



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

August 3, 2022

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

**RE: Tower Share Application-T-Mobile: CTNL256A**  
**Crown Site ID#842865**  
**1699 Exeter Road Lebanon, CT 06249**  
**Latitude: 41° 37' 40.53" / Longitude: -72° 18' 20.34"**

Dear Ms. Bachman:

T-Mobile proposes to install six (6) antennas, six (6) remote radios, one (1) microwave dish at the 131-foot mount level on the existing 153-foot monopole tower located at 1699 Exeter Road, Lebanon CT. T-Mobile to also install, three (3) Hybrid cables, one (1) ½" coaxial cable, one (1) new antenna mount. T-Mobile to add equipment cabinets and one (1) new 50kw Diesel generator on a new 10' x 15' concrete pad within the existing compound space. The property is owned by Liebman, Leon Mark & Murry, Susan Ann and the tower is owned by Crown Castle. This modification/proposal includes hardware that is both 4G (LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

**Panned Modification:**

**Tower:**

Installed New:

- (3) Ericsson 6419 B41 Antennas
- (3) RFS APXVAALL24\_43-U-NA20 Antennas
- (1) RFS SC2-W100BD Microwave Dish
- (3) Ericsson-Radio 4460 B25+ B66 RRU
- (3) Ericsson-Radio 4480\_B71+B85 RRU
- (3) Hybrid Cable (6x24)
- (1) Coaxial Cable (1/2")
- (1) RMQP-4096K Antenna Mount

**Ground:**

Install New:

- (1) 6160 & (1) B160 Battery Cabinets
- (2) PSU 4813 Voltage Booster
- (1.) CSR IXRe Router
- (2^)^ RP 6651
- (1) 50KW SSM Diesel Generator
- (1.) Canopy

The Foundation for a Wireless World.  
CrownCastle.com

(2) H-Frames  
(4<sup>^</sup>) LED Luminare Work Lights  
Ice Bridge

The facility was approved by the Connecticut Siting Council Docket No. 257 on October 29, 2003.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50aa of T-Mobile intent to share a telecommunication facility pursuant to R.C.S.A. § 16-50j-88. In accordance with R.C.S.A. § 16-50j-88, a copy of this letter is being sent to Kevin Cwikla, First Selectman, Town of Lebanon CT, Philip Chester, Town Planner, Town of Lebanon CT. Liebman, Leon Mark & Murry, Susan Ann, Property Owner. Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower. The total Height of the tower is 153' and T-Mobile antennas will be placed at the 131' mount height of the tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

Connecticut General Statute 16-50aa indicates the Council must approve the share use of telecommunication facility provided it finds the shared use is technically, legally, environmentally and economically feasible and meets public safety concerns.

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting the T-Mobile proposed loading. The structural analysis is included in the package.

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this support tower in Lebanon. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit T-Mobile to obtain a building permit for the proposed installation.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of T-Mobile equipment at the 131-foot level of the existing 153-foot tower would have an insignificant visual impact on the area around the tower. T-Mobile ground equipment would be installed within the existing facility compound. T-Mobile shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced of the radio frequency emissions would not increase

Melanie A. Bachman

Page 3

to a level at or above the Federal Communications Commission safety standard.

D. Economic Feasibility. T-Mobile has authorization to collocate their antennas on the cell tower.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting T-Mobile proposed loading. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing tower. T-Mobile intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of residents and individuals traveling through Lebanon.

For the foregoing reasons, T-Mobile respectfully submits that the proposed Tower Share to the above-reference telecommunications facility. Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,



Jeffrey Barbadora  
Site Acquisition Specialist  
1800 W. Park Drive, Suite 250  
Westborough, MA 01581  
(781) 970-0053  
Jeff.Barbadora@crowncastle.com

Attachments

cc:

Kevin Cwikla, First Selectman  
Town of Hall  
579 Exeter Road  
Main Floor  
Lebanon, CT 06249  
860-642-6100

Philip Chester, Town Planner  
Town of Hall  
579 Exeter Road  
Lower Level  
Lebanon, CT 06249  
860-642-2006

Liebman, Leon Mark & Murry, Susan Ann, Property Owner  
13 Mill Street  
Middlebury, VT 05753

Petition No. 964  
Cellco Partnership d/b/a Verizon Wireless  
Lebanon, Connecticut  
Staff Report  
October 7, 2010

On August 27, 2010, the Connecticut Siting Council (Council) received a petition from Cellco Partnership d/b/a Verizon Wireless (Verizon) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required to extend the height of an existing 120-foot tower an additional 30 feet to a height of 150 feet. Council member Brian Golembiewski, Executive Director Linda Roberts, and staff member David Martin visited the site on September 16, 2010 to review the proposal. Ken Baldwin of Robinson & Cole, Sandy Carter of Verizon, and Michael Libertine of Vanasse Hangen Brustlin (VHB) represented Verizon at the field review.

The existing tower is owned by AT&T Wireless PCS, LLC (AT&T) and is located at 1699 Exeter Road in Lebanon. The tower was certificated by the Council on October 29, 2008 under Docket 257. In its certificate application, AT&T originally sought permission to erect a 150-foot tower at this site and flew a balloon at this height during the Council's field review. In its deliberations on this application, the Council concluded that AT&T could achieve its coverage objectives with its antennas at 120 feet and directed AT&T to build its tower at this height. However, the Council further directed AT&T to design the tower and foundation to be able to accommodate an extension to the originally proposed height in case another carrier would want to go on the tower at a higher location in the future.

Now Verizon seeks to install antennas on the tower to fill coverage gaps it is experiencing along portions of Routes 207 and 16. Verizon's RF engineers have determined that it needs to place its antennas at a centerline height of 150 feet in order to achieve its coverage objectives. Verizon's antennas would be mounted on T-arms in accordance with the Council's Decision and Order for this docket and would extend to an overall height of approximately 153 feet.

A professional engineer licensed in Connecticut has determined that the existing tower is structurally capable of accommodating the extension and antenna loading proposed by Verizon. Staff calculates that the addition of Verizon's antennas would result in an overall power density equal to 28.6% of the FCC's applicable limit.

The tower is surrounded by thick stands of mature, deciduous trees that limit near views to fleeting glimpses from a few scattered locations along Route 207 (Exeter Road). VHB performed a visual analysis for the proposed tower extension that concluded the extension would increase the tower's year-round visibility approximately 31 acres from 165 acres to 196 acres within a two-mile radius of the site. This additional acreage would represent expansions of areas from which the tower is visible now. The extended tower would be visible from very few new areas.

In addition to notifying town officials and the underlying property owner of its proposed extension, Verizon also sent letters to abutting property owners. Town officials did not report any concerns about the extension and no inquiries were received from neighbors.

The proposed extension of this existing tower is not expected to have any substantial adverse environmental effects.

**Close up view of existing tower**



View from Lake Williams boat launch, approximately 1,500 feet to west of tower





# CONNECTICUT SITING COUNCIL

Home About Us Pending Matters Decisions Forms Contact Us

- Filing Guides
- Meetings & Minutes
- Public Participation
- Audio Link to New Britain Hearing Rooms
- Programs & Services
- Telecommunications Database
- Maps
- Publications
- Other Resources
- Statutes & Regulations
- Electric Transmission Upgrade Projects
- Frequently Asked Questions

## Decisions

[Printable Version](#)

<p><b>DOCKET NO. 257 - AT&amp;T Wireless PCS, LLC d/b/a AT&amp;T</b> }                  Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at 1593 Exeter Road or one of two sites on Levita Road, Lebanon, Connecticut.</p>	<p>} Connecticut                  } Siting                  } Council                  } October 29, 2003</p>
---	---

### Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to AT&T Wireless PCS d/b/a AT&T Wireless for the construction, maintenance and operation of a wireless telecommunications facility at Site A, 1593 Exeter Road, Lebanon, Connecticut. The Council denies certification of Sites B and C, both located at the Botticello Property, Levita Road, Lebanon, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T Wireless PCS, LLC and other entities, both public and private, but such tower shall not exceed a height of 120 feet above ground level.
2. The tower foundation shall be of sufficient capacity to support a monopole extension to 150 feet above ground level.
3. Panel antennas shall be installed on the monopole using a flush mount or T-arm mount design.
4. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
  - a) a detailed site development plan that depicts the location of the access road, compound, tower, utility line, erosion and sedimentation control features, and landscaping;
  - b) specifications for the tower, tower foundation, antennas, equipment building, and security fence; and
  - c) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
5. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
6. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.



Melanie Bachman,  
Executive Director

#### NOTICE TO USERS

The Connecticut Siting Council posts filed documents to this site as a public service. The Council disclaims any liability for the content of submissions made by parties, intervenors, public officials, and the general public. Further, while the Council seeks to be complete in its postings, the Council urges users of this site to confirm with the submitter the completeness of the postings made. The posting of any document does not constitute or imply endorsement by the Connecticut Siting Council. Finally, the Connecticut Siting Council assumes no responsibility for the use of documents posted on this site.

For further information about the proper use of material posted on this site, please see the State of Connecticut [disclaimer](#).

7. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing. The Certificate Holder shall provide space on the tower for no compensation for any municipal antennas, provided such antennas are compatible with the structural integrity of the tower.

8. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

9. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and ceases to function.

10. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

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

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

The parties and intervenors to this proceeding are:

**Applicant**

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

**Its Representative**

Christopher B. Fisher, Esq.  
Cuddy & Feder LLP  
90 Maple Avenue  
White Plains, New York 10601  
(914) 761-1300

Content Last Modified on 12/3/2003 11:33:42 AM

Ten Franklin Square New Britain, CT 06051 / 860- 827-2935

[Home](#) | [CT.gov Home](#) | [Send Feedback](#) | [Login](#) | [Register](#)  
State of Connecticut [Disclaimer](#), [Privacy Policy](#), and [Web Site Accessibility Policy](#). Copyright © 2002-2019 State of Connecticut.





# 1699 EXETER RD

**Location** 1699 EXETER RD

**Mblu** 242 / / 15 / /

**Acct#** L0096950

**Owner** LIEBMAN LEON MARK &

**Assessment** \$167,270

**PID** 2422

**Building Count** 1

## Current Value

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$57,850	\$109,420	\$167,270

## Owner of Record

**Owner** LIEBMAN LEON MARK &  
**Co-Owner** MURRAY SUSAN ANN  
**Address** 13 MILL ST  
MIDDLEBURY, VT 05753

**Sale Price** \$0  
**Certificate**  
**Book & Page** 0297/0682  
**Sale Date** 03/21/2016  
**Instrument** 31

## Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
LIEBMAN LEON MARK &	\$0		0297/0682	31	03/21/2016
LIEBMAN LEON M &	\$0		0291/1098	31	11/05/2014
LIEBMAN FLORENCE	\$0		0280/0906	25	10/19/2012
LIEBMAN HAROLD & FLORENCE	\$0		0067/0384	29	02/14/1997

## Building Information

### Building 1 : Section 1

**Year Built:**  
**Living Area:** 0  
**Replacement Cost:** \$0  
**Building Percent Good:**  
**Replacement Cost**  
**Less Depreciation:** \$0

Building Attributes

Field	Description
Style	Vacant Land
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Kitchens	
Insulated	
Usrflid 103	
Usrflid 104	
Usrflid 105	
Usrflid 106	
Usrflid 107	
Num Park	
Fireplaces	
Gas Fireplaces	
Usrflid 101	
Usrflid 102	
Usrflid 100	
Usrflid 300	
Usrflid 301	
Usrflid 302	
Usrflid 304	

### Building Photo



(<https://images.vgsi.com/photos/LebanonCTPhotos/\A00\01\22\11.jpg>)

### Building Layout

([https://images.vgsi.com/photos/LebanonCTPhotos//Sketches/2422\\_2422.](https://images.vgsi.com/photos/LebanonCTPhotos//Sketches/2422_2422.))

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

Fndtn Cndtn	
Basement	
Usrflld 701	
Usrflld 305	
Usrflld 900	
Usrflld 901	
Usrflld 303	

**Extra Features**

Extra Features	<a href="#">Legend</a>
No Data for Extra Features	

**Land**

**Land Use**

**Use Code** 431V  
**Description** CELL TOWR MDL-00  
**Zone** RA  
**Neighborhood**  
**Alt Land Appr** No  
**Category**

**Land Line Valuation**

**Size (Acres)** 10.06  
**Frontage** 1  
**Depth** 0  
**Assessed Value** \$109,420

**Outbuildings**

Outbuildings						<a href="#">Legend</a>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FN3	FENCE-6' CHAIN			320.00 L.F.	\$2,020	1
TW2	CELL TOWER			120.00 HEIGHT	\$78,120	1
SHD1	SHED FRAME			240.00 S.F.	\$2,520	1

**Valuation History**

Assessment				
Valuation Year	Improvements	Land	Total	
2020	\$57,850	\$109,420	\$167,270	
2019	\$57,850	\$109,420	\$167,270	
2018	\$57,850	\$109,420	\$167,270	





21

22

24

2.0 Ac

0.56 AcC

1736

1732

1726

1720

1699

1681

15

10.06 AcC

15.001

2.055 Ac

15.0

2.114

CELL TOWER

31

14

3.2 AcC

OLD COLCHESTER

ROUTE 207

1500'S

220'S

124.8'

410'

560'

106.57'

261.40'

39.43'

175'

18.04'

82.02'

85.2'

120.4'

76.76'

73.71'

91.81'

427.1'

845'

Map 241

Map 242

Map 242

Map 242

Map 242

Map 242

Map 242

Map 242

Map 242

Map 242

Map 242

Map 242

2

1C





1800 W Park Dr r2nd Floor  
Westborough, Town of, MA 01581

Phone: (781) 970-0053  
Fax: (724) 416-6120  
www.crowncastle.com

**Crown Castle Letter of Authorization**

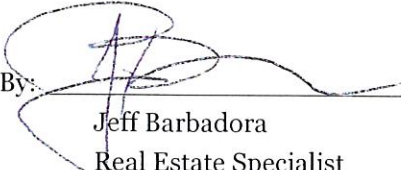
CT - CONNECTICUT SITING COUNCIL  
Connecticut Siting Council  
TEN FRANKLIN SQUARE  
NEW BRITAIN, VT 05753

**Re: Application for Zoning/Building Permit**  
**Crown Castle telecommunications site at: 1699 EXETER RD, LEBANON, CT 06249**

CCATT LLC ("Crown Castle") hereby authorizes T-MOBILE, including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CT - CONNECTICUT SITING COUNCIL for the existing wireless communications site described below:

**Crown Site ID/Name:** 842865/LEBANON WEST  
**Customer Site ID:** CTNL256A/Lebanon Underserved  
**Site Address:** 1699 EXETER RD, LEBANON, CT 06249  
**APN:** LEBA-000242-000000-000015

Crown Castle

By:   
Jeff Barbadora  
Real Estate Specialist

Date: 8/02/22

**Barbadora, Jeff**

---

**From:** TrackingUpdates@fedex.com  
**Sent:** Thursday, August 4, 2022 11:51 AM  
**To:** Barbadora, Jeff  
**Subject:** FedEx Shipment 777568072124: Your package has been delivered

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.



Hi. Your package was  
delivered Thu, 08/04/2022 at  
11:48am.



Delivered to 579 EXETER RD, LEBANON, CT 06249  
Received by B.NELSON

**OBTAIN PROOF OF DELIVERY**

TRACKING NUMBER [777568072124](#)

<b>FROM</b>	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
<b>TO</b>	Town of Lebanon Kevin Cwikla, First Selectman 579 Exeter Road Main Floor LEBANON, CT, US, 06249
<b>REFERENCE</b>	799001.7680
<b>SHIPPER REFERENCE</b>	799001.7680
<b>SHIP DATE</b>	Wed 8/03/2022 05:27 PM
<b>DELIVERED TO</b>	Receptionist/Front Desk
<b>PACKAGING TYPE</b>	FedEx Envelope
<b>ORIGIN</b>	WESTBOROUGH, MA, US, 01581
<b>DESTINATION</b>	LEBANON, CT, US, 06249
<b>SPECIAL HANDLING</b>	Deliver Weekday
<b>NUMBER OF PIECES</b>	1
<b>TOTAL SHIPMENT WEIGHT</b>	1.00 LB
<b>SERVICE TYPE</b>	FedEx Priority Overnight



**Barbadora, Jeff**

---

**From:** TrackingUpdates@fedex.com  
**Sent:** Thursday, August 4, 2022 11:50 AM  
**To:** Barbadora, Jeff  
**Subject:** FedEx Shipment 777568104800: Your package has been delivered

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.



Hi. Your package was  
delivered Thu, 08/04/2022 at  
11:48am.



Delivered to 579 EXETER RD, LEBANON, CT 06249  
Received by B.NELSON

[OBTAIN PROOF OF DELIVERY](#)

TRACKING NUMBER [777568104800](#)

<b>FROM</b>	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
<b>TO</b>	Town of Lebanon Philip Chester, Town Planner 579 Exeter Road Lower Level LEBANON, CT, US, 06249
<b>REFERENCE</b>	799001.7680
<b>SHIPPER REFERENCE</b>	799001.7680
<b>SHIP DATE</b>	Wed 8/03/2022 05:27 PM
<b>DELIVERED TO</b>	Receptionist/Front Desk
<b>PACKAGING TYPE</b>	FedEx Envelope
<b>ORIGIN</b>	WESTBOROUGH, MA, US, 01581
<b>DESTINATION</b>	LEBANON, CT, US, 06249
<b>SPECIAL HANDLING</b>	Deliver Weekday
<b>NUMBER OF PIECES</b>	1
<b>TOTAL SHIPMENT WEIGHT</b>	0.50 LB
<b>SERVICE TYPE</b>	FedEx Priority Overnight

**Barbadora, Jeff**

---

**From:** TrackingUpdates@fedex.com  
**Sent:** Thursday, August 4, 2022 11:35 AM  
**To:** Barbadora, Jeff  
**Subject:** FedEx Shipment 777568142396: Your package has been delivered

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.



Hi. Your package was  
delivered Thu, 08/04/2022 at  
11:33am.



Delivered to 13 MILL ST, MIDDLEBURY, VT 05753

[OBTAIN PROOF OF DELIVERY](#)

TRACKING NUMBER [777568142396](#)

<b>FROM</b>	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
<b>TO</b>	Property Owner Mark Liebman & Susan Murray 13 Mill Street MIDDLEBURY, VT, US, 05753
<b>REFERENCE</b>	799001.7680
<b>SHIPPER REFERENCE</b>	799001.7680
<b>SHIP DATE</b>	Wed 8/03/2022 05:27 PM
<b>DELIVERED TO</b>	Residence
<b>PACKAGING TYPE</b>	FedEx Envelope
<b>ORIGIN</b>	WESTBOROUGH, MA, US, 01581
<b>DESTINATION</b>	MIDDLEBURY, VT, US, 05753
<b>SPECIAL HANDLING</b>	Deliver Weekday Residential Delivery
<b>NUMBER OF PIECES</b>	1
<b>TOTAL SHIPMENT WEIGHT</b>	1.00 LB
<b>SERVICE TYPE</b>	FedEx Priority Overnight



Date: **June 06, 2022**

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

**Subject:** **Structural Analysis Report**

**Carrier Designation:** **T-Mobile Co-Locate**  
**Site Number:** CTNL256A  
**Site Name:** Lebanon Underserved

**Crown Castle Designation:** **BU Number:** 842865  
**Site Name:** LEBANON WEST  
**JDE Job Number:** 714962  
**Work Order Number:** 2124305  
**Order Number:** 614533 Rev. 2

**Engineering Firm Designation:** **B+T Group Project Number:** 138667.005.01

**Site Data:** **1699 EXETER RD, LEBANON, New London County, CT**  
**Latitude 41° 37' 40.53", Longitude -72° 18' 20.34"**  
**149 Foot - Monopole**

B+T Group is pleased to submit this “**Structural Analysis Report**” to determine the structural integrity of the above-mentioned tower.

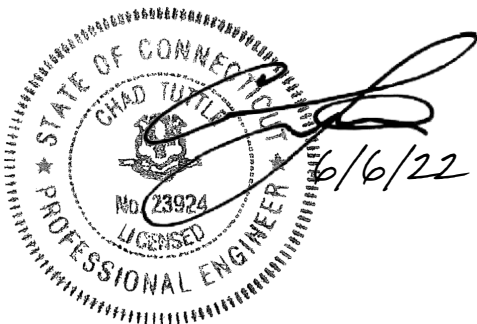
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity**

This analysis utilizes an ultimate 3-second gust wind speed of 121 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Chris Guidry

Respectfully submitted by: B+T Engineering, Inc.  
COA: PEC.0001564; Expires: 02/10/2023



Chad E. Tuttle, P.E.

## TABLE OF CONTENTS

### 1) INTRODUCTION

### 2) ANALYSIS CRITERIA

- Table 1 - Proposed Equipment Configuration
- Table 2 - Other Considered Equipment

### 3) ANALYSIS PROCEDURE

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

### 4) ANALYSIS RESULTS

- Table 4 - Section Capacity (Summary)
- Table 5 - Tower Component Stresses vs. Capacity - LC7
- 4.1) Recommendations
- Table 6 - Proposed Equipment Tilt-Sway Results - LC7

### 5) APPENDIX A

- tnxTower Output

### 6) APPENDIX B

- Base Level Drawing

### 7) APPENDIX C

- Additional Calculations

## 1) INTRODUCTION

This is a 149 ft. Monopole designed by Engineered Endeavors Inc and mapped by FDH Velocitel. The Monopole has been modified per reinforcement drawings prepared by GPD Group, in December of 2010. The modification consists of extension of 30' which is included in manufacturer drawing.

## 2) ANALYSIS CRITERIA

<b>TIA-222 Revision:</b>	TIA-222-H
<b>Risk Category:</b>	II
<b>Wind Speed:</b>	121 mph
<b>Exposure Category:</b>	C
<b>Topographic Factor:</b>	1
<b>Ice Thickness:</b>	1 in
<b>Wind Speed with Ice:</b>	50 mph
<b>Service Wind Speed:</b>	60 mph

**Table 1 - Proposed Equipment Configuration**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
131.0	131.0	1	Site Pro 1	RMQP-4096-HK	1 3	1/2 1-5/8
		3	Ericsson	AIR 6419 B41_TMO		
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	Ericsson	Radio 4480_TMOV2		
		3	Rfs Celwave	APXVAALL24_43-U-NA20_TMO		
		1	Rfs Celwave	SC2-W100BD		

**Table 2 - Other Considered Equipment**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150.0	150.0	3	Antel	BXA-70063/6CF	11	1-5/8
		6	Commscope	NHH-65B-R2B		
		1	Raycap	RVZDC-6627-PF-48		
		3	Samsung Telecom.	MT6407-77A		
		3	Samsung Telecom.	RF4439D-25A		
		3	Samsung Telecom.	RF4440D-13A		
		1	--	Platform Mount [LP 303-1]		
119.0	120.0	3	Cci Antennas	DMP65R-BU8D	2 4 12	3/8 7/8 1-1/4
		3	Cci Antennas	HPA65R-BU8A		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 8843 B2/B66A		
		3	Powerwave Tech.	7770.00		
		6	Powerwave Tech.	LGP21401		
		1	Raycap	DC6-48-60-0-8C-EV		
		1	Raycap	DC6-48-60-18-8F		
		1	--	T-Arm Mount [TA 601-3]		

### 3) ANALYSIS PROCEDURE

**Table 3 - Documents Provided**

Document	Reference	Source
Tower Manufacturer Drawing	8633642	CCI Sites
Tower Mapping	6126908	CCI Sites
Foundation Drawing	4858940	CCI Sites
Geotech Report	4713227	CCI Sites
Crown CAD Package	Date: 06/01/2022	CCI Sites

#### 3.1) Analysis Method

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

#### 3.2) Assumptions

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

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

### 4) ANALYSIS RESULTS

**Table 4 - Section Capacity (Summary)**

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	149 - 119	Pole	TP26.12x19.5x0.188	1	-8.427	947.977	42.1	Pass
L2	119 - 82.08	Pole	TP34.26x26.12x0.25	2	-15.700	1605.733	64.9	Pass
L3	82.08 - 46.123	Pole	TP41.57x32.694x0.313	3	-23.445	2437.428	65.5	Pass
L4	46.123 - 0	Pole	TP51x39.694x0.375	4	-38.908	3701.250	62.7	Pass
							Summary	
						Pole (L3)	65.5	Pass
						Rating =	65.5	Pass



**Table 5 - Tower Component Stresses vs. Capacity - LC7**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Flange Connection	119.0	54.0	Pass
1,2	Anchor Rods	Base	52.1	Pass
1,2	Base Plate	Base	66.3	Pass
1,2	Base Foundation (Structural)	Base	46.8	Pass
1,2	Base Foundation (Soil Interaction)	Base	42.9	Pass

<b>Structure Rating (max from all components) =</b>	<b>66.3%</b>
---	--------------

Notes:

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

#### 4.1) Recommendations

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

The results of the tilt and twist values for a 60 mph 3-second gust service wind speed per the TIA-222-H Standard are given below:

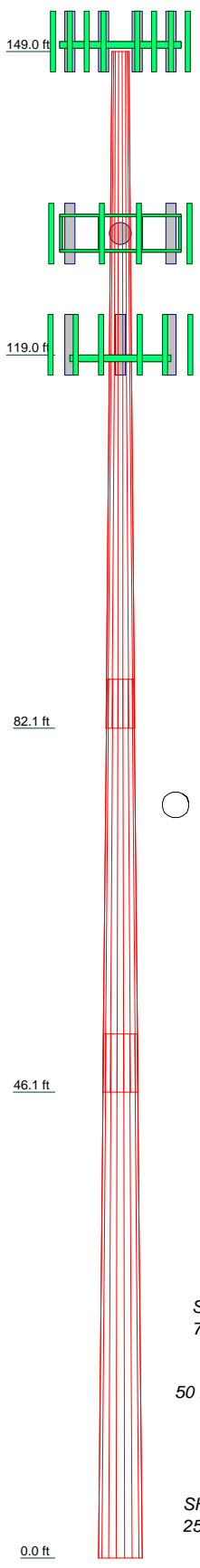
**Table 6 – Existing Loading Tilt-Sway Results for 60 mph Service Wind - LC7**

<i>Elevation (ft)</i>	<i>Dish Model</i>	<i>Diameter (ft)</i>	<i>Tilt (°)</i>	<i>Twist (°)</i>
131.0	SC2-W100BD	2.200	1.492	0.003

**APPENDIX A**

**TNXTOWER OUTPUT**

Section	1	2	3	4	
Length (ft)	30.000	36.920	40.790	51.873	
Number of Sides	18	18	18	18	
Thickness (in)	0.188	0.250	0.313	0.375	
Socket Length (ft)		4.833	5.750		
Top Dia (in)	19.500	26.120	32.694	39.694	
Bot Dia (in)	26.120	34.260	41.570	51.000	
Grade			A572-65		
Weight (K)	1.4	3.0	5.1	9.4	18.9



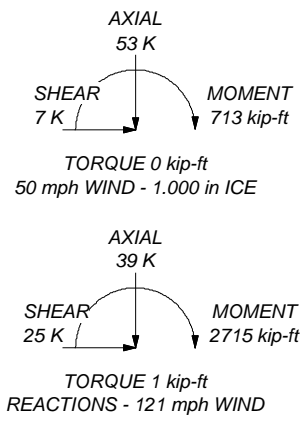
**MATERIAL STRENGTH**

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

**TOWER DESIGN NOTES**

1. Tower is located in New London County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 121 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 65.5%

ALL REACTIONS ARE FACTORED



**B+T Group**  
 1717 S. Boulder, Suite 300  
 Tulsa, OK 74119  
 Phone: (918) 587-4630  
 FAX: (555) 295-0265

Job: <b>138667.005.01 - LEBANON WEST, CT (BU# 84286)</b>		
Project:		
Client: Crown Castle	Drawn by: SACHIN	App'd:
Code: TIA-222-H	Date: 06/04/22	Scale: NTS
Path:	Dwg No: E-1	

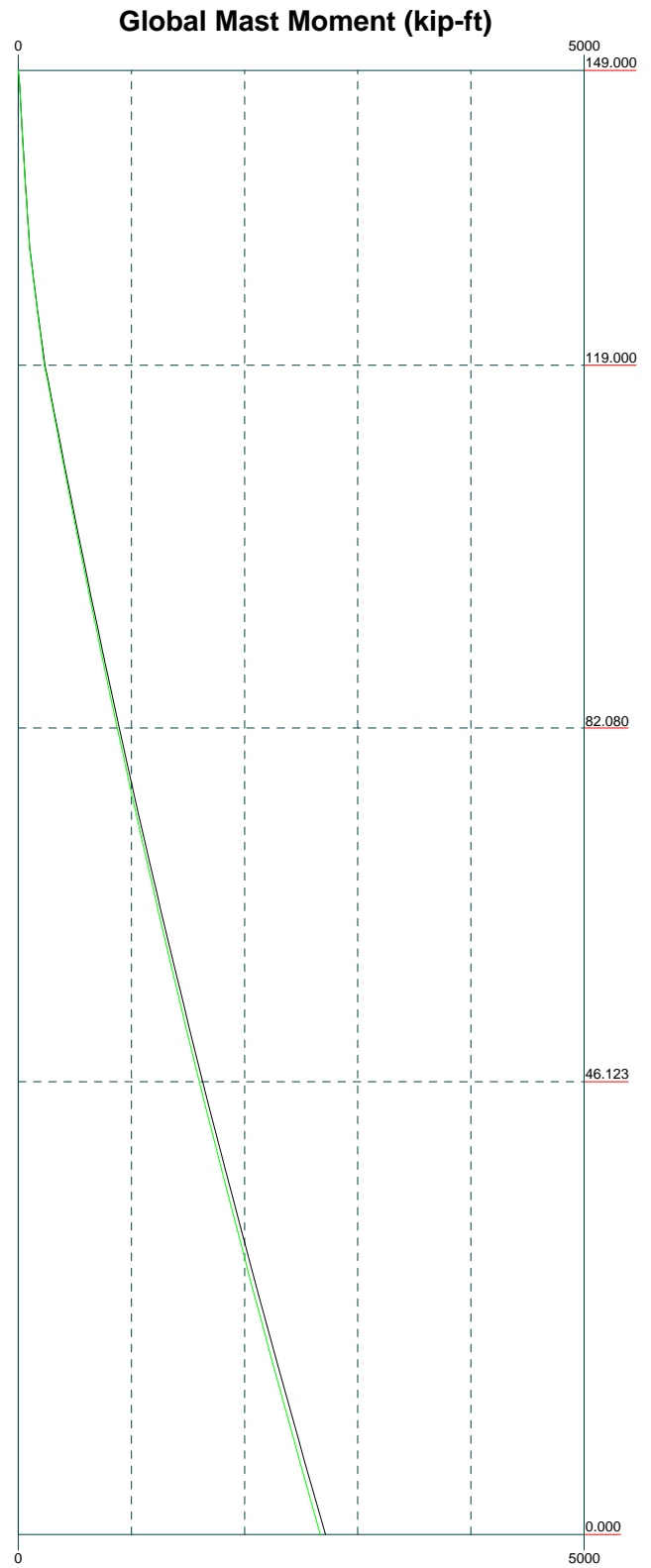
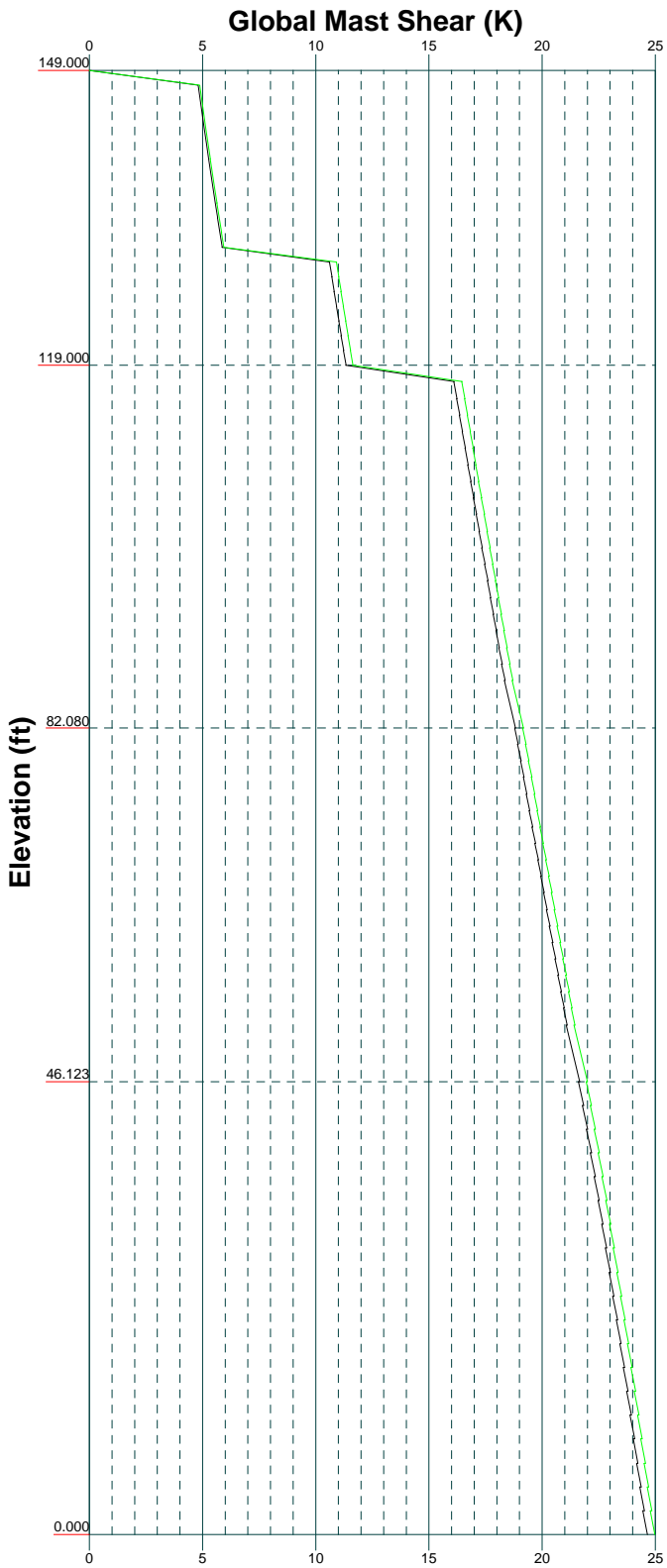
C:\Users\GOWRAB\Desktop\138667\_A222H5\_Lebanon West - Sachin - 06/04/22\138667.005.01 LEBANON WEST.ctb

Vx

Vz

Mx

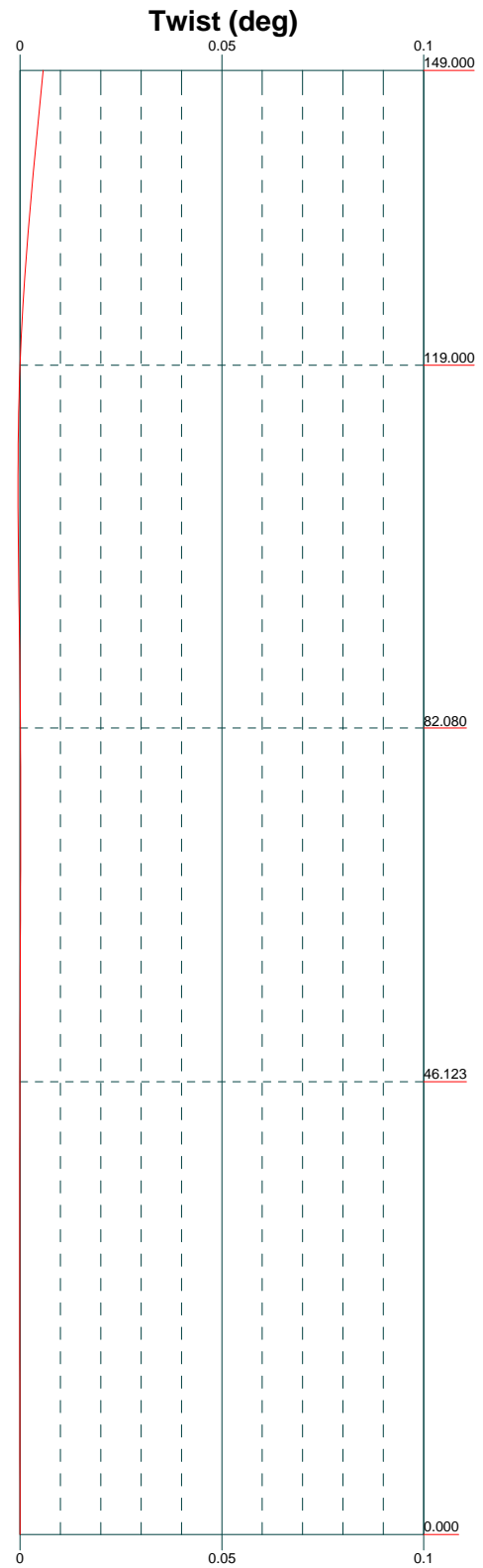
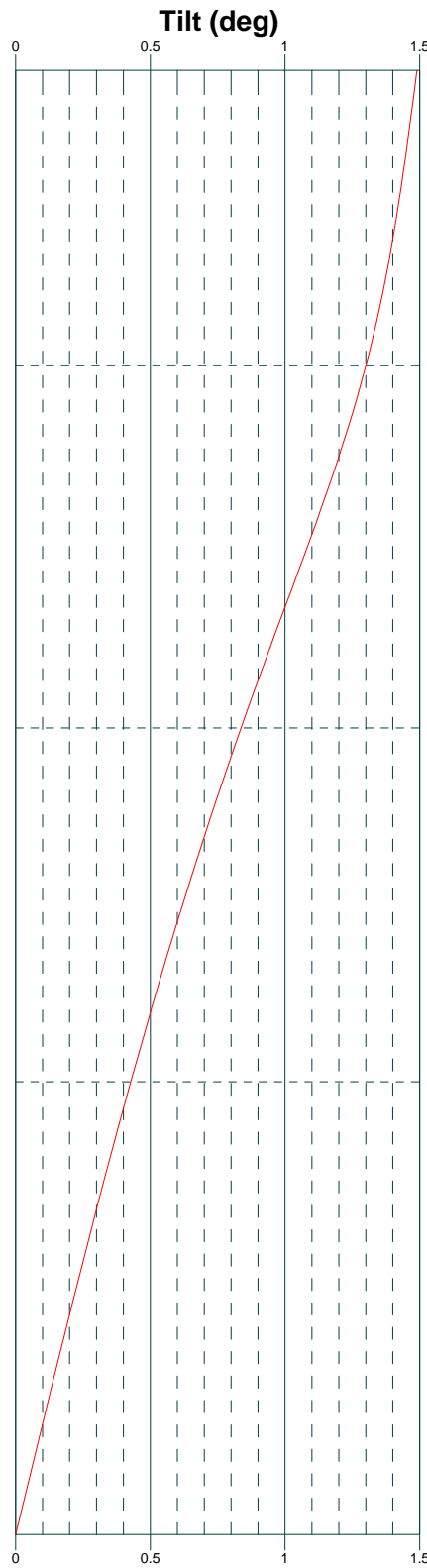
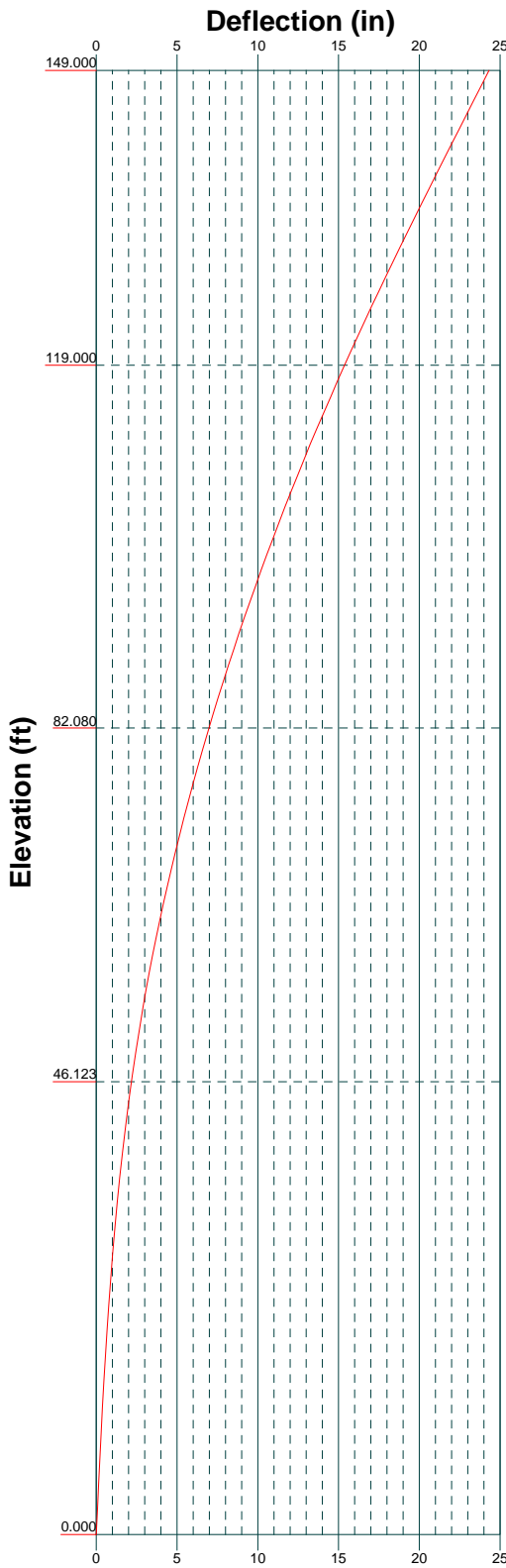
Mz



**B+T Group**  
 1717 S. Boulder, Suite 300  
 Tulsa, OK 74119  
 Phone: (918) 587-4630  
 FAX: (555) 295-0265

Job: <b>138667.005.01 - LEBANON WEST, CT (BU# 84286)</b>		
Project:		
Client: Crown Castle	Drawn by: SACHIN	App'd:
Code: TIA-222-H	Date: 06/04/22	Scale: NTS
Path:	Dwg No: E-4	

C:\Users\SCW\OneDrive\Documents\138667\_005\138667\_005\_01\138667\_005\_01\LEBANON WEST.ctb



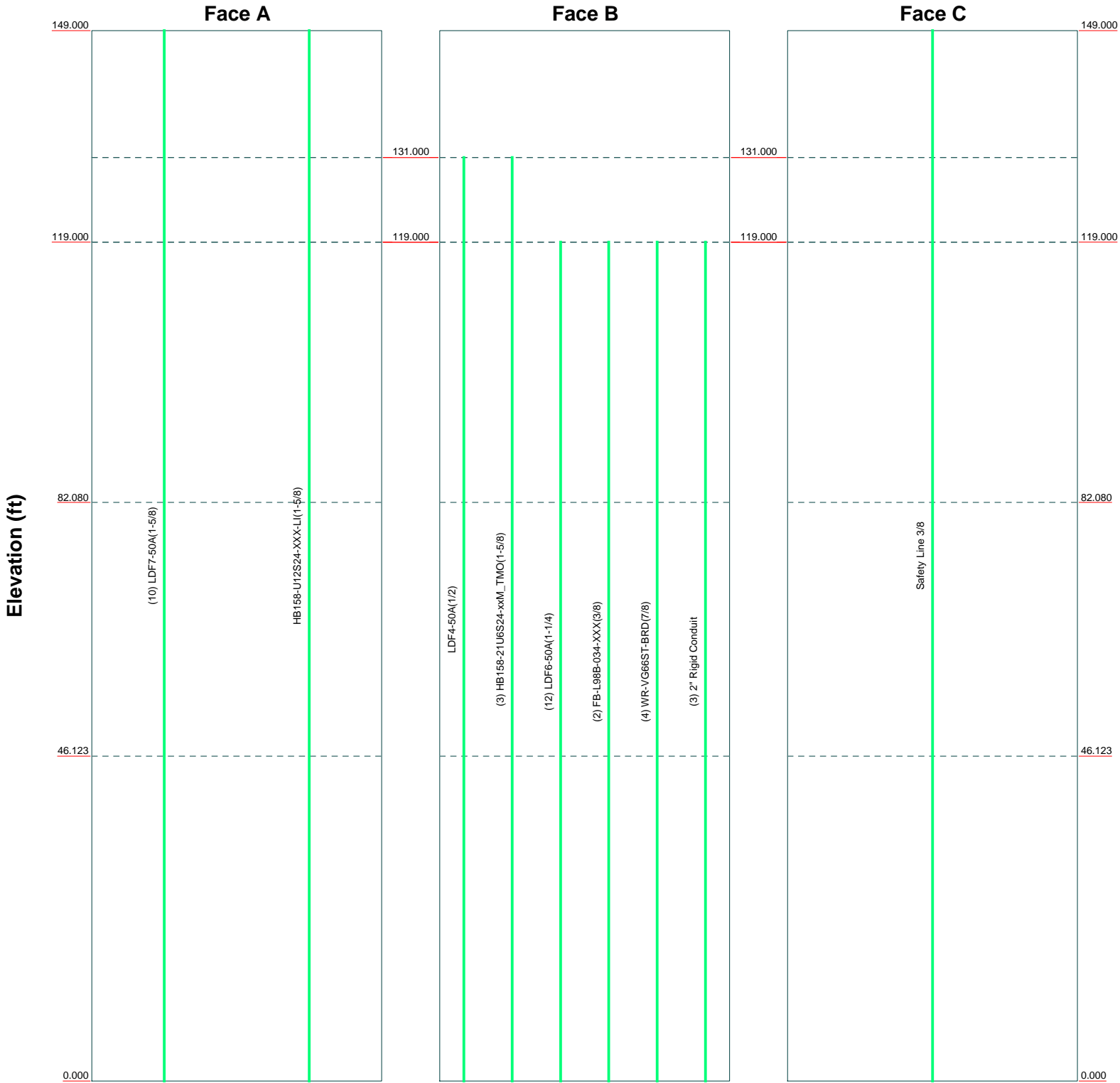
**B+T Group**  
 1717 S. Boulder, Suite 300  
 Tulsa, OK 74119  
 Phone: (918) 587-4630  
 FAX: (555) 295-0265

Job: <b>138667.005.01 - LEBANON WEST, CT (BU# 84286)</b>		
Project:		
Client: Crown Castle	Drawn by: SACHIN	App'd:
Code: TIA-222-H	Date: 06/04/22	Scale: NTS
Path:	Dwg No: E-5	

# Feed Line Distribution Chart

## 0' - 149'

— Round   
 — Flat   
 — App In Face   
 — App Out Face   
 — Truss Leg




**B+T Group**  
 1717 S. Boulder, Suite 300  
 Tulsa, OK 74119  
 Phone: (918) 587-4630  
 FAX: (555) 295-0265

Job: <b>138667.005.01 - LEBANON WEST, CT (BU# 84286)</b>		
Project:		
Client: Crown Castle	Drawn by: SACHIN	App'd:
Code: TIA-222-H	Date: 06/04/22	Scale: NTS
Path:	Dwg No: E-7	

C:\Users\SCW\OneDrive\Documents\138667\_005\01\138667\_005\_01\LEBANON WEST.ctb

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b> 138667.005.01 - LEBANON WEST, CT (BU# 842865)	<b>Page</b> 1 of 16
	<b>Project</b>	<b>Date</b> 16:54:54 06/04/22
	<b>Client</b> Crown Castle	<b>Designed by</b> SACHIN

## Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

- Tower is located in New London County, Connecticut.
- Tower base elevation above sea level: 487.000 ft.
- Basic wind speed of 121 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.000 ft.
- Nominal ice thickness of 1.000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.000 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50.000 °F.
- Deflections calculated using a wind speed of 60 mph.
- TIA-222-H Annex S.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used:  $K_{es}(F_w) = 0.95$ ,  $K_{es}(t_i) = 0.85$ .
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

## Options

- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>Consider Moments - Legs</li> <li>Consider Moments - Horizontals</li> <li>Consider Moments - Diagonals</li> <li>Use Moment Magnification</li> <li>√ Use Code Stress Ratios</li> <li>√ Use Code Safety Factors - Guys</li> <li>Escalate Ice</li> <li>Always Use Max Kz</li> <li>Use Special Wind Profile</li> <li>Include Bolts In Member Capacity</li> <li>Leg Bolts Are At Top Of Section</li> <li>Secondary Horizontal Braces Leg</li> <li>Use Diamond Inner Bracing (4 Sided)</li> <li>SR Members Have Cut Ends</li> <li>SR Members Are Concentric</li> </ul> | <ul style="list-style-type: none"> <li>Distribute Leg Loads As Uniform</li> <li>Assume Legs Pinned</li> <li>√ Assume Rigid Index Plate</li> <li>√ Use Clear Spans For Wind Area</li> <li>Use Clear Spans For KL/r</li> <li>Retension Guys To Initial Tension</li> <li>√ Bypass Mast Stability Checks</li> <li>√ Use Azimuth Dish Coefficients</li> <li>√ Project Wind Area of Appurt.</li> <li>Autocalc Torque Arm Areas</li> <li>Add IBC .6D+W Combination</li> <li>Sort Capacity Reports By Component</li> <li>Triangulate Diamond Inner Bracing</li> <li>Treat Feed Line Bundles As Cylinder</li> <li>Ignore KL/ry For 60 Deg. Angle Legs</li> </ul> | <ul style="list-style-type: none"> <li>Use ASCE 10 X-Brace Ly Rules</li> <li>Calculate Redundant Bracing Forces</li> <li>Ignore Redundant Members in FEA</li> <li>SR Leg Bolts Resist Compression</li> <li>All Leg Panels Have Same Allowable</li> <li>Offset Girt At Foundation</li> <li>√ Consider Feed Line Torque</li> <li>Include Angle Block Shear Check</li> <li>Use TIA-222-H Bracing Resist. Exemption</li> <li>Use TIA-222-H Tension Splice Exemption</li> <li style="text-align: center;">Poles</li> <li>√ Include Shear-Torsion Interaction</li> <li>Always Use Sub-Critical Flow</li> <li>Use Top Mounted Sockets</li> <li>√ Pole Without Linear Attachments</li> <li>Pole With Shroud Or No Appurtenances</li> <li>Outside and Inside Corner Radii Are Known</li> </ul> |
|--|---|---|

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b> 138667.005.01 - LEBANON WEST, CT (BU# 842865)	<b>Page</b> 2 of 16
	<b>Project</b>	<b>Date</b> 16:54:54 06/04/22
	<b>Client</b> Crown Castle	<b>Designed by</b> SACHIN

### Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	149.000-119.000	30.000	0.000	18	19.500	26.120	0.188	0.750	A572-65 (65 ksi)
L2	119.000-82.080	36.920	4.833	18	26.120	34.260	0.250	1.000	A572-65 (65 ksi)
L3	82.080-46.123	40.790	5.750	18	32.694	41.570	0.313	1.250	A572-65 (65 ksi)
L4	46.123-0.000	51.873		18	39.694	51.000	0.375	1.500	A572-65 (65 ksi)

### Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I <sup>2</sup> /Q in <sup>2</sup>	w in	w/t
L1	19.772	11.493	541.578	6.856	9.906	54.672	1083.869	5.748	3.102	16.544
	26.494	15.433	1311.230	9.206	13.269	98.819	2624.185	7.718	4.267	22.758
L2	26.484	20.528	1735.696	9.184	13.269	130.809	3473.676	10.266	4.157	16.628
	34.750	26.987	3943.704	12.074	17.404	226.597	7892.597	13.496	5.590	22.359
L3	34.218	32.119	4255.032	11.496	16.609	256.192	8515.663	16.062	5.204	16.654
	42.163	40.922	8800.414	14.646	21.118	416.734	17612.408	20.465	6.766	21.652
L4	41.521	46.799	9140.669	13.958	20.164	453.306	18293.366	23.404	6.326	16.87
	51.729	60.256	19510.606	17.972	25.908	753.073	39046.884	30.134	8.316	22.176

Tower Elevation ft	Gusset Area (per face) ft <sup>2</sup>	Gusset Thickness in	Gusset Grade	Adjust. Factor A <sub>f</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 149.000-119.000				1	1	1			
L2 119.000-82.080				1	1	1			
L3 82.080-46.123				1	1	1			
L4 46.123-0.000				1	1	1			



<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b> 138667.005.01 - LEBANON WEST, CT (BU# 842865)	<b>Page</b> 3 of 16
	<b>Project</b>	<b>Date</b> 16:54:54 06/04/22
	<b>Client</b> Crown Castle	<b>Designed by</b> SACHIN

### Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
*											

### Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C <sub>AA</sub> ft <sup>2</sup> /ft	Weight klf
LDF7-50A(1-5/8)	A	No	No	Inside Pole	149.000 - 0.000	10	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
HB158-U12S24-XX X-LI(1-5/8)	A	No	No	Inside Pole	149.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.003 0.003 0.003
*									
LDF4-50A(1/2)	B	No	No	Inside Pole	131.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
HB158-21U6S24-xx M_TMO(1-5/8)	B	No	No	Inside Pole	131.000 - 0.000	3	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.003 0.003 0.003
*									
LDF6-50A(1-1/4)	B	No	No	Inside Pole	119.000 - 0.000	12	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
FB-L98B-034-XXX(3/8)	B	No	No	Inside Pole	119.000 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
WR-VG66ST-BRD(7/8)	B	No	No	Inside Pole	119.000 - 0.000	4	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
2" Rigid Conduit	B	No	No	Inside Pole	119.000 - 0.000	3	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.003 0.003 0.003
*									
Safety Line 3/8	C	No	No	CaAa (Out Of Face)	149.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.037 0.137 0.238	0.000 0.001 0.001
*									

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight K
L1	149.000-119.000	A	0.000	0.000	0.000	0.000	0.342
		B	0.000	0.000	0.000	0.000	0.092
		C	0.000	0.000	0.000	1.125	0.007

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b>	<b>Page</b>
	138667.005.01 - LEBANON WEST, CT (BU# 842865)	4 of 16
	<b>Project</b>	<b>Date</b>
		16:54:54 06/04/22
<b>Client</b>	Crown Castle	<b>Designed by</b>
		SACHIN

Tower Section	Tower Elevation ft	Face	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
L2	119.000-82.080	A	0.000	0.000	0.000	0.000	0.421
		B	0.000	0.000	0.000	0.000	0.997
		C	0.000	0.000	0.000	1.385	0.008
L3	82.080-46.123	A	0.000	0.000	0.000	0.000	0.410
		B	0.000	0.000	0.000	0.000	0.971
		C	0.000	0.000	0.000	1.348	0.008
L4	46.123-0.000	A	0.000	0.000	0.000	0.000	0.526
		B	0.000	0.000	0.000	0.000	1.246
		C	0.000	0.000	0.000	1.730	0.010

### Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
L1	149.000-119.000	A	0.977	0.000	0.000	0.000	0.000	0.342
		B		0.000	0.000	0.000	0.000	0.092
		C		0.000	0.000	0.000	6.989	0.038
L2	119.000-82.080	A	0.950	0.000	0.000	0.000	0.000	0.421
		B		0.000	0.000	0.000	0.000	0.997
		C		0.000	0.000	0.000	8.396	0.045
L3	82.080-46.123	A	0.908	0.000	0.000	0.000	0.000	0.410
		B		0.000	0.000	0.000	0.000	0.971
		C		0.000	0.000	0.000	8.177	0.044
L4	46.123-0.000	A	0.821	0.000	0.000	0.000	0.000	0.526
		B		0.000	0.000	0.000	0.000	1.246
		C		0.000	0.000	0.000	10.104	0.055

### Feed Line Center of Pressure

Section	Elevation ft	$CP_x$ in	$CP_z$ in	$CP_x$ Ice in	$CP_z$ Ice in
L1	149.000-119.000	-0.296	0.171	-0.909	0.525
L2	119.000-82.080	-0.298	0.172	-0.927	0.535
L3	82.080-46.123	-0.299	0.173	-0.952	0.550
L4	46.123-0.000	-0.300	0.173	-0.939	0.542

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

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b> 138667.005.01 - LEBANON WEST, CT (BU# 842865)	<b>Page</b> 5 of 16
	<b>Project</b>	<b>Date</b> 16:54:54 06/04/22
	<b>Client</b> Crown Castle	<b>Designed by</b> SACHIN

## Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>A</sub> Front	C <sub>A</sub> A <sub>A</sub> Side	Weight	
			Horz	Lateral						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
BXA-70063/6CF w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	150.000	No Ice	7.340	5.510	0.058
			0.000	0.000			1/2" Ice	8.080	6.220	0.115
			0.000	0.000			1" Ice	8.830	6.940	0.183
BXA-70063/6CF w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	150.000	No Ice	7.340	5.510	0.058
			0.000	0.000			1/2" Ice	8.080	6.220	0.115
			0.000	0.000			1" Ice	8.830	6.940	0.183
BXA-70063/6CF w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	150.000	No Ice	7.340	5.510	0.058
			0.000	0.000			1/2" Ice	8.080	6.220	0.115
			0.000	0.000			1" Ice	8.830	6.940	0.183
(2) NHH-65B-R2B w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	150.000	No Ice	4.090	3.290	0.069
			0.000	0.000			1/2" Ice	4.480	3.670	0.132
			0.000	0.000			1" Ice	4.880	4.060	0.205
(2) NHH-65B-R2B w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	150.000	No Ice	4.090	3.290	0.069
			0.000	0.000			1/2" Ice	4.480	3.670	0.132
			0.000	0.000			1" Ice	4.880	4.060	0.205
(2) NHH-65B-R2B w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	150.000	No Ice	4.090	3.290	0.069
			0.000	0.000			1/2" Ice	4.480	3.670	0.132
			0.000	0.000			1" Ice	4.880	4.060	0.205
MT6407-77A	A	From Leg	4.000	0.000	0.000	150.000	No Ice	4.692	1.840	0.082
			0.000	0.000			1/2" Ice	4.980	2.063	0.111
			0.000	0.000			1" Ice	5.275	2.292	0.144
MT6407-77A	B	From Leg	4.000	0.000	0.000	150.000	No Ice	4.692	1.840	0.082
			0.000	0.000			1/2" Ice	4.980	2.063	0.111
			0.000	0.000			1" Ice	5.275	2.292	0.144
MT6407-77A	C	From Leg	4.000	0.000	0.000	150.000	No Ice	4.692	1.840	0.082
			0.000	0.000			1/2" Ice	4.980	2.063	0.111
			0.000	0.000			1" Ice	5.275	2.292	0.144
RVZDC-6627-PF-48	A	From Leg	4.000	0.000	0.000	150.000	No Ice	3.792	2.514	0.032
			0.000	0.000			1/2" Ice	4.044	2.727	0.063
			0.000	0.000			1" Ice	4.303	2.947	0.099
RF4440D-13A	A	From Leg	4.000	0.000	0.000	150.000	No Ice	1.865	1.129	0.073
			0.000	0.000			1/2" Ice	2.035	1.267	0.090
			0.000	0.000			1" Ice	2.212	1.411	0.110
RF4440D-13A	B	From Leg	4.000	0.000	0.000	150.000	No Ice	1.865	1.129	0.073
			0.000	0.000			1/2" Ice	2.035	1.267	0.090
			0.000	0.000			1" Ice	2.212	1.411	0.110
RF4440D-13A	C	From Leg	4.000	0.000	0.000	150.000	No Ice	1.865	1.129	0.073
			0.000	0.000			1/2" Ice	2.035	1.267	0.090
			0.000	0.000			1" Ice	2.212	1.411	0.110
RF4439D-25A	A	From Leg	4.000	0.000	0.000	150.000	No Ice	1.865	1.252	0.075
			0.000	0.000			1/2" Ice	2.035	1.394	0.093
			0.000	0.000			1" Ice	2.212	1.544	0.114
RF4439D-25A	B	From Leg	4.000	0.000	0.000	150.000	No Ice	1.865	1.252	0.075
			0.000	0.000			1/2" Ice	2.035	1.394	0.093
			0.000	0.000			1" Ice	2.212	1.544	0.114
RF4439D-25A	C	From Leg	4.000	0.000	0.000	150.000	No Ice	1.865	1.252	0.075
			0.000	0.000			1/2" Ice	2.035	1.394	0.093
			0.000	0.000			1" Ice	2.212	1.544	0.114
8' x 2" Mount Pipe	A	From Leg	4.000	0.000	0.000	150.000	No Ice	1.900	1.900	0.029
			0.000	0.000			1/2" Ice	2.728	2.728	0.044
			0.000	0.000			1" Ice	3.401	3.401	0.063

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b>	138667.005.01 - LEBANON WEST, CT (BU# 842865)	<b>Page</b>	6 of 16
	<b>Project</b>		<b>Date</b>	16:54:54 06/04/22
	<b>Client</b>	Crown Castle		<b>Designed by</b>

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Vert						ft
			Lateral		°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
8' x 2" Mount Pipe	B	From Leg	4.000	0.000	0.000	150.000	No Ice	1.900	1.900	0.029
			0.000				1/2" Ice	2.728	2.728	0.044
			0.000				1" Ice	3.401	3.401	0.063
8' x 2" Mount Pipe	C	From Leg	4.000	0.000	0.000	150.000	No Ice	1.900	1.900	0.029
			0.000				1/2" Ice	2.728	2.728	0.044
			0.000				1" Ice	3.401	3.401	0.063
Platform Mount [LP 303-1]	C	None			0.000	150.000	No Ice	14.690	14.690	1.250
							1/2" Ice	18.010	18.010	1.569
							1" Ice	21.340	21.340	1.942
Side Arm Mount [SO 102-3]	C	None			0.000	150.000	No Ice	3.600	3.600	0.075
							1/2" Ice	4.180	4.180	0.105
							1" Ice	4.750	4.750	0.135
*										
AIR 6419 B41_TMO w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	131.000	No Ice	6.580	3.500	0.111
			0.000				1/2" Ice	7.060	3.900	0.162
			0.000				1" Ice	7.570	4.320	0.220
AIR 6419 B41_TMO w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	131.000	No Ice	6.580	3.500	0.111
			0.000				1/2" Ice	7.060	3.900	0.162
			0.000				1" Ice	7.570	4.320	0.220
AIR 6419 B41_TMO w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	131.000	No Ice	6.580	3.500	0.111
			0.000				1/2" Ice	7.060	3.900	0.162
			0.000				1" Ice	7.570	4.320	0.220
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	131.000	No Ice	14.690	6.870	0.183
			0.000				1/2" Ice	15.460	7.550	0.311
			0.000				1" Ice	16.230	8.250	0.453
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	131.000	No Ice	14.690	6.870	0.183
			0.000				1/2" Ice	15.460	7.550	0.311
			0.000				1" Ice	16.230	8.250	0.453
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	131.000	No Ice	14.690	6.870	0.183
			0.000				1/2" Ice	15.460	7.550	0.311
			0.000				1" Ice	16.230	8.250	0.453
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.000	0.000	0.000	131.000	No Ice	2.139	1.686	0.109
			0.000				1/2" Ice	2.321	1.850	0.131
			0.000				1" Ice	2.511	2.022	0.156
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.000	0.000	0.000	131.000	No Ice	2.139	1.686	0.109
			0.000				1/2" Ice	2.321	1.850	0.131
			0.000				1" Ice	2.511	2.022	0.156
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.000	0.000	0.000	131.000	No Ice	2.139	1.686	0.109
			0.000				1/2" Ice	2.321	1.850	0.131
			0.000				1" Ice	2.511	2.022	0.156
Radio 4480_TMOV2	A	From Leg	4.000	0.000	0.000	131.000	No Ice	2.878	1.397	0.081
			0.000				1/2" Ice	3.091	1.558	0.103
			0.000				1" Ice	3.312	1.727	0.128
Radio 4480_TMOV2	B	From Leg	4.000	0.000	0.000	131.000	No Ice	2.878	1.397	0.081
			0.000				1/2" Ice	3.091	1.558	0.103
			0.000				1" Ice	3.312	1.727	0.128
Radio 4480_TMOV2	C	From Leg	4.000	0.000	0.000	131.000	No Ice	2.878	1.397	0.081
			0.000				1/2" Ice	3.091	1.558	0.103
			0.000				1" Ice	3.312	1.727	0.128
(2) 8' x 2" Mount Pipe	A	From Leg	4.000	0.000	0.000	131.000	No Ice	1.900	1.900	0.029
			0.000				1/2" Ice	2.728	2.728	0.044
			0.000				1" Ice	3.401	3.401	0.063
(2) 8' x 2" Mount Pipe	B	From Leg	4.000	0.000	0.000	131.000	No Ice	1.900	1.900	0.029
			0.000				1/2" Ice	2.728	2.728	0.044
			0.000				1" Ice	3.401	3.401	0.063
(2) 8' x 2" Mount Pipe	C	From Leg	4.000	0.000	0.000	131.000	No Ice	1.900	1.900	0.029
			0.000				1/2" Ice	2.728	2.728	0.044
			0.000				1" Ice	3.401	3.401	0.063

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b>	<b>Page</b>
	138667.005.01 - LEBANON WEST, CT (BU# 842865)	7 of 16
	<b>Project</b>	<b>Date</b>
		16:54:54 06/04/22
<b>Client</b>	<b>Designed by</b>	
	Crown Castle	SACHIN

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Lateral						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
PlatfoSite Pro I RMQP-4096-HK	C	None	0.000		0.000	131.000	1" Ice	3.401	3.401	0.063
							No Ice	28.310	28.310	1.770
							1/2" Ice	35.690	35.690	2.297
							1" Ice	43.110	43.110	2.943
*										
7770.00 w/ Mount Pipe	A	From Leg	4.000		0.000	119.000	No Ice	5.746	4.254	0.055
			0.000				1/2" Ice	6.179	5.014	0.103
			1.000				1" Ice	6.607	5.711	0.157
7770.00 w/ Mount Pipe	B	From Leg	4.000		0.000	119.000	No Ice	5.746	4.254	0.055
			0.000				1/2" Ice	6.179	5.014	0.103
			1.000				1" Ice	6.607	5.711	0.157
7770.00 w/ Mount Pipe	C	From Leg	4.000		0.000	119.000	No Ice	5.746	4.254	0.055
			0.000				1/2" Ice	6.179	5.014	0.103
			1.000				1" Ice	6.607	5.711	0.157
HPA65R-BU8A w/ Mount Pipe	A	From Leg	4.000		0.000	119.000	No Ice	8.100	6.940	0.087
			0.000				1/2" Ice	8.860	7.690	0.170
			1.000				1" Ice	9.640	8.450	0.266
HPA65R-BU8A w/ Mount Pipe	B	From Leg	4.000		0.000	119.000	No Ice	8.100	6.940	0.087
			0.000				1/2" Ice	8.860	7.690	0.170
			1.000				1" Ice	9.640	8.450	0.266
HPA65R-BU8A w/ Mount Pipe	C	From Leg	4.000		0.000	119.000	No Ice	8.100	6.940	0.087
			0.000				1/2" Ice	8.860	7.690	0.170
			1.000				1" Ice	9.640	8.450	0.266
DMP65R-BU8D w/ Mount Pipe	A	From Leg	4.000		0.000	119.000	No Ice	15.890	7.890	0.139
			0.000				1/2" Ice	16.810	8.740	0.252
			1.000				1" Ice	17.760	9.600	0.380
DMP65R-BU8D w/ Mount Pipe	B	From Leg	4.000		0.000	119.000	No Ice	15.890	7.890	0.139
			0.000				1/2" Ice	16.810	8.740	0.252
			1.000				1" Ice	17.760	9.600	0.380
DMP65R-BU8D w/ Mount Pipe	C	From Leg	4.000		0.000	119.000	No Ice	15.890	7.890	0.139
			0.000				1/2" Ice	16.810	8.740	0.252
			1.000				1" Ice	17.760	9.600	0.380
(2) LGP21401	A	From Leg	4.000		0.000	119.000	No Ice	1.104	0.207	0.014
			0.000				1/2" Ice	1.239	0.274	0.021
			1.000				1" Ice	1.381	0.348	0.030
(2) LGP21401	B	From Leg	4.000		0.000	119.000	No Ice	1.104	0.207	0.014
			0.000				1/2" Ice	1.239	0.274	0.021
			1.000				1" Ice	1.381	0.348	0.030
(2) LGP21401	C	From Leg	4.000		0.000	119.000	No Ice	1.104	0.207	0.014
			0.000				1/2" Ice	1.239	0.274	0.021
			1.000				1" Ice	1.381	0.348	0.030
RRUS 4449 B5/B12	A	From Leg	4.000		0.000	119.000	No Ice	1.968	1.408	0.071
			0.000				1/2" Ice	2.144	1.564	0.090
			1.000				1" Ice	2.328	1.727	0.111
RRUS 4449 B5/B12	B	From Leg	4.000		0.000	119.000	No Ice	1.968	1.408	0.071
			0.000				1/2" Ice	2.144	1.564	0.090
			1.000				1" Ice	2.328	1.727	0.111
RRUS 4449 B5/B12	C	From Leg	4.000		0.000	119.000	No Ice	1.968	1.408	0.071
			0.000				1/2" Ice	2.144	1.564	0.090
			1.000				1" Ice	2.328	1.727	0.111
RRUS 8843 B2/B66A	A	From Leg	4.000		0.000	119.000	No Ice	1.639	1.353	0.072
			0.000				1/2" Ice	1.799	1.500	0.090
			1.000				1" Ice	1.966	1.655	0.110
RRUS 8843 B2/B66A	B	From Leg	4.000		0.000	119.000	No Ice	1.639	1.353	0.072
			0.000				1/2" Ice	1.799	1.500	0.090
			1.000				1" Ice	1.966	1.655	0.110
RRUS 8843 B2/B66A	C	From Leg	4.000		0.000	119.000	No Ice	1.639	1.353	0.072

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b> 138667.005.01 - LEBANON WEST, CT (BU# 842865)	<b>Page</b> 8 of 16
	<b>Project</b>	<b>Date</b> 16:54:54 06/04/22
	<b>Client</b> Crown Castle	<b>Designed by</b> SACHIN

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz Lateral	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
DC6-48-60-0-8C-EV	B	From Leg	0.000			1/2" Ice	1.799	1.500	0.090	
			1.000			1" Ice	1.966	1.655	0.110	
			3.000	0.000	119.000	No Ice	2.736	4.783	0.026	
			0.000			1/2" Ice	2.962	5.063	0.063	
DC6-48-60-18-8F	C	From Leg	1.000			1" Ice	3.195	5.350	0.104	
			3.000	0.000	119.000	No Ice	1.212	1.212	0.033	
			0.000			1/2" Ice	1.892	1.892	0.055	
			1.000			1" Ice	2.105	2.105	0.080	
5' x 2" Pipe Mount	A	From Leg	3.000	0.000	119.000	No Ice	1.188	1.188	0.018	
			0.000			1/2" Ice	1.496	1.496	0.027	
			0.000			1" Ice	1.807	1.807	0.040	
			3.000	0.000	119.000	No Ice	1.188	1.188	0.018	
5' x 2" Pipe Mount	B	From Leg	0.000			1/2" Ice	1.496	1.496	0.027	
			0.000			1" Ice	1.807	1.807	0.040	
			3.000	0.000	119.000	No Ice	1.188	1.188	0.018	
			0.000			1/2" Ice	1.496	1.496	0.027	
5' x 2" Pipe Mount	C	From Leg	0.000			1" Ice	1.807	1.807	0.040	
			3.000	0.000	119.000	No Ice	1.188	1.188	0.018	
			0.000			1/2" Ice	1.496	1.496	0.027	
			0.000			1" Ice	1.807	1.807	0.040	
T-Arm Mount [TA 601-3]	C	None			0.000	119.000	No Ice	12.560	12.560	0.726
						1/2" Ice	15.360	15.360	0.941	
						1" Ice	18.040	18.040	1.210	
Side Arm Mount [SO 701-3]	C	None			0.000	119.000	No Ice	3.020	3.020	0.195
						1/2" Ice	4.180	4.180	0.237	
						1" Ice	5.330	5.330	0.279	
*										
*										

## Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz Lateral	Vert							
			ft	ft	°	°	ft	ft	ft <sup>2</sup>	K		
SC2-W100BD	A	Paraboloid w/o Radome	From Leg	4.000		0.000		131.000	2.200	No Ice	3.801	0.020
				0.000						1/2" Ice	4.095	0.041
				0.000						1" Ice	4.388	0.062
*												
*												

## Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b> 138667.005.01 - LEBANON WEST, CT (BU# 842865)	<b>Page</b> 9 of 16
	<b>Project</b>	<b>Date</b> 16:54:54 06/04/22
	<b>Client</b> Crown Castle	<b>Designed by</b> SACHIN

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

### Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	149 - 119	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-15.695	0.032	0.818
			Max. Mx	20	-8.477	230.390	0.227
			Max. My	14	-8.427	0.016	-235.060
			Max. Vy	20	-11.339	230.390	0.227
			Max. Vx	14	11.643	0.016	-235.060
			Max. Torque	6			1.033
			Max Tension	1	0.000	0.000	0.000
L2	119 - 82.08	Pole	Max Tension	1	0.000	0.000	0.000

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b> 138667.005.01 - LEBANON WEST, CT (BU# 842865)	<b>Page</b> 10 of 16
	<b>Project</b>	<b>Date</b> 16:54:54 06/04/22
	<b>Client</b> Crown Castle	<b>Designed by</b> SACHIN

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L3	82.08 - 46.123	Pole	Max. Compression	26	-26.870	-0.002	0.401
			Max. Mx	20	-15.746	784.564	-0.964
			Max. My	14	-15.700	1.274	-800.548
			Max. Vy	20	-18.363	784.564	-0.964
			Max. Vx	14	18.712	1.274	-800.548
			Max. Torque	24			-0.857
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.881	0.056	0.367
			Max. Mx	20	-23.471	1476.912	-2.134
			Max. My	14	-23.445	2.535	-1505.036
L4	46.123 - 0	Pole	Max. Vy	20	-21.108	1476.912	-2.134
			Max. Vx	14	21.452	2.535	-1505.036
			Max. Torque	24			-0.765
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-53.327	0.160	0.307
			Max. Mx	20	-38.908	2669.425	-3.842
			Max. My	14	-38.908	4.371	-2715.064
			Max. Vy	20	-24.651	2669.425	-3.842
			Max. Vx	14	24.980	4.371	-2715.064
			Max. Torque	24			-0.675

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	33	53.327	0.006	-6.742
	Max. H <sub>x</sub>	21	29.197	24.619	-0.032
	Max. H <sub>z</sub>	3	29.197	-0.034	24.855
	Max. M <sub>x</sub>	2	2702.719	-0.034	24.855
	Max. M <sub>z</sub>	8	2669.255	-24.619	0.036
	Max. Torsion	6	0.372	-21.367	12.444
	Min. Vert	11	29.197	-21.293	-12.607
	Min. H <sub>x</sub>	9	29.197	-24.619	0.036
	Min. H <sub>z</sub>	14	38.929	0.034	-24.947
	Min. M <sub>x</sub>	14	-2715.064	0.034	-24.947
	Min. M <sub>z</sub>	20	-2669.425	24.619	-0.032
	Min. Torsion	24	-0.562	12.321	21.482

### Tower Mast Reaction Summary

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead Only	32.441	0.000	0.000	-0.109	0.067	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	38.929	0.034	-24.855	-2702.719	-4.193	0.192
0.9 Dead+1.0 Wind 0 deg - No Ice	29.197	0.034	-24.855	-2670.143	-4.165	0.193
1.2 Dead+1.0 Wind 30 deg - No Ice	38.929	12.380	-21.516	-2339.218	-1343.845	-0.231
0.9 Dead+1.0 Wind 30 deg - No Ice	29.197	12.380	-21.516	-2311.026	-1327.705	-0.228



<p><b>tnxTower</b></p> <p><b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265</p>	<p><b>Job</b></p> <p>138667.005.01 - LEBANON WEST, CT (BU# 842865)</p>	<p><b>Page</b></p> <p>11 of 16</p>
	<p><b>Project</b></p>	<p><b>Date</b></p> <p>16:54:54 06/04/22</p>
	<p><b>Client</b></p> <p>Crown Castle</p>	<p><b>Designed by</b></p> <p>SACHIN</p>

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 60 deg - No Ice	38.929	21.367	-12.444	-1353.374	-2317.810	-0.372
0.9 Dead+1.0 Wind 60 deg - No Ice	29.197	21.367	-12.444	-1337.047	-2289.960	-0.367
1.2 Dead+1.0 Wind 90 deg - No Ice	38.929	24.619	-0.036	-4.723	-2669.255	-0.357
0.9 Dead+1.0 Wind 90 deg - No Ice	29.197	24.619	-0.036	-4.630	-2637.176	-0.352
1.2 Dead+1.0 Wind 120 deg - No Ice	38.929	21.293	12.607	1376.182	-2308.007	-0.280
0.9 Dead+1.0 Wind 120 deg - No Ice	29.197	21.293	12.607	1359.626	-2280.281	-0.276
1.2 Dead+1.0 Wind 150 deg - No Ice	38.929	12.242	21.627	2354.639	-1325.608	-0.116
0.9 Dead+1.0 Wind 150 deg - No Ice	29.197	12.242	21.627	2326.318	-1309.698	-0.114
1.2 Dead+1.0 Wind 180 deg - No Ice	38.929	-0.034	24.947	2715.064	4.371	-0.188
0.9 Dead+1.0 Wind 180 deg - No Ice	29.197	-0.034	24.947	2682.427	4.297	-0.189
1.2 Dead+1.0 Wind 210 deg - No Ice	38.929	-12.301	21.661	2358.896	1333.189	-0.211
0.9 Dead+1.0 Wind 210 deg - No Ice	29.197	-12.301	21.661	2330.526	1317.145	-0.214
1.2 Dead+1.0 Wind 240 deg - No Ice	38.929	-21.327	12.666	1383.583	2312.440	0.088
0.9 Dead+1.0 Wind 240 deg - No Ice	29.197	-21.327	12.666	1366.940	2284.619	0.083
1.2 Dead+1.0 Wind 270 deg - No Ice	38.929	-24.619	0.032	3.842	2669.425	0.353
0.9 Dead+1.0 Wind 270 deg - No Ice	29.197	-24.619	0.032	3.833	2637.301	0.348
1.2 Dead+1.0 Wind 300 deg - No Ice	38.929	-21.333	-12.385	-1345.966	2313.721	0.559
0.9 Dead+1.0 Wind 300 deg - No Ice	29.197	-21.333	-12.385	-1329.727	2285.875	0.556
1.2 Dead+1.0 Wind 330 deg - No Ice	38.929	-12.321	-21.482	-2334.953	1336.617	0.562
0.9 Dead+1.0 Wind 330 deg - No Ice	29.197	-12.321	-21.482	-2306.812	1320.518	0.560
1.2 Dead+1.0 Ice+1.0 Temp	53.327	0.000	0.000	-0.307	0.160	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	53.327	0.006	-6.724	-711.096	-0.624	-0.219
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	53.327	3.353	-5.821	-615.544	-353.756	-0.202
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	53.327	5.793	-3.365	-356.051	-610.913	-0.087
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	53.327	6.679	-0.007	-1.220	-704.034	0.063
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	53.327	5.779	3.398	360.141	-609.004	0.190
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	53.327	3.327	5.844	618.080	-350.192	0.267
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	53.327	-0.006	6.742	712.940	0.958	0.220
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	53.327	-3.338	5.850	618.871	351.896	0.113
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	53.327	-5.785	3.408	361.512	610.130	0.029
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	53.327	-6.679	0.006	0.363	704.369	-0.063

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b> 138667.005.01 - LEBANON WEST, CT (BU# 842865)	<b>Page</b> 12 of 16
	<b>Project</b>	<b>Date</b> 16:54:54 06/04/22
	<b>Client</b> Crown Castle	<b>Designed by</b> SACHIN

Load Combination	Vertical	Shear <sub>x</sub>	Shear <sub>z</sub>	Overturning Moment, M <sub>x</sub>	Overturning Moment, M <sub>z</sub>	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	53.327	-5.787	-3.354	-354.681	610.457	-0.133
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	53.327	-3.342	-5.815	-614.754	352.720	-0.178
Dead+Wind 0 deg - Service	32.441	0.008	-5.757	-622.082	-0.915	0.041
Dead+Wind 30 deg - Service	32.441	2.867	-4.984	-538.424	-309.217	-0.056
Dead+Wind 60 deg - Service	32.441	4.949	-2.882	-311.541	-533.353	-0.086
Dead+Wind 90 deg - Service	32.441	5.702	-0.008	-1.174	-614.222	-0.081
Dead+Wind 120 deg - Service	32.441	4.932	2.920	316.612	-531.102	-0.060
Dead+Wind 150 deg - Service	32.441	2.836	5.010	541.800	-305.025	-0.022
Dead+Wind 180 deg - Service	32.441	-0.008	5.779	624.764	1.056	-0.041
Dead+Wind 210 deg - Service	32.441	-2.849	5.017	542.785	306.872	-0.048
Dead+Wind 240 deg - Service	32.441	-4.940	2.934	318.318	532.228	0.019
Dead+Wind 270 deg - Service	32.441	-5.702	0.007	0.796	614.363	0.080
Dead+Wind 300 deg - Service	32.441	-4.941	-2.869	-309.834	532.509	0.127
Dead+Wind 330 deg - Service	32.441	-2.854	-4.976	-537.439	307.652	0.127

## Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-32.441	0.000	0.000	32.441	0.000	0.000%
2	0.034	-38.929	-24.855	-0.034	38.929	24.855	0.000%
3	0.034	-29.197	-24.855	-0.034	29.197	24.855	0.000%
4	12.380	-38.929	-21.516	-12.380	38.929	21.516	0.000%
5	12.380	-29.197	-21.516	-12.380	29.197	21.516	0.000%
6	21.367	-38.929	-12.444	-21.367	38.929	12.444	0.000%
7	21.367	-29.197	-12.444	-21.367	29.197	12.444	0.000%
8	24.619	-38.929	-0.036	-24.619	38.929	0.036	0.000%
9	24.619	-29.197	-0.036	-24.619	29.197	0.036	0.000%
10	21.293	-38.929	12.607	-21.293	38.929	-12.607	0.000%
11	21.293	-29.197	12.607	-21.293	29.197	-12.607	0.000%
12	12.242	-38.929	21.627	-12.242	38.929	-21.627	0.000%
13	12.242	-29.197	21.627	-12.242	29.197	-21.627	0.000%
14	-0.034	-38.929	24.947	0.034	38.929	-24.947	0.000%
15	-0.034	-29.197	24.947	0.034	29.197	-24.947	0.000%
16	-12.301	-38.929	21.661	12.301	38.929	-21.661	0.000%
17	-12.301	-29.197	21.661	12.301	29.197	-21.661	0.000%
18	-21.327	-38.929	12.666	21.327	38.929	-12.666	0.000%
19	-21.327	-29.197	12.666	21.327	29.197	-12.666	0.000%
20	-24.619	-38.929	0.032	24.619	38.929	-0.032	0.000%
21	-24.619	-29.197	0.032	24.619	29.197	-0.032	0.000%
22	-21.333	-38.929	-12.385	21.333	38.929	12.385	0.000%
23	-21.333	-29.197	-12.385	21.333	29.197	12.385	0.000%
24	-12.321	-38.929	-21.482	12.321	38.929	21.482	0.000%
25	-12.321	-29.197	-21.482	12.321	29.197	21.482	0.000%
26	0.000	-53.327	0.000	0.000	53.327	0.000	0.000%
27	0.006	-53.327	-6.724	-0.006	53.327	6.724	0.000%
28	3.353	-53.327	-5.821	-3.353	53.327	5.821	0.000%
29	5.793	-53.327	-3.365	-5.793	53.327	3.365	0.000%
30	6.679	-53.327	-0.007	-6.679	53.327	0.007	0.000%
31	5.779	-53.327	3.398	-5.779	53.327	-3.398	0.000%
32	3.327	-53.327	5.844	-3.327	53.327	-5.844	0.000%
33	-0.006	-53.327	6.742	0.006	53.327	-6.742	0.000%
34	-3.338	-53.327	5.850	3.338	53.327	-5.850	0.000%
35	-5.785	-53.327	3.408	5.785	53.327	-3.408	0.000%
36	-6.679	-53.327	0.006	6.679	53.327	-0.006	0.000%

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b>	<b>Page</b>
	138667.005.01 - LEBANON WEST, CT (BU# 842865)	13 of 16
	<b>Project</b>	<b>Date</b>
		16:54:54 06/04/22
	<b>Client</b>	<b>Designed by</b>
	Crown Castle	SACHIN

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
37	-5.787	-53.327	-3.354	5.787	53.327	3.354	0.000%
38	-3.342	-53.327	-5.815	3.342	53.327	5.815	0.000%
39	0.008	-32.441	-5.757	-0.008	32.441	5.757	0.000%
40	2.867	-32.441	-4.984	-2.867	32.441	4.984	0.000%
41	4.949	-32.441	-2.882	-4.949	32.441	2.882	0.000%
42	5.702	-32.441	-0.008	-5.702	32.441	0.008	0.000%
43	4.932	-32.441	2.920	-4.932	32.441	-2.920	0.000%
44	2.836	-32.441	5.010	-2.836	32.441	-5.010	0.000%
45	-0.008	-32.441	5.779	0.008	32.441	-5.779	0.000%
46	-2.849	-32.441	5.017	2.849	32.441	-5.017	0.000%
47	-4.940	-32.441	2.934	4.940	32.441	-2.934	0.000%
48	-5.702	-32.441	0.007	5.702	32.441	-0.007	0.000%
49	-4.941	-32.441	-2.869	4.941	32.441	2.869	0.000%
50	-2.854	-32.441	-4.976	2.854	32.441	4.976	0.000%

## Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000001
2	Yes	5	0.0000001	0.00004190
3	Yes	4	0.0000001	0.00049661
4	Yes	6	0.0000001	0.00013823
5	Yes	6	0.0000001	0.00004314
6	Yes	6	0.0000001	0.00014002
7	Yes	6	0.0000001	0.00004385
8	Yes	5	0.0000001	0.00007104
9	Yes	4	0.0000001	0.00080284
10	Yes	6	0.0000001	0.00013821
11	Yes	6	0.0000001	0.00004305
12	Yes	6	0.0000001	0.00013943
13	Yes	6	0.0000001	0.00004362
14	Yes	4	0.0000001	0.00081090
15	Yes	4	0.0000001	0.00031917
16	Yes	6	0.0000001	0.00013855
17	Yes	6	0.0000001	0.00004320
18	Yes	6	0.0000001	0.00013991
19	Yes	6	0.0000001	0.00004356
20	Yes	5	0.0000001	0.00005277
21	Yes	4	0.0000001	0.00061067
22	Yes	6	0.0000001	0.00014023
23	Yes	6	0.0000001	0.00004402
24	Yes	6	0.0000001	0.00013583
25	Yes	6	0.0000001	0.00004236
26	Yes	4	0.0000001	0.00000001
27	Yes	5	0.0000001	0.00039760
28	Yes	5	0.0000001	0.00055314
29	Yes	5	0.0000001	0.00055551
30	Yes	5	0.0000001	0.00039281
31	Yes	5	0.0000001	0.00055478
32	Yes	5	0.0000001	0.00055105
33	Yes	5	0.0000001	0.00039775
34	Yes	5	0.0000001	0.00055521
35	Yes	5	0.0000001	0.00055590
36	Yes	5	0.0000001	0.00039288
37	Yes	5	0.0000001	0.00055245

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b> 138667.005.01 - LEBANON WEST, CT (BU# 842865)	<b>Page</b> 14 of 16
	<b>Project</b>	<b>Date</b> 16:54:54 06/04/22
	<b>Client</b> Crown Castle	<b>Designed by</b> SACHIN

38	Yes	5	0.00000001	0.00055312
39	Yes	4	0.00000001	0.00007862
40	Yes	4	0.00000001	0.00072774
41	Yes	4	0.00000001	0.00076056
42	Yes	4	0.00000001	0.00009676
43	Yes	4	0.00000001	0.00072258
44	Yes	4	0.00000001	0.00075017
45	Yes	4	0.00000001	0.00007691
46	Yes	4	0.00000001	0.00073182
47	Yes	4	0.00000001	0.00074202
48	Yes	4	0.00000001	0.00009363
49	Yes	4	0.00000001	0.00077026
50	Yes	4	0.00000001	0.00069975

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	149 - 119	24.317	45	1.492	0.003
L2	119 - 82.08	15.368	45	1.303	0.001
L3	86.913 - 46.123	7.881	45	0.897	0.001
L4	51.873 - 0	2.713	45	0.488	0.000

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.000	BXA-70063/6CF w/ Mount Pipe	45	24.317	1.492	0.003	28813
131.000	SC2-W100BD	45	18.805	1.398	0.002	8003
119.000	7770.00 w/ Mount Pipe	45	15.368	1.303	0.001	4938

### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	149 - 119	105.773	14	6.506	0.014
L2	119 - 82.08	66.851	14	5.674	0.006
L3	86.913 - 46.123	34.284	14	3.906	0.002
L4	51.873 - 0	11.799	14	2.124	0.001

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b> 138667.005.01 - LEBANON WEST, CT (BU# 842865)	<b>Page</b> 15 of 16
	<b>Project</b>	<b>Date</b> 16:54:54 06/04/22
	<b>Client</b> Crown Castle	<b>Designed by</b> SACHIN

### Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
150.000	BXA-70063/6CF w/ Mount Pipe	14	105.773	6.506	0.014	6782
131.000	SC2-W100BD	14	81.797	6.090	0.009	1881
119.000	7770.00 w/ Mount Pipe	14	66.851	5.674	0.006	1157

### Compression Checks

#### Pole Design Data

Section No.	Elevation	Size	L	L <sub>u</sub>	Kl/r	A	P <sub>u</sub>	φP <sub>n</sub>	Ratio
	ft		ft	ft		in <sup>2</sup>	K	K	$\frac{P_u}{\phi P_n}$
L1	149 - 119 (1)	TP26.12x19.5x0.188	30.000	0.000	0.0	15.433	-8.427	902.835	0.009
L2	119 - 82.08 (2)	TP34.26x26.12x0.25	36.920	0.000	0.0	26.141	-15.700	1529.270	0.010
L3	82.08 - 46.123 (3)	TP41.57x32.694x0.313	40.790	0.000	0.0	39.681	-23.445	2321.360	0.010
L4	46.123 - 0 (4)	TP51x39.694x0.375	51.873	0.000	0.0	60.256	-38.908	3525.000	0.011

#### Pole Bending Design Data

Section No.	Elevation	Size	M <sub>ux</sub>	φM <sub>ux</sub>	Ratio	M <sub>uy</sub>	φM <sub>uy</sub>	Ratio
	ft		kip-ft	kip-ft	$\frac{M_{ux}}{\phi M_{ux}}$	kip-ft	kip-ft	$\frac{M_{uy}}{\phi M_{uy}}$
L1	149 - 119 (1)	TP26.12x19.5x0.188	235.060	545.470	0.431	0.000	545.470	0.000
L2	119 - 82.08 (2)	TP34.26x26.12x0.25	800.548	1194.908	0.670	0.000	1194.908	0.000
L3	82.08 - 46.123 (3)	TP41.57x32.694x0.313	1505.042	2224.975	0.676	0.000	2224.975	0.000
L4	46.123 - 0 (4)	TP51x39.694x0.375	2715.067	4195.525	0.647	0.000	4195.525	0.000

#### Pole Shear Design Data

Section No.	Elevation	Size	Actual V <sub>u</sub>	φV <sub>n</sub>	Ratio	Actual T <sub>u</sub>	φT <sub>n</sub>	Ratio
	ft		K	K	$\frac{V_u}{\phi V_n}$	kip-ft	kip-ft	$\frac{T_u}{\phi T_n}$
L1	149 - 119 (1)	TP26.12x19.5x0.188	11.643	267.393	0.044	0.045	615.112	0.000
L2	119 - 82.08 (2)	TP34.26x26.12x0.25	18.712	458.782	0.041	0.376	1323.633	0.000
L3	82.08 - 46.123 (3)	TP41.57x32.694x0.313	21.452	696.407	0.031	0.302	2439.900	0.000
L4	46.123 - 0 (4)	TP51x39.694x0.375	24.980	1057.500	0.024	0.193	4688.408	0.000

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (555) 295-0265	<b>Job</b> 138667.005.01 - LEBANON WEST, CT (BU# 842865)	<b>Page</b> 16 of 16
	<b>Project</b>	<b>Date</b> 16:54:54 06/04/22
	<b>Client</b> Crown Castle	<b>Designed by</b> SACHIN

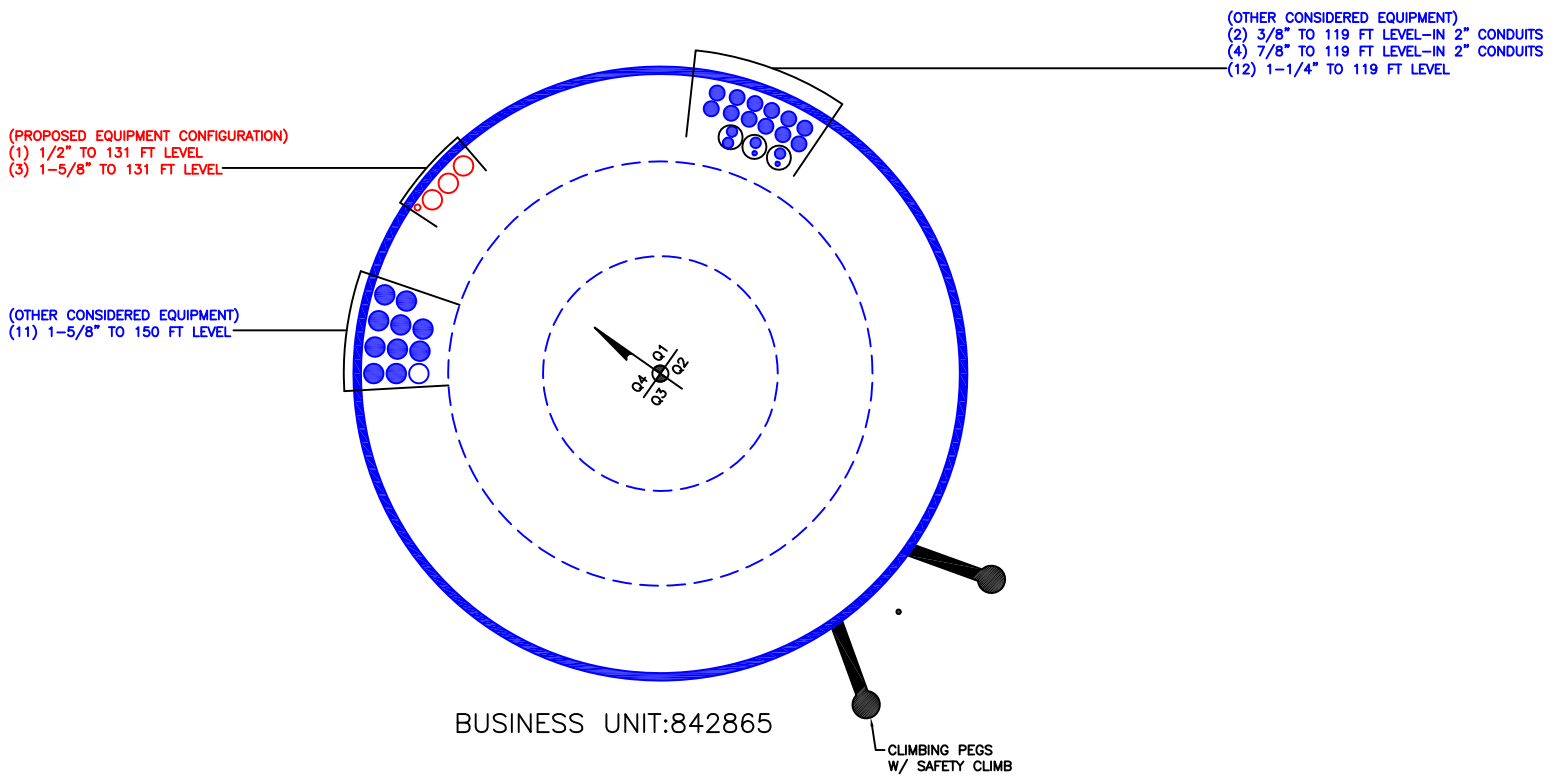
### Pole Interaction Design Data

Section No.	Elevation ft	Ratio $P_u$	Ratio $M_{ux}$	Ratio $M_{uy}$	Ratio $V_u$	Ratio $T_u$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		$\phi P_n$	$\phi M_{ux}$	$\phi M_{uy}$	$\phi V_n$	$\phi T_n$			
L1	149 - 119 (1)	0.009	0.431	0.000	0.044	0.000	0.442	1.050	4.8.2 ✓
L2	119 - 82.08 (2)	0.010	0.670	0.000	0.041	0.000	0.682	1.050	4.8.2 ✓
L3	82.08 - 46.123 (3)	0.010	0.676	0.000	0.031	0.000	0.687	1.050	4.8.2 ✓
L4	46.123 - 0 (4)	0.011	0.647	0.000	0.024	0.000	0.659	1.050	4.8.2 ✓

### Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail
L1	149 - 119	Pole	TP26.12x19.5x0.188	1	-8.427	947.977	42.1	Pass
L2	119 - 82.08	Pole	TP34.26x26.12x0.25	2	-15.700	1605.733	64.9	Pass
L3	82.08 - 46.123	Pole	TP41.57x32.694x0.313	3	-23.445	2437.428	65.5	Pass
L4	46.123 - 0	Pole	TP51x39.694x0.375	4	-38.908	3701.250	62.7	Pass
Summary								
Pole (L3)							65.5	Pass
<b>RATING =</b>							<b>65.5</b>	<b>Pass</b>

**APPENDIX B**  
**BASE LEVEL DRAWING**





**APPENDIX C**  
**ADDITIONAL CALCULATIONS**

# Monopole Flange Plate Connection

Elevation = 119 ft.

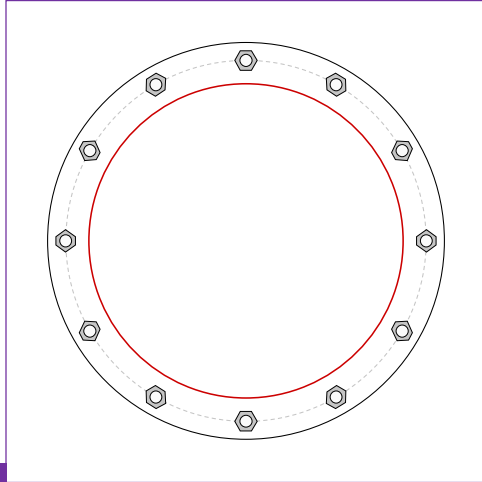


BU #	842865
Site Name	LEBANON WEST, CT
Order #	614533, Rev. 02
TIA-222 Revision	H

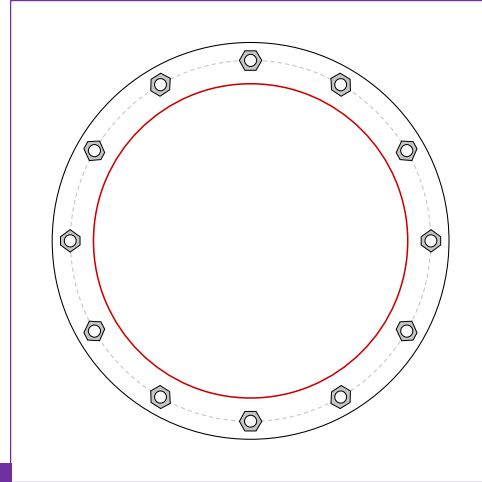
Applied Loads	
Moment (kip-ft)	238.75
Axial Force (kips)	11.31
Shear Force (kips)	16.06

\*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



**Connection Properties**

**Bolt Data**

(12) 1"  $\phi$  bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 30" BC

**Top Plate Data**

33" OD x 1" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

**Top Stiffener Data**

N/A

**Top Pole Data**

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

**Bottom Plate Data**

33" OD x 1" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

**Bottom Stiffener Data**

N/A

**Bottom Pole Data**

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

**Analysis Results**

**Bolt Capacity**

Max Load (kips)	30.88
Allowable (kips)	54.50
Stress Rating:	<b>54.0%</b> Pass

**Top Plate Capacity**

Max Stress (ksi):	24.54	(Flexural)
Allowable Stress (ksi):	54.00	
Stress Rating:	<b>43.3%</b>	Pass
Tension Side Stress Rating:	<b>19.9%</b>	Pass

**Bottom Plate Capacity**

Max Stress (ksi):	24.54	(Flexural)
Allowable Stress (ksi):	54.00	
Stress Rating:	<b>43.3%</b>	Pass
Tension Side Stress Rating:	<b>19.9%</b>	Pass

# Monopole Base Plate Connection

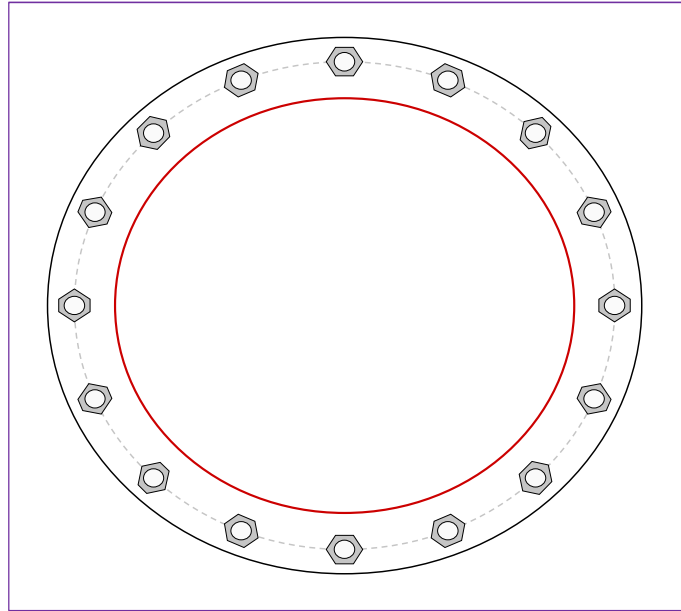


Site Info	
BU #	842865
Site Name	LEBANON WEST, CT
Order #	614533, Rev. 02

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
$I_{ar}$ (in)	3.25

Applied Loads	
Moment (kip-ft)	2715.07
Axial Force (kips)	38.91
Shear Force (kips)	24.98

\*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
(16) 2-1/4" $\phi$ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 60" BC
Base Plate Data
66" OD x 2" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi)
Stiffener Data
N/A
Pole Data
51" x 0.375" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary	<i>(units of kips, kip-in)</i>	
$Pu_t = 133.24$	$\phi Pn_t = 243.75$	<b>Stress Rating</b>
$Vu = 1.56$	$\phi Vn = 149.1$	<b>52.1%</b>
$Mu = 3.3$	$\phi Mn = 128.14$	<b>Pass</b>
Base Plate Summary		
Max Stress (ksi):	37.58	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	<b>66.3%</b>	<b>Pass</b>

# Pier and Pad Foundation



BU #: 842865  
 Site Name: LEBANON WEST,  
 App. Number: 614533, Rev. 02

TIA-222 Revision: H  
 Tower Type: Monopole

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

Superstructure Analysis Reactions		
Compression, $P_{comp}$ :	38.91	kips
Base Shear, $V_{u\_comp}$ :	24.98	kips
Moment, $M_u$ :	2715.07	ft-kips
Tower Height, $H$ :	149	ft
BP Dist. Above Fdn, $bp_{dist}$ :	5.5	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	336.69	24.98	7.1%	Pass
<i>Bearing Pressure (ksf)</i>	9.00	1.97	20.9%	Pass
<i>Overturning (kip*ft)</i>	6792.70	2913.87	42.9%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	5753.17	2827.48	46.8%	Pass
<i>Pier Compression (kip)</i>	31187.52	78.60	0.2%	Pass
<i>Pad Flexure (kip*ft)</i>	4347.14	943.77	20.7%	Pass
<i>Pad Shear - 1-way (kips)</i>	896.51	145.81	15.5%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.190	0.028	14.3%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	5555.13	1696.49	29.1%	Pass

Pier Properties		
Pier Shape:	Square	
Pier Diameter, $dpier$ :	7	ft
Ext. Above Grade, $E$ :	1	ft
Pier Rebar Size, $Sc$ :	8	
Pier Rebar Quantity, $mc$ :	45	
Pier Tie/Spiral Size, $St$ :	4	
Pier Tie/Spiral Quantity, $mt$ :	5	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, $cc_{pier}$ :	3	in

\*Rating per TIA-222-H Section 15.5

Structural Rating*:	46.8%
Soil Rating*:	42.9%

Pad Properties		
Depth, $D$ :	6.5	ft
Pad Width, $W_1$ :	25	ft
Pad Thickness, $T$ :	3	ft
Pad Rebar Size (Bottom dir. 2), $Sp_2$ :	8	
Pad Rebar Quantity (Bottom dir. 2), $mp_2$ :	40	
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, $\delta_c$ :	150	pcf

Soil Properties		
Total Soil Unit Weight, $\gamma$ :	135	pcf
Ultimate Gross Bearing, $Q_{ult}$ :	12.000	ksf
Cohesion, $C_u$ :	0.000	ksf
Friction Angle, $\phi$ :	36	degrees
SPT Blow Count, $N_{blows}$ :		
Base Friction, $\mu$ :		
Neglected Depth, $N$ :	3.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, $gw$ :	19	ft

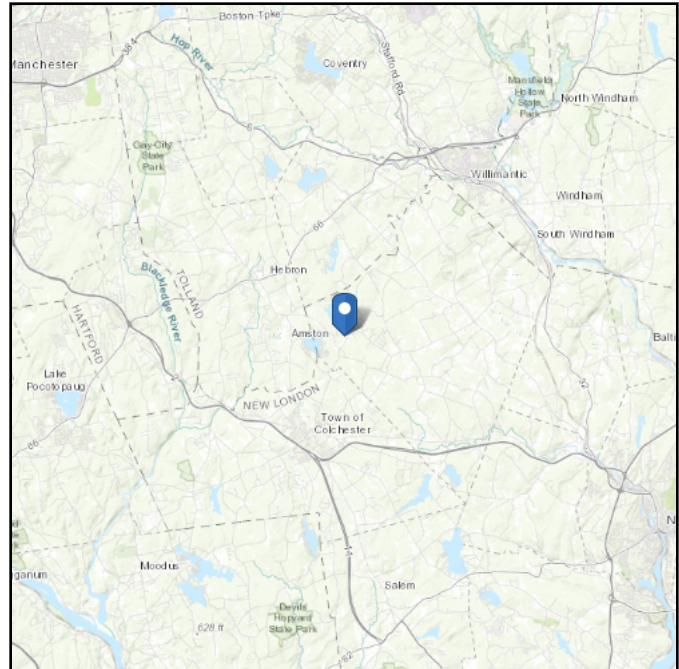
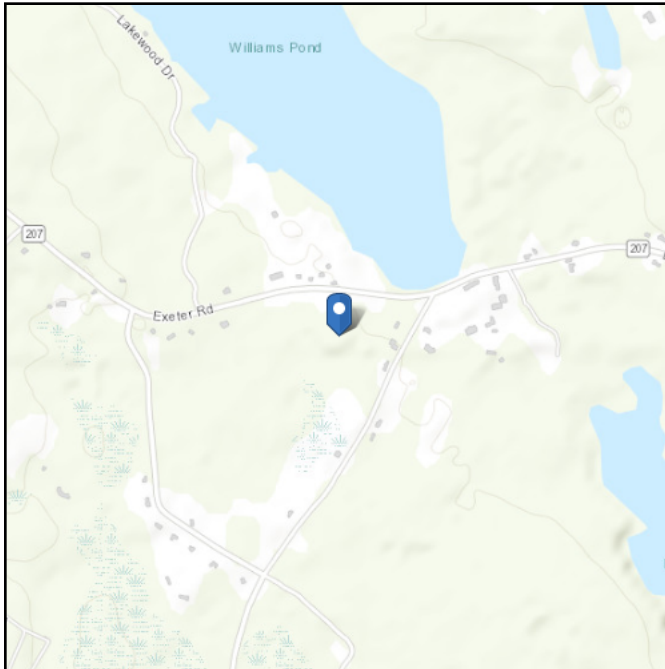
<--Toggle between Gross and Net

# ASCE 7 Hazards Report

**Address:**  
No Address at This Location

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

**Elevation:** 486.64 ft (NAVD 88)  
**Latitude:** 41.627925  
**Longitude:** -72.30565



## Wind

### Results:

Wind Speed	121 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	93 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2  
Date Accessed: Fri Apr 29 2022

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

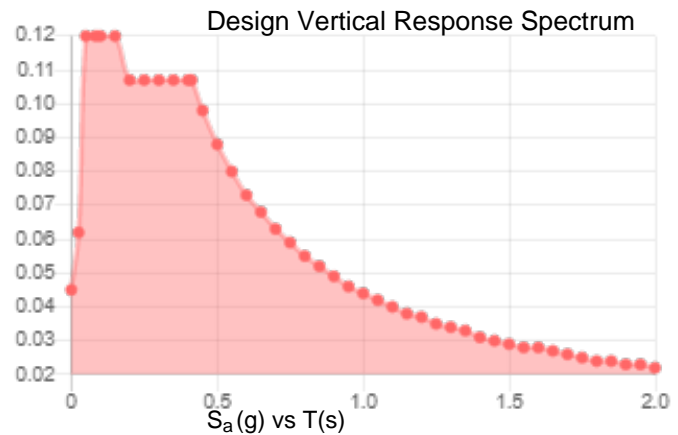
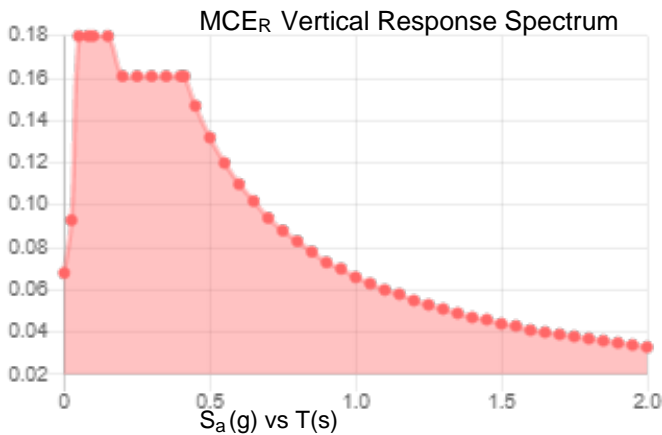
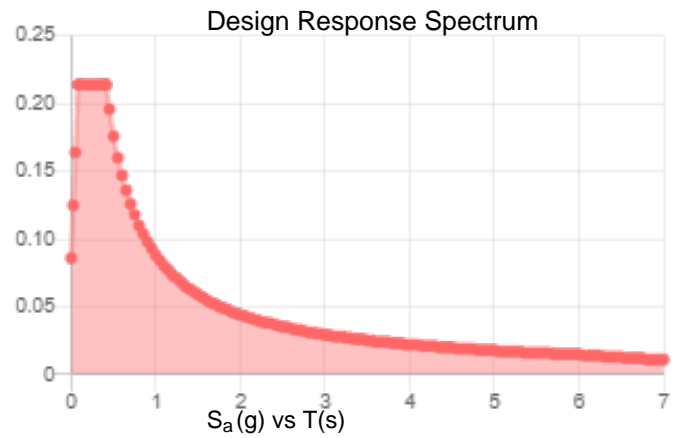
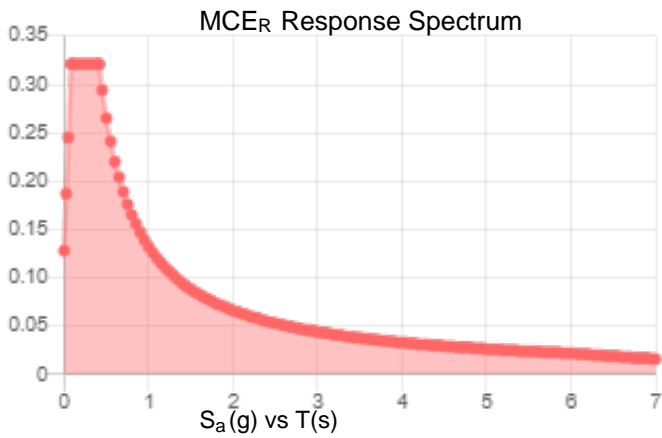
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

**Results:**

$S_s$ :	0.201	$S_{D1}$ :	0.088
$S_1$ :	0.055	$T_L$ :	6
$F_a$ :	1.6	PGA :	0.111
$F_v$ :	2.4	PGA <sub>M</sub> :	0.175
$S_{MS}$ :	0.321	$F_{PGA}$ :	1.579
$S_{M1}$ :	0.132	$I_e$ :	1
$S_{DS}$ :	0.214	$C_v$ :	0.701

**Seismic Design Category** B



**Data Accessed:** Fri Apr 29 2022

**Date Source:**

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

## Ice

---

**Results:**

Ice Thickness: 1.00 in.  
Concurrent Temperature: 15 F  
Gust Speed 50 mph

**Data Source:** Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

**Date Accessed:** Fri Apr 29 2022

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

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

---

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

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

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

Date: **May 27, 2022**



Trylon  
1825 W. Walnut Hill Lane,  
Suite 302  
Irving, TX 75038  
214-930-1730

**Subject:** **Mount Analysis - Conditional Passing Report**

**Carrier Designation:** **T-Mobile Equipment Change Out**  
**Carrier Site Number:** CTNL256A  
**Carrier Site Name:** Lebanon Underserved

**Crown Castle Designation:** **BU Number:** 842865  
**Site Name:** LEBANON WEST  
**JDE Job Number:** 714962  
**Order Number:** 614533 Rev. 2

**Engineering Firm Designation:** **Trylon Report Designation:** 210863

**Site Data:** **1699 Exeter Road, Lebanon, New London County, CT, 06249**  
**Latitude 41°37'40.53" Longitude -72°18'20.34"**

**Structure Information:** **Tower Height & Type:** **149.0 ft Monopole**  
**Mount Elevation:** **131.0 ft**  
**Mount Width & Type:** **12.5 ft Platform**

Trylon is pleased to submit this “**Mount Analysis - Conditional Passing Report**” to determine the structural integrity of T-Mobile’s antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

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

**Platform**

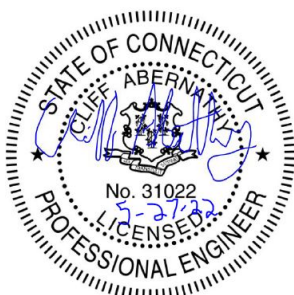
**Sufficient\***

**\*Sufficient upon completion of the changes listed in the ‘Recommendations’ section of this report.**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 121 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Steve Mustaro, P.E.

Respectfully Submitted by:  
Cliff Abernathy, P.E.





## TABLE OF CONTENTS

### 1) INTRODUCTION

### 2) ANALYSIS CRITERIA

Table 1 - Proposed Equipment Configuration

### 3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

3.1) Analysis Method

3.2) Assumptions

### 4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity

4.1) Recommendations

### 5) APPENDIX A

Wire Frame and Rendered Models

### 6) APPENDIX B

Software Input Calculations

### 7) APPENDIX C

Software Analysis Output

### 8) APPENDIX D

Additional Calculations

### 9) APPENDIX E

Supplemental Drawings

## 1) INTRODUCTION

This is a proposed three sector 12.5 ft Platform, designed by Site Pro 1.

## 2) ANALYSIS CRITERIA

<b>Building Code:</b>	2018 Connecticut State Building Code
<b>TIA-222 Revision:</b>	TIA-222-H
<b>Risk Category:</b>	II
<b>Ultimate Wind Speed:</b>	121 mph
<b>Exposure Category:</b>	C
<b>Topographic Factor at Base:</b>	1.0
<b>Topographic Factor at Mount:</b>	1.0
<b>Ice Thickness:</b>	1.0 in
<b>Wind Speed with Ice:</b>	50 mph
<b>Seismic S<sub>s</sub>:</b>	0.201
<b>Seismic S<sub>1</sub>:</b>	0.055
<b>Live Loading Wind Speed:</b>	30 mph
<b>Man Live Load at Mid/End-Points:</b>	250 lb
<b>Man Live Load at Mount Pipes:</b>	500 lb

**Table 1 - Proposed Equipment Configuration**

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
131.0	131.0	3	ERICSSON	AIR 6419 B41_TMO	12.5 ft Platform [Site Pro 1 RMQP-4096-HK]
		3	RFS/CELWAVE	APXVAALL24_43-U-NA20_TMO	
		1	RFS/CELWAVE	SC2-W100BD	
		3	ERICSSON	RADIO 4460 B2/B25 B66_TMO	
		3	ERICSSON	RADIO 4480_TMOV2	

## 3) ANALYSIS PROCEDURE

**Table 2 - Documents Provided**

Document	Remarks	Reference	Source
Crown Application	T-Mobile Application	614533 Rev. 2	CCI Sites
Mount Manufacturer Drawings	Site Pro 1	RMQP-4096-HK	Trylon

### 3.1) Analysis Method

RISA-3D (Version 17.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

A tool internally developed, using Microsoft Excel, by Trylon was used to calculate wind loading on all appurtenances, dishes, and mount members for various load cases. Selected output from the analysis is included in Appendix B.

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

**3.2) Assumptions**

- 1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
- 2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
- 3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
- 4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
- 5) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
- 6) Steel grades have been assumed as follows, unless noted otherwise:
 

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

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

**4) ANALYSIS RESULTS**

**Table 3 - Mount Component Stresses vs. Capacity (Platform, All Sectors)**

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 2, 3	Mount Pipe(s)	MP10	131.0	49.7	Pass
	Horizontal(s)	H2		10.0	Pass
	Standoff(s)	M3		19.0	Pass
	Bracing(s)	M74		21.0	Pass
	Handrail(s)	M55		29.9	Pass
	Kicker(s)	M90		12.6	Pass
	Mount Connection(s)	-		13.2	Pass

<b>Structure Rating (max from all components) =</b>	<b>49.7%</b>
---	--------------

Notes:

- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
- 2) See additional documentation in "Appendix D – Additional Calculations" for detailed mount connection calculations.
- 3) Rating per TIA-222-H, Section 15.5

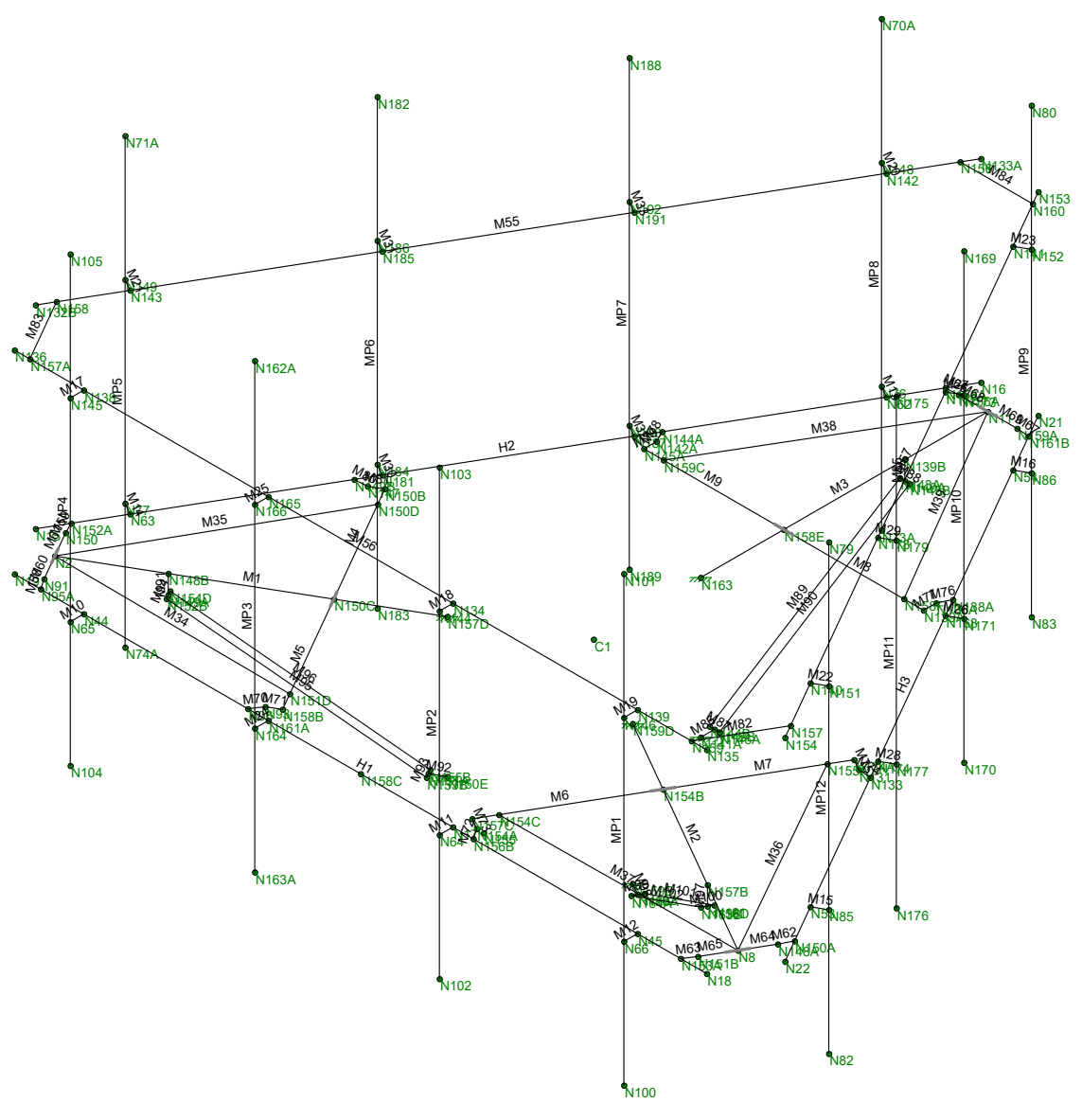
**4.1) Recommendations**

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

1. Site Pro 1 RMQP-4096-HK.

No structural modifications are required at this time, provided that the above-listed changes are implemented.

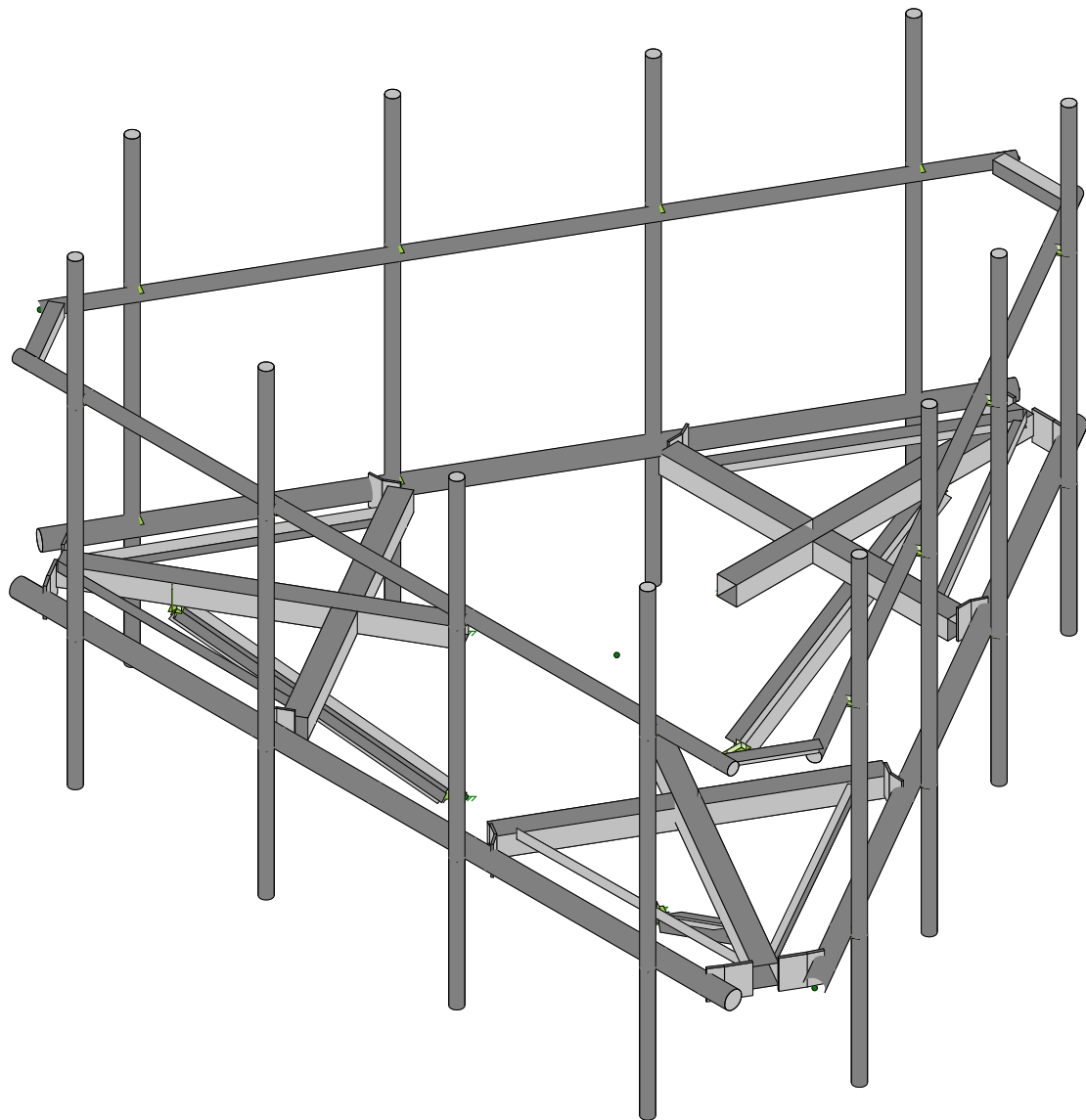
**APPENDIX A**  
**WIRE FRAME AND RENDERED MODELS**



Trylon  
SMM  
210683

842865

Wireframe  
May 27, 2022 at 11:39 AM  
842865\_loaded\_loaded.r3d



Trylon

SMM

210683

842865

Render

May 27, 2022 at 11:39 AM

842865\_loaded\_loaded.r3d

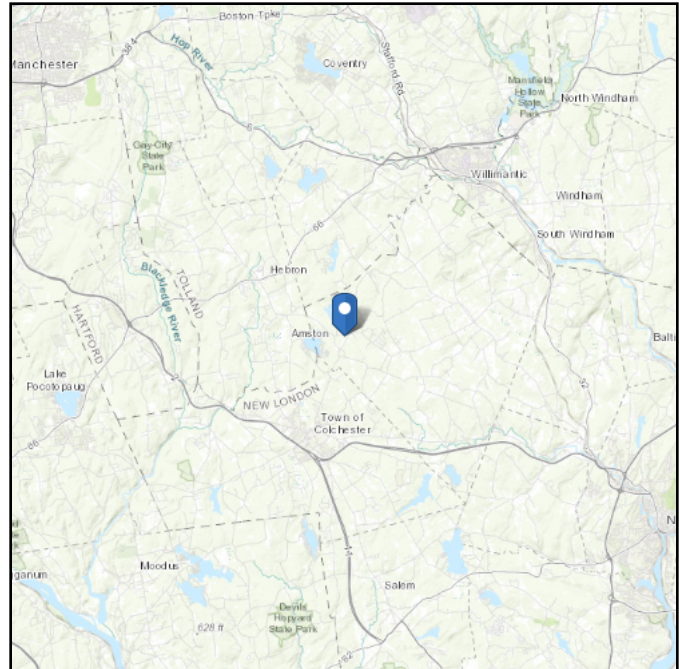
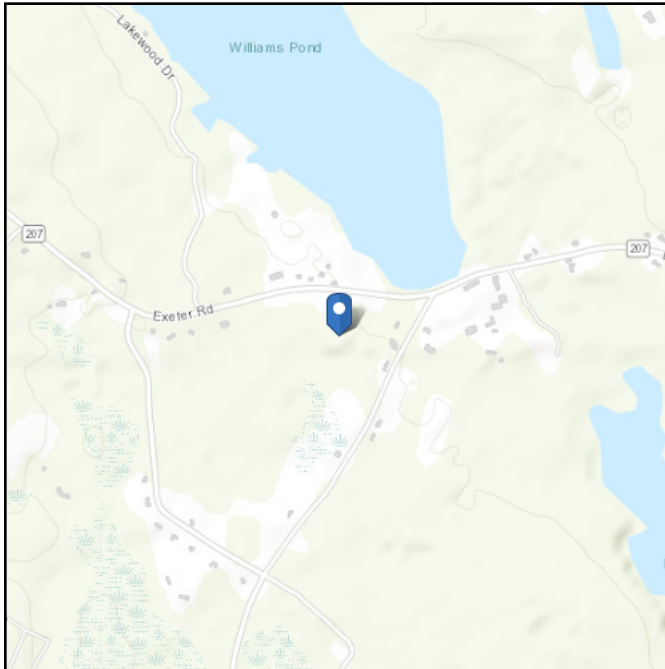
**APPENDIX B**  
**SOFTWARE INPUT CALCULATIONS**

# ASCE 7 Hazards Report

**Address:**  
No Address at This Location

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

**Elevation:** 486.64 ft (NAVD 88)  
**Latitude:** 41.627925  
**Longitude:** -72.30565



## Wind

### Results:

Wind Speed	121 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	93 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2  
Date Accessed: Tue May 03 2022

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

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

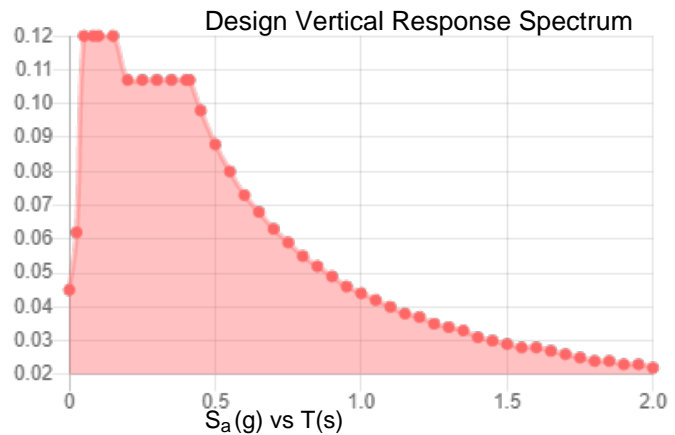
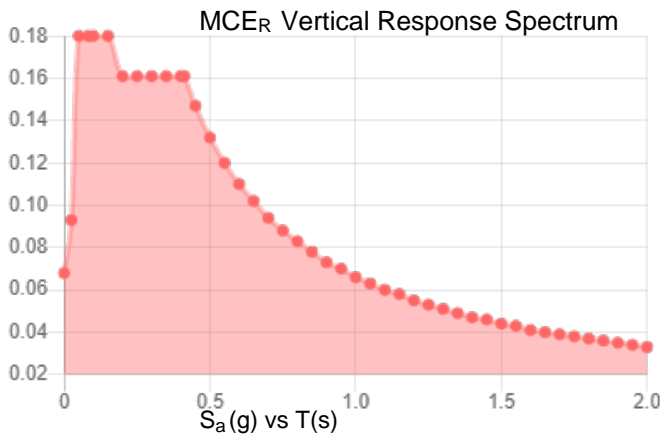
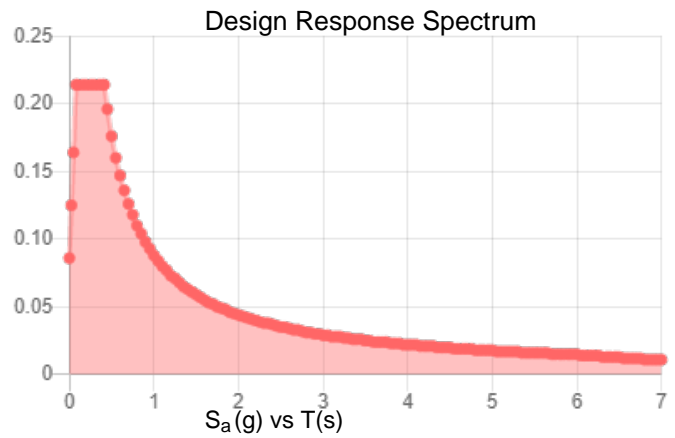
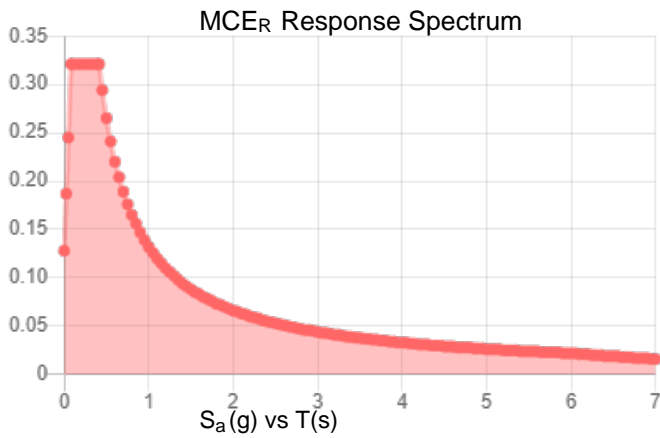


**Site Soil Class:** D - Default (see Section 11.4.3)

**Results:**

$S_s$ :	0.201	$S_{D1}$ :	0.088
$S_1$ :	0.055	$T_L$ :	6
$F_a$ :	1.6	PGA :	0.111
$F_v$ :	2.4	PGA <sub>M</sub> :	0.175
$S_{MS}$ :	0.321	$F_{PGA}$ :	1.579
$S_{M1}$ :	0.132	$I_e$ :	1
$S_{DS}$ :	0.214	$C_v$ :	0.701

**Seismic Design Category** B



**Data Accessed:** Tue May 03 2022

**Date Source:**

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

## Ice

---

**Results:**

Ice Thickness: 1.00 in.  
Concurrent Temperature: 15 F  
Gust Speed 50 mph

**Data Source:** Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

**Date Accessed:** Tue May 03 2022

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

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

---

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

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

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



# Trylon

1825 W. Walnut Hill Lane Suite 120  
Irving, TX 75038

## TIA LOAD CALCULATOR 2.2

PROJECT DATA	
Job Code:	210863
Carrier Site ID:	BU 842865
Carrier Site Name:	LEBANON WEST

CODES AND STANDARDS	
Building Code:	2018 IBC
Local Building Code:	2018 CSBC
Design Standard:	TIA-222-H

STRUCTURE DETAILS		
Mount Type:	Platform	--
Mount Elevation:	131.0	ft.
Number of Sectors:	3	--
Structure Type:	Monopole	--
Structure Height:	149.0	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	C	--
Site Class:	D - Default	--
Ground Elevation:	486.64	ft.

TOPOGRAPHIC DATA		
Topographic Category:	1.00	--
Topographic Feature:	N/A	--
Crest Point Elevation:	0.00	ft.
Base Point Elevation:	0.00	ft.
Crest to Mid-Height (L/2):	0.00	ft.
Distance from Crest (x):	0.00	ft.
Base Topo Factor ( $K_{zt}$ ):	1.00	--
Mount Topo Factor ( $K_{zt}$ ):	1.00	--

WIND PARAMETERS		
Design Wind Speed:	121	mph
Wind Escalation Factor ( $K_s$ ):	1.00	--
Velocity Coefficient ( $K_z$ ):	1.34	--
Directionality Factor ( $K_d$ ):	0.95	--
Gust Effect Factor (G <sub>h</sub> ):	1.00	--
Shielding Factor ( $K_a$ ):	0.90	--
Velocity Pressure ( $q_z$ ):	46.87	psf
Ground Elevation Factor ( $K_e$ ):	0.98	--

ICE PARAMETERS		
Design Ice Wind Speed:	50	mph
Design Ice Thickness ( $t_i$ ):	1.00	in
Importance Factor ( $I_i$ ):	1.00	--
Ice Velocity Pressure ( $q_{zi}$ ):	6.86	psf
Mount Ice Thickness ( $t_{iz}$ ):	1.15	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	84.36	psf
Round Member Pressure:	50.62	psf
Ice Wind Pressure:	7.41	psf

SEISMIC PARAMETERS		
Importance Factor ( $I_e$ ):	1.00	--
Short Period Accel. ( $S_s$ ):	0.20	g
1 Second Accel. ( $S_1$ ):	0.06	g
Short Period Des. ( $S_{DS}$ ):	0.21	g
1 Second Des. ( $S_{D1}$ ):	0.09	g
Short Period Coeff. ( $F_a$ ):	1.60	--
1 Second Coeff. ( $F_v$ ):	2.40	--
Response Coefficient ( $C_s$ ):	0.11	--
Amplification Factor ( $A_S$ ):	1.20	--

## LOAD COMBINATIONS [LRFD]

#	Description
1	1.4DL
2	1.2DL + 1WL 0 AZI
3	1.2DL + 1WL 30 AZI
4	1.2DL + 1WL 45 AZI
5	1.2DL + 1WL 60 AZI
6	1.2DL + 1WL 90 AZI
7	1.2DL + 1WL 120 AZI
8	1.2DL + 1WL 135 AZI
9	1.2DL + 1WL 150 AZI
10	1.2DL + 1WL 180 AZI
11	1.2DL + 1WL 210 AZI
12	1.2DL + 1WL 225 AZI
13	1.2DL + 1WL 240 AZI
14	1.2DL + 1WL 270 AZI
15	1.2DL + 1WL 300 AZI
16	1.2DL + 1WL 315 AZI
17	1.2DL + 1WL 330 AZI
18	0.9DL + 1WL 0 AZI
19	0.9DL + 1WL 30 AZI
20	0.9DL + 1WL 45 AZI
21	0.9DL + 1WL 60 AZI
22	0.9DL + 1WL 90 AZI
23	0.9DL + 1WL 120 AZI
24	0.9DL + 1WL 135 AZI
25	0.9DL + 1WL 150 AZI
26	0.9DL + 1WL 180 AZI
27	0.9DL + 1WL 210 AZI
28	0.9DL + 1WL 225 AZI
29	0.9DL + 1WL 240 AZI
30	0.9DL + 1WL 270 AZI
31	0.9DL + 1WL 300 AZI
32	0.9DL + 1WL 315 AZI
33	0.9DL + 1WL 330 AZI
34	1.2DL + 1DLi + 1WLi 0 AZI
35	1.2DL + 1DLi + 1WLi 30 AZI
36	1.2DL + 1DLi + 1WLi 45 AZI
37	1.2DL + 1DLi + 1WLi 60 AZI
38	1.2DL + 1DLi + 1WLi 90 AZI
39	1.2DL + 1DLi + 1WLi 120 AZI
40	1.2DL + 1DLi + 1WLi 135 AZI
41	1.2DL + 1DLi + 1WLi 150 AZI

#	Description
42	1.2DL + 1DLi + 1WLi 180 AZI
43	1.2DL + 1DLi + 1WLi 210 AZI
44	1.2DL + 1DLi + 1WLi 225 AZI
45	1.2DL + 1DLi + 1WLi 240 AZI
46	1.2DL + 1DLi + 1WLi 270 AZI
47	1.2DL + 1DLi + 1WLi 300 AZI
48	1.2DL + 1DLi + 1WLi 315 AZI
49	1.2DL + 1DLi + 1WLi 330 AZI
50	(1.2+0.2Sds) + 1.0E 0 AZI
51	(1.2+0.2Sds) + 1.0E 30 AZI
52	(1.2+0.2Sds) + 1.0E 45 AZI
53	(1.2+0.2Sds) + 1.0E 60 AZI
54	(1.2+0.2Sds) + 1.0E 90 AZI
55	(1.2+0.2Sds) + 1.0E 120 AZI
56	(1.2+0.2Sds) + 1.0E 135 AZI
57	(1.2+0.2Sds) + 1.0E 150 AZI
58	(1.2+0.2Sds) + 1.0E 180 AZI
59	(1.2+0.2Sds) + 1.0E 210 AZI
60	(1.2+0.2Sds) + 1.0E 225 AZI
61	(1.2+0.2Sds) + 1.0E 240 AZI
62	(1.2+0.2Sds) + 1.0E 270 AZI
63	(1.2+0.2Sds) + 1.0E 300 AZI
64	(1.2+0.2Sds) + 1.0E 315 AZI
65	(1.2+0.2Sds) + 1.0E 330 AZI
66	(0.9-0.2Sds) + 1.0E 0 AZI
67	(0.9-0.2Sds) + 1.0E 30 AZI
68	(0.9-0.2Sds) + 1.0E 45 AZI
69	(0.9-0.2Sds) + 1.0E 60 AZI
70	(0.9-0.2Sds) + 1.0E 90 AZI
71	(0.9-0.2Sds) + 1.0E 120 AZI
72	(0.9-0.2Sds) + 1.0E 135 AZI
73	(0.9-0.2Sds) + 1.0E 150 AZI
74	(0.9-0.2Sds) + 1.0E 180 AZI
75	(0.9-0.2Sds) + 1.0E 210 AZI
76	(0.9-0.2Sds) + 1.0E 225 AZI
77	(0.9-0.2Sds) + 1.0E 240 AZI
78	(0.9-0.2Sds) + 1.0E 270 AZI
79	(0.9-0.2Sds) + 1.0E 300 AZI
80	(0.9-0.2Sds) + 1.0E 315 AZI
81	(0.9-0.2Sds) + 1.0E 330 AZI
82-88	1.2D + 1.5 Lv1

#	Description
89	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP1
90	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP1
91	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP1
92	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP1
93	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP1
94	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP1
95	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP1
96	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP1
97	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP1
98	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP1
99	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP1
100	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP1
101	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP1
102	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP1
103	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP1
104	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP1
105	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP2
106	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP2
107	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP2
108	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP2
109	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP2
110	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP2
111	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP2
112	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP2
113	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP2
114	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP2
115	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP2
116	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP2
117	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP2
118	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP2
119	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP2
120	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP2

#	Description
121	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP3
122	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP3
123	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP3
124	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP3
125	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP3
126	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP3
127	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP3
128	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP3
129	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP3
130	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP3
131	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP3
132	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP3
133	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP3
134	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP3
135	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP3
136	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP3
137	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP4
138	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP4
139	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP4
140	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP4
141	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP4
142	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP4
143	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP4
144	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP4
145	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP4
146	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP4
147	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP4
148	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP4
149	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP4
150	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP4
151	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP4
152	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP4

\*This page shows an example of maintenance loads for (4) pipes, the number of mount pipe LCs may vary per site







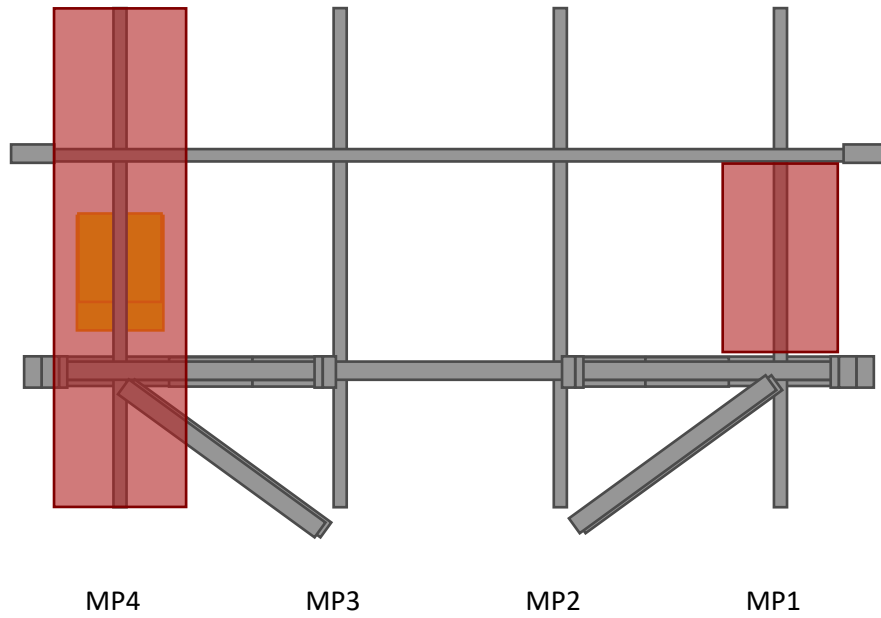








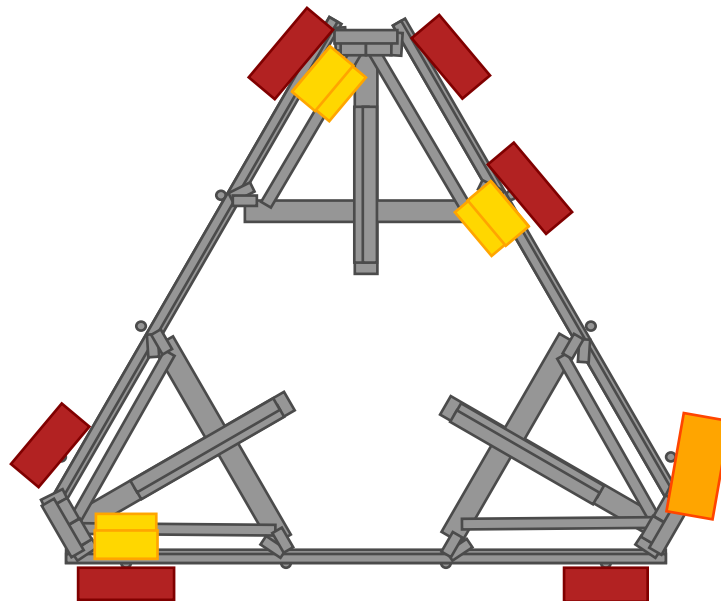
### ELEVATION VIEW



\*these drawings are intended to show approximate locations of equipment on the mount and should not be used to determine exact placement of equipment or additional hardware

\*\*Elevation View Shows Only One Sector

### PLAN VIEW





**APPENDIX C**  
**SOFTWARE ANALYSIS OUTPUT**



























**APPENDIX D**  
**ADDITIONAL CALCULATIONS**

**BOLT TOOL 1.5.2**

Project Data	
Job Code:	210863
Carrier Site ID:	BU 842865
Carrier Site Name:	LEBANON WEST

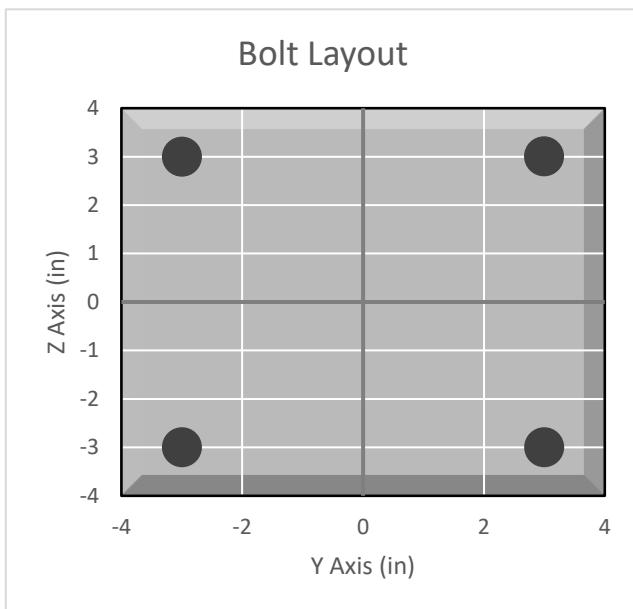
Code	
Design Standard:	TIA-222-H
Slip Check:	No
Pretension Standard:	TIA-222-H

Bolt Properties		
Connection Type:	Bolt	
Diameter:	0.625	in
Grade:	A325	--
Yield Strength (Fy):	92	ksi
Ultimate Strength (Fu):	120	ksi
Number of Bolts:	4	--
Threads Included:	Yes	--
Double Shear:	No	--
Connection Pipe Size:	-	in

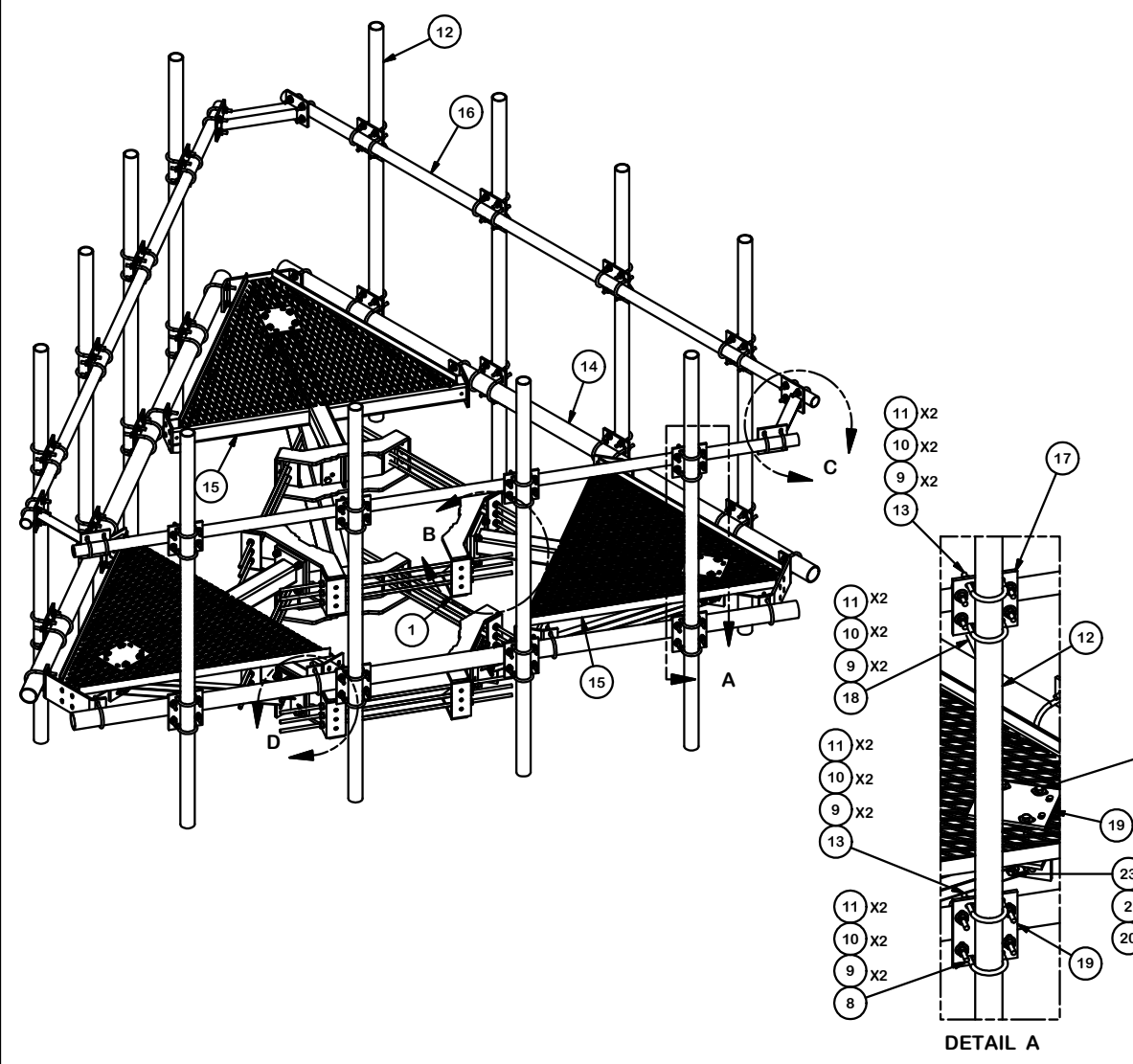
Connection Description
Standoff to Collar

Bolt Check*		
Tensile Capacity ( $\phi T_n$ ):	20340.1	lbs
Shear Capacity ( $\phi V_n$ ):	13805.8	lbs
Tension Force ( $T_u$ ):	2820.0	lbs
Shear Force ( $V_u$ ):	242.7	lbs
Tension Usage:	13.2%	--
Shear Usage:	1.7%	--
Interaction:	13.2%	Pass
Controlling Member:	M3	--
Controlling LC:	15	--

\*Rating per TIA-222-H Section 15.5



**APPENDIX E**  
**SUPPLEMENTAL DRAWINGS**



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	6	X-LWRM	RING MOUNT WELDMNT		68.16	408.95
2	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
3	60	A58NUT	5/8" HDG A325 HEX NUT		0.13	7.78
4	18	G58R-24	5/8" x 24" THREADED ROD (HDG.)		0.55	9.88
5	18	G58R-48	5/8" x 48" THREADED ROD (HDG.)		0.55	9.88
6	24	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	8.53
7	24	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.82
8	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.73	26.34
9	264	G12FW	1/2" HDG USS FLATWASHER		0.03	8.99
10	252	G12LW	1/2" HDG LOCKWASHER		0.01	3.50
11	252	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	18.03
12	12	P3096	2-7/8" OD X 96" Sch 40 Galvanized Pipe		46.45	557.43
13	48	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.73	35.12
14	3	P3150	3-1/2" X 150" SCH 40 GALVANIZED PIPE	150 in	94.80	284.40
15	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.31
16	3	P2150	2-3/8" OD X 150" SCH 40 GALVANIZED PIPE	150 in	48.06	144.17
17	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
18	36	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.73	26.34
19	15	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	90.32
20	6	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	0.78
21	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
22	6	X-253992	T-BRACKET FOR REINFORCEMENT KIT		13.55	81.27
23	6	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.62
24	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	4.91
25	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
					TOTAL WT. #	2645.84

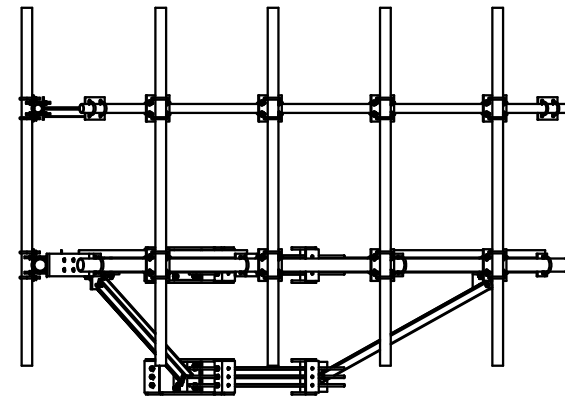
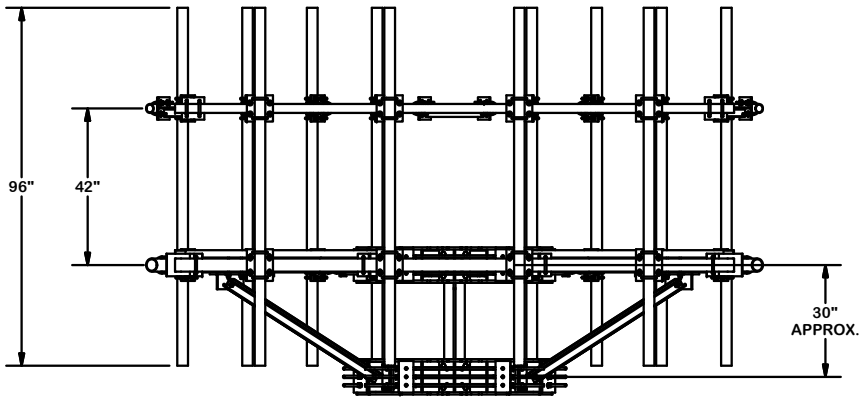
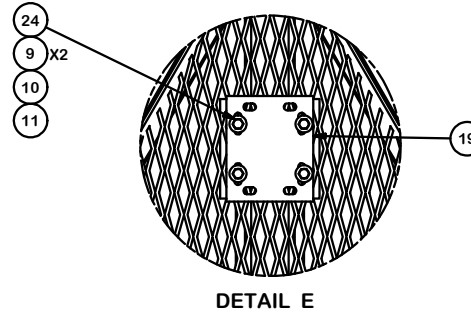
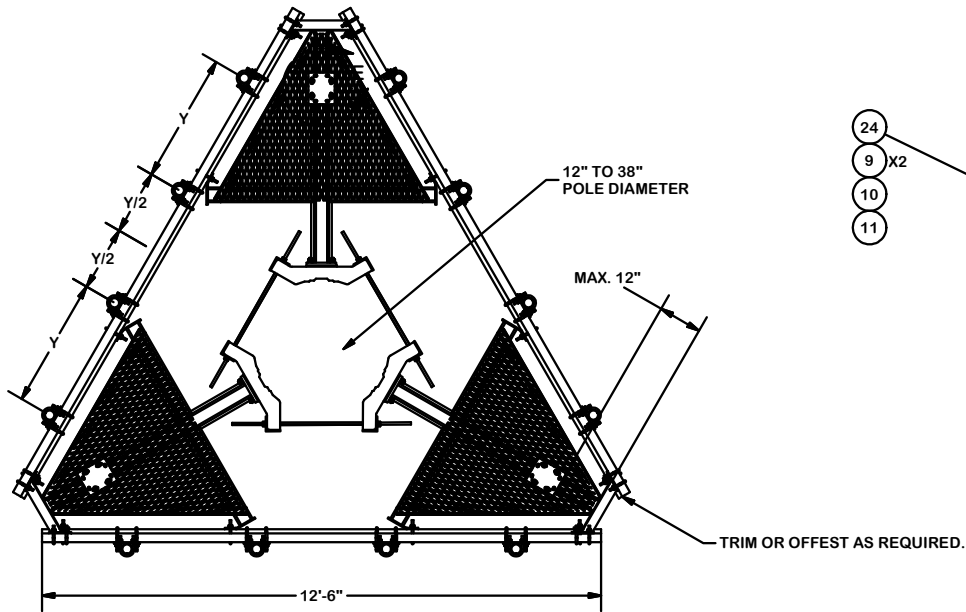
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014
REVISION HISTORY				

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

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

DESCRIPTION 12' 6" LOW PROFILE PLATFORM WITH TWELVE 2-7/8" ANTENNA MOUNTING PIPES, AND HANDRAIL	
CPD NO. 4488	DRAWN BY CEK 3/24/2014
CLASS 81	SUB 02
DRAWING USAGE CUSTOMER	ENG. APPROVAL BMC 7/14/2014

 <b>A valmont COMPANY</b>	Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX
	Engineering Support Team: 1-888-753-7446
PART NO. <b>RMQP-4096-HK</b>	DWG. NO. <b>RMQP-4096-HK</b>
1 OF 3	



**TOLERANCE NOTES**

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

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

DESCRIPTION  
 12' 6" LOW PROFILE PLATFORM  
 WITH TWELVE 2-7/8" ANTENNA MOUNTING  
 PIPES, AND HANDRAIL



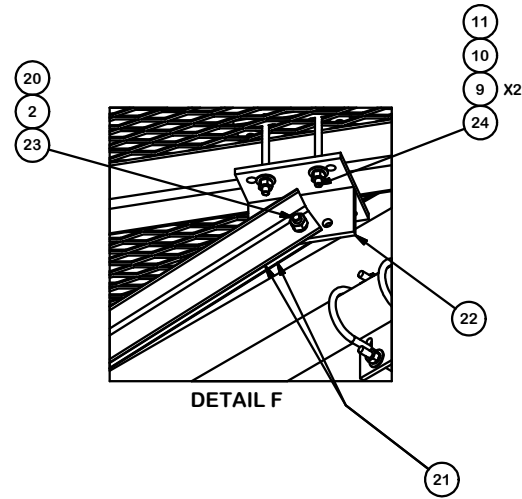
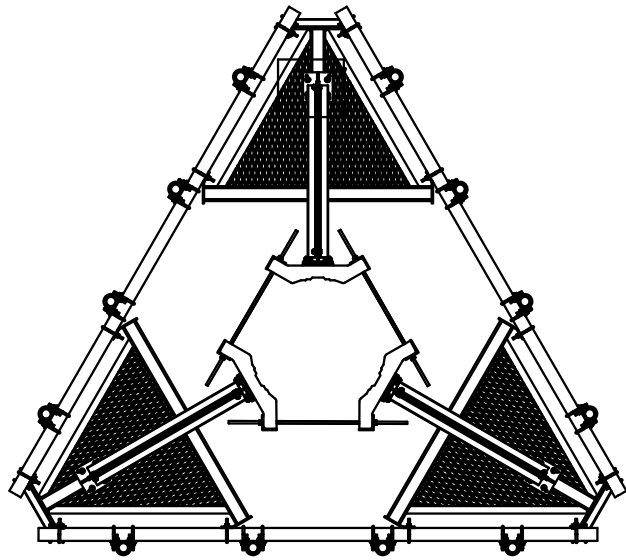
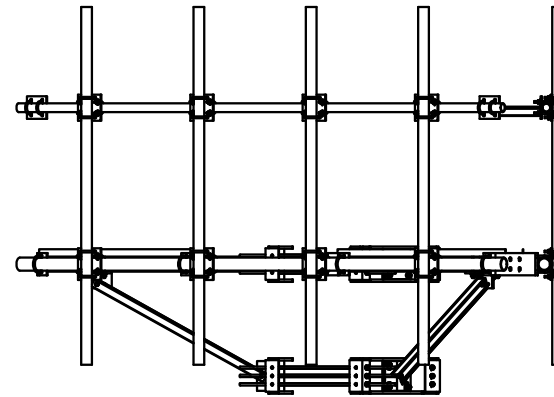
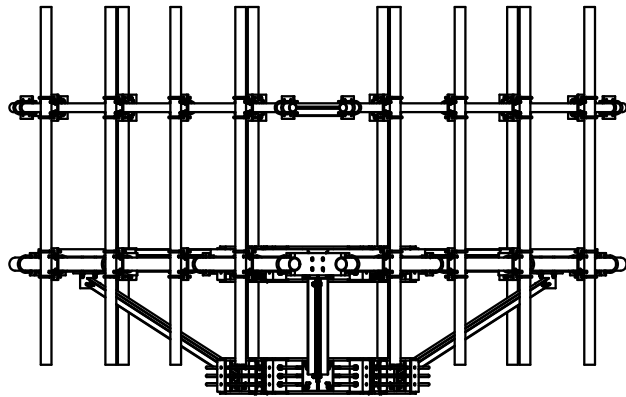
Engineering Support Team:  
 1-888-753-7446

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

CPD NO. 4488	DRAWN BY CEK 3/24/2014	ENG. APPROVAL
CLASS 81	SUB 02	DRAWING USAGE CUSTOMER
CHECKED BY BMC 7/14/2014		

PART NO. RMQP-4096-HK	PAGE 2 OF 3
DWG. NO. RMQP-4096-HK	

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014
REVISION HISTORY				



**TOLERANCE NOTES**

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

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

DESCRIPTION  
 12' 6" LOW PROFILE PLATFORM  
 WITH TWELVE 2-7/8" ANTENNA MOUTING  
 PIPES, AND HANDRAIL



Engineering  
 Support Team:  
 1-888-753-7446

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

CPD NO. 4488	DRAWN BY CEK 3/24/2014	ENG. APPROVAL
CLASS SUB 81 02	DRAWING USAGE CUSTOMER	CHECKED BY BMC 7/14/2014

PART NO. RMQP-4096-HK	PAGE 3 OF 3
DWG. NO. RMQP-4096-HK	

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014
REVISION HISTORY				



# Radio Frequency Emissions Analysis Report



**Site ID: CTNL256A**

Lebanon Underserved  
1699 Exeter Road  
Lebanon, CT 06249

**July 14, 2022**

**Fox Hill Telecom Project Number: 221456**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>30.44 %</b>



July 14, 2022

T-MOBILE  
Attn: RF Manager  
35 Griffin Road South  
Bloomfield, CT 06009

### Emissions Analysis for Site: **CTNL256A – Lebanon Underserved**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed upgrades to the T-MOBILE facility located at **1699 Exeter Road, Lebanon, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation located on this property are within specified federal limits.

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

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

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

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limits for the 600 MHz & 700 MHz bands are approximately  $400 \mu\text{W}/\text{cm}^2$  and  $467 \mu\text{W}/\text{cm}^2$  respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS), 2500 MHz (BRS) and 11 GHz microwave bands is  $1000 \mu\text{W}/\text{cm}^2$ . Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



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

Additional details can be found in FCC OET 65.

## CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **1699 Exeter Road, Lebanon, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-MOBILE is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

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

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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE / 5G NR	600 MHz	2	40
LTE	700 MHz	2	20
LTE	1900 MHz (PCS)	4	40
GSM	1900 MHz (PCS)	1	15
LTE	2100 MHz (AWS)	4	40
LTE / 5G NR	2500 MHz (BRS)	8	20
Microwave (Sector A)	11 GHz	1	1

*Table 1: Channel Data Table*



The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS), 2100 MHz (AWS), 2500 MHz (BRS) and 11 GHz microwave frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXVAALL24_43-U-NA20	126
A	2	Commscope AIR6419 B41	126
A	3	RFS SC2-W100BD	126
B	1	RFS APXVAALL24_43-U-NA20	126
B	2	Commscope AIR6419 B41	126
C	1	RFS APXVAALL24_43-U-NA20	126
C	2	Commscope AIR6419 B41	126

*Table 2: Antenna Data*

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



## RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	13.65 / 13.85 / 16.65 / 16.95	13	455	18,843.43	5.68
Antenna A2	Commscope AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	5.64
Antenna A3	RFS SC2-W100BD	11 GHz	32.25	1	1	1,678.80	0.04
Sector A Composite MPE%							<b>11.36</b>
Antenna B1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	13.65 / 13.85 / 16.65 / 16.95	13	455	18,843.43	5.68
Antenna B2	Commscope AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	5.64
Sector B Composite MPE%							<b>11.32</b>
Antenna C1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	13.65 / 13.85 / 16.65 / 16.95	13	455	18,843.43	5.68
Antenna C2	Commscope AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	5.64
Sector C Composite MPE%							<b>11.32</b>

*Table 3: T-MOBILE Emissions Levels*

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

<b>Site Composite MPE%</b>	
<b>Carrier</b>	<b>MPE%</b>
T-MOBILE – Max at Sector A	<b>11.36 %</b>
AT&T	7.33 %
Verizon Wireless	11.75 %
<b>Site Total MPE %:</b>	<b>30.44 %</b>

*Table 4: All Carrier MPE Contributions*

T-MOBILE Sector A Total:	11.36 %
T-MOBILE Sector B Total:	11.32 %
T-MOBILE Sector C Total:	11.32 %
Site Total:	30.44 %

*Table 5: Site MPE Summary*



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

T-MOBILE _ Frequency Band / Technology Max Power Values Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
T-Mobile 600 MHz LTE / 5G NR	2	926.96	126	4.63	600 MHz	400	1.16%
T-Mobile 700 MHz LTE	2	485.32	126	2.42	700 MHz	467	0.52%
T-Mobile 1900 MHz (PCS) LTE	4	1,849.52	126	18.47	1900 MHz (PCS)	1000	1.85%
T-Mobile 1900 MHz (PCS) GSM	1	693.57	126	1.73	1900 MHz (PCS)	1000	0.17%
T-Mobile 2100 MHz (AWS) LTE	4	1,981.80	126	19.79	2100 MHz (AWS)	1000	1.98%
T-Mobile 2500 MHz (BRS) LTE / 5G NR	8	2,825.08	126	56.42	2500 MHz (BRS)	1000	5.64%
T-Mobile 11 GHz Microwave	1	1,678.80	126	0.42	11 GHz	1000	0.04%
						<b>Total:</b>	<b>11.36%</b>

*Table 6: T-MOBILE Maximum Sector MPE Power Values*



## Summary

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

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

T-MOBILE Sector	Power Density Value (%)
Sector A:	11.36 %
Sector B:	11.32 %
Sector C:	11.32 %
T-MOBILE Maximum Total (per sector):	11.36 %
Site Total:	30.44 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **30.44 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan  
Principal RF Engineer  
**Fox Hill Telecom, Inc**  
Holden, MA 01520  
(978)660-3998





**T-MOBILE SITE NUMBER: CTNL256A** **BUSINESS UNIT #: 842865**  
**T-MOBILE SITE NAME: LEBANON UNDERSERVED** **SITE ADDRESS: 1699 EXETER RD**  
**SITE TYPE: MONOPOLE** **COUNTY: NEW LONDON**  
**TOWER HEIGHT: 150'-0"** **JURISDICTION: TOWN OF NEW LONDON**  
**CTNL256A\_COVERAGE STRATEGY: 67E5998E\_1xAIR+1OP**

**T-Mobile**  
 12920 SE 38TH STREET  
 BELLEVUE, WA 98006

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

**INFINIGY**  
 FROM ZERO TO INFINIGY  
 the solutions are endless  
 500 West Office Center Dr.  
 Suite 150 | Fort Washington, PA 19034  
 www.infinigy.com

**T-MOBILE SITE NUMBER: CTNL256A**  
**BU #: 842865**  
**LEBANON WEST**  
 1699 EXETER RD  
 LEBANON, CT 06249  
 EXISTING 150'-0" MONOPOLE

**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DES/QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS

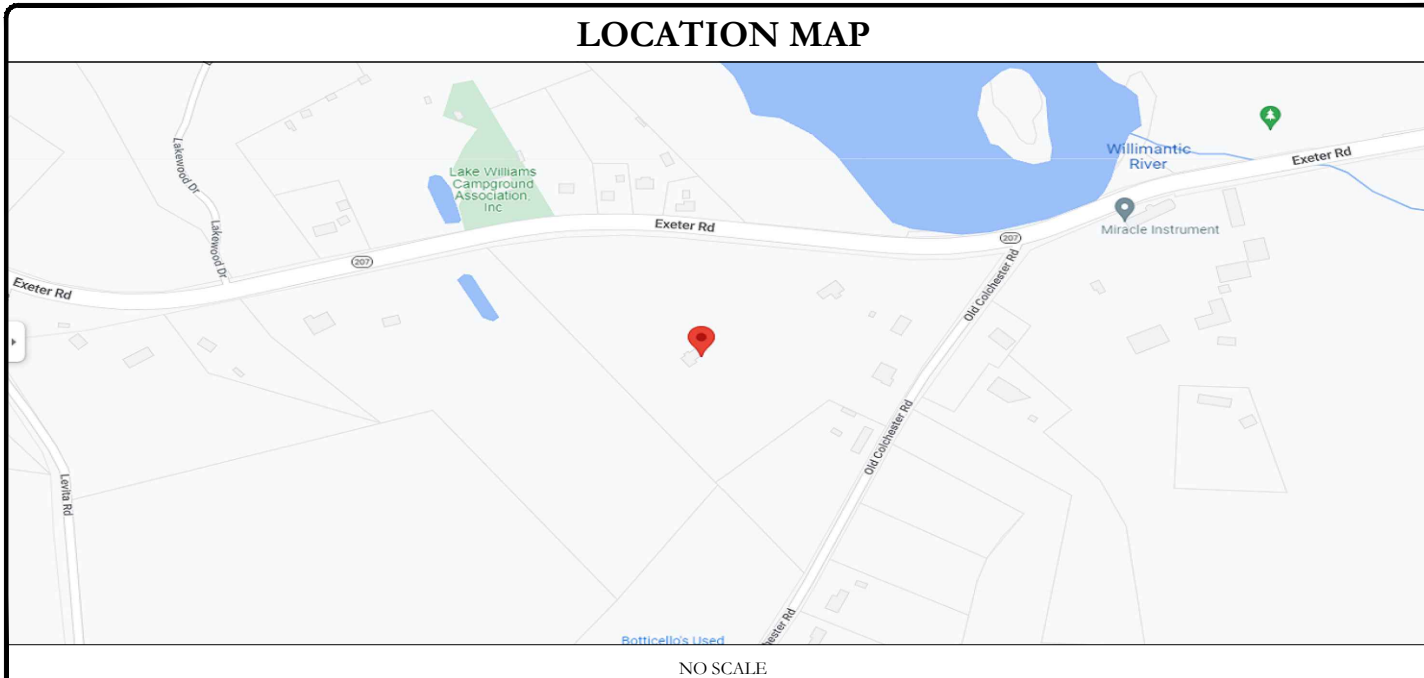
**SITE INFORMATION**

CROWN CASTLE USA INC. SITE NAME:	LEBANON WEST
SITE ADDRESS:	1699 EXETER RD LEBANON, CT 06249
COUNTY:	NEW LONDON
MAP/PARCEL #:	TBD
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.62759000° (41° 37' 40.53")
LONGITUDE:	-72.30580000° (-72° 18' 20.34")
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	498 FT
CURRENT ZONING:	TBD
JURISDICTION:	TOWN OF NEW LONDON
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	TBD
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 12920 SE 38TH STREET BELLEVUE, WA 98006
ELECTRIC PROVIDER:	----
TELCO PROVIDER:	----

**DRAWING INDEX**

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN & ENLARGED SITE PLAN
C-2	ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	ANTENNA EQUIPMENT SPECS
C-6	RAN EQUIPMENT SPECS & DETAILS
C-7	GENERATOR INSTALLATION DETAILS
C-8	GROUND EQUIPMENT SUPPORT DETAILS
C-9	CANOPY DETAILS
C-10	ANTENNA MOUNTING DETAIL
C-11	GENERATOR SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
E-2	UTILITY ROUTING
G-1	TYPICAL GROUNDING SCHEMATIC
G-2	ANTENNA GROUNDING DIAGRAM
G-3	GROUNDING DETAILS I
G-4	GROUNDING DETAILS II

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 22X34. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.



**PROJECT TEAM**

A&E FIRM:	INFINIGY 500 WEST OFFICE CENTER DR. SUITE 150, FORT WASHINGTON, PA 19034
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065
	TRICIA PELON - PROJECT MANAGER TRICIA.PELON@CROWNCastle.COM
	CHRISTOPHER P MILLER - CONSTRUCTION MANAGER CHRISP.MILLER@CROWNCastle.COM

**PROJECT DESCRIPTION**

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

**TOWER SCOPE OF WORK:**

- INSTALL (6) ANTENNAS
- INSTALL (1) DISH ANTENNA
- INSTALL (6) RRHS
- INSTALL (3) 6X24 HYBRID CABLES
- INSTALL (1) 1/2" COAX CABLES
- INSTALL (1) RMQP-4096-HK ANTENNA MOUNT

**GROUND SCOPE OF WORK:**

- INSTALL 10'X15' CONCRETE PAD
- INSTALL (1) 6160 & (1) B160 BATTERY CABINET
- INSTALL (1) IXRE ROUTER IN (P) CABINET
- INSTALL (2) PSU4813 BOOSTER IN (P) CABINET
- INSTALL (2) RP 6651 IN (P) CABINET
- INSTALL (1) 50KW SSM DIESEL GENERATOR
- INSTALL ICE BRIDGE
- INSTALL (2) H-FRAMES W/ ASSOCIATED EQUIPMENT
- INSTALL (1) CANOPY
- INSTALL (4) LED LUMINARE WORK LIGHTS

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

**APPLICABLE CODES/REFERENCE DOCUMENTS**

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

CODE TYPE	CODE
BUILDING	2015 IBC
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

**REFERENCE DOCUMENTS:**

STRUCTURAL ANALYSIS: B+T GROUP  
 DATED: 06/06/2022

MOUNT ANALYSIS: TRYLON  
 DATED: 05/27/2022

RFDS REVISION: 1  
 DATED: 2/28/2022

ORDER ID: 614533  
 REVISION: 2

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

**APPROVALS**

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

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

**SHUHEI SAKANoue**  
 STATE OF CONNECTICUT  
 LICENSED PROFESSIONAL ENGINEER  
 34916  
 07/29/22

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

<b>SHEET NUMBER:</b> T-1	<b>REVISION:</b> 1
-----------------------------	-----------------------

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GREENFIELD GROUNDING NOTES:

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

GENERAL NOTES:

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

ELECTRICAL INSTALLATION NOTES:

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

Table with 3 columns: SYSTEM, CONDUCTOR, COLOR. Lists conductor color codes for various systems like 120/240V, 10, 120/208V, 30, 277/480V, 30, and DC VOLTAGE.

APWA UNIFORM COLOR CODE:

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

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

ABBREVIATIONS:

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



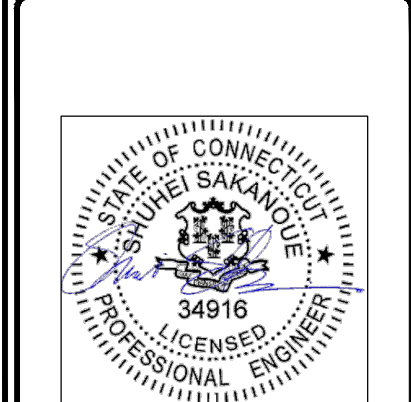
T-MOBILE SITE NUMBER: CTNL256A

BU #: 842865 LEBANON WEST

1699 EXETER RD LEBANON, CT 06249

EXISTING 150'-0" MONOPOLE

Table with 5 columns: REV, DATE, DRWN, DESCRIPTION, DES./QA. Shows revision history for RCD drawings.

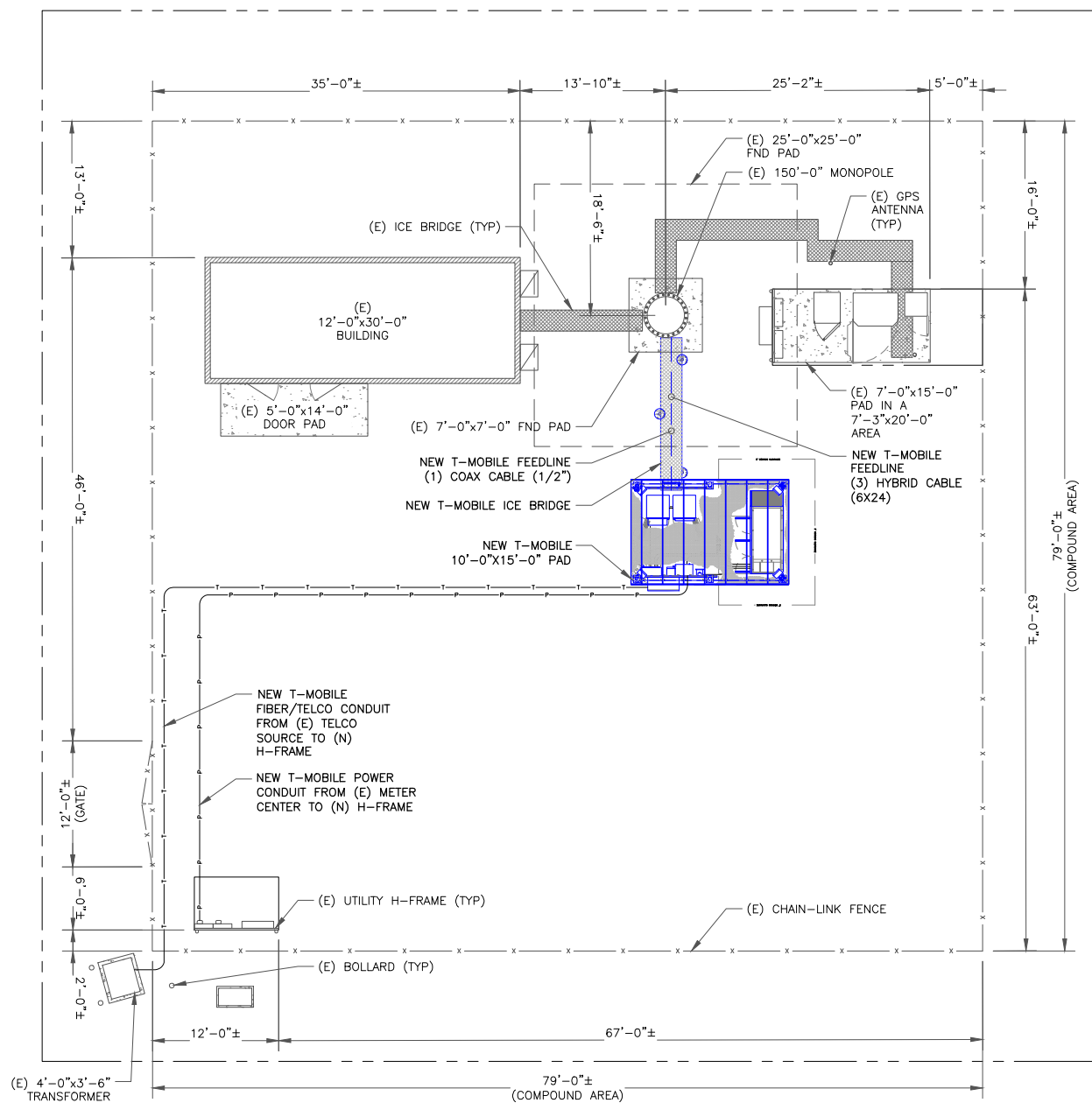


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: T-2 REVISION: 1

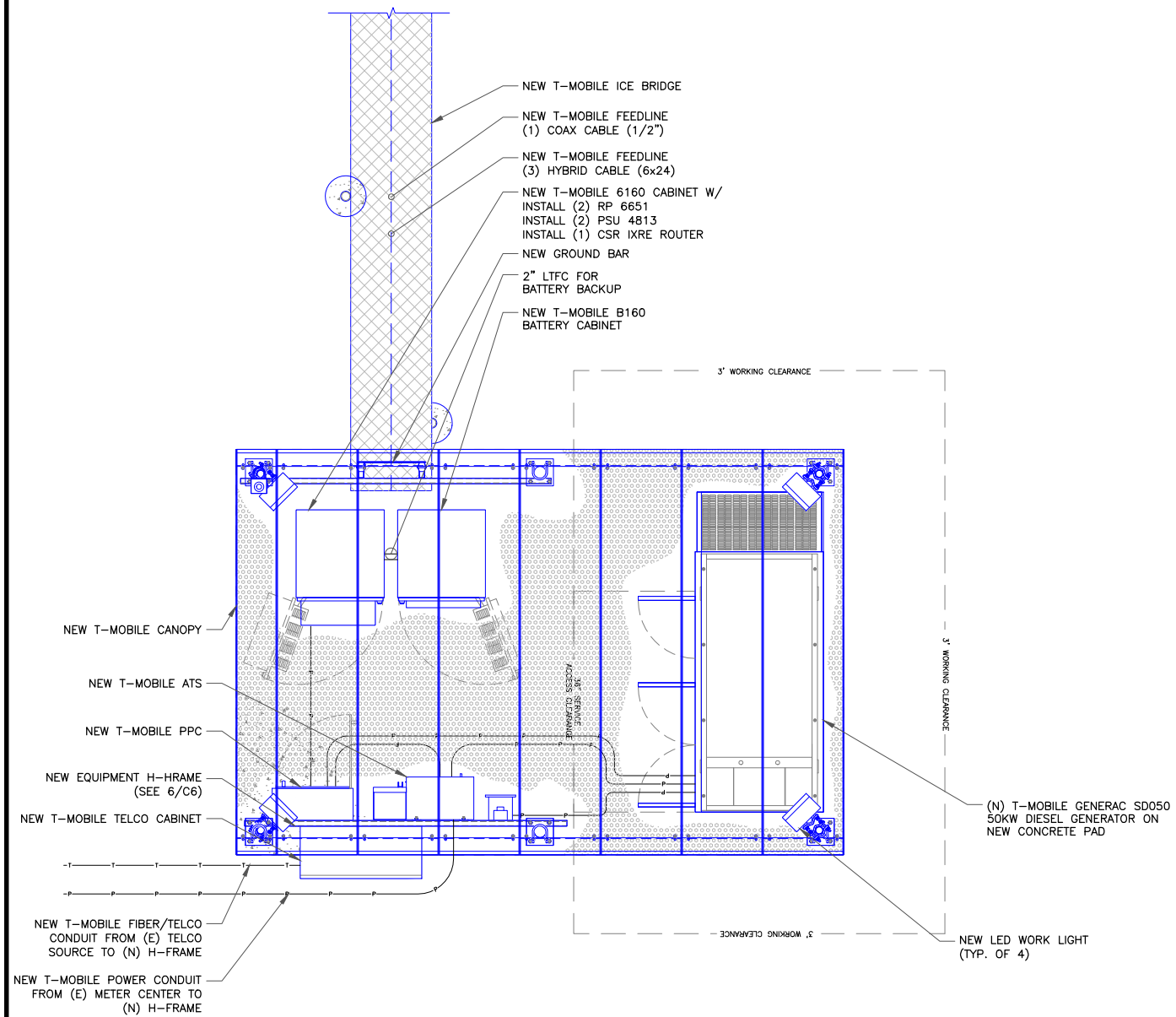
NOTE:

1. PLANS BASED ON SITE PLAN PROVIDED BY TOWER OWNER AND SITE VISIT PERFORMED BY INFINIGY. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING T-MOBILE EQUIPMENT.



1 SITE PLAN

SCALE: 1/8"=1'-0" (FULL SIZE)  
1/16"=1'-0" (11x17)



2 ENLARGED SITE PLAN

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



T-Mobile

12920 SE 38TH STREET  
BELLEVUE, WA 98006

CROWN CASTLE

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

INFINIGY  
FROM ZERO TO INFINIGY  
the solutions are endless

500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
CTNL256A

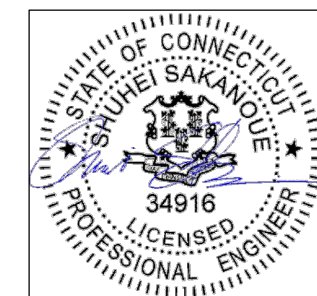
BU #: 842865  
LEBANON WEST

1699 EXETER RD  
LEBANON, CT 06249

EXISTING 150'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS



07/29/22

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

SHEET NUMBER:

C-1

REVISION:

1

**NOTES:**

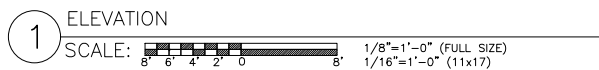
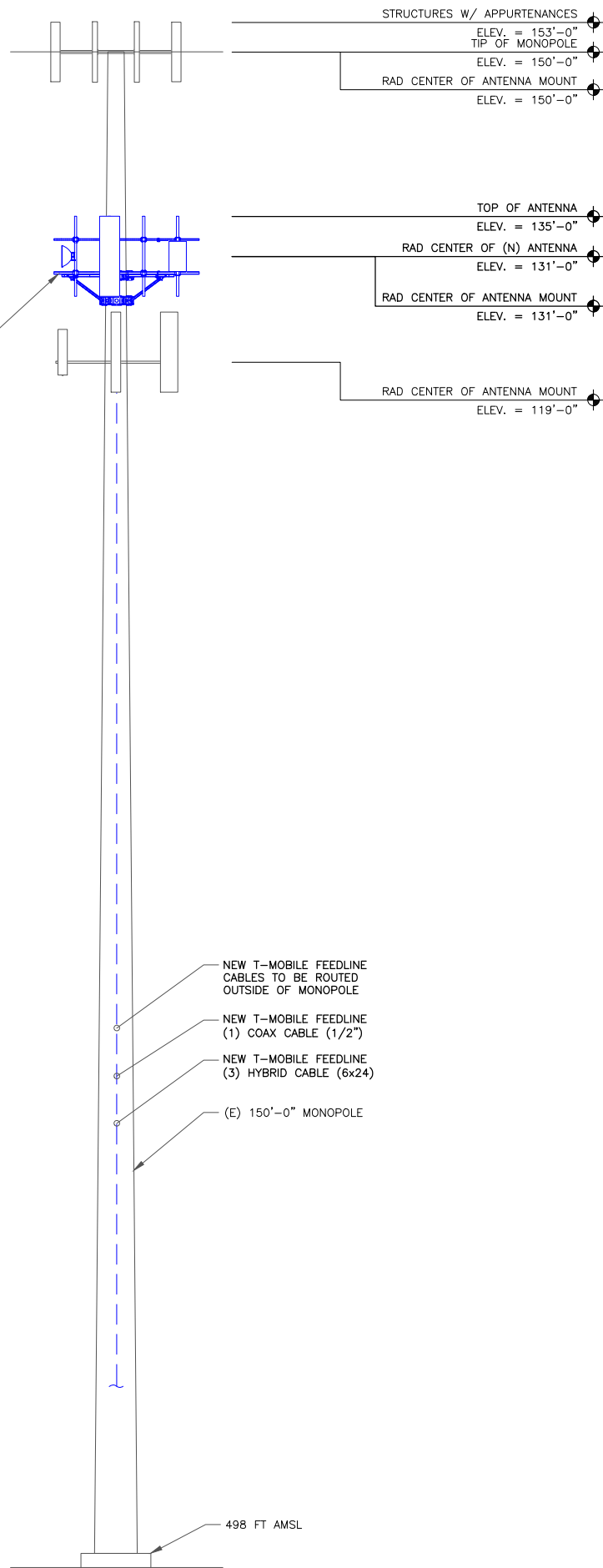
- ELEVATION BASED ON DRAWING PROVIDED BY TOWER OWNER. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING EQUIPMENT.
- INFINIGY HAS NOT EVALUATED THE TOWER OR MOUNT STRUCTURE AND ASSUMES NO RESPONSIBILITY FOR THEIR STRUCTURAL INTEGRITY REGARDING PROPOSED LOADINGS. FINAL INSTALLATION SHALL COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSES PERFORMED BY OTHERS.

**T-MOBILE EQUIPMENT**

ANTENNA CL: 131'-0"  
MOUNT CL: 131'-0"

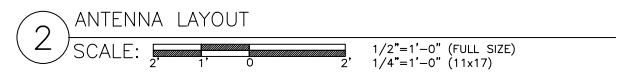
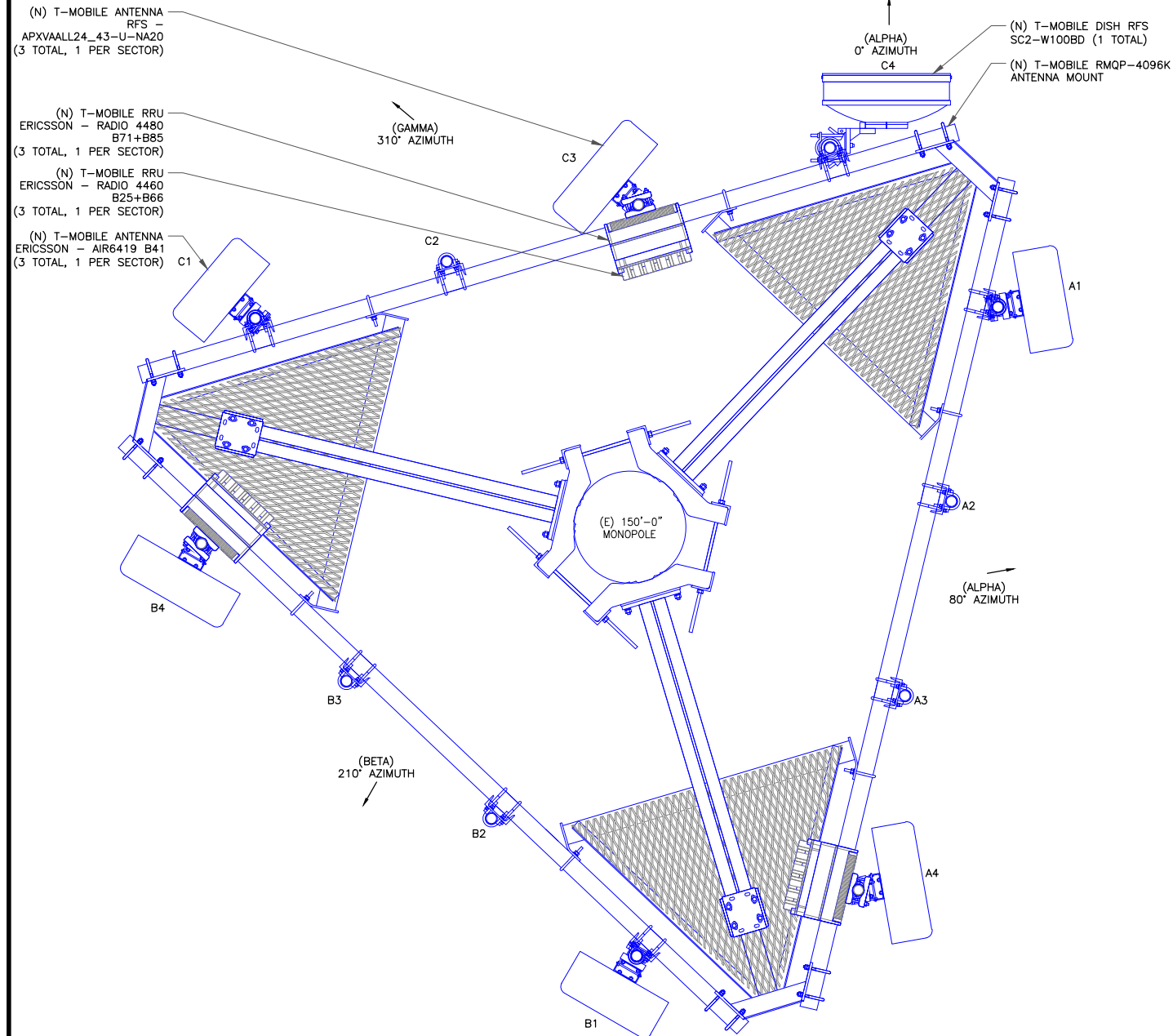
ANY AND ALL TOWER MOUNTED EQUIPMENT MUST NOT TRAP OR INTERFERE W/ EXISTING SAFETY CLIMB

NEW T-MOBILE EQUIPMENT  
(6) ANTENNAS  
(6) RRHS  
(1) DISH ANTENNA  
(1) RMQP-4096K



**NOTES:**

- A STRUCTURAL EVALUATION OF THE T-MOBILE ANTENNA MOUNTS HAS BEEN PERFORMED BY TRYLON. REFER TO ANTENNA MOUNT STRUCTURAL ANALYSIS DATED 05/03/2022 PRIOR TO CONSTRUCTION.
- THE SITEPRO1 PLATFORM MOUNT (PART# PART# RMQP-4096 HRK) HAS SUFFICIENT CAPACITY TO CARRY THE PROPOSED LOADING CONFIGURATION.
- INFINIGY HAS NOT EVALUATED THE TOWER FOR THIS SITE AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. CONTRACTOR TO COORDINATE LOADING WITH RF ENGINEER. REFER TO STRUCTURAL ANALYSIS PERFORMED BY OTHERS PRIOR TO CONSTRUCTION.



**T-Mobile**  
12920 SE 38TH STREET  
BELLEVUE, WA 98006

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

**INFINIGY**  
FROM ZERO TO INFINIGY  
the solutions are endless  
500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
**CTNL256A**

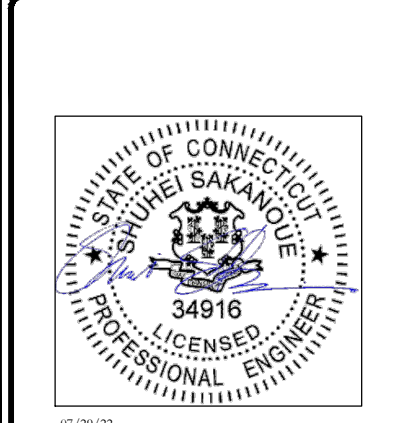
BU #: 842865  
**LEBANON WEST**

1699 EXETER RD  
LEBANON, CT 06249

EXISTING 150'-0" MONOPOLE

**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS



07/29/22

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

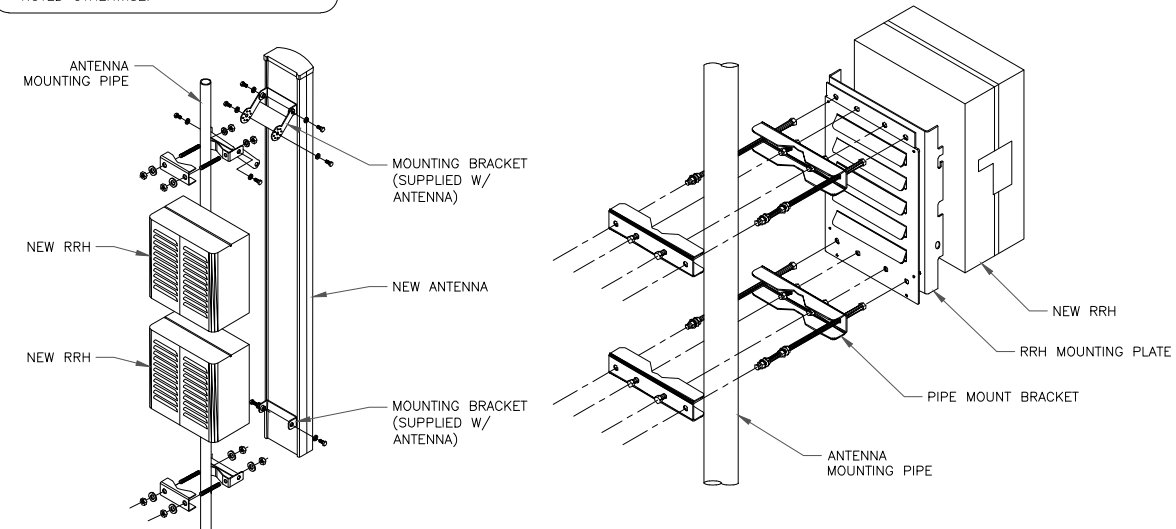
SHEET NUMBER: **C-2** REVISION: **1**

ANTENNA SCHEDULE										
SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	A1	L2500, N2500	131'-0"	80°	ERICSSON	ERICSSON - AIR6419 B41	2	2/2	--	(1) HYBRID CABLE (6x24) (1) COAX CABLE (1/2")
ALPHA	A2	--	131'-0"	80°	--	--	--	--		
ALPHA	A3	--	131'-0"	80°	--	--	--	--		
ALPHA	A4	L700, L600, N600	131'-0"	80°	RFS	APXVAALL24_43-U-NA20	2	2/2/2/2	(1) ERICSSON - RRUS 4460 B25+B66 (1) ERICSSON - RRUS 4480 B71+B85	
BETA	B1	L2500, N2500	131'-0"	210°	ERICSSON	ERICSSON - AIR6419 B41	2	2/2	--	(1) HYBRID CABLE (6x24)
BETA	B2	--	131'-0"	210°	--	--	--	--		
BETA	B3	--	131'-0"	210°	--	--	--	--		
BETA	B4	L700, L600, N600	131'-0"	210°	RFS	APXVAALL24_43-U-NA20	2	2/2/2/2	(1) ERICSSON - RRUS 4460 B25+B66 (1) ERICSSON - RRUS 4480 B71+B85	
GAMMA	C1	L2500, N2500	131'-0"	310°	ERICSSON	ERICSSON - AIR6419 B41	2	2/2	--	(1) HYBRID CABLE (6x24)
GAMMA	C2	L700, L600, N600	131'-0"	310°	RFS	APXVAALL24_43-U-NA20	2	2/2/2/2	(1) ERICSSON - RRUS 4460 B25+B66 (1) ERICSSON - RRUS 4480 B71+B85	
GAMMA	C3	--	131'-0"	310°	--	--	--	--		
GAMMA	C4	--	131'-0"	0°	RFS	SC2-W100BD	--	--	--	

1 ANTENNA AND CABLE SCHEDULE  
SCALE: NOT TO SCALE

**INSTALLER NOTES:**

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



**NOTE:**

1. CONTRACTOR SHALL INSTALL 3RD DUAL RRH MOUNT TO ACCOMMODATE ALL RRH BRACKETS HOLES IF NECESSARY.

2 ANTENNA WITH RRHs MOUNTING DETAIL  
SCALE: NOT TO SCALE

**T-Mobile**  
12920 SE 38TH STREET  
BELLEVUE, WA 98006

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

**INFINIGY**  
FROM ZERO TO INFINIGY  
the solutions are endless  
500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
**CTNL256A**

BU #: 842865  
**LEBANON WEST**

1699 EXETER RD  
LEBANON, CT 06249

EXISTING 150'-0" MONOPOLE

**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS

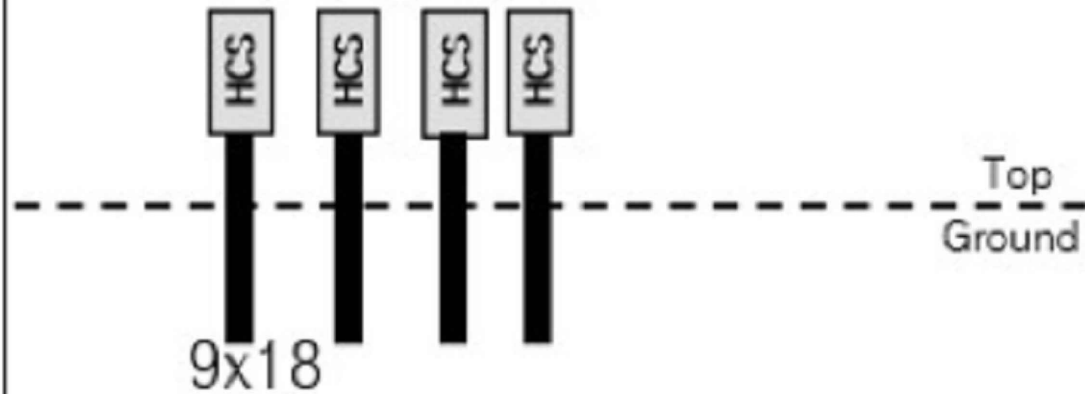
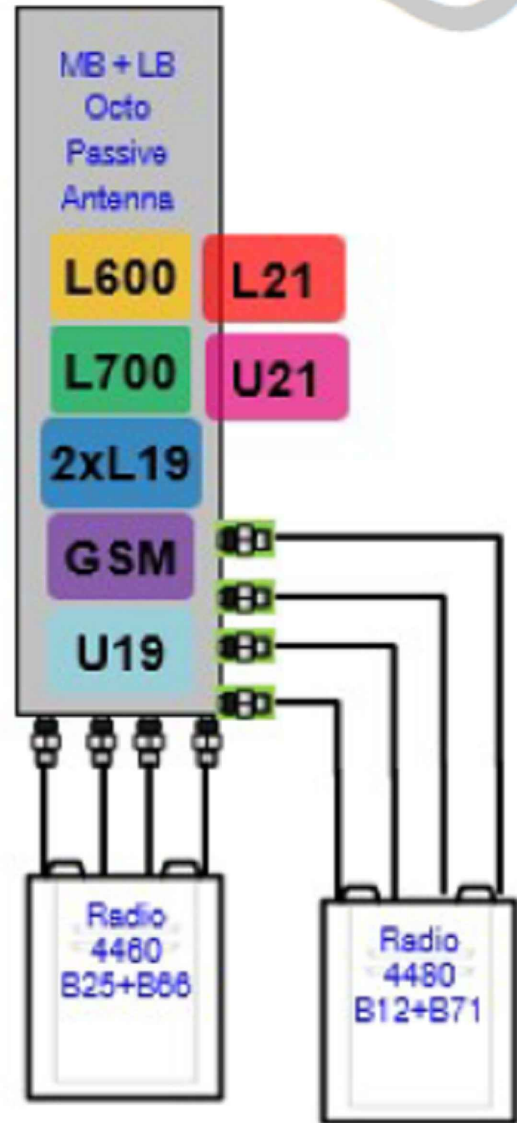
STATE OF CONNECTICUT  
SHUHEI SAKANOU  
34916  
LICENSED PROFESSIONAL ENGINEER

07/29/22

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

SHEET NUMBER: **C-3** REVISION: **1**

# Final Config: 67E5A998E



Notes:

**T-Mobile**  
12920 SE 38TH STREET  
BELLEVUE, WA 98006

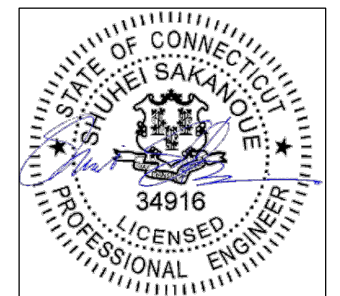
**CROWN CASTLE**  
3 CORPORATE PARK DRIVE, SUITE 101  
CLIFTON PARK, NY 12065

**INFINIGY**  
FROM ZERO TO INFINIGY  
the solutions are endless  
500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
**CTNL256A**  
  
BU #: 842865  
**LEBANON WEST**  
  
1699 EXETER RD  
LEBANON, CT 06249  
  
EXISTING 150'-0" MONOPOLE

**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DES/QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS

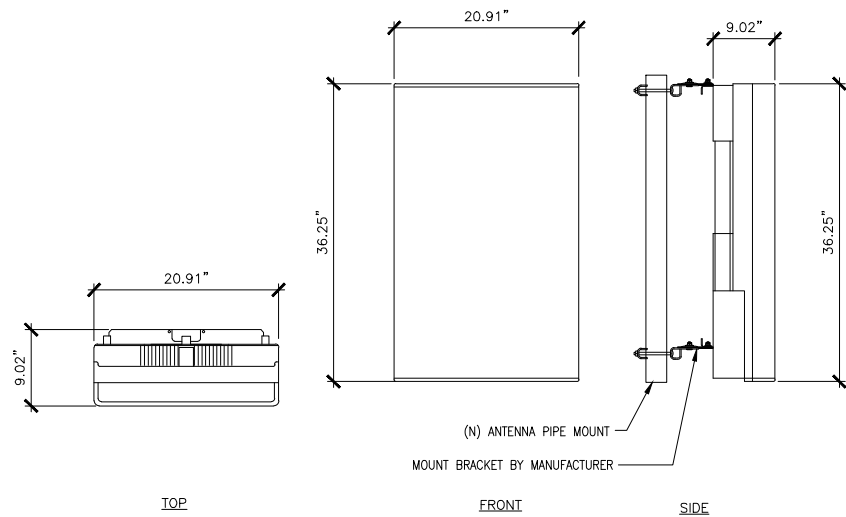


07/29/22

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

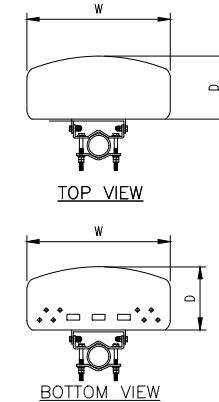
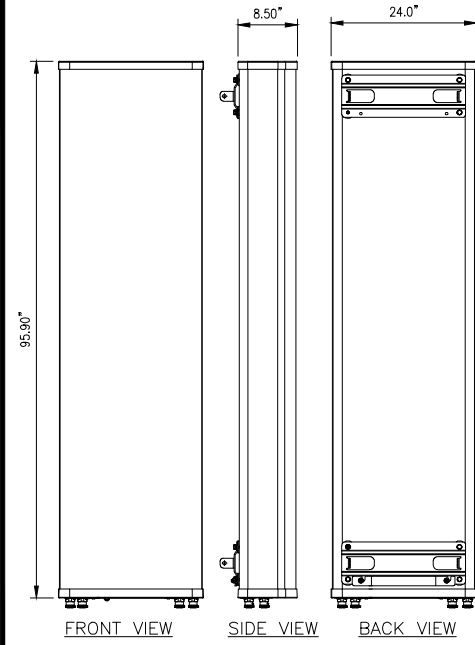
SHEET NUMBER: **C-4** REVISION: **1**

MANUFACTURER: ERICSSON  
 MODEL: AIR6419 B41  
 WEIGHT: 96.50 LBS (W/ MOUNT BRACKET 113)  
 DIMENSIONS: 36.25"H. X 20.91"W. X 9.02"D.  
 FREQUENCY: REFER TO RF DATA SHEET



1 (N) AIR6419 B41 ANTENNA SPEC  
 SCALE: NOT TO SCALE

700MHz RFS ANTENNAS	
MODEL	WEIGHT (lb)
(8') APXVAALL24_43-U-NA20	149.90
WEIGHT W/ MOUNTING BRACKET (lb):	154

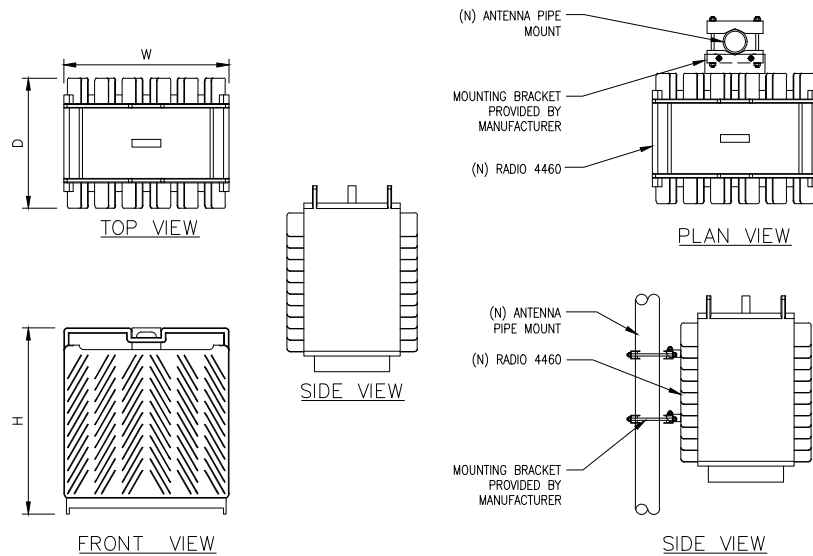
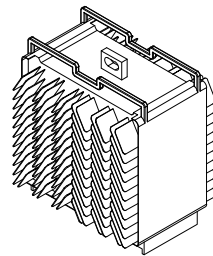


2 (N) APXVAALL24\_43-U-NA20 ANTENNA SPEC  
 SCALE: NOT TO SCALE

3 NOT USED  
 SCALE: NOT TO SCALE

**ERICSSON RADIO-4460 B25 B66**

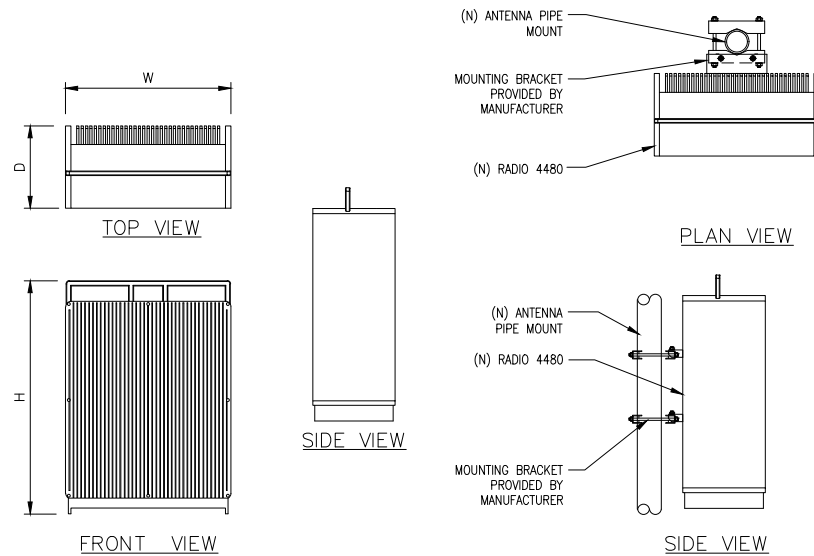
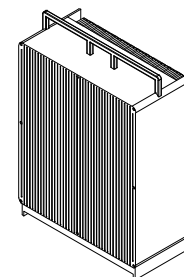
DIMENSIONS, WxDxH: 17.0"x15.1"x11.9"  
 MAX OUTPUT POWER: 4x80W (2x(2x80W))  
 TOTAL WEIGHT: 109 lbs  
 TEMPERATURE: -40° TO 55° C



4 (N) RADIO 4460 SPEC  
 SCALE: NOT TO SCALE

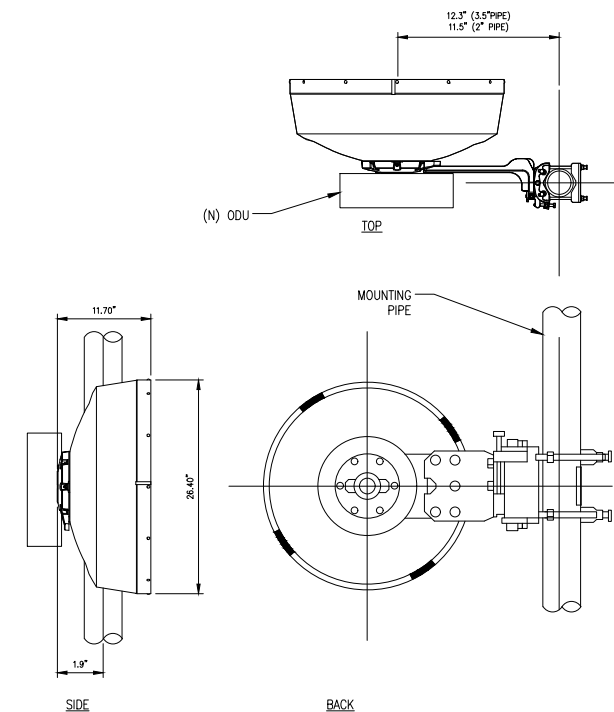
**ERICSSON RADIO-4480 B71 B85**

DIMENSIONS, WxDxH: 21.8"x15.7"x7.5"  
 MAX OUTPUT POWER: 4x80W (2x(2x80W))  
 TOTAL WEIGHT: 93 lbs  
 TEMPERATURE: -40° TO 55° C



5 (N) RADIO 4480 SPEC  
 SCALE: NOT TO SCALE

MW MANUFACTURER: RFS  
 MODEL: SC2-W100BD  
 DIMENSIONS: HxWxD: 26.40"x26.40"x11.70"  
 WEIGHT: 20.0 LBS



6 (N) SC2-W100BD DISH SPEC  
 SCALE: NOT TO SCALE

**T-Mobile**

12920 SE 38TH STREET  
 BELLEVUE, WA 98006

**CROWN CASTLE**

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

**INFINIGY**  
 FROM ZERO TO INFINIGY  
 the solutions are endless

500 West Office Center Dr.  
 Suite 150 | Fort Washington, PA 19034  
 www.infinigy.com

T-MOBILE SITE NUMBER:  
**CTNL256A**

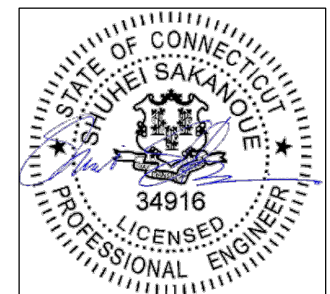
BU #: 842865  
**LEBANON WEST**

1699 EXETER RD  
 LEBANON, CT 06249

EXISTING 150'-0" MONOPOLE

**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS



07/29/22

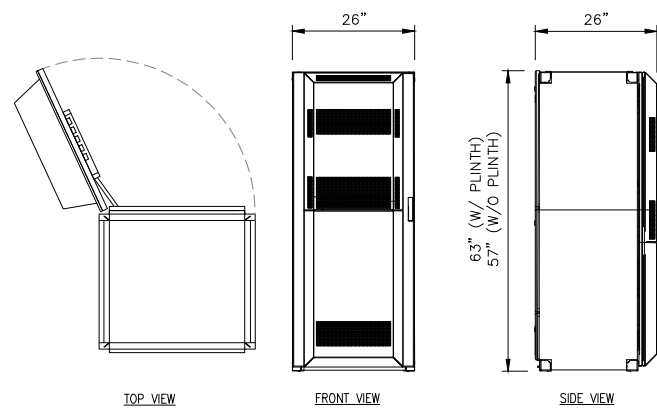
IT IS A VIOLATION OF LAW FOR ANY PERSON,  
 UNLESS THEY ARE ACTING UNDER THE DIRECTION  
 OF A LICENSED PROFESSIONAL ENGINEER,  
 TO ALTER THIS DOCUMENT.

SHEET NUMBER:

**C-5**

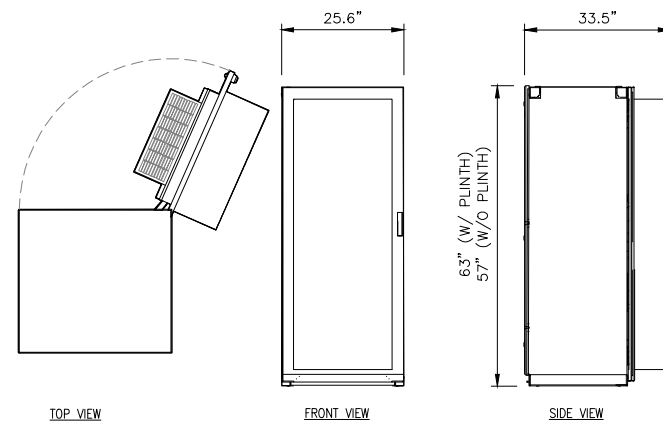
REVISION:

**1**



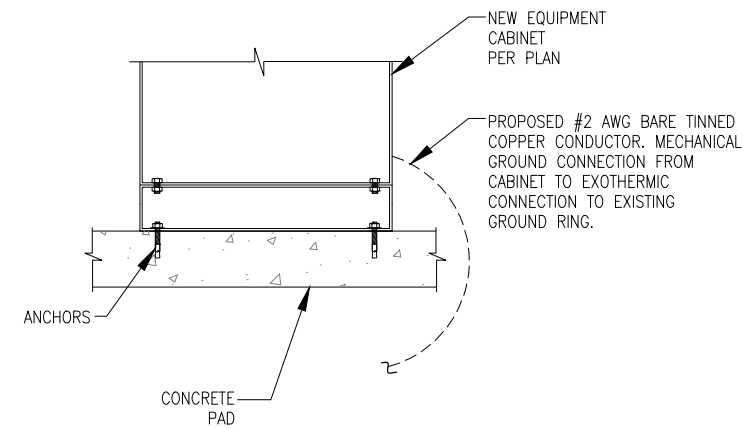
ERICSSON MODEL NO.:	B160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x26"x26" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	485 LBS
MAXIMUM WEIGHT:	2100± LBS

1 (N) B160 CABINET DETAIL  
SCALE: NOT TO SCALE

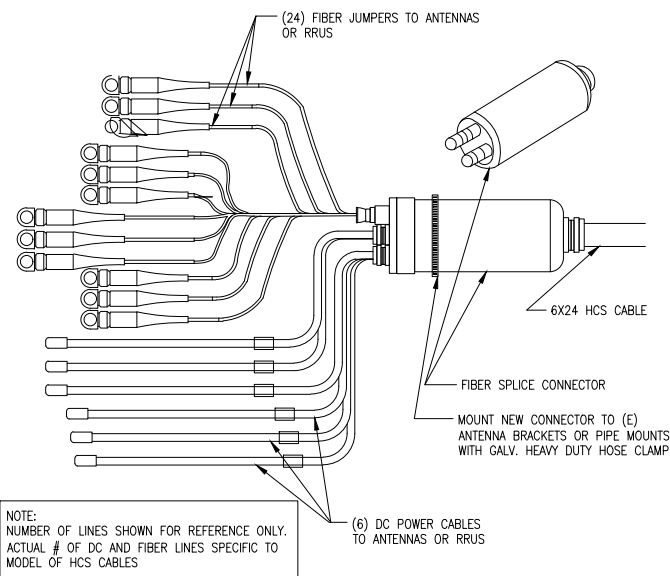


ERICSSON MODEL NO.:	6160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x25.6"x25.6" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	410 LBS
MAXIMUM WEIGHT:	770± LBS

2 (N) 6160 CABINET DETAIL  
SCALE: NOT TO SCALE

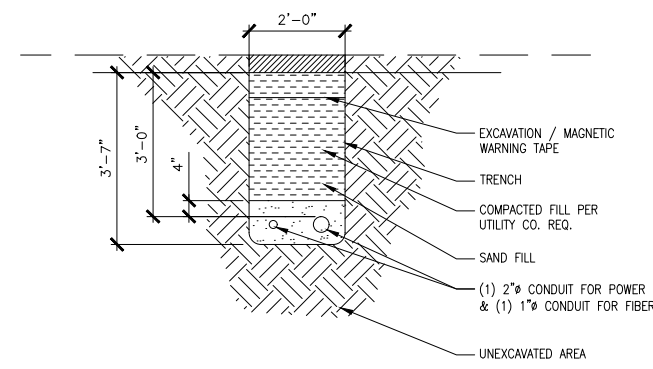


3 (N) EQUIPMENT CABINET MOUNTING DETAIL  
SCALE: NOT TO SCALE

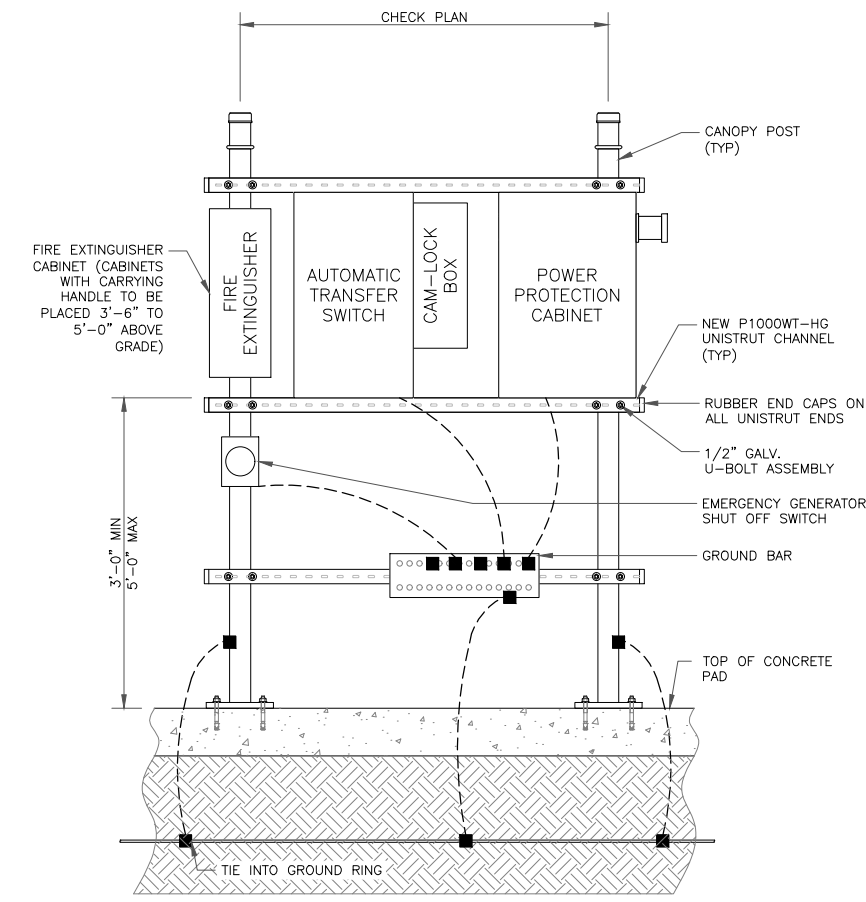


NOTE:  
NUMBER OF LINES SHOWN FOR REFERENCE ONLY.  
ACTUAL # OF DC AND FIBER LINES SPECIFIC TO  
MODEL OF HCS CABLES

4 (N) 6X24 HCS CABLE DETAIL  
SCALE: NOT TO SCALE



5 (N) CONDUIT TRENCH DETAIL  
SCALE: NOT TO SCALE



6 H-FRAME DETAIL  
SCALE: NOT TO SCALE

**T-Mobile**  
12920 SE 38TH STREET  
BELLEVUE, WA 98006

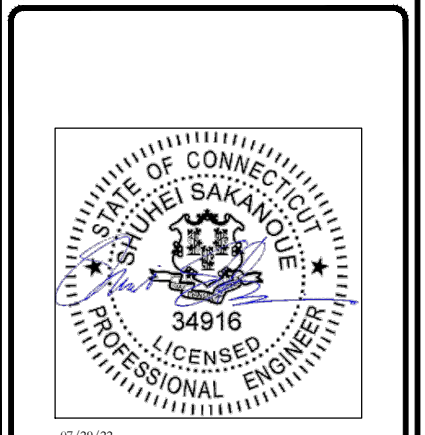
**CROWN CASTLE**  
3 CORPORATE PARK DRIVE, SUITE 101  
CLIFTON PARK, NY 12065

**INFINIGY**  
FROM ZERO TO INFINIGY  
the solutions are endless  
500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
**CTNL256A**  
  
BU #: 842865  
**LEBANON WEST**  
  
1699 EXETER RD  
LEBANON, CT 06249  
  
EXISTING 150'-0" MONOPOLE

ISSUED FOR:

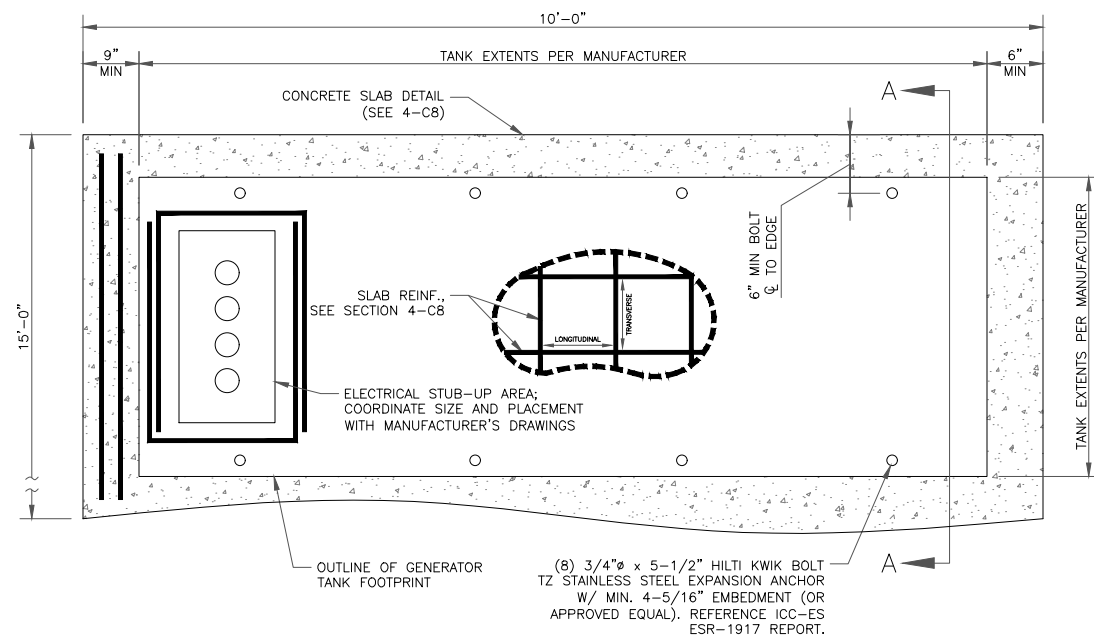
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS



07/29/22  
IT IS A VIOLATION OF LAW FOR ANY PERSON,  
UNLESS THEY ARE ACTING UNDER THE DIRECTION  
OF A LICENSED PROFESSIONAL ENGINEER,  
TO ALTER THIS DOCUMENT.

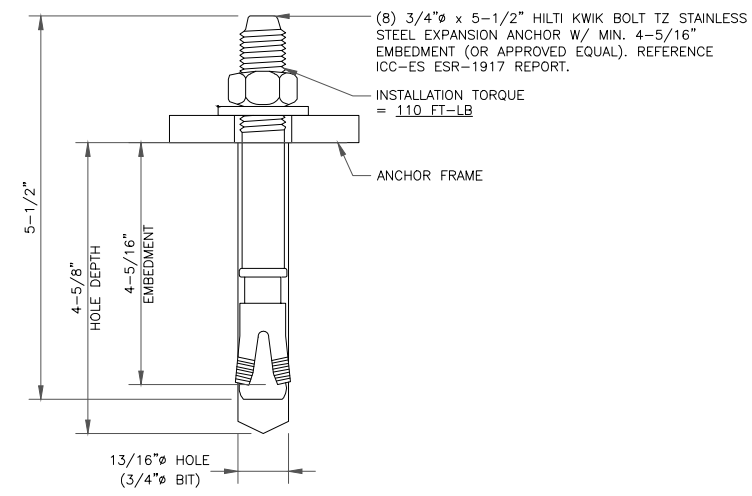
SHEET NUMBER: **C-6** REVISION: **1**





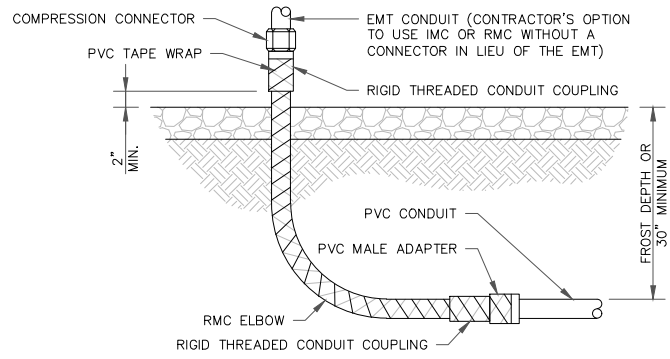
1 GENERATOR PAD DETAIL  
SCALE: NOT TO SCALE

**INSTALLER NOTE:**  
PER CBC 1705.12.6, PERIODIC SPECIAL INSPECTION OF ANCHORAGE FOR STANDBY POWER SYSTEMS IS REQUIRED

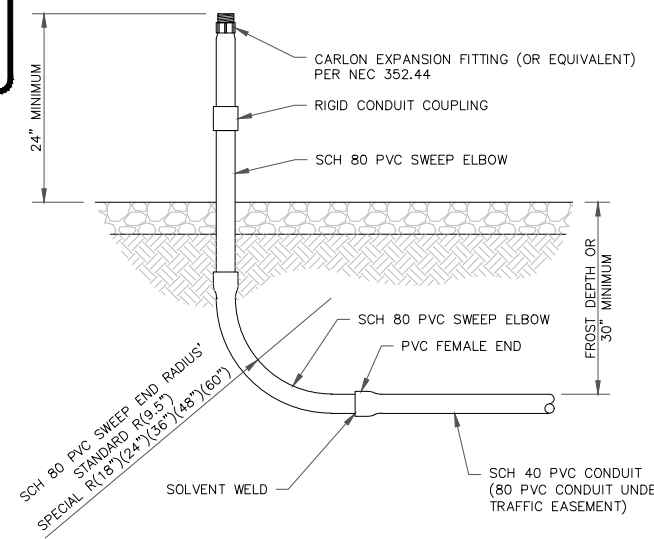


2 TYPICAL ANCHOR DETAIL  
SCALE: NOT TO SCALE

**INSTALLER NOTES:**  
ALL METAL CONDUIT INSTALLED IN DIRECT CONTACT WITH THE EARTH SHALL BE CONSIDERED TO BE INSTALLED IN A SEVERELY CORROSIVE ENVIRONMENT AND IS REQUIRED TO HAVE SUPPLEMENTAL PROTECTION AGAINST CORROSION (NEC ARTICLE 342.10(B) & 344.10(B)(1)). THIS PROTECTION SHALL EITHER BE AN APPROVED MANUFACTURER INSTALLED PROTECTIVE COATING ON THE CONDUIT OR SHALL BE (2) LAYERS OF 10 MIL PVC PIPE WRAP TAPE INSTALLED USING OPPOSING SPIRAL WRAPS. ON VERTICAL PIPE THE OUTSIDE LAYER OF TAPE SHALL BE WRAPPED SO AS TO PROVIDE SHEDDING OF WATER (i.e. TAPE SHOULD WRAP IN AN UPWARD DIRECTION WITH LOWER WRAP BEING BENEATH THE WRAP ABOVE). SPIRAL WRAPS HAVE A MINIMUM OF 1/4" OVERLAP WITH THE PRECEDING TAPE WRAP. ANY OTHER METHODS OF CORROSION PROTECTION SHALL REQUIRE APPROVAL BY THE ENGINEER OF RECORD PRIOR TO BEING USED.



3 CONDUIT STUB UP DETAILS  
SCALE: NOT TO SCALE



**STRUCTURAL DESIGN NOTES:**

ALL LOADS DERIVED FROM REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, ASCE 7.

**BUILDING & COMMUNICATION STRUCTURES:**

- WIND LOADS: IBC 2018 & ASCE 7-16  
V = 94 MPH ULTIMATE WIND SPEED  
EXPOSURE CATEGORY = C; TOPOGRAPHIC CATEGORY = 1.  
IMPORTANCE FACTOR = 1.0.
- SEISMIC LOADS: IBC 2018 & ASCE 7-16  
STRUCTURE CLASS = II; SITE CLASS = D.  
SS = 0.36 ; S1 = 0.188 ; SDS = 0.363

**CONCRETE NOTES:**

- PRIOR TO EXCAVATION, CHECK THE AREA FOR UNDERGROUND FACILITIES.
- ALL CONCRETE SHALL BE IN ACCORDANCE WITH CHAPTER 19 OF THE IBC & ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", LATEST EDITION & HAVE THE FOLLOWING PROPERTIES:
  - A MINIMUM 7-DAY COMPRESSIVE STRENGTH (f'c) OF 2,500 PSI.
  - B CEMENT SHALL BE "LOW-ALKALI" TYPE IIA (MODERATE SULFATE RESISTANCE, AIR ENTRAINING) CONFORMING TO ASTM C150.
  - C MAXIMUM WATER/CEMENT RATIO OF 0.45 AND AIR-ENTRAINED 4% TO 7%.
  - D CONCRETE PROPORTIONING SHALL BE DESIGNED BY AN APPROVED LABORATORY. TOLERANCES IN ACCORDANCE WITH ACI 117. COPIES OF CONCRETE MIX SHALL BE SUBMITTED TO THE CROWN CASTLE CONSTRUCTION MANAGER FOR REVIEW PRIOR TO PLACEMENT.
  - E ALL AGGREGATE USED IN CONCRETE SHALL CONFORM TO ASTM C33. USE ONLY AGGREGATES KNOWN NOT TO CAUSE EXCESSIVE SHRINKAGE. MAXIMUM AGGREGATE SIZE TO BE 3/4".
  - F MAXIMUM SLUMP: REFER TO GEOTECHNICAL REPORT FOR CONFIRMATION OF ANY ASSUMPTIONS MADE DURING DESIGN.
- FORMWORK FOR CONCRETE SHALL CONFORM TO ACI 347. TOLERANCES FOR FINISHED CONCRETE SURFACES SHALL MEET CLASS-C REQUIREMENTS. IN NO CASE SHALL FINISHED CONCRETE SURFACES EXCEED THE FOLLOWING VALUES AS MEASURED FROM NEAT PLAN LINES AND FINISHED GRADES: ± 1/4" VERTICAL, ± 1" HORIZONTAL.
- CHAMFER ALL EXPOSED CORNERS AND FILLET ENTRANT ANGLES 3/4" U.N.O.
- CONCRETE FINISHING: CONCRETE SURFACES SHALL BE FINISHED IN ACCORDANCE WITH ACI. PROVIDE ROUGH FINISH FOR ALL SURFACES NOT EXPOSED TO VIEW AND SMOOTH FINISH FOR ALL OTHERS, U.N.O.
- STEEL REINFORCEMENT AND CONCRETE SHOULD BE PLACED IMMEDIATELY UPON COMPLETION OF THE FOUNDATION EXCAVATION. CONTRACTOR SHALL NOT ALLOW A COLD JOINT TO FORM IN THE CONCRETE. PORTION AT GRADE SHOULD BE FORMED. TEMPORARY CASING MAY BE REQUIRED TO PREVENT CAVING PRIOR TO CONCRETE PLACEMENT.

**REINFORCING STEEL NOTES:**

- ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615. VERTICAL/HORIZONTAL BARS SHALL BE GRADE 60; TIES OR STIRRUPS SHALL BE A MINIMUM OF GRADE 40. ALL REINFORCING STEEL SHALL HAVE 3" (± 3/8") OF CONCRETE COVER, U.N.O.
- ALL BAR BENDS, HOOKS, SPLICES AND OTHER REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ACI 315.
- ALL BARS SHALL BE SPLICED WITH A MINIMUM LAP OF 48 BAR DIAMETERS. LAP SPLICES OF DEFORMED BARS IN TENSION ZONES SHALL BE CLASS-B SPLICES. WELDING OF BARS IS NOT PERMITTED.
- AT ALL CORNERS AND WALL INTERSECTIONS, PROVIDE BENT HORIZONTAL BARS TO MATCH THE HORIZONTAL REINFORCING STEEL.
- PROVIDE VERTICAL DOWELS IN FOOTINGS AND AT CONSTRUCTION JOINTS TO MATCH VERTICAL REINFORCING BAR SIZE AND SPACING.
- ACI-APPROVED PLASTIC-COATED BAR CHAIRS OR PRECAST CONCRETE BLOCKS SHALL BE PROVIDED FOR SUPPORT OF ALL GRADE-CAST REINFORCING STEEL & SHALL BE SUFFICIENT IN NUMBER TO PREVENT SAGGING. METAL CLIPS OR SUPPORTS SHALL NOT BE PLACED IN CONTACT WITH THE FORMS OR THE SUB-GRADE.
- DOWELS AND ANCHOR BOLTS SHALL BE WIRED OR OTHERWISE HELD IN CORRECT POSITION PRIOR TO PLACING CONCRETE. IN NO CASE SHALL DOWELS OR ANCHOR BOLTS BE "STABBED" INTO FRESHLY-POURED CONCRETE.

**FOUNDATION NOTES:**

- THE CONTRACTOR SHALL READ THE GEOTECHNICAL REPORT AND SHALL CONSULT THE GEOTECHNICAL ENGINEER AS NECESSARY PRIOR TO CONSTRUCTION.
- THE GEOTECHNICAL ENGINEER (OR INSPECTOR) SHALL INSPECT THE EXCAVATION PRIOR TO THE PLACEMENT OF CONCRETE AND SHALL PROVIDE A NOTICE OF INSPECTION FOR THE BUILDING INSPECTOR FOR REVIEW AND RECORDS PURPOSES.
- THE CONTRACTOR SHALL DETERMINE THE MEANS AND METHODS NECESSARY TO SUPPORT THE EXCAVATION DURING CONSTRUCTION.
- REBAR AT BOTTOM OF FOUNDATIONS SHALL BE BONDED TO SITE GROUNDING SYSTEM (WHEN APPLICABLE). SEE ADDITIONAL DETAILS ON APPROVED A&E CONSTRUCTION DRAWINGS.
- ALL FOOTINGS TO BE PLACED ON FIRM, UNDISTURBED, INORGANIC MATERIAL. PROOF ROLL SUB-GRADE PRIOR TO PLACING CONCRETE WHERE THE MATERIAL HAS BEEN DISTURBED BY EQUIPMENT. UNACCEPTABLE/DISTURBED MATERIAL SHALL BE OVER-EXCAVATED AND REPLACED WITH "LEAN CONCRETE FILL". THE GEOTECHNICAL REPORT SHALL BE REVIEWED AND ADHERED TO FOR SPECIFIC RECOMMENDATIONS.
- STRUCTURAL BACKFILL SHALL BE GRANULAR FREE-DRAINING MATERIAL FREE OF DEBRIS, ORGANICS, REFUSE AND OTHERWISE DELETERIOUS MATERIALS. MATERIAL SHALL BE PLACED IN LIFTS NO GREATER THAN 6" IN DEPTH AND COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED PER ASTM D1557 (MODIFIED PROCTOR). THE GEOTECHNICAL REPORT SHALL BE REVIEWED AND ADHERED TO FOR SPECIFIC RECOMMENDATIONS.

**SOIL NOTES:**

- FOUNDATION DESIGN BASED ON THE PRESUMPTIVE MINIMUM SOIL PARAMETERS IN ACCORDANCE WITH THE IBC, CBC AND TIA. WHEN A SITE SPECIFIC GEOTECHNICAL REPORT IS AVAILABLE ON C/SITES AND THE ENGINEER AND THE CONTRACTOR SHALL ADHERE TO ALL RECOMMENDATIONS PROVIDED THEREIN.
- ALL FOUNDATIONS TO BE PLACED ON FIRM, UNDISTURBED, INORGANIC MATERIAL. PROOF ROLL SUB-GRADE PRIOR TO PLACING CONCRETE WHERE THE MATERIAL HAS BEEN DISTURBED BY EQUIPMENT. UNACCEPTABLE/DISTURBED MATERIAL SHALL BE OVER-EXCAVATED AND REPLACED WITH STRUCTURAL BACKFILL.
- STRUCTURAL BACKFILL SHALL BE GRANULAR FREE-DRAINING MATERIAL FREE OF DEBRIS, ORGANICS, REFUSE AND OTHERWISE DELETERIOUS MATERIALS. MATERIAL SHALL BE PLACED IN LIFTS NO GREATER THAN 6" IN DEPTH AND COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED PER ASTM D1557 (MODIFIED PROCTOR). THE GEOTECHNICAL REPORT SHALL BE REVIEWED AND ADHERED TO FOR SPECIFIC RECOMMENDATIONS.

**MECHANICAL ANCHOR NOTES:**

- HILTI PRODUCTS MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, AS INCLUDED IN THE ADHESIVE PACKAGING.
- CONTRACTOR SHALL AVOID DRILLING HOLES IN VERTICAL/HORIZONTAL REINFORCING BARS.
- HOLES MUST BE WIRE BRUSHED AND BLASTED WITH COMPRESSED AIR PRIOR TO INSTALLATION. TEMPERATURES/METHODS/WORKING TIME/ETC. ARE TO BE IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.
- REFERENCE ICC-ES ESR-1917 REPORT.

**T-Mobile**  
12920 SE 38TH STREET  
BELLEVUE, WA 98006

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

**INFINIGY**  
FROM ZERO TO INFINIGY  
the solutions are endless  
500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
**CTNL256A**  
  
BU #: 842865  
**LEBANON WEST**  
  
1699 EXETER RD  
LEBANON, CT 06249  
  
EXISTING 150'-0" MONOPOLE

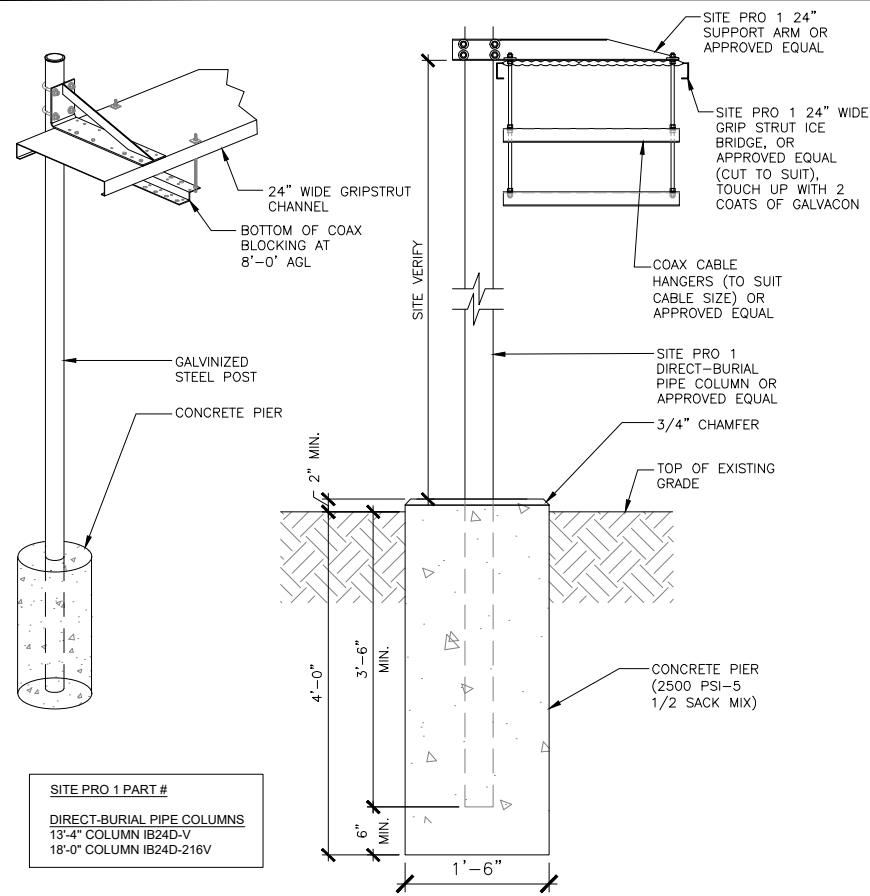
**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS

STATE OF CONNECTICUT  
SHUHEI SAKANoue  
34916  
LICENSED PROFESSIONAL ENGINEER  
07/29/22

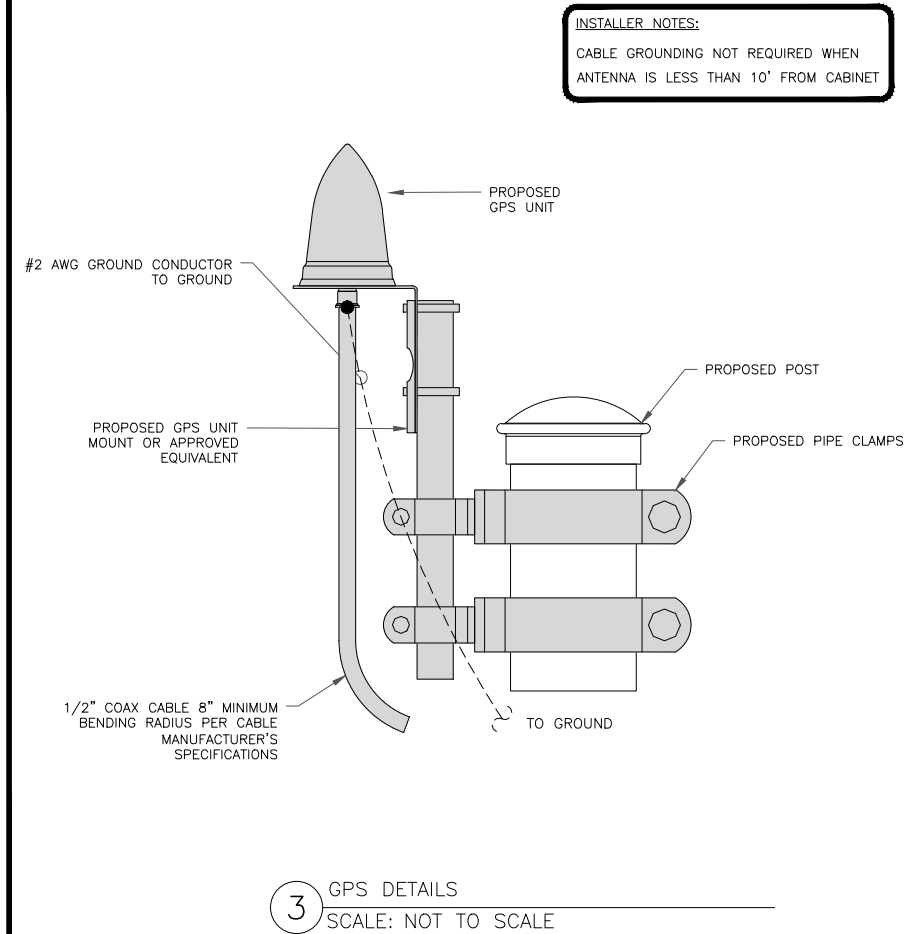
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: **C-7** REVISION: **1**

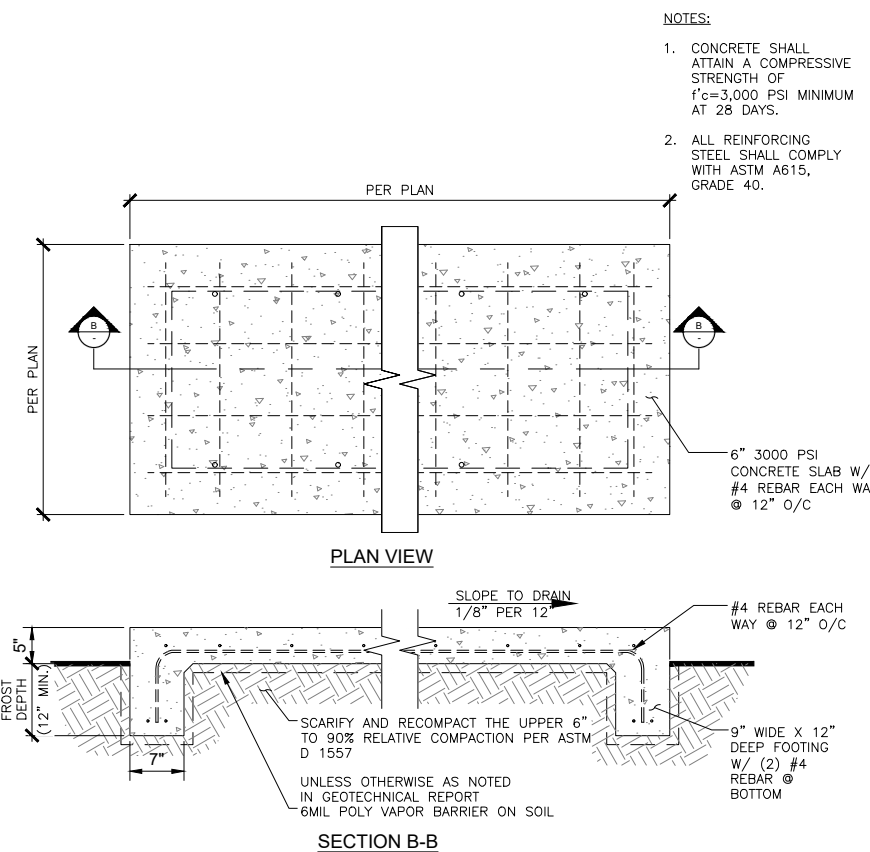


1 CABLE BRIDGE DETAIL  
SCALE: NOT TO SCALE

2 NOT USED  
SCALE: NOT TO SCALE

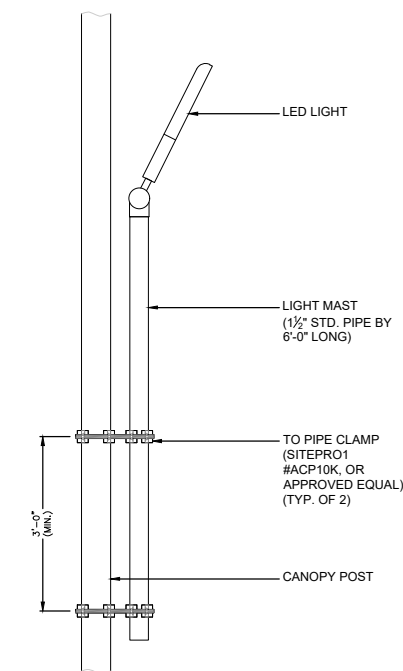


3 GPS DETAILS  
SCALE: NOT TO SCALE



4 (N) CONCRETE PAD DETAIL  
SCALE: NOT TO SCALE

5 NOT USED  
SCALE: NOT TO SCALE



6 LED LIGHT DETAIL  
SCALE: NOT TO SCALE

**INSTALLER NOTES:**  
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET

**T-Mobile**  
12920 SE 38TH STREET  
BELLEVUE, WA 98006

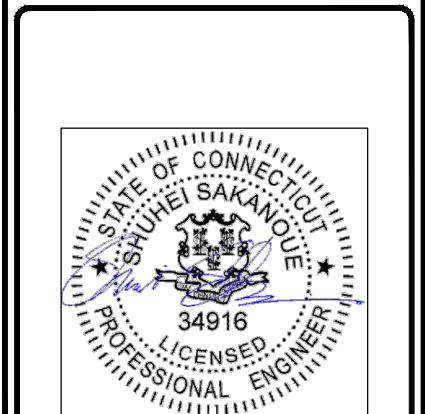
**CROWN CASTLE**  
3 CORPORATE PARK DRIVE, SUITE 101  
CLIFTON PARK, NY 12065

**INFINIGY**  
FROM ZERO TO INFINIGY  
the solutions are endless  
500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
**CTNL256A**  
  
BU #: 842865  
**LEBANON WEST**  
  
1699 EXETER RD  
LEBANON, CT 06249  
  
EXISTING 150'-0" MONOPOLE

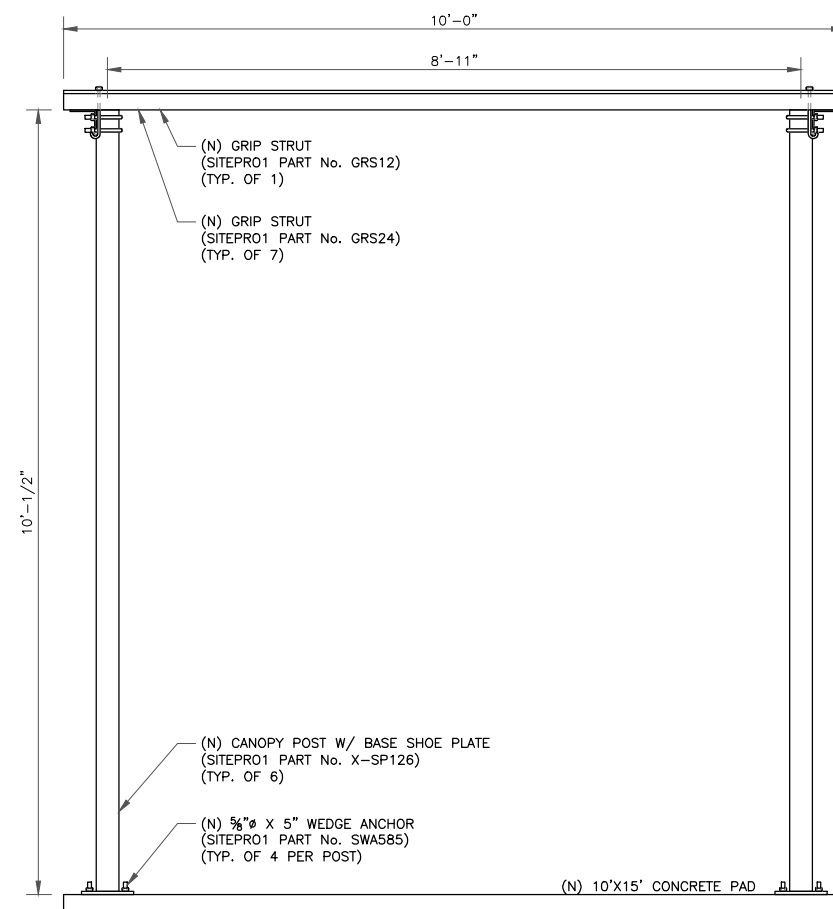
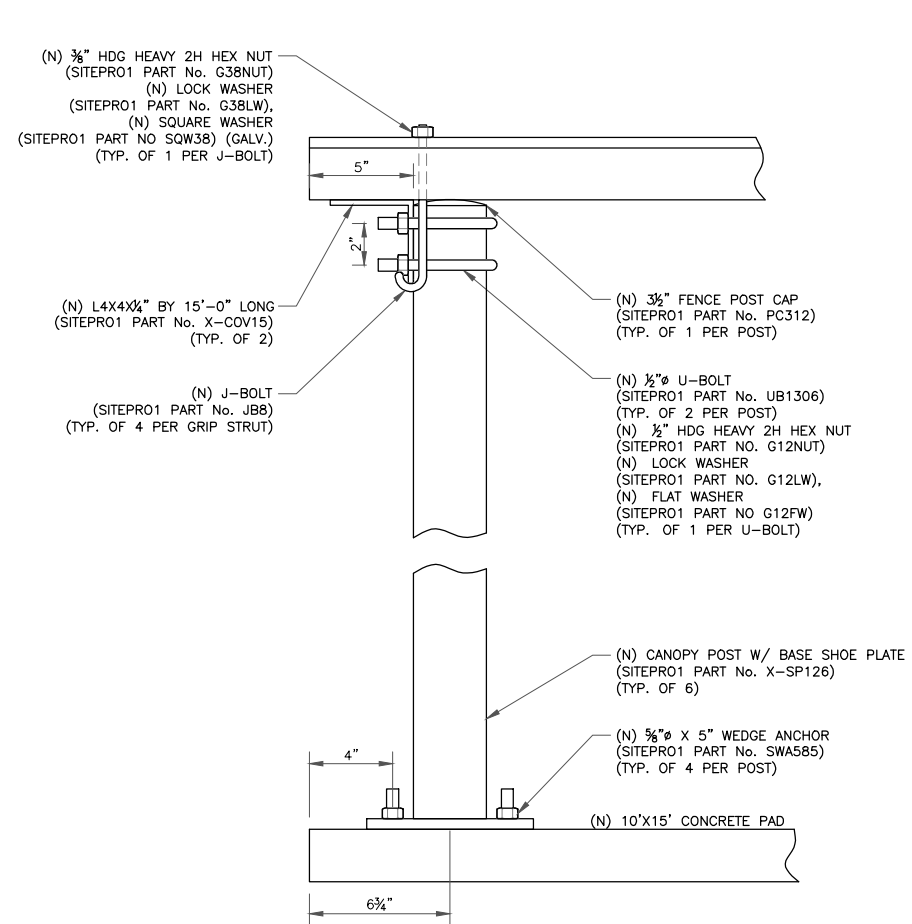
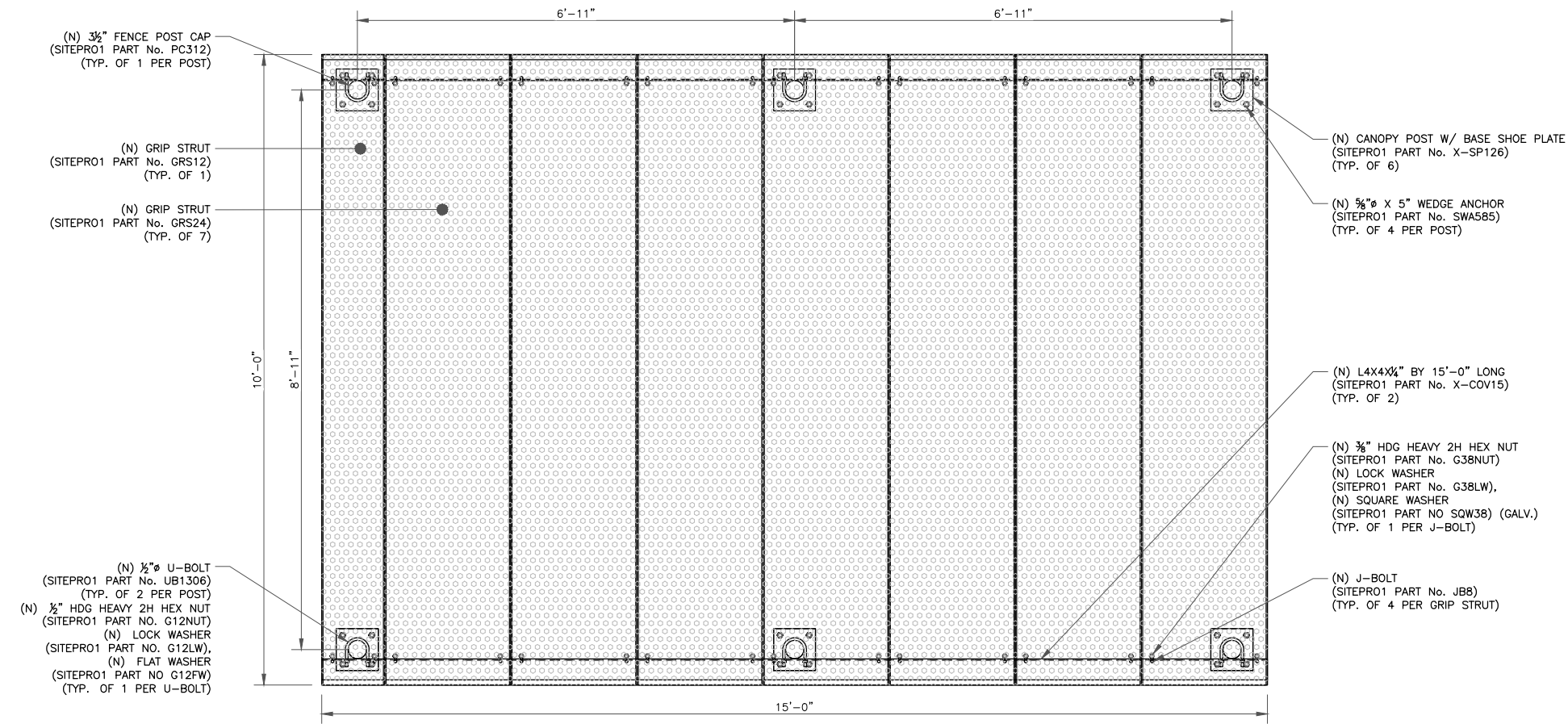
**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS



07/29/22  
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: **C-8** REVISION: **1**



1 CANOPY DETAIL  
SCALE: NOT TO SCALE

**T-Mobile**  
12920 SE 38TH STREET  
BELLEVUE, WA 98006

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

**INFINIGY**  
FROM ZERO TO INFINIGY  
the solutions are endless  
500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
**CTNL256A**

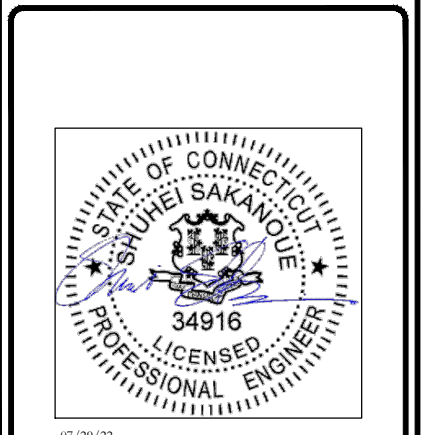
BU #: 842865  
**LEBANON WEST**

1699 EXETER RD  
LEBANON, CT 06249

EXISTING 150'-0" MONOPOLE

ISSUED FOR:

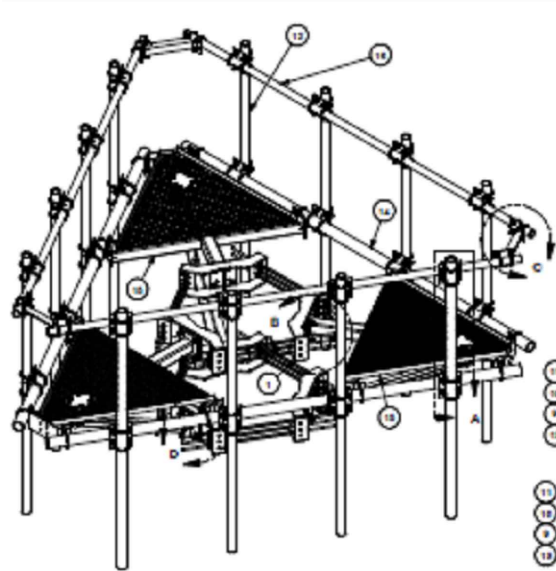
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS



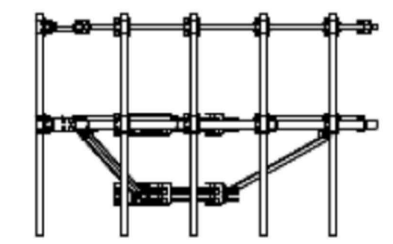
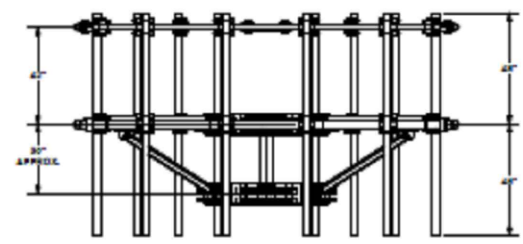
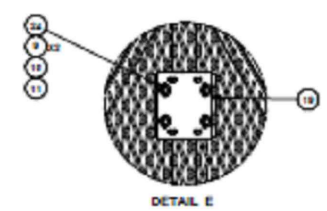
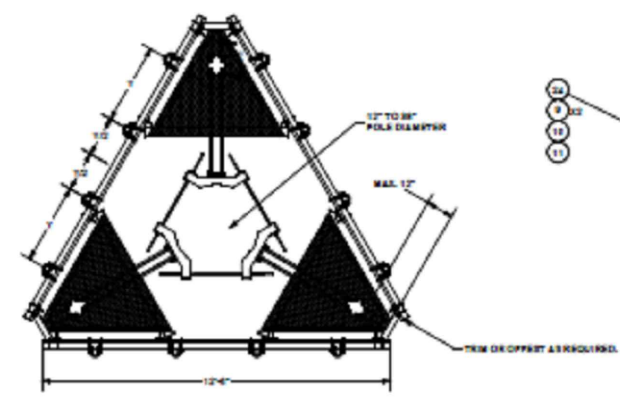
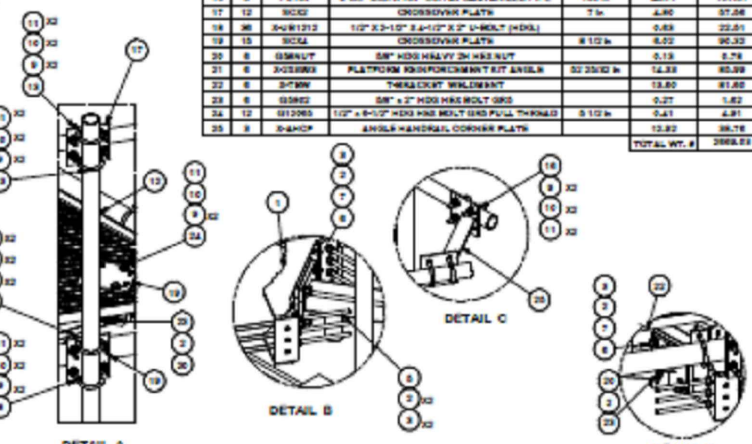
07/29/22

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

SHEET NUMBER: **C-9** REVISION: **1**



ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	8	20490M	HEX MOUNT W/LOCKWASH		96.81	772.64
2	88	0304W	5/8" HDG LOCKWASHER		0.23	1.72
3	88	0304NUT	5/8" HDG HEX NUT		0.19	1.79
4	16	0304-02	5/8" x 1/2" THREADED ROD (HDL)		2.29	37.83
5	16	0304-04	5/8" x 3/4" THREADED ROD (HDL)		4.18	75.37
6	24	0304-06	5/8" x 1" THREADED ROD (HDL)	2.31 m	0.23	8.34
7	16	0304-08	5/8" HDG ALSS PLATWASHER		0.23	8.82
8	36	04010R	1/2" x 3/8" x 2 1/2" U-BOLT (HDL)		0.69	28.62
9	24	0104W	1/2" HDG USS PLATWASHER	302 m	0.23	8.82
10	24	0104NUT	1/2" HDG HEAVY DN HEX NUT	1.9 m	0.21	8.00
11	24	0104-02	1/2" HDG HEAVY DN HEX NUT		0.07	18.65
12	12	0304-08	3/8" x 1" EMT (2-1/2" SCH 40 GALVANIZED PIPE)	86 m	48.34	580.88
13	24	04010R	1/2" x 3/8" x 2 1/2" U-BOLT (HDL)		0.70	33.43
14	8	0304-06	5/8" x 1" EMT (2-1/2" SCH 40 GALVANIZED PIPE)	150 m	80.50	28.40
15	8	0304-08	LOW PROFILE PLATFORM CORNER		312.10	686.01
16	8	0304-10	2-3/8" DIA. x 100" SCH 40 GALVANIZED PIPE	100 m	48.77	177.31
17	12	0304-12	CROSSBRACE PLATE	7 m	4.80	37.04
18	36	04010R	1/2" x 3/8" x 2 1/2" U-BOLT (HDL)		0.68	25.01
19	15	0304-12	CROSSBRACE PLATE	8.10 m	8.22	90.32
20	8	0304-14	5/8" HDG HEAVY DN HEX NUT		0.19	8.78
21	8	0304-16	PLATEWASH FOR FORKWAY AT ANGLE	32.250 m	14.83	65.09
22	8	0304-18	THESECT W/LOCKWASH		15.80	87.80
23	8	0304-20	5/8" x 2" HDG HEX BOLT GRD		0.27	1.82
24	12	0104-02	1/2" x 3/8" HDG HEX BOLT (SD FULL THREADED)	0.10 m	0.21	4.81
25	8	04010P	ANGLE HORIZONTAL CORNER PLATE		12.82	88.78
<b>TOTAL WT. #</b>						<b>2888.83</b>



REV	DATE	DRWN	DESCRIPTION	DES./QA
C			RELOCATED MOUNT PIPE POSITIONS	
B			CHANGED 2-25000 TO 2-TWR	
A			REPLACED COP WITH SANDIC	
REV			DESCRIPTION OF REVISIONS	
REVISION HISTORY				

4488	JMT	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	

4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	

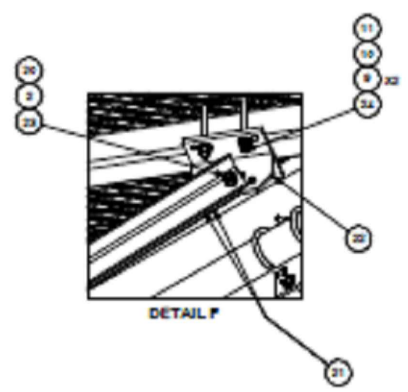
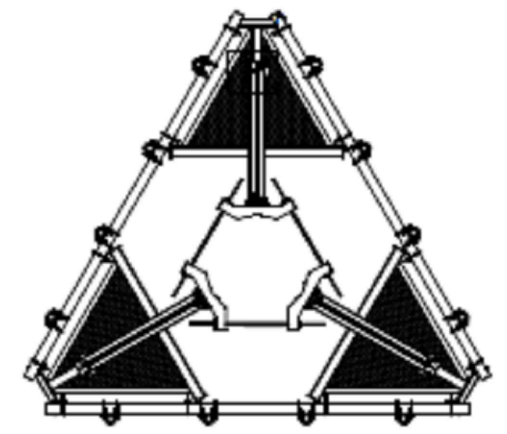
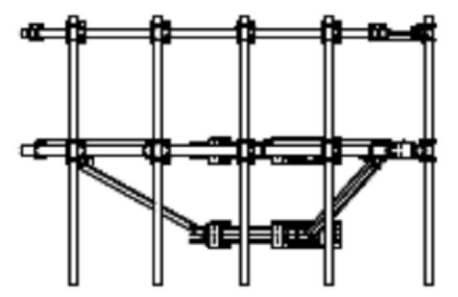
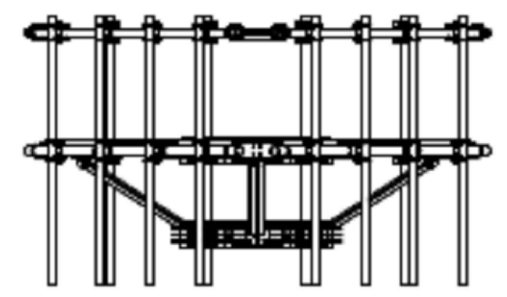
4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	

REV	DATE	DRWN	DESCRIPTION	DES./QA
C			RELOCATED MOUNT PIPE POSITIONS	
B			CHANGED 2-25000 TO 2-TWR	
A			REPLACED COP WITH SANDIC	
REV			DESCRIPTION OF REVISIONS	
REVISION HISTORY				

4488	JMT	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	

4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	

4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	



REV	DATE	DRWN	DESCRIPTION	DES./QA
C			RELOCATED MOUNT PIPE POSITIONS	
B			CHANGED 2-25000 TO 2-TWR	
A			REPLACED COP WITH SANDIC	
REV			DESCRIPTION OF REVISIONS	
REVISION HISTORY				

4488	JMT	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	

4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	

4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	
4488	CRS	02/02/21	

1 MOUNTING DETAIL  
SCALE: NOT TO SCALE

**T-Mobile**  
1920 SE 38TH STREET  
BELLEVUE, WA 98006

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

**INFINIGY**  
FROM ZERO TO INFINIGY  
the solutions are endless  
500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
**CTNL256A**  
  
BU #: 842865  
**LEBANON WEST**  
  
1699 EXETER RD  
LEBANON, CT 06249  
  
EXISTING 150'-0" MONOPOLE

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS

ISSUED FOR:  
**SHUHEI SAKANoue**  
34916  
LICENSED PROFESSIONAL ENGINEER

07/29/22  
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: **C-10** REVISION: **1**

# SD050

CUSTOM MODEL



## Industrial Diesel Generator Set

EPA Emissions Certification: Tier III

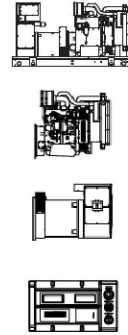
50 kW Diesel

Standby Power Rating  
50KW 60 Hz



### features benefits

- Generator Set**
  - PROTOTYPE & TORSIONALLY TESTED
  - LAZING TESTED
  - RHINOCAST PAINT SYSTEM
  - SOUND LEVEL 2 ENCLOSURE
- Engine**
  - EPA TIER CERTIFIED
  - INDUSTRIAL TESTED, GENERAC APPROVED
  - POWER-MATCHED OUTPUT
  - INDUSTRIAL GRADE
- Alternator**
  - TWO-THIRD FITOR
  - LAYER WOUND ROTOR & STATOR
  - CLASS B MATERIALS
  - DIGITAL 3-PHASE VOLTAGE CONTROL
- Controls**
  - ENCAPSULATED BOARD W/ SEALED HARNESS
  - 4-20mA VOLTAGE-TO-CURRENT SENSORS
  - SURFACE-MOUNT TECHNOLOGY
  - ADVANCED DIAGNOSTICS & COMMUNICATIONS



primary codes and standards



## SD050

### application and engineering data

#### ENGINE SPECIFICATIONS

<b>General</b>	Series / PFI	Next / PFI	<b>Cooling System</b>	Cooling System Type	Closed
EPA Emissions Compliance	Tier III		Water Pump	Belts Driven Centrifugal	
EPA Emissions Reference	See Emissions Data Sheet		Fan Type	Pusher	
Cylinder #	4		Fan Blade Number	2518 (10)	
Type	Diesel		Fan Diameter (in.)	24	
Displacement - L (cu. in.)	4.5 (274)		Coolant Heater Wattage	1500	
Bore - mm (in.)	105 (4.1)		Coolant Heater Standard Voltage	120	
Stroke - mm (in.)	130 (5.2)		<b>Fuel System</b>		
Compression Ratio	17.5:1		Fuel Type	Ultra Low Sulfur Diesel Fuel	
Intake Air Method	Turbocharged		Fuel Specifications	ASTM	
Cylinder Head Type	Aluminum		Fuel Filtration (microns)	5	
Injection Type	Common Rail		Fuel Filter Element	100 Micron	
Crankshaft Type	Forged Steel		Fuel Inject Pump Make	Standby	
Engine Block Type	Cast Iron / Wet Sleeve		Fuel Pump Type	Engine Driven Gear	
<b>Engine Governor</b>			Injector Type	Mechanical	
Governor	Electronic Isochronous		Engine Type	Direct Injection	
Frequency Regulation (Steady State)	±0.25%		Fuel Supply Line - mm (in.)	1/4 Inch Npt	
<b>Lubrication System</b>			Fuel Return Line - mm (in.)	1/4 Inch Npt	
Oil Pump Type	Gear		<b>Engine Electrical System</b>		
Oil Filter Type	Full Flow		System Voltage	12VDC	
Crankcase Capacity - L (qt)	13.6 (3.6) (14.4)		Battery Charging Alternator	30 Amp	
			Battery Size (at 60°C)	Optima RedTop	
			Battery Voltage	12V	
			Battery Capacity	100Ah	
			Ground Polarity	Negative	

#### ALTERNATOR SPECIFICATIONS

Standard Model	390	Voltage Regulator Type	Digital
Phase	3	Number of Sensor Phases	3
Field Type	Rectifying	Regulation Accuracy (Steady State)	±0.25%
Insulation Class - Rotor	H		
Insulation Class - Stator	F		
Total Harmonic Distortion	< 5.0%		
Telephone Interference Factor (TIF)	< 50		
Standard Excitation	PMG		
Bearing	Single Sealed Cartridge		
Coilings	Direct, Flexible End		
Load Capacity - Standby	100%		
Load Capacity - Prime	100%		
Prototype Short Circuit Test	Y		

#### CODES AND STANDARDS COMPLIANCE (WHERE APPLICABLE)

- NFPA 99
- NFPA 110
- ISO 8528-5
- ISO 12088-5
- ISO 3046
- ISO 5046
- BS5534
- SAE J1349
- DNV271
- IEC 60242 TESTING
- NEMA ICS 1

Rating Definitions:  
Standby - Applicable for a varying emergency load for the duration of a utility power outage with no overload capability. (Max. load factor = 70%)  
Prime - Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. (Max. load factor = 80%) A 10% overload capacity is available for 1 out of every 12 hours.



## SD050

### operating data (60Hz)

#### POWER RATINGS (KW)

Single-Phase 120/240VAC @ 1.0 pf	STANDBY	50	Amps	208
Three-Phase 208/208VAC @ 0.8 pf				
Three-Phase 240/240VAC @ 0.8 pf				
Three-Phase 277/480VAC @ 0.8 pf				
Three-Phase 340/500VAC @ 0.8 pf				

#### STARTING CAPABILITIES (kVA)

Alternator*	kW	60VAC						sVAC vs. Voltage Dip					
		20%	15%	25%	30%	35%	30%	25%	20%	15%	10%		
Standard	50	-	-	-	-	-	25	39	52	65	77	50	
Module 1	-	-	-	-	-	-	-	-	-	-	-	-	
Module 2	-	-	-	-	-	-	-	-	-	-	-	-	

#### FUEL

Fuel Pump Lift - (in)	STANDBY	
	Percent Load	gph
30(9)	25%	2.52
	50%	2.13
	75%	3.09
	100%	4.15

#### COOLING

Coolant System Capacity - Gal (L)	4.5 (17.4)	Coolant Flow per Minute	gpm (lpm)	32.7 (123.8)
Maximum Radiator Backpressure	8.0" H <sub>2</sub> O Column	Heat rejection to Coolant	BTU/min	123,000
		Inlet Air	cfm (m <sup>3</sup> /min)	6,360 (180.0)
		Max. Operating Radiator Air Temp	F (C)	122(50)
		Max. Operating Ambient Temperature	F (C)	122(50)

#### COMBUSTION AIR REQUIREMENTS

Inlet Flow at Rated Power	cfm (m <sup>3</sup> /min)	247 (7.00)
---------------------------	---------------------------	------------

#### EXHAUST

Exhaust Outlet Size (Open Set)	3.0"	Exhaust Flow (Rated Output)	cfm (m <sup>3</sup> /hr)	534(906.7)
Maximum Backpressure (Post-Stack)	1.5" Hg	Maximum Backpressure	inHg (kPa)	15 (5.1)
Exhaust Temp (Rated Output)		Exhaust Temp (Rated Output)	F (C)	900(490.0)

#### ENGINE

Rated Engine Speed	rpm	1800
Maximum Power at Rated kW	hp	55
Temperature Deration		Consult Factory
Altitude Deration		Consult Factory

Deration - Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, ISO8528 and IEC6271 standards.



## SD050

### standard features and options

#### GENERATOR SET

- Gen set Vibration Isolation
- Factory Testing
- Extended warranty
- Padlockable Doors
- Steel Enclosure (Enclosed Models)
- Remote Emergency Shutdown

#### ENGINE SYSTEM

- General**
  - Oil Drain Extension
  - Air Cleaner
  - Industrial Exhaust Silencer (Open Sets, ship loose)
  - Critical Exhaust Silencer (Enclosed Sets)
  - Stainless steel flexible exhaust connection
- Fuel System**
  - Primary fuel filter with Water Separator
  - Reusable Fuel Lines
  - 14.1/2 Fuel Tank, 48 hr Runtime
  - 2 Gal. Overflow Containment with Alarm
- Cooling System**
  - 120VAC Coolant Heater (3-wire connection cord)
  - 50%/50% Coolant
  - Level 1 Guarding (Open Sets)
  - Coolant Recovery System
  - UV/Coone resistant hoses
  - Factory-installed Radiator
  - Radiator Drain Extension
  - Fan guard
  - Radiator duct adapter (Open Sets)

#### ENGINE ELECTRICAL SYSTEM

- Battery charging alternator
- Battery cables
- Battery tray
- 72W 120VAC Battery heater
- Solenoid activated starter motor
- USA UL listed/qualify battery charger
- Weather resistant electrical connections
- Duplex GFCI Convenience Outlet

#### ALTERNATOR SYSTEM

- UL2200-60HzProtect™
- 100% Rated 200A Main Line Circuit Breaker

#### CONTROL SYSTEM

- Control Panel**
  - Digital In Control Panel - Dual 4x20 Display
  - Programmable Control Limiter
  - 7-Day Programmable Exerciser (requires H-Transfer Switch)
  - Special Applications Programmable PLC
  - RS-232
  - RS-485
  - All-Phase Sensing DVR
  - Full System Status
  - Utility Monitoring (Req. H-Transfer Switch)
  - 2-Wire Start Compatible
  - Power Output (kW)
  - Power Factor
  - Reactive Power
  - All phase AC Voltage
  - All phase Currents
  - Oil Pressure
  - Coolant Temperature
  - Coolant Level
  - Low Fuel Pressure Indication
  - Engine Speed
  - Battery Voltage
  - Frequency
  - Data/Time Fault History (Event Log)
  - 12/200 kV Nonprotect™
  - Low-Speed Exerciser
  - Isosynchronous Governor Control
  - 48Vdc C-70Vdc C Operation
  - Weather-Resistant Electrical Connections
  - Audible Alarms and Shutdowns
  - Not in Auto (Flashing Light)
  - On/Off/Manual Switch
  - 6-Stop (Red Mushroom-Type)
  - Remote 6-Stop (Break-Glass-Type, Surface Mount)
  - Remote 6-Stop (Red Mushroom-Type, Surface Mount)
  - NFPA 110 Level 1 and II (Programmable)
  - Remote Communication - RS232

#### ALARMS (Programmable Tolerances, Pre-Alarms and Shutdowns)

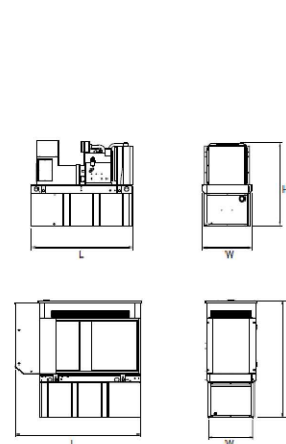
- Low Fuel
- Oil Pressure (Pre-programmed Low Pressure Shutdown)
- Coolant Temperature (Pre-programmed High Temp Shutdown)
- Coolant Level (Pre-programmed Low Level Shutdown)
- Engine Speed (Pre-programmed Overspeed Shutdown)
- Voltage (Pre-programmed Overvoltage Shutdown)
- Battery Voltage

Other Options:  
Single Side Service  
O



## SD050

### dimensions, weights and sound levels



OPEN SET		SOUND LEVEL	
RUNTIME HOURS	CONDUCTOR TANK VOLUME	L	W
48	210	210	70
		38	37
			2400

LEVEL 2 SOUND ENCLOSURE		TANK SIZE	
RUNTIME HOURS	CONDUCTOR TANK VOLUME	L	W
48	210	210	94.8
		38	39
			3535

\*Required gallons based on 100% of standby rating. Weights consider steel enclosure and are without fuel in tank. Sound levels measured at 20% (20%) and 100% (100%) load. All performance ratings in accordance with ISO3046, ISO8528 and IEC6271 standards.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Generac Power Systems, Inc. • 545 W29290 HWY. 59, Waukesha, WI 53189 • generac.com  
©2010 Generac Power Systems, Inc. All rights reserved. All specifications are subject to change without notice. Model: D780505E74 / Printed in U.S.A. 110410



12920 SE 38TH STREET  
BELLEVUE, WA 98006



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



FROM ZERO TO INFINIGY  
the solutions are endless

500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
CTNL256A

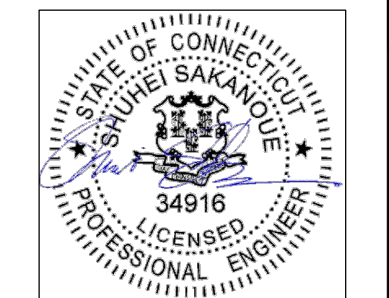
BU #: 842865  
LEBANON WEST

1699 EXETER RD  
LEBANON, CT 06249

EXISTING 150'-0" MONOPOLE

### ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS



07/29/22

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

SHEET NUMBER:

C-11

REVISION:

1

PANELBOARD "T-MOBILE" SCHEDULE											
MAIN: 200 AMP MAIN BREAKER			VOLTAGE/PHASE: 120/240V, 1-PHASE, 3-WIRE						SURGE PROTECTION DEVICE: YES		
MOUNTING: H-FRAME			ENCLOSURE: NEMA 3R			MANUFACTURER: V.I.F.			MODEL NUMBER: V.I.F.		
BUS: 200 AMP											
DESCRIPTION	LOAD (VA)	C or NC	C/B	CIR No.	LOAD (VA)		CIR No.	C/B	C or NC	LOAD (VA)	DESCRIPTION
					A-PHASE	B-PHASE					
SURGE SUPPRESSION	1	NC	60	1	1921		2	20	NC	1920	GEN BLOCK HEATER
	1				3		1921	4	20	NC	1920
6160	7000	C	100	5	7200		6	20	NC	200	LIGHT
	7000				7		7180	8	20	NC	180
6161 GFI	180	NC	20	9	360		10	20	NC	180	TELCO GFI
				11			12				
				13	0		14				
				15			16				
				17	0		18				
				19			20				
				21	0		22				
				23			24				
BASE LOAD (VA) =					9481	9101					
25% OF CONTINUOUS LOAD (VA) =					1750	1750					
TOTAL LOAD (VA) =					11231	10851					
TOTAL LOAD (A) =					94	90					

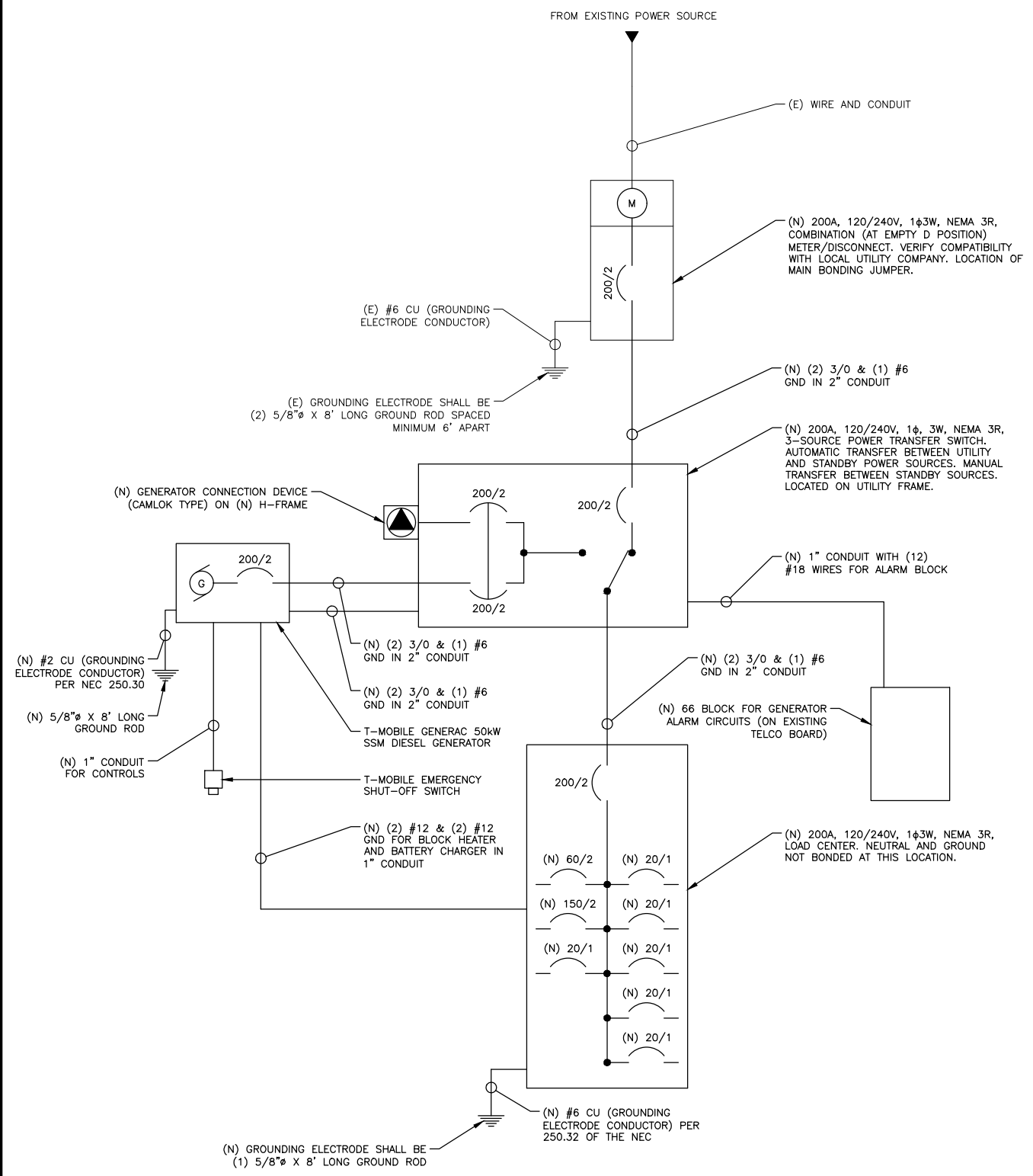
C = CONTINUOUS LOAD; NC = NON-CONTINUOUS LOAD

ALL LOADS ARE EXISTING UNLESS NOTED OTHERWISE.

1 AC PANEL SCHEDULE  
SCALE: NOT TO SCALE

NOTES:

- ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN-2, XHHW, OR XHHW-2 UNLESS NOTED OTHERWISE.
- CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- ALL GROUNDING AND BONDING PER THE NEC.



2 ONE LINE DIAGRAM  
SCALE: NOT TO SCALE

**T-Mobile**  
12920 SE 38TH STREET  
BELLEVUE, WA 98006

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

**INFINIGY**  
FROM ZERO TO INFINIGY  
the solutions are endless  
500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
**CTNL256A**

BU #: 842865  
**LEBANON WEST**

1699 EXETER RD  
LEBANON, CT 06249

EXISTING 150'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS

STATE OF CONNECTICUT  
SHUHEI SAKANoue  
34916  
LICENSED PROFESSIONAL ENGINEER

07/29/22

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

SHEET NUMBER: **E-1** REVISION: **1**

T-MOBILE SITE NUMBER:  
**CTNL256A**

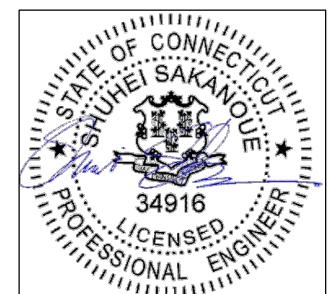
BU #: 842865  
**LEBANON WEST**

1699 EXETER RD  
LEBANON, CT 06249

EXISTING 150'-0" MONOPOLE

**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS



07/29/22

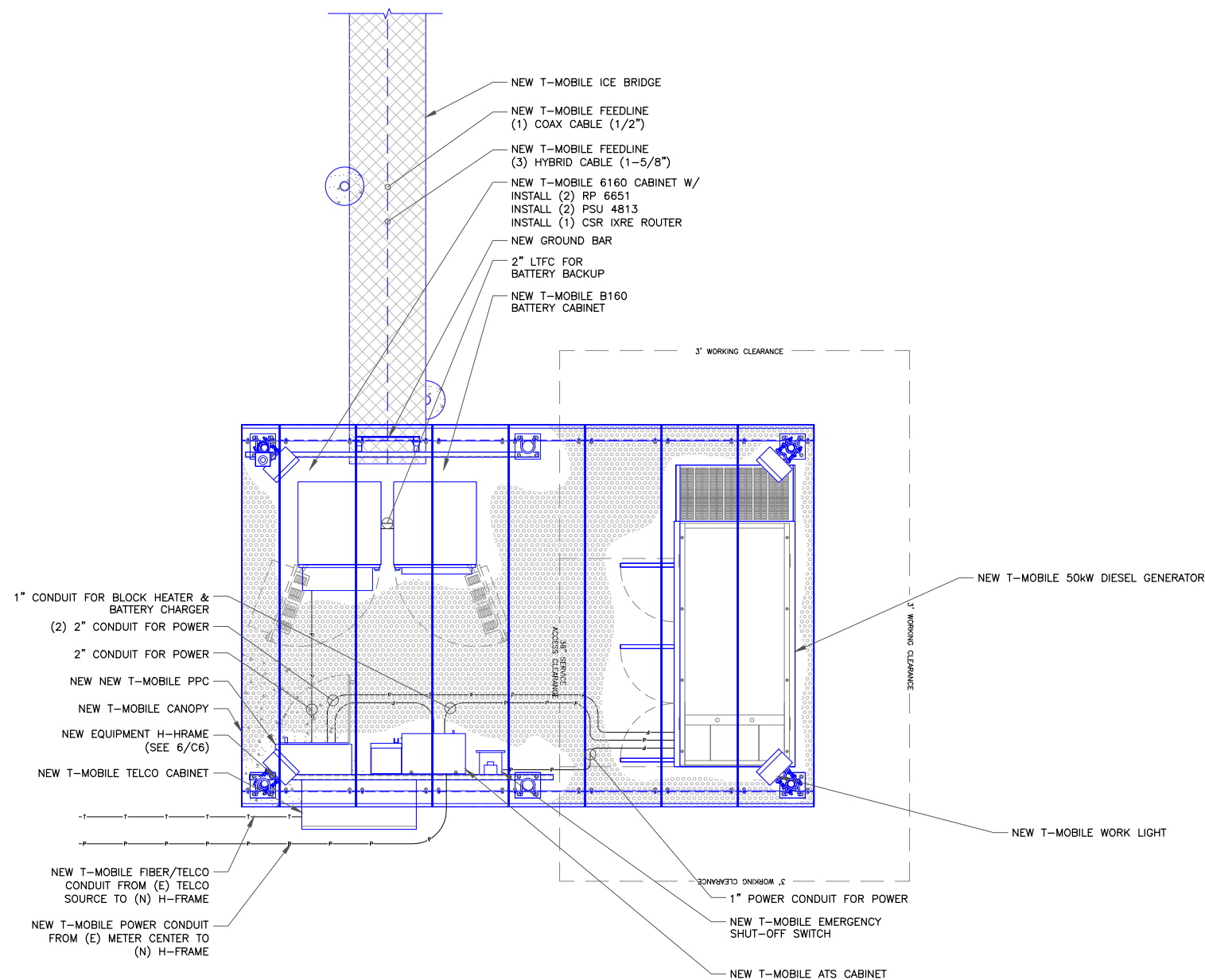
IT IS A VIOLATION OF LAW FOR ANY PERSON,  
UNLESS THEY ARE ACTING UNDER THE DIRECTION  
OF A LICENSED PROFESSIONAL ENGINEER,  
TO ALTER THIS DOCUMENT.

SHEET NUMBER:

**E-2**

REVISION:

**1**



**NOTE:**  
NEW CONDUIT ROUTING IS SCHEMATIC ONLY, CONTRACTOR  
SHALL DETERMINE SUITABLE ROUTING IN FIELD.

ELECTRICAL DISTRIBUTION:	TELCO DISTRIBUTION:
<ul style="list-style-type: none"> <li>(1) 2" FROM POWER SOURCE TO ATS (FOR POWER)</li> <li>(2) 2" FROM ATS TO GEN (FOR POWER)</li> <li>(1) 2" FROM ATS TO PPC (FOR POWER)</li> <li>(1) 1" FROM PPC TO GEN (FOR GEN BATT CHARGER &amp; GEN BLOCK HEATER)</li> <li>(1) 2" FROM PPC TO 6160 (FOR POWER)</li> <li>(1) 2" FROM 6160 TO B160 (FOR DISTRIBUTION)</li> <li>(1) 1" FROM GEN TO EMERGENCY STOP (FOR CONTROLS)</li> </ul>	<ul style="list-style-type: none"> <li>(1) 2" FROM TELCO SOURCE TO TELCO CAB (FOR TELCO)</li> <li>(1) 1" FROM ATS TO TELCO CAB (FOR ALARM)</li> <li>(1) 1" FROM TELCO CAB TO 6160 (FOR TELCO)</li> </ul>

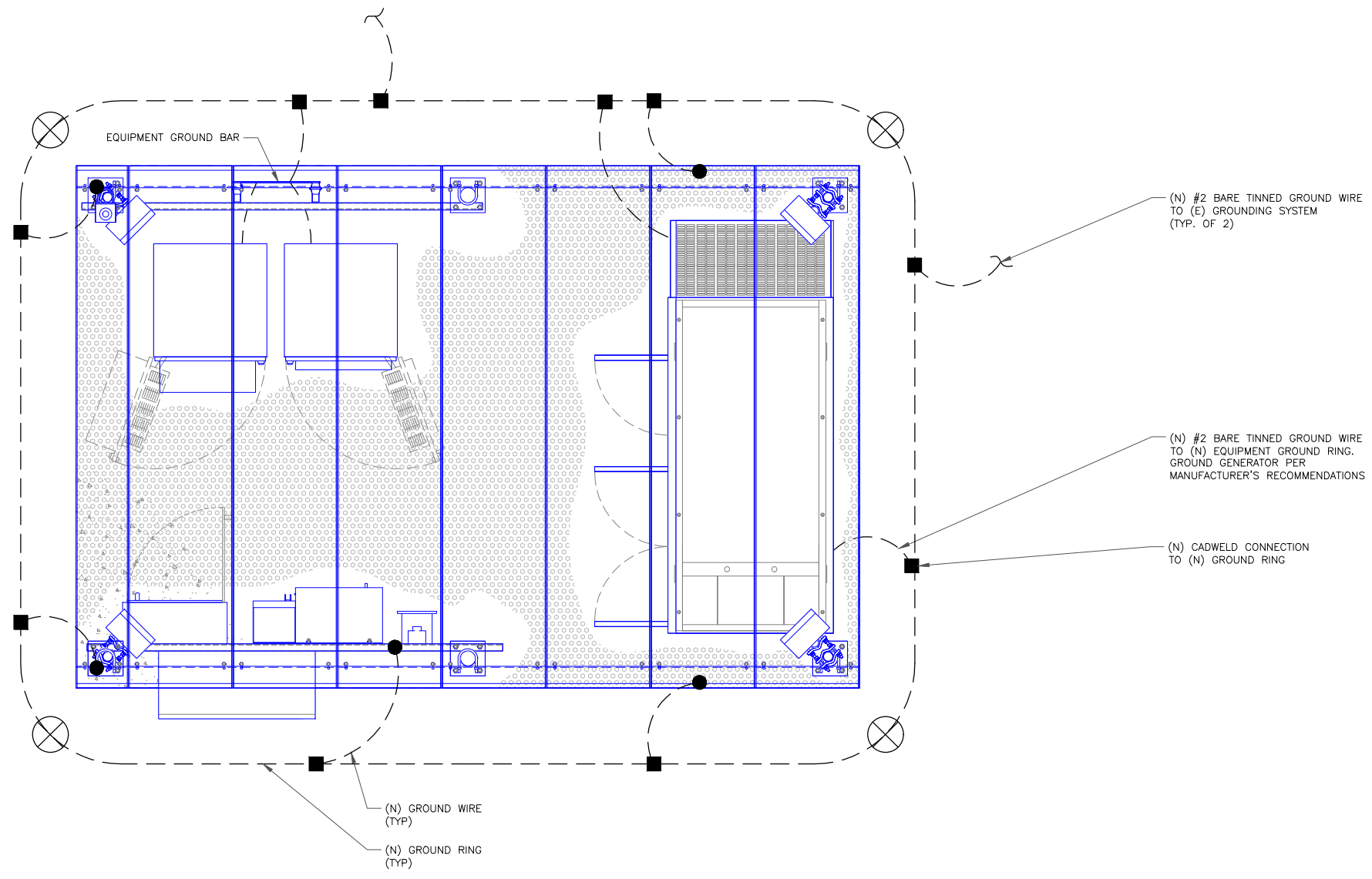
1 UTILITY ROUTING  
SCALE: NOT TO SCALE



- GROUNDING PLAN LEGEND:**
- GROUND WIRE
  - EXOTHERMIC WELD
  - MECHANICAL CONNECTION
  - ⊗ NEW GROUND ROD, 5/8" x 10'

**GROUNDING NOTES:**

1. IF MORE THAN 20' FROM EXISTING GROUND RING, INSTALL GROUND ROD (5/8" x 10'). ROD SPACING: 8' MAX. TOP OF ROD AND GROUND WIRE TO BE AT GROUND RING DEPTH BELOW FROST LINE.
2. ALL GROUND CONDUCTORS SHALL BE COPPER, 75 DEGREES C RATED, AND CONDUCTOR INSULATION BE THHN OR THHN.
3. GROUND FAULT PROTECTION REQUIRED FOR UTILITY RECEPTACLES.
4. GENERATOR NEUTRAL SHALL NOT BE GROUNDED AT THE GENERATOR. REFER TO SINGLE LINE DETAIL.
5. EQUIPMENT LOCATED OUTSIDE OR EXPOSED TO MOISTURE SHALL BE NEMA 3R RATED.



1 TYPICAL GROUNDING SCHEMATIC  
SCALE: NOT TO SCALE

**T-Mobile**  
12920 SE 38TH STREET  
BELLEVUE, WA 98006

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

**INFINIGY**  
FROM ZERO TO INFINIGY  
the solutions are endless  
500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
**CTNL256A**

BU #: 842865  
**LEBANON WEST**

1699 EXETER RD  
LEBANON, CT 06249

EXISTING 150'-0" MONOPOLE

**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS

STATE OF CONNECTICUT  
SHUHEI SAKANOU  
34916  
LICENSED PROFESSIONAL ENGINEER

07/29/22

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

SHEET NUMBER: **G-1** REVISION: **1**



T-MOBILE SITE NUMBER:  
**CTNL256A**

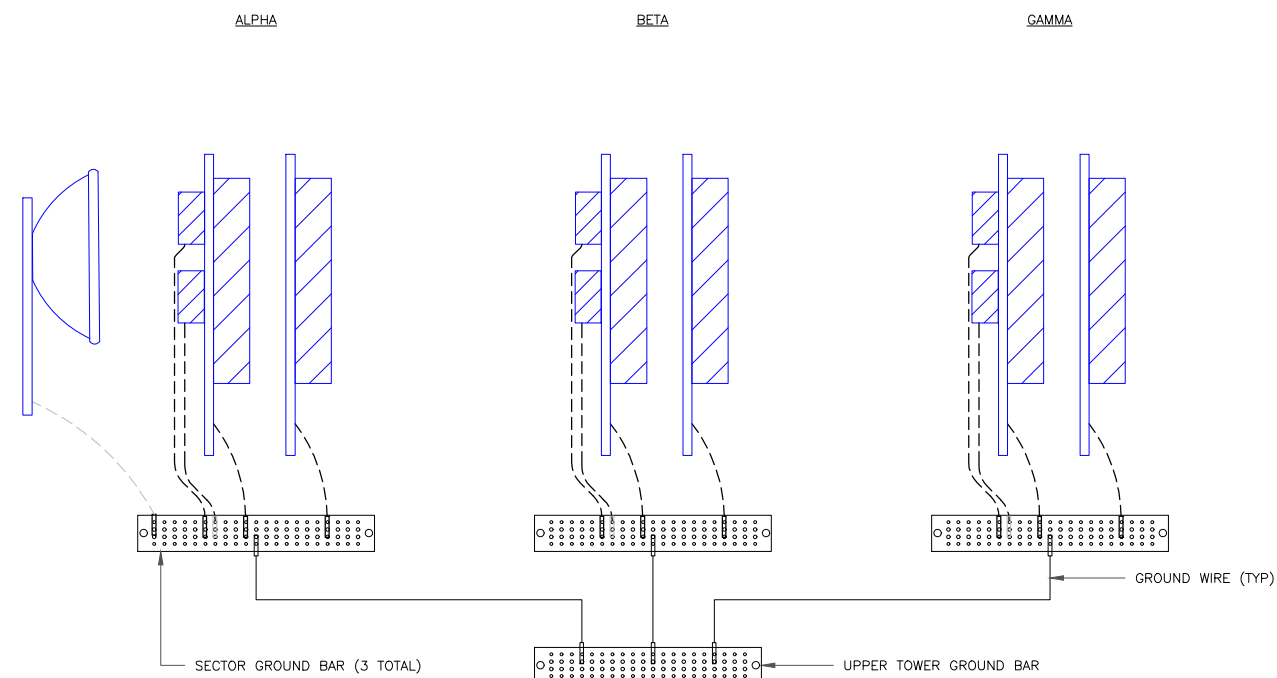
BU #: 842865  
**LEBANON WEST**

1699 EXETER RD  
LEBANON, CT 06249

EXISTING 150'-0" MONOPOLE

**ISSUED FOR:**

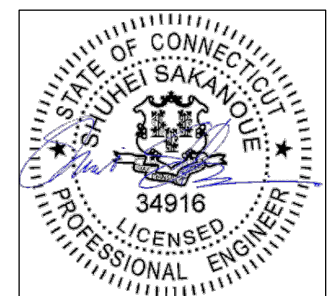
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS



**NOTES:**

1. ALL NEW GROUNDS TO BE #6 STRANDED COPPER WITH GREEN INSULATION UNLESS NOTED OTHERWISE.
2. TOWER TO BE USED AS COMMON GROUND PATH, NO ISOLATED GROUND LEADS UPPER BUSS TO LOWER BUSS

1 ANTENNA GROUNDING DIAGRAM  
SCALE: NOT TO SCALE



07/29/22

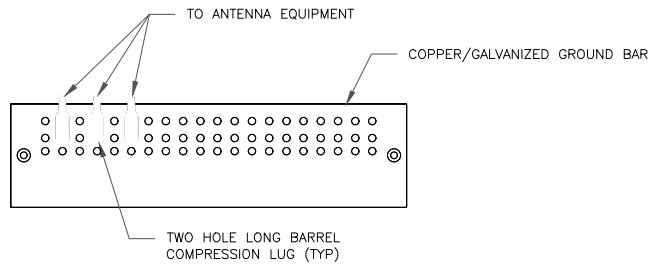
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER:

**G-2**

REVISION:

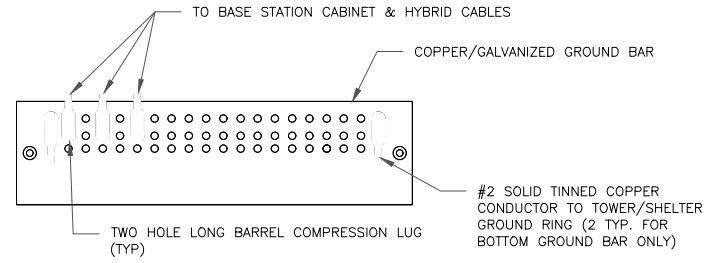
**1**



NOTES:

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

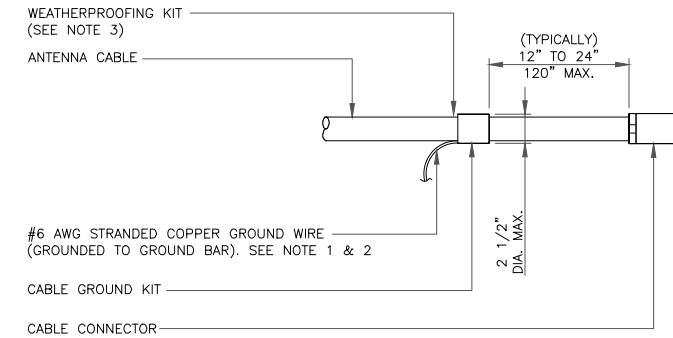
1 ANTENNA SECTOR GROUND BAR DETAIL  
SCALE: NOT TO SCALE



NOTES:

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

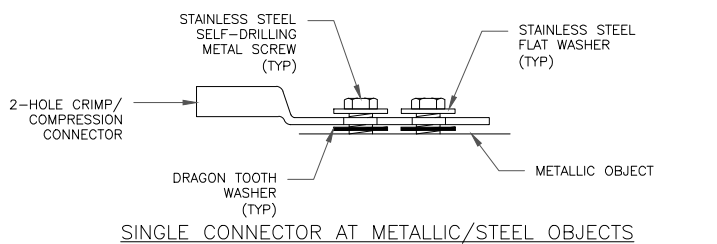
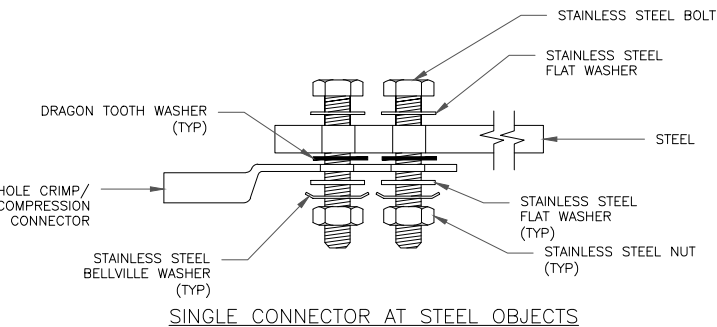
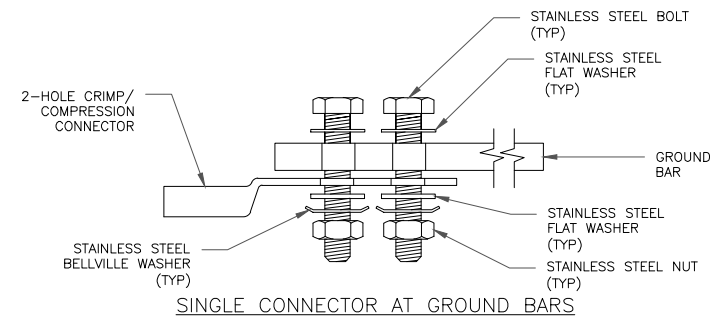
2 TOWER/SHELTER GROUND BAR DETAIL  
SCALE: NOT TO SCALE



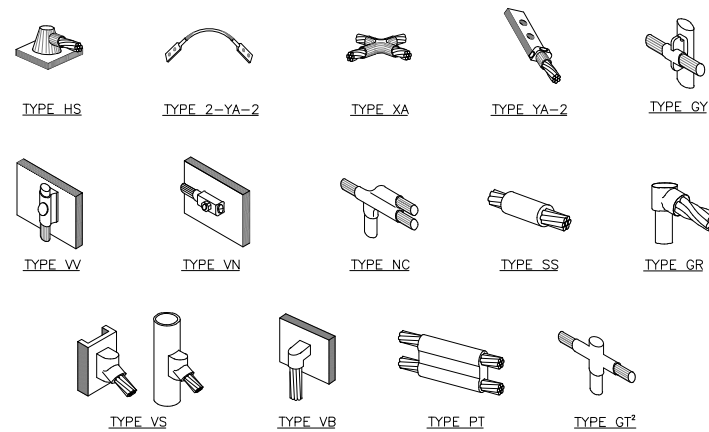
NOTES:

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

3 CABLE GROUND KIT CONNECTION  
SCALE: NOT TO SCALE



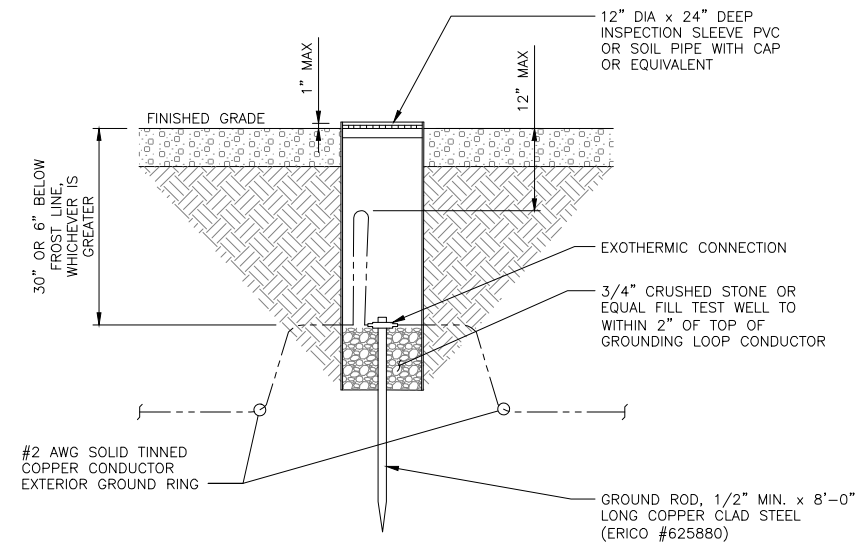
4 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS  
SCALE: NOT TO SCALE



NOTE:

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

5 CADWELD GROUNDING CONNECTIONS  
SCALE: NOT TO SCALE



6 GROUND ROD DETAIL  
SCALE: NOT TO SCALE

**T-Mobile**  
12920 SE 38TH STREET  
BELLEVUE, WA 98006

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

**INFINIGY**  
FROM ZERO TO INFINIGY  
the solutions are endless  
500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
**CTNL256A**

BU #: 842865  
**LEBANON WEST**

1699 EXETER RD  
LEBANON, CT 06249

EXISTING 150'-0" MONOPOLE

ISSUED FOR:

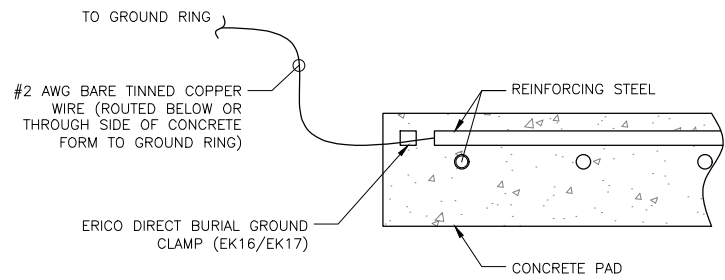
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS



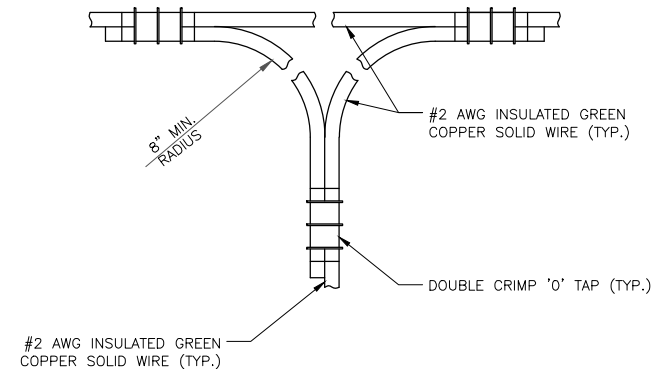
07/29/22

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

SHEET NUMBER: **G-3** REVISION: **1**



1 REBAR GROUNDING DETAIL  
SCALE: NOT TO SCALE



2 CONNECTION TO GROUND RING  
SCALE: NOT TO SCALE

3 NOT USED  
SCALE: NOT TO SCALE

4 NOT USED  
SCALE: NOT TO SCALE

5 NOT USED  
SCALE: NOT TO SCALE

6 NOT USED  
SCALE: NOT TO SCALE

**T-Mobile**  
12920 SE 38TH STREET  
BELLEVUE, WA 98006

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

**INFINIGY**  
FROM ZERO TO INFINIGY  
the solutions are endless  
500 West Office Center Dr.  
Suite 150 | Fort Washington, PA 19034  
www.infinigy.com

T-MOBILE SITE NUMBER:  
**CTNL256A**

BU #: **842865**  
**LEBANON WEST**

1699 EXETER RD  
LEBANON, CT 06249

EXISTING 150'-0" MONOPOLE

**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/23/22	RCD	PRELIMINARY	SS
0	07/01/22	RCD	100% FINALS	SS
1	07/29/22	RCD	100% FINALS	SS

07/29/22

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

SHEET NUMBER: **G-4** REVISION: **1**