

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts
and New York

August 5, 2024

Via Electronic Mail

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

**Re: Notice of Exempt Modification – Facility Modification
130 Vernon Road, Bolton, Connecticut**

Dear Attorney Bachman:

Mountaintop Enterprises, Inc. currently owns and operates two (2) communications towers (a 280-foot guyed lattice tower and a 150-foot guyed lattice tower) at the above referenced address (the “Property”). The towers are approximately 180 feet apart. Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains antennas and remote radio heads at the 120-foot level on the existing 280-foot lattice tower at the Property. Equipment associated with Cellco’s existing antennas is located in a shelter near the base of the 280-foot tower. Cellco now intends to modify and upgrade its existing facility and plans to relocate its antennas and remote radio heads (“RRHs”) to the 120-foot level on adjacent 150-foot lattice tower on the Property. Cellco will continue to utilize its existing equipment shelter and will connect to the adjacent 150-foot tower via underground fiber optic antenna cable conduit. The 150-foot tower was approved by the Town of Bolton (“Town”) in October of 1980. Cellco was approved to share the 280-foot tower in April of 1993. A copy of the Town’s tower approval and Cellco’s shared-use approval are included in Attachment 1.

As described above, Cellco intends to remove its antennas and remote radio heads (“RRHs”) from the 280-foot tower and install eight (8) new antennas and six (6) new RRHs on a new antenna support structure at the 120-foot level on the 150-foot tower. A set of project plans showing Cellco’s proposed facility modifications and the specifications for Cellco’s new antennas and RRHs are included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 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 Bolton’s Chief Elected Official and Land Use Officer and Mountaintop Enterprises, Inc. the tower and Property owner.

30021031-v1

Melanie A. Bachman, Esq.

August 5, 2024

Page 2

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 150-foot tower. Cellco's new antennas and RRHs will be installed at the 120-foot level on the existing tower on the Property.

2. The proposed modifications will not involve any change to ground-mounted equipment and will not require the extension of the Property 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 installation of Cellco's new antennas on the existing 150-foot tower will not increase radio frequency (RF) emissions from the Cellco facility to a level at or above the Federal Communications Commission (FCC) safety standard. Included in Attachment 3 is a Calculated Radio Frequency Emissions Report demonstrating that the proposed modified facility will comply with the FCC safety standards. The modified facility will be capable of providing Cellco's 5G wireless service.

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

6. According to the attached Structural Analysis Report ("SA") and Antenna Mount Analysis Report ("MA"), the existing 150-foot tower, tower foundation, new antenna support structure and antenna mounts can support Cellco's proposed modifications. Copies of the SA and MA are included in Attachment 4.

A copy of the parcel map and Property owner information is included in Attachment 5. A Certificate of Mailing verifying that this filing was sent to municipal officials and the Property owner is included in Attachment 6.

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

Sincerely,



Kenneth C. Baldwin

Enclosures

Copy to:

Rodney Fournier First Selectman
Rich McKinnon, Chief Building Official/Land Use Department Head
Mountaintop Enterprises Inc., Property Owner
Aleksey Tyurin

ATTACHMENT 1

CERTIFICATE OF USE AND OCCUPANCY

BOLTON, CONNECTICUT

No 1091

This is to certify that: Radio Tower at

LOCATION

ZONE

STREET

CARD NO.

MAP

BLOCK

LOT

under Permit No. 608 conforms substantially to the requirements of the Building Code, Sanitation Code and the Zone Ordinance of the Town of Bolton and is hereby approved for occupancy as indicated below.

Approved for occupancy. 10/1/50

Date Oct 8, 1950

Calvin Hutchinson Building Official

Notice: — If this certificate is lost or destroyed, a duplicate should be immediately obtained from the Department of Buildings.

Any change or extension of the use herein approved requires a new certificate of occupancy.

Copies of this certificate may be obtained at the Department of Buildings at a charge of seventy-five cents each.

PERMIT NO. 688

LICENSE NO.

APPLICATION FOR BUILDING PERMIT

TOWN OF BOLTON CONNECTICUT

(Application must be typed or printed)

LOCATION OF JOB	APPLICANT	BUILDER	THIS PERMIT EXPIRES ONE YEAR FROM DATE OF ISSUE
STREET: VANDERBILT MAP: 11 LOT: 9 CARD NO: 64 ZONE: R1	Motorola Communications Inc. 65 Huntington Rd. Glen Ridge NJ 07452	Motorola Communications Inc. 65 Huntington Rd. Glen Ridge NJ 07452	7-16-79

DEPARTMENT DECISION	REQUIREMENTS	FEE SCHEDULE	FEE COVERS
Application is hereby ☒ Approved ☐ Disapproved	☐ TOWN PLANNING ☒ APPEALS BOARD ☐ BLUE PRINTS ☐ SANITATION APPLICATION ☐ TOWN ZONING ☐ PLOT PLAN ☐ DRIVEWAY	Estimated Cost: \$1,200 Difference: \$6 Additional: \$25 Total Fee: \$26	☒ BUILDING ☐ HEATING ☐ PLUMBING ☐ ELECTRICAL ☐ Certificate of Use and Occupancy

TYPE OF BUILDING: ☒ Residential ☐ Commercial ☐ Other

TYPE OF JOB: ☐ Demolition ☐ Repair ☒ Alteration ☐ Original Construction

SIZE OF BUILDING

STORIES: NA NO. FAMILIES:

HEIGHT: DEPTH: FRONT:

GARAGE: HEIGHT: DEPTH: FRONT:

DISTANCES FROM LOT LINE (Circle Front Lot Line)

5' 0" 20' 0" 20' 0" 20' 0"

E W N S

MATERIAL OF FOOTING: Cement

WIDTH: 4' DEPTH: 4'

Depth Below Grade: 4'

MATERIAL OF FOUNDATION: Cement

Thickness: Above Grade: 4" Below Grade: 4"

MATERIAL OF CHIMNEY: N/A

EIGHT: FLUE SIZE: NO. OF FLUES:

MATERIAL OF PIERS:

Distance Apart: ze of Footing:

MEMBER	SIZE	MATERIAL OR SPECIES	LONGEST SPAN	CENTER
Sill				
Girder	120"			
Outside Stud	75" 0"	TOWER		
Bearing Stud				
1st Floor Joist				
2nd Floor Joist				
3rd Floor Joist				
4th Floor Joist				
Rafter				
Ridge				
Hip or Valley				
Headers				
Sheathing				

STAINLESS - as per plans filed town off bldg.

site is approx 854' above sea level -

Stavens Bros only is on old wood pole tower

FURTHER DETAILS Reed Const and a forestry Co are on subject tower at this time. Tower is owned by Motorola Co. Huntress Electronics maintains.

Final OK - 10-8-80 CH

All work covered by this application has been authorized by the (owner) or (agent) of this property and will be done according to local code and regulations.

DATE: 7/16/79

APPLICANT: Miller & Hathaway

6467766



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

136 Main Street, Suite 401
New Britain, Connecticut 06051-4225
Phone: 827-7682

FILE
COPY

April 7, 1993

David S. Malko, P.E.
General Manager - Engineering
Bell Atlantic Metro Mobile
20 Alexander Drive
P.O. Box 5029
Wallingford, CT 06492

RE: Metro Mobile CTS of Hartford, Inc., notice of intent to modify an existing tower structure owned by Mountaintop Enterprises Inc., at 130 Vernon Road, Bolton, Connecticut.

At a public meeting held on April 7, 1993, the Connecticut Siting Council (Council) ruled that this modification would not cause a significant change or alteration in the physical and environmental characteristics of the site, and acknowledged this action as an exempt modification of an existing non-facility tower.

The proposed modification is to be implemented as specified in your notice dated March 25, 1993. As proposed, the modification is in compliance with the exemption criteria specified in Ct. Regs. of St. Agen. section 16-50j-72(c) as changes to an existing non-facility site that do not extend the boundaries of the tower site, do not increase noise levels at the tower site boundary by six decibels or more, do not add radio frequency sending or receiving capability which increases total frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State of Connecticut Department of Environmental protection pursuant to section 22a-162 of the Connecticut General Statutes, and has received all municipal zoning approvals and building permits.

The Council is pleased to note that the shared use of an existing tower serves the Council's long-term goal of protecting the public interest by avoiding proliferation of additional tower structures.

Please notify the Council upon completion of construction.

Very truly yours,

A handwritten signature in dark ink, appearing to read "Joel M. Rinebold", written over a horizontal line.

Joel M. Rinebold
Executive Director

JMR/ss
6876E

ATTACHMENT 2

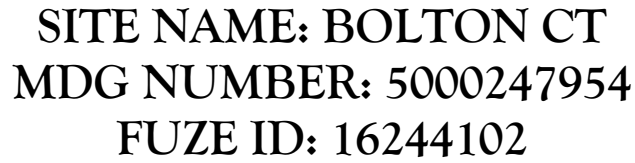
PROJECT NOTES

1. SITE INFORMATION OBTAINED FROM THE FOLLOWING:
 - A. PLAN ENTITLED "BOLTON CT" PREPARED BY AECOM OF ROCKY HILL, CT LAST REVISED 09/10/21.
 - B. COLLIERS ENGINEERING & DESIGN, INC. HAS PERFORMED LIMITED FIELD OBSERVATIONS ON 09/26/2023.
 - C. ANTENNA MOUNT ANALYSIS REPORT AND PMI REQUIREMENTS PREPARED BY COLLIERS ENGINEERING & DESIGN, INC. ON 02/02/2024.
2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANIES OR OTHER PUBLIC/GOVERNING AUTHORITIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
4. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE AS A RESULT OF CONSTRUCTION OF THIS FACILITY AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
6. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND CONSTRUCTION DRAWINGS.
8. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS MUST BE VERIFIED. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
9. SINCE THE CELL SITE MAY BE 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 REQUIRED TO BE WORN TO ALERT OF ANY POTENTIALLY DANGEROUS EXPOSURE LEVELS.
10. THE PROPOSED FACILITY WILL COMPLY WITH ALL STATE AND LOCAL STORMWATER ORDINANCES.
11. NO NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY AS TO CAUSE A NUISANCE.
12. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (NO HANDICAP ACCESS IS REQUIRED).
13. THE FACILITY DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
14. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTHS WITH RF ENGINEERING PRIOR TO INSTALLATION.
15. THE TOWER, MOUNTS AND ANTENNAS SHALL BE DESIGNED TO MEET EIA/TIA-222-H AS PER IBC REQUIREMENTS.
16. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
17. CONTRACTOR MUST FIELD LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION.
18. CONTRACTOR SHALL CONTACT STATE SPECIFIC ONE CALL SYSTEM THREE WORKING DAYS PRIOR TO ANY EARTH MOVING ACTIVITIES.

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WAS CONTRACTED OR TO WHOM IT IS CERTIFIED. THIS DRAWING MAY
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FOR ANY OTHER PURPOSE WITHOUT THE EXPRESS WRITTEN CONSENT
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130 VERNON ROAD
VERNON ROCKVILLE, CT 06066
TOLLAND COUNTY

VICINITY MAP

PROJECT LOCATION

Lower Bolton Lake

Bolton Lake

Lower Bolton Lake Boat Launch

Able Coil & Electronics

Mike's Mobile Marine Services

Compas Dental

T.F. Jones Plumbing

Indian Notch Park Temporarily closed

Bottom Rd

Quarry Rd

Vernon Rd

N Midway Rd

S Midway Rd

Plymouth Ln

Beverly Rd

Colonial Rd

Juniper Ln

Lyndwood Dr

Railroad Brook

Scale: 0 100 200 Feet

Compass Rose: N, S, E, W

SOURCE: BING MAPS

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING

- CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.
- | | |
|--|--|
| 1. 2022 CONNECTICUT STATE BUILDING CODE,
INCORPORATING THE 2021 IBC | 8. INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81
IEEE C2 LATEST EDITION |
| 2. 2020 NATIONAL ELECTRICAL CODE (NFPA 70) | 9. TELCORDIA GR-1275 |
| 3. 2020 NFPA 101 | 10. ANSI T1.31 I |
| 4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION 360-16 | 11. PROPOSED USE: UNMANNED TELECOM FACILITY |
| 5. AMERICAN CONCRETE INSTITUTE | 12. HANDICAP REQUIREMENTS: FACILITY IS UNMANNED AND NOT
FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT
REQUIRED. |
| 6. TIA-222-H | 13. CONSTRUCTION TYPE: IIB |
| 7. TIA 607 FOR GROUNDING | 14. USE GROUP: U |

PROJECT INFORMATION

LATITUDE: 41°48'7.38" N (RFDS)
 LONGITUDE: 72°26'28.22" W (RFDS)
 GROUND ELEVATION: 814± AMSL (GOOGLE EARTH)
 JURISDICTION: TOWN OF BOLTON

APPLICANT

COMPANY: VERIZON WIRELESS
ADDRESS: 51 ALDER STREET
CITY, STATE, ZIP: MEDWAY, MA 02053

COMPANY: VERIZON WIRELESS
ADDRESS: 51 ALDER STREET
CITY, STATE, ZIP: MEDWAY, MA 02053

PROPERTY OWNER

OWNER:	MOUNTAINTOP ENTERPRISES INC.
ADDRESS:	PO BOX 9219
CITY, STATE, ZIP:	BOLTON, CT 06043

OWNER: MOUNTAINTOP ENTERPRISES INC.
ADDRESS: PO BOX 9219
CITY, STATE, ZIP: BOLTON, CT 06043

SITE ACQUISITION

COMPANY: CENTERLINE COMMUNICATIONS, LLC.
ADDRESS: 750 W. CENTER ST, SUITE 301
CITY, STATE, ZIP: WEST BRIDGEWATER, MA 02379

COMPANY: CENTERLINE COMMUNICATIONS, LLC.
ADDRESS: 750 W. CENTER ST, SUITE 301
CITY, STATE, ZIP: WEST BRIDGEWATER, MA 02379

ENGINEERING COMPANY

COMPANY: COLLIERS ENGINEERING & DESIGN,
ARCHITECTURE, SURVEY, CT P.C.

CONTACT: PETE ALBANO

COMPANY: COLLIERS ENGINEERING & DESIGN,
ARCHITECTURE, SURVEY, CT P.C.
CONTACT: PETE ALBANO

PHONE: (856) 797-0412
E-MAIL: PETER.ALBANO@COLLIERSENG.COM

**CONTRACTOR PMI
REQUIREMENT**

PMI LOCATION:	HTTPS://PMI.VZWSMART.COM
SMART TOOL VENDOR PROJECT #:	10220904
MDG NUMBER:	5000247954
ANALYSIS DATE:	05/02/2024
*** PMI AND REQUIREMENTS ARE EMBEDDED IN MOUNT ANALYSIS REPORT	

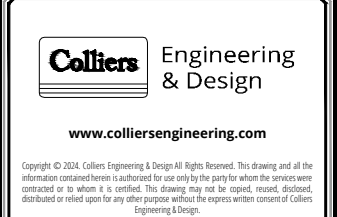
MOUNT REPLACEMENT REQUIRED :	YES
------------------------------	-----

REFER TO MOUNT MODIFICATION DRAWINGS PAGE FOR VZW
SMART KIT APPROVED VENDORS

PROJECT DESCRIPTION/ SCOPE OF WORK	

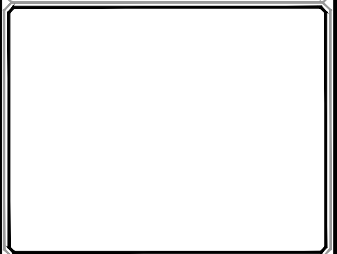
REMOVE (8) EXISTING PANEL ANTENNAS
REMOVE (2) EXISTING RADIOS
REMOVE (8) 1-5/8" COAX CABLES
INSTALL (4) PROPOSED COMMSCOPE NHH-65B-R2B
INSTALL (2) PROPOSED SAMSUNG MT6413-77A
INSTALL (2) PROPOSED XXDWMM-12.5-65
INSTALL (2) PROPOSED B2/B66A (RF4439D-25A) RADIOS
INSTALL (2) PROPOSED RF4461D-13A RADIOS
INSTALL (1) PROPOSED OVP AT TOWER
INSTALL (1) PROPOSED OVP IN SHELTER
INSTALL (2) HYBRID CABLES

SHEET INDEX

[illegible]

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CONSULTING



811 ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT:
WWW.CALL811.COM

1	06/07/24	ISSUED FOR CONSTRUCTION	AJC	PMA	
0	05/02/24	ISSUED FOR CONSTRUCTION	AJC	PMA	
A	04/09/24	ISSUED FOR REVIEW	AJC	PMA	
REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY	

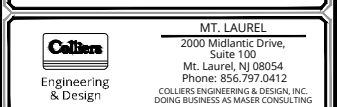
The seal is a circular emblem for the State of Connecticut. It features a central shield with a sun rising over mountains and a river. The shield is surrounded by a wreath. The outer ring of the seal contains the text "PETER M. ALBANO" at the top and "PROFESSIONAL ENGINEER" at the bottom. In the center, the text "Peter M. Albano" is written in a large, stylized script. Below the name, it says "CONNECTICUT LICENSED PROFESSIONAL ENGINEER", "LICENSE NO. 3546", "COLLIERS ENGINEERING & DESIGN CT, P.C.", and "CTJC 0000131". At the bottom, the expiration date "06/12/2024" is printed in red.

06/12/2024

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

SITE NAME:
BOLTON CT
MDG NUMBER: 5000247954
FUZE ID: 16244102

130 VERNON ROAD
VERNON ROCKVILLE, CT 06066
TOLLAND COUNTY

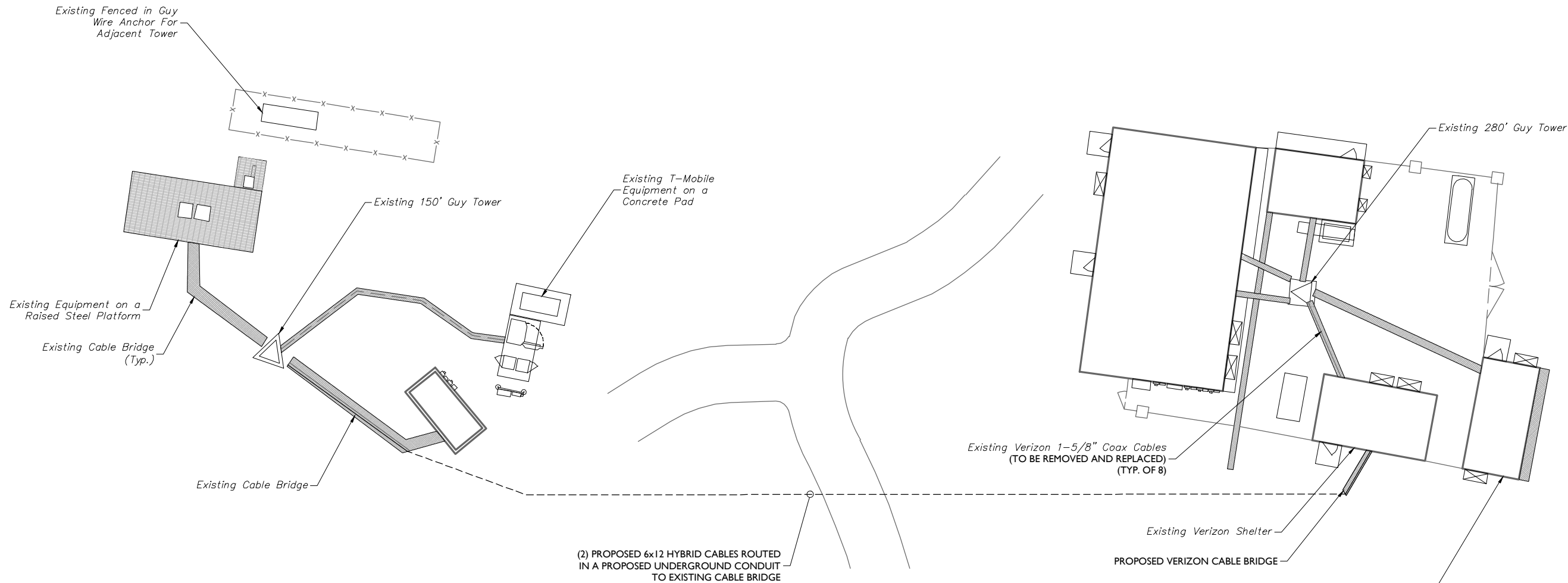
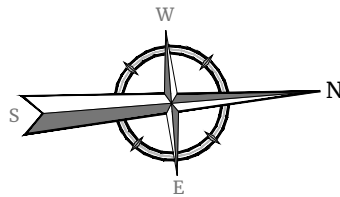


SHEET TITLE:

TITLE SHEET

SHEET NUMBER : T-1

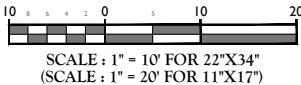
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION



LEGEND

- Existing Chain Link Fence
- Existing Structure
- Existing Features
- PROPOSED FEATURES
- Existing Cables
- PROPOSED CABLES

COMPOUND LAYOUT



REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
1	05/07/24	ISSUED FOR CONSTRUCTION	AJC	PMA
0	05/02/24	ISSUED FOR CONSTRUCTION	AJC	PMA
A	04/09/24	ISSUED FOR REVIEW	AJC	PMA

Peter M. Albano
CONNECTICUT LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 35459
COLLIERS ENGINEERING & DESIGN CT, P.C.
06/12/2024

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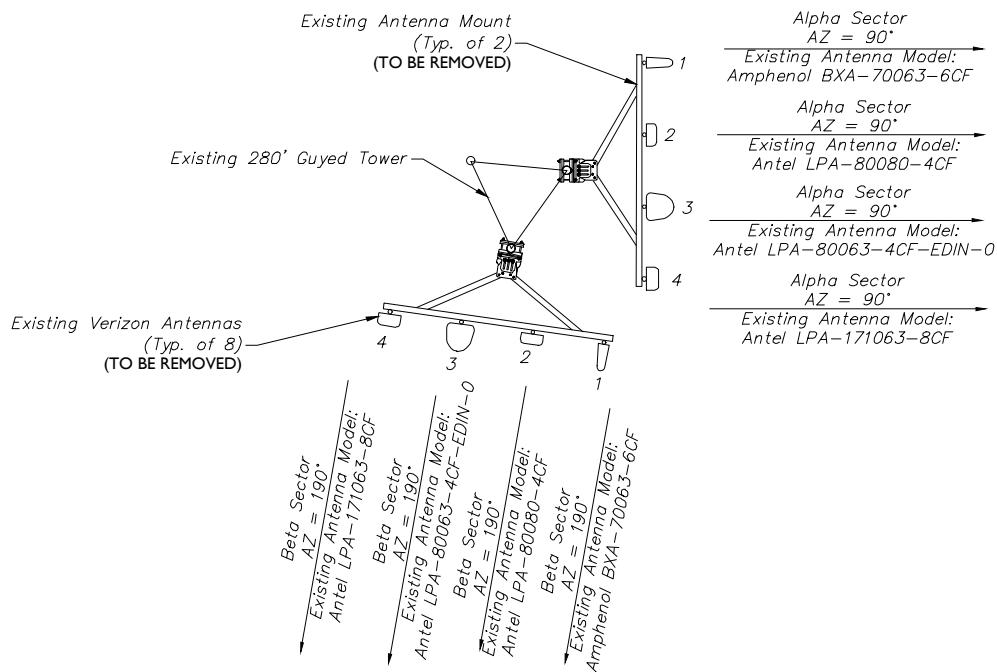
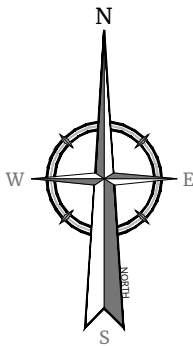
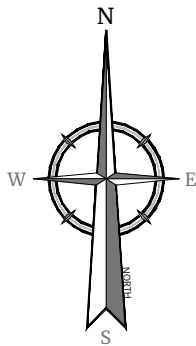
SITE NAME:
BOLTON CT
MDG NUMBER: 5000247954
FUZE ID: 16244102

130 VERNON ROAD
VERNON ROCKVILLE, CT 06066
TOLLAND COUNTY

MT. LAUREL
2000 Midlantic Drive,
Suite 100
Mt. Laurel, NJ 08054
Phone: 856.797.0412
COLLIERS ENGINEERING & DESIGN, INC.
DOING BUSINESS AS MASER CONSULTING

COMPOUND LAYOUT

C-1



EXISTING ANTENNA LAYOUT
(280' GUYED TOWER)
NOT TO SCALE

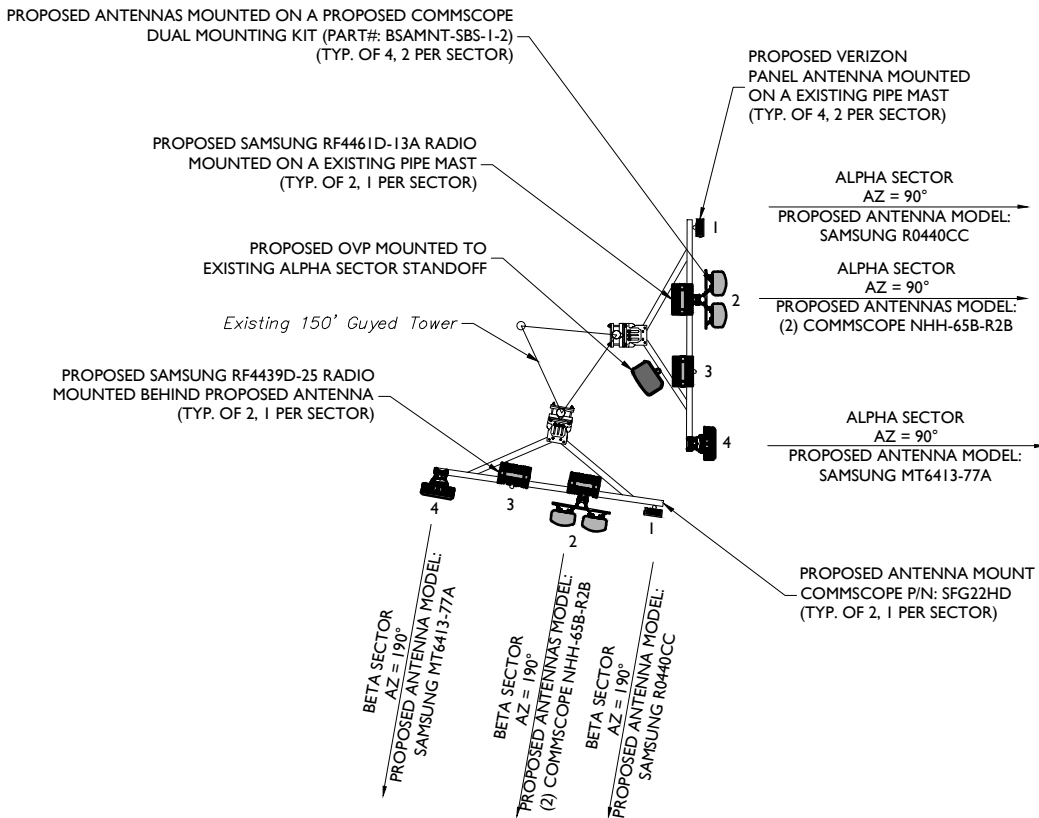
Requirements:

The existing mounts are **SUFFICIENT** for the final loading configuration shown in attachment 2 and do not require modifications. Additional requirements are noted below.

Contractor shall record all dimensions and member sizes requested in the Mount Geometry Verification Requirements section of the Mount Analysis report. Contractor shall provide the requested information to Colliers Engineering & Design for structural verification while on site. Contact EOR if these documents are not available to the general contractor.

Contractor shall inspect climbing facilities and safety climb, if present, and ensure they are in good condition. Contractor shall install safety climb wire rope guides in locations where wire rope is rubbing against the mount or mount-to-tower connection steel. Wire brush clean any observed corrosion and protect with two (2) coats of cold galvanization (Zinga or Zinc Kote). Contractor shall provide photos of wire rope guide installation as part of PMI documents. Contact EOR if additional guidance is required.

Contractor shall install proposed OVP to top right (as seen from behind mount) Alpha sector standoff.



PROPOSED ANTENNA LAYOUT
(150' GUYED TOWER)
NOT TO SCALE

NOTES:

- ANTENNA ORIENTATION IS BASED ON TRUE NORTH BEARING. CONTRACTOR SHALL VERIFY TRUE NORTH PRIOR TO CONSTRUCTION.
- CONTRACTOR TO REFER TO FINAL RF CONFIGURATION SHEET FOR ANTENNA AZIMUTHS PRIOR TO CONSTRUCTION.

FINAL CABLE INFORMATION

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	HYBRID	STATUS	LENGTH *
(1) OVP-12	(1) PROPOSED	(2) HYBRIFLEX LOW INDUCTIVE	(2) PROPOSED	410'±

* ESTIMATED LENGTH OF CABLE WAS CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 25% (OF THE TWO PREVIOUS VALUES), LENGTHS REFLECTED IN THE TABLE DEFER TO THE GREATEST LENGTH.

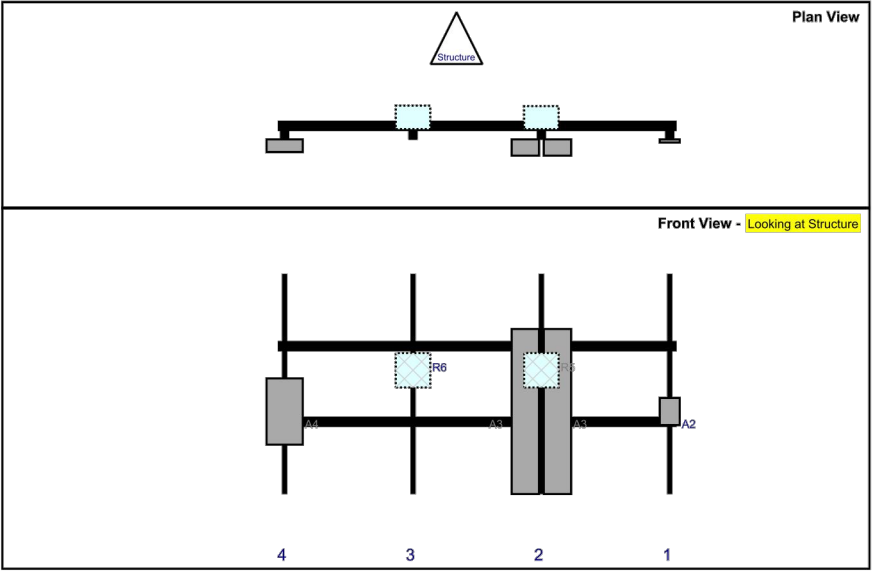
REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
1	05/07/24	ISSUED FOR CONSTRUCTION	AJC	PMA
0	05/02/24	ISSUED FOR CONSTRUCTION	AJC	PMA
A	04/09/24	ISSUED FOR REVIEW	AJC	PMA

Peter M. Albano
CONNECTICUT LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 35459
COLLIERS ENGINEERING & DESIGN CT, P.C.
06/12/2024

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

SITE NAME:
BOLTON CT
MDG NUMBER: 5000247954
FUZE ID: 16244102
130 VERNON ROAD
VERNON ROCKVILLE, CT 06066
TOLLAND COUNTY

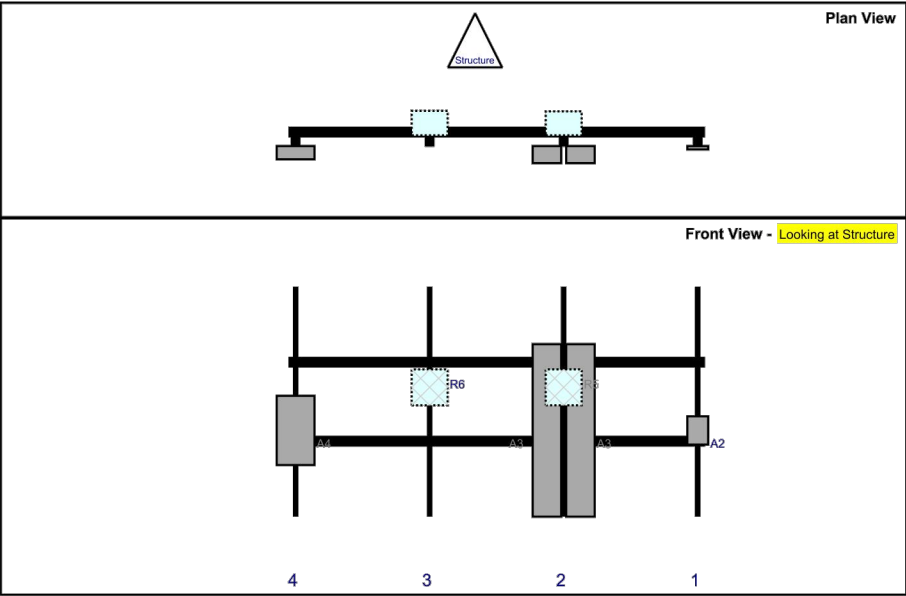
Structure: 5000247954-VZW - BOLTON CT					
Sector:	A			5/2/2024	
Structure Type:	Guyed	10220904			
Mount Elev:	120.00			Page: 1	



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A2	R0440CC w/ RT4423-48A	11.8	8.7	171	1	a	Front	60	0	Added	
A3	NHH-65B-R2B	72	11.9	115	2	a	Front	60	7	Added	
A3	NHH-65B-R2B	72	11.9	115	2	b	Front	60	-7	Added	
R5	RF4439d-25A	15	15	115	2	a	Behind	42	0	Added	
R6	RF4461d-13A	15	15	59	3	a	Behind	42	0	Added	
A4	MT6413-77A	28.9	15.8	3	4	a	Front	60	0	Added	
M5	RVZDC-6627-PF-48	29.5	16.5			Member				Added	

ALPHA SECTOR

Structure: 5000247954-VZW - BOLTON CT					
Sector:	B			5/2/2024	
Structure Type:	Guyed	10220904			
Mount Elev:	120.00			Page: 2	



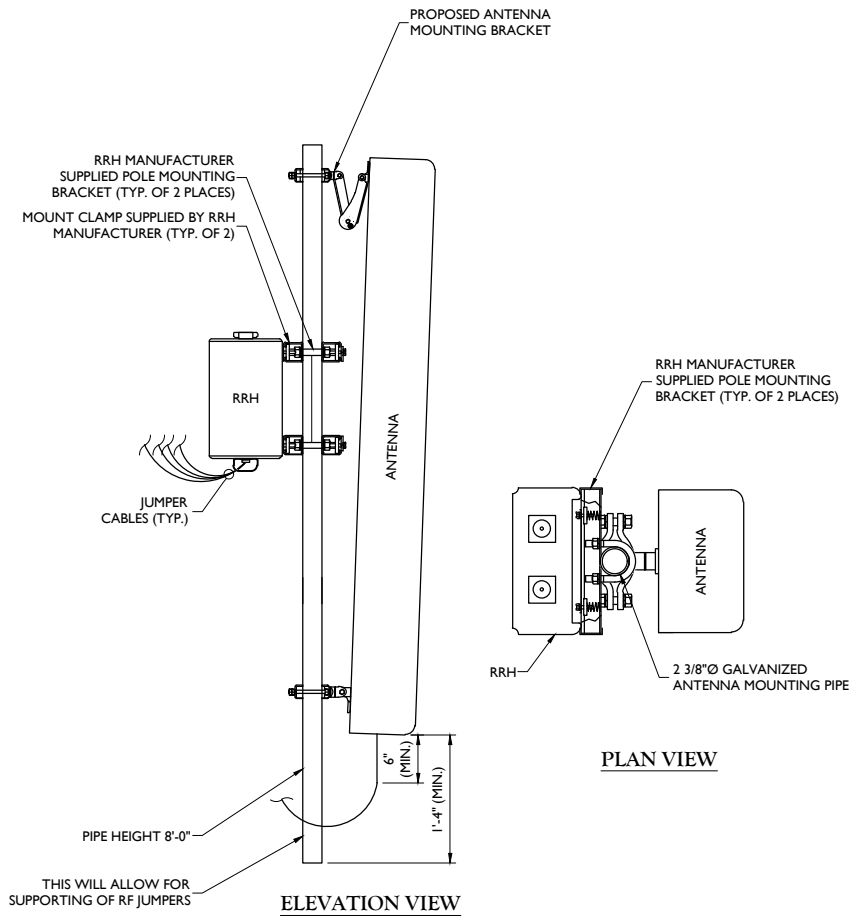
Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A2	R0440CC w/ RT4423-48A	11.8	8.7	171	1	a	Front	60	0	Added	
A3	NHH-65B-R2B	72	11.9	115	2	a	Front	60	7	Added	
A3	NHH-65B-R2B	72	11.9	115	2	b	Front	60	-7	Added	
R5	RF4439d-25A	15	15	115	2	a	Behind	42	0	Added	
R6	RF4461d-13A	15	15	59	3	a	Behind	42	0	Added	
A4	MT6413-77A	28.9	15.8	3	4	a	Front	60	0	Added	

BETA SECTOR

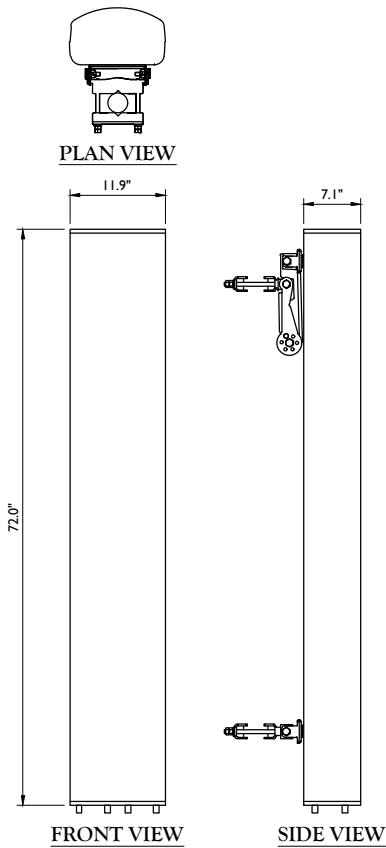
ANTENNA PLACEMENT DIAGRAMS
NOT TO SCALE

NOTE:
THE ANTENNA PLACEMENT DIAGRAMS HAVE BEEN TAKEN FROM
THE MOUNT ANALYSIS PREPARED BY COLLIERS ENGINEERING &
DESIGN INC. DATED 05/02/2024.

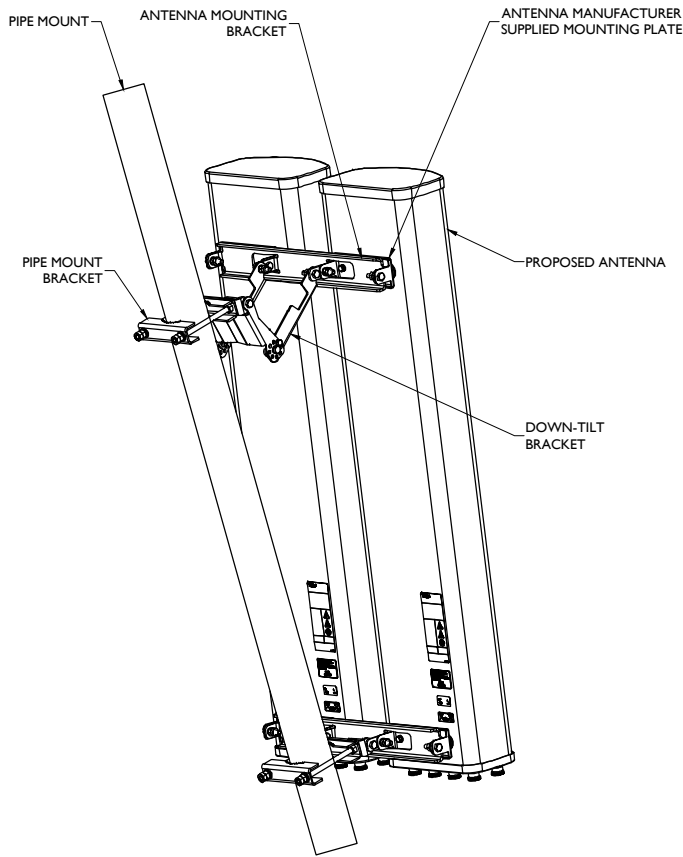
REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
1	05/07/24	ISSUED FOR CONSTRUCTION	AJC	PMA
0	05/02/24	ISSUED FOR CONSTRUCTION	AJC	PMA
A	04/09/24	ISSUED FOR REVIEW	AJC	PMA



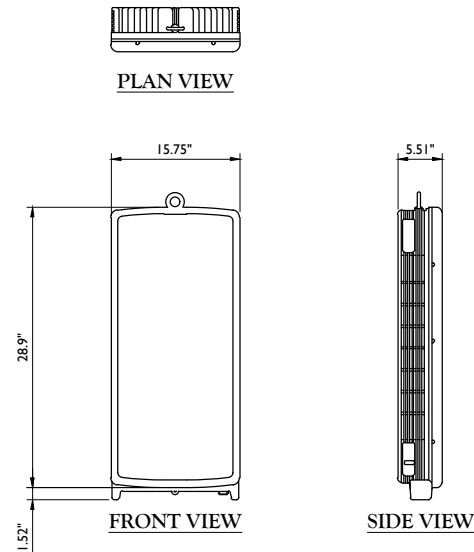
ANTENNA MOUNTING DETAIL
NOT TO SCALE



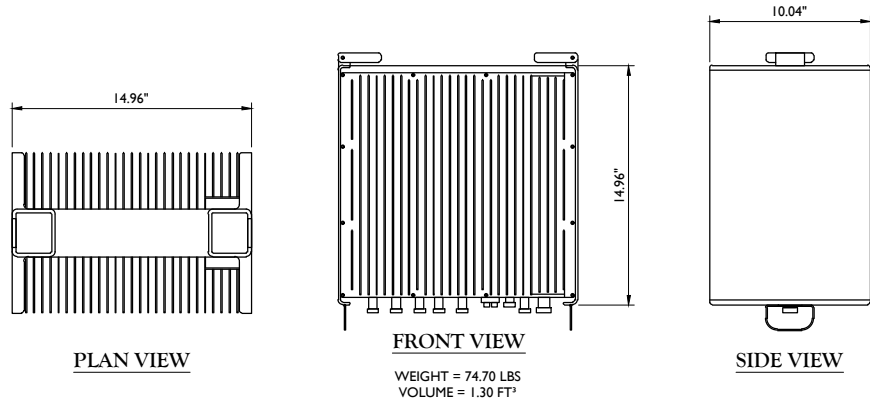
COMMSCOPE NHH-65B-R2B
NOT TO SCALE



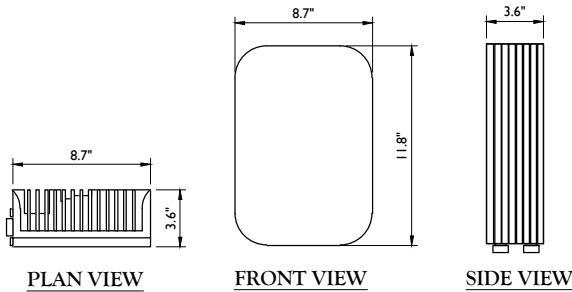
COMMSCOPE BSAMNT-SBS-1-2
NOT TO SCALE



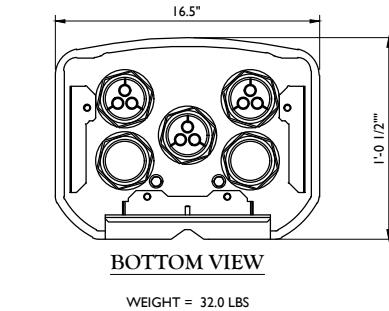
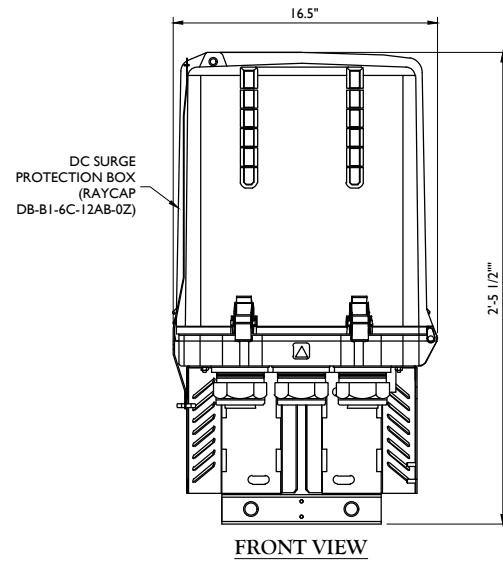
WEIGHT = 81.57 LBS
VOLUME = 1.9 FT³
SAMSUNG MT6413-77A
NOT TO SCALE



SAMSUNG RF4439D-25A (B2/B66)
REMOTE RADIO HEAD
NOT TO SCALE



WEIGHT:
RADIO: =15.4 LBS
VOLUME = 0.59 FT³
SAMSUNG RT4423-48A/B (R0440CC) DETAIL
NOT TO SCALE



RAYCAP DB-B1-6C-12AB-0Z
SURGE PROTECTION
NOT TO SCALE

SCALE:		JOB NUMBER:		
AS SHOWN		21781125A		
1	06/07/24	ISSUED FOR CONSTRUCTION	AJC PMA	
0	05/02/24	ISSUED FOR CONSTRUCTION	AJC PMA	
A	04/09/24	ISSUED FOR REVIEW	AJC PMA	
REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY

Peter M. Albano
CONNECTICUT LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 35459
COLLIERS ENGINEERING & DESIGN CT, P.C.
06/12/2024

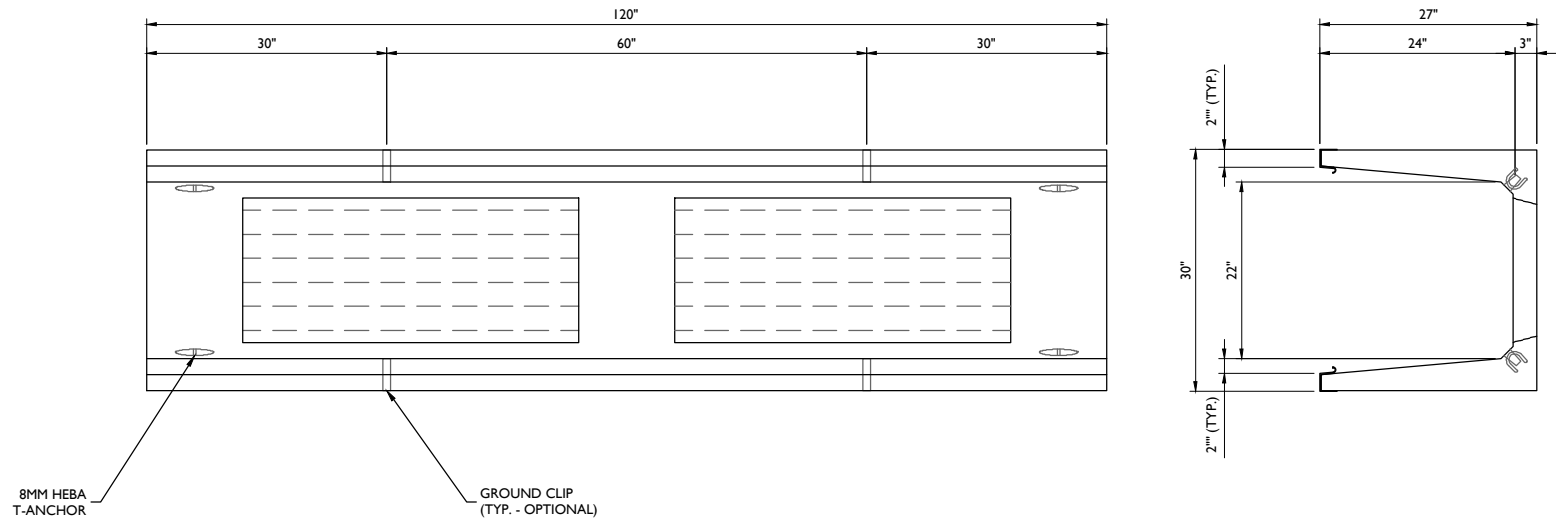
IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF THE RESPONSIBLE LICENSED PROFESSIONAL
ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:
BOLTON CT
MDG NUMBER: 5000247954
FUZE ID: 16244102
130 VERNON ROAD
VERNON ROCKVILLE, CT 06066
TOLLAND COUNTY

MT. LAUREL
2000 Midlantic Drive,
Suite 100
Mt. Laurel, NJ 08054
Phone: 856.797.0412
COLLIERS ENGINEERING & DESIGN, INC.
DOING BUSINESS AS MASER CONSULTING

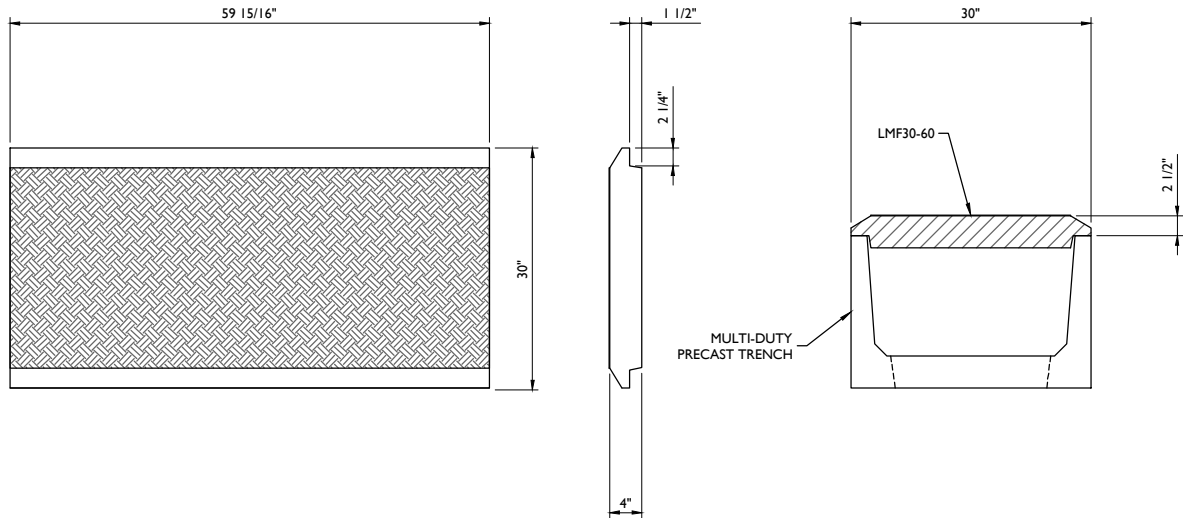
SHEET TITLE:
CONSTRUCTION DETAILS

SHEET NUMBER:
A-1



WEIGHT: 2047 LBS

TRENWA PRECAST TIER 15 RATED TRENCH
(P/N: BM2424-120)
NOT TO SCALE



WEIGHT: 70 LBS

FIBRELITE TIER 15 RATED TRENCH LID
(P/N: LMF30-60)
NOT TO SCALE



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ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT:
WWW.CALL811.COM

SCALE: AS SHOWN JOB NUMBER: 21781125A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
1	05/07/24	ISSUED FOR CONSTRUCTION	AJC	PMA
0	05/02/24	ISSUED FOR CONSTRUCTION	AJC	PMA
A	04/09/24	ISSUED FOR REVIEW	AJC	PMA

Peter M. Albano
CONNECTICUT LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 35459
COLLIERS ENGINEERING & DESIGN CT, P.C.
CIT #PC 0000131

06/12/2024

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

SITE NAME:
BOLTON CT
MDG NUMBER: 5000247954
FUZE ID: 16244102

130 VERNON ROAD
VERNON ROCKVILLE, CT 06066
TOLLAND COUNTY



Engineering & Design

MT. LAUREL
2000 Midlantic Drive,
Suite 100
Mt. Laurel, NJ 08054
Phone: 856.797.0412
COLLIERS ENGINEERING & DESIGN, INC.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE:
CONSTRUCTION DETAILS

SHEET NUMBER:

A-2

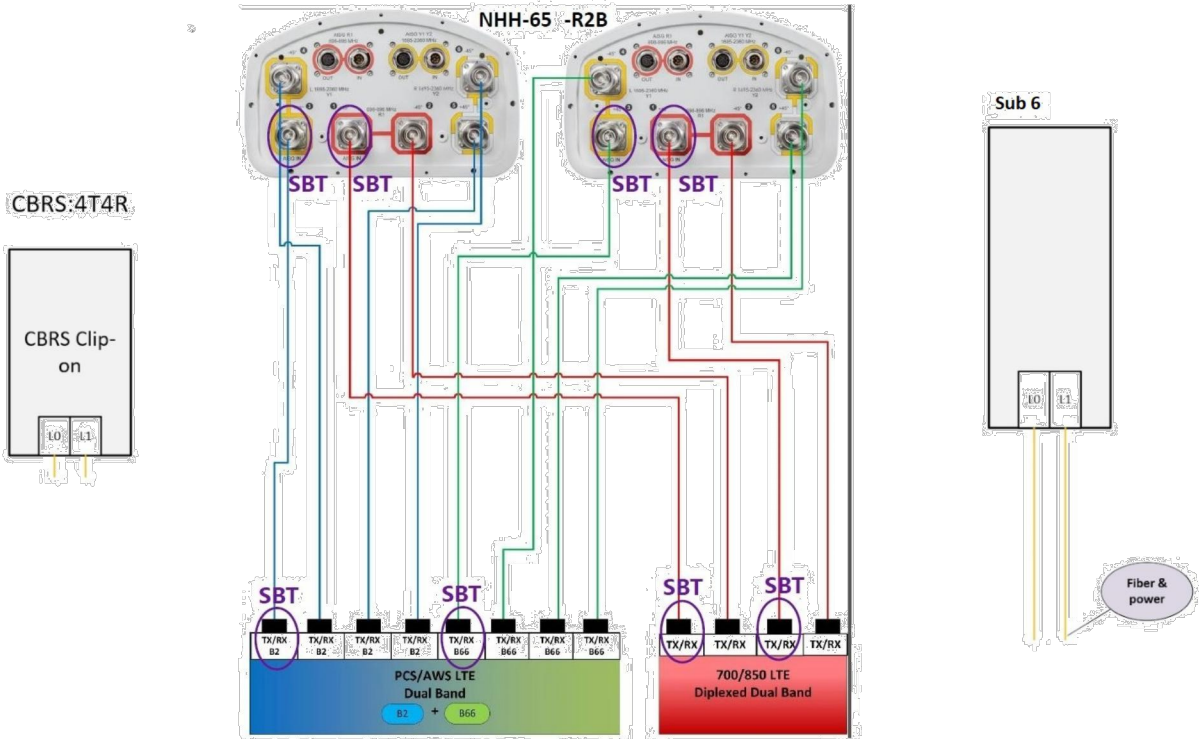
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

Antenna Summary

Added														
700	850	1900	AWS	CBRS	CBAND	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID
				LTE		Samsung	R0440CC 3550Mhz		120	120.4	190(B) 90(A)	PHYSICAL	2	
					5G	Samsung	MT6413-77A		120	121.2	190(B) 90(A)	PHYSICAL	2	
LTE	LTE 5G	LTE	LTE			COMMSCOPE	NHH-65B-R2B	HEX PORT, AWS/PCS/700/850, 6 FT, 65 HBW,	120	123	190(B) 90(A)	PHYSICAL	4	1900056292
Removed														
700	850	1900	AWS	CBRS	CBAND	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID
LTE						AMPHENOL	BXA-70063-6CF		121	124	90(01) 190(02)	PHYSICAL	2	
						ANTEL	LPA-80080-4CF		121	123		PHYSICAL	2	
						ANTEL	LPA-171063-8CF		121	124	90(D1) 190(D2)	PHYSICAL	2	
						ANTEL	LPA-80063-4CF-EDIN-0 (234926)		121	123		PHYSICAL	2	
Retained														
700	850	1900	AWS	CBRS	CBAND	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID
No data available.														

Added: 8 Removed: 8 Retained: 0

ANTENNA SCHEDULE



RF PLUMBING DIAGRAMS

Equipment Summary

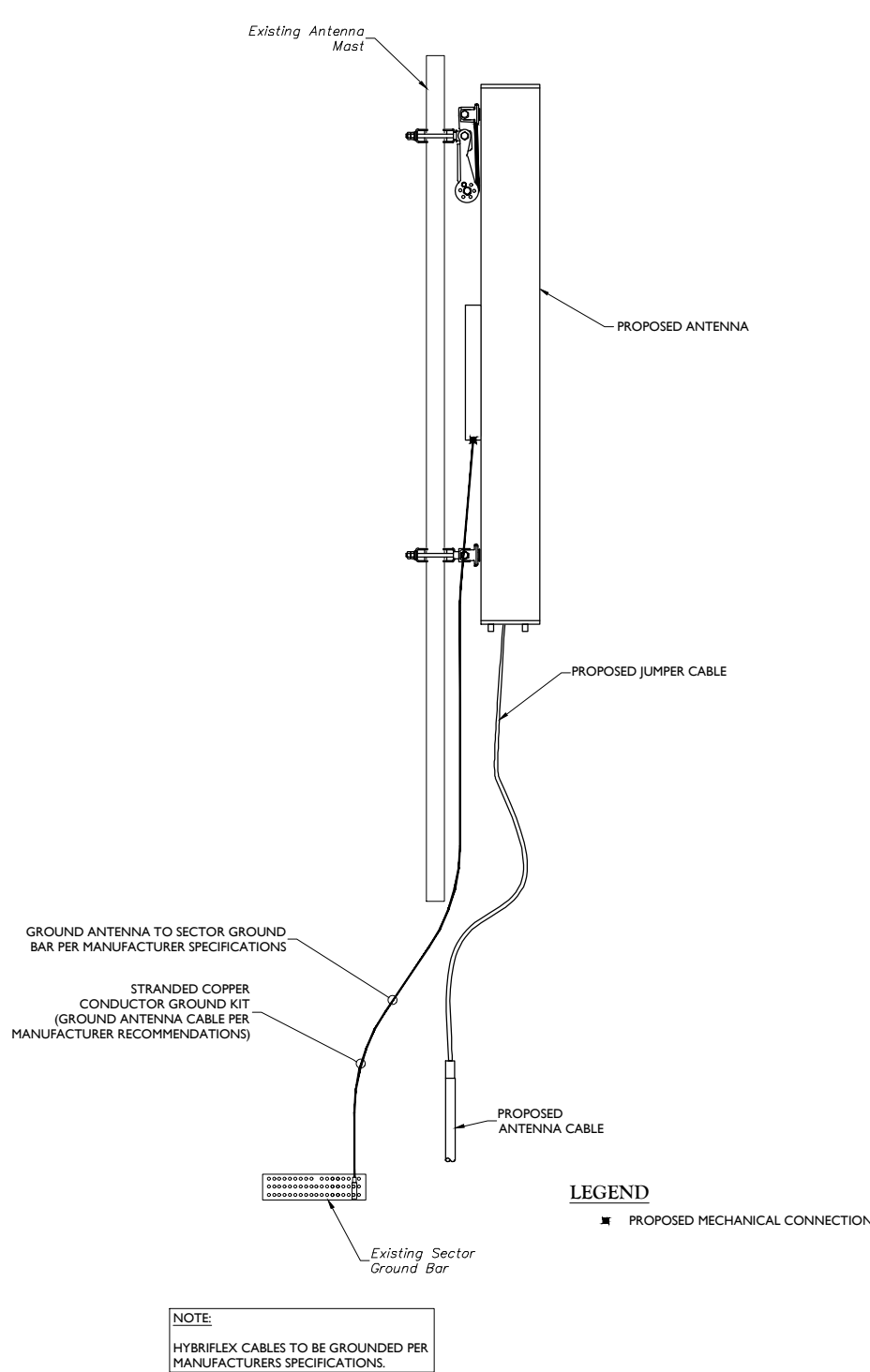
Added															
Equipment Type	Location	700	850	1900	AWS	CBRS	CBAND	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID
RRU	Tower			LTE	LTE			Samsung	B2/B66A RRH ORAN (RF4439d-25A)				PHYSICAL	2	
RRU	Tower					LTE		Samsung	RT4423-48A				PHYSICAL	2	
Other	Shelter							Quad	Rack Ancillary	2X2 VERT DUCT MOUNTING BKT			PHYSICAL	10	0000000019001511
Mount	Tower							COMMSCOPE	BSAMNT-SBS-1-2	MOUNT-KIT, SIDE BY SIDE, 2PT			PHYSICAL	2	0000000019000058
Other	Shelter							Quad	Rack Ancillary	23" SEISMIC ZONE 4 RACK			PHYSICAL	1	0000000019000053
OVP Box	Tower							RayCap	RVZDC-4520-RM-48	12 POSITION RACK MOUNT OVP, WITH ALARM B			PHYSICAL	1	0000000019000410
Hybrid Cable	Tower							HUBERSUHNE-001	SD-06X6GA-12SM-240	H+S MLC-HYBRID 6X12 LOW INDUCTANCE (6AWG)SM- LCDX12 240 FT			PHYSICAL	2	0000000019000005
Other	Shelter							Quad	Rack Ancillary	6" FIBER DUCT			PHYSICAL	1	0000000019000010
Cell Site Routers	Tower							Nokia	3HE14785AA	PS - 7250 IXR-E DC			PHYSICAL	2	0000000019000075
Other	Shelter							Quad	Rack Ancillary	48 PORT 2 RU RACK MOUNT PATH PANEL WITH S/M LC QUAD HD UPC			PHYSICAL	1	0000000019000004
OVP Box	Tower							RayCap	OVP-12	12 POSITION DOME OVP, WITH ALARM BOARD			PHYSICAL	1	0000000019000410
Other	Shelter							Quad	Rack Ancillary	CORR2FLEX 6F SM LC/LC FLEX BOOT FIBER 60" AWS			PHYSICAL	1	0000000019000004
Other	Shelter							Quad	Rack Ancillary	FIBER DUCT COVER			PHYSICAL	1	0000000019000013
LCC4	Tower							SAMSUNGELE-001	SLS-BB1150EDEX	CHANNEL CARD LCC4			PHYSICAL	2	0000000019001677
Other	Shelter							Quad	Rack Ancillary	2X2 FIBER DUCT			PHYSICAL	1	0000000019000002
Other	Shelter							Quad	Rack Ancillary	CORR2FLEX 6F SM LC/LC FLEX BOOT FIBER 60" (700)			PHYSICAL	1	0000000019000003
Other	Shelter							Quad	Rack Ancillary	CORR2FLEX 6F SM LC/LC FLEX BOOT FBR 40" PCS			PHYSICAL	2	0000000019000003
Cell Site Routers	Tower							Nokia	3HE15386AA	SYS-7250 IXR-E 24SFP+ 8SFP28 2QSFP28GNSS			PHYSICAL	1	0000000019000182
RRU	Tower							5G	Samsung	MT6413-77A			PHYSICAL	0	
RRU	Tower		LTE	LTE 5G				Samsung	RF4461d-13A				PHYSICAL	2	
Power Plants	Tower							GEMINIPOWE-001	109163473	NE075AC48ATEZ RECTIFIER 175 - 275VAC INPUT, 48V, 75A OUTPUT			PHYSICAL	3	0000000019000436
Removed															
Equipment Type	Location	700	850	1900	AWS	CBRS	CBAND	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID
RRU	Tower		LTE					Nokia	UHBA B13 RRH 4x30				PHYSICAL	2	
Coaxial Cables	Tower							N/A	1-5/8" Coax				PHYSICAL	8	
Retained															
Equipment Type	Location	700	850	1900	AWS	CBRS	CBAND	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID

EQUIPMENT SCHEDULE

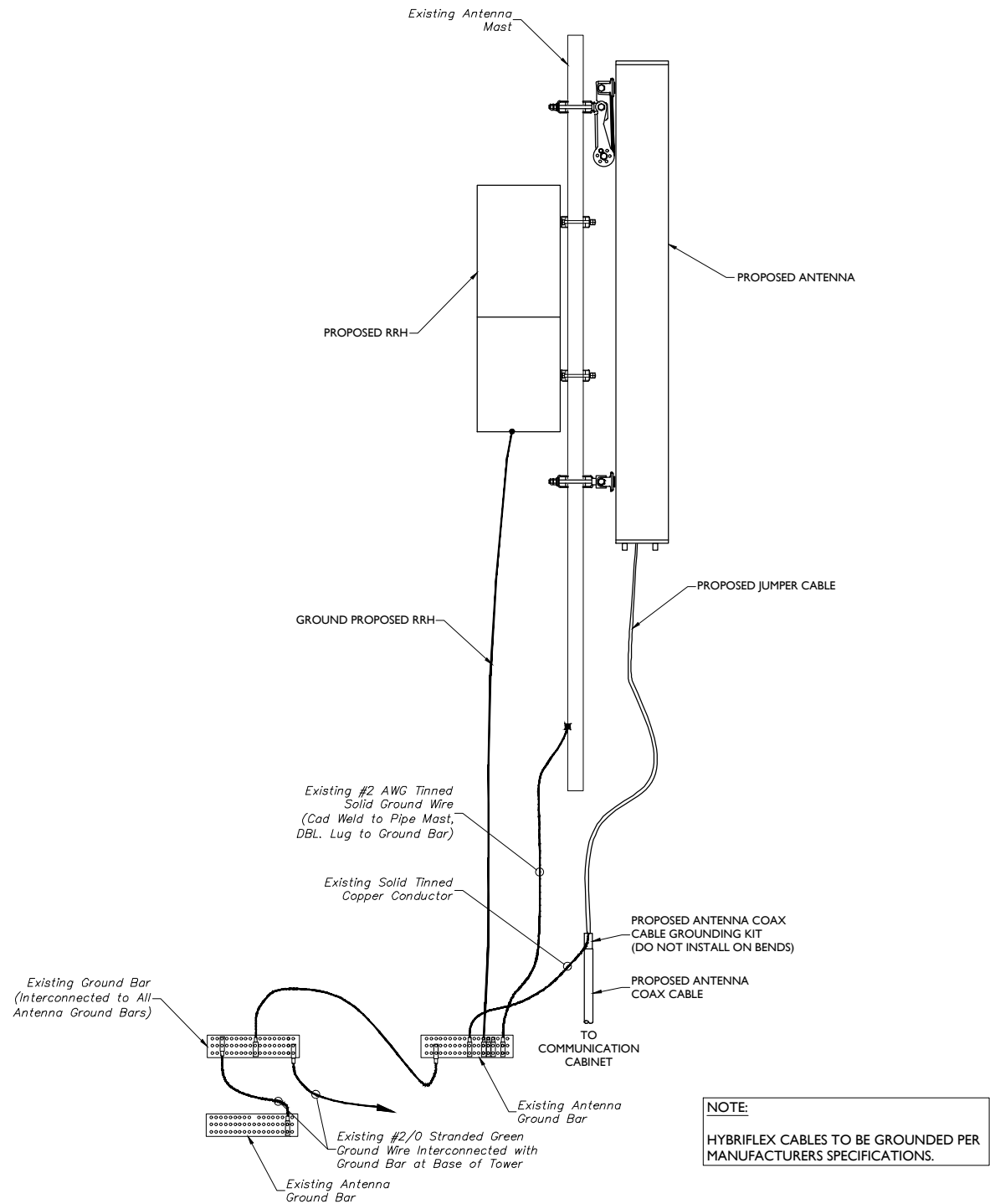
NOTE:
ANTENNA SCHEDULE AND RF PLUMBING DIAGRAM TAKEN FROM RFDS MATCHING SITE NAME AND FUZE ID REFERENCE IN THESE DRAWINGS, DATED 09/22/2023. THEY HAVE NOT BEEN ALTERED IN ANY WAY BY COLLIERS ENGINEERING & DESIGN.

1	05/07/24	ISSUED FOR CONSTRUCTION											AJC	PMA	
0	05/02/24	ISSUED FOR CONSTRUCTION											AJC	PMA	
A	04/09/24	ISSUED FOR REVIEW											AJC	PMA	
REV	DATE	DESCRIPTION											DRAWN BY	CHECKED BY	

\\npb\ehs_41003\BOLTON CT CD Rev 1.dwg\$C-1 By:ACOA



**INTEGRATED ANTENNA
GROUNDING SCHEMATIC**
NOT TO SCALE



ANTENNA GROUNDING SCHEMATIC
NOT TO SCALE

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
1	05/07/24	ISSUED FOR CONSTRUCTION	AJC	PMA
0	05/02/24	ISSUED FOR CONSTRUCTION	AJC	PMA
A	04/09/24	ISSUED FOR REVIEW	AJC	PMA

POST MODIFICATION INSPECTION (PMI) REQUIREMENTS

1. PMI REQUIRED FOR ALL SITES, REFER TO VERIZON NSTD-446 SECTION 1.5 AND 2.3 FOR MORE INFORMATION.
2. CONTRACTOR SHALL REFER TO THE MOUNT ANALYSIS BY COLLIERS ENGINEERING & DESIGN, INC. DATED 02/02/2024 FOR ADDITIONAL DETAILS.
3. GENERAL CONTRACTOR SHALL PROVIDE THE BELOW DOCUMENTATION TO THE STRUCTURAL ENGINEER OF RECORD VIA EMAIL, DROPBOX, OR OTHER FILE SHARE METHOD. PROVIDE HIGH RESOLUTION PHOTO'S (DO NOT COMPRESS).
4. STRUCTURAL ENGINEER OF RECORD WILL CONDUCT A REVIEW OF THE PROVIDED DOCUMENTS TO PREPARE A PMI REPORT. STRUCTURAL ENGINEER OF RECORD WILL NOTIFY GENERAL CONTRACTOR IF ANY ADDITIONAL DOCUMENTATION IS REQUIRED TO COMPLETE THE PMI.
5. PMI DOCUMENTATION SHALL BE SUFFICIENT TO CONFIRM THE UPGRADE WAS BUILT AS DESIGNED, INCLUDING EQUIPMENT CHANGES AND STRUCTURAL MODIFICATIONS, AND IS IN ADDITION TO ANY OTHER REQUIRED CLOSEOUT PACKAGE DOCUMENTATION.
6. REQUIRED DOCUMENTATION FOR PMI INCLUDES THE FOLLOWING AT A MINIMUM. REFER TO THE MOUNT ANALYSIS FOR POSSIBLE ADDITIONAL INFORMATION. IF STRUCTURAL MODIFICATIONS ARE REQUIRED, REFER TO THE MODIFICATION DRAWINGS FOR POSSIBLE ADDITIONAL REQUIREMENTS.
 - a. PROVIDE PRE-AND-POST CONSTRUCTION PHOTOS OF EACH SECTOR FROM THE MOUNT ELEVATION AND THE GROUND. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE PHOTO'S PROVIDED PROVIDE POSITIVE CONFIRMATION THAT THE MODIFICATION/UPGRADE WAS COMPLETED IN ACCORDANCE WITH THESE CONSTRUCTION DRAWINGS AND ANY STRUCTURAL/MOUNT MODIFICATION DRAWINGS. CONTRACTOR SHALL RELAY ANY DATA THAT CAN IMPACT THE PERFORMANCE OF THE MOUNT OR MOUNT MODIFICATION, INCLUDING SAFETY ISSUES. PHOTOS SHALL HAVE A DATE/TIME STAMP IN THE PHOTO. REFER TO THE MOUNT ANALYSIS FOR SCHEDULE OF REQUIRED PHOTOS. PROVIDE PHOTOS OF THE GATE SIGNS AND CARRIER SHELTER TO IDENTIFY THE TOWER OWNER, SITE NAME, SITE NUMBER, ETC.
 - b. VERIFICATION OF THE MEMBER CONNECTIONS, BRACING, AND RELEVANT DIMENSIONS.
 - c. VERIFICATION OF THE ANTENNA AND OTHER EQUIPMENT CONFIGURATION (PHOTOS OF MODEL NUMBERS/TAGS FOR ALL EQUIPMENT, AS WELL AS THE FEEDLINE CONFIGURATION). TAKE PHOTOS OF THE BACK SIDE OF EACH SECTOR AS WELL AS CLOSE-UPS OF ALL EQUIPMENT. PHOTOS SHOULD CONFIRM THE HORIZONTAL AND VERTICAL POSITIONING OF THE ANTENNAS AND EQUIPMENT AND SHALL HAVE TAPE MEASURES IN THE PHOTOS TO CONFIRM.
 - d. FOR TIEBACKS, STRUTS, MOUNT PIPES, PHOTOS TO CONFIRM THE ANGLES AND LOCATIONS OF ATTACHMENT POINT AT BOTH ENDS OF MEMBER, AS WELL AS DIMENSIONS, THICKNESS, AND LENGTHS OF THE MEMBERS. REFER TO THE CHECKLIST IN THE MOUNT ANALYSIS OR MOUNT MOD DRAWINGS FOR ADDITIONAL INFORMATION.
 - e. MATERIALS USED (TYPE, STRENGTH, DIMENSIONS, ETC.). PROVIDE BILL OF MATERIAL AND MATERIAL SPEC TO CONFIRM MATERIAL GRADES AND SIZES. PROVIDE DOCUMENTATION FOR GALVANIZATION OF MEMBERS WHETHER HOT-DIPPED OR COLD-GALVANIZED. IF MATERIALS DIFFER FROM THOSE SPECIFIED ON THESE DRAWINGS, PROVIDE DOCUMENTATION THAT THE "EQUIVALENT" MATERIAL HAS THE SAME SPECIFICATIONS.
 - f. MOUNT ORIENTATION/AZIMUTH AND ELEVATION. PROVIDE TAPE DROP OF ANTENNA CENTERLINE(S) AND MOUNT ATTACHMENT POINTS TO THE SUPPORTING STRUCTURE. IF THERE ARE MULTIPLE RAD CENTERS, PROVIDE PHOTOS OF ALL ELEVATIONS.
 - g. VERIFICATION THAT THE INSTALL HAS NOT CAUSED DAMAGE TO OR UNPLANNED OBSTRUCTION OF THE FOLLOWING:
 - CLIMBING FACILITIES
 - SAFETY CLIMB IF PRESENT, INCLUDING PHOTOS ABOVE AND BELOW THE MOUNT
 - LIGHTING SYSTEMS
 - OTHER INSTALLED SYSTEMS ON THE STRUCTURE
 - CONTRACTOR SHALL ENSURE THE SAFETY CLIMB IS SUPPORTED AND NOT ADVERSELY AFFECTED BY THE INSTALLATION OF NEW COMPONENTS. THIS MAY INVOLVE THE INSTALLATION OF WIRE ROPE GUIDES OR OTHER ITEMS TO PROTECT THE WIRE ROPE.
 - h. OTHER ITEMS DETERMINED BY THE STRUCTURAL ENGINEER TO ENSURE THE MOUNT WILL PERFORM AS DESIGNED. PHOTOS OF RELEVANT MEASUREMENTS, WITH SUFFICIENT DETAILS TO CONFIRM CONNECTION DETAILS, PLACEMENT OF EQUIPMENT, WALL ANCHOR DETAILS, BALLAST QUANTITIES, STRUCTURAL MODIFICATION ETC. DIAMETERS AND THICKNESS OF BOLTS/THEADED RODS/ANGLES/TUBES ETC. SHALL HAVE PHOTOS CONFIRMING CALIPER MEASUREMENTS.
 - CONFIRMATION THAT ALL HARDWARE WAS PROPERLY INSTALLED, AND EXISTING HARDWARE WAS INSPECTED FOR ANY ISSUES
 - FOR BALLAST SLEDS, DOCUMENTATION OF THE WEIGHT OF BALLAST IN EACH SECTOR
 - FOR WALL ANCHORS, PHOTOS, AND MEASUREMENTS OF OUTSIDE AND INSIDE OF CONNECTIONS, DOCUMENTATIONS OF ADHESIVE USED, SIZE AND LENGTH OF ANCHORS, EFFECTIVE EMBEDMENT DEPTH OF THE ANCHORS, GROUTING OF HOLLOW WALLS, SPACING AND EDGE DISTANCE MEASUREMENTS, AND ANY THROUGH-BOLTS OR BACKING PLATES.
 - FOR STUD WELD CONNECTION, DOCUMENTATION TO CONFIRM SURFACE PREPARATION, STUD WELD SIZE, GRADE, LENGTH, AND SPACING.
 - FOR FABRICATED PARTS, SHOP DRAWINGS TO BE APPROVED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION
 - FOR WELD PARTS, CERTIFIED WELD INSPECTION
 - FOR BOLTED PARTS, BOLT INSTALLATION AND TORQUE
7. CONTRACTOR SHALL PROVIDE, IN ADDITION TO THE ABOVE, AS-BUILT CDS WITH REDLINES IDENTIFYING ANY CHANGES. THE AS-BUILTS SHALL HAVE THE CONTRACTOR'S NAME, PREPARER'S SIGNATURE, AND DATE.

8. IF THE MODIFICATION INSTALLATION WOULD FAIL THE PMI ("FAILED PMI"), THE CONTRACTOR SHALL WORK WITH THE ENGINEER OF RECORD TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:
 - a. CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENTAL PMI.
 - b. OR, WITH EOR'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT/UPGRADE USING THE AS-BUILT CONDITION
9. NOTE: IF LOADING IS DIFFERENT THAN THAT SHOWN IN THESE CONSTRUCTION DRAWINGS OR STRUCTURAL/ MOUNT MODIFICATION DRAWINGS, CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY FOR RESOLUTION.
10. THE ENGINEERING FIRM PERFORMING AN ANALYSIS SHALL PROVIDE A CONTRACTOR'S PHOTO LOG AND CHECKLIST TO BE COMPLETED BY THE INSTALLING CONTRACTOR. THE CONTRACTOR SHALL THEN PROVIDE POST-INSTALLATION INFORMATION TO THE STRUCTURAL ENGINEER. THE STRUCTURAL ENGINEER SHALL REVIEW THE DOCUMENTS FOR ANY DEFICIENCIES THAT CAN BE DETERMINED FROM THE DESKTOP REVIEW OF THE DATA. THE ENGINEERING FIRM SHALL THEN PROVIDE DOCUMENTATION TO VZW THAT THE SITE IS COMPLETED, AND THE PMI REPORT IS APPROVED.



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Doing Business as  **MASER**
CONSULTING



PROTECT YOURSELF

ALL STATES REQUIRE NOTIFICATION OF
EXCAVATORS, DESIGNERS, OR ANY PERSON
PREPARING TO DISTURB THE EARTH'S
SURFACE ANYWHERE IN ANY STATE

Know what's below.
Call before you dig.

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT:
WWW.CALL811.COM

SCALE: AS SHOWN

JOB NUMBER: 21781125A

1	06/07/24	ISSUED FOR CONSTRUCTION	AJC	PMA	
0	05/02/24	ISSUED FOR CONSTRUCTION	AJC	PMA	
A	04/09/24	ISSUED FOR REVIEW	AJC	PMA	
REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY	

Peter M Albano

CONNECTICUT LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 35459

COLLIERS ENGINEERING & DESIGN CT, P.C.

1. JPL 0000131

06/12/2024

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OF THE RESPONSIBLE LICENSED PROFESSIONAL
ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:
BOLTON CT
MDG NUMBER: 5000247954
FUZE ID: 16244102

130 VERNON ROAD
VERNON ROCKVILLE, CT 06066
TOLLAND COUNTY



Engineering & Design

MT. LAUREL
2000 Midlantic Drive,
Suite 100
Mt. Laurel, NJ 08054
Phone: 856.797.0412
COLLIERS ENGINEERING & DESIGN, INC.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE :

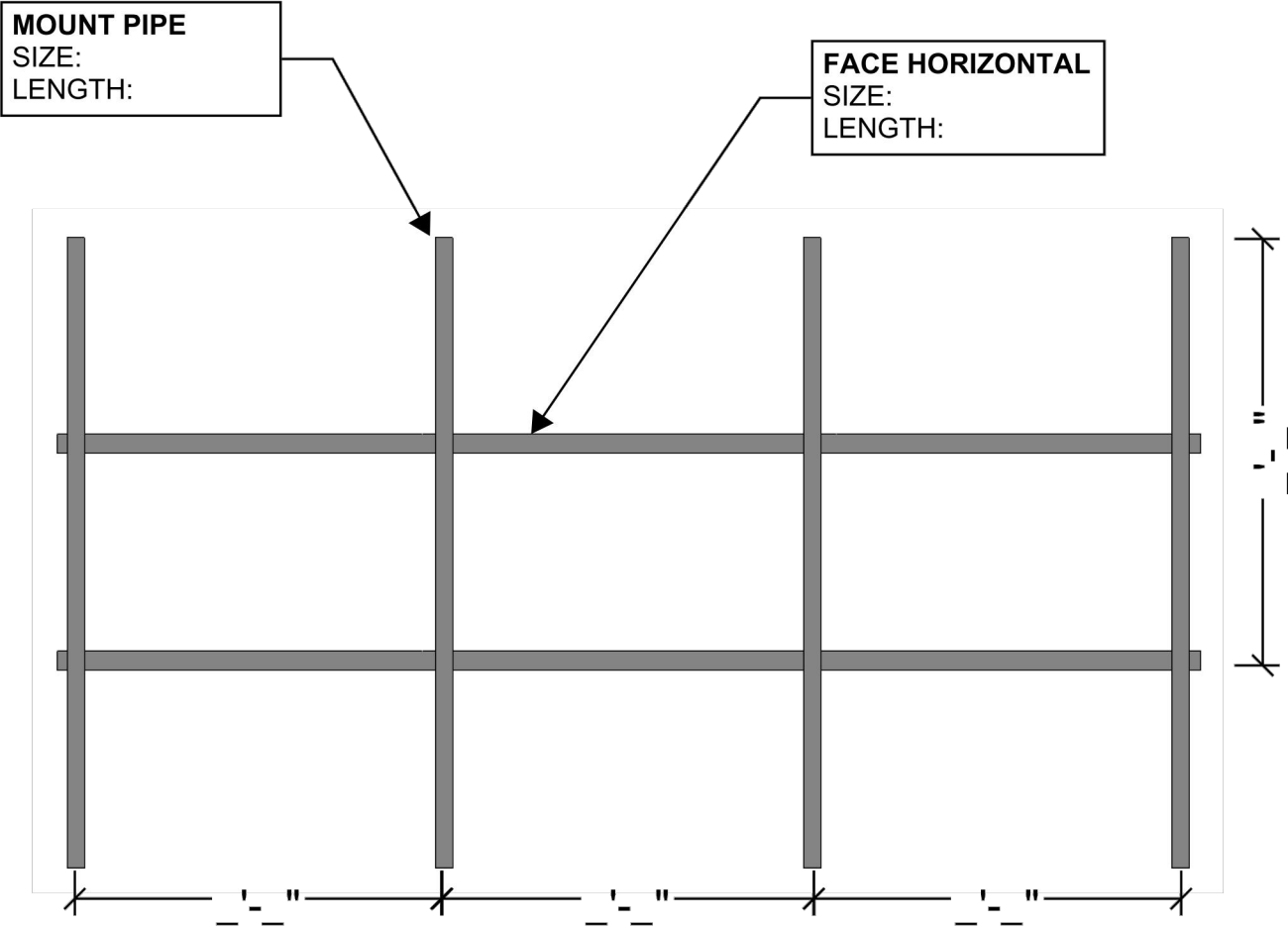
PMI REQUIREMENTS

SHEET NUMBER

GN-I

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

MOUNT GEOMETRY VERIFICATION



CONTRACTOR SHALL MEASURE ALL DIMENSIONS AND MEMBER SIZES REQUESTED ON THIS SKETCH. RECORD VIA PHOTOS AND MARKUPS ON THIS PAGE. PROVIDE PHOTOS AND MARKED-UP SKETCH TO THE EOR FOR EVALUATION.



Know what's below.
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LICENSE NUMBER: 35459
COLLIERS ENGINEERING & DESIGN CT, P.C.
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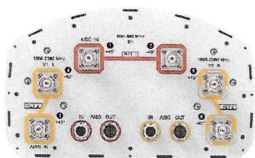


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Phone: 856.797.0412
COLLIERS ENGINEERING & DESIGN, INC.
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SHEET TITLE:
MOUNT GEOMETRY
VERIFICATION

SHEET NUMBER:
MG-I

NHH-65B-R2B



6-port sector antenna, 2x 698–896 and 4x 1695–2360 MHz, 65° HPBW, 2x RET. Both high bands share the same electrical tilt.

- Interleaved dipole technology providing for attractive, low wind load mechanical package
- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- Separate RS-485 RET input/output for low and high band
- One RET for low band and one RET for both high bands to ensure same tilt level for 4x Rx or 4x MIMO

General Specifications

Antenna Type	Sector
Band	Multiband
Color	Light gray
Grounding Type	RF connector body grounded to reflector and mounting bracket
Performance Note	Outdoor usage Wind loading figures are validated by wind tunnel measurements described in white paper WP-112534-EN
Radome Material	Fiberglass, UV resistant
Radiator Material	Low loss circuit board
Reflector Material	Aluminum
RF Connector Interface	4.3-10 Female
RF Connector Location	Bottom
RF Connector Quantity, high band	4
RF Connector Quantity, low band	2
RF Connector Quantity, total	6

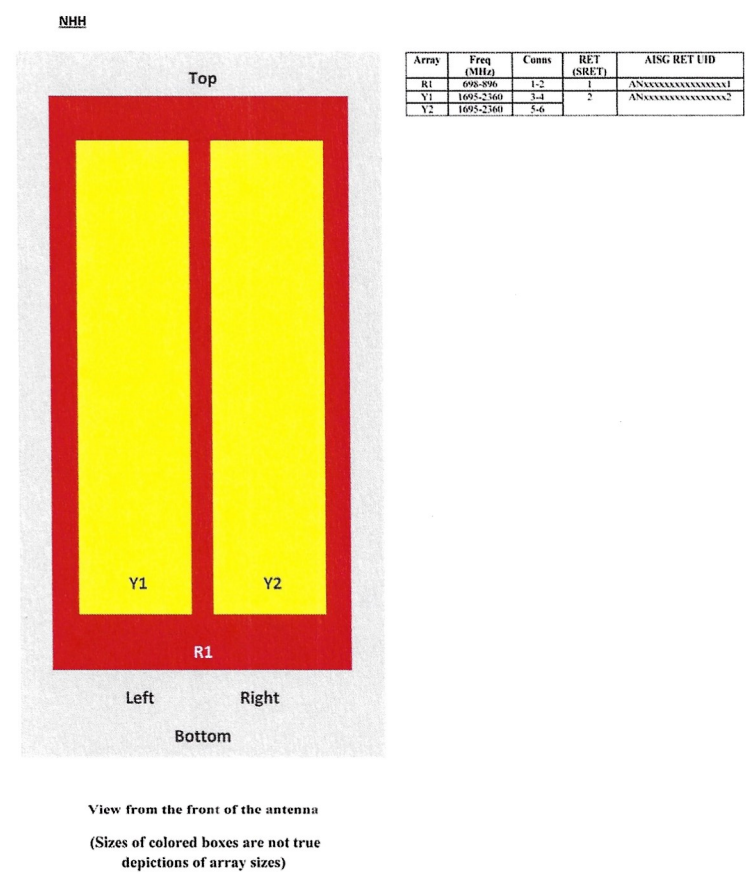
Remote Electrical Tilt (RET) Information

RET Interface	8-pin DIN Female 8-pin DIN Male
RET Interface, quantity	2 female 2 male
Input Voltage	10–30 Vdc
Internal Bias Tee	Port 1 Port 3
Internal RET	High band (1) Low band (1)
Power Consumption, idle state, maximum	2 W
Power Consumption, normal conditions, maximum	13 W

NHH-65B-R2B

Protocol	3GPP/AISG 2.0 (Single RET)
Dimensions	
Width	301 mm 11.85 in
Depth	180 mm 7.087 in
Length	1828 mm 71.969 in
Net Weight, without mounting kit	19.8 kg 43.651 lb

Array Layout



Electrical Specifications

Impedance	50 ohm
Operating Frequency Band	1695 – 2360 MHz 698 – 896 MHz

NHH-65B-R2B

Polarization	±45°
Total Input Power, maximum	900 W @ 50 °C

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.9	15	17.7	17.9	18.4	18.7
Beamwidth, Horizontal, degrees	65	60	71	69	64	57
Beamwidth, Vertical, degrees	12.4	11.2	5.7	5.2	4.9	4.6
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	0–7
USLS (First Lobe), dB	13	14	18	18	19	18
Front-to-Back Ratio at 180°, dB	30	29	31	30	29	31
Isolation, Cross Polarization, dB	25	25	25	25	25	25
Isolation, Inter-band, dB	30	30	30	30	30	30
VSWR Return loss, dB	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port at 50°C, maximum, watts	300	300	300	300	300	300

Electrical Specifications, BASTA

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.5	14.5	17.3	17.7	18.1	18.5
Gain by all Beam Tilts Tolerance, dB	±0.6	±1.1	±0.4	±0.4	±0.5	±0.3
Gain by Beam Tilt, average, dBi	0° 14.4 7° 14.6 14° 14.3	0° 14.7 7° 14.7 14° 14.1	0° 17.2 4° 17.3 7° 17.3	0° 17.6 4° 17.7 7° 17.7	0° 18.0 4° 18.2 7° 18.1	0° 18.3 4° 18.5 7° 18.6
Beamwidth, Horizontal Tolerance, degrees	±2	±2.1	±3	±4.1	±6.5	±2.9
Beamwidth, Vertical Tolerance, degrees	±0.7	±0.7	±0.3	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	13	14	16	16	17	15
Front-to-Back Total Power at 180° ± 30°, dB	23	22	27	27	25	25
CPR at Boresight, dB	22	21	23	23	22	19

NHH-65B-R2B

CPR at Sector, dB	10	7	16	13	11	4
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Mechanical Specifications

Effective Projective Area (EPA), frontal	0.26 m ² 2.799 ft ²
Effective Projective Area (EPA), lateral	0.22 m ² 2.368 ft ²
Wind Loading @ Velocity, frontal	278.0 N @ 150 km/h (62.5 lbf @ 150 km/h)
Wind Loading @ Velocity, lateral	230.0 N @ 150 km/h (51.7 lbf @ 150 km/h)
Wind Loading @ Velocity, maximum	537.0 N @ 150 km/h (120.7 lbf @ 150 km/h)
Wind Loading @ Velocity, rear	282.0 N @ 150 km/h (63.4 lbf @ 150 km/h)
Wind Speed, maximum	241 km/h 149.75 mph

Packaging and Weights

Width, packed	409 mm 16.102 in
Depth, packed	299 mm 11.772 in
Length, packed	1952 mm 76.85 in
Weight, gross	32.3 kg 71.209 lb

Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Below maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
ROHS	Compliant



Included Products

BSAMNT-3	– Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.
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* Footnotes

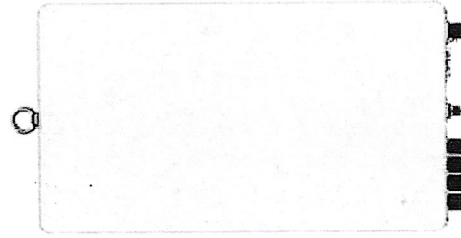
Performance Note	Severe environmental conditions may degrade optimum performance
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C-band 64T64R

Gen 2

SAMSUNG

Gen 2 : Higher conducted power radio with reduced size/volume/weight vs Gen 1 and also SOC embedded for flexibility to support new features



※ Preliminary Design: External appearance and mechanical design can be subject to change

Gen 2. 64T64R C-band MMU Dimensions	
Size (WxHxD)	400 x 734 x 140 mm (15.75 x 28.90 x 5.51 inch)
Weight	26kg (57.3 lb)

Item	Gen 2 64T64R (MT6413-77A)
Air Technology	NR n77/TDD
Frequency	3700 ~ 3980 MHz
IBW	200 MHz
OBW	200 MHz
Carrier Bandwidth	20(HW ready)/40/60/80/100 MHz
# of Carriers	2 carriers
Layer	DL : 16L, UL : 16RX (8L)
RF Chain	64T64R
Antenna Configuration	4V16H with 192 AE
ERP	80.5 dBm @320W (55 dBm + 25.5 dB)
Conductive Power	320W
Spectrum Analyzer	TX/RX support
RX Sensitivity	Typical -97.8dBm @1Rx, 18.36MHz with 30kHz, 51RBs
Modulation	DL 256QAM support, DL 1024QAM with 1~2dB power back-off
Function Split	DL/UL option 7-2x
Input Power	-48 VDC (-38 VDC to -57 VDC)
Power Consumption	1,287W (100% load, room temp.)
Size (WHD)	400 x 734 x 140 mm (15.75 x 28.90 x 5.51 inch)
Volume	41.1L
Weight	26kg (57.3 lb)
Operating Temperature	-40°C ~ 55°C (w/o solar load)
Cooling	Natural convection
Unwanted Emission	3GPP 38.104
	FCC 47 CFR 27.53 : < -13dBm/MHz
	< -40 dBm/MHz @ above 4 GHz
	< -50 dBm /MHz @ 4,040 ~ 4,050 MHz
	< -60 dBm /MHz @ above 4,050 MHz
Optic Interface	15km, 4 ports (25Gbps x 4), SFP28, single mode, Bi-di (Option: Duplex)
Mounting Options	Pole, wall
NB-IoT	Not support
External Alarm	4RX
Fronthaul Interface	eCPRI

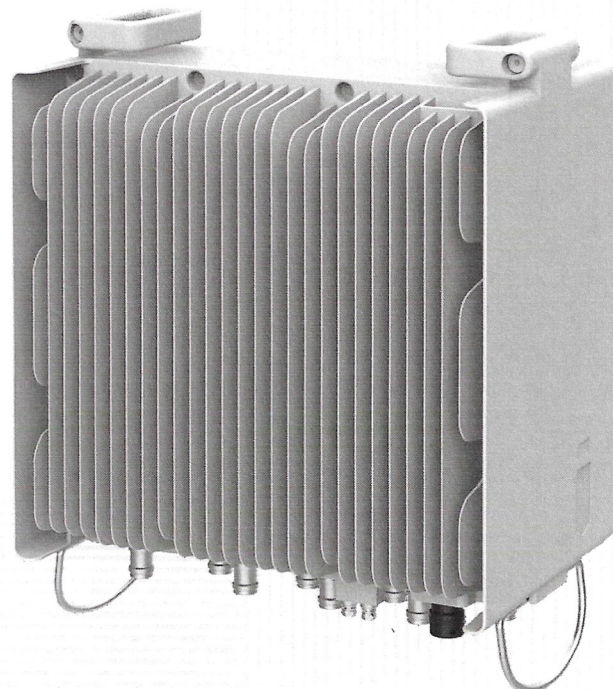
SAMSUNG

AWS/PCS MACRO RADIO

DUAL-BAND AND HIGH POWER
FOR MACRO COVERAGE

Samsung's future proof dual-band radio is designed to help effectively increase the coverage areas in wireless networks. This AWS/PCS 4T4R dual-band radio has 4Tx/4Rx to 2Tx/2Rx RF chains options and a total output power of 320W, making it ideal for macro sites.

Model Code RF4439d-25A



Homepage
samsungnetworks.com

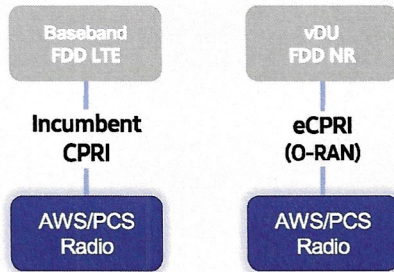


Youtube
www.youtube.com/samsung5g

Points of Differentiation

Continuous Migration

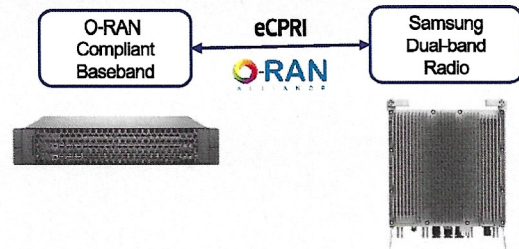
Samsung's AWS/PCS macro radio can support each incumbent CPRI interface as well as advanced eCPRI interfaces. This feature provides installable options for both legacy LTE networks and added NR networks.



O-RAN Compliant

A standardized O-RAN radio can help in implementing cost-effective networks, which are capable of sending more data without compromising additional investments.

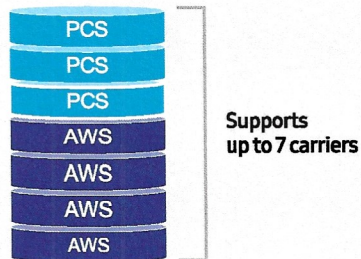
Samsung's state-of-the-art O-RAN technology will help accelerate the effort toward constructing a solid O-RAN ecosystem.



Optimum Spectrum Utilization

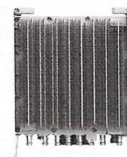
The number of required carriers varies according to site (region). Supporting many carriers is essential for using all frequencies that the operator has available.

The new AWS/PCS dual-band radio can support up to 3 carriers in the PCS (1.9GHz) band and 4 carriers in the AWS (2.1GHz) band, respectively.



Brand New Features in a Compact Size

Samsung's AWS/PCS macro radio offers several features, such as dual connectivity for baseband for both CDU and vDU, O-RAN capability, more carriers and an enlarged PCS spectrum, combined into an incumbent radio volume of 36.8L.



- 2 FH connectivity
- O-RAN capability
- More carriers and spectrum

Same as an incumbent radio volume

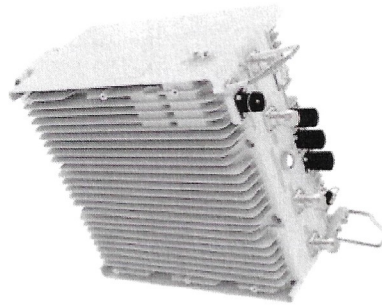
Technical Specifications

Item	Specification
Tech	LTE / NR
Brand	B25(PCS), B66(AWS)
Frequency Band	DL: 1930 – 1995MHz, UL: 1850 – 1915MHz DL: 2110 – 2200MHz, UL: 1710 – 1780MHz
RF Power	(B25) 4 × 40W or 2 × 60W (B66) 4 × 60W or 2 × 80W
IBW/OBW	(B25) 65MHz / 30MHz (B66) DL 90MHz, UL 70MHz / 60MHz
Installation	Pole, Wall
Size/ Weight	14.96 x 14.96 x 10.04inch (36.8L) / 74.7lb

700/850 4T4R Macro 320W ORU - New Filter (RF4461d-13A)

SAMSUNG

Specifications

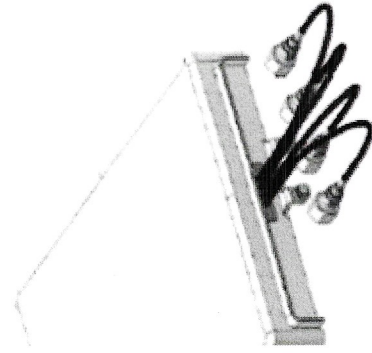


Item	Specification
Air Interface	LTE_NR(HW resource ready)
Band	Band13 (700MHz) Band5 (850MHz)
Frequency	DL: 746~756MHz UL: 869~894MHz
IBW	UL: 824~849MHz 25MHz
OBW	25MHz
Carrier Bandwidth	LTE/NR 5*70MHz
# of carriers	2C*
Total # of carriers	4C + B13 (SDL) 1C
RF Chain	4T4R/2T4R/2T2R/1T2R 2T2R+2T2R bi-sector Total : 320W
RF Output Power	4 x 40W or 2 x 60W 4 x 40W or 2 x 60W
Spectrum Analyzer	TX/RX Support
RX Sensitivity	Typ. -104.5dBm @1Rx (25RBs 5MHz)
Modulation	256QAM support, (1024QAM with 1~2dB power back-off)
Input Power	-48VDC (-38VDC to -57VDC)
Power Consumption	1.165 Watt @ 100% RF load, room temperature
Size (WHD)	380 x 380 x 260 mm (14.96 x 14.96 x 10.23 inch)
Volume	37.5 L
Weight (W/o Solar Shield & finger guard)	35.9 kg (79.1 lb)
Operating Temperature	-40°C (-40°F) ~ 55°C (131°F) (Without solar load)
Cooling	Natural convection
Unwanted Emission	3GPP 36.104 FCC 47 CFR 27.53 c, f)
CPRI Cascade	Not supported
Optic Interface	-69 dBm/100 kHz per path @ 896 ~901 MHz
RET & TMA Interface	FCC 47 CFR 22.917
Bias-T	3GPP 36.104
Mounting Options	20km, 2 ports (9.8Gbps x 2), SFP+, single mode Duplex (Option: Bi-di)
NB-IoT	Not supported
PIM Cancellation	4 ports (2 ports per band)
# of antenna port	Pole, wall
External Alarm	Support
Fronthaul Interface	25A-268 or 268-218 or 4GB
CPRI compression	Opt. 8 CPRI / Opt. 7-2x selectable (not simultaneous support) Not Support

* 5MHz supporting in B13(700MHz) depends on 3Gpp std. and UE capability.
External filters in interferer and victim sides for Mexican boarder to support 5MHz service need to be considered
** Finger guard is not needed

CBRS Clip-on Antenna for 4T4R RU

CLIP ON



Item		Specification
Frequency range (MHz)		3,550~3,700
Polarization		Dual, Slant $\pm 45^\circ$
Impedance (Ω)		50 Ω
Return loss		$< 1.5:1$ (14 dB)
Port to Port Isolation (dB)		> 25
Gain(dBi)		12.5 ± 0.5
Horizontal 3dB beam width ($^\circ$)		65 ± 5
Vertical 3dB beam width ($^\circ$)		17 ± 3
Fixed Electrical Tilt ($^\circ$)		8 $\pm 2^\circ$
Front to back ratio (dB) 180° $\pm 30^\circ$		≥ 25
Cross polar ratio	dB@ Boresight	> 18
	dB@ $\pm 30^\circ$	> 10
	dB@ $\pm 60^\circ$	> 8
Max Power/Port(Watt)		200
PIM		< -145 dBc @ 2x5Watts
Size (WHD)		220 x 303.5 x 37 mm, (8.7 x 12 x 1.5 inch)
Volume		Less than 2.5L
Weight (W/o Solar Shield & finger guard)		3.3 lb (1.5kg)
Operating Temperature		-40°C (-40°F) ~ 55°C (131°F)
Dust and water ingress		IP55
RF Connector (Bottom side)		2 2-5 Male

* Notes :

- 1 Fixed Electrical Tilt angle is the angle between the antenna mechanical boresight and the half-power beam axis in the elevation cut.
- 2 Specifications maybe not applicable if enclosure(or shroud) is added. Need make further analysis based on specific sc

SAMSUNG

Samsung Micro Radio

CBRS(N48)
4T4R Micro Radio

Samsung's CBRS 4T4R Micro Radio provides mobile operators with a cost-effective solution to fill coverage gaps encountered when Macro Radios are in use.

Model Code	RT4423-48A(DC) RT4423-48B(AC)
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Homepage
samsungnetworks.com

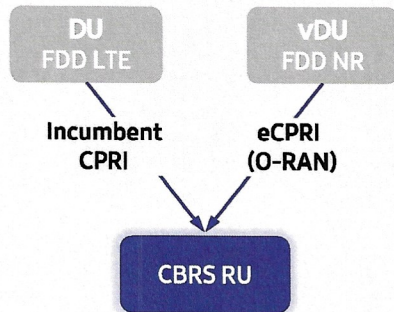


Youtube
www.youtube.com/samsung5g

Points of Differentiation

Dual Personality

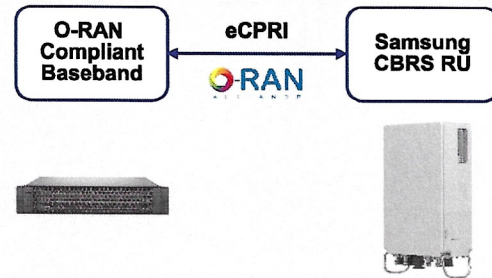
The new CBRS Radio supports existing CPRI and advanced eCPRI interfaces providing installation options for both legacy LTE and NR network equipment.



O-RAN Compliant

A standardized O-RAN radio supports implementing cost-effective networks capable of enhanced data throughput without compromising existing or new network investments.

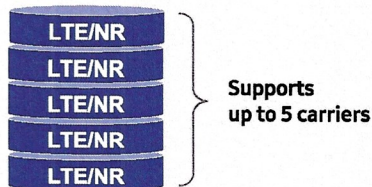
Samsung O-RAN products ensure state-of-the-art O-RAN technology will accelerate efforts for creating solid O-RAN ecosystems.



High Capacity

The number of carriers required varies according to site(region). Supporting multiple carriers is essential to customers as they seek to utilize all frequencies available to them.

The new CBRS radio can support up to 5 carriers which is an increase of 3 carriers over the capacity of the previous CBRS product.

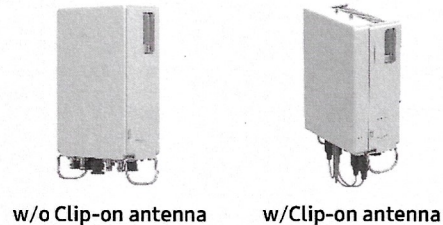


Compact and Easy Installation

New CBRS RU is compact in its design with a volume of 6L and weighing only about 7kg.

This compact design allows for various installation options including, tower, rooftop, pole, wall and shroud.

A clip on antenna is available providing flexibility to installation requirements.



Technical Specifications

Item	Specification
Tech	LTE / NR
Band	B48, n48 / TDD
Frequency Band	3,550 – 3,700 MHz
RF Power	20 W (5 W x 4 Ports)
IBW/OBW	150MHz / 100MHz
Installation	Pole, Wall, Side by side (max 3 radio)
Size/ Weight	[Radio] w/o Clip-on antenna : 8.7 x 11.8 x 3.6 inch, 5.97L, 7kg w/ Clip-on antenna : 8.7 x 11.8 x 5.0 inch, 8.42L, 8.5kg *AC and DC type have same size and weight [Bracket Weight] Tilting & Swivel (EP97-02038A) : 2.51kg Fixed (EP97-02037A) : 1.31kg Side by side (EP97-02089A) : 8.0kg

ATTACHMENT 3



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65 Dartmouth Drive
Auburn, NH 03032
(603) 644-2800

support@csquaredsystems.com

Calculated Radio Frequency Emissions Report



Bolton

130 Vernon Road, Vernon Rockville, CT

July 29, 2024

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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modification of Verizon's antenna arrays mounted at 120' on an existing guyed lattice tower located at 130 Vernon Road in Vernon Rockville, CT. The coordinates of the tower are 41° 48' 9.28" N, 72° 26' 28.33" W.

Verizon is proposing the following:

- 1) Install eight (8) multi-band antennas, two (2) per sector to support its commercial LTE and 5G network.

This report considers the proposed antenna configuration for Verizon¹ as well as existing antenna configuration^{2,3} for AT&T, T-Mobile and unknown operators (UHF, VHF, Microwave Antennas) to derive the resulting % MPE of its proposed installation.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm²). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment C of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment C contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

¹ As referenced to Verizon's Radio Frequency Design Sheet updated 04/15/2024.

² As referenced to AT&T's Connecticut Siting Council Notice of Exempt Modification – 130 Vernon Road, Bolton, Connecticut, dated 03/19/2021.

³ As referenced to T-Mobile's Connecticut Siting Council Notice of Exempt Modification – 130 Vernon Road, Bolton, Connecticut, dated 12/10/2021.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{\text{GRF}^2 \times 1.64 \times \text{ERP}}{4\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

$R = \text{Radial Distance} = \sqrt{H^2 + V^2}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor (GRF) of 1.6

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final installations.

4. Antenna Inventory

Table 1 below outlines Verizon's proposed antenna configuration for the site. The associated data sheets and antenna patterns for these specific antenna models are included in Attachments C.

Operator	Sector / Azimuth	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
Verizon	Alpha / 90°	700	160	14.9	4944	NHH-65B-R2B	65	0	6	120
		850	160	15	5060		60			
		1900	160	17.9	9866		69			
		2100	240	18.4	16604		64			
		3500	20	12.52	357	R0440CC	-	0	-	120
		3700	320	25.5	113540	MT6413-77A	-	0	2.46	120
	Beta / 190°	700	160	14.9	4944	NHH-65B-R2B	65	0	6	120
		850	160	15	5060		60			
		1900	160	17.9	9866		69			
		2100	240	18.4	16604		64			
		3500	20	12.52	357	R0440CC	-	0	-	120
		3700	320	25.5	113540	MT6413-77A	-	0	2.46	120

Table 1: Proposed Antenna Inventory^{4,5}

⁴ Antenna heights are in referenced to Verizon's Radio Frequency Design Sheet updated 04/15/2024.

⁵ Transmit power assumes 0 dB of cable loss.

5. Calculation Results

The calculated power density results are shown in Figure 1 below. For completeness, the calculations for this analysis range from 0 feet horizontal distance (directly below the antennas) to a value of 3,000 feet horizontal distance from the site. In addition to the other worst-case scenario considerations that were previously mentioned, the power density calculations to each horizontal distance point away from the antennas was completed using a local maximum off beam antenna gain (within ± 5 degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.

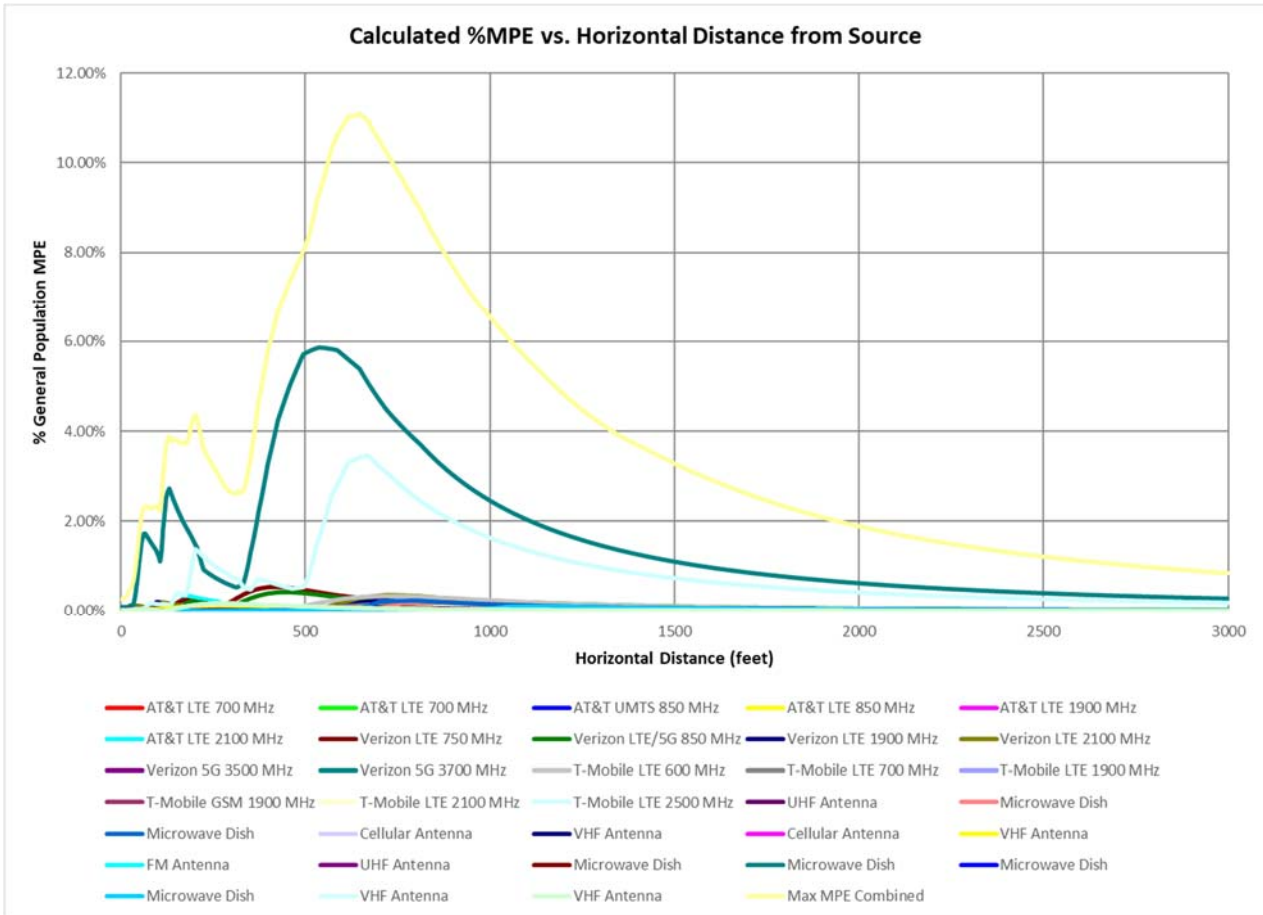


Figure 1: Graph of General Population % MPE vs. Distance

The highest percent of MPE (11.09% of the General Population limit) is calculated to occur at a horizontal distance of 646 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 1500 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. The highest percent of MPE value was calculated to occur at a horizontal distance of 646 feet from the site (reference Figure 1).

As stated in Section 3, all calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, a six foot height offset was considered in this analysis to account for average human height. As a result, the predicted signal levels are significantly higher than the actual signal levels will be from the final configuration. The results presented in Figure 1 and Table 2 assume level ground elevation from the base of the tower out to the horizontal distances calculated.

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm ²)	Limit (mW/cm ²)	% MPE
AT&T LTE 1900 MHz	1	160.0	164.1	646	0.000172	1.000	0.02%
AT&T LTE 2100 MHz	1	160.0	164.1	646	0.000452	1.000	0.05%
AT&T LTE 700 MHz	1	80.0	164.1	646	0.000207	0.467	0.04%
AT&T LTE 700 MHz	1	160.0	164.1	646	0.000498	0.467	0.11%
AT&T LTE 850 MHz	1	80.0	164.1	646	0.000141	0.567	0.02%
AT&T UMTS 850 MHz	1	40.0	164.1	646	0.000110	0.567	0.02%
Cellular Antenna	1	100.0	280.0	646	0.000072	0.633	0.01%
Cellular Antenna	1	100.0	235.0	646	0.000034	0.600	0.01%
FM Antenna	1	100.0	289.0	646	0.000067	0.200	0.03%
Microwave Dish	1	1.0	113.0	646	0.000279	1.000	0.03%
Microwave Dish	1	1.0	104.5	646	0.000732	1.000	0.07%
Microwave Dish	1	1.0	212.5	646	0.000002	1.000	0.00%
Microwave Dish	1	1.0	204.5	646	0.000002	1.000	0.00%
Microwave Dish	1	1.0	204.5	646	0.000002	1.000	0.00%
Microwave Dish	1	1.0	153.0	646	0.000014	1.000	0.00%
T-Mobile GSM 1900 MHz	1	120.0	148.0	646	0.000159	1.000	0.02%
T-Mobile LTE 1900 MHz	1	120.0	148.0	646	0.000159	1.000	0.02%
T-Mobile LTE 2100 MHz	1	120.0	148.0	646	0.000143	1.000	0.01%
T-Mobile LTE 2500 MHz	1	240.0	148.0	646	0.034080	1.000	3.41%
T-Mobile LTE 600 MHz	1	140.0	148.0	646	0.001231	0.400	0.31%
T-Mobile LTE 700 MHz	1	60.0	148.0	646	0.000599	0.467	0.13%
UHF Antenna	1	100.0	124.5	646	0.000246	0.300	0.08%
UHF Antenna	1	100.0	260.0	646	0.000015	0.300	0.01%
Verizon 5G 3500 MHz	1	20.0	120.0	646	0.000182	1.000	0.02%
Verizon 5G 3700 MHz	1	320.0	120.0	646	0.053947	1.000	5.39%
Verizon LTE 1900 MHz	1	160.0	120.0	646	0.001982	1.000	0.20%
Verizon LTE 2100 MHz	1	240.0	120.0	646	0.002930	1.000	0.29%
Verizon LTE 750 MHz	1	160.0	120.0	646	0.001463	0.500	0.29%
Verizon LTE/5G 850 MHz	1	160.0	120.0	646	0.001470	0.567	0.26%
VHF Antenna	1	100.0	260.0	646	0.000081	0.200	0.04%
VHF Antenna	1	100.0	218.0	646	0.000135	0.200	0.07%
VHF Antenna	1	100.0	132.0	646	0.000138	0.200	0.07%
VHF Antenna	1	100.0	132.0	646	0.000138	0.200	0.07%
Total							11.09%

Table 2: Maximum Percent of General Population Exposure Values^{6,7,8,9}

⁶ Frequencies listed are representative of the operating band and are not the specific operating frequency.

⁷ The total % MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

⁸ In the case where antenna pattern data was unavailable, generic antenna pattern was used based on the frequency, bandwidth and gain of the antenna.

⁹ Reasonable assumptions for the frequency and power were used in the calculation for absolute worst case %MPE for VHF, UHF, and Microwave Dish Antennas.

6. Conclusion

The above analysis verifies that RF exposure levels from the site with Verizon's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **11.09%** of the FCC limit (General Population/Uncontrolled). This maximum cumulative percent of MPE value is calculated to occur 646 feet away from the site.

7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Report Prepared By: Ram Acharya
RF Engineer
C Squared Systems, LLC

July 26, 2024
Date



Reviewed/Approved By: Martin Lavin
Senior RF Engineer
C Squared Systems, LLC

July 29, 2024
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2019, IEEE Standard Safety Levels With Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2021, IEEE Recommended Practice for Measurements and Computations of Electric, Magnetic, and Electromagnetic Fields with Respect to Human Exposure to Such Fields, 0 Hz-300 GHz IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure¹⁰

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure¹¹

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 3: FCC Limits for Maximum Permissible Exposure

¹⁰ Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

¹¹ General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

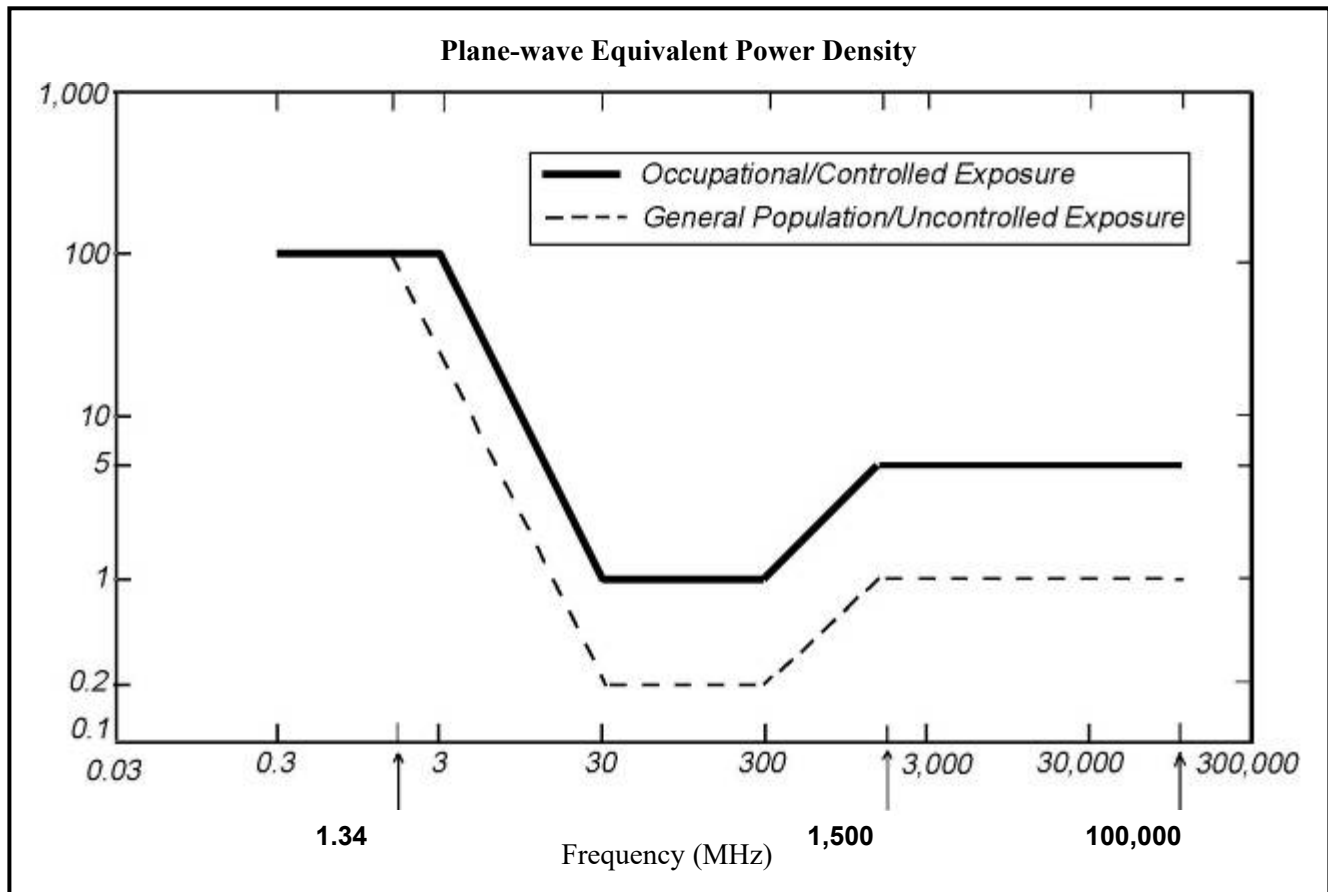
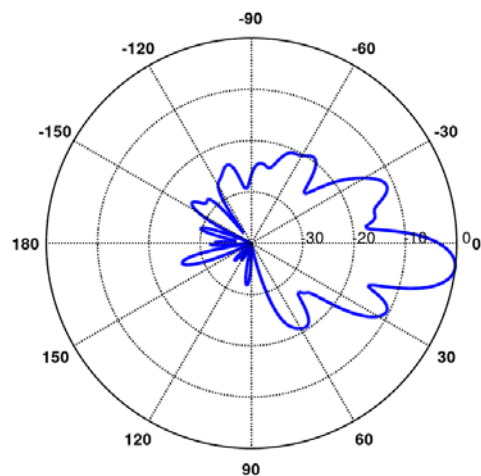


Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: Verizon Antenna Model Data Sheets and Electrical Patterns

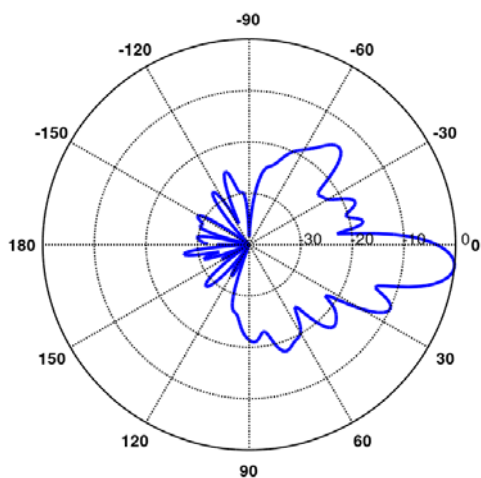
750 MHz

Manufacturer: COMMSCOPE
 Model #: NHH-65B-R2B
 Frequency Band: 698-806 MHz
 Gain: 14.9 dBi
 Vertical Beamwidth: 12.4°
 Horizontal Beamwidth: 65°
 Polarization: $\pm 45^\circ$
 Dimensions (L x W x D): 71.96" x 11.85" x 7.08"



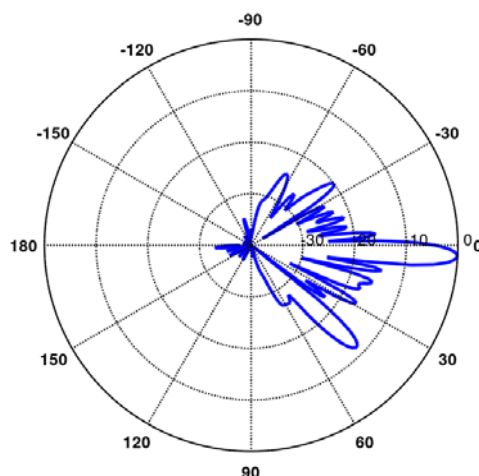
850 MHz

Manufacturer: COMMSCOPE
 Model #: NHH-65B-R2B
 Frequency Band: 806-896 MHz
 Gain: 15 dBi
 Vertical Beamwidth: 11.2°
 Horizontal Beamwidth: 60°
 Polarization: $\pm 45^\circ$
 Dimensions (L x W x D): 71.96" x 11.85" x 7.08"



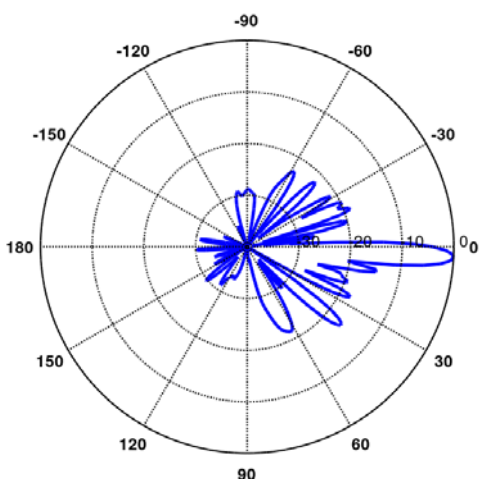
1900 MHz

Manufacturer: COMMSCOPE
 Model #: NHH-65B-R2B
 Frequency Band: 1850-1990 MHz
 Gain: 17.9 dBi
 Vertical Beamwidth: 5.2°
 Horizontal Beamwidth: 69°
 Polarization: $\pm 45^\circ$
 Dimensions (L x W x D): 71.96" x 11.85" x 7.08"



2100 MHz

Manufacturer: COMMSCOPE
 Model #: NHH-65B-R2B
 Frequency Band: 1920-2200 MHz
 Gain: 18.4 dBi
 Vertical Beamwidth: 4.9°
 Horizontal Beamwidth: 64°
 Polarization: $\pm 45^\circ$
 Dimensions (L x W x D): 71.96" x 11.85" x 7.12"



ATTACHMENT 4



Engineering
& Design

PROJECT NO. 2024-001

PROJECT NAME: VERIZON WIRELESS SITE VISIT

DATE

PROJECT NO.

PROJECT NAME

PROJECT LOCATION

PROJECT DESCRIPTION

PROJECT STATUS

PROJECT CONTACT

PROJECT

PROJECT

PROJECT LOCATION

PROJECT DESCRIPTION

PROJECT

PROJECT

PROJECT CONTACT



PROJECT NO.

PROJECT NAME

PROJECT

PROJECT LOCATION

Verizon Wireless

PROJECT DESCRIPTION

PROJECT STATUS

PROJECT

PROJECT CONTACT

Colliers Engineering & Design, Architecture,
Landscape Architecture, Surveying, CT P.C.

PROJECT LOCATION

PROJECT DESCRIPTION

PROJECT STATUS

PROJECT CONTACT

PROJECT

PROJECT

PROJECT CONTACT

Objective:

The objective of this report is to determine the structural capacity of the existing 150' guyed tower and foundation at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

Introduction:

Colliers Engineering & Design has reviewed the following documents in completing this report:

Document Type	Remarks	Source
<i>Previous Structural Analysis Report</i>	<i>AECOM Site ID: 323456 Dated May 10, 2021</i>	<i>Verizon Wireless</i>
<i>Mount ReAnalysis</i>	<i>Colliers Engineering & Design Project #: 21781125, Rev 2 Dated May 2, 2024</i>	<i>Colliers Engineering & Design</i>
<i>Radio Frequency Data Sheet (RFDS)</i>	<i>Verizon RFDS Site ID: 323456 Dated April 15, 2024</i>	<i>Verizon Wireless</i>
<i>Site Visit Notes and Photos</i>	<i>Dated September 26, 2023</i>	<i>Colliers Engineering & Design</i>

Codes and Standards:

Jurisdictional adopted codes and standards:

- 2022 Connecticut State Building code, Incorporating the 2021 International Building Code

Colliers Engineering & Design utilized the following codes and standards:

- Structural Standards for Antenna Supporting Structures and Antennas ANSI/TIA-222-H
 - Ultimate Wind Speed – 120 mph (3-Second Gust)
 - Exposure Category – C
 - Risk Category – II
 - Topographic Factor, K_{zt} – 1.0
 - Ice Wind Speed – 50 mph (3-Second Gust)
 - Design Ice Thickness – 1.5"
 - Mean Base Elevation (AMSL) – 804.34 ft.
 - Service Wind Speed – 60 mph (3-Second Gust)
 - Seismic Parameters (Assuming Site Class D)
 - Short Term MCER ground motion (period=0.2s), S_s – 0.186
 - Long Term MCER ground motion (period=1.0s), S_1 – 0.055



Analysis Results and Conclusion:

Component	Utilization %	Pass/Fail
Beam	100%	Pass
Column	100%	Pass
Slab	100%	Pass
Wall	100%	Pass
Foundation	100%	Pass
Roof	100%	Pass
Staircase	100%	Pass
Elevator	100%	Pass
Core	100%	Pass
Bracing	100%	Pass
Diaphragm	100%	Pass
Joint	100%	Pass
Detail	100%	Pass
Connection	100%	Pass
Foundation	100%	Pass
Roof	100%	Pass
Staircase	100%	Pass
Elevator	100%	Pass
Core	100%	Pass
Bracing	100%	Pass
Diaphragm	100%	Pass
Joint	100%	Pass
Detail	100%	Pass
Connection	100%	Pass

Structure Rating – Overall Structural Performance	76.3%
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Recommendation:

- 1. The structure is designed to meet the required performance objectives.
- 2. The structure is designed to meet the required performance objectives.
- 3. The structure is designed to meet the required performance objectives.
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- 20. The structure is designed to meet the required performance objectives.

Disclaimer of Warranties:

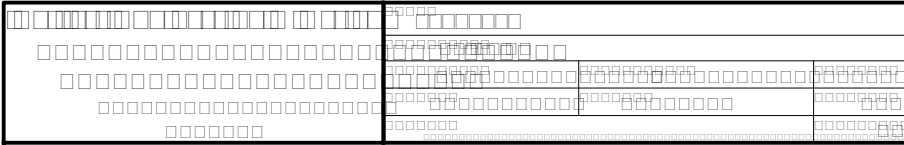
The information contained herein is for general informational purposes only and does not constitute an offer of insurance or any other financial product. The information is not intended to be used as a basis for investment decisions. The information is not intended to be used as a basis for investment decisions. The information is not intended to be used as a basis for investment decisions.

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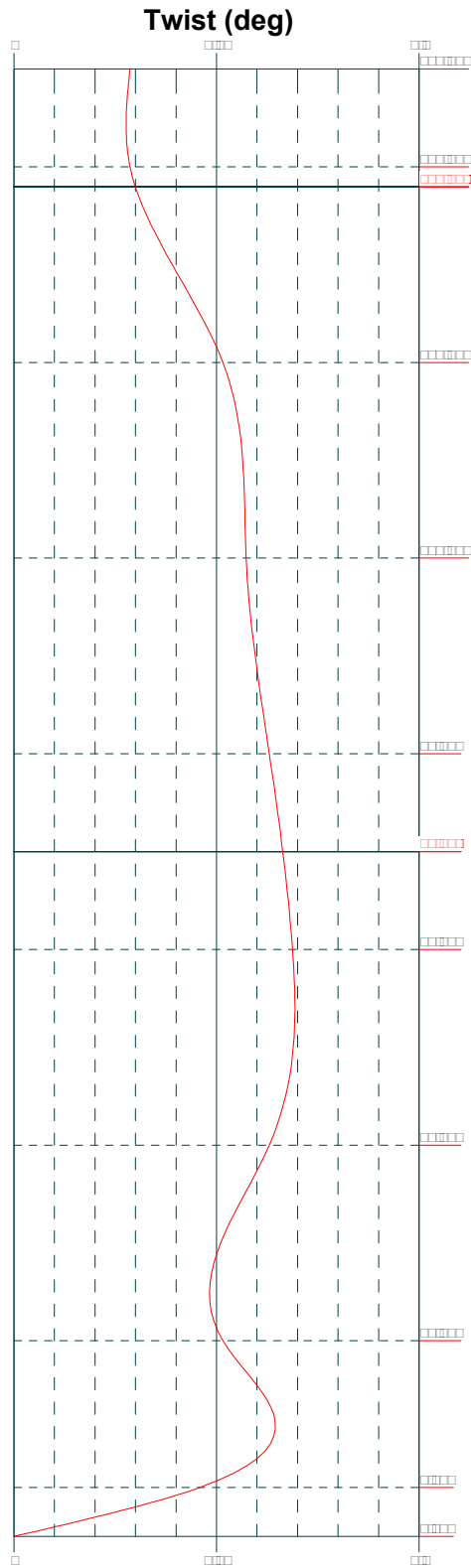
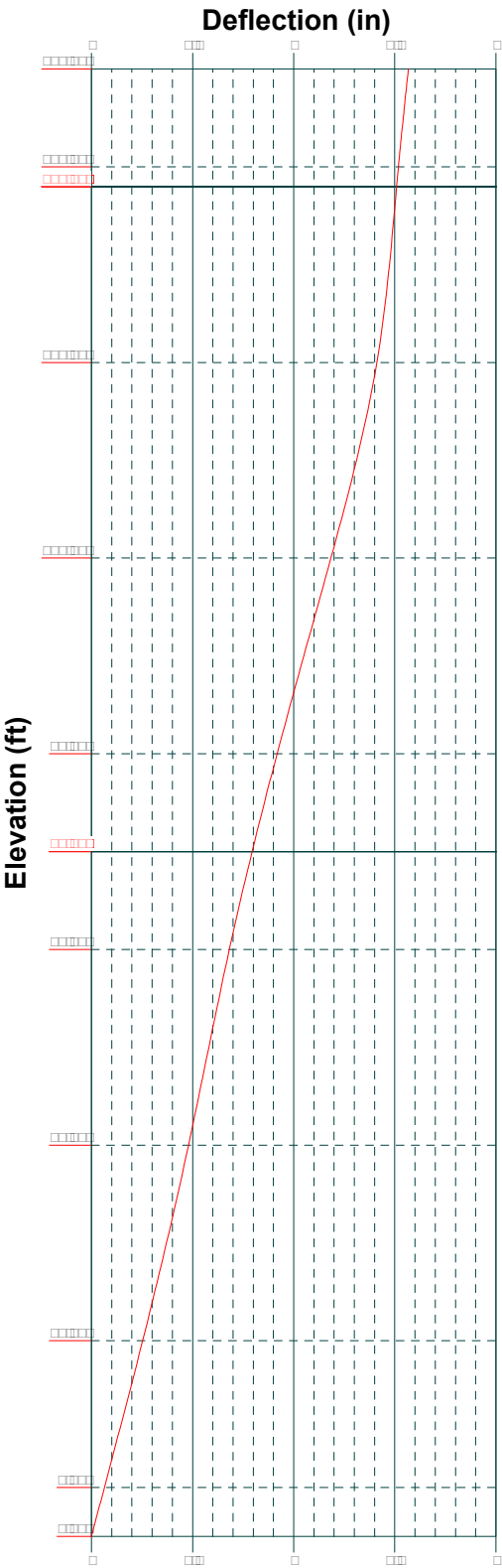
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A schematic diagram of a protein structure. The protein is represented as a horizontal bar with several colored segments: a red segment at the N-terminus, followed by a black segment, a blue segment, a green segment, and a cyan segment. Above the bar, several boxes represent different motifs or domains: a box with four 'Q's (QQQQ) above the red segment, a box with three 'Q's (QQQ) above the black segment, a box with seven 'Q's (QQQQQQ) above the blue segment, a box with seven 'Q's (QQQQQQ) above the green segment, and a box with seven 'Q's (QQQQQQ) above the cyan segment. The boxes are arranged in a way that suggests they are distributed along the length of the protein.



1. 姓名: _____ 2. 性别: _____ 3. 年龄: _____ 4. 职业: _____ 5. 住址: _____ 6. 联系电话: _____ 7. 电子邮箱: _____ 8. 身份证号: _____ 9. 其他: _____	1. 姓名: _____ 2. 性别: _____ 3. 年龄: _____ 4. 职业: _____ 5. 住址: _____ 6. 联系电话: _____ 7. 电子邮箱: _____ 8. 身份证号: _____ 9. 其他: _____
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TIA-222-H - Service - 60 mph		Maximum Values	
Deflection (in)		Tilt (deg)	
Twist (deg)		Elevation (ft)	
0		100	
10		90	
20		80	
30		70	
40		60	
50		50	
60		40	
70		30	
80		20	
90		10	
100		0	

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tnxTower Colliers Engineering & Design 2000 Midlantic Dr, Suite 100 Mount Laurel, NJ 08054 Phone: 856.797.0412 FAX:	Job	23777276	Page	19 of 27
	Project	Bolton CT	Date	11:39:59 05/02/24
	Client	Verizon Wireless	Designed by	Vincent DiGirolamo

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T5	80	Leg	A325N	0.750	5	5.045	39.761	0.127	1	Bolt DS
T6	60	Leg	A325N	0.750	5	6.291	39.761	0.158	1	Bolt DS
T7	40	Leg	A325N	0.750	5	6.729	39.761	0.169	1	Bolt DS
T8	20	Leg	A325N	0.750	5	7.073	39.761	0.178	1	Bolt DS

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T2	138.000 (A) (463)	9/16 EHS	3.500	35.000	10.527	21.000	1.000	1.995
	138.000 (A) (464)	9/16 EHS	3.500	35.000	10.098	21.000	1.000	2.080
	138.000 (B) (457)	9/16 EHS	3.500	35.000	10.313	21.000	1.000	2.036
	138.000 (B) (458)	9/16 EHS	3.500	35.000	10.637	21.000	1.000	1.974
	138.000 (C) (448)	9/16 EHS	3.500	35.000	10.435	21.000	1.000	2.012
	138.000 (C) (449)	9/16 EHS	3.500	35.000	10.454	21.000	1.000	2.009
T5	70.000 (A) (474)	11/16 EHS	5.000	50.000	11.479	30.000	1.000	2.613
	70.000 (B) (473)	11/16 EHS	5.000	50.000	11.601	30.000	1.000	2.586
	70.000 (C) (469)	11/16 EHS	5.000	50.000	11.588	30.000	1.000	2.589

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	150 - 140	2	10.000	2.250	54.0 K=1.00	3.142	-15.192	114.226	0.133 ¹
T2	140 - 120	2	20.000	2.375	57.0 K=1.00	3.142	-30.819	111.479	0.276 ¹
T3	120 - 100	2	20.000	2.375	57.0 K=1.00	3.142	-30.829	111.479	0.277 ¹
T4	100 - 80	2 1/4	20.000	2.375	50.7 K=1.00	3.976	-28.182	148.303	0.190 ¹
T5	80 - 60	2 1/4	20.000	2.375	50.7 K=1.00	3.976	-32.426	148.303	0.219 ¹

tnxTower Colliers Engineering & Design 2000 Midlantic Dr, Suite 100 Mount Laurel, NJ 08054 Phone: 856.797.0412 FAX:	Job	23777276	Page	20 of 27
	Project	Bolton CT	Date	11:39:59 05/02/24
	Client	Verizon Wireless	Designed by	Vincent DiGirolamo

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T6	60 - 40	2 1/4	20.000	2.375	50.7 K=1.00	3.976	-33.625	148.303	0.227 ¹
T7	40 - 20	2 1/4	20.000	2.375	50.7 K=1.00	3.976	-35.365	148.303	0.238 ¹
T8	20 - 5	2 1/2	15.000	2.417	46.4 K=1.00	4.909	-36.227	188.719	0.192 ¹
T9	5 - 0	2 1/2	5.449	2.075	39.8 K=1.00	4.909	-39.126	196.697	0.199 ¹

¹ P_u / •P_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T1	150 - 140	3/4	4.373	2.089	120.4 K=0.90	0.442	-2.325	6.891	0.337 ¹
T2	140 - 120	3/4	4.439	2.121	122.2 K=0.90	0.442	-3.911	6.688	0.585 ¹
T3	120 - 100	3/4	4.439	2.121	122.2 K=0.90	0.442	-1.263	6.688	0.189 ¹
T4	100 - 80	3/4	4.439	2.108	121.4 K=0.90	0.442	-2.000	6.767	0.295 ¹
T5	80 - 60	3/4	4.439	2.108	121.4 K=0.90	0.442	-2.097	6.767	0.310 ¹
T6	60 - 40	3/4	4.439	2.108	121.4 K=0.90	0.442	-1.265	6.767	0.187 ¹
T7	40 - 20	3/4	4.439	2.108	121.4 K=0.90	0.442	-0.740	6.767	0.109 ¹
T8	20 - 5	3/4	4.461	2.107	121.3 K=0.90	0.442	-0.762	6.778	0.112 ¹
T9	5 - 0	3/4	2.605	1.997	115.0 K=0.90	0.442	-2.883	7.540	0.382 ¹

¹ P_u / •P_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T9	5 - 0	4x1/2	2.063	1.854	154.2 K=1.00	2.000	-0.722	19.014	0.038 ¹

¹ P_u / •P_n controls

tnxTower Colliers Engineering & Design 2000 Midlantic Dr, Suite 100 Mount Laurel, NJ 08054 Phone: 856.797.0412 FAX:	Job	23777276	Page	21 of 27
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Secondary Horizontal Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	•P _n	Ratio $\frac{P_u}{\bullet P_n}$
	ft		ft	ft		in ²	K	K	$\bullet P_n$
T9	5 - 0	3/4	2.661	2.453	109.9 K=0.70	0.442	-0.722	8.221	0.088 ¹

¹ P_u / •P_n controls

Top Girt Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	•P _n	Ratio $\frac{P_u}{\bullet P_n}$
	ft		ft	ft		in ²	K	K	$\bullet P_n$
T1	150 - 140	3/4	3.750	3.583	160.5 K=0.70	0.442	-0.075	3.873	0.019 ¹
T2	140 - 120	3/4	3.750	3.583	160.5 K=0.70	0.442	-1.155	3.873	0.298 ¹
T3	120 - 100	3/4	3.750	3.583	160.5 K=0.70	0.442	-0.534	3.873	0.138 ¹
T4	100 - 80	3/4	3.750	3.563	159.6 K=0.70	0.442	-0.488	3.918	0.125 ¹
T5	80 - 60	3/4	3.750	3.563	159.6 K=0.70	0.442	-0.562	3.918	0.143 ¹
T6	60 - 40	3/4	3.750	3.563	159.6 K=0.70	0.442	-0.582	3.918	0.149 ¹
T7	40 - 20	3/4	3.750	3.563	159.6 K=0.70	0.442	-0.613	3.918	0.156 ¹
T8	20 - 5	3/4	3.750	3.542	158.7 K=0.70	0.442	-0.627	3.964	0.158 ¹

¹ P_u / •P_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	•P _n	Ratio $\frac{P_u}{\bullet P_n}$
	ft		ft	ft		in ²	K	K	$\bullet P_n$
T1	150 - 140	3/4	3.750	3.583	160.5 K=0.70	0.442	-0.618	3.873	0.160 ¹
T2	140 - 120	3/4	3.750	3.583	160.5 K=0.70	0.442	-0.534	3.873	0.138 ¹
T3	120 - 100	3/4	3.750	3.583	160.5 K=0.70	0.442	-0.534	3.873	0.138 ¹
T4	100 - 80	3/4	3.750	3.563	159.6 K=0.70	0.442	-0.537	3.918	0.137 ¹
T5	80 - 60	3/4	3.750	3.563	159.6 K=0.70	0.442	-0.562	3.918	0.143 ¹
T6	60 - 40	3/4	3.750	3.563	159.6 K=0.70	0.442	-0.582	3.918	0.149 ¹
T7	40 - 20	3/4	3.750	3.563	159.6 K=0.70	0.442	-0.613	3.918	0.156 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T8	20 - 5	3/4	3.750	3.542	158.7 K=0.70	0.442	-0.722	3.964	0.182 ¹

¹ P_u / •P_n controls

Top Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T1	150 - 140	1 1/4	3.750	3.583	137.6 K=1.00	1.227	-5.041	14.642	0.344 ¹

¹ P_u / •P_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T2	140 - 120 (450)	2L3x3x1/4	7.762	7.762	100.2 K=1.00	2.880	-1.514	70.977	0.021 ¹
T2	140 - 120 (451)	2L3x3x1/4	7.762	7.762	100.2 K=1.00	2.880	-1.608	70.977	0.023 ¹
T2	140 - 120 (459)	2L3x3x1/4	7.762	7.762	100.2 K=1.00	2.880	-0.985	70.977	0.014 ¹
T2	140 - 120 (460)	2L3x3x1/4	7.762	7.762	100.2 K=1.00	2.880	-1.187	70.977	0.017 ¹
T2	140 - 120 (465)	2L3x3x1/4	7.762	7.762	100.2 K=1.00	2.880	-1.291	70.977	0.018 ¹
T2	140 - 120 (466)	2L3x3x1/4	7.762	7.762	100.2 K=1.00	2.880	-1.680	70.977	0.024 ¹

¹ P_u / •P_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T2	140 - 120 (455)	2L3x3x1/4	6.946	6.852	88.4 K=1.00	2.880	-8.415	78.196	0.108 ¹
T2	140 - 120 (456)	2L3x3x1/4	6.946	6.852	88.4 K=1.00	2.880	-7.861	78.196	0.101 ¹
T2	140 - 120 (461)	2L3x3x1/4	6.946	6.852	88.4 K=1.00	2.880	-8.423	78.196	0.108 ¹
T2	140 - 120 (462)	2L3x3x1/4	6.946	6.852	88.4	2.880	-8.475	78.196	0.108 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T2	140 - 120 (467)	2L3x3x1/4	6.946	6.852	K=1.00 88.4	2.880	-8.901	78.196	0.114 ¹
T2	140 - 120 (468)	2L3x3x1/4	6.946	6.852	K=1.00 88.4	2.880	-8.392	78.196	0.107 ¹

¹ P_u / •P_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T1	150 - 140	2	10.000	2.250	54.0	3.142	3.525	141.372	0.025 ¹
T2	140 - 120	2	20.000	2.375	57.0	3.142	10.279	141.372	0.073 ¹
T3	120 - 100	2	20.000	2.375	57.0	1.794	9.271	87.466	0.106 ¹
T5	80 - 60	2 1/4	20.000	2.375	50.7	3.976	5.601	178.924	0.031 ¹

¹ P_u / •P_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T1	150 - 140	3/4	4.373	2.089	133.7	0.442	2.340	19.880	0.118 ¹
T2	140 - 120	3/4	4.439	2.121	135.7	0.442	8.711	19.880	0.438 ¹
T3	120 - 100	3/4	4.439	2.121	135.7	0.442	1.127	19.880	0.057 ¹
T4	100 - 80	3/4	4.439	2.108	134.9	0.442	1.863	19.880	0.094 ¹
T5	80 - 60	3/4	4.439	2.108	134.9	0.442	1.899	19.880	0.096 ¹
T6	60 - 40	3/4	4.439	2.108	134.9	0.442	1.086	19.880	0.055 ¹
T7	40 - 20	3/4	4.439	2.108	134.9	0.442	0.557	19.880	0.028 ¹
T8	20 - 5	3/4	4.461	2.107	134.8	0.442	1.254	19.880	0.063 ¹
T9	5 - 0	3/4	3.708	2.185	139.9	0.442	0.744	19.880	0.037 ¹

¹ P_u / •P_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T9	5 - 0	4x1/2	2.063	1.854	154.2	2.000	0.722	64.800	0.011 ¹

¹ P_u / •P_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T9	5 - 0	3/4	2.661	2.453	157.0	0.442	0.888	19.880	0.045 ¹

¹ P_u / •P_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T1	150 - 140	3/4	3.750	3.583	229.3	0.442	0.036	19.880	0.002 ¹
T2	140 - 120	3/4	3.750	3.583	229.3	0.442	1.226	19.880	0.062 ¹
T3	120 - 100	3/4	3.750	3.583	229.3	0.442	0.534	19.880	0.027 ¹
T4	100 - 80	3/4	3.750	3.563	228.0	0.442	0.506	19.880	0.025 ¹
T5	80 - 60	3/4	3.750	3.563	228.0	0.442	0.654	19.880	0.033 ¹
T6	60 - 40	3/4	3.750	3.563	228.0	0.442	0.582	19.880	0.029 ¹
T7	40 - 20	3/4	3.750	3.563	228.0	0.442	0.613	19.880	0.031 ¹
T8	20 - 5	3/4	3.750	3.542	226.7	0.442	0.627	19.880	0.032 ¹

¹ P_u / •P_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T1	150 - 140	3/4	3.750	3.583	229.3	0.442	0.982	19.880	0.049 ¹
T2	140 - 120	3/4	3.750	3.583	229.3	0.442	0.534	19.880	0.027 ¹
T3	120 - 100	3/4	3.750	3.583	229.3	0.442	0.534	19.880	0.027 ¹
T4	100 - 80	3/4	3.750	3.563	228.0	0.442	0.673	19.880	0.034 ¹
T5	80 - 60	3/4	3.750	3.563	228.0	0.442	0.562	19.880	0.028 ¹
T6	60 - 40	3/4	3.750	3.563	228.0	0.442	0.582	19.880	0.029 ¹
T7	40 - 20	3/4	3.750	3.563	228.0	0.442	0.613	19.880	0.031 ¹
T8	20 - 5	3/4	3.750	3.542	226.7	0.442	6.994	19.880	0.352 ¹
T9	5 - 0	3/4	0.375	0.167	10.7	0.442	0.965	19.880	0.049 ¹

¹ P_u / •P_n controls

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Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T1	150 - 140	1 1/4	3.750	3.583	137.6	1.227	6.245	55.223	0.113 ¹
T5	80 - 60	1 1/4	3.750	3.563	136.8	1.227	5.197	55.223	0.094 ¹

¹ P_u / •P_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T2	140 - 120 (450)	2L3x3x1/4	7.762	7.762	100.2	2.880	9.787	93.312	0.105 ¹
T2	140 - 120 (451)	2L3x3x1/4	7.762	7.762	100.2	2.880	9.121	93.312	0.098 ¹
T2	140 - 120 (459)	2L3x3x1/4	7.762	7.762	100.2	2.880	9.291	93.312	0.100 ¹
T2	140 - 120 (460)	2L3x3x1/4	7.762	7.762	100.2	2.880	9.403	93.312	0.101 ¹
T2	140 - 120 (465)	2L3x3x1/4	7.762	7.762	100.2	2.880	9.988	93.312	0.107 ¹
T2	140 - 120 (466)	2L3x3x1/4	7.762	7.762	100.2	2.880	9.395	93.312	0.101 ¹

¹ P_u / •P_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	•P _n K	Ratio $\frac{P_u}{\bullet P_n}$
T2	140 - 120 (455)	2L3x3x1/4	6.946	6.852	88.4	2.880	4.950	93.312	0.053 ¹
T2	140 - 120 (456)	2L3x3x1/4	6.946	6.852	88.4	2.880	4.914	93.312	0.053 ¹
T2	140 - 120 (461)	2L3x3x1/4	6.946	6.852	88.4	2.880	4.882	93.312	0.052 ¹
T2	140 - 120 (462)	2L3x3x1/4	6.946	6.852	88.4	2.880	4.928	93.312	0.053 ¹
T2	140 - 120 (467)	2L3x3x1/4	6.946	6.852	88.4	2.880	5.411	93.312	0.058 ¹
T2	140 - 120 (468)	2L3x3x1/4	6.946	6.852	88.4	2.880	5.403	93.312	0.058 ¹

¹ P_u / •P_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	øP _{allow} K	% Capacity	Pass Fail
T1	150 - 140	Leg	2	3	-15.192	114.226	13.3	Pass
T2	140 - 120	Leg	2	35	-30.819	111.479	27.6	Pass
T3	120 - 100	Leg	2	92	-30.829	111.479	27.7	Pass
T4	100 - 80	Leg	2 1/4	149	-28.182	148.303	19.0	Pass

CClplate

Project Information

BU #	
Site Name	
Order #	

Tower Information

Tower Type	Self Support
TIA-222 Rev	H

☐ Apply TIA-222-H Section 15.5

Applied Loads

	Comp.	Uplift
Axial (k)	104.00	0.00
Shear (k)	1.00	0.00

Anchor Rod Data

Quantity:	3
Diameter (in):	1
Material Grade:	A615-75
Grout Considered:	No
l_{ar} (in):	1
Eta Factor, η :	
Thread Type:	N-Included
Configuration:	Symmetrical

Fy=75 ksi Fu=100 ksi
Not Considered, $l_{ar} \leq 1(d)$

Anchor Rod Results

Axial, Pu_c (kips)	34.67
Shear, Vu (kips)	0.33
Moment, Mu (kip-in)	-
Axial Cap., ϕPn_c (kips)	45.45
Shear Cap., ϕVn (kips)	13.64
Moment Cap., ϕMn (kip-in)	-
Stress Rating	76.3%

Pass

Pier and Pad Foundation



BU # :
 Site Name:
 App. Number:

TIA-222 Revision:
 Tower Type:

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	104	kips
Base Shear, V_{u_comp} :	1	kips
Moment, M_u :	0	ft-kips
Tower Height, H :	150	ft
BP Dist. Above Fdn, bp_{dist} :	2	in
Bolt Circle / Bearing Plate Width, BC :	6	in

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, d_{pier} :	2.5	ft
Ext. Above Grade, E :	0.5	ft
Pier Rebar Size, S_c :	6	
Pier Rebar Quantity, mc :	9	
Pier Tie/Spiral Size, S_t :	4	
Pier Tie/Spiral Quantity, mt :	3	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Pad Properties		
Depth, D :	3	ft
Pad Width, W :	7	ft
Pad Thickness, T :	1.25	ft
Pad Rebar Size (Bottom), S_p :	4	
Pad Rebar Quantity (Bottom), mp :	12	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	4	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	120	pcf
Ultimate Gross Bearing, Q_{ult} :	40.000	ksf
Cohesion, C_u :		ksf
Friction Angle, ϕ :	32	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :		
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, gw :	N/A	ft

Foundation Analysis Checks				
	Capacity	Demand	Rating	Check
Lateral (Sliding) (kips)	28.15	1.00	3.6%	Pass
Bearing Pressure (ksf)	24.00	2.71	11.3%	Pass
Overturing (kip*ft)	307.82	3.67	1.2%	Pass
Pier Flexure (Comp.) (kip*ft)	294.59	2.25	0.8%	Pass
Pier Compression (kip)	3124.31	105.99	3.4%	Pass
Pad Flexure (kip*ft)	118.78	38.77	32.6%	Pass
Pad Shear - 1-way (kips)	89.65	20.12	22.4%	Pass
Pad Shear - 2-way (Comp) (ksi)	0.190	0.046	24.3%	Pass
Flexural 2-way (Comp) (kip*ft)	210.77	1.35	0.6%	Pass

Soil Rating:	11.3%
Structural Rating:	32.6%

<--Toggle between Gross and Net

[illegible][illegible]

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Engineering & Design



Our engineering and design services are designed to help you accelerate your business growth. We provide a range of services including structural engineering, mechanical engineering, electrical engineering, and more. Our team of experts will work with you to identify the most effective solutions for your business, ensuring that you are always at the forefront of innovation.



Our engineering and design services are designed to help you accelerate your business growth. We provide a range of services including structural engineering, mechanical engineering, electrical engineering, and more. Our team of experts will work with you to identify the most effective solutions for your business, ensuring that you are always at the forefront of innovation.

Accelerating success.



Our engineering and design services are designed to help you accelerate your business growth. We provide a range of services including structural engineering, mechanical engineering, electrical engineering, and more. Our team of experts will work with you to identify the most effective solutions for your business, ensuring that you are always at the forefront of innovation.

□ □ □ □

☐ **Mount Steel (EPA)a per ANSI/TIA-222-H Section 2.6.11.2:**

[illegible][illegible]

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – **Passing Mount Analysis**

Passing Mount Analysis requires a PMI due to a modification in loading.

Electronic pdf version of this can be downloaded at <https://pmi.vzwsmart.com>.

For additional questions and support, please reach out to pmisupport@colliersengineering.com

MDG #: 5000247954

SMART Project #: 10220904

Fuze Project ID: 16244102

Purpose – to provide SMART Tool structural vendor the proper documentation in order to complete the required Mount Desktop review of the Post Modification Inspection Report.

- Contractor is responsible for making certain the photos provided as noted below provide confirmation that the installation was completed in accordance with this Passing Mount Analysis.
- Contractor shall relay any data that can impact the performance of the mount, this includes safety issues.

Base Requirements:

- If installation will cause damage to the structure, the climbing facility, or safety climb if present or any installed system, SMART Tool vendor to be notified prior to install. Any special photos outside of the standard requirements will be indicated on the drawings.
- Provide “as built mount drawings” showing contractor’s name, contact information, preparer’s signature, and date. Any deviations from the drawings (Proposed modification) shall be shown. NOTE: If loading is different than what is conveyed in the passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo should be time and date stamped
- Photos should be high resolution.
- Contractor shall ensure that the safety climb wire rope is supported and not adversely impacted by the install of the modification components. This may involve the install of wire rope guides, or other items to protect the wire rope. If there is conflict, contact the SMART Tool engineer for recommendations.
- The PMI can be accessed at the following portal: <https://pmi.vzwsmart.com>

Photo Requirements:

- *Photos taken at ground level*
 - Photo of Gate Signs showing the tower owner, site name, and number.
 - Overall tower structure after installation.
 - Photos of the mount after installation; if the mounts are at different rad elevations, pictures must be provided for all elevations that equipment was installed.
- *Photos taken at Mount Elevation*
 - Photos showing the safety climb wire rope above and below the mount prior to installation.
 - Photos showing the climbing facility and safety climb if present.
 - Photos showing each individual sector after installation. Each entire sector shall be in one photo to show the interconnection of members.

- These photos shall also certify that the placement and geometry of the equipment on the mount is as depicted in the antenna placement diagram in this form.
- Photos that show the model number of each antenna and piece of equipment installed per sector.

Antenna & equipment placement and Geometry Confirmation:

- The contractor shall certify that the antenna & equipment placement and geometry is in accordance with the sketch and table as included in the mount analysis and noted below.
- ☐ The contractor certifies that the photos support and the equipment on the mount is as depicted on the sketch and table included in this form and with the mount analysis provided.

OR

- ☐ The contractor notes that the equipment on the mount is not in accordance with the sketch and has noted the differences below and provided photo documentation of any alterations.

Special Instructions / Validation as required from the MA or any other information the contractor deems necessary to share that was identified:

Issue:

Contractor shall record all dimensions and member sizes requested in the Mount Geometry Verification Requirements section of the Mount Analysis report. Contractor shall provide the requested information to Colliers Engineering & Design for structural verification while on site. Contact EOR if these documents are not available to the general contractor.

Contractor shall inspect climbing facilities and safety climb, if present, and ensure they are in good condition. Contractor shall install safety climb wire rope guides in locations where wire rope is rubbing against the mount or mount-to-tower connection steel. Wire brush clean any observed corrosion and protect with two (2) coats of cold galvanization (Zinga or Zinc Kote). Contractor shall provide photos of wire rope guide installation as part of PMI documents. Contact EOR if additional guidance is required.

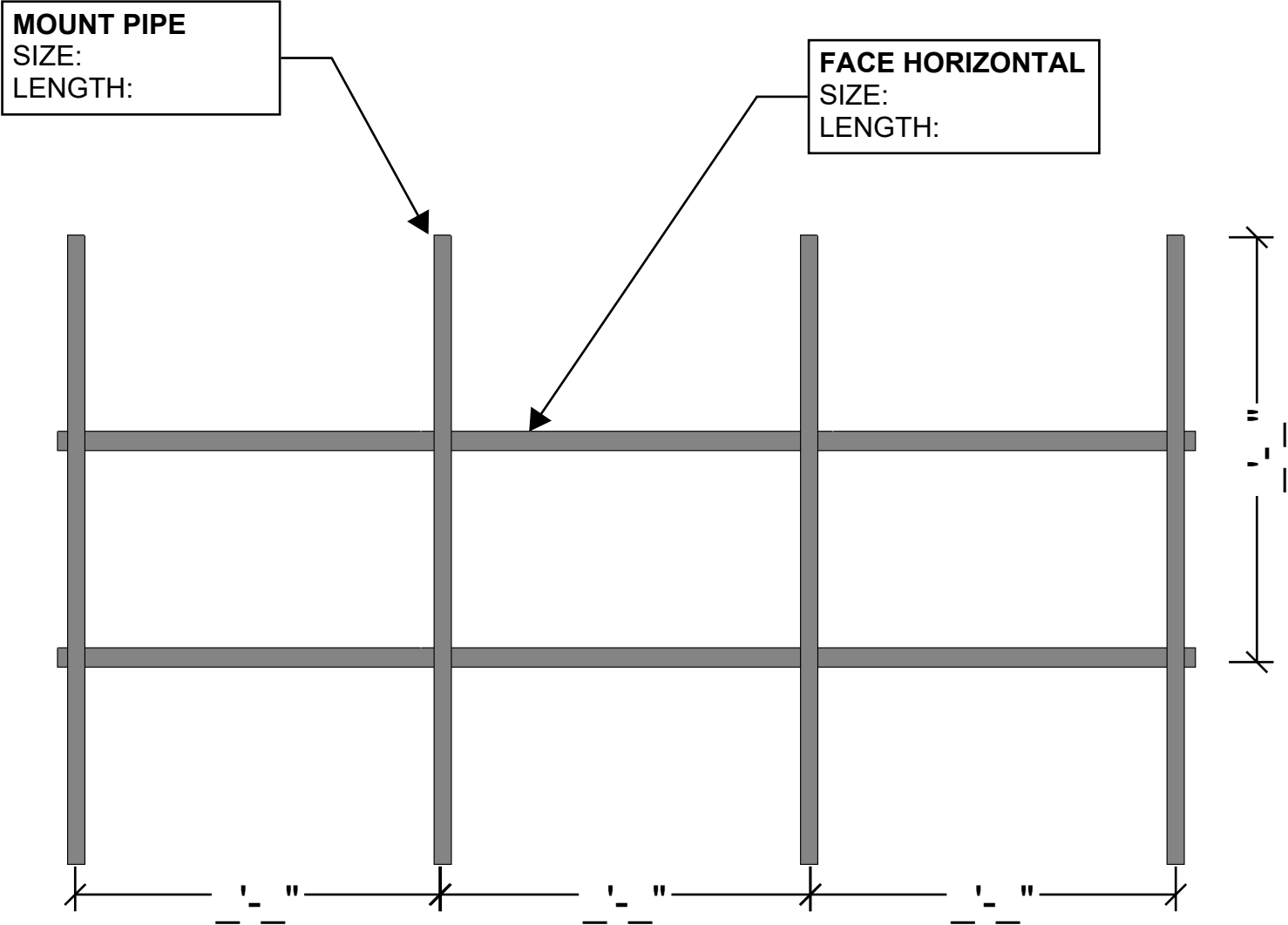
Contractor shall install proposed OVP to top right (as seen from behind mount) Alpha sector standoff.

Response:

Special Instruction Confirmation:

- ☐ The contractor has read and acknowledges the above special instructions.
- ☐ All hardware listed in the Special Instructions above (if applicable) has been properly installed, and the existing hardware was inspected.

MOUNT GEOMETRY VERIFICATION



MOUNT FRONT VIEW
N.T.S

CONTRACTOR SHALL MEASURE ALL DIMENSIONS AND MEMBER SIZES REQUESTED ON THIS SKETCH. RECORD VIA PHOTOS AND MARKUPS ON THIS PAGE. PROVIDE PHOTOS AND MARKED-UP SKETCH TO THE EOR FOR EVALUATION.

MOUNT GEOMETRY VERIFICATION

STANDARD PIPE DIMENSIONS				
		THICKNESS (IN.)		
PIPE SIZE	O.D. (IN.)	STD	XSTR	XXSTR
P1 1/2	1.900	0.145	0.200	0.400
P2	2.375	0.154	0.218	0.436
P2 1/2	2.875	0.203	0.276	0.552
P3	3.500	0.216	0.300	0.600
P3 1/2	4.000	0.226	0.318	0.636
P4	4.500	0.237	0.337	0.674
P4 1/2	5.000	0.247	0.355	0.710
P5	5.563	0.258	0.375	0.750
P6	6.625	0.280	0.432	0.864

**CONTRACTOR SHALL USE MEMBER SIZES AND DETAILS TO FACILITATE
GEOMETRY VERIFICATION. CONTACT EOR FOR ADDITIONAL CLARIFICATION IF
NEEDED**

Sector: A

5/2/2024

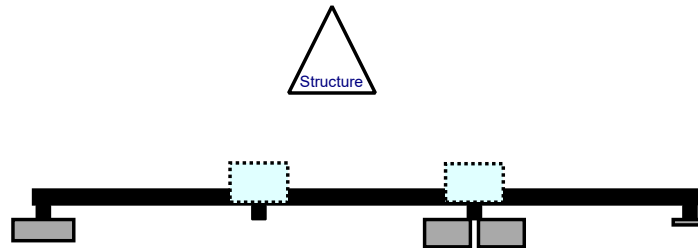
Structure Type: Guyed

10220904

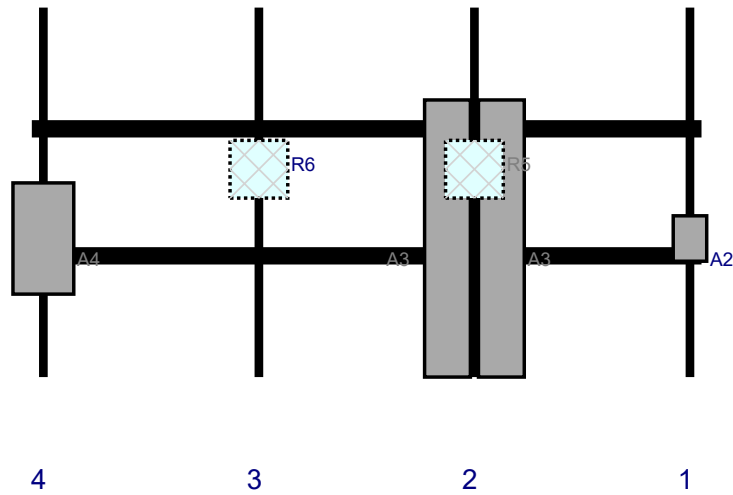
Mount Elev: 120.00

Page: 1

Plan View



Front View - Looking at Structure



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A2	R0440CC w/ RT4423-48A	11.8	8.7	171	1	a	Front	60	0	Added	
A3	NHH-65B-R2B	72	11.9	115	2	a	Front	60	7	Added	
A3	NHH-65B-R2B	72	11.9	115	2	b	Front	60	-7	Added	
R5	RF4439d-25A	15	15	115	2	a	Behind	42	0	Added	
R6	RF4461d-13A	15	15	59	3	a	Behind	42	0	Added	
A4	MT6413-77A	28.9	15.8	3	4	a	Front	60	0	Added	
M5	RVZDC-6627-PF-48	29.5	16.5		Member					Added	

Sector: **B**

5/2/2024

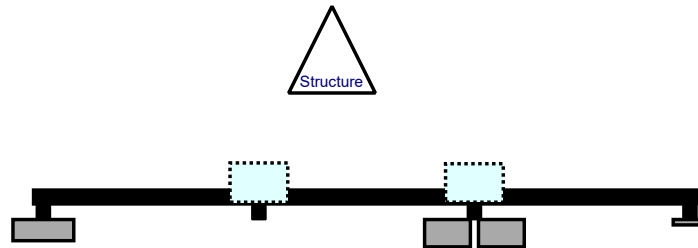
Structure Type: Guyed

10220904

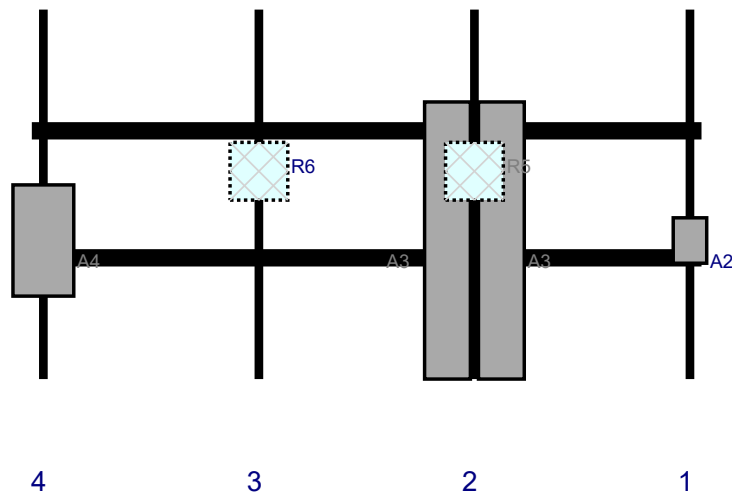
Mount Elev: 120.00

Page: 2

Plan View

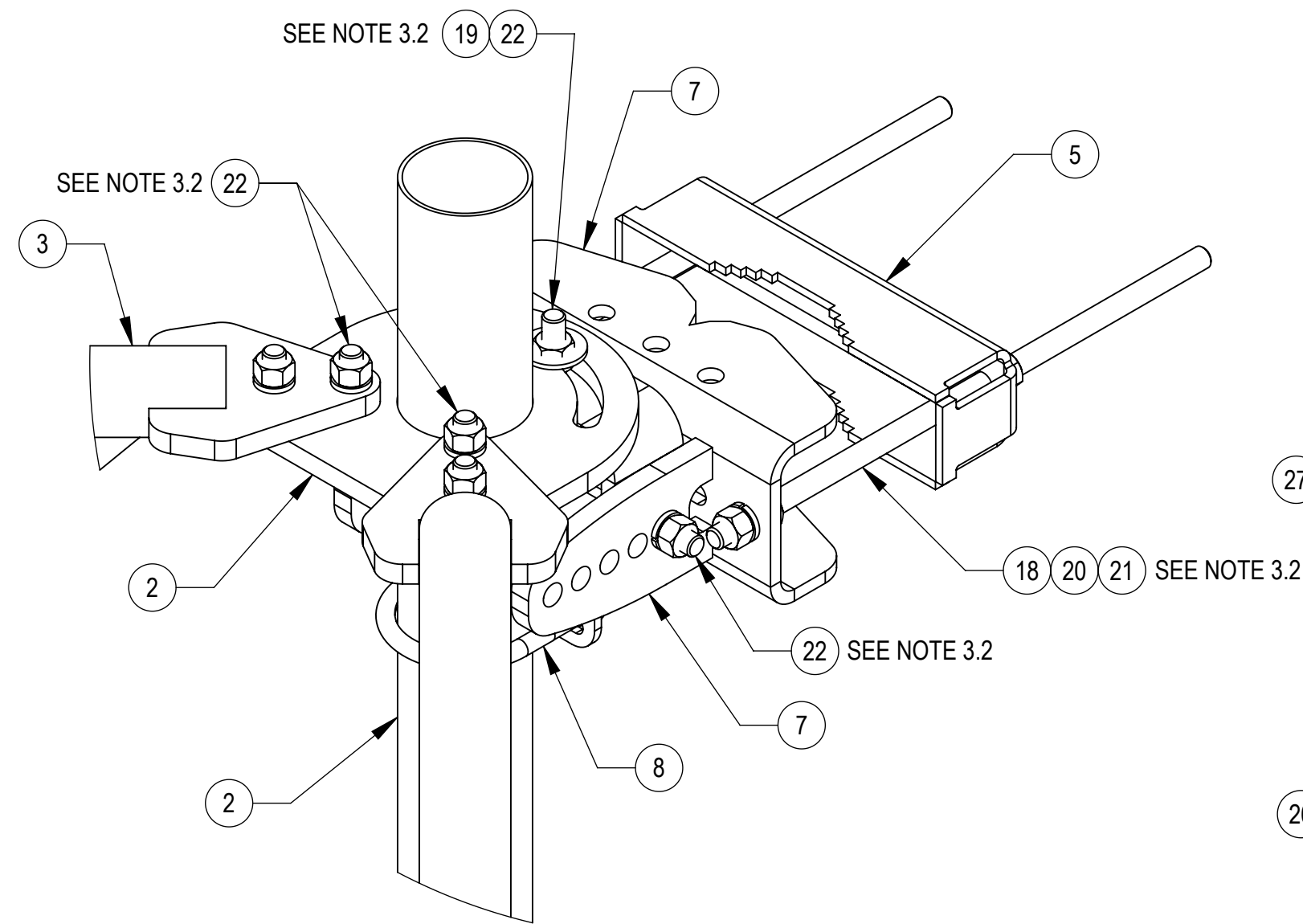


Front View - Looking at Structure



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A2	R0440CC w/ RT4423-48A	11.8	8.7	171	1	a	Front	60	0	Added	
A3	NHH-65B-R2B	72	11.9	115	2	a	Front	60	7	Added	
A3	NHH-65B-R2B	72	11.9	115	2	b	Front	60	-7	Added	
R5	RF4439d-25A	15	15	115	2	a	Behind	42	0	Added	
R6	RF4461d-13A	15	15	59	3	a	Behind	42	0	Added	
A4	MT6413-77A	28.9	15.8	3	4	a	Front	60	0	Added	

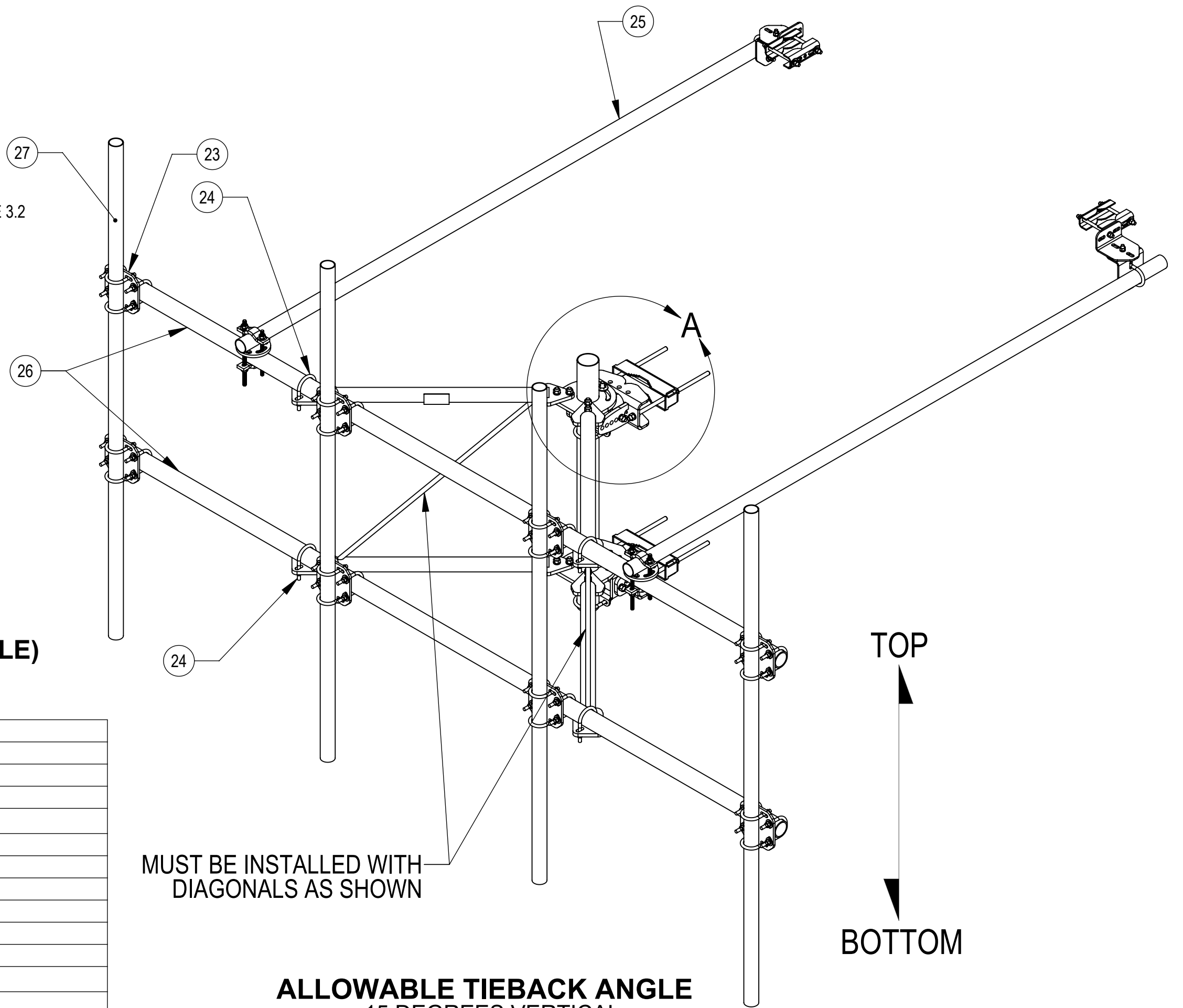
NOTES:



DETAIL A
SCALE 1 : 4

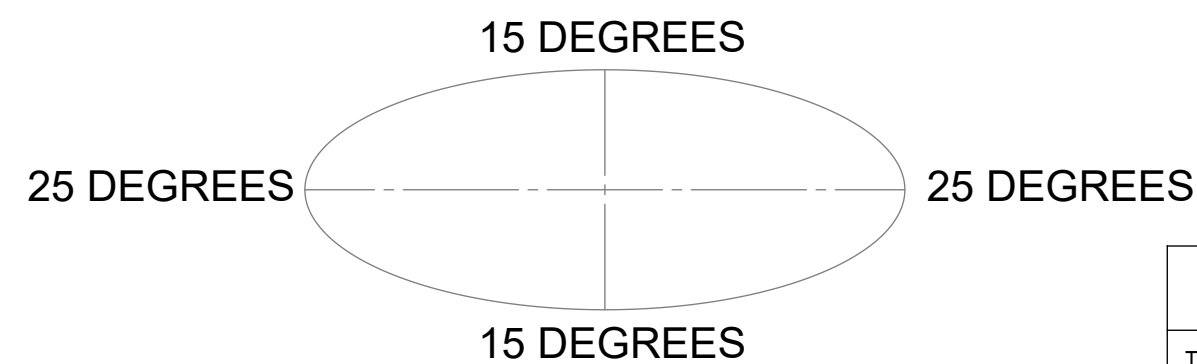
SFG22HD-12-4-96 SHOWN FOR REFERENCE
(NOT ALL CONFIGURATIONS INCLUDE ALL ITEMS SEE NOTES IN TABLE)

ITEM	PART NO.	DESCRIPTION	QTY.	NOTE NO.
1	SFG2237	WELDMENT, AZIMUTH/TAPER BRACKET	2	
2	SFG2270	BACK VERTICAL ARM MOUNT	1	
3	SFG2278	ARM, STANDOFF - SFG22	2	
4	SFG2250	LABEL, SFG22	1	
5	SFG2283	BACK TOWER LEG CLAMP	2	
6	SFG2343	WELDMENT, LOWER, TOWER LEG BRACKET	1	
7	SFG2345	WELDMENT, TOP TAPER BRACKET	1	
8	GUB-4355	1/2" X 3-5/8" X 5" GALV U-BOLT	2	
9	XAU01	ANGLE, CROSSOVER, 1.9-3.5" X 1.9-3.5" OD	4	
10	GUB-4240	1/2" X 2-1/2" X 4" GALV U-BOLT	2	
11	XP-R	CROSSOVER PLATE, ROUND, UP TO 3.5" OD	2	
12	SAB01	FORMED CLAMP	4	
13	MT-379-8	1/2" X 8" GALV THREADED ROD	4	
14	GWF-04	1/2" GALV FLAT WASHER	8	
15	GWL-04	1/2" GALV LOCK WASHER	10	
16	GN-04	1/2" GALV HEX NUT	10	
17	GB-04145	1/2" X 1-1/2" GALV BOLT KIT	2	
18	MT-382-18	5/8" X 18" GALV THREADED ROD	4	
19	GWF-05	5/8" GALV FLAT WASHER, 1.7OD	2	
20	GWL-05	5/8" GALV LOCK WASHER	8	
21	GN-05	5/8" GALV HEX NUT	12	
22	GB-05225	5/8" X 2-1/4" GALV BOLT KIT	14	
23	XP-2025	CROSSOVER PLATE KIT, 2-3/8 OD X 2-7/8 OD	8	
24	GUB-4352	1/2" X 3" X 5-1/4" GALV U-BOLT	4	
25	MT-651-120	2.375" OD X 120" PIPE	2	TIEBACK PIPE
26	MT-546-150	2-7/8" OD x 150" GALV PIPE	2	FOR 10' FACE PIPE USE MT-546-126; FOR 14' FACE PIPE USE MT-546-174
27	MT-651-96	Ø 2.375" OD X 96" PIPE	4	FOR 10' ANTENNA PIPE USE MT-537 (HDX USE MT546126120 FOR 126" & MT54696120 FOR 96"); NOT INCLUDED IN BASE KITS



MUST BE INSTALLED WITH
DIAGONALS AS SHOWN

ALLOWABLE TIEBACK ANGLE
±15 DEGREES VERTICAL
±25 DEGREES HORIZONTAL



PATENT PENDING

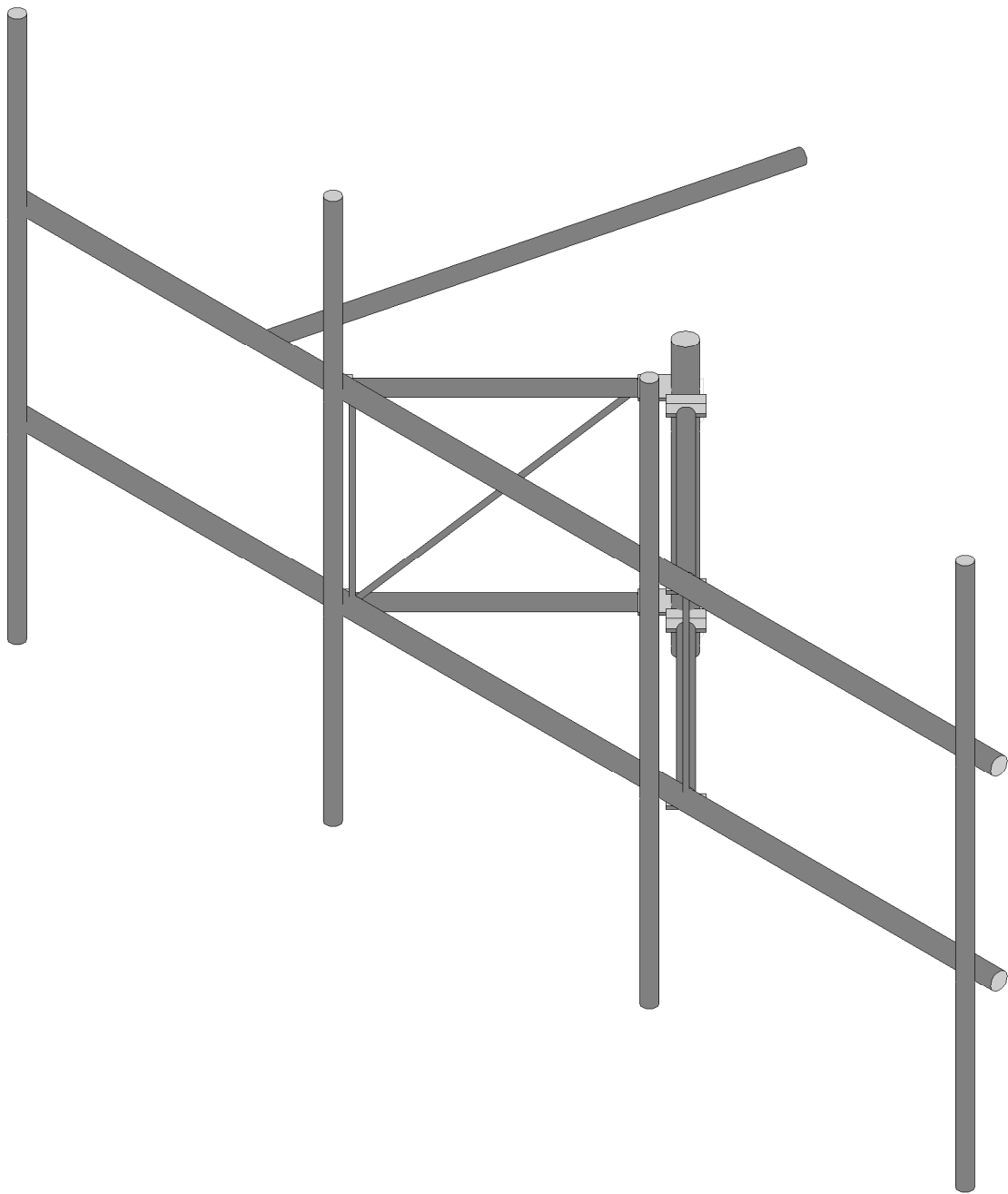
COMMScope, INC. OF NORTH CAROLINA				
TITLE SFG22HD SECTOR FRAME SERIES				
SIZE C	SCALE 1:14	DOCUMENT NO. SFG22HD		
 	DRAWING			SHEET 2 OF 7
	VERSION 04	STATUS CE	REVISION	

	Desktop Mount Mapping Form			
	Site Name:	BOLTON CT	Tower Type:	Guyed Tower
	Site ID:	467254	Tower Owner:	Other
	FUZE Project ID:	16244102	Tower Height (Ft.):	150
	Customer:	Verizon Wireless	Mount Elevation (Ft.):	120
	Colliers Project No.	21781125A	Date:	7/26/2021
The information contained herein is considered confidential in nature and is to be used only for the specific customer it was intended for. Reproduction, transmission, publication, modification or disclosure by any method is prohibited except by express written permission of Colliers Engineering & Design.				

Document Type	Provided? (Yes/No)	Source Name	Project No.	Dated	Comments/Remarks
Previous Mount Mapping	No				
Previous Mapping Photos	No				
Previous Mount Analysis	No				
Previous Mount Modifications	No				
Previous Structural Analysis	Yes	VZ5-227 - 150' Guyed Bolton 0512202		5/10/2021	Use (2) Commscope SFG22 Mounts
Construction Drawings	Yes	Bolton CT VZ5-227 DE Rev0 05272021		5/27/2021	General placement location
Closeout Package	No				
Closeout Photos	No				
Handover Package	No				
New Build 445 Documentation	No				
Other	Yes	130 Vernon Road Bolton CT 05122021		4/15/2021	Shows the location of the new tower, this is a new mount on an adjacent tower
Previous PMI	No				

The **desktop mount mapping** is based on the engineering review of the available site documents in FUZE, as listed above, in place of a full mount mapping. It is assumed that the information provided in the documents listed above, provide an accurate representation of the existing mount. EOR reserves the right and will typically require additional clarification and verification as will be included in the PMI requirements. During the Post Modification Inspection (PMI) process, the GC on site will be required to confirm all questions, confirmations, and validations as posed by the EOR. The engineering review for this desktop mount mapping was performed in accordance to the ANSI/TIA-222-H requirements and Verizon's NSTD446 standard.

	
Photo taken from: Closeout Package	Photo taken from: Closeout Package

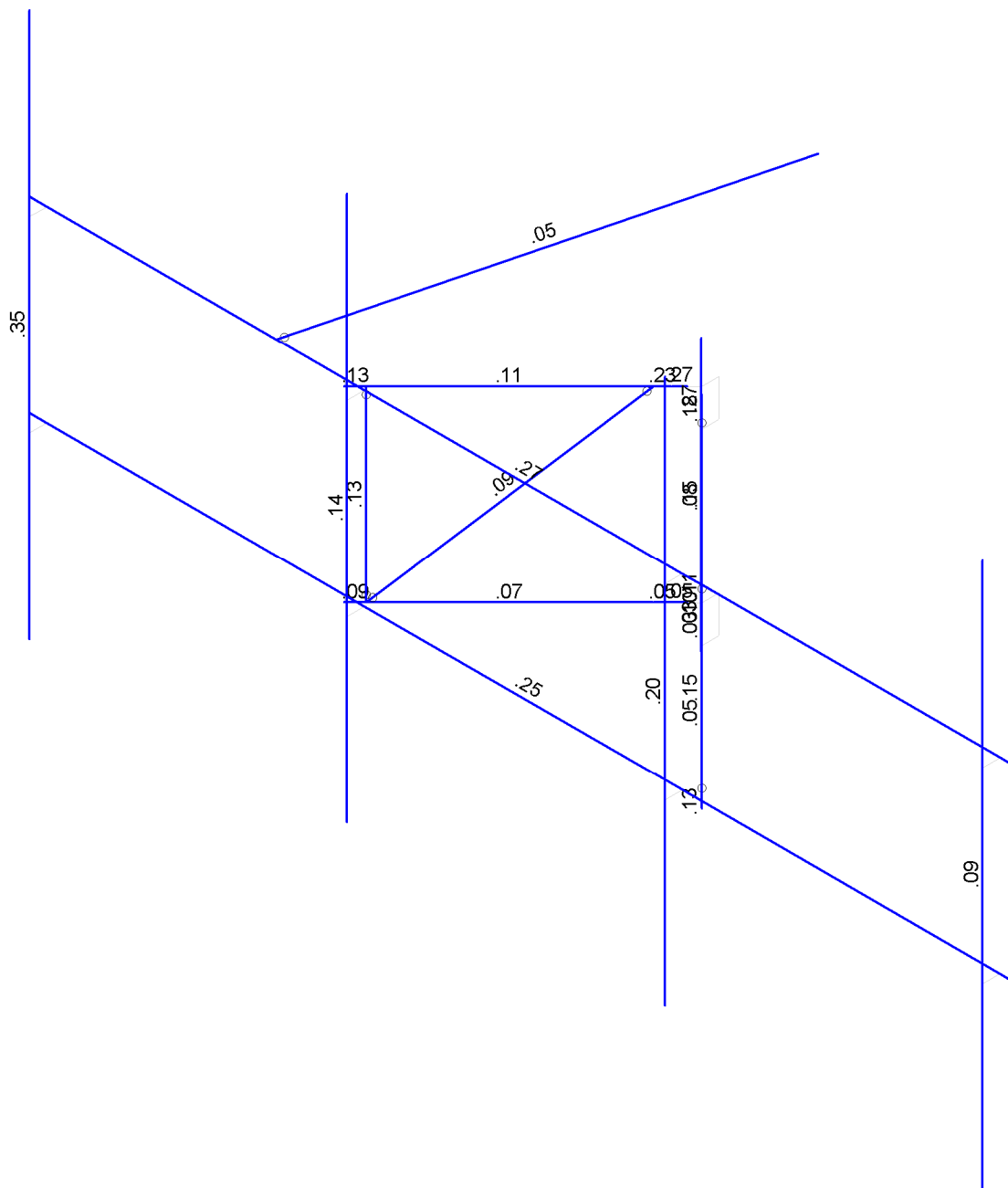


Envelope Only Solution

	Rendered Model	SK - 1
		Jan 31, 2024 at 9:46 AM
		5000247954-VZW_MT_LOT_A_H.r3d

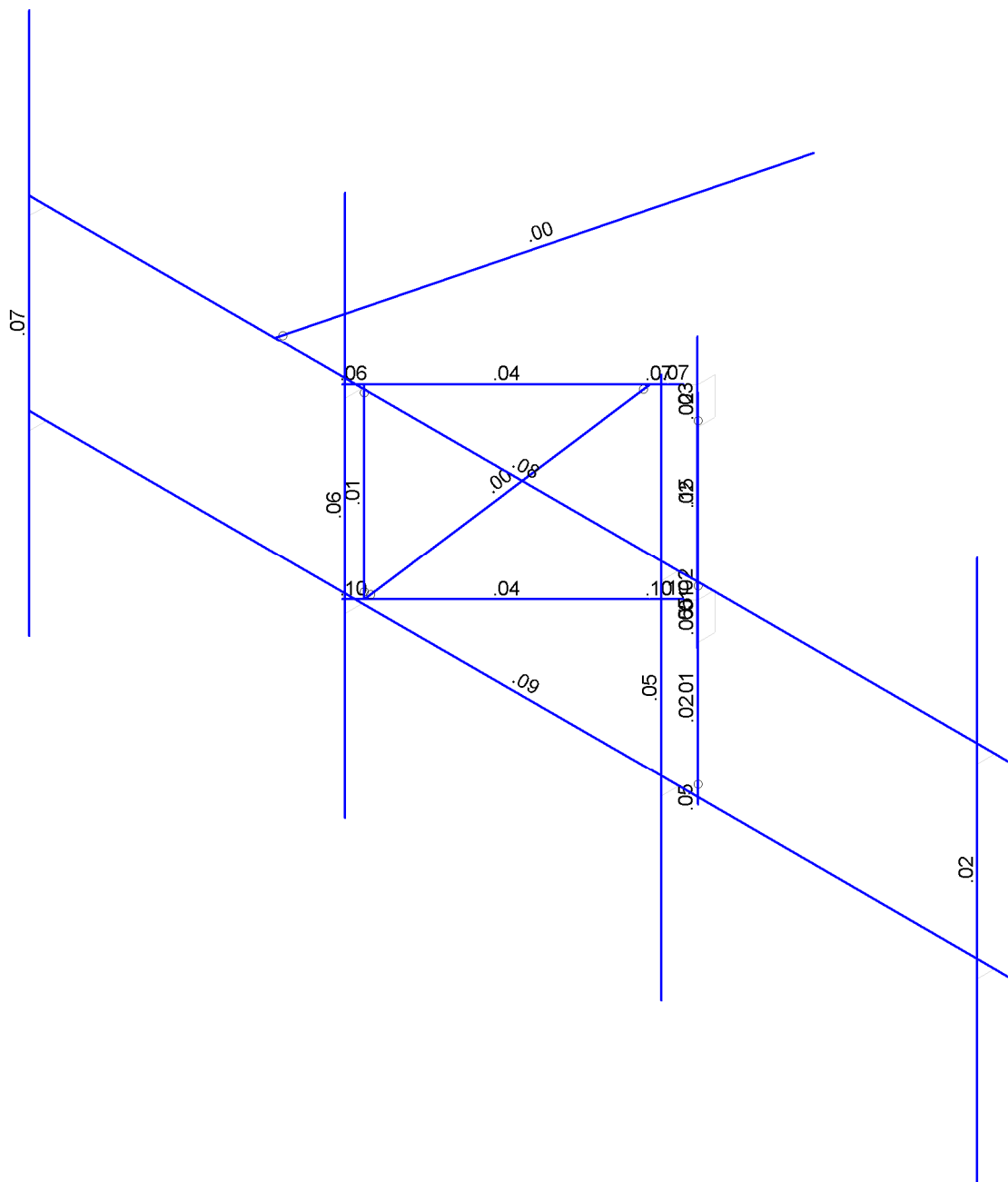


Code Check (Env.)	
No Calc	> 1.0
90-1.0	75-50
50-75	0-50



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

		SK - 2
		Jan 31, 2024 at 9:46 AM
	Bending Check	5000247954-VZW_MT_LOT_A_H.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

	Shear Check	SK - 3
		Jan 31, 2024 at 9:46 AM
		5000247954-VZW_MT_LOT_A_H.r3d

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1	Antenna D	None					42		
2	Antenna Di	None					42		
3	Antenna Wo (0 Deg)	None					42		
4	Antenna Wo (30 Deg)	None					42		
5	Antenna Wo (60 Deg)	None					42		
6	Antenna Wo (90 Deg)	None					42		
7	Antenna Wo (120 Deg)	None					42		
8	Antenna Wo (150 Deg)	None					42		
9	Antenna Wo (180 Deg)	None					42		
10	Antenna Wo (210 Deg)	None					42		
11	Antenna Wo (240 Deg)	None					42		
12	Antenna Wo (270 Deg)	None					42		
13	Antenna Wo (300 Deg)	None					42		
14	Antenna Wo (330 Deg)	None					42		
15	Antenna Wi (0 Deg)	None					42		
16	Antenna Wi (30 Deg)	None					42		
17	Antenna Wi (60 Deg)	None					42		
18	Antenna Wi (90 Deg)	None					42		
19	Antenna Wi (120 Deg)	None					42		
20	Antenna Wi (150 Deg)	None					42		
21	Antenna Wi (180 Deg)	None					42		
22	Antenna Wi (210 Deg)	None					42		
23	Antenna Wi (240 Deg)	None					42		
24	Antenna Wi (270 Deg)	None					42		
25	Antenna Wi (300 Deg)	None					42		
26	Antenna Wi (330 Deg)	None					42		
27	Antenna Wm (0 Deg)	None					42		
28	Antenna Wm (30 Deg)	None					42		
29	Antenna Wm (60 Deg)	None					42		
30	Antenna Wm (90 Deg)	None					42		
31	Antenna Wm (120 Deg)	None					42		
32	Antenna Wm (150 Deg)	None					42		
33	Antenna Wm (180 Deg)	None					42		
34	Antenna Wm (210 Deg)	None					42		
35	Antenna Wm (240 Deg)	None					42		
36	Antenna Wm (270 Deg)	None					42		
37	Antenna Wm (300 Deg)	None					42		
38	Antenna Wm (330 Deg)	None					42		
39	Structure D	None		-1					
40	Structure Di	None						28	
41	Structure Wo (0 Deg)	None						56	
42	Structure Wo (30 Deg)	None						56	
43	Structure Wo (60 Deg)	None						56	
44	Structure Wo (90 Deg)	None						56	
45	Structure Wo (120 D...	None						56	
46	Structure Wo (150 D...	None						56	
47	Structure Wo (180 D...	None						56	
48	Structure Wo (210 D...	None						56	
49	Structure Wo (240 D...	None						56	
50	Structure Wo (270 D...	None						56	
51	Structure Wo (300 D...	None						56	
52	Structure Wo (330 D...	None						56	
53	Structure Wi (0 Deg)	None						56	
54	Structure Wi (30 Deg)	None						56	
55	Structure Wi (60 Deg)	None						56	
56	Structure Wi (90 Deg)	None						56	
57	Structure Wi (120 De..	None						56	
58	Structure Wi (150 De..	None						56	
59	Structure Wi (180 De..	None						56	
60	Structure Wi (210 De..	None						56	
61	Structure Wi (240 De..	None						56	

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
62	Structure Wi (270 De...	None						56	
63	Structure Wi (300 De...	None						56	
64	Structure Wi (330 De...	None						56	
65	Structure Wm (0 Deg)	None						56	
66	Structure Wm (30 De...	None						56	
67	Structure Wm (60 De...	None						56	
68	Structure Wm (90 De...	None						56	
69	Structure Wm (120 D...	None						56	
70	Structure Wm (150 D...	None						56	
71	Structure Wm (180 D...	None						56	
72	Structure Wm (210 D...	None						56	
73	Structure Wm (240 D...	None						56	
74	Structure Wm (270 D...	None						56	
75	Structure Wm (300 D...	None						56	
76	Structure Wm (330 D...	None						56	
77	Lm1	None					1		
78	Lm2	None					1		
79	Lv1	None					1		
80	Lv2	None					1		
81	Antenna Ev	None					42		
82	Antenna Eh (0 Deg)	None					28		
83	Antenna Eh (90 Deg)	None					28		
84	Structure Ev	ELY		-.04					
85	Structure Eh (0 Deg)	ELZ			-.099				
86	Structure Eh (90 Deg)	ELX	.099						

	Description	S... P...	S... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa...
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
14	1.2D + 1.0Di + 1.0Wi (30 Deg)	Yes Y		1	1.2	39	1.2	2	1	40	1	16	1	54
15	1.2D + 1.0Di + 1.0Wi (60 Deg)	Yes Y		1	1.2	39	1.2	2	1	40	1	17	1	55
16	1.2D + 1.0Di + 1.0Wi (90 Deg)	Yes Y		1	1.2	39	1.2	2	1	40	1	18	1	56
17	1.2D + 1.0Di + 1.0Wi (120 Deg)	Yes Y		1	1.2	39	1.2	2	1	40	1	19	1	57
18	1.2D + 1.0Di + 1.0Wi (150 Deg)	Yes Y		1	1.2	39	1.2	2	1	40	1	20	1	58
19	1.2D + 1.0Di + 1.0Wi (180 Deg)	Yes Y		1	1.2	39	1.2	2	1	40	1	21	1	59
20	1.2D + 1.0Di + 1.0Wi (210 Deg)	Yes Y		1	1.2	39	1.2	2	1	40	1	22	1	60
21	1.2D + 1.0Di + 1.0Wi (240 Deg)	Yes Y		1	1.2	39	1.2	2	1	40	1	23	1	61
22	1.2D + 1.0Di + 1.0Wi (270 Deg)	Yes Y		1	1.2	39	1.2	2	1	40	1	24	1	62
23	1.2D + 1.0Di + 1.0Wi (300 Deg)	Yes Y		1	1.2	39	1.2	2	1	40	1	25	1	63
24	1.2D + 1.0Di + 1.0Wi (330 Deg)	Yes Y		1	1.2	39	1.2	2	1	40	1	26	1	64
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	

	Description	S...P...	S...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...
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	E...	1	.82	1	.83	E...	1	E...			
53	1.2D + 1.0Ev + 1.0Eh (30 Deg)	Yes Y		1	1.2	.39	1.2	.81	1	E...	1	.82	.866	.83	.5	E...	.866	E...	.5	
54	1.2D + 1.0Ev + 1.0Eh (60 Deg)	Yes Y		1	1.2	.39	1.2	.81	1	E...	1	.82	.5	.83	.866	E...	.5	E...	.866	
55	1.2D + 1.0Ev + 1.0Eh (90 Deg)	Yes Y		1	1.2	.39	1.2	.81	1	E...	1	.82		.83	1	E...		E...	1	
56	1.2D + 1.0Ev + 1.0Eh (120 Deg)	Yes Y		1	1.2	.39	1.2	.81	1											

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	l _{yy} [in4]	l _{zz} [in4]	J [in4]
1	Face Horizontal	PIPE 2.5	None	None	A500 Gr. C 46	Typical	1.61	1.45	1.45	2.89
2	Standoff Horizontal	PIPE 2.0	None	None	A500 Gr. C 46	Typical	1.02	.627	.627	1.25
3	Standoff Vertical	SR 0.75	None	None	A529 Gr 50	Typical	.442	.016	.016	.031
4	Standoff Diagonal	SR 0.75	None	None	A529 Gr 50	Typical	.442	.016	.016	.031
5	Mast Pipe	PIPE 3.0	None	None	A500 Gr. C 46	Typical	2.07	2.85	2.85	5.69
6	Standoff Plate	PL1/2x5	None	None	A572 Gr.50	Typical	2.5	.052	5.208	.195
7	Tieback	PIPE 2.0	None	None	A500 Gr. C 46	Typical	1.02	.627	.627	1.25
8	Antenna Pipe	PIPE 2.0	None	None	A500 Gr. C 46	Typical	1.02	.627	.627	1.25

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A53 Gr. B	29000	11154	.3	.65	.49	35	1.5	60	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
5	A500 Gr. B 42	29000	11154	.3	.65	.49	42	1.4	58	1.3
6	A500 Gr. B 46	29000	11154	.3	.65	.49	46	1.4	58	1.3
7	A500 Gr. C 46	29000	11154	.3	.65	.49	46	1.5	62	1.2
8	A529 Gr 50	29000	11154	.3	.65	.49	50	1.5	65	1.2

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N9	N10			Face Horizontal	None	None	A500 Gr. ...	Typical
2	M2	N7	N8			Face Horizontal	None	None	A500 Gr. ...	Typical
3	M3	N28	N30			Standoff Horiz...	None	None	A500 Gr. ...	Typical
4	M4	N27	N29			Standoff Horiz...	None	None	A500 Gr. ...	Typical
5	M5	N38	N40			Standoff Horiz...	None	None	A500 Gr. ...	Typical
6	M6	N37	N39			Standoff Horiz...	None	None	A500 Gr. ...	Typical
7	M7	N28	N27			Standoff Vertical	None	None	A529 Gr 50	Typical
8	M8	N38	N37			Standoff Vertical	None	None	A529 Gr 50	Typical
9	M9	N27	N30			Standoff Diago...	None	None	A529 Gr 50	Typical
10	M10	N37	N40			Standoff Diago...	None	None	A529 Gr 50	Typical
11	M11	N46	N45			Mast Pipe	None	None	A500 Gr. ...	Typical
12	M12	N32	N34		90	Standoff Plate	None	None	A572 Gr.50	Typical
13	M13	N31	N33		90	Standoff Plate	None	None	A572 Gr.50	Typical
14	M14	N42	N44		90	Standoff Plate	None	None	A572 Gr.50	Typical
15	M15	N41	N43		90	Standoff Plate	None	None	A572 Gr.50	Typical
16	M16	N25	N28		90	Standoff Plate	None	None	A572 Gr.50	Typical
17	M17	N23	N27		90	Standoff Plate	None	None	A572 Gr.50	Typical
18	M18	N30	N32		90	Standoff Plate	None	None	A572 Gr.50	Typical
19	M19	N29	N31		90	Standoff Plate	None	None	A572 Gr.50	Typical
20	M20	N26	N38		90	Standoff Plate	None	None	A572 Gr.50	Typical
21	M21	N24	N37		90	Standoff Plate	None	None	A572 Gr.50	Typical
22	M22	N40	N42		90	Standoff Plate	None	None	A572 Gr.50	Typical
23	M23	N39	N41		90	Standoff Plate	None	None	A572 Gr.50	Typical
24	M24	N62	N61			Tieback	None	None	A500 Gr. ...	Typical
25	MP1A	N50	N53			Antenna Pipe	None	None	A500 Gr. ...	Typical
26	MP2A	N51	N54			Antenna Pipe	None	None	A500 Gr. ...	Typical
27	MP3A	N67	N68			Antenna Pipe	None	None	A500 Gr. ...	Typical
28	MP4A	N49	N52			Antenna Pipe	None	None	A500 Gr. ...	Typical
29	M29	N11	N17			RIGID	None	None	RIGID	Typical
30	M30	N12	N18			RIGID	None	None	RIGID	Typical
31	M31	N15	N21			RIGID	None	None	RIGID	Typical
32	M32	N13	N19			RIGID	None	None	RIGID	Typical
33	M33	N14	N20			RIGID	None	None	RIGID	Typical
34	M34	N16	N22			RIGID	None	None	RIGID	Typical
35	M35	N3	N25			RIGID	None	None	RIGID	Typical
36	M36	N4	N23			RIGID	None	None	RIGID	Typical
37	M37	N6	N24			RIGID	None	None	RIGID	Typical
38	M38	N5	N26			RIGID	None	None	RIGID	Typical
39	M39	N34	N36			RIGID	None	None	RIGID	Typical
40	M40	N33	N35			RIGID	None	None	RIGID	Typical
41	M41	N44	N36			RIGID	None	None	RIGID	Typical
42	M42	N43	N35			RIGID	None	None	RIGID	Typical
43	M43	N36	N48			RIGID	None	None	RIGID	Typical
44	M44	N35	N47			RIGID	None	None	RIGID	Typical
45	M45	N58	N60			RIGID	None	None	RIGID	Typical
46	M46	N57	N59			RIGID	None	None	RIGID	Typical
47	M47	N48	N60			RIGID	None	None	RIGID	Typical
48	M48	N47	N59			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
49	M49	N63	N65			RIGID	None	None	RIGID	Typical
50	M50	N64	N66			RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes	** NA **			None
2	M2						Yes	** NA **			None
3	M3						Yes	** NA **			None
4	M4						Yes	** NA **			None
5	M5						Yes	** NA **			None
6	M6						Yes	** NA **			None
7	M7	BenPIN	BenPIN				Yes	** NA **			None
8	M8	BenPIN	BenPIN				Yes	** NA **			None
9	M9	BenPIN	BenPIN				Yes	** NA **			None
10	M10	BenPIN	BenPIN				Yes	** NA **			None
11	M11						Yes	** NA **			None
12	M12						Yes	** NA **			None
13	M13						Yes	** NA **			None
14	M14						Yes	** NA **			None
15	M15						Yes	** NA **			None
16	M16						Yes	** NA **			None
17	M17						Yes	** NA **			None
18	M18						Yes	** NA **			None
19	M19						Yes	** NA **			None
20	M20						Yes	** NA **			None
21	M21						Yes	** NA **			None
22	M22						Yes	** NA **			None
23	M23						Yes	** NA **			None
24	M24	BenPIN					Yes	** NA **			None
25	MP1A						Yes	** NA **			None
26	MP2A						Yes	** NA **			None
27	MP3A						Yes	** NA **			None
28	MP4A						Yes	** NA **			None
29	M29						Yes	** NA **			None
30	M30						Yes	** NA **			None
31	M31						Yes	** NA **			None
32	M32						Yes	** NA **			None
33	M33						Yes	** NA **			None
34	M34						Yes	** NA **			None
35	M35	OOOXOO					Yes	** NA **			None
36	M36	OOOXOO					Yes	** NA **			None
37	M37	OOOXOO					Yes	** NA **			None
38	M38	OOOXOO					Yes	** NA **			None
39	M39						Yes	** NA **			None
40	M40						Yes	** NA **			None
41	M41						Yes	** NA **			None
42	M42						Yes	** NA **			None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	M45	OOOXOX					Yes	** NA **			None
46	M46	OOOXOX					Yes	** NA **			None
47	M47						Yes	** NA **			None
48	M48						Yes	** NA **			None
49	M49						Yes	** NA **			None
50	M50						Yes	** NA **			None

Member Point Loads (BLC 1 : Antenna D)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	Y	-4.4	4
2	MP1A	My	-.002	4
3	MP1A	Mz	0	4
4	MP2A	Y	-21.85	1
5	MP2A	My	-.011	1
6	MP2A	Mz	.013	1
7	MP2A	Y	-21.85	7
8	MP2A	My	-.011	7
9	MP2A	Mz	.013	7
10	MP2A	Y	-21.85	1
11	MP2A	My	-.011	1
12	MP2A	Mz	-.013	1
13	MP2A	Y	-21.85	7
14	MP2A	My	-.011	7
15	MP2A	Mz	-.013	7
16	MP4A	Y	-28.65	2.5
17	MP4A	My	-.014	2.5
18	MP4A	Mz	0	2.5
19	MP4A	Y	-28.65	5.5
20	MP4A	My	-.014	5.5
21	MP4A	Mz	0	5.5
22	MP2A	Y	-74.7	3.5
23	MP2A	My	.037	3.5
24	MP2A	Mz	0	3.5
25	MP3A	Y	-79.1	3.5
26	MP3A	My	.04	3.5
27	MP3A	Mz	0	3.5
28	M5	Y	-32	1.5
29	M5	My	0	1.5
30	M5	Mz	0	1.5
31	MP2A	Y	-7.7	6.5
32	MP2A	My	.008	6.5
33	MP2A	Mz	-.003	6.5
34	MP2A	Y	-7.7	7.5
35	MP2A	My	.008	7.5
36	MP2A	Mz	-.003	7.5
37	MP2A	Y	-7.7	6.5
38	MP2A	My	.008	6.5
39	MP2A	Mz	.003	6.5
40	MP2A	Y	-7.7	7.5
41	MP2A	My	.008	7.5
42	MP2A	Mz	.003	7.5

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	Y	-22.433	4
2	MP1A	My	-.011	4
3	MP1A	Mz	0	4
4	MP2A	Y	-94.258	1
5	MP2A	My	-.047	1
6	MP2A	Mz	.055	1
7	MP2A	Y	-94.258	7
8	MP2A	My	-.047	7
9	MP2A	Mz	.055	7
10	MP2A	Y	-94.258	1
11	MP2A	My	-.047	1
12	MP2A	Mz	-.055	1
13	MP2A	Y	-94.258	7
14	MP2A	My	-.047	7
15	MP2A	Mz	-.055	7

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
16	MP4A	Y	-46.68	2.5
17	MP4A	My	-.023	2.5
18	MP4A	Mz	0	2.5
19	MP4A	Y	-46.68	5.5
20	MP4A	My	-.023	5.5
21	MP4A	Mz	0	5.5
22	MP2A	Y	-70.682	3.5
23	MP2A	My	.035	3.5
24	MP2A	Mz	0	3.5
25	MP3A	Y	-71.406	3.5
26	MP3A	My	.036	3.5
27	MP3A	Mz	0	3.5
28	M5	Y	-136.141	1.5
29	M5	My	0	1.5
30	M5	Mz	0	1.5
31	MP2A	Y	-13.686	6.5
32	MP2A	My	.014	6.5
33	MP2A	Mz	-.005	6.5
34	MP2A	Y	-13.686	7.5
35	MP2A	My	.014	7.5
36	MP2A	Mz	-.005	7.5
37	MP2A	Y	-13.686	6.5
38	MP2A	My	.014	6.5
39	MP2A	Mz	.005	6.5
40	MP2A	Y	-13.686	7.5
41	MP2A	My	.014	7.5
42	MP2A	Mz	.005	7.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	0	4
2	MP1A	Z	-35.89	4
3	MP1A	Mx	0	4
4	MP2A	X	0	1
5	MP2A	Z	-109.484	1
6	MP2A	Mx	-.064	1
7	MP2A	X	0	7
8	MP2A	Z	-109.484	7
9	MP2A	Mx	-.064	7
10	MP2A	X	0	1
11	MP2A	Z	-109.484	1
12	MP2A	Mx	.064	1
13	MP2A	X	0	7
14	MP2A	Z	-109.484	7
15	MP2A	Mx	.064	7
16	MP4A	X	0	2.5
17	MP4A	Z	-63.714	2.5
18	MP4A	Mx	0	2.5
19	MP4A	X	0	5.5
20	MP4A	Z	-63.714	5.5
21	MP4A	Mx	0	5.5
22	MP2A	X	0	3.5
23	MP2A	Z	-62.504	3.5
24	MP2A	Mx	0	3.5
25	MP3A	X	0	3.5
26	MP3A	Z	-75.409	3.5
27	MP3A	Mx	0	3.5
28	M5	X	0	1.5
29	M5	Z	-97.184	1.5
30	M5	Mx	0	1.5
31	MP2A	X	0	6.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
32	MP2A	Z	-15.324	6.5
33	MP2A	Mx	.005	6.5
34	MP2A	X	0	7.5
35	MP2A	Z	-15.324	7.5
36	MP2A	Mx	.005	7.5
37	MP2A	X	0	6.5
38	MP2A	Z	-15.324	6.5
39	MP2A	Mx	-.005	6.5
40	MP2A	X	0	7.5
41	MP2A	Z	-15.324	7.5
42	MP2A	Mx	-.005	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
1	MP1A	X	14.338	4
2	MP1A	Z	-24.835	4
3	MP1A	Mx	-.007	4
4	MP2A	X	46.929	1
5	MP2A	Z	-81.283	1
6	MP2A	Mx	-.071	1
7	MP2A	X	46.929	7
8	MP2A	Z	-81.283	7
9	MP2A	Mx	-.071	7
10	MP2A	X	46.929	1
11	MP2A	Z	-81.283	1
12	MP2A	Mx	.024	1
13	MP2A	X	46.929	7
14	MP2A	Z	-81.283	7
15	MP2A	Mx	.024	7
16	MP4A	X	26.69	2.5
17	MP4A	Z	-46.229	2.5
18	MP4A	Mx	-.013	2.5
19	MP4A	X	26.69	5.5
20	MP4A	Z	-46.229	5.5
21	MP4A	Mx	-.013	5.5
22	MP2A	X	28.681	3.5
23	MP2A	Z	-49.678	3.5
24	MP2A	Mx	.014	3.5
25	MP3A	X	34.705	3.5
26	MP3A	Z	-60.111	3.5
27	MP3A	Mx	.017	3.5
28	M5	X	52.423	1.5
29	M5	Z	-90.799	1.5
30	M5	Mx	0	1.5
31	MP2A	X	6.855	6.5
32	MP2A	Z	-11.874	6.5
33	MP2A	Mx	.011	6.5
34	MP2A	X	6.855	7.5
35	MP2A	Z	-11.874	7.5
36	MP2A	Mx	.011	7.5
37	MP2A	X	6.855	6.5
38	MP2A	Z	-11.874	6.5
39	MP2A	Mx	.003	6.5
40	MP2A	X	6.855	7.5
41	MP2A	Z	-11.874	7.5
42	MP2A	Mx	.003	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
1	MP1A	X	12.342	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
2	MP1A	Z	-7.126	4
3	MP1A	Mx	-.006	4
4	MP2A	X	54.218	1
5	MP2A	Z	-31.303	1
6	MP2A	Mx	-.045	1
7	MP2A	X	54.218	7
8	MP2A	Z	-31.303	7
9	MP2A	Mx	-.045	7
10	MP2A	X	54.218	1
11	MP2A	Z	-31.303	1
12	MP2A	Mx	-.009	1
13	MP2A	X	54.218	7
14	MP2A	Z	-31.303	7
15	MP2A	Mx	-.009	7
16	MP4A	X	28.331	2.5
17	MP4A	Z	-16.357	2.5
18	MP4A	Mx	-.014	2.5
19	MP4A	X	28.331	5.5
20	MP4A	Z	-16.357	5.5
21	MP4A	Mx	-.014	5.5
22	MP2A	X	40.772	3.5
23	MP2A	Z	-23.54	3.5
24	MP2A	Mx	.02	3.5
25	MP3A	X	49.721	3.5
26	MP3A	Z	-28.707	3.5
27	MP3A	Mx	.025	3.5
28	M5	X	104.07	1.5
29	M5	Z	-60.085	1.5
30	M5	Mx	0	1.5
31	MP2A	X	9.08	6.5
32	MP2A	Z	-5.242	6.5
33	MP2A	Mx	.011	6.5
34	MP2A	X	9.08	7.5
35	MP2A	Z	-5.242	7.5
36	MP2A	Mx	.011	7.5
37	MP2A	X	9.08	6.5
38	MP2A	Z	-5.242	6.5
39	MP2A	Mx	.007	6.5
40	MP2A	X	9.08	7.5
41	MP2A	Z	-5.242	7.5
42	MP2A	Mx	.007	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
1	MP1A	X	7.038	4
2	MP1A	Z	0	4
3	MP1A	Mx	-.004	4
4	MP2A	X	46.979	1
5	MP2A	Z	0	1
6	MP2A	Mx	-.023	1
7	MP2A	X	46.979	7
8	MP2A	Z	0	7
9	MP2A	Mx	-.023	7
10	MP2A	X	46.979	1
11	MP2A	Z	0	1
12	MP2A	Mx	-.023	1
13	MP2A	X	46.979	7
14	MP2A	Z	0	7
15	MP2A	Mx	-.023	7
16	MP4A	X	22.381	2.5
17	MP4A	Z	0	2.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
18	MP4A	Mx	-.011	2.5
19	MP4A	X	22.381	5.5
20	MP4A	Z	0	5.5
21	MP4A	Mx	-.011	5.5
22	MP2A	X	41.938	3.5
23	MP2A	Z	0	3.5
24	MP2A	Mx	.021	3.5
25	MP3A	X	51.415	3.5
26	MP3A	Z	0	3.5
27	MP3A	Mx	.026	3.5
28	M5	X	127.832	1.5
29	M5	Z	0	1.5
30	M5	Mx	0	1.5
31	MP2A	X	8.872	6.5
32	MP2A	Z	0	6.5
33	MP2A	Mx	.009	6.5
34	MP2A	X	8.872	7.5
35	MP2A	Z	0	7.5
36	MP2A	Mx	.009	7.5
37	MP2A	X	8.872	6.5
38	MP2A	Z	0	6.5
39	MP2A	Mx	.009	6.5
40	MP2A	X	8.872	7.5
41	MP2A	Z	0	7.5
42	MP2A	Mx	.009	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	12.342	4
2	MP1A	Z	7.126	4
3	MP1A	Mx	-.006	4
4	MP2A	X	54.218	1
5	MP2A	Z	31.303	1
6	MP2A	Mx	-.009	1
7	MP2A	X	54.218	7
8	MP2A	Z	31.303	7
9	MP2A	Mx	-.009	7
10	MP2A	X	54.218	1
11	MP2A	Z	31.303	1
12	MP2A	Mx	-.045	1
13	MP2A	X	54.218	7
14	MP2A	Z	31.303	7
15	MP2A	Mx	-.045	7
16	MP4A	X	28.331	2.5
17	MP4A	Z	16.357	2.5
18	MP4A	Mx	-.014	2.5
19	MP4A	X	28.331	5.5
20	MP4A	Z	16.357	5.5
21	MP4A	Mx	-.014	5.5
22	MP2A	X	40.772	3.5
23	MP2A	Z	23.54	3.5
24	MP2A	Mx	.02	3.5
25	MP3A	X	49.721	3.5
26	MP3A	Z	28.707	3.5
27	MP3A	Mx	.025	3.5
28	M5	X	104.07	1.5
29	M5	Z	60.085	1.5
30	M5	Mx	0	1.5
31	MP2A	X	9.08	6.5
32	MP2A	Z	5.242	6.5
33	MP2A	Mx	.007	6.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
34	MP2A	X	9.08	7.5
35	MP2A	Z	5.242	7.5
36	MP2A	Mx	.007	7.5
37	MP2A	X	9.08	6.5
38	MP2A	Z	5.242	6.5
39	MP2A	Mx	.011	6.5
40	MP2A	X	9.08	7.5
41	MP2A	Z	5.242	7.5
42	MP2A	Mx	.011	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	14.338	4
2	MP1A	Z	24.835	4
3	MP1A	Mx	-.007	4
4	MP2A	X	46.929	1
5	MP2A	Z	81.283	1
6	MP2A	Mx	.024	1
7	MP2A	X	46.929	7
8	MP2A	Z	81.283	7
9	MP2A	Mx	.024	7
10	MP2A	X	46.929	1
11	MP2A	Z	81.283	1
12	MP2A	Mx	-.071	1
13	MP2A	X	46.929	7
14	MP2A	Z	81.283	7
15	MP2A	Mx	-.071	7
16	MP4A	X	26.69	2.5
17	MP4A	Z	46.229	2.5
18	MP4A	Mx	-.013	2.5
19	MP4A	X	26.69	5.5
20	MP4A	Z	46.229	5.5
21	MP4A	Mx	-.013	5.5
22	MP2A	X	28.681	3.5
23	MP2A	Z	49.678	3.5
24	MP2A	Mx	.014	3.5
25	MP3A	X	34.705	3.5
26	MP3A	Z	60.111	3.5
27	MP3A	Mx	.017	3.5
28	M5	X	52.423	1.5
29	M5	Z	90.799	1.5
30	M5	Mx	0	1.5
31	MP2A	X	6.855	6.5
32	MP2A	Z	11.874	6.5
33	MP2A	Mx	.003	6.5
34	MP2A	X	6.855	7.5
35	MP2A	Z	11.874	7.5
36	MP2A	Mx	.003	7.5
37	MP2A	X	6.855	6.5
38	MP2A	Z	11.874	6.5
39	MP2A	Mx	.011	6.5
40	MP2A	X	6.855	7.5
41	MP2A	Z	11.874	7.5
42	MP2A	Mx	.011	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	0	4
2	MP1A	Z	35.89	4
3	MP1A	Mx	0	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
4	MP2A	X	0	1
5	MP2A	Z	109.484	1
6	MP2A	Mx	.064	1
7	MP2A	X	0	7
8	MP2A	Z	109.484	7
9	MP2A	Mx	.064	7
10	MP2A	X	0	1
11	MP2A	Z	109.484	1
12	MP2A	Mx	-.064	1
13	MP2A	X	0	7
14	MP2A	Z	109.484	7
15	MP2A	Mx	-.064	7
16	MP4A	X	0	2.5
17	MP4A	Z	63.714	2.5
18	MP4A	Mx	0	2.5
19	MP4A	X	0	5.5
20	MP4A	Z	63.714	5.5
21	MP4A	Mx	0	5.5
22	MP2A	X	0	3.5
23	MP2A	Z	62.504	3.5
24	MP2A	Mx	0	3.5
25	MP3A	X	0	3.5
26	MP3A	Z	75.409	3.5
27	MP3A	Mx	0	3.5
28	M5	X	0	1.5
29	M5	Z	97.184	1.5
30	M5	Mx	0	1.5
31	MP2A	X	0	6.5
32	MP2A	Z	15.324	6.5
33	MP2A	Mx	-.005	6.5
34	MP2A	X	0	7.5
35	MP2A	Z	15.324	7.5
36	MP2A	Mx	-.005	7.5
37	MP2A	X	0	6.5
38	MP2A	Z	15.324	6.5
39	MP2A	Mx	.005	6.5
40	MP2A	X	0	7.5
41	MP2A	Z	15.324	7.5
42	MP2A	Mx	.005	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	-14.338	4
2	MP1A	Z	24.835	4
3	MP1A	Mx	.007	4
4	MP2A	X	-46.929	1
5	MP2A	Z	81.283	1
6	MP2A	Mx	.071	1
7	MP2A	X	-46.929	7
8	MP2A	Z	81.283	7
9	MP2A	Mx	.071	7
10	MP2A	X	-46.929	1
11	MP2A	Z	81.283	1
12	MP2A	Mx	-.024	1
13	MP2A	X	-46.929	7
14	MP2A	Z	81.283	7
15	MP2A	Mx	-.024	7
16	MP4A	X	-26.69	2.5
17	MP4A	Z	46.229	2.5
18	MP4A	Mx	.013	2.5
19	MP4A	X	-26.69	5.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
20	MP4A	Z	46.229	5.5
21	MP4A	Mx	.013	5.5
22	MP2A	X	-28.681	3.5
23	MP2A	Z	49.678	3.5
24	MP2A	Mx	-.014	3.5
25	MP3A	X	-34.705	3.5
26	MP3A	Z	60.111	3.5
27	MP3A	Mx	-.017	3.5
28	M5	X	-52.423	1.5
29	M5	Z	90.799	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-6.855	6.5
32	MP2A	Z	11.874	6.5
33	MP2A	Mx	-.011	6.5
34	MP2A	X	-6.855	7.5
35	MP2A	Z	11.874	7.5
36	MP2A	Mx	-.011	7.5
37	MP2A	X	-6.855	6.5
38	MP2A	Z	11.874	6.5
39	MP2A	Mx	-.003	6.5
40	MP2A	X	-6.855	7.5
41	MP2A	Z	11.874	7.5
42	MP2A	Mx	-.003	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	-12.342	4
2	MP1A	Z	7.126	4
3	MP1A	Mx	.006	4
4	MP2A	X	-54.218	1
5	MP2A	Z	31.303	1
6	MP2A	Mx	.045	1
7	MP2A	X	-54.218	7
8	MP2A	Z	31.303	7
9	MP2A	Mx	.045	7
10	MP2A	X	-54.218	1
11	MP2A	Z	31.303	1
12	MP2A	Mx	.009	1
13	MP2A	X	-54.218	7
14	MP2A	Z	31.303	7
15	MP2A	Mx	.009	7
16	MP4A	X	-28.331	2.5
17	MP4A	Z	16.357	2.5
18	MP4A	Mx	.014	2.5
19	MP4A	X	-28.331	5.5
20	MP4A	Z	16.357	5.5
21	MP4A	Mx	.014	5.5
22	MP2A	X	-40.772	3.5
23	MP2A	Z	23.54	3.5
24	MP2A	Mx	-.02	3.5
25	MP3A	X	-49.721	3.5
26	MP3A	Z	28.707	3.5
27	MP3A	Mx	-.025	3.5
28	M5	X	-104.07	1.5
29	M5	Z	60.085	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-9.08	6.5
32	MP2A	Z	5.242	6.5
33	MP2A	Mx	-.011	6.5
34	MP2A	X	-9.08	7.5
35	MP2A	Z	5.242	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
36	MP2A	Mx	-.011	7.5
37	MP2A	X	-9.08	6.5
38	MP2A	Z	5.242	6.5
39	MP2A	Mx	-.007	6.5
40	MP2A	X	-9.08	7.5
41	MP2A	Z	5.242	7.5
42	MP2A	Mx	-.007	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
1	MP1A	X	-7.038	4
2	MP1A	Z	0	4
3	MP1A	Mx	.004	4
4	MP2A	X	-46.979	1
5	MP2A	Z	0	1
6	MP2A	Mx	.023	1
7	MP2A	X	-46.979	7
8	MP2A	Z	0	7
9	MP2A	Mx	.023	7
10	MP2A	X	-46.979	1
11	MP2A	Z	0	1
12	MP2A	Mx	.023	1
13	MP2A	X	-46.979	7
14	MP2A	Z	0	7
15	MP2A	Mx	.023	7
16	MP4A	X	-22.381	2.5
17	MP4A	Z	0	2.5
18	MP4A	Mx	.011	2.5
19	MP4A	X	-22.381	5.5
20	MP4A	Z	0	5.5
21	MP4A	Mx	.011	5.5
22	MP2A	X	-41.938	3.5
23	MP2A	Z	0	3.5
24	MP2A	Mx	-.021	3.5
25	MP3A	X	-51.415	3.5
26	MP3A	Z	0	3.5
27	MP3A	Mx	-.026	3.5
28	M5	X	-127.832	1.5
29	M5	Z	0	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-8.872	6.5
32	MP2A	Z	0	6.5
33	MP2A	Mx	-.009	6.5
34	MP2A	X	-8.872	7.5
35	MP2A	Z	0	7.5
36	MP2A	Mx	-.009	7.5
37	MP2A	X	-8.872	6.5
38	MP2A	Z	0	6.5
39	MP2A	Mx	-.009	6.5
40	MP2A	X	-8.872	7.5
41	MP2A	Z	0	7.5
42	MP2A	Mx	-.009	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
1	MP1A	X	-12.342	4
2	MP1A	Z	-7.126	4
3	MP1A	Mx	.006	4
4	MP2A	X	-54.218	1
5	MP2A	Z	-31.303	1

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
6	MP2A	Mx	.009	1
7	MP2A	X	-54.218	7
8	MP2A	Z	-31.303	7
9	MP2A	Mx	.009	7
10	MP2A	X	-54.218	1
11	MP2A	Z	-31.303	1
12	MP2A	Mx	.045	1
13	MP2A	X	-54.218	7
14	MP2A	Z	-31.303	7
15	MP2A	Mx	.045	7
16	MP4A	X	-28.331	2.5
17	MP4A	Z	-16.357	2.5
18	MP4A	Mx	.014	2.5
19	MP4A	X	-28.331	5.5
20	MP4A	Z	-16.357	5.5
21	MP4A	Mx	.014	5.5
22	MP2A	X	-40.772	3.5
23	MP2A	Z	-23.54	3.5
24	MP2A	Mx	-.02	3.5
25	MP3A	X	-49.721	3.5
26	MP3A	Z	-28.707	3.5
27	MP3A	Mx	-.025	3.5
28	M5	X	-104.07	1.5
29	M5	Z	-60.085	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-9.08	6.5
32	MP2A	Z	-5.242	6.5
33	MP2A	Mx	-.007	6.5
34	MP2A	X	-9.08	7.5
35	MP2A	Z	-5.242	7.5
36	MP2A	Mx	-.007	7.5
37	MP2A	X	-9.08	6.5
38	MP2A	Z	-5.242	6.5
39	MP2A	Mx	-.011	6.5
40	MP2A	X	-9.08	7.5
41	MP2A	Z	-5.242	7.5
42	MP2A	Mx	-.011	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	-14.338	4
2	MP1A	Z	-24.835	4
3	MP1A	Mx	.007	4
4	MP2A	X	-46.929	1
5	MP2A	Z	-81.283	1
6	MP2A	Mx	-.024	1
7	MP2A	X	-46.929	7
8	MP2A	Z	-81.283	7
9	MP2A	Mx	-.024	7
10	MP2A	X	-46.929	1
11	MP2A	Z	-81.283	1
12	MP2A	Mx	.071	1
13	MP2A	X	-46.929	7
14	MP2A	Z	-81.283	7
15	MP2A	Mx	.071	7
16	MP4A	X	-26.69	2.5
17	MP4A	Z	-46.229	2.5
18	MP4A	Mx	.013	2.5
19	MP4A	X	-26.69	5.5
20	MP4A	Z	-46.229	5.5
21	MP4A	Mx	.013	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
22	MP2A	X	-28.681	3.5
23	MP2A	Z	-49.678	3.5
24	MP2A	Mx	-.014	3.5
25	MP3A	X	-34.705	3.5
26	MP3A	Z	-60.111	3.5
27	MP3A	Mx	-.017	3.5
28	M5	X	-52.423	1.5
29	M5	Z	-90.799	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-6.855	6.5
32	MP2A	Z	-11.874	6.5
33	MP2A	Mx	-.003	6.5
34	MP2A	X	-6.855	7.5
35	MP2A	Z	-11.874	7.5
36	MP2A	Mx	-.003	7.5
37	MP2A	X	-6.855	6.5
38	MP2A	Z	-11.874	6.5
39	MP2A	Mx	-.011	6.5
40	MP2A	X	-6.855	7.5
41	MP2A	Z	-11.874	7.5
42	MP2A	Mx	-.011	7.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	0	4
2	MP1A	Z	-9.082	4
3	MP1A	Mx	0	4
4	MP2A	X	0	1
5	MP2A	Z	-32.704	1
6	MP2A	Mx	-.019	1
7	MP2A	X	0	7
8	MP2A	Z	-32.704	7
9	MP2A	Mx	-.019	7
10	MP2A	X	0	1
11	MP2A	Z	-32.704	1
12	MP2A	Mx	.019	1
13	MP2A	X	0	7
14	MP2A	Z	-32.704	7
15	MP2A	Mx	.019	7
16	MP4A	X	0	2.5
17	MP4A	Z	-16.117	2.5
18	MP4A	Mx	0	2.5
19	MP4A	X	0	5.5
20	MP4A	Z	-16.117	5.5
21	MP4A	Mx	0	5.5
22	MP2A	X	0	3.5
23	MP2A	Z	-17.012	3.5
24	MP2A	Mx	0	3.5
25	MP3A	X	0	3.5
26	MP3A	Z	-17.012	3.5
27	MP3A	Mx	0	3.5
28	M5	X	0	1.5
29	M5	Z	-26.977	1.5
30	M5	Mx	0	1.5
31	MP2A	X	0	6.5
32	MP2A	Z	-4.385	6.5
33	MP2A	Mx	.001	6.5
34	MP2A	X	0	7.5
35	MP2A	Z	-4.385	7.5
36	MP2A	Mx	.001	7.5
37	MP2A	X	0	6.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
38	MP2A	Z	-4.385	6.5
39	MP2A	Mx	-.001	6.5
40	MP2A	X	0	7.5
41	MP2A	Z	-4.385	7.5
42	MP2A	Mx	-.001	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	3.79	4
2	MP1A	Z	-6.564	4
3	MP1A	Mx	-.002	4
4	MP2A	X	15.136	1
5	MP2A	Z	-26.216	1
6	MP2A	Mx	-.023	1
7	MP2A	X	15.136	7
8	MP2A	Z	-26.216	7
9	MP2A	Mx	-.023	7
10	MP2A	X	15.136	1
11	MP2A	Z	-26.216	1
12	MP2A	Mx	.008	1
13	MP2A	X	15.136	7
14	MP2A	Z	-26.216	7
15	MP2A	Mx	.008	7
16	MP4A	X	6.932	2.5
17	MP4A	Z	-12.007	2.5
18	MP4A	Mx	-.003	2.5
19	MP4A	X	6.932	5.5
20	MP4A	Z	-12.007	5.5
21	MP4A	Mx	-.003	5.5
22	MP2A	X	7.886	3.5
23	MP2A	Z	-13.659	3.5
24	MP2A	Mx	.004	3.5
25	MP3A	X	7.911	3.5
26	MP3A	Z	-13.702	3.5
27	MP3A	Mx	.004	3.5
28	M5	X	14.384	1.5
29	M5	Z	-24.914	1.5
30	M5	Mx	0	1.5
31	MP2A	X	1.936	6.5
32	MP2A	Z	-3.353	6.5
33	MP2A	Mx	.003	6.5
34	MP2A	X	1.936	7.5
35	MP2A	Z	-3.353	7.5
36	MP2A	Mx	.003	7.5
37	MP2A	X	1.936	6.5
38	MP2A	Z	-3.353	6.5
39	MP2A	Mx	.000818	6.5
40	MP2A	X	1.936	7.5
41	MP2A	Z	-3.353	7.5
42	MP2A	Mx	.000818	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	3.961	4
2	MP1A	Z	-2.287	4
3	MP1A	Mx	-.002	4
4	MP2A	X	22.004	1
5	MP2A	Z	-12.704	1
6	MP2A	Mx	-.018	1
7	MP2A	X	22.004	7

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
8	MP2A	Z	-12.704	7
9	MP2A	Mx	-.018	7
10	MP2A	X	22.004	1
11	MP2A	Z	-12.704	1
12	MP2A	Mx	-.004	1
13	MP2A	X	22.004	7
14	MP2A	Z	-12.704	7
15	MP2A	Mx	-.004	7
16	MP4A	X	8.105	2.5
17	MP4A	Z	-4.68	2.5
18	MP4A	Mx	-.004	2.5
19	MP4A	X	8.105	5.5
20	MP4A	Z	-4.68	5.5
21	MP4A	Mx	-.004	5.5
22	MP2A	X	11.513	3.5
23	MP2A	Z	-6.647	3.5
24	MP2A	Mx	.006	3.5
25	MP3A	X	11.642	3.5
26	MP3A	Z	-6.721	3.5
27	MP3A	Mx	.006	3.5
28	M5	X	28.017	1.5
29	M5	Z	-16.176	1.5
30	M5	Mx	0	1.5
31	MP2A	X	2.465	6.5
32	MP2A	Z	-1.423	6.5
33	MP2A	Mx	.003	6.5
34	MP2A	X	2.465	7.5
35	MP2A	Z	-1.423	7.5
36	MP2A	Mx	.003	7.5
37	MP2A	X	2.465	6.5
38	MP2A	Z	-1.423	6.5
39	MP2A	Mx	.002	6.5
40	MP2A	X	2.465	7.5
41	MP2A	Z	-1.423	7.5
42	MP2A	Mx	.002	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	3.071	4
2	MP1A	Z	0	4
3	MP1A	Mx	-.002	4
4	MP2A	X	22.977	1
5	MP2A	Z	0	1
6	MP2A	Mx	-.011	1
7	MP2A	X	22.977	7
8	MP2A	Z	0	7
9	MP2A	Mx	-.011	7
10	MP2A	X	22.977	1
11	MP2A	Z	0	1
12	MP2A	Mx	-.011	1
13	MP2A	X	22.977	7
14	MP2A	Z	0	7
15	MP2A	Mx	-.011	7
16	MP4A	X	7.107	2.5
17	MP4A	Z	0	2.5
18	MP4A	Mx	-.004	2.5
19	MP4A	X	7.107	5.5
20	MP4A	Z	0	5.5
21	MP4A	Mx	-.004	5.5
22	MP2A	X	12.055	3.5
23	MP2A	Z	0	3.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
24	MP2A	Mx	.006	3.5
25	MP3A	X	12.253	3.5
26	MP3A	Z	0	3.5
27	MP3A	Mx	.006	3.5
28	M5	X	34.143	1.5
29	M5	Z	0	1.5
30	M5	Mx	0	1.5
31	MP2A	X	2.333	6.5
32	MP2A	Z	0	6.5
33	MP2A	Mx	.002	6.5
34	MP2A	X	2.333	7.5
35	MP2A	Z	0	7.5
36	MP2A	Mx	.002	7.5
37	MP2A	X	2.333	6.5
38	MP2A	Z	0	6.5
39	MP2A	Mx	.002	6.5
40	MP2A	X	2.333	7.5
41	MP2A	Z	0	7.5
42	MP2A	Mx	.002	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	3.961	4
2	MP1A	Z	2.287	4
3	MP1A	Mx	-.002	4
4	MP2A	X	22.004	1
5	MP2A	Z	12.704	1
6	MP2A	Mx	-.004	1
7	MP2A	X	22.004	7
8	MP2A	Z	12.704	7
9	MP2A	Mx	-.004	7
10	MP2A	X	22.004	1
11	MP2A	Z	12.704	1
12	MP2A	Mx	-.018	1
13	MP2A	X	22.004	7
14	MP2A	Z	12.704	7
15	MP2A	Mx	-.018	7
16	MP4A	X	8.105	2.5
17	MP4A	Z	4.68	2.5
18	MP4A	Mx	-.004	2.5
19	MP4A	X	8.105	5.5
20	MP4A	Z	4.68	5.5
21	MP4A	Mx	-.004	5.5
22	MP2A	X	11.513	3.5
23	MP2A	Z	6.647	3.5
24	MP2A	Mx	.006	3.5
25	MP3A	X	11.642	3.5
26	MP3A	Z	6.721	3.5
27	MP3A	Mx	.006	3.5
28	M5	X	28.017	1.5
29	M5	Z	16.176	1.5
30	M5	Mx	0	1.5
31	MP2A	X	2.465	6.5
32	MP2A	Z	1.423	6.5
33	MP2A	Mx	.002	6.5
34	MP2A	X	2.465	7.5
35	MP2A	Z	1.423	7.5
36	MP2A	Mx	.002	7.5
37	MP2A	X	2.465	6.5
38	MP2A	Z	1.423	6.5
39	MP2A	Mx	.003	6.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
40	MP2A	X	2.465	7.5
41	MP2A	Z	1.423	7.5
42	MP2A	Mx	.003	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	3.79	4
2	MP1A	Z	6.564	4
3	MP1A	Mx	-.002	4
4	MP2A	X	15.136	1
5	MP2A	Z	26.216	1
6	MP2A	Mx	.008	1
7	MP2A	X	15.136	7
8	MP2A	Z	26.216	7
9	MP2A	Mx	.008	7
10	MP2A	X	15.136	1
11	MP2A	Z	26.216	1
12	MP2A	Mx	-.023	1
13	MP2A	X	15.136	7
14	MP2A	Z	26.216	7
15	MP2A	Mx	-.023	7
16	MP4A	X	6.932	2.5
17	MP4A	Z	12.007	2.5
18	MP4A	Mx	-.003	2.5
19	MP4A	X	6.932	5.5
20	MP4A	Z	12.007	5.5
21	MP4A	Mx	-.003	5.5
22	MP2A	X	7.886	3.5
23	MP2A	Z	13.659	3.5
24	MP2A	Mx	.004	3.5
25	MP3A	X	7.911	3.5
26	MP3A	Z	13.702	3.5
27	MP3A	Mx	.004	3.5
28	M5	X	14.384	1.5
29	M5	Z	24.914	1.5
30	M5	Mx	0	1.5
31	MP2A	X	1.936	6.5
32	MP2A	Z	3.353	6.5
33	MP2A	Mx	.000818	6.5
34	MP2A	X	1.936	7.5
35	MP2A	Z	3.353	7.5
36	MP2A	Mx	.000818	7.5
37	MP2A	X	1.936	6.5
38	MP2A	Z	3.353	6.5
39	MP2A	Mx	.003	6.5
40	MP2A	X	1.936	7.5
41	MP2A	Z	3.353	7.5
42	MP2A	Mx	.003	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	0	4
2	MP1A	Z	9.082	4
3	MP1A	Mx	0	4
4	MP2A	X	0	1
5	MP2A	Z	32.704	1
6	MP2A	Mx	.019	1
7	MP2A	X	0	7
8	MP2A	Z	32.704	7
9	MP2A	Mx	.019	7

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
10	MP2A	X	0	1
11	MP2A	Z	32.704	1
12	MP2A	Mx	-.019	1
13	MP2A	X	0	7
14	MP2A	Z	32.704	7
15	MP2A	Mx	-.019	7
16	MP4A	X	0	2.5
17	MP4A	Z	16.117	2.5
18	MP4A	Mx	0	2.5
19	MP4A	X	0	5.5
20	MP4A	Z	16.117	5.5
21	MP4A	Mx	0	5.5
22	MP2A	X	0	3.5
23	MP2A	Z	17.012	3.5
24	MP2A	Mx	0	3.5
25	MP3A	X	0	3.5
26	MP3A	Z	17.012	3.5
27	MP3A	Mx	0	3.5
28	M5	X	0	1.5
29	M5	Z	26.977	1.5
30	M5	Mx	0	1.5
31	MP2A	X	0	6.5
32	MP2A	Z	4.385	6.5
33	MP2A	Mx	-.001	6.5
34	MP2A	X	0	7.5
35	MP2A	Z	4.385	7.5
36	MP2A	Mx	-.001	7.5
37	MP2A	X	0	6.5
38	MP2A	Z	4.385	6.5
39	MP2A	Mx	.001	6.5
40	MP2A	X	0	7.5
41	MP2A	Z	4.385	7.5
42	MP2A	Mx	.001	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	-3.79	4
2	MP1A	Z	6.564	4
3	MP1A	Mx	.002	4
4	MP2A	X	-15.136	1
5	MP2A	Z	26.216	1
6	MP2A	Mx	.023	1
7	MP2A	X	-15.136	7
8	MP2A	Z	26.216	7
9	MP2A	Mx	.023	7
10	MP2A	X	-15.136	1
11	MP2A	Z	26.216	1
12	MP2A	Mx	-.008	1
13	MP2A	X	-15.136	7
14	MP2A	Z	26.216	7
15	MP2A	Mx	-.008	7
16	MP4A	X	-6.932	2.5
17	MP4A	Z	12.007	2.5
18	MP4A	Mx	.003	2.5
19	MP4A	X	-6.932	5.5
20	MP4A	Z	12.007	5.5
21	MP4A	Mx	.003	5.5
22	MP2A	X	-7.886	3.5
23	MP2A	Z	13.659	3.5
24	MP2A	Mx	-.004	3.5
25	MP3A	X	-7.911	3.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
26	MP3A	Z	13.702	3.5
27	MP3A	Mx	-.004	3.5
28	M5	X	-14.384	1.5
29	M5	Z	24.914	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-1.936	6.5
32	MP2A	Z	3.353	6.5
33	MP2A	Mx	-.003	6.5
34	MP2A	X	-1.936	7.5
35	MP2A	Z	3.353	7.5
36	MP2A	Mx	-.003	7.5
37	MP2A	X	-1.936	6.5
38	MP2A	Z	3.353	6.5
39	MP2A	Mx	-.000818	6.5
40	MP2A	X	-1.936	7.5
41	MP2A	Z	3.353	7.5
42	MP2A	Mx	-.000818	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	-3.961	4
2	MP1A	Z	2.287	4
3	MP1A	Mx	.002	4
4	MP2A	X	-22.004	1
5	MP2A	Z	12.704	1
6	MP2A	Mx	.018	1
7	MP2A	X	-22.004	7
8	MP2A	Z	12.704	7
9	MP2A	Mx	.018	7
10	MP2A	X	-22.004	1
11	MP2A	Z	12.704	1
12	MP2A	Mx	.004	1
13	MP2A	X	-22.004	7
14	MP2A	Z	12.704	7
15	MP2A	Mx	.004	7
16	MP4A	X	-8.105	2.5
17	MP4A	Z	4.68	2.5
18	MP4A	Mx	.004	2.5
19	MP4A	X	-8.105	5.5
20	MP4A	Z	4.68	5.5
21	MP4A	Mx	.004	5.5
22	MP2A	X	-11.513	3.5
23	MP2A	Z	6.647	3.5
24	MP2A	Mx	-.006	3.5
25	MP3A	X	-11.642	3.5
26	MP3A	Z	6.721	3.5
27	MP3A	Mx	-.006	3.5
28	M5	X	-28.017	1.5
29	M5	Z	16.176	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-2.465	6.5
32	MP2A	Z	1.423	6.5
33	MP2A	Mx	-.003	6.5
34	MP2A	X	-2.465	7.5
35	MP2A	Z	1.423	7.5
36	MP2A	Mx	-.003	7.5
37	MP2A	X	-2.465	6.5
38	MP2A	Z	1.423	6.5
39	MP2A	Mx	-.002	6.5
40	MP2A	X	-2.465	7.5
41	MP2A	Z	1.423	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
42	MP2A	Mx	-.002	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
1	MP1A	X	-3.071	4
2	MP1A	Z	0	4
3	MP1A	Mx	.002	4
4	MP2A	X	-22.977	1
5	MP2A	Z	0	1
6	MP2A	Mx	.011	1
7	MP2A	X	-22.977	7
8	MP2A	Z	0	7
9	MP2A	Mx	.011	7
10	MP2A	X	-22.977	1
11	MP2A	Z	0	1
12	MP2A	Mx	.011	1
13	MP2A	X	-22.977	7
14	MP2A	Z	0	7
15	MP2A	Mx	.011	7
16	MP4A	X	-7.107	2.5
17	MP4A	Z	0	2.5
18	MP4A	Mx	.004	2.5
19	MP4A	X	-7.107	5.5
20	MP4A	Z	0	5.5
21	MP4A	Mx	.004	5.5
22	MP2A	X	-12.055	3.5
23	MP2A	Z	0	3.5
24	MP2A	Mx	-.006	3.5
25	MP3A	X	-12.253	3.5
26	MP3A	Z	0	3.5
27	MP3A	Mx	-.006	3.5
28	M5	X	-34.143	1.5
29	M5	Z	0	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-2.333	6.5
32	MP2A	Z	0	6.5
33	MP2A	Mx	-.002	6.5
34	MP2A	X	-2.333	7.5
35	MP2A	Z	0	7.5
36	MP2A	Mx	-.002	7.5
37	MP2A	X	-2.333	6.5
38	MP2A	Z	0	6.5
39	MP2A	Mx	-.002	6.5
40	MP2A	X	-2.333	7.5
41	MP2A	Z	0	7.5
42	MP2A	Mx	-.002	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
1	MP1A	X	-3.961	4
2	MP1A	Z	-2.287	4
3	MP1A	Mx	.002	4
4	MP2A	X	-22.004	1
5	MP2A	Z	-12.704	1
6	MP2A	Mx	.004	1
7	MP2A	X	-22.004	7
8	MP2A	Z	-12.704	7
9	MP2A	Mx	.004	7
10	MP2A	X	-22.004	1
11	MP2A	Z	-12.704	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
12	MP2A	Mx	.018	1
13	MP2A	X	-22.004	7
14	MP2A	Z	-12.704	7
15	MP2A	Mx	.018	7
16	MP4A	X	-8.105	2.5
17	MP4A	Z	-4.68	2.5
18	MP4A	Mx	.004	2.5
19	MP4A	X	-8.105	5.5
20	MP4A	Z	-4.68	5.5
21	MP4A	Mx	.004	5.5
22	MP2A	X	-11.513	3.5
23	MP2A	Z	-6.647	3.5
24	MP2A	Mx	-.006	3.5
25	MP3A	X	-11.642	3.5
26	MP3A	Z	-6.721	3.5
27	MP3A	Mx	-.006	3.5
28	M5	X	-28.017	1.5
29	M5	Z	-16.176	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-2.465	6.5
32	MP2A	Z	-1.423	6.5
33	MP2A	Mx	-.002	6.5
34	MP2A	X	-2.465	7.5
35	MP2A	Z	-1.423	7.5
36	MP2A	Mx	-.002	7.5
37	MP2A	X	-2.465	6.5
38	MP2A	Z	-1.423	6.5
39	MP2A	Mx	-.003	6.5
40	MP2A	X	-2.465	7.5
41	MP2A	Z	-1.423	7.5
42	MP2A	Mx	-.003	7.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-3.79	4
2	MP1A	Z	-6.564	4
3	MP1A	Mx	.002	4
4	MP2A	X	-15.136	1
5	MP2A	Z	-26.216	1
6	MP2A	Mx	-.008	1
7	MP2A	X	-15.136	7
8	MP2A	Z	-26.216	7
9	MP2A	Mx	-.008	7
10	MP2A	X	-15.136	1
11	MP2A	Z	-26.216	1
12	MP2A	Mx	.023	1
13	MP2A	X	-15.136	7
14	MP2A	Z	-26.216	7
15	MP2A	Mx	.023	7
16	MP4A	X	-6.932	2.5
17	MP4A	Z	-12.007	2.5
18	MP4A	Mx	.003	2.5
19	MP4A	X	-6.932	5.5
20	MP4A	Z	-12.007	5.5
21	MP4A	Mx	.003	5.5
22	MP2A	X	-7.886	3.5
23	MP2A	Z	-13.659	3.5
24	MP2A	Mx	-.004	3.5
25	MP3A	X	-7.911	3.5
26	MP3A	Z	-13.702	3.5
27	MP3A	Mx	-.004	3.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
28	M5	X	-14.384	1.5
29	M5	Z	-24.914	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-1.936	6.5
32	MP2A	Z	-3.353	6.5
33	MP2A	Mx	-.000818	6.5
34	MP2A	X	-1.936	7.5
35	MP2A	Z	-3.353	7.5
36	MP2A	Mx	-.000818	7.5
37	MP2A	X	-1.936	6.5
38	MP2A	Z	-3.353	6.5
39	MP2A	Mx	-.003	6.5
40	MP2A	X	-1.936	7.5
41	MP2A	Z	-3.353	7.5
42	MP2A	Mx	-.003	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	0	4
2	MP1A	Z	-2.243	4
3	MP1A	Mx	0	4
4	MP2A	X	0	1
5	MP2A	Z	-6.843	1
6	MP2A	Mx	-.004	1
7	MP2A	X	0	7
8	MP2A	Z	-6.843	7
9	MP2A	Mx	-.004	7
10	MP2A	X	0	1
11	MP2A	Z	-6.843	1
12	MP2A	Mx	.004	1
13	MP2A	X	0	7
14	MP2A	Z	-6.843	7
15	MP2A	Mx	.004	7
16	MP4A	X	0	2.5
17	MP4A	Z	-3.982	2.5
18	MP4A	Mx	0	2.5
19	MP4A	X	0	5.5
20	MP4A	Z	-3.982	5.5
21	MP4A	Mx	0	5.5
22	MP2A	X	0	3.5
23	MP2A	Z	-3.907	3.5
24	MP2A	Mx	0	3.5
25	MP3A	X	0	3.5
26	MP3A	Z	-4.713	3.5
27	MP3A	Mx	0	3.5
28	M5	X	0	1.5
29	M5	Z	-6.074	1.5
30	M5	Mx	0	1.5
31	MP2A	X	0	6.5
32	MP2A	Z	-.958	6.5
33	MP2A	Mx	.000319	6.5
34	MP2A	X	0	7.5
35	MP2A	Z	-.958	7.5
36	MP2A	Mx	.000319	7.5
37	MP2A	X	0	6.5
38	MP2A	Z	-.958	6.5
39	MP2A	Mx	-.000319	6.5
40	MP2A	X	0	7.5
41	MP2A	Z	-.958	7.5
42	MP2A	Mx	-.000319	7.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	.896	4
2	MP1A	Z	-1.552	4
3	MP1A	Mx	-.000448	4
4	MP2A	X	2.933	1
5	MP2A	Z	-5.08	1
6	MP2A	Mx	-.004	1
7	MP2A	X	2.933	7
8	MP2A	Z	-5.08	7
9	MP2A	Mx	-.004	7
10	MP2A	X	2.933	1
11	MP2A	Z	-5.08	1
12	MP2A	Mx	.001	1
13	MP2A	X	2.933	7
14	MP2A	Z	-5.08	7
15	MP2A	Mx	.001	7
16	MP4A	X	1.668	2.5
17	MP4A	Z	-2.889	2.5
18	MP4A	Mx	-.000834	2.5
19	MP4A	X	1.668	5.5
20	MP4A	Z	-2.889	5.5
21	MP4A	Mx	-.000834	5.5
22	MP2A	X	1.793	3.5
23	MP2A	Z	-3.105	3.5
24	MP2A	Mx	.000896	3.5
25	MP3A	X	2.169	3.5
26	MP3A	Z	-3.757	3.5
27	MP3A	Mx	.001	3.5
28	M5	X	3.276	1.5
29	M5	Z	-5.675	1.5
30	M5	Mx	0	1.5
31	MP2A	X	.428	6.5
32	MP2A	Z	-.742	6.5
33	MP2A	Mx	.000675	6.5
34	MP2A	X	.428	7.5
35	MP2A	Z	-.742	7.5
36	MP2A	Mx	.000675	7.5
37	MP2A	X	.428	6.5
38	MP2A	Z	-.742	6.5
39	MP2A	Mx	.000181	6.5
40	MP2A	X	.428	7.5
41	MP2A	Z	-.742	7.5
42	MP2A	Mx	.000181	7.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	.771	4
2	MP1A	Z	-.445	4
3	MP1A	Mx	-.000386	4
4	MP2A	X	3.389	1
5	MP2A	Z	-1.956	1
6	MP2A	Mx	-.003	1
7	MP2A	X	3.389	7
8	MP2A	Z	-1.956	7
9	MP2A	Mx	-.003	7
10	MP2A	X	3.389	1
11	MP2A	Z	-1.956	1
12	MP2A	Mx	-.000554	1
13	MP2A	X	3.389	7
14	MP2A	Z	-1.956	7
15	MP2A	Mx	-.000554	7
16	MP4A	X	1.771	2.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
17	MP4A	Z	-1.022	2.5
18	MP4A	Mx	-.000886	2.5
19	MP4A	X	1.771	5.5
20	MP4A	Z	-1.022	5.5
21	MP4A	Mx	-.000886	5.5
22	MP2A	X	2.548	3.5
23	MP2A	Z	-1.471	3.5
24	MP2A	Mx	.001	3.5
25	MP3A	X	3.108	3.5
26	MP3A	Z	-1.794	3.5
27	MP3A	Mx	.002	3.5
28	M5	X	6.504	1.5
29	M5	Z	-3.755	1.5
30	M5	Mx	0	1.5
31	MP2A	X	.567	6.5
32	MP2A	Z	-.328	6.5
33	MP2A	Mx	.000676	6.5
34	MP2A	X	.567	7.5
35	MP2A	Z	-.328	7.5
36	MP2A	Mx	.000676	7.5
37	MP2A	X	.567	6.5
38	MP2A	Z	-.328	6.5
39	MP2A	Mx	.000458	6.5
40	MP2A	X	.567	7.5
41	MP2A	Z	-.328	7.5
42	MP2A	Mx	.000458	7.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	.44	4
2	MP1A	Z	0	4
3	MP1A	Mx	-.00022	4
4	MP2A	X	2.936	1
5	MP2A	Z	0	1
6	MP2A	Mx	-.001	1
7	MP2A	X	2.936	7
8	MP2A	Z	0	7
9	MP2A	Mx	-.001	7
10	MP2A	X	2.936	1
11	MP2A	Z	0	1
12	MP2A	Mx	-.001	1
13	MP2A	X	2.936	7
14	MP2A	Z	0	7
15	MP2A	Mx	-.001	7
16	MP4A	X	1.399	2.5
17	MP4A	Z	0	2.5
18	MP4A	Mx	-.0007	2.5
19	MP4A	X	1.399	5.5
20	MP4A	Z	0	5.5
21	MP4A	Mx	-.0007	5.5
22	MP2A	X	2.621	3.5
23	MP2A	Z	0	3.5
24	MP2A	Mx	.001	3.5
25	MP3A	X	3.213	3.5
26	MP3A	Z	0	3.5
27	MP3A	Mx	.002	3.5
28	M5	X	7.989	1.5
29	M5	Z	0	1.5
30	M5	Mx	0	1.5
31	MP2A	X	.554	6.5
32	MP2A	Z	0	6.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
33	MP2A	Mx	.000554	6.5
34	MP2A	X	.554	7.5
35	MP2A	Z	0	7.5
36	MP2A	Mx	.000554	7.5
37	MP2A	X	.554	6.5
38	MP2A	Z	0	6.5
39	MP2A	Mx	.000554	6.5
40	MP2A	X	.554	7.5
41	MP2A	Z	0	7.5
42	MP2A	Mx	.000554	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	.771	4
2	MP1A	Z	.445	4
3	MP1A	Mx	-.000386	4
4	MP2A	X	3.389	1
5	MP2A	Z	1.956	1
6	MP2A	Mx	-.000554	1
7	MP2A	X	3.389	7
8	MP2A	Z	1.956	7
9	MP2A	Mx	-.000554	7
10	MP2A	X	3.389	1
11	MP2A	Z	1.956	1
12	MP2A	Mx	-.003	1
13	MP2A	X	3.389	7
14	MP2A	Z	1.956	7
15	MP2A	Mx	-.003	7
16	MP4A	X	1.771	2.5
17	MP4A	Z	1.022	2.5
18	MP4A	Mx	-.000886	2.5
19	MP4A	X	1.771	5.5
20	MP4A	Z	1.022	5.5
21	MP4A	Mx	-.000886	5.5
22	MP2A	X	2.548	3.5
23	MP2A	Z	1.471	3.5
24	MP2A	Mx	.001	3.5
25	MP3A	X	3.108	3.5
26	MP3A	Z	1.794	3.5
27	MP3A	Mx	.002	3.5
28	M5	X	6.504	1.5
29	M5	Z	3.755	1.5
30	M5	Mx	0	1.5
31	MP2A	X	.567	6.5
32	MP2A	Z	.328	6.5
33	MP2A	Mx	.000458	6.5
34	MP2A	X	.567	7.5
35	MP2A	Z	.328	7.5
36	MP2A	Mx	.000458	7.5
37	MP2A	X	.567	6.5
38	MP2A	Z	.328	6.5
39	MP2A	Mx	.000676	6.5
40	MP2A	X	.567	7.5
41	MP2A	Z	.328	7.5
42	MP2A	Mx	.000676	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	.896	4
2	MP1A	Z	1.552	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
3	MP1A	Mx	-.000448	4
4	MP2A	X	2.933	1
5	MP2A	Z	5.08	1
6	MP2A	Mx	.001	1
7	MP2A	X	2.933	7
8	MP2A	Z	5.08	7
9	MP2A	Mx	.001	7
10	MP2A	X	2.933	1
11	MP2A	Z	5.08	1
12	MP2A	Mx	-.004	1
13	MP2A	X	2.933	7
14	MP2A	Z	5.08	7
15	MP2A	Mx	-.004	7
16	MP4A	X	1.668	2.5
17	MP4A	Z	2.889	2.5
18	MP4A	Mx	-.000834	2.5
19	MP4A	X	1.668	5.5
20	MP4A	Z	2.889	5.5
21	MP4A	Mx	-.000834	5.5
22	MP2A	X	1.793	3.5
23	MP2A	Z	3.105	3.5
24	MP2A	Mx	.000896	3.5
25	MP3A	X	2.169	3.5
26	MP3A	Z	3.757	3.5
27	MP3A	Mx	.001	3.5
28	M5	X	3.276	1.5
29	M5	Z	5.675	1.5
30	M5	Mx	0	1.5
31	MP2A	X	.428	6.5
32	MP2A	Z	.742	6.5
33	MP2A	Mx	.000181	6.5
34	MP2A	X	.428	7.5
35	MP2A	Z	.742	7.5
36	MP2A	Mx	.000181	7.5
37	MP2A	X	.428	6.5
38	MP2A	Z	.742	6.5
39	MP2A	Mx	.000675	6.5
40	MP2A	X	.428	7.5
41	MP2A	Z	.742	7.5
42	MP2A	Mx	.000675	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP1A	X	0	4
2	MP1A	Z	2.243	4
3	MP1A	Mx	0	4
4	MP2A	X	0	1
5	MP2A	Z	6.843	1
6	MP2A	Mx	.004	1
7	MP2A	X	0	7
8	MP2A	Z	6.843	7
9	MP2A	Mx	.004	7
10	MP2A	X	0	1
11	MP2A	Z	6.843	1
12	MP2A	Mx	-.004	1
13	MP2A	X	0	7
14	MP2A	Z	6.843	7
15	MP2A	Mx	-.004	7
16	MP4A	X	0	2.5
17	MP4A	Z	3.982	2.5
18	MP4A	Mx	0	2.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
19	MP4A	X	0	5.5
20	MP4A	Z	3.982	5.5
21	MP4A	Mx	0	5.5
22	MP2A	X	0	3.5
23	MP2A	Z	3.907	3.5
24	MP2A	Mx	0	3.5
25	MP3A	X	0	3.5
26	MP3A	Z	4.713	3.5
27	MP3A	Mx	0	3.5
28	M5	X	0	1.5
29	M5	Z	6.074	1.5
30	M5	Mx	0	1.5
31	MP2A	X	0	6.5
32	MP2A	Z	.958	6.5
33	MP2A	Mx	-.000319	6.5
34	MP2A	X	0	7.5
35	MP2A	Z	.958	7.5
36	MP2A	Mx	-.000319	7.5
37	MP2A	X	0	6.5
38	MP2A	Z	.958	6.5
39	MP2A	Mx	.000319	6.5
40	MP2A	X	0	7.5
41	MP2A	Z	.958	7.5
42	MP2A	Mx	.000319	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	-.896	4
2	MP1A	Z	1.552	4
3	MP1A	Mx	.000448	4
4	MP2A	X	-2.933	1
5	MP2A	Z	5.08	1
6	MP2A	Mx	.004	1
7	MP2A	X	-2.933	7
8	MP2A	Z	5.08	7
9	MP2A	Mx	.004	7
10	MP2A	X	-2.933	1
11	MP2A	Z	5.08	1
12	MP2A	Mx	-.001	1
13	MP2A	X	-2.933	7
14	MP2A	Z	5.08	7
15	MP2A	Mx	-.001	7
16	MP4A	X	-1.668	2.5
17	MP4A	Z	2.889	2.5
18	MP4A	Mx	.000834	2.5
19	MP4A	X	-1.668	5.5
20	MP4A	Z	2.889	5.5
21	MP4A	Mx	.000834	5.5
22	MP2A	X	-1.793	3.5
23	MP2A	Z	3.105	3.5
24	MP2A	Mx	-.000896	3.5
25	MP3A	X	-2.169	3.5
26	MP3A	Z	3.757	3.5
27	MP3A	Mx	-.001	3.5
28	M5	X	-3.276	1.5
29	M5	Z	5.675	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-.428	6.5
32	MP2A	Z	.742	6.5
33	MP2A	Mx	-.000675	6.5
34	MP2A	X	-.428	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
35	MP2A	Z	.742	7.5
36	MP2A	Mx	-.000675	7.5
37	MP2A	X	-.428	6.5
38	MP2A	Z	.742	6.5
39	MP2A	Mx	-.000181	6.5
40	MP2A	X	-.428	7.5
41	MP2A	Z	.742	7.5
42	MP2A	Mx	-.000181	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	-.771	4
2	MP1A	Z	.445	4
3	MP1A	Mx	.000386	4
4	MP2A	X	-3.389	1
5	MP2A	Z	1.956	1
6	MP2A	Mx	.003	1
7	MP2A	X	-3.389	7
8	MP2A	Z	1.956	7
9	MP2A	Mx	.003	7
10	MP2A	X	-3.389	1
11	MP2A	Z	1.956	1
12	MP2A	Mx	.000554	1
13	MP2A	X	-3.389	7
14	MP2A	Z	1.956	7
15	MP2A	Mx	.000554	7
16	MP4A	X	-1.771	2.5
17	MP4A	Z	1.022	2.5
18	MP4A	Mx	.000886	2.5
19	MP4A	X	-1.771	5.5
20	MP4A	Z	1.022	5.5
21	MP4A	Mx	.000886	5.5
22	MP2A	X	-2.548	3.5
23	MP2A	Z	1.471	3.5
24	MP2A	Mx	-.001	3.5
25	MP3A	X	-3.108	3.5
26	MP3A	Z	1.794	3.5
27	MP3A	Mx	-.002	3.5
28	M5	X	-6.504	1.5
29	M5	Z	3.755	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-.567	6.5
32	MP2A	Z	.328	6.5
33	MP2A	Mx	-.000676	6.5
34	MP2A	X	-.567	7.5
35	MP2A	Z	.328	7.5
36	MP2A	Mx	-.000676	7.5
37	MP2A	X	-.567	6.5
38	MP2A	Z	.328	6.5
39	MP2A	Mx	-.000458	6.5
40	MP2A	X	-.567	7.5
41	MP2A	Z	.328	7.5
42	MP2A	Mx	-.000458	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP1A	X	-.44	4
2	MP1A	Z	0	4
3	MP1A	Mx	.00022	4
4	MP2A	X	-2.936	1

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
5	MP2A	Z	0	1
6	MP2A	Mx	.001	1
7	MP2A	X	-2.936	7
8	MP2A	Z	0	7
9	MP2A	Mx	.001	7
10	MP2A	X	-2.936	1
11	MP2A	Z	0	1
12	MP2A	Mx	.001	1
13	MP2A	X	-2.936	7
14	MP2A	Z	0	7
15	MP2A	Mx	.001	7
16	MP4A	X	-1.399	2.5
17	MP4A	Z	0	2.5
18	MP4A	Mx	.0007	2.5
19	MP4A	X	-1.399	5.5
20	MP4A	Z	0	5.5
21	MP4A	Mx	.0007	5.5
22	MP2A	X	-2.621	3.5
23	MP2A	Z	0	3.5
24	MP2A	Mx	-.001	3.5
25	MP3A	X	-3.213	3.5
26	MP3A	Z	0	3.5
27	MP3A	Mx	-.002	3.5
28	M5	X	-7.989	1.5
29	M5	Z	0	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-.554	6.5
32	MP2A	Z	0	6.5
33	MP2A	Mx	-.000554	6.5
34	MP2A	X	-.554	7.5
35	MP2A	Z	0	7.5
36	MP2A	Mx	-.000554	7.5
37	MP2A	X	-.554	6.5
38	MP2A	Z	0	6.5
39	MP2A	Mx	-.000554	6.5
40	MP2A	X	-.554	7.5
41	MP2A	Z	0	7.5
42	MP2A	Mx	-.000554	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
1	MP1A	X	-.771	4
2	MP1A	Z	-.445	4
3	MP1A	Mx	.000386	4
4	MP2A	X	-3.389	1
5	MP2A	Z	-1.956	1
6	MP2A	Mx	.000554	1
7	MP2A	X	-3.389	7
8	MP2A	Z	-1.956	7
9	MP2A	Mx	.000554	7
10	MP2A	X	-3.389	1
11	MP2A	Z	-1.956	1
12	MP2A	Mx	.003	1
13	MP2A	X	-3.389	7
14	MP2A	Z	-1.956	7
15	MP2A	Mx	.003	7
16	MP4A	X	-1.771	2.5
17	MP4A	Z	-1.022	2.5
18	MP4A	Mx	.000886	2.5
19	MP4A	X	-1.771	5.5
20	MP4A	Z	-1.022	5.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
21	MP4A	Mx	.000886	5.5
22	MP2A	X	-2.548	3.5
23	MP2A	Z	-1.471	3.5
24	MP2A	Mx	-.001	3.5
25	MP3A	X	-3.108	3.5
26	MP3A	Z	-1.794	3.5
27	MP3A	Mx	-.002	3.5
28	M5	X	-6.504	1.5
29	M5	Z	-3.755	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-.567	6.5
32	MP2A	Z	-.328	6.5
33	MP2A	Mx	-.000458	6.5
34	MP2A	X	-.567	7.5
35	MP2A	Z	-.328	7.5
36	MP2A	Mx	-.000458	7.5
37	MP2A	X	-.567	6.5
38	MP2A	Z	-.328	6.5
39	MP2A	Mx	-.000676	6.5
40	MP2A	X	-.567	7.5
41	MP2A	Z	-.328	7.5
42	MP2A	Mx	-.000676	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
1	MP1A	X	-.896	4
2	MP1A	Z	-1.552	4
3	MP1A	Mx	.000448	4
4	MP2A	X	-2.933	1
5	MP2A	Z	-5.08	1
6	MP2A	Mx	-.001	1
7	MP2A	X	-2.933	7
8	MP2A	Z	-5.08	7
9	MP2A	Mx	-.001	7
10	MP2A	X	-2.933	1
11	MP2A	Z	-5.08	1
12	MP2A	Mx	.004	1
13	MP2A	X	-2.933	7
14	MP2A	Z	-5.08	7
15	MP2A	Mx	.004	7
16	MP4A	X	-1.668	2.5
17	MP4A	Z	-2.889	2.5
18	MP4A	Mx	.000834	2.5
19	MP4A	X	-1.668	5.5
20	MP4A	Z	-2.889	5.5
21	MP4A	Mx	.000834	5.5
22	MP2A	X	-1.793	3.5
23	MP2A	Z	-3.105	3.5
24	MP2A	Mx	-.000896	3.5
25	MP3A	X	-2.169	3.5
26	MP3A	Z	-3.757	3.5
27	MP3A	Mx	-.001	3.5
28	M5	X	-3.276	1.5
29	M5	Z	-5.675	1.5
30	M5	Mx	0	1.5
31	MP2A	X	-.428	6.5
32	MP2A	Z	-.742	6.5
33	MP2A	Mx	-.000181	6.5
34	MP2A	X	-.428	7.5
35	MP2A	Z	-.742	7.5
36	MP2A	Mx	-.000181	7.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
37	MP2A	X	-.428	6.5
38	MP2A	Z	-.742	6.5
39	MP2A	Mx	-.000675	6.5
40	MP2A	X	-.428	7.5
41	MP2A	Z	-.742	7.5
42	MP2A	Mx	-.000675	7.5

Member Point Loads (BLC 77 : Lm1)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	M30	Y	-500	0

Member Point Loads (BLC 78 : Lm2)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	M34	Y	-500	0

Member Point Loads (BLC 79 : Lv1)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	M1	Y	-250	0

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	MP1A	Y	-.175	4
2	MP1A	My	-8.7e-5	4
3	MP1A	Mz	0	4
4	MP2A	Y	-.867	1
5	MP2A	My	-.000434	1
6	MP2A	Mz	.000506	1
7	MP2A	Y	-.867	7
8	MP2A	My	-.000434	7
9	MP2A	Mz	.000506	7
10	MP2A	Y	-.867	1
11	MP2A	My	-.000434	1
12	MP2A	Mz	-.000506	1
13	MP2A	Y	-.867	7
14	MP2A	My	-.000434	7
15	MP2A	Mz	-.000506	7
16	MP4A	Y	-1.137	2.5
17	MP4A	My	-.000568	2.5
18	MP4A	Mz	0	2.5
19	MP4A	Y	-1.137	5.5
20	MP4A	My	-.000568	5.5
21	MP4A	Mz	0	5.5
22	MP2A	Y	-2.964	3.5
23	MP2A	My	.001	3.5
24	MP2A	Mz	0	3.5
25	MP3A	Y	-3.139	3.5
26	MP3A	My	.002	3.5
27	MP3A	Mz	0	3.5
28	M5	Y	-1.27	1.5
29	M5	My	0	1.5
30	M5	Mz	0	1.5
31	MP2A	Y	-.306	6.5
32	MP2A	My	.000306	6.5
33	MP2A	Mz	-.000102	6.5
34	MP2A	Y	-.306	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
35	MP2A	My	.000306	7.5
36	MP2A	Mz	-.000102	7.5
37	MP2A	Y	-.306	6.5
38	MP2A	My	.000306	6.5
39	MP2A	Mz	.000102	6.5
40	MP2A	Y	-.306	7.5
41	MP2A	My	.000306	7.5
42	MP2A	Mz	.000102	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
1	MP1A	Z	-.436	4
2	MP1A	Mx	0	4
3	MP2A	Z	-2.168	1
4	MP2A	Mx	-.001	1
5	MP2A	Z	-2.168	7
6	MP2A	Mx	-.001	7
7	MP2A	Z	-2.168	1
8	MP2A	Mx	.001	1
9	MP2A	Z	-2.168	7
10	MP2A	Mx	.001	7
11	MP4A	Z	-2.842	2.5
12	MP4A	Mx	0	2.5
13	MP4A	Z	-2.842	5.5
14	MP4A	Mx	0	5.5
15	MP2A	Z	-7.41	3.5
16	MP2A	Mx	0	3.5
17	MP3A	Z	-7.847	3.5
18	MP3A	Mx	0	3.5
19	M5	Z	-3.174	1.5
20	M5	Mx	0	1.5
21	MP2A	Z	-.764	6.5
22	MP2A	Mx	.000255	6.5
23	MP2A	Z	-.764	7.5
24	MP2A	Mx	.000255	7.5
25	MP2A	Z	-.764	6.5
26	MP2A	Mx	-.000255	6.5
27	MP2A	Z	-.764	7.5
28	MP2A	Mx	-.000255	7.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft, %]
1	MP1A	X	.436	4
2	MP1A	Mx	-.000218	4
3	MP2A	X	2.168	1
4	MP2A	Mx	-.001	1
5	MP2A	X	2.168	7
6	MP2A	Mx	-.001	7
7	MP2A	X	2.168	1
8	MP2A	Mx	-.001	1
9	MP2A	X	2.168	7
10	MP2A	Mx	-.001	7
11	MP4A	X	2.842	2.5
12	MP4A	Mx	-.001	2.5
13	MP4A	X	2.842	5.5
14	MP4A	Mx	-.001	5.5
15	MP2A	X	7.41	3.5
16	MP2A	Mx	.004	3.5
17	MP3A	X	7.847	3.5
18	MP3A	Mx	.004	3.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
19	M5	X	3.174	1.5
20	M5	Mx	0	1.5
21	MP2A	X	.764	6.5
22	MP2A	Mx	.000764	6.5
23	MP2A	X	.764	7.5
24	MP2A	Mx	.000764	7.5
25	MP2A	X	.764	6.5
26	MP2A	Mx	.000764	6.5
27	MP2A	X	.764	7.5
28	MP2A	Mx	.000764	7.5

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/ft, lb*s^2*ft)]
No Data to Print ...			

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
No Data to Print ...						

Envelope Joint Reactions

	Joint	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N2	max 2010.912	33	29.455	2	1020.322	2	0	75	0	75	0	75
2		min -916.267	3	-2237.395	21	-3235.394	20	0	1	0	1	0	1
3	N1	max 610.101	47	4797.072	21	2759.195	13	0	75	0	75	0	75
4		min -1969.175	29	878.282	2	323.104	7	0	1	0	1	0	1
5	N61	max 249.908	3	41.83	15	1023.877	9	0	75	0	75	0	75
6		min -252.432	9	9.749	73	-1026.47	3	0	1	0	1	0	1
7	Totals:	max 1015.901	11	2600.848	13	1671.956	1						
8		min -1015.901	5	660.822	73	-1671.955	7						

Joint Reactions (By Combination)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	1	N2	-22.322	-381.066	432.589	0	0	0
2	1	N1	-34.115	1289.102	1458.548	0	0	0
3	1	N61	56.436	13.698	-219.18	0	0	0
4	1	Totals:	0	921.734	1671.956			
5	1	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
6	2	N2	-714.704	29.455	1020.322	0	0	0
7	2	N1	-268.87	878.282	1211.467	0	0	0
8	2	N61	239.461	13.997	-942.902	0	0	0
9	2	Totals:	-744.113	921.734	1288.886			
10	2	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
11	3	N2	-916.267	21.525	668.575	0	0	0
12	3	N1	-326.93	886.172	931.404	0	0	0
13	3	N61	249.908	14.037	-1026.47	0	0	0
14	3	Totals:	-993.29	921.734	573.509			
15	3	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
16	4	N2	-884.833	-126.494	139.459	0	0	0
17	4	N1	-305.815	1034.254	763.557	0	0	0
18	4	N61	201.279	13.974	-902.995	0	0	0
19	4	Totals:	-989.37	921.734	.02			
20	4	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
21	5	N2	-892.381	-192.973	-239.681	0	0	0
22	5	N1	-330.995	1100.716	577.209	0	0	0
23	5	N61	207.475	13.991	-924.048	0	0	0

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
24	5	Totals:	-1015.901	921.734	-586.52			
25	5	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
26	6	N2	-626.189	-433.067	-1029.213	0	0	0
27	6	N1	-282.503	1340.927	351.434	0	0	0
28	6	N61	151.525	13.874	-633.684	0	0	0
29	6	Totals:	-757.167	921.734	-1311.462			
30	6	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
31	7	N2	108.156	-965.118	-2204.225	0	0	0
32	7	N1	-53.736	1873.304	323.104	0	0	0
33	7	N61	-54.42	13.548	209.165	0	0	0
34	7	Totals:	0	921.734	-1671.955			
35	7	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
36	8	N2	804.006	-1376.765	-2793.671	0	0	0
37	8	N1	180.691	2285.154	571.28	0	0	0
38	8	N61	-240.584	13.344	933.506	0	0	0
39	8	Totals:	744.112	921.734	-1288.885			
40	8	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
41	9	N2	1007.187	-1372.984	-2449.595	0	0	0
42	9	N1	238.533	2281.397	852.21	0	0	0
43	9	N61	-252.432	13.321	1023.877	0	0	0
44	9	Totals:	993.289	921.734	-573.508			
45	9	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
46	10	N2	975.241	-1226.461	-1923.403	0	0	0
47	10	N1	217.427	2134.847	1020.05	0	0	0
48	10	N61	-203.299	13.348	903.333	0	0	0
49	10	Totals:	989.369	921.734	-.019			
50	10	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
51	11	N2	982.478	-1160.752	-1545.544	0	0	0
52	11	N1	242.644	2069.126	1206.471	0	0	0
53	11	N61	-209.222	13.36	925.594	0	0	0
54	11	Totals:	1015.901	921.734	586.521			
55	11	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
56	12	N2	713.815	-918.528	-752.173	0	0	0
57	12	N1	194.433	1826.818	1431.378	0	0	0
58	12	N61	-151.081	13.444	632.259	0	0	0
59	12	Totals:	757.167	921.734	1311.463			
60	12	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
61	13	N2	-198.101	-1870.717	-2110.741	0	0	0
62	13	N1	178.427	4430.011	2759.195	0	0	0
63	13	N61	19.674	41.554	-76.007	0	0	0
64	13	Totals:	0	2600.848	572.447			
65	13	COG (ft):	X: .152	Y: 1.838	Z: 2.624			
66	14	N2	-442.229	-1721.907	-1889.206	0	0	0
67	14	N1	95.558	4280.982	2676.676	0	0	0
68	14	N61	85.493	41.773	-335.084	0	0	0
69	14	Totals:	-261.178	2600.848	452.387			
70	14	COG (ft):	X: .152	Y: 1.838	Z: 2.624			
71	15	N2	-537.994	-1700.413	-1963.308	0	0	0
72	15	N1	65.939	4259.431	2578.071	0	0	0
73	15	N61	97.058	41.83	-398.245	0	0	0
74	15	Totals:	-374.997	2600.848	216.518			
75	15	COG (ft):	X: .152	Y: 1.838	Z: 2.624			
76	16	N2	-542.994	-1742.697	-2139.072	0	0	0
77	16	N1	66.332	4301.741	2510.307	0	0	0
78	16	N61	82.919	41.804	-371.225	0	0	0
79	16	Totals:	-393.743	2600.848	.01			
80	16	COG (ft):	X: .152	Y: 1.838	Z: 2.624			
81	17	N2	-525.574	-1784.548	-2313.373	0	0	0
82	17	N1	63.24	4343.614	2442.365	0	0	0
83	17	N61	77.976	41.782	-350.896	0	0	0
84	17	Totals:	-384.358	2600.848	-221.903			

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
85	17	COG (ft):	X: .152	Y: 1.838	Z: 2.624			
86	18	N2	-407.306	-1883.669	-2612.949	0	0	0
87	18	N1	88.689	4442.845	2371.852	0	0	0
88	18	N61	52.034	41.672	-220.636	0	0	0
89	18	Totals:	-266.582	2600.848	-461.733			
90	18	COG (ft):	X: .152	Y: 1.838	Z: 2.624			
91	19	N2	-149.912	-2066.48	-3013.711	0	0	0
92	19	N1	169.224	4625.898	2366.924	0	0	0
93	19	N61	-19.313	41.43	74.341	0	0	0
94	19	Totals:	0	2600.848	-572.445			
95	19	COG (ft):	X: .152	Y: 1.838	Z: 2.624			
96	20	N2	94.631	-2215.398	-3235.394	0	0	0
97	20	N1	252.059	4775.023	2449.578	0	0	0
98	20	N61	-85.513	41.223	333.433	0	0	0
99	20	Totals:	261.177	2600.848	-452.384			
100	20	COG (ft):	X: .152	Y: 1.838	Z: 2.624			
101	21	N2	190.664	-2237.395	-3162.206	0	0	0
102	21	N1	281.645	4797.072	2548.312	0	0	0
103	21	N61	-97.312	41.172	397.378	0	0	0
104	21	Totals:	374.996	2600.848	-216.516			
105	21	COG (ft):	X: .152	Y: 1.838	Z: 2.624			
106	22	N2	195.635	-2195.353	-2986.903	0	0	0
107	22	N1	281.246	4755.006	2616.091	0	0	0
108	22	N61	-83.139	41.195	370.805	0	0	0
109	22	Totals:	393.742	2600.848	-.007			
110	22	COG (ft):	X: .152	Y: 1.838	Z: 2.624			
111	23	N2	178.118	-2153.587	-2812.754	0	0	0
112	23	N1	284.345	4713.218	2684.022	0	0	0
113	23	N61	-78.107	41.217	350.638	0	0	0
114	23	Totals:	384.357	2600.848	221.906			
115	23	COG (ft):	X: .152	Y: 1.838	Z: 2.624			
116	24	N2	59.498	-2054.152	-2512.625	0	0	0
117	24	N1	258.934	4613.681	2754.403	0	0	0
118	24	N61	-51.851	41.32	219.957	0	0	0
119	24	Totals:	266.581	2600.848	461.735			
120	24	COG (ft):	X: .152	Y: 1.838	Z: 2.624			
121	25	N2	1946.288	-1310.63	-1591.35	0	0	0
122	25	N1	-1950.554	2968.679	1712.326	0	0	0
123	25	N61	4.259	13.659	-16.463	0	0	0
124	25	Totals:	-.007	1671.707	104.513			
125	25	COG (ft):	X: -3.229	Y: 1.182	Z: 2.75			
126	26	N2	1902.816	-1285.19	-1554.678	0	0	0
127	26	N1	-1965.15	2943.138	1697.02	0	0	0
128	26	N61	15.821	13.76	-61.775	0	0	0
129	26	Totals:	-46.512	1671.707	80.567			
130	26	COG (ft):	X: -3.229	Y: 1.182	Z: 2.75			
131	27	N2	1890.219	-1285.529	-1576.41	0	0	0
132	27	N1	-1968.817	2943.464	1679.437	0	0	0
133	27	N61	16.51	13.772	-67.171	0	0	0
134	27	Totals:	-62.088	1671.707	35.856			
135	27	COG (ft):	X: -3.229	Y: 1.182	Z: 2.75			
136	28	N2	1892.276	-1294.631	-1609.34	0	0	0
137	28	N1	-1967.557	2952.584	1668.847	0	0	0
138	28	N61	13.441	13.754	-59.493	0	0	0
139	28	Totals:	-61.84	1671.707	.015			
140	28	COG (ft):	X: -3.229	Y: 1.182	Z: 2.75			
141	29	N2	1891.859	-1298.704	-1632.959	0	0	0
142	29	N1	-1969.175	2956.656	1657.139	0	0	0
143	29	N61	13.815	13.755	-60.822	0	0	0
144	29	Totals:	-63.501	1671.707	-36.642			
145	29	COG (ft):	X: -3.229	Y: 1.182	Z: 2.75			

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
146	30	N2	1908.688	-1313.583	-1682.328	0	0	0
147	30	N1	-1966.244	2971.575	1642.888	0	0	0
148	30	N61	10.228	13.715	-42.511	0	0	0
149	30	Totals:	-47.328	1671.707	-81.951			
150	30	COG (ft):	X: -3.229	Y: 1.182	Z: 2.75			
151	31	N2	1954.823	-1346.619	-1755.881	0	0	0
152	31	N1	-1952.092	3004.728	1640.856	0	0	0
153	31	N61	-2.739	13.599	10.539	0	0	0
154	31	Totals:	-.008	1671.707	-104.486			
155	31	COG (ft):	X: -3.229	Y: 1.182	Z: 2.75			
156	32	N2	1998.308	-1372.064	-1792.56	0	0	0
157	32	N1	-1937.497	3030.273	1656.167	0	0	0
158	32	N61	-14.314	13.499	55.853	0	0	0
159	32	Totals:	46.497	1671.707	-80.54			
160	32	COG (ft):	X: -3.229	Y: 1.182	Z: 2.75			
161	33	N2	2010.912	-1371.741	-1770.857	0	0	0
162	33	N1	-1933.831	3029.963	1673.752	0	0	0
163	33	N61	-15.008	13.486	61.276	0	0	0
164	33	Totals:	62.073	1671.707	-35.829			
165	33	COG (ft):	X: -3.229	Y: 1.182	Z: 2.75			
166	34	N2	2008.853	-1362.645	-1737.939	0	0	0
167	34	N1	-1935.091	3020.849	1684.342	0	0	0
168	34	N61	-11.937	13.504	53.609	0	0	0
169	34	Totals:	61.825	1671.707	.012			
170	34	COG (ft):	X: -3.229	Y: 1.182	Z: 2.75			
171	35	N2	2009.269	-1358.574	-1714.324	0	0	0
172	35	N1	-1933.473	3016.779	1696.051	0	0	0
173	35	N61	-12.31	13.503	54.943	0	0	0
174	35	Totals:	63.486	1671.707	36.669			
175	35	COG (ft):	X: -3.229	Y: 1.182	Z: 2.75			
176	36	N2	1992.43	-1343.687	-1664.941	0	0	0
177	36	N1	-1936.402	3001.852	1710.298	0	0	0
178	36	N61	-8.714	13.543	36.62	0	0	0
179	36	Totals:	47.313	1671.707	81.978			
180	36	COG (ft):	X: -3.229	Y: 1.182	Z: 2.75			
181	37	N2	-596.45	-1282.026	-1592.193	0	0	0
182	37	N1	592.959	2940.138	1710.192	0	0	0
183	37	N61	3.492	13.625	-13.499	0	0	0
184	37	Totals:	0	1671.738	104.499			
185	37	COG (ft):	X: .958	Y: 1.182	Z: 2.75			
186	38	N2	-639.868	-1256.229	-1555.334	0	0	0
187	38	N1	578.344	2914.331	1694.635	0	0	0
188	38	N61	15.02	13.635	-58.747	0	0	0
189	38	Totals:	-46.504	1671.738	80.554			
190	38	COG (ft):	X: .958	Y: 1.182	Z: 2.75			
191	39	N2	-652.481	-1256.584	-1577.094	0	0	0
192	39	N1	574.687	2914.685	1677.113	0	0	0
193	39	N61	15.715	13.637	-64.177	0	0	0
194	39	Totals:	-62.079	1671.738	35.842			
195	39	COG (ft):	X: .958	Y: 1.182	Z: 2.75			
196	40	N2	-650.457	-1265.806	-1610.105	0	0	0
197	40	N1	575.964	2923.909	1666.651	0	0	0
198	40	N61	12.661	13.635	-56.544	0	0	0
199	40	Totals:	-61.832	1671.738	.001			
200	40	COG (ft):	X: .958	Y: 1.182	Z: 2.75			
201	41	N2	-650.895	-1269.93	-1633.767	0	0	0
202	41	N1	574.361	2928.033	1655.011	0	0	0
203	41	N61	13.041	13.635	-57.9	0	0	0
204	41	Totals:	-63.493	1671.738	-36.655			
205	41	COG (ft):	X: .958	Y: 1.182	Z: 2.75			
206	42	N2	-634.118	-1285.04	-1683.279	0	0	0

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
207	42	N1	577.317	2943.147	1640.98	0	0	0
208	42	N61	9.481	13.631	-39.665	0	0	0
209	42	Totals:	-47.32	1671.738	-81.965			
210	42	COG (ft):	X: .958	Y: 1.182	Z: 2.75			
211	43	N2	-588.072	-1318.568	-1757.111	0	0	0
212	43	N1	591.506	2976.687	1639.351	0	0	0
213	43	N61	-3.433	13.619	13.261	0	0	0
214	43	Totals:	0	1671.738	-104.499			
215	43	COG (ft):	X: .958	Y: 1.182	Z: 2.75			
216	44	N2	-544.64	-1344.369	-1793.977	0	0	0
217	44	N1	606.119	3002.497	1654.912	0	0	0
218	44	N61	-14.974	13.61	58.511	0	0	0
219	44	Totals:	46.505	1671.738	-80.553			
220	44	COG (ft):	X: .958	Y: 1.182	Z: 2.75			
221	45	N2	-532.02	-1344.031	-1772.247	0	0	0
222	45	N1	609.775	3002.16	1672.437	0	0	0
223	45	N61	-15.674	13.608	63.967	0	0	0
224	45	Totals:	62.081	1671.738	-35.842			
225	45	COG (ft):	X: .958	Y: 1.182	Z: 2.75			
226	46	N2	-534.047	-1334.814	-1739.247	0	0	0
227	46	N1	608.498	2992.942	1682.899	0	0	0
228	46	N61	-12.618	13.61	56.346	0	0	0
229	46	Totals:	61.833	1671.738	-.001			
230	46	COG (ft):	X: .958	Y: 1.182	Z: 2.75			
231	47	N2	-533.61	-1330.693	-1715.591	0	0	0
232	47	N1	610.101	2988.821	1694.539	0	0	0
233	47	N61	-12.997	13.61	57.707	0	0	0
234	47	Totals:	63.494	1671.738	36.656			
235	47	COG (ft):	X: .958	Y: 1.182	Z: 2.75			
236	48	N2	-550.396	-1315.575	-1666.063	0	0	0
237	48	N1	607.146	2973.698	1708.567	0	0	0
238	48	N61	-9.428	13.614	39.461	0	0	0
239	48	Totals:	47.321	1671.738	81.965			
240	48	COG (ft):	X: .958	Y: 1.182	Z: 2.75			
241	49	N2	1031.851	-1000.355	-1282.535	0	0	0
242	49	N1	-1032.107	2283.451	1283.523	0	0	0
243	49	N61	.252	13.624	-.98	0	0	0
244	49	Totals:	-.004	1296.72	.007			
245	49	COG (ft):	X: -2.211	Y: 1.41	Z: 2.715			
246	50	N2	44.063	-968.728	-1283.094	0	0	0
247	50	N1	-44.062	2251.84	1283.089	0	0	0
248	50	N61	-.002	13.622	.006	0	0	0
249	50	Totals:	0	1296.734	0			
250	50	COG (ft):	X: -.114	Y: 1.41	Z: 2.715			
251	51	N2	51.426	-788.788	-1039.984	0	0	0
252	51	N1	-51.431	1848.252	1040.003	0	0	0
253	51	N61	.005	15.893	-.019	0	0	0
254	51	Totals:	0	1075.356	0			
255	51	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
256	52	N2	46.489	-693.356	-875.575	0	0	0
257	52	N1	-45.606	1631.498	947.203	0	0	0
258	52	N61	-.883	14.072	4.57	0	0	0
259	52	Totals:	0	952.213	76.198			
260	52	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
261	53	N2	11.387	-672.816	-841.561	0	0	0
262	53	N1	-57.16	1610.945	938.696	0	0	0
263	53	N61	7.674	14.084	-31.146	0	0	0
264	53	Totals:	-38.099	952.213	65.989			
265	53	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
266	54	N2	-14.563	-659.144	-828.807	0	0	0
267	54	N1	-65.599	1597.263	925.423	0	0	0

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
268	54	N61	14.175	14.094	-58.516	0	0	0
269	54	Totals:	-65.987	952.213	38.101			
270	54	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
271	55	N2	-24.413	-656	-840.725	0	0	0
272	55	N1	-68.663	1594.114	910.939	0	0	0
273	55	N61	16.879	14.098	-70.212	0	0	0
274	55	Totals:	-76.198	952.213	.002			
275	55	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
276	56	N2	-15.521	-664.226	-874.124	0	0	0
277	56	N1	-65.529	1602.343	899.125	0	0	0
278	56	N61	15.063	14.095	-63.099	0	0	0
279	56	Totals:	-65.987	952.213	-38.097			
280	56	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
281	57	N2	9.727	-681.614	-920.043	0	0	0
282	57	N1	-57.039	1619.74	893.147	0	0	0
283	57	N61	9.214	14.087	-39.09	0	0	0
284	57	Totals:	-38.099	952.213	-65.986			
285	57	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
286	58	N2	44.572	-703.51	-966.191	0	0	0
287	58	N1	-45.467	1641.649	894.605	0	0	0
288	58	N61	.894	14.074	-4.612	0	0	0
289	58	Totals:	0	952.213	-76.198			
290	58	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
291	59	N2	79.678	-724.047	-1000.199	0	0	0
292	59	N1	-33.913	1662.199	903.114	0	0	0
293	59	N61	-7.667	14.061	31.098	0	0	0
294	59	Totals:	38.098	952.213	-65.988			
295	59	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
296	60	N2	105.636	-737.724	-1012.961	0	0	0
297	60	N1	-25.475	1675.885	916.388	0	0	0
298	60	N61	-14.174	14.052	58.472	0	0	0
299	60	Totals:	65.986	952.213	-38.1			
300	60	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
301	61	N2	115.49	-740.876	-1001.055	0	0	0
302	61	N1	-22.412	1679.041	930.875	0	0	0
303	61	N61	-16.882	14.048	70.18	0	0	0
304	61	Totals:	76.197	952.213	-.001			
305	61	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
306	62	N2	106.594	-732.652	-967.662	0	0	0
307	62	N1	-25.545	1670.814	942.688	0	0	0
308	62	N61	-15.063	14.051	63.072	0	0	0
309	62	Totals:	65.986	952.213	38.098			
310	62	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
311	63	N2	81.339	-715.26	-921.735	0	0	0
312	63	N1	-34.034	1653.413	948.664	0	0	0
313	63	N61	-9.206	14.059	39.059	0	0	0
314	63	Totals:	38.098	952.213	65.987			
315	63	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
316	64	N2	32.566	-479.57	-593.761	0	0	0
317	64	N1	-31.681	1130.626	665.382	0	0	0
318	64	N61	-.885	9.765	4.577	0	0	0
319	64	Totals:	0	660.822	76.198			
320	64	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
321	65	N2	-2.521	-459.029	-559.753	0	0	0
322	65	N1	-43.248	1110.076	656.876	0	0	0
323	65	N61	7.671	9.774	-31.134	0	0	0
324	65	Totals:	-38.099	660.822	65.989			
325	65	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
326	66	N2	-28.464	-445.36	-547.005	0	0	0
327	66	N1	-51.693	1096.401	643.606	0	0	0
328	66	N61	14.17	9.781	-58.5	0	0	0

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
329	66	Totals:	-65.987	660.822	38.101			
330	66	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
331	67	N2	-38.318	-442.223	-558.928	0	0	0
332	67	N1	-54.753	1093.261	629.125	0	0	0
333	67	N61	16.874	9.784	-70.195	0	0	0
334	67	Totals:	-76.197	660.822	.002			
335	67	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
336	68	N2	-29.44	-450.458	-592.329	0	0	0
337	68	N1	-51.606	1101.498	617.314	0	0	0
338	68	N61	15.058	9.782	-63.083	0	0	0
339	68	Totals:	-65.987	660.822	-38.098			
340	68	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
341	69	N2	-4.211	-467.854	-638.247	0	0	0
342	69	N1	-43.097	1118.9	611.338	0	0	0
343	69	N61	9.21	9.776	-39.077	0	0	0
344	69	Totals:	-38.099	660.822	-65.987			
345	69	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
346	70	N2	30.614	-489.755	-684.39	0	0	0
347	70	N1	-31.507	1140.81	612.797	0	0	0
348	70	N61	.892	9.767	-4.604	0	0	0
349	70	Totals:	0	660.822	-76.198			
350	70	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
351	71	N2	65.705	-510.293	-718.393	0	0	0
352	71	N1	-19.94	1161.357	621.304	0	0	0
353	71	N61	-7.667	9.758	31.101	0	0	0
354	71	Totals:	38.098	660.822	-65.988			
355	71	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
356	72	N2	91.655	-523.966	-731.148	0	0	0
357	72	N1	-11.496	1175.036	634.576	0	0	0
358	72	N61	-14.173	9.752	58.472	0	0	0
359	72	Totals:	65.986	660.822	-38.1			
360	72	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
361	73	N2	101.514	-527.111	-719.238	0	0	0
362	73	N1	-8.437	1178.184	649.059	0	0	0
363	73	N61	-16.88	9.749	70.178	0	0	0
364	73	Totals:	76.197	660.822	-.001			
365	73	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
366	74	N2	92.631	-518.878	-685.843	0	0	0
367	74	N1	-11.583	1169.949	660.87	0	0	0
368	74	N61	-15.062	9.751	63.071	0	0	0
369	74	Totals:	65.986	660.822	38.098			
370	74	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			
371	75	N2	67.395	-501.478	-639.918	0	0	0
372	75	N1	-20.091	1152.543	666.844	0	0	0
373	75	N61	-9.206	9.757	39.061	0	0	0
374	75	Totals:	38.098	660.822	65.987			
375	75	COG (ft):	X: -.161	Y: 1.825	Z: 2.651			

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

	Member	Shape	Code Check	L...	LC	Shear Check	Loc[...Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	M1	PIPE 2.5	.253	4...	26	.085	9.818	7	10819....	66654	4.727	4.727	2...	H1-1b
2	M2	PIPE 2.5	.272	4...	8	.076	4.531	9	10819....	66654	4.727	4.727	2...	H1-1b
3	M3	PIPE 2.0	.111	2...	32	.037	0	27	36702....	42228	2.46	2.46	2...	H1-1b
4	M4	PIPE 2.0	.072	0	36	.041	0	27	36702....	42228	2.46	2.46	1...	H1-1b
5	M5	PIPE 2.0	.084	2...	18	.019	0	15	36701....	42228	2.46	2.46	1...	H1-1b
6	M6	PIPE 2.0	.052	0	21	.023	0	26	36701....	42228	2.46	2.46	1...	H1-1b
7	M7	SR 0.75	.134	2...	26	.013	0	27	6575.7...	19880....	.249	.249	1...	H1-1b*
8	M8	SR 0.75	.145	2...	13	.013	0	27	6575.7...	19880....	.249	.249	1	H1-1b*
9	M9	SR 0.75	.093	2...	16	.003	0	35	3020.6...	19880....	.249	.249	1...	H1-1b
10	M10	SR 0.75	.103	2...	22	.007	4.057	33	3020.6...	19880....	.249	.249	1...	H1-1b

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

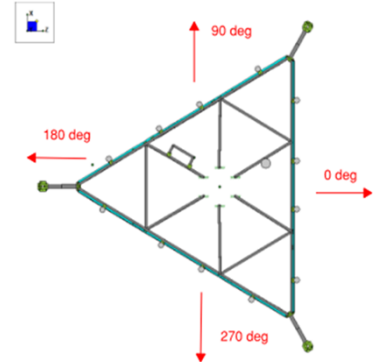
	Member	Shape	Code Check	L...	LC	Shear Check	Loc[...Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
11	M11	PIPE 3.0	.146	1...	33	.149	1.167	33	76573....	85698	7.555	7.555	1...	H1-1b
12	M12	PL1/2x5	.272		27	.066	.167	z 27	110931...	112500	1.172	11.719	1...	H1-1b
13	M13	PL1/2x5	.047	0	25	.098	.167	y 27	110931...	112500	1.172	11.719	1...	H1-1b
14	M14	PL1/2x5	.271		21	.025	.167	z 21	110932...	112500	1.172	11.719	1...	H1-1b
15	M15	PL1/2x5	.030		13	.053	.167	y 26	110932...	112500	1.172	11.719	1...	H1-1b
16	M16	PL1/2x5	.133		32	.063	0	y 27	109658...	112500	1.172	11.719	1...	H1-1b
17	M17	PL1/2x5	.090		32	.097	.225	y 27	109658...	112500	1.172	11.719	1...	H1-1b
18	M18	PL1/2x5	.233	0	27	.066	.188	z 27	110518...	112500	1.172	11.719	1...	H1-1b
19	M19	PL1/2x5	.049	0	25	.098	.188	y 27	110518...	112500	1.172	11.719	1...	H1-1b
20	M20	PL1/2x5	.113		14	.018	.225	z 12	109658...	112500	1.172	11.719	1...	H1-1b
21	M21	PL1/2x5	.127	0	7	.052	0	y 26	109658...	112500	1.172	11.719	1...	H1-1b
22	M22	PL1/2x5	.178	0	21	.025	.188	z 21	110518...	112500	1.172	11.719	1...	H1-1b
23	M23	PL1/2x5	.029		24	.053	.188	y 26	110518...	112500	1.172	11.719	1...	H1-1b
24	M24	PIPE 2.0	.050	0	9	.003	0	22	21516....	42228	2.46	2.46	1...	H1-1b*
25	MP1A	PIPE 2.0	.088	2...	15	.016	4	27	15369....	42228	2.46	2.46	4...	H1-1b
26	MP2A	PIPE 2.0	.199	5...	7	.048	3.583	27	15369....	42228	2.46	2.46	3...	H1-1b
27	MP3A	PIPE 2.0	.136	2...	32	.057	3.583	9	15369....	42228	2.46	2.46	4...	H1-1b
28	MP4A	PIPE 2.0	.352	2...	33	.065	2.667	33	15369....	42228	2.46	2.46	4...	H1-1b

I. Mount-to-Tower Connection Check

Custom Orientation Required

Yes

Nodes (labeled per Risa)	Orientation (per graphic of typical platform)
N1	0
N2	0



Tower Connection Bolt Checks

Yes

Bolt Orientation

Parallel

Bolt Quantity per Reaction:

2 (Horizontal)

d_x (in) (Delta X of typ. bolt config. sketch) :

9.5

d_y (in) (Delta Y of typ. bolt config. sketch) :

2

Bolt Type:

A307

Bolt Diameter (in):

0.625

Required Tensile Strength / bolt (kips):

0.0

Required Shear Strength / bolt (kips):

2.4

Tensile Capacity / bolt (kips):

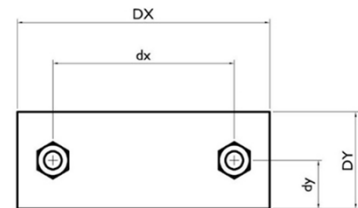
10.4

Shear Capacity / bolt (kips):

6.2

Bolt Overall Utilization:

38.7%



Tower Connection Baseplate Checks

No

ATTACHMENT 5

ArcGIS Web Map



CRCOG CAPITAL REGION
COUNCIL OF GOVERNMENTS
Working together for a better region.

Scale
1:4,514

Created: 5/6/2020

CRCOG makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

130 VERNON RD

Location 130 VERNON RD

Mblu 02 / 3 /

UID 10001982

Owner MOUNTAINTOP ENTERPRISES
INC

Taxable Status Non-Exempt

Assessment \$530,570

Appraisal \$946,900

PID 1982

Building Count 1

Legal Description

User Field 1 00015 00021 00009

User Field 2

User Field 3 H-1010

User Field 4

User Field 5

User Field 6

User Field 7

User Field 8

User Field 9

User Field 10

Location

Street/Road

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2024	\$124,400	\$822,500	\$946,900
Assessment			
Valuation Year	Improvements	Land	Total
2024	\$87,200	\$443,370	\$530,570

Parcel Addresses

Additional Addresses
No Additional Addresses available for this parcel

Owner of Record

Owner MOUNTAINTOP ENTERPRISES INC

Sale Price \$0

Co-Owner
Care Of
Address PO BOX 9219
BOLTON, CT 06043

Book & Page 166/656
Sale Date 10/01/2014
Instrument 24
Qualified U

Ownership History

Ownership History				
Owner	Sale Price	Book & Page	Instrument	Sale Date
MOUNTAINTOP ENTERPRISES INC	\$0	166/656	24	10/01/2014
MOUNTAINTOP ENTERPRISES INC	\$0	0051/0920		01/30/1979

Building Information

Building 1 : Section 1

Year Built: 1980
Living Area: 1,920
Replacement Cost: \$63,240
Building Percent Good: 72
Replacement Cost
Less Depreciation: \$45,500

Building Photo



(PhotoHandler.ashx?pid=1982&bid=1982)

Building Attributes	
Field	Description
Style	Equipment Garage
Model:	Comm/Ind
Grade	D
Stories:	1.5
Occupancy	1.00
Exterior Wall 1	Board & Batten
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Metal
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Minimum
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Hot Air-no Duc
% Central Air	0
Frame Type	WOOD FRAME
Fin. Bsmt. Area	
Wall Height	8.00
Test6	
Test1	

ATTACHMENT 6



VW/Bolton

Certificate of Mailing — Firm

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Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103		3	3				
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1.		Rodney Fournier First Selectman Town of Bolton 222 Bolton Center Road Bolton, CT 06043					
2.		Rich McKinnon, Chief Building Official/Land Use Department Head Town of Bolton 222 Bolton Center Road Bolton, CT 06043					
3.		Mountaintop Enterprises, Inc. P.O. Box 9219 Bolton, CT 06043					
4.							
5.							
6.							