



Filed by:

Rick Woods Site Development Manager - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3800 - rwoods@sbsite.com

November 18, 2024

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

RE: **Notice of Exempt Modification**
 47 Brown Road Brooklyn, CT 06234
 Latitude: 41.79836078
 Longitude: -071.93588856
 T-Mobile Site #: CT11513D

Dear Ms. Bachman:

T-Mobile currently has six (6) antennas at 137' of the existing 144' Monopole Tower at 47 Brown Road Brooklyn, CT. The 144' tower is owned by SBA Tower II, LLC. The property is owned by Cynthia Perkins, Richard Perkins & Annie Perkins. T-Mobile now intends to replace three (3) antennas with (3) new antennas and (3) new Radios. The new antennas and radios would be installed at 137'.

Planned Modifications:

TOWER

Remove:

- (3) RFS APX16DWV-16DWV-S-E-A20 antennas
- (3) Ericsson Twin Style 1A TMAs
- (9) 1-5/8" coax
- (3) 1-5/8" hybrid cables

Install New:

- (2) 1.9" Coax
- (3) RFS APXVLL19P_43-C-A20 antennas
- (3) Ericsson 4460 B25+B66 Radios

Existing Equipment to Remain:

- (3) RFS APXVAARR24_43-U-NA20 antennas
- (3) Ericsson 4480 B71+B55 Radios
- (1) Sitepro RMQP-4096-Hk low-profile platform

Reserved Entitlements:

- (3) Kathrein Bias Ts
- (3) EMS RR90-19-XXDPQ antennas
- (15) 1-5/8" coax

GROUND

Install New:

- (1) Slackbox for Fiber management
- (1) 6160 V2 AC Equipment Cabinet
- (1) B160 Battery Cabinet

This facility was approved by the Council on January 12, 2004 under Docket 264. Approval was given for a tower not to exceed 150' above ground level, sufficient to accommodate antennas of carriers, Quinebaug Valley Emergency Communications Inc., and other entities both public and private. A recalculated RF report was to be provided when circumstances in operation caused a change in power density. Upon establishment of any new applicable RF standards, the facility was to be brought into compliance with same. The certificate holder was to permit public or private entities to share space for fair consideration or to provide reasons precluding such tower sharing. Reasonable space on the tower was to be provided for no compensation for any municipal antennas provided tower space was available and such antennas were compatible with the structural integrity of the tower. Any obsolete antennas were to be removed within sixty days. There were no further post construction stipulations set. Please see attached.

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 the Town of Brooklyn's First Selectman, Austin Tanner, and Zoning Enforcement Chairman, Bruce Parsons, as well as to the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. §16.50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modification will not require the extension of the site boundary.
3. The proposed modifications 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 Communications Commission safety standard.

5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Rick Woods
Site Development Manager



SBA Communications Corporation
134 Flanders Road
Suite 125
Westborough, MA 01581

508.251.0720 x3800 + **T**
508.614.0389 + **C**
rwoods@sbsite.com

Your Signal Starts Here.

Attachments:

cc: Austin Tanner, First Selectman / with attachments
The Town of Brooklyn, 4 Wolf Den Road, Brooklyn, CT 06234
Bruce Parsons, Zoning Enforcement Chairman / with attachments
Town of Brooklyn, Clifford B. Green Memorial Center, 69 South Main Street, Suite 22, Brooklyn, CT 06234
Cynthia, Richard & Annie Perkins / with attachments
159 Brown Rd., Brooklyn, CT 06234

EXHIBIT LIST

Exhibit 1	Copy of Check	X
Exhibit 2	Notification Receipts	X
Exhibit 3	Property Card	X
Exhibit 4	Property Map	X
Exhibit 5	Original Zoning Approval	CSC 1/12/04
Exhibit 6	EME Report	Centerline 11/14/2024
Exhibit 7	Structural Analysis	TEP 9/12/2024
Exhibit 8	Mount Analysis	TEP 9/10/2024
Exhibit 9	Construction Drawings	Chappell 10/3/2024



EXHIBIT 1



EXHIBIT 2

ORIGIN ID:BBFA (508) 768-7960
SHIP DATE: 18NOV24
JOHN MORRISON ACTWGT: 1.00 LB
SBA COMMUNICATIONS CORPORATION CAD: 255382542INET4535
134 FLANDERS
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US
BILL SENDER

TO AUSTIN TANNER
TOWN OF BROOKLYN FIRST SELECTMAN
4 WOLF DEN ROAD

BROOKLYN CT 06234

(860) 779-3411 REF: 10-56-92009-6089
INV: PO: DEPT:

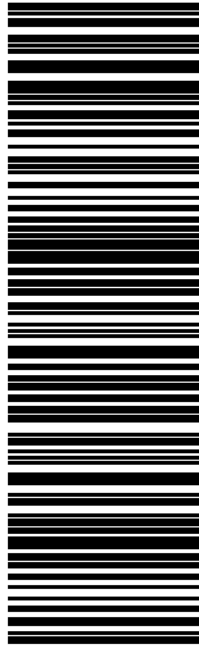


TUE - 19 NOV 5:00P
STANDARD OVERNIGHT

TRK# 7700 3836 1992

0201

EB GONA 06234
CT-US BDL



After printing this label:
1. Fold the printed page along the horizontal line.
2. Place label in shipping pouch and affix it to your shipment.

CONSIGNEE COPY - PLEASE PLACE IN FRONT OF POUCH

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

ORIGIN ID:BBFA (508) 768-7960
SHIP DATE: 18NOV24
JOHN MORRISON ACTWGT: 1.00 LB
SBA COMMUNICATIONS CORPORATION CAD: 255382542INET4535
134 FLANDERS
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US
BILL SENDER

TO CYNTHIA. RICHARD, ANNIE PERKINS

159 BROWN RD

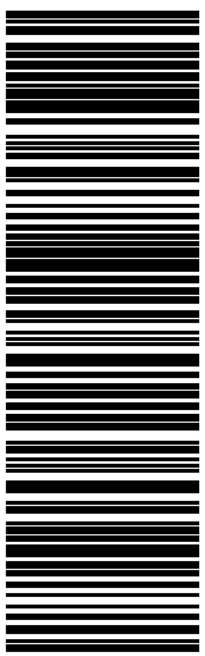
BROOKLYN CT 06234
REF: 10-56-92009-6089
(508) 614-0389

PO: DEPT:



TRK# 7700 3859 6477
TUE - 19 NOV 5:00P
STANDARD OVERNIGHT
020T

EB GONA
06234
CT-US BDL



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ORIGIN ID:BBFA (508) 768-7960
JOHN MORRISON
SBA COMMUNICATIONS CORPORATION
134 FLANDERS
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 18NOV24
ACTWGT: 1.00 LB
CAD: 255382542INET4535

BILL SENDER

TO **BRUCE PARSONS**
ZONING CHAIRMAN
4 WOLF DEN ROAD

BROOKLYN CT 06234

(860) 779-3411 REF: 10-56-92009-6089

INV:

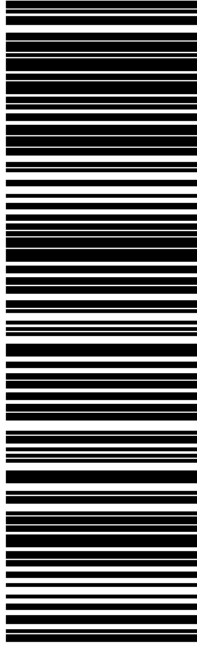
DEPT:



TUE - 19 NOV 5:00P
STANDARD OVERNIGHT

TRK# 7700 3844 2990
0201

EB GONA
06234
CT-US BDL



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EXHIBIT 3

159 BROWN RD

Location

159 BROWN RD

Mblu

34/ / 34/ /

Acct#

00132200

Owner

PERKINS CYNTHIA E &
RICHARD H &

Assessment

\$156,490

Appraisal

\$252,400

PID

1473

Building Count

1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2016	\$161,300	\$91,100	\$252,400
Assessment			
Valuation Year	Improvements	Land	Total
2016	\$112,900	\$43,590	\$156,490

Owner of Record

Owner

PERKINS CYNTHIA E & RICHARD H &

Sale Price

\$0

Co-Owner

PERKINS ANNIE D

Certificate

Care Of

Book & Page

571/ 183

Address

159 BROWN RD
BROOKLYN, CT 06234

Sale Date

02/09/2016

Instrument

29

Qualified

U

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
PERKINS CYNTHIA E & RICHARD H &	\$0		571/ 183	29	02/09/2016
PERKINS CYNTHIA E & RICHARD H	\$45,000		562/ 256	25	07/13/2015
INGALLS RALPH G FAMILY TRUST	\$0		369/ 196		09/12/2005
INGALLS RALPH G	\$0		34/ 311		04/22/1958

Building Information

Building 1 : Section 1

Year Built:

2016

Living Area:

1,508

Replacement Cost:

\$161,268

Building Percent 100
Good:
Replacement Cost
Less Depreciation: \$161,300

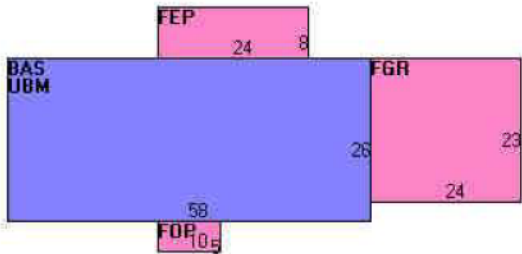
Building Attributes	
Field	Description
Style	Ranch
Model	Residential
Grade:	C
Stories:	1
Occupancy	1
Exterior Wall 1	Board & Batten
Exterior Wall 2	Vinyl Siding
Roof Structure:	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Flr 1	Wood Laminate
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Hot Water
AC Type:	00
Total Bedrooms:	2 Bedrooms
Total Bthrms:	2
Total Half Baths:	
Total Xtra Fixtrs:	1
Total Rooms:	5
Bath Style:	Average
Kitchen Style:	Modern

Building Photo



(http://images.vgsi.com/photos/BrooklynCTPhotos//\00\00\32\6'

Building Layout



(http://images.vgsi.com/photos/BrooklynCTPhotos//Sketches/14'

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,508	1,508
FEP	Porch, Enclosed	192	0
FGR	Garage	552	0
FOP	Porch, Open	50	0
UBM	Basement, Unfinished	1,508	0
		3,810	1,508

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 1010
Description Single Fam MDL-01
Zone RA
Neighborhood 0050
Alt Land Appr Category No

Land Line Valuation

Size (Acres) 15.19
Frontage
Depth
Assessed Value \$43,590
Appraised Value \$91,100

Outbuildings

Outbuildings	<u>Legend</u>
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$161,300	\$91,100	\$252,400
2017	\$161,300	\$91,100	\$252,400
2016	\$161,300	\$91,100	\$252,400

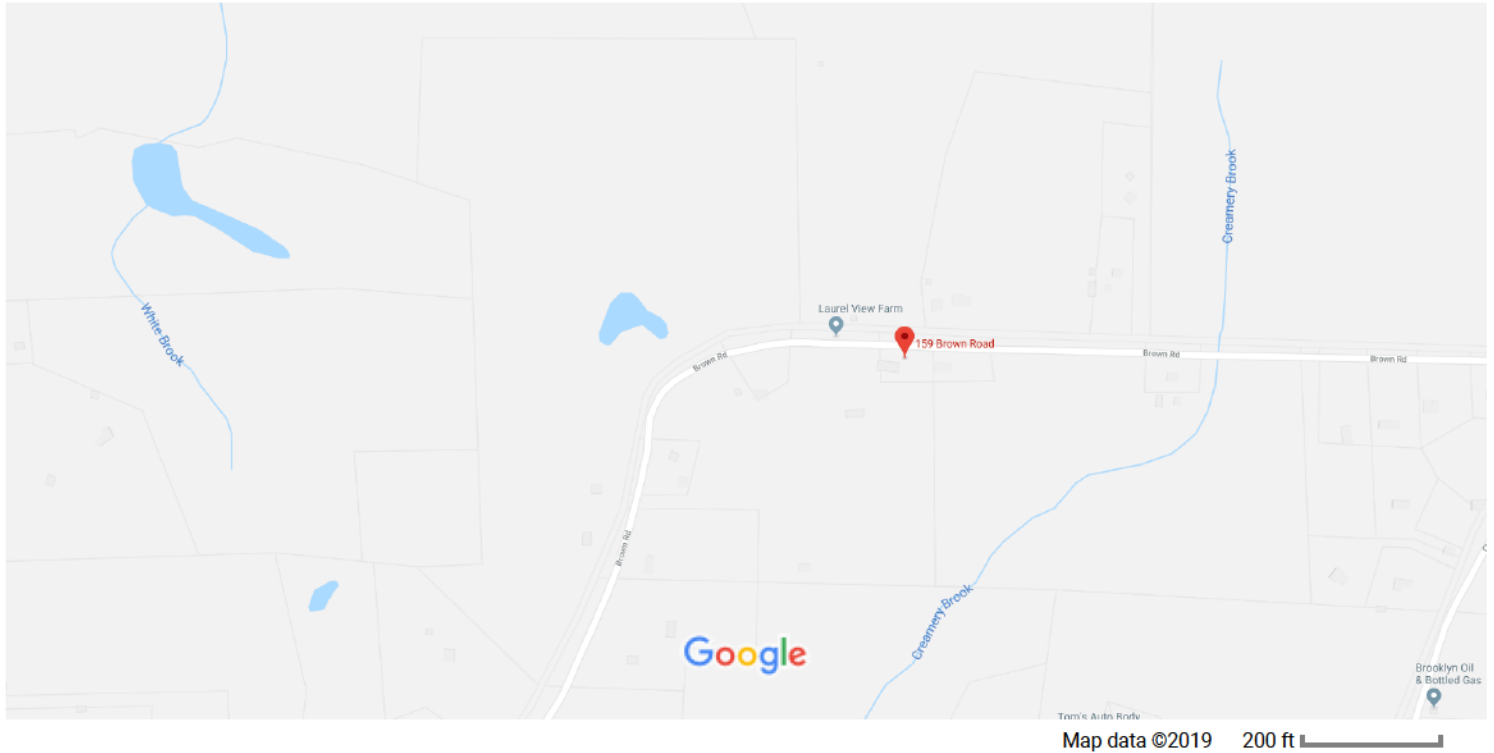
Assessment			
Valuation Year	Improvements	Land	Total
2018	\$112,900	\$43,590	\$156,490
2017	\$112,900	\$43,590	\$156,490
2016	\$112,900	\$43,590	\$156,490

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EXHIBIT 4

Google Maps 159 Brown Rd



159 Brown Rd

Brooklyn, CT 06234



Directions



Save



Nearby

Send to your
phone

Share



R328+56 Brooklyn, Connecticut



EXHIBIT 5

SITE NAME: INGALLS

SITE ID: CT13612-A

Transaction: Light Tower

01513

ZONING/PERMITTING COMPLETION FORM

Address: 146 Brown Rd., Brooklyn, CT 06234

Jurisdiction: Town of Brooklyn Zoning District: _____

Zoning Approval Type: Cert. of Environmental Compatibility Case #: _____

Approval Date: 1-12-04 Approved Height: 150' monopole Tower Build Date: _____

If tower is destroyed or drop/swap required, tower can likely be rebuilt?

☐ YES

☐ NO

Conditions of Approval:

	Yes	No	N/A
Removal Bond	☐	☒	☐
Site Plan Submittal	☐	☒	☐
Fall Zone	☐	☒	☐
Periodic Inspections	☐	☒	☐
Periodic Reporting	☐	☒	☐
Approval Renewal	☐	☒	☐
Additional Conditions	☐	☒	☐

JURISDICTION POC/DEPT.

Planning/Zoning: _____

Phone: _____ Fax: _____

Bldg./Code Enforcement: _____

Phone: _____ Fax: _____

Submitted by: _____ Date: _____

Zoning Compliance

TO BE COMPLETED BY CORPORATE

	Yes	No	N/A
Zoning Approval Attached (required)	☒	☐	☐
Ordinance Attached (required)	☐	☒	☐
Building Permit Attached (required)	☒	☐	☐
Certificate of Occupancy or Compliance (CO) attached (required)	☒	☐	☐

006686

Date Recd

5/24/04

3/20/06

Zoning Manager Approval: Diane E. Borchardt Date 8/14/2008

Diane E. Borchardt, AICP

08/26/2004 THU 12:10

401 454 3131 TOWER VENTURES II, LLC + + + ciolfi c.

0001/001

08/26/2004 15:48

15085488835

ALAN DICK

PAGE 01/01

APPLICATION FOR BUILDING PERMIT

Brooklyn
IngrallsTOWN OF BROOKLYN
CONNECTICUTPERMIT NO. Nº 006326

(Application must be typed or printed)

LOCATION OF JOB (NO. & STREET)		CARD NO.	MAP	BLOCK	LOT
<u>Brown Road</u>			<u>34</u>		<u>34</u>
OWNER	TEL	ADDRESS (NO., STREET, TOWN, STATE, ZIP)			
<u>Ralph Callup Ingralls</u>		<u>146 Brown Road Brooklyn CT</u>			
APPLICANT	TEL	ADDRESS (NO., STREET, TOWN, STATE, ZIP)			
<u>Same</u>					
BUILDER	TEL	ADDRESS (NO., STREET, TOWN, STATE, ZIP)			
<u>Tower Ventures II</u>		<u>170 Westminster St Providence RI</u>			
LICENSE #	NAME & TEL. # OF PERSON RESPONSIBLE				
	<u>02903</u>				

All Permits Must Be Posted And Visible From The Street

SIZE OF BUILDING		DISTANCES FROM LOT LINE (Circle Front Lot Line)				OTHER REQUIREMENTS	
STORIES	NO. OF FAMILIES	EAST	WEST	NORTH	SOUTH	ZONING PERMIT	REQ'D. ATTACHED
HEIGHT	DEPTH					PLAT PLAN	REQ'D. ATTACHED
TOTAL FLOOR AREA (NEW) SQ. FT.		PROPOSED USE				SEPTIC PERMIT	REQ'D. ATTACHED
TYPE OF WORK BEING DONE		☐ NEW HOME (Single Family) ☐ MULTI FAMILY # OF BEDROOMS _____ WATER SUPPLY _____				APPROVALS	
☐ ORIG. CONSTRUCTION ☐ ALTERATION ☐ ADDITION		☐ ADDITION ☐ GARAGE ☐ DECK/PORCH ☐ SHED ☐ POOL ☐ COMMERCIAL/PUBLIC ☐ OTHER _____				ZONING _____ FIRE MARSHAL _____ WETLAND _____ ENGINEER _____ SANITATION _____ STREET SUPT. _____	
CONSTRUCTION VALUE		BUILDING PLANS				FEE COVERS	
ESTIMATED	ACTUAL	REQUIRED ATTACHED				VALUE FEE ☒ CONSTRUCTION <u>65,000</u> <u>560</u> ☐ PLUMBING _____ ☐ HEATING _____ ☒ ELECTRICAL <u>15,000</u> _____ ☐ SEPTIC _____ ☐ ZONING _____ ☐ OTHER _____	
TYPE OF HEAT		MATERIALS LIST				TOTAL	
☐ ELECTRIC ☐ GAS ☐ OIL		ON PLANS ATTACHED				CHECK # <u>1237</u> DATE PAID <u>5-26-04</u>	

DESCRIPTION OF WORK / REMARKS:

Installation of 150 foot tower
and antennas and radio equipment
for mobile

360.345.4602

All work covered by this application
done according to state regulationswork authorized by the (owner) or (agent) of this property and will be
completed within 180 days if work does not commence within 6 months.☐ APPROVED☐ DISAPPROVED

5/24/04

Date

Alan Dick

Owner/Agent Signature

Hal Bililio - Pres. mem.

Date

Building Official

Office Copy - White

City Copy - Yellow

Assessor's Copy - Pink

Building Official - Green

Building Official - Goldenrod

Map 34 Lot 34

BUILDING DEPARTMENT
TOWN OF BROOKLYN, CONNECTICUT

No 2146

CERTIFICATE OF OCCUPANCY

Dated 3/20/06

This is to certify that building at 146 Brown Road as Complete under Permit No. 000088 conforms substantially to the requirements of the Building Code and Zone ordinances of the Town of Brooklyn, where applicable, and is hereby approved for occupancy as indicated below.

Approved for occupancy Installation of 150 foot tower
and antennas and radio equipment
for T-Mobile

Owner: Ingalls
N/A Fire Marshall J. Marshall Building Official

Notice: If this certificate is lost or destroyed, a duplicate should be immediately obtained from the Building Official.

Any change or extension of the use herein approved requires a new certificate of occupancy. Copies of this certificate may be obtained at the Building Department, Town Hall, Brooklyn, Conn.



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

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

Brooklyn

CT-01513

April 20, 2004

Scott T. Penner, Esq.
Hurwitz & Sagarin, LLC
147 N. Broad Street
Milford, CT 06460

RE: **DOCKET NO. 264 - Tower Ventures II, LLC Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at Brown Road (Lot 34) Brooklyn, Connecticut.**

Dear Attorney Penner:

At a public meeting of the Connecticut Siting Council held on April 15, 2004, the Connecticut Siting Council (Council) considered and approved the Development and Management (D&M) Plan submitted for this project on March 15, 2004, with the following conditions:

- 1) Tower Ventures provide a copy of the final foundation design upon completion of soil borings.
- 2) the removal of all erosion and sedimentation controls within 30-days of site stabilization.

This approval applies only to the D&M Plan submitted on March 15, 2004. Any changes to the D&M Plan require advance Council notification and approval.

Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Enclosed is a copy of the staff report on this D&M Plan, dated April 15, 2004.

Thank you for your attention and cooperation.

Very truly yours,

PBK/PEE
Pamela B. Katz, P.E.
Chairman

PBK/laf

Enclosure: Staff Report, dated April 15, 2004



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

Docket No. 264
Tower Ventures II, LLC
Brown Road, Brooklyn

Development and Management Plan

Staff Report

April 15, 2004

On January 12, 2004, the Connecticut Siting Council (Council) issued a Certificate of Environmental Compatibility and Public Need to Tower Ventures II, LLC for the construction, maintenance, and operation of a wireless telecommunications facility on Brown Road, Lot 34, Brooklyn, Connecticut. As required in the Council's Decision and Order, Tower Ventures submitted a completed Development and Management Plan for this facility on March 15, 2004.

Consistent with the Council's D & O, the tower and compound site was relocated approximately 75 feet to the south to an area with a moderate grade.

Consistent with the Council's Decision and Order, Tower Ventures will construct a 150-foot monopole, designed to support six levels of antennas, at the site. AT&T will install six flush mounted panel antennas at a centerline height of 147 feet agl. T-Mobile will install nine panel antennas on a platform at a centerline height of 137 feet agl. The final foundation design will be determined upon completion of soil borings at the site.

Tower Ventures will construct a 75-foot by 75-foot tower compound enclosed by a ten-foot high chain link fence at the site. Access to the site would be provided by a ten-foot wide, 160-foot long gravel drive of new construction extending from an existing grass drive on the property. Tower Ventures will upgrade the grass drive to a gravel surface. Underground utilities would be installed along the access road from a utility pole on Brown Road.

AT&T will install two equipment cabinets on a ten-foot by six-foot concrete pad within the compound. T-Mobile will install four equipment cabinets on two concrete pads within the compound.

Consistent with the Council's D&O, the cumulative worst-case radio frequency power density level at the base of the tower during operation of AT&T antennas at the site would be 19.8% of the applicable ANSI standard.

All of the D&M requirements set forth in the Council's Decision & Order for Docket 264 are substantially in compliance; therefore, Council staff recommends approval of the D&M plan with the conditions:

- 1) Tower Ventures provide a copy of the final foundation design upon completion of soil borings.
- 2) the removal of all erosion and sedimentation controls within 30-days of site stabilization.



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@po.state.ct.us

Web Site: www.state.ct.us/csc/index.htm

CERTIFICATE
OF
ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED
DOCKET NO. 264

Pursuant to General Statutes § 16-50k, as amended, the Connecticut Siting Council hereby issues a Certificate of Environmental Compatibility and Public Need to Tower Ventures II, LLC for the construction, maintenance and operation of a wireless telecommunications facility at Brown Road, Lot 34, Brooklyn, Connecticut. This Certificate is issued in accordance with and subject to the terms and conditions set forth in the Decision and Order of the Council on January 12, 2004.

By order of the Council,



Pamela B. Katz, P.E., Chairman

January 12, 2004

DOCKET NO. 264 - Tower Ventures II, LLC application for a } Connecticut
Certificate of Environmental Compatibility and Public Need for }
the construction, maintenance and operation of a wireless } Siting
telecommunications facility at either 146 Brown Road or Brown } Council
Road (Lot 34) Brooklyn, Connecticut. }

January 12, 2004

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Tower Ventures II, LLC for the construction, maintenance and operation of a wireless telecommunications facility at Site A-2, located at Lot 34, Brown Road, Brooklyn, Connecticut. The Council denies certification of Site A-1 located at 146 Brown Road, Brooklyn, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Omnipoint Holdings d/b/a T-Mobile, AT&T Wireless PCS LLC, Quinebaug Valley Emergency Communications, Inc. and other entities, both public and private, but such tower shall not exceed a height of 150 feet above ground level.
2. The compound site shall be moved approximately 75 feet to the south.
3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) a detailed site development plan that depicts the location of the access road, compound, tower, utility line, erosion and sedimentation control features, extent of site clearing and grading, and landscaping. Erosion and sedimentation controls shall be consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; and
 - b) specifications for the tower, tower foundation, antennas, equipment building, and security fence.
4. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

Docket No. 264
Decision & Order
Page 2

5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing. The Certificate Holder shall provide reasonable space on the tower for no compensation for any municipal antennas, provided tower space is available and such antennas are compatible with the structural integrity of the tower.
7. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
8. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.
9. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant and the Norwich Bulletin.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant

Tower Ventures II, LLC.

Intervenor

Omnipoint Facilities Network 2, L.L.C.,
A Subsidiary of T-Mobile, USA, Inc.

Intervenor

AT&T Wireless PCS, LLC
d/b/a AT&T Wireless

Its Representative

Scott T. Penner, Esq.
Hurwitz & Sagarin, LLC
147 N. Broad Street
Milford, CT 06460

Its Representative

Stephen J. Humes, Esq.
LeBoeuf, Lamb, Greene & MacRae, L.L.P.
Goodwin Square
225 Asylum Street
Hartford, CT 06103

Its Representative

Christopher B. Fisher, Esq.
Cuddy & Feder LLP
90 Maple Avenue
White Plains, New York 10601

CERTIFICATION

The undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in **DOCKET NO. 264 - Tower Ventures II, LLC** application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at either 146 Brown Road or Brown Road (Lot 34) Brooklyn, Connecticut, and voted as follows to approve proposed Site A-2 site located at Brown Road, Lot 34, Brooklyn, Connecticut, and deny certification of proposed Site A-1 located at 146 Brown Road, Connecticut:

Council Members

Vote Cast


Pamela B. Katz, P.E., Chairman

Yes


Commissioner Donald W. Downes
Designee: Gerald J. Heffernan

Yes

Brian J. Emerick
Commissioner Arthur J. Rocque, Jr.
Designee: Brian J. Emerick

Yes

Philip Ashton

Absent

Daniel P. Lynch, Jr.
Daniel P. Lynch, Jr.

Abstain

James J. Murphy, Jr.

Yes

Brian O'Neill

Yes

Colin C. Tait

Yes

Edward S. Wilensky

Yes

Dated at New Britain, Connecticut, January 12, 2004.

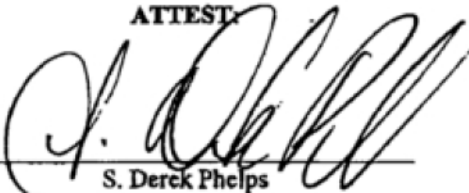
STATE OF CONNECTICUT)

ss. New Britain, Connecticut :

COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the Findings of Fact, Opinion, and Decision and Order issued by the Connecticut Siting Council, State of Connecticut.

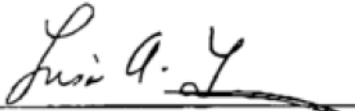
ATTEST:



S. Derck Phelps
Executive Director
Connecticut Siting Council

I certify that a copy of the Findings of Fact, Opinion, and Decision and Order in Docket No. 262 has been forwarded by Certified First Class Return Receipt Requested mail on January 14, 2004, to all parties and intervenors of record as listed on the attached service list, July 25, 2003.

ATTEST:



Lisa A. Fontaine
Administrative Assistant
Connecticut Siting Council



EXHIBIT 6



CENTERLINE

Radio Frequency Exposure Analysis Report

November 14, 2024

T-Mobile

Site Name: TwrVntr -Brooklyn #2

Site ID: CT11513D

Site Address: 47 Brown Road, Brooklyn, CT 06234



Michael Fischer, P.E.
Registered Professional Engineer (Electrical)
Connecticut License Number 33928
Expires January 31, 2025

Signed 14 November 2024

Site Compliance Summary

T-Mobile Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	2.40331 $\mu\text{W}/\text{cm}^2$
Cumulative General Population % MPE (Ground Level):	0.34444%



November 14, 2024

T-Mobile
Attn: Adam Sullivan
15 Commerce Way, Suite B
Norton, MA 02379

RF Exposure Analysis for Site: TwrVntr -Brooklyn #2

Centerline was contracted to analyze the proposed T-Mobile facility at **47 Brown Road, Brooklyn, CT 06234** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{\text{MHz}}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of $1 \text{ mW}/\text{cm}^2$ ($1000 \mu\text{W}/\text{cm}^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the MPE limits for General Population/Uncontrolled environments as defined below.

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

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, 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.



Calculation Methodology

Centerline has performed theoretical modeling of the site using a software tool, RoofMaster®, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.



Data & Results

The following table details the antennas and operating parameters for the T-Mobile antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at ground level.

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table(s) below. The cumulative power density and cumulative % MPE are displayed at the bottom of the table(s) below.

The following files were used in completing this report:

RFDS:	CT11513D_RF_Final_RFDS_67D998E_Equipment Upgrade_4_2024-10-09
CD:	CT11513D_A and E_FCD_EquipUpgrade_R1_20241003-SSD_BB_RFapprove



Maximum Calculated Cumulative Power Density (Location: Ground @ approximately 10' North of site)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBi)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	700	13.65	137.00	4.00	40.00	3707.83	0.08020	466.67	0.01719
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	600	12.95	137.00	4.00	40.00	3155.88	0.07473	400.00	0.01868
T-Mobile A 2	RFS APXVLL19P_43-C-A20	1900	16.24	137.00	4.00	40.00	6731.63	0.09669	1000.00	0.00967
T-Mobile A 2	RFS APXVLL19P_43-C-A20	1900	16.24	137.00	4.00	40.00	6731.63	0.09669	1000.00	0.00967
T-Mobile A 2	RFS APXVLL19P_43-C-A20	2100	17.33	137.00	4.00	60.00	12978.10	0.14428	1000.00	0.01443
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	700	13.65	137.00	4.00	40.00	3707.83	0.00006	466.67	0.00001
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	600	12.95	137.00	4.00	40.00	3155.88	0.00045	400.00	0.00011
T-Mobile B 4	RFS APXVLL19P_43-C-A20	1900	16.24	137.00	4.00	40.00	6731.63	0.00026	1000.00	0.00003
T-Mobile B 4	RFS APXVLL19P_43-C-A20	1900	16.24	137.00	4.00	40.00	6731.63	0.00026	1000.00	0.00003
T-Mobile B 4	RFS APXVLL19P_43-C-A20	2100	17.33	137.00	4.00	60.00	12978.10	0.00016	1000.00	0.00002
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	700	13.65	137.00	4.00	40.00	3707.83	0.00079	466.67	0.00017
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	600	12.95	137.00	4.00	40.00	3155.88	0.00031	400.00	0.00008
T-Mobile C 6	RFS APXVLL19P_43-C-A20	1900	16.24	137.00	4.00	40.00	6731.63	0.00025	1000.00	0.00003
T-Mobile C 6	RFS APXVLL19P_43-C-A20	1900	16.24	137.00	4.00	40.00	6731.63	0.00025	1000.00	0.00003
T-Mobile C 6	RFS APXVLL19P_43-C-A20	2100	17.33	137.00	4.00	60.00	12978.10	0.00025	1000.00	0.00003
Verizon A 7	GENERIC PANEL 6FT	850	12.62	127.00	0.00	0.00	0.00 (Not in Use)	0.00000	566.67	0.00000
Verizon A 8	GENERIC PANEL 6FT	700	12.33	127.00	2.00	40.00	1368.01	0.05614	466.67	0.01203
Verizon A 8	GENERIC PANEL 6FT	850	12.62	127.00	2.00	40.00	1462.48	0.05796	566.67	0.01023
Verizon A 8	GENERIC PANEL 6FT	1900	15.84	127.00	4.00	40.00	6139.32	0.11617	1000.00	0.01162
Verizon A 9	GENERIC PANEL 6FT	700	12.33	127.00	2.00	40.00	1368.01	0.05614	466.67	0.01203
Verizon A 9	GENERIC PANEL 6FT	850	12.62	127.00	2.00	40.00	1462.48	0.05796	566.67	0.01023
Verizon A 9	GENERIC PANEL 6FT	2100	16.39	127.00	4.00	40.00	6968.19	0.12199	1000.00	0.01220
Verizon A 10	GENERIC PANEL 1FT	3600	15.35	127.00	4.00	5.00	685.54	0.01741	1000.00	0.00174
Verizon A 11	GENERIC PANEL 6FT	850	12.62	127.00	0.00	0.00	0.00 (Not in Use)	0.00000	566.67	0.00000
Verizon B 12	GENERIC PANEL 6FT	850	12.62	127.00	0.00	0.00	0.00 (Not in Use)	0.00000	566.67	0.00000
Verizon B 13	GENERIC PANEL 6FT	700	12.33	127.00	2.00	40.00	1368.01	0.00022	466.67	0.00005
Verizon B 13	GENERIC PANEL 6FT	850	12.62	127.00	2.00	40.00	1462.48	0.00001	566.67	0.00000
Verizon B 13	GENERIC PANEL 6FT	1900	15.84	127.00	4.00	40.00	6139.32	0.00002	1000.00	0.00000
Verizon B 14	GENERIC PANEL 6FT	700	12.33	127.00	2.00	40.00	1368.01	0.00022	466.67	0.00005
Verizon B 14	GENERIC PANEL 6FT	850	12.62	127.00	2.00	40.00	1462.48	0.00001	566.67	0.00000
Verizon B 14	GENERIC PANEL 6FT	2100	16.39	127.00	4.00	40.00	6968.19	0.00004	1000.00	0.00000
Verizon B 15	GENERIC PANEL 1FT	3600	15.35	127.00	4.00	5.00	685.54	0.00000	1000.00	0.00000
Verizon B 16	GENERIC PANEL 6FT	850	12.62	127.00	0.00	0.00	0.00 (Not in Use)	0.00000	566.67	0.00000



Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
Verizon C 17	GENERIC PANEL 6FT	850	12.62	127.00	0.00	0.00	0.00 (Not in Use)	0.00000	566.67	0.00000
Verizon C 18	GENERIC PANEL 6FT	700	12.33	127.00	2.00	40.00	1368.01	0.00017	466.67	0.00004
Verizon C 18	GENERIC PANEL 6FT	850	12.62	127.00	2.00	40.00	1462.48	0.00019	566.67	0.00003
Verizon C 18	GENERIC PANEL 6FT	1900	15.84	127.00	4.00	40.00	6139.32	0.00020	1000.00	0.00002
Verizon C 19	GENERIC PANEL 6FT	700	12.33	127.00	2.00	40.00	1368.01	0.00017	466.67	0.00004
Verizon C 19	GENERIC PANEL 6FT	850	12.62	127.00	2.00	40.00	1462.48	0.00019	566.67	0.00003
Verizon C 19	GENERIC PANEL 6FT	2100	16.39	127.00	4.00	40.00	6968.19	0.00013	1000.00	0.00001
Verizon C 20	GENERIC PANEL 1FT	3600	15.35	127.00	4.00	5.00	685.54	0.00001	1000.00	0.00000
Verizon C 21	GENERIC PANEL 6FT	850	12.62	127.00	0.00	0.00	0.00 (Not in Use)	0.00000	566.67	0.00000
Dish A 22	JMA MX08FRO665-21	600	11.35	60.00	4.00	30.00	1637.50	0.41106	400.00	0.10277
Dish A 22	JMA MX08FRO665-21	2007	15.75	60.00	4.00	40.00	6013.40	0.52335	1000.00	0.05234
Dish A 22	JMA MX08FRO665-21	2100	16.75	60.00	4.00	40.00	7570.42	0.48784	1000.00	0.04878
Dish B 23	JMA MX08FRO665-21	600	11.35	180.00	4.00	30.00	1637.50	0.00007	400.00	0.00002
Dish B 23	JMA MX08FRO665-21	2007	15.75	180.00	4.00	40.00	6013.40	0.00000	1000.00	0.00000
Dish B 23	JMA MX08FRO665-21	2100	16.75	180.00	4.00	40.00	7570.42	0.00000	1000.00	0.00000
Dish C 24	JMA MX08FRO665-21	600	11.35	300.00	4.00	30.00	1637.50	0.00000	400.00	0.00000
Dish C 24	JMA MX08FRO665-21	2007	15.75	300.00	4.00	40.00	6013.40	0.00000	1000.00	0.00000
Dish C 24	JMA MX08FRO665-21	2100	16.75	300.00	4.00	40.00	7570.42	0.00001	1000.00	0.00000
							Cumulative Power Density:	2.40331 $\mu\text{W}/\text{cm}^2$	Cumulative % MPE:	0.34444%



Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in all areas at ground level that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **compliant** with FCC rules and regulations.

Michelle Stone
RF EME Technical Writer II
Centerline



EXHIBIT 7



A **CONGRUEX**® COMPANY

Tower Engineering Solutions, LLC
1320 Greenway Drive, Suite 600, Irving, Texas 75038
Phone: (972) 483-0607, Fax: (972) 975-9615

Structural Analysis Report

<u>Structure Information</u>	Tower Type	Existing 150 ft EEI Monopole
<u>Customer Information</u>	Name	SBA Communications Corp
	Site Number	CT13612-A
	Site Name	Ingalls
<u>Carrier Information</u>	Name	T-Mobile
	Site ID / Name	CT11513D / Ingalls
	App #	260460, V1
<u>Site Information</u>	Address:	146 Brown Rd Brooklyn, Connecticut 06234, Windham County
	Latitude:	41.798361°
	Longitude:	-71.935889°

Analysis Result:

Max Structural Usage: **86.1% [Pass]**

Max Foundation Usage: **59.0% [Pass]**

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Wei-Hsiang Chen





TES

A **CONGRUEX**® COMPANY

Tower Engineering Solutions, LLC
1320 Greenway Drive, Suite 600, Irving, Texas 75038
Phone: (972) 483-0607, Fax: (972) 975-9615

Structural Analysis Report

<u>Structure Information</u>	<i>Tower Type</i>	<i>Existing 150 ft EEI Monopole</i>
<u>Customer Information</u>	<i>Name</i>	<i>SBA Communications Corp</i>
	<i>Site Number</i>	<i>CT13612-A</i>
	<i>Site Name</i>	<i>Ingalls</i>
<u>Carrier Information</u>	<i>Name</i>	<i>T-Mobile</i>
	<i>Site ID / Name</i>	<i>CT11513D / Ingalls</i>
	<i>App #</i>	<i>260460, V1</i>
<u>Site Information</u>	<i>Address:</i>	<i>146 Brown Rd</i> <i>Brooklyn, Connecticut 06234, Windham County</i>
	<i>Latitude:</i>	<i>41.798361°</i>
	<i>Longitude:</i>	<i>-71.935889°</i>

Analysis Result:

Max Structural Usage: **86.1% [Pass]**

Max Foundation Usage: **59.0% [Pass]**

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Wei-Hsiang Chen

Introduction

The purpose of this report is to summarize the analysis results on the 150 ft EEI Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Document Type	Remarks
Tower Drawings	Engineered Endeavors Incorporated, Project # 12401, Drawing # GS55101, dated 03/18/2004
Foundation Drawing	Engineered Endeavors Incorporated, Project # 12401, Drawing # S12401-150.0, dated 03/18/2004
Geotechnical Report	Jaworski Geotech Inc. Geotechnical Report, dated 04/19/2004
Modification Drawings	N/A
Mount Analysis	TES Job # 151109, dated 09/10/2024

Analysis Criteria

The comprehensive analysis was performed in accordance with the requirements and stipulations of the TIA-222-H. In accordance with this standard, the structure was analyzed using TESPoles, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Codes and Standards	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code	
Wind Parameters	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT} :	122.0 mph
	Ice Wind Speed (3-sec. Gust):	50 mph
	Design Ice Thickness:	1.00"
	Service Load Wind Speed:	60 mph + 0" Radial ice
	Exposure Category:	C
	Risk Category:	II
	Ground Elevation Factor (K_e):	0.989
Topographic Parameters	Method:	Method 1
	Feature Type:	Flat
	Crest Height (H):	0 ft
	Length of Feature (L):	0.0 ft
	Distance to crest (x):	0.0 ft
Seismic Parameters:	S_s	0.184 g
	S_1	0.054 g

This structural analysis is based upon the tower being classified as a Risk Category II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
-	137.0	3	RFS APX16DWV-16DWVS-E-A20 Panel	Low Profile Platform w/ HRK [RMQP-4096-HK]	(15) 1-5/8" (3) 1-5/8" Hybrid	T-Mobile
-		3	RFS APXVAARR24_43-U-NA20 Panel			
-		3	EMS - RR90-19-XXDPQ - Panel			
-		3	KRY 112 144/1 TMA			
-		3	Ericsson KRY 112 489/2 TMA			
-		3	Ericsson 4449 B71+B12 RRU			
-		3	Kathrein 782 11056 Bias Ts			
7	128.0	6	Antel LPA-80080/6CF ____ - Panel	(1) Low Profile Platform + (3) JMA 91900314-02 + (1) VZWSMART-PLK1 + (3) P2 1/2 STD Pipe + (3) Site Pro 1 SP219-H Crossover Plates	(6) 1 5/8" (2) 1 5/8" Hybrid	Verizon
8		2	Kaelus BSF0020F3V1-1 - Filter			
9	127.0	2	RFS DB-T1-6Z-8AB-0Z - Junction Box			
10		6	JMA MX06FRO660-02 - Panel			
11		3	Samsung MT6407-77A - Panel			
12		3	Samsung RF4439d-25A RRU			
13		3	Samsung RF4440d-13A RRU			
14	110.0	3	Commscope FFVV-65B-R2 - Panel	(1) Commscope Platform [MC-PK8-DSH]	(1) 1.6" Hybrid	Dish Wireless
15		3	Fujitsu TA08025-B605			
16		3	Fujitsu TA08025-B604			
17		1	Raycap RDIDC-9181-PF-48			

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	137.0	3	RFS APXVLL19P_43-C-A20 - Panel	Low Profile Platform w/ HRK [RMQP-4096-HK]	(15) 1-5/8" (2) 1.9" Hybrid	T-Mobile
2		3	RFS APXVAARR24_43-U-NA20 - Panel			
3		3	EMS RR90-19-XXDPQ - Panel			
4		3	Ericsson 4449 B71 + B85 RRU			
5		3	Ericsson 4460 B25 + B66 RRU			
6		3	Kathrein 782 11056 Bias-Ts			

All transmission lines are considered running inside of the pole shafts.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

Tower Component	Utilization %	Pass / Fail
Pole Shaft	68.9%	Pass
Anchor Bolt	60.2%	Pass
Base Plate	86.1%	Pass
Structure Rating – (Controlling Utilization of all Components)		86.1%

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3184.4	31.0	40.0

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Service Load Condition (Rigidity)

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.259 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a comprehensive structural analysis.

Usage Diagram - Max Ratio 68.95% at 49.1ft

Structure: CT13612-A-SBA

Code: EIA/TIA-222-H

9/12/2024

Site Name: Ingalls

Exposure: C

Height: 150.00 (ft)

Gh: 1.1

Base Elev: 1.500 (ft)

Page: 1

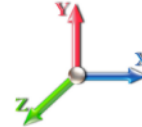


Dead Load Factor: 1.20

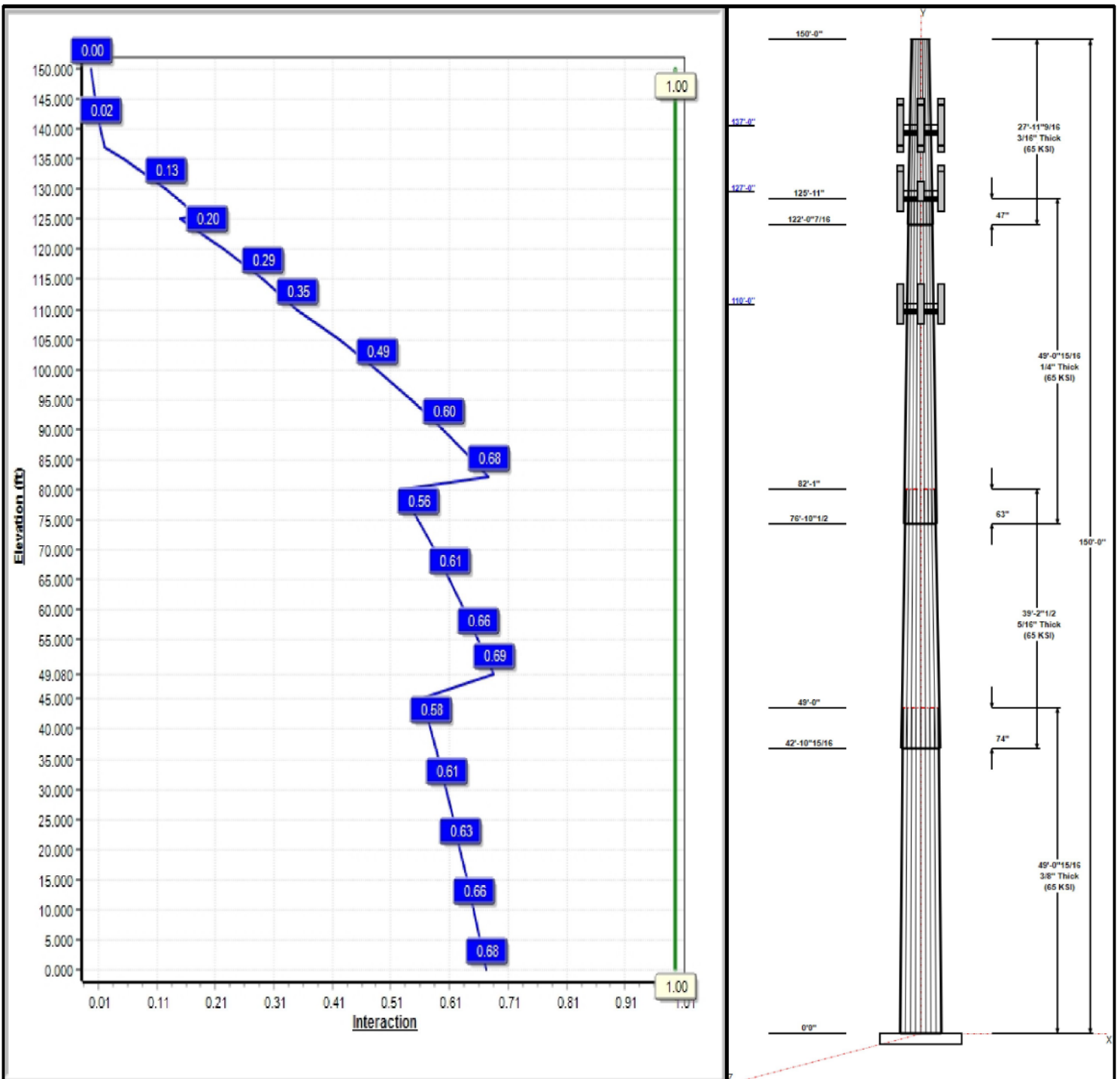
Wind Load Factor: 1.00

Iterations: 27

Load Case : 1.2D + 1.0W 122 mph Wind at 60°



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Structure: CT13612-A-SBA

Type: Tapered
Site Name: Ingalls
Height: 150.00 (ft)
Base Elev: 1.50 (ft)

Base Shape: 18 Sided
Taper: 0.23521

9/12/2024

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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	49.08	43.46	55.00	0.375		0.23521	65
2	39.21	36.31	45.53	0.313	Slip	0.23521	65
3	49.08	26.50	38.04	0.250	Slip	0.23521	65
4	27.96	21.22	27.80	0.188	Slip	0.23521	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
150.00	156.00	1	Lightning Rod 1"x10'	
137.00	137.00	3	APXVLL19P_43-C-A20	T-Mobile
137.00	137.00	3	4460 B25 + B66	T-Mobile
137.00	137.00	3	RR90-19-XXDPQ	T-Mobile
137.00	137.00	3	Kathrein 782 11056 Bias	T-Mobile
137.00	137.00	3	APXVAARR24_43-U-NA20	T-Mobile
137.00	137.00	3	4449 B71 + B85	T-Mobile
137.00	137.00	1	Low Profile Mount	T-Mobile
127.00	128.00	6	LPA-80080-6CF	Verizon
127.00	127.00	2	DB-T1-6Z-8AB-0Z	Verizon
127.00	128.00	2	BSF0020F3V1-1	Verizon
127.00	127.00	1	Low Profile Platform	Verizon
127.00	127.00	6	MX06FRO660-02	Verizon
127.00	127.00	3	MT6407-77A	Verizon
127.00	127.00	3	RF4439d-25A	Verizon
127.00	127.00	3	RF4440d-13A	Verizon
127.00	127.00	1	mods	Verizon
110.00	110.00	3	FFVV-65B-R2	Dish Wireless
110.00	110.00	3	TA08025-B605	Dish Wireless
110.00	110.00	3	TA08025-B604	Dish Wireless
110.00	110.00	1	RDIDC-9181-OF-48	Dish Wireless
110.00	110.00	1	MC-PK8-DSH	Dish Wireless

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
8.00	150.00	Outside	Safety Cable	
8.00	150.00	Outside	Step bolts (ladder)	
8.00	137.00	Inside	1-5/8" Coax	T-Mobile
8.00	137.00	Inside	1.9" Hybrid	T-Mobile
8.00	127.00	Inside	1 5/8" Coax	Verizon
8.00	127.00	Inside	1 5/8" Hybrid	Verizon
0.00	110.00	Inside	1.6" Hybrid	Dish Wireless

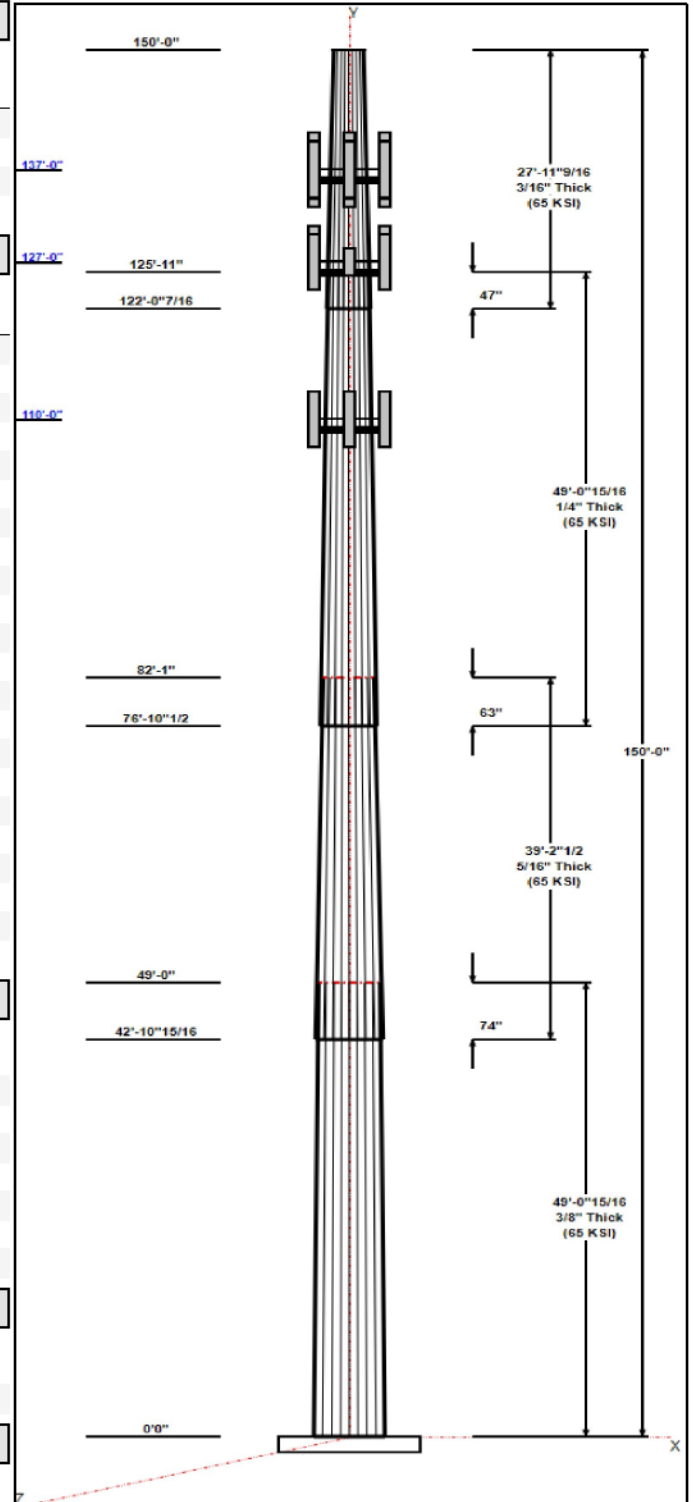
Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
16	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	70.0	60.0	Round

Reactions



Structure: CT13612-A-SBA

Type: Tapered
Site Name: Ingalls
Height: 150.00 (ft)
Base Elev: 1.50 (ft)

Base Shape: 18 Sided
Taper: 0.23521

9/12/2024

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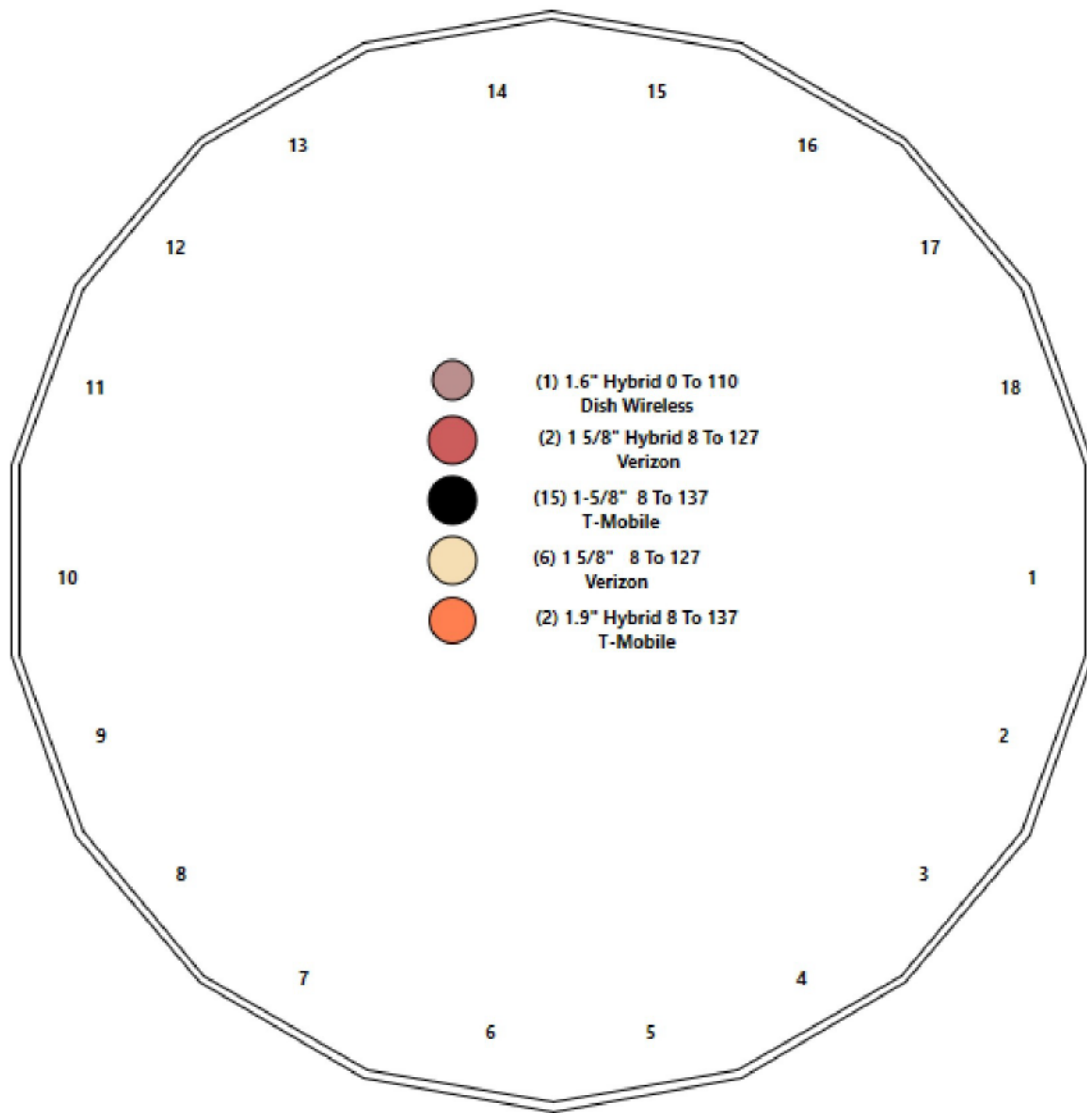
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.0W 122 mph Wind	3184.2	31.0	40.0
1.2D + 1.0W 122 mph Wind at 30°	2757.7	26.8	40.0
1.2D + 1.0W 122 mph Wind at 60°	1592.2	15.5	40.0
1.2D + 1.0W 122 mph Wind at 90°	0.0	0.0	40.0
1.2D + 1.0W 122 mph Wind at 120°	1592.2	15.5	40.0
1.2D + 1.0W 122 mph Wind at 150°	2757.7	26.8	40.0
1.2D + 1.0W 122 mph Wind at 180°	3184.2	31.0	40.0
1.2D + 1.0W 122 mph Wind at 210°	2757.7	26.8	40.0
1.2D + 1.0W 122 mph Wind at 240°	1592.2	15.5	40.0
1.2D + 1.0W 122 mph Wind at 270°	0.0	0.0	40.0
1.2D + 1.0W 122 mph Wind at 300°	1592.2	15.5	40.0
1.2D + 1.0W 122 mph Wind at 330°	2757.7	26.8	40.0
0.9D + 1.0W 122 mph Wind	3154.8	31.0	30.0
0.9D + 1.0W 122 mph Wind at 30°	2732.2	26.8	30.0
0.9D + 1.0W 122 mph Wind at 60°	1577.5	15.5	30.0
0.9D + 1.0W 122 mph Wind at 90°	0.0	0.0	30.0
0.9D + 1.0W 122 mph Wind at 120°	1577.5	15.5	30.0
0.9D + 1.0W 122 mph Wind at 150°	2732.2	26.8	30.0
0.9D + 1.0W 122 mph Wind at 180°	3154.8	31.0	30.0
0.9D + 1.0W 122 mph Wind at 210°	2732.2	26.8	30.0
0.9D + 1.0W 122 mph Wind at 240°	1577.5	15.5	30.0
0.9D + 1.0W 122 mph Wind at 270°	0.0	0.0	30.0
0.9D + 1.0W 122 mph Wind at 300°	1577.5	15.5	30.0
0.9D + 1.0W 122 mph Wind at 330°	2732.2	26.8	30.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind	819.8	8.1	55.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	710.0	7.0	55.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	409.9	4.0	55.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	0.0	0.0	55.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	409.9	4.0	55.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	710.0	7.0	55.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	819.8	8.1	55.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	710.0	7.0	55.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	409.9	4.0	55.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	0.0	0.0	55.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	409.9	4.0	55.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	710.0	7.0	55.0
1.0D + 1.0W 60 mph Wind	766.3	7.5	33.3
1.0D + 1.0W 60 mph Wind at 30°	663.6	6.5	33.3
1.0D + 1.0W 60 mph Wind at 60°	383.1	3.7	33.3
1.0D + 1.0W 60 mph Wind at 90°	0.0	0.0	33.3
1.0D + 1.0W 60 mph Wind at 120°	383.1	3.7	33.3
1.0D + 1.0W 60 mph Wind at 150°	663.6	6.5	33.3
1.0D + 1.0W 60 mph Wind at 180°	766.3	7.5	33.3
1.0D + 1.0W 60 mph Wind at 210°	663.6	6.5	33.3
1.0D + 1.0W 60 mph Wind at 240°	383.1	3.7	33.3
1.0D + 1.0W 60 mph Wind at 270°	0.0	0.0	33.3
1.0D + 1.0W 60 mph Wind at 300°	383.1	3.7	33.3
1.0D + 1.0W 60 mph Wind at 330°	663.6	6.5	33.3
1.2D + 1.0Ev + 1.0Eh	79.7	0.6	41.4
0.9D + 1.0Ev + 1.0Eh	79.2	0.6	31.3

Structure: CT13612-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Ingalls
Height: 150.00 (ft)

9/12/2024

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Shaft Properties

Structure: CT13612-A-SBA

Site Name: Ingalls

Height: 150.00 (ft)

Base Elev: 1.500 (ft)

Gh: 1.1

Code: TIA-222-H

Exposure: C

Crest Height: 0.00

Site Class: D - Stiff Soil

Struct Class: II

9/12/2024

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	49.080	0.3750	65		0.00	9,711
2	18	39.210	0.3125	65	Slip	74.00	5,374
3	18	49.080	0.2500	65	Slip	63.00	4,243
4	18	27.963	0.1875	65	Slip	47.00	1,377
Total Shaft Weight:							20,705

Bottom

Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	55.00	0.00	65.02	24510.38	24.45	146.67	43.46	49.08	51.27	12023.3	19.02	115.8	0.235213
2	45.53	42.91	44.85	11586.41	24.28	145.70	36.31	82.12	35.70	5844.63	19.08	116.1	0.235213
3	38.04	76.87	29.99	5411.66	25.42	152.17	26.50	125.95	20.83	1813.12	17.28	106.0	0.235213
4	27.80	122.0	16.43	1582.13	24.73	148.24	21.22	150.00	12.52	699.35	18.54	113.1	0.235213

Load Summary

Structure: CT13612-A-SBA	Code: EIA_H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	150.00	Lightning Rod 1"x10'	1	62.00	2.32	1.00	103.93	5.185	1.00	0.00	6.00
2	137.00	APXVLL19P_43-C-A20	3	40.90	8.25	0.75	154.46	10.124	0.77	0.00	0.00
3	137.00	4460 B25 + B66	3	104.00	1.65	0.67	159.78	2.525	0.67	0.00	0.00
4	137.00	RR90-19-XXDPQ	3	32.00	5.88	0.68	137.37	8.970	0.69	0.00	0.00
5	137.00	Kathrein 782 11056 Bias Ts	3	1.80	0.28	0.67	3.92	0.545	0.67	0.00	0.00
6	137.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	400.83	21.481	0.70	0.00	0.00
7	137.00	4449 B71 + B85	3	75.00	1.95	0.67	124.71	2.328	0.67	0.00	0.00

Shaft Section Properties

Structure: CT13612-A-SBA	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3750	55.000	65.015	24510.4	24.45	146.67	72.6	877.7	0.0
5.00		0.3750	53.824	63.615	22961.1	23.90	143.53	73.3	840.2	1094.3
10.00		0.3750	52.648	62.216	21478.5	23.34	140.39	73.9	803.5	1070.4
15.00		0.3750	51.472	60.816	20061.2	22.79	137.26	74.6	767.7	1046.6
20.00		0.3750	50.296	59.416	18707.6	22.24	134.12	75.2	732.6	1022.8
25.00		0.3750	49.120	58.016	17416.3	21.69	130.99	75.9	698.4	999.0
30.00		0.3750	47.944	56.616	16185.9	21.13	127.85	76.5	664.9	975.2
35.00		0.3750	46.768	55.217	15014.8	20.58	124.71	77.2	632.3	951.4
40.00		0.3750	45.591	53.817	13901.6	20.03	121.58	77.8	600.6	927.5
42.91	Bot - Section 2	0.3750	44.906	53.001	13279.1	19.70	119.75	78.2	582.4	529.5
45.00		0.3750	44.415	52.417	12844.9	19.47	118.44	78.5	569.6	691.0
49.08	Top - Section 1	0.3125	44.081	43.411	10506.8	23.46	141.06	0.0	0.0	1329.1
50.00		0.3125	43.864	43.196	10351.7	23.34	140.37	73.9	464.8	135.6
55.00		0.3125	42.688	42.030	9535.6	22.68	136.60	74.7	440.0	725.0
60.00		0.3125	41.512	40.863	8763.5	22.01	132.84	75.5	415.8	705.2
65.00		0.3125	40.336	39.697	8034.2	21.35	129.08	76.3	392.3	685.3
70.00		0.3125	39.160	38.531	7346.6	20.69	125.31	77.1	369.5	665.5
75.00		0.3125	37.984	37.364	6699.4	20.02	121.55	77.9	347.4	645.6
76.87	Bot - Section 3	0.3125	37.543	36.927	6467.0	19.77	120.14	78.1	339.3	236.8
80.00		0.3125	36.808	36.198	6091.3	19.36	117.79	78.6	325.9	704.9
82.12	Top - Section 2	0.2500	36.808	29.008	4898.3	24.55	147.23	0.0	0.0	470.8
85.00		0.2500	36.132	28.471	4631.4	24.07	144.53	73.1	252.5	281.3
90.00		0.2500	34.956	27.538	4190.7	23.24	139.82	74.1	236.1	476.5
95.00		0.2500	33.780	26.605	3779.0	22.41	135.12	75.0	220.3	460.6
100.00		0.2500	32.604	25.672	3395.1	21.59	130.41	76.0	205.1	444.7
105.00		0.2500	31.428	24.739	3038.2	20.76	125.71	77.0	190.4	428.8
110.00		0.2500	30.252	23.805	2707.2	19.93	121.01	78.0	176.3	413.0
115.00		0.2500	29.075	22.872	2401.1	19.10	116.30	78.9	162.7	397.1
120.00		0.2500	27.899	21.939	2119.0	18.27	111.60	79.9	149.6	381.2
122.04	Bot - Section 4	0.2500	27.420	21.559	2010.8	17.93	109.68	80.3	144.4	150.7
125.00		0.2500	26.723	21.006	1860.0	17.44	106.89	80.9	137.1	378.2
125.95	Top - Section 3	0.1875	26.874	15.881	1429.0	23.86	143.33	0.0	0.0	119.6
127.00		0.1875	26.628	15.735	1389.8	23.63	142.02	73.6	102.8	56.3
130.00		0.1875	25.922	15.315	1281.5	22.97	138.25	74.4	97.4	158.5
135.00		0.1875	24.746	14.615	1113.7	21.86	131.98	75.7	88.6	254.6
137.00		0.1875	24.276	14.335	1050.9	21.42	129.47	76.2	85.3	98.5
140.00		0.1875	23.570	13.915	961.2	20.75	125.71	77.0	80.3	144.2
145.00		0.1875	22.394	13.215	823.4	19.65	119.43	78.3	72.4	230.8
150.00		0.1875	21.218	12.515	699.3	18.54	113.16	79.6	64.9	218.9

20704.9

Wind Loading - Shaft

Structure: CT13612-A-SBA

Code: TIA-222-H

9/12/2024

Site Name: Ingalls

Exposure: C

Height: 150.00 (ft)

Crest Height: 0.00

Base Elev: 1.500 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 8



Load Case: 1.2D + 1.0W 122 mph Wind at 60° - Controlling Direction

Iterations 27

Dead Load Factor 1.20

Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	30.438	33.48	520.66	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	30.438	33.48	509.53	0.730	0.000	5.00	23.021	16.81	562.7	0.0	1313.1
10.00		1.00	0.85	30.438	33.48	498.40	0.730	0.000	5.00	22.524	16.44	550.5	0.0	1284.5
15.00		1.00	0.87	31.014	34.12	491.85	0.730	0.000	5.00	22.026	16.08	548.6	0.0	1255.9
20.00		1.00	0.92	32.792	36.07	494.20	0.730	0.000	5.00	21.529	15.72	566.9	0.0	1227.4
25.00		1.00	0.96	34.267	37.69	493.38	0.730	0.000	5.00	21.031	15.35	578.7	0.0	1198.8
30.00		1.00	0.99	35.537	39.09	490.41	0.730	0.000	5.00	20.533	14.99	586.0	0.0	1170.2
35.00		1.00	1.02	36.657	40.32	485.86	0.730	0.000	5.00	20.036	14.63	589.8	0.0	1141.6
40.00		1.00	1.05	37.661	41.43	480.08	0.730	0.000	5.00	19.538	14.26	590.9	0.0	1113.1
42.91	Bot - Section 2	1.00	1.07	38.203	42.02	476.26	0.730	0.000	2.91	11.155	8.14	342.2	0.0	635.4
45.00		1.00	1.08	38.574	42.43	473.33	0.730	0.000	2.09	7.996	5.84	247.7	0.0	829.2
49.08	Top - Section 1	1.00	1.10	39.263	43.19	467.22	0.730	0.000	4.08	15.384	11.23	485.0	0.0	1594.9
50.00		1.00	1.10	39.412	43.35	472.51	0.730	0.000	0.92	3.423	2.50	108.3	0.0	162.7
55.00		1.00	1.12	40.189	44.21	464.35	0.730	0.000	5.00	18.310	13.37	590.9	0.0	870.0
60.00		1.00	1.14	40.913	45.00	455.61	0.730	0.000	5.00	17.812	13.00	585.2	0.0	846.2
65.00		1.00	1.16	41.591	45.75	446.36	0.730	0.000	5.00	17.315	12.64	578.3	0.0	822.4
70.00		1.00	1.18	42.231	46.45	436.66	0.730	0.000	5.00	16.817	12.28	570.3	0.0	798.6
75.00		1.00	1.20	42.836	47.12	426.57	0.730	0.000	5.00	16.320	11.91	561.4	0.0	774.8
76.87	Bot - Section 3	1.00	1.20	43.055	47.36	422.70	0.730	0.000	1.87	5.986	4.37	207.0	0.0	284.1
80.00		1.00	1.21	43.411	47.75	416.13	0.730	0.000	3.13	9.968	7.28	347.5	0.0	845.9
82.12	Top - Section 2	1.00	1.22	43.647	48.01	411.59	0.730	0.000	2.12	6.658	4.86	233.4	0.0	564.9
85.00		1.00	1.23	43.959	48.35	411.05	0.730	0.000	2.88	8.878	6.48	313.4	0.0	337.6
90.00		1.00	1.24	44.482	48.93	400.03	0.730	0.000	5.00	15.038	10.98	537.2	0.0	571.8
95.00		1.00	1.26	44.983	49.48	388.75	0.730	0.000	5.00	14.541	10.61	525.2	0.0	552.7
100.00		1.00	1.27	45.464	50.01	377.21	0.730	0.000	5.00	14.043	10.25	512.7	0.0	533.7
105.00		1.00	1.28	45.926	50.52	365.45	0.730	0.000	5.00	13.546	9.89	499.5	0.0	514.6
110.00	Appurtenance(s)	1.00	1.29	46.372	51.01	353.48	0.730	0.000	5.00	13.048	9.53	485.9	0.0	495.6
115.00		1.00	1.31	46.802	51.48	341.31	0.730	0.000	5.00	12.550	9.16	471.7	0.0	476.5
120.00		1.00	1.32	47.218	51.94	328.95	0.730	0.000	5.00	12.053	8.80	457.0	0.0	457.4
122.04	Bot - Section 4	1.00	1.32	47.384	52.12	323.87	0.730	0.000	2.04	4.767	3.48	181.4	0.0	180.9
125.00		1.00	1.33	47.621	52.38	316.43	0.730	0.000	2.96	6.882	5.02	263.2	0.0	453.8
125.95	Top - Section 3	1.00	1.33	47.696	52.47	314.02	0.730	0.000	0.95	2.177	1.59	83.4	0.0	143.5
127.00	Appurtenance(s)	1.00	1.33	47.778	52.56	315.82	0.730	0.000	1.05	2.369	1.73	90.9	0.0	67.6
130.00		1.00	1.34	48.011	52.81	308.20	0.730	0.000	3.00	6.670	4.87	257.2	0.0	190.2
135.00		1.00	1.35	48.390	53.23	295.37	0.730	0.000	5.00	10.719	7.82	416.5	0.0	305.5
137.00	Appurtenance(s)	1.00	1.36	48.538	53.39	290.20	0.730	0.000	2.00	4.148	3.03	161.7	0.0	118.2
140.00		1.00	1.36	48.758	53.63	282.40	0.730	0.000	3.00	6.073	4.43	237.8	0.0	173.0
145.00		1.00	1.37	49.115	54.03	269.29	0.730	0.000	5.00	9.724	7.10	383.5	0.0	277.0
150.00	Appurtenance(s)	1.00	1.38	49.464	54.41	256.05	0.730	0.000	5.00	9.226	6.73	366.5	0.0	262.7
Totals:									150.00			15,675.4		24,845.8

Discrete Appurtenance Forces

Structure: CT13612-A-SBA	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 9
	Struct Class: II	



Load Case: 1.2D + 1.0W 122 mph Wind at 60° - Controlling Direction

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	Lightning Rod 1"x10'	1	49.870	54.857	1.00	1.00	2.32	74.40	0.000	6.000	-63.63	0.00	-381.80
2	137.00	Kathrein 782 11056 Bias	3	48.538	53.392	0.50	0.75	0.42	6.48	0.000	0.000	-11.27	0.00	0.00
3	137.00	APXVLL19P_43-C-A20	3	48.538	53.392	0.56	0.75	13.92	147.24	0.000	0.000	-371.66	0.00	0.00
4	137.00	4460 B25 + B66	3	48.538	53.392	0.50	0.75	2.49	374.40	0.000	0.000	-66.40	0.00	0.00
5	137.00	RR90-19-XXDPQ	3	48.538	53.392	0.51	0.75	9.00	115.20	0.000	0.000	-240.17	0.00	0.00
6	137.00	APXVAARR24_43-U-NA2	3	48.538	53.392	0.52	0.75	31.88	460.80	0.000	0.000	-851.01	0.00	0.00
7	137.00	4449 B71 + B85	3	48.538	53.392	0.50	0.75	2.94	270.00	0.000	0.000	-78.48	0.00	0.00
8	137.00	Low Profile Mount	1	48.538	53.392	1.00	1.00	50.00	2544.00	0.000	0.000	-1334.80	0.00	0.00
9	127.00	BSF0020F3V1-1	2	47.856	52.642	0.75	0.75	1.78	42.24	0.000	1.000	-46.98	0.00	-46.98
10	127.00	Low Profile Platform	1	47.778	52.556	1.00	1.00	22.00	1680.00	0.000	0.000	-578.12	0.00	0.00
11	127.00	mods	1	47.778	52.556	1.00	1.00	13.00	616.80	0.000	0.000	-341.62	0.00	0.00
12	127.00	RF4440d-13A	3	47.778	52.556	0.50	0.75	2.82	253.08	0.000	0.000	-74.08	0.00	0.00
13	127.00	RF4439d-25A	3	47.778	52.556	0.50	0.75	2.82	268.92	0.000	0.000	-74.08	0.00	0.00
14	127.00	MT6407-77A	3	47.778	52.556	0.52	0.75	7.39	313.20	0.000	0.000	-194.11	0.00	0.00
15	127.00	MX06FRO660-02	6	47.778	52.556	0.65	0.75	38.64	496.80	0.000	0.000	-1015.41	0.00	0.00
16	127.00	DB-T1-6Z-8AB-0Z	2	47.778	52.556	0.56	0.75	5.40	105.60	0.000	0.000	-141.90	0.00	0.00
17	127.00	LPA-80080-6CF	6	47.856	52.642	0.66	0.75	17.15	151.20	0.000	1.000	-451.32	0.00	-451.32
18	110.00	MC-PK8-DSH	1	46.372	51.009	1.00	1.00	37.59	2072.40	0.000	0.000	-958.72	0.00	0.00
19	110.00	RDIDC-9181-OF-48	1	46.372	51.009	0.75	0.75	1.51	26.28	0.000	0.000	-38.45	0.00	0.00
20	110.00	TA08025-B604	3	46.372	51.009	0.50	0.75	2.95	230.04	0.000	0.000	-75.36	0.00	0.00
21	110.00	TA08025-B605	3	46.372	51.009	0.50	0.75	2.95	270.00	0.000	0.000	-75.36	0.00	0.00
22	110.00	FFVV-65B-R2	3	46.372	51.009	0.55	0.75	20.88	227.88	0.000	0.000	-532.44	0.00	0.00
Totals:									10,746.96			-7,615.36		

Total Applied Force Summary

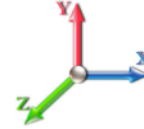
Structure: CT13612-A-SBA	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 10



Load Case: 1.2D + 1.0W 122 mph Wind at 60° - Controlling Direction

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		-281.34	-1324.02	0.00	0.00
10.00		-275.26	-1361.57	0.00	0.00
15.00		-274.28	-1432.18	0.00	0.00
20.00		-283.44	-1403.60	0.00	0.00
25.00		-289.35	-1375.03	0.00	0.00
30.00		-292.98	-1346.45	0.00	0.00
35.00		-294.88	-1317.87	0.00	0.00
40.00		-295.44	-1289.29	0.00	0.00
42.91		-171.10	-738.05	0.00	0.00
45.00		-123.84	-902.73	0.00	0.00
49.08		-242.52	-1738.72	0.00	0.00
50.00		-54.17	-195.11	0.00	0.00
55.00		-295.44	-1046.26	0.00	0.00
60.00		-292.59	-1022.44	0.00	0.00
65.00		-289.14	-998.63	0.00	0.00
70.00		-285.15	-974.81	0.00	0.00
75.00		-280.68	-951.00	0.00	0.00
76.87		-103.48	-350.17	0.00	0.00
80.00		-173.74	-956.14	0.00	0.00
82.12		-116.68	-639.76	0.00	0.00
85.00		-156.68	-438.98	0.00	0.00
90.00		-268.58	-748.00	0.00	0.00
95.00		-262.62	-728.95	0.00	0.00
100.00		-256.34	-709.89	0.00	0.00
105.00		-249.77	-690.84	0.00	0.00
110.00	(11) attachments	-1923.26	-3498.39	0.00	0.00
115.00		-235.84	-641.82	0.00	0.00
120.00		-228.50	-622.77	0.00	0.00
122.04		-90.69	-248.21	0.00	0.00
125.00		-131.59	-551.79	0.00	0.00
125.95		-41.69	-175.03	0.00	0.00
127.00	(27) attachments	-2963.07	-4030.01	0.00	-498.30
130.00		-128.58	-258.99	0.00	0.00
135.00		-208.25	-420.21	0.00	0.00
137.00	(19) attachments	-3034.62	-4082.20	0.00	0.00
140.00		-118.89	-177.76	0.00	0.00
145.00		-191.75	-284.83	0.00	0.00
150.00	(1) attachments	-246.86	-344.94	0.00	-381.80
Totals:		-15,453.0	-40,017.4	0.00	-880.11
		7	5		

Linear Appurtenance Segment Forces (Factored)

Structure: CT13612-A-SBA **Code:** TIA-222-H 9/12/2024
Site Name: Ingalls **Exposure:** C
Height: 150.00 (ft) **Crest Height:** 0.00
Base Elev: 1.500 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II **Page:** 11

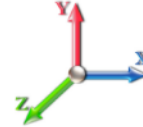


Load Case: 1.2D + 1.0W 122 mph Wind at 60° - Controlling Direction

Iterations 27

Dead Load Factor 1.20

Wind Load Factor 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
10.00	Safety Cable	Yes	2.00	0.000	0.36	0.06	0.00	0.007	0.000	30.438	0.00	0.66
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.007	0.000	30.438	0.00	2.50
15.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.019	0.000	31.014	0.00	1.64
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	31.014	0.00	6.24
20.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.019	0.000	32.792	0.00	1.64
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	32.792	0.00	6.24
25.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.020	0.000	34.267	0.00	1.64
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	34.267	0.00	6.24
30.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.020	0.000	35.537	0.00	1.64
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	35.537	0.00	6.24
35.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.021	0.000	36.657	0.00	1.64
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	36.657	0.00	6.24
40.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.021	0.000	37.661	0.00	1.64
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	37.661	0.00	6.24
42.91	Safety Cable	Yes	2.91	0.000	0.36	0.09	0.00	0.022	0.000	38.203	0.00	0.95
42.91	Step bolts (ladder)	Yes	2.91	0.000	0.63	0.15	0.00	0.022	0.000	38.203	0.00	3.64
45.00	Safety Cable	Yes	2.09	0.000	0.36	0.06	0.00	0.022	0.000	38.574	0.00	0.68
45.00	Step bolts (ladder)	Yes	2.09	0.000	0.63	0.11	0.00	0.022	0.000	38.574	0.00	2.60
49.08	Safety Cable	Yes	4.08	0.000	0.36	0.12	0.00	0.022	0.000	39.263	0.00	1.34
49.08	Step bolts (ladder)	Yes	4.08	0.000	0.63	0.21	0.00	0.022	0.000	39.263	0.00	5.09
50.00	Safety Cable	Yes	0.92	0.000	0.36	0.03	0.00	0.022	0.000	39.412	0.00	0.30
50.00	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.05	0.00	0.022	0.000	39.412	0.00	1.15
55.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.023	0.000	40.189	0.00	1.64
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	40.189	0.00	6.24
60.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.023	0.000	40.913	0.00	1.64
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	40.913	0.00	6.24
65.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.024	0.000	41.591	0.00	1.64
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	41.591	0.00	6.24
70.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.025	0.000	42.231	0.00	1.64
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.025	0.000	42.231	0.00	6.24
75.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.025	0.000	42.836	0.00	1.64
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.025	0.000	42.836	0.00	6.24
76.87	Safety Cable	Yes	1.87	0.000	0.36	0.06	0.00	0.026	0.000	43.055	0.00	0.61
76.87	Step bolts (ladder)	Yes	1.87	0.000	0.63	0.10	0.00	0.026	0.000	43.055	0.00	2.34
80.00	Safety Cable	Yes	3.13	0.000	0.36	0.09	0.00	0.026	0.000	43.411	0.00	1.02
80.00	Step bolts (ladder)	Yes	3.13	0.000	0.63	0.16	0.00	0.026	0.000	43.411	0.00	3.90
82.12	Safety Cable	Yes	2.12	0.000	0.36	0.06	0.00	0.027	0.000	43.647	0.00	0.70
82.12	Step bolts (ladder)	Yes	2.12	0.000	0.63	0.11	0.00	0.027	0.000	43.647	0.00	2.65
85.00	Safety Cable	Yes	2.88	0.000	0.36	0.09	0.00	0.027	0.000	43.959	0.00	0.94
85.00	Step bolts (ladder)	Yes	2.88	0.000	0.63	0.15	0.00	0.027	0.000	43.959	0.00	3.59
90.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.027	0.000	44.482	0.00	1.64
90.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	44.482	0.00	6.24
95.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.028	0.000	44.983	0.00	1.64
95.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.028	0.000	44.983	0.00	6.24
100.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.029	0.000	45.464	0.00	1.64
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.029	0.000	45.464	0.00	6.24
105.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.030	0.000	45.926	0.00	1.64

Linear Appurtenance Segment Forces (Factored)

Structure: CT13612-A-SBA	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



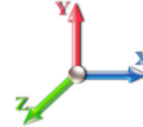
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Load Case: 1.2D + 1.0W 122 mph Wind at 60° - Controlling Direction

Iterations 27

Dead Load Factor 1.20

Wind Load Factor 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	45.926	0.00	6.24
110.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.032	0.000	46.372	0.00	1.64
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.032	0.000	46.372	0.00	6.24
115.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.033	0.000	46.802	0.00	1.64
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.033	0.000	46.802	0.00	6.24
120.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.034	0.000	47.218	0.00	1.64
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.034	0.000	47.218	0.00	6.24
122.04	Safety Cable	Yes	2.04	0.000	0.36	0.06	0.00	0.035	0.000	47.384	0.00	0.67
122.04	Step bolts (ladder)	Yes	2.04	0.000	0.63	0.11	0.00	0.035	0.000	47.384	0.00	2.54
125.00	Safety Cable	Yes	2.96	0.000	0.36	0.09	0.00	0.036	0.000	47.621	0.00	0.97
125.00	Step bolts (ladder)	Yes	2.96	0.000	0.63	0.16	0.00	0.036	0.000	47.621	0.00	3.70
125.95	Safety Cable	Yes	0.95	0.000	0.36	0.03	0.00	0.037	0.000	47.696	0.00	0.31
125.95	Step bolts (ladder)	Yes	0.95	0.000	0.63	0.05	0.00	0.037	0.000	47.696	0.00	1.19
127.00	Safety Cable	Yes	1.05	0.000	0.36	0.03	0.00	0.036	0.000	47.778	0.00	0.34
127.00	Step bolts (ladder)	Yes	1.05	0.000	0.63	0.05	0.00	0.036	0.000	47.778	0.00	1.31
130.00	Safety Cable	Yes	3.00	0.000	0.36	0.09	0.00	0.037	0.000	48.011	0.00	0.98
130.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.037	0.000	48.011	0.00	3.74
135.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.038	0.000	48.390	0.00	1.64
135.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.038	0.000	48.390	0.00	6.24
137.00	Safety Cable	Yes	2.00	0.000	0.36	0.06	0.00	0.040	0.000	48.538	0.00	0.66
137.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.040	0.000	48.538	0.00	2.50
140.00	Safety Cable	Yes	3.00	0.000	0.36	0.09	0.00	0.041	0.000	48.758	0.00	0.98
140.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.041	0.000	48.758	0.00	3.74
145.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.042	0.000	49.115	0.00	1.64
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.042	0.000	49.115	0.00	6.24
150.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.045	0.000	49.464	0.00	1.64
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.045	0.000	49.464	0.00	6.24
Totals:											0.0	223.7

Calculated Forces

Structure: CT13612-A-SBA

Code: TIA-222-H

9/12/2024

Site Name: Ingalls

Exposure: C

Height: 150.00 (ft)

Crest Height: 0.00

Base Elev: 1.500 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 13



Load Case: 1.2D + 1.0W 122 mph Wind at 60° - Controlling Direction

Iterations 27

Dead Load Factor 1.20

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-39.97	-15.49	-0.02	-1592.2	-2757.7	3184.36	4250.57	1141.01	5171.27	4782.12	0.00	0.000	0.000	0.676
5.00	-38.55	-15.26	-0.02	-1514.7	-2623.6	3029.51	4196.29	1116.45	4950.99	4618.72	0.10	0.180	0.000	0.666
10.00	-37.09	-15.05	-0.02	-1438.4	-2491.4	2876.87	4140.37	1091.88	4735.51	4456.20	0.38	0.363	0.000	0.655
15.00	-35.57	-14.82	-0.02	-1363.2	-2361.1	2726.42	4082.82	1067.32	4524.82	4294.69	0.87	0.549	0.000	0.644
20.00	-34.07	-14.59	-0.02	-1289.2	-2232.7	2578.18	4023.63	1042.75	4318.93	4134.30	1.54	0.737	0.000	0.633
25.00	-32.61	-14.35	-0.02	-1216.3	-2106.3	2432.30	3962.80	1018.19	4117.83	3975.15	2.42	0.927	0.000	0.621
30.00	-31.18	-14.09	-0.02	-1144.6	-1982.0	2288.86	3900.33	993.62	3921.52	3817.37	3.49	1.120	0.000	0.608
35.00	-29.78	-13.84	-0.02	-1074.2	-1860.0	2147.95	3836.22	969.05	3730.01	3661.07	4.77	1.315	0.000	0.595
40.00	-28.43	-13.57	-0.02	-1005.1	-1740.2	2009.61	3770.47	944.49	3543.30	3506.38	6.25	1.512	0.000	0.581
42.91	-27.66	-13.41	-0.02	-965.62	-1671.7	1930.60	3731.41	930.17	3436.71	3417.03	7.21	1.630	0.000	0.573
45.00	-26.70	-13.30	-0.02	-937.69	-1623.2	1874.65	3703.09	919.92	3361.37	3353.41	7.94	1.715	0.000	0.567
49.08	-24.94	-13.05	-0.02	-883.45	-1529.3	1766.15	2883.58	761.86	2766.63	2598.69	9.48	1.879	0.000	0.689
50.00	-24.68	-13.03	-0.02	-871.50	-1508.4	1742.14	2874.90	758.10	2739.34	2577.97	9.85	1.917	0.000	0.686
55.00	-23.56	-12.76	-0.02	-806.45	-1395.6	1611.93	2826.79	737.63	2593.39	2465.89	11.98	2.148	0.000	0.663
60.00	-22.46	-12.50	-0.01	-742.73	-1285.2	1484.38	2777.04	717.15	2451.44	2354.77	14.35	2.379	0.000	0.640
65.00	-21.39	-12.23	-0.01	-680.35	-1177.0	1359.51	2725.66	696.68	2313.48	2244.72	16.97	2.610	0.000	0.615
70.00	-20.34	-11.97	-0.01	-619.29	-1071.1	1237.31	2672.63	676.21	2179.52	2135.88	19.83	2.839	0.000	0.588
75.00	-19.36	-11.69	-0.01	-559.52	-967.66	1117.78	2617.96	655.74	2049.55	2028.35	22.92	3.067	0.000	0.560
76.87	-18.97	-11.59	-0.01	-537.67	-929.77	1074.04	2597.06	648.07	2001.88	1988.42	24.14	3.155	0.000	0.549
80.00	-17.99	-11.41	-0.01	-501.46	-867.05	1001.62	2561.66	635.27	1923.58	1922.25	26.26	3.297	0.000	0.529
82.12	-17.32	-11.30	-0.01	-477.27	-825.12	953.21	1893.43	509.09	1544.19	1425.71	27.75	3.394	0.000	0.680
85.00	-16.83	-11.16	-0.01	-444.84	-768.90	888.31	1872.76	499.67	1487.55	1383.87	29.83	3.523	0.000	0.653
90.00	-16.02	-10.90	-0.01	-389.14	-672.42	776.91	1835.56	483.29	1391.64	1311.62	33.66	3.779	0.000	0.603
95.00	-15.24	-10.65	0.00	-334.70	-578.18	668.07	1796.72	466.92	1298.92	1240.05	37.75	4.024	0.000	0.549
100.00	-14.49	-10.40	0.00	-281.52	-486.16	561.79	1756.24	450.54	1209.40	1169.28	42.09	4.256	0.000	0.491
105.00	-13.77	-10.15	0.00	-229.57	-396.35	458.03	1714.12	434.16	1123.07	1099.43	46.66	4.469	0.000	0.427
110.00	-10.54	-8.11	0.00	-178.86	-308.72	356.79	1670.37	417.78	1039.94	1030.63	51.45	4.660	0.000	0.354
115.00	-9.89	-7.86	0.00	-138.36	-238.75	275.95	1624.97	401.41	960.01	963.00	56.42	4.826	0.000	0.294
120.00	-9.29	-7.61	0.00	-99.08	-170.95	197.59	1577.93	385.03	883.27	896.64	61.55	4.967	0.000	0.228
122.04	-9.04	-7.51	0.00	-83.58	-144.20	166.67	1558.31	378.36	852.93	870.01	63.68	5.016	0.000	0.199
125.00	-8.50	-7.36	0.00	-61.32	-105.78	122.27	1529.26	368.65	809.73	831.69	66.81	5.077	0.000	0.154
125.95	-8.33	-7.31	0.00	-54.30	-93.67	108.27	1048.18	278.72	617.12	576.03	67.82	5.094	0.000	0.199
127.00	-4.84	-4.18	0.00	-46.15	-79.60	92.01	1042.37	276.15	605.79	567.51	68.94	5.110	0.000	0.168
130.00	-4.60	-4.04	0.00	-33.62	-57.99	67.04	1025.31	268.78	573.88	543.22	72.17	5.159	0.000	0.129
135.00	-4.22	-3.81	0.00	-13.43	-23.17	26.79	995.56	256.49	522.63	503.18	77.60	5.211	0.000	0.058
137.00	-0.70	-0.59	0.00	-5.81	-10.02	11.59	983.21	251.58	502.80	487.34	79.78	5.221	0.000	0.025
140.00	-0.55	-0.47	0.00	-4.03	-6.95	8.03	964.18	244.21	473.77	463.80	83.06	5.229	0.000	0.018
145.00	-0.30	-0.26	0.00	-1.70	-2.92	3.38	931.15	231.93	427.31	425.21	88.54	5.237	0.000	0.008
150.00	0.00	-0.25	0.00	-0.38	-0.66	0.76	896.49	219.64	383.25	387.52	94.02	5.241	0.000	0.002

Wind Loading - Shaft

Structure: CT13612-A-SBA

Code: TIA-222-H

9/12/2024

Site Name: Ingalls

Exposure: C

Height: 150.00 (ft)

Crest Height: 0.00

Base Elev: 1.500 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 14

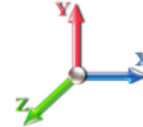


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° - Controlling Direction

Iterations 23

Dead Load Factor 1.20

Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.113	5.62	0.00	1.200	0.734	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.113	5.62	0.00	1.200	0.850	5.00	23.730	28.48	160.1	291.2	1604.3
10.00		1.00	0.85	5.113	5.62	0.00	1.200	0.900	5.00	23.274	27.93	157.1	301.9	1586.4
15.00		1.00	0.87	5.209	5.73	0.00	1.200	0.933	5.00	22.804	27.36	156.8	306.3	1562.3
20.00		1.00	0.92	5.508	6.06	0.00	1.200	0.958	5.00	22.327	26.79	162.3	307.6	1535.0
25.00		1.00	0.96	5.756	6.33	0.00	1.200	0.978	5.00	21.846	26.22	166.0	307.0	1505.8
30.00		1.00	0.99	5.969	6.57	0.00	1.200	0.995	5.00	21.363	25.64	168.3	305.2	1475.4
35.00		1.00	1.02	6.157	6.77	0.00	1.200	1.010	5.00	20.878	25.05	169.7	302.3	1444.0
40.00		1.00	1.05	6.326	6.96	0.00	1.200	1.023	5.00	20.391	24.47	170.3	298.8	1411.8
42.91	Bot - Section 2	1.00	1.07	6.417	7.06	0.00	1.200	1.030	2.91	11.655	13.99	98.7	172.7	808.1
45.00		1.00	1.08	6.479	7.13	0.00	1.200	1.035	2.09	8.356	10.03	71.5	124.7	953.8
49.08	Top - Section 1	1.00	1.10	6.595	7.25	0.00	1.200	1.044	4.08	16.094	19.31	140.1	240.7	1835.6
50.00		1.00	1.10	6.620	7.28	0.00	1.200	1.046	0.92	3.584	4.30	31.3	54.1	216.8
55.00		1.00	1.12	6.750	7.43	0.00	1.200	1.055	5.00	19.189	23.03	171.0	289.2	1159.2
60.00		1.00	1.14	6.872	7.56	0.00	1.200	1.064	5.00	18.699	22.44	169.6	283.8	1130.0
65.00		1.00	1.16	6.986	7.68	0.00	1.200	1.073	5.00	18.209	21.85	167.9	278.2	1100.6
70.00		1.00	1.18	7.093	7.80	0.00	1.200	1.080	5.00	17.718	21.26	165.9	272.3	1070.9
75.00		1.00	1.20	7.195	7.91	0.00	1.200	1.088	5.00	17.226	20.67	163.6	266.2	1041.0
76.87	Bot - Section 3	1.00	1.20	7.232	7.95	0.00	1.200	1.090	1.87	6.327	7.59	60.4	98.9	383.0
80.00		1.00	1.21	7.292	8.02	0.00	1.200	1.095	3.13	10.538	12.65	101.4	164.7	1010.6
82.12	Top - Section 2	1.00	1.22	7.331	8.06	0.00	1.200	1.097	2.12	7.047	8.46	68.2	110.7	675.6
85.00		1.00	1.23	7.384	8.12	0.00	1.200	1.101	2.88	9.406	11.29	91.7	147.8	485.3
90.00		1.00	1.24	7.471	8.22	0.00	1.200	1.107	5.00	15.961	19.15	157.4	250.1	821.9
95.00		1.00	1.26	7.556	8.31	0.00	1.200	1.113	5.00	15.469	18.56	154.3	243.3	796.0
100.00		1.00	1.27	7.636	8.40	0.00	1.200	1.119	5.00	14.976	17.97	151.0	236.3	770.0
105.00		1.00	1.28	7.714	8.49	0.00	1.200	1.124	5.00	14.483	17.38	147.5	229.2	743.8
110.00	Appurtenance(s)	1.00	1.29	7.789	8.57	0.00	1.200	1.129	5.00	13.989	16.79	143.8	222.0	717.5
115.00		1.00	1.31	7.861	8.65	0.00	1.200	1.134	5.00	13.496	16.19	140.0	214.6	691.1
120.00		1.00	1.32	7.931	8.72	0.00	1.200	1.139	5.00	13.002	15.60	136.1	207.2	664.6
122.04	Bot - Section 4	1.00	1.32	7.959	8.75	0.00	1.200	1.141	2.04	5.154	6.19	54.1	83.1	264.0
125.00		1.00	1.33	7.999	8.80	0.00	1.200	1.144	2.96	7.447	8.94	78.6	119.9	573.7
125.95	Top - Section 3	1.00	1.33	8.011	8.81	0.00	1.200	1.145	0.95	2.359	2.83	24.9	38.3	181.8
127.00	Appurtenance(s)	1.00	1.33	8.025	8.83	0.00	1.200	1.146	1.05	2.569	3.08	27.2	41.7	109.3
130.00		1.00	1.34	8.064	8.87	0.00	1.200	1.148	3.00	7.244	8.69	77.1	116.8	307.0
135.00		1.00	1.35	8.128	8.94	0.00	1.200	1.153	5.00	11.679	14.02	125.3	186.9	492.5
137.00	Appurtenance(s)	1.00	1.36	8.153	8.97	0.00	1.200	1.154	2.00	4.533	5.44	48.8	73.5	191.7
140.00		1.00	1.36	8.190	9.01	0.00	1.200	1.157	3.00	6.651	7.98	71.9	107.5	280.5
145.00		1.00	1.37	8.250	9.07	0.00	1.200	1.161	5.00	10.691	12.83	116.4	171.2	448.2
150.00	Appurtenance(s)	1.00	1.38	8.308	9.14	0.00	1.200	1.165	5.00	10.197	12.24	111.8	163.2	425.9
Totals:									150.00			4,578.3		32,475.2

Discrete Appurtenance Forces

Structure: CT13612-A-SBA	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 15

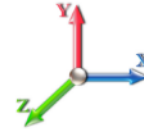


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° - Controlling Direction

Iterations 23

Dead Load Factor 1.20

Wind Load Factor 1.00



No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	Lightning Rod 1"x10'	1	8.376	9.214	1.00	1.00	5.19	98.33	0.000	6.000	-23.89	0.00	-143.32
2	137.00	Kathrein 782 11056 Bias	3	8.153	8.968	0.50	0.75	0.82	-5.76	0.000	0.000	-3.69	0.00	0.00
3	137.00	APXVLL19P_43-C-A20	3	8.153	8.968	0.58	0.75	17.54	335.83	0.000	0.000	-78.65	0.00	0.00
4	137.00	4460 B25 + B66	3	8.153	8.968	0.50	0.75	3.81	541.74	0.000	0.000	-17.07	0.00	0.00
5	137.00	RR90-19-XXDPQ	3	8.153	8.968	0.52	0.75	13.93	431.31	0.000	0.000	-62.44	0.00	0.00
6	137.00	APXVAARR24_43-U-NA2	3	8.153	8.968	0.52	0.75	33.83	1279.30	0.000	0.000	-151.70	0.00	0.00
7	137.00	4449 B71 + B85	3	8.153	8.968	0.50	0.75	3.51	419.13	0.000	0.000	-15.74	0.00	0.00
8	137.00	Low Profile Mount	1	8.153	8.968	1.00	1.00	74.47	2732.18	0.000	0.000	-333.92	0.00	0.00
9	127.00	BSF0020F3V1-1	2	8.038	8.842	0.75	0.75	2.56	135.30	0.000	1.000	-11.32	0.00	-11.32
10	127.00	Low Profile Platform	1	8.025	8.828	1.00	1.00	33.59	2181.93	0.000	0.000	-148.28	0.00	0.00
11	127.00	mods	1	8.025	8.828	1.00	1.00	21.34	1531.22	0.000	0.000	-94.19	0.00	0.00
12	127.00	RF4440d-13A	3	8.025	8.828	0.50	0.75	3.37	377.95	0.000	0.000	-14.87	0.00	0.00
13	127.00	RF4439d-25A	3	8.025	8.828	0.50	0.75	3.37	407.45	0.000	0.000	-14.87	0.00	0.00
14	127.00	MT6407-77A	3	8.025	8.828	0.52	0.75	8.36	531.92	0.000	0.000	-36.88	0.00	0.00
15	127.00	MX06FRO660-02	6	8.025	8.828	0.65	0.75	42.11	1501.05	0.000	0.000	-185.87	0.00	0.00
16	127.00	DB-T1-6Z-8AB-0Z	2	8.025	8.828	0.56	0.75	6.03	282.94	0.000	0.000	-26.62	0.00	0.00
17	127.00	LPA-80080-6CF	6	8.038	8.842	0.66	0.75	20.72	524.76	0.000	1.000	-91.61	0.00	-91.61
18	110.00	MC-PK8-DSH	1	7.789	8.568	1.00	1.00	68.16	2791.74	0.000	0.000	-291.99	0.00	0.00
19	110.00	RDIDC-9181-OF-48	1	7.789	8.568	0.75	0.75	1.78	48.04	0.000	0.000	-7.64	0.00	0.00
20	110.00	TA08025-B604	3	7.789	8.568	0.50	0.75	3.50	292.04	0.000	0.000	-15.00	0.00	0.00
21	110.00	TA08025-B605	3	7.789	8.568	0.50	0.75	3.50	333.75	0.000	0.000	-15.00	0.00	0.00
22	110.00	FFVV-65B-R2	3	7.789	8.568	0.55	0.75	22.43	757.51	0.000	0.000	-96.10	0.00	0.00
Totals:									17,529.65			-1,737.32		

Total Applied Force Summary

Structure: CT13612-A-SBA	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° - Controlling Direction

Iterations 23

Dead Load Factor 1.20

Wind Load Factor 1.00



Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		-80.07	-1615.20	0.00	0.00
10.00		-78.53	-1668.93	0.00	0.00
15.00		-78.40	-1753.00	0.00	0.00
20.00		-81.16	-1726.40	0.00	0.00
25.00		-82.99	-1697.79	0.00	0.00
30.00		-84.16	-1667.81	0.00	0.00
35.00		-84.84	-1636.83	0.00	0.00
40.00		-85.13	-1605.07	0.00	0.00
42.91		-49.36	-920.80	0.00	0.00
45.00		-35.73	-1034.63	0.00	0.00
49.08		-70.05	-1993.80	0.00	0.00
50.00		-15.66	-252.47	0.00	0.00
55.00		-85.49	-1353.35	0.00	0.00
60.00		-84.81	-1324.48	0.00	0.00
65.00		-83.95	-1295.29	0.00	0.00
70.00		-82.95	-1265.83	0.00	0.00
75.00		-81.80	-1236.11	0.00	0.00
76.87		-30.20	-456.15	0.00	0.00
80.00		-50.72	-1132.76	0.00	0.00
82.12		-34.10	-758.58	0.00	0.00
85.00		-45.83	-597.85	0.00	0.00
90.00		-78.71	-1017.65	0.00	0.00
95.00		-77.14	-991.95	0.00	0.00
100.00		-75.48	-966.10	0.00	0.00
105.00		-73.73	-940.11	0.00	0.00
110.00	(11) attachments	-497.64	-5137.06	0.00	0.00
115.00		-70.02	-876.82	0.00	0.00
120.00		-68.06	-850.46	0.00	0.00
122.04		-27.07	-339.73	0.00	0.00
125.00		-39.32	-683.94	0.00	0.00
125.95		-12.47	-217.27	0.00	0.00
127.00	(27) attachments	-638.10	-7622.74	0.00	-102.93
130.00		-38.56	-388.26	0.00	0.00
135.00		-62.65	-628.08	0.00	0.00
137.00	(19) attachments	-687.60	-5979.73	0.00	0.00
140.00		-35.95	-297.86	0.00	0.00
145.00		-58.21	-477.24	0.00	0.00
150.00	(1) attachments	-79.80	-553.42	0.00	-143.32
Totals:		-4,026.45	-54,961.53	0.00	-246.25

Linear Appurtenance Segment Forces (Factored)

Structure: CT13612-A-SBA **Code:** TIA-222-H 9/12/2024
Site Name: Ingalls **Exposure:** C
Height: 150.00 (ft) **Crest Height:** 0.00
Base Elev: 1.500 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II **Page:** 17

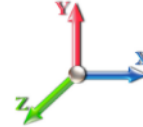


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° - Controlling Direction

Iterations 23

Dead Load Factor 1.20

Wind Load Factor 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
10.00	Safety Cable	Yes	2.00	0.000	0.36	0.36	0.00	0.007	0.000	5.113	0.00	3.18
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.40	0.00	0.007	0.000	5.113	0.00	5.42
15.00	Safety Cable	Yes	5.00	0.000	0.36	0.93	0.00	0.019	0.000	5.209	0.00	8.38
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.04	0.00	0.019	0.000	5.209	0.00	13.99
20.00	Safety Cable	Yes	5.00	0.000	0.36	0.95	0.00	0.019	0.000	5.508	0.00	8.70
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.06	0.00	0.019	0.000	5.508	0.00	14.34
25.00	Safety Cable	Yes	5.00	0.000	0.36	0.97	0.00	0.020	0.000	5.756	0.00	8.97
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.08	0.00	0.020	0.000	5.756	0.00	14.63
30.00	Safety Cable	Yes	5.00	0.000	0.36	0.98	0.00	0.020	0.000	5.969	0.00	9.20
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.09	0.00	0.020	0.000	5.969	0.00	14.87
35.00	Safety Cable	Yes	5.00	0.000	0.36	0.99	0.00	0.021	0.000	6.157	0.00	9.40
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.10	0.00	0.021	0.000	6.157	0.00	15.09
40.00	Safety Cable	Yes	5.00	0.000	0.36	1.00	0.00	0.021	0.000	6.326	0.00	9.58
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.12	0.00	0.021	0.000	6.326	0.00	15.29
42.91	Safety Cable	Yes	2.91	0.000	0.36	0.59	0.00	0.022	0.000	6.417	0.00	5.64
42.91	Step bolts (ladder)	Yes	2.91	0.000	0.63	0.65	0.00	0.022	0.000	6.417	0.00	8.97
45.00	Safety Cable	Yes	2.09	0.000	0.36	0.42	0.00	0.022	0.000	6.479	0.00	4.07
45.00	Step bolts (ladder)	Yes	2.09	0.000	0.63	0.47	0.00	0.022	0.000	6.479	0.00	6.45
49.08	Safety Cable	Yes	4.08	0.000	0.36	0.83	0.00	0.022	0.000	6.595	0.00	8.06
49.08	Step bolts (ladder)	Yes	4.08	0.000	0.63	0.92	0.00	0.022	0.000	6.595	0.00	12.72
50.00	Safety Cable	Yes	0.92	0.000	0.36	0.19	0.00	0.022	0.000	6.620	0.00	1.82
50.00	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.21	0.00	0.022	0.000	6.620	0.00	2.87
55.00	Safety Cable	Yes	5.00	0.000	0.36	1.03	0.00	0.023	0.000	6.750	0.00	10.04
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.14	0.00	0.023	0.000	6.750	0.00	15.77
60.00	Safety Cable	Yes	5.00	0.000	0.36	1.04	0.00	0.023	0.000	6.872	0.00	10.17
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.15	0.00	0.023	0.000	6.872	0.00	15.91
65.00	Safety Cable	Yes	5.00	0.000	0.36	1.04	0.00	0.024	0.000	6.986	0.00	10.29
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.16	0.00	0.024	0.000	6.986	0.00	16.04
70.00	Safety Cable	Yes	5.00	0.000	0.36	1.05	0.00	0.025	0.000	7.093	0.00	10.40
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.16	0.00	0.025	0.000	7.093	0.00	16.16
75.00	Safety Cable	Yes	5.00	0.000	0.36	1.06	0.00	0.025	0.000	7.195	0.00	10.51
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.17	0.00	0.025	0.000	7.195	0.00	16.27
76.87	Safety Cable	Yes	1.87	0.000	0.36	0.40	0.00	0.026	0.000	7.232	0.00	3.95
76.87	Step bolts (ladder)	Yes	1.87	0.000	0.63	0.44	0.00	0.026	0.000	7.232	0.00	6.11
80.00	Safety Cable	Yes	3.13	0.000	0.36	0.66	0.00	0.026	0.000	7.292	0.00	6.64
80.00	Step bolts (ladder)	Yes	3.13	0.000	0.63	0.73	0.00	0.026	0.000	7.292	0.00	10.24
82.12	Safety Cable	Yes	2.12	0.000	0.36	0.45	0.00	0.027	0.000	7.331	0.00	4.52
82.12	Step bolts (ladder)	Yes	2.12	0.000	0.63	0.50	0.00	0.027	0.000	7.331	0.00	6.98
85.00	Safety Cable	Yes	2.88	0.000	0.36	0.61	0.00	0.027	0.000	7.384	0.00	6.16
85.00	Step bolts (ladder)	Yes	2.88	0.000	0.63	0.68	0.00	0.027	0.000	7.384	0.00	9.49
90.00	Safety Cable	Yes	5.00	0.000	0.36	1.07	0.00	0.027	0.000	7.471	0.00	10.80
90.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.19	0.00	0.027	0.000	7.471	0.00	16.59
95.00	Safety Cable	Yes	5.00	0.000	0.36	1.08	0.00	0.028	0.000	7.556	0.00	10.89
95.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.19	0.00	0.028	0.000	7.556	0.00	16.68
100.00	Safety Cable	Yes	5.00	0.000	0.36	1.08	0.00	0.029	0.000	7.636	0.00	10.98
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.19	0.00	0.029	0.000	7.636	0.00	16.77
105.00	Safety Cable	Yes	5.00	0.000	0.36	1.09	0.00	0.030	0.000	7.714	0.00	11.06

Linear Appurtenance Segment Forces (Factored)

Structure: CT13612-A-SBA	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° - Controlling Direction

Iterations 23

Dead Load Factor 1.20

Wind Load Factor 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.20	0.00	0.030	0.000	7.714	0.00	16.86
110.00	Safety Cable	Yes	5.00	0.000	0.36	1.09	0.00	0.032	0.000	7.789	0.00	11.14
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.20	0.00	0.032	0.000	7.789	0.00	16.94
115.00	Safety Cable	Yes	5.00	0.000	0.36	1.10	0.00	0.033	0.000	7.861	0.00	11.21
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.21	0.00	0.033	0.000	7.861	0.00	17.02
120.00	Safety Cable	Yes	5.00	0.000	0.36	1.10	0.00	0.034	0.000	7.931	0.00	11.29
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.21	0.00	0.034	0.000	7.931	0.00	17.10
122.04	Safety Cable	Yes	2.04	0.000	0.36	0.45	0.00	0.035	0.000	7.959	0.00	4.61
122.04	Step bolts (ladder)	Yes	2.04	0.000	0.63	0.49	0.00	0.035	0.000	7.959	0.00	6.98
125.00	Safety Cable	Yes	2.96	0.000	0.36	0.65	0.00	0.036	0.000	7.999	0.00	6.73
125.00	Step bolts (ladder)	Yes	2.96	0.000	0.63	0.72	0.00	0.036	0.000	7.999	0.00	10.18
125.95	Safety Cable	Yes	0.95	0.000	0.36	0.21	0.00	0.037	0.000	8.011	0.00	2.17
125.95	Step bolts (ladder)	Yes	0.95	0.000	0.63	0.23	0.00	0.037	0.000	8.011	0.00	3.28
127.00	Safety Cable	Yes	1.05	0.000	0.36	0.23	0.00	0.036	0.000	8.025	0.00	2.38
127.00	Step bolts (ladder)	Yes	1.05	0.000	0.63	0.25	0.00	0.036	0.000	8.025	0.00	3.60
130.00	Safety Cable	Yes	3.00	0.000	0.36	0.66	0.00	0.037	0.000	8.064	0.00	6.86
130.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.73	0.00	0.037	0.000	8.064	0.00	10.35
135.00	Safety Cable	Yes	5.00	0.000	0.36	1.11	0.00	0.038	0.000	8.128	0.00	11.49
135.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.22	0.00	0.038	0.000	8.128	0.00	17.32
137.00	Safety Cable	Yes	2.00	0.000	0.36	0.44	0.00	0.040	0.000	8.153	0.00	4.61
137.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.49	0.00	0.040	0.000	8.153	0.00	6.94
140.00	Safety Cable	Yes	3.00	0.000	0.36	0.67	0.00	0.041	0.000	8.190	0.00	6.93
140.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.74	0.00	0.041	0.000	8.190	0.00	10.43
145.00	Safety Cable	Yes	5.00	0.000	0.36	1.12	0.00	0.042	0.000	8.250	0.00	11.62
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.23	0.00	0.042	0.000	8.250	0.00	17.45
150.00	Safety Cable	Yes	5.00	0.000	0.36	1.12	0.00	0.045	0.000	8.308	0.00	11.68
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.23	0.00	0.045	0.000	8.308	0.00	17.52
Totals:											0.0	755.7

Calculated Forces

Structure: CT13612-A-SBA

Code: TIA-222-H

9/12/2024

Site Name: Ingalls

Exposure: C

Height: 150.00 (ft)

Crest Height: 0.00

Base Elev: 1.500 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

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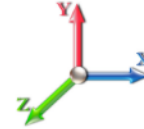


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° - Controlling Direction

Iterations 23

Dead Load Factor 1.20

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-54.96	-4.04	0.00	-409.90	-709.97	819.80	4250.57	1141.01	5171.27	4782.12	0.00	0.000	0.000	0.184
5.00	-53.34	-3.98	0.00	-389.71	-675.00	779.42	4196.29	1116.45	4950.99	4618.72	0.03	0.046	0.000	0.182
10.00	-51.66	-3.92	0.00	-369.82	-640.54	739.64	4140.37	1091.88	4735.51	4456.20	0.10	0.093	0.000	0.179
15.00	-49.90	-3.86	0.00	-350.22	-606.59	700.43	4082.82	1067.32	4524.82	4294.69	0.22	0.141	0.000	0.175
20.00	-48.17	-3.80	0.00	-330.91	-573.15	661.82	4023.63	1042.75	4318.93	4134.30	0.40	0.189	0.000	0.172
25.00	-46.47	-3.73	0.00	-311.92	-540.26	623.84	3962.80	1018.19	4117.83	3975.15	0.62	0.238	0.000	0.169
30.00	-44.79	-3.66	0.00	-293.26	-507.94	586.52	3900.33	993.62	3921.52	3817.37	0.90	0.288	0.000	0.165
35.00	-43.15	-3.59	0.00	-274.95	-476.21	549.89	3836.22	969.05	3730.01	3661.07	1.23	0.338	0.000	0.162
40.00	-41.54	-3.52	0.00	-256.99	-445.10	513.96	3770.47	944.49	3543.30	3506.38	1.61	0.388	0.000	0.158
42.91	-40.62	-3.47	0.00	-246.74	-427.35	493.47	3731.41	930.17	3436.71	3417.03	1.85	0.418	0.000	0.155
45.00	-39.58	-3.45	0.00	-239.49	-414.80	478.97	3703.09	919.92	3361.37	3353.41	2.04	0.440	0.000	0.154
49.08	-37.59	-3.38	0.00	-225.44	-390.45	450.86	2883.58	761.86	2766.63	2598.69	2.44	0.482	0.000	0.187
50.00	-37.33	-3.37	0.00	-222.33	-385.07	444.65	2874.90	758.10	2739.34	2577.97	2.53	0.492	0.000	0.186
55.00	-35.97	-3.30	0.00	-205.48	-355.88	410.95	2826.79	737.63	2593.39	2465.89	3.08	0.550	0.000	0.179
60.00	-34.64	-3.22	0.00	-189.00	-327.33	377.98	2777.04	717.15	2451.44	2354.77	3.68	0.609	0.000	0.173
65.00	-33.34	-3.15	0.00	-172.88	-299.42	345.74	2725.66	696.68	2313.48	2244.72	4.35	0.668	0.000	0.166
70.00	-32.07	-3.07	0.00	-157.14	-272.15	314.25	2672.63	676.21	2179.52	2135.88	5.08	0.726	0.000	0.159
75.00	-30.83	-3.00	0.00	-141.76	-245.52	283.51	2617.96	655.74	2049.55	2028.35	5.88	0.784	0.000	0.152
76.87	-30.38	-2.97	0.00	-136.15	-235.80	272.28	2597.06	648.07	2001.88	1988.42	6.19	0.806	0.000	0.149
80.00	-29.24	-2.92	0.00	-126.87	-219.72	253.71	2561.66	635.27	1923.58	1922.25	6.73	0.843	0.000	0.143
82.12	-28.48	-2.89	0.00	-120.67	-208.98	241.32	1893.43	509.09	1544.19	1425.71	7.11	0.867	0.000	0.184
85.00	-27.88	-2.85	0.00	-112.37	-194.60	224.71	1872.76	499.67	1487.55	1383.87	7.64	0.900	0.000	0.177
90.00	-26.86	-2.78	0.00	-98.13	-169.94	196.24	1835.56	483.29	1391.64	1311.62	8.62	0.964	0.000	0.164
95.00	-25.86	-2.70	0.00	-84.25	-145.90	168.48	1796.72	466.92	1298.92	1240.05	9.66	1.026	0.000	0.150
100.00	-24.90	-2.63	0.00	-70.73	-122.49	141.45	1756.24	450.54	1209.40	1169.28	10.77	1.085	0.000	0.135
105.00	-23.95	-2.56	0.00	-57.58	-99.71	115.14	1714.12	434.16	1123.07	1099.43	11.94	1.138	0.000	0.119
110.00	-18.83	-2.02	0.00	-44.78	-77.55	89.55	1670.37	417.78	1039.94	1030.63	13.16	1.186	0.000	0.098
115.00	-17.96	-1.94	0.00	-34.70	-60.08	69.38	1624.97	401.41	960.01	963.00	14.42	1.228	0.000	0.083
120.00	-17.11	-1.87	0.00	-24.98	-43.25	49.95	1577.93	385.03	883.27	896.64	15.73	1.263	0.000	0.067
122.04	-16.77	-1.84	0.00	-21.17	-36.66	42.33	1558.31	378.36	852.93	870.01	16.27	1.276	0.000	0.060
125.00	-16.09	-1.80	0.00	-15.71	-27.21	31.42	1529.26	368.65	809.73	831.69	17.07	1.291	0.000	0.048
125.95	-15.87	-1.78	0.00	-14.00	-24.25	28.00	1048.18	278.72	617.12	576.03	17.33	1.296	0.000	0.064
127.00	-8.28	-1.06	0.00	-12.03	-20.84	24.06	1042.37	276.15	605.79	567.51	17.61	1.300	0.000	0.050
130.00	-7.89	-1.02	0.00	-8.86	-15.35	17.72	1025.31	268.78	573.88	543.22	18.43	1.313	0.000	0.040
135.00	-7.27	-0.95	0.00	-3.78	-6.55	7.57	995.56	256.49	522.63	503.18	19.82	1.327	0.000	0.022
137.00	-1.32	-0.19	0.00	-1.89	-3.28	3.78	983.21	251.58	502.80	487.34	20.37	1.330	0.000	0.009
140.00	-1.02	-0.15	0.00	-1.32	-2.29	2.65	964.18	244.21	473.77	463.80	21.21	1.332	0.000	0.007
145.00	-0.55	-0.09	0.00	-0.57	-0.99	1.15	931.15	231.93	427.31	425.21	22.61	1.335	0.000	0.003
150.00	0.00	-0.08	0.00	-0.14	-0.25	0.29	896.49	219.64	383.25	387.52	24.00	1.337	0.000	0.001

Wind Loading - Shaft

Structure: CT13612-A-SBA

Code: TIA-222-H

9/12/2024

Site Name: Ingalls

Exposure: C

Height: 150.00 (ft)

Crest Height: 0.00

Base Elev: 1.500 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

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Load Case: 1.0D + 1.0W 60 mph Wind - Controlling Direction

Iterations 23

Dead Load Factor 1.00

Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.362	8.10	256.06	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.362	8.10	250.59	0.730	0.000	5.00	23.021	16.81	136.1	0.0	1094.3
10.00		1.00	0.85	7.362	8.10	245.11	0.730	0.000	5.00	22.524	16.44	133.2	0.0	1070.4
15.00		1.00	0.87	7.501	8.25	241.90	0.730	0.000	5.00	22.026	16.08	132.7	0.0	1046.6
20.00		1.00	0.92	7.931	8.72	243.05	0.730	0.000	5.00	21.529	15.72	137.1	0.0	1022.8
25.00		1.00	0.96	8.288	9.12	242.65	0.730	0.000	5.00	21.031	15.35	140.0	0.0	999.0
30.00		1.00	0.99	8.595	9.45	241.18	0.730	0.000	5.00	20.533	14.99	141.7	0.0	975.2
35.00		1.00	1.02	8.866	9.75	238.95	0.730	0.000	5.00	20.036	14.63	142.6	0.0	951.4
40.00		1.00	1.05	9.109	10.02	236.11	0.730	0.000	5.00	19.538	14.26	142.9	0.0	927.5
42.91	Bot - Section 2	1.00	1.07	9.240	10.16	234.22	0.730	0.000	2.91	11.155	8.14	82.8	0.0	529.5
45.00		1.00	1.08	9.330	10.26	232.79	0.730	0.000	2.09	7.996	5.84	59.9	0.0	691.0
49.08	Top - Section 1	1.00	1.10	9.497	10.45	229.78	0.730	0.000	4.08	15.384	11.23	117.3	0.0	1329.1
50.00		1.00	1.10	9.533	10.49	232.38	0.730	0.000	0.92	3.423	2.50	26.2	0.0	135.6
55.00		1.00	1.12	9.720	10.69	228.37	0.730	0.000	5.00	18.310	13.37	142.9	0.0	725.0
60.00		1.00	1.14	9.896	10.89	224.07	0.730	0.000	5.00	17.812	13.00	141.5	0.0	705.2
65.00		1.00	1.16	10.060	11.07	219.52	0.730	0.000	5.00	17.315	12.64	139.9	0.0	685.3
70.00		1.00	1.18	10.214	11.24	214.75	0.730	0.000	5.00	16.817	12.28	137.9	0.0	665.5
75.00		1.00	1.20	10.361	11.40	209.79	0.730	0.000	5.00	16.320	11.91	135.8	0.0	645.6
76.87	Bot - Section 3	1.00	1.20	10.414	11.46	207.88	0.730	0.000	1.87	5.986	4.37	50.1	0.0	236.8
80.00		1.00	1.21	10.500	11.55	204.65	0.730	0.000	3.13	9.968	7.28	84.0	0.0	704.9
82.12	Top - Section 2	1.00	1.22	10.557	11.61	202.42	0.730	0.000	2.12	6.658	4.86	56.4	0.0	470.8
85.00		1.00	1.23	10.632	11.70	202.16	0.730	0.000	2.88	8.878	6.48	75.8	0.0	281.3
90.00		1.00	1.24	10.759	11.83	196.74	0.730	0.000	5.00	15.038	10.98	129.9	0.0	476.5
95.00		1.00	1.26	10.880	11.97	191.19	0.730	0.000	5.00	14.541	10.61	127.0	0.0	460.6
100.00		1.00	1.27	10.996	12.10	185.51	0.730	0.000	5.00	14.043	10.25	124.0	0.0	444.7
105.00		1.00	1.28	11.108	12.22	179.73	0.730	0.000	5.00	13.546	9.89	120.8	0.0	428.8
110.00	Appurtenance(s)	1.00	1.29	11.216	12.34	173.84	0.730	0.000	5.00	13.048	9.53	117.5	0.0	413.0
115.00		1.00	1.31	11.320	12.45	167.86	0.730	0.000	5.00	12.550	9.16	114.1	0.0	397.1
120.00		1.00	1.32	11.421	12.56	161.78	0.730	0.000	5.00	12.053	8.80	110.5	0.0	381.2
122.04	Bot - Section 4	1.00	1.32	11.461	12.61	159.28	0.730	0.000	2.04	4.767	3.48	43.9	0.0	150.7
125.00		1.00	1.33	11.518	12.67	155.62	0.730	0.000	2.96	6.882	5.02	63.7	0.0	378.2
125.95	Top - Section 3	1.00	1.33	11.536	12.69	154.44	0.730	0.000	0.95	2.177	1.59	20.2	0.0	119.6
127.00	Appurtenance(s)	1.00	1.33	11.556	12.71	155.32	0.730	0.000	1.05	2.369	1.73	22.0	0.0	56.3
130.00		1.00	1.34	11.612	12.77	151.57	0.730	0.000	3.00	6.670	4.87	62.2	0.0	158.5
135.00		1.00	1.35	11.704	12.87	145.27	0.730	0.000	5.00	10.719	7.82	100.7	0.0	254.6
137.00	Appurtenance(s)	1.00	1.36	11.740	12.91	142.72	0.730	0.000	2.00	4.148	3.03	39.1	0.0	98.5
140.00		1.00	1.36	11.793	12.97	138.89	0.730	0.000	3.00	6.073	4.43	57.5	0.0	144.2
145.00		1.00	1.37	11.880	13.07	132.44	0.730	0.000	5.00	9.724	7.10	92.8	0.0	230.8
150.00	Appurtenance(s)	1.00	1.38	11.964	13.16	125.93	0.730	0.000	5.00	9.226	6.73	88.6	0.0	218.9
Totals:									150.00			3,791.4		20,704.9

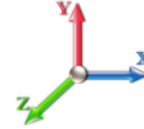
Discrete Appurtenance Forces

Structure: CT13612-A-SBA	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 21



Load Case: 1.0D + 1.0W 60 mph Wind - Controlling Direction

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	Lightning Rod 1"x10'	1	12.062	13.268	1.00	1.00	2.32	62.00	0.000	6.000	-30.78	0.00	-184.69
2	137.00	Kathrein 782 11056 Bias	3	11.740	12.914	0.50	0.75	0.42	5.40	0.000	0.000	-5.45	0.00	0.00
3	137.00	APXVLL19P_43-C-A20	3	11.740	12.914	0.56	0.75	13.92	122.70	0.000	0.000	-179.79	0.00	0.00
4	137.00	4460 B25 + B66	3	11.740	12.914	0.50	0.75	2.49	312.00	0.000	0.000	-32.12	0.00	0.00
5	137.00	RR90-19-XXDPQ	3	11.740	12.914	0.51	0.75	9.00	96.00	0.000	0.000	-116.18	0.00	0.00
6	137.00	APXVAARR24_43-U-NA2	3	11.740	12.914	0.52	0.75	31.88	384.00	0.000	0.000	-411.67	0.00	0.00
7	137.00	4449 B71 + B85	3	11.740	12.914	0.50	0.75	2.94	225.00	0.000	0.000	-37.96	0.00	0.00
8	137.00	Low Profile Mount	1	11.740	12.914	1.00	1.00	50.00	2120.00	0.000	0.000	-645.70	0.00	0.00
9	127.00	BSF0020F3V1-1	2	11.575	12.733	0.75	0.75	1.78	35.20	0.000	1.000	-22.73	0.00	-22.73
10	127.00	Low Profile Platform	1	11.556	12.712	1.00	1.00	22.00	1400.00	0.000	0.000	-279.66	0.00	0.00
11	127.00	mods	1	11.556	12.712	1.00	1.00	13.00	514.00	0.000	0.000	-165.25	0.00	0.00
12	127.00	RF4440d-13A	3	11.556	12.712	0.50	0.75	2.82	210.90	0.000	0.000	-35.83	0.00	0.00
13	127.00	RF4439d-25A	3	11.556	12.712	0.50	0.75	2.82	224.10	0.000	0.000	-35.83	0.00	0.00
14	127.00	MT6407-77A	3	11.556	12.712	0.52	0.75	7.39	261.00	0.000	0.000	-93.90	0.00	0.00
15	127.00	MX06FRO660-02	6	11.556	12.712	0.65	0.75	38.64	414.00	0.000	0.000	-491.20	0.00	0.00
16	127.00	DB-T1-6Z-8AB-0Z	2	11.556	12.712	0.56	0.75	5.40	88.00	0.000	0.000	-68.64	0.00	0.00
17	127.00	LPA-80080-6CF	6	11.575	12.733	0.66	0.75	17.15	126.00	0.000	1.000	-218.32	0.00	-218.32
18	110.00	MC-PK8-DSH	1	11.216	12.338	1.00	1.00	37.59	1727.00	0.000	0.000	-463.77	0.00	0.00
19	110.00	RDIDC-9181-OF-48	1	11.216	12.338	0.75	0.75	1.51	21.90	0.000	0.000	-18.60	0.00	0.00
20	110.00	TA08025-B604	3	11.216	12.338	0.50	0.75	2.95	191.70	0.000	0.000	-36.45	0.00	0.00
21	110.00	TA08025-B605	3	11.216	12.338	0.50	0.75	2.95	225.00	0.000	0.000	-36.45	0.00	0.00
22	110.00	FFVV-65B-R2	3	11.216	12.338	0.55	0.75	20.88	189.90	0.000	0.000	-257.56	0.00	0.00
Totals:									8,955.80			-3,683.86		

Total Applied Force Summary

Structure: CT13612-A-SBA	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

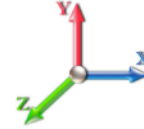


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Load Case: 1.0D + 1.0W 60 mph Wind - Controlling Direction

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		-136.10	-1103.35	0.00	0.00
10.00		-133.16	-1134.64	0.00	0.00
15.00		-132.68	-1193.49	0.00	0.00
20.00		-137.11	-1169.67	0.00	0.00
25.00		-139.97	-1145.85	0.00	0.00
30.00		-141.72	-1122.04	0.00	0.00
35.00		-142.65	-1098.22	0.00	0.00
40.00		-142.92	-1074.41	0.00	0.00
42.91		-82.77	-615.04	0.00	0.00
45.00		-59.91	-752.28	0.00	0.00
49.08		-117.32	-1448.94	0.00	0.00
50.00		-26.20	-162.59	0.00	0.00
55.00		-142.92	-871.88	0.00	0.00
60.00		-141.54	-852.03	0.00	0.00
65.00		-139.87	-832.19	0.00	0.00
70.00		-137.94	-812.34	0.00	0.00
75.00		-135.77	-792.50	0.00	0.00
76.87		-50.06	-291.81	0.00	0.00
80.00		-84.04	-796.79	0.00	0.00
82.12		-56.44	-533.14	0.00	0.00
85.00		-75.79	-365.82	0.00	0.00
90.00		-129.92	-623.33	0.00	0.00
95.00		-127.04	-607.46	0.00	0.00
100.00		-124.00	-591.58	0.00	0.00
105.00		-120.83	-575.70	0.00	0.00
110.00	(11) attachments	-930.36	-2915.33	0.00	0.00
115.00		-114.08	-534.85	0.00	0.00
120.00		-110.53	-518.97	0.00	0.00
122.04		-43.87	-206.84	0.00	0.00
125.00		-63.66	-459.83	0.00	0.00
125.95		-20.17	-145.86	0.00	0.00
127.00	(27) attachments	-1433.36	-3358.34	0.00	-241.05
130.00		-62.20	-215.82	0.00	0.00
135.00		-100.74	-350.18	0.00	0.00
137.00	(19) attachments	-1467.97	-3401.84	0.00	0.00
140.00		-57.51	-148.13	0.00	0.00
145.00		-92.76	-237.36	0.00	0.00
150.00	(1) attachments	-119.42	-287.45	0.00	-184.69
Totals:		-7,475.28	-33,347.88	0.00	-425.74

Linear Appurtenance Segment Forces (Factored)

Structure: CT13612-A-SBA **Code:** TIA-222-H 9/12/2024
Site Name: Ingalls **Exposure:** C
Height: 150.00 (ft) **Crest Height:** 0.00
Base Elev: 1.500 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II **Page:** 23

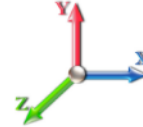


Load Case: 1.0D + 1.0W 60 mph Wind - Controlling Direction

Iterations 23

Dead Load Factor 1.00

Wind Load Factor 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
10.00	Safety Cable	Yes	2.00	0.000	0.36	0.06	0.00	0.007	0.000	7.362	0.00	0.55
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.007	0.000	7.362	0.00	2.08
15.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.019	0.000	7.501	0.00	1.37
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	7.501	0.00	5.20
20.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.019	0.000	7.931	0.00	1.37
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	7.931	0.00	5.20
25.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.020	0.000	8.288	0.00	1.37
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	8.288	0.00	5.20
30.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.020	0.000	8.595	0.00	1.37
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	8.595	0.00	5.20
35.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.021	0.000	8.866	0.00	1.37
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	8.866	0.00	5.20
40.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.021	0.000	9.109	0.00	1.37
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	9.109	0.00	5.20
42.91	Safety Cable	Yes	2.91	0.000	0.36	0.09	0.00	0.022	0.000	9.240	0.00	0.80
42.91	Step bolts (ladder)	Yes	2.91	0.000	0.63	0.15	0.00	0.022	0.000	9.240	0.00	3.03
45.00	Safety Cable	Yes	2.09	0.000	0.36	0.06	0.00	0.022	0.000	9.330	0.00	0.57
45.00	Step bolts (ladder)	Yes	2.09	0.000	0.63	0.11	0.00	0.022	0.000	9.330	0.00	2.17
49.08	Safety Cable	Yes	4.08	0.000	0.36	0.12	0.00	0.022	0.000	9.497	0.00	1.11
49.08	Step bolts (ladder)	Yes	4.08	0.000	0.63	0.21	0.00	0.022	0.000	9.497	0.00	4.24
50.00	Safety Cable	Yes	0.92	0.000	0.36	0.03	0.00	0.022	0.000	9.533	0.00	0.25
50.00	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.05	0.00	0.022	0.000	9.533	0.00	0.96
55.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.023	0.000	9.720	0.00	1.37
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	9.720	0.00	5.20
60.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.023	0.000	9.896	0.00	1.37
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	9.896	0.00	5.20
65.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.024	0.000	10.060	0.00	1.37
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	10.060	0.00	5.20
70.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.025	0.000	10.214	0.00	1.37
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.025	0.000	10.214	0.00	5.20
75.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.025	0.000	10.361	0.00	1.37
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.025	0.000	10.361	0.00	5.20
76.87	Safety Cable	Yes	1.87	0.000	0.36	0.06	0.00	0.026	0.000	10.414	0.00	0.51
76.87	Step bolts (ladder)	Yes	1.87	0.000	0.63	0.10	0.00	0.026	0.000	10.414	0.00	1.95
80.00	Safety Cable	Yes	3.13	0.000	0.36	0.09	0.00	0.026	0.000	10.500	0.00	0.85
80.00	Step bolts (ladder)	Yes	3.13	0.000	0.63	0.16	0.00	0.026	0.000	10.500	0.00	3.25
82.12	Safety Cable	Yes	2.12	0.000	0.36	0.06	0.00	0.027	0.000	10.557	0.00	0.58
82.12	Step bolts (ladder)	Yes	2.12	0.000	0.63	0.11	0.00	0.027	0.000	10.557	0.00	2.21
85.00	Safety Cable	Yes	2.88	0.000	0.36	0.09	0.00	0.027	0.000	10.632	0.00	0.79
85.00	Step bolts (ladder)	Yes	2.88	0.000	0.63	0.15	0.00	0.027	0.000	10.632	0.00	2.99
90.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.027	0.000	10.759	0.00	1.37
90.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	10.759	0.00	5.20
95.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.028	0.000	10.880	0.00	1.37
95.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.028	0.000	10.880	0.00	5.20
100.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.029	0.000	10.996	0.00	1.37
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.029	0.000	10.996	0.00	5.20
105.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.030	0.000	11.108	0.00	1.37

Linear Appurtenance Segment Forces (Factored)

Structure: CT13612-A-SBA	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 24

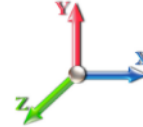


Load Case: 1.0D + 1.0W 60 mph Wind - Controlling Direction

Iterations 23

Dead Load Factor 1.00

Wind Load Factor 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	11.108	0.00	5.20
110.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.032	0.000	11.216	0.00	1.37
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.032	0.000	11.216	0.00	5.20
115.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.033	0.000	11.320	0.00	1.37
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.033	0.000	11.320	0.00	5.20
120.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.034	0.000	11.421	0.00	1.37
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.034	0.000	11.421	0.00	5.20
122.04	Safety Cable	Yes	2.04	0.000	0.36	0.06	0.00	0.035	0.000	11.461	0.00	0.56
122.04	Step bolts (ladder)	Yes	2.04	0.000	0.63	0.11	0.00	0.035	0.000	11.461	0.00	2.12
125.00	Safety Cable	Yes	2.96	0.000	0.36	0.09	0.00	0.036	0.000	11.518	0.00	0.81
125.00	Step bolts (ladder)	Yes	2.96	0.000	0.63	0.16	0.00	0.036	0.000	11.518	0.00	3.08
125.95	Safety Cable	Yes	0.95	0.000	0.36	0.03	0.00	0.037	0.000	11.536	0.00	0.26
125.95	Step bolts (ladder)	Yes	0.95	0.000	0.63	0.05	0.00	0.037	0.000	11.536	0.00	0.99
127.00	Safety Cable	Yes	1.05	0.000	0.36	0.03	0.00	0.036	0.000	11.556	0.00	0.29
127.00	Step bolts (ladder)	Yes	1.05	0.000	0.63	0.05	0.00	0.036	0.000	11.556	0.00	1.09
130.00	Safety Cable	Yes	3.00	0.000	0.36	0.09	0.00	0.037	0.000	11.612	0.00	0.82
130.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.037	0.000	11.612	0.00	3.12
135.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.038	0.000	11.704	0.00	1.37
135.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.038	0.000	11.704	0.00	5.20
137.00	Safety Cable	Yes	2.00	0.000	0.36	0.06	0.00	0.040	0.000	11.740	0.00	0.55
137.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.040	0.000	11.740	0.00	2.08
140.00	Safety Cable	Yes	3.00	0.000	0.36	0.09	0.00	0.041	0.000	11.793	0.00	0.82
140.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.041	0.000	11.793	0.00	3.12
145.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.042	0.000	11.880	0.00	1.37
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.042	0.000	11.880	0.00	5.20
150.00	Safety Cable	Yes	5.00	0.000	0.36	0.15	0.00	0.045	0.000	11.964	0.00	1.37
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.045	0.000	11.964	0.00	5.20
Totals:											0.0	186.4

Calculated Forces

Structure: CT13612-A-SBA

Code: TIA-222-H

9/12/2024

Site Name: Ingalls

Exposure: C

Height: 150.00 (ft)

Crest Height: 0.00

Base Elev: 1.500 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

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Load Case: 1.0D + 1.0W 60 mph Wind - Controlling Direction

Iterations 23

Dead Load Factor 1.00

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-33.34	-7.49	0.00	-766.26	0.00	766.26	4250.57	1141.01	5171.27	4782.12	0.00	0.000	0.000	0.168
5.00	-32.24	-7.38	0.00	-728.82	0.00	728.82	4196.29	1116.45	4950.99	4618.72	0.02	0.043	0.000	0.166
10.00	-31.10	-7.27	0.00	-691.94	0.00	691.94	4140.37	1091.88	4735.51	4456.20	0.09	0.087	0.000	0.163
15.00	-29.90	-7.15	0.00	-655.62	0.00	655.62	4082.82	1067.32	4524.82	4294.69	0.21	0.132	0.000	0.160
20.00	-28.72	-7.04	0.00	-619.85	0.00	619.85	4023.63	1042.75	4318.93	4134.30	0.37	0.177	0.000	0.157
25.00	-27.57	-6.91	0.00	-584.67	0.00	584.67	3962.80	1018.19	4117.83	3975.15	0.58	0.223	0.000	0.154
30.00	-26.44	-6.79	0.00	-550.09	0.00	550.09	3900.33	993.62	3921.52	3817.37	0.84	0.269	0.000	0.151
35.00	-25.34	-6.66	0.00	-516.15	0.00	516.15	3836.22	969.05	3730.01	3661.07	1.15	0.316	0.000	0.148
40.00	-24.26	-6.53	0.00	-482.84	0.00	482.84	3770.47	944.49	3543.30	3506.38	1.50	0.364	0.000	0.144
42.91	-23.65	-6.45	0.00	-463.82	0.00	463.82	3731.41	930.17	3436.71	3417.03	1.73	0.392	0.000	0.142
45.00	-22.89	-6.40	0.00	-450.35	0.00	450.35	3703.09	919.92	3361.37	3353.41	1.91	0.412	0.000	0.141
49.08	-21.44	-6.28	0.00	-424.25	0.00	424.25	2883.58	761.86	2766.63	2598.69	2.28	0.452	0.000	0.171
50.00	-21.27	-6.26	0.00	-418.47	0.00	418.47	2874.90	758.10	2739.34	2577.97	2.37	0.461	0.000	0.170
55.00	-20.40	-6.13	0.00	-387.15	0.00	387.15	2826.79	737.63	2593.39	2465.89	2.88	0.516	0.000	0.164
60.00	-19.54	-6.00	0.00	-356.48	0.00	356.48	2777.04	717.15	2451.44	2354.77	3.45	0.572	0.000	0.158
65.00	-18.71	-5.87	0.00	-326.47	0.00	326.47	2725.66	696.68	2313.48	2244.72	4.08	0.627	0.000	0.152
70.00	-17.89	-5.74	0.00	-297.11	0.00	297.11	2672.63	676.21	2179.52	2135.88	4.77	0.682	0.000	0.146
75.00	-17.09	-5.61	0.00	-268.40	0.00	268.40	2617.96	655.74	2049.55	2028.35	5.51	0.737	0.000	0.139
76.87	-16.80	-5.56	0.00	-257.89	0.00	257.89	2597.06	648.07	2001.88	1988.42	5.80	0.758	0.000	0.136
80.00	-16.00	-5.48	0.00	-240.50	0.00	240.50	2561.66	635.27	1923.58	1922.25	6.31	0.792	0.000	0.131
82.12	-15.47	-5.42	0.00	-228.87	0.00	228.87	1893.43	509.09	1544.19	1425.71	6.67	0.816	0.000	0.169
85.00	-15.10	-5.35	0.00	-213.29	0.00	213.29	1872.76	499.67	1487.55	1383.87	7.17	0.847	0.000	0.162
90.00	-14.47	-5.23	0.00	-186.54	0.00	186.54	1835.56	483.29	1391.64	1311.62	8.09	0.908	0.000	0.150
95.00	-13.86	-5.10	0.00	-160.41	0.00	160.41	1796.72	466.92	1298.92	1240.05	9.07	0.967	0.000	0.137
100.00	-13.27	-4.98	0.00	-134.89	0.00	134.89	1756.24	450.54	1209.40	1169.28	10.12	1.022	0.000	0.123
105.00	-12.69	-4.86	0.00	-109.99	0.00	109.99	1714.12	434.16	1123.07	1099.43	11.22	1.074	0.000	0.108
110.00	-9.79	-3.88	0.00	-85.69	0.00	85.69	1670.37	417.78	1039.94	1030.63	12.37	1.120	0.000	0.089
115.00	-9.26	-3.76	0.00	-66.28	0.00	66.28	1624.97	401.41	960.01	963.00	13.56	1.159	0.000	0.075
120.00	-8.74	-3.65	0.00	-47.47	0.00	47.47	1577.93	385.03	883.27	896.64	14.80	1.193	0.000	0.059
122.04	-8.53	-3.60	0.00	-40.04	0.00	40.04	1558.31	378.36	852.93	870.01	15.31	1.205	0.000	0.052
125.00	-8.07	-3.53	0.00	-29.38	0.00	29.38	1529.26	368.65	809.73	831.69	16.06	1.220	0.000	0.041
125.95	-7.93	-3.50	0.00	-26.01	0.00	26.01	1048.18	278.72	617.12	576.03	16.30	1.224	0.000	0.053
127.00	-4.60	-2.00	0.00	-22.11	0.00	22.11	1042.37	276.15	605.79	567.51	16.57	1.228	0.000	0.043
130.00	-4.38	-1.93	0.00	-16.11	0.00	16.11	1025.31	268.78	573.88	543.22	17.35	1.239	0.000	0.034
135.00	-4.04	-1.83	0.00	-6.44	0.00	6.44	995.56	256.49	522.63	503.18	18.65	1.252	0.000	0.017
137.00	-0.67	-0.28	0.00	-2.78	0.00	2.78	983.21	251.58	502.80	487.34	19.18	1.254	0.000	0.006
140.00	-0.52	-0.22	0.00	-1.93	0.00	1.93	964.18	244.21	473.77	463.80	19.97	1.256	0.000	0.005
145.00	-0.28	-0.13	0.00	-0.81	0.00	0.81	931.15	231.93	427.31	425.21	21.28	1.258	0.000	0.002
150.00	0.00	-0.12	0.00	-0.18	0.00	0.18	896.49	219.64	383.25	387.52	22.60	1.259	0.000	0.000

Final Analysis Summary

Structure: CT13612-A-SBA	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.0W 122 mph Wind	31.0	0.00	39.97	0.00	0.00	3184.25
1.2D + 1.0W 122 mph Wind at 30°	26.8	15.49	39.97	1592.19	0.02	2757.73
1.2D + 1.0W 122 mph Wind at 60°	15.5	26.82	39.97	2757.72	0.02	1592.20
1.2D + 1.0W 122 mph Wind at 90°	0.0	30.97	39.97	3184.25	0.00	0.00
1.2D + 1.0W 122 mph Wind at 120°	15.5	26.82	39.97	2757.72	0.02	1592.20
1.2D + 1.0W 122 mph Wind at 150°	26.8	15.49	39.97	1592.19	0.02	2757.73
1.2D + 1.0W 122 mph Wind at 180°	31.0	0.00	39.97	0.00	0.00	3184.25
1.2D + 1.0W 122 mph Wind at 210°	26.8	15.49	39.97	1592.19	0.02	2757.73
1.2D + 1.0W 122 mph Wind at 240°	15.5	26.82	39.97	2757.72	0.02	1592.20
1.2D + 1.0W 122 mph Wind at 270°	0.0	30.97	39.97	3184.25	0.00	0.00
1.2D + 1.0W 122 mph Wind at 300°	15.5	26.82	39.97	2757.72	0.02	1592.20
1.2D + 1.0W 122 mph Wind at 330°	26.8	15.49	39.97	1592.19	0.02	2757.73
0.9D + 1.0W 122 mph Wind	31.0	0.00	29.96	0.00	0.00	3154.83
0.9D + 1.0W 122 mph Wind at 30°	26.8	15.48	29.96	1577.47	0.02	2732.24
0.9D + 1.0W 122 mph Wind at 60°	15.5	26.81	29.96	2732.24	0.02	1577.47
0.9D + 1.0W 122 mph Wind at 90°	0.0	30.95	29.96	3154.83	0.00	0.00
0.9D + 1.0W 122 mph Wind at 120°	15.5	26.81	29.96	2732.24	0.02	1577.47
0.9D + 1.0W 122 mph Wind at 150°	26.8	15.48	29.96	1577.47	0.02	2732.24
0.9D + 1.0W 122 mph Wind at 180°	31.0	0.00	29.96	0.00	0.00	3154.83
0.9D + 1.0W 122 mph Wind at 210°	26.8	15.48	29.96	1577.47	0.02	2732.24
0.9D + 1.0W 122 mph Wind at 240°	15.5	26.81	29.96	2732.24	0.02	1577.47
0.9D + 1.0W 122 mph Wind at 270°	0.0	30.95	29.96	3154.83	0.00	0.00
0.9D + 1.0W 122 mph Wind at 300°	15.5	26.81	29.96	2732.24	0.02	1577.47
0.9D + 1.0W 122 mph Wind at 330°	26.8	15.48	29.96	1577.47	0.02	2732.24
1.2D + 1.0Di + 1.0Wi 50 mph Wind	8.1	0.00	54.96	0.00	0.00	819.79
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.0	4.04	54.96	409.90	0.00	709.97
1.2D + 1.0Di + 1.0Wi 50 mph Wind	4.0	6.99	54.96	709.97	0.00	409.90
1.2D + 1.0Di + 1.0Wi 50 mph Wind	0.0	8.08	54.96	819.79	0.00	0.00
1.2D + 1.0Di + 1.0Wi 50 mph Wind	4.0	6.99	54.96	709.97	0.00	409.90
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.0	4.04	54.96	409.90	0.00	709.97
1.2D + 1.0Di + 1.0Wi 50 mph Wind	8.1	0.00	54.96	0.00	0.00	819.79
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.0	4.04	54.96	409.90	0.00	709.97
1.2D + 1.0Di + 1.0Wi 50 mph Wind	4.0	6.99	54.96	709.97	0.00	409.90
1.2D + 1.0Di + 1.0Wi 50 mph Wind	0.0	8.08	54.96	819.79	0.00	0.00
1.2D + 1.0Di + 1.0Wi 50 mph Wind	4.0	6.99	54.96	709.97	0.00	409.90
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.0	4.04	54.96	409.90	0.00	709.97
1.0D + 1.0W 60 mph Wind	7.5	0.00	33.34	0.00	0.00	766.26
1.0D + 1.0W 60 mph Wind at 30°	6.5	3.74	33.34	383.13	0.00	663.60
1.0D + 1.0W 60 mph Wind at 60°	3.7	6.48	33.34	663.60	0.00	383.13
1.0D + 1.0W 60 mph Wind at 90°	0.0	7.49	33.34	766.26	0.00	0.00
1.0D + 1.0W 60 mph Wind at 120°	3.7	6.48	33.34	663.60	0.00	383.13
1.0D + 1.0W 60 mph Wind at 150°	6.5	3.74	33.34	383.13	0.00	663.60
1.0D + 1.0W 60 mph Wind at 180°	7.5	0.00	33.34	0.00	0.00	766.26
1.0D + 1.0W 60 mph Wind at 210°	6.5	3.74	33.34	383.13	0.00	663.60
1.0D + 1.0W 60 mph Wind at 240°	3.7	6.48	33.34	663.60	0.00	383.13
1.0D + 1.0W 60 mph Wind at 270°	0.0	7.49	33.34	766.26	0.00	0.00
1.0D + 1.0W 60 mph Wind at 300°	3.7	6.48	33.34	663.60	0.00	383.13

Final Analysis Summary

Structure: CT13612-A-SBA	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 27
	Struct Class: II	



Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.0D + 1.0W 60 mph Wind at 330°	6.5	3.74	33.34	383.13	0.00	663.60
1.2D + 1.0Ev + 1.0Eh	0.6	0.00	41.36	0.00	0.00	79.70
0.9D + 1.0Ev + 1.0Eh	0.6	0.00	31.31	0.00	0.00	79.18

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.0W 122 mph Wind	-24.94	-26.10	0.00	-1766.0	0.00	1766.0	2883.58	761.86	2766.63	2598.69	49.08	0.689
1.2D + 1.0W 122 mph Wind at 30°	-24.94	-22.61	0.02	-1529.7	-882.73	1766.1	2883.58	761.86	2766.63	2598.69	49.08	0.689
1.2D + 1.0W 122 mph Wind at 60°	-24.94	-13.05	-0.02	-883.45	-1529.3	1766.1	2883.58	761.86	2766.63	2598.69	49.08	0.689
1.2D + 1.0W 122 mph Wind at 90°	-24.94	0.00	0.00	0.00	-1766.0	1766.0	2883.58	761.86	2766.63	2598.69	49.08	0.689
1.2D + 1.0W 122 mph Wind at 120°	-24.94	13.05	0.02	883.45	-1529.3	1766.1	2883.58	761.86	2766.63	2598.69	49.08	0.689
1.2D + 1.0W 122 mph Wind at 150°	-24.94	22.61	-0.02	1529.73	-882.73	1766.1	2883.58	761.86	2766.63	2598.69	49.08	0.689
1.2D + 1.0W 122 mph Wind at 180°	-24.94	26.10	0.00	1766.08	0.00	1766.0	2883.58	761.86	2766.63	2598.69	49.08	0.689
1.2D + 1.0W 122 mph Wind at 210°	-24.94	22.61	0.02	1529.73	882.73	1766.1	2883.58	761.86	2766.63	2598.69	49.08	0.689
1.2D + 1.0W 122 mph Wind at 240°	-24.94	13.05	-0.02	883.45	1529.3	1766.1	2883.58	761.86	2766.63	2598.69	49.08	0.689
1.2D + 1.0W 122 mph Wind at 270°	-24.94	0.00	0.00	0.00	1766.0	1766.0	2883.58	761.86	2766.63	2598.69	49.08	0.689
1.2D + 1.0W 122 mph Wind at 300°	-24.94	-13.05	0.02	-883.45	1529.3	1766.1	2883.58	761.86	2766.63	2598.69	49.08	0.689
1.2D + 1.0W 122 mph Wind at 330°	-24.94	-22.61	-0.02	-1529.7	882.73	1766.1	2883.58	761.86	2766.63	2598.69	49.08	0.689
0.9D + 1.0W 122 mph Wind	-18.50	-25.88	0.00	-1743.0	0.00	1743.0	2883.58	761.86	2766.63	2598.69	49.08	0.678
0.9D + 1.0W 122 mph Wind at 30°	-18.50	-22.41	0.02	-1509.8	-871.23	1743.1	2883.58	761.86	2766.63	2598.69	49.08	0.678
0.9D + 1.0W 122 mph Wind at 60°	-18.50	-12.94	-0.02	-871.94	-1509.4	1743.1	2883.58	761.86	2766.63	2598.69	49.08	0.678
0.9D + 1.0W 122 mph Wind at 90°	-18.50	0.00	0.00	0.00	-1743.0	1743.0	2883.58	761.86	2766.63	2598.69	49.08	0.678
0.9D + 1.0W 122 mph Wind at 120°	-18.50	12.94	0.02	871.94	-1509.4	1743.1	2883.58	761.86	2766.63	2598.69	49.08	0.678
0.9D + 1.0W 122 mph Wind at 150°	-18.50	22.41	-0.02	1509.81	-871.23	1743.1	2883.58	761.86	2766.63	2598.69	49.08	0.678
0.9D + 1.0W 122 mph Wind at 180°	-18.50	25.88	0.00	1743.09	0.00	1743.0	2883.58	761.86	2766.63	2598.69	49.08	0.678
0.9D + 1.0W 122 mph Wind at 210°	-18.50	22.41	0.02	1509.81	871.23	1743.1	2883.58	761.86	2766.63	2598.69	49.08	0.678
0.9D + 1.0W 122 mph Wind at 240°	-18.50	12.94	-0.02	871.94	1509.4	1743.1	2883.58	761.86	2766.63	2598.69	49.08	0.678
0.9D + 1.0W 122 mph Wind at 270°	-18.50	0.00	0.00	0.00	1743.0	1743.0	2883.58	761.86	2766.63	2598.69	49.08	0.678
0.9D + 1.0W 122 mph Wind at 300°	-18.50	-12.94	0.02	-871.94	1509.4	1743.1	2883.58	761.86	2766.63	2598.69	49.08	0.678
0.9D + 1.0W 122 mph Wind at 330°	-18.50	-22.41	-0.02	-1509.8	871.23	1743.1	2883.58	761.86	2766.63	2598.69	49.08	0.678
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-37.59	-6.75	0.00	-450.85	0.00	450.85	2883.58	761.86	2766.63	2598.69	49.08	0.187
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-37.59	-5.85	0.00	-390.46	-225.42	450.86	2883.58	761.86	2766.63	2598.69	49.08	0.187
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-37.59	-3.38	0.00	-225.44	-390.45	450.86	2883.58	761.86	2766.63	2598.69	49.08	0.187
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-37.59	0.00	0.00	0.00	-450.85	450.85	2883.58	761.86	2766.63	2598.69	49.08	0.187
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-37.59	3.38	0.00	225.44	-390.45	450.86	2883.58	761.86	2766.63	2598.69	49.08	0.187
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-37.59	5.85	0.00	390.46	-225.42	450.86	2883.58	761.86	2766.63	2598.69	49.08	0.187
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-37.59	6.75	0.00	450.85	0.00	450.85	2883.58	761.86	2766.63	2598.69	49.08	0.187
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-37.59	5.85	0.00	390.46	225.42	450.86	2883.58	761.86	2766.63	2598.69	49.08	0.187
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-37.59	3.38	0.00	225.44	390.45	450.86	2883.58	761.86	2766.63	2598.69	49.08	0.187
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-37.59	0.00	0.00	0.00	450.85	450.85	2883.58	761.86	2766.63	2598.69	49.08	0.187
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-37.59	-3.38	0.00	-225.44	390.45	450.86	2883.58	761.86	2766.63	2598.69	49.08	0.187
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-37.59	-5.85	0.00	-390.46	225.42	450.86	2883.58	761.86	2766.63	2598.69	49.08	0.187
1.0D + 1.0W 60 mph Wind	-21.44	-6.28	0.00	-424.25	0.00	424.25	2883.58	761.86	2766.63	2598.69	49.08	0.171
1.0D + 1.0W 60 mph Wind at 30°	-21.44	-5.44	0.00	-367.41	-212.12	424.25	2883.58	761.86	2766.63	2598.69	49.08	0.171

Final Analysis Summary

Structure: CT13612-A-SBA	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 28
	Struct Class: II	



Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)							
1.0D + 1.0W 60 mph Wind at 60°	-21.44	-3.14	0.00	-212.13	-367.41	424.25	2883.58	761.86	2766.63	2598.69	49.08	0.171	
1.0D + 1.0W 60 mph Wind at 90°	-21.44	0.00	0.00	0.00	-424.25	424.25	2883.58	761.86	2766.63	2598.69	49.08	0.171	
1.0D + 1.0W 60 mph Wind at 120°	-21.44	3.14	0.00	212.13	-367.41	424.25	2883.58	761.86	2766.63	2598.69	49.08	0.171	
1.0D + 1.0W 60 mph Wind at 150°	-21.44	5.44	0.00	367.41	-212.12	424.25	2883.58	761.86	2766.63	2598.69	49.08	0.171	
1.0D + 1.0W 60 mph Wind at 180°	-21.44	6.28	0.00	424.25	0.00	424.25	2883.58	761.86	2766.63	2598.69	49.08	0.171	
1.0D + 1.0W 60 mph Wind at 210°	-21.44	5.44	0.00	367.41	212.12	424.25	2883.58	761.86	2766.63	2598.69	49.08	0.171	
1.0D + 1.0W 60 mph Wind at 240°	-21.44	3.14	0.00	212.13	367.41	424.25	2883.58	761.86	2766.63	2598.69	49.08	0.171	
1.0D + 1.0W 60 mph Wind at 270°	-21.44	0.00	0.00	0.00	424.25	424.25	2883.58	761.86	2766.63	2598.69	49.08	0.171	
1.0D + 1.0W 60 mph Wind at 300°	-21.44	-3.14	0.00	-212.13	367.41	424.25	2883.58	761.86	2766.63	2598.69	49.08	0.171	
1.0D + 1.0W 60 mph Wind at 330°	-21.44	-5.44	0.00	-367.41	212.12	424.25	2883.58	761.86	2766.63	2598.69	49.08	0.171	
1.2D + 1.0Ev + 1.0Eh	-19.27	0.62	0.00	27.83	0.00	27.83	1893.43	509.09	1544.19	1425.71	82.12	0.030	
0.9D + 1.0Ev + 1.0Eh	-14.59	0.61	0.00	27.66	0.00	27.66	1893.43	509.09	1544.19	1425.71	82.12	0.027	

Base Plate Summary

Structure: CT13612-A-SB	Code: TIA-222-H	9/12/2024
Site Name: Ingalls	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 1.500 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 29



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 60.00	Bolt Circle: 64.00
Moment (kip-ft): 3015.40	Width (in): 70.00	Number Bolts: 16.00
Axial (kip): 31.20	Style: Round	Bolt Type: 2.25" 18J
Shear (kip): 28.36	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.0W 60° Wind)	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 3184.36	Effective Len (in): 14.68	Ultimate (ksi): 100.00
Axial (kip): 39.97	Moment (kip-in): 682.94	Arrangement: Radial
Shear (kip): 30.97	Allow Stress (ksi): 81.00	Cluster Dist (in): 0.00
	Applied Stress (ksi): 69.66	Start Angle (deg): 0.00
	Stress Ratio: 0.86	Compression
		Force (kip): 151.76
		Allowable (kip): 268.39
		Ratio: 0.57
		Tension
		Force (kip): 146.77
		Allowable (kip): 243.75
		Ratio: 0.60

Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):

0.90

Strength reduction factor (Shear):

0.75

Strength reduction factor (Axial compression):

0.65

Wind Load Factor on Concrete Design:

1.00

Load/
Capacity
Ratio**(1) Concrete Pier:**

Vertical Steel Rebar Area (sq. in./each):

0.79

Tie / Stirrup Area (sq. in./each):

0.20

Calculated Moment Capacity (Mn,Kips-Ft):

6072.6

>

Design Factored Moment (Mu, Kips-F

3323.9

0.55

OK!

Calculated Shear Capacity (Kips):

660.1

>

Design Factored Shear (Kips):

31.0

0.05

OK!

Calculated Tension Capacity (Tn, Kips):

1962.4

>

Design Factored Tension (Tu Kips):

0.0

0.00

OK!

Calculated Compression Capacity (Pn, Kips):

9733.6

>

Design Factored Axial Load (Pu Kips):

40.0

0.00

OK!

Moment & Axial Strength Combination:

0.55

OK!

Check Tie Spacing (Design/Required):

1

OK!

Pier Reinforcement Ratio:

0.007

Reinforcement Ratio is satisfied per ACI

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):

888.0

>

One-Way Factored Shear (L-D. Kips):

212.3

0.24

OK!

One-Way Design Shear Capacity (W-Direction, Kips):

888.0

>

One-Way Factored Shear (W-D., Kips)

212.3

0.24

OK!

One-Way Design Shear Capacity (Corner-Corner, Kips):

796.4

>

One-Way Factored Shear (C-C, Kips):

210.0

0.26

OK!

Lower Steel Pad Reinforcement Ratio (L-Direct.):

0.0041

OK!

Lower Steel Pad Reinf. Ratio (W-Direc

0.0041

Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):

5347.6

>

Moment at Bottom (L-Dir. K-Ft):

1127.1

0.21

OK!

Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):

5347.6

>

Moment at Bottom (W-Dir. K-Ft):

1127.1

0.21

OK!

Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):

7489.7

>

Moment at Bottom (C-C Dir. K-Ft):

1593.9

0.21

OK!

Upper Steel Pad Reinforcement Ratio (L-Direct.):

0.0020

OK!

Upper Steel Reinf. Ratio (W-Dir.):

0.0020

Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):

2723.3

>

Moment at the top (L-Dir K-Ft):

512.2

0.19

OK!

Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):

2723.3

>

Moment at the top (W-Dir K-Ft):

512.2

0.19

OK!

Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):

3833.2

>

Moment at the top (C-C Dir. K-Ft):

481.4

0.13

OK!

(3).Check Punching Shear Capacity due to Moment in the Pier:

Moment transferred by punching shear:

1273.8

k-ft.

Max. factored shear stress $v_{u,CD}$:

3.5

Psi

Max. factored shear stress $v_{u,AB}$:

8.8

Psi

Factored shear Strength ϕv_n :

189.7

Psi

Max. factored shear stress v_u :

8.8

Psi

Check Usage of Punching Shear Capacity:

0.05

OK!

(4).Check Bending Capacity of the Pad Within the Effective Slab Width:

Overturning moment to be transferred by flexure:

955.3

k-ft.

Effective Width for resisting OT moment:

16.0

ft.

Calculated number of Rebar in Effective width:

16

Actual number of Rebar in Effective width:

16

Steel Pad Moment Capacity (L-Direc. Kips-ft):

1815.6

k-ft.

Check Usage of the Flexure Capacity:

0.53

OK!



EXHIBIT 8



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Antenna Mount Analysis Report

Existing Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT13612-A-SBA

Customer Site Name: Ingalls

Carrier Name: T-Mobile (App#: 260460-1)

Carrier Site ID / Name: CT11513D / Ingalls

Site Location: 146 Brown Rd

Brooklyn, Connecticut

Windham County

Latitude: 41.798361

Longitude: -71.935889

Analysis Result:

Max Structural Usage: 46.6% [Pass]

Report Prepared By: Sandesh Khawas Bhujel





Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Antenna Mount Analysis Report

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Windham County

Latitude: 41.798361

Longitude: -71.935889

Analysis Result:

Max Structural Usage: 46.6% [Pass]

Report Prepared By: Sandesh Khawas Bhujel

Introduction

The purpose of this report is to summarize the analysis results on the (1) Sitepro RMQP-4096-HK at 137.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Specification	(1) Sitepro RMQP-4096-HK as per SBA Application #: 260460, v1
Antenna Loading	SBA Application #: 260460, v1, dated 8/29/2024
Modification Drawings	N/A
Recent Mount Photos	Provided by SBA

Analysis Criteria

Wind Speed Used in the Analysis: 122 mph (3-Sec. Gust) (Ultimate Wind Speed)

Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1" radial ice concurrent

Service Load Wind Speed: 30 mph +0" Radial ice

Standard/Codes: ANSI/TIA/EIA 222-H / IBC 2021

Exposure Category: C

Risk Category: II

Topographic Category: 1

Crest Height (Ft): 0

Ground Elevation Factor: 1.000

The site is a Risk Category II structure per IBC Table 1604.5. This site does not support emergency communication equipment for first responders such as fire departments, police, hospitals, ambulance services or any of the facilities listed for Risk Categories III and IV. The scope of work detailed in this structural analysis does not include items that are a part of emergency service as the 911 or essential facility service of an emergency response system.

Mount Information

(1) Sitepro RMQP-4096-HK at 137.00' elevation

Final Antenna Configuration

3	RFS APXVLL19P_43-C-A20
3	RFS APXVAARR24_43-U-NA20
3	EMS RR90-19-XXDPQ
3	Ericsson 4449 B71 + B85
3	Ericsson 4460 B25 + B66

In addition to the proposed equipment loading, a 500 lb serviceability load was also considered in this analysis in accordance with TIA requirements.

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 46.6%, which occurs in the support rail. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

Attachments

1. Mount Photos
2. Antenna Placement Diagram
3. Analysis Calculations

Standard Conditions

1. The loading configuration as analyzed in this report is as provided from the customer. Any deviation from this design shall be communicated to TES to verify deviation will not adversely impact the analysis.
2. The analysis is based on the presumption that the antenna mount members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.
3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion. The mount analysis is not a condition assessment of the mount.
4. The mount analysis was performed in accordance with the loading provided, and if applicable the modification required to support the additional loading.
5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.
6. The modification drawings are not intended to convey means or methods. These are the responsibility of the installing contractor.
7. Rigging plan review is available if the contractor requires for a construction class IV or other if required. Review fee would apply.
8. The mount modification package was created based upon information provided for the mount loading. The underlying tower is assumed to provide support and sufficient rigidity to support the mount loads as a tower analysis was not part of the mount analysis.
9. TES is not responsible for modifications to climbing facilities unless communicated to TES in writing.



Structure: CT13612-A-SBA - Ingalls

Sector: A

9/10/2024

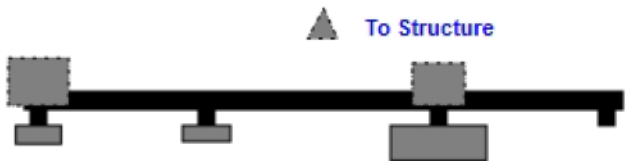


Structure Type: Monopole

Mount Elev: 137.00

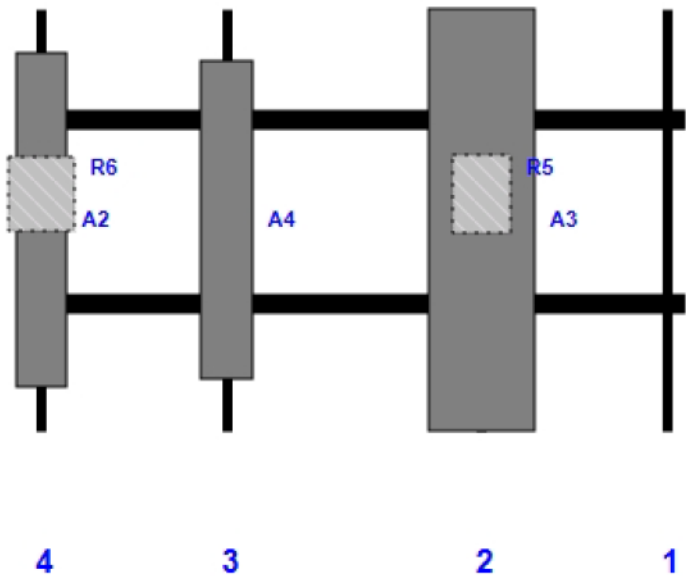
Page: 1

Plan View



Front View

Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A3	APXVAARR24_43-U-NA20	95.90	24.00	104.00	2	a	Front	48.00		Retained	
R5	4449 B71 + B85	17.90	13.10	104.00	2	a	Behind	42.00		Added	
A4	RR90-19-XXDPQ	72.00	12.00	46.00	3	a	Front	48.00		Retained	
A2	APXVLL19P_43-C-A20	75.80	11.30	4.00	4	a	Front	48.00		Added	
R6	4460 B25 + B66	17.00	15.10	4.00	4	a	Behind	42.00		Added	

Structure: CT13612-A-SBA - Ingalls

Sector: **B**

9/10/2024

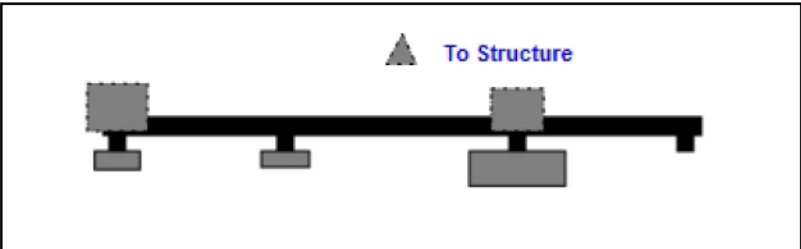


Structure Type: Monopole

Mount Elev: 137.00

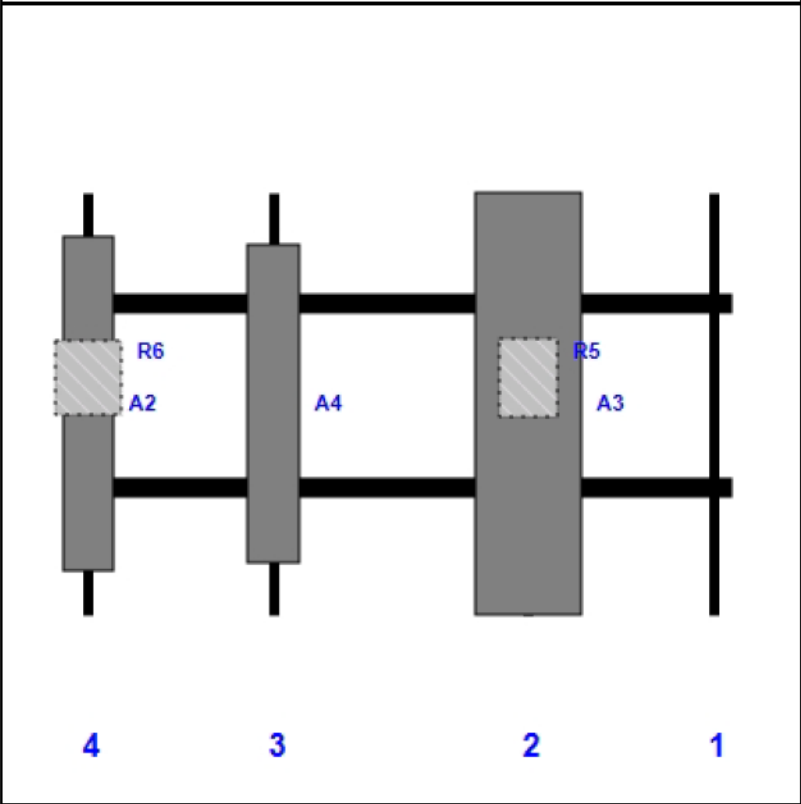
Page: 2

Plan View



Front View

Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A3	APXVAARR24_43-U-NA20	95.90	24.00	104.00	2	a	Front	48.00		Retained	
R5	4449 B71 + B85	17.90	13.10	104.00	2	a	Behind	42.00		Added	
A4	RR90-19-XXDPQ	72.00	12.00	46.00	3	a	Front	48.00		Retained	
A2	APXVLL19P_43-C-A20	75.80	11.30	4.00	4	a	Front	48.00		Added	
R6	4460 B25 + B66	17.00	15.10	4.00	4	a	Behind	42.00		Added	

Structure: CT13612-A-SBA - Ingalls

Sector: C

9/10/2024

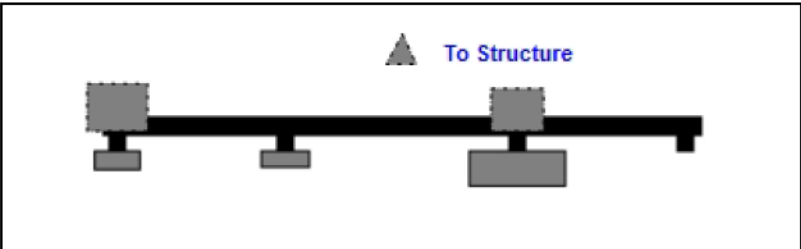


Structure Type: Monopole

Mount Elev: 137.00

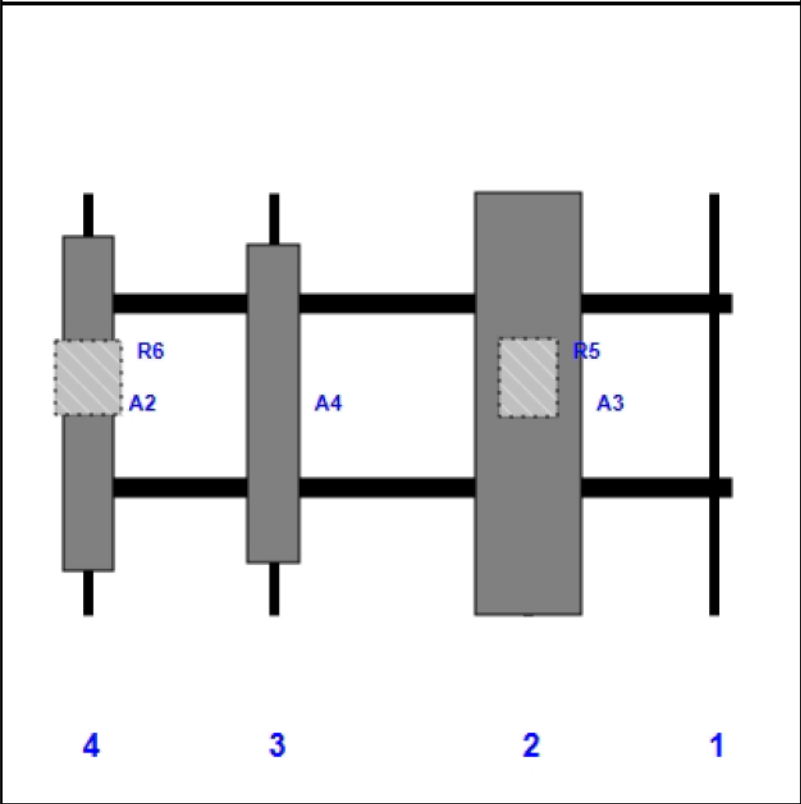
Page: 3

Plan View

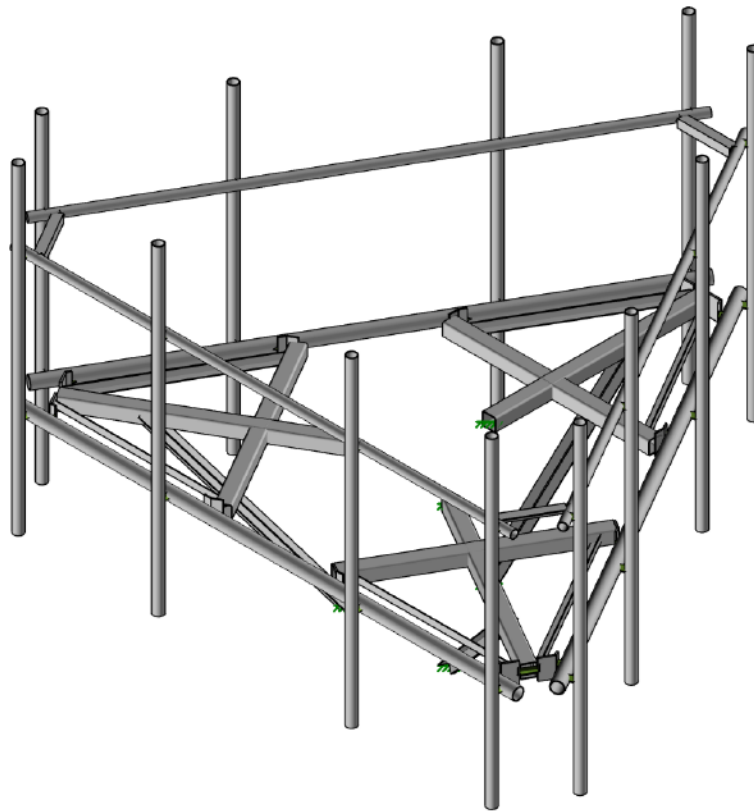
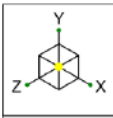


Front View

Looking Toward Structure

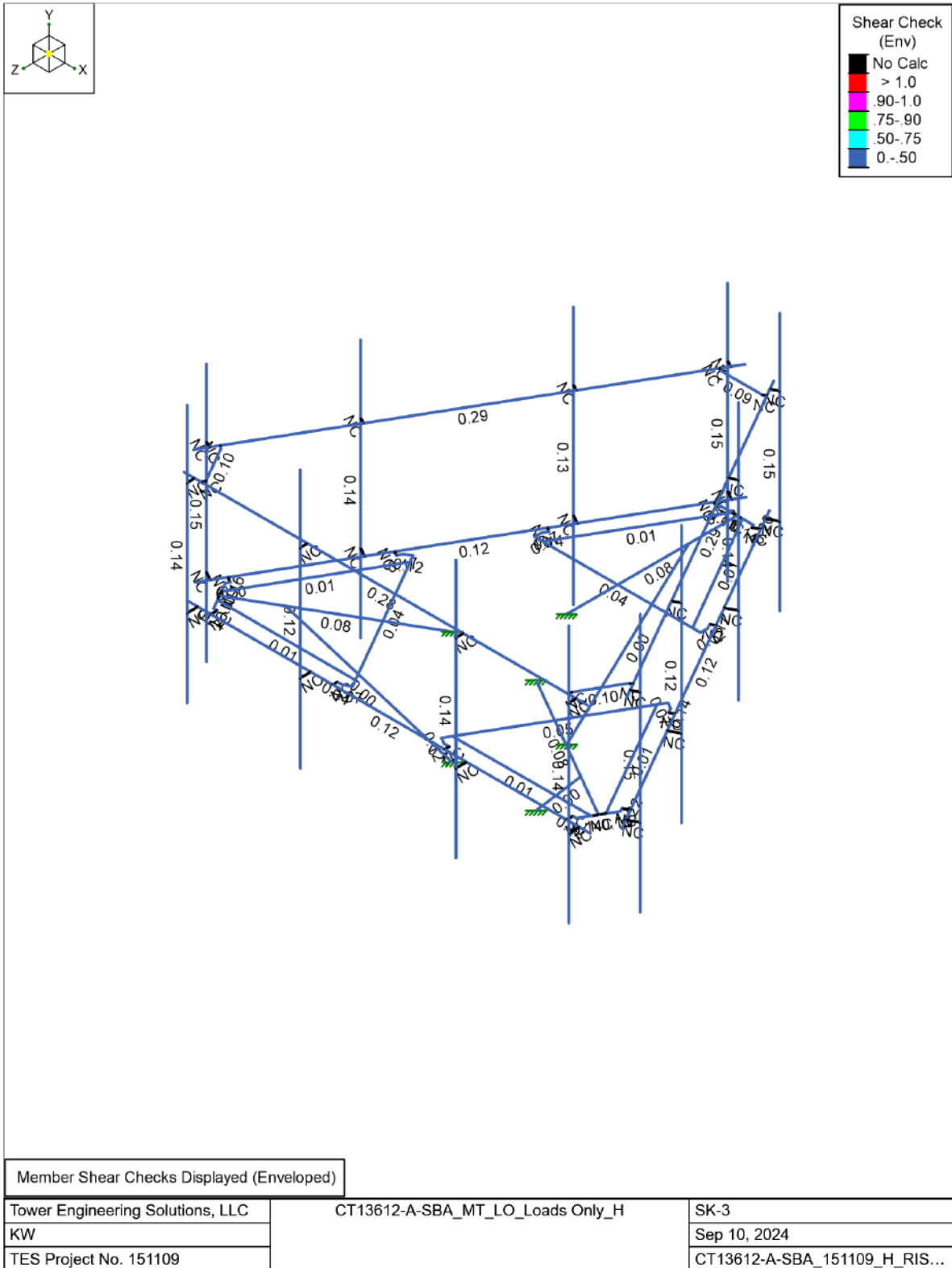


Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A3	APXVAARR24_43-U-NA20	95.90	24.00	104.00	2	a	Front	48.00		Retained	
R5	4449 B71 + B85	17.90	13.10	104.00	2	a	Behind	42.00		Added	
A4	RR90-19-XXDPQ	72.00	12.00	46.00	3	a	Front	48.00		Retained	
A2	APXVLL19P_43-C-A20	75.80	11.30	4.00	4	a	Front	48.00		Added	
R6	4460 B25 + B66	17.00	15.10	4.00	4	a	Behind	42.00		Added	



Tower Engineering Solutions, LLC	CT13612-A-SBA_MT_LO_Loads Only_H	SK-1
KW		Sep 10, 2024
TES Project No. 151109		CT13612-A-SBA_151109_H_RIS...





Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Point	Distributed	Area(Member)
1	Antenna D	None				72		
2	Antenna Di	None				72		
3	Antenna Wo (0 Deg)	None				72		
4	Antenna Wo (30 Deg)	None				72		
5	Antenna Wo (60 Deg)	None				72		
6	Antenna Wo (90 Deg)	None				72		
7	Antenna Wo (120 Deg)	None				72		
8	Antenna Wo (150 Deg)	None				72		
9	Antenna Wo (180 Deg)	None				72		
10	Antenna Wo (210 Deg)	None				72		
11	Antenna Wo (240 Deg)	None				72		
12	Antenna Wo (270 Deg)	None				72		
13	Antenna Wo (300 Deg)	None				72		
14	Antenna Wo (330 Deg)	None				72		
15	Antenna Wi (0 Deg)	None				72		
16	Antenna Wi (30 Deg)	None				72		
17	Antenna Wi (60 Deg)	None				72		
18	Antenna Wi (90 Deg)	None				72		
19	Antenna Wi (120 Deg)	None				72		
20	Antenna Wi (150 Deg)	None				72		
21	Antenna Wi (180 Deg)	None				72		
22	Antenna Wi (210 Deg)	None				72		
23	Antenna Wi (240 Deg)	None				72		
24	Antenna Wi (270 Deg)	None				72		
25	Antenna Wi (300 Deg)	None				72		
26	Antenna Wi (330 Deg)	None				72		
27	Antenna Wm (0 Deg)	None				72		
28	Antenna Wm (30 Deg)	None				72		
29	Antenna Wm (60 Deg)	None				72		
30	Antenna Wm (90 Deg)	None				72		
31	Antenna Wm (120 Deg)	None				72		
32	Antenna Wm (150 Deg)	None				72		
33	Antenna Wm (180 Deg)	None				72		
34	Antenna Wm (210 Deg)	None				72		
35	Antenna Wm (240 Deg)	None				72		
36	Antenna Wm (270 Deg)	None				72		
37	Antenna Wm (300 Deg)	None				72		
38	Antenna Wm (330 Deg)	None				72		
39	Structure D	None		-1				3
40	Structure Di	None					60	3
41	Structure Wo (0 Deg)	None					120	
42	Structure Wo (30 Deg)	None					120	
43	Structure Wo (60 Deg)	None					120	
44	Structure Wo (90 Deg)	None					120	
45	Structure Wo (120 Deg)	None					120	
46	Structure Wo (150 Deg)	None					120	
47	Structure Wo (180 Deg)	None					120	
48	Structure Wo (210 Deg)	None					120	
49	Structure Wo (240 Deg)	None					120	
50	Structure Wo (270 Deg)	None					120	
51	Structure Wo (300 Deg)	None					120	
52	Structure Wo (330 Deg)	None					120	
53	Structure Wi (0 Deg)	None					120	
54	Structure Wi (30 Deg)	None					120	
55	Structure Wi (60 Deg)	None					120	

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Point	Distributed	Area(Member)
56	Structure Wi (90 Deg)	None					120	
57	Structure Wi (120 Deg)	None					120	
58	Structure Wi (150 Deg)	None					120	
59	Structure Wi (180 Deg)	None					120	
60	Structure Wi (210 Deg)	None					120	
61	Structure Wi (240 Deg)	None					120	
62	Structure Wi (270 Deg)	None					120	
63	Structure Wi (300 Deg)	None					120	
64	Structure Wi (330 Deg)	None					120	
65	Structure Wm (0 Deg)	None					120	
66	Structure Wm (30 Deg)	None					120	
67	Structure Wm (60 Deg)	None					120	
68	Structure Wm (90 Deg)	None					120	
69	Structure Wm (120 Deg)	None					120	
70	Structure Wm (150 Deg)	None					120	
71	Structure Wm (180 Deg)	None					120	
72	Structure Wm (210 Deg)	None					120	
73	Structure Wm (240 Deg)	None					120	
74	Structure Wm (270 Deg)	None					120	
75	Structure Wm (300 Deg)	None					120	
76	Structure Wm (330 Deg)	None					120	
77	Lm1	None				1		
78	Lm2	None				1		
79	Lv1	None				1		
80	Lv2	None				1		
81	Antenna Ev	None				72		
82	Antenna Eh (0 Deg)	None				48		
83	Antenna Eh (90 Deg)	None				48		
84	Structure Ev	ELY		-0.039				3
85	Structure Eh (0 Deg)	ELZ			-0.098			3
86	Structure Eh (90 Deg)	ELX	0.098					3
87	BLC 39 Transient Area Loads	None					51	
88	BLC 40 Transient Area Loads	None					51	
89	BLC 84 Transient Area Loads	None					51	
90	BLC 85 Transient Area Loads	None					51	
91	BLC 86 Transient Area Loads	None					51	

Load Combinations

	Description	Solve	P-Delta	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
1	1.2D+1.0Wo (0 Deg)	Yes	Y	1	1.2	39	1.2	3	1	41	1							
2	1.2D+1.0Wo (30 Deg)	Yes	Y	1	1.2	39	1.2	4	1	42	1							
3	1.2D+1.0Wo (60 Deg)	Yes	Y	1	1.2	39	1.2	5	1	43	1							
4	1.2D+1.0Wo (90 Deg)	Yes	Y	1	1.2	39	1.2	6	1	44	1							
5	1.2D+1.0Wo (120 Deg)	Yes	Y	1	1.2	39	1.2	7	1	45	1							
6	1.2D+1.0Wo (150 Deg)	Yes	Y	1	1.2	39	1.2	8	1	46	1							
7	1.2D+1.0Wo (180 Deg)	Yes	Y	1	1.2	39	1.2	9	1	47	1							
8	1.2D+1.0Wo (210 Deg)	Yes	Y	1	1.2	39	1.2	10	1	48	1							
9	1.2D+1.0Wo (240 Deg)	Yes	Y	1	1.2	39	1.2	11	1	49	1							
10	1.2D+1.0Wo (270 Deg)	Yes	Y	1	1.2	39	1.2	12	1	50	1							
11	1.2D+1.0Wo (300 Deg)	Yes	Y	1	1.2	39	1.2	13	1	51	1							
12	1.2D+1.0Wo (330 Deg)	Yes	Y	1	1.2	39	1.2	14	1	52	1							
13	1.2D + 1.0Di + 1.0Wi (0 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	15	1	53	1			
14	1.2D + 1.0Di + 1.0Wi (30 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	16	1	54	1			
15	1.2D + 1.0Di + 1.0Wi (60 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	17	1	55	1			
16	1.2D + 1.0Di + 1.0Wi (90 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	18	1	56	1			

Load Combinations (Continued)

Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
17 1.2D + 1.0Di + 1.0Wi (120 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	19	1	57	1				
18 1.2D + 1.0Di + 1.0Wi (150 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	20	1	58	1				
19 1.2D + 1.0Di + 1.0Wi (180 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	21	1	59	1				
20 1.2D + 1.0Di + 1.0Wi (210 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	22	1	60	1				
21 1.2D + 1.0Di + 1.0Wi (240 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	23	1	61	1				
22 1.2D + 1.0Di + 1.0Wi (270 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	24	1	62	1				
23 1.2D + 1.0Di + 1.0Wi (300 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	25	1	63	1				
24 1.2D + 1.0Di + 1.0Wi (330 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	26	1	64	1				
25 1.2D + 1.5Lm1 + 1.0Wm (0 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	27	1	65	1						
26 1.2D + 1.5Lm1 + 1.0Wm (30 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	28	1	66	1						
27 1.2D + 1.5Lm1 + 1.0Wm (60 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	29	1	67	1						
28 1.2D + 1.5Lm1 + 1.0Wm (90 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	30	1	68	1						
29 1.2D + 1.5Lm1 + 1.0Wm (120 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	31	1	69	1						
30 1.2D + 1.5Lm1 + 1.0Wm (150 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	32	1	70	1						
31 1.2D + 1.5Lm1 + 1.0Wm (180 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	33	1	71	1						
32 1.2D + 1.5Lm1 + 1.0Wm (210 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	34	1	72	1						
33 1.2D + 1.5Lm1 + 1.0Wm (240 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	35	1	73	1						
34 1.2D + 1.5Lm1 + 1.0Wm (270 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	36	1	74	1						
35 1.2D + 1.5Lm1 + 1.0Wm (300 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	37	1	75	1						
36 1.2D + 1.5Lm1 + 1.0Wm (330 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	38	1	76	1						
37 1.2D + 1.5Lm2 + 1.0Wm (0 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	27	1	65	1						
38 1.2D + 1.5Lm2 + 1.0Wm (30 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	28	1	66	1						
39 1.2D + 1.5Lm2 + 1.0Wm (60 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	29	1	67	1						
40 1.2D + 1.5Lm2 + 1.0Wm (90 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	30	1	68	1						
41 1.2D + 1.5Lm2 + 1.0Wm (120 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	31	1	69	1						
42 1.2D + 1.5Lm2 + 1.0Wm (150 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	32	1	70	1						
43 1.2D + 1.5Lm2 + 1.0Wm (180 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	33	1	71	1						
44 1.2D + 1.5Lm2 + 1.0Wm (210 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	34	1	72	1						
45 1.2D + 1.5Lm2 + 1.0Wm (240 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	35	1	73	1						
46 1.2D + 1.5Lm2 + 1.0Wm (270 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	36	1	74	1						
47 1.2D + 1.5Lm2 + 1.0Wm (300 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	37	1	75	1						
48 1.2D + 1.5Lm2 + 1.0Wm (330 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	38	1	76	1						
49 1.2D + 1.5Lv1	Yes	Y	1	1.2	39	1.2	79	1.5										
50 1.2D + 1.5Lv2	Yes	Y	1	1.2	39	1.2	80	1.5										
51 1.4D	Yes	Y	1	1.4	39	1.4												
52 1.2D + 1.0Ev + 1.0Eh (0 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	1	83		ELZ	1	ELX	
53 1.2D + 1.0Ev + 1.0Eh (30 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.866	83	0.5	ELZ	0.866	ELX	0.5
54 1.2D + 1.0Ev + 1.0Eh (60 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.5	83	0.866	ELZ	0.5	ELX	0.866
55 1.2D + 1.0Ev + 1.0Eh (90 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82		83	1	ELZ		ELX	1
56 1.2D + 1.0Ev + 1.0Eh (120 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.5	83	0.866	ELZ	-0.5	ELX	0.866
57 1.2D + 1.0Ev + 1.0Eh (150 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.866	83	0.5	ELZ	-0.866	ELX	0.5
58 1.2D + 1.0Ev + 1.0Eh (180 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-1	83		ELZ	-1	ELX	
59 1.2D + 1.0Ev + 1.0Eh (210 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.866	83	-0.5	ELZ	-0.866	ELX	-0.5
60 1.2D + 1.0Ev + 1.0Eh (240 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.5	83	-0.866	ELZ	-0.5	ELX	-0.866
61 1.2D + 1.0Ev + 1.0Eh (270 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82		83	-1	ELZ		ELX	-1
62 1.2D + 1.0Ev + 1.0Eh (300 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.5	83	-0.866	ELZ	0.5	ELX	-0.866
63 1.2D + 1.0Ev + 1.0Eh (330 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.866	83	-0.5	ELZ	0.866	ELX	-0.5
64 0.9D - 1.0Ev + 1.0Eh (0 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	1	83		ELZ	1	ELX	
65 0.9D - 1.0Ev + 1.0Eh (30 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.866	83	0.5	ELZ	0.866	ELX	0.5
66 0.9D - 1.0Ev + 1.0Eh (60 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.5	83	0.866	ELZ	0.5	ELX	0.866
67 0.9D - 1.0Ev + 1.0Eh (90 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82		83	1	ELZ		ELX	1
68 0.9D - 1.0Ev + 1.0Eh (120 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.5	83	0.866	ELZ	-0.5	ELX	0.866
69 0.9D - 1.0Ev + 1.0Eh (150 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.866	83	0.5	ELZ	-0.866	ELX	0.5
70 0.9D - 1.0Ev + 1.0Eh (180 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-1	83		ELZ	-1	ELX	
71 0.9D - 1.0Ev + 1.0Eh (210 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.866	83	-0.5	ELZ	-0.866	ELX	-0.5

Load Combination Design (Continued)

	Description	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
49	1.2D + 1.5Lv1		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
50	1.2D + 1.5Lv2		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
51	1.4D		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
52	1.2D + 1.0Ev + 1.0Eh (0 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
53	1.2D + 1.0Ev + 1.0Eh (30 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
54	1.2D + 1.0Ev + 1.0Eh (60 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
55	1.2D + 1.0Ev + 1.0Eh (90 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
56	1.2D + 1.0Ev + 1.0Eh (120 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
57	1.2D + 1.0Ev + 1.0Eh (150 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
58	1.2D + 1.0Ev + 1.0Eh (180 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
59	1.2D + 1.0Ev + 1.0Eh (210 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
60	1.2D + 1.0Ev + 1.0Eh (240 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
61	1.2D + 1.0Ev + 1.0Eh (270 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
62	1.2D + 1.0Ev + 1.0Eh (300 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
63	1.2D + 1.0Ev + 1.0Eh (330 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
64	0.9D - 1.0Ev + 1.0Eh (0 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
65	0.9D - 1.0Ev + 1.0Eh (30 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
66	0.9D - 1.0Ev + 1.0Eh (60 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
67	0.9D - 1.0Ev + 1.0Eh (90 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
68	0.9D - 1.0Ev + 1.0Eh (120 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
69	0.9D - 1.0Ev + 1.0Eh (150 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
70	0.9D - 1.0Ev + 1.0Eh (180 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
71	0.9D - 1.0Ev + 1.0Eh (210 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
72	0.9D - 1.0Ev + 1.0Eh (240 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
73	0.9D - 1.0Ev + 1.0Eh (270 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
74	0.9D - 1.0Ev + 1.0Eh (300 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
75	0.9D - 1.0Ev + 1.0Eh (330 Deg)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	N1	0	0	0	
2	N2	0	0	-1.5	
3	N3	0	0	-3.078125	
4	N4	0	0	-6.786458	
5	N5	-2.572917	0	-3.078125	
6	N6	2.572917	0	-3.078125	
7	N7	-2.572917	0	-3.296875	
8	N8	2.572917	0	-3.296875	
9	N10	2.489584	0	-3.441213	
10	N11	-0.5	0	-6.786458	
11	N12	0.5	0	-6.786458	
12	N13	-0.556	0	-6.689463	
13	N14	0.556	0	-6.689463	
14	N9	-2.489583	0	-3.441213	
15	N15	-2.322917	0	-3.078125	
16	N18	-0.166667	0	-6.786458	
17	N18A	2.322917	0	-3.078125	
18	N19	0.166667	0	-6.786458	
19	N19A	2.615879	0	-3.514129	
20	N20	0.72595	0	-6.787583	
21	N23	-2.615879	0	-3.514129	
22	N24	-0.72595	0	-6.787583	
23	N24A	-1.299038	0	0.75	
24	N25	-2.665734	0	1.539063	
25	N26	-5.877245	0	3.393229	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
26	N27	-1.379276	0	3.767274	
27	N28	-3.952193	0	-0.689149	
28	N29	-1.568719	0	3.876649	
29	N30	-4.141636	0	-0.579774	
30	N31	-4.22497	0	-0.435436	
31	N32	-5.627245	0	3.826242	
32	N33	-6.127245	0	2.960216	
33	N34	-5.515245	0	3.826242	
34	N35	-6.071245	0	2.863222	
35	N36	-1.735386	0	3.876649	
36	N37	-1.504276	0	3.550767	
37	N38	-5.793912	0	3.537567	
38	N39	-3.827193	0	-0.472642	
39	N40	-5.960579	0	3.248891	
40	N41	-4.351265	0	-0.508353	
41	N42	-6.241194	0	2.765101	
42	N43	-1.735386	0	4.022482	
43	N44	-5.515245	0	4.022482	
44	N46	1.299038	0	0.75	
45	N47	2.665734	0	1.539063	
46	N48	5.877245	0	3.393229	
47	N49	3.952193	0	-0.689149	
48	N50	1.379276	0	3.767274	
49	N51	4.141636	0	-0.579774	
50	N52	1.568719	0	3.876649	
51	N53	1.735386	0	3.876649	
52	N54	6.127245	0	2.960216	
53	N55	5.627245	0	3.826242	
54	N56	6.071245	0	2.863222	
55	N57	5.515245	0	3.826242	
56	N58	4.224969	0	-0.435436	
57	N59	3.827193	0	-0.472642	
58	N60	5.960579	0	3.248891	
59	N61	1.504276	0	3.550767	
60	N62	5.793912	0	3.537567	
61	N63	1.735386	0	4.022482	
62	N64	5.515245	0	4.022482	
63	N65	4.351265	0	-0.508353	
64	N66	6.241194	0	2.765101	
65	N65A	-6.25	0	4.022482	
66	N66A	6.25	0	4.022482	
67	N67	-5.916667	0	4.022482	
68	N69	5.916667	0	4.022482	
69	N70	2.416667	0	4.022482	
70	N71	-5.916667	0	4.350607	
71	N73	5.916667	0	4.350607	
72	N74	2.416667	0	4.350607	
73	N75	-6.25	3.5	4.12144	
74	N76	6.25	3.5	4.12144	
75	N77	-5.916667	3.5	4.12144	
76	N79	5.916667	3.5	4.12144	
77	N80	2.416667	3.5	4.12144	
78	N81	-5.916667	3.5	4.350607	
79	N83	5.916667	3.5	4.350607	
80	N84	2.416667	3.5	4.350607	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
81	N85	-5.916667	5.583333	4.350607	
82	N87	5.916667	5.583333	4.350607	
83	N88	2.416667	5.583333	4.350607	
84	N89	-5.916667	-2.416667	4.350607	
85	N91	5.916667	-2.416667	4.350607	
86	N92	2.416667	-2.416667	4.350607	
87	N94	6.608572	0	3.401418	
88	N95	0.358572	0	-7.4239	
89	N96	6.441905	0	3.112743	
90	N98	0.525238	0	-7.135225	
91	N100	6.72607	0	2.94868	
92	N102	0.809403	0	-7.299287	
93	N104	6.694272	3.5	3.351939	
94	N105	0.444272	3.5	-7.473379	
95	N106	6.527606	3.5	3.063264	
96	N108	0.610939	3.5	-7.184704	
97	N110	6.72607	3.5	2.94868	
98	N112	0.809403	3.5	-7.299287	
99	N114	6.72607	5.583333	2.94868	
100	N116	0.809403	5.583333	-7.299287	
101	N118	6.72607	-2.416667	2.94868	
102	N120	0.809403	-2.416667	-7.299287	
103	N123	-0.358572	0	-7.4239	
104	N124	-6.608572	0	3.401418	
105	N125	-0.525238	0	-7.135225	
106	N127	-6.441905	0	3.112743	
107	N129	-0.809403	0	-7.299287	
108	N131	-6.72607	0	2.94868	
109	N133	-0.444272	3.5	-7.473379	
110	N134	-6.694272	3.5	3.351939	
111	N135	-0.610939	3.5	-7.184704	
112	N137	-6.527606	3.5	3.063264	
113	N139	-0.809403	3.5	-7.299287	
114	N141	-6.72607	3.5	2.94868	
115	N143	-0.809403	5.583333	-7.299287	
116	N145	-6.72607	5.583333	2.94868	
117	N147	-0.809403	-2.416667	-7.299287	
118	N149	-6.72607	-2.416667	2.94868	
119	N149A	-5.668667	3.5	4.12144	
120	N150A	-5.668667	3.5	4.022482	
121	N151	5.668667	3.5	4.12144	
122	N152	5.668667	3.5	4.022482	
123	N153	6.403605	3.5	2.848489	
124	N154	6.317905	3.5	2.897969	
125	N155	0.734939	3.5	-6.96993	
126	N156	0.649238	3.5	-6.920451	
127	N157	-0.734939	3.5	-6.96993	
128	N158	-0.649238	3.5	-6.920451	
129	N159	-6.403605	3.5	2.848489	
130	N160	-6.317905	3.5	2.897969	
131	N161	0	0	-5.286458	
132	N162	0	-3.5	-1.5	
133	N163	-4.578207	0	2.643229	
134	N164	-1.299038	-3.5	0.75	
135	N165	4.578207	0	2.643229	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
136	N166	1.299038	-3.5	0.75	
137	N167	-2.416667	5.583333	4.350607	
138	N168	-2.416667	-2.416667	4.350607	
139	N169	-2.416667	0	4.022482	
140	N170	-2.416667	0	4.350607	
141	N171	-2.416667	3.5	4.12144	
142	N172	-2.416667	3.5	4.350607	
143	N144	2.559403	5.583333	-4.268199	
144	N146	4.777605	3.5	0.032175	
145	N148	4.97607	0	-0.082408	
146	N150	2.275238	0	-4.104136	
147	N173	2.559403	0	-4.268199	
148	N174	2.360938	3.5	-4.153615	
149	N175	2.559403	3.5	-4.268199	
150	N176	4.691905	0	0.081654	
151	N177	4.97607	3.5	-0.082408	
152	N178	2.559403	-2.416667	-4.268199	
153	N179	4.97607	5.583333	-0.082408	
154	N180	4.97607	-2.416667	-0.082408	
155	N181	-4.97607	5.583333	-0.082408	
156	N182	-2.360938	3.5	-4.153615	
157	N183	-2.559403	0	-4.268199	
158	N184	-4.691905	0	0.081654	
159	N185	-4.97607	0	-0.082408	
160	N186	-4.777605	3.5	0.032175	
161	N187	-4.97607	3.5	-0.082408	
162	N188	-2.275238	0	-4.104136	
163	N189	-2.559403	3.5	-4.268199	
164	N190	-4.97607	-2.416667	-0.082408	
165	N191	-2.559403	5.583333	-4.268199	
166	N192	-2.559403	-2.416667	-4.268199	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N46	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N24A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N162	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N164	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N166	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	I _{yy} [in ⁴]	I _{zz} [in ⁴]	J [in ⁴]
1	Standoff Arms	HSS4X4X4	Beam	SquareTube	A500 Gr.B RECT	Typical	3.37	7.8	7.8	12.8
2	Plan Bracing	HSS4X4X4	Beam	SquareTube	A500 Gr.B RECT	Typical	3.37	7.8	7.8	12.8
3	Face Horizontals	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
4	Mount Pipes	PIPE 2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
5	Support Rail	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
6	Bottom Corner Plate	PL1/2X6	Beam	RECT	A36 Gr.36	Typical	3	0.062	9	0.237
7	Plan Brace Connection Plate	PL3/8X6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101
8	Top Corner Braces	L2.5X2.5X4	Beam	Single Angle	A36 Gr.36	Typical	1.19	0.692	0.692	0.026
9	Grating Support Angles	L2X2X3	Beam	Single Angle	A36 Gr.36	Typical	0.722	0.271	0.271	0.009
10	Kickers	LL2.5X2.5X3X3	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical	1.8	2.46	1.07	0.023

Cold Formed Steel Section Sets

Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	I _{yy} [in ⁴]	I _{zz} [in ⁴]	J [in ⁴]
1 Plan Bracing 1	4CU4X375	Beam	None	A653 SS Gr33	Typical	3.977	6.309	9.989	0.186

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	A500 Gr.C RND	29000	11154	0.3	0.65	0.527	46	1.4	62	1.3
7	A500 Gr.C RECT	29000	11154	0.3	0.65	0.527	50	1.4	62	1.3
8	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
9	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
10	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e ⁵ °F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Fu [ksi]
1	A653 SS Gr33	29500	11346	0.3	0.65	0.49	33	45
2	A653 SS Gr50/1	29500	11346	0.3	0.65	0.49	50	65

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N2	N4		Standoff Arms	Beam	SquareTube	A500 Gr.B RECT	Typical
2	M2	N5	N6		Plan Bracing	Beam	SquareTube	A500 Gr.B RECT	Typical
3	M3	N5	N7		Plan Brace Connection Plate	Beam	RECT	A36 Gr.36	Typical
4	M4	N7	N9		Plan Brace Connection Plate	Beam	RECT	A36 Gr.36	Typical
5	M5	N6	N8		Plan Brace Connection Plate	Beam	RECT	A36 Gr.36	Typical
6	M6	N8	N10		Plan Brace Connection Plate	Beam	RECT	A36 Gr.36	Typical
7	M7	N18	N11		Bottom Corner Plate	Beam	RECT	A36 Gr.36	Typical
8	M8	N11	N13		Bottom Corner Plate	Beam	RECT	A36 Gr.36	Typical
9	M9	N19	N12		Bottom Corner Plate	Beam	RECT	A36 Gr.36	Typical
10	M10	N12	N14		Bottom Corner Plate	Beam	RECT	A36 Gr.36	Typical
11	M11	N15	N18		Grating Support Angles	Beam	Single Angle	A36 Gr.36	Typical
12	M12	N18A	N19	270	Grating Support Angles	Beam	Single Angle	A36 Gr.36	Typical
13	M13	N18	N19		RIGID	None	None	RIGID	Typical
14	M14	N14	N20		RIGID	None	None	RIGID	Typical
15	M15	N10	N19A		RIGID	None	None	RIGID	Typical
16	M16	N13	N24		RIGID	None	None	RIGID	Typical
17	M17	N9	N23		RIGID	None	None	RIGID	Typical
18	M18	N24A	N26		Standoff Arms	Beam	SquareTube	A500 Gr.B RECT	Typical
19	M19	N27	N28		Plan Bracing	Beam	SquareTube	A500 Gr.B RECT	Typical
20	M20	N27	N29		Plan Brace Connection Plate	Beam	RECT	A36 Gr.36	Typical
21	M21	N29	N36		Plan Brace Connection Plate	Beam	RECT	A36 Gr.36	Typical
22	M22	N28	N30		Plan Brace Connection Plate	Beam	RECT	A36 Gr.36	Typical
23	M23	N30	N31		Plan Brace Connection Plate	Beam	RECT	A36 Gr.36	Typical
24	M24	N38	N32		Bottom Corner Plate	Beam	RECT	A36 Gr.36	Typical
25	M25	N32	N34		Bottom Corner Plate	Beam	RECT	A36 Gr.36	Typical
26	M26	N40	N33		Bottom Corner Plate	Beam	RECT	A36 Gr.36	Typical
27	M27	N33	N35		Bottom Corner Plate	Beam	RECT	A36 Gr.36	Typical
28	M28	N37	N38		Grating Support Angles	Beam	Single Angle	A36 Gr.36	Typical
29	M29	N39	N40	270	Grating Support Angles	Beam	Single Angle	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
30	M30	N38	N40		RIGID	None	None	RIGID	Typical
31	M31	N35	N42		RIGID	None	None	RIGID	Typical
32	M32	N31	N41		RIGID	None	None	RIGID	Typical
33	M33	N34	N44		RIGID	None	None	RIGID	Typical
34	M34	N36	N43		RIGID	None	None	RIGID	Typical
35	M35	N46	N48		Standoff Arms	Beam	SquareTube	A500 Gr.B RECT	Typical
36	M36	N49	N50		Plan Bracing	Beam	SquareTube	A500 Gr.B RECT	Typical
37	M37	N49	N51		Plan Brace Connection Plate	Beam	RECT	A36 Gr.36	Typical
38	M38	N51	N58		Plan Brace Connection Plate	Beam	RECT	A36 Gr.36	Typical
39	M39	N50	N52		Plan Brace Connection Plate	Beam	RECT	A36 Gr.36	Typical
40	M40	N52	N53		Plan Brace Connection Plate	Beam	RECT	A36 Gr.36	Typical
41	M41	N60	N54		Bottom Corner Plate	Beam	RECT	A36 Gr.36	Typical
42	M42	N54	N56		Bottom Corner Plate	Beam	RECT	A36 Gr.36	Typical
43	M43	N62	N55		Bottom Corner Plate	Beam	RECT	A36 Gr.36	Typical
44	M44	N55	N57		Bottom Corner Plate	Beam	RECT	A36 Gr.36	Typical
45	M45	N59	N60		Grating Support Angles	Beam	Single Angle	A36 Gr.36	Typical
46	M46	N61	N62	270	Grating Support Angles	Beam	Single Angle	A36 Gr.36	Typical
47	M47	N60	N62		RIGID	None	None	RIGID	Typical
48	M48	N57	N64		RIGID	None	None	RIGID	Typical
49	M49	N53	N63		RIGID	None	None	RIGID	Typical
50	M50	N56	N66		RIGID	None	None	RIGID	Typical
51	M51	N58	N65		RIGID	None	None	RIGID	Typical
52	M52	N65A	N66A		Face Horizontals	Beam	Pipe	A53 Gr.B	Typical
53	M53	N75	N76		Support Rail	Beam	Pipe	A53 Gr.B	Typical
54	M54	N69	N73		RIGID	None	None	RIGID	Typical
55	M55	N79	N83		RIGID	None	None	RIGID	Typical
56	M56	N80	N84		RIGID	None	None	RIGID	Typical
57	M57	N70	N74		RIGID	None	None	RIGID	Typical
58	M60	N77	N81		RIGID	None	None	RIGID	Typical
59	M61	N67	N71		RIGID	None	None	RIGID	Typical
60	MP1A	N87	N91		Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
61	MP2A	N88	N92		Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
62	MP4A	N85	N89		Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
63	M66	N94	N95		Face Horizontals	Beam	Pipe	A53 Gr.B	Typical
64	M67	N104	N105		Support Rail	Beam	Pipe	A53 Gr.B	Typical
65	M68	N98	N102		RIGID	None	None	RIGID	Typical
66	M69	N108	N112		RIGID	None	None	RIGID	Typical
67	M74	N106	N110		RIGID	None	None	RIGID	Typical
68	M75	N96	N100		RIGID	None	None	RIGID	Typical
69	MP1C	N116	N120		Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
70	MP4C	N114	N118		Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
71	M80	N123	N124		Face Horizontals	Beam	Pipe	A53 Gr.B	Typical
72	M81	N133	N134		Support Rail	Beam	Pipe	A53 Gr.B	Typical
73	M82	N127	N131		RIGID	None	None	RIGID	Typical
74	M83	N137	N141		RIGID	None	None	RIGID	Typical
75	M88	N135	N139		RIGID	None	None	RIGID	Typical
76	M89	N125	N129		RIGID	None	None	RIGID	Typical
77	MP1B	N145	N149		Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
78	MP4B	N143	N147		Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
79	M94	N149A	N150A		RIGID	None	None	RIGID	Typical
80	M95	N151	N152		RIGID	None	None	RIGID	Typical
81	M96	N153	N154		RIGID	None	None	RIGID	Typical
82	M97	N155	N156		RIGID	None	None	RIGID	Typical
83	M98	N157	N158		RIGID	None	None	RIGID	Typical
84	M99	N159	N160		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
85	M100	N150A	N160	180	Top Corner Braces	Beam	Single Angle	A36 Gr.36	Typical
86	M101	N158	N156	180	Top Corner Braces	Beam	Single Angle	A36 Gr.36	Typical
87	M102	N154	N152	180	Top Corner Braces	Beam	Single Angle	A36 Gr.36	Typical
88	M103	N162	N161		Kickers	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical
89	M104	N164	N163		Kickers	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical
90	M105	N166	N165		Kickers	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical
91	MP3A	N167	N168		Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
92	M107	N171	N172		RIGID	None	None	RIGID	Typical
93	M108	N169	N170		RIGID	None	None	RIGID	Typical
94	MP3C	N179	N180		Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
95	M110	N174	N175		RIGID	None	None	RIGID	Typical
96	M111	N150	N173		RIGID	None	None	RIGID	Typical
97	M112	N146	N177		RIGID	None	None	RIGID	Typical
98	M113	N176	N148		RIGID	None	None	RIGID	Typical
99	MP2C	N144	N178		Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
100	MP3B	N191	N192		Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
101	M116	N186	N187		RIGID	None	None	RIGID	Typical
102	M117	N184	N185		RIGID	None	None	RIGID	Typical
103	M118	N182	N189		RIGID	None	None	RIGID	Typical
104	M119	N188	N183		RIGID	None	None	RIGID	Typical
105	MP2B	N181	N190		Mount Pipes	Beam	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	M1			Yes	N/A	None
2	M2			Yes	N/A	None
3	M3			Yes	N/A	None
4	M4			Yes	N/A	None
5	M5			Yes	N/A	None
6	M6			Yes	N/A	None
7	M7			Yes	N/A	None
8	M8			Yes	N/A	None
9	M9			Yes	N/A	None
10	M10			Yes	N/A	None
11	M11			Yes	N/A	None
12	M12			Yes	N/A	None
13	M13			Yes	** NA **	None
14	M14		BenPIN	Yes	** NA **	None
15	M15		BenPIN	Yes	** NA **	None
16	M16		BenPIN	Yes	** NA **	None
17	M17		BenPIN	Yes	** NA **	None
18	M18			Yes	N/A	None
19	M19			Yes	N/A	None
20	M20			Yes	N/A	None
21	M21			Yes	N/A	None
22	M22			Yes	N/A	None
23	M23			Yes	N/A	None
24	M24			Yes	N/A	None
25	M25			Yes	N/A	None
26	M26			Yes	N/A	None
27	M27			Yes	N/A	None
28	M28			Yes	N/A	None
29	M29			Yes	N/A	None
30	M30			Yes	** NA **	None
31	M31		BenPIN	Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
32	M32		BenPIN	Yes	** NA **	None
33	M33		BenPIN	Yes	** NA **	None
34	M34		BenPIN	Yes	** NA **	None
35	M35			Yes	N/A	None
36	M36			Yes	N/A	None
37	M37			Yes	N/A	None
38	M38			Yes	N/A	None
39	M39			Yes	N/A	None
40	M40			Yes	N/A	None
41	M41			Yes	N/A	None
42	M42			Yes	N/A	None
43	M43			Yes	N/A	None
44	M44			Yes	N/A	None
45	M45			Yes	N/A	None
46	M46			Yes	N/A	None
47	M47			Yes	** NA **	None
48	M48		BenPIN	Yes	** NA **	None
49	M49		BenPIN	Yes	** NA **	None
50	M50		BenPIN	Yes	** NA **	None
51	M51		BenPIN	Yes	** NA **	None
52	M52			Yes	N/A	None
53	M53			Yes	N/A	None
54	M54			Yes	** NA **	None
55	M55			Yes	** NA **	None
56	M56			Yes	** NA **	None
57	M57			Yes	** NA **	None
58	M60			Yes	** NA **	None
59	M61			Yes	** NA **	None
60	MP1A			Yes	N/A	None
61	MP2A			Yes	N/A	None
62	MP4A			Yes	N/A	None
63	M66			Yes	N/A	None
64	M67			Yes	N/A	None
65	M68			Yes	** NA **	None
66	M69			Yes	** NA **	None
67	M74			Yes	** NA **	None
68	M75			Yes	** NA **	None
69	MP1C			Yes	N/A	None
70	MP4C			Yes	N/A	None
71	M80			Yes	N/A	None
72	M81			Yes	N/A	None
73	M82			Yes	** NA **	None
74	M83			Yes	** NA **	None
75	M88			Yes	** NA **	None
76	M89			Yes	** NA **	None
77	MP1B			Yes	N/A	None
78	MP4B			Yes	N/A	None
79	M94			Yes	** NA **	None
80	M95			Yes	** NA **	None
81	M96			Yes	** NA **	None
82	M97			Yes	** NA **	None
83	M98			Yes	** NA **	None
84	M99			Yes	** NA **	None
85	M100			Yes	N/A	None
86	M101			Yes	N/A	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
87	M102			Yes	N/A	None
88	M103	BenPIN	BenPIN	Yes	N/A	None
89	M104	BenPIN	BenPIN	Yes	N/A	None
90	M105	BenPIN	BenPIN	Yes	N/A	None
91	MP3A			Yes	N/A	None
92	M107			Yes	** NA **	None
93	M108			Yes	** NA **	None
94	MP3C			Yes	N/A	None
95	M110			Yes	** NA **	None
96	M111			Yes	** NA **	None
97	M112			Yes	** NA **	None
98	M113			Yes	** NA **	None
99	MP2C			Yes	N/A	None
100	MP3B			Yes	N/A	None
101	M116			Yes	** NA **	None
102	M117			Yes	** NA **	None
103	M118			Yes	** NA **	None
104	M119			Yes	** NA **	None
105	MP2B			Yes	N/A	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
1	M1	Standoff Arms	5.286	Lbyy	N/A	N/A	Lateral
2	M2	Plan Bracing	5.146	Lbyy	N/A	N/A	Lateral
3	M3	Plan Brace Connection Plate	0.219	Lbyy	N/A	N/A	Lateral
4	M4	Plan Brace Connection Plate	0.167	Lbyy	N/A	N/A	Lateral
5	M5	Plan Brace Connection Plate	0.219	Lbyy	N/A	N/A	Lateral
6	M6	Plan Brace Connection Plate	0.167	Lbyy	N/A	N/A	Lateral
7	M7	Bottom Corner Plate	0.333	Lbyy	N/A	N/A	Lateral
8	M8	Bottom Corner Plate	0.112	Lbyy	N/A	N/A	Lateral
9	M9	Bottom Corner Plate	0.333	Lbyy	N/A	N/A	Lateral
10	M10	Bottom Corner Plate	0.112	Lbyy	N/A	N/A	Lateral
11	M11	Grating Support Angles	4.29	Lbyy	N/A	N/A	Lateral
12	M12	Grating Support Angles	4.29	Lbyy	N/A	N/A	Lateral
13	M18	Standoff Arms	5.286	Lbyy	N/A	N/A	Lateral
14	M19	Plan Bracing	5.146	Lbyy	N/A	N/A	Lateral
15	M20	Plan Brace Connection Plate	0.219	Lbyy	N/A	N/A	Lateral
16	M21	Plan Brace Connection Plate	0.167	Lbyy	N/A	N/A	Lateral
17	M22	Plan Brace Connection Plate	0.219	Lbyy	N/A	N/A	Lateral
18	M23	Plan Brace Connection Plate	0.167	Lbyy	N/A	N/A	Lateral
19	M24	Bottom Corner Plate	0.333	Lbyy	N/A	N/A	Lateral
20	M25	Bottom Corner Plate	0.112	Lbyy	N/A	N/A	Lateral
21	M26	Bottom Corner Plate	0.333	Lbyy	N/A	N/A	Lateral
22	M27	Bottom Corner Plate	0.112	Lbyy	N/A	N/A	Lateral
23	M28	Grating Support Angles	4.29	Lbyy	N/A	N/A	Lateral
24	M29	Grating Support Angles	4.29	Lbyy	N/A	N/A	Lateral
25	M35	Standoff Arms	5.286	Lbyy	N/A	N/A	Lateral
26	M36	Plan Bracing	5.146	Lbyy	N/A	N/A	Lateral
27	M37	Plan Brace Connection Plate	0.219	Lbyy	N/A	N/A	Lateral
28	M38	Plan Brace Connection Plate	0.167	Lbyy	N/A	N/A	Lateral
29	M39	Plan Brace Connection Plate	0.219	Lbyy	N/A	N/A	Lateral
30	M40	Plan Brace Connection Plate	0.167	Lbyy	N/A	N/A	Lateral
31	M41	Bottom Corner Plate	0.333	Lbyy	N/A	N/A	Lateral
32	M42	Bottom Corner Plate	0.112	Lbyy	N/A	N/A	Lateral
33	M43	Bottom Corner Plate	0.333	Lbyy	N/A	N/A	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
34	M44	Bottom Corner Plate	0.112	Lbyy	N/A	N/A	Lateral
35	M45	Grating Support Angles	4.29	Lbyy	N/A	N/A	Lateral
36	M46	Grating Support Angles	4.29	Lbyy	N/A	N/A	Lateral
37	M52	Face Horizontals	12.5	Lbyy	N/A	N/A	Lateral
38	M53	Support Rail	12.5	Lbyy	N/A	N/A	Lateral
39	MP1A	Mount Pipes	8	Lbyy	N/A	N/A	Lateral
40	MP2A	Mount Pipes	8	Lbyy	N/A	N/A	Lateral
41	MP4A	Mount Pipes	8	Lbyy	N/A	N/A	Lateral
42	M66	Face Horizontals	12.5	Lbyy	N/A	N/A	Lateral
43	M67	Support Rail	12.5	Lbyy	N/A	N/A	Lateral
44	MP1C	Mount Pipes	8	Lbyy	N/A	N/A	Lateral
45	MP4C	Mount Pipes	8	Lbyy	N/A	N/A	Lateral
46	M80	Face Horizontals	12.5	Lbyy	N/A	N/A	Lateral
47	M81	Support Rail	12.5	Lbyy	N/A	N/A	Lateral
48	MP1B	Mount Pipes	8	Lbyy	N/A	N/A	Lateral
49	MP4B	Mount Pipes	8	Lbyy	N/A	N/A	Lateral
50	M100	Top Corner Braces	1.298	Lbyy	N/A	N/A	Lateral
51	M101	Top Corner Braces	1.298	Lbyy	N/A	N/A	Lateral
52	M102	Top Corner Braces	1.298	Lbyy	N/A	N/A	Lateral
53	M103	Kickers	5.156	Lbyy	N/A	N/A	Lateral
54	M104	Kickers	5.156	Lbyy	N/A	N/A	Lateral
55	M105	Kickers	5.156	Lbyy	N/A	N/A	Lateral
56	MP3A	Mount Pipes	8	Lbyy	N/A	N/A	Lateral
57	MP3C	Mount Pipes	8	Lbyy	N/A	N/A	Lateral
58	MP2C	Mount Pipes	8	Lbyy	N/A	N/A	Lateral
59	MP3B	Mount Pipes	8	Lbyy	N/A	N/A	Lateral
60	MP2B	Mount Pipes	8	Lbyy	N/A	N/A	Lateral

Cold Formed Steel Design Parameters

No Data to Print...							
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Member Point Loads (BLC 1 : Antenna D)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	Y	-20.45	1
2	MP4A	My	-0.015	1
3	MP4A	Mz	0	1
4	MP4A	Y	-20.45	7
5	MP4A	My	-0.015	7
6	MP4A	Mz	0	7
7	MP4B	Y	-20.45	1
8	MP4B	My	0.008	1
9	MP4B	Mz	-0.013	1
10	MP4B	Y	-20.45	7
11	MP4B	My	0.008	7
12	MP4B	Mz	-0.013	7
13	MP4C	Y	-20.45	1
14	MP4C	My	0.008	1
15	MP4C	Mz	0.013	1
16	MP4C	Y	-20.45	7
17	MP4C	My	0.008	7
18	MP4C	Mz	0.013	7
19	MP2A	Y	-64	0.5
20	MP2A	My	-0.048	0.5
21	MP2A	Mz	0	0.5

Member Point Loads (BLC 1 : Antenna D) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
22	MP2A	Y	-64	7.5
23	MP2A	My	-0.048	7.5
24	MP2A	Mz	0	7.5
25	MP2B	Y	-64	0.5
26	MP2B	My	0.024	0.5
27	MP2B	Mz	-0.042	0.5
28	MP2B	Y	-64	7.5
29	MP2B	My	0.024	7.5
30	MP2B	Mz	-0.042	7.5
31	MP2C	Y	-64	0.5
32	MP2C	My	0.024	0.5
33	MP2C	Mz	0.042	0.5
34	MP2C	Y	-64	7.5
35	MP2C	My	0.024	7.5
36	MP2C	Mz	0.042	7.5
37	MP3A	Y	-16	1.5
38	MP3A	My	-0.012	1.5
39	MP3A	Mz	0	1.5
40	MP3A	Y	-16	6.5
41	MP3A	My	-0.012	6.5
42	MP3A	Mz	0	6.5
43	MP3B	Y	-16	1.5
44	MP3B	My	0.006	1.5
45	MP3B	Mz	-0.01	1.5
46	MP3B	Y	-16	6.5
47	MP3B	My	0.006	6.5
48	MP3B	Mz	-0.01	6.5
49	MP3C	Y	-16	1.5
50	MP3C	My	0.006	1.5
51	MP3C	Mz	0.01	1.5
52	MP3C	Y	-16	6.5
53	MP3C	My	0.006	6.5
54	MP3C	Mz	0.01	6.5
55	MP2A	Y	-75	3.5
56	MP2A	My	0.037	3.5
57	MP2A	Mz	0	3.5
58	MP2B	Y	-75	3.5
59	MP2B	My	0.037	3.5
60	MP2B	Mz	0	3.5
61	MP2C	Y	-75	3.5
62	MP2C	My	0.037	3.5
63	MP2C	Mz	0	3.5
64	MP4A	Y	-104	3.5
65	MP4A	My	0.052	3.5
66	MP4A	Mz	0	3.5
67	MP4B	Y	-104	3.5
68	MP4B	My	0.052	3.5
69	MP4B	Mz	0	3.5
70	MP4C	Y	-104	3.5
71	MP4C	My	0.052	3.5
72	MP4C	Mz	0	3.5

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	Y	-53.285	1
2	MP4A	My	-0.04	1
3	MP4A	Mz	0	1
4	MP4A	Y	-53.285	7
5	MP4A	My	-0.04	7
6	MP4A	Mz	0	7
7	MP4B	Y	-53.285	1
8	MP4B	My	0.02	1
9	MP4B	Mz	-0.035	1
10	MP4B	Y	-53.285	7
11	MP4B	My	0.02	7
12	MP4B	Mz	-0.035	7
13	MP4C	Y	-53.285	1
14	MP4C	My	0.02	1
15	MP4C	Mz	0.035	1
16	MP4C	Y	-53.285	7
17	MP4C	My	0.02	7
18	MP4C	Mz	0.035	7
19	MP2A	Y	-133.782	0.5
20	MP2A	My	-0.1	0.5
21	MP2A	Mz	0	0.5
22	MP2A	Y	-133.782	7.5
23	MP2A	My	-0.1	7.5
24	MP2A	Mz	0	7.5
25	MP2B	Y	-133.782	0.5
26	MP2B	My	0.05	0.5
27	MP2B	Mz	-0.087	0.5
28	MP2B	Y	-133.782	7.5
29	MP2B	My	0.05	7.5
30	MP2B	Mz	-0.087	7.5
31	MP2C	Y	-133.782	0.5
32	MP2C	My	0.05	0.5
33	MP2C	Mz	0.087	0.5
34	MP2C	Y	-133.782	7.5
35	MP2C	My	0.05	7.5
36	MP2C	Mz	0.087	7.5
37	MP3A	Y	-50.897	1.5
38	MP3A	My	-0.038	1.5
39	MP3A	Mz	0	1.5
40	MP3A	Y	-50.897	6.5
41	MP3A	My	-0.038	6.5
42	MP3A	Mz	0	6.5
43	MP3B	Y	-50.897	1.5
44	MP3B	My	0.019	1.5
45	MP3B	Mz	-0.033	1.5
46	MP3B	Y	-50.897	6.5
47	MP3B	My	0.019	6.5
48	MP3B	Mz	-0.033	6.5
49	MP3C	Y	-50.897	1.5
50	MP3C	My	0.019	1.5
51	MP3C	Mz	0.033	1.5
52	MP3C	Y	-50.897	6.5
53	MP3C	My	0.019	6.5
54	MP3C	Mz	0.033	6.5
55	MP2A	Y	-47.918	3.5

Member Point Loads (BLC 2 : Antenna Di) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
56	MP2A	My	0.024	3.5
57	MP2A	Mz	0	3.5
58	MP2B	Y	-47.918	3.5
59	MP2B	My	0.024	3.5
60	MP2B	Mz	0	3.5
61	MP2C	Y	-47.918	3.5
62	MP2C	My	0.024	3.5
63	MP2C	Mz	0	3.5
64	MP4A	Y	-53.892	3.5
65	MP4A	My	0.027	3.5
66	MP4A	Mz	0	3.5
67	MP4B	Y	-53.892	3.5
68	MP4B	My	0.027	3.5
69	MP4B	Mz	0	3.5
70	MP4C	Y	-53.892	3.5
71	MP4C	My	0.027	3.5
72	MP4C	Mz	0	3.5

Member Point Loads (BLC 3 : Antenna Wo (0 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	0	1
2	MP4A	Z	-179.751	1
3	MP4A	Mx	0	1
4	MP4A	X	0	7
5	MP4A	Z	-179.751	7
6	MP4A	Mx	0	7
7	MP4B	X	0	1
8	MP4B	Z	-113.583	1
9	MP4B	Mx	0.074	1
10	MP4B	X	0	7
11	MP4B	Z	-113.583	7
12	MP4B	Mx	0.074	7
13	MP4C	X	0	1
14	MP4C	Z	-113.583	1
15	MP4C	Mx	-0.074	1
16	MP4C	X	0	7
17	MP4C	Z	-113.583	7
18	MP4C	Mx	-0.074	7
19	MP2A	X	0	0.5
20	MP2A	Z	-445.854	0.5
21	MP2A	Mx	0	0.5
22	MP2A	X	0	7.5
23	MP2A	Z	-445.854	7.5
24	MP2A	Mx	0	7.5
25	MP2B	X	0	0.5
26	MP2B	Z	-258.313	0.5
27	MP2B	Mx	0.168	0.5
28	MP2B	X	0	7.5
29	MP2B	Z	-258.313	7.5
30	MP2B	Mx	0.168	7.5
31	MP2C	X	0	0.5
32	MP2C	Z	-258.313	0.5
33	MP2C	Mx	-0.168	0.5
34	MP2C	X	0	7.5
35	MP2C	Z	-258.313	7.5

Member Point Loads (BLC 3 : Antenna Wo (0 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
36	MP2C	Mx	-0.168	7.5
37	MP3A	X	0	1.5
38	MP3A	Z	-194.29	1.5
39	MP3A	Mx	0	1.5
40	MP3A	X	0	6.5
41	MP3A	Z	-194.29	6.5
42	MP3A	Mx	0	6.5
43	MP3B	X	0	1.5
44	MP3B	Z	-106.948	1.5
45	MP3B	Mx	0.069	1.5
46	MP3B	X	0	6.5
47	MP3B	Z	-106.948	6.5
48	MP3B	Mx	0.069	6.5
49	MP3C	X	0	1.5
50	MP3C	Z	-106.948	1.5
51	MP3C	Mx	-0.069	1.5
52	MP3C	X	0	6.5
53	MP3C	Z	-106.948	6.5
54	MP3C	Mx	-0.069	6.5
55	MP2A	X	0	3.5
56	MP2A	Z	-86.792	3.5
57	MP2A	Mx	0	3.5
58	MP2B	X	0	3.5
59	MP2B	Z	-86.792	3.5
60	MP2B	Mx	0	3.5
61	MP2C	X	0	3.5
62	MP2C	Z	-86.792	3.5
63	MP2C	Mx	0	3.5
64	MP4A	X	0	3.5
65	MP4A	Z	-94.281	3.5
66	MP4A	Mx	0	3.5
67	MP4B	X	0	3.5
68	MP4B	Z	-94.281	3.5
69	MP4B	Mx	0	3.5
70	MP4C	X	0	3.5
71	MP4C	Z	-94.281	3.5
72	MP4C	Mx	0	3.5

Member Point Loads (BLC 4 : Antenna Wo (30 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	78.848	1
2	MP4A	Z	-136.568	1
3	MP4A	Mx	-0.059	1
4	MP4A	X	78.848	7
5	MP4A	Z	-136.568	7
6	MP4A	Mx	-0.059	7
7	MP4B	X	45.763	1
8	MP4B	Z	-79.265	1
9	MP4B	Mx	0.069	1
10	MP4B	X	45.763	7
11	MP4B	Z	-79.265	7
12	MP4B	Mx	0.069	7
13	MP4C	X	78.848	1
14	MP4C	Z	-136.568	1
15	MP4C	Mx	-0.059	1

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
16	MP4C	X	78.848	7
17	MP4C	Z	-136.568	7
18	MP4C	Mx	-0.059	7
19	MP2A	X	191.67	0.5
20	MP2A	Z	-331.982	0.5
21	MP2A	Mx	-0.144	0.5
22	MP2A	X	191.67	7.5
23	MP2A	Z	-331.982	7.5
24	MP2A	Mx	-0.144	7.5
25	MP2B	X	97.9	0.5
26	MP2B	Z	-169.567	0.5
27	MP2B	Mx	0.147	0.5
28	MP2B	X	97.9	7.5
29	MP2B	Z	-169.567	7.5
30	MP2B	Mx	0.147	7.5
31	MP2C	X	191.67	0.5
32	MP2C	Z	-331.982	0.5
33	MP2C	Mx	-0.144	0.5
34	MP2C	X	191.67	7.5
35	MP2C	Z	-331.982	7.5
36	MP2C	Mx	-0.144	7.5
37	MP3A	X	82.588	1.5
38	MP3A	Z	-143.047	1.5
39	MP3A	Mx	-0.062	1.5
40	MP3A	X	82.588	6.5
41	MP3A	Z	-143.047	6.5
42	MP3A	Mx	-0.062	6.5
43	MP3B	X	38.917	1.5
44	MP3B	Z	-67.406	1.5
45	MP3B	Mx	0.058	1.5
46	MP3B	X	38.917	6.5
47	MP3B	Z	-67.406	6.5
48	MP3B	Mx	0.058	6.5
49	MP3C	X	82.588	1.5
50	MP3C	Z	-143.047	1.5
51	MP3C	Mx	-0.062	1.5
52	MP3C	X	82.588	6.5
53	MP3C	Z	-143.047	6.5
54	MP3C	Mx	-0.062	6.5
55	MP2A	X	41.255	3.5
56	MP2A	Z	-71.455	3.5
57	MP2A	Mx	0.021	3.5
58	MP2B	X	41.255	3.5
59	MP2B	Z	-71.455	3.5
60	MP2B	Mx	0.021	3.5
61	MP2C	X	41.255	3.5
62	MP2C	Z	-71.455	3.5
63	MP2C	Mx	0.021	3.5
64	MP4A	X	44.64	3.5
65	MP4A	Z	-77.318	3.5
66	MP4A	Mx	0.022	3.5
67	MP4B	X	44.64	3.5
68	MP4B	Z	-77.318	3.5
69	MP4B	Mx	0.022	3.5
70	MP4C	X	44.64	3.5

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
71	MP4C	Z	-77.318	3.5
72	MP4C	Mx	0.022	3.5

Member Point Loads (BLC 5 : Antenna Wo (60 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	98.366	1
2	MP4A	Z	-56.792	1
3	MP4A	Mx	-0.074	1
4	MP4A	X	98.366	7
5	MP4A	Z	-56.792	7
6	MP4A	Mx	-0.074	7
7	MP4B	X	98.366	1
8	MP4B	Z	-56.792	1
9	MP4B	Mx	0.074	1
10	MP4B	X	98.366	7
11	MP4B	Z	-56.792	7
12	MP4B	Mx	0.074	7
13	MP4C	X	155.669	1
14	MP4C	Z	-89.876	1
15	MP4C	Mx	0	1
16	MP4C	X	155.669	7
17	MP4C	Z	-89.876	7
18	MP4C	Mx	0	7
19	MP2A	X	223.705	0.5
20	MP2A	Z	-129.156	0.5
21	MP2A	Mx	-0.168	0.5
22	MP2A	X	223.705	7.5
23	MP2A	Z	-129.156	7.5
24	MP2A	Mx	-0.168	7.5
25	MP2B	X	223.705	0.5
26	MP2B	Z	-129.156	0.5
27	MP2B	Mx	0.168	0.5
28	MP2B	X	223.705	7.5
29	MP2B	Z	-129.156	7.5
30	MP2B	Mx	0.168	7.5
31	MP2C	X	386.121	0.5
32	MP2C	Z	-222.927	0.5
33	MP2C	Mx	0	0.5
34	MP2C	X	386.121	7.5
35	MP2C	Z	-222.927	7.5
36	MP2C	Mx	0	7.5
37	MP3A	X	92.619	1.5
38	MP3A	Z	-53.474	1.5
39	MP3A	Mx	-0.069	1.5
40	MP3A	X	92.619	6.5
41	MP3A	Z	-53.474	6.5
42	MP3A	Mx	-0.069	6.5
43	MP3B	X	92.619	1.5
44	MP3B	Z	-53.474	1.5
45	MP3B	Mx	0.069	1.5
46	MP3B	X	92.619	6.5
47	MP3B	Z	-53.474	6.5
48	MP3B	Mx	0.069	6.5
49	MP3C	X	168.26	1.5
50	MP3C	Z	-97.145	1.5

Member Point Loads (BLC 5 : Antenna Wo (60 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
51	MP3C	Mx	0	1.5
52	MP3C	X	168.26	6.5
53	MP3C	Z	-97.145	6.5
54	MP3C	Mx	0	6.5
55	MP2A	X	64.037	3.5
56	MP2A	Z	-36.972	3.5
57	MP2A	Mx	0.032	3.5
58	MP2B	X	64.037	3.5
59	MP2B	Z	-36.972	3.5
60	MP2B	Mx	0.032	3.5
61	MP2C	X	64.037	3.5
62	MP2C	Z	-36.972	3.5
63	MP2C	Mx	0.032	3.5
64	MP4A	X	68.654	3.5
65	MP4A	Z	-39.637	3.5
66	MP4A	Mx	0.034	3.5
67	MP4B	X	68.654	3.5
68	MP4B	Z	-39.637	3.5
69	MP4B	Mx	0.034	3.5
70	MP4C	X	68.654	3.5
71	MP4C	Z	-39.637	3.5
72	MP4C	Mx	0.034	3.5

Member Point Loads (BLC 6 : Antenna Wo (90 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	91.527	1
2	MP4A	Z	0	1
3	MP4A	Mx	-0.069	1
4	MP4A	X	91.527	7
5	MP4A	Z	0	7
6	MP4A	Mx	-0.069	7
7	MP4B	X	157.695	1
8	MP4B	Z	0	1
9	MP4B	Mx	0.059	1
10	MP4B	X	157.695	7
11	MP4B	Z	0	7
12	MP4B	Mx	0.059	7
13	MP4C	X	157.695	1
14	MP4C	Z	0	1
15	MP4C	Mx	0.059	1
16	MP4C	X	157.695	7
17	MP4C	Z	0	7
18	MP4C	Mx	0.059	7
19	MP2A	X	195.799	0.5
20	MP2A	Z	0	0.5
21	MP2A	Mx	-0.147	0.5
22	MP2A	X	195.799	7.5
23	MP2A	Z	0	7.5
24	MP2A	Mx	-0.147	7.5
25	MP2B	X	383.34	0.5
26	MP2B	Z	0	0.5
27	MP2B	Mx	0.144	0.5
28	MP2B	X	383.34	7.5
29	MP2B	Z	0	7.5
30	MP2B	Mx	0.144	7.5

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
31	MP2C	X	383.34	0.5
32	MP2C	Z	0	0.5
33	MP2C	Mx	0.144	0.5
34	MP2C	X	383.34	7.5
35	MP2C	Z	0	7.5
36	MP2C	Mx	0.144	7.5
37	MP3A	X	77.833	1.5
38	MP3A	Z	0	1.5
39	MP3A	Mx	-0.058	1.5
40	MP3A	X	77.833	6.5
41	MP3A	Z	0	6.5
42	MP3A	Mx	-0.058	6.5
43	MP3B	X	165.176	1.5
44	MP3B	Z	0	1.5
45	MP3B	Mx	0.062	1.5
46	MP3B	X	165.176	6.5
47	MP3B	Z	0	6.5
48	MP3B	Mx	0.062	6.5
49	MP3C	X	165.176	1.5
50	MP3C	Z	0	1.5
51	MP3C	Mx	0.062	1.5
52	MP3C	X	165.176	6.5
53	MP3C	Z	0	6.5
54	MP3C	Mx	0.062	6.5
55	MP2A	X	69.661	3.5
56	MP2A	Z	0	3.5
57	MP2A	Mx	0.035	3.5
58	MP2B	X	69.661	3.5
59	MP2B	Z	0	3.5
60	MP2B	Mx	0.035	3.5
61	MP2C	X	69.661	3.5
62	MP2C	Z	0	3.5
63	MP2C	Mx	0.035	3.5
64	MP4A	X	74.272	3.5
65	MP4A	Z	0	3.5
66	MP4A	Mx	0.037	3.5
67	MP4B	X	74.272	3.5
68	MP4B	Z	0	3.5
69	MP4B	Mx	0.037	3.5
70	MP4C	X	74.272	3.5
71	MP4C	Z	0	3.5
72	MP4C	Mx	0.037	3.5

Member Point Loads (BLC 7 : Antenna Wo (120 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	98.366	1
2	MP4A	Z	56.792	1
3	MP4A	Mx	-0.074	1
4	MP4A	X	98.366	7
5	MP4A	Z	56.792	7
6	MP4A	Mx	-0.074	7
7	MP4B	X	155.669	1
8	MP4B	Z	89.876	1
9	MP4B	Mx	0	1
10	MP4B	X	155.669	7

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
11	MP4B	Z	89.876	7
12	MP4B	Mx	0	7
13	MP4C	X	98.366	1
14	MP4C	Z	56.792	1
15	MP4C	Mx	0.074	1
16	MP4C	X	98.366	7
17	MP4C	Z	56.792	7
18	MP4C	Mx	0.074	7
19	MP2A	X	223.705	0.5
20	MP2A	Z	129.156	0.5
21	MP2A	Mx	-0.168	0.5
22	MP2A	X	223.705	7.5
23	MP2A	Z	129.156	7.5
24	MP2A	Mx	-0.168	7.5
25	MP2B	X	386.121	0.5
26	MP2B	Z	222.927	0.5
27	MP2B	Mx	0	0.5
28	MP2B	X	386.121	7.5
29	MP2B	Z	222.927	7.5
30	MP2B	Mx	0	7.5
31	MP2C	X	223.705	0.5
32	MP2C	Z	129.156	0.5
33	MP2C	Mx	0.168	0.5
34	MP2C	X	223.705	7.5
35	MP2C	Z	129.156	7.5
36	MP2C	Mx	0.168	7.5
37	MP3A	X	92.619	1.5
38	MP3A	Z	53.474	1.5
39	MP3A	Mx	-0.069	1.5
40	MP3A	X	92.619	6.5
41	MP3A	Z	53.474	6.5
42	MP3A	Mx	-0.069	6.5
43	MP3B	X	168.26	1.5
44	MP3B	Z	97.145	1.5
45	MP3B	Mx	0	1.5
46	MP3B	X	168.26	6.5
47	MP3B	Z	97.145	6.5
48	MP3B	Mx	0	6.5
49	MP3C	X	92.619	1.5
50	MP3C	Z	53.474	1.5
51	MP3C	Mx	0.069	1.5
52	MP3C	X	92.619	6.5
53	MP3C	Z	53.474	6.5
54	MP3C	Mx	0.069	6.5
55	MP2A	X	64.037	3.5
56	MP2A	Z	36.972	3.5
57	MP2A	Mx	0.032	3.5
58	MP2B	X	64.037	3.5
59	MP2B	Z	36.972	3.5
60	MP2B	Mx	0.032	3.5
61	MP2C	X	64.037	3.5
62	MP2C	Z	36.972	3.5
63	MP2C	Mx	0.032	3.5
64	MP4A	X	68.654	3.5
65	MP4A	Z	39.637	3.5

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
66	MP4A	Mx	0.034	3.5
67	MP4B	X	68.654	3.5
68	MP4B	Z	39.637	3.5
69	MP4B	Mx	0.034	3.5
70	MP4C	X	68.654	3.5
71	MP4C	Z	39.637	3.5
72	MP4C	Mx	0.034	3.5

Member Point Loads (BLC 8 : Antenna Wo (150 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	78.848	1
2	MP4A	Z	136.568	1
3	MP4A	Mx	-0.059	1
4	MP4A	X	78.848	7
5	MP4A	Z	136.568	7
6	MP4A	Mx	-0.059	7
7	MP4B	X	78.848	1
8	MP4B	Z	136.568	1
9	MP4B	Mx	-0.059	1
10	MP4B	X	78.848	7
11	MP4B	Z	136.568	7
12	MP4B	Mx	-0.059	7
13	MP4C	X	45.763	1
14	MP4C	Z	79.265	1
15	MP4C	Mx	0.069	1
16	MP4C	X	45.763	7
17	MP4C	Z	79.265	7
18	MP4C	Mx	0.069	7
19	MP2A	X	191.67	0.5
20	MP2A	Z	331.982	0.5
21	MP2A	Mx	-0.144	0.5
22	MP2A	X	191.67	7.5
23	MP2A	Z	331.982	7.5
24	MP2A	Mx	-0.144	7.5
25	MP2B	X	191.67	0.5
26	MP2B	Z	331.982	0.5
27	MP2B	Mx	-0.144	0.5
28	MP2B	X	191.67	7.5
29	MP2B	Z	331.982	7.5
30	MP2B	Mx	-0.144	7.5
31	MP2C	X	97.9	0.5
32	MP2C	Z	169.567	0.5
33	MP2C	Mx	0.147	0.5
34	MP2C	X	97.9	7.5
35	MP2C	Z	169.567	7.5
36	MP2C	Mx	0.147	7.5
37	MP3A	X	82.588	1.5
38	MP3A	Z	143.047	1.5
39	MP3A	Mx	-0.062	1.5
40	MP3A	X	82.588	6.5
41	MP3A	Z	143.047	6.5
42	MP3A	Mx	-0.062	6.5
43	MP3B	X	82.588	1.5
44	MP3B	Z	143.047	1.5
45	MP3B	Mx	-0.062	1.5

Member Point Loads (BLC 8 : Antenna Wo (150 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
46	MP3B	X	82.588	6.5
47	MP3B	Z	143.047	6.5
48	MP3B	Mx	-0.062	6.5
49	MP3C	X	38.917	1.5
50	MP3C	Z	67.406	1.5
51	MP3C	Mx	0.058	1.5
52	MP3C	X	38.917	6.5
53	MP3C	Z	67.406	6.5
54	MP3C	Mx	0.058	6.5
55	MP2A	X	41.255	3.5
56	MP2A	Z	71.455	3.5
57	MP2A	Mx	0.021	3.5
58	MP2B	X	41.255	3.5
59	MP2B	Z	71.455	3.5
60	MP2B	Mx	0.021	3.5
61	MP2C	X	41.255	3.5
62	MP2C	Z	71.455	3.5
63	MP2C	Mx	0.021	3.5
64	MP4A	X	44.64	3.5
65	MP4A	Z	77.318	3.5
66	MP4A	Mx	0.022	3.5
67	MP4B	X	44.64	3.5
68	MP4B	Z	77.318	3.5
69	MP4B	Mx	0.022	3.5
70	MP4C	X	44.64	3.5
71	MP4C	Z	77.318	3.5
72	MP4C	Mx	0.022	3.5

Member Point Loads (BLC 9 : Antenna Wo (180 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	0	1
2	MP4A	Z	179.751	1
3	MP4A	Mx	0	1
4	MP4A	X	0	7
5	MP4A	Z	179.751	7
6	MP4A	Mx	0	7
7	MP4B	X	0	1
8	MP4B	Z	113.583	1
9	MP4B	Mx	-0.074	1
10	MP4B	X	0	7
11	MP4B	Z	113.583	7
12	MP4B	Mx	-0.074	7
13	MP4C	X	0	1
14	MP4C	Z	113.583	1
15	MP4C	Mx	0.074	1
16	MP4C	X	0	7
17	MP4C	Z	113.583	7
18	MP4C	Mx	0.074	7
19	MP2A	X	0	0.5
20	MP2A	Z	445.854	0.5
21	MP2A	Mx	0	0.5
22	MP2A	X	0	7.5
23	MP2A	Z	445.854	7.5
24	MP2A	Mx	0	7.5
25	MP2B	X	0	0.5

Member Point Loads (BLC 9 : Antenna Wo (180 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
26	MP2B	Z	258.313	0.5
27	MP2B	Mx	-0.168	0.5
28	MP2B	X	0	7.5
29	MP2B	Z	258.313	7.5
30	MP2B	Mx	-0.168	7.5
31	MP2C	X	0	0.5
32	MP2C	Z	258.313	0.5
33	MP2C	Mx	0.168	0.5
34	MP2C	X	0	7.5
35	MP2C	Z	258.313	7.5
36	MP2C	Mx	0.168	7.5
37	MP3A	X	0	1.5
38	MP3A	Z	194.29	1.5
39	MP3A	Mx	0	1.5
40	MP3A	X	0	6.5
41	MP3A	Z	194.29	6.5
42	MP3A	Mx	0	6.5
43	MP3B	X	0	1.5
44	MP3B	Z	106.948	1.5
45	MP3B	Mx	-0.069	1.5
46	MP3B	X	0	6.5
47	MP3B	Z	106.948	6.5
48	MP3B	Mx	-0.069	6.5
49	MP3C	X	0	1.5
50	MP3C	Z	106.948	1.5
51	MP3C	Mx	0.069	1.5
52	MP3C	X	0	6.5
53	MP3C	Z	106.948	6.5
54	MP3C	Mx	0.069	6.5
55	MP2A	X	0	3.5
56	MP2A	Z	86.792	3.5
57	MP2A	Mx	0	3.5
58	MP2B	X	0	3.5
59	MP2B	Z	86.792	3.5
60	MP2B	Mx	0	3.5
61	MP2C	X	0	3.5
62	MP2C	Z	86.792	3.5
63	MP2C	Mx	0	3.5
64	MP4A	X	0	3.5
65	MP4A	Z	94.281	3.5
66	MP4A	Mx	0	3.5
67	MP4B	X	0	3.5
68	MP4B	Z	94.281	3.5
69	MP4B	Mx	0	3.5
70	MP4C	X	0	3.5
71	MP4C	Z	94.281	3.5
72	MP4C	Mx	0	3.5

Member Point Loads (BLC 10 : Antenna Wo (210 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-78.848	1
2	MP4A	Z	136.568	1
3	MP4A	Mx	0.059	1
4	MP4A	X	-78.848	7
5	MP4A	Z	136.568	7

Member Point Loads (BLC 10 : Antenna Wo (210 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
6	MP4A	Mx	0.059	7
7	MP4B	X	-45.763	1
8	MP4B	Z	79.265	1
9	MP4B	Mx	-0.069	1
10	MP4B	X	-45.763	7
11	MP4B	Z	79.265	7
12	MP4B	Mx	-0.069	7
13	MP4C	X	-78.848	1
14	MP4C	Z	136.568	1
15	MP4C	Mx	0.059	1
16	MP4C	X	-78.848	7
17	MP4C	Z	136.568	7
18	MP4C	Mx	0.059	7
19	MP2A	X	-191.67	0.5
20	MP2A	Z	331.982	0.5
21	MP2A	Mx	0.144	0.5
22	MP2A	X	-191.67	7.5
23	MP2A	Z	331.982	7.5
24	MP2A	Mx	0.144	7.5
25	MP2B	X	-97.9	0.5
26	MP2B	Z	169.567	0.5
27	MP2B	Mx	-0.147	0.5
28	MP2B	X	-97.9	7.5
29	MP2B	Z	169.567	7.5
30	MP2B	Mx	-0.147	7.5
31	MP2C	X	-191.67	0.5
32	MP2C	Z	331.982	0.5
33	MP2C	Mx	0.144	0.5
34	MP2C	X	-191.67	7.5
35	MP2C	Z	331.982	7.5
36	MP2C	Mx	0.144	7.5
37	MP3A	X	-82.588	1.5
38	MP3A	Z	143.047	1.5
39	MP3A	Mx	0.062	1.5
40	MP3A	X	-82.588	6.5
41	MP3A	Z	143.047	6.5
42	MP3A	Mx	0.062	6.5
43	MP3B	X	-38.917	1.5
44	MP3B	Z	67.406	1.5
45	MP3B	Mx	-0.058	1.5
46	MP3B	X	-38.917	6.5
47	MP3B	Z	67.406	6.5
48	MP3B	Mx	-0.058	6.5
49	MP3C	X	-82.588	1.5
50	MP3C	Z	143.047	1.5
51	MP3C	Mx	0.062	1.5
52	MP3C	X	-82.588	6.5
53	MP3C	Z	143.047	6.5
54	MP3C	Mx	0.062	6.5
55	MP2A	X	-41.255	3.5
56	MP2A	Z	71.455	3.5
57	MP2A	Mx	-0.021	3.5
58	MP2B	X	-41.255	3.5
59	MP2B	Z	71.455	3.5
60	MP2B	Mx	-0.021	3.5

Member Point Loads (BLC 10 : Antenna Wo (210 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
61	MP2C	X	-41.255	3.5
62	MP2C	Z	71.455	3.5
63	MP2C	Mx	-0.021	3.5
64	MP4A	X	-44.64	3.5
65	MP4A	Z	77.318	3.5
66	MP4A	Mx	-0.022	3.5
67	MP4B	X	-44.64	3.5
68	MP4B	Z	77.318	3.5
69	MP4B	Mx	-0.022	3.5
70	MP4C	X	-44.64	3.5
71	MP4C	Z	77.318	3.5
72	MP4C	Mx	-0.022	3.5

Member Point Loads (BLC 11 : Antenna Wo (240 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-98.366	1
2	MP4A	Z	56.792	1
3	MP4A	Mx	0.074	1
4	MP4A	X	-98.366	7
5	MP4A	Z	56.792	7
6	MP4A	Mx	0.074	7
7	MP4B	X	-98.366	1
8	MP4B	Z	56.792	1
9	MP4B	Mx	-0.074	1
10	MP4B	X	-98.366	7
11	MP4B	Z	56.792	7
12	MP4B	Mx	-0.074	7
13	MP4C	X	-155.669	1
14	MP4C	Z	89.876	1
15	MP4C	Mx	0	1
16	MP4C	X	-155.669	7
17	MP4C	Z	89.876	7
18	MP4C	Mx	0	7
19	MP2A	X	-223.705	0.5
20	MP2A	Z	129.156	0.5
21	MP2A	Mx	0.168	0.5
22	MP2A	X	-223.705	7.5
23	MP2A	Z	129.156	7.5
24	MP2A	Mx	0.168	7.5
25	MP2B	X	-223.705	0.5
26	MP2B	Z	129.156	0.5
27	MP2B	Mx	-0.168	0.5
28	MP2B	X	-223.705	7.5
29	MP2B	Z	129.156	7.5
30	MP2B	Mx	-0.168	7.5
31	MP2C	X	-386.121	0.5
32	MP2C	Z	222.927	0.5
33	MP2C	Mx	0	0.5
34	MP2C	X	-386.121	7.5
35	MP2C	Z	222.927	7.5
36	MP2C	Mx	0	7.5
37	MP3A	X	-92.619	1.5
38	MP3A	Z	53.474	1.5
39	MP3A	Mx	0.069	1.5
40	MP3A	X	-92.619	6.5

Member Point Loads (BLC 11 : Antenna Wo (240 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
41	MP3A	Z	53.474	6.5
42	MP3A	Mx	0.069	6.5
43	MP3B	X	-92.619	1.5
44	MP3B	Z	53.474	1.5
45	MP3B	Mx	-0.069	1.5
46	MP3B	X	-92.619	6.5
47	MP3B	Z	53.474	6.5
48	MP3B	Mx	-0.069	6.5
49	MP3C	X	-168.26	1.5
50	MP3C	Z	97.145	1.5
51	MP3C	Mx	0	1.5
52	MP3C	X	-168.26	6.5
53	MP3C	Z	97.145	6.5
54	MP3C	Mx	0	6.5
55	MP2A	X	-64.037	3.5
56	MP2A	Z	36.972	3.5
57	MP2A	Mx	-0.032	3.5
58	MP2B	X	-64.037	3.5
59	MP2B	Z	36.972	3.5
60	MP2B	Mx	-0.032	3.5
61	MP2C	X	-64.037	3.5
62	MP2C	Z	36.972	3.5
63	MP2C	Mx	-0.032	3.5
64	MP4A	X	-68.654	3.5
65	MP4A	Z	39.637	3.5
66	MP4A	Mx	-0.034	3.5
67	MP4B	X	-68.654	3.5
68	MP4B	Z	39.637	3.5
69	MP4B	Mx	-0.034	3.5
70	MP4C	X	-68.654	3.5
71	MP4C	Z	39.637	3.5
72	MP4C	Mx	-0.034	3.5

Member Point Loads (BLC 12 : Antenna Wo (270 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-91.527	1
2	MP4A	Z	0	1
3	MP4A	Mx	0.069	1
4	MP4A	X	-91.527	7
5	MP4A	Z	0	7
6	MP4A	Mx	0.069	7
7	MP4B	X	-157.695	1
8	MP4B	Z	0	1
9	MP4B	Mx	-0.059	1
10	MP4B	X	-157.695	7
11	MP4B	Z	0	7
12	MP4B	Mx	-0.059	7
13	MP4C	X	-157.695	1
14	MP4C	Z	0	1
15	MP4C	Mx	-0.059	1
16	MP4C	X	-157.695	7
17	MP4C	Z	0	7
18	MP4C	Mx	-0.059	7
19	MP2A	X	-195.799	0.5
20	MP2A	Z	0	0.5

Member Point Loads (BLC 12 : Antenna Wo (270 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
21	MP2A	Mx	0.147	0.5
22	MP2A	X	-195.799	7.5
23	MP2A	Z	0	7.5
24	MP2A	Mx	0.147	7.5
25	MP2B	X	-383.34	0.5
26	MP2B	Z	0	0.5
27	MP2B	Mx	-0.144	0.5
28	MP2B	X	-383.34	7.5
29	MP2B	Z	0	7.5
30	MP2B	Mx	-0.144	7.5
31	MP2C	X	-383.34	0.5
32	MP2C	Z	0	0.5
33	MP2C	Mx	-0.144	0.5
34	MP2C	X	-383.34	7.5
35	MP2C	Z	0	7.5
36	MP2C	Mx	-0.144	7.5
37	MP3A	X	-77.833	1.5
38	MP3A	Z	0	1.5
39	MP3A	Mx	0.058	1.5
40	MP3A	X	-77.833	6.5
41	MP3A	Z	0	6.5
42	MP3A	Mx	0.058	6.5
43	MP3B	X	-165.176	1.5
44	MP3B	Z	0	1.5
45	MP3B	Mx	-0.062	1.5
46	MP3B	X	-165.176	6.5
47	MP3B	Z	0	6.5
48	MP3B	Mx	-0.062	6.5
49	MP3C	X	-165.176	1.5
50	MP3C	Z	0	1.5
51	MP3C	Mx	-0.062	1.5
52	MP3C	X	-165.176	6.5
53	MP3C	Z	0	6.5
54	MP3C	Mx	-0.062	6.5
55	MP2A	X	-69.661	3.5
56	MP2A	Z	0	3.5
57	MP2A	Mx	-0.035	3.5
58	MP2B	X	-69.661	3.5
59	MP2B	Z	0	3.5
60	MP2B	Mx	-0.035	3.5
61	MP2C	X	-69.661	3.5
62	MP2C	Z	0	3.5
63	MP2C	Mx	-0.035	3.5
64	MP4A	X	-74.272	3.5
65	MP4A	Z	0	3.5
66	MP4A	Mx	-0.037	3.5
67	MP4B	X	-74.272	3.5
68	MP4B	Z	0	3.5
69	MP4B	Mx	-0.037	3.5
70	MP4C	X	-74.272	3.5
71	MP4C	Z	0	3.5
72	MP4C	Mx	-0.037	3.5

Member Point Loads (BLC 13 : Antenna Wo (300 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-98.366	1
2	MP4A	Z	-56.792	1
3	MP4A	Mx	0.074	1
4	MP4A	X	-98.366	7
5	MP4A	Z	-56.792	7
6	MP4A	Mx	0.074	7
7	MP4B	X	-155.669	1
8	MP4B	Z	-89.876	1
9	MP4B	Mx	0	1
10	MP4B	X	-155.669	7
11	MP4B	Z	-89.876	7
12	MP4B	Mx	0	7
13	MP4C	X	-98.366	1
14	MP4C	Z	-56.792	1
15	MP4C	Mx	-0.074	1
16	MP4C	X	-98.366	7
17	MP4C	Z	-56.792	7
18	MP4C	Mx	-0.074	7
19	MP2A	X	-223.705	0.5
20	MP2A	Z	-129.156	0.5
21	MP2A	Mx	0.168	0.5
22	MP2A	X	-223.705	7.5
23	MP2A	Z	-129.156	7.5
24	MP2A	Mx	0.168	7.5
25	MP2B	X	-386.121	0.5
26	MP2B	Z	-222.927	0.5
27	MP2B	Mx	0	0.5
28	MP2B	X	-386.121	7.5
29	MP2B	Z	-222.927	7.5
30	MP2B	Mx	0	7.5
31	MP2C	X	-223.705	0.5
32	MP2C	Z	-129.156	0.5
33	MP2C	Mx	-0.168	0.5
34	MP2C	X	-223.705	7.5
35	MP2C	Z	-129.156	7.5
36	MP2C	Mx	-0.168	7.5
37	MP3A	X	-92.619	1.5
38	MP3A	Z	-53.474	1.5
39	MP3A	Mx	0.069	1.5
40	MP3A	X	-92.619	6.5
41	MP3A	Z	-53.474	6.5
42	MP3A	Mx	0.069	6.5
43	MP3B	X	-168.26	1.5
44	MP3B	Z	-97.145	1.5
45	MP3B	Mx	0	1.5
46	MP3B	X	-168.26	6.5
47	MP3B	Z	-97.145	6.5
48	MP3B	Mx	0	6.5
49	MP3C	X	-92.619	1.5
50	MP3C	Z	-53.474	1.5
51	MP3C	Mx	-0.069	1.5
52	MP3C	X	-92.619	6.5
53	MP3C	Z	-53.474	6.5
54	MP3C	Mx	-0.069	6.5
55	MP2A	X	-64.037	3.5

Member Point Loads (BLC 13 : Antenna Wo (300 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
56	MP2A	Z	-36.972	3.5
57	MP2A	Mx	-0.032	3.5
58	MP2B	X	-64.037	3.5
59	MP2B	Z	-36.972	3.5
60	MP2B	Mx	-0.032	3.5
61	MP2C	X	-64.037	3.5
62	MP2C	Z	-36.972	3.5
63	MP2C	Mx	-0.032	3.5
64	MP4A	X	-68.654	3.5
65	MP4A	Z	-39.637	3.5
66	MP4A	Mx	-0.034	3.5
67	MP4B	X	-68.654	3.5
68	MP4B	Z	-39.637	3.5
69	MP4B	Mx	-0.034	3.5
70	MP4C	X	-68.654	3.5
71	MP4C	Z	-39.637	3.5
72	MP4C	Mx	-0.034	3.5

Member Point Loads (BLC 14 : Antenna Wo (330 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-78.848	1
2	MP4A	Z	-136.568	1
3	MP4A	Mx	0.059	1
4	MP4A	X	-78.848	7
5	MP4A	Z	-136.568	7
6	MP4A	Mx	0.059	7
7	MP4B	X	-78.848	1
8	MP4B	Z	-136.568	1
9	MP4B	Mx	0.059	1
10	MP4B	X	-78.848	7
11	MP4B	Z	-136.568	7
12	MP4B	Mx	0.059	7
13	MP4C	X	-45.763	1
14	MP4C	Z	-79.265	1
15	MP4C	Mx	-0.069	1
16	MP4C	X	-45.763	7
17	MP4C	Z	-79.265	7
18	MP4C	Mx	-0.069	7
19	MP2A	X	-191.67	0.5
20	MP2A	Z	-331.982	0.5
21	MP2A	Mx	0.144	0.5
22	MP2A	X	-191.67	7.5
23	MP2A	Z	-331.982	7.5
24	MP2A	Mx	0.144	7.5
25	MP2B	X	-191.67	0.5
26	MP2B	Z	-331.982	0.5
27	MP2B	Mx	0.144	0.5
28	MP2B	X	-191.67	7.5
29	MP2B	Z	-331.982	7.5
30	MP2B	Mx	0.144	7.5
31	MP2C	X	-97.9	0.5
32	MP2C	Z	-169.567	0.5
33	MP2C	Mx	-0.147	0.5
34	MP2C	X	-97.9	7.5
35	MP2C	Z	-169.567	7.5

Member Point Loads (BLC 14 : Antenna Wo (330 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
36	MP2C	Mx	-0.147	7.5
37	MP3A	X	-82.588	1.5
38	MP3A	Z	-143.047	1.5
39	MP3A	Mx	0.062	1.5
40	MP3A	X	-82.588	6.5
41	MP3A	Z	-143.047	6.5
42	MP3A	Mx	0.062	6.5
43	MP3B	X	-82.588	1.5
44	MP3B	Z	-143.047	1.5
45	MP3B	Mx	0.062	1.5
46	MP3B	X	-82.588	6.5
47	MP3B	Z	-143.047	6.5
48	MP3B	Mx	0.062	6.5
49	MP3C	X	-38.917	1.5
50	MP3C	Z	-67.406	1.5
51	MP3C	Mx	-0.058	1.5
52	MP3C	X	-38.917	6.5
53	MP3C	Z	-67.406	6.5
54	MP3C	Mx	-0.058	6.5
55	MP2A	X	-41.255	3.5
56	MP2A	Z	-71.455	3.5
57	MP2A	Mx	-0.021	3.5
58	MP2B	X	-41.255	3.5
59	MP2B	Z	-71.455	3.5
60	MP2B	Mx	-0.021	3.5
61	MP2C	X	-41.255	3.5
62	MP2C	Z	-71.455	3.5
63	MP2C	Mx	-0.021	3.5
64	MP4A	X	-44.64	3.5
65	MP4A	Z	-77.318	3.5
66	MP4A	Mx	-0.022	3.5
67	MP4B	X	-44.64	3.5
68	MP4B	Z	-77.318	3.5
69	MP4B	Mx	-0.022	3.5
70	MP4C	X	-44.64	3.5
71	MP4C	Z	-77.318	3.5
72	MP4C	Mx	-0.022	3.5

Member Point Loads (BLC 15 : Antenna Wi (0 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	0	1
2	MP4A	Z	-33.669	1
3	MP4A	Mx	0	1
4	MP4A	X	0	7
5	MP4A	Z	-33.669	7
6	MP4A	Mx	0	7
7	MP4B	X	0	1
8	MP4B	Z	-22.082	1
9	MP4B	Mx	0.014	1
10	MP4B	X	0	7
11	MP4B	Z	-22.082	7
12	MP4B	Mx	0.014	7
13	MP4C	X	0	1
14	MP4C	Z	-22.082	1
15	MP4C	Mx	-0.014	1

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
16	MP4C	X	0	7
17	MP4C	Z	-22.082	7
18	MP4C	Mx	-0.014	7
19	MP2A	X	0	0.5
20	MP2A	Z	-79.474	0.5
21	MP2A	Mx	0	0.5
22	MP2A	X	0	7.5
23	MP2A	Z	-79.474	7.5
24	MP2A	Mx	0	7.5
25	MP2B	X	0	0.5
26	MP2B	Z	-47.412	0.5
27	MP2B	Mx	0.031	0.5
28	MP2B	X	0	7.5
29	MP2B	Z	-47.412	7.5
30	MP2B	Mx	0.031	7.5
31	MP2C	X	0	0.5
32	MP2C	Z	-47.412	0.5
33	MP2C	Mx	-0.031	0.5
34	MP2C	X	0	7.5
35	MP2C	Z	-47.412	7.5
36	MP2C	Mx	-0.031	7.5
37	MP3A	X	0	1.5
38	MP3A	Z	-33.184	1.5
39	MP3A	Mx	0	1.5
40	MP3A	X	0	6.5
41	MP3A	Z	-33.184	6.5
42	MP3A	Mx	0	6.5
43	MP3B	X	0	1.5
44	MP3B	Z	-20.105	1.5
45	MP3B	Mx	0.013	1.5
46	MP3B	X	0	6.5
47	MP3B	Z	-20.105	6.5
48	MP3B	Mx	0.013	6.5
49	MP3C	X	0	1.5
50	MP3C	Z	-20.105	1.5
51	MP3C	Mx	-0.013	1.5
52	MP3C	X	0	6.5
53	MP3C	Z	-20.105	6.5
54	MP3C	Mx	-0.013	6.5
55	MP2A	X	0	3.5
56	MP2A	Z	-17.223	3.5
57	MP2A	Mx	0	3.5
58	MP2B	X	0	3.5
59	MP2B	Z	-17.223	3.5
60	MP2B	Mx	0	3.5
61	MP2C	X	0	3.5
62	MP2C	Z	-17.223	3.5
63	MP2C	Mx	0	3.5
64	MP4A	X	0	3.5
65	MP4A	Z	-18.684	3.5
66	MP4A	Mx	0	3.5
67	MP4B	X	0	3.5
68	MP4B	Z	-18.684	3.5
69	MP4B	Mx	0	3.5
70	MP4C	X	0	3.5

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
71	MP4C	Z	-18.684	3.5
72	MP4C	Mx	0	3.5

Member Point Loads (BLC 16 : Antenna Wi (30 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	14.903	1
2	MP4A	Z	-25.814	1
3	MP4A	Mx	-0.011	1
4	MP4A	X	14.903	7
5	MP4A	Z	-25.814	7
6	MP4A	Mx	-0.011	7
7	MP4B	X	9.11	1
8	MP4B	Z	-15.779	1
9	MP4B	Mx	0.014	1
10	MP4B	X	9.11	7
11	MP4B	Z	-15.779	7
12	MP4B	Mx	0.014	7
13	MP4C	X	14.903	1
14	MP4C	Z	-25.814	1
15	MP4C	Mx	-0.011	1
16	MP4C	X	14.903	7
17	MP4C	Z	-25.814	7
18	MP4C	Mx	-0.011	7
19	MP2A	X	34.394	0.5
20	MP2A	Z	-59.571	0.5
21	MP2A	Mx	-0.026	0.5
22	MP2A	X	34.394	7.5
23	MP2A	Z	-59.571	7.5
24	MP2A	Mx	-0.026	7.5
25	MP2B	X	18.362	0.5
26	MP2B	Z	-31.805	0.5
27	MP2B	Mx	0.028	0.5
28	MP2B	X	18.362	7.5
29	MP2B	Z	-31.805	7.5
30	MP2B	Mx	0.028	7.5
31	MP2C	X	34.394	0.5
32	MP2C	Z	-59.571	0.5
33	MP2C	Mx	-0.026	0.5
34	MP2C	X	34.394	7.5
35	MP2C	Z	-59.571	7.5
36	MP2C	Mx	-0.026	7.5
37	MP3A	X	14.412	1.5
38	MP3A	Z	-24.962	1.5
39	MP3A	Mx	-0.011	1.5
40	MP3A	X	14.412	6.5
41	MP3A	Z	-24.962	6.5
42	MP3A	Mx	-0.011	6.5
43	MP3B	X	7.872	1.5
44	MP3B	Z	-13.635	1.5
45	MP3B	Mx	0.012	1.5
46	MP3B	X	7.872	6.5
47	MP3B	Z	-13.635	6.5
48	MP3B	Mx	0.012	6.5
49	MP3C	X	14.412	1.5
50	MP3C	Z	-24.962	1.5

Member Point Loads (BLC 16 : Antenna Wi (30 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
51	MP3C	Mx	-0.011	1.5
52	MP3C	X	14.412	6.5
53	MP3C	Z	-24.962	6.5
54	MP3C	Mx	-0.011	6.5
55	MP2A	X	8.241	3.5
56	MP2A	Z	-14.273	3.5
57	MP2A	Mx	0.004	3.5
58	MP2B	X	8.241	3.5
59	MP2B	Z	-14.273	3.5
60	MP2B	Mx	0.004	3.5
61	MP2C	X	8.241	3.5
62	MP2C	Z	-14.273	3.5
63	MP2C	Mx	0.004	3.5
64	MP4A	X	8.889	3.5
65	MP4A	Z	-15.397	3.5
66	MP4A	Mx	0.004	3.5
67	MP4B	X	8.889	3.5
68	MP4B	Z	-15.397	3.5
69	MP4B	Mx	0.004	3.5
70	MP4C	X	8.889	3.5
71	MP4C	Z	-15.397	3.5
72	MP4C	Mx	0.004	3.5

Member Point Loads (BLC 17 : Antenna Wi (60 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	19.124	1
2	MP4A	Z	-11.041	1
3	MP4A	Mx	-0.014	1
4	MP4A	X	19.124	7
5	MP4A	Z	-11.041	7
6	MP4A	Mx	-0.014	7
7	MP4B	X	19.124	1
8	MP4B	Z	-11.041	1
9	MP4B	Mx	0.014	1
10	MP4B	X	19.124	7
11	MP4B	Z	-11.041	7
12	MP4B	Mx	0.014	7
13	MP4C	X	29.159	1
14	MP4C	Z	-16.835	1
15	MP4C	Mx	0	1
16	MP4C	X	29.159	7
17	MP4C	Z	-16.835	7
18	MP4C	Mx	0	7
19	MP2A	X	41.06	0.5
20	MP2A	Z	-23.706	0.5
21	MP2A	Mx	-0.031	0.5
22	MP2A	X	41.06	7.5
23	MP2A	Z	-23.706	7.5
24	MP2A	Mx	-0.031	7.5
25	MP2B	X	41.06	0.5
26	MP2B	Z	-23.706	0.5
27	MP2B	Mx	0.031	0.5
28	MP2B	X	41.06	7.5
29	MP2B	Z	-23.706	7.5
30	MP2B	Mx	0.031	7.5

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
31	MP2C	X	68.827	0.5
32	MP2C	Z	-39.737	0.5
33	MP2C	Mx	0	0.5
34	MP2C	X	68.827	7.5
35	MP2C	Z	-39.737	7.5
36	MP2C	Mx	0	7.5
37	MP3A	X	17.411	1.5
38	MP3A	Z	-10.052	1.5
39	MP3A	Mx	-0.013	1.5
40	MP3A	X	17.411	6.5
41	MP3A	Z	-10.052	6.5
42	MP3A	Mx	-0.013	6.5
43	MP3B	X	17.411	1.5
44	MP3B	Z	-10.052	1.5
45	MP3B	Mx	0.013	1.5
46	MP3B	X	17.411	6.5
47	MP3B	Z	-10.052	6.5
48	MP3B	Mx	0.013	6.5
49	MP3C	X	28.738	1.5
50	MP3C	Z	-16.592	1.5
51	MP3C	Mx	0	1.5
52	MP3C	X	28.738	6.5
53	MP3C	Z	-16.592	6.5
54	MP3C	Mx	0	6.5
55	MP2A	X	12.988	3.5
56	MP2A	Z	-7.499	3.5
57	MP2A	Mx	0.006	3.5
58	MP2B	X	12.988	3.5
59	MP2B	Z	-7.499	3.5
60	MP2B	Mx	0.006	3.5
61	MP2C	X	12.988	3.5
62	MP2C	Z	-7.499	3.5
63	MP2C	Mx	0.006	3.5
64	MP4A	X	13.829	3.5
65	MP4A	Z	-7.984	3.5
66	MP4A	Mx	0.007	3.5
67	MP4B	X	13.829	3.5
68	MP4B	Z	-7.984	3.5
69	MP4B	Mx	0.007	3.5
70	MP4C	X	13.829	3.5
71	MP4C	Z	-7.984	3.5
72	MP4C	Mx	0.007	3.5

Member Point Loads (BLC 18 : Antenna Wi (90 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	18.22	1
2	MP4A	Z	0	1
3	MP4A	Mx	-0.014	1
4	MP4A	X	18.22	7
5	MP4A	Z	0	7
6	MP4A	Mx	-0.014	7
7	MP4B	X	29.807	1
8	MP4B	Z	0	1
9	MP4B	Mx	0.011	1
10	MP4B	X	29.807	7

Member Point Loads (BLC 18 : Antenna Wi (90 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
11	MP4B	Z	0	7
12	MP4B	Mx	0.011	7
13	MP4C	X	29.807	1
14	MP4C	Z	0	1
15	MP4C	Mx	0.011	1
16	MP4C	X	29.807	7
17	MP4C	Z	0	7
18	MP4C	Mx	0.011	7
19	MP2A	X	36.725	0.5
20	MP2A	Z	0	0.5
21	MP2A	Mx	-0.028	0.5
22	MP2A	X	36.725	7.5
23	MP2A	Z	0	7.5
24	MP2A	Mx	-0.028	7.5
25	MP2B	X	68.787	0.5
26	MP2B	Z	0	0.5
27	MP2B	Mx	0.026	0.5
28	MP2B	X	68.787	7.5
29	MP2B	Z	0	7.5
30	MP2B	Mx	0.026	7.5
31	MP2C	X	68.787	0.5
32	MP2C	Z	0	0.5
33	MP2C	Mx	0.026	0.5
34	MP2C	X	68.787	7.5
35	MP2C	Z	0	7.5
36	MP2C	Mx	0.026	7.5
37	MP3A	X	15.745	1.5
38	MP3A	Z	0	1.5
39	MP3A	Mx	-0.012	1.5
40	MP3A	X	15.745	6.5
41	MP3A	Z	0	6.5
42	MP3A	Mx	-0.012	6.5
43	MP3B	X	28.824	1.5
44	MP3B	Z	0	1.5
45	MP3B	Mx	0.011	1.5
46	MP3B	X	28.824	6.5
47	MP3B	Z	0	6.5
48	MP3B	Mx	0.011	6.5
49	MP3C	X	28.824	1.5
50	MP3C	Z	0	1.5
51	MP3C	Mx	0.011	1.5
52	MP3C	X	28.824	6.5
53	MP3C	Z	0	6.5
54	MP3C	Mx	0.011	6.5
55	MP2A	X	14.256	3.5
56	MP2A	Z	0	3.5
57	MP2A	Mx	0.007	3.5
58	MP2B	X	14.256	3.5
59	MP2B	Z	0	3.5
60	MP2B	Mx	0.007	3.5
61	MP2C	X	14.256	3.5
62	MP2C	Z	0	3.5
63	MP2C	Mx	0.007	3.5
64	MP4A	X	15.064	3.5
65	MP4A	Z	0	3.5

Member Point Loads (BLC 18 : Antenna Wi (90 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
66	MP4A	Mx	0.008	3.5
67	MP4B	X	15.064	3.5
68	MP4B	Z	0	3.5
69	MP4B	Mx	0.008	3.5
70	MP4C	X	15.064	3.5
71	MP4C	Z	0	3.5
72	MP4C	Mx	0.008	3.5

Member Point Loads (BLC 19 : Antenna Wi (120 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	19.124	1
2	MP4A	Z	11.041	1
3	MP4A	Mx	-0.014	1
4	MP4A	X	19.124	7
5	MP4A	Z	11.041	7
6	MP4A	Mx	-0.014	7
7	MP4B	X	29.159	1
8	MP4B	Z	16.835	1
9	MP4B	Mx	0	1
10	MP4B	X	29.159	7
11	MP4B	Z	16.835	7
12	MP4B	Mx	0	7
13	MP4C	X	19.124	1
14	MP4C	Z	11.041	1
15	MP4C	Mx	0.014	1
16	MP4C	X	19.124	7
17	MP4C	Z	11.041	7
18	MP4C	Mx	0.014	7
19	MP2A	X	41.06	0.5
20	MP2A	Z	23.706	0.5
21	MP2A	Mx	-0.031	0.5
22	MP2A	X	41.06	7.5
23	MP2A	Z	23.706	7.5
24	MP2A	Mx	-0.031	7.5
25	MP2B	X	68.827	0.5
26	MP2B	Z	39.737	0.5
27	MP2B	Mx	0	0.5
28	MP2B	X	68.827	7.5
29	MP2B	Z	39.737	7.5
30	MP2B	Mx	0	7.5
31	MP2C	X	41.06	0.5
32	MP2C	Z	23.706	0.5
33	MP2C	Mx	0.031	0.5
34	MP2C	X	41.06	7.5
35	MP2C	Z	23.706	7.5
36	MP2C	Mx	0.031	7.5
37	MP3A	X	17.411	1.5
38	MP3A	Z	10.052	1.5
39	MP3A	Mx	-0.013	1.5
40	MP3A	X	17.411	6.5
41	MP3A	Z	10.052	6.5
42	MP3A	Mx	-0.013	6.5
43	MP3B	X	28.738	1.5
44	MP3B	Z	16.592	1.5
45	MP3B	Mx	0	1.5

Member Point Loads (BLC 19 : Antenna Wi (120 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
46	MP3B	X	28.738	6.5
47	MP3B	Z	16.592	6.5
48	MP3B	Mx	0	6.5
49	MP3C	X	17.411	1.5
50	MP3C	Z	10.052	1.5
51	MP3C	Mx	0.013	1.5
52	MP3C	X	17.411	6.5
53	MP3C	Z	10.052	6.5
54	MP3C	Mx	0.013	6.5
55	MP2A	X	12.988	3.5
56	MP2A	Z	7.499	3.5
57	MP2A	Mx	0.006	3.5
58	MP2B	X	12.988	3.5
59	MP2B	Z	7.499	3.5
60	MP2B	Mx	0.006	3.5
61	MP2C	X	12.988	3.5
62	MP2C	Z	7.499	3.5
63	MP2C	Mx	0.006	3.5
64	MP4A	X	13.829	3.5
65	MP4A	Z	7.984	3.5
66	MP4A	Mx	0.007	3.5
67	MP4B	X	13.829	3.5
68	MP4B	Z	7.984	3.5
69	MP4B	Mx	0.007	3.5
70	MP4C	X	13.829	3.5
71	MP4C	Z	7.984	3.5
72	MP4C	Mx	0.007	3.5

Member Point Loads (BLC 20 : Antenna Wi (150 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	14.903	1
2	MP4A	Z	25.814	1
3	MP4A	Mx	-0.011	1
4	MP4A	X	14.903	7
5	MP4A	Z	25.814	7
6	MP4A	Mx	-0.011	7
7	MP4B	X	14.903	1
8	MP4B	Z	25.814	1
9	MP4B	Mx	-0.011	1
10	MP4B	X	14.903	7
11	MP4B	Z	25.814	7
12	MP4B	Mx	-0.011	7
13	MP4C	X	9.11	1
14	MP4C	Z	15.779	1
15	MP4C	Mx	0.014	1
16	MP4C	X	9.11	7
17	MP4C	Z	15.779	7
18	MP4C	Mx	0.014	7
19	MP2A	X	34.394	0.5
20	MP2A	Z	59.571	0.5
21	MP2A	Mx	-0.026	0.5
22	MP2A	X	34.394	7.5
23	MP2A	Z	59.571	7.5
24	MP2A	Mx	-0.026	7.5
25	MP2B	X	34.394	0.5

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
26	MP2B	Z	59.571	0.5
27	MP2B	Mx	-0.026	0.5
28	MP2B	X	34.394	7.5
29	MP2B	Z	59.571	7.5
30	MP2B	Mx	-0.026	7.5
31	MP2C	X	18.362	0.5
32	MP2C	Z	31.805	0.5
33	MP2C	Mx	0.028	0.5
34	MP2C	X	18.362	7.5
35	MP2C	Z	31.805	7.5
36	MP2C	Mx	0.028	7.5
37	MP3A	X	14.412	1.5
38	MP3A	Z	24.962	1.5
39	MP3A	Mx	-0.011	1.5
40	MP3A	X	14.412	6.5
41	MP3A	Z	24.962	6.5
42	MP3A	Mx	-0.011	6.5
43	MP3B	X	14.412	1.5
44	MP3B	Z	24.962	1.5
45	MP3B	Mx	-0.011	1.5
46	MP3B	X	14.412	6.5
47	MP3B	Z	24.962	6.5
48	MP3B	Mx	-0.011	6.5
49	MP3C	X	7.872	1.5
50	MP3C	Z	13.635	1.5
51	MP3C	Mx	0.012	1.5
52	MP3C	X	7.872	6.5
53	MP3C	Z	13.635	6.5
54	MP3C	Mx	0.012	6.5
55	MP2A	X	8.241	3.5
56	MP2A	Z	14.273	3.5
57	MP2A	Mx	0.004	3.5
58	MP2B	X	8.241	3.5
59	MP2B	Z	14.273	3.5
60	MP2B	Mx	0.004	3.5
61	MP2C	X	8.241	3.5
62	MP2C	Z	14.273	3.5
63	MP2C	Mx	0.004	3.5
64	MP4A	X	8.889	3.5
65	MP4A	Z	15.397	3.5
66	MP4A	Mx	0.004	3.5
67	MP4B	X	8.889	3.5
68	MP4B	Z	15.397	3.5
69	MP4B	Mx	0.004	3.5
70	MP4C	X	8.889	3.5
71	MP4C	Z	15.397	3.5
72	MP4C	Mx	0.004	3.5

Member Point Loads (BLC 21 : Antenna Wi (180 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	0	1
2	MP4A	Z	33.669	1
3	MP4A	Mx	0	1
4	MP4A	X	0	7
5	MP4A	Z	33.669	7

Member Point Loads (BLC 21 : Antenna Wi (180 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
6	MP4A	Mx	0	7
7	MP4B	X	0	1
8	MP4B	Z	22.082	1
9	MP4B	Mx	-0.014	1
10	MP4B	X	0	7
11	MP4B	Z	22.082	7
12	MP4B	Mx	-0.014	7
13	MP4C	X	0	1
14	MP4C	Z	22.082	1
15	MP4C	Mx	0.014	1
16	MP4C	X	0	7
17	MP4C	Z	22.082	7
18	MP4C	Mx	0.014	7
19	MP2A	X	0	0.5
20	MP2A	Z	79.474	0.5
21	MP2A	Mx	0	0.5
22	MP2A	X	0	7.5
23	MP2A	Z	79.474	7.5
24	MP2A	Mx	0	7.5
25	MP2B	X	0	0.5
26	MP2B	Z	47.412	0.5
27	MP2B	Mx	-0.031	0.5
28	MP2B	X	0	7.5
29	MP2B	Z	47.412	7.5
30	MP2B	Mx	-0.031	7.5
31	MP2C	X	0	0.5
32	MP2C	Z	47.412	0.5
33	MP2C	Mx	0.031	0.5
34	MP2C	X	0	7.5
35	MP2C	Z	47.412	7.5
36	MP2C	Mx	0.031	7.5
37	MP3A	X	0	1.5
38	MP3A	Z	33.184	1.5
39	MP3A	Mx	0	1.5
40	MP3A	X	0	6.5
41	MP3A	Z	33.184	6.5
42	MP3A	Mx	0	6.5
43	MP3B	X	0	1.5
44	MP3B	Z	20.105	1.5
45	MP3B	Mx	-0.013	1.5
46	MP3B	X	0	6.5
47	MP3B	Z	20.105	6.5
48	MP3B	Mx	-0.013	6.5
49	MP3C	X	0	1.5
50	MP3C	Z	20.105	1.5
51	MP3C	Mx	0.013	1.5
52	MP3C	X	0	6.5
53	MP3C	Z	20.105	6.5
54	MP3C	Mx	0.013	6.5
55	MP2A	X	0	3.5
56	MP2A	Z	17.223	3.5
57	MP2A	Mx	0	3.5
58	MP2B	X	0	3.5
59	MP2B	Z	17.223	3.5
60	MP2B	Mx	0	3.5

Member Point Loads (BLC 21 : Antenna Wi (180 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
61	MP2C	X	0	3.5
62	MP2C	Z	17.223	3.5
63	MP2C	Mx	0	3.5
64	MP4A	X	0	3.5
65	MP4A	Z	18.684	3.5
66	MP4A	Mx	0	3.5
67	MP4B	X	0	3.5
68	MP4B	Z	18.684	3.5
69	MP4B	Mx	0	3.5
70	MP4C	X	0	3.5
71	MP4C	Z	18.684	3.5
72	MP4C	Mx	0	3.5

Member Point Loads (BLC 22 : Antenna Wi (210 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-14.903	1
2	MP4A	Z	25.814	1
3	MP4A	Mx	0.011	1
4	MP4A	X	-14.903	7
5	MP4A	Z	25.814	7
6	MP4A	Mx	0.011	7
7	MP4B	X	-9.11	1
8	MP4B	Z	15.779	1
9	MP4B	Mx	-0.014	1
10	MP4B	X	-9.11	7
11	MP4B	Z	15.779	7
12	MP4B	Mx	-0.014	7
13	MP4C	X	-14.903	1
14	MP4C	Z	25.814	1
15	MP4C	Mx	0.011	1
16	MP4C	X	-14.903	7
17	MP4C	Z	25.814	7
18	MP4C	Mx	0.011	7
19	MP2A	X	-34.394	0.5
20	MP2A	Z	59.571	0.5
21	MP2A	Mx	0.026	0.5
22	MP2A	X	-34.394	7.5
23	MP2A	Z	59.571	7.5
24	MP2A	Mx	0.026	7.5
25	MP2B	X	-18.362	0.5
26	MP2B	Z	31.805	0.5
27	MP2B	Mx	-0.028	0.5
28	MP2B	X	-18.362	7.5
29	MP2B	Z	31.805	7.5
30	MP2B	Mx	-0.028	7.5
31	MP2C	X	-34.394	0.5
32	MP2C	Z	59.571	0.5
33	MP2C	Mx	0.026	0.5
34	MP2C	X	-34.394	7.5
35	MP2C	Z	59.571	7.5
36	MP2C	Mx	0.026	7.5
37	MP3A	X	-14.412	1.5
38	MP3A	Z	24.962	1.5
39	MP3A	Mx	0.011	1.5
40	MP3A	X	-14.412	6.5

Member Point Loads (BLC 22 : Antenna Wi (210 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
41	MP3A	Z	24.962	6.5
42	MP3A	Mx	0.011	6.5
43	MP3B	X	-7.872	1.5
44	MP3B	Z	13.635	1.5
45	MP3B	Mx	-0.012	1.5
46	MP3B	X	-7.872	6.5
47	MP3B	Z	13.635	6.5
48	MP3B	Mx	-0.012	6.5
49	MP3C	X	-14.412	1.5
50	MP3C	Z	24.962	1.5
51	MP3C	Mx	0.011	1.5
52	MP3C	X	-14.412	6.5
53	MP3C	Z	24.962	6.5
54	MP3C	Mx	0.011	6.5
55	MP2A	X	-8.241	3.5
56	MP2A	Z	14.273	3.5
57	MP2A	Mx	-0.004	3.5
58	MP2B	X	-8.241	3.5
59	MP2B	Z	14.273	3.5
60	MP2B	Mx	-0.004	3.5
61	MP2C	X	-8.241	3.5
62	MP2C	Z	14.273	3.5
63	MP2C	Mx	-0.004	3.5
64	MP4A	X	-8.889	3.5
65	MP4A	Z	15.397	3.5
66	MP4A	Mx	-0.004	3.5
67	MP4B	X	-8.889	3.5
68	MP4B	Z	15.397	3.5
69	MP4B	Mx	-0.004	3.5
70	MP4C	X	-8.889	3.5
71	MP4C	Z	15.397	3.5
72	MP4C	Mx	-0.004	3.5

Member Point Loads (BLC 23 : Antenna Wi (240 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-19.124	1
2	MP4A	Z	11.041	1
3	MP4A	Mx	0.014	1
4	MP4A	X	-19.124	7
5	MP4A	Z	11.041	7
6	MP4A	Mx	0.014	7
7	MP4B	X	-19.124	1
8	MP4B	Z	11.041	1
9	MP4B	Mx	-0.014	1
10	MP4B	X	-19.124	7
11	MP4B	Z	11.041	7
12	MP4B	Mx	-0.014	7
13	MP4C	X	-29.159	1
14	MP4C	Z	16.835	1
15	MP4C	Mx	0	1
16	MP4C	X	-29.159	7
17	MP4C	Z	16.835	7
18	MP4C	Mx	0	7
19	MP2A	X	-41.06	0.5
20	MP2A	Z	23.706	0.5

Member Point Loads (BLC 23 : Antenna Wi (240 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
21	MP2A	Mx	0.031	0.5
22	MP2A	X	-41.06	7.5
23	MP2A	Z	23.706	7.5
24	MP2A	Mx	0.031	7.5
25	MP2B	X	-41.06	0.5
26	MP2B	Z	23.706	0.5
27	MP2B	Mx	-0.031	0.5
28	MP2B	X	-41.06	7.5
29	MP2B	Z	23.706	7.5
30	MP2B	Mx	-0.031	7.5
31	MP2C	X	-68.827	0.5
32	MP2C	Z	39.737	0.5
33	MP2C	Mx	0	0.5
34	MP2C	X	-68.827	7.5
35	MP2C	Z	39.737	7.5
36	MP2C	Mx	0	7.5
37	MP3A	X	-17.411	1.5
38	MP3A	Z	10.052	1.5
39	MP3A	Mx	0.013	1.5
40	MP3A	X	-17.411	6.5
41	MP3A	Z	10.052	6.5
42	MP3A	Mx	0.013	6.5
43	MP3B	X	-17.411	1.5
44	MP3B	Z	10.052	1.5
45	MP3B	Mx	-0.013	1.5
46	MP3B	X	-17.411	6.5
47	MP3B	Z	10.052	6.5
48	MP3B	Mx	-0.013	6.5
49	MP3C	X	-28.738	1.5
50	MP3C	Z	16.592	1.5
51	MP3C	Mx	0	1.5
52	MP3C	X	-28.738	6.5
53	MP3C	Z	16.592	6.5
54	MP3C	Mx	0	6.5
55	MP2A	X	-12.988	3.5
56	MP2A	Z	7.499	3.5
57	MP2A	Mx	-0.006	3.5
58	MP2B	X	-12.988	3.5
59	MP2B	Z	7.499	3.5
60	MP2B	Mx	-0.006	3.5
61	MP2C	X	-12.988	3.5
62	MP2C	Z	7.499	3.5
63	MP2C	Mx	-0.006	3.5
64	MP4A	X	-13.829	3.5
65	MP4A	Z	7.984	3.5
66	MP4A	Mx	-0.007	3.5
67	MP4B	X	-13.829	3.5
68	MP4B	Z	7.984	3.5
69	MP4B	Mx	-0.007	3.5
70	MP4C	X	-13.829	3.5
71	MP4C	Z	7.984	3.5
72	MP4C	Mx	-0.007	3.5

Member Point Loads (BLC 24 : Antenna Wi (270 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-18.22	1
2	MP4A	Z	0	1
3	MP4A	Mx	0.014	1
4	MP4A	X	-18.22	7
5	MP4A	Z	0	7
6	MP4A	Mx	0.014	7
7	MP4B	X	-29.807	1
8	MP4B	Z	0	1
9	MP4B	Mx	-0.011	1
10	MP4B	X	-29.807	7
11	MP4B	Z	0	7
12	MP4B	Mx	-0.011	7
13	MP4C	X	-29.807	1
14	MP4C	Z	0	1
15	MP4C	Mx	-0.011	1
16	MP4C	X	-29.807	7
17	MP4C	Z	0	7
18	MP4C	Mx	-0.011	7
19	MP2A	X	-36.725	0.5
20	MP2A	Z	0	0.5
21	MP2A	Mx	0.028	0.5
22	MP2A	X	-36.725	7.5
23	MP2A	Z	0	7.5
24	MP2A	Mx	0.028	7.5
25	MP2B	X	-68.787	0.5
26	MP2B	Z	0	0.5
27	MP2B	Mx	-0.026	0.5
28	MP2B	X	-68.787	7.5
29	MP2B	Z	0	7.5
30	MP2B	Mx	-0.026	7.5
31	MP2C	X	-68.787	0.5
32	MP2C	Z	0	0.5
33	MP2C	Mx	-0.026	0.5
34	MP2C	X	-68.787	7.5
35	MP2C	Z	0	7.5
36	MP2C	Mx	-0.026	7.5
37	MP3A	X	-15.745	1.5
38	MP3A	Z	0	1.5
39	MP3A	Mx	0.012	1.5
40	MP3A	X	-15.745	6.5
41	MP3A	Z	0	6.5
42	MP3A	Mx	0.012	6.5
43	MP3B	X	-28.824	1.5
44	MP3B	Z	0	1.5
45	MP3B	Mx	-0.011	1.5
46	MP3B	X	-28.824	6.5
47	MP3B	Z	0	6.5
48	MP3B	Mx	-0.011	6.5
49	MP3C	X	-28.824	1.5
50	MP3C	Z	0	1.5
51	MP3C	Mx	-0.011	1.5
52	MP3C	X	-28.824	6.5
53	MP3C	Z	0	6.5
54	MP3C	Mx	-0.011	6.5
55	MP2A	X	-14.256	3.5

Member Point Loads (BLC 24 : Antenna Wi (270 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
56	MP2A	Z	0	3.5
57	MP2A	Mx	-0.007	3.5
58	MP2B	X	-14.256	3.5
59	MP2B	Z	0	3.5
60	MP2B	Mx	-0.007	3.5
61	MP2C	X	-14.256	3.5
62	MP2C	Z	0	3.5
63	MP2C	Mx	-0.007	3.5
64	MP4A	X	-15.064	3.5
65	MP4A	Z	0	3.5
66	MP4A	Mx	-0.008	3.5
67	MP4B	X	-15.064	3.5
68	MP4B	Z	0	3.5
69	MP4B	Mx	-0.008	3.5
70	MP4C	X	-15.064	3.5
71	MP4C	Z	0	3.5
72	MP4C	Mx	-0.008	3.5

Member Point Loads (BLC 25 : Antenna Wi (300 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-19.124	1
2	MP4A	Z	-11.041	1
3	MP4A	Mx	0.014	1
4	MP4A	X	-19.124	7
5	MP4A	Z	-11.041	7
6	MP4A	Mx	0.014	7
7	MP4B	X	-29.159	1
8	MP4B	Z	-16.835	1
9	MP4B	Mx	0	1
10	MP4B	X	-29.159	7
11	MP4B	Z	-16.835	7
12	MP4B	Mx	0	7
13	MP4C	X	-19.124	1
14	MP4C	Z	-11.041	1
15	MP4C	Mx	-0.014	1
16	MP4C	X	-19.124	7
17	MP4C	Z	-11.041	7
18	MP4C	Mx	-0.014	7
19	MP2A	X	-41.06	0.5
20	MP2A	Z	-23.706	0.5
21	MP2A	Mx	0.031	0.5
22	MP2A	X	-41.06	7.5
23	MP2A	Z	-23.706	7.5
24	MP2A	Mx	0.031	7.5
25	MP2B	X	-68.827	0.5
26	MP2B	Z	-39.737	0.5
27	MP2B	Mx	0	0.5
28	MP2B	X	-68.827	7.5
29	MP2B	Z	-39.737	7.5
30	MP2B	Mx	0	7.5
31	MP2C	X	-41.06	0.5
32	MP2C	Z	-23.706	0.5
33	MP2C	Mx	-0.031	0.5
34	MP2C	X	-41.06	7.5
35	MP2C	Z	-23.706	7.5

Member Point Loads (BLC 25 : Antenna Wi (300 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
36	MP2C	Mx	-0.031	7.5
37	MP3A	X	-17.411	1.5
38	MP3A	Z	-10.052	1.5
39	MP3A	Mx	0.013	1.5
40	MP3A	X	-17.411	6.5
41	MP3A	Z	-10.052	6.5
42	MP3A	Mx	0.013	6.5
43	MP3B	X	-28.738	1.5
44	MP3B	Z	-16.592	1.5
45	MP3B	Mx	0	1.5
46	MP3B	X	-28.738	6.5
47	MP3B	Z	-16.592	6.5
48	MP3B	Mx	0	6.5
49	MP3C	X	-17.411	1.5
50	MP3C	Z	-10.052	1.5
51	MP3C	Mx	-0.013	1.5
52	MP3C	X	-17.411	6.5
53	MP3C	Z	-10.052	6.5
54	MP3C	Mx	-0.013	6.5
55	MP2A	X	-12.988	3.5
56	MP2A	Z	-7.499	3.5
57	MP2A	Mx	-0.006	3.5
58	MP2B	X	-12.988	3.5
59	MP2B	Z	-7.499	3.5
60	MP2B	Mx	-0.006	3.5
61	MP2C	X	-12.988	3.5
62	MP2C	Z	-7.499	3.5
63	MP2C	Mx	-0.006	3.5
64	MP4A	X	-13.829	3.5
65	MP4A	Z	-7.984	3.5
66	MP4A	Mx	-0.007	3.5
67	MP4B	X	-13.829	3.5
68	MP4B	Z	-7.984	3.5
69	MP4B	Mx	-0.007	3.5
70	MP4C	X	-13.829	3.5
71	MP4C	Z	-7.984	3.5
72	MP4C	Mx	-0.007	3.5

Member Point Loads (BLC 26 : Antenna Wi (330 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-14.903	1
2	MP4A	Z	-25.814	1
3	MP4A	Mx	0.011	1
4	MP4A	X	-14.903	7
5	MP4A	Z	-25.814	7
6	MP4A	Mx	0.011	7
7	MP4B	X	-14.903	1
8	MP4B	Z	-25.814	1
9	MP4B	Mx	0.011	1
10	MP4B	X	-14.903	7
11	MP4B	Z	-25.814	7
12	MP4B	Mx	0.011	7
13	MP4C	X	-9.11	1
14	MP4C	Z	-15.779	1
15	MP4C	Mx	-0.014	1

Member Point Loads (BLC 26 : Antenna Wi (330 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
16	MP4C	X	-9.11	7
17	MP4C	Z	-15.779	7
18	MP4C	Mx	-0.014	7
19	MP2A	X	-34.394	0.5
20	MP2A	Z	-59.571	0.5
21	MP2A	Mx	0.026	0.5
22	MP2A	X	-34.394	7.5
23	MP2A	Z	-59.571	7.5
24	MP2A	Mx	0.026	7.5
25	MP2B	X	-34.394	0.5
26	MP2B	Z	-59.571	0.5
27	MP2B	Mx	0.026	0.5
28	MP2B	X	-34.394	7.5
29	MP2B	Z	-59.571	7.5
30	MP2B	Mx	0.026	7.5
31	MP2C	X	-18.362	0.5
32	MP2C	Z	-31.805	0.5
33	MP2C	Mx	-0.028	0.5
34	MP2C	X	-18.362	7.5
35	MP2C	Z	-31.805	7.5
36	MP2C	Mx	-0.028	7.5
37	MP3A	X	-14.412	1.5
38	MP3A	Z	-24.962	1.5
39	MP3A	Mx	0.011	1.5
40	MP3A	X	-14.412	6.5
41	MP3A	Z	-24.962	6.5
42	MP3A	Mx	0.011	6.5
43	MP3B	X	-14.412	1.5
44	MP3B	Z	-24.962	1.5
45	MP3B	Mx	0.011	1.5
46	MP3B	X	-14.412	6.5
47	MP3B	Z	-24.962	6.5
48	MP3B	Mx	0.011	6.5
49	MP3C	X	-7.872	1.5
50	MP3C	Z	-13.635	1.5
51	MP3C	Mx	-0.012	1.5
52	MP3C	X	-7.872	6.5
53	MP3C	Z	-13.635	6.5
54	MP3C	Mx	-0.012	6.5
55	MP2A	X	-8.241	3.5
56	MP2A	Z	-14.273	3.5
57	MP2A	Mx	-0.004	3.5
58	MP2B	X	-8.241	3.5
59	MP2B	Z	-14.273	3.5
60	MP2B	Mx	-0.004	3.5
61	MP2C	X	-8.241	3.5
62	MP2C	Z	-14.273	3.5
63	MP2C	Mx	-0.004	3.5
64	MP4A	X	-8.889	3.5
65	MP4A	Z	-15.397	3.5
66	MP4A	Mx	-0.004	3.5
67	MP4B	X	-8.889	3.5
68	MP4B	Z	-15.397	3.5
69	MP4B	Mx	-0.004	3.5
70	MP4C	X	-8.889	3.5

Member Point Loads (BLC 26 : Antenna Wi (330 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
71	MP4C	Z	-15.397	3.5
72	MP4C	Mx	-0.004	3.5

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	0	1
2	MP4A	Z	-10.869	1
3	MP4A	Mx	0	1
4	MP4A	X	0	7
5	MP4A	Z	-10.869	7
6	MP4A	Mx	0	7
7	MP4B	X	0	1
8	MP4B	Z	-6.868	1
9	MP4B	Mx	0.004	1
10	MP4B	X	0	7
11	MP4B	Z	-6.868	7
12	MP4B	Mx	0.004	7
13	MP4C	X	0	1
14	MP4C	Z	-6.868	1
15	MP4C	Mx	-0.004	1
16	MP4C	X	0	7
17	MP4C	Z	-6.868	7
18	MP4C	Mx	-0.004	7
19	MP2A	X	0	0.5
20	MP2A	Z	-26.96	0.5
21	MP2A	Mx	0	0.5
22	MP2A	X	0	7.5
23	MP2A	Z	-26.96	7.5
24	MP2A	Mx	0	7.5
25	MP2B	X	0	0.5
26	MP2B	Z	-15.62	0.5
27	MP2B	Mx	0.01	0.5
28	MP2B	X	0	7.5
29	MP2B	Z	-15.62	7.5
30	MP2B	Mx	0.01	7.5
31	MP2C	X	0	0.5
32	MP2C	Z	-15.62	0.5
33	MP2C	Mx	-0.01	0.5
34	MP2C	X	0	7.5
35	MP2C	Z	-15.62	7.5
36	MP2C	Mx	-0.01	7.5
37	MP3A	X	0	1.5
38	MP3A	Z	-11.748	1.5
39	MP3A	Mx	0	1.5
40	MP3A	X	0	6.5
41	MP3A	Z	-11.748	6.5
42	MP3A	Mx	0	6.5
43	MP3B	X	0	1.5
44	MP3B	Z	-6.467	1.5
45	MP3B	Mx	0.004	1.5
46	MP3B	X	0	6.5
47	MP3B	Z	-6.467	6.5
48	MP3B	Mx	0.004	6.5
49	MP3C	X	0	1.5
50	MP3C	Z	-6.467	1.5

Member Point Loads (BLC 27 : Antenna Wm (0 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
51	MP3C	Mx	-0.004	1.5
52	MP3C	X	0	6.5
53	MP3C	Z	-6.467	6.5
54	MP3C	Mx	-0.004	6.5
55	MP2A	X	0	3.5
56	MP2A	Z	-5.248	3.5
57	MP2A	Mx	0	3.5
58	MP2B	X	0	3.5
59	MP2B	Z	-5.248	3.5
60	MP2B	Mx	0	3.5
61	MP2C	X	0	3.5
62	MP2C	Z	-5.248	3.5
63	MP2C	Mx	0	3.5
64	MP4A	X	0	3.5
65	MP4A	Z	-5.701	3.5
66	MP4A	Mx	0	3.5
67	MP4B	X	0	3.5
68	MP4B	Z	-5.701	3.5
69	MP4B	Mx	0	3.5
70	MP4C	X	0	3.5
71	MP4C	Z	-5.701	3.5
72	MP4C	Mx	0	3.5

Member Point Loads (BLC 28 : Antenna Wm (30 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	4.768	1
2	MP4A	Z	-8.258	1
3	MP4A	Mx	-0.004	1
4	MP4A	X	4.768	7
5	MP4A	Z	-8.258	7
6	MP4A	Mx	-0.004	7
7	MP4B	X	2.767	1
8	MP4B	Z	-4.793	1
9	MP4B	Mx	0.004	1
10	MP4B	X	2.767	7
11	MP4B	Z	-4.793	7
12	MP4B	Mx	0.004	7
13	MP4C	X	4.768	1
14	MP4C	Z	-8.258	1
15	MP4C	Mx	-0.004	1
16	MP4C	X	4.768	7
17	MP4C	Z	-8.258	7
18	MP4C	Mx	-0.004	7
19	MP2A	X	11.59	0.5
20	MP2A	Z	-20.074	0.5
21	MP2A	Mx	-0.009	0.5
22	MP2A	X	11.59	7.5
23	MP2A	Z	-20.074	7.5
24	MP2A	Mx	-0.009	7.5
25	MP2B	X	5.92	0.5
26	MP2B	Z	-10.253	0.5
27	MP2B	Mx	0.009	0.5
28	MP2B	X	5.92	7.5
29	MP2B	Z	-10.253	7.5
30	MP2B	Mx	0.009	7.5

Member Point Loads (BLC 28 : Antenna Wm (30 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
31	MP2C	X	11.59	0.5
32	MP2C	Z	-20.074	0.5
33	MP2C	Mx	-0.009	0.5
34	MP2C	X	11.59	7.5
35	MP2C	Z	-20.074	7.5
36	MP2C	Mx	-0.009	7.5
37	MP3A	X	4.994	1.5
38	MP3A	Z	-8.65	1.5
39	MP3A	Mx	-0.004	1.5
40	MP3A	X	4.994	6.5
41	MP3A	Z	-8.65	6.5
42	MP3A	Mx	-0.004	6.5
43	MP3B	X	2.353	1.5
44	MP3B	Z	-4.076	1.5
45	MP3B	Mx	0.004	1.5
46	MP3B	X	2.353	6.5
47	MP3B	Z	-4.076	6.5
48	MP3B	Mx	0.004	6.5
49	MP3C	X	4.994	1.5
50	MP3C	Z	-8.65	1.5
51	MP3C	Mx	-0.004	1.5
52	MP3C	X	4.994	6.5
53	MP3C	Z	-8.65	6.5
54	MP3C	Mx	-0.004	6.5
55	MP2A	X	2.495	3.5
56	MP2A	Z	-4.321	3.5
57	MP2A	Mx	0.001	3.5
58	MP2B	X	2.495	3.5
59	MP2B	Z	-4.321	3.5
60	MP2B	Mx	0.001	3.5
61	MP2C	X	2.495	3.5
62	MP2C	Z	-4.321	3.5
63	MP2C	Mx	0.001	3.5
64	MP4A	X	2.699	3.5
65	MP4A	Z	-4.675	3.5
66	MP4A	Mx	0.001	3.5
67	MP4B	X	2.699	3.5
68	MP4B	Z	-4.675	3.5
69	MP4B	Mx	0.001	3.5
70	MP4C	X	2.699	3.5
71	MP4C	Z	-4.675	3.5
72	MP4C	Mx	0.001	3.5

Member Point Loads (BLC 29 : Antenna Wm (60 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	5.948	1
2	MP4A	Z	-3.434	1
3	MP4A	Mx	-0.004	1
4	MP4A	X	5.948	7
5	MP4A	Z	-3.434	7
6	MP4A	Mx	-0.004	7
7	MP4B	X	5.948	1
8	MP4B	Z	-3.434	1
9	MP4B	Mx	0.004	1
10	MP4B	X	5.948	7

Member Point Loads (BLC 29 : Antenna Wm (60 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
11	MP4B	Z	-3.434	7
12	MP4B	Mx	0.004	7
13	MP4C	X	9.413	1
14	MP4C	Z	-5.435	1
15	MP4C	Mx	0	1
16	MP4C	X	9.413	7
17	MP4C	Z	-5.435	7
18	MP4C	Mx	0	7
19	MP2A	X	13.527	0.5
20	MP2A	Z	-7.81	0.5
21	MP2A	Mx	-0.01	0.5
22	MP2A	X	13.527	7.5
23	MP2A	Z	-7.81	7.5
24	MP2A	Mx	-0.01	7.5
25	MP2B	X	13.527	0.5
26	MP2B	Z	-7.81	0.5
27	MP2B	Mx	0.01	0.5
28	MP2B	X	13.527	7.5
29	MP2B	Z	-7.81	7.5
30	MP2B	Mx	0.01	7.5
31	MP2C	X	23.348	0.5
32	MP2C	Z	-13.48	0.5
33	MP2C	Mx	0	0.5
34	MP2C	X	23.348	7.5
35	MP2C	Z	-13.48	7.5
36	MP2C	Mx	0	7.5
37	MP3A	X	5.6	1.5
38	MP3A	Z	-3.233	1.5
39	MP3A	Mx	-0.004	1.5
40	MP3A	X	5.6	6.5
41	MP3A	Z	-3.233	6.5
42	MP3A	Mx	-0.004	6.5
43	MP3B	X	5.6	1.5
44	MP3B	Z	-3.233	1.5
45	MP3B	Mx	0.004	1.5
46	MP3B	X	5.6	6.5
47	MP3B	Z	-3.233	6.5
48	MP3B	Mx	0.004	6.5
49	MP3C	X	10.174	1.5
50	MP3C	Z	-5.874	1.5
51	MP3C	Mx	0	1.5
52	MP3C	X	10.174	6.5
53	MP3C	Z	-5.874	6.5
54	MP3C	Mx	0	6.5
55	MP2A	X	3.872	3.5
56	MP2A	Z	-2.236	3.5
57	MP2A	Mx	0.002	3.5
58	MP2B	X	3.872	3.5
59	MP2B	Z	-2.236	3.5
60	MP2B	Mx	0.002	3.5
61	MP2C	X	3.872	3.5
62	MP2C	Z	-2.236	3.5
63	MP2C	Mx	0.002	3.5
64	MP4A	X	4.151	3.5
65	MP4A	Z	-2.397	3.5

Member Point Loads (BLC 29 : Antenna Wm (60 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
66	MP4A	Mx	0.002	3.5
67	MP4B	X	4.151	3.5
68	MP4B	Z	-2.397	3.5
69	MP4B	Mx	0.002	3.5
70	MP4C	X	4.151	3.5
71	MP4C	Z	-2.397	3.5
72	MP4C	Mx	0.002	3.5

Member Point Loads (BLC 30 : Antenna Wm (90 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	5.534	1
2	MP4A	Z	0	1
3	MP4A	Mx	-0.004	1
4	MP4A	X	5.534	7
5	MP4A	Z	0	7
6	MP4A	Mx	-0.004	7
7	MP4B	X	9.535	1
8	MP4B	Z	0	1
9	MP4B	Mx	0.004	1
10	MP4B	X	9.535	7
11	MP4B	Z	0	7
12	MP4B	Mx	0.004	7
13	MP4C	X	9.535	1
14	MP4C	Z	0	1
15	MP4C	Mx	0.004	1
16	MP4C	X	9.535	7
17	MP4C	Z	0	7
18	MP4C	Mx	0.004	7
19	MP2A	X	11.84	0.5
20	MP2A	Z	0	0.5
21	MP2A	Mx	-0.009	0.5
22	MP2A	X	11.84	7.5
23	MP2A	Z	0	7.5
24	MP2A	Mx	-0.009	7.5
25	MP2B	X	23.18	0.5
26	MP2B	Z	0	0.5
27	MP2B	Mx	0.009	0.5
28	MP2B	X	23.18	7.5
29	MP2B	Z	0	7.5
30	MP2B	Mx	0.009	7.5
31	MP2C	X	23.18	0.5
32	MP2C	Z	0	0.5
33	MP2C	Mx	0.009	0.5
34	MP2C	X	23.18	7.5
35	MP2C	Z	0	7.5
36	MP2C	Mx	0.009	7.5
37	MP3A	X	4.706	1.5
38	MP3A	Z	0	1.5
39	MP3A	Mx	-0.004	1.5
40	MP3A	X	4.706	6.5
41	MP3A	Z	0	6.5
42	MP3A	Mx	-0.004	6.5
43	MP3B	X	9.988	1.5
44	MP3B	Z	0	1.5
45	MP3B	Mx	0.004	1.5

Member Point Loads (BLC 30 : Antenna Wm (90 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
46	MP3B	X	9.988	6.5
47	MP3B	Z	0	6.5
48	MP3B	Mx	0.004	6.5
49	MP3C	X	9.988	1.5
50	MP3C	Z	0	1.5
51	MP3C	Mx	0.004	1.5
52	MP3C	X	9.988	6.5
53	MP3C	Z	0	6.5
54	MP3C	Mx	0.004	6.5
55	MP2A	X	4.212	3.5
56	MP2A	Z	0	3.5
57	MP2A	Mx	0.002	3.5
58	MP2B	X	4.212	3.5
59	MP2B	Z	0	3.5
60	MP2B	Mx	0.002	3.5
61	MP2C	X	4.212	3.5
62	MP2C	Z	0	3.5
63	MP2C	Mx	0.002	3.5
64	MP4A	X	4.491	3.5
65	MP4A	Z	0	3.5
66	MP4A	Mx	0.002	3.5
67	MP4B	X	4.491	3.5
68	MP4B	Z	0	3.5
69	MP4B	Mx	0.002	3.5
70	MP4C	X	4.491	3.5
71	MP4C	Z	0	3.5
72	MP4C	Mx	0.002	3.5

Member Point Loads (BLC 31 : Antenna Wm (120 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	5.948	1
2	MP4A	Z	3.434	1
3	MP4A	Mx	-0.004	1
4	MP4A	X	5.948	7
5	MP4A	Z	3.434	7
6	MP4A	Mx	-0.004	7
7	MP4B	X	9.413	1
8	MP4B	Z	5.435	1
9	MP4B	Mx	0	1
10	MP4B	X	9.413	7
11	MP4B	Z	5.435	7
12	MP4B	Mx	0	7
13	MP4C	X	5.948	1
14	MP4C	Z	3.434	1
15	MP4C	Mx	0.004	1
16	MP4C	X	5.948	7
17	MP4C	Z	3.434	7
18	MP4C	Mx	0.004	7
19	MP2A	X	13.527	0.5
20	MP2A	Z	7.81	0.5
21	MP2A	Mx	-0.01	0.5
22	MP2A	X	13.527	7.5
23	MP2A	Z	7.81	7.5
24	MP2A	Mx	-0.01	7.5
25	MP2B	X	23.348	0.5

Member Point Loads (BLC 31 : Antenna Wm (120 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
26	MP2B	Z	13.48	0.5
27	MP2B	Mx	0	0.5
28	MP2B	X	23.348	7.5
29	MP2B	Z	13.48	7.5
30	MP2B	Mx	0	7.5
31	MP2C	X	13.527	0.5
32	MP2C	Z	7.81	0.5
33	MP2C	Mx	0.01	0.5
34	MP2C	X	13.527	7.5
35	MP2C	Z	7.81	7.5
36	MP2C	Mx	0.01	7.5
37	MP3A	X	5.6	1.5
38	MP3A	Z	3.233	1.5
39	MP3A	Mx	-0.004	1.5
40	MP3A	X	5.6	6.5
41	MP3A	Z	3.233	6.5
42	MP3A	Mx	-0.004	6.5
43	MP3B	X	10.174	1.5
44	MP3B	Z	5.874	1.5
45	MP3B	Mx	0	1.5
46	MP3B	X	10.174	6.5
47	MP3B	Z	5.874	6.5
48	MP3B	Mx	0	6.5
49	MP3C	X	5.6	1.5
50	MP3C	Z	3.233	1.5
51	MP3C	Mx	0.004	1.5
52	MP3C	X	5.6	6.5
53	MP3C	Z	3.233	6.5
54	MP3C	Mx	0.004	6.5
55	MP2A	X	3.872	3.5
56	MP2A	Z	2.236	3.5
57	MP2A	Mx	0.002	3.5
58	MP2B	X	3.872	3.5
59	MP2B	Z	2.236	3.5
60	MP2B	Mx	0.002	3.5
61	MP2C	X	3.872	3.5
62	MP2C	Z	2.236	3.5
63	MP2C	Mx	0.002	3.5
64	MP4A	X	4.151	3.5
65	MP4A	Z	2.397	3.5
66	MP4A	Mx	0.002	3.5
67	MP4B	X	4.151	3.5
68	MP4B	Z	2.397	3.5
69	MP4B	Mx	0.002	3.5
70	MP4C	X	4.151	3.5
71	MP4C	Z	2.397	3.5
72	MP4C	Mx	0.002	3.5

Member Point Loads (BLC 32 : Antenna Wm (150 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	4.768	1
2	MP4A	Z	8.258	1
3	MP4A	Mx	-0.004	1
4	MP4A	X	4.768	7
5	MP4A	Z	8.258	7

Member Point Loads (BLC 32 : Antenna Wm (150 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
6	MP4A	Mx	-0.004	7
7	MP4B	X	4.768	1
8	MP4B	Z	8.258	1
9	MP4B	Mx	-0.004	1
10	MP4B	X	4.768	7
11	MP4B	Z	8.258	7
12	MP4B	Mx	-0.004	7
13	MP4C	X	2.767	1
14	MP4C	Z	4.793	1
15	MP4C	Mx	0.004	1
16	MP4C	X	2.767	7
17	MP4C	Z	4.793	7
18	MP4C	Mx	0.004	7
19	MP2A	X	11.59	0.5
20	MP2A	Z	20.074	0.5
21	MP2A	Mx	-0.009	0.5
22	MP2A	X	11.59	7.5
23	MP2A	Z	20.074	7.5
24	MP2A	Mx	-0.009	7.5
25	MP2B	X	11.59	0.5
26	MP2B	Z	20.074	0.5
27	MP2B	Mx	-0.009	0.5
28	MP2B	X	11.59	7.5
29	MP2B	Z	20.074	7.5
30	MP2B	Mx	-0.009	7.5
31	MP2C	X	5.92	0.5
32	MP2C	Z	10.253	0.5
33	MP2C	Mx	0.009	0.5
34	MP2C	X	5.92	7.5
35	MP2C	Z	10.253	7.5
36	MP2C	Mx	0.009	7.5
37	MP3A	X	4.994	1.5
38	MP3A	Z	8.65	1.5
39	MP3A	Mx	-0.004	1.5
40	MP3A	X	4.994	6.5
41	MP3A	Z	8.65	6.5
42	MP3A	Mx	-0.004	6.5
43	MP3B	X	4.994	1.5
44	MP3B	Z	8.65	1.5
45	MP3B	Mx	-0.004	1.5
46	MP3B	X	4.994	6.5
47	MP3B	Z	8.65	6.5
48	MP3B	Mx	-0.004	6.5
49	MP3C	X	2.353	1.5
50	MP3C	Z	4.076	1.5
51	MP3C	Mx	0.004	1.5
52	MP3C	X	2.353	6.5
53	MP3C	Z	4.076	6.5
54	MP3C	Mx	0.004	6.5
55	MP2A	X	2.495	3.5
56	MP2A	Z	4.321	3.5
57	MP2A	Mx	0.001	3.5
58	MP2B	X	2.495	3.5
59	MP2B	Z	4.321	3.5
60	MP2B	Mx	0.001	3.5

Member Point Loads (BLC 32 : Antenna Wm (150 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
61	MP2C	X	2.495	3.5
62	MP2C	Z	4.321	3.5
63	MP2C	Mx	0.001	3.5
64	MP4A	X	2.699	3.5
65	MP4A	Z	4.675	3.5
66	MP4A	Mx	0.001	3.5
67	MP4B	X	2.699	3.5
68	MP4B	Z	4.675	3.5
69	MP4B	Mx	0.001	3.5
70	MP4C	X	2.699	3.5
71	MP4C	Z	4.675	3.5
72	MP4C	Mx	0.001	3.5

Member Point Loads (BLC 33 : Antenna Wm (180 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	0	1
2	MP4A	Z	10.869	1
3	MP4A	Mx	0	1
4	MP4A	X	0	7
5	MP4A	Z	10.869	7
6	MP4A	Mx	0	7
7	MP4B	X	0	1
8	MP4B	Z	6.868	1
9	MP4B	Mx	-0.004	1
10	MP4B	X	0	7
11	MP4B	Z	6.868	7
12	MP4B	Mx	-0.004	7
13	MP4C	X	0	1
14	MP4C	Z	6.868	1
15	MP4C	Mx	0.004	1
16	MP4C	X	0	7
17	MP4C	Z	6.868	7
18	MP4C	Mx	0.004	7
19	MP2A	X	0	0.5
20	MP2A	Z	26.96	0.5
21	MP2A	Mx	0	0.5
22	MP2A	X	0	7.5
23	MP2A	Z	26.96	7.5
24	MP2A	Mx	0	7.5
25	MP2B	X	0	0.5
26	MP2B	Z	15.62	0.5
27	MP2B	Mx	-0.01	0.5
28	MP2B	X	0	7.5
29	MP2B	Z	15.62	7.5
30	MP2B	Mx	-0.01	7.5
31	MP2C	X	0	0.5
32	MP2C	Z	15.62	0.5
33	MP2C	Mx	0.01	0.5
34	MP2C	X	0	7.5
35	MP2C	Z	15.62	7.5
36	MP2C	Mx	0.01	7.5
37	MP3A	X	0	1.5
38	MP3A	Z	11.748	1.5
39	MP3A	Mx	0	1.5
40	MP3A	X	0	6.5

Member Point Loads (BLC 33 : Antenna Wm (180 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
41	MP3A	Z	11.748	6.5
42	MP3A	Mx	0	6.5
43	MP3B	X	0	1.5
44	MP3B	Z	6.467	1.5
45	MP3B	Mx	-0.004	1.5
46	MP3B	X	0	6.5
47	MP3B	Z	6.467	6.5
48	MP3B	Mx	-0.004	6.5
49	MP3C	X	0	1.5
50	MP3C	Z	6.467	1.5
51	MP3C	Mx	0.004	1.5
52	MP3C	X	0	6.5
53	MP3C	Z	6.467	6.5
54	MP3C	Mx	0.004	6.5
55	MP2A	X	0	3.5
56	MP2A	Z	5.248	3.5
57	MP2A	Mx	0	3.5
58	MP2B	X	0	3.5
59	MP2B	Z	5.248	3.5
60	MP2B	Mx	0	3.5
61	MP2C	X	0	3.5
62	MP2C	Z	5.248	3.5
63	MP2C	Mx	0	3.5
64	MP4A	X	0	3.5
65	MP4A	Z	5.701	3.5
66	MP4A	Mx	0	3.5
67	MP4B	X	0	3.5
68	MP4B	Z	5.701	3.5
69	MP4B	Mx	0	3.5
70	MP4C	X	0	3.5
71	MP4C	Z	5.701	3.5
72	MP4C	Mx	0	3.5

Member Point Loads (BLC 34 : Antenna Wm (210 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-4.768	1
2	MP4A	Z	8.258	1
3	MP4A	Mx	0.004	1
4	MP4A	X	-4.768	7
5	MP4A	Z	8.258	7
6	MP4A	Mx	0.004	7
7	MP4B	X	-2.767	1
8	MP4B	Z	4.793	1
9	MP4B	Mx	-0.004	1
10	MP4B	X	-2.767	7
11	MP4B	Z	4.793	7
12	MP4B	Mx	-0.004	7
13	MP4C	X	-4.768	1
14	MP4C	Z	8.258	1
15	MP4C	Mx	0.004	1
16	MP4C	X	-4.768	7
17	MP4C	Z	8.258	7
18	MP4C	Mx	0.004	7
19	MP2A	X	-11.59	0.5
20	MP2A	Z	20.074	0.5

Member Point Loads (BLC 34 : Antenna Wm (210 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
21	MP2A	Mx	0.009	0.5
22	MP2A	X	-11.59	7.5
23	MP2A	Z	20.074	7.5
24	MP2A	Mx	0.009	7.5
25	MP2B	X	-5.92	0.5
26	MP2B	Z	10.253	0.5
27	MP2B	Mx	-0.009	0.5
28	MP2B	X	-5.92	7.5
29	MP2B	Z	10.253	7.5
30	MP2B	Mx	-0.009	7.5
31	MP2C	X	-11.59	0.5
32	MP2C	Z	20.074	0.5
33	MP2C	Mx	0.009	0.5
34	MP2C	X	-11.59	7.5
35	MP2C	Z	20.074	7.5
36	MP2C	Mx	0.009	7.5
37	MP3A	X	-4.994	1.5
38	MP3A	Z	8.65	1.5
39	MP3A	Mx	0.004	1.5
40	MP3A	X	-4.994	6.5
41	MP3A	Z	8.65	6.5
42	MP3A	Mx	0.004	6.5
43	MP3B	X	-2.353	1.5
44	MP3B	Z	4.076	1.5
45	MP3B	Mx	-0.004	1.5
46	MP3B	X	-2.353	6.5
47	MP3B	Z	4.076	6.5
48	MP3B	Mx	-0.004	6.5
49	MP3C	X	-4.994	1.5
50	MP3C	Z	8.65	1.5
51	MP3C	Mx	0.004	1.5
52	MP3C	X	-4.994	6.5
53	MP3C	Z	8.65	6.5
54	MP3C	Mx	0.004	6.5
55	MP2A	X	-2.495	3.5
56	MP2A	Z	4.321	3.5
57	MP2A	Mx	-0.001	3.5
58	MP2B	X	-2.495	3.5
59	MP2B	Z	4.321	3.5
60	MP2B	Mx	-0.001	3.5
61	MP2C	X	-2.495	3.5
62	MP2C	Z	4.321	3.5
63	MP2C	Mx	-0.001	3.5
64	MP4A	X	-2.699	3.5
65	MP4A	Z	4.675	3.5
66	MP4A	Mx	-0.001	3.5
67	MP4B	X	-2.699	3.5
68	MP4B	Z	4.675	3.5
69	MP4B	Mx	-0.001	3.5
70	MP4C	X	-2.699	3.5
71	MP4C	Z	4.675	3.5
72	MP4C	Mx	-0.001	3.5

Member Point Loads (BLC 35 : Antenna Wm (240 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-5.948	1
2	MP4A	Z	3.434	1
3	MP4A	Mx	0.004	1
4	MP4A	X	-5.948	7
5	MP4A	Z	3.434	7
6	MP4A	Mx	0.004	7
7	MP4B	X	-5.948	1
8	MP4B	Z	3.434	1
9	MP4B	Mx	-0.004	1
10	MP4B	X	-5.948	7
11	MP4B	Z	3.434	7
12	MP4B	Mx	-0.004	7
13	MP4C	X	-9.413	1
14	MP4C	Z	5.435	1
15	MP4C	Mx	0	1
16	MP4C	X	-9.413	7
17	MP4C	Z	5.435	7
18	MP4C	Mx	0	7
19	MP2A	X	-13.527	0.5
20	MP2A	Z	7.81	0.5
21	MP2A	Mx	0.01	0.5
22	MP2A	X	-13.527	7.5
23	MP2A	Z	7.81	7.5
24	MP2A	Mx	0.01	7.5
25	MP2B	X	-13.527	0.5
26	MP2B	Z	7.81	0.5
27	MP2B	Mx	-0.01	0.5
28	MP2B	X	-13.527	7.5
29	MP2B	Z	7.81	7.5
30	MP2B	Mx	-0.01	7.5
31	MP2C	X	-23.348	0.5
32	MP2C	Z	13.48	0.5
33	MP2C	Mx	0	0.5
34	MP2C	X	-23.348	7.5
35	MP2C	Z	13.48	7.5
36	MP2C	Mx	0	7.5
37	MP3A	X	-5.6	1.5
38	MP3A	Z	3.233	1.5
39	MP3A	Mx	0.004	1.5
40	MP3A	X	-5.6	6.5
41	MP3A	Z	3.233	6.5
42	MP3A	Mx	0.004	6.5
43	MP3B	X	-5.6	1.5
44	MP3B	Z	3.233	1.5
45	MP3B	Mx	-0.004	1.5
46	MP3B	X	-5.6	6.5
47	MP3B	Z	3.233	6.5
48	MP3B	Mx	-0.004	6.5
49	MP3C	X	-10.174	1.5
50	MP3C	Z	5.874	1.5
51	MP3C	Mx	0	1.5
52	MP3C	X	-10.174	6.5
53	MP3C	Z	5.874	6.5
54	MP3C	Mx	0	6.5
55	MP2A	X	-3.872	3.5

Member Point Loads (BLC 35 : Antenna Wm (240 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
56	MP2A	Z	2.236	3.5
57	MP2A	Mx	-0.002	3.5
58	MP2B	X	-3.872	3.5
59	MP2B	Z	2.236	3.5
60	MP2B	Mx	-0.002	3.5
61	MP2C	X	-3.872	3.5
62	MP2C	Z	2.236	3.5
63	MP2C	Mx	-0.002	3.5
64	MP4A	X	-4.151	3.5
65	MP4A	Z	2.397	3.5
66	MP4A	Mx	-0.002	3.5
67	MP4B	X	-4.151	3.5
68	MP4B	Z	2.397	3.5
69	MP4B	Mx	-0.002	3.5
70	MP4C	X	-4.151	3.5
71	MP4C	Z	2.397	3.5
72	MP4C	Mx	-0.002	3.5

Member Point Loads (BLC 36 : Antenna Wm (270 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-5.534	1
2	MP4A	Z	0	1
3	MP4A	Mx	0.004	1
4	MP4A	X	-5.534	7
5	MP4A	Z	0	7
6	MP4A	Mx	0.004	7
7	MP4B	X	-9.535	1
8	MP4B	Z	0	1
9	MP4B	Mx	-0.004	1
10	MP4B	X	-9.535	7
11	MP4B	Z	0	7
12	MP4B	Mx	-0.004	7
13	MP4C	X	-9.535	1
14	MP4C	Z	0	1
15	MP4C	Mx	-0.004	1
16	MP4C	X	-9.535	7
17	MP4C	Z	0	7
18	MP4C	Mx	-0.004	7
19	MP2A	X	-11.84	0.5
20	MP2A	Z	0	0.5
21	MP2A	Mx	0.009	0.5
22	MP2A	X	-11.84	7.5
23	MP2A	Z	0	7.5
24	MP2A	Mx	0.009	7.5
25	MP2B	X	-23.18	0.5
26	MP2B	Z	0	0.5
27	MP2B	Mx	-0.009	0.5
28	MP2B	X	-23.18	7.5
29	MP2B	Z	0	7.5
30	MP2B	Mx	-0.009	7.5
31	MP2C	X	-23.18	0.5
32	MP2C	Z	0	0.5
33	MP2C	Mx	-0.009	0.5
34	MP2C	X	-23.18	7.5
35	MP2C	Z	0	7.5

Member Point Loads (BLC 36 : Antenna Wm (270 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
36	MP2C	Mx	-0.009	7.5
37	MP3A	X	-4.706	1.5
38	MP3A	Z	0	1.5
39	MP3A	Mx	0.004	1.5
40	MP3A	X	-4.706	6.5
41	MP3A	Z	0	6.5
42	MP3A	Mx	0.004	6.5
43	MP3B	X	-9.988	1.5
44	MP3B	Z	0	1.5
45	MP3B	Mx	-0.004	1.5
46	MP3B	X	-9.988	6.5
47	MP3B	Z	0	6.5
48	MP3B	Mx	-0.004	6.5
49	MP3C	X	-9.988	1.5
50	MP3C	Z	0	1.5
51	MP3C	Mx	-0.004	1.5
52	MP3C	X	-9.988	6.5
53	MP3C	Z	0	6.5
54	MP3C	Mx	-0.004	6.5
55	MP2A	X	-4.212	3.5
56	MP2A	Z	0	3.5
57	MP2A	Mx	-0.002	3.5
58	MP2B	X	-4.212	3.5
59	MP2B	Z	0	3.5
60	MP2B	Mx	-0.002	3.5
61	MP2C	X	-4.212	3.5
62	MP2C	Z	0	3.5
63	MP2C	Mx	-0.002	3.5
64	MP4A	X	-4.491	3.5
65	MP4A	Z	0	3.5
66	MP4A	Mx	-0.002	3.5
67	MP4B	X	-4.491	3.5
68	MP4B	Z	0	3.5
69	MP4B	Mx	-0.002	3.5
70	MP4C	X	-4.491	3.5
71	MP4C	Z	0	3.5
72	MP4C	Mx	-0.002	3.5

Member Point Loads (BLC 37 : Antenna Wm (300 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-5.948	1
2	MP4A	Z	-3.434	1
3	MP4A	Mx	0.004	1
4	MP4A	X	-5.948	7
5	MP4A	Z	-3.434	7
6	MP4A	Mx	0.004	7
7	MP4B	X	-9.413	1
8	MP4B	Z	-5.435	1
9	MP4B	Mx	0	1
10	MP4B	X	-9.413	7
11	MP4B	Z	-5.435	7
12	MP4B	Mx	0	7
13	MP4C	X	-5.948	1
14	MP4C	Z	-3.434	1
15	MP4C	Mx	-0.004	1

Member Point Loads (BLC 37 : Antenna Wm (300 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
16	MP4C	X	-5.948	7
17	MP4C	Z	-3.434	7
18	MP4C	Mx	-0.004	7
19	MP2A	X	-13.527	0.5
20	MP2A	Z	-7.81	0.5
21	MP2A	Mx	0.01	0.5
22	MP2A	X	-13.527	7.5
23	MP2A	Z	-7.81	7.5
24	MP2A	Mx	0.01	7.5
25	MP2B	X	-23.348	0.5
26	MP2B	Z	-13.48	0.5
27	MP2B	Mx	0	0.5
28	MP2B	X	-23.348	7.5
29	MP2B	Z	-13.48	7.5
30	MP2B	Mx	0	7.5
31	MP2C	X	-13.527	0.5
32	MP2C	Z	-7.81	0.5
33	MP2C	Mx	-0.01	0.5
34	MP2C	X	-13.527	7.5
35	MP2C	Z	-7.81	7.5
36	MP2C	Mx	-0.01	7.5
37	MP3A	X	-5.6	1.5
38	MP3A	Z	-3.233	1.5
39	MP3A	Mx	0.004	1.5
40	MP3A	X	-5.6	6.5
41	MP3A	Z	-3.233	6.5
42	MP3A	Mx	0.004	6.5
43	MP3B	X	-10.174	1.5
44	MP3B	Z	-5.874	1.5
45	MP3B	Mx	0	1.5
46	MP3B	X	-10.174	6.5
47	MP3B	Z	-5.874	6.5
48	MP3B	Mx	0	6.5
49	MP3C	X	-5.6	1.5
50	MP3C	Z	-3.233	1.5
51	MP3C	Mx	-0.004	1.5
52	MP3C	X	-5.6	6.5
53	MP3C	Z	-3.233	6.5
54	MP3C	Mx	-0.004	6.5
55	MP2A	X	-3.872	3.5
56	MP2A	Z	-2.236	3.5
57	MP2A	Mx	-0.002	3.5
58	MP2B	X	-3.872	3.5
59	MP2B	Z	-2.236	3.5
60	MP2B	Mx	-0.002	3.5
61	MP2C	X	-3.872	3.5
62	MP2C	Z	-2.236	3.5
63	MP2C	Mx	-0.002	3.5
64	MP4A	X	-4.151	3.5
65	MP4A	Z	-2.397	3.5
66	MP4A	Mx	-0.002	3.5
67	MP4B	X	-4.151	3.5
68	MP4B	Z	-2.397	3.5
69	MP4B	Mx	-0.002	3.5
70	MP4C	X	-4.151	3.5

Member Point Loads (BLC 37 : Antenna Wm (300 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
71	MP4C	Z	-2.397	3.5
72	MP4C	Mx	-0.002	3.5

Member Point Loads (BLC 38 : Antenna Wm (330 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	-4.768	1
2	MP4A	Z	-8.258	1
3	MP4A	Mx	0.004	1
4	MP4A	X	-4.768	7
5	MP4A	Z	-8.258	7
6	MP4A	Mx	0.004	7
7	MP4B	X	-4.768	1
8	MP4B	Z	-8.258	1
9	MP4B	Mx	0.004	1
10	MP4B	X	-4.768	7
11	MP4B	Z	-8.258	7
12	MP4B	Mx	0.004	7
13	MP4C	X	-2.767	1
14	MP4C	Z	-4.793	1
15	MP4C	Mx	-0.004	1
16	MP4C	X	-2.767	7
17	MP4C	Z	-4.793	7
18	MP4C	Mx	-0.004	7
19	MP2A	X	-11.59	0.5
20	MP2A	Z	-20.074	0.5
21	MP2A	Mx	0.009	0.5
22	MP2A	X	-11.59	7.5
23	MP2A	Z	-20.074	7.5
24	MP2A	Mx	0.009	7.5
25	MP2B	X	-11.59	0.5
26	MP2B	Z	-20.074	0.5
27	MP2B	Mx	0.009	0.5
28	MP2B	X	-11.59	7.5
29	MP2B	Z	-20.074	7.5
30	MP2B	Mx	0.009	7.5
31	MP2C	X	-5.92	0.5
32	MP2C	Z	-10.253	0.5
33	MP2C	Mx	-0.009	0.5
34	MP2C	X	-5.92	7.5
35	MP2C	Z	-10.253	7.5
36	MP2C	Mx	-0.009	7.5
37	MP3A	X	-4.994	1.5
38	MP3A	Z	-8.65	1.5
39	MP3A	Mx	0.004	1.5
40	MP3A	X	-4.994	6.5
41	MP3A	Z	-8.65	6.5
42	MP3A	Mx	0.004	6.5
43	MP3B	X	-4.994	1.5
44	MP3B	Z	-8.65	1.5
45	MP3B	Mx	0.004	1.5
46	MP3B	X	-4.994	6.5
47	MP3B	Z	-8.65	6.5
48	MP3B	Mx	0.004	6.5
49	MP3C	X	-2.353	1.5
50	MP3C	Z	-4.076	1.5

Member Point Loads (BLC 38 : Antenna Wm (330 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
51	MP3C	Mx	-0.004	1.5
52	MP3C	X	-2.353	6.5
53	MP3C	Z	-4.076	6.5
54	MP3C	Mx	-0.004	6.5
55	MP2A	X	-2.495	3.5
56	MP2A	Z	-4.321	3.5
57	MP2A	Mx	-0.001	3.5
58	MP2B	X	-2.495	3.5
59	MP2B	Z	-4.321	3.5
60	MP2B	Mx	-0.001	3.5
61	MP2C	X	-2.495	3.5
62	MP2C	Z	-4.321	3.5
63	MP2C	Mx	-0.001	3.5
64	MP4A	X	-2.699	3.5
65	MP4A	Z	-4.675	3.5
66	MP4A	Mx	-0.001	3.5
67	MP4B	X	-2.699	3.5
68	MP4B	Z	-4.675	3.5
69	MP4B	Mx	-0.001	3.5
70	MP4C	X	-2.699	3.5
71	MP4C	Z	-4.675	3.5
72	MP4C	Mx	-0.001	3.5

Member Point Loads (BLC 77 : Lm1)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	M52	Y	-500	%3

Member Point Loads (BLC 78 : Lm2)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	M52	Y	-500	%97

Member Point Loads (BLC 79 : Lv1)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	M1	Y	-250	%5

Member Point Loads (BLC 80 : Lv2)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	M1	Y	-250	%50

Member Point Loads (BLC 81 : Antenna Ev)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	Y	-0.803	1
2	MP4A	My	-0.000602	1
3	MP4A	Mz	0	1
4	MP4A	Y	-0.803	7
5	MP4A	My	-0.000602	7
6	MP4A	Mz	0	7
7	MP4B	Y	-0.803	1
8	MP4B	My	0.000301	1

Member Point Loads (BLC 81 : Antenna Ev) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
9	MP4B	Mz	-0.000521	1
10	MP4B	Y	-0.803	7
11	MP4B	My	0.000301	7
12	MP4B	Mz	-0.000521	7
13	MP4C	Y	-0.803	1
14	MP4C	My	0.000301	1
15	MP4C	Mz	0.000521	1
16	MP4C	Y	-0.803	7
17	MP4C	My	0.000301	7
18	MP4C	Mz	0.000521	7
19	MP2A	Y	-2.512	0.5
20	MP2A	My	-0.002	0.5
21	MP2A	Mz	0	0.5
22	MP2A	Y	-2.512	7.5
23	MP2A	My	-0.002	7.5
24	MP2A	Mz	0	7.5
25	MP2B	Y	-2.512	0.5
26	MP2B	My	0.000942	0.5
27	MP2B	Mz	-0.002	0.5
28	MP2B	Y	-2.512	7.5
29	MP2B	My	0.000942	7.5
30	MP2B	Mz	-0.002	7.5
31	MP2C	Y	-2.512	0.5
32	MP2C	My	0.000942	0.5
33	MP2C	Mz	0.002	0.5
34	MP2C	Y	-2.512	7.5
35	MP2C	My	0.000942	7.5
36	MP2C	Mz	0.002	7.5
37	MP3A	Y	-0.628	1.5
38	MP3A	My	-0.000471	1.5
39	MP3A	Mz	0	1.5
40	MP3A	Y	-0.628	6.5
41	MP3A	My	-0.000471	6.5
42	MP3A	Mz	0	6.5
43	MP3B	Y	-0.628	1.5
44	MP3B	My	0.000236	1.5
45	MP3B	Mz	-0.000408	1.5
46	MP3B	Y	-0.628	6.5
47	MP3B	My	0.000236	6.5
48	MP3B	Mz	-0.000408	6.5
49	MP3C	Y	-0.628	1.5
50	MP3C	My	0.000236	1.5
51	MP3C	Mz	0.000408	1.5
52	MP3C	Y	-0.628	6.5
53	MP3C	My	0.000236	6.5
54	MP3C	Mz	0.000408	6.5
55	MP2A	Y	-2.944	3.5
56	MP2A	My	0.001	3.5
57	MP2A	Mz	0	3.5
58	MP2B	Y	-2.944	3.5
59	MP2B	My	0.001	3.5
60	MP2B	Mz	0	3.5
61	MP2C	Y	-2.944	3.5
62	MP2C	My	0.001	3.5
63	MP2C	Mz	0	3.5

Member Point Loads (BLC 81 : Antenna Ev) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
64	MP4A	Y	-4.082	3.5
65	MP4A	My	0.002	3.5
66	MP4A	Mz	0	3.5
67	MP4B	Y	-4.082	3.5
68	MP4B	My	0.002	3.5
69	MP4B	Mz	0	3.5
70	MP4C	Y	-4.082	3.5
71	MP4C	My	0.002	3.5
72	MP4C	Mz	0	3.5

Member Point Loads (BLC 82 : Antenna Eh (0 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	Z	-2.007	1
2	MP4A	Mx	0	1
3	MP4A	Z	-2.007	7
4	MP4A	Mx	0	7
5	MP4B	Z	-2.007	1
6	MP4B	Mx	0.001	1
7	MP4B	Z	-2.007	7
8	MP4B	Mx	0.001	7
9	MP4C	Z	-2.007	1
10	MP4C	Mx	-0.001	1
11	MP4C	Z	-2.007	7
12	MP4C	Mx	-0.001	7
13	MP2A	Z	-6.281	0.5
14	MP2A	Mx	0	0.5
15	MP2A	Z	-6.281	7.5
16	MP2A	Mx	0	7.5
17	MP2B	Z	-6.281	0.5
18	MP2B	Mx	0.004	0.5
19	MP2B	Z	-6.281	7.5
20	MP2B	Mx	0.004	7.5
21	MP2C	Z	-6.281	0.5
22	MP2C	Mx	-0.004	0.5
23	MP2C	Z	-6.281	7.5
24	MP2C	Mx	-0.004	7.5
25	MP3A	Z	-1.57	1.5
26	MP3A	Mx	0	1.5
27	MP3A	Z	-1.57	6.5
28	MP3A	Mx	0	6.5
29	MP3B	Z	-1.57	1.5
30	MP3B	Mx	0.001	1.5
31	MP3B	Z	-1.57	6.5
32	MP3B	Mx	0.001	6.5
33	MP3C	Z	-1.57	1.5
34	MP3C	Mx	-0.001	1.5
35	MP3C	Z	-1.57	6.5
36	MP3C	Mx	-0.001	6.5
37	MP2A	Z	-7.36	3.5
38	MP2A	Mx	0	3.5
39	MP2B	Z	-7.36	3.5
40	MP2B	Mx	0	3.5
41	MP2C	Z	-7.36	3.5
42	MP2C	Mx	0	3.5
43	MP4A	Z	-10.206	3.5

Member Point Loads (BLC 82 : Antenna Eh (0 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
44	MP4A	Mx	0	3.5
45	MP4B	Z	-10.206	3.5
46	MP4B	Mx	0	3.5
47	MP4C	Z	-10.206	3.5
48	MP4C	Mx	0	3.5

Member Point Loads (BLC 83 : Antenna Eh (90 Deg))

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP4A	X	2.007	1
2	MP4A	Mx	-0.002	1
3	MP4A	X	2.007	7
4	MP4A	Mx	-0.002	7
5	MP4B	X	2.007	1
6	MP4B	Mx	0.000753	1
7	MP4B	X	2.007	7
8	MP4B	Mx	0.000753	7
9	MP4C	X	2.007	1
10	MP4C	Mx	0.000753	1
11	MP4C	X	2.007	7
12	MP4C	Mx	0.000753	7
13	MP2A	X	6.281	0.5
14	MP2A	Mx	-0.005	0.5
15	MP2A	X	6.281	7.5
16	MP2A	Mx	-0.005	7.5
17	MP2B	X	6.281	0.5
18	MP2B	Mx	0.002	0.5
19	MP2B	X	6.281	7.5
20	MP2B	Mx	0.002	7.5
21	MP2C	X	6.281	0.5
22	MP2C	Mx	0.002	0.5
23	MP2C	X	6.281	7.5
24	MP2C	Mx	0.002	7.5
25	MP3A	X	1.57	1.5
26	MP3A	Mx	-0.001	1.5
27	MP3A	X	1.57	6.5
28	MP3A	Mx	-0.001	6.5
29	MP3B	X	1.57	1.5
30	MP3B	Mx	0.000589	1.5
31	MP3B	X	1.57	6.5
32	MP3B	Mx	0.000589	6.5
33	MP3C	X	1.57	1.5
34	MP3C	Mx	0.000589	1.5
35	MP3C	X	1.57	6.5
36	MP3C	Mx	0.000589	6.5
37	MP2A	X	7.36	3.5
38	MP2A	Mx	0.004	3.5
39	MP2B	X	7.36	3.5
40	MP2B	Mx	0.004	3.5
41	MP2C	X	7.36	3.5
42	MP2C	Mx	0.004	3.5
43	MP4A	X	10.206	3.5
44	MP4A	Mx	0.005	3.5
45	MP4B	X	10.206	3.5
46	MP4B	Mx	0.005	3.5
47	MP4C	X	10.206	3.5

Member Point Loads (BLC 83 : Antenna Eh (90 Deg)) (Continued)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
48	MP4C	Mx	0.005	3.5

Member Area Loads (BLC 39 : Structure D)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N38	N40	N39	N37	Y	Two Way	-0.005
2	N18	N19	N18A	N15	Y	Two Way	-0.005
3	N60	N62	N61	N59	Y	Two Way	-0.005

Member Area Loads (BLC 40 : Structure Di)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N38	N40	N39	N37	Y	Two Way	-0.01
2	N18	N19	N18A	N15	Y	Two Way	-0.01
3	N60	N62	N61	N59	Y	Two Way	-0.01

Member Area Loads (BLC 84 : Structure Ev)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N38	N40	N39	N37	Y	Two Way	-0.000204
2	N18	N19	N18A	N15	Y	Two Way	-0.000204
3	N60	N62	N61	N59	Y	Two Way	-0.000204

Member Area Loads (BLC 85 : Structure Eh (0 Deg))

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N38	N40	N39	N37	Z	Two Way	-0.00051
2	N18	N19	N18A	N15	Z	Two Way	-0.00051
3	N60	N62	N61	N59	Z	Two Way	-0.00051

Member Area Loads (BLC 86 : Structure Eh (90 Deg))

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N38	N40	N39	N37	X	Two Way	0.00051
2	N18	N19	N18A	N15	X	Two Way	0.00051
3	N60	N62	N61	N59	X	Two Way	0.00051

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N46	max	2836.406	11	568.091	11	1732.19	12	0.344	3	2.192	8	0.569	12
2		min	-4464.074	5	-258.471	5	-2682.088	5	-0.597	9	-2.169	2	-0.295	6
3	N2	max	1501.058	10	555.527	7	5362.604	1	0.571	7	2.25	4	0.589	4
4		min	-1499.73	4	-290.471	1	-3313.369	7	-0.253	1	-2.244	10	-0.486	10
5	N24A	max	4531.924	9	570.236	3	1616.803	2	0.465	11	2.168	12	0.222	8
6		min	-2908.245	3	-257.79	9	-2559.517	8	-0.532	5	-2.192	6	-0.607	2
7	N162	max	45.827	10	2376.682	13	281.225	7	0	75	0	8	0	2
8		min	-45.778	4	-274.627	7	-2517.586	13	0	1	0	2	0	8
9	N164	max	284.324	3	2271.063	21	1201.655	21	0	10	0	4	0	4
10		min	-2081.275	21	-318.157	3	-164.158	3	0	4	0	10	0	10
11	N166	max	2082.722	17	2272.633	17	1202.546	17	0	12	0	12	0	12
12		min	-282.401	11	-316.09	11	-163.016	11	0	6	0	6	0	6
13	Totals:	max	6447.617	10	7021.606	19	6559.036	1						

Envelope Node Reactions (Continued)

Node Label	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
14 min	-6447.621	4	2417.562	75	-6559.036	7						

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 [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M81	PIPE 2.0	0.462	8.724	11	0.287	11.849	11	6295.422	32130	1.872	1.872	1	H3-6		
2	M67	PIPE 2.0	0.466	8.724	3	0.286	11.849	3	6295.422	32130	1.872	1.872	1	H3-6		
3	M53	PIPE 2.0	0.453	8.724	7	0.282	11.849	7	6295.422	32130	1.872	1.872	1	H3-6		
4	M25	PL1/2X6	0.113	0.112	9	0.236	0	y	32	96757.343	97200	1.012	12.15	1.526	H1-1b	
5	M8	PL1/2X6	0.118	0.112	1	0.223	0	y	12	96757.342	97200	1.012	12.15	1.559	H1-1b	
6	M44	PL1/2X6	0.105	0.112	5	0.219	0	y	43	96757.343	97200	1.012	12.15	1.437	H1-1b	
7	M42	PL1/2X6	0.115	0.112	5	0.216	0	y	4	96757.348	97200	1.012	12.15	1.562	H1-1b	
8	M10	PL1/2X6	0.109	0.112	1	0.2	0	y	3	96757.342	97200	1.012	12.15	1.464	H1-1b	
9	M27	PL1/2X6	0.105	0.112	9	0.197	0	y	11	96757.348	97200	1.012	12.15	1.455	H1-1b	
10	M6	PL3/8X6	0.283	0.167	8	0.174	0	y	14	71583.566	72900	0.57	9.113	1.34	H1-1b	
11	M23	PL3/8X6	0.283	0.167	4	0.174	0	y	22	71583.558	72900	0.57	9.113	1.318	H1-1b	
12	M40	PL3/8X6	0.282	0.167	12	0.173	0	y	18	71583.564	72900	0.57	9.113	1.351	H1-1b	
13	M26	PL1/2X6	0.19	0	9	0.159	0	y	29	93348.509	97200	1.012	12.15	1.303	H1-1b	
14	MP1B	PIPE 2.5	0.174	5.583	1	0.148	2.083	11	30038.461	50715	3.596	3.596	1	H1-1b		
15	MP4C	PIPE 2.5	0.21	5.583	1	0.146	5.583	3	30038.461	50715	3.596	3.596	1	H1-1b		
16	MP4B	PIPE 2.5	0.201	5.583	9	0.145	2.083	11	30038.461	50715	3.596	3.596	1	H1-1b		
17	MP1C	PIPE 2.5	0.178	5.583	12	0.145	2.083	3	30038.461	50715	3.596	3.596	1	H1-1b		
18	M4	PL3/8X6	0.291	0.167	6	0.144	0	y	23	71583.558	72900	0.57	9.113	1.435	H1-1b	
19	MP1A	PIPE 2.5	0.169	5.583	4	0.144	2.083	7	30038.461	50715	3.596	3.596	1	H1-1b		
20	M38	PL3/8X6	0.289	0.167	10	0.144	0	y	15	71583.566	72900	0.57	9.113	1.44	H1-1b	
21	MP2B	PIPE 2.5	0.331	5.583	2	0.143	5.583	10	30038.461	50715	3.596	3.596	1	H1-1b		
22	M21	PL3/8X6	0.289	0.167	2	0.143	0	y	19	71583.564	72900	0.57	9.113	1.382	H1-1b	
23	MP2C	PIPE 2.5	0.323	5.583	12	0.143	2.083	2	30038.461	50715	3.596	3.596	1	H1-1b		
24	M43	PL1/2X6	0.192	0	5	0.142	0	y	13	93348.497	97200	1.012	12.15	1.302	H1-1b	
25	M9	PL1/2X6	0.198	0	1	0.14	0	y	21	93348.506	97200	1.012	12.15	1.304	H1-1b	
26	MP2A	PIPE 2.5	0.315	5.583	2	0.14	2.083	6	30038.461	50715	3.596	3.596	1	H1-1b		
27	MP4A	PIPE 2.5	0.199	5.583	5	0.139	5.583	1	30038.461	50715	3.596	3.596	1	H1-1b		
28	M41	PL1/2X6	0.237	0	4	0.133	0	y	44	93348.509	97200	1.012	12.15	1.323	H1-1b	
29	MP3B	PIPE 2.5	0.314	5.583	2	0.126	5.583	12	30038.461	50715	3.596	3.596	1	H1-1b		
30	MP3A	PIPE 2.5	0.297	5.583	10	0.122	5.583	8	30038.461	50715	3.596	3.596	1	H1-1b		
31	MP3C	PIPE 2.5	0.31	5.583	12	0.122	5.583	3	30038.461	50715	3.596	3.596	1	H1-1b		
32	M22	PL3/8X6	0.304	0	12	0.119	0	y	12	70647.065	72900	0.57	9.113	1.112	H1-1b	
33	M80	PIPE 3.0	0.144	8.594	2	0.118	0.651	11	28250.552	65205	5.749	5.749	1	H1-1b		
34	M66	PIPE 3.0	0.141	3.906	12	0.117	0.651	3	28250.552	65205	5.749	5.749	1	H1-1b		
35	M5	PL3/8X6	0.301	0	4	0.117	0	y	4	70647.064	72900	0.57	9.113	1.113	H1-1b	
36	M39	PL3/8X6	0.299	0	8	0.116	0	y	8	70647.065	72900	0.57	9.113	1.113	H1-1b	
37	M52	PIPE 3.0	0.138	8.594	10	0.115	0.651	7	28250.554	65205	5.749	5.749	1	H1-1b		
38	M24	PL1/2X6	0.247	0	8	0.114	0.333	y	12	93348.497	97200	1.012	12.15	1.322	H1-1b	
39	M7	PL1/2X6	0.242	0	12	0.111	0.333	y	4	93348.506	97200	1.012	12.15	1.322	H1-1b	
40	M100	L2.5X2.5X4	0.358	0	11	0.097	1.298	y	12	36492.099	38556	1.114	2.537	1.5	H2-1	
41	M102	L2.5X2.5X4	0.355	0	7	0.097	0	y	2	36492.099	38556	1.114	2.537	1.5	H2-1	
42	M101	L2.5X2.5X4	0.365	0	3	0.095	0	y	10	36492.099	38556	1.114	2.537	1.5	H2-1	
43	M18	HSS4X4X4	0.15	0	6	0.083	0	z	12	124118.182	139518	16.181	16.181	2.008	H1-1b	
44	M1	HSS4X4X4	0.152	0	4	0.082	0	z	4	124118.185	139518	16.181	16.181	2.006	H1-1b	
45	M35	HSS4X4X4	0.15	0	8	0.082	0	z	8	124118.182	139518	16.181	16.181	2.055	H1-1b	
46	M20	PL3/8X6	0.214	0	6	0.074	0	y	1	70647.065	72900	0.57	9.113	1.159	H1-1b	
47	M37	PL3/8X6	0.224	0	2	0.071	0	y	9	70647.065	72900	0.57	9.113	1.156	H1-1b	
48	M3	PL3/8X6	0.227	0	10	0.07	0	y	5	70647.064	72900	0.57	9.113	1.156	H1-1b	
49	M36	HSS4X4X4	0.093	2.573	18	0.045	4.931	z	7	124882.573	139518	16.181	16.181	1.367	H1-1b	
50	M2	HSS4X4X4	0.094	2.573	14	0.045	4.931	z	3	124882.574	139518	16.181	16.181	1.368	H1-1b	
51	M19	HSS4X4X4	0.094	2.573	22	0.044	4.931	z	11	124882.573	139518	16.181	16.181	1.368	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 [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn	
52	M46	L2X2X3	0.224	4.29	5	0.01	4.29	z	14	9305.237	23392.8	0.558	1.133	1.5	H2-1
53	M12	L2X2X3	0.227	4.29	1	0.009	4.29	z	22	9305.238	23392.8	0.558	1.133	1.5	H2-1
54	M29	L2X2X3	0.218	4.29	9	0.009	4.29	z	18	9305.238	23392.8	0.558	1.133	1.5	H2-1
55	M28	L2X2X3	0.209	4.29	9	0.008	4.29	z	1	9305.237	23392.8	0.558	1.133	1.5	H2-1
56	M45	L2X2X3	0.203	4.29	5	0.008	4.29	z	9	9305.238	23392.8	0.558	1.133	1.5	H2-1
57	M11	L2X2X3	0.21	4.29	1	0.008	4.29	z	5	9305.238	23392.8	0.558	1.133	1.5	H2-1
58	M104	LL2.5X2.5X3X3	0.08	0	21	0.004	5.156	y	10	41549.458	58320	3.954	2.544	1	H1-1b*
59	M105	LL2.5X2.5X3X3	0.08	0	17	0.004	5.156	y	4	41549.458	58320	3.954	2.544	1	H1-1b*
60	M103	LL2.5X2.5X3X3	0.083	0	13	0.004	5.156	y	2	41549.458	58320	3.954	2.544	1	H1-1b*

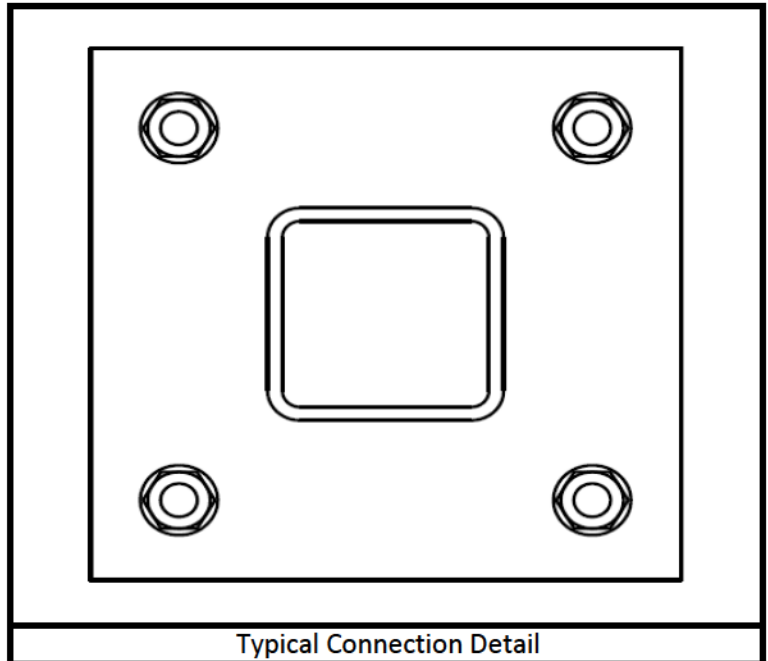
Envelope AISI S100-16: LRFD Member Cold Formed Steel Code Checks

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	Standoff Arm Flange Connection Check		Date	
	Customer:	SBA	TIA Standard:	ANSI/TIA-222-H
	Carrier:	T-Mobile	Mount Elev. [ft]:	
	Site Name:		Engineer Name:	S. Bhujel
	Site Number:		Project #:	

NOTE: The calculations shown below are for a single representative load combination for example purposes. The results for all load combinations are presented in the Results Summary Table.

RISA Member Label =	M1	
I or J End?	I	
Load Combination # =	4	
Plate Width, Wp =	8	[In]
Plate Height, Hp =	8	[In]
Plate Thickness, tp =	0.75	[In]
Plate Fy =	36	[KSI]
Bolt Diameter, db =	0.625	[In]
Bolt Fu =	120	[KSI]
Bolt Horizontal Spacing, Sbh =	6	[In]
Bolt Vertical Spacing, Sbv =	6	[In]
Standoff Member Shape =	Rect Tube	
Member Width, Wm =	4	[In]
Member Depth, Dm =	4	[In]
Member Thickness, tm =	0.25	[In]
Standoff Weld Size =	0.1875	[In]
# Standoff Welds =	2	
Length of Stiffener, Ls =		[In]
Width of Stiffener, Ws =		[In]
Width of Notch, Wn =		[In]
Stiffener Dim 1, ds1 =		[In]
Stiffener Dim 2, ds2 =		[In]
Stiffener Fy =		[KSI]
Stiffener Weld Size =		[In]
# Stiffener Welds =		



NOTES

Capacity Checks:

Max Bolt Shear =	0.742	[Kips]
Bolt Shear Capacity =	13.81	[Kips]
Max Bolt Shear Usage =	5.4%	PASS
Max Bolt Tension =	2.67	[Kips]
Bolt Tension Capacity =	20.34	[Kips]
Max Bolt Tension Usage =	13.1%	PASS
Max Bolt Interaction =	14.1%	PASS
Max Plate Bending Moment =	5.04	[Kip-In]
Length of Yield Line =	5.85	[In]
Plate Moment Capacity =	26.65	[Kip-In]
Max Plate Usage =	16.5%	PASS
Max Weld Usage =	18.4%	PASS

	Standoff Arm Flange Connection Check			Date
	Customer:	SBA	TIA Standard:	9/10/2024
	Carrier:	T-Mobile	Mount Elev. [ft]:	ANSI/TIA-222-H
	Site Name:		Engineer Name:	S. Bhujel
	Site Number:		Project #:	

Results Summary Table

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M1	I	1	0.1284	1.6887	0.9%	8.3%	8.3%	10.4%	9.1%
M1	I	2	0.3081	1.8579	2.2%	9.1%	9.2%	11.5%	11.8%
M1	I	3	0.5769	1.8965	4.2%	9.3%	9.9%	11.7%	12.2%
M1	I	4	0.7425	2.6706	5.4%	13.1%	14.1%	16.5%	18.4%
M1	I	5	0.5830	1.1291	4.2%	5.6%	6.7%	7.0%	12.6%
M1	I	6	0.3074	0.2435	2.2%	1.2%	2.5%	1.5%	5.2%
M1	I	7	0.1517	0.0000	1.1%	0.0%	1.1%	0.0%	8.3%
M1	I	8	0.2870	0.1988	2.1%	1.0%	2.3%	1.2%	10.8%
M1	I	9	0.5425	0.9498	3.9%	4.7%	5.8%	5.9%	7.2%
M1	I	10	0.6772	2.6406	4.9%	13.0%	13.8%	16.3%	16.0%
M1	I	11	0.4783	2.0045	3.5%	9.9%	10.1%	12.4%	13.2%
M1	I	12	0.1812	1.8861	1.3%	9.3%	9.3%	11.7%	9.2%
M1	I	13	0.1216	1.0517	0.9%	5.2%	5.2%	6.5%	6.6%
M1	I	14	0.1655	1.0909	1.2%	5.4%	5.5%	6.7%	6.0%
M1	I	15	0.2277	1.2025	1.6%	5.9%	6.0%	7.4%	7.8%
M1	I	16	0.2654	1.3703	1.9%	6.7%	6.9%	8.5%	9.0%
M1	I	17	0.2399	1.0405	1.7%	5.1%	5.2%	6.4%	6.9%
M1	I	18	0.1922	0.8105	1.4%	4.0%	4.2%	5.0%	4.4%
M1	I	19	0.1590	0.7334	1.2%	3.6%	3.8%	4.5%	4.7%
M1	I	20	0.1273	0.8139	0.9%	4.0%	4.0%	5.0%	5.3%
M1	I	21	0.1094	0.9986	0.8%	4.9%	5.0%	6.2%	3.6%
M1	I	22	0.1149	1.3534	0.8%	6.7%	6.7%	8.4%	3.9%
M1	I	23	0.0940	1.2085	0.7%	5.9%	6.0%	7.5%	4.5%
M1	I	24	0.0943	1.1033	0.7%	5.4%	5.4%	6.8%	6.9%
M1	I	25	0.0705	0.4447	0.5%	2.2%	2.2%	2.7%	2.6%
M1	I	26	0.0826	0.4738	0.6%	2.3%	2.4%	2.9%	2.4%
M1	I	27	0.0994	0.4511	0.7%	2.2%	2.3%	2.8%	2.9%
M1	I	28	0.1093	0.5038	0.8%	2.5%	2.5%	3.1%	3.3%
M1	I	29	0.1027	0.4096	0.7%	2.0%	2.1%	2.5%	2.7%
M1	I	30	0.0887	0.4000	0.6%	2.0%	2.1%	2.5%	2.0%
M1	I	31	0.0808	0.3744	0.6%	1.8%	1.9%	2.3%	2.1%
M1	I	32	0.0718	0.3542	0.5%	1.7%	1.8%	2.2%	2.3%
M1	I	33	0.0673	0.4418	0.5%	2.2%	2.2%	2.7%	1.8%
M1	I	34	0.0659	0.5436	0.5%	2.7%	2.7%	3.4%	1.5%
M1	I	35	0.0633	0.5012	0.5%	2.5%	2.5%	3.1%	2.0%
M1	I	36	0.0634	0.4310	0.5%	2.1%	2.1%	2.7%	2.7%
M1	I	37	0.0483	0.4627	0.4%	2.3%	2.3%	2.9%	2.9%
M1	I	38	0.0599	0.4289	0.4%	2.1%	2.1%	2.7%	2.7%
M1	I	39	0.0764	0.5010	0.6%	2.5%	2.5%	3.1%	3.2%
M1	I	40	0.0870	0.5527	0.6%	2.7%	2.7%	3.4%	3.6%
M1	I	41	0.0797	0.4595	0.6%	2.3%	2.3%	2.8%	3.0%
M1	I	42	0.0671	0.3521	0.5%	1.7%	1.8%	2.2%	2.3%

	Standoff Arm Flange Connection Check			Date
	Customer:	SBA	TIA Standard:	9/10/2024
	Carrier:	T-Mobile	Mount Elev. [ft]:	ANSI/TIA-222-H
	Site Name:		Engineer Name:	S. Bhujel
	Site Number:		Project #:	

Results Summary Table (Continued)

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M1	I	43	0.0572	0.3704	0.4%	1.8%	1.8%	2.3%	2.4%
M1	I	44	0.0484	0.4031	0.4%	2.0%	2.0%	2.5%	2.6%
M1	I	45	0.0423	0.3919	0.3%	1.9%	1.9%	2.4%	2.1%
M1	I	46	0.0406	0.4947	0.3%	2.4%	2.4%	3.1%	1.7%
M1	I	47	0.0379	0.4513	0.3%	2.2%	2.2%	2.8%	2.3%
M1	I	48	0.0393	0.4809	0.3%	2.4%	2.4%	3.0%	3.0%
M1	I	49	0.1532	0.5052	1.1%	2.5%	2.7%	3.1%	3.3%
M1	I	50	0.0979	0.6532	0.7%	3.2%	3.3%	4.0%	4.2%
M1	I	51	0.0746	0.4861	0.5%	2.4%	2.4%	3.0%	3.1%
M1	I	52	0.0629	0.4620	0.5%	2.3%	2.3%	2.9%	2.9%
M1	I	53	0.0707	0.4870	0.5%	2.4%	2.4%	3.0%	3.1%
M1	I	54	0.0774	0.4950	0.6%	2.4%	2.5%	3.1%	3.2%
M1	I	55	0.0805	0.4865	0.6%	2.4%	2.4%	3.0%	3.1%
M1	I	56	0.0799	0.4628	0.6%	2.3%	2.3%	2.9%	3.0%
M1	I	57	0.0751	0.4303	0.5%	2.1%	2.1%	2.7%	2.8%
M1	I	58	0.0693	0.3977	0.5%	2.0%	2.0%	2.5%	2.6%
M1	I	59	0.0665	0.4236	0.5%	2.1%	2.1%	2.6%	2.4%
M1	I	60	0.0637	0.4565	0.5%	2.2%	2.3%	2.8%	2.3%
M1	I	61	0.0618	0.4790	0.4%	2.4%	2.4%	3.0%	2.4%
M1	I	62	0.0605	0.4867	0.4%	2.4%	2.4%	3.0%	2.5%
M1	I	63	0.0611	0.4773	0.4%	2.3%	2.4%	2.9%	2.7%
M1	I	64	0.0430	0.3304	0.3%	1.6%	1.6%	2.0%	2.1%
M1	I	65	0.0510	0.3544	0.4%	1.7%	1.8%	2.2%	2.2%
M1	I	66	0.0579	0.3644	0.4%	1.8%	1.8%	2.3%	2.3%
M1	I	67	0.0610	0.3549	0.4%	1.7%	1.8%	2.2%	2.3%
M1	I	68	0.0602	0.3312	0.4%	1.6%	1.6%	2.0%	2.1%
M1	I	69	0.0552	0.2987	0.4%	1.5%	1.5%	1.8%	1.9%
M1	I	70	0.0486	0.2671	0.4%	1.3%	1.3%	1.7%	1.7%
M1	I	71	0.0459	0.2950	0.3%	1.5%	1.5%	1.8%	1.6%
M1	I	72	0.0438	0.3269	0.3%	1.6%	1.6%	2.0%	1.5%
M1	I	73	0.0413	0.3493	0.3%	1.7%	1.7%	2.2%	1.5%
M1	I	74	0.0407	0.3570	0.3%	1.8%	1.8%	2.2%	1.7%
M1	I	75	0.0412	0.3476	0.3%	1.7%	1.7%	2.1%	1.9%
M18	I	1	0.5984	1.0770	4.3%	5.3%	6.5%	6.7%	12.6%
M18	I	2	0.3228	0.2634	2.3%	1.3%	2.7%	1.6%	5.4%
M18	I	3	0.1648	0.0000	1.2%	0.0%	1.2%	0.0%	8.6%
M18	I	4	0.2727	0.2811	2.0%	1.4%	2.4%	1.7%	11.4%
M18	I	5	0.5285	0.8783	3.8%	4.3%	5.4%	5.4%	6.7%
M18	I	6	0.6693	2.5928	4.8%	12.7%	13.6%	16.0%	15.4%
M18	I	7	0.4677	1.9529	3.4%	9.6%	10.0%	12.1%	12.9%
M18	I	8	0.1663	1.8252	1.2%	9.0%	9.0%	11.3%	9.1%
M18	I	9	0.1283	1.5551	0.9%	7.6%	7.7%	9.6%	9.1%

	Standoff Arm Flange Connection Check			Date
	Customer:	SBA	TIA Standard:	9/10/2024
	Carrier:	T-Mobile	Mount Elev. [ft]:	ANSI/TIA-222-H
	Site Name:		Engineer Name:	S. Bhujel
	Site Number:		Project #:	

Results Summary Table (Continued)

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M18	I	10	0.3043	1.8891	2.2%	9.3%	9.4%	11.7%	12.0%
M18	I	11	0.5765	1.7465	4.2%	8.6%	9.4%	10.8%	11.5%
M18	I	12	0.7538	2.5918	5.5%	12.7%	13.8%	16.0%	18.0%
M18	I	13	0.2624	1.0147	1.9%	5.0%	5.1%	6.3%	6.8%
M18	I	14	0.2147	0.8373	1.6%	4.1%	4.4%	5.2%	4.4%
M18	I	15	0.1819	0.7525	1.3%	3.7%	3.9%	4.7%	4.8%
M18	I	16	0.1506	0.8156	1.1%	4.0%	4.0%	5.0%	5.4%
M18	I	17	0.1334	1.0075	1.0%	5.0%	5.0%	6.2%	3.6%
M18	I	18	0.1286	1.3672	0.9%	6.7%	6.8%	8.4%	3.6%
M18	I	19	0.1168	1.2289	0.8%	6.0%	6.1%	7.6%	4.4%
M18	I	20	0.1183	1.0851	0.9%	5.3%	5.3%	6.7%	6.8%
M18	I	21	0.1442	1.0432	1.0%	5.1%	5.2%	6.4%	6.4%
M18	I	22	0.1865	1.1327	1.4%	5.6%	5.7%	7.0%	5.8%
M18	I	23	0.2476	1.1673	1.8%	5.7%	5.9%	7.2%	7.6%
M18	I	24	0.2860	1.3402	2.1%	6.6%	6.8%	8.3%	8.9%
M18	I	25	0.0957	0.6039	0.7%	3.0%	3.0%	3.7%	3.1%
M18	I	26	0.0952	0.5280	0.7%	2.6%	2.7%	3.3%	3.3%
M18	I	27	0.1031	0.4965	0.7%	2.4%	2.5%	3.1%	3.1%
M18	I	28	0.1151	0.5401	0.8%	2.7%	2.7%	3.3%	2.9%
M18	I	29	0.1324	0.5848	1.0%	2.9%	3.0%	3.6%	3.7%
M18	I	30	0.1433	0.7105	1.0%	3.5%	3.6%	4.4%	4.5%
M18	I	31	0.1356	0.6956	1.0%	3.4%	3.5%	4.3%	4.4%
M18	I	32	0.1210	0.6956	0.9%	3.4%	3.5%	4.3%	3.9%
M18	I	33	0.1115	0.6792	0.8%	3.3%	3.4%	4.2%	4.1%
M18	I	34	0.1025	0.6915	0.7%	3.4%	3.5%	4.3%	4.3%
M18	I	35	0.0992	0.6908	0.7%	3.4%	3.4%	4.3%	3.5%
M18	I	36	0.0986	0.7206	0.7%	3.5%	3.6%	4.5%	3.7%
M18	I	37	0.0874	0.4687	0.6%	2.3%	2.3%	2.9%	3.1%
M18	I	38	0.0762	0.4387	0.6%	2.2%	2.2%	2.7%	2.4%
M18	I	39	0.0689	0.4112	0.5%	2.0%	2.1%	2.5%	2.5%
M18	I	40	0.0603	0.4209	0.4%	2.1%	2.1%	2.6%	2.7%
M18	I	41	0.0537	0.4755	0.4%	2.3%	2.4%	2.9%	2.2%
M18	I	42	0.0573	0.5793	0.4%	2.8%	2.9%	3.6%	1.9%
M18	I	43	0.0484	0.5375	0.4%	2.6%	2.7%	3.3%	2.4%
M18	I	44	0.0512	0.4927	0.4%	2.4%	2.4%	3.0%	3.1%
M18	I	45	0.0582	0.4853	0.4%	2.4%	2.4%	3.0%	3.0%
M18	I	46	0.0680	0.5175	0.5%	2.5%	2.6%	3.2%	2.8%
M18	I	47	0.0825	0.5067	0.6%	2.5%	2.5%	3.1%	3.3%
M18	I	48	0.0925	0.5605	0.7%	2.8%	2.8%	3.5%	3.7%
M18	I	49	0.0808	0.4285	0.6%	2.1%	2.2%	2.6%	2.6%
M18	I	50	0.0838	0.4287	0.6%	2.1%	2.2%	2.6%	2.6%
M18	I	51	0.0934	0.4995	0.7%	2.5%	2.5%	3.1%	3.0%

	Standoff Arm Flange Connection Check			Date
	Customer:	SBA	TIA Standard:	9/10/2024
	Carrier:	T-Mobile	Mount Elev. [ft]:	ANSI/TIA-222-H
	Site Name:		Engineer Name:	S. Bhujel
	Site Number:		Project #:	

Results Summary Table (Continued)

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M18	I	52	0.0953	0.4451	0.7%	2.2%	2.2%	2.8%	2.9%
M18	I	53	0.0914	0.4186	0.7%	2.1%	2.1%	2.6%	2.7%
M18	I	54	0.0858	0.4050	0.6%	2.0%	2.1%	2.5%	2.6%
M18	I	55	0.0830	0.4349	0.6%	2.1%	2.2%	2.7%	2.4%
M18	I	56	0.0801	0.4649	0.6%	2.3%	2.3%	2.9%	2.3%
M18	I	57	0.0783	0.4893	0.6%	2.4%	2.5%	3.0%	2.4%
M18	I	58	0.0778	0.5010	0.6%	2.5%	2.5%	3.1%	2.5%
M18	I	59	0.0779	0.4965	0.6%	2.4%	2.5%	3.1%	2.6%
M18	I	60	0.0802	0.4782	0.6%	2.4%	2.4%	3.0%	2.8%
M18	I	61	0.0866	0.4652	0.6%	2.3%	2.3%	2.9%	3.0%
M18	I	62	0.0925	0.4722	0.7%	2.3%	2.3%	2.9%	3.0%
M18	I	63	0.0964	0.4647	0.7%	2.3%	2.3%	2.9%	3.0%
M18	I	64	0.0707	0.3181	0.5%	1.6%	1.6%	2.0%	2.1%
M18	I	65	0.0660	0.2907	0.5%	1.4%	1.4%	1.8%	1.9%
M18	I	66	0.0606	0.2711	0.4%	1.3%	1.4%	1.7%	1.7%
M18	I	67	0.0578	0.2990	0.4%	1.5%	1.5%	1.8%	1.6%
M18	I	68	0.0550	0.3300	0.4%	1.6%	1.7%	2.0%	1.5%
M18	I	69	0.0533	0.3544	0.4%	1.7%	1.8%	2.2%	1.5%
M18	I	70	0.0528	0.3660	0.4%	1.8%	1.8%	2.3%	1.7%
M18	I	71	0.0528	0.3615	0.4%	1.8%	1.8%	2.2%	1.8%
M18	I	72	0.0551	0.3432	0.4%	1.7%	1.7%	2.1%	2.0%
M18	I	73	0.0613	0.3362	0.4%	1.7%	1.7%	2.1%	2.1%
M18	I	74	0.0681	0.3442	0.5%	1.7%	1.7%	2.1%	2.2%
M18	I	75	0.0719	0.3377	0.5%	1.7%	1.7%	2.1%	2.2%
M35	I	1	0.5533	0.9050	4.0%	4.4%	5.6%	5.6%	7.0%
M35	I	2	0.6839	2.5684	5.0%	12.6%	13.5%	15.9%	15.3%
M35	I	3	0.4741	1.8628	3.4%	9.2%	9.6%	11.5%	12.3%
M35	I	4	0.1741	1.9118	1.3%	9.4%	9.4%	11.8%	9.8%
M35	I	5	0.1169	1.6718	0.8%	8.2%	8.3%	10.3%	8.3%
M35	I	6	0.2976	1.8066	2.2%	8.9%	8.9%	11.2%	11.4%
M35	I	7	0.5701	1.8417	4.1%	9.1%	9.7%	11.4%	12.0%
M35	I	8	0.7387	2.6143	5.4%	12.9%	13.8%	16.2%	18.1%
M35	I	9	0.5733	1.0475	4.2%	5.1%	6.3%	6.5%	12.3%
M35	I	10	0.2977	0.3295	2.2%	1.6%	2.7%	2.0%	4.8%
M35	I	11	0.1487	0.0000	1.1%	0.0%	1.1%	0.0%	8.1%
M35	I	12	0.2982	0.2093	2.2%	1.0%	2.4%	1.3%	11.2%
M35	I	13	0.1124	0.9827	0.8%	4.8%	4.9%	6.1%	3.8%
M35	I	14	0.1297	1.3312	0.9%	6.5%	6.6%	8.2%	3.4%
M35	I	15	0.0869	1.1814	0.6%	5.8%	5.8%	7.3%	4.7%
M35	I	16	0.0910	1.1341	0.7%	5.6%	5.6%	7.0%	7.1%
M35	I	17	0.1207	1.0751	0.9%	5.3%	5.3%	6.6%	6.7%
M35	I	18	0.1626	1.0827	1.2%	5.3%	5.5%	6.7%	6.1%

	Standoff Arm Flange Connection Check			Date
	Customer:	SBA	TIA Standard:	9/10/2024
	Carrier:	T-Mobile	Mount Elev. [ft]:	ANSI/TIA-222-H
	Site Name:		Engineer Name:	S. Bhujel
	Site Number:		Project #:	

Results Summary Table (Continued)

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M35	I	19	0.2244	1.2128	1.6%	6.0%	6.1%	7.5%	7.8%
M35	I	20	0.2617	1.3730	1.9%	6.8%	6.9%	8.5%	9.1%
M35	I	21	0.2358	1.0381	1.7%	5.1%	5.2%	6.4%	6.9%
M35	I	22	0.1885	0.8200	1.4%	4.0%	4.3%	5.1%	4.4%
M35	I	23	0.1558	0.7354	1.1%	3.6%	3.8%	4.5%	4.8%
M35	I	24	0.1252	0.8305	0.9%	4.1%	4.1%	5.1%	5.5%
M35	I	25	0.0868	0.4576	0.6%	2.2%	2.3%	2.8%	2.4%
M35	I	26	0.0844	0.5580	0.6%	2.7%	2.8%	3.4%	2.0%
M35	I	27	0.0823	0.5136	0.6%	2.5%	2.6%	3.2%	2.6%
M35	I	28	0.0833	0.5162	0.6%	2.5%	2.6%	3.2%	3.3%
M35	I	29	0.0938	0.4948	0.7%	2.4%	2.5%	3.1%	3.2%
M35	I	30	0.1054	0.4921	0.8%	2.4%	2.5%	3.0%	3.0%
M35	I	31	0.1216	0.5308	0.9%	2.6%	2.7%	3.3%	3.5%
M35	I	32	0.1319	0.5790	1.0%	2.8%	2.9%	3.6%	3.8%
M35	I	33	0.1249	0.4848	0.9%	2.4%	2.4%	3.0%	3.2%
M35	I	34	0.1113	0.4223	0.8%	2.1%	2.2%	2.6%	2.5%
M35	I	35	0.1013	0.3988	0.7%	2.0%	2.1%	2.5%	2.7%
M35	I	36	0.0921	0.4344	0.7%	2.1%	2.2%	2.7%	2.9%
M35	I	37	0.1711	0.5957	1.2%	2.9%	3.1%	3.7%	3.8%
M35	I	38	0.1756	0.7211	1.3%	3.5%	3.7%	4.5%	4.6%
M35	I	39	0.1766	0.7006	1.3%	3.4%	3.6%	4.3%	4.5%
M35	I	40	0.1803	0.6943	1.3%	3.4%	3.7%	4.3%	4.0%
M35	I	41	0.1887	0.6799	1.4%	3.3%	3.6%	4.2%	4.3%
M35	I	42	0.1995	0.6971	1.4%	3.4%	3.6%	4.3%	4.5%
M35	I	43	0.2142	0.6899	1.6%	3.4%	3.7%	4.3%	3.8%
M35	I	44	0.2198	0.7162	1.6%	3.5%	3.8%	4.4%	3.8%
M35	I	45	0.2070	0.5960	1.5%	2.9%	3.2%	3.7%	3.2%
M35	I	46	0.1879	0.5435	1.4%	2.7%	2.9%	3.4%	3.5%
M35	I	47	0.1779	0.5101	1.3%	2.5%	2.7%	3.2%	3.3%
M35	I	48	0.1704	0.5277	1.2%	2.6%	2.9%	3.3%	3.1%
M35	I	49	0.0627	0.4271	0.5%	2.1%	2.1%	2.6%	2.7%
M35	I	50	0.0604	0.4272	0.4%	2.1%	2.1%	2.6%	2.7%
M35	I	51	0.0733	0.4982	0.5%	2.4%	2.5%	3.1%	3.2%
M35	I	52	0.0608	0.4445	0.4%	2.2%	2.2%	2.7%	2.4%
M35	I	53	0.0586	0.4640	0.4%	2.3%	2.3%	2.9%	2.5%
M35	I	54	0.0579	0.4697	0.4%	2.3%	2.3%	2.9%	2.6%
M35	I	55	0.0588	0.4633	0.4%	2.3%	2.3%	2.9%	2.8%
M35	I	56	0.0624	0.4779	0.5%	2.3%	2.4%	3.0%	3.0%
M35	I	57	0.0697	0.4969	0.5%	2.4%	2.5%	3.1%	3.2%
M35	I	58	0.0761	0.5008	0.6%	2.5%	2.5%	3.1%	3.2%
M35	I	59	0.0790	0.4882	0.6%	2.4%	2.4%	3.0%	3.2%
M35	I	60	0.0778	0.4625	0.6%	2.3%	2.3%	2.9%	3.0%

	Standoff Arm Flange Connection Check			Date
				9/10/2024
	Customer:	SBA	TIA Standard:	ANSI/TIA-222-H
	Carrier:	T-Mobile	Mount Elev. [ft]:	
	Site Name:		Engineer Name:	S. Bhujel
	Site Number:		Project #:	

Results Summary Table (Continued)

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M35	I	61	0.0734	0.4321	0.5%	2.1%	2.1%	2.7%	2.8%
M35	I	62	0.0675	0.4035	0.5%	2.0%	2.0%	2.5%	2.6%
M35	I	63	0.0641	0.4185	0.5%	2.1%	2.1%	2.6%	2.5%
M35	I	64	0.0413	0.3173	0.3%	1.6%	1.6%	2.0%	1.6%
M35	I	65	0.0392	0.3369	0.3%	1.7%	1.7%	2.1%	1.6%
M35	I	66	0.0385	0.3436	0.3%	1.7%	1.7%	2.1%	1.8%
M35	I	67	0.0393	0.3352	0.3%	1.6%	1.7%	2.1%	2.0%
M35	I	68	0.0426	0.3428	0.3%	1.7%	1.7%	2.1%	2.2%
M35	I	69	0.0501	0.3617	0.4%	1.8%	1.8%	2.2%	2.3%
M35	I	70	0.0567	0.3656	0.4%	1.8%	1.8%	2.3%	2.3%
M35	I	71	0.0596	0.3541	0.4%	1.7%	1.8%	2.2%	2.3%
M35	I	72	0.0583	0.3294	0.4%	1.6%	1.6%	2.0%	2.1%
M35	I	73	0.0536	0.2970	0.4%	1.5%	1.5%	1.8%	1.9%
M35	I	74	0.0477	0.2684	0.3%	1.3%	1.3%	1.7%	1.7%
M35	I	75	0.0445	0.2913	0.3%	1.4%	1.5%	1.8%	1.6%



EXHIBIT 9

APPROVED
By STiwari60 at 9:31 am, Oct 09, 2024

APPROVED
By Craig Koppang at 2:25 pm, Oct 09, 2024

RF Engineer- Shailendra Tiwari
Redline Note on -RF-1
10/09/2024

SBA APPROVED

By Stephen Roth at 2:35:40 PM, 10/11/2024

APPROVALS

PROJECT MANAGER:	DATE:	ZONING/SITE ACQ.:	DATE:
APPROVED By Bill Blake at 9:22 am, Oct 07, 2024			
RF ENGINEERING:	DATE:	TOWER OWNER:	DATE:

T-MOBILE TECHNICIAN SITE SAFETY NOTES

LOCATION	SPECIAL RESTRICTIONS
SECTOR A:	ACCESS BY CERTIFIED CLIMBER
SECTOR B:	ACCESS BY CERTIFIED CLIMBER
SECTOR C:	ACCESS BY CERTIFIED CLIMBER
SECTOR D:	ACCESS BY CERTIFIED CLIMBER
GPS/LMU:	UNRESTRICTED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE

GENERAL NOTES

- THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
- THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BEING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
- THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE OWNPOINT REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
- THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
- THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BID OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
- THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
- THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
- THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
- THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
- THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'S REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE LESSEE/LICENSEE REPRESENTATIVE.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
- ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK.

AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT 811



T-Mobile

TWRVNTR-BROOKLYN #2

47 BROWN ROAD
BROOKLYN, CT 06234
WINDHAM COUNTY

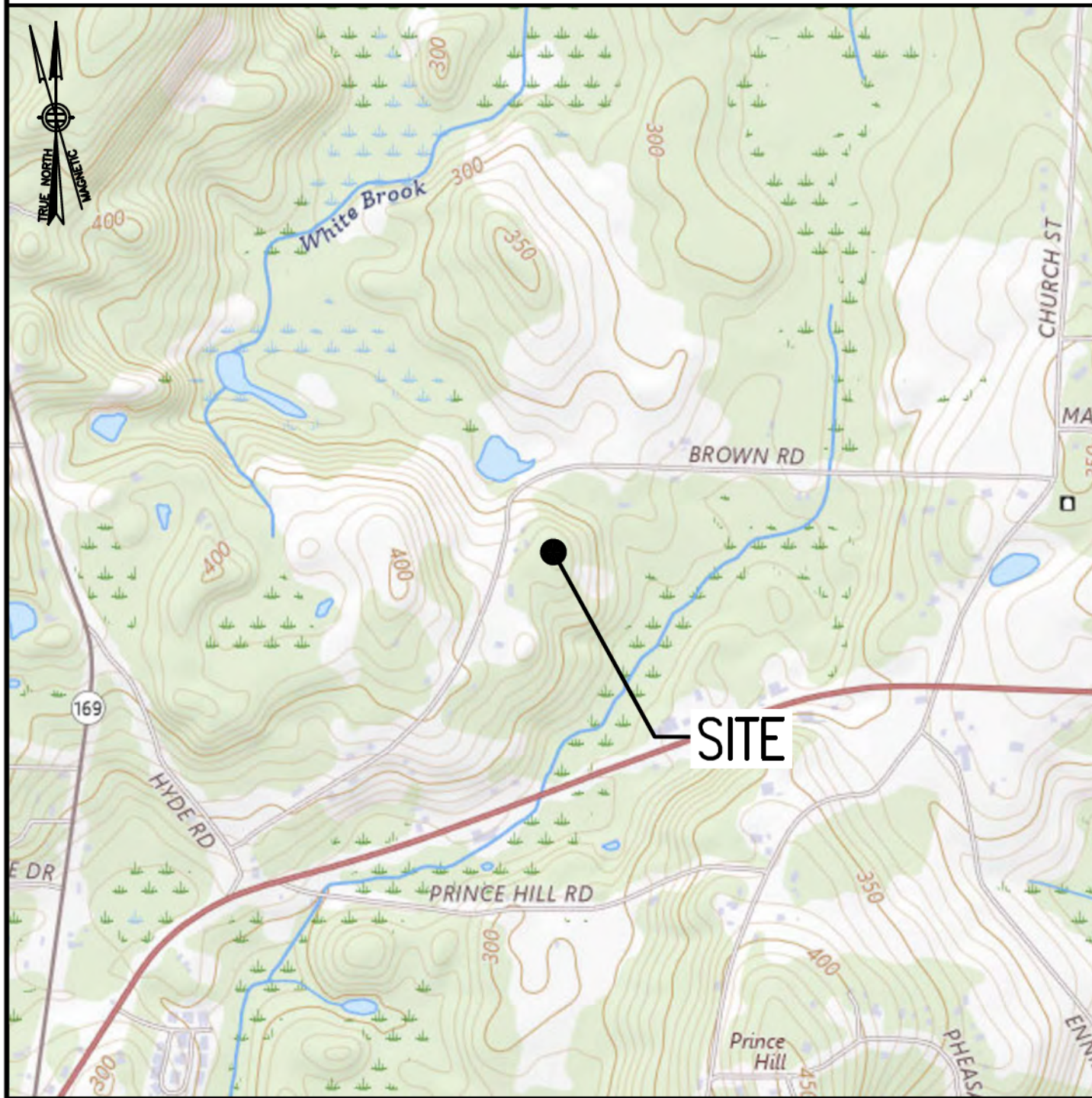
SITE NO.: CT11513D

SITE TYPE: 144'± MONOPOLE

PROJECT: EQUIPMENT UPGRADE
RF DESIGN GUIDELINE: 67D998E 6160

VICINITY MAP

SCALE: 1" = 1000'



DIRECTIONS

FROM NORTON TAKE I-495 NORTH TOWARD MANSFIELD/MARLBORO. TAKE EXIT 33B FOR I-95 SOUTH TOWARD PROVIDENCE RI. TAKE EXIT 6 FOR I-295 SOUTH TOWARD WOONSOCKET/WARWICK. CONTINUE ONTO I-295 SOUTH. TAKE EXIT 12B FOR US-44 WEST/PUTNAM PIKE TOWARD SMITHFIELD. AT TRAFFIC CIRCLE, TAKE 2ND EXIT ONTO US-44. TAKE SLIGHT RIGHT ONTO MARY CREST DRIVE. TAKE SLIGHT RIGHT ONTO SAYLE AVENUE. CONTINUE ONTO AZUD ROAD. SITE IS LOCATED ON THE LEFT HAND SIDE.

SHEET INDEX

SHEET NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
A-1	COMPOUND & EQUIPMENT PLANS	0
A-2	TOWER ELEVATION & ANTENNA PLANS	0
A-3	SITE DETAILS	0
RF-1	RF DATA	0
E-1	ELECTRIC & GROUNDING DETAILS	0

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SCOPE OF WORK

REMOVE:	INSTALL:
(3) ANTENNAS (3) TMAS (9) COAXIAL CABLES (3) HYBRID CABLES (1) RBS6201 ODE EQUIPMENT CABINET (1) S8000 EQUIPMENT CABINET (1) BATTERY CABINET (1) JUNCTION BOX	(3) ANTENNAS (3) RADIOS (2) HYBRID CABLES (1) SLACKBOX FOR FIBER MANAGEMENT (1) 6160 V2 AC EQUIPMENT CABINET (1) B160 BATTERY CABINET - RAN EQUIPMENT (REFER TO SHEET RF-1) (1) CIRCUIT BREAKER

SITE NOTES

- THIS IS AN UNMANNED AND RESTRICTED ACCESS TELECOMMUNICATION FACILITY, AND IS NOT FOR HUMAN HABITATION. IT WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
 - ADA COMPLIANCE NOT REQUIRED.
 - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
 - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
- CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
- NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
 - BUILDING CODE: 2022 CONNECTICUT STATE BUILDING CODE
 - ELECTRICAL CODE: 2020 NATIONAL ELECTRICAL CODE
 - STRUCTURAL CODE: TIA/EIA-222-H STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

PROJECT SUMMARY

SITE NUMBER:	CT11513D
SITE NAME:	TWRVNTR-BROOKLYN #2
SBA SITE NUMBER:	CT13612-A
SBA SITE NAME:	INGALLS
SBA COLLO APP NUMBER:	N/A
SITE ADDRESS:	47 BROWN ROAD BROOKLYN, CT 06234
PROPERTY OWNER:	CYNTHIA E. PERKINS & RICHARD H. PERKINS & ANNIE D. PERKINS 159 BROWN ROAD BROOKLYN, CT 06234
TOWER OWNER:	SBA TOWERS II, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	WINDHAM
ZONING DISTRICT:	RA (RESIDENTIAL/AGRICULTURAL)
STRUCTURE TYPE:	SELF-SUPPORT TOWER
STRUCTURE HEIGHT:	144'±
STRUCTURE HEIGHT W/APPERT.:	150'±
GROUND ELEVATION:	298'±
TOTAL AMSL:	448'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: 41.7984° N41°47'54.10" LONGITUDE: -71.9359° W71°56'09.20"

SPECIAL ZONING NOTE:
BASED ON INFORMATION PROVIDED BY T-MOBILE REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW, AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW, OR ADMINISTRATIVE REVIEW).

T-Mobile

15 COMMERCE WAY, SUITE B
NORTON, MA 02766
(508) 286-2700



SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
(508) 251-0720



R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	10/03/24	ISSUED FOR CONSTRUCTION	CJC
0	08/03/24	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11513D

SITE ADDRESS:
47 BROWN ROAD
BROOKLYN, CT 06234

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR – T-MOBILE
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – T-MOBILE
OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR 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 CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR 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.
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL, STATE AND FEDERAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR AND/OR LANDLORD PRIOR TO CONSTRUCTION.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.
13. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
14. SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS AND POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.
15. CONSTRUCTION SHALL COMPLY WITH ALL T-MOBILE STANDARDS AND SPECIFICATIONS.
16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
17. THE EXISTING CELL SITES ARE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
18. IF THE EXISTING CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. 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 ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR 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.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
6. 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.
7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
8. 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 ENGINEERING, OWNER AND/OR LOCAL UTILITIES.
9. 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 IN THE PROJECT SPECIFICATIONS.
10. SUBCONTRACTOR 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.
11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T-MOBILE SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

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. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (400PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST EARTH.....3 IN.
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 AND LARGER2 IN.
#5 AND SMALLER & WWF1½ IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER
OR NOT CAST AGAINST THE GROUND:
SLAB AND WALL¾ IN.
BEAMS AND COLUMNS½ IN.
5. A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.
7. CONCRETE CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
(A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
8. AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND T-MOBILE SPECIFICATIONS UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.
3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾") AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.
4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ¾" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.
5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
6. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
3. AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
4. COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.
5. AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T-MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.
2. COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.
3. CABLE LADDER RACK:
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY AND/OR ICE BRIDGE, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
2. SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLEING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.
3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
4. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA, AND MATCH INSTALLATION REQUIREMENTS.
6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC AND OSHA.
7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
13. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY HARGER (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
21. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
23. CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
24. CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
25. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
27. 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 RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.
31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.



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1	10/03/24	ISSUED FOR CONSTRUCTION	CNC
0	08/03/24	ISSUED FOR REVIEW	JRV

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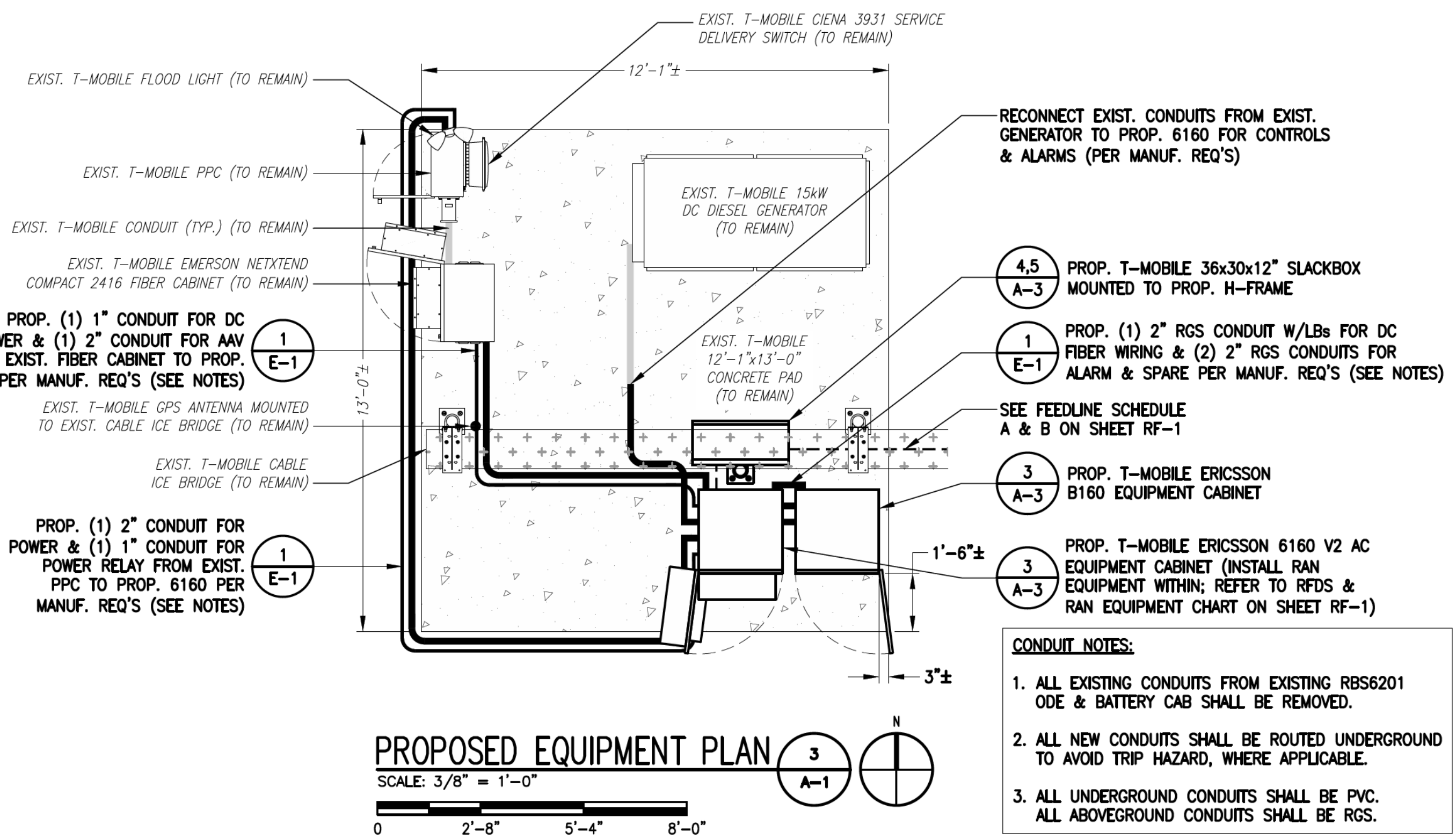
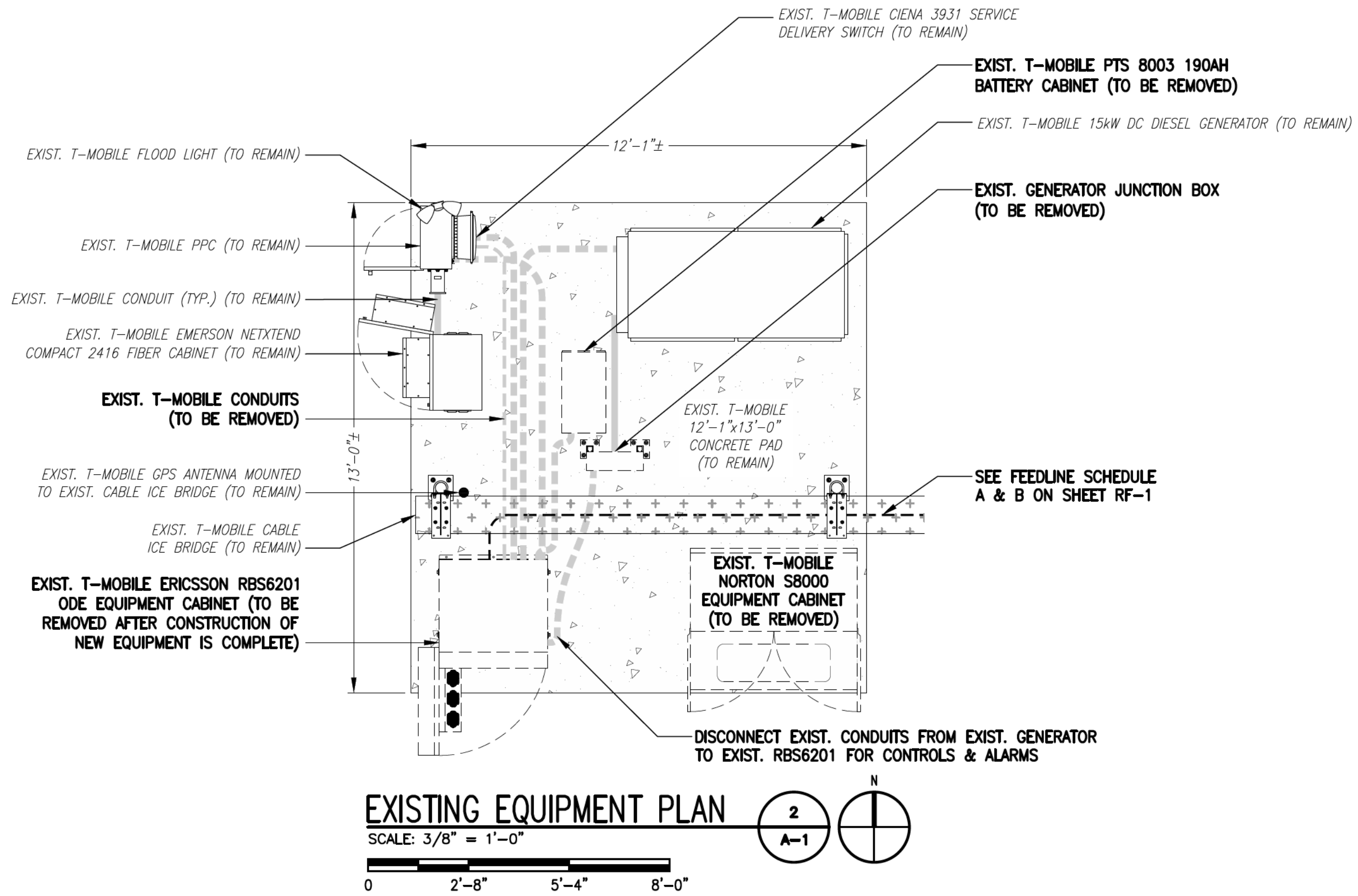
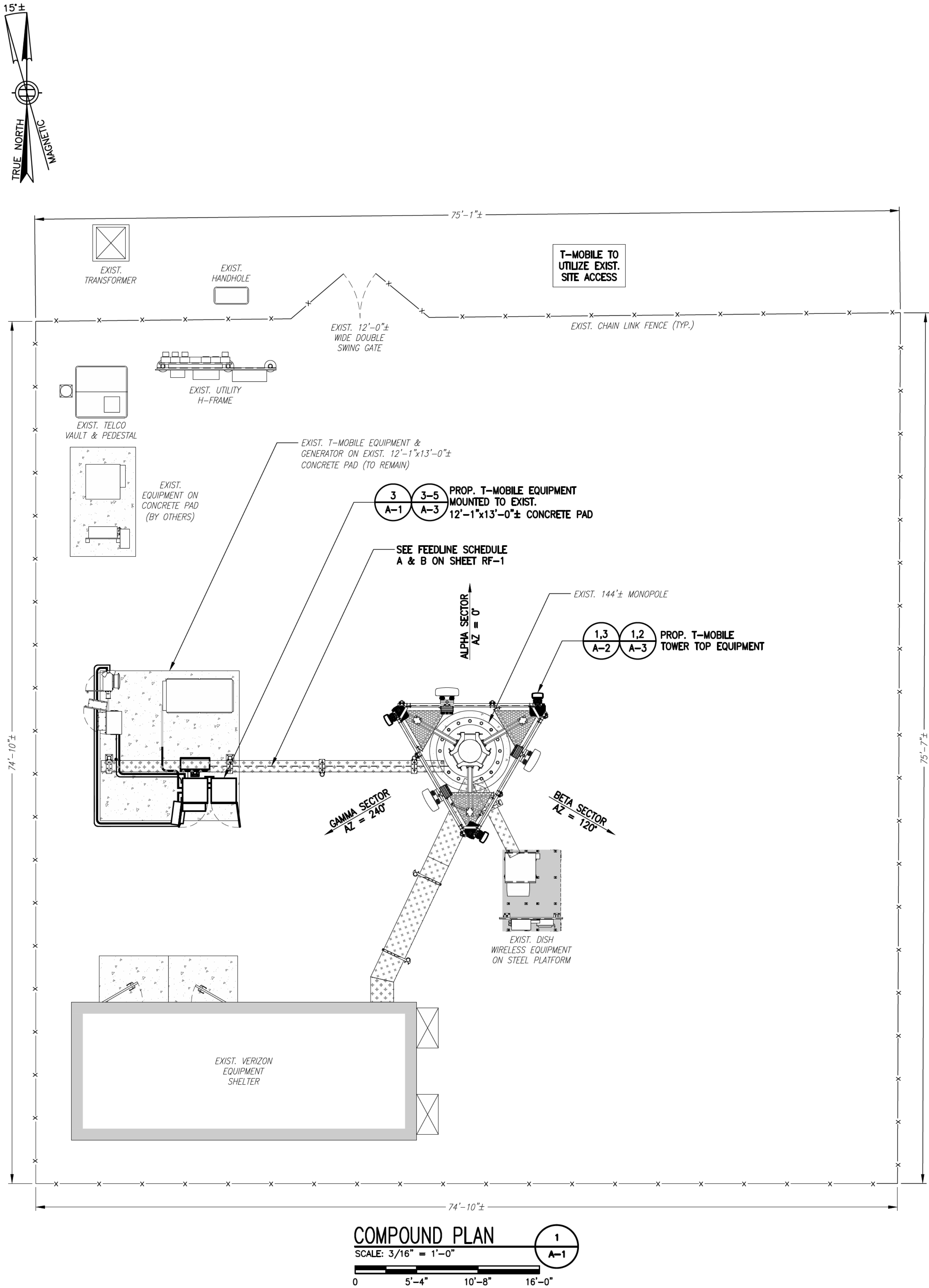
SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-1

SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM
SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.



T-Mobile

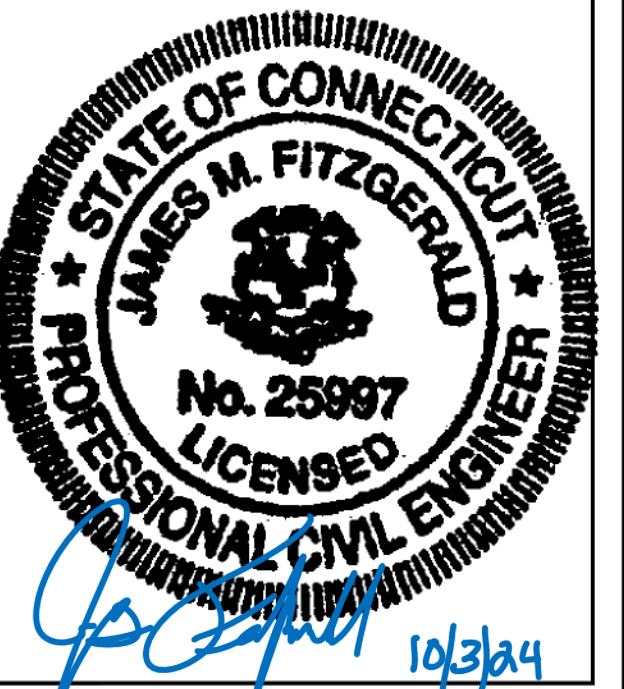
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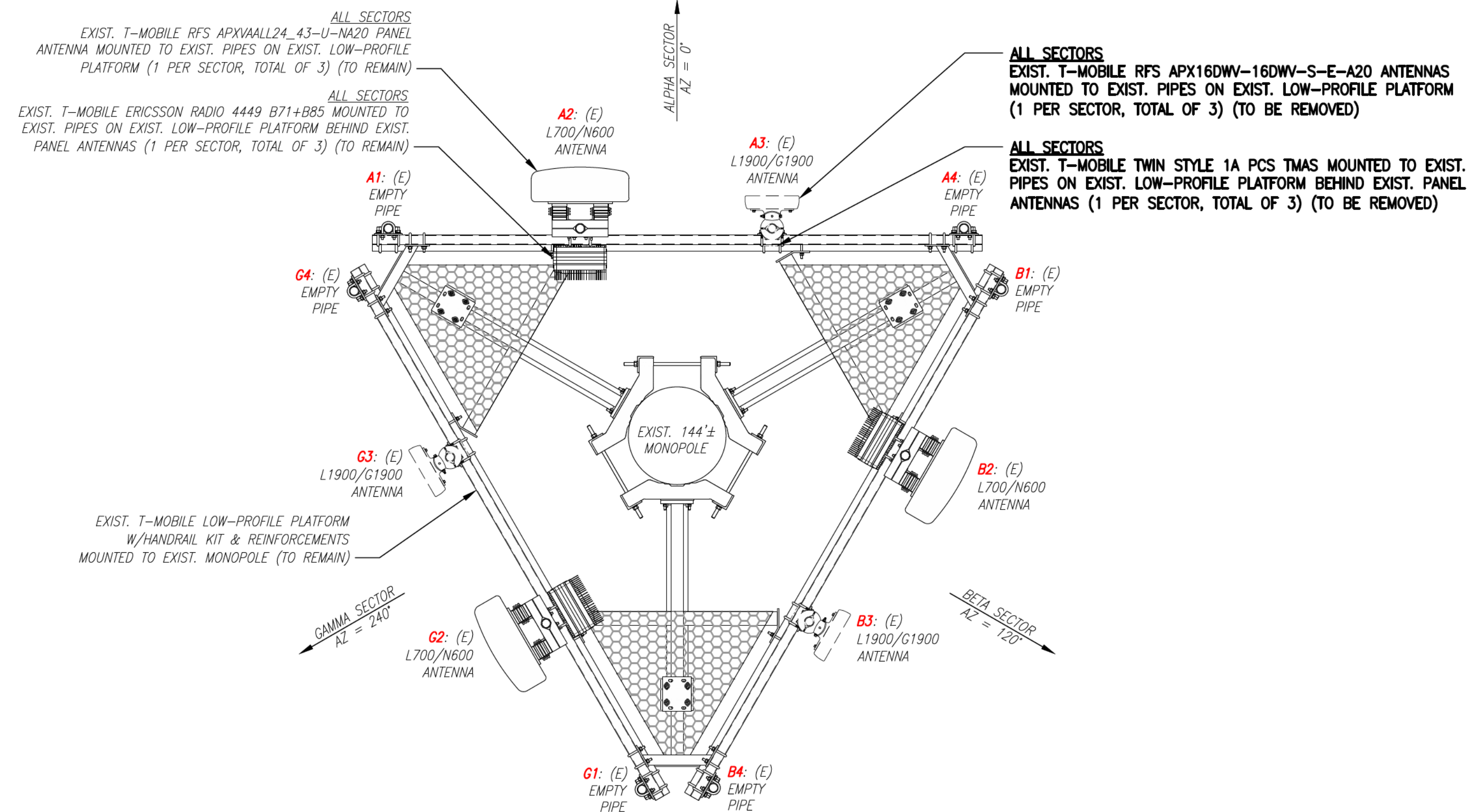
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COMPOUND &
EQUIPMENT PLANS

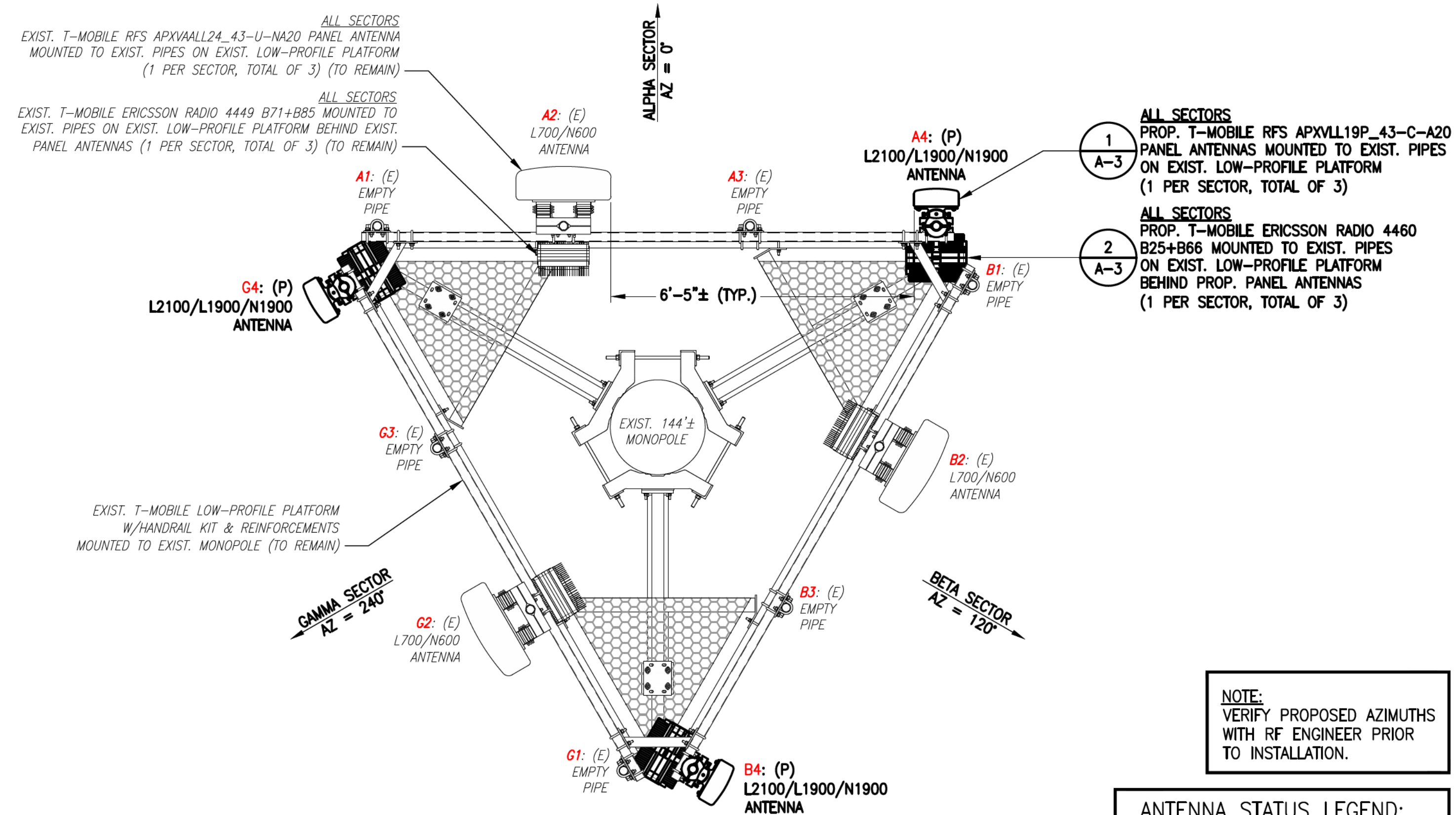
SHEET NUMBER

A-1

RAD CENTER NOTE:
T-MOBILE ANTENNA AND MOUNT RAD CENTER SHOWN IN ELEVATION
ARE ACCORDING TO STRUCTURAL ANALYSIS DONE BY OTHERS AND
MAY DIFFER FROM RAD CENTER ON RFDS PROVIDED BY T-MOBILE.



EXISTING ANTENNA PLAN
SCALE: N.T.S.



PROPOSED ANTENNA PLAN

SCALE: N.T.S.

ANTENNA STATUS LEGEND:

EMPTY - EMPTY PIPE

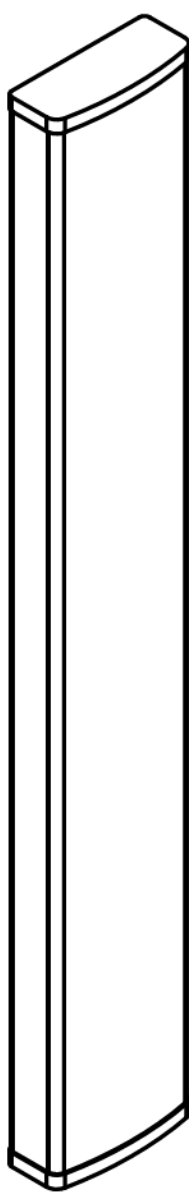
(E) - EXISTING

(P) - INSTALL

(F) - FUTURE

SHEET NUMBER

A-2



RFS APXVII19P 43-C-A20 ANTENNA
DIMENSIONS: 75.8"H x 11.3"W x 4.6"D
WEIGHT: 49.3 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3
SECTORS: ALPHA, BETA, GAMMA

ANTENNA DETAILS
SCALE: N.T.S.

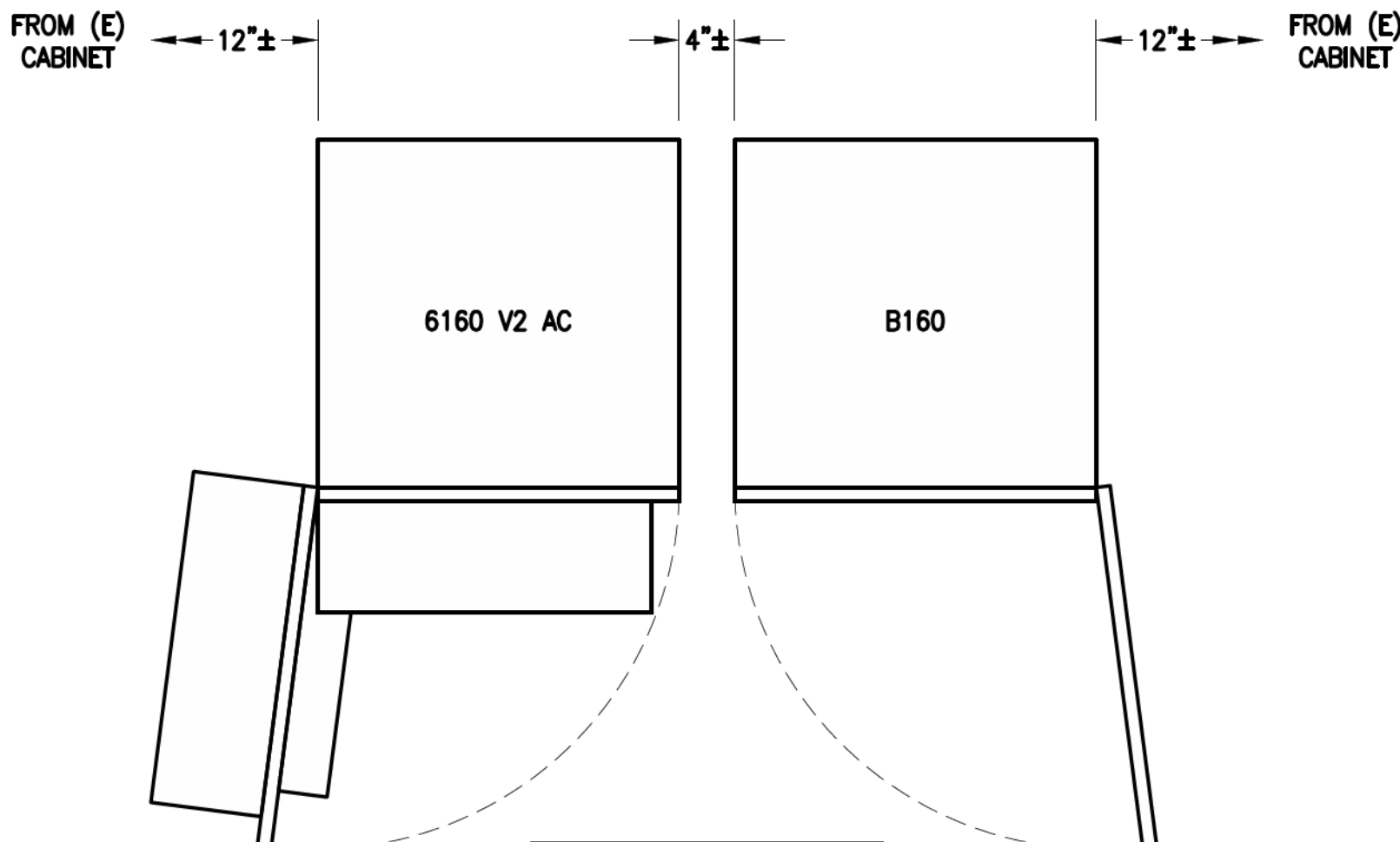
1
A-3



ERICSSON RADIO 4460 B25+B66
DIMENSIONS: 17.0"H x 15.1"W x 11.9"D
WEIGHT: 104.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3
SECTORS: ALPHA, BETA, GAMMA

RADIO DETAIL
SCALE: N.T.S.

2
A-3



FROM (E) CABINET 12"± 4"± 12"± FROM (E) CABINET

6160 V2 AC B160

CABINETS TO BE MOUNTED PER MANUFACTURER'S SPECIFICATIONS

ERICSSON 6160 V2 AC EQUIPMENT CABINET
DIMENSIONS: 63.25"H x 26.0"W x 34.0"D
QUANTITY: TOTAL OF 1

ERICSSON B160 BATTERY CABINET
DIMENSIONS: 63.25"H x 26.0"W x 26.0"D
QUANTITY: TOTAL OF 1

EQUIPMENT DETAIL
SCALE: N.T.S.

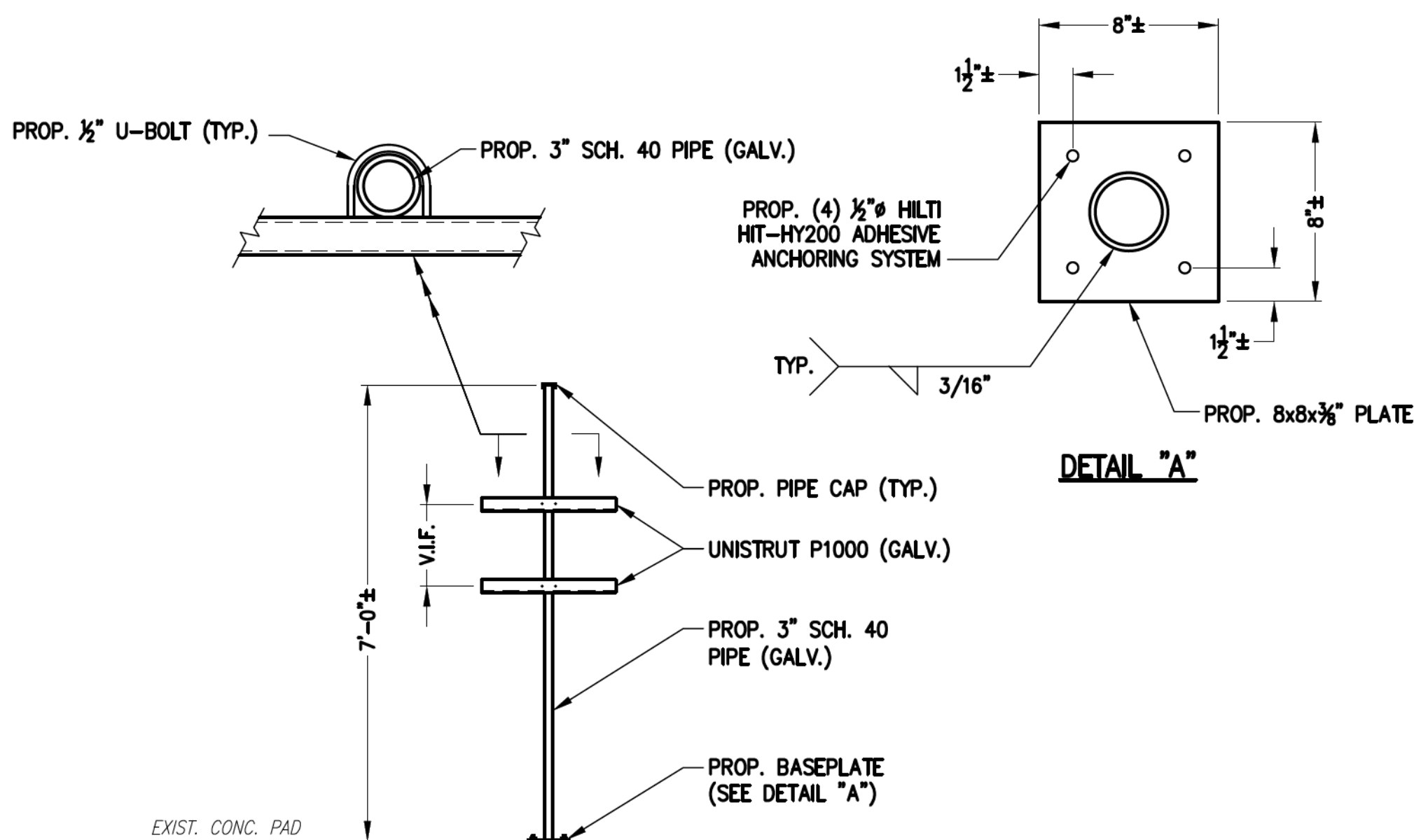
3
A-3



SLACKBOX - HOFFMAN A36R3012HCR NEMA 3R ENCLOSURE
DIMENSIONS: 36.0"H x 30.0"W x 12.0"D
QUANTITY: TOTAL OF 1

SSC DETAILS
SCALE: N.T.S.

4
A-3



PROP. 1/2" U-BOLT (TYP.) PROP. 3" SCH. 40 PIPE (GALV.)

PROP. (4) 1/2" HILTI HIT-HY200 ADHESIVE ANCHORING SYSTEM

TYP. 3/16"

PROP. PIPE CAP (TYP.) UNISTRUT P1000 (GALV.)

PROP. 3" SCH. 40 PIPE (GALV.)

PROP. BASEPLATE (SEE DETAIL "A")

EXIST. CONC. PAD

8"± 1 1/2"± 8"± 1 1/2"±

DETAIL "A"

7'-0"± V.I.F.

H-FRAME DETAIL
SCALE: N.T.S.

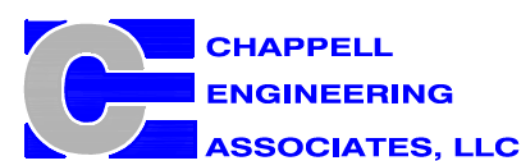
5
A-3



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SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

1815.557

FINAL ANTENNA CONFIGURATION											
SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	SBTS/TMAS/MULTIPLEXERS/RADIOS	CABLES			
ALPHA	A1	-	-	-	-	-	-	(P) (2) 2" (6x24) HCS FIBER CABLES (60m±)			
	A2	RFS APXVAALL24_43-U-NA20	137'± AGL	0°	0°	2°	L700/N600		ERICSSON RADIO 4449 B71+B25		
	A3	-	-	-	-	-	-		-		
	A4	RFS APXVLL19P_43-C-A20	137'± AGL	0°	0°	-	L2100/L1900/N1900		ERICSSON RADIO 4460 B25+B66		
BETA	B1	-	-	-	-	-	-		(P) (2) 2" (6x24) HCS FIBER CABLES (60m±)		
	B2	RFS APXVAALL24_43-U-NA20	137'± AGL	120°	0°	2°	L700/N600			ERICSSON RADIO 4449 B71+B25	
	B3	-	-	-	-	-	-			-	
	B4	RFS APXVLL19P_43-C-A20	137'± AGL	120°	0°	-	L2100/L1900/N1900			ERICSSON RADIO 4460 B25+B66	
GAMMA	G1	-	-	-	-	-	-			(P) (2) 2" (6x24) HCS FIBER CABLES (60m±)	
	G2	RFS APXVAALL24_43-U-NA20	137'± AGL	240°	0°	2°	L700/N600				ERICSSON RADIO 4449 B71+B25
	G3	-	-	-	-	-	-				-
	G4	RFS APXVLL19P_43-C-A20	137'± AGL	240°	0°	-	L2100/L1900/N1900				ERICSSON RADIO 4460 B25+B66
CABLE NOTE: EXISTING (9) 1-5/8" COAXIAL CABLES & (3) 1-5/8" (6x12) HCS FIBER CABLES TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B BELOW.											
NOTE: RFDS REV4 - 09/25/24											

RAD CENTER NOTE:
T-MOBILE ANTENNA RAD CENTER SHOWN IN ABOVE SCHEDULE IS
ACCORDING TO RFDS PROVIDED BY T-MOBILE AND MIGHT DIFFER
FROM ACTUAL ANTENNA RAD CENTER ON STRUCTURAL ANALYSIS.

FEEDLINE SCHEDULE		
SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: (1) 1/2" COAXIAL CABLE FOR GPS ANTENNA EXISTING TO BE REMOVED: (9) 1-5/8" COAXIAL CABLES (3) 1-3/4" (6x12) HCS FIBER CABLES	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (2) 2" (6x24) HCS FIBER CABLES (60m±)	
NOTE: EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.		

RAN EQUIPMENT		
CABINET	EXISTING	PROPOSED
ERICSSON RBS6201 ODE EQUIPMENT CABINET (TO BE REMOVED)	(1) BB 6630 (1) BB 6648 (1) DUG20 (6) RUS02 B2	N/A
ERICSSON 6160 V2 AC EQUIPMENT CABINET	N/A	(1) BB 6630 (1) BB 6648 (1) CSR DXR V2 (GEN2)
NOTE: RAN EQUIPMENT IS BASED ON RFDS REV4 DATED 09/25/24.		

Remove from Proposed
Base Band already in Existing



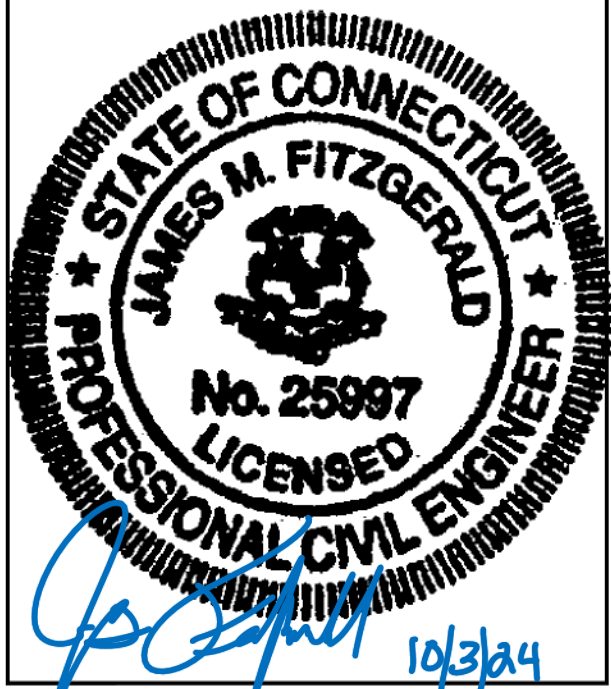
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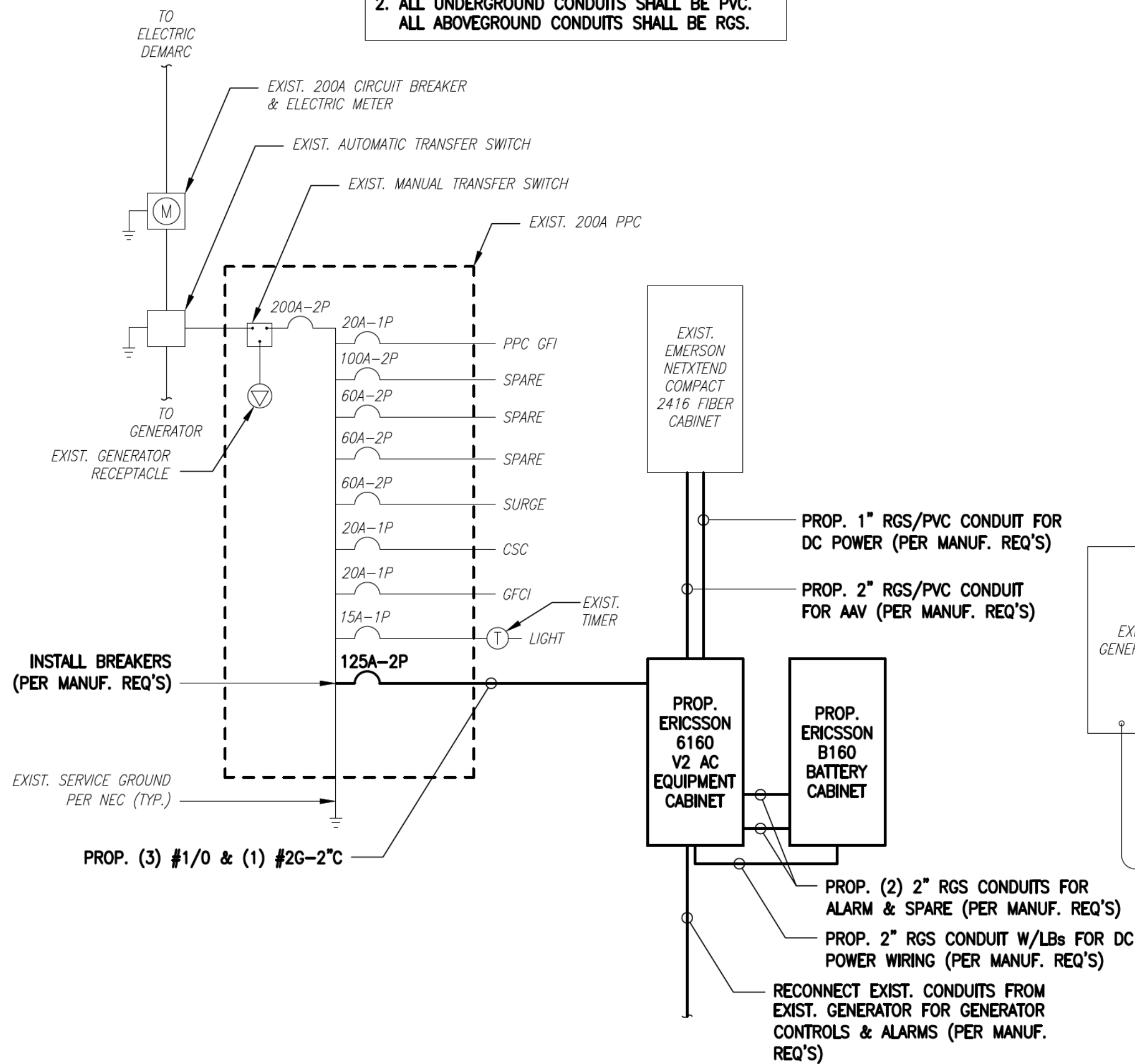
SHEET TITLE

RF DATA

SHEET NUMBER

RF-1

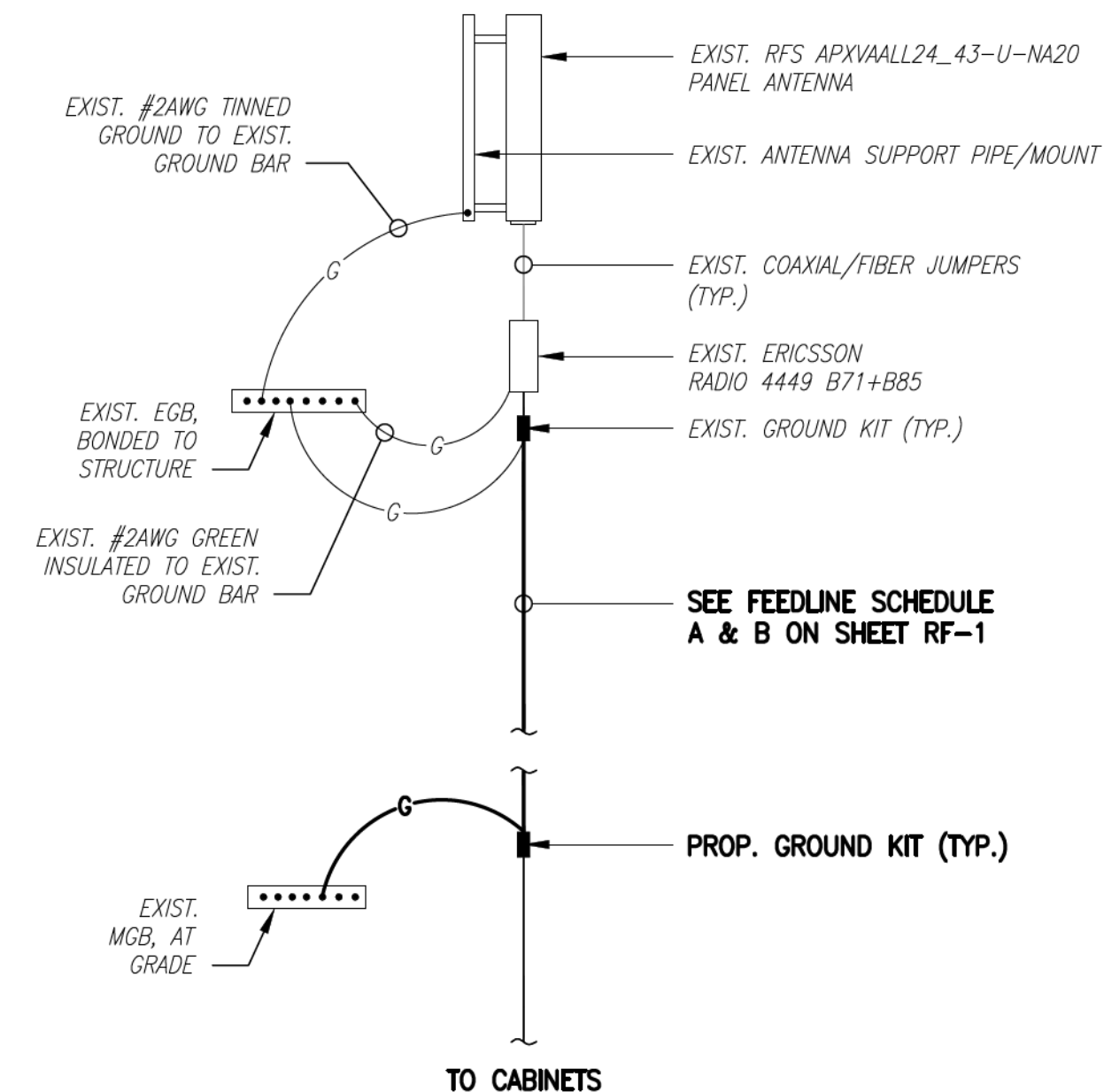
- CONDUIT NOTES:**
1. ALL CONDUITS SHALL BE ROUTED UNDERGROUND TO AVOID TRIP HAZARD, WHERE APPLICABLE.
 2. ALL UNDERGROUND CONDUITS SHALL BE PVC. ALL ABOVEGROUND CONDUITS SHALL BE RGS.



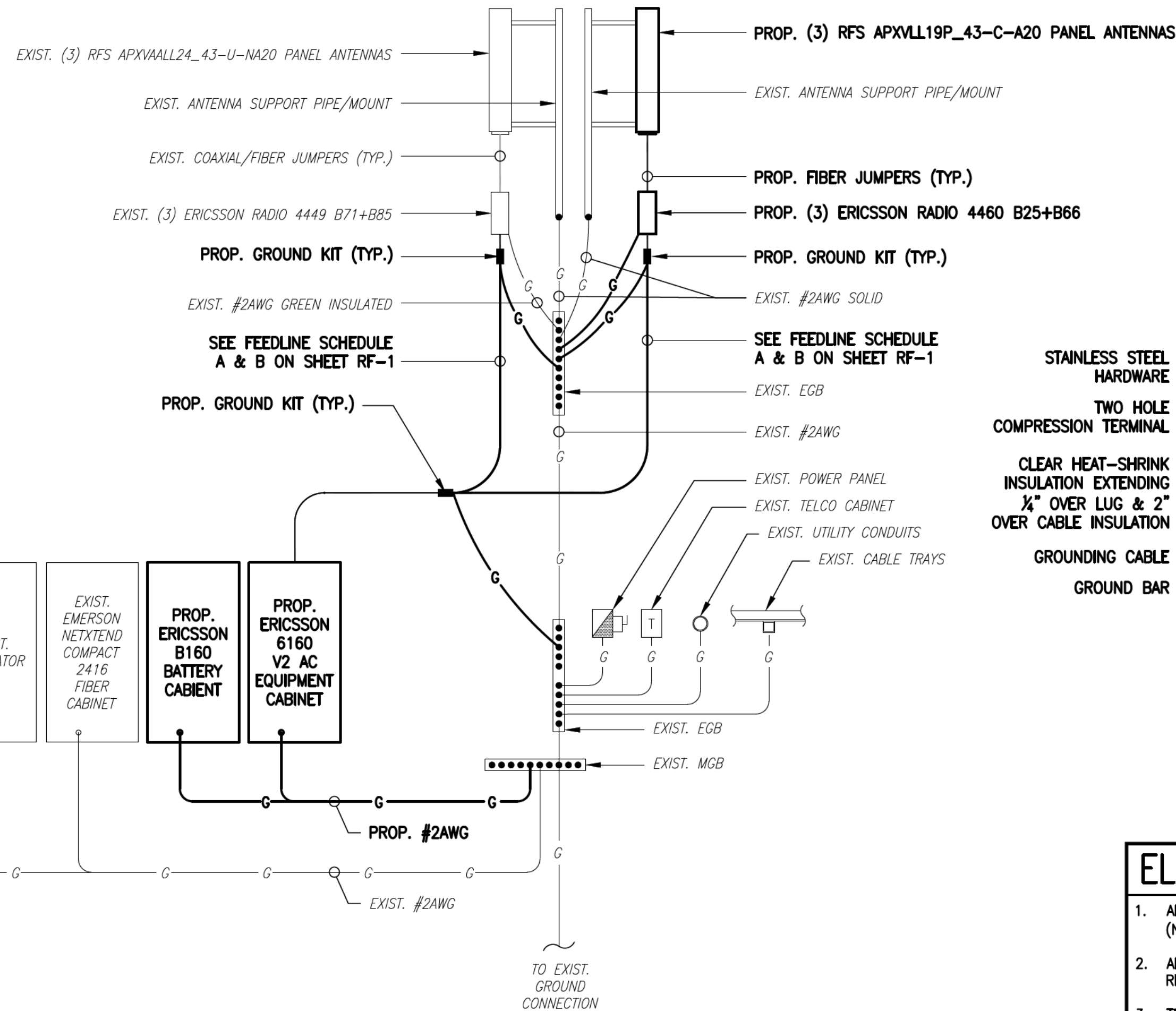
ONE-LINE DIAGRAM

SCALE: NOT TO SCALE

1
E-1



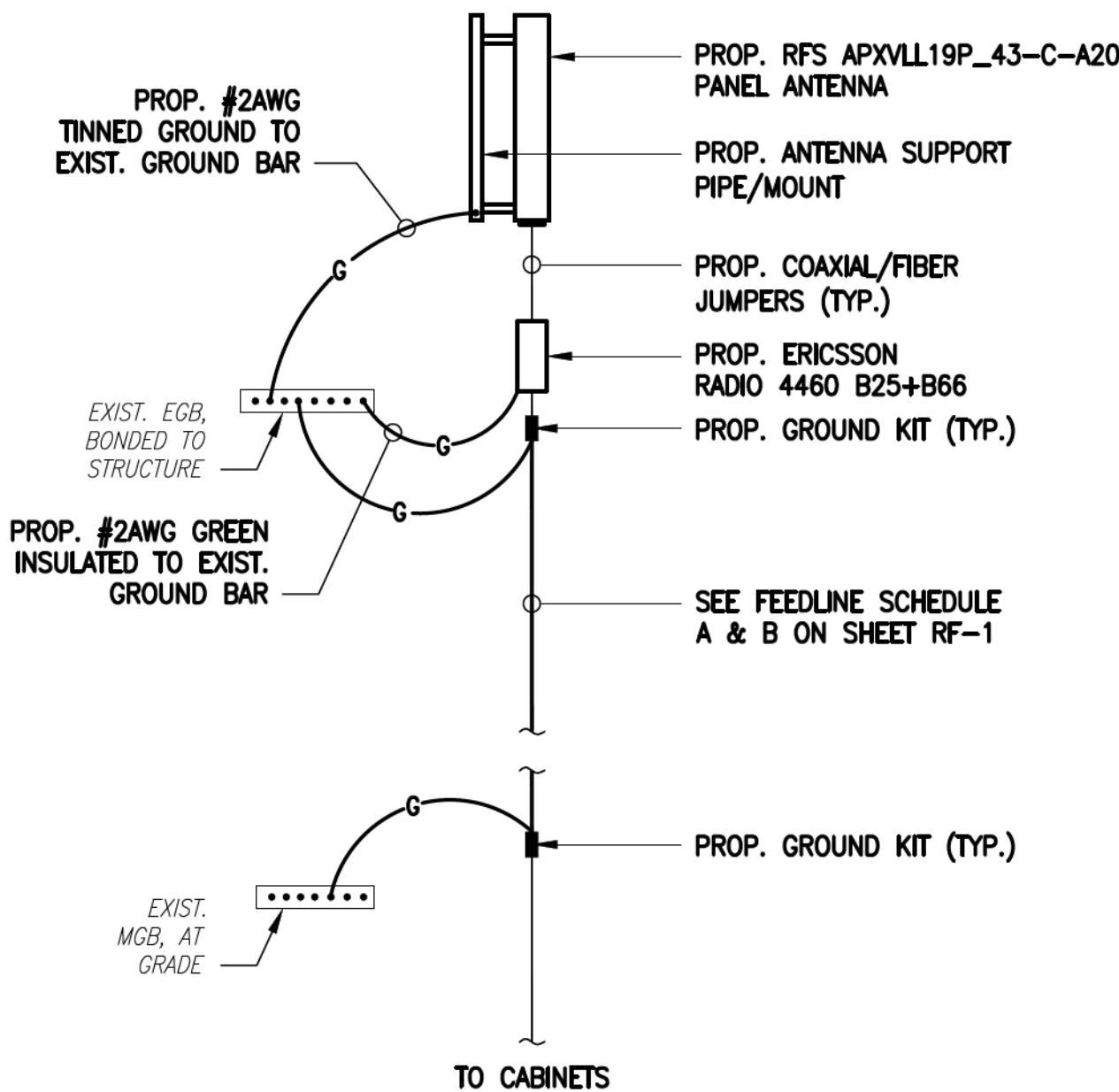
**L700/N600
ANTENNA**



GROUNDING RISER DIAGRAM

SCALE: NOT TO SCALE

2
E-1

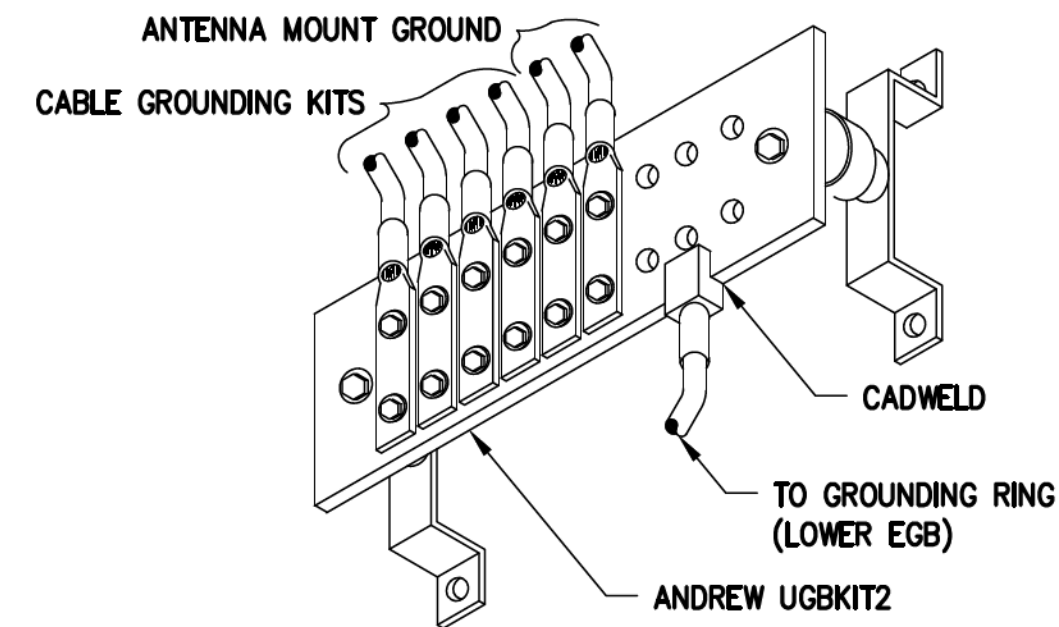


**L2100/L1900/N1900
ANTENNA**

**CABLE CONNECTION
AND GROUNDING DETAIL**

SCALE: NOT TO SCALE

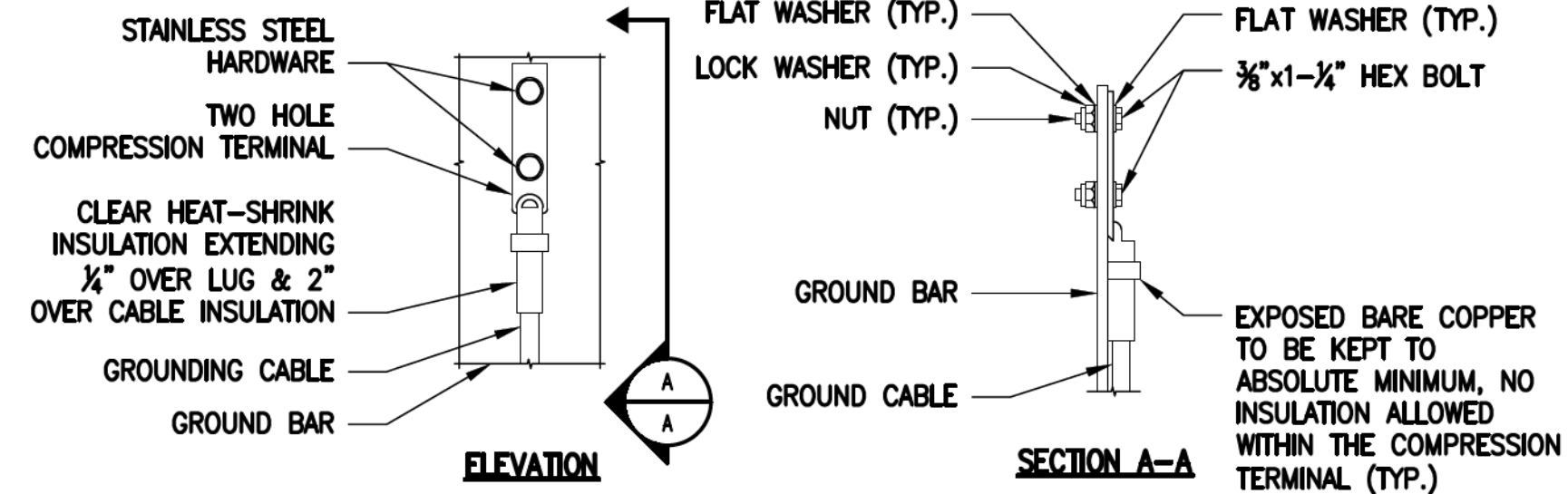
3
E-1



GROUND BAR (EGB)

SCALE: NOT TO SCALE

4
E-1



**TYPICAL GROUND BAR
CONNECTIONS DETAIL**

SCALE: NOT TO SCALE

5
E-1

NOTES:

1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, & MGB.

ELECTRICAL & GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THHN INSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.
13. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXIST. TOWER/MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
21. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
22. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE-TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

T-Mobile

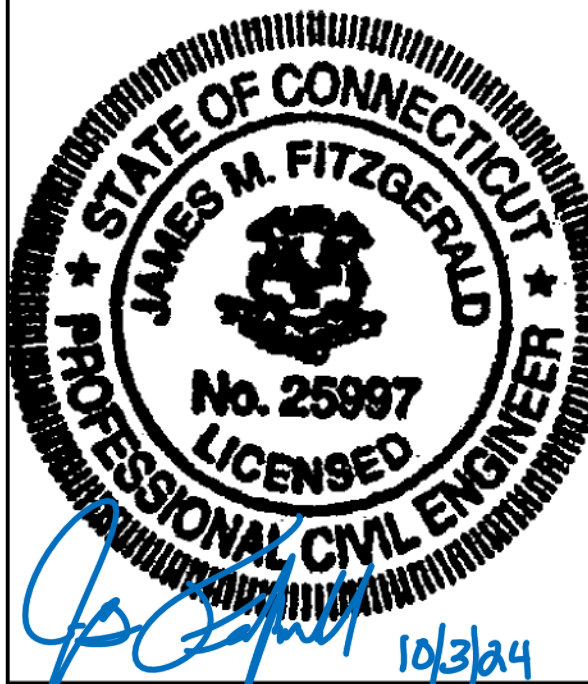
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CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	10/03/24	ISSUED FOR CONSTRUCTION	CMC
0	08/03/24	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11513D

SITE ADDRESS:
47 BROWN ROAD
BROOKLYN, CT 06234

SHEET TITLE
**ELECTRIC & GROUNDING
DETAILS**

SHEET NUMBER

E-1