

March 20, 2020

*Via Electronic Mail*

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

Re: **Notice of Exempt Modification – Facility Modification  
751 Higgins Road, Cheshire, Connecticut**

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) antennas at the top level on the existing 250-foot tower at 751 Higgins Road in Cheshire, Connecticut (the “Property”). The Property and tower are owned by AT&T. According to the Town of Cheshire Director of Planning and Building Official the existing tower was constructed in or prior to 1967 as a part of a United State Civil Defense program. The Town of Cheshire has no record of any local zoning or building permit approvals for this tower. The Siting Council approved Cellco’s shared use of the tower in 1993. A copy of the Council’s approval letter is included in Attachment 1.

Cellco now intends to modify its facility by removing eight (8) of its existing antennas and installing seven (7) new antennas and removing nine (9) remote radio heads (“RRHs”) and installing six (6) newer model RRHs. Three existing stand-off mounts will also be replaced as part of these proposed facility modifications. A set of project plans showing the proposed facility modifications and specifications for Cellco’s new antennas and RRHs are included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Cheshire’s Town Manager, Sean

20516466-v1

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Kimball; William Voelker, Cheshire's Director of Planning; and AT&T, the tower and Property owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas will be installed at the same 250-foot level on the tower.
2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The installation of new antennas and RRHs will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for the modified facility is included in Attachment 3.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower, its foundation and new antenna mounts can support Cellco's proposed facility modifications. (See Structural Analysis Report included in Attachment 4 and Mount Structural Analysis Report included in Attachment 5).

A copy of the parcel map and Property owner information is included in Attachment 6. A Certificate of Mailing verifying that this filing was sent to municipal officials and the owner of the Property is included in Attachment 7.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

Enclosures

Copy to:

Sean Kimball, Cheshire Town Manager  
William Voelker, Cheshire Town Planner  
AT&T  
Tim Parks

# **ATTACHMENT 1**



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

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

**FILE  
COPY**

October 26, 1993

David S. Malko  
General Manager - Engineering  
Bell Atlantic Metro Mobile  
20 Alexander Drive  
Wallingford, CT 06492

RE: Metro Mobile CTS of New Haven, Inc., notice of intent to modify an existing telecommunications tower and associated equipment at 751 Higgins Road in Cheshire, Connecticut.

Dear Mr. Malko:

At a meeting held October 15, 1993, the Connecticut Siting Council (Council) acknowledged your notice of an exempt modification at an existing tower site at 751 Higgins Road in Cheshire, Connecticut, pursuant to section 16-50j-73 of the Regulations of State Agencies (RSA).

The proposed modification is to be implemented as specified in your notice dated October 1, 1993. The modification is in compliance with the exception criteria in RSA section 16-50j-72(b) as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by 6 decibels, and increase radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Section 22a-162 of the Connecticut General Statutes.

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

Please notify the Council when all work is complete.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Mortimer A. Gelston".

Mortimer A. Gelston  
Chairman

Handwritten initials "MAG" in a stylized cursive font.

MAG:RKE:mmb

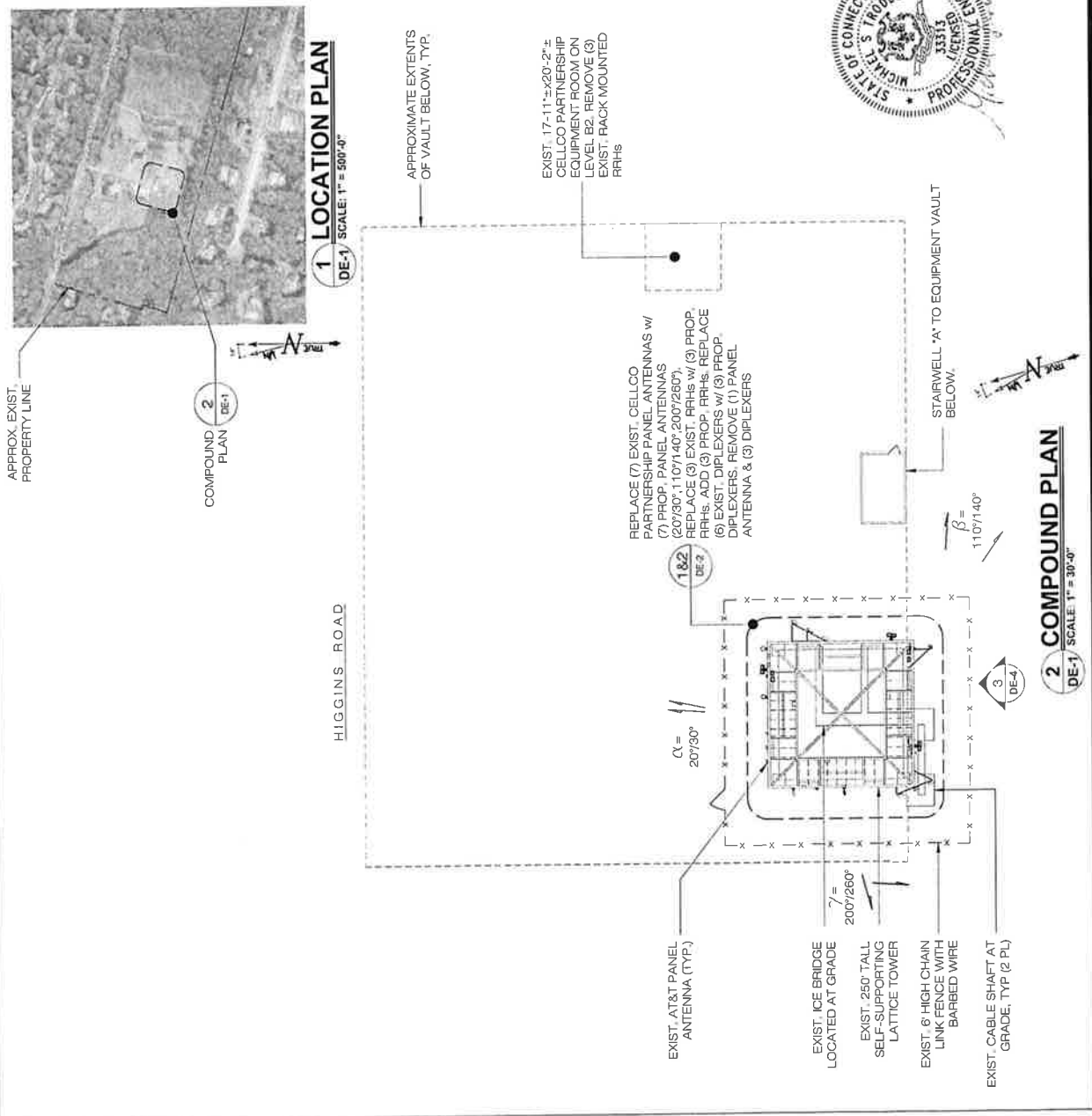
cc: Honorable Sandra R. Mouris, Mayor, Town of Cheshire

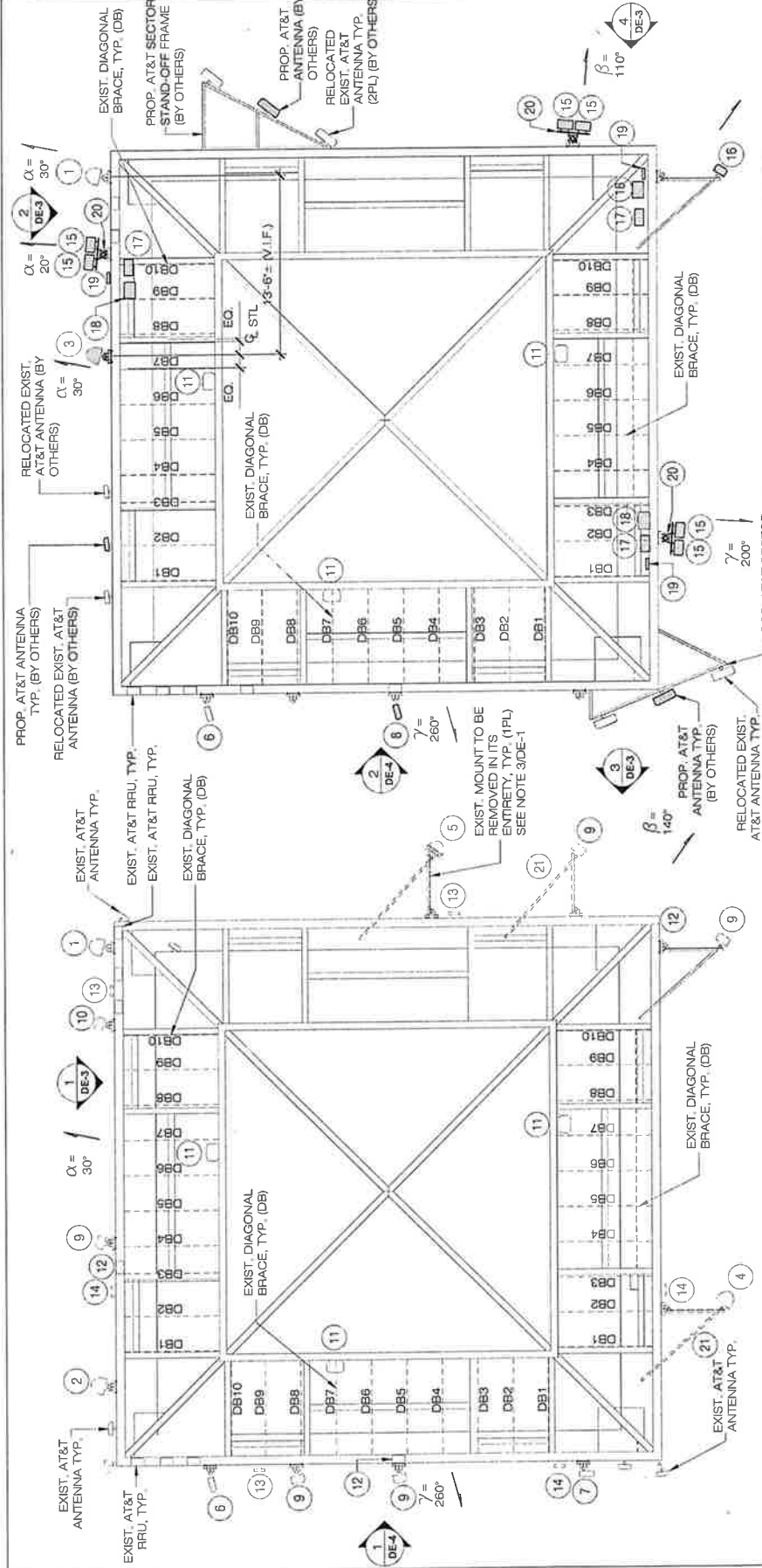
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# **ATTACHMENT 2**

- NOTES:**
- DESIGN EXHIBIT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND CONVEY GENERAL INFORMATION PERTAINING TO THE SIZE AND LOCATION OF THE PROPOSED WIRELESS EQUIPMENT UPGRADE.
  - BASE MAPPING FROM FIELD MEASUREMENTS TAKEN BY ALL-POINTS TECH. CORP., P.C. ON 10-25-18.
  - EXISTING ANTENNA & RRHS MOUNTS REQUIRE MODIFICATION PRIOR TO THE INSTALLATION OF THE PROP. EQUIPMENT UPGRADE. REFER TO MOUNT STRUCTURAL ANALYSIS REPORT PREPARED BY ALL POINTS TECHNOLOGY CORP., DATED FEBRUARY 10, 2020 AVAILABLE UNDER SEPARATE COVER AND DE-6 & 7 FOR MORE INFORMATION.
  - PROJECT SCOPE INCLUDES THE FOLLOWING:
    - REPLACEMENT OF SEVEN (7) EXIST. PANEL ANTENNAS w/ SEVEN (7) PROP. PANEL ANTENNAS. (4) EXIST. PANEL ANTENNAS TO REMAIN.
    - REPLACEMENT OF THREE (3) EXIST. REMOTE RADIO HEADS (RRHS) w/ THREE (3) PROP. RRHS
    - INSTALLATION OF THREE (3) OF (6) SIX EXIST. DIPLEXERS w/ (3) PROP. DIPLEXERS.
    - REMOVAL OF THREE (3) OF (6) SIX EXIST. DIPLEXERS
    - REMOVAL OF THREE (3) EXIST. RRHS FROM WITHIN EXIST. EQUIPMENT ROOM.
    - REMOVAL OF (1) PANEL ANTENNA (BETA)
    - REPLACEMENT & RELOCATION OF (1) EXIST. ANTENNA MOUNT (ALPHA).
    - PARTIAL REMOVAL OF (3) EXIST. STAND-OFF MOUNTS (BETA).
    - REMOVAL OF (1) EXIST. ANTENNA MOUNT (GAMMA).
  - ALL EXPOSED STEEL AND HARDWARE TO BE HOT DIP GALVANIZED (HDG).
  - THE PROPOSED EQUIPMENT UPGRADE INDICATED HEREIN IS SUBJECT TO THE COMPLETION OF A STRUCTURAL ANALYSIS OF THE HOST SUPPORTING STRUCTURE (BY OTHERS).
  - CAP & WEATHERPROOF ALL UN-USED CABLE ENTRY PORTS (WHERE APPLICABLE).
  - MOUNT & GROUND ALL NEW EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

**REVISIONS:**  
 -REV5:12/04/19: REV PER VZW COMMENTS. JRM  
 -REV6:01/14/20: REVISED TO INCLUDE PROP. AT&T EQUIPMENT MODIFICATIONS. JRM  
 -REV7:02/10/20: FOR FILING. JRM

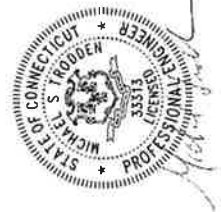




**2 TOWER PLAN VIEW - PROP.**  
 DE-2 / SCALE: 1/8" = 1'-0"

**1 TOWER PLAN VIEW - EXIST.**  
 DE-2 / SCALE: 1/8" = 1'-0"

- |   |  |  |
|---|--|--|
| <p>1 EXIST. ANTENNA (TO REMAIN)<br/>         MODEL: ANTEL LPA-80063-6CF</p> <p>2 EXIST. ANTENNA (TO REMAIN)<br/>         MODEL: ANTEL LPA-80063-6CF</p> <p>3 EXIST. ANTENNA (TO REMAIN)<br/>         MODEL: ANTEL LPA-80063-6CF</p> <p>4 EXIST. ANTENNA (TO REMAIN)<br/>         MODEL: ANTEL LPA-80063-6CF</p> <p>5 EXIST. ANTENNA (TO REMAIN)<br/>         MODEL: ANTEL LPA-80063-6CF</p> <p>6 EXIST. ANTENNA (TO REMAIN)<br/>         MODEL: ANTEL LPA-80063-6CF</p> <p>7 EXIST. ANTENNA (TO REMAIN)<br/>         MODEL: ANTEL LPA-80063-6CF</p> | <p>8 EXIST. ANTENNA (RELOCATED)<br/>         MODEL: ANTEL LPA-80080-6CF</p> <p>9 EXIST. ANTENNA (TO BE RELOCATED)<br/>         MODEL: ANTEL LPA-80063-6CF</p> <p>10 EXIST. ANTENNA (TO BE REPLACED)<br/>         MODEL: ANDREW SBHH-1D65B</p> <p>11 EXIST. ANTENNA (TO BE REPLACED)<br/>         MODEL: ANDREW SBHH-1D65B</p> <p>12 EXIST. 60VP (TO REMAIN)<br/>         MODEL: RAYCAP RxxDC3315-PF-48 (V.I.F.)</p> <p>13 EXIST. RRH (TO BE REPLACED)<br/>         MODEL: ALU 2x80W AWS RRH</p> <p>14 EXIST. DIPLEXER (TO BE REPLACED)<br/>         MODEL: RFS FDRH6004-2C-3L (V.I.F.)</p> <p>15 EXIST. DIPLEXER (TO BE REMOVED)<br/>         MODEL: RFS FDRH6004-2C-3L (V.I.F.)</p> <p>16 EXIST. ANTENNA (TO BE REMOVED)<br/>         MODEL: ANTEL LPA-80080-6CF</p> <p>17 EXIST. ANTENNA (TO BE REMOVED)<br/>         MODEL: ANTEL LPA-80080-6CF</p> <p>18 EXIST. ANTENNA (TO BE REMOVED)<br/>         MODEL: ANTEL LPA-80080-6CF</p> <p>19 EXIST. ANTENNA (TO BE REMOVED)<br/>         MODEL: ANTEL LPA-80080-6CF</p> <p>20 EXIST. ANTENNA (TO BE REMOVED)<br/>         MODEL: ANTEL LPA-80080-6CF</p> <p>21 EXIST. ANTENNA (TO BE REMOVED)<br/>         MODEL: ANTEL LPA-80080-6CF</p> | <p>16 PROP. ANTENNA<br/>         MODEL: AMPHENOL BXA-70063-6CF</p> <p>17 PROP. DUAL BAND RRH<br/>         MODEL: SAMSUNG B13/B5 700/850 RRH</p> <p>18 PROP. DUAL BAND RRH<br/>         MODEL: SAMSUNG B66/B2 AMSPCS RRH</p> <p>19 PROP. QUAD DIPLEXER<br/>         MODEL: COMMSCOPE CBC78T-DS-43-2X</p> <p>20 PROP. COMMSCOPE ANTENNA MOUNT<br/>         MODEL: BSAMINT-555-2-3</p> <p>21 EXIST. STAND-OFF MOUNT, OUTRIGGER &amp; U-BOLTS TO BE REMOVED. INNER PIPE MOUNT &amp; MOUNTING BRACKETS TO REMAIN. REFER TO DE-6 FOR DETAILS</p> |
|---|--|--|



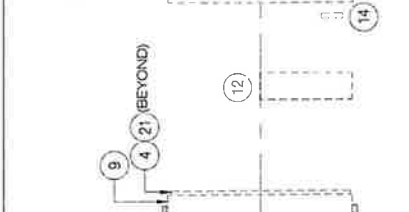
**REVISIONS:**  
 -REV5:12/04/19: REV PER VZW COMMENTS: JRM  
 -REV6:01/14/20: REVISED TO INCLUDE PROP. AT&T EQUIPMENT MODIFICATIONS: JRM  
 -REV7:02/10/20: FOR FILING: JRM



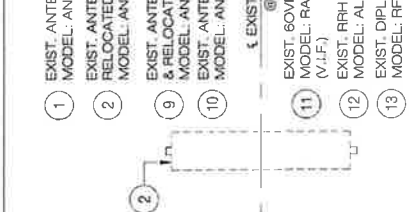
CHESHIRE CT  
 751 HIGGINS ROAD  
 CHESHIRE, CT 06410  
 VZW  
 VZW  
 PROJECT CODE: 201808598308  
 VZW FUZE ID: 15273443  
 DRAWN BY: DRA  
 CHECKED BY: JRM  
 DATE OF DV: 10/25/18  
 DATE: 11/27/19

APT FILING NUMBER: CT141EB9400  
 MOUNTING CONFIGURATION DETAILS

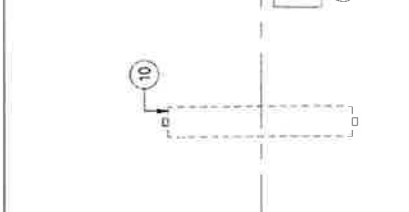
EXIST. ANTENNA (TO BE REMOVED)  
 MODEL: ANTEL LPA-80063-6CF  
 EXIST. ANTENNA (TO BE REPLACED)  
 MODEL: ANTEL LPA-80063-6CF  
 EXIST. ANTENNA (TO BE REPLACED)  
 MODEL: ANTEL LPA-80063-6CF  
 EXIST. ANTENNA (TO BE REPLACED)  
 MODEL: ANDREW SBNIHH-1D65B  
 EXIST. GOVP (TO REMAIN)  
 MODEL: RAYCAP RxxDC3315-PF-48  
 (V.I.F.)  
 EXIST. ANTENNAS  
 @ 252.0' ± AGL



EXIST. ANTENNA (TO REMAIN)  
 MODEL: ANTEL LPA-80063-6CF  
 EXIST. ANTENNA & MOUNT (TO BE  
 RELOCATED)  
 MODEL: ANTEL LPA-80063-6CF  
 EXIST. ANTENNA (TO BE REPLACED  
 & RELOCATED)  
 MODEL: ANDREW SBNIHH-1D65B  
 EXIST. ANTENNA (TO BE REPLACED)  
 MODEL: ANDREW SBNIHH-1D65B  
 EXIST. ANTENNAS  
 @ 252.0' ± AGL



EXIST. ANTENNA (TO REMAIN)  
 MODEL: ANTEL LPA-80063-6CF  
 EXIST. ANTENNA & MOUNT (RELOCATED)  
 USE NEW HARDWARE TO MATCH EXIST.  
 W/ FLAT WASHERS, LOCK WASHERS &  
 NUTS, TYP.  
 MODEL: ANTEL LPA-80063-6CF  
 EXIST. GOVP (TO REMAIN)  
 MODEL: RAYCAP RxxDC3315-PF-48  
 (V.I.F.)  
 EXIST. ANTENNAS  
 @ 252.0' ± AGL



PROP. ANTENNA  
 MODEL: COMMSCOPE JAHH-65C-R3B  
 PROP. DUAL BAND RRH  
 MODEL: SAMSUNG B13B5 700/850 RRH  
 PROP. DUAL BAND RRH  
 MODEL: SAMSUNG B66/B2 AWSPCS RRH  
 PROP. QUAD DIPLEXER  
 MODEL: COMMSCOPE CBC78T-DS-43-2X  
 PROP. COMMSCOPE ANTENNA MOUNT  
 MODEL: BSAMINT-SBS-2-3

EXISTING AZIMUTHS  
 ALPHA: 30°  
 EXISTING (FRONT)

EXISTING AZIMUTHS  
 BETA: 140°  
 EXISTING (FRONT)

EXISTING AZIMUTHS  
 ALPHA: 30°  
 EXISTING (FRONT)

EXISTING AZIMUTHS  
 BETA: 140°  
 EXISTING (FRONT)

PROPOSED AZIMUTHS  
 ALPHA: 207/30°  
 PROPOSED (FRONT)

PROPOSED AZIMUTHS  
 BETA: 110/7/140°  
 PROPOSED (FRONT)

**ALPHA MOUNTING CONFIGURATION - EXIST.**  
 DE-3 / SCALE: 1/4" = 1'-0"

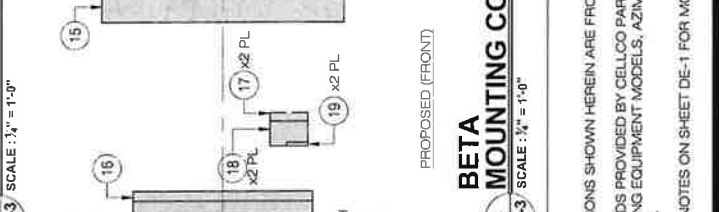
**BETA MOUNTING CONFIGURATION - EXIST.**  
 DE-3 / SCALE: 1/4" = 1'-0"

**ALPHA MOUNTING CONFIGURATION - PROP.**  
 DE-3 / SCALE: 1/4" = 1'-0"

**BETA MOUNTING CONFIGURATION - PROP.**  
 DE-3 / SCALE: 1/4" = 1'-0"

NOTES:  
 1. ANTENNA CONFIGURATIONS SHOWN HEREIN ARE FRONT ELEVATIONS.  
 2. REFER TO THE FINAL RFDS PROVIDED BY CELCO PARTNERSHIP FOR THE LATEST INFORMATION REGARDING EQUIPMENT MODELS, AZIMUTHS, DOWN-TILT & REQUIRED CABLING INFORMATION.  
 3. REFER TO ADDITIONAL NOTES ON SHEET DE-1 FOR MORE INFORMATION.

REVISIONS:  
 -REV: 12/04/19: REV PER VZW COMMENTS: JRM  
 -REV: 01/14/20: REVISED TO INCLUDE PROP. AT&T  
 EQUIPMENT MODIFICATIONS: JRM  
 -REV: 02/10/20: FOR FILING: JRM



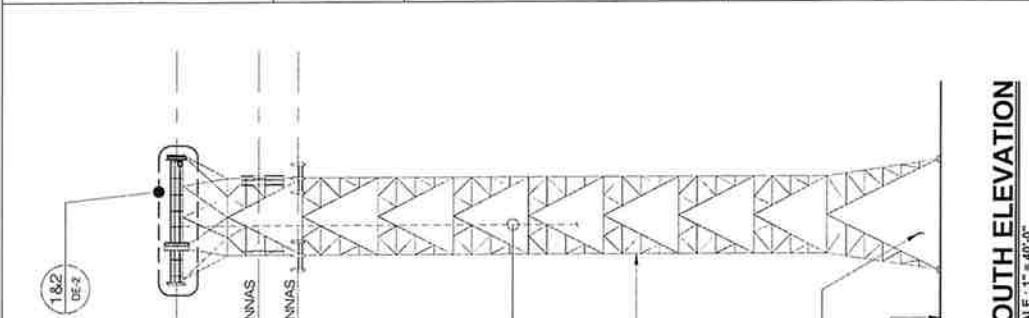
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 VZW FUZE ID: 15273443  
 DRAWN BY: DRA  
 CHECKED BY: JRM  
 DATE OF DV: 10/25/18  
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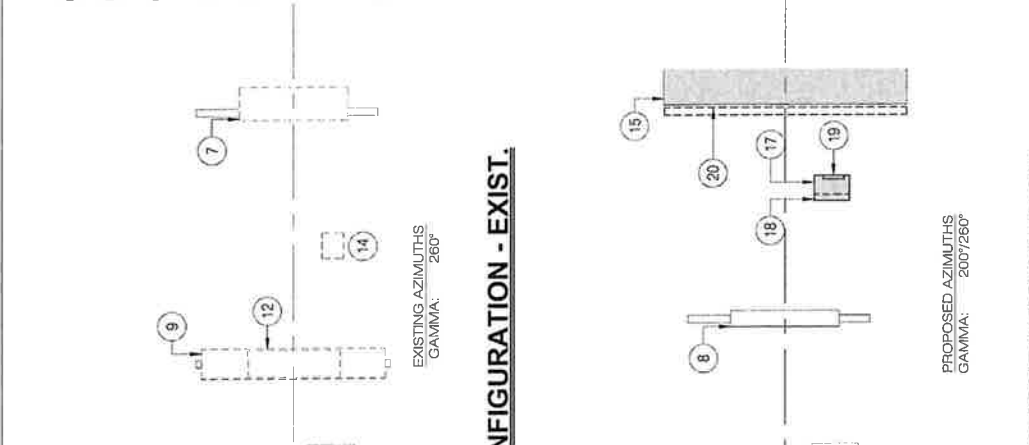
APT FILING NUMBER: CT141EB9400  
 MOUNTING CONFIGURATION DETAILS

CHESHIRE CT  
 751 HIGGINS ROAD  
 CHESHIRE, CT 06410  
 VZW  
 VZW  
 PROJECT CODE: 201808598308  
 VZW FUZE ID: 15273443  
 DRAWN BY: DRA  
 CHECKED BY: JRM  
 DATE OF DV: 10/25/18  
 DATE: 11/27/19



- REPLACE (7) EXIST. CELCO PARTNERSHIP PANEL ANTENNAS w/ (7) PROP. PANEL ANTENNAS (20'x30", 11071.40" 2007/2807) REPLACE (3) EXIST. RRHs w/ (3) PROP. RRHs. ADD (3) PROP. RRHs. REPLACE (6) EXIST. DIPLEXERS w/ (3) PROP. DIPLEXERS REMOVE (1) PANEL ANTENNA & (3) DIPLEXERS
- EXIST. /PROP. VERIZON PANEL ANTENNAS @ 252.0' ± AGL
- EXIST. CARRIER PANEL ANTENNAS @ 225.0' ± AGL
- EXIST. CARRIER PANEL ANTENNAS @ 212.0' ± AGL
- EXIST. CELCO PARTNERSHIP 1 1/8" DIA. COAXIAL CABLES & (3) EXIST. 6X12 HYBRID CABLES ROUTED WITHIN EXIST. CABLE LADDER TO REMAIN.
- EXIST. 250' FT TALL SELF SUPPORTING LATTICE TOWER
- EXIST. CELCO PARTNERSHIP GPS ANTENNA TO REMAIN
- APPROX. EXIST. GRADE
- EXIST. ANTENNA (TO REMAIN)  
MODEL: ANTEL LPA-80080-6CF
- EXIST. ANTENNA (TO BE RELOCATED)  
MODEL: ANTEL LPA-80080-6CF
- EXIST. ANTENNA (TO BE REPLACED)  
RELOCATED  
MODEL: ANDREW SBN11H-1 D65B
- EXIST. 60VP (TO REMAIN)  
MODEL: RAYCAP RxxDC3315-PF-48 (V.I.F.)
- EXIST. RRH (TO BE REPLACED)  
MODEL: ALU 2x80W AWS RRH
- EXIST. ANTENNAS @ 252.0' ± AGL
- EXIST. DIPLEXER (TO BE REPLACED)  
MODEL: RFS FD9R6004-2C-3L (V.I.F.)
- EXIST. DIPLEXER (TO BE REMOVED)  
MODEL: RFS FD9R6004-2C-3L (V.I.F.)
- EXIST. ANTENNA (TO REMAIN)  
MODEL: ANTEL LPA-80080-6CF
- EXIST. ANTENNA (RELOCATED)  
MODEL: ANTEL LPA-80080-6CF
- EXIST. 60VP (TO REMAIN)  
MODEL: RAYCAP RxxDC3315-PF-48 (V.I.F.)
- EXIST. /PROP. ANTENNAS @ 252.0' ± AGL
- PROP. ANTENNA  
MODEL: COMMSCOPE JAHH-65C-R3B (LOCATED AT SOUTH FACE)
- PROP. DUAL BAND RRH (BEYOND)  
MODEL: SAMSUNG B13B5 700/850 RRH
- PROP. DUAL BAND RRH  
MODEL: SAMSUNG B65B2 AWS/PCS RRH
- PROP. QUAD DIPLEXER  
MODEL: COMMSCOPE CB078T-DS-43-2X
- PROP. COMMSCOPE ANTENNA MOUNT  
MODEL: BSAMINT-SBS-2-3

**NOTES:**  
 1. ANTENNA CONFIGURATIONS SHOWN HEREIN ARE FRONT ELEVATIONS.  
 2. REFER TO THE FINAL RFDS PROVIDED BY CELCO PARTNERSHIP FOR THE LATEST INFORMATION REGARDING EQUIPMENT MODELS, AZIMUTHS & REQUIRED CABLING INFORMATION.  
 3. REFER TO ADDITIONAL NOTES ON SHEET DE-1 FOR MORE INFORMATION.



**REVISIONS:**  
 -REV 6/12/2019: REV PER VZW COMMENTS: JRM  
 -REV 6/01/19/20: EQUIPMENT MODIFICATIONS: JRM  
 -REV 7/02/10/20: FOR FILING: JRM

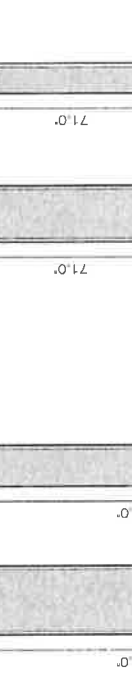


### EQUIPMENT DATA

#### EQUIPMENT SPECIFICATIONS

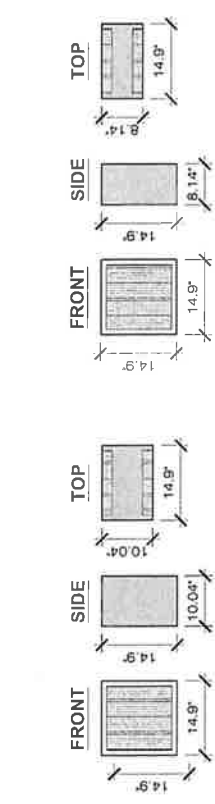
SECTOR	ANTENNA MAKE/MODEL	QTY	AZIMUTH	EQUIPMENT STATUS	HEIGHT (IN)	WIDTH (IN)	DEPTH (IN)	WEIGHT (LBS)
ALPHA	850: ANTEL LPA-80063-6CF	2	30°	ETR/ERL	70.9	15.0	13.1	27.0 (2)
	700/850/1900: COMMSCOPE JAHH-65C-R3B	1	20°	NEW	96.0	13.8	8.2	79.6 (2)
	700/850/2100: COMMSCOPE JAHH-65C-R3B	1	20°	NEW	96.0	13.8	8.2	79.6 (2)
BETA	850: AMPHENOL BXA-70063-6CF	1	140°	NEW	71.0	11.3	6.0	17.0 (2)
	700/850/1900: COMMSCOPE JAHH-65C-R3B	1	110°	NEW	96.0	13.8	8.2	79.6 (2)
	700/850/2100: COMMSCOPE JAHH-65C-R3B	1	110°	NEW	96.0	13.8	8.2	79.6 (2)
GAMMA	850: ANTEL LPA-80080-6CF	2	260°	ETR/ERL	70.9	5.5	13.2	21.0 (2)
	700/850/1900: COMMSCOPE JAHH-65C-R3B	1	200°	NEW	96.0	13.8	8.2	79.6 (2)
	700/850/2100: COMMSCOPE JAHH-65C-R3B	1	200°	NEW	96.0	13.8	8.2	79.6 (2)
	APPURTENANCE MAKE/MODEL							
	SAMSUNG B5B13 700850 RRH	3	-	NEW	14.9	14.9	8.14	70.3
	SAMSUNG AWS1PCS RRH	3	-	NEW	14.9	14.9	10.04	84.4
	COMMSCOPE CBC78T-DS-43-2X QUAD DIPLEXER	3	-	NEW	6.4	6.9	9.6	20.7
	RAYCAP RxxDC-3315-PF-48 (6 OVP)	3	-	ETR	28.9	15.7	10.3	32

- (1) ETR: DENOTES EXIST, TO REMAIN, ERL: DENOTES EXIST, TO BE RELOCATED.
- (2) WEIGHT WITHOUT MOUNTING BRACKET.
- (3) ANTENNA DATA BASED ON RPDS DATED 11/1/2019



**1 PROP. ANTENNA DETAIL**  
DE-5 SCALE: 1/2" = 1'-0"

**2 PROP. ANTENNA DETAIL**  
DE-5 SCALE: 1/2" = 1'-0"



SAMSUNG DUAL HIGH BAND B2B66a RRH  
RRH PCS/AWS  
REMOTE RADIO HEAD (RRH)  
WxDxH=14.9x14.9x10.04" (97.5 Lbs)

SAMSUNG DUAL HIGH BAND B5B13 RRH  
RRH 850/700  
REMOTE RADIO HEAD (RRH)  
WxDxH=14.9x14.9x8.14" (82.0 Lbs)

NOTE: WEIGHTS INCLUDE SOLAR SHIELD & MOUNTING BRACKET

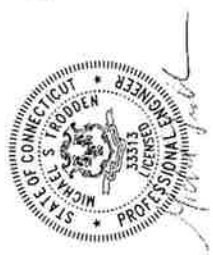
**4 PROP. RRH EQUIPMENT**  
DE-5 SCALE: 1/2" = 1'-0"



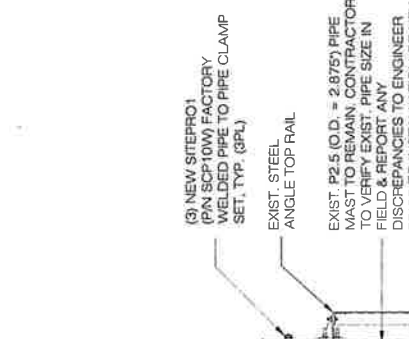
COMMSCOPE CBC78T-DS-43-2X  
QUAD DIPLEXER  
HWxD=9.6x9.6" (20.7 Lbs)

**3 PROP. QUAD DIPLEXER**  
DE-5 SCALE: 1/2" = 1'-0"

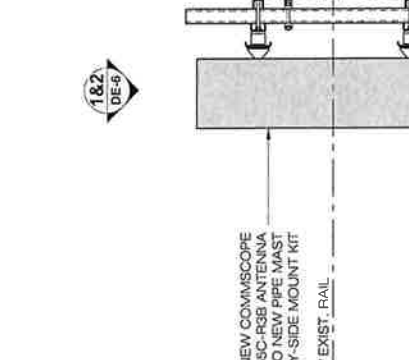
- REVISIONS:**
- REV:12/04/19: REV PER VZW COMMENTS. JRM
  - REV:01/14/20: REVISED TO INCLUDE PROP. AT&T EQUIPMENT MODIFICATIONS. JRM
  - REV:02/10/20: FOR FILING. JRM



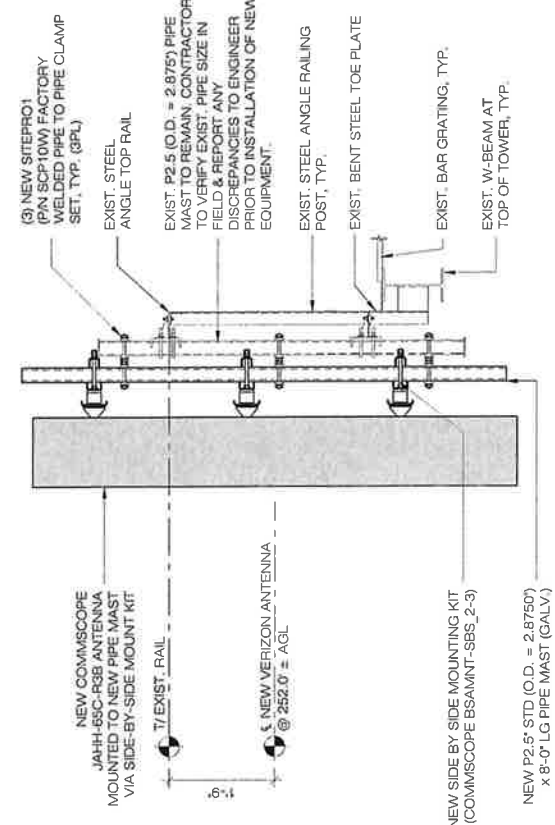
- NOTES:**
- COORDINATE INSTALLATION OF REINF. w/ VERIZON CONSTRUCTION MANAGER & OWNER SAFETY REQUIREMENTS.
  - PAINT ALL EXPOSED STEEL TO MATCH EXIST. HOST STRUCTURE. COORDINATE w/ VERIZON CONSTRUCTION MANAGER & OWNER FOR PAINT SPECIFICATIONS.
  - ALL STEEL AND HARDWARE EXPOSED TO WEATHER TO BE HOT DIP GALVANIZED (HDG). REFER TO STRUCTURAL STEEL NOTES.
  - MOUNT AND GROUND ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.



**1 PARTIAL ANTENNA MOUNT PLAN - ALPHA & GAMMA**  
 DE-6 SCALE: 1/2" = 1'-0"

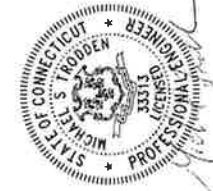


**2 PARTIAL ANTENNA MOUNT PLAN - BETA**  
 DE-6 SCALE: 1/2" = 1'-0"



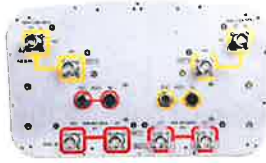
**3 MOUNT REINFORCEMENT ELEVATION**  
 DE-6 SCALE: 1/2" = 1'-0"

- REVISIONS:**
- REV 6: 12/04/19: REV PER VZW COMMENTS. JRM
  - REV 5: 01/14/20: REVISED TO INCLUDE PROP. AT&T EQUIPMENT MODIFICATIONS. JRM
  - REV 7: 02/10/20: FOR FILING. JRM





# JAHH-65C-R3B



8-port sector antenna, 2x 698–803, 2x 824–894 and 4x 1695–2360 MHz, 65° HPBW, 3x RET and low bands have diplexers. Internal SBT's on first LB(Port 1) and first HB(Port 5)

- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- One RET for 700MHz, one RET for 850MHz, and one RET for both high bands to ensure same tilt level for 4x Rx or 4x MIMO
- Internal filter on low band and interleaved dipole technology providing for attractive, low wind load mechanical package
- Separate RS-485 RET input/output for low and high band
- Supports re-configurable antenna sharing capability enabling control of the internal RET system using up to two separate RET compatible OEM radios

## General Specifications

<b>Antenna Type</b>	Sector
<b>Band</b>	Multiband
<b>Color</b>	Light gray
<b>Effective Projective Area (EPA), frontal</b>	0.4 m <sup>2</sup>   4.306 ft <sup>2</sup>
<b>Effective Projective Area (EPA), lateral</b>	0.34 m <sup>2</sup>   3.66 ft <sup>2</sup>
<b>Grounding Type</b>	RF connector body grounded to reflector and mounting bracket
<b>Performance Note</b>	Outdoor usage   Wind loading figures are validated by wind tunnel measurements described in white paper WP-112534-EN
<b>RF Connector Interface</b>	4.3-10 Female
<b>RF Connector Location</b>	Bottom
<b>RF Connector Quantity, high band</b>	4
<b>RF Connector Quantity, low band</b>	4
<b>RF Connector Quantity, total</b>	8

## Remote Electrical Tilt (RET) Information, General

<b>RET Hardware</b>	CommRET v2
<b>RET Interface</b>	8-pin DIN Female   8-pin DIN Male
<b>RET Interface, quantity</b>	2 female   2 male

## Dimensions

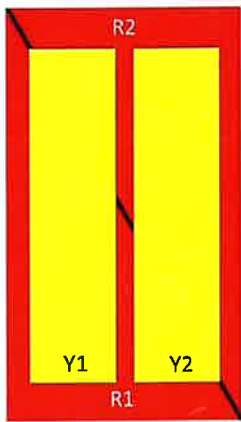
<b>Width</b>	350 mm   13.78 in
<b>Length</b>	2438 mm   95.984 in

# JAHH-65C-R3B

Depth

208 mm | 8.189 in

## Array Layout



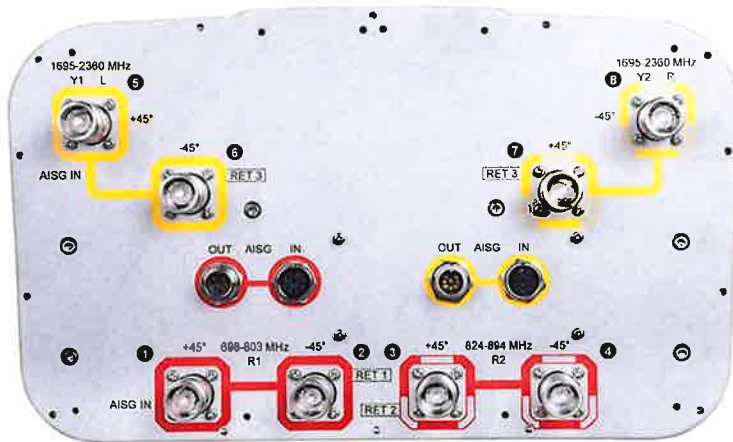
Array	Freq (MHz)	Conns	RET (SRET)	AISG RET UID
R1	698-803	1-2	1	CPxxxxxxxxxxxxxxxxR1
R2	824-894	3-4	2	CPxxxxxxxxxxxxxxxxR2
Y1	1695-2360	5-6	3	CPxxxxxxxxxxxxxxxxY1
Y2	1695-2360	7-8		

Left Right  
Bottom

(Sizes of colored boxes are not true depictions of array sizes)

## Port Configuration

# JAHH-65C-R3B



## Electrical Specifications

<b>Operating Frequency Band</b>	1695 – 2360 MHz   698 – 803 MHz   824 – 894 MHz
<b>Total Input Power, maximum</b>	800 W @ 50 °C

## Remote Electrical Tilt (RET) Information, Electrical

<b>Protocol</b>	3GPP/AISG 2.0 (Single RET)
<b>Power Consumption, idle state, maximum</b>	1 W
<b>Power Consumption, normal conditions, maximum</b>	8 W
<b>Input Voltage</b>	10–30 Vdc
<b>Internal Bias Tee</b>	Port 1   Port 5
<b>Internal RET</b>	High band (1)   Low band (2)



# JAHH-65C-R3B

## Electrical Specifications

Frequency Band, MHz	698–803	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	15.5	16.2	18.2	18.6	18.7	18.7
Beamwidth, Horizontal, degrees	67	64	62	60	61	64
Beamwidth, Vertical, degrees	9.8	8.4	5.7	5.3	5	4.5
Beam Tilt, degrees	0–11	0–11	2–12	2–12	2–12	2–12
USLS (First Lobe), dB	23	22	20	20	21	20
Front-to-Back Ratio at 180°, dB	30	30	29	35	38	39
Isolation, Cross Polarization, dB	25	25	25	25	25	25
Isolation, Inter-band, dB	30	30	30	30	30	30
VSWR   Return loss, dB	1.5   14.0	1.5   14.0	1.5   14.0	1.5   14.0	1.5   14.0	1.5   14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port at 50° C, maximum, watts	200	200	250	250	250	200

## Electrical Specifications, BASTA

Frequency Band, MHz	698–803	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	15.2	16	17.5	18.2	18.3	18.3
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.4	±0.7	±0.5	±0.5	±0.7
Gain by Beam Tilt, average, dBi	0°   15.2 11°   15.2 5°   15.2	0°   15.8 5°   16.0 11°   16.0	2°   17.2 7°   17.6 12°   17.5	2°   17.8 7°   18.4 12°   18.3	2°   17.8 7°   18.5 12°   18.4	2°   17.8 7°   18.4 12°   18.2
Beamwidth, Horizontal Tolerance, degrees	±1.1	±1.6	±3.9	±3	±3	±4.6
Beamwidth, Vertical Tolerance, degrees	±0.5	±0.4	±0.3	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	18	17	16	16	16	15
Front-to-Back Total Power at 180° ± 30°, dB	25	23	25	31	29	30
CPR at Boresight, dB	23	22	20	23	22	19
CPR at Sector, dB	12	13	10	13	11	8

## Material Specifications

Radiator Material	Low loss circuit board
Radome Material	Fiberglass, UV resistant

# JAHH-65C-R3B

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**Reflector Material** Aluminum

## Mechanical Specifications

<b>Wind Loading at Velocity, frontal</b>	425.0 N @ 150 km/h   95.5 lbf @ 150 km/h
<b>Wind Loading at Velocity, lateral</b>	361.0 N @ 150 km/h   81.2 lbf @ 150 km/h
<b>Wind Loading at Velocity, maximum</b>	202.3 lbf @ 150 km/h   900.0 N @ 150 km/h
<b>Wind Speed, maximum</b>	241 km/h   149.75 mph

## Packaging and Weights

<b>Width, packed</b>	456 mm   17.953 in
<b>Depth, packed</b>	357 mm   14.055 in
<b>Length, packed</b>	2585 mm   101.772 in
<b>Net Weight, without mounting kit</b>	36.1 kg   79.587 lb
<b>Weight, gross</b>	51.1 kg   112.656 lb

## Regulatory Compliance/Certifications

<b>Agency</b>	<b>Classification</b>
CHINA-ROHS	Below maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
REACH-SVHC	Compliant as per SVHC revision on <a href="http://www.commscope.com/ProductCompliance">www.commscope.com/ProductCompliance</a>
ROHS	Compliant



## Included Products

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

## \* Footnotes

**Performance Note** Severe environmental conditions may degrade optimum performance

# SAMSUNG

## Dual-Band Radio Unit 700/850MHz (B13/B5) RFV01U-D2A

Samsung's RFV01U-D2A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.



### Features and Benefits

- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation

The RFV01U-D2A RU targets dual-band support across Band 13 (700MHz) and Band 5 (850MHz), making it an ideal product for broad coverage footprints across multiple common low-end, long-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

### Key Technical Specifications

Duplex Type: FDD

Operating Frequencies:

B13: DL(746-756MHz)/UL(777-787MHz)

B5: DL(869-894MHz)/UL(824-849MHz)

Instantaneous Bandwidth: 10MHz(B13) + 25MHz(B5)

RF Chain: 4T4R/2T4R/2T2R

Output Power: Total 320W

DU-RU Interface: CPRI (10Gbps)

Dimensions: 380 x 380 x 207mm (29.9L)

Weight: 31.9kg

Input Power: -48V DC

Operating Temp.: -40 - 55°(w/o solar load)

Cooling: Natural convection

# SAMSUNG

## Dual-Band Radio Unit AWS/PCS (B66/B2)

RFV01U-D1A

Samsung's RFV01U-D1A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.



The RFV01U-D1A RU targets dual-band support across Band 66 (AWS) and Band 2 (PCS), making it an ideal product for broad coverage footprints across multiple common mid-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

### Features and Benefits

- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation
- Built-in Broadcast Auxiliary Services (BAS) filter ensures compliant AWS operation without impacting footprint

### Key Technical Specifications

Duplex Type: FDD

Operating Frequencies:

B66: DL(2,110-2,180MHz)/UL(1,710-1,780MHz)

B2: DL(1,930-1,990MHz)/UL(1,850-1,910MHz)

Instantaneous Bandwidth:

70MHz(B66) + 60MHz(B2)

RF Chain: 4T4R/2T4R/2T2R

Output Power: Total 320W

DU-RU Interface: CPRI (10Gbps)

Dimensions: 380 x 380 x 255mm (36.8L)

Weight: 38.3kg

Input Power: -48V DC

Operating Temp.: -40 - 55°(w/o solar load)

Cooling: Natural convection

# **ATTACHMENT 3**

Site Name: Cheshire Tower Height: 250ft		General	Power	Density				
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total
*AT&T-UMTS	2	728	255	850	0.0084	0.5667	0.15%	
*AT&T-LTE(BAND 14)	4	906	255	700	0.0210	0.4667	0.45%	
*AT&T-LTE (WCS)	4	1181	255	2300	0.0274	1.0000	0.27%	
*AT&T-LTE	2	826	255	700	0.0096	0.4667	0.21%	
*AT&T-LTE (PCS)	4	1250	255	1900	0.0290	1.0000	0.29%	
*T-Mobile	4	1167	212	1900/2100	0.0396	1.0000	0.40%	
*T-Mobile	2	2334	212	2100	0.0396	1.0000	0.40%	
*T-Mobile	1	687	212	700	0.0058	0.4667	0.12%	
*Nextel	9	100	215	851	0.0074	0.5673	0.13%	
*VoiceStream	1	100	217	2400	0.0008	1.0000	0.01%	
*Sprint	1	377	225.6	850	0.0028	0.5667	0.05%	
*Sprint	2	942	225.6	850	0.0140	0.5667	0.25%	
*Sprint	5	512	225.6	1900	0.0191	1.0000	0.19%	
*Sprint	2	1280	225.6	1900	0.0191	1.0000	0.19%	
*Sprint	8	778	225.6	2500	0.0464	1.0000	0.46%	
<b>VZW PCS</b>	<b>4</b>	<b>1667</b>	<b>252</b>	<b>0.0378</b>	<b>1970</b>	<b>1.0000</b>	<b>3.78%</b>	
<b>VZW 850 Cellular</b>	<b>2</b>	<b>238</b>	<b>252</b>	<b>0.0027</b>	<b>869</b>	<b>0.5793</b>	<b>0.47%</b>	
<b>VZW Cellular</b>	<b>4</b>	<b>432</b>	<b>252</b>	<b>0.0098</b>	<b>880</b>	<b>0.5866</b>	<b>1.67%</b>	
<b>VZW AWS</b>	<b>4</b>	<b>1694</b>	<b>252</b>	<b>0.0384</b>	<b>2145</b>	<b>1.0000</b>	<b>3.84%</b>	
<b>VZW 700</b>	<b>4</b>	<b>774</b>	<b>252</b>	<b>0.0175</b>	<b>746</b>	<b>0.4973</b>	<b>3.52%</b>	<b>16.84%</b>
* Source: Siting Council								

# **ATTACHMENT 4**



We do it right the first time.

Airosmith Development  
355 State Suite, Suite #1 East  
Albany, NY 12210  
(518) 527-0011



ENGINEERING AND ARCHITECTURE  
PROFESSIONAL CORPORATION  
Traci Preble  
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Akron, OH 44311  
(317) 299-2996  
[tpreble@gpdgroup.com](mailto:tpreble@gpdgroup.com)

**GPD# 2019736.27**  
February 28, 2020

### STRUCTURAL ANALYSIS REPORT

<b>AT&amp;T DESIGNATION:</b>	<b>Site USID:</b>	<b>TAG0053</b>	<b>26014</b>
	<b>Site FA:</b>	<b>10136365</b>	<b>10034996</b>
	<b>Site Name:</b>	<b>CHESHIRE</b>	<b>CHESHIRE SW</b>
	<b>Client Number:</b>	<b>468692</b>	

<b>ANALYSIS CRITERIA:</b>	<b>Codes:</b>	<b>TIA-222-G, 2018 Connecticut State Building Code &amp; 2015 IBC 135-mph Ultimate 3-second gust with 0" ice 105-mph Nominal 3-second gust with 0" ice 50-mph 3-second gust with 3/4" ice</b>
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<b>SITE DATA:</b>	<b>751 Higgins Road, Cheshire, CT 06410, New Haven County Latitude 41° 29' 14.870" N, Longitude 72° 55' 45.595" W Market: NEW ENGLAND 250' Radio Relay Towers Self Support Tower</b>
-------------------	--

Ms. Andrea Armstrong,

GPD is pleased to submit this Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

#### Analysis Results

Tower Stress Level with Proposed Equipment:	90.3%	Pass
Building Pedestal Ratio with Proposed Equipment:	Adequate	Pass

We at GPD appreciate the opportunity of providing our continuing professional services to you and Airosmith Development. If you have any questions or need further assistance on this or any other projects, please do not hesitate to call.

Respectfully submitted,

Christopher J. Scheks, P.E.  
Connecticut #: 0030026





## SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing modified structure is capable of carrying the proposed loading configuration as specified by Verizon Wireless to Airosmith Development. This report was commissioned by Ms. Andrea Armstrong of Airosmith Development.

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 135 mph converted to a nominal 3-second gust wind speed of 105 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category III were used in this analysis.

Detailed foundation and geotechnical information for the building were not available or provided for this report. Therefore, the in place capacities could not be verified. However, based on the reserve capacity of the supporting pedestals, it is our opinion that the supporting building and foundations will be adequate for the proposed loading configuration.

**Modifications designed by GPD (Project #: 2012856.05, dated 7/25/2012) have been installed and were considered in this analysis.**

**Mount modifications designed by All-Points (File #: CT141EB9400 Rev. 7, dated 2/10/2020) and mount analysis by All-Points (File #: CT141EB9400, dated 2/10/2020) have been considered in this analysis.**

### TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Legs	86.6%	Pass
Leg Bolts	87.0%	Pass
Diagonals	76.3%	Pass
Horizontals	65.7%	Pass
Redundant Members	85.3%	Pass
Internal Bracing	84.5%	Pass
Member Bolts	90.3%	Pass
Anchor Rods	44.3%	Pass
Building Pedestals	25.8%	Pass
Foundation	Adequate	Pass

## ANALYSIS METHOD

RISA-3D (Version 17.0.1) and TNX Tower (Version 8.0.4.0), commercially available software programs, were used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being completed without the benefit of a recent detailed site visit.

**DOCUMENTS PROVIDED**

Document	Remarks	Source
Site Lease Application	Not Provided	N/A
Tower Design	AT&T Co. Drawing #: NA4J03-902 Rev 3, dated 6/5/1967	AT&T
Building Drawings	AT&T Co. L-4 Junction Building, dated 12/1/1965	AT&T
Foundation Mapping	FDH Project #: 11-12049E-N1, dated 12/20/2011	AT&T
Ground Mapping	GPD Project #: 2013723.01.TAG0053.01, dated 6/14/2013	AT&T
Geotechnical Report	Not Provided	N/A
Previous Structural Analysis	GPD Project #: 2019704.67, dated 8/13/2019	AT&T
Previous Structural Analysis	Infinigy Job #: 1108-B0003-B, dated 3/28/2019	Airosmith
Tower Mapping	GPD Project #: 2013723.01.TAG0053.03, 1/17/2014	AT&T
Modification Drawings	GPD Project #: 2012856.05, dated 7/25/2012	AT&T
RF Design Form	RFDS ID #: 1363219 dated 8/2/2018	Airosmith
Mount Modifications	All-Points File #: CT141EB9400 Rev. 7, updated 2/10/2020	Airosmith
Mount Analysis	All-Points File #: CT141EB9400, dated 2/10/2020	Airosmith

**ASSUMPTIONS**

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower member sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations.
6. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
7. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
8. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
9. All prior structural modifications are assumed to be as per data supplied/available and to have been properly installed.
10. Loading interpreted from photos is accurate to  $\pm 5'$  AGL, antenna size accurate to  $\pm 3.3$  sf, and coax equal to the number of existing antennas without reserve.
11. All existing loading was obtained from the previous analysis by GPD, site photos, and the provided Construction Drawings and is assumed to be accurate.
12. The final loading configuration has been modeled based on the provided Construction Drawings by All-Points (File #: CT141EB9400 Rev. 7, updated 2/10/2020) and is assumed to be accurate.
13. Face A azimuth of  $105^\circ$  assumed based on the tower mapping by GPD (Project #: 2013723.01.TAG0053.03, 1/17/2014).

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD should be allowed to review any new information to determine its effect on the structural integrity of the tower.

## DISCLAIMER OF WARRANTIES

GPD has not performed a recent site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

This analysis is limited to the designated maximum wind and seismic conditions per the governing tower standards and code. Wind forces resulting in tower vibrations near the structure's resonant frequencies were not considered in this analysis and are outside the scope of this analysis. Lateral loading from any dynamic response was not evaluated under a time-domain based fatigue analysis.

GPD does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the capability of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

Towers are designed to carry gravity, wind, and ice loads. All members, legs, diagonals, struts, and redundant members provide structural stability to the tower with little redundancy. Absence or removal of a member can trigger catastrophic failure unless a substitute is provided before any removal. Legs carry axial loads and derive their strength from shorter unbraced lengths by the presence of redundant members and their connection to the diagonals with bolts or welds. If the bolts or welds are removed without providing any substitute to the frame, the leg is subjected to a higher unbraced length that immediately reduces its load carrying capacity. If a diagonal is also removed in addition to the connection, the unbraced length of the leg is greatly increased, jeopardizing its load carrying capacity. Failure of one leg can result in a tower collapse because there is no redundancy. Redundant members and diagonals are critical to the stability of the tower.

GPD makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD pursuant to this report will be limited to the total fee received for preparation of this report.

## APPENDIX A

### Tower Analysis Summary Form

## Tower Analysis Summary Form

### General Info

Site Name	CHESHIRE
Site Number	TAG0053
FA Number	10136365
Date of Analysis	2/29/2020
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

### Tower Info

Description	Date
Tower Type (0, SST, MP)	SST
Tower Height (top of faced AGL)	150'
Tower Manufacturer	Radio Relay Towers
Tower Model	Type "J"
Tower Design	AT&T Co. Drawing #: NA4J03-002 Rev 3 6/5/1967
Building Drawings	AT&T Co. L-4 Junction Building 12/1/1965
Geotech Report	n/a
Tower Mapping	TEP Project #: 111343 4/8/2011
Tower Mapping	Hudson Design Group 2/4/2013
Tower Mapping	GPD Project #: 2013723.01, TAG0053.03 1/17/2014
Previous Structural Analysis	GPD Project #: 2018704.67 8/13/2019
Modification Drawings	GPD Project #: 2012856.05 7/25/2012
Ground Mapping	GPD Project #: 2013723.01, TAG0053.01 6/14/2013
Foundation Mapping	FDH Project #: 11-12049E-41 12/20/2011

### Design Parameters

Design Code Used	TIA-222-G, 2015 IBC & 2018 CT Building Code
Location of Tower (County, State)	New Haven, CT
Nominal Wind Speed (mph)	105 J Second Gust
Ice Thickness (in)	0.75
Risk Category (I, II, III)	III
Exposure Category (B, C, D)	B
Topographic Category (1 to 5)	1

### Analysis Results (% Maximum Usage)

Existing/Reserved + Future + Proposed Condition	
Tower (%)	90.3%
Anchor Rods (%)	44.3%
Foundation (%)	Adequate
Foundation Adequate?	YES

Modifications designed by GPD (Project #: 2012856.05, dated 7/25/2012) have been installed and were considered in this analysis.

Mount modifications designed by All-Points (File #: CT141EB9400 Rev. 7, updated 2/10/2020) and mount analysis by All-Points (File #: CT141EB9400, dated 2/10/2020) have been considered in this analysis.

### Steel Yield Strength (ksi)

Legs	36
Bracing	36
Member Bolts	A307
Anchor Rods	C-1015

Note: Material grades assumed based on previous analysis.

### Existing / Reserved Loading

Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Antenna				Azimuth	Mount			Transmission Line			
			Quantity	Type	Manufacturer	Model		Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Leg/Face
Unknown	252	265	1	Rod	Unknown	4' Lightning Rod		Unknown	Top Platform	1	Unknown	5/8"	Face A	
Unknown	252	262	1	Beacon	Unknown	Flash Beacon		Unknown	on the same mount					
AT&T Mobility	252	255	2	Panel	KMW	AM-XC-1E16-00T-RET	154/270	Unknown	on the same mount	12	Unknown	1.5/8"	Face D	
AT&T Mobility	252	255	1	Panel	Andrew	SBNH-1DG56SC		Unknown	on the same mount	6	DC Power Fiber	5/8"	Face D	
AT&T Mobility	252	255	3	Panel	GCI	HPA-67R-HUJ-116	15/154270	Unknown	on the same mount	6		1.24"	Face D	
AT&T Mobility	252	255	1	Panel	Kathrein	K00-10916		Unknown	on the same mount					
AT&T Mobility	252	255	2	Panel	Kathrein	K00-10916		Unknown	on the same mount					
AT&T Mobility	252	255	3	Panel	GCI	DTMA1P7819VG12A	150/265	Unknown	on the same mount					
AT&T Mobility	252	255	3	RRU	Ericsson	RRUS 11		Unknown	on the same mount					
AT&T Mobility	252	255	3	RRU	Ericsson	RRUS 32 B2		Unknown	on the same mount					
AT&T Mobility	252	255	3	RRU	Ericsson	RRUS 32		Unknown	on the same mount					
AT&T Mobility	252	255	3	RRU	Ericsson	RRUS 4476 B14		Unknown	on the same mount					
AT&T Mobility	252	255	6	Surge	Raycap	DC6-46-60-18-8F		Unknown	on the same mount	12	Unknown	1.5/8"	Face D	
Verizon	252	254	6	Panel	Andrew	SBNH110519	30/140/260	Unknown	4' Standoff on Platform	3	Fiber	1.5/8"	Face D	
Verizon	252	254	6	Panel	Antel	LPA 6090J6CF	200	Unknown	on the same mounts					
Verizon	252	254	6	Panel	Antel	LPA 6090J6CF	200	Unknown	on the same mounts					
Verizon	252	254	6	Diplexers	RFS	FD960042C-3L		Unknown	on the same mounts					
Verizon	252	254	3	RRH	Alcatel Lucent	RRH 2X60AWS		Unknown	on the same mounts					
Verizon	252	254	3	RRH	Alcatel Lucent	RRH 2X60 PCS		Unknown	on the same mounts					
Verizon	252	254	3	RRH	Alcatel Lucent	RRH 2X60AWS LTE		Unknown	on the same mounts					
Verizon	252	254	3	Surge	Raycap	RevDC-3315-FJ-4P		Unknown	on the same mounts					
Verizon	252	254	1	GPS	Lucent	GPS		Unknown	on the same mounts					
Town of Cheshire	245	255	1	Dipole	RFI	8A20-41 DIN		Unknown	6' Sidearm	1	Unknown	7/8"	Face D	
Town of Cheshire	248	252.5	1	Dipole	RFI	8A20-47 DIN		Unknown	6' Sidearm	1	Unknown	7/8"	Face D	
Town of Cheshire	240	240	1	Dish	RFS	8C2-W100AC		Unknown	Mount Pipe	1	RFS	E105	Face D	
Misc.	239.5		1					Unknown	Platform	1				
Sprint	225	220.5	3	Panel	Corwave	APXYTM14-ALU-120	30/130/210	Unknown	20' Pipe Mounts	8	Hybrid	1"	Face D	
Sprint	225	220.5	3	Panel	Comscope	NNV-65U-R4	30/130/210	Unknown	on the same mounts					
Sprint	225	220.5	3	RRU	Alcatel Lucent	TD-RRH 8x25		Unknown	on the same mounts					
Sprint	225	220.5	6	RRU	Alcatel Lucent	190 MHz 2x50W		Unknown	on the same mounts					
Sprint	225	220.5	3	RRU	Alcatel Lucent	190 MHz 4x45		Unknown	on the same mounts					
NexTel	210	212	6	Panel	Decibel	DBE4H199E-XY	30/255	Unknown	14' Sector Frames	6	Unknown	1.5/8"	Face D	
T-Mobile	210	212	2	Panel	Ericsson	AIR21-D1A/B2P	60/140	Unknown	14' Sector Frames	2	Hybrid	7/8"	Face B	
T-Mobile	210	212	2	Panel	Ericsson	MRC 1116-046-1 B1A/B12P-40P	60/140	Unknown	on the same mounts					
T-Mobile	210	212	2	RRU	Ericsson	KRUS11B12		Unknown	on the same mounts					
T-Mobile	210	212	2	RRU	Ericsson	KRUS11B2		Unknown	on the same mounts					
Unknown	210	207	1	Panel	Unknown	26"x76"x2" FP	150	Unknown	on the same mounts	1	Unknown	1/2"	Face A	
NexTel	195	200	3	Panel	Decibel	DBE4H199E-XY	135	Unknown	14' Sector Frame	3	Unknown	1.5/8"	Face D	
SGI	130	130	2	Omni	Unknown	PG1-NOF-0091		Unknown	5' Standoffs	2	Unknown	7/8"	Face D	
SGI	171	177	1	Omni	Unknown	PG1-DOF-0043		Unknown	5' Standoff	1	Unknown	7/8"	Face D	
Misc.	139.5		1					Unknown	Platforms w/ Rails					
AT&T Internet Services	85	85	1	Yagi	Wade	WL 7-131S		Unknown	Standoffs	7	Unknown	5/8"	Face D	
AT&T Internet Services	85	85	1	Yagi	Wade	WL 14-69S		Unknown	on the same mounts					
AT&T Internet Services	85	81	1	Yagi	Wade	WL 11-69S		Unknown	on the same mounts					
AT&T Internet Services	85	81	1	Yagi	Wade	WL 14-69S		Unknown	on the same mounts					
AT&T Internet Services	85	81	1	Yagi	Wade	WL 14-69S		Unknown	on the same mounts					
Unknown	37	37	1	Camera	Vicon	Camera - V3200H		Unknown	2.5' Box Mount	1	Conduit	1"	Face A	
Unknown	38.5	38.5	1	GPS	Lucent	40751769		Unknown	3' Side Arm	1	Unknown	1/2"	Face D	
Unknown	21	21	2	Junction	Unknown	Junction Box		Unknown	Platform	1	Conduit	1"	Face A	
Unknown	21	21	1	RRU	Unknown	28" x 15.5" x 10" RRU		Unknown	on the same mount					

Note: (3) 4' Standoff Mounts, (6) SBNH110519 Antennas, (2) Antel LPA 6090J6CF Antennas, (3) RRH 2X60 RRHs, & (6) FD960042C-3L Diplexers at 254' are to be removed prior to the installation of the proposed loading, and were not considered in this analysis.

### Proposed Loading

Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Antenna				Azimuth	Mount			Transmission Line			
			Quantity	Type	Manufacturer	Model		Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Leg/Face
Verizon	252	254	9	Panel	Andrew	JAHH-65C-R3B	20/110/200	3	Commscope	BSAMNT-5DS-7-3				
Verizon	252	254	1	Panel	Amphenol	8XA-7096J-GCF	140	3	Unknown	8" P2.5 STD Mount Pipe				
Verizon	252	254	3	RRU	Samsung	B5B13 RRH		9	Site Pre	BCP10W Clamp Set				
Verizon	252	254	3	RRU	Samsung	B2/B6/A RRH				on the existing platform				
Verizon	252	254	3	Diplexer	Commscope	CBC7G1-DS-43-2X				on the existing platform				

Note: The proposed loading shall be installed in addition to the existing loading at the same elevation.

### Future Loading

Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Antenna				Azimuth	Mount			Transmission Line			
			Quantity	Type	Manufacturer	Model		Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Leg/Face

## **APPENDIX B**

### Software Output Files and Calculations

<b>tnxTower</b>  <b>GPD</b> 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job</b>	Cheshire SW	<b>Page</b>	1 of 9
	<b>Project</b>	2019736.27	<b>Date</b>	09:17:50 02/25/20
	<b>Client</b>	Verizon Wireless	<b>Designed by</b>	mschooley

### Tower Input Data

The main tower is a 4x free standing tower with an overall height of 250.00 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 33.50 ft at the top and 37.00 ft at the base.

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

The following design criteria apply:

Tower is located in New Haven County, Connecticut.

Basic wind speed of 105 mph.

Structure Class III.

Exposure Category B.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

Pressures are calculated at each section.

Stress ratio used in tower member design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

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

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Climbing Ladder (Af)	C	No	No	Af (CaAa)	250.00 - 8.00	-24.000 0	0.44	1	1	3.8400	3.8400		4.81
Safety Line 3/8	C	No	No	Ar (CaAa)	250.00 - 8.00	-24.000 0	0.44	1	1	0.3750	0.3750		0.22
5/8" Power Cable	C	No	No	Ar (CaAa)	250.00 - 8.00	0.0000	0.35	1	1	0.6300	0.5000		0.15
2-1/4" Conduit	C	No	No	Ar (CaAa)	250.00 - 8.00	0.0000	0.35	1	1	2.2500	2.2500		0.32
Feedline Ladder Af	D	No	No	Ar (CaAa)	250.00 - 8.00	0.0000	0.02	1	1	2.5000	2.5000		7.00
LDF7-50A (1-5/8 FOAM)	D	No	No	Ar (CaAa)	250.00 - 8.00	0.0000	0.02	18	6	1.9800	1.9800		0.82
1.34" Fiber Cable	D	No	No	Ar (CaAa)	250.00 - 8.00	5.0000	0.02	6	3	1.3400	1.3400		0.82
5/8" DC cable	D	No	No	Ar (CaAa)	250.00 - 8.00	5.0000	0.02	12	6	0.6250	0.6250		0.30
1-5/8" Fiber Cable	D	No	No	Ar (CaAa)	250.00 - 8.00	0.0000	0.02	3	3	1.9800	1.6250		0.82
1" Fiber Cable	D	No	No	Ar (CaAa)	225.00 - 8.00	0.0000	0.05	2	1	0.8800	0.8800		0.60
1" Fiber Cable	D	No	No	Ar (CaAa)	225.00 - 8.00	0.0000	-0.05	2	1	0.8800	0.8800		0.60
Feedline Ladder Af	C	No	No	Ar (CaAa)	212.00 - 8.00	2.0000	-0.042	1	1	2.5000	2.5000		7.00
Feedline Ladder Af	B	No	No	Ar (CaAa)	209.00 - 8.00	0.0000	0.45	1	1	2.5000	2.5000		7.00
Feedline	D	No	No	Ar (CaAa)	209.00 - 8.00	0.0000	0.43	1	1	2.5000	2.5000		7.00

<b>tnxTower</b>  <b>GPD</b> 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job</b> Cheshire SW	<b>Page</b> 2 of 9
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	<b>Client</b> Verizon Wireless	<b>Designed by</b> mschooley

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Ladder Af LDF7-50A (1-5/8 FOAM)	D	No	No	Ar (CaAa)	8.00 198.00 - 8.00	0.0000	0.45	9	9	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	D	No	No	Ar (CaAa)	210.00 - 198.00	0.0000	0.45	6	6	1.9800	1.9800		0.82
7/8" Hybrid Cable	B	No	No	Ar (CaAa)	210.00 - 8.00	0.0000	0.45	2	2	0.8750	0.8750		0.28
LDF4RN-50A (1/2 FOAM)	C	No	No	Ar (CaAa)	210.00 - 8.00	0.0000	-0.35	1	1	0.6300	0.6300		0.15
LDF5-50A (7/8 FOAM)	D	No	No	Ar (CaAa)	190.00 - 171.00	8.0000	0	2	2	1.0900	1.0900		0.33
LDF5-50A (7/8 FOAM)	D	No	No	Ar (CaAa)	171.00 - 8.00	8.0000	0	3	3	1.0900	1.0900		0.33
LDF4.5-50 (5/8 FOAM)	D	No	No	Ar (CaAa)	85.00 - 8.00	6.0000	0	7	4	0.8700	0.8700		0.15
1" Rigid Conduit	C	No	No	Ar (CaAa)	21.00 - 8.00	0.0000	-0.3	2	2	1.0000	1.0000		0.50
1" Rigid Conduit	C	No	No	Ar (CaAa)	37.00 - 21.00	0.0000	-0.3	1	1	1.0000	1.0000		0.50
LDF4-50A (1/2 FOAM)	D	No	No	Ar (CaAa)	36.50 - 8.00	0.0000	0.055	1	1	0.6300	0.6300		0.15
LDF5-50A (7/8 FOAM)	D	No	No	Ar (CaAa)	249.00 - 8.00	0.0000	-0.02	2	2	1.0900	1.0900		0.33
E105	D	No	No	Ar (CaAa)	240.00 - 8.00	0.0000	-0.02	1	1	1.3000	1.3000		0.40

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight lb
4' Lightning Rod	C	None		0.0000	265.00	No Ice	0.10	10.00
						1/2" Ice	0.51	11.87
						1" Ice	0.89	16.37
Flash Beacon	C	None		0.0000	263.00	No Ice	3.00	100.00
						1/2" Ice	4.50	150.00
						1" Ice	6.00	200.00
13' I-Beam Mast Mount	C	None		0.0000	256.50	No Ice	13.00	195.00
						1/2" Ice	14.14	262.31
						1" Ice	15.08	340.70
Tower Top Platform	C	None		0.0000	252.00	No Ice	85.00	4425.00
						1/2" Ice	97.00	5752.50
						1" Ice	110.00	7080.00
2' Standoff - Round (GPD)	B	From Face	4.00	0.0000	252.00	No Ice	1.14	37.40
			-21.00			1/2" Ice	1.79	55.34
			3.00			1" Ice	2.44	73.28
2' Standoff - Round (GPD)	C	From Face	4.00	0.0000	252.00	No Ice	1.14	37.40
			-21.00			1/2" Ice	1.79	55.34
			3.00			1" Ice	2.44	73.28
2' Standoff - Round (GPD)	A	From Face	4.00	0.0000	252.00	No Ice	1.14	37.40
			-21.00			1/2" Ice	1.79	55.34
			3.00			1" Ice	2.44	73.28
AM-X-CD-16-65-00T-RET	B	From Face	4.00	0.0000	252.00	No Ice	8.02	83.24



<b>inxTower</b>  <b>GPD</b> 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job</b>	Cheshire SW	<b>Page</b>	3 of 9
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	<b>Client</b>	Verizon Wireless	<b>Designed by</b>	mschooley

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>1</sub> Front	C <sub>A</sub> A <sub>1</sub> Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb
w/ 6' Mount Pipe			-22.00			1/2" Ice	8.48	7.18	148.46
			3.00			1" Ice	8.94	8.00	222.18
AM-X-CD-16-65-00T-RET	C	From Face	4.00		49.0000	No Ice	8.02	6.37	83.24
w/ 6' Mount Pipe			-22.00			1/2" Ice	8.48	7.18	148.46
			3.00			1" Ice	8.94	8.00	222.18
SBNH-1D6565C w/ Mount Pipe	A	From Face	4.00		-15.0000	No Ice	11.45	9.36	86.35
			-22.00			1/2" Ice	12.06	10.68	170.71
			3.00			1" Ice	12.69	11.71	264.63
HPA-65R-BUU-H8 w/ Mount Pipe	B	From Face	4.00		5.0000	No Ice	13.05	9.42	94.20
			-20.00			1/2" Ice	13.66	10.82	189.07
			3.00			1" Ice	14.27	12.07	293.65
HPA-65R-BUU-H8 w/ Mount Pipe	C	From Face	4.00		45.0000	No Ice	13.05	9.42	94.20
			-20.00			1/2" Ice	13.66	10.82	189.07
			3.00			1" Ice	14.27	12.07	293.65
HPA-65R-BUU-H8 w/ Mount Pipe	A	From Face	4.00		-20.0000	No Ice	13.05	9.42	94.20
			-20.00			1/2" Ice	13.66	10.82	189.07
			3.00			1" Ice	14.27	12.07	293.65
80010966 w/ Mount Pipe	B	From Face	4.00		0.0000	No Ice	17.60	9.64	147.45
			-20.00			1/2" Ice	18.33	11.15	263.33
			3.00			1" Ice	19.07	12.70	389.66
80010965 w/ Mount Pipe	C	From Face	4.00		49.0000	No Ice	14.05	7.63	125.19
			-20.00			1/2" Ice	14.69	8.90	221.67
			3.00			1" Ice	15.30	9.96	327.18
80010965 w/ Mount Pipe	A	From Face	4.00		-15.0000	No Ice	14.05	7.63	125.19
			-20.00			1/2" Ice	14.69	8.90	221.67
			3.00			1" Ice	15.30	9.96	327.18
DTMABP7819VG12A	B	From Face	4.00		0.0000	No Ice	0.98	0.34	19.18
			-20.00			1/2" Ice	1.10	0.42	26.48
			3.00			1" Ice	1.23	0.51	35.63
DTMABP7819VG12A	C	From Face	4.00		49.0000	No Ice	0.98	0.34	19.18
			-20.00			1/2" Ice	1.10	0.42	26.48
			3.00			1" Ice	1.23	0.51	35.63
DTMABP7819VG12A	A	From Face	4.00		-15.0000	No Ice	0.98	0.34	19.18
			-20.00			1/2" Ice	1.10	0.42	26.48
			3.00			1" Ice	1.23	0.51	35.63
RRUS 11	B	From Face	4.00		0.0000	No Ice	2.78	1.19	50.70
			-20.00			1/2" Ice	2.99	1.33	71.50
			3.00			1" Ice	3.21	1.49	95.33
RRUS 11	C	From Face	4.00		49.0000	No Ice	2.78	1.19	50.70
			-20.00			1/2" Ice	2.99	1.33	71.50
			3.00			1" Ice	3.21	1.49	95.33
RRUS 11	A	From Face	4.00		-15.0000	No Ice	2.78	1.19	50.70
			-20.00			1/2" Ice	2.99	1.33	71.50
			3.00			1" Ice	3.21	1.49	95.33
RRUS 32 B2	B	From Face	4.00		0.0000	No Ice	2.73	1.67	52.90
			-20.00			1/2" Ice	2.95	1.86	73.96
			3.00			1" Ice	3.18	2.05	98.21
RRUS 32 B2	C	From Face	4.00		49.0000	No Ice	2.73	1.67	52.90
			-20.00			1/2" Ice	2.95	1.86	73.96
			3.00			1" Ice	3.18	2.05	98.21
RRUS 32 B2	A	From Face	4.00		-15.0000	No Ice	2.73	1.67	52.90
			-20.00			1/2" Ice	2.95	1.86	73.96
			3.00			1" Ice	3.18	2.05	98.21
RRUS 32	B	From Face	4.00		0.0000	No Ice	3.31	2.42	77.00
			-20.00			1/2" Ice	3.56	2.64	104.93
			3.00			1" Ice	3.81	2.86	136.47
RRUS 32	C	From Face	4.00		49.0000	No Ice	3.31	2.42	77.00

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	<b>Client</b>	Verizon Wireless	<b>Designed by</b>	mschooley

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>A</sub> A <sub>1</sub> Front ft <sup>2</sup>	C <sub>A</sub> A <sub>2</sub> Side ft <sup>2</sup>	Weight lb
			-20.00			1/2" Ice 3.56	2.64	104.93
			3.00			1" Ice 3.81	2.86	136.47
RRUS 32	A	From Face	4.00	-15.0000	252.00	No Ice 3.31	2.42	77.00
			-20.00			1/2" Ice 3.56	2.64	104.93
			3.00			1" Ice 3.81	2.86	136.47
RRUS 4478 B14	B	From Face	4.00	0.0000	252.00	No Ice 1.84	1.06	59.90
			-20.00			1/2" Ice 2.01	1.20	75.78
			3.00			1" Ice 2.19	1.34	94.29
RRUS 4478 B14	C	From Face	4.00	49.0000	252.00	No Ice 1.84	1.06	59.90
			-20.00			1/2" Ice 2.01	1.20	75.78
			3.00			1" Ice 2.19	1.34	94.29
RRUS 4478 B14	A	From Face	4.00	-15.0000	252.00	No Ice 1.84	1.06	59.90
			-20.00			1/2" Ice 2.01	1.20	75.78
			3.00			1" Ice 2.19	1.34	94.29
(2) DC6-48-60-18-8F Surge Suppression Unit	A	From Face	4.00	-15.0000	252.00	No Ice 0.92	0.92	18.90
			-20.00			1/2" Ice 1.46	1.46	36.62
			3.00			1" Ice 1.64	1.64	56.82
(2) DC6-48-60-18-8F Surge Suppression Unit	B	From Face	4.00	49.0000	252.00	No Ice 0.92	0.92	18.90
			-20.00			1/2" Ice 1.46	1.46	36.62
			3.00			1" Ice 1.64	1.64	56.82
(2) DC6-48-60-18-8F Surge Suppression Unit	C	From Face	4.00	0.0000	252.00	No Ice 0.92	0.92	18.90
			-20.00			1/2" Ice 1.46	1.46	36.62
			3.00			1" Ice 1.64	1.64	56.82
****								
GPS	A	From Face	4.00	0.0000	252.00	No Ice 0.11	0.11	0.87
			0.00			1/2" Ice 0.21	0.21	3.85
			2.00			1" Ice 0.28	0.28	7.85
Pipe Mount 5.25'x2.875"	B	From Face	4.50	0.0000	252.00	No Ice 0.00	1.42	34.00
			10.00			1/2" Ice 0.00	1.74	45.21
			2.00			1" Ice 0.00	2.07	60.06
Pipe Mount 5.25'x2.875"	C	From Face	4.50	0.0000	252.00	No Ice 0.00	1.42	34.00
			15.00			1/2" Ice 0.00	1.74	45.21
			2.00			1" Ice 0.00	2.07	60.06
Pipe Mount 5.25'x2.875"	D	From Face	4.50	0.0000	252.00	No Ice 0.00	1.42	34.00
			10.00			1/2" Ice 0.00	1.74	45.21
			2.00			1" Ice 0.00	2.07	60.06
4' Standoff	D	From Face	6.00	0.0000	252.00	No Ice 6.82	6.82	160.00
			-20.00			1/2" Ice 8.94	8.94	208.00
			2.00			1" Ice 11.06	11.06	256.00
P2.5 Stiff Arm	D	From Face	5.00	0.0000	252.00	No Ice 0.86	0.07	17.70
			-20.00			1/2" Ice 1.08	0.10	26.06
			2.00			1" Ice 1.31	0.15	37.32
BSAMNT-SBS-2-3	B	From Face	5.00	5.0000	252.00	No Ice 0.11	0.00	110.10
			10.00			1/2" Ice 0.15	0.03	110.71
			2.00			1" Ice 0.21	0.08	111.95
BSAMNT-SBS-2-3	C	From Face	5.00	5.0000	252.00	No Ice 0.11	0.00	110.10
			15.00			1/2" Ice 0.15	0.03	110.71
			2.00			1" Ice 0.21	0.08	111.95
BSAMNT-SBS-2-3	D	From Face	5.00	5.0000	252.00	No Ice 0.11	0.00	110.10
			10.00			1/2" Ice 0.15	0.03	110.71
			2.00			1" Ice 0.21	0.08	111.95
JAHH-65C-R3B w/ 8' P2.5 STD Mount Pipe & (3) SCP10W Clamp Set	B	From Face	5.00	5.0000	252.00	No Ice 12.86	10.81	166.93
			10.00			1/2" Ice 13.46	12.24	267.77
			2.00			1" Ice 14.06	13.33	379.56
JAHH-65C-R3B	B	From Face	5.00	5.0000	252.00	No Ice 12.81	8.48	80.20
			10.00			1/2" Ice 13.41	9.07	155.94
			2.00			1" Ice 14.01	9.67	239.51

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight
			Horz	Vert					
			Lateral	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb
JAHH-65C-R3B w/ 8' P2.5 STD Mount Pipe & (3) SCP10W Clamp Set	C	From Face	5.00	5.0000	252.00	No Ice	12.86	10.81	166.93
			15.00			1/2" Ice	13.46	12.24	267.77
			2.00			1" Ice	14.06	13.33	379.56
JAHH-65C-R3B	C	From Face	5.00	5.0000	252.00	No Ice	12.81	8.48	80.20
			15.00			1/2" Ice	13.41	9.07	155.94
			2.00			1" Ice	14.01	9.67	239.51
JAHH-65C-R3B w/ 8' P2.5 STD Mount Pipe & (3) SCP10W Clamp Set	D	From Face	5.00	5.0000	252.00	No Ice	12.86	10.81	166.93
			10.00			1/2" Ice	13.46	12.24	267.77
			2.00			1" Ice	14.06	13.33	379.56
JAHH-65C-R3B	D	From Face	5.00	5.0000	252.00	No Ice	12.81	8.48	80.20
			10.00			1/2" Ice	13.41	9.07	155.94
			2.00			1" Ice	14.01	9.67	239.51
LPA-80063/6CF w/ Mount Pipe	B	From Face	4.50	15.0000	252.00	No Ice	9.83	10.22	52.22
			5.00			1/2" Ice	10.40	11.38	144.64
			2.00			1" Ice	10.93	12.27	245.54
LPA-80063/6CF w/ Mount Pipe	B	From Face	4.50	15.0000	252.00	No Ice	9.83	10.22	52.22
			18.00			1/2" Ice	10.40	11.38	144.64
			2.00			1" Ice	10.93	12.27	245.54
LPA-80080/6CF w/ Mount Pipe	A	From Face	4.50	-25.0000	252.00	No Ice	4.35	10.04	42.90
			0.00			1/2" Ice	4.79	11.00	107.03
			2.00			1" Ice	5.25	11.83	178.83
LPA-80080/6CF w/ Mount Pipe	A	From Face	4.50	-25.0000	252.00	No Ice	4.35	10.04	42.90
			12.00			1/2" Ice	4.79	11.00	107.03
			2.00			1" Ice	5.25	11.83	178.83
BXA-70063-6CF	D	From Face	8.00	-55.0000	252.00	No Ice	7.57	4.16	17.00
			-20.00			1/2" Ice	8.02	4.60	59.49
			2.00			1" Ice	8.47	5.04	107.83
B5/B13 RRH	B	From Face	4.00	0.0000	252.00	No Ice	1.85	1.01	82.00
			9.00			1/2" Ice	2.02	1.14	98.32
			2.00			1" Ice	2.20	1.28	117.29
B5/B13 RRH	D	From Face	4.00	0.0000	252.00	No Ice	1.85	1.01	82.00
			10.00			1/2" Ice	2.02	1.14	98.32
			2.00			1" Ice	2.20	1.28	117.29
B5/B13 RRH	D	From Face	4.00	0.0000	252.00	No Ice	1.85	1.01	82.00
			-19.00			1/2" Ice	2.02	1.14	98.32
			2.00			1" Ice	2.20	1.28	117.29
B2/B66A RRH	B	From Face	4.00	0.0000	252.00	No Ice	1.85	1.25	97.50
			9.00			1/2" Ice	2.02	1.39	115.71
			2.00			1" Ice	2.20	1.54	136.71
B2/B66A RRH	D	From Face	4.00	0.0000	252.00	No Ice	1.85	1.25	97.50
			10.00			1/2" Ice	2.02	1.39	115.71
			2.00			1" Ice	2.20	1.54	136.71
B2/B66A RRH	D	From Face	4.00	0.0000	252.00	No Ice	1.85	1.25	97.50
			-19.00			1/2" Ice	2.02	1.39	115.71
			2.00			1" Ice	2.20	1.54	136.71
CBC78T-DS-43-2X	B	From Face	4.00	0.0000	252.00	No Ice	0.37	0.51	20.70
			9.00			1/2" Ice	0.45	0.60	27.04
			2.00			1" Ice	0.53	0.70	35.07
CBC78T-DS-43-2X	D	From Face	4.00	0.0000	252.00	No Ice	0.37	0.51	20.70
			10.00			1/2" Ice	0.45	0.60	27.04
			2.00			1" Ice	0.53	0.70	35.07
CBC78T-DS-43-2X	D	From Face	4.00	0.0000	252.00	No Ice	0.37	0.51	20.70
			-19.00			1/2" Ice	0.45	0.60	27.04
			2.00			1" Ice	0.53	0.70	35.07
RxxDC-3315-PF-48	A	From Face	0.00	0.0000	252.00	No Ice	2.51	1.64	32.00
			5.00			1/2" Ice	2.71	1.81	54.87
			2.00			1" Ice	2.92	1.98	80.86

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>1</sub> Front	C <sub>A</sub> A <sub>2</sub> Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb	
RxxDC-3315-PF-48	B	From Face	0.00	0.00	0.0000	252.00	No Ice	2.51	1.64	32.00
			5.00				1/2" Ice	2.71	1.81	54.87
			2.00				1" Ice	2.92	1.98	80.86
RxxDC-3315-PF-48	D	From Face	0.00	0.00	0.0000	252.00	No Ice	2.51	1.64	32.00
			5.00				1/2" Ice	2.71	1.81	54.87
			2.00				1" Ice	2.92	1.98	80.86
OA20-67-DIN	A	From Leg	6.00	0.00	0.0000	249.00	No Ice	1.31	1.31	9.00
			0.00				1/2" Ice	2.03	2.03	19.35
			3.50				1" Ice	2.60	2.60	34.28
6' Standoff	A	From Leg	3.00	0.00	0.0000	249.00	No Ice	2.72	12.93	145.70
			0.00				1/2" Ice	4.11	17.82	223.26
			0.00				1" Ice	5.50	22.71	300.83
OA20-41-DIN	C	From Leg	6.00	0.00	0.0000	249.00	No Ice	3.46	3.46	28.00
			0.00				1/2" Ice	5.21	5.21	56.62
			6.00				1" Ice	6.42	6.42	92.76
6' Standoff	C	From Leg	3.00	0.00	0.0000	249.00	No Ice	2.72	12.93	145.70
			0.00				1/2" Ice	4.11	17.82	223.26
			0.00				1" Ice	5.50	22.71	300.83
Pipe Mount 4'x4.5"	A	From Leg	0.50	0.00	0.0000	240.00	No Ice	1.06	1.06	43.20
			0.00				1/2" Ice	1.58	1.58	56.19
			0.00				1" Ice	1.84	1.84	72.23
Platform	C	None		0.00	0.0000	239.50	No Ice	75.38	75.38	10500.00
							1/2" Ice	94.22	94.22	13000.00
							1" Ice	113.06	113.06	15500.00
10' x 2.5" Pipe	B	From Face	1.00	0.00	0.0000	225.60	No Ice	2.50	2.50	50.00
			-10.00				1/2" Ice	3.53	3.53	68.64
			0.00				1" Ice	4.58	4.58	93.79
10' x 2.5" Pipe	D	From Face	1.00	0.00	0.0000	225.60	No Ice	2.50	2.50	50.00
			-15.00				1/2" Ice	3.53	3.53	68.64
			0.00				1" Ice	4.58	4.58	93.79
APXVTM14-ALU-I20 w/ 10' x 2" Mount Pipe	B	From Face	1.00	0.00	0.0000	225.60	No Ice	7.60	5.98	92.72
			15.00				1/2" Ice	8.52	7.37	158.56
			0.60				1" Ice	9.46	8.78	231.95
APXVTM14-ALU-I20 w/ 10' x 2" Mount Pipe	C	From Face	1.00	0.00	0.0000	225.60	No Ice	7.60	5.98	92.72
			-15.00				1/2" Ice	8.52	7.37	158.56
			0.60				1" Ice	9.46	8.78	231.95
APXVTM14-ALU-I20 w/ 10' x 2" Mount Pipe	D	From Face	1.00	0.00	0.0000	225.60	No Ice	7.60	5.98	92.72
			10.00				1/2" Ice	8.52	7.37	158.56
			0.60				1" Ice	9.46	8.78	231.95
NNVV-65B-R4 w/ Mount Pipe	B	From Face	1.00	0.00	0.0000	225.60	No Ice	12.27	7.17	99.30
			15.00				1/2" Ice	12.77	8.13	187.33
			0.60				1" Ice	13.27	8.97	283.67
NNVV-65B-R4 w/ Mount Pipe	C	From Face	1.00	0.00	0.0000	225.60	No Ice	12.27	7.17	99.30
			-15.00				1/2" Ice	12.77	8.13	187.33
			0.60				1" Ice	13.27	8.97	283.67
NNVV-65B-R4 w/ Mount Pipe	D	From Face	1.00	0.00	0.0000	225.60	No Ice	12.27	7.17	99.30
			10.00				1/2" Ice	12.77	8.13	187.33
			0.60				1" Ice	13.27	8.97	283.67
TD-RRH8x20-25	B	From Face	1.00	0.00	0.0000	225.60	No Ice	3.70	1.29	66.00
			15.00				1/2" Ice	3.95	1.46	89.94
			0.60				1" Ice	4.20	1.64	117.22
TD-RRH8x20-25	C	From Face	1.00	0.00	0.0000	225.60	No Ice	3.70	1.29	66.00
			-15.00				1/2" Ice	3.95	1.46	89.94
			0.60				1" Ice	4.20	1.64	117.22
TD-RRH8x20-25	D	From Face	1.00	0.00	0.0000	225.60	No Ice	3.70	1.29	66.00
			10.00				1/2" Ice	3.95	1.46	89.94
			0.60				1" Ice	4.20	1.64	117.22

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>1</sub> Front	C <sub>A</sub> A <sub>2</sub> Side	Weight
			Horz Lateral	Vert					
(2) 800 MHz 2x50W	B	From Face	1.00	0.0000	225.60	No Ice	2.09	1.73	53.00
			15.00			1/2" Ice	2.27	1.90	73.74
			0.60			1" Ice	2.46	2.08	97.45
(2) 800 MHz 2x50W	C	From Face	1.00	0.0000	225.60	No Ice	2.09	1.73	53.00
			-15.00			1/2" Ice	2.27	1.90	73.74
			0.60			1" Ice	2.46	2.08	97.45
(2) 800 MHz 2x50W	D	From Face	1.00	0.0000	225.60	No Ice	2.09	1.73	53.00
			10.00			1/2" Ice	2.27	1.90	73.74
			0.60			1" Ice	2.46	2.08	97.45
1900 4x45 65 MHz RRU	B	From Face	1.00	0.0000	225.60	No Ice	2.08	1.99	53.00
			15.00			1/2" Ice	2.27	2.18	74.10
			0.60			1" Ice	2.47	2.37	98.26
1900 4x45 65 MHz RRU	C	From Face	1.00	0.0000	225.60	No Ice	2.08	1.99	53.00
			-15.00			1/2" Ice	2.27	2.18	74.10
			0.60			1" Ice	2.47	2.37	98.26
1900 4x45 65 MHz RRU	D	From Face	1.00	0.0000	225.60	No Ice	2.08	1.99	53.00
			10.00			1/2" Ice	2.27	2.18	74.10
			0.60			1" Ice	2.47	2.37	98.26
14' Sector Frame	A	From Leg	0.50	60.0000	210.00	No Ice	18.21	0.00	492.00
			0.00			1/2" Ice	23.76	0.00	690.25
			0.00			1" Ice	29.31	0.00	888.50
14' Sector Frame	D	From Leg	0.50	15.0000	210.00	No Ice	18.21	0.00	492.00
			0.00			1/2" Ice	23.76	0.00	690.25
			0.00			1" Ice	29.31	0.00	888.50
(3) DB844H90E-XY w/Mount Pipe	A	From Leg	1.00	60.0000	210.00	No Ice	2.24	3.34	43.38
			0.00			1/2" Ice	2.61	3.73	78.61
			2.00			1" Ice	2.99	4.13	121.53
(3) DB844H90E-XY w/Mount Pipe	D	From Leg	1.00	15.0000	210.00	No Ice	2.24	3.34	43.38
			0.00			1/2" Ice	2.61	3.73	78.61
			2.00			1" Ice	2.99	4.13	121.53
14' Sector Frame	B	From Leg	0.50	0.0000	210.00	No Ice	18.21	0.00	492.00
			0.00			1/2" Ice	23.76	0.00	690.25
			0.00			1" Ice	29.31	0.00	888.50
14' Sector Frame	C	From Leg	0.50	-10.0000	210.00	No Ice	18.21	0.00	492.00
			0.00			1/2" Ice	23.76	0.00	690.25
			0.00			1" Ice	29.31	0.00	888.50
AIR21 B4A/B2P w/ mount pipe	B	From Leg	1.00	0.0000	210.00	No Ice	6.13	5.54	101.25
			0.00			1/2" Ice	6.52	6.20	156.43
			2.00			1" Ice	6.92	6.87	218.21
AIR21 B4A/B2P w/ mount pipe	C	From Leg	1.00	-10.0000	210.00	No Ice	6.13	5.54	101.25
			0.00			1/2" Ice	6.52	6.20	156.43
			2.00			1" Ice	6.92	6.87	218.21
KRC 118 048/1 B4A/B12P-B8P w/ Mount Pipe	B	From Leg	1.00	0.0000	210.00	No Ice	11.54	10.68	154.59
			0.00			1/2" Ice	12.16	12.09	246.84
			2.00			1" Ice	12.79	13.33	348.90
KRC 118 048/1 B4A/B12P-B8P w/ Mount Pipe	C	From Leg	1.00	-10.0000	210.00	No Ice	11.54	10.68	154.59
			0.00			1/2" Ice	12.16	12.09	246.84
			2.00			1" Ice	12.79	13.33	348.90
RRUS 11 B12	B	From Leg	1.00	0.0000	210.00	No Ice	2.83	1.18	50.70
			0.00			1/2" Ice	3.04	1.33	71.57
			2.00			1" Ice	3.26	1.48	95.49
RRUS 11 B12	C	From Leg	1.00	-10.0000	210.00	No Ice	2.83	1.18	50.70
			0.00			1/2" Ice	3.04	1.33	71.57
			2.00			1" Ice	3.26	1.48	95.49
RRUS 11 B2	B	From Leg	1.00	0.0000	210.00	No Ice	2.83	1.18	50.70
			0.00			1/2" Ice	3.04	1.33	71.57
			2.00			1" Ice	3.26	1.48	95.49

<b>tnxTower</b>  <b>GPD</b> 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job</b>	Cheshire SW	<b>Page</b>	8 of 9
	<b>Project</b>	2019736.27	<b>Date</b>	09:17:50 02/25/20
	<b>Client</b>	Verizon Wireless	<b>Designed by</b>	mschooley

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>Front</sub>	C <sub>A</sub> A <sub>Side</sub>	Weight
			Horz	Vert					
			Lateral	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb
RRUS 11 B2	C	From Leg	1.00	-10.0000	210.00	No Ice	2.83	1.18	50.70
			0.00			1/2" Ice	3.04	1.33	71.57
			2.00			1" Ice	3.26	1.48	95.49
26"x 26" Flat Panel	C	From Leg	1.00	0.0000	210.00	No Ice	5.60	0.52	15.00
			0.00			1/2" Ice	5.92	0.67	38.43
			-3.00			1" Ice	6.24	0.83	65.30
14' Sector Frame	C	From Leg	0.50	-15.0000	198.00	No Ice	18.21	0.00	492.00
			0.00			1/2" Ice	23.76	0.00	690.25
			0.00			1" Ice	29.31	0.00	888.50
(3) DB844H90E-XY w/Mount Pipe	C	From Leg	1.00	-15.0000	198.00	No Ice	2.24	3.34	43.38
			0.00			1/2" Ice	2.61	3.73	78.61
			2.00			1" Ice	2.99	4.13	121.53
5' Standoff	A	From Leg	1.75	-45.0000	190.00	No Ice	2.72	12.93	145.70
			-1.75			1/2" Ice	4.11	17.82	223.26
			0.00			1" Ice	5.50	22.71	300.83
PG1-NOF-0091	A	From Leg	3.50	-45.0000	190.00	No Ice	1.40	1.40	7.50
			-3.50			1/2" Ice	2.23	2.23	18.71
			6.00			1" Ice	3.07	3.07	35.15
5' Standoff	B	From Leg	1.75	45.0000	190.00	No Ice	2.72	12.93	145.70
			1.75			1/2" Ice	4.11	17.82	223.26
			0.00			1" Ice	5.50	22.71	300.83
PG1-NOF-0091	B	From Leg	3.50	45.0000	190.00	No Ice	1.40	1.40	7.50
			3.50			1/2" Ice	2.23	2.23	18.71
			6.00			1" Ice	3.07	3.07	35.15
5' Standoff	B	From Leg	1.75	45.0000	171.00	No Ice	2.72	12.93	145.70
			1.75			1/2" Ice	4.11	17.82	223.26
			0.00			1" Ice	5.50	22.71	300.83
PG1-DOF-0093	B	From Leg	3.50	45.0000	171.00	No Ice	1.40	1.40	7.50
			3.50			1/2" Ice	2.23	2.23	18.71
			0.00			1" Ice	3.07	3.07	35.15
Catwalk	B	From Face	0.00	0.0000	139.50	No Ice	75.38	4.08	1250.00
			0.00			1/2" Ice	94.22	5.09	1600.00
			0.00			1" Ice	113.06	6.11	1950.00
WL14-69/S	B	From Leg	1.00	-28.0000	85.00	No Ice	2.88	2.88	5.00
			0.00			1/2" Ice	3.74	3.74	6.50
			-4.00			1" Ice	4.61	4.61	8.45
WL14-69/S	B	From Leg	1.00	-28.0000	85.00	No Ice	2.88	2.88	5.00
			0.00			1/2" Ice	3.74	3.74	6.50
			0.00			1" Ice	4.61	4.61	8.45
WL14-69/S	C	From Leg	1.00	-39.0000	85.00	No Ice	2.88	2.88	5.00
			0.00			1/2" Ice	3.74	3.74	6.50
			-2.00			1" Ice	4.61	4.61	8.45
WL14-69/S	D	From Leg	1.00	-32.0000	85.00	No Ice	2.88	2.88	5.00
			0.00			1/2" Ice	3.74	3.74	6.50
			-1.00			1" Ice	4.61	4.61	8.45
WL7-13	D	From Leg	1.00	-32.0000	85.00	No Ice	2.88	2.88	25.00
			0.00			1/2" Ice	3.73	3.73	32.50
			3.00			1" Ice	4.59	4.59	40.00
2.5' Box Mount	B	From Leg	1.50	0.0000	37.00	No Ice	1.36	1.36	20.00
			0.00			1/2" Ice	2.45	2.45	40.00
			0.00			1" Ice	3.50	3.50	64.00
Camera	B	From Leg	1.50	0.0000	37.00	No Ice	0.11	0.05	2.00
			0.00			1/2" Ice	0.16	0.08	3.30
			0.00			1" Ice	0.21	0.12	5.42
3' Side Arm	D	From Face	1.50	0.0000	36.50	No Ice	0.93	0.93	44.94
			0.00			1/2" Ice	1.13	1.13	54.87
			0.00			1" Ice	1.37	1.37	67.25

<b>tnxTower</b>  <b>GPD</b> 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job</b>	Cheshire SW	<b>Page</b>	9 of 9
	<b>Project</b>	2019736.27	<b>Date</b>	09:17:50 02/25/20
	<b>Client</b>	Verizon Wireless	<b>Designed by</b>	mschooley

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	Vert ft					
GPS	D	From Facc	3.00	0.0000	36.50	No Ice	0.12	0.12	0.87
			0.00			1/2" Ice	0.21	0.21	3.85
			0.00			1" Ice	0.28	0.28	7.85

### Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				Horz Lateral ft	Vert ft						
SC3-W100	A	Paraboloid w/Shroud (HP)	From Leg	1.00	74.0000	240.00	3.00	No Ice	7.07	400.00	
				0.00					1/2" Ice	7.47	440.00
				0.00					1" Ice	7.86	480.00





Company : GPD  
 Designer :  
 Job Number : 2019736.27  
 Model Name : CHESHIRE SW

Feb 25, 2020  
 11:23 AM  
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### Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1/...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36	29000	11200	.295	.65	.49	36	1.5	58	1.2

### Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	TWR_LEG_T1	L6x6x1/2	Column	Single Angle	A36	Typical	5.75	19.908	19.908	.479
2	TWR_LEG_OUTER_T1	2L2 1/2x2 1/2x...	Column	Single Angle	A36	Typical	2.38	3.347	1.41	.049
3	TWR_TOP_GIRT_T1	2L3x4x5/16x3/8	Beam	Wide Flange	A36	Typical	4.18	15.508	3.29	.136
4	TWR_DIAG_T1	2L3x4x5/16x3/8	Column	None	A36	Typical	4.18	15.508	3.29	.136
5	TWR_DIAG_OUTER_T1	2L3 1/2x4x5/16...	Column	None	A36	Typical	4.49	15.551	5.1	.146
6	TWR_RED_HORZ_T1	L2 1/2x2 1/2x3/...	Beam	None	A36	Typical	.902	.547	.547	.011
7	TWR_RED_HORZ_2_T1	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
8	TWR_HORZ_OUTER_T1	W12X26	Beam	None	A36	Typical	7.65	17.3	204	.3
9	TWR_RED_HORZ_3_T1	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
10	TWR_RED_HORZ_4_T1	L2 1/2x2 1/2x3/...	Beam	None	A36	Typical	.902	.547	.547	.011
11	TWR_RED_DIAG_T1	L2 1/2x2 1/2x3/...	Column	Single Angle	A36	Typical	.902	.547	.547	.011
12	TWR_LEG_T2	W6X20	Column	Wide Flange	A36	Typical	5.87	13.3	41.4	.24
13	TWR_DIAG_T2	2L3x2 1/2x3/8x...	Column	None	A36	Typical	3.84	5.153	3.31	.18
14	TWR_RED_HORZ_T2	L3x3x3/16	Beam	None	A36	Typical	1.09	.948	.948	.014
15	TWR_RED_HORZ_2_T2	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
16	TWR_RED_DIAG_T2	L3x3x3/16	Column	None	A36	Typical	1.09	.948	.948	.014
17	TWR_RED_HORZ_3_T2	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
18	TWR_RED_DIAG_2_T2	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
19	TWR_RED_DIAG_3_T2	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
20	TWR_RED_HIP_T2	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
21	TWR_RED_HIP_2_T2	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
22	TWR_RED_HIPDIA_T2	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
23	TWR_RED_HIPDIA_2_T2	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
24	TWR_INNER_SUPP_T2	W10X30	Beam	Wide Flange	A36	Typical	8.84	16.7	170	.622
25	TWR_INNER_SQ_T2	W8X13	Beam	Wide Flange	A36	Typical	3.84	2.73	39.6	.087
26	TWR_INNER_CORNER...	W8X13	Beam	Wide Flange	A36	Typical	3.84	2.73	39.6	.087
27	TWR_LEG_T3	W6X20	Column	Wide Flange	A36	Typical	5.87	13.3	41.4	.24
28	TWR_HORZ_T3	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
29	TWR_DIAG_T3	2L3x2 1/2x3/8x...	Column	None	A36	Typical	3.84	5.153	3.31	.18
30	TWR_RED_HORZ_T3	L3x3x3/16	Beam	None	A36	Typical	1.09	.948	.948	.014
31	TWR_RED_HORZ_2_T3	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
32	TWR_RED_DIAG_T3	L3x3x3/16	Column	None	A36	Typical	1.09	.948	.948	.014
33	TWR_RED_HORZ_3_T3	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
34	TWR_RED_DIAG_2_T3	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
35	TWR_RED_DIAG_3_T3	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
36	TWR_RED_HIP_T3	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
37	TWR_RED_HIP_2_T3	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
38	TWR_RED_HIPDIA_T3	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
39	TWR_RED_HIPDIA_2_T3	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
40	TWR_INNER_SUPP_T3	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
41	TWR_INNER_SQ_T3	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
42	TWR_INNER_CORNER...	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
43	TWR_INNER_TRI_T3	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
44	TWR_INNER_BRACE_T3	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
45	TWR_INNER_LADDER_T3	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
46	TWR_LEG_T4	W6X25	Column	Wide Flange	A36	Typical	7.34	17.1	53.4	.461
47	TWR_HORZ_T4	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
48	TWR_DIAG_T4	2L3x2-1/2x1/2x...	Column	None	A36	Typical	5	6.999	4.167	.417
49	TWR_RED_HORZ_T4	L3x3x3/16	Beam	None	A36	Typical	1.09	.948	.948	.014
50	TWR_RED_HORZ_2_T4	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021





Company : GPD  
 Designer :  
 Job Number : 2019736.27  
 Model Name : CHESHIRE SW

Feb 25, 2020  
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**Hot Rolled Steel Section Sets (Continued)**

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
51	TWR RED DIAG T4	L3x3x3/16	Column	None	A36	Typical	1.09	.948	.948	.014
52	TWR RED HORZ 3 T4	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
53	TWR RED DIAG 2 T4	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
54	TWR RED DIAG 3 T4	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
55	TWR RED HIP T4	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
56	TWR RED HIP 2 T4	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
57	TWR RED HIPDIA T4	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
58	TWR RED HIPDIA 2 T4	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
59	TWR INNER SUPP T4	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
60	TWR INNER SQ T4	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
61	TWR INNER CORNER ...	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
62	TWR INNER TRI T4	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
63	TWR INNER BRACE T4	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
64	TWR INNER LADDER T4	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
65	TWR LEG T5	W8X31	Column	Wide Flange	A36	Typical	9.13	37.1	110	.536
66	TWR HORZ T5	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
67	TWR DIAG T5	2L3x2-1/2x1/2x...	Column	None	A36	Typical	5	6.999	4.167	.417
68	TWR RED HORZ T5	L3x3x3/16	Beam	None	A36	Typical	1.09	.948	.948	.014
69	TWR RED HORZ 2 T5	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
70	TWR RED DIAG T5	L3x3x3/16	Column	None	A36	Typical	1.09	.948	.948	.014
71	TWR RED HORZ 3 T5	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
72	TWR RED DIAG 2 T5	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
73	TWR RED DIAG 3 T5	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
74	TWR RED HIP T5	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
75	TWR RED HIP 2 T5	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
76	TWR RED HIPDIA T5	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
77	TWR RED HIPDIA 2 T5	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
78	TWR INNER SUPP T5	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
79	TWR INNER SQ T5	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
80	TWR INNER CORNER ...	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
81	TWR INNER TRI T5	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
82	TWR INNER BRACE T5	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
83	TWR INNER LADDER T5	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
84	TWR LEG T6	W8X40	Column	Wide Flange	A36	Typical	11.7	49.1	146	1.12
85	TWR HORZ T6	2L3x2 1/2x5/16...	Beam	None	A36	Typical	3.242	4.255	2.845	.106
86	TWR DIAG T6	2L4x3x3/8x3/8	Column	None	A36	Typical	4.97	8.508	7.93	.233
87	TWR RED HORZ T6	L3x3x3/16	Beam	None	A36	Typical	1.09	.948	.948	.014
88	TWR RED HORZ 2 T6	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
89	TWR RED DIAG T6	L3x3x3/16	Column	None	A36	Typical	1.09	.948	.948	.014
90	TWR RED HORZ 3 T6	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
91	TWR RED DIAG 2 T6	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
92	TWR RED DIAG 3 T6	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
93	TWR RED HIP T6	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
94	TWR RED HIP 2 T6	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
95	TWR RED HIPDIA T6	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
96	TWR RED HIPDIA 2 T6	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
97	TWR INNER SUPP T6	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
98	TWR INNER SQ T6	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
99	TWR INNER CORNER ...	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
100	TWR INNER TRI T6	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
101	TWR INNER BRACE T6	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
102	TWR INNER LADDER T6	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
103	TWR LEG T7	W10X54	Column	Wide Flange	A36	Typical	15.8	103	303	1.82
104	TWR HORZ T7	2L3x2 1/2x3/8x...	Beam	None	A36	Typical	3.84	5.153	3.31	.18
105	TWR DIAG T7	2L4x3x3/8x3/8	Column	None	A36	Typical	4.97	8.508	7.93	.233
106	TWR RED HORZ T7	L3x3x3/16	Beam	None	A36	Typical	1.09	.948	.948	.014
107	TWR RED HORZ 2 T7	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021





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**Hot Rolled Steel Section Sets (Continued)**

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
108	TWR RED DIAG T7	L3x3x3/16	Column	None	A36	Typical	1.09	.948	.948	.014
109	TWR RED HORZ 3 T7	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
110	TWR RED DIAG 2 T7	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
111	TWR RED DIAG 3 T7	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
112	TWR RED HIP T7	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
113	TWR RED HIP 2 T7	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
114	TWR RED HIPDIA T7	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
115	TWR RED HIPDIA 2 T7	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
116	TWR INNER SUPP T7	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
117	TWR INNER SQ T7	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
118	TWR INNER CORNER ...	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
119	TWR INNER TRI T7	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
120	TWR INNER BRACE T7	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
121	TWR INNER LADDER T7	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
122	TWR LEG T8	W10X60	Column	Wide Flange	A36	Typical	17.7	116	341	2.48
123	TWR HORZ T8	2L3x2 1/2x3/8x...	Beam	None	A36	Typical	3.84	5.153	3.31	.18
124	TWR DIAG T8	2L4x3x1/2x3/8	Column	None	A36	Typical	6.5	11.536	10.1	.542
125	TWR RED HORZ T8	L3x3x3/16	Beam	None	A36	Typical	1.09	.948	.948	.014
126	TWR RED HORZ 2 T8	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
127	TWR RED DIAG T8	L3x3x3/16	Column	None	A36	Typical	1.09	.948	.948	.014
128	TWR RED HORZ 3 T8	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
129	TWR RED DIAG 2 T8	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
130	TWR RED DIAG 3 T8	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
131	TWR RED HIP T8	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
132	TWR RED HIP 2 T8	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
133	TWR RED HIPDIA T8	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
134	TWR RED HIPDIA 2 T8	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
135	TWR INNER SUPP T8	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
136	TWR INNER SQ T8	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
137	TWR INNER CORNER ...	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
138	TWR INNER TRI T8	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
139	TWR INNER BRACE T8	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
140	TWR INNER LADDER T8	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
141	TWR LEG T9	W10X68	Column	Wide Flange	A36	Typical	19.9	134	394	3.56
142	TWR HORZ T9	2L3x2 1/2x3/8x...	Beam	None	A36	Typical	3.84	5.153	3.31	.18
143	TWR DIAG T9	2L4x3x1/2x3/8	Column	None	A36	Typical	6.5	11.536	10.1	.542
144	TWR RED HORZ T9	L3x3x3/16	Beam	None	A36	Typical	1.09	.948	.948	.014
145	TWR RED HORZ 2 T9	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
146	TWR RED DIAG T9	L3x3x3/16	Column	None	A36	Typical	1.09	.948	.948	.014
147	TWR RED HORZ 3 T9	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
148	TWR RED DIAG 2 T9	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
149	TWR RED DIAG 3 T9	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
150	TWR RED HIP T9	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
151	TWR RED HIP 2 T9	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
152	TWR RED HIPDIA T9	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
153	TWR REDHIPDIA 2 T9	2L2 1/2x2 1/2x...	Column	None	A36	Typical	1.8	2.499	1.09	.021
154	TWR INNER SUPP T9	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
155	TWR INNER SQ T9	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
156	TWR INNER CORNER ...	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
157	TWR INNER TRI T9	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
158	TWR INNER BRACE T9	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
159	TWR INNER LADDER T9	2L3x2 1/2x1/4x...	Beam	None	A36	Typical	2.63	3.373	2.35	.055
160	TWR LEG T10	W12X79	Column	Wide Flange	A36	Typical	23.2	216	662	3.84
161	TWR HORZ T10	2L4x3x1/2x3/8	Beam	None	A36	Typical	6.5	11.536	10.1	.542
162	TWR DIAG T10	2L4x4x1/2x3/8	Column	None	A36	Typical	7.5	25.217	11.1	.625
163	TWR RED HORZ T10	L3x3x3/16	Beam	None	A36	Typical	1.09	.948	.948	.014
164	TWR RED HORZ 2 T10	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	1.8	2.499	1.09	.021





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**Hot Rolled Steel Section Sets (Continued)**

	Label	Shape	Type	Design List	Material	Design R...	A [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
165	TWR_RED_DIAG_T10	L3x3x3/16	Column	None	A36	Typical	1.09	.948	.948	.014
166	TWR_RED_HORZ_3_T10	2L2 1/2x2 1/2x...	Beam	None	A36	Typical	2.38	3.347	1.41	.049
167	TWR_RED_DIAG_2_T10	2L2 1/2x2 1/2x...	Column	None	A36	Typical	2.38	3.347	1.41	.049
168	TWR_RED_HORZ_4_T10	2L3x3x1/4x3/8	Beam	None	A36	Typical	2.88	5.535	2.49	.06
169	TWR_RED_DIAG_3_T10	2L2 1/2x2 1/2x...	Column	None	A36	Typical	2.38	3.347	1.41	.049
170	TWR_RED_DIAG_4_T10	2L2 1/2x2 1/2x...	Column	None	A36	Typical	2.38	3.347	1.41	.049
171	TWR_RED_DIAG_0_T10	L2.5x2.5x8	Column	None	A36	Typical	2.26	1.22	1.22	.188
172	TWR_RED_HORZ_0_T10	L2.5x2.5x3	Column	None	A36	Typical	.901	.535	.535	.011
173	TWR_RED_HIP_1_T10	LL4x4x8x3	Column	None	A36	Typical	7.5	25.1	11	.644
174	TWR_RED_HIP_3_T10	LL3x3x3x3	Column	None	A36	Typical	2.18	4.09	1.9	.027
175	TWR_RED_HIPDIA_1_T10	LL3x3x3x3	Column	None	A36	Typical	2.18	4.09	1.9	.027
176	TWR_RED_HIPDIA_3_T10	LL3x3x3x3	Column	None	A36	Typical	2.18	4.09	1.9	.027
177	TWR_INNER_GIRT_T10	C4x7.2	Column	None	A36	Typical	2.13	.425	4.58	.082

**Joint Boundary Conditions**

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N441	Reaction	Reaction	Reaction		Reaction	
2	N442	Reaction	Reaction	Reaction		Reaction	
3	N443	Reaction	Reaction	Reaction		Reaction	
4	N444	Reaction	Reaction	Reaction		Reaction	

**Basic Load Cases**

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distrib..	Area(M...	Surface...
1	Dead	None		-1		40	486	40		
2	No Ice Wind 0 deg	None				40	1318	120		
3	No Ice Wind 45 deg	None				80	1318	160		
4	No Ice Wind 90 deg	None				40	1322	120		
5	No Ice Wind 135 deg	None				80	1308	160		
6	No Ice Wind 180 deg	None				40	1318	120		
7	No Ice Wind 225 deg	None				80	1318	160		
8	No Ice Wind 270 deg	None				40	1322	120		
9	No Ice Wind 315 deg	None				80	1308	160		
10	Ice	None				40	490	822		
11	Temperature Drop	None						1261		
12	Ice Wind 0 deg	None				40	1302	64		
13	Ice Wind 45 deg	None				80	1254	160		
14	Ice Wind 90 deg	None				40	1318	120		
15	Ice Wind 135 deg	None				80	1230	160		
16	Ice Wind 180 deg	None				40	1302	64		
17	Ice Wind 225 deg	None				80	1254	160		
18	Ice Wind 270 deg	None				40	1318	120		
19	Ice Wind 315 deg	None				80	1230	160		
20	Service Wind 0 deg	None				40	1274	120		
21	Service Wind 45 deg	None				80	1236	160		
22	Service Wind 90 deg	None				40	1272	120		
23	Service Wind 135 deg	None				80	1212	160		
24	Service Wind 180 deg	None				40	1274	120		
25	Service Wind 225 deg	None				80	1236	160		
26	Service Wind 270 deg	None				40	1272	120		
27	Service Wind 315 deg	None				80	1212	160		



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**Load Combinations**

	Description	S...	PDelta	SR...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	
1	Dead Only	Y...			1	1	28	1	29	1													
2	1.2 Dead+1.6 Wind 0 deg - No Ice	Y...			1	1.2	2	1.6	28	1.2	29	1											
3	0.9 Dead+1.6 Wind 0 deg - No Ice	Y...			1	.9	2	1.6	28	.9	29	1											
4	1.2 Dead+1.6 Wind 45 deg - No ...	Y...			1	1.2	3	1.6	28	1.2	29	1											
5	0.9 Dead+1.6 Wind 45 deg - No ...	Y...			1	.9	3	1.6	28	.9	29	1											
6	1.2 Dead+1.6 Wind 90 deg - No ...	Y...			1	1.2	4	1.6	28	1.2	29	1											
7	0.9 Dead+1.6 Wind 90 deg - No ...	Y...			1	.9	4	1.6	28	.9	29	1											
8	1.2 Dead+1.6 Wind 135 deg - N...	Y...			1	1.2	5	1.6	28	1.2	29	1											
9	0.9 Dead+1.6 Wind 135 deg - N...	Y...			1	.9	5	1.6	28	.9	29	1											
10	1.2 Dead+1.6 Wind 180 deg - N...	Y...			1	1.2	6	1.6	28	1.2	29	1											
11	0.9 Dead+1.6 Wind 180 deg - N...	Y...			1	.9	6	1.6	28	.9	29	1											
12	1.2 Dead+1.6 Wind 225 deg - N...	Y...			1	1.2	7	1.6	28	1.2	29	1											
13	0.9 Dead+1.6 Wind 225 deg - N...	Y...			1	.9	7	1.6	28	.9	29	1											
14	1.2 Dead+1.6 Wind 270 deg - N...	Y...			1	1.2	8	1.6	28	1.2	29	1											
15	0.9 Dead+1.6 Wind 270 deg - N...	Y...			1	.9	8	1.6	28	.9	29	1											
16	1.2 Dead+1.6 Wind 315 deg - N...	Y...			1	1.2	9	1.6	28	1.2	29	1											
17	0.9 Dead+1.6 Wind 315 deg - N...	Y...			1	.9	9	1.6	28	.9	29	1											
18	1.2 Dead+1.0 Ice+1.0 Temp	Y...			1	1.2	10	1	11	1	28	1.2	29	1									
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ic...	Y...			1	1.2	12	1	10	1	11	1	28	1.2	29	1							
20	1.2 Dead+1.0 Wind 45 deg+1.0 I...	Y...			1	1.2	13	1	10	1	11	1	28	1.2	29	1							
21	1.2 Dead+1.0 Wind 90 deg+1.0 I...	Y...			1	1.2	14	1	10	1	11	1	28	1.2	29	1							
22	1.2 Dead+1.0 Wind 135 deg+1.0...	Y...			1	1.2	15	1	10	1	11	1	28	1.2	29	1							
23	1.2 Dead+1.0 Wind 180 deg+1.0...	Y...			1	1.2	16	1	10	1	11	1	28	1.2	29	1							
24	1.2 Dead+1.0 Wind 225 deg+1.0...	Y...			1	1.2	17	1	10	1	11	1	28	1.2	29	1							
25	1.2 Dead+1.0 Wind 270 deg+1.0...	Y...			1	1.2	18	1	10	1	11	1	28	1.2	29	1							
26	1.2 Dead+1.0 Wind 315 deg+1.0...	Y...			1	1.2	19	1	10	1	11	1	28	1.2	29	1							
27	Dead+Wind 0 deg - Service	Y...			1	1	20	1	28	1	29	1											
28	Dead+Wind 45 deg - Service	Y...			1	1	21	1	28	1	29	1											
29	Dead+Wind 90 deg - Service	Y...			1	1	22	1	28	1	29	1											
30	Dead+Wind 135 deg - Service	Y...			1	1	23	1	28	1	29	1											
31	Dead+Wind 180 deg - Service	Y...			1	1	24	1	28	1	29	1											
32	Dead+Wind 225 deg - Service	Y...			1	1	25	1	28	1	29	1											
33	Dead+Wind 270 deg - Service	Y...			1	1	26	1	28	1	29	1											
34	Dead+Wind 315 deg - Service	Y...			1	1	27	1	28	1	29	1											

**Envelope Joint Reactions**

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N441	max	55.556	12	634.184	12	48.122	3	0	34	.632	16	0	34
2		min	-48.229	5	-505.172	5	-52.597	10	0	1	-.582	9	0	1
3	N442	max	48.147	17	633.558	8	47.97	3	0	34	.581	13	0	34
4		min	-55.459	8	-502.215	17	-52.487	10	0	1	-.632	4	0	1
5	N443	max	42.341	13	628.196	4	52.513	2	0	34	.352	8	0	34
6		min	-49.186	4	-507.028	13	-48.013	11	0	1	-.306	17	0	1
7	N444	max	49.066	16	625.017	16	52.528	2	0	34	.31	5	0	34
8		min	-42.172	9	-506.412	9	-48.123	11	0	1	-.357	12	0	1
9	Totals:	max	172.225	15	691.605	26	199.856	3						
10		min	-172.206	6	214.16	3	-199.942	10						





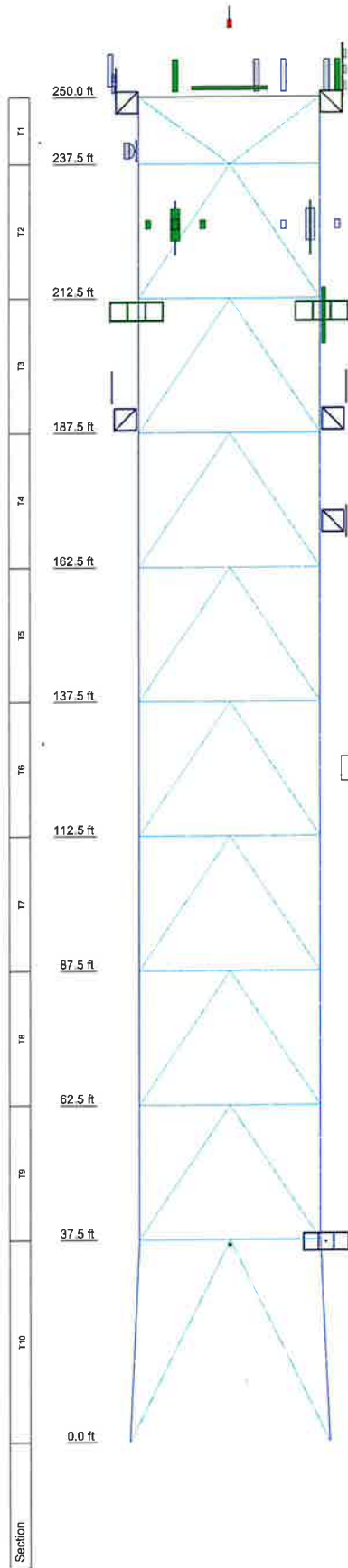
**Bolt Checks**

Section #	Elevation	Component Type	Bolt Grade	Bolt Size (in)	# of Bolts	Maximum Load (k)	Maximum Load per Bolt (k)	Allowable Load per Bolt (k)	Ratio	Allowable Ratio	% Capacity	Criteria
T1	250	Leg	A307	0.75	12	17.52	1.46	14.91	0.098	1.000	9.8%	Bolt Tension
		Leg Outer	A307	0.75	3	2.946	0.982	8.836	0.111	1.000	11.1%	Bolt Shear
		Diagonal	A307	0.75	2	7.738	3.869	17.892	0.216	1.000	21.6%	Bolt Shear
		Diagonal Outer	A307	0.75	2	2.692	1.346	17.892	0.075	1.000	7.5%	Bolt Shear
		Redundant Horizontal	A307	0.75	2	2.016	1.008	8.057	0.125	1.000	12.5%	Member Block Shear
		Horizontal Outer	A307	0.75	6	2.241	0.374	17.892	0.021	1.000	2.1%	Bolt DS
T2	237.5	Leg	A307	0.75	16	28.494	3.562	17.892	0.199	1.000	19.9%	Bolt DS
		Diagonal	A307	0.75	4	21.306	5.326	17.892	0.298	1.000	29.8%	Bolt Shear
		Horizontal	A307	0.75	4	4.457	1.114	17.892	0.062	1.000	6.2%	Bolt DS
T3	212.5	Leg	A307	0.75	16	62.61	7.826	17.892	0.437	1.000	43.7%	Bolt DS
		Horizontal	A307	0.75	3	16.397	5.466	17.892	0.305	1.000	30.5%	Bolt Shear
		Diagonal	A307	0.75	4	29.527	7.382	17.892	0.413	1.000	41.3%	Bolt Shear
		Inner Square	A307	0.75	2	4.115	2.058	16.114	0.128	1.000	12.8%	Member Block Shear
		Inner Corner	A307	0.75	2	4.744	2.372	16.114	0.147	1.000	14.7%	Member Block Shear
T4	187.5	Leg	A307	0.75	22	84.296	7.663	17.892	0.428	1.000	42.8%	Bolt DS
		Horizontal	A307	0.75	3	19.825	6.608	17.892	0.369	1.000	36.9%	Bolt Shear
		Diagonal	A307	0.75	5	38.922	7.784	17.892	0.435	1.000	43.5%	Bolt Shear
		Redundant Horizontal	A307	0.75	2	1.716	0.858	8.567	0.100	1.000	10.0%	Member Block Shear
		Inner Square	A307	0.75	2	4.275	2.138	16.114	0.133	1.000	13.3%	Member Block Shear
		Inner Corner	A307	0.75	2	4.768	2.384	16.114	0.148	1.000	14.8%	Member Block Shear
T5	162.5	Leg	A307	1	22	130.383	11.853	30.963	0.383	1.000	38.3%	Bolt DS
		Horizontal	A307	0.75	3	24.195	8.065	17.892	0.451	1.000	45.1%	Bolt Shear
		Diagonal	A307	0.75	5	47.903	9.581	17.892	0.535	1.000	53.5%	Bolt Shear
		Redundant Horizontal	A307	0.75	2	2.574	1.287	8.567	0.150	1.000	15.0%	Member Block Shear
		Redundant Diagonal	A307	0.75	2	2.248	1.124	8.567	0.131	1.000	13.1%	Member Block Shear
		Inner Square	A307	0.75	2	5.226	2.613	16.114	0.162	1.000	16.2%	Member Block Shear
		Inner Corner	A307	0.75	2	5.783	2.892	16.114	0.179	1.000	17.9%	Member Block Shear
		Inner Ladder	A307	0.75	2	3.601	1.8	17.892	0.101	1.000	10.1%	Bolt Shear
		Leg	A307	1	24	187.222	15.602	31.809	0.490	1.000	49.0%	Bolt DS
		Horizontal	A307	0.75	3	29.265	9.755	17.892	0.545	1.000	54.5%	Bolt Shear
		Diagonal	A307	0.75	4	56.931	14.233	17.892	0.795	1.000	79.5%	Bolt Shear
T6	137.5	Redundant Horizontal	A307	0.75	2	3.033	1.516	8.567	0.177	1.000	17.7%	Member Block Shear
		Redundant Diagonal	A307	0.75	2	2.861	1.43	8.567	0.167	1.000	16.7%	Member Block Shear
		Inner Square	A307	0.75	2	5.39	2.695	16.114	0.167	1.000	16.7%	Member Block Shear
		Inner Corner	A307	0.75	2	5.855	2.928	16.114	0.182	1.000	18.2%	Member Block Shear
		Inner Ladder	A307	0.75	2	3.689	1.844	17.892	0.103	1.000	10.3%	Bolt Shear
		Leg	A307	1	24	254.703	21.225	31.809	0.667	1.000	66.7%	Bolt DS
		Horizontal	A307	0.75	4	33.584	8.396	17.892	0.469	1.000	46.9%	Bolt Shear
		Diagonal	A307	0.75	4	64.644	16.161	17.892	0.903	1.000	90.3%	Bolt Shear
		Redundant Horizontal	A307	0.75	2	4.1	2.05	8.567	0.239	1.000	23.9%	Member Block Shear
		Redundant Diagonal	A307	0.75	2	3.778	1.889	8.567	0.221	1.000	22.1%	Member Block Shear
		T7	112.5	Inner Square	A307	0.75	2	5.395	2.698	16.114	0.167	1.000
Inner Corner	A307			0.75	2	5.853	2.926	16.114	0.182	1.000	18.2%	Member Block Shear
Inner Ladder	A307			0.75	2	3.675	1.838	17.892	0.103	1.000	10.3%	Bolt Shear
Leg	A307			1	24	332.133	27.678	31.809	0.870	1.000	87.0%	Bolt DS
Horizontal	A307			0.75	4	38.208	9.552	17.892	0.534	1.000	53.4%	Bolt Shear
Diagonal	A307			0.75	5	74.785	14.957	17.892	0.836	1.000	83.6%	Bolt Shear
Redundant Horizontal	A307			0.75	2	5.398	2.699	8.567	0.315	1.000	31.5%	Member Block Shear
Redundant Diagonal	A307			0.75	2	5.075	2.538	8.567	0.296	1.000	29.6%	Member Block Shear
Inner Square	A307			0.75	2	6.125	3.062	16.114	0.190	1.000	19.0%	Member Block Shear
Inner Corner	A307			0.75	2	6.638	3.319	16.114	0.206	1.000	20.6%	Member Block Shear
T8	87.5			Inner Ladder	A307	0.75	2	4.156	2.078	17.892	0.116	1.000
		Leg	A307	1	32	420.373	26.273	31.809	0.826	1.000	82.6%	Bolt DS
		Horizontal	A307	0.75	4	41.876	10.469	17.892	0.585	1.000	58.5%	Bolt Shear
		Diagonal	A307	0.75	6	81.711	13.618	17.892	0.761	1.000	76.1%	Bolt Shear
		Redundant Horizontal	A307	0.75	2	7.225	3.612	8.567	0.422	1.000	42.2%	Member Block Shear
		Redundant Diagonal	A307	0.75	2	6.725	3.362	8.567	0.393	1.000	39.3%	Member Block Shear
		Inner Square	A307	0.75	2	6.664	3.332	16.114	0.207	1.000	20.7%	Member Block Shear
		Inner Corner	A307	0.75	2	7.224	3.612	16.114	0.224	1.000	22.4%	Member Block Shear
		Inner Ladder	A307	0.75	2	4.526	2.263	17.892	0.126	1.000	12.6%	Bolt Shear
		Leg	A307	1	40	516.839	25.842	31.809	0.812	1.000	81.2%	Bolt DS
		T9	62.5	Horizontal	A307	0.75	4	40.671	10.168	17.892	0.568	1.000
Diagonal	A307			0.75	8	104.205	13.026	17.892	0.728	1.000	72.8%	Bolt Shear
Redundant Horizontal	A307			0.75	2	2.469	1.234	8.567	0.144	1.000	14.4%	Member Block Shear
Redundant Diagonal	A307			0.75	2	2.089	1.044	8.567	0.122	1.000	12.2%	Member Block Shear
Redundant Diagonal 0	A307			0.75	2	14.021	7.01	8.946	0.784	1.000	78.4%	Bolt Shear
Redundant Horizontal 0	A307			0.75	2	11.269	5.634	8.057	0.699	1.000	69.9%	Member Block Shear
Leg	A307			1	40	516.839	25.842	31.809	0.812	1.000	81.2%	Bolt DS
Horizontal	A307			0.75	4	40.671	10.168	17.892	0.568	1.000	56.8%	Bolt Shear
Diagonal	A307			0.75	8	104.205	13.026	17.892	0.728	1.000	72.8%	Bolt Shear
Redundant Horizontal	A307			0.75	2	2.469	1.234	8.567	0.144	1.000	14.4%	Member Block Shear
Redundant Diagonal	A307			0.75	2	2.089	1.044	8.567	0.122	1.000	12.2%	Member Block Shear
T10	37.5	Redundant Diagonal 0	A307	0.75	2	14.021	7.01	8.946	0.784	1.000	78.4%	Bolt Shear
		Redundant Horizontal 0	A307	0.75	2	11.269	5.634	8.057	0.699	1.000	69.9%	Member Block Shear
		Leg	A307	1	40	516.839	25.842	31.809	0.812	1.000	81.2%	Bolt DS
		Horizontal	A307	0.75	4	40.671	10.168	17.892	0.568	1.000	56.8%	Bolt Shear
		Diagonal	A307	0.75	8	104.205	13.026	17.892	0.728	1.000	72.8%	Bolt Shear
		Redundant Horizontal	A307	0.75	2	2.469	1.234	8.567	0.144	1.000	14.4%	Member Block Shear
		Redundant Diagonal	A307	0.75	2	2.089	1.044	8.567	0.122	1.000	12.2%	Member Block Shear
		Redundant Diagonal 0	A307	0.75	2	14.021	7.01	8.946	0.784	1.000	78.4%	Bolt Shear
		Redundant Horizontal 0	A307	0.75	2	11.269	5.634	8.057	0.699	1.000	69.9%	Member Block Shear
		Leg	A307	1	40	516.839	25.842	31.809	0.812	1.000	81.2%	Bolt DS
		Horizontal	A307	0.75	4	40.671	10.168	17.892	0.568	1.000	56.8%	Bolt Shear

Maximum Capacity 90.3%

## APPENDIX C

### Tower Elevation Drawing



**DESIGNED APPURTENANCE LOADING**


TYPE	ELEVATION	TYPE	ELEVATION
4' Lightning Rod	265	CBC78T-DS-43-2X	252
Flash Beacon	263	CBC78T-DS-43-2X	252
13' I-Beam Mast Mount	256.5	CBC78T-DS-43-2X	252
Tower Top Platform	252	RxxDC-3315-PF-48	252
2' Standoff - Round (GPD)	252	RxxDC-3315-PF-48	252
2' Standoff - Round (GPD)	252	RxxDC-3315-PF-48	252
2' Standoff - Round (GPD)	252	OA20-67-DIN	249
AM-X-CD-16-65-00T-RET w/ 6' Mount Pipe	252	6' Standoff	249
AM-X-CD-16-65-00T-RET w/ 6' Mount Pipe	252	OA20-41-DIN	249
AM-X-CD-16-65-00T-RET w/ 6' Mount Pipe	252	6' Standoff	249
SBNH-1D6565C w/ Mount Pipe	252	Pipe Mount 4'x4.5"	240
HPA-65R-BUU-H8 w/ Mount Pipe	252	SC3-W100	240
HPA-65R-BUU-H8 w/ Mount Pipe	252	Platform	239.5
HPA-65R-BUU-H8 w/ Mount Pipe	252	10' x 2.5" Pipe	225.6
HPA-65R-BUU-H8 w/ Mount Pipe	252	APXVTM14-ALU-I20 w/ 10' x 2" Mount Pipe	225.6
80010966 w/ Mount Pipe	252	APXVTM14-ALU-I20 w/ 10' x 2" Mount Pipe	225.6
80010965 w/ Mount Pipe	252	APXVTM14-ALU-I20 w/ 10' x 2" Mount Pipe	225.6
80010965 w/ Mount Pipe	252	APXVTM14-ALU-I20 w/ 10' x 2" Mount Pipe	225.6
DTMABP7819VG12A	252	NNVV-65B-R4 w/ Mount Pipe	225.6
DTMABP7819VG12A	252	NNVV-65B-R4 w/ Mount Pipe	225.6
DTMABP7819VG12A	252	NNVV-65B-R4 w/ Mount Pipe	225.6
RRUS 11	252	NNVV-65B-R4 w/ Mount Pipe	225.6
RRUS 11	252	TD-RRH8x20-25	225.6
RRUS 11	252	TD-RRH8x20-25	225.6
RRUS 32 B2	252	TD-RRH8x20-25	225.6
RRUS 32 B2	252	TD-RRH8x20-25	225.6
RRUS 32 B2	252	(2) 800 MHz 2x50W	225.6
RRUS 32	252	(2) 800 MHz 2x50W	225.6
RRUS 32	252	(2) 800 MHz 2x50W	225.6
RRUS 32	252	1900 4x45 65 MHz RRU	225.6
RRUS 4478 B14	252	1900 4x45 65 MHz RRU	225.6
RRUS 4478 B14	252	1900 4x45 65 MHz RRU	225.6
RRUS 4478 B14	252	10' x 2.5" Pipe	225.6
(2) DC6-48-60-18-8F Surge Suppression Unit	252	14' Sector Frame	210
(2) DC6-48-60-18-8F Surge Suppression Unit	252	(3) DB844H90E-XY w/Mount Pipe	210
(2) DC6-48-60-18-8F Surge Suppression Unit	252	(3) DB844H90E-XY w/Mount Pipe	210
(2) DC6-48-60-18-8F Surge Suppression Unit	252	14' Sector Frame	210
(2) DC6-48-60-18-8F Surge Suppression Unit	252	14' Sector Frame	210
GPS	252	AIR21 B4A/B2P w/ mount pipe	210
Pipe Mount 5.25'x2.875"	252	AIR21 B4A/B2P w/ mount pipe	210
Pipe Mount 5.25'x2.875"	252	KRC 118 04B/1 B4A/B12P-B8P w/ Mount Pipe	210
Pipe Mount 5.25'x2.875"	252	KRC 118 04B/1 B4A/B12P-B8P w/ Mount Pipe	210
4' Standoff	252	RRUS 11 B12	210
P2.5 Stiff Arm	252	RRUS 11 B12	210
BSAMNT-SBS-2-3	252	RRUS 11 B2	210
BSAMNT-SBS-2-3	252	RRUS 11 B2	210
BSAMNT-SBS-2-3	252	RRUS 11 B2	210
JAHH-65C-R3B w/ 8' P2.5 STD Mount Pipe_(3) SCP10W Clamp Set	252	28"x 26" Flat Panel	210
JAHH-65C-R3B	252	14' Sector Frame	210
JAHH-65C-R3B w/ 8' P2.5 STD Mount Pipe_(3) SCP10W Clamp Set	252	(3) DB844H90E-XY w/Mount Pipe	198
JAHH-65C-R3B	252	14' Sector Frame	198
JAHH-65C-R3B w/ 8' P2.5 STD Mount Pipe_(3) SCP10W Clamp Set	252	PG1-NOF-0091	190
JAHH-65C-R3B	252	5' Standoff	190
JAHH-65C-R3B w/ 8' P2.5 STD Mount Pipe_(3) SCP10W Clamp Set	252	PG1-NOF-0091	190
JAHH-65C-R3B	252	5' Standoff	190
LPA-80063/6CF w/ Mount Pipe	252	PG1-DOF-0093	171
LPA-80063/6CF w/ Mount Pipe	252	5' Standoff	171
LPA-80080/6CF w/ Mount Pipe	252	Catwalk	139.5
LPA-80080/6CF w/ Mount Pipe	252	WL14-69/S	85
BXA-70063-6CF	252	WL14-69/S	85
B5/B13 RRH	252	WL14-69/S	85
B5/B13 RRH	252	WL7-13	85
B5/B13 RRH	252	WL14-69/S	85
B2/B66A RRH	252	Camera	37
B2/B66A RRH	252	2.5' Box Mount	37
B2/B66A RRH	252	GPS	36.5
B2/B66A RRH	252	3' Side Arm	36.5

**MATERIAL STRENGTH**

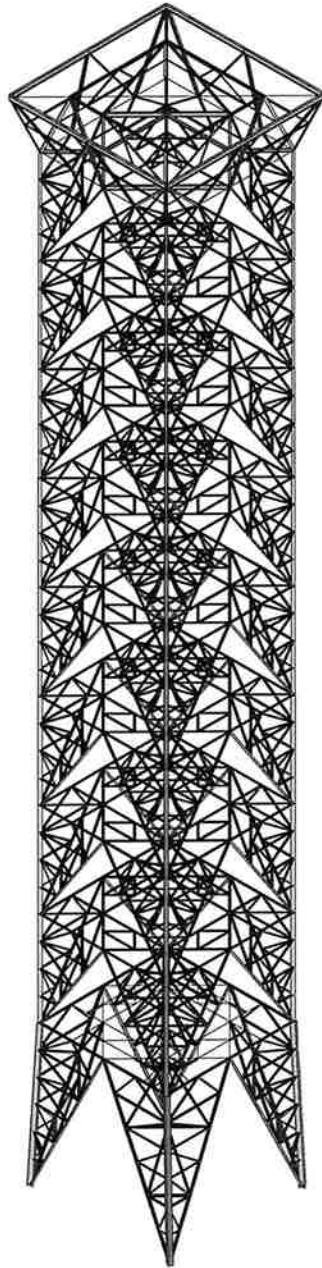
GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

**TOWER DESIGN NOTES**

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 105 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase

 <p><b>GPD</b> 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101</p>	<p><b>Job: Cheshire SW</b></p> <p><b>Project: 2019736.27</b></p>		
	<p>Client: Verizon Wireless</p> <p>Code: TIA-222-G</p> <p>Path:</p>	<p>Drawn by: mschooley</p> <p>Date: 02/25/20</p>	<p>App'd:</p> <p>Scale: NTS</p> <p>Dwg No. E-1</p>





Envelope Only Solution

GPD

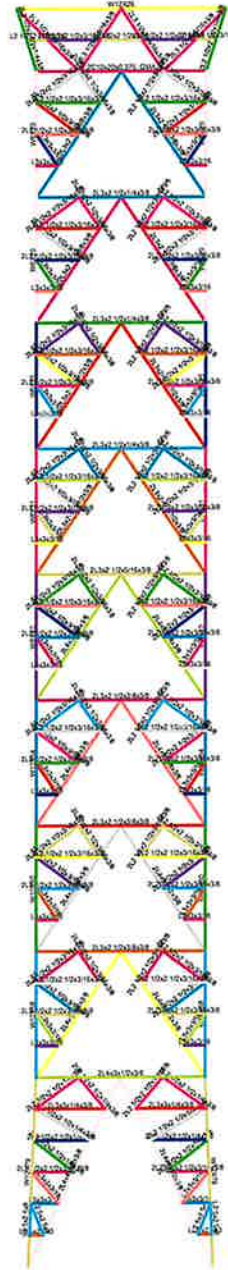
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CHESHIRE SW

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- Section Sets
- TWR\_LEG\_T1
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  - TWR\_TOP\_GIRT\_T1
  - TWR\_DIAG\_T1
  - TWR\_DIAG\_OUTER\_T1
  - TWR\_RED\_HORZ\_T1
  - TWR\_RED\_HORZ\_2\_T1
  - TWR\_RED\_HORZ\_OUTER\_T1
  - TWR\_RED\_HORZ\_3\_T1
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  - TWR\_RED\_HIPDIA\_T2
  - TWR\_RED\_HIPDIA\_2\_T2
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  - TWR\_INNER\_SO\_T2
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  - TWR\_INNER\_SO\_T7
  - TWR\_INNER\_CORNER\_T7
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CHESHIRE SW

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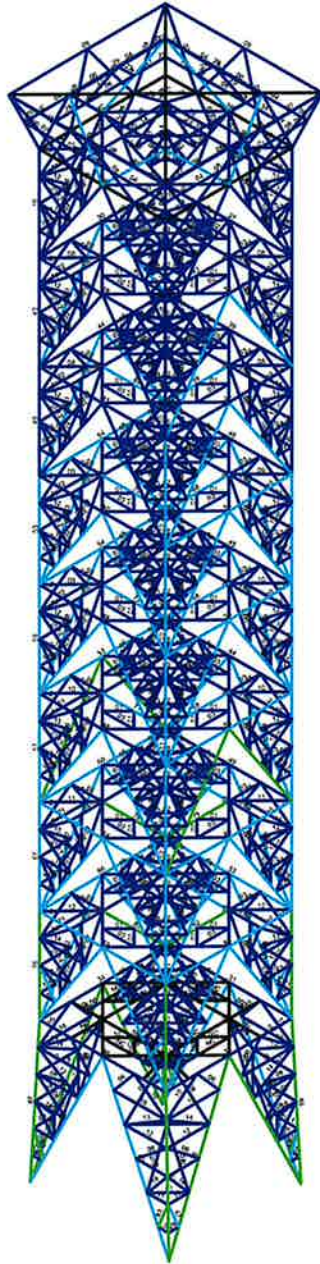
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( Env )

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- 75-90
- 50-75
- 0-.50



Monitor Code Checks Disabled (Envelope)  
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CHESHIRE SW

SK - 3

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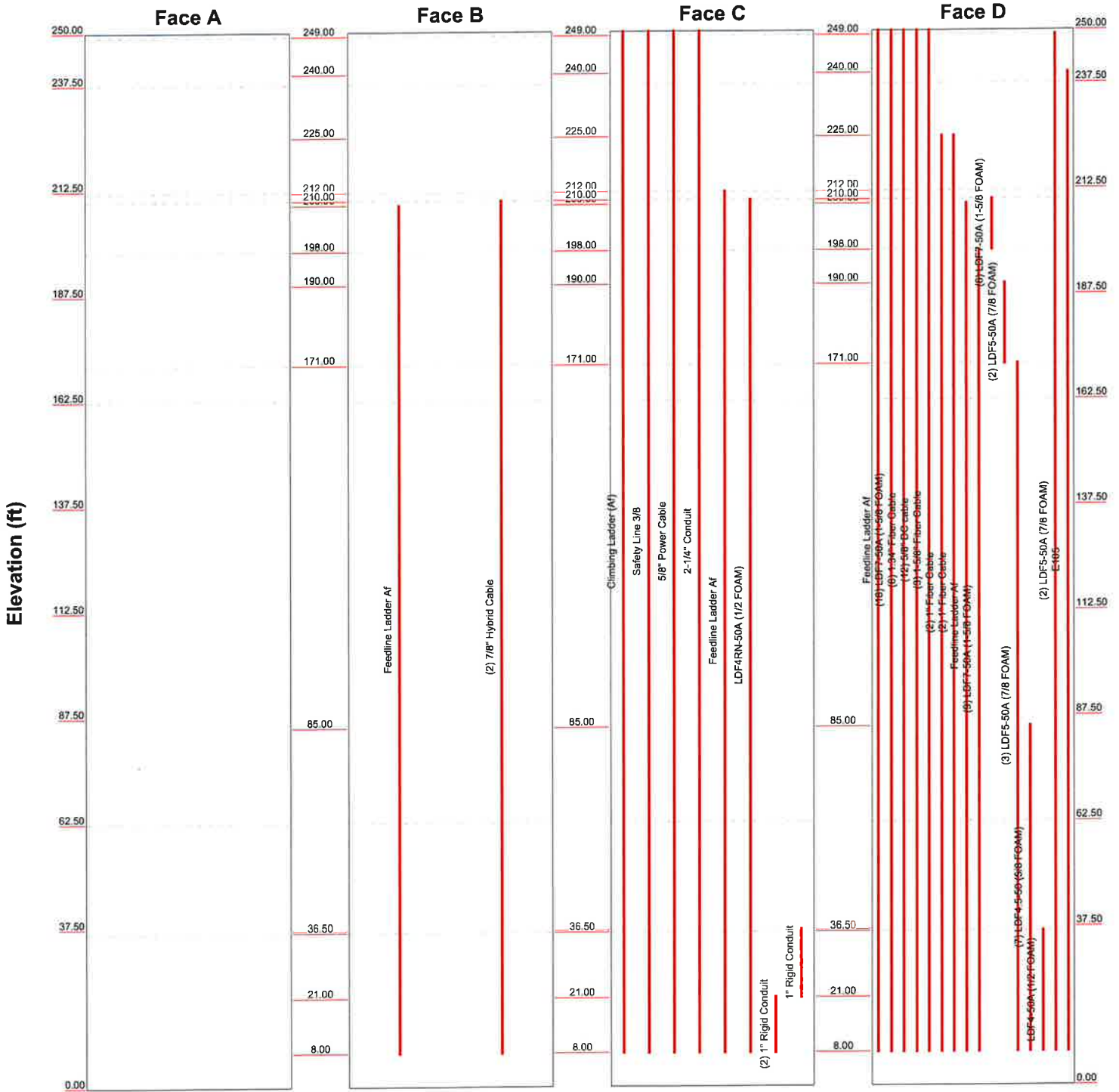
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# Feed Line Distribution Chart

## 0' - 250'

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

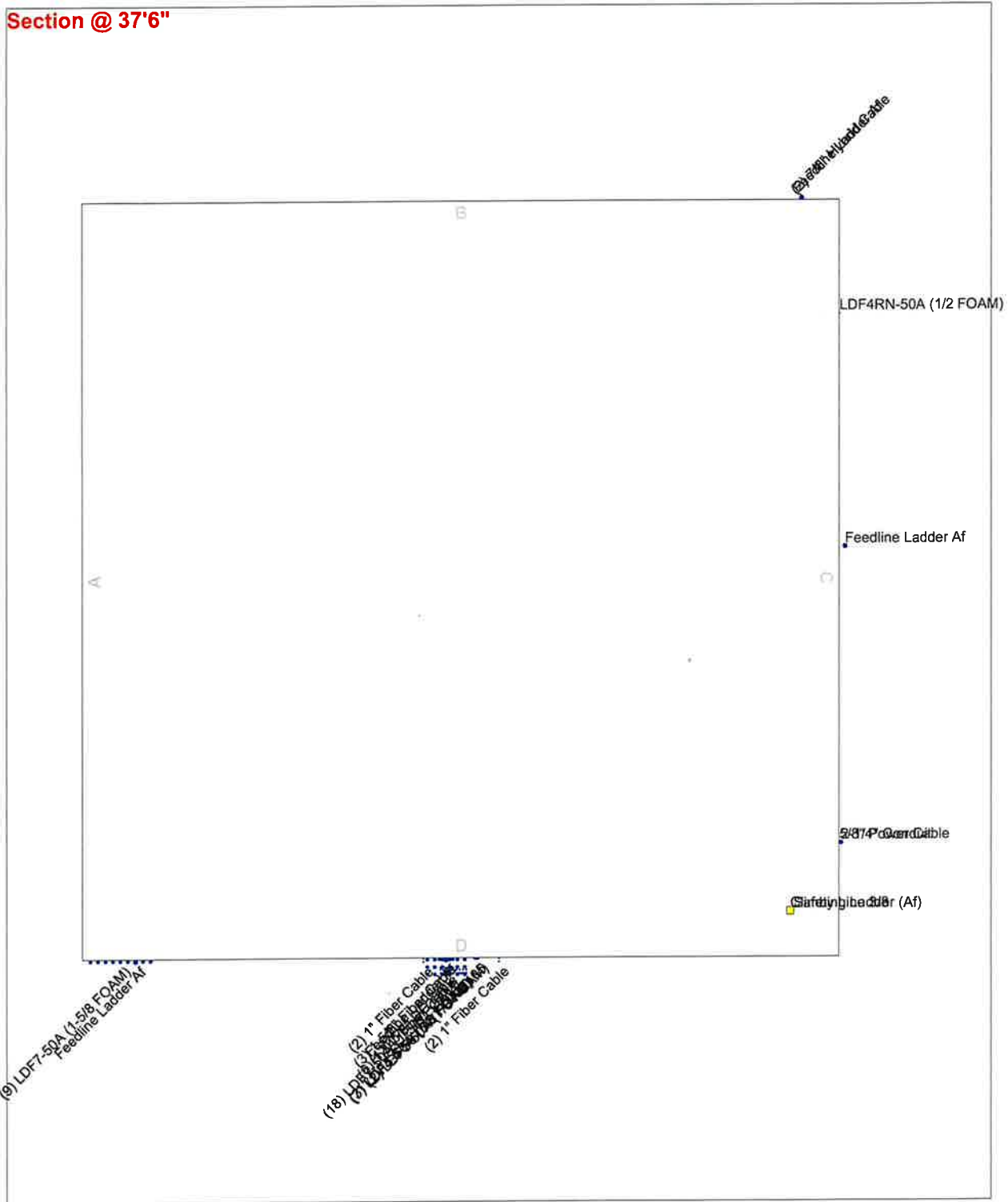



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	<b>Project: 2019736.27</b>		
	<b>Client: Verizon Wireless</b>	<b>Drawn by: mschooley</b>	<b>App'd:</b>
	<b>Code: TIA-222-G</b>	<b>Date: 02/25/20</b>	<b>Scale: NTS</b>
<b>Path:</b>		<b>Dwg No. E-7</b>	

# Feed Line Plan 37'6"

Round \_\_\_\_\_ Flat \_\_\_\_\_ App In Face \_\_\_\_\_ App Out Face \_\_\_\_\_

## Section @ 37'6"



 <p><b>GPD</b> 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101</p>	<b>Job: Cheshire SW</b>		
	Project: <b>2019736.27</b>		
	Client: Verizon Wireless	Drawn by: mschooley	App'd:
	Code: TIA-222-G	Date: 02/25/20	Scale: NTS
Path:		Dwg No. E-7	

## **APPENDIX D**

### Anchor Rod Analysis

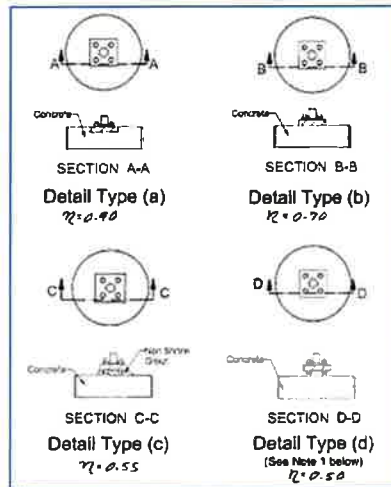


**Self-Support Anchor Rod Analysis**  
**CHESHIRE SW**  
**2019736.27**

General Info	
Code	TIA-222-G
Modified Anchor Rods	No
Clear Distance > d <sub>b</sub>	No
Leg Eccentricity	No
Max Capacity	1.05

Anchor Rod Results		
$(P_u + V_u/\eta) =$	64.4	kips
$\phi * R_{nt} = \phi * F_{ub} * A_n =$	145.6	kips
Anchor Rod Stress Ratio =	44.3%	<b>OK</b>

Tower Reactions		
Detail Type =	d	
Eta Factor, $\eta =$	0.50	
Down Load, P <sub>u</sub> =	634.18	kips
Down Load Shear, V <sub>u</sub> =	69.57	kips
Uplift, P <sub>u</sub> =	507.03	kips
Uplift Shear, V <sub>u</sub> =	60.52	kips



Anchor Rods		
Number of Anchor Rods, N =	12	
Anchor Rod Grade =	C-1015	
Anchor Rod Diameter, d <sub>b</sub> =	2.25	in
Bolt Circle, BC =	34	in
Yield, F <sub>y</sub> =	47	ksi
Tensile, F <sub>ub</sub> =	56	ksi

Figure 4-4 of TIA-222-G

## APPENDIX E

### Foundation Pedestal Analysis



Title Block Line 1  
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 Title Block" selection.  
 Title Block Line 6

Project Title: CHESHIRE SW  
 Engineer:  
 Project ID: 2019736.27  
 Project Descr: Pedestal Analysis

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File = T:\ATand\TTAG0053 and 26014\18 2019736 37 Verizon SA\Re-Run 2-2020\Calcs\Pedestal Checks.ec6

## Concrete Column

Lic. #: KW-06004426

Licensee: GPD ASSOCIATES

Description: Pedestal Analysis

### Code References

Calculations per ACI 318-11, IBC 2012, CBC 2013, ASCE 7-10  
 Load Combinations Used: IBC 2012

### General Information

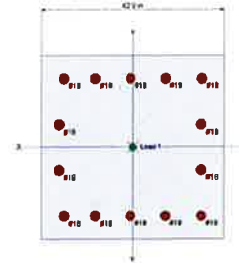
$f'_c$ : Concrete 28 day strength = 3.0 ksi  
 $E$  = 3,122.0 ksi  
 Density = 150.0 pcf  
 $\beta$  = 0.850  
 $f_y$  - Main Rebar = 40.0 ksi  
 $E$  - Main Rebar = 29,000.0 ksi  
 Allow. Reinforcing Limits *ASTM A615 Bars Used*  
 Min. Reinf. = 1.0 %  
 Max. Reinf. = 8.0 %

Overall Column Height = 6.20 ft  
 End Fixity Top Free, Bottom Fixed  
 Brace condition for deflection (buckling) along columns :  
 X-X (width) axis :  
 Unbraced Length for X-X Axis buckling = 6.20 ft, K = 2.10  
 Y-Y (depth) axis :  
 Unbraced Length for X-X Axis buckling = 6.20 ft, K = 2.10

### Column Cross Section

Column Dimensions : 42.0in Square Column, Column Edge to  
 Rebar Edge Cover = 4.125in

Column Reinforcing : 4 - #18 bars @ corners., 3.0 - #18 bars top &  
 bottom between corner bars, 2.0 - #18 bars  
 left & right between corner bars



### Applied Loads

Entered loads are factored per load combinations specified by user.

Column self weight included : 11,392.5 lbs \* Dead Load Factor  
 AXIAL LOADS . . .  
 LC8 - Node 442: Axial Load at 6.20 ft above base, D = 62.558, W = 559.14 k  
 BENDING LOADS . . .  
 LC8 - Node 442: Lat. Point Load at 6.20 ft creating Mx-x, W = 69.571 k  
 Lat. Point Load at 6.20 ft creating My-y, W = 43.247 k

### DESIGN SUMMARY

Load Combination +1.20D+0.50Lr+0.50L+W+1.60H  
 Location of max. above base 6.158 ft  
**Maximum Stress Ratio 0.258 : 1**  
 Ratio =  $(P_u^2 + M_u^2)^{.5} / (\Phi P_n^2 + \Phi M_n^2)^{.5}$   
 $P_u$  = 647.88 k  $\Phi * P_n$  = 2,499.56 k  
 $M_{u-x}$  = -431.340 k-ft  $\Phi * M_{n-x}$  = -1,735.10 k-ft  
 $M_{u-y}$  = -268.131 k-ft  $\Phi * M_{n-y}$  = 911.03 k-ft  
 $M_u$  Angle = 32.0 deg  
 $M_u$  at Angle = 507.89 k-ft  $\Phi M_n$  at Angle = 1,967.13 k-ft

### Maximum SERVICE Load Reactions . .

Top along Y-Y 0.0 k Bottom along Y-Y 43.247 k  
 Top along X-X 0.0 k Bottom along X-X 69.571 k

### Maximum SERVICE Load Deflections . . .

Along Y-Y 0.01174 in at 6.20 ft above base  
 for load combination : W Only  
 Along X-X 0.007299 in at 6.20 ft above base  
 for load combination : W Only

*P<sub>n</sub> & M<sub>n</sub> values located at P<sub>u</sub>-M<sub>u</sub> vector intersection with capacity curve*

### Column Capacities . . .

P<sub>nmax</sub> : Nominal Max. Compressive Axial Capacity 6,595.40 k  
 P<sub>nmin</sub> : Nominal Min. Tension Axial Capacity -2,240.0 k  
 $\Phi P_n$ , max : Usable Compressive Axial Capacity 3,429.61 k  
 $\Phi P_n$ , min : Usable Tension Axial Capacity -1,456.0 k

### General Section Information . $\phi = 0.650$ $\beta = 0.850$ $\theta = 0.80$

$\rho$  : % Reinforcing 3.175 % Rebar % Ok  
 Reinforcing Area 56.0 in<sup>2</sup>  
 Concrete Area 1,764.0 in<sup>2</sup>

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 Project ID: 2019736.27  
 Project Descr: Pedestal Analysis

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## Concrete Column

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Licensee: GPD ASSOCIATES

Description: Pedestal Analysis

### Governing Load Combination Results

Governing Factored Load Combination	Moment		Dist. from base ft	Axial Load k		Bending Analysis k-ft						Utilization Ratio	
	X-X	Y-Y		Pu	$\phi * Pn$	$\delta x$	$\delta x * Mux$	$\delta y$	$\delta y * Muy$	Alpha (deg)	$\delta Mu$		$\phi Mn$
+1.40D+1.60H			6.16	103.53	3,429.61					0.000			0.030
+1.20D+0.50Lr+1.60L+1.60H			6.16	88.74	3,429.61					0.000			0.026
+1.20D+1.60L+0.50S+1.60H			6.16	88.74	3,429.61					0.000			0.026
+1.20D+1.60Lr+0.50L+1.60H			6.16	88.74	3,429.61					0.000			0.026
+1.20D+1.60Lr+0.50W+1.60H	Actual	Actual	6.16	368.31	2,684.11	1.000	-215.67	1.000	-134.07	32.000	253.94	1,845.77	0.138
+1.20D+0.50L+1.60S+1.60H			6.16	88.74	3,429.61					0.000			0.026
+1.20D+1.60S+0.50W+1.60H	Actual	Actual	6.16	368.31	2,684.11	1.000	-215.67	1.000	-134.07	32.000	253.94	1,845.77	0.138
+1.20D+0.50Lr+0.50L+W+1.60H	Actual	Actual	6.16	647.88	2,499.56	1.000	-431.34	1.000	-268.13	32.000	507.89	1,967.13	0.258
+1.20D+0.50L+0.50S+W+1.60H	Actual	Actual	6.16	647.88	2,499.56	1.000	-431.34	1.000	-268.13	32.000	507.89	1,967.13	0.258
+1.20D+0.50L+0.70S+E+1.60H			6.16	88.74	3,429.61					0.000			0.026
+0.90D+W+0.90H	Actual	Actual	6.16	625.70	2,453.64	1.000	-431.34	1.000	-268.13	32.000	507.89	1,995.69	0.254
+0.90D+E+0.90H			6.16	66.56	3,429.61					0.000			0.019

### Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	X-X Axis Reaction		k	Y-Y Axis Reaction		Axial Reaction	My - End Moments		k-ft	Mx - End Moments	
	@ Base	@ Top		@ Base	@ Top		@ Base	@ Top		@ Base	@ Top
+D+H						73.951					
+D+L+H						73.951					
+D+Lr+H						73.951					
+D+S+H						73.951					
+D+0.750Lr+0.750L+H						73.951					
+D+0.750L+0.750S+H						73.951					
+D+0.60W+H	25.948			41.743		409.437		258.804			160.879
+D+0.70E+H						73.951					
+D+0.750Lr+0.750L+0.450W+H	19.461			31.307		325.565		194.103			120.659
+D+0.750L+0.750S+0.450W+H	19.461			31.307		325.565		194.103			120.659
+D+0.750L+0.750S+0.5250E+H						73.951					
+0.60D+0.60W+0.60H	25.948			41.743		379.857		258.804			160.879
+0.60D+0.70E+0.60H						44.370					
D Only						73.951					
Lr Only											
L Only											
S Only											
W Only	43.247			69.571		559.144		431.340			268.131
E Only											
H Only											

### Maximum Moment Reactions

Note: Only non-zero reactions are listed.

Load Combination	Moment About X-X Axis		k-ft	Moment About Y-Y Axis		k-ft
	@ Base	@ Top		@ Base	@ Top	
+D+H						
+D+L+H						
+D+Lr+H						
+D+S+H						
+D+0.750Lr+0.750L+H						
+D+0.750L+0.750S+H						
+D+0.60W+H	258.804				160.879	
+D+0.70E+H						
+D+0.750Lr+0.750L+0.450W+H	194.103				120.659	
+D+0.750L+0.750S+0.450W+H	194.103				120.659	
+D+0.750L+0.750S+0.5250E+H						
+0.60D+0.60W+0.60H	258.804				160.879	
+0.60D+0.70E+0.60H						
D Only						
Lr Only						
L Only						
S Only						
W Only	431.340				268.131	

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 Engineer:  
 Project ID: 2019736.27  
 Project Descr: Pedestal Analysis

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## Concrete Column

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### Maximum Moment Reactions

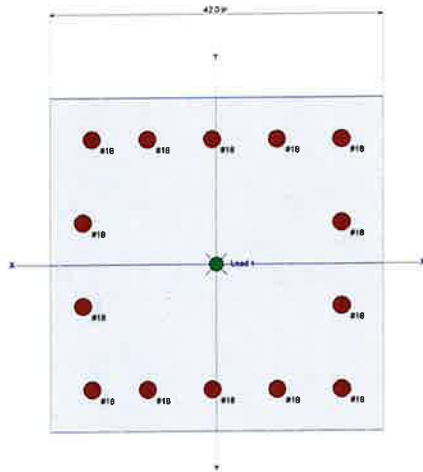
Note: Only non-zero reactions are listed.

Load Combination	Moment About X-X Axis		Moment About Y-Y Axis	
	@ Base	@ Top	@ Base	@ Top
E Only		k-ft		k-ft
H Only		k-ft		k-ft

### Maximum Deflections for Load Combinations

Load Combination	Max. X-X Deflection		Max. Y-Y Deflection	
	Distance		Distance	
+D+H	0.0000 in	0.000 ft	0.000 in	0.000 ft
+D+L+H	0.0000 in	0.000 ft	0.000 in	0.000 ft
+D+Lr+H	0.0000 in	0.000 ft	0.000 in	0.000 ft
+D+S+H	0.0000 in	0.000 ft	0.000 in	0.000 ft
+D+0.750Lr+0.750L+H	0.0000 in	0.000 ft	0.000 in	0.000 ft
+D+0.750L+0.750S+H	0.0000 in	0.000 ft	0.000 in	0.000 ft
+D+0.60W+H	0.0044 in	6.200 ft	0.007 in	6.200 ft
+D+0.70E+H	0.0000 in	0.000 ft	0.000 in	0.000 ft
+D+0.750Lr+0.750L+0.450W+H	0.0033 in	6.200 ft	0.005 in	6.200 ft
+D+0.750L+0.750S+0.450W+H	0.0033 in	6.200 ft	0.005 in	6.200 ft
+D+0.750L+0.750S+0.5250E+H	0.0000 in	0.000 ft	0.000 in	0.000 ft
+0.60D+0.60W+0.60H	0.0044 in	6.200 ft	0.007 in	6.200 ft
+0.60D+0.70E+0.60H	0.0000 in	0.000 ft	0.000 in	0.000 ft
D Only	0.0000 in	0.000 ft	0.000 in	0.000 ft
Lr Only	0.0000 in	0.000 ft	0.000 in	0.000 ft
L Only	0.0000 in	0.000 ft	0.000 in	0.000 ft
S Only	0.0000 in	0.000 ft	0.000 in	0.000 ft
W Only	0.0073 in	6.200 ft	0.012 in	6.200 ft
E Only	0.0000 in	0.000 ft	0.000 in	0.000 ft
H Only	0.0000 in	0.000 ft	0.000 in	0.000 ft

### Sketches



### Interaction Diagrams

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Project Title: CHESHIRE SW  
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 Project ID: 2019736.27  
 Project Descr: Pedestal Analysis

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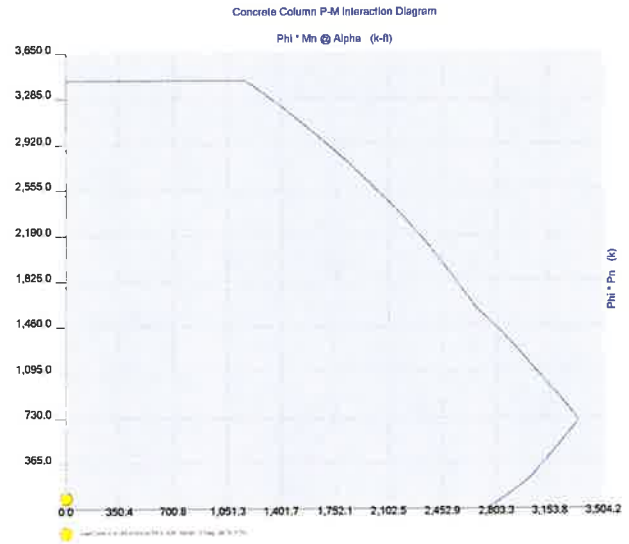
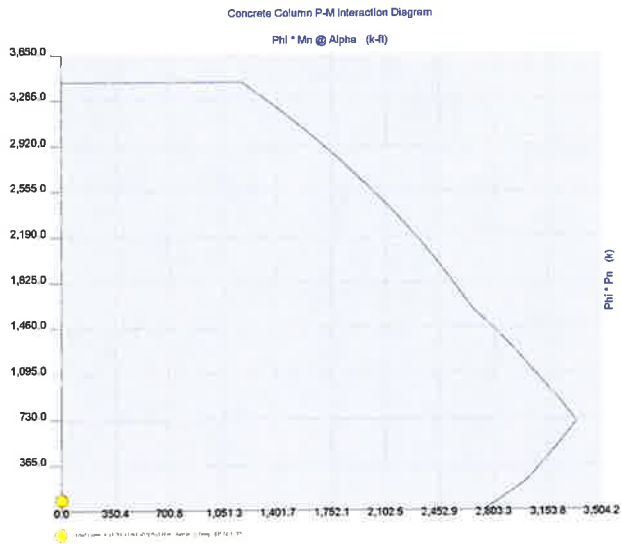
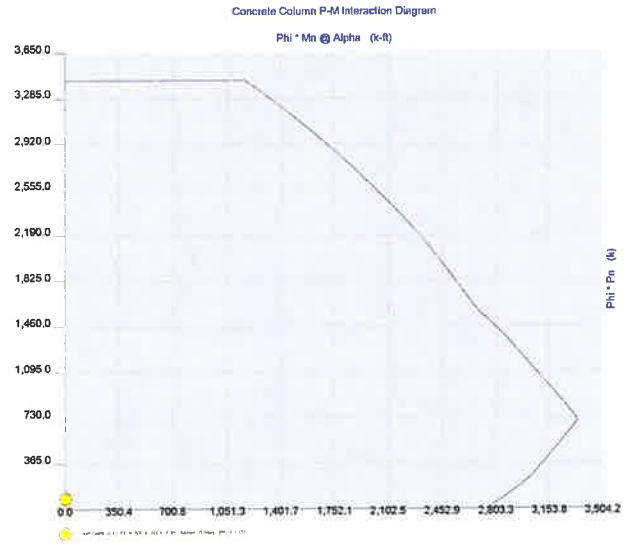
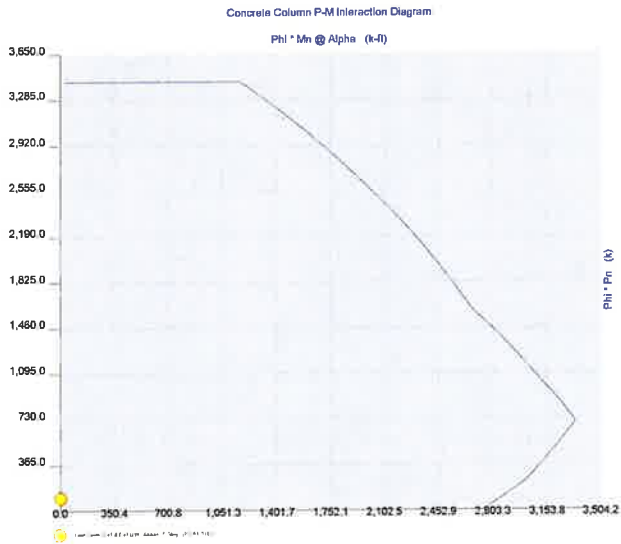
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Lic. #: KW-06004426

Licensee: GPD ASSOCIATES

Description: Pedestal Analysis



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Project Title: CHESHIRE SW  
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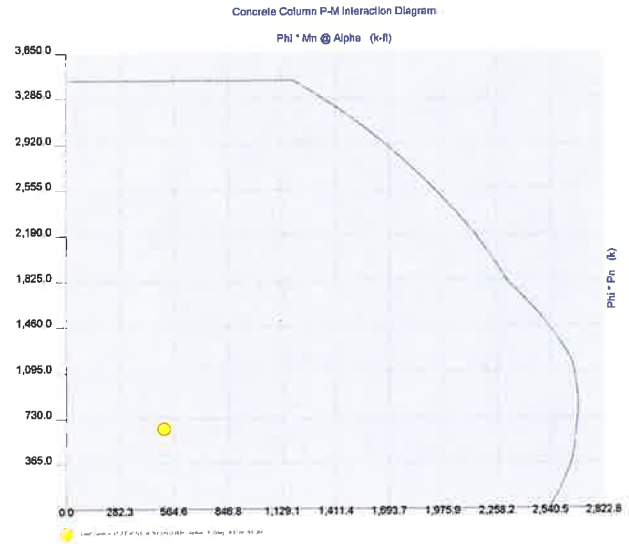
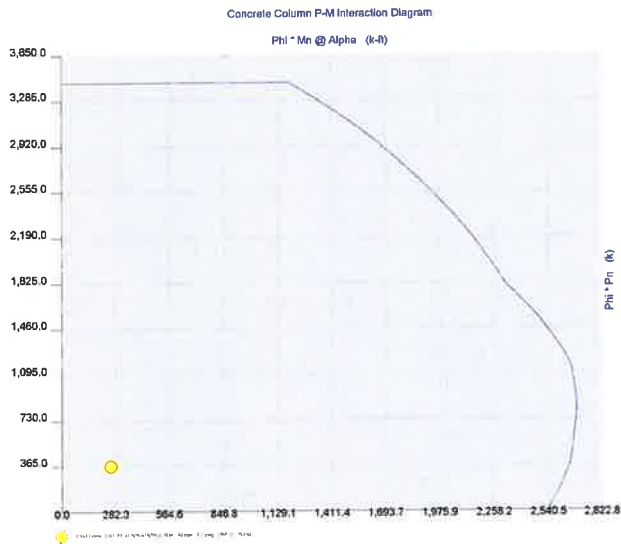
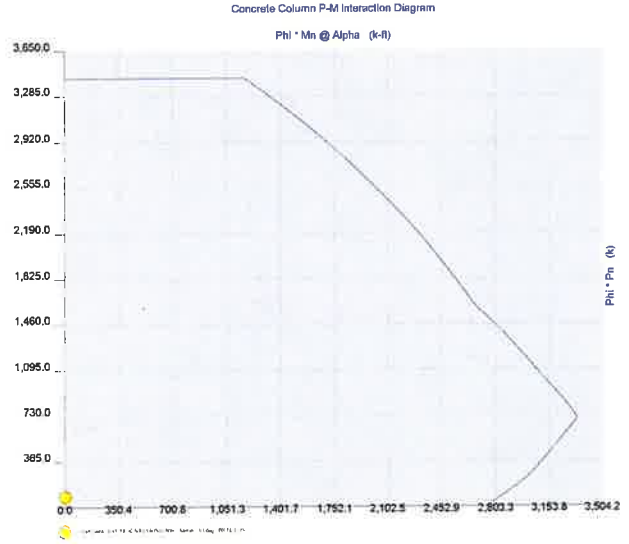
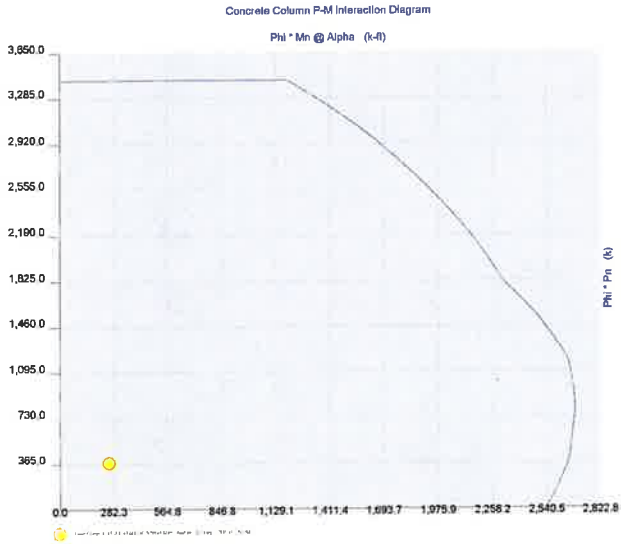
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Description : Pedestal Analysis



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Project Title: CHESHIRE SW  
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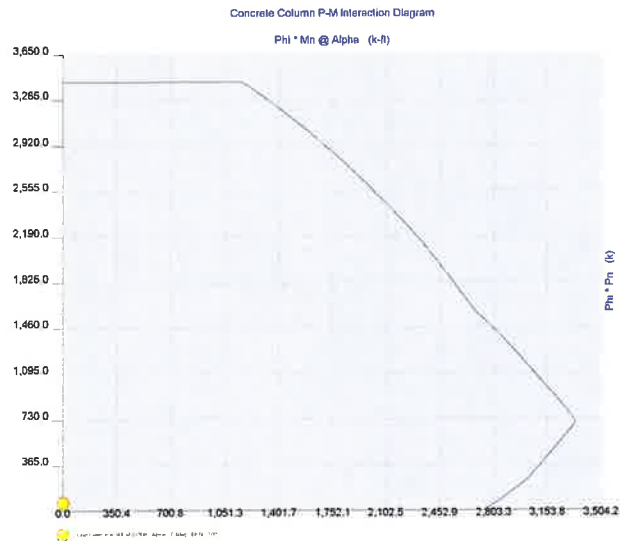
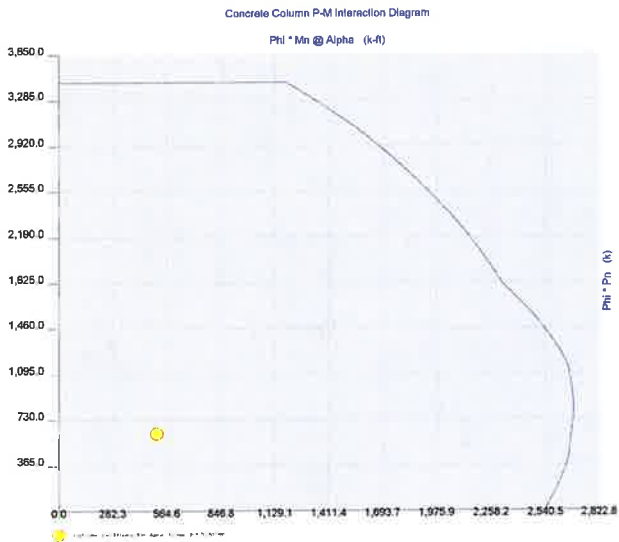
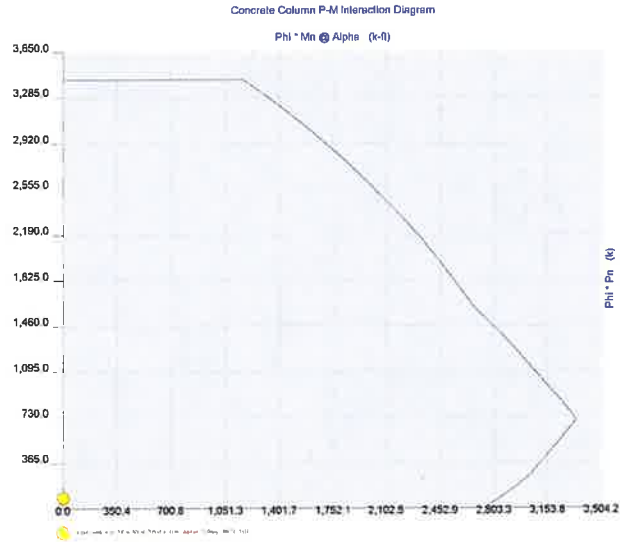
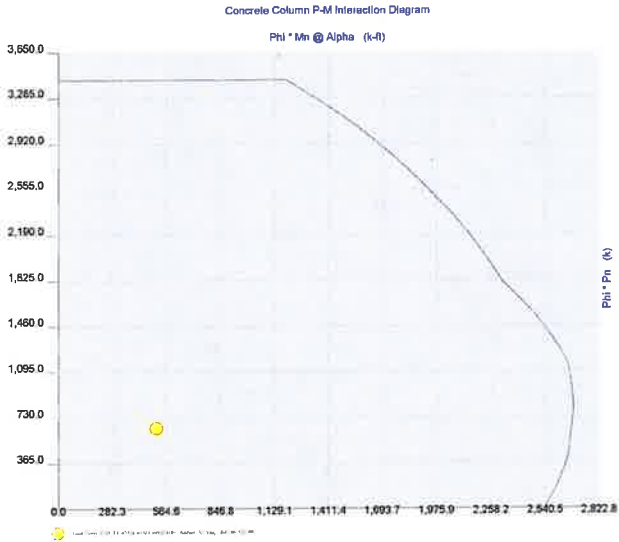
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Lic. #: KW-06004426

Licensee: GPD ASSOCIATES

Description: Pedestal Analysis



# **ATTACHMENT 5**





February 10, 2020

Verizon Wireless  
20 Alexander Drive  
Wallingford, CT 06492

Attn: Mr. Andrew Leone

Re: Mount Structural Analysis – Wireless Communications Modification  
Verizon Wireless Site I.D.: Cheshire CT  
751 Higgins Road  
Cheshire, CT 06410

Project/Location Code: 20180859908/468692  
Verizon Wireless FUZE I.D.: 15273443  
APT Filing No. CT141EB9400

Dear Mr. Leone,

All-Points Technology Corp. (APT), a professional engineering corporation licensed in the State of Connecticut, has been retained by Verizon Wireless (VZW) to assess the structural adequacy of the existing VZW antenna mounting assemblies to support the proposed antenna and appurtenance modification on the above noted host structure. This review is limited to a structural evaluation of the existing antenna mounting assemblies and their connection to the host structure.

Details of the proposed antenna and appurtenance modification are included within the table on the following page. Reference is made to Design Exhibit Drawings (DE1 – DE7), prepared by this office, marked Rev 7, dated 02/10/2020.

The structural review has been prepared in accordance with the following design standards:

ANSI/TIA-222-G-2009 – Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

ASCE/SEI 7-10 – Minimum Design Loads for Buildings and Other Structures

AISC – American Institute of Steel Construction Manual of Steel Construction, 14<sup>th</sup> Ed.

IBC 2015 – as amended by the 2018 Connecticut State Building Code.

Antenna, appurtenance and mount assembly loads were evaluated utilizing the ANSI TIA-222-G standard.

- o Load Case 1: 97 mph (3-second gust), 0in ice (Nominal Survival Wind)
- o Load Case 2: 50 mph (3-second gust) with 0.75in ice thickness
- o Load Case 3: 60 mph (3-second gust) (Service Load)
- o Structure Class II
- o Exposure Category C
- o Topographic Category 1.

Note:

1. Based upon IBC 2015/2018 Connecticut State Building Code maximum ultimate wind speed for site location of 125 mph (3-sec gust), equivalent to a nominal design speed of 97 mph (3-sec gust) per Appendix N and exception #5, Section 1609.1.1.



The existing and proposed VZW antenna/appurtenance and mount assembly loading consists of the following equipment (proposed equipment shown in **bold text**):

Antenna and Appurtenance Make/Model	Quantity	Status	Mount Type	Elevation
<b>Commscope JAHH-65C-R3B panel antennas</b>	6	P	Pipe Mounted to Top Platform & Railing of Existing Lattice Tower with proposed <b>Commscope Side by Side Mounting Kits (BSAMNT-SBS-2-3)</b> and mount modifications as applicable.	252 ft± AGL
<b>Amphenol BXA-70063-6CF panel antennas</b>	1	P		
Amphenol LPA-80063-6CF panel antennas	2	ETR / ERL		
<b>Amphenol LPA-80080-6CF panel antennas</b>	2	ETR / ETL		
<b>Samsung B5/B13 700/850 RRH Remote Radio Heads (RRHs)</b>	3 <sup>4</sup>	P		
<b>Samsung B2/B66a PCS/AWS RRH Remote Radio Heads (RRHs)</b>	3 <sup>4</sup>	P		
<b>Commscope CBC78T-DS-43-2X Quad Diplexers</b>	3	P		
Raycap RxxDC-3315-PF-48 Main Distribution Boxes (MDBs)	3	ETR		
Hybrid Fiber Cables	3	ETR	n/a	n/a
Coaxial Cables	12	ETR	n/a	n/a

Notes:

1. ETR = Existing to Remain; ERL = Existing to be Relocated; P = Proposed.
2. Antennas and appurtenances shall be centered on mount assembly at the above specified elevation with no vertical eccentricity.
3. One (1) existing Panel Antenna and three (3) existing diplexers to be removed from the tower.
4. Three (3) existing RRHs located within existing shelter to be removed.

In conclusion, we find that with the modifications outlined within the aforementioned DEs prepared by this office, the existing and proposed Verizon antenna mounting assemblies will be structurally adequate to support the proposed antenna and appurtenance modification. Under the proposed loading as referenced above, the maximum usage of the existing and modified mounting assemblies is 60%.

The findings of this certification letter are based upon a review of the physical characteristics of the mount assembly as documented by local field mapping conducted by APT from grade. This letter assumes that the mounting assembly structural components and connections are in good condition and have been properly maintained since erection. The contractor shall inspect the condition of the existing mount assemblies in its entirety prior to the installation of the equipment modification.

Sincerely,  
 All-Points Technology Corp. P.C.



Michael S. Trodden, P.E.  
 Sr. Structural Engineer



# ***Appendix A***

*Design Criteria*

# ATC Hazards by Location

## Search Information

**Address:** 751 Higgins Rd, Cheshire, CT 06410, USA  
**Coordinates:** 41.487542, -72.928438  
**Elevation:** 277 ft  
**Timestamp:** 2020-02-10T20:57:31.786Z  
**Hazard Type:** Wind



### ASCE 7-16

MRI 10-Year ..... 75 mph  
 MRI 25-Year ..... 84 mph  
 MRI 50-Year ..... 91 mph  
 MRI 100-Year ..... 97 mph  
 Risk Category I ..... 108 mph  
 Risk Category II ..... 119 mph  
 Risk Category III ..... 128 mph  
 Risk Category IV ..... **▲ 132 mph**

You are in a wind-borne debris region if you are also within 1 mile of the coastal mean high water line.

### ASCE 7-10

MRI 10-Year ..... 77 mph  
 MRI 25-Year ..... 87 mph  
 MRI 50-Year ..... 93 mph  
 MRI 100-Year ..... 100 mph  
 Risk Category I ..... 113 mph  
 Risk Category II ..... 123 mph  
 Risk Category III-IV ..... **▲ 133 mph**

If the structure under consideration is a healthcare facility and you are also within 1 mile of the coastal mean high water line, you are in a wind-borne debris region. If other occupancy, use the Risk Category II basic wind speed contours to determine if you are in a wind-borne debris region.

### ASCE 7-05

ASCE 7-05 Wind Speed ..... 105 mph

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

## Disclaimer

Hazard loads are interpolated from data provided in ASCE 7 and rounded up to the nearest whole integer. Per ASCE 7, islands and coastal areas outside the last contour should use the last wind speed contour of the coastal area – in some cases, this website will extrapolate past the last wind speed contour and therefore, provide a wind speed that is slightly higher. NOTE: For queries near wind-borne debris region boundaries, the resulting determination is sensitive to rounding which may affect whether or not it is considered to be within a wind-borne debris region.

Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.

<b>(APPENDIX N) MUNICIPALITY - SPECIFIC STRUCTURAL DESIGN PARAMETERS</b>												
<b>Municipality</b>	<b>Ground Snow Load</b>	<b>Wind Design Parameters</b>										
		<b>MCE Spectral Accelerations (%g)</b>		<b>Ultimate Design Wind Speeds, <math>V_{ult}</math> (mph)</b>			<b>Nominal Design Wind Speeds, <math>V_{asd}</math> (mph)</b>			<b>Wind-Borne Debris Regions<sup>1</sup></b>		<b>Hurricane-Prone Regions</b>
		$S_s$	$S_1$	Risk Cat. I	Risk Cat. II	Risk Cat III-IV	Risk Cat. I	Risk Cat. II	Risk Cat. III-IV	Risk Cat. II & III except Occup I-2	Risk Cat III Occup I-2 & Risk Cat. IV	
Barkhamsted	40	0.177	0.065	110	120	125	85	93	97			Yes
Beacon Falls	30	0.192	0.064	115	125	135	89	97	105			Yes
Berlin	30	0.183	0.063	115	125	135	89	97	105			Yes
Bethany	30	0.189	0.063	115	125	135	89	97	105			Yes
Bethel	30	0.215	0.066	110	120	125	85	93	97			Yes
Bethlehem	35	0.190	0.065	110	120	125	85	93	97			Yes
Bloomfield	35	0.180	0.064	115	125	130	89	97	101			Yes
Bolton	30	0.177	0.063	115	125	135	89	97	105			Yes
Bozrah	30	0.170	0.061	120	135	145	93	105	112		Type A	Yes
Branford	30	0.180	0.061	120	130	140	93	101	108		Type B	Yes
Bridgeport	30	0.209	0.064	115	125	135	89	97	105		Type B	Yes
Bridgewater	35	0.201	0.066	110	120	125	85	93	97			Yes
Bristol	35	0.185	0.064	110	120	130	85	93	101			Yes
Brookfield	35	0.208	0.066	110	120	125	85	93	97			Yes
Brooklyn	35	0.171	0.062	120	130	140	93	101	108			Yes
Burlington	35	0.182	0.064	110	120	130	85	93	101			Yes
Canaan	40	0.173	0.065	105	115	120	81	89	93			
Canterbury	35	0.171	0.061	120	130	140	93	101	108		Type A	Yes
Canton	35	0.180	0.064	110	120	130	85	93	101			Yes
Chaplin	35	0.173	0.062	120	130	140	93	101	108			Yes
Cheshire	30	0.186	0.063	115	125	135	89	97	105			Yes
Chester	30	0.172	0.060	120	130	140	93	101	108		Type A	Yes
Clinton	30	0.169	0.059	120	135	140	93	105	108	Type B	Type A	Yes
Colchester	30	0.174	0.061	120	130	140	93	101	108			Yes
Colebrook	40	0.174	0.065	105	115	125	81	89	97			
Columbia	30	0.175	0.062	120	130	140	93	101	108			Yes
Cornwall	40	0.180	0.065	105	115	120	81	89	93			
Coventry	30	0.176	0.063	120	130	140	93	101	108			Yes
Cromwell	30	0.181	0.063	115	125	135	89	97	105			Yes
Danbury	30	0.217	0.067	110	120	125	85	93	97			Yes
Darien	30	0.242	0.068	110	120	130	85	93	101			Yes
Deep River	30	0.170	0.060	120	130	140	93	101	108		Type A	Yes
Derby	30	0.195	0.064	115	125	135	89	97	105			Yes
Durham	30	0.179	0.062	115	130	140	89	101	108			Yes
Eastford	40	0.172	0.063	120	130	140	93	101	108			Yes
East Granby	35	0.177	0.065	110	120	130	85	93	101			Yes
East Haddam	30	0.172	0.061	120	130	140	93	101	108			Yes
East Hampton	30	0.177	0.062	120	130	140	93	101	108			Yes
East Hartford	30	0.180	0.064	115	125	135	89	97	105			Yes
East Haven	30	0.182	0.062	120	130	140	93	101	108		Type B	Yes
East Lyme	30	0.164	0.059	125	135	145	97	105	112	Type B	Type A	Yes
Easton	30	0.215	0.066	120	130	140	93	101	108			Yes
East Windsor	35	0.177	0.064	115	125	135	89	97	105			Yes
Ellington	35	0.176	0.064	115	125	135	89	97	105			Yes

State	County	Min. Basic Wind Speed V (mph)	Max. Basic Wind Speed V (mph)	Min. Basic Wind Speed with Ice V <sub>i</sub> (mph)	Max. Basic Wind Speed with Ice V <sub>i</sub> (mph)	Min. Design Ice Thickness t <sub>i</sub> (in.)	Max. Design Ice Thickness t <sub>i</sub> (in.)	Design Frost Depth (in.)	Min. S <sub>s</sub>	Max. S <sub>s</sub>	Notes
CO	LINCOLN	90	90	50	50	0.00	0.25	50	0.12	0.16	2
CO	LOGAN	90	90	50	60	0.25	0.25	50	0.09	0.11	-
CO	MESA	90	90	40	50	0.00	0.25	50	0.27	0.54	2
CO	MINERAL	90	90	40	40	0.00	0.00	40	0.37	0.49	2
CO	MOFFAT	90	90	50	50	0.00	0.25	50	0.26	0.37	2
CO	MONTEZUMA	90	90	40	40	0.00	0.25	30	0.19	0.37	2
CO	MONTROSE	90	90	40	40	0.00	0.25	40	0.26	0.55	2
CO	MORGAN	90	90	50	50	0.00	0.25	50	0.11	0.15	2
CO	OTERO	90	90	50	50	0.00	0.25	40	0.14	0.18	2
CO	OURAY	90	90	40	40	0.00	0.25	40	0.43	0.56	2
CO	PARK	90	90	50	50	0.00	0.00	50	0.22	0.35	2
CO	PHILLIPS	90	90	50	60	0.25	0.50	50	0.08	0.09	-
CO	PITKIN	90	90	50	50	0.00	0.00	50	0.37	0.54	2
CO	PROWERS	90	90	50	50	0.25	0.50	40	0.11	0.12	-
CO	PUEBLO	90	90	50	50	0.00	0.00	40	0.16	0.23	1, 2
CO	RIO BLANCO	90	90	40	50	0.00	0.25	50	0.27	0.40	2
CO	RIO GRANDE	90	90	40	40	0.00	0.00	40	0.34	0.39	2
CO	ROUTT	90	90	50	50	0.00	0.00	50	0.25	0.31	2
CO	SAGUACHE	90	90	40	50	0.00	0.00	40	0.35	0.49	1, 2
CO	SAN JUAN	90	90	40	40	0.00	0.00	40	0.37	0.54	2
CO	SAN MIGUEL	90	90	40	40	0.00	0.25	40	0.24	0.51	2
CO	SEDGWICK	90	90	60	60	0.25	0.50	50	0.08	0.09	-
CO	SUMMIT	90	90	50	50	0.00	0.00	50	0.27	0.33	2
CO	TELLER	90	90	50	50	0.00	0.00	40	0.18	0.22	1, 2
CO	WASHINGTON	90	90	50	50	0.00	0.25	50	0.09	0.13	-
CO	WELD	90	90	50	50	0.00	0.25	50	0.11	0.21	1, 2
CO	YUMA	90	90	50	50	0.25	0.50	50	0.08	0.11	-
CT	FAIRFIELD	90	110	40	50	0.75	0.75	40	0.30	0.41	1, 2
CT	HARTFORD	90	105	40	50	1.00	1.00	40	0.26	0.28	-
CT	LITCHFIELD	90	100	40	40	0.75	1.00	40	0.26	0.33	1, 2
CT	MIDDLESEX	100	120	50	50	0.75	0.75	40	0.25	0.28	-
CT	NEW HAVEN	95	115	50	50	0.75	0.75	40	0.26	0.32	-
CT	NEW LONDON	105	120	50	50	0.75	0.75	40	0.24	0.27	-
CT	TOLLAND	95	105	40	50	0.75	1.00	40	0.26	0.27	-
CT	WINDHAM	100	110	40	50	0.75	1.00	40	0.26	0.27	-
DE	KENT	90	105	30	40	0.50	0.75	30	0.17	0.25	-
DE	NEW CASTLE	90	90	40	40	0.75	0.75	30	0.24	0.33	-
DE	SUSSEX	95	120	40	40	0.50	0.50	20	0.13	0.18	-
FL	ALACHUA	100	105	30	30	0.00	0.00	0	0.11	0.13	-
FL	BAKER	100	105	30	30	0.00	0.00	0	0.13	0.15	-
FL	BAY	115	130	30	30	0.00	0.25	0	0.08	0.11	-
FL	BRADFORD	100	105	30	30	0.00	0.00	0	0.12	0.14	-
FL	BREVARD	115	135	30	30	0.00	0.00	0	0.08	0.11	-
FL	BROWARD	120	140	30	30	0.00	0.00	0	0.06	0.08	-
FL	CALHOUN	110	120	30	30	0.00	0.00	0	0.09	0.11	-
FL	CHARLOTTE	110	130	30	30	0.00	0.00	0	0.08	0.09	-
FL	CITRUS	100	115	30	30	0.00	0.00	0	0.09	0.11	-

## ***Appendix B***

*Antenna Mount Analysis*





Project ID: CT141EB9400  
 Site Name: Cheshire CT  
 Date: 2/10/2020  
 Sheet: of

(Based on ANSI/TIA-222-G-2005)

<b>Site Name:</b>	Cheshire CT
<b>Site Address:</b>	751 Higgins Road Cheshire, CT 06410
<b>Site County:</b>	New Haven

Design Criteria

Ultimate Basic Wind Speed, $V_{ult}$ =	125	mph	2018 CTSBC, Appendix N
Nominal Basic Wind Speed, $V_{asd}$ =	97	mph	2018 CTSBC, Appendix N
Basic Wind Speed with ice, $V_i$ =	50	mph	
Basic Wind Speed, $V_w$ =	15	mph	For access/man combinations
Design Ice Thickness, $t_i$ =	0.75	in	
Type of Structure =	Lattice		
Structure Height =	250	ft	
Structure Class =	II		Table 2-1
Exposure Category =	C		Section 2.6.5
Importance Factor, $I$ =	1.00		Table 2-3
Importance Factor with Ice, $I_{wi}$ =	1.00		Table 2-3
Ice Thickness Importance Factor, $I_{it}$ =	1.00		Table 2-3
$z_g$ =	900		Table 2-4
$\alpha$ =	9.5		Table 2-4
$K_{zmin}$ =	0.85		Table 2-4
$K_{zt}$ =	1.0		Section 2.6.6.4
$K_d$ =	0.85		Table 2-2
$G_h$ =	0.85		Section 2.6.7
Mount $G_h$ =	1.00		Section 2.6.7
$q_z'$ =	20.47	psf	
$q_{zi}'$ =	5.44	psf	Excluding $K_z$
$q_{zw}'$ =	0.49	psf	



(Based on ANSI/TIA-222-G-2005)

Design Criteria:  $q_t = 20.47$  psf (from Previous Sheet)  
 $q_{hj} = 5.44$  psf  
 $q_{sw} = 0.49$  psf  
 $t_i = 0.75$  in

$G_h = 1.00$  Section 2.6.7  
 $K_s = 1.00$  Section 2.6.9.2.2 - Section 2.6.9.2.4

#/Sector	Elev. z, ft	$K_z$	$q_w$ , psf	Dimensions			Flat Panel Front Coefficient			Flat Panel Side Coefficient			Front Wind Force, lbs	Side Wind Force, lbs	Weight, lbs		
				Height, in	Width, in	Depth, in	Area, ft <sup>2</sup>	Aspect Ratio	$C_{Af}$	Area, ft <sup>2</sup>	Aspect Ratio	$C_{As}$					
2.0	252	1.537	31.48	96.0	13.8	8.2	12.53	6.957	1.36	12.53	5.467	11.707	1.56	8.511	395.0	268.0	134.6
2.0	252	1.537	31.48	70.9	15.0	13.1	9.43	7.36	4.737	1.28	6.432	5.422	1.31	8.402	297.0	265.0	42.0
1.0	252	1.537	31.48	71.0	11.3	6.0	32.2	5.57	6.283	1.34	2.958	11.833	1.56	4.618	235.0	146.0	32.2
2.0	252	1.537	31.48	70.9	5.5	13.2	36.0	2.71	12.885	1.60	6.496	5.369	1.30	8.473	137.0	267.0	36.0
1.0	252	1.537	31.48	15.0	15.0	10.0	84.4	1.55	1.000	1.20	1.043	1.490	1.20	1.252	59.0	40.0	84.4
1.0	252	1.537	31.48	15.0	15.0	8.2	70.3	1.55	1.000	1.20	0.847	1.836	1.20	1.016	59.0	32.0	70.3
1.0	252	1.537	31.48	6.4	6.9	9.6	20.7	0.31	0.928	1.20	0.427	0.667	1.20	0.512	12.0	17.0	20.7
1.0	252	1.537	31.48	21.6	15.7	10.3	32.0	2.35	1.370	1.20	1.543	2.090	1.20	1.852	89.0	59.0	32.0

#/Sector	Elev. z, ft	$K_z$	$q_w$ , psf	Dimensions with Ice			Flat Panel Front Coefficient			Flat Panel Side Coefficient			Front Wind Force, lbs	Side Wind Force, lbs	Weight, lbs		
				Ice Thick., in	Height, in	Depth, in	Area, ft <sup>2</sup>	Aspect Ratio	$C_{Af}$	Area, ft <sup>2</sup>	Aspect Ratio	$C_{As}$					
2.0	252	1.537	8.364	1.84	99.88	16.05	333.7	12.10	6.21	16.148	8.221	6.21	1.33	10.974	136.0	92.0	488.3
2.0	252	1.537	8.364	1.84	74.55	19.87	302.8	9.65	3.75	12.017	8.669	3.75	1.25	10.798	101.0	91.0	344.8
1.0	252	1.537	8.364	1.84	74.68	12.79	204.5	7.77	5.84	10.262	5.018	5.84	1.32	6.630	86.0	56.0	236.7
2.0	252	1.537	8.364	1.84	74.55	14.30	225.1	4.75	5.21	6.169	8.737	5.21	1.30	11.346	52.0	95.0	261.1
1.0	252	1.537	8.364	1.84	18.64	18.02	69.2	2.41	1.03	2.894	1.775	1.03	1.20	2.130	25.0	18.0	153.7
1.0	252	1.537	8.364	1.84	18.64	17.04	65.8	2.41	1.09	2.894	1.531	1.09	1.20	1.837	25.0	16.0	136.2
1.0	252	1.537	8.364	1.84	10.08	11.82	25.8	0.74	0.85	1.20	0.929	0.85	1.20	1.115	8.0	10.0	46.5
1.0	252	1.537	8.364	1.84	25.23	18.81	97.5	3.40	1.34	4.080	2.450	1.34	1.20	2.940	35.0	25.0	129.5

#/Sector	Elev. z, ft	$K_z$	$q_w$ , psf	Dimensions			Flat Panel Front Coefficient			Flat Panel Side Coefficient			Front Wind Force, lbs	Side Wind Force, lbs	Weight, lbs		
				Height, in	Width, in	Depth, in	Area, ft <sup>2</sup>	Aspect Ratio	$C_{Af}$	Area, ft <sup>2</sup>	Aspect Ratio	$C_{As}$					
2.0	252	1.537	0.75	96.0	13.8	8.2	12.53	6.957	1.36	12.53	5.467	11.707	1.56	8.511	100.0	7.0	134.6
2.0	252	1.537	0.75	70.9	15.0	13.1	9.43	7.36	4.737	1.28	6.432	5.422	1.31	8.402	8.0	7.0	42
1.0	252	1.537	0.75	71.0	11.3	6.0	32.2	5.57	6.283	1.34	2.958	11.833	1.56	4.618	6.0	4.0	32.2
2.0	252	1.537	0.75	70.9	5.5	13.2	36.0	2.71	12.885	1.60	6.496	5.369	1.30	8.473	4.0	7.0	36
1.0	252	1.537	0.75	15.0	15.0	10.0	84.4	1.55	1.000	1.20	1.043	1.490	1.20	1.252	2.0	1.0	84.44
1.0	252	1.537	0.75	15.0	15.0	8.2	70.3	1.55	1.000	1.20	0.847	1.836	1.20	1.016	2.0	1.0	70.33
1.0	252	1.537	0.75	6.4	6.9	9.6	20.7	0.31	0.928	1.20	0.427	0.667	1.20	0.512	1.0	1.0	20.7
1.0	252	1.537	0.75	21.6	15.7	10.3	32.0	2.35	1.370	1.20	1.543	2.090	1.20	1.852	3.0	2.0	32





(Based on ANSI/TIA-222-G-2005)

Project ID: CT141EB9400  
 Site Name: Cheshire CT  
 Date: 2/10/2020  
 Sheet: of

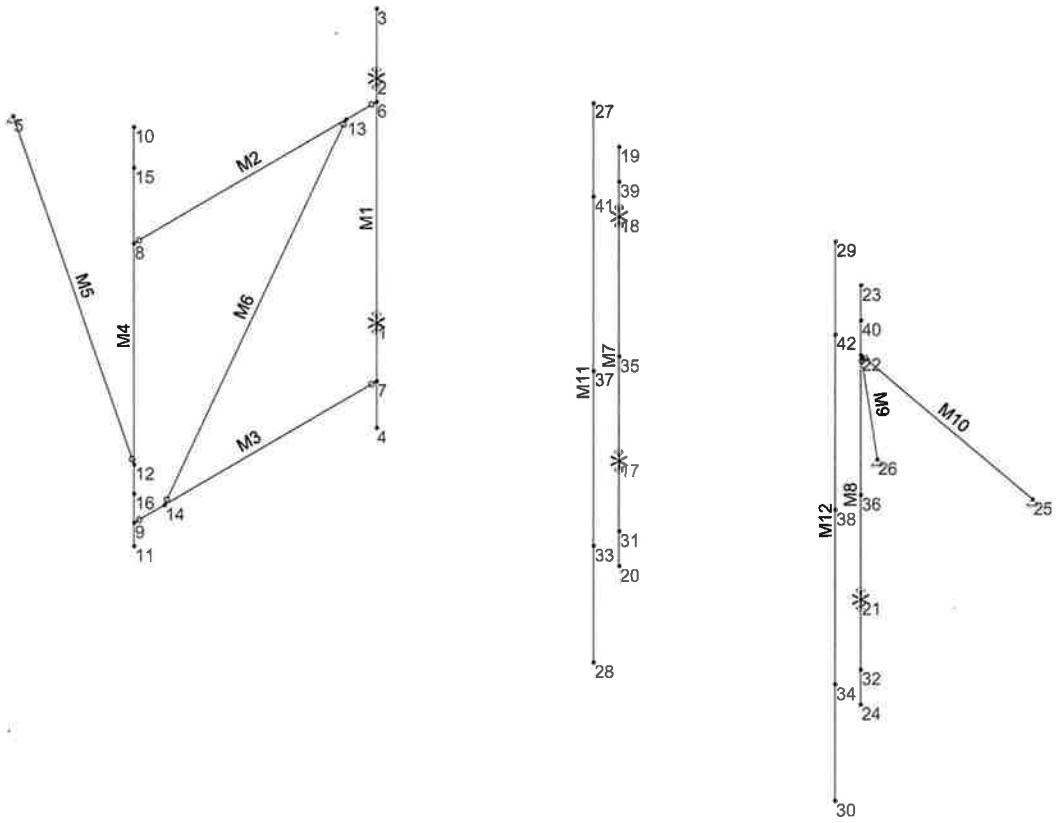
Design Criteria: (From Previous Sheet)

$q_s^* = 20.47$  psf  
 $q_d^* = 5.44$  psf  
 $q_{sw}^* = 0.49$  psf  
 $t_i = 0.75$  in

$G_h = 1.00$  Section 2.6.9  
 $K_a = 1.00$  Section 2.6.9.2.2- Section 2.6.9.2.4

Description	Elev. z, ft	$K_r$	$q_p$ , psf	Ice Thick., $t_{ip}$ , in	$q_{ip}$ , psf	$q_{wp}$ , psf	Dimensions			Loading, No Ice			With Ice			Loading, Working							
							Width or Dia, in	Depth, in	Weight, lbs/ft	Flat or Round	Ca	Wind, lbs/ft	Width or Dia, in	Depth, in	Weight, lbs/ft	Flat or Round	Ca	Wind, lbs/ft	Width or Dia, in	Depth, in	Weight, lbs/ft	Flat or Round	Ca
2.5 STD Pipe	252	1.537	31.48	1.84	8.36	0.75	2.875	2.875	5.79	ROUND	1.20	9.0	6.55	10.58	1.2	5.48	6.55	10.58	1.2	5.48	FLAT	2.00	1.0
L2.5x2.5x3/16	252	1.537	31.48	1.84	8.36	0.75	2.500	2.500	3.07	FLAT	2.00	13.1	6.18	12.07	1.2	5.17	6.18	12.07	1.2	5.17	FLAT	2.00	1.0
L2x2x3/16	252	1.537	31.48	1.84	8.36	0.75	2.000	2.000	2.44	FLAT	2.00	10.5	5.68	10.48	1.2	4.75	5.68	10.48	1.2	4.75	FLAT	2.00	1.0

\*\* All member sizes have been assumed



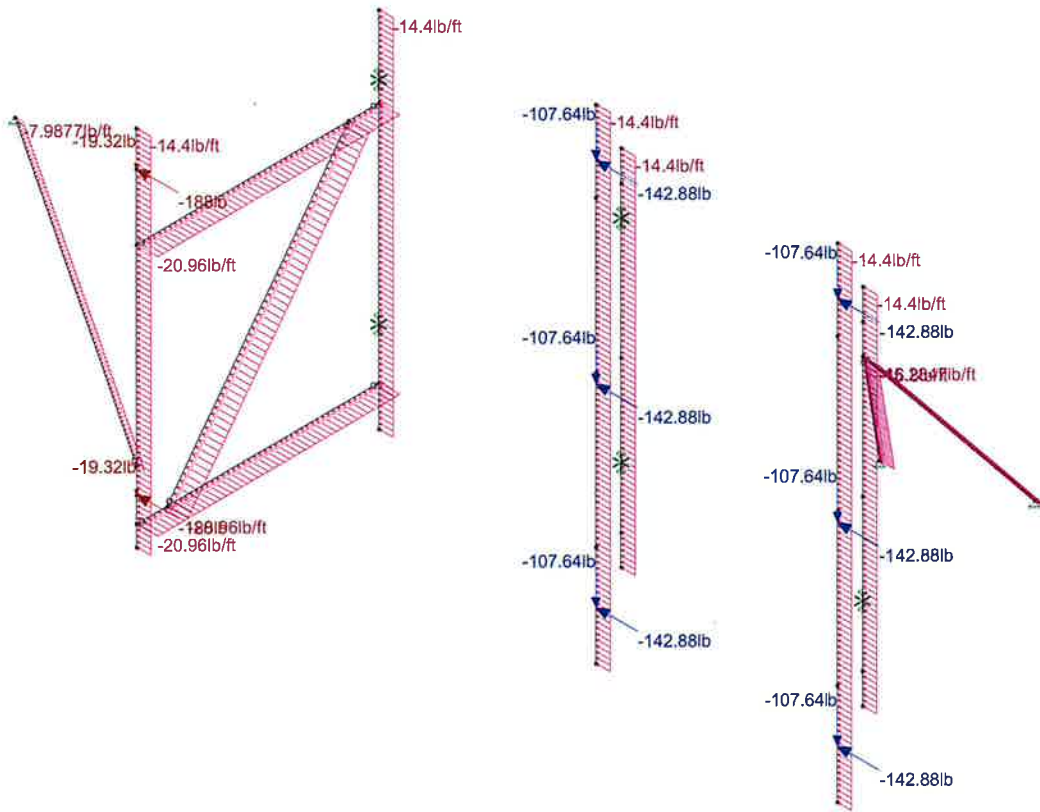
Envelope Only Solution

APT
MT
Cheshire

EXISTING MOUNTS  
NODE & MEMBER LABELS

Feb 10, 2020 at 4:04 PM

Beta Standoff\_02.10.202.r3d

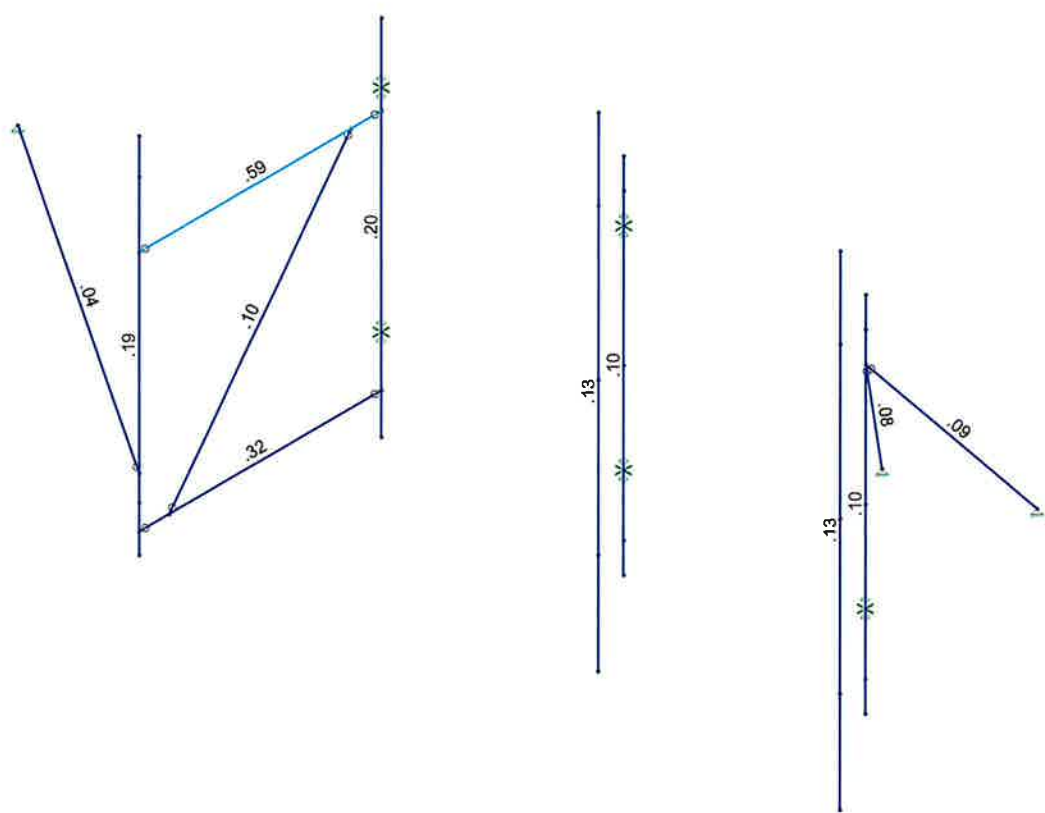


Loads: LC 1, 1.2DL + 1.6WLX  
Envelope Only Solution

APT	EXISTING MOUNTS WORST CASE LOAD COMBO - LC1	Feb 10, 2020 at 4:05 PM
MT		Beta Standoff_02.10.202.r3d
Cheshire		



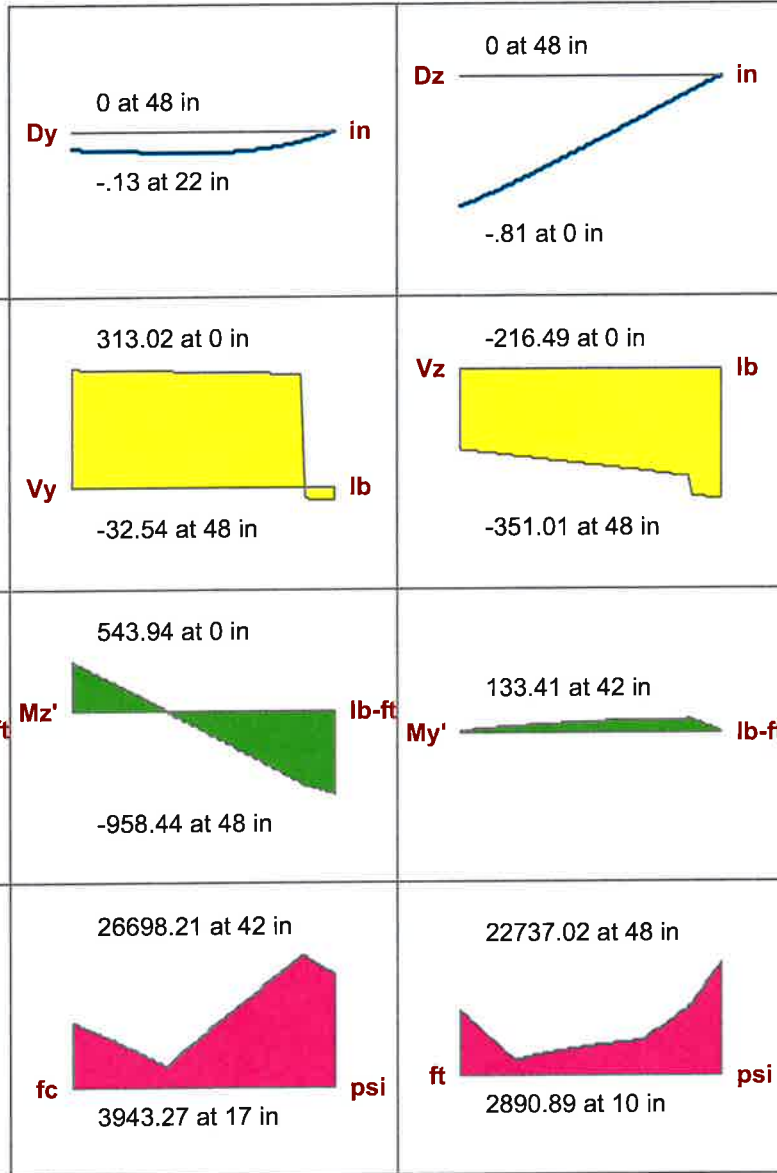
Color Check	
Color	Value
Red	> 1.0
Yellow	0.5 - 1.0
Green	0.0 - 0.5
Blue	0.0 - 0.25
Black	0.0 - 0.0



Member Code Checks Displayed (Enveloped)  
Envelope Only Solution

APT	EXISTING MOUNTS BENDING STRESSES	Feb 10, 2020 at 4:06 PM
MT		Beta Standoff_02.10.202.r3d
Cheshire		

Beam: **M2**  
 Shape: **L2.5x2.5x3**  
 Material: **A36 Gr.36**  
 Length: **48 in**  
 I Joint: **8**  
 J Joint: **6**  
 LC 1: **1.2DL + 1.6WLX**  
 Code Check: **0.593 (bending)**  
 Report Based On 97 Sections



**AISC 14th(360-10): LRFD Code Check**

**Direct Analysis Method**

Max Bending Check	<b>0.593</b>	Max Shear Check	<b>0.078 (y)</b>	Max Defl Ratio	<b>L/590</b>
Location	<b>42 in</b>	Location	<b>0 in</b>	Location	<b>29.5 in</b>
Equation	<b>H2-1</b>			Span	<b>1</b>

Bending Flange	<b>Compact</b>	Compression Flange	<b>Slender</b>	<b>Qs=.983</b>
Bending Web	<b>Compact</b>	Compression Web	<b>Slender</b>	<b>Qa=1</b>

Fy	<b>36000 psi</b>	Lb	<b>48 in</b>	z-z'	<b>42 in</b>
phi*Pnc	<b>17176.43 lb</b>	KL/r	<b>99.59</b>		<b>42.97</b>
phi*Pnt	<b>29192.4 lb</b>				
phi*Mny'	<b>872.57 lb-ft</b>	L Comp Flange	<b>42 in</b>		
phi*Mnz'	<b>1971.83 lb-ft</b>	L-torque	<b>48 in</b>		
phi*Vny	<b>9112.5 lb</b>	Tau_b	<b>1</b>		
phi*Vnz	<b>9112.5 lb</b>				
Cb	<b>2.25</b>				



Company : APT  
 Designer : MT  
 Job Number : Cheshire  
 Model Name : EXISTING MOUNTS

Feb 10, 2020  
 4:07 PM  
 Checked By: \_\_\_\_\_

**(Global) Model Settings**

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)
RISACconnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI S100-12: ASD
Wood Code	AWC NDS-15: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-14
Masonry Code	ACI 530-13: ASD
Aluminum Code	AA ADM1-15: ASD - Building
	AISC 14th(360-10): ASD

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR SET ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8



Company : APT  
 Designer : MT  
 Job Number : Cheshire  
 Model Name : EXISTING MOUNTS

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**(Global) Model Settings, Continued**

Seismic Code	ASCE 7-10
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1

**Member Primary Data**

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	3	4			2.5" STD Pipe	Column	Pipe	A53 Gr.B	Typical
2	M2	8	6			L2.5x2.5x3/16	Beam	Single Angle	A36 Gr.36	Typical
3	M3	9	7			L2.5x2.5x3/16	Beam	Single Angle	A36 Gr.36	Typical
4	M4	10	11			2.5" STD Pipe	Column	Pipe	A53 Gr.B	Typical
5	M5	5	12			2.5" STD Pipe	Column	Pipe	A53 Gr.B	Typical
6	M6	14	13			L2.5x2.5x3/16	Beam	Single Angle	A36 Gr.36	Typical
7	M7	19	20			2.5" STD Pipe	Column	Pipe	A53 Gr.B	Typical
8	M8	23	24			2.5" STD Pipe	Column	Pipe	A53 Gr.B	Typical
9	M9	22	26			L2.5x2.5x3/16	Beam	Single Angle	A36 Gr.36	Typical
10	M10	22	25			L2.5x2.5x3/16	Beam	Single Angle	A36 Gr.36	Typical
11	M11	27	28			2.5" STD Pipe	Column	Pipe	A53 Gr.B	Typical
12	M12	29	30			2.5" STD Pipe	Column	Pipe	A53 Gr.B	Typical
13	M13	33	31			RIGID	None	None	RIGID	Typical
14	M14	34	32			RIGID	None	None	RIGID	Typical
15	M15	37	35			RIGID	None	None	RIGID	Typical
16	M16	38	36			RIGID	None	None	RIGID	Typical
17	M17	41	39			RIGID	None	None	RIGID	Typical
18	M18	42	40			RIGID	None	None	RIGID	Typical

**Member Advanced Data**

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes	** NA **			None
2	M2	OOOOXO	OOOOXO				Yes	Default			None
3	M3	OOOOXO	OOOOXO				Yes	Default			None
4	M4						Yes	** NA **			None
5	M5		BenPIN				Yes	** NA **			None
6	M6	BenPIN	BenPIN				Yes	Default			None
7	M7						Yes	** NA **			None
8	M8						Yes	** NA **			None





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**Member Advanced Data (Continued)**

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
9	M9	BenPIN					Yes				None
10	M10	BenPIN					Yes				None
11	M11						Yes	** NA **			None
12	M12						Yes	** NA **			None
13	M13						Yes	** NA **			None
14	M14						Yes	** NA **			None
15	M15						Yes	** NA **			None
16	M16						Yes	** NA **			None
17	M17						Yes	** NA **			None
18	M18						Yes	** NA **			None

**Hot Rolled Steel Design Parameters**

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	2.5" STD Pi...	72									Lateral
2	M2	L2.5x2.5x3/...	48		Segment	Segment	Segment					Lateral
3	M3	L2.5x2.5x3/...	48		Segment	Segment	Segment					Lateral
4	M4	2.5" STD Pi...	72									Lateral
5	M5	2.5" STD Pi...	86.5332									Lateral
6	M6	L2.5x2.5x3/...	60			Lbyy						Lateral
7	M7	2.5" STD Pi...	72									Lateral
8	M8	2.5" STD Pi...	72									Lateral
9	M9	L2.5x2.5x3/...	54.1479			Lbyy						Lateral
10	M10	L2.5x2.5x3/...	54.1479			Lbyy						Lateral
11	M11	2.5" STD Pi...	96									Lateral
12	M12	2.5" STD Pi...	96									Lateral

**Load Combinations**

	Description	So...	P...	S...	BLC Fa...	BLC Fa...	BLC Fa...	BLC Fa...	B... Fa...	B... Fa...	B... Fa...	B... Fa...	B... Fa...	B... Fa...
1	1.2DL + 1.6WLX	Yes	Y		DL 1.2	WLX 1.6								
2	1.2DL + 1.6WLZ	Yes	Y		DL 1.2	WLZ 1.6								
3	1.2DL + 1.13(WLX + WLZ)	Yes	Y		DL 1.2	WLX 1.13	WLZ 1.13							
4	1.2DL + 1.6WL-X	Yes	Y		DL 1.2	WLX -1.6								
5	1.2DL + 1.6WL-Z	Yes	Y		DL 1.2	WLZ -1.6								
6	1.2DL + 1.13(WL-X + WL...	Yes	Y		DL 1.2	WLX -1....	WLZ -1....							
7	1.2DL + DLi + WLXi	Yes	Y		DL 1.2	OL1 1	OL2 1							
8	1.2DL + DLi + WLZi	Yes	Y		DL 1.2	OL1 1	OL3 1							
9	1.2DL + DLi + 0.707(WL...	Yes	Y		DL 1.2	OL1 1	OL2 .707	OL3 .707						
10	1.2DL + DLi + WLXi	Yes	Y		DL 1.2	OL1 1	OL2 -1							
11	1.2DL + DLi + WLZi	Yes	Y		DL 1.2	OL1 1	OL3 -1							
12	1.2DL + DLi + 0.707(WL...	Yes	Y		DL 1.2	OL1 1	OL2 -.7...	OL3 -.7...						

**Envelope Joint Reactions**

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	2	max	385.69	1	704.08	10	89.19	2	0	1	613.02	1	0	1
2		min	-375.16	4	51.99	1	-693.6	11	0	1	-647.63	4	0	1
3	1	max	23.59	4	153.27	7	692.5	8	0	1	130.84	4	0	1
4		min	-45.81	1	-74.12	4	-191.69	1	0	1	-144.74	1	0	1
5	5	max	539	1	68.3	10	340.3	1	0	1	0	1	0	1
6		min	-527.32	4	24.12	1	-332.12	4	0	1	0	1	0	1
7	18	max	244.33	1	1230.04	2	517.4	2	0	1	112.61	1	0	1
8		min	-244.33	4	-810.14	5	-607.48	5	0	1	-112.61	4	0	1
9	17	max	385.91	1	1229.7	5	948.04	2	0	1	114	1	0	1





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**Envelope Joint Reactions (Continued)**

Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC	
10		min	-385.91	4	-810.48	2	-857.96	5	0	1	-114	4	0	1
11	21	max	385.9	1	1652.32	11	948.07	2	0	1	226.6	1	0	1
12		min	-385.85	4	-275.98	2	-857.87	5	0	1	-226.6	4	0	1
13	25	max	38	1	721.72	2	609.54	2	0	1	0	1	0	1
14		min	-37.84	4	-814.97	5	-699.73	5	0	1	0	1	0	1
15	26	max	351.12	1	600.65	1	362.92	1	0	1	0	1	0	1
16		min	-351.33	4	-583.22	4	-362.86	4	0	1	0	1	0	1
17	Totals:	max	2284.14	1	3469.41	8	3633.01	2						
18		min	-2284.14	4	1095.45	5	-3633.01	5						

**Envelope AISC 14th(360-10): LRFD Steel Code Checks**

Member	Shape	Code Che...	Loc[in]	LC	Shear Check	Loc[...]	Dir	LC	phi*Pnc...	phi*Pnt [...]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn	
1	M1	PIPE 2.5	.203	16.5	1	.229	12		4	37773.82	50715	3596.25	3596.25	1.12	H1-1b
2	M2	L2.5x2.5x3	.593	42	1	.089	42	y	7	17176.43	29192.4	872.57	1971.83	2.25	H2-1
3	M3	L2.5x2.5x3	.323	6	10	.086	6	y	7	17176.43	29192.4	872.57	1971.83	1.75	H2-1
4	M4	PIPE 2.5	.194	57.75	1	.158	58.5		1	37773.82	50715	3596.25	3596.25	1.18	H1-1b
5	M5	PIPE 2.5	.037	43.27	7	.005	86.53		11	33137.99	50715	3596.25	3596.25	1.14	H1-1b
6	M6	L2.5x2.5x3	.098	30	1	.015	0	z	1	12869.59	29192.4	872.57	1659.73	1.14	H2-1
7	M7	PIPE 2.5	.103	54	2	.045	54		3	37773.82	50715	3596.25	3596.25	1	H1-1b
8	M8	PIPE 2.5	.104	54	2	.053	54		3	37773.82	50715	3596.25	3596.25	1.36	H1-1b
9	M9	L2.5x2.5x3	.082	27.64	1	.003	0	y	6	14934.25	29192.4	872.57	1702.96	1.14	H2-1
10	M10	L2.5x2.5x3	.086	28.2	2	.004	0	z	4	14934.25	29192.4	872.57	1702.96	1.14	H2-1
11	M11	PIPE 2.5	.127	76	5	.029	76		5	30038.46	50715	3596.25	3596.25	1	H1-1b
12	M12	PIPE 2.5	.127	76	5	.030	16		3	30038.46	50715	3596.25	3596.25	2.16	H1-1b

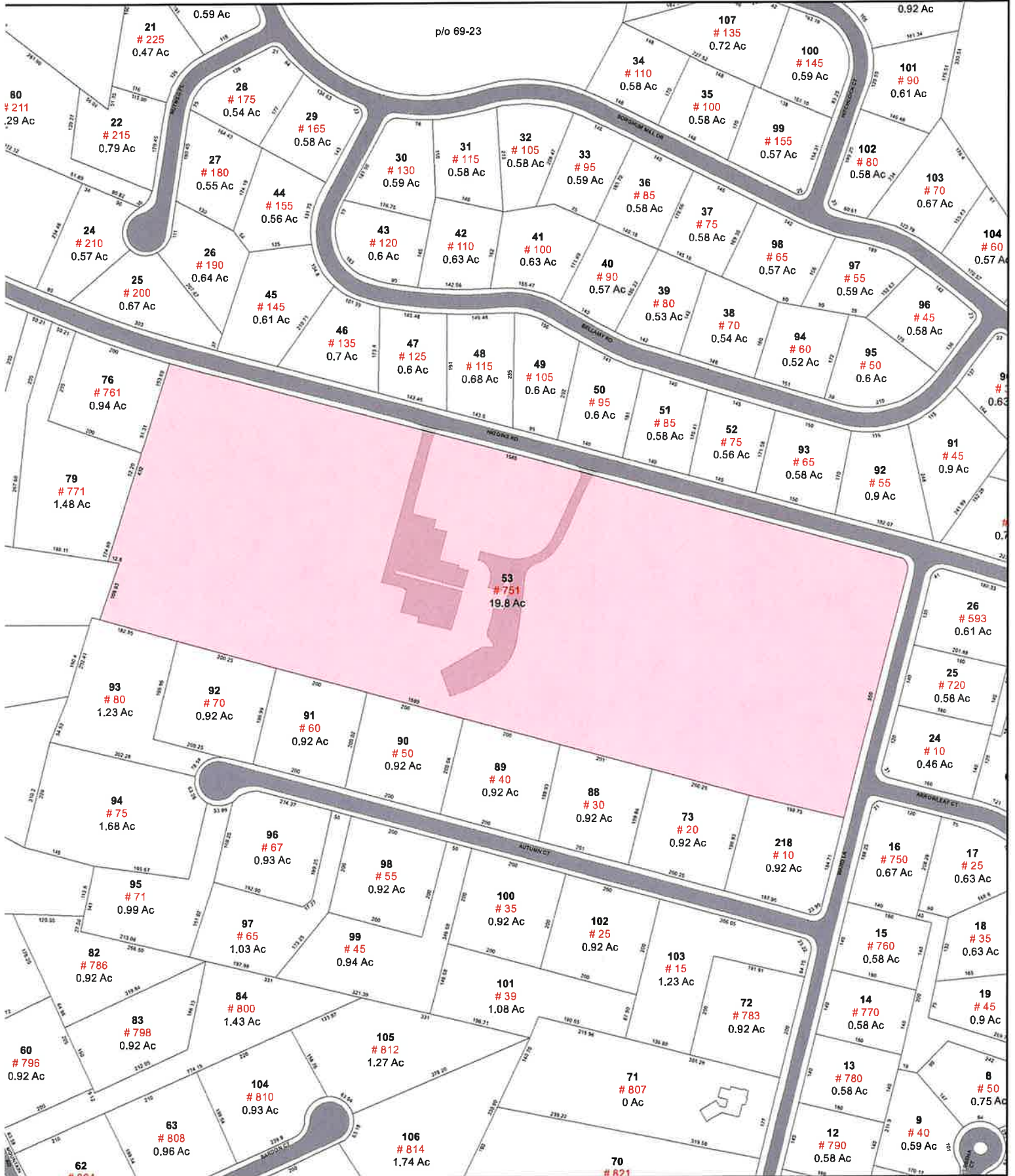
# **ATTACHMENT 6**

# Town of Cheshire, Connecticut - Assessment Parcel Map



Parcel: 00712600

Location: 751 HIGGINS RD



Approximate Scale: 1 inch = 257 feet

0 140 280 420 560



Feet

Map Produced: April 2019

Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The Town of Cheshire and its mapping contractors assume no legal responsibility for the information contained herein.



# Town of Cheshire, CT

## Property Listing Report

Map Block Lot **69-53**

Building # **1**

Unique Identifier **00712600**

### Property Information

Property Location	751 HIGGINS RD
Mailing Address	P O BOX 7207 BEDMINSTER NJ 07921
Land Use	Light Industrial
Zoning Code	R-40
Neighborhood	I-1C

Owner	AMER TEL & TEL CO
Co-Owner	AT&T PROPERTY TAX UNIT
Book / Page	0148/0566
Land Class	Industrial
Census Tract	3434
Acreage	19.8

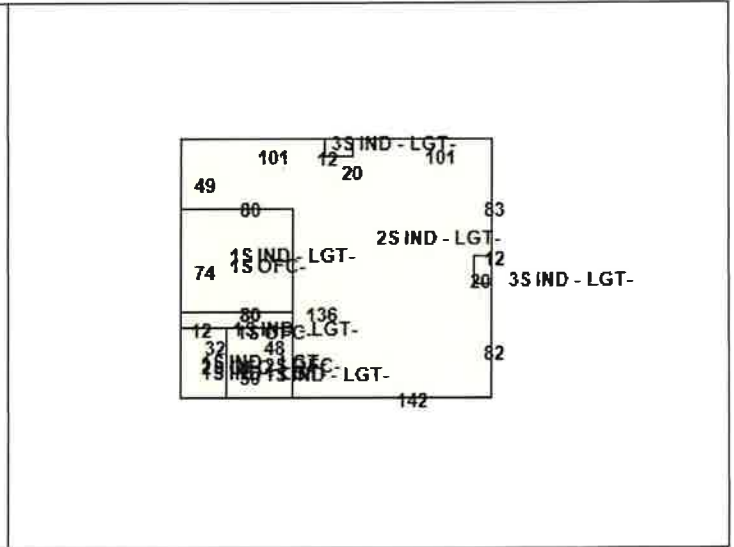
### Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	2594709	1816300
Outbuildings	29640	20750
Land	429316	300520
Total	3053665	2137570

### Utility Information

Electric	No
Gas	No
Sewer	No
Public Water	No
Well	No



### Primary Construction Details

Year Built	1968
Building Desc.	Commercial
Building Style	
Stories	2.00
Exterior Walls	Pre-Cast Concrete
Exterior Walls 2	B. V. Solid
Interior Walls	
Interior Walls 2	
Interior Floors 1	Composite
Interior Floors 2	

Heating Fuel	
Heating Type	
AC Type	Central
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	
Occupancy	0

Building Use	Light Industrial
Building Condition	Average
Frame Type	Average
Fireplaces	0
Bsmt Gar	0
Fin Bsmt Area	
Fin Bsmt Quality	
Building Grade	-50
Roof Style	HIP
Roof Cover	Asphalt

Report Created On **3/5/2020**





# Town of Cheshire, CT

Property Listing Report

Map Block Lot **69-53**

Building # **1**

Unique Identifier **00712600**

## Detached Outbuildings

Type	Description	Area (sq ft)	Condition	Year Built
Fencing	Fencing	2400	Average	1968
Paving	Paving	43000	Average	1968
Fencing	Fencing	600	Average	1968
Fencing	Fencing	1560	Average	1968

## Attached Extra Features

Type	Description	Area (sq ft)	Condition	Year Built

## Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price

# **ATTACHMENT 7**



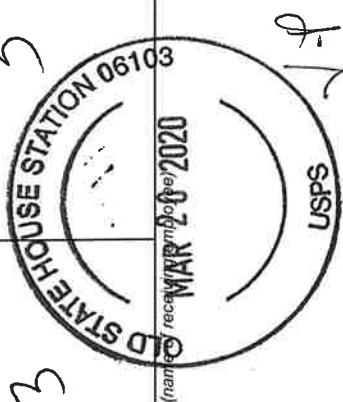
**Certificate of Mailing — Firm**

Name and Address of Sender

Kenneth C. Baldwin, Esq.  
 Robinson & Cole LLP  
 280 Trumbull Street  
 Hartford, CT 06103

TOTAL NO.  
 of Pieces Listed by Sender

TOTAL NO.  
 of Pieces Received at Post Office™



Affix Stamp Here  
 Postmark with Date of Receipt.

neopost<sup>SM</sup>  
 03/20/2020  
**US POSTAGE \$002.84**  
 ZIP 06103  
 041L12209937

Postmaster, per (name) / received (date)

Postmaster, per (name) / received (date)

USPS® Tracking Number  
 Firm-specific Identifier

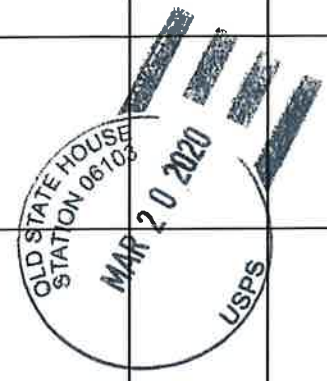
Address  
 (Name, Street, City, State, and ZIP Code™)

Postage

Special Handling

Parcel Airlift

USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Sean Kimball, Town Manager Town of Cheshire 84 South Main Street Cheshire, CT 06410				
2.	William Voelker, Town Planner Town of Cheshire 84 South Main Street Cheshire, CT 06410				
3.	AT&T Corporation Real Estate Administration RE- Site Maint- Higgins RD/CT1370/Used Asset No. 10132665 575 Menasco Drive Atlanta, GA 30324				
4.					
5.					
6.					



Cheshire