Robinson+Cole

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Also admitted in Massachusetts
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May 28, 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**
380 Horace Street, Bridgeport, Connecticut

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains six (6) antennas at the 88-foot level of the existing 90-foot tower at 380 Horace Street in Bridgeport, Connecticut (the "Property"). The tower is owned by Tarpon Towers. The Property is owned by 416 Horace Realty LLC. The Council approved Cellco's use of the tower in 2018 (Docket No 479). A copy of the Council's Decision and Order for Docket No. 479 is included in Attachment 1.

Cellco now intends to modify its facility by adding two (2) new antenna/remote radio head ("RRH") integrated units. A set of project plans showing the proposed facility modifications and the specifications for Cellco's new antenna/RRH units 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 Bridgeport's Mayor, Joseph Ganim; Dennis Buckley, Bridgeport's Zoning Administrator; Tarpon Towers, the tower owner; and 416 Horace Realty LLC, the owner of the Property.

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 new antenna/RRH units will be installed at the 88-foot level on the 90-

foot 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 antenna/RRH integrated units 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 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 Property owner is included in Attachment 7.

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

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Joseph Ganim, Bridgeport Mayor
Dennis Buckley, Bridgeport Zoning Administrator
Tarpon Towers
416 Horace Realty LLC
Tim Parks

ATTACHMENT 1

DOCKET NO. 479 - Tarpon Towers II, LLC and Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility located at 380 Horace Street, Bridgeport, Connecticut.	}	Connecticut Siting Council

March 29, 2018

Decision and Order

Pursuant to Connecticut General Statutes §16-50p and the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment, ecological balance, public health and safety, scenic, historic, and recreational values, agriculture, forests and parks, air and water purity, and fish, aquaculture and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Tarpon Towers II, LLC, hereinafter referred to as the Certificate Holder, for a telecommunications facility at 380 Horace Street, Bridgeport, Connecticut.

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

1. The tower shall be constructed as a monopole at a height of 90 feet above ground level to provide the proposed wireless services, sufficient to accommodate the antennas of Cellco Partnership d/b/a Verizon Wireless and other entities, both public and private. The height of the tower may be extended after the date of this Decision and Order pursuant to regulations of the Federal Communications Commission.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the City of Bridgeport for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a) final site plan(s) for development of the facility that employ the governing standard in the State of Connecticut for tower design in accordance with the currently adopted International Building Code and include specifications for the tower, tower foundation, antennas, and equipment compound including, but not limited to, fencing, radio equipment, access road, utility line, and emergency backup generator;
    b) the compound shall be rotated about 90 degrees to avoid the rocky outcropping;
    c) the tower shall be designed with a yield point to ensure that the tower setback radius remains within the boundaries of the subject property;
    d) a blasting plan prepared in consultation with the fire marshall, if applicable;
    e) construction plans for site clearing, grading, landscaping, water drainage and stormwater control, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended;
    f) Vernal Pool Protection Plan; and
    g) hours of construction.

3. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.

7. Any request for extension of the time period referred to in Condition 6 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the City of Bridgeport.

8. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council within 90 days from the one year period of cessation of service. The Certificate Holder may submit a written request to the Council for an extension of the 90 day period not later than 60 days prior to the expiration of the 90 day period.

9. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.

10. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.

11. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.

12. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.

13. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.

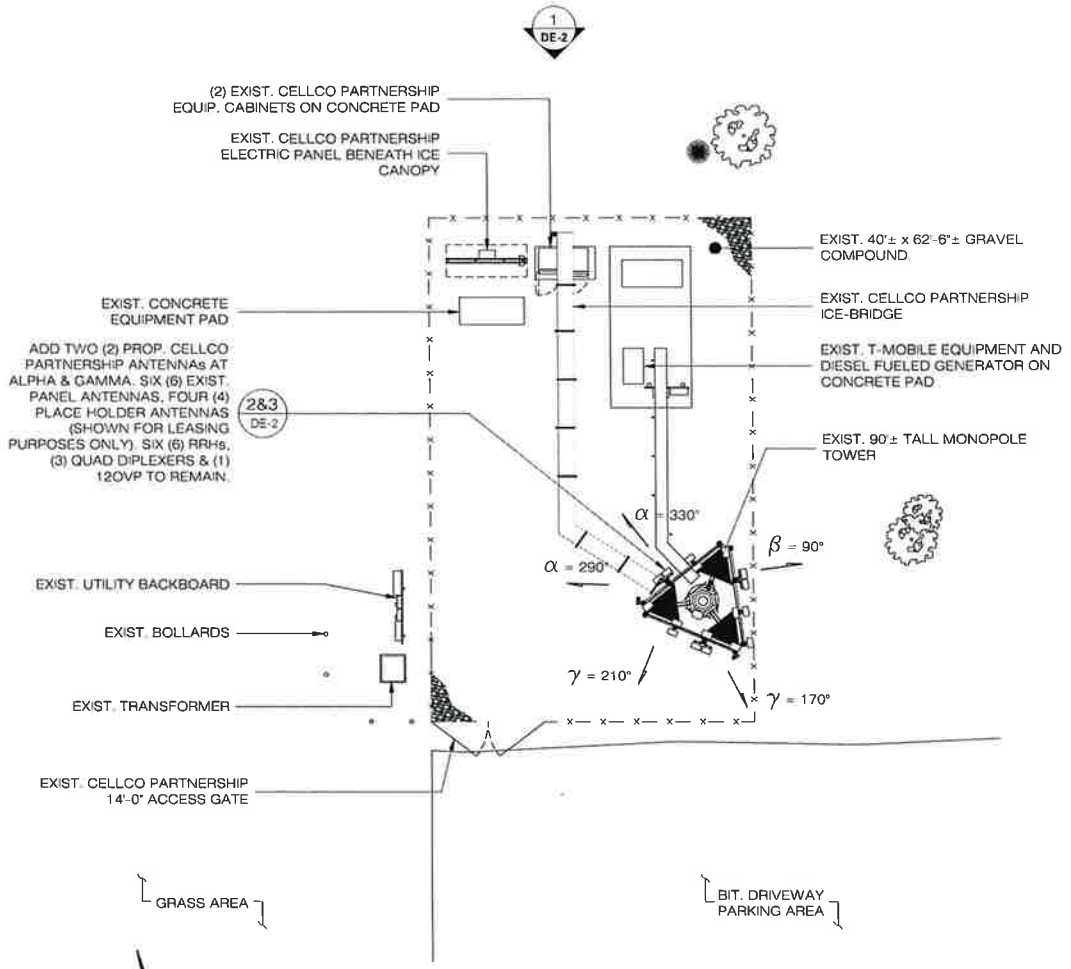
14. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the Certificate Holder within 30 days of the sale and/or transfer.

15. This Certificate may be surrendered by the Certificate Holder upon written notification and approval by the Council.

We hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed in the Service List, dated January 29, 2018, and notice of issuance published in the Connecticut Post.

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

ATTACHMENT 2



1 DE-1 COMPOUND PLAN

SCALE: 1" = 15'-0"

15 0 7.5 15 30

(IN FEET)1 inch = 15 ft.

GENERAL NOTES:

1. DESIGN EXHIBIT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND CONVEY GENERAL INFORMATION PERTAINING TO THE SIZE AND LOCATION OF THE PROPOSED WIRELESS EQUIPMENT UPGRADE.
2. BASE MAPPING FROM FIELD MEASUREMENTS TAKEN BY ALL-POINTS TECH. CORP., P.C. ON 01/29/20.
3. REFER TO TOWER STRUCTURAL ANALYSIS REPORT PREPARED BY MFP ENGINEERING & CONSULTING LLC, MFP PROJECT #40920-028, DATED APRIL 07, 2020 AVAILABLE UNDER SEPARATE COVER.
4. REFER TO MOUNT STRUCTURAL ANALYSIS REPORT PREPARED BY ALL-POINTS TECHNOLOGY CORP., DATED MAY 19, 2020 AVAILABLE UNDER SEPARATE COVER.
5. PROJECT SCOPE INCLUDES THE FOLLOWING:
   - INSTALLATION OF (2) PROP. ANTENNAS w/ INTEGRATED RRUs
6. ALL EXPOSED STEEL AND HARDWARE TO BE HOT DIP GAL. (DG).
7. CAP & WEATHERPROOF ALL UN-USED CABLE ENTRY PORTS (WHERE APPLICABLE).
8. MOUNT & GROUND ALL NEW EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
9. ALL ANTENNAS, APPURTENANCES AND NEW STEEL SHALL BE PAINTED TO MATCH EXIST. (WHERE APPLICABLE) AND SHALL BE APPROVED BY OWNER.

LOCATION PLAN

SCALE: 1" = 200'-0"

STATE OF CONNECTICUT
MICHAEL S. TROOIEN
33313
LICENSED
PROFESSIONAL ENGINEER

REVISIONS:
-REV0. 02/07/20. FOR REVIEW. JRM
-REV1: 02/13/20. REV PER CLIENT COMMENTS. JRM
-REV2: 02/20/20. REV PER CLIENT COMMENTS. JRM
-REV3: 05/19/20. REV PER UPDATED RFDS. JRM
-REV4.

Celico Partnership d/b/a verizon

APT FILING NUMBER: CT141EB11240

LOCATION, COMPOUND PLAN & NOTES

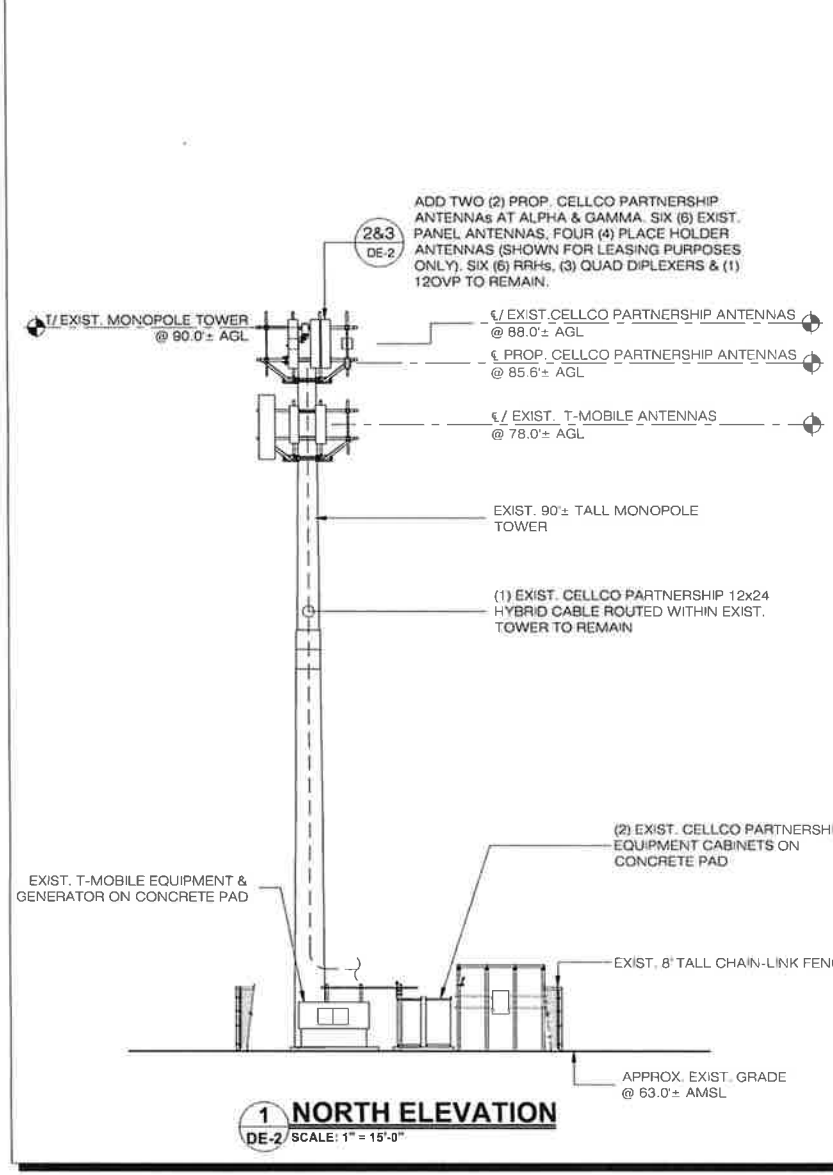
DATE OF DV: 01/29/19 DRAWN BY: DRA
DATE: 02/07/20 CHECKED BY: JRM

BRIDGEPORT EAST CT
CAOLE
380 HORACE STREET
BRIDGEPORT, CT 06610

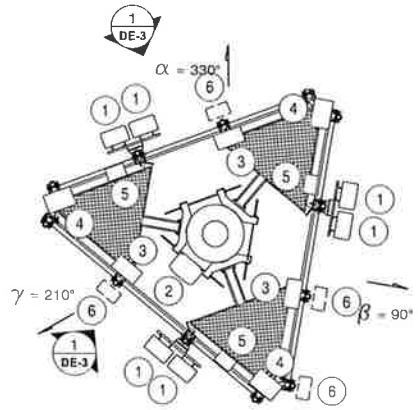
VZW FUZE ID: 16055802 VZW VZW
VZW PROJECT CODE: 20202084400 LC: 468264 CM: AL

SHEET NUMBER: DE-1

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PH (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

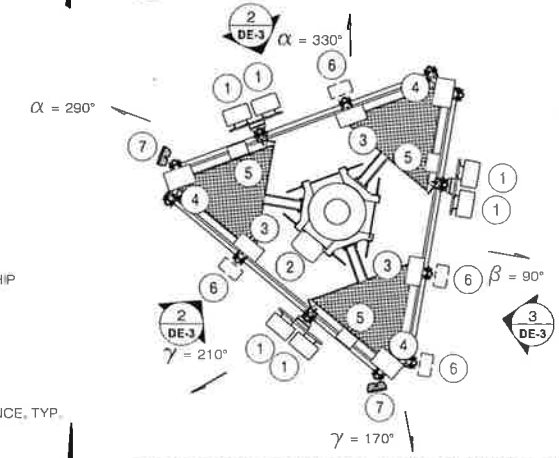


1 DE-2 NORTH ELEVATION
SCALE: 1" = 15'-0"



1. EXIST. ANTENNA (TO REMAIN) MODEL: COMMSCOPE JAHH-65B-R3B
2. EXIST. 12OVP (TO REMAIN) MODEL: RxxDC-6627-PF-48
3. EXIST. DUAL BAND RRH (TO REMAIN) MODEL: SAMSUNG B2/B66 AWS/PCS RRH
4. EXIST. DUAL BAND RRH (TO REMAIN) MODEL: SAMSUNG B5/B13 700/850 RRH
5. EXIST. QUAD DIPLEXER (TO REMAIN) MODEL: COMMSCOPE CBC78T-DS-43-2X
6. PLACE HOLDER ANTENNA (SHOWN FOR LEASING PURPOSES ONLY)

2 DE-2 EXISTING PLATFORM PLAN
SCALE: 3/16" = 1'-0"



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5. EXIST. QUAD DIPLEXER (TO REMAIN) MODEL: COMMSCOPE CBC78T-DS-43-2X
6. PLACE HOLDER ANTENNA (SHOWN FOR LEASING PURPOSES ONLY)
7. PROP. ANTENNA MODEL: SAMSUNG VZ-AT1K01 MOUNTED ON EXIST. PIPE MAST

3 DE-2 PROPOSED PLATFORM PLAN
SCALE: 3/16" = 1'-0"

STATE OF CONNECTICUT
MICHAEL S TRODDEN
33313
LICENSED
PROFESSIONAL ENGINEER

REVISIONS:
-REV0. 02/07/20. FOR REVIEW: JRM
-REV1. 02/13/20. REV PER CLIENT COMMENTS. JRM
-REV2. 02/20/20. REV PER CLIENT COMMENTS. JRM
-REV3. 05/19/20. REV PER UPDATED RFDS. JRM
-REV4.

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SHEET NUMBER: DE-2

BRIDGEPORT EAST CT
CAOLE
380 HORACE STREET
BRIDGEPORT, CT 06610

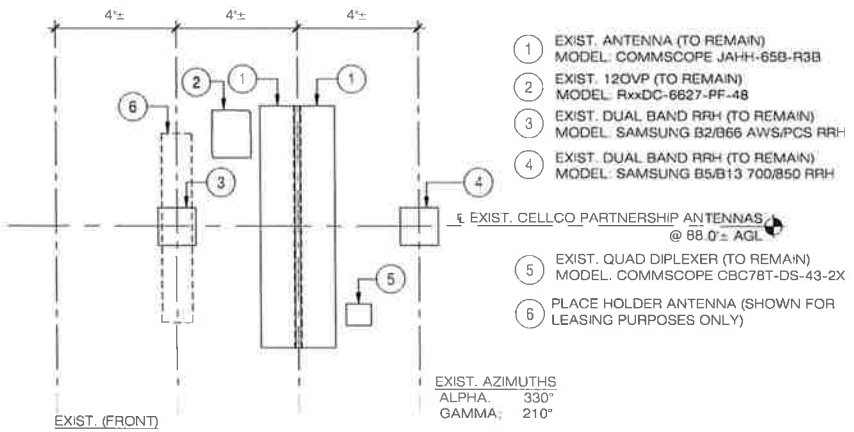
VZW FUZE ID: 16055802 VZW VZW
VZW PROJECT CODE: 20202084400 LC: 488264 CM: AL

APT FILING NUMBER: CT141EB11240

NORTH ELEVATION & EQUIPMENT PLATFORM PLANS

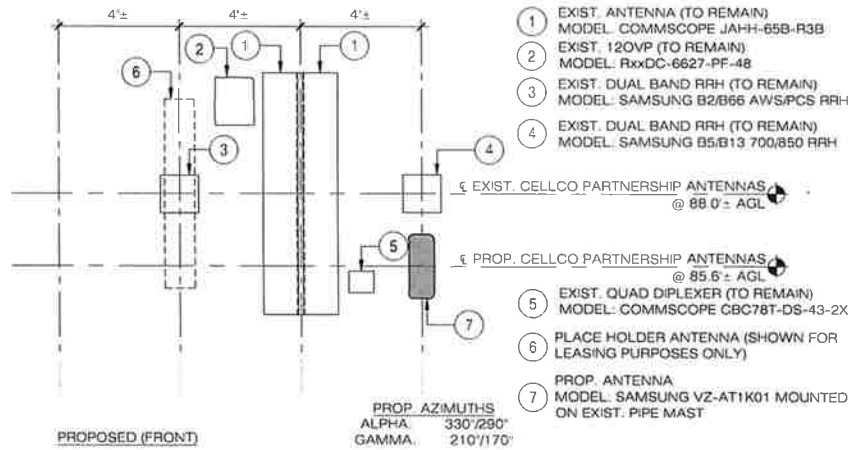
DATE OF DV: 01/28/19 | DRAWN BY: DRA
DATE: 02/07/20 | CHECKED BY: JRM

Cellco Partnership d/b/a verizon



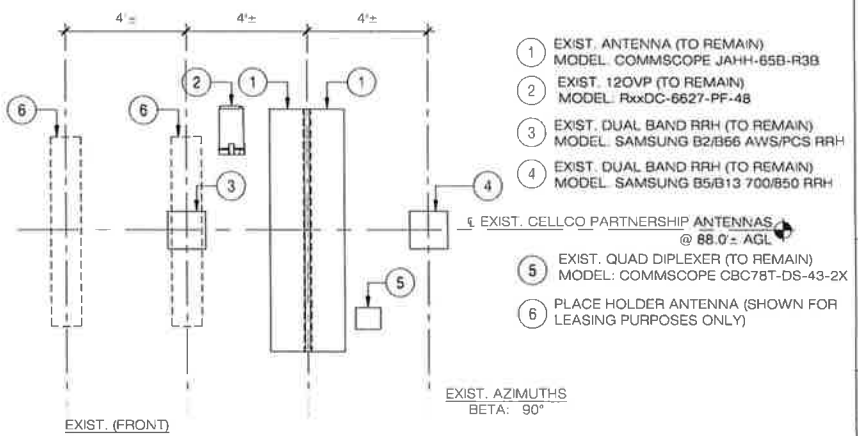
1 DE-3 ALPHA/GAMMA EQUIPMENT CONFIG. - EXIST.

SCALE: 1/4" = 1'-0"



2 DE-3 ALPHA/GAMMA EQUIPMENT CONFIG. - PROP.

SCALE: 1/4" = 1'-0"



3 DE-3 BETA EQUIPMENT CONFIG. - EXIST.

SCALE: 1/4" = 1'-0"

NOTES:

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

REVISIONS:

-REV0. 02/07/20. FOR REVIEW. JRM
-REV1. 02/13/20. REV PER CLIENT COMMENTS. JRM
-REV2. 02/20/20. REV PER CLIENT COMMENTS. JRM
-REV3. 05/19/20. REV PER UPDATED RFDS. JRM
-REV4

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PH (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

SHEET NUMBER: DE-3

BRIDGEPORT EAST CT
CAOLE
380 HORACE STREET
BRIDGEPORT, CT 06610

VZW FUZE ID: 16055802 VZW VZW
PROJECT CODE: 20202084400 LC: 408264 CM: AL

APT FILING NUMBER: CT141EB11240

EQUIPMENT CONFIGURATIONS

DATE OF DV: 01/29/19 DRAWN BY: DRA
DATE: 02/07/20 CHECKED BY: JRM

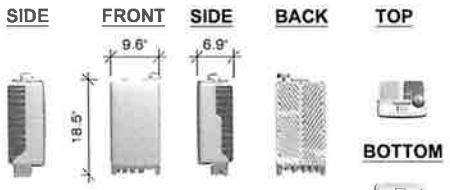
Cellco Partnership d/b/a verizon

EQUIPMENT DATA

EQUIPMENT SPECIFICATIONS

SECTOR	ANTENNA MAKE/MODEL	QTY	AZIMUTH	EQUIPMENT STATUS	HEIGHT (IN)	WIDTH (IN)	DEPTH (IN)	WEIGHT (LBS)
ALPHA	700/850/1900/2100: COMMSCOPE JAHH-65B-R3B	1	330°	ETR	72.0	13.8	8.2	64.4 (2)
	700/850/1900/2100: COMMSCOPE JAHH-65B-R3B	1		ETR	72.0	13.8	8.2	64.4 (2)
	SAMSUNG VZ-AT1K01	1	290°	PROP.	18.5	9.6	6.9	35.0 (2)
	PLACE HOLDER	1		ETR	**75.0**	**12.0**	**6.53**	**62.2 (2)**
BETA	700/850/1900/2100: COMMSCOPE JAHH-65B-R3B	1	90°	ETR	72.0	13.8	8.2	64.4 (2)
	700/850/1900/2100: COMMSCOPE JAHH-65B-R3B	1		ETR	72.0	13.8	8.2	64.4 (2)
	PLACE HOLDER	1		ETR	75.0	12.0	6.53	62.2 (2)
	PLACE HOLDER	1		ETR	**75.0**	**12.0**	**6.53**	**62.2 (2)**
GAMMA	700/850/1900/2100: COMMSCOPE JAHH-65B-R3B	1	210°	ETR	72.0	13.8	8.2	64.4 (2)
	700/850/1900/2100: COMMSCOPE JAHH-65B-R3B	1		ETR	72.0	13.8	8.2	64.4 (2)
	SAMSUNG VZ-AT1K01	1	170°	PROP.	18.5	9.6	6.9	35.0 (2)
	PLACE HOLDER	1		ETR	**75.0**	**12.0**	**6.53**	**62.2 (2)**
	APPURTENANCE MAKE/MODEL							
	COMMSCOPE CB78T-43-2X QUADPLEXERS	3	-	ETR	6.4	6.9	9.6	20.7
	SAMSUNG B5/B13 850/700 RRH	3	-	ETR	14.9	14.9	8.14	82.0
	SAMSUNG B2/B66 PCS/AWS RRH	3	-	ETR	14.9	14.9	10.04	97.5
	RAYCAP RxxDC-6627-PF-48	1	-	ETR	29.5	16.5	12.6	32

(1) 'ETR' DENOTES EXIST. TO REMAIN
(2) WEIGHT WITHOUT MOUNTING BRACKET.
(3) EQUIPMENT DATA BASED ON RFDS DATED 03/23/20



SAMSUNG NR AU (AT1K01)
ANTENNA (OR EQUAL)
WxDxH=9.6"x18.5"x6.9" (35.0 Lbs)

NOTE: WEIGHTS INCLUDE SOLAR SHEILD & MOUNTING BRACKET

1 DE-4 PROP. ANTENNA
SCALE : ½" = 1'-0"

REVISIONS:
-REV0. 02/07/20. FOR REVIEW. JRM
-REV1. 02/13/20. REV PER CLIENT COMMENTS. JRM
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SHEET NUMBER: DE-4

BRIDGEPORT EAST CT
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380 HORACE STREET
BRIDGEPORT, CT 06610

VZW FUZE ID: 16055802 VZW VZW
PROJECT CODE: 20202084400 LC: 488264 CM: AL

APT FILING NUMBER: CT141EB11240

EQUIPMENT MECHANICAL SPECIFICATIONS & DETAILS

DATE OF DV: 01/29/19 DRAWN BY: DRA
DATE: 02/07/20 CHECKED BY: JRM

Cellco Partnership d/b/a verizon

Specifications

The table below outlines the main specifications of the AU:

Table 1. Specifications

Item		AT1K01
Technology		5G NR
Operating Frequency		27.5 to 28.35 GHz
RF Chain		1024 TR/unit
Antenna Array	Configuration	1024 AE (4T4R)
	Element	256 AE (16H16V)/path, 1024 AE/unit
	Gain	28 dBi/path
IBW/OBW		850/800 MHz
Channel Bandwidth/Capacity		100 MHz Max 8CC (50/200/400 MHz will be supported in ES2, SVR19A: 100 MHz)
RF Output Power		26 dBm/path, 32 dBm/unit
Input Voltage		-48 V DC (-36 to -58 V DC) or 100 to 240 V AC
Input Current		10.9 A @ -48 V DC 4.3 A @ 100 to 240 V AC
LED		Total: 1 EA Powered, Operational, Fail (3 Status w/different colors)
Operational Temperature		-40~55°C (with solar load)
Humidity		TBD
IP rating		IP65
EMC		FCC Title 47 CFR Part 15 Subpart B
Safety		UL 60950 or 62368
Installation		Pole/Wall/Tower mounting
Dimension (W × D × H)		• 9.57 in. (243 mm) × 6.89 in. (175 mm) × 16.81 in. (427 mm) •(@without cover) • 9.57 in. (243 mm) × 6.89 in. (175 mm) × 19.4 in. (493 mm) (@with cover & GPS Port)
Volume		< 18.16 L
Weight		< 33.07 lb (15.8 kg)

ATTACHMENT 3

	General	Power	Density					
Site Name: Bridgeport E								
Tower Height: 90 Ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*T-Mobile-AWS-LTE	2	2334	80	2100	0.3066	1.0000	3.07%	
*T-Mobile-AWS-UMTS	2	1295	80	2100	0.1701	1.0000	1.70%	
*T-Mobile-LTE	2	649	80	700	0.0852	0.4667	1.83%	
*T-Mobile-LTE	2	592	80	600	0.0778	0.4000	1.94%	
*T-Mobile-PCS-LTE	2	2560	80	1900	0.3362	1.0000	3.36%	
*T-Mobile-microwave	1	2213	80	23000	0.1453	1.0000	2.91%	
5G 28GHz	**1**	**610**	**88**	**0.0283**	**28000**	**1.0**	**2.83%**	
VZW CBRS	**0**	**50**	**88**	**0.0000**	**3600**	**1.0**	**0.00%**	
VZW PCS	**1**	**2312**	**88**	**0.0727**	**1970**	**1.0**	**7.27%**	
VZW Cellular LTE	**1**	**499**	**88**	**0.0232**	**869**	**0.579333**	**4.00%**	
VZW Cellular	**1**	**499**	**88**	**0.0232**	**869**	**0.579333**	**4.00%**	
VZW AWS	**1**	**2570**	**8888**	**0.0734**	**2145**	**1.0**	**7.34%**	
VZW 700	**1**	**1165**	**88**	**0.0286**	**746**	**0.497333**	**5.75%**	

ATTACHMENT 4

Structural Analysis
90-ft Monopole

Prepared For:
Tarpon Towers
8916 77th Terrace East Ste. 103
Bradenton, FL 34202

MFP Project #40920-028

Site Location:
CT1221 Bridgeport
Fairfield Co., CT
Lat/Long: 41°12'14", -73°10'32"

Analysis Type:
ANSI/TIA-222-G
Structure Rating - 28.1% Passing

April 7, 2020

4.7.2020

Michael F. Plahovinsak, P.E.
18301 State Route 161 W, Plain City, OH 43064
614-398-6250 - mike@mfpeng.com

Project Summary:

I have completed a structural analysis of the existing monopole for the following new configuration:

- 88' – Verizon:
  - (6) Commscope JAHH-65B-R3B + (4) HBXX-6517DS-A2M Antennas
  - (2) Samsung NR-AU(AT1KO1 Antennas at 85.6'
  - (3) Samsung B5/B13 + (3) B2/66 RRU's
  - (3) Commscope CB78T-43-2X Diplexers
  - (1) Raycap RXDC-6627-PF-48
  - (2) 12 x 24 Coax
  - 12' Platform

The pole has been analyzed in accordance with the requirements of the International Building Code per IBC section 3108, and the recommendations of the Telecommunications Industry Association *"Structural Standard for Steel Antenna Supporting Structures"* **ANSI/TIA-222-G.**

This analysis may be considered a "Rigorous Structural Analysis" as defined in ANSI/TIA-222-G 15.5.2.

As indicated in the conclusions of this analysis, I have determined that the existing pole and foundation have *sufficient capacity* to support the existing, reserved and proposed antenna loads as detailed herein. Based on the results of my analysis, structural modifications are not required at this time.

Source of Data:

Resource	Source	Job Number	Date
Pole and Foundation Drawings	Engineered Endeavors	18308-P01-T1	05/08/18
Geotechnical Report	Welti Geotechnical	-	04/09/18

Analysis Criteria:

2015 International Building Code
Structural Standards for Steel Antenna Supporting Structures **ANSI/TIA-222-G**

- TIA-222-G Wind Speed 100 mph (V_{asd} / 3-Second Gust)
- Equivalent ASCE-7-10 Wind 129 mph (V_{ult})
- TIA-222-G Wind w/ 3/4" Ice 50 mph (3-Sec Gust)
- Operational Wind Speed 60 mph (3-Sec Gust)

Structure Class	Exposure Category	Topographic Category
II (I = 1.0)	C	I

Appurtenance Listing:

Status	Elev.	Antenna / Mounting	Coax	Owner
Proposed	88'	(6) Commscope JAHH-65B-R3B Antennas (4) HBXX-6517DS-A2M Antennas (2) Samsung NR-AU(AT1KO1 Antennas at 85.6' (3) Samsung B5/B13 + (3) B2/66 RRU's (3) Commscope CB78T-43-2X Diplexers (1) Raycap RXDC-6627-PF-48 12' Platform	(2) 12 x 24	Verizon
Existing	80'	(2) Ericsson AIR3246 B66 Antennas (1) RFS APXVAARR24_43-UNA20 Antennas (3) Ericsson AIR 5122Antennas (3) RFS APX16DWV16WVSEA20 Antennas (3) Ericsson 2217 B66A + (3) 4449 B71+B12 + (3) 4415 B25 RRU (1) Commscope VHLP1-23-CR4B 12' Platform	(12) 1 5/8"	T-Mobile

All antenna lines assumed internally mounted, not exposed to the wind.

Foundation Analysis:

The existing monopole foundation design was analyzed in conjunction with site specific geotechnical report. The existing foundation has sufficient capacity to support the pole with the proposed antenna configuration.

Conclusion:

I have completed a structural analysis of the existing monopole and foundation in accordance with the project specifics outlined above. My analysis indicates that the existing monopole and foundation are structurally adequate when considering the existing plus proposed loading. Please refer to the attached calculations for an itemized listing of all member stress ratios. The existing pole is safe and adequate to support the proposed loads, and no structural reinforcing is required to support the above loading.

Recommendations:

As a part of routine maintenance, I recommend periodic inspection of the pole and foundation structure for signs of fatigue or corrosion.

If you have any questions about the contents of this structural report or require any additional information, please feel free to contact my office.

Sincerely,

Michael F. Plahovinsak, P.E.

mike@mfpeng.com ~ 614.398-6250

Standard Conditions for Providing Structural Consulting Services on Existing Structures

1. The following standard conditions are a general overview of key issues regarding the work product supplied.

2. If the existing conditions are not as represented in this structural report or attached sketches, I should be contacted to evaluate the significance of the deviation and revise the structural assessment accordingly.

3. The structural analysis has been performed assuming that the structure is in "like new" condition. No allowance was made for excessive corrosion, damaged or missing structural members, loose bolts, etc. If there are any known deficiencies in the structure that potentially compromise structural integrity, I should be made aware of the deficiencies. If I am aware of a deficiency that exists in a structure at the time of my analysis, a general explanation of the structural concern due to the deficiency will be included in the structural report, but the deficiency will not be reflected in capacity calculations.

4. The structural analysis provided is an assessment of the primary load carrying capacity of the structure. I provide a limited scope of service in that I have not verified the capacity of every weld, plate, connection detail, etc. In most cases, structural fabrication details are unknown at the time of my analysis, and the detailed field measurement of this information is beyond the scope of my services. In instances where I have not performed connection capacity calculations, it is assumed that existing manufactured connections develop the full capacity of the primary members being connected.

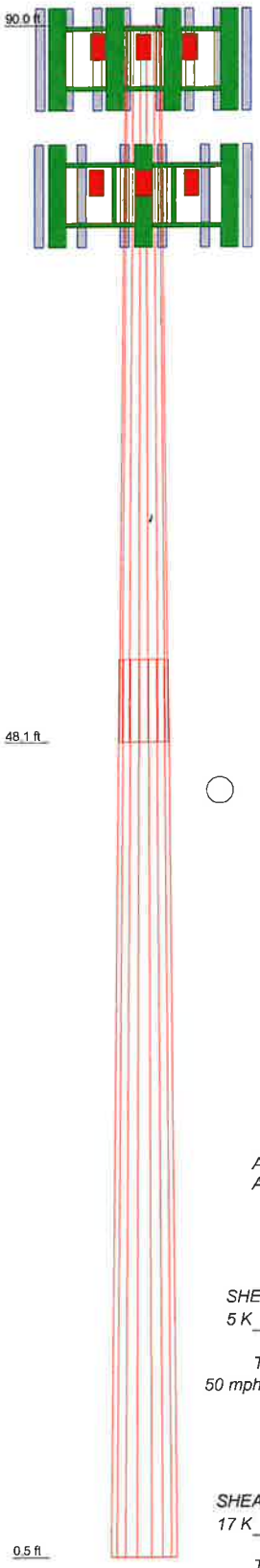
5. The structural integrity of the existing foundation system can only be verified if exact foundation sizes and soils conditions are known. I will not accept any responsibility for the adequacy of the existing foundations unless this site-specific data is supplied.

6. Miscellaneous items such as antenna mounts, coax supports, etc. have not been designed, detailed, or specified as part of my work. It is assumed that material of adequate size and strength will be purchased from a reputable component manufacturer. The attached report and sketches are schematic in nature and should not be used to fabricate or purchase hardware and accessories to be attached to the structure. I recommend field measurement of the structure before fabricating or purchasing new hardware and accessories. I am not responsible for proper fit and clearance of hardware and accessory items in the field.

7. The structural analysis has been performed considering minimum code requirements or recommendations. If alternate wind, ice, or deflection criteria are to be considered, then I shall be made aware of the alternate criteria.

Michael F. Plahovinsak, P.E. - Since 2011

mike@mfpeng.com



Section	1	2
Length (ft)	41.94	52.43
Number of Sides	18	18
Thickness (in)	0.3125	0.4375
Socket Length (ft)	4.87	
Top Dia (in)	24.9600	33.1738
Bot Dia (in)	34.9600	45.5000
Grade	A572-65	A572-65
Weight (K)	4.2	9.6

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) Commscope JAHH-65B-R3B-V3 (Verizon)	88	Raycap RCMDC-6627-PF-48 (Verizon)	88
(2) Commscope HBXX-6517DS-A2M (Verizon)	88	12' Platform w/ Handrail (Verizon)	88
(2) Commscope JAHH-65B-R3B-V3 (Verizon)	88	Samsung NR-AU (AT1KO1 (Verizon)	85.5
Commscope HBXX-6517DS-A2M (Verizon)	88	Samsung NR-AU (AT1KO1 (Verizon)	85.5
(2) Commscope JAHH-65B-R3B-V3 (Verizon)	88	(2) Ericsson AIR 3246 B66 (T-Mobile)	80
Commscope HBXX-6517DS-A2M (Verizon)	88	RFS - APXVAARR24_43-U-NA20 (T-Mobile)	80
(3) Samsung BR04C B5/B13 RRH (Verizon)	88	(3) Ericsson AIR 5122 (T-Mobile)	80
(3) Samsung BR049 B2/B66A RRH (Verizon)	88	(3) RFS APX16VDWV-16DWVS (T-Mobile)	80
(3) Commscope CBC78T-DS-43-2X (Verizon)	88	(3) Ericsson 2217 B66A (T-Mobile)	80
		(3) Ericsson 4449 B12+B71 (T-Mobile)	80
		(3) Ericsson 4415 B25 (T-Mobile)	80
		12' Platform w/ Handrail (T-Mobile)	80
		Andrew VHLP1-23 (T-Mobile)	80

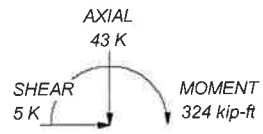
MATERIAL STRENGTH

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

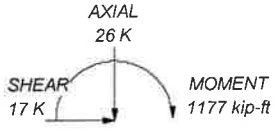
TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 100 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 in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. ANSI/TIA-222-G wind speeds are Vasd winds. Refer to IBC Table 1609.3.1 for Vult wind speed conversions.
9. TOWER RATING: 28.1%

ALL REACTIONS ARE FACTORED



TORQUE 1 kip-ft
50 mph WIND - 0.7500 in ICE



TORQUE 3 kip-ft
REACTIONS - 100 mph WIND

Michael Plahovinsak, P.E.
18301 State Route 161
Plain City, OH 43064
Phone: 614-398-6250
FAX: mike@mfpeng.com

Job:	***90-ft Monopole - MFP #40920-028***		
Project:	***CT1221 Bridgeport***		
Client:	Tarpon Towers	Drawn by: Mike	App'd:
Code:	TIA-222-G	Date: 04/07/20	Scale: NTS
Path:	J:\Projects\409-Misc\40920-028\40920-028.eri		Dwg No. E-1

tnxTower	Job: 90-ft Monopole - MFP #40920-028	Page: 1 of 6
Michael Plahovinsak, P.E. 18301 State Route 161 Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@mfpeng.com	Project: CT1221 Bridgeport	Date: 07:39:24 04/07/20
	Client: Tarpon Towers	Designed by: Mike

Tower Input Data

This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 100 mph.
Structure Class II.
Exposure Category C.
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.
ANSI/TIA-222-G wind speeds are Vasd winds. Refer to IBC Table 1609.3.1 for Vult wind speed conversions..
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	90.00-48.06	41.94	4.87	18	24.9600	34.9600	0.3125	1.2500	A572-65 (65 ksi)
L2	48.06-0.50	52.43		18	33.1738	45.5000	0.4375	1.7500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	25.2968	24.4472	1876.3464	8.7499	12.6797	147.9806	3755.1618	12.2259	3.8430	12.297
	35.4511	34.3660	5212.0684	12.2999	17.7597	293.4776	10430.9949	17.1863	5.6030	17.929
L2	34.7807	45.4585	6154.7710	11.6214	16.8523	365.2185	12317.6405	22.7336	5.0686	11.585
	46.1344	62.5749	16053.4462	15.9972	23.1140	694.5335	32128.0159	31.2934	7.2380	16.544

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
1 5/8" (Verizon)	C	No	Yes	Inside Pole	90.00 - 0.50	2	No Ice	0.00	0.92
							1/2" Ice	0.00	0.92
							1" Ice	0.00	0.92
6x12 HCS (T-Mobile)	C	No	Yes	Inside Pole	80.00 - 0.50	4	No Ice	0.00	0.92
							1/2" Ice	0.00	0.92
							1" Ice	0.00	0.92
1/2"	C	No	Yes	Inside Pole	80.00 - 0.50	37	No Ice	0.00	0.15

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
(T-Mobile)							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) Commscope JAHH-65B-R3B-V3 (Verizon)	A	From Face	3.00	0.00	0.00	0.0000	88.00	No Ice	9.11	7.41	0.09
								1/2" Ice	9.58	8.37	0.16
								1" Ice	10.05	9.20	0.24
(2) Commscope HBXX-6517DS-A2M (Verizon)	A	From Face	3.00	0.00	0.00	0.0000	88.00	No Ice	8.72	6.91	0.07
								1/2" Ice	9.27	8.11	0.14
								1" Ice	9.80	9.02	0.21
(2) Commscope JAHH-65B-R3B-V3 (Verizon)	B	From Face	3.00	0.00	0.00	0.0000	88.00	No Ice	9.11	7.41	0.09
								1/2" Ice	9.58	8.37	0.16
								1" Ice	10.05	9.20	0.24
Commscope HBXX-6517DS-A2M (Verizon)	B	From Face	3.00	0.00	0.00	0.0000	88.00	No Ice	8.72	6.91	0.07
								1/2" Ice	9.27	8.11	0.14
								1" Ice	9.80	9.02	0.21
Samsung NR-AU (AT1KO1 (Verizon)	B	From Face	3.00	0.00	0.00	0.0000	85.50	No Ice	1.56	1.41	0.04
								1/2" Ice	1.75	1.68	0.06
								1" Ice	1.95	1.97	0.08
(2) Commscope JAHH-65B-R3B-V3 (Verizon)	C	From Face	3.00	0.00	0.00	0.0000	88.00	No Ice	9.11	7.41	0.09
								1/2" Ice	9.58	8.37	0.16
								1" Ice	10.05	9.20	0.24
Commscope HBXX-6517DS-A2M (Verizon)	C	From Face	3.00	0.00	0.00	0.0000	88.00	No Ice	8.72	6.91	0.07
								1/2" Ice	9.27	8.11	0.14
								1" Ice	9.80	9.02	0.21
Samsung NR-AU (AT1KO1 (Verizon)	C	From Face	3.00	0.00	0.00	0.0000	85.50	No Ice	1.56	1.41	0.04
								1/2" Ice	1.75	1.68	0.06
								1" Ice	1.95	1.97	0.08
(3) Samsung BR04C B5/B13 RRH (Verizon)	A	From Face	2.00	0.00	0.00	0.0000	88.00	No Ice	1.88	1.01	0.07
								1/2" Ice	2.05	1.14	0.09
								1" Ice	2.22	1.28	0.11
(3) Samsung BR049 B2/B66A RRH (Verizon)	B	From Face	2.00	0.00	0.00	0.0000	88.00	No Ice	1.88	1.25	0.08
								1/2" Ice	2.05	1.39	0.10
								1" Ice	2.22	1.54	0.12
(3) Commscope CBC78T-DS-43-2X (Verizon)	C	From Face	2.00	0.00	0.00	0.0000	88.00	No Ice	0.37	0.51	0.02
								1/2" Ice	0.45	0.60	0.03
								1" Ice	0.53	0.70	0.04
Raycap RCMDC-6627-PF-48 (Verizon)	B	From Face	2.00	0.00	0.00	0.0000	88.00	No Ice	4.06	3.10	0.03
								1/2" Ice	4.32	3.34	0.07
								1" Ice	4.58	3.58	0.11
12' Platform w/ Handrail (Verizon)	C	None				0.0000	88.00	No Ice	30.00	30.00	1.80
								1/2" Ice	35.00	35.00	2.60
								1" Ice	40.00	40.00	3.40
**											
(2) Ericsson AIR 3246 B66 (T-Mobile)	A	From Face	3.00	0.00	0.00	0.0000	80.00	No Ice	8.04	6.41	0.24
								1/2" Ice	8.45	7.09	0.31
								1" Ice	8.87	7.78	0.38
RFS - APXVAARR24_43-U-NA20 (T-Mobile)	A	From Face	3.00	0.00	0.00	0.0000	80.00	No Ice	20.24	10.79	0.16
								1/2" Ice	20.89	12.21	0.29
								1" Ice	21.55	13.49	0.44

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(3) Ericsson AIR 5122 (T-Mobile)	B	From Face	3.00 0.00 0.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	2.34 2.55 2.76	1.15 1.43 1.73	0.04 0.06 0.08
(3) RFS APX16VDWV-16DWVS (T-Mobile)	C	From Face	3.00 0.00 0.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	6.67 7.06 7.47	3.34 3.99 4.64	0.06 0.11 0.16
(3) Ericsson 2217 B66A (T-Mobile)	A	From Face	2.00 0.00 0.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	0.73 0.84 0.97	0.05 0.06 0.08
(3) Ericsson 4449 B12+B71 (T-Mobile)	B	From Face	2.00 0.00 0.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.02 1.15 1.29	0.07 0.09 0.11
(3) Ericsson 4415 B25 (T-Mobile)	C	From Face	2.00 0.00 0.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	0.82 0.94 1.07	0.05 0.06 0.08
12' Platform w/ Handrail (T-Mobile)	C	None		0.0000	80.00	No Ice 1/2" Ice 1" Ice	30.00 35.00 40.00	30.00 35.00 40.00	1.80 2.60 3.40

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
Andrew VHLP1-23 (T-Mobile)	C	Paraboloid w/Radome	From Face	1.00 0.00 0.00	0.0000		80.00	1.00	No Ice 1/2" Ice 1" Ice	0.79 0.92 1.06	0.03 0.04 0.04

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 90 deg - No Ice
5	0.9 Dead+1.6 Wind 90 deg - No Ice
6	1.2 Dead+1.6 Wind 180 deg - No Ice
7	0.9 Dead+1.6 Wind 180 deg - No Ice
8	1.2 Dead+1.0 Ice+1.0 Temp
9	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
10	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
11	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
12	Dead+Wind 0 deg - Service
13	Dead+Wind 90 deg - Service
14	Dead+Wind 180 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	90 - 48.06	Pole	Max Tension	12	0.00	-0.00	0.00
			Max. Compression	8	-26.01	4.89	3.15
			Max. Mx	4	-12.35	-372.55	-3.94
			Max. My	2	-12.35	7.85	373.86
			Max. Vy	4	13.11	-372.55	-3.94
			Max. Vx	2	-13.07	7.85	373.86
			Max. Torque	6			-3.25
L2	48.06 - 0.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-43.12	4.91	3.16
			Max. Mx	4	-25.49	-1176.80	-14.50
			Max. My	2	-25.49	18.77	1175.98
			Max. Vy	4	17.48	-1176.80	-14.50
			Max. Vx	2	-17.44	18.77	1175.98
			Max. Torque	6			-3.25

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	90 - 48.06	3.281	12	0.3003	0.0032
L2	52.93 - 0.5	1.196	12	0.2055	0.0012

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
88.00	(2) Commscope JAHH-65B-R3B-V3	12	3.155	0.2958	0.0031	79370
85.50	Samsung NR-AU (AT1KO1	12	2.997	0.2901	0.0030	79370
80.00	Andrew VHLP1-23	12	2.654	0.2774	0.0026	39685

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	90 - 48.06	16.174	2	1.4723	0.0160
L2	52.93 - 0.5	5.915	2	1.0154	0.0060

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
88.00	(2) Commscope JAHH-65B-R3B-V3	2	15.553	1.4506	0.0154	16208

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
85.50	Samsung NR-AU (AT1KO1	2	14.779	1.4233	0.0147	16208
80.00	Andrew VHLP1-23	2	13.092	1.3626	0.0130	8104

Pole Design Data

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
L1	90 - 48.06 (1)	TP34.96x24.96x0.3125	41.94	0.00	0.0	33.2142	-12.35	2423.75	0.005
L2	48.06 - 0.5 (2)	TP45.5x33.1738x0.4375	52.43	0.00	0.0	62.5749	-25.49	4614.75	0.006

Pole Bending Design Data

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy}	ϕM_{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
L1	90 - 48.06 (1)	TP34.96x24.96x0.3125	373.94	1666.53	0.224	0.00	1666.53	0.000
L2	48.06 - 0.5 (2)	TP45.5x33.1738x0.4375	1176.89	4268.35	0.276	0.00	4268.35	0.000

Pole Shear Design Data

Section No.	Elevation	Size	Actual V_u	ϕV_n	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u	ϕT_n	Ratio $\frac{T_u}{\phi T_n}$
	ft		K	K		kip-ft	kip-ft	
L1	90 - 48.06 (1)	TP34.96x24.96x0.3125	13.07	1211.88	0.011	3.24	3341.84	0.001
L2	48.06 - 0.5 (2)	TP45.5x33.1738x0.4375	17.48	2307.38	0.008	1.49	8559.67	0.000

Pole Interaction Design Data

Section No.	Elevation	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	ft								
L1	90 - 48.06 (1)	0.005	0.224	0.000	0.011	0.001	0.230 ✔	1.000	4.8.2 ✔
L2	48.06 - 0.5 (2)	0.006	0.276	0.000	0.008	0.000	0.281 ✔	1.000	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	90 - 48.06	Pole	TP34.96x24.96x0.3125	1	-12.35	2423.75	23.0	Pass
L2	48.06 - 0.5	Pole	TP45.5x33.1738x0.4375	2	-25.49	4614.75	28.1	Pass
							Summary	
						Pole (L2)	28.1	Pass
						RATING =	**28.1**	**Pass**

Michael F. Plahovinsak, P.E.
18301 State Route 161 W
Plain City, OH 43064
Phone: 614-398-6250
email: mike@mfpeng.com

Job	90-ft monopole - MFP #40920-028
Page	BP & AB Calc
Project	CT1221 Bridgeport
Date	04/06/2020
Client	TARPON TOWERS
Designed by	Mike

Anchor Rod and Base Plate Calculation

ANSI/TIA-222-G

Factored Base Reactions:		***Pole Shape:***	***Anchor Rods:***	***Base Plate:***
Moment:	1177 ft-kips	18-Sided	(18) 2.25 in. A615 GR. 75	2.75 in. x 58.75 in. Rour
Shear:	17 kips	***Pole Dia. (D_f):***	Anchor Rods Evenly Spaced	fy = 50 ksi
Axial:	26 kips	45.50 in	On a 52.75 in Bolt Circle	

Anchor Rod Calculation According to TIA-222-G section 4.9.9

ϕ_t , ϕ_v = 0.80 TIA 4.9.9
I_{bolts} = 6260.77 in^2 Momet of Inertia
P_u = 61 kips Compr Force
V_u = 0.9 kips Shear Force
Rnt = 325.00 kips Nominal Tensile Strength
n 0.50 for detail type (d)
Stress Rating = **24.2%** Satisfies TIA-G 4.9.9

Base Plate Calculation According to TIA-222-G

ϕ = 0.90 TIA 4.7
M_{PL} = 135.2 in-kip Plate Moment
L = 7.9 in Section Length
Z = 15.0 Plastic Section Modulus
M_P = 750.7 in-kip Plastic Moment
ϕM_n = 675.6 in-kip Factored Resistance

Calculated Moment vs Factored Resistance
135.17 in-kip $\leq$ 676 in-kip

Stress Rating = **20.0%**

Anchor Rods Are Adequate	**24.2%**	☑
Base Plate is Adequate	**20.0%**	☑

ATTACHMENT 5

May 19, 2020

Verizon Wireless
20 Alexander Drive
Wallingford, CT 06492

Attn: Mr. Andrew Leone

Re: Antenna Mount Structural Analysis – Wireless Communications Modification
Verizon Wireless Site I.D.: Bridgeport East CT (Caole)
380 Horace Street
Bridgeport, CT 06610

Project/Location Code:	20201864800/468264
VZW FUZE I.D.:	16055802
APT Filing No.	CT141EB11240

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 mount assembly to support the proposed antenna and appurtenance modification at the location referenced above. This review was limited to a structural evaluation of the existing antenna mount assembly and its connection to the host tower structure.

Details of the proposed antenna and appurtenance modification are included within the table on the following page. Reference is made to the Design Exhibit Drawings DE-1 thru DE-4 prepared by this office, marked Rev 3, dated 05/19/2020.

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, 14th 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.

- Load Case 1: 97 mph (3-second gust,), 0in ice (Nominal Survival Wind)
- Load Case 2: 50 mph (3-second gust) with 1.0in ice thickness
- Load Case 3: 60 mph (3-second gust) (Service Load)
- Structure Class II
- Exposure Category B
- 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/equipment to be relocated indicated in **bold** text):

Antenna and Appurtenance Make/Model	Quantity	Status	Mount Type	Elevation
Samsung VZ-AT1K01 Panel antennas	**2**	**P**	One (1) existing Valmont/SitePRO1 12'-6" Low Profile Platform (P/N: RMQP-4096-HK) w/ Reinforcement and Handrail System.	88 ft± & AGL
Commscope JAHH-65B-R3B panel antennas	6	ETR		
Place Holder Antenna (For Leasing Purposes Only)	4	-		
Samsung B2/B66 PCS/AWS RRH Remote Radio Heads (RRHs)	3	ETR		
Samsung B5/B13 850/700 LTE RRH Remote Radio Heads (RRHs)	3	ETR		
Commscope CBC78T-DS-43-2X Quadplexer	3	ETR		
Raycap RxxDC-6627-PF-48 (12 OVP)	1	ETR		
6x12 Hybrid Cables	3	ETR	n/a	n/a

Notes:
1. ETR = Existing to Remain; ERL = Exist to be Relocated; P = Proposed.
2. Antennas and appurtenances shall be centered on mount assembly at the above specified elevation with no vertical eccentricity.

The findings of this review are based upon comparative review of the proposed equipment loading and Rev 2 Construction Drawings prepared by Hudson Design Group LLC dated November 16, 2016. Under the proposed loading as referenced above, the maximum usage of the existing VZW antenna mounts is 35%.

In conclusion, we find that the existing VZW antenna mount assembly is structurally adequate to support the proposed antenna/appurtenance modification.

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 assembly in its entirety prior to the installation of the proposed antenna and appurtenance modification.

If there are any further questions regarding this project or if we may of further assistance, please do not hesitate to call.

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

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

Appendix A

Design Criteria

Hazards by Location

Search Information

Address: 380 Horace St, Bridgeport, CT 06610, USA

Coordinates: 41.2032126, -73.1761884

Elevation: 57 ft

Timestamp: 2020-05-26T18:10:50.791Z

Hazard Type: Wind

ASCE 7-16

MRI 10-Year	75 mph
MRI 25-Year	84 mph
MRI 50-Year	90 mph
MRI 100-Year	97 mph
Risk Category I	108 mph
Risk Category II	119 mph
Risk Category III	128 mph
Risk Category IV	⚠ 133 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	86 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 ⚠ 111 mph

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

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.

(APPENDIX N) MUNICIPALITY - SPECIFIC STRUCTURAL DESIGN PARAMETERS												
				Wind Design Parameters								
Municipality	**Ground Snow Load**	**MCE Spectral Accelerations (%g)**		**Ultimate Design Wind Speeds, V_{ult} (mph)**			**Nominal Design Wind Speeds, V_{asd} (mph)**			**Wind-Borne Debris Regions[1]**		**Hurricane-Prone Regions**
		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_i (mph)	Max. Basic Wind Speed with Ice V_i (mph)	Min. Design Ice Thickness t_i (in.)	Max. Design Ice Thickness t_i (in.)	Design Frost Depth (in.)	Min. S_S	Max. S_S	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

ALL-POINTS TECHNOLOGY CORPORATION

Project ID:	CT141EB11240
Site Name:	Bridgeport East CT (Caole)
Date:	5/19/2020
Sheet:	of

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

Site Name:	Bridgeport East CT (Caole)
Site Address:	380 Horace Street Bridgeport, CT 6610
Site County:	Fairfield

Design Criteria

Ultimate Basic Wind Speed, V_{ULT} =	125	mph	*2018 CSBC, Appendix N*
Nominal Basic Wind Speed, V_{ASD} =	97	mph	*2018 CSBC, 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 =	Monopole		
Structure Height =	90	ft, +/-	
Structure Class =	II		*Table 2-1*
Exposure Category =	B		*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 =	1200		*Table 2-4*
α =	7		*Table 2-4*
K_{zmin} =	0.7		*Table 2-4*
K_{zt} =	1.00		*Section 2.6.6.4*
K_d =	0.95		*Table 2-2*
G_h =	1.10		*Section 2.6.7*
Mount G_h =	1.00		*Section 2.6.7*
q_z' =	**22.88**	**psf**	
q_{zi}' =	**6.08**	**psf**	*Excluding Kz*
q_{zw}' =	**0.55**	**psf**	

ALL-POINTS TECHNOLOGY CORPORATION

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

Project ID: CT141EB11240
Site Name: Bridgeport East CT (Caole)
Date: 5/20/2020
Sheet: of

Design Criteria: *(From Previous Sheet)*

$q_z' =$ **22.88** psf
$q_{zi}' =$ **6.08** psf
$q_{zw}' =$ **0.55** psf
$t_i =$ **0.75** in

$G_h =$ 1.00 *Section 2.6.7*
$K_a =$ 1.00 *Section 2.6.9.2.2- Section 2.6.9.2.4*

Description	#/Sector	Elev. z, ft	K_z	q_z, psf	Dimensions Height, in	Width, in	Depth, in	Wght., lbs	Flat Panel Front Coefficient Area, ft²	Aspect Ratio	Ca	C_aA_a	Flat Panel Side Coefficient Area, ft²	Aspect Ratio	Ca	C_aA_a	Front Wind Force, lbs	Side Wind Force, lbs	Weight, lbs
JAHH-65B-R3B	2.0	88	0.953	21.80	72.0	13.8	8.2	98.1	6.90	5.217	1.30	8.96	4.100	8.780	1.46	5.983	196.0	131.0	98.1
HBXX-6517DS-VTM	1.0	88	0.953	21.80	75.0	12.0	6.5	62.2	6.26	6.249	1.34	8.36	3.405	11.483	1.55	5.276	183.0	116.0	62.17
VZ-AT1K01	1.0	88	0.953	21.80	18.5	9.6	6.9	35.0	1.23	1.927	1.20	1.48	0.886	2.681	1.21	1.070	33.0	24.0	35.0
B5/B13 700/850 RRH	1.0	88	0.953	21.80	15.0	15.0	8.1	70.3	1.55	1.000	1.20	1.87	0.842	1.847	1.20	1.010	41.0	23.0	70.3
B2/B66 PCS/AWS RRH	1.0	88	0.953	21.80	15.0	15.0	10.0	84.4	1.55	1.000	1.20	1.87	1.043	1.490	1.20	1.252	41.0	28.0	84.4
CBC78T-DS-43-2X	1.0	88	0.953	21.80	6.4	6.9	9.6	21.8	0.31	0.928	1.20	0.37	0.427	0.667	1.20	0.512	9.0	12.0	21.8
RxxDC-3315-PF-48	1.0	88	0.953	21.80	21.6	15.7	10.3	32.0	2.35	1.370	1.20	2.82	1.543	2.090	1.20	1.852	62.0	41.0	32.0

Description	#/Sector	Elev.	K_z	q_{zi}, psf	Dimensions with Ice Ice Thick., t_{iz}, in	Height, in	Dc, in	Wght., lbs	Flat Panel Front Coefficient Area, ft²	Aspect Ratio	Ca	C_aA_a	Flat Panel Side Coefficient Area, ft²	Aspect Ratio	Ca	C_aA_a	Front Wind Force, lbs	Side Wind Force, lbs	Weight, lbs
JAHH-65B-R3B	2.0	88	0.953	5.793	1.65	75.31	16.05	224.6	8.95	4.69	1.28	11.450	6.019	4.69	1.28	7.703	67.0	45.0	322.7
HBXX-6517DS-VTM	1.0	88	0.953	5.793	1.65	78.35	13.67	202.3	8.33	5.73	1.32	10.980	5.356	5.73	1.32	7.057	64.0	41.0	264.4
VZ-AT1K01	1.0	88	0.953	5.793	1.65	21.81	11.82	49.5	1.96	1.84	1.20	2.346	1.546	1.84	1.20	1.855	14.0	11.0	84.5
B5/B13 700/850 RRH	1.0	88	0.953	5.793	1.65	18.27	17.01	57.4	2.32	1.07	1.20	2.781	1.447	1.07	1.20	1.737	17.0	11.0	127.7
B2/B66 PCS/AWS RRH	1.0	88	0.953	5.793	1.65	18.27	18.02	60.5	2.32	1.01	1.20	2.781	1.694	1.01	1.20	2.032	17.0	12.0	145.0
CBC78T-DS-43-2X	1.0	88	0.953	5.793	1.65	9.71	11.82	22.0	0.69	0.82	1.20	0.826	0.870	0.82	1.20	1.044	5.0	7.0	43.8
RxxDC-3315-PF-48	1.0	88	0.953	5.793	1.65	24.86	18.81	85.7	3.29	1.32	1.20	3.944	2.351	1.32	1.20	2.821	23.0	17.0	117.7

Description	#/Sector	Elev. z, ft	K_z	q_{zw}, psf	Dimensions Height, in	Width, in	Depth, in	Wght., lbs	Flat Panel Front Coefficient Area, ft²	Aspect Ratio	Ca	C_aA_a	Flat Panel Side Coefficient Area, ft²	Aspect Ratio	Ca	C_aA_a	Front Wind Force, lbs	Side Wind Force, lbs	Weight, lbs
JAHH-65B-R3B	2.0	88	0.953	0.52	72.0	13.8	8.2	98.1	6.90	5.217	1.30	8.96	4.100	8.780	1.46	5.983	5.0	4.0	98.1
HBXX-6517DS-VTM	1.0	88	0.953	0.52	75.0	12.0	6.5	62.2	6.26	6.249	1.34	8.36	3.405	11.483	1.55	5.276	5.0	3.0	62.17
VZ-AT1K01	1.0	88	0.953	0.52	18.5	9.6	6.9	35.0	1.23	1.927	1.20	1.48	0.886	2.681	1.21	1.070	1.0	1.0	35
B5/B13 700/850 RRH	1.0	88	0.953	0.52	15.0	15.0	8.1	70.3	1.55	1.000	1.20	1.87	0.842	1.847	1.20	1.010	1.0	1.0	70.3
B2/B66 PCS/AWS RRH	1.0	88	0.953	0.52	15.0	15.0	10.0	84.4	1.55	1.000	1.20	1.87	1.043	1.490	1.20	1.252	1.0	1.0	84.44
CBC78T-DS-43-2X	1.0	88	0.953	0.52	6.4	6.9	9.6	21.8	0.31	0.928	1.20	0.37	0.427	0.667	1.20	0.512	1.0	1.0	21.8
RxxDC-3315-PF-48	1.0	88	0.953	0.52	21.6	15.7	10.3	32.0	2.35	1.370	1.20	2.82	1.543	2.090	1.20	1.852	2.0	1.0	32

ALL-POINTS TECHNOLOGY CORPORATION

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

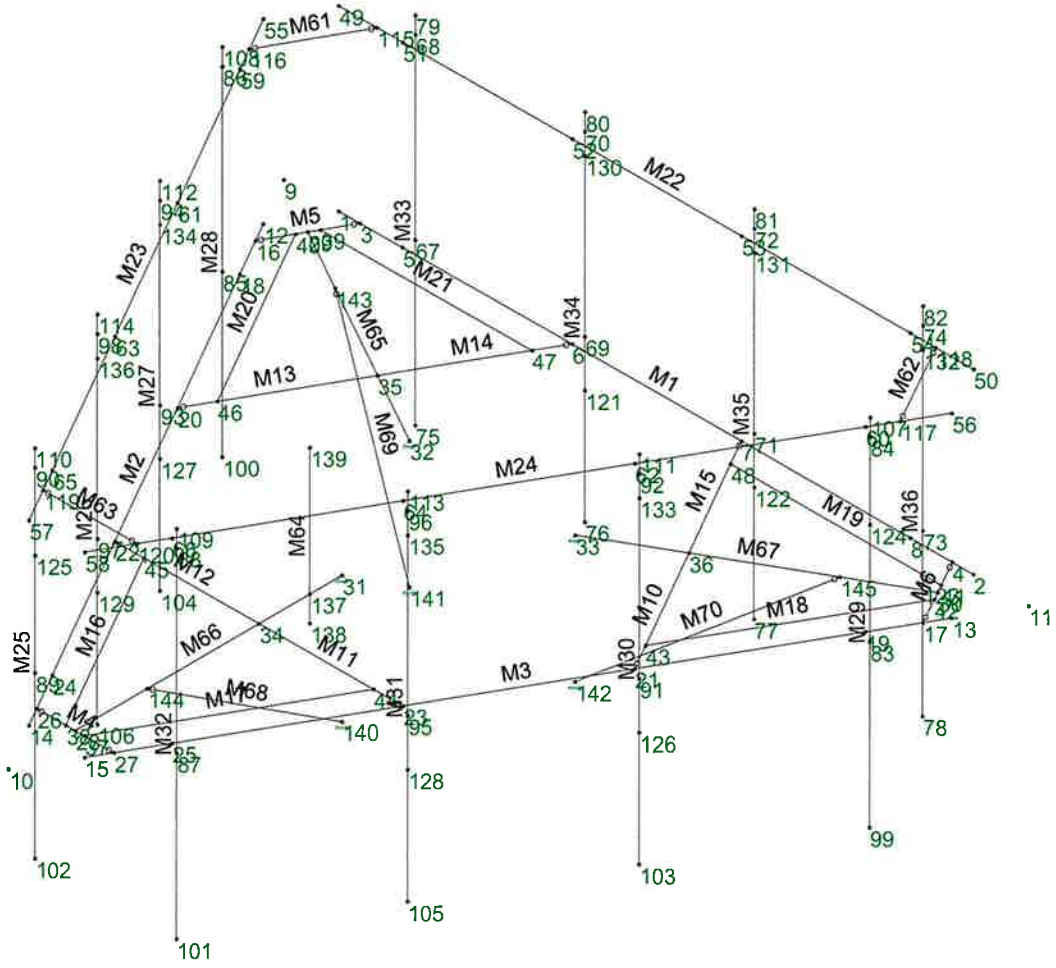
Project ID: CT141EB11240
Site Name: Bridgeport East CT (Caole)
Date: 5/20/2020
Sheet: of

Design Criteria: *(From Previous Sheet)*

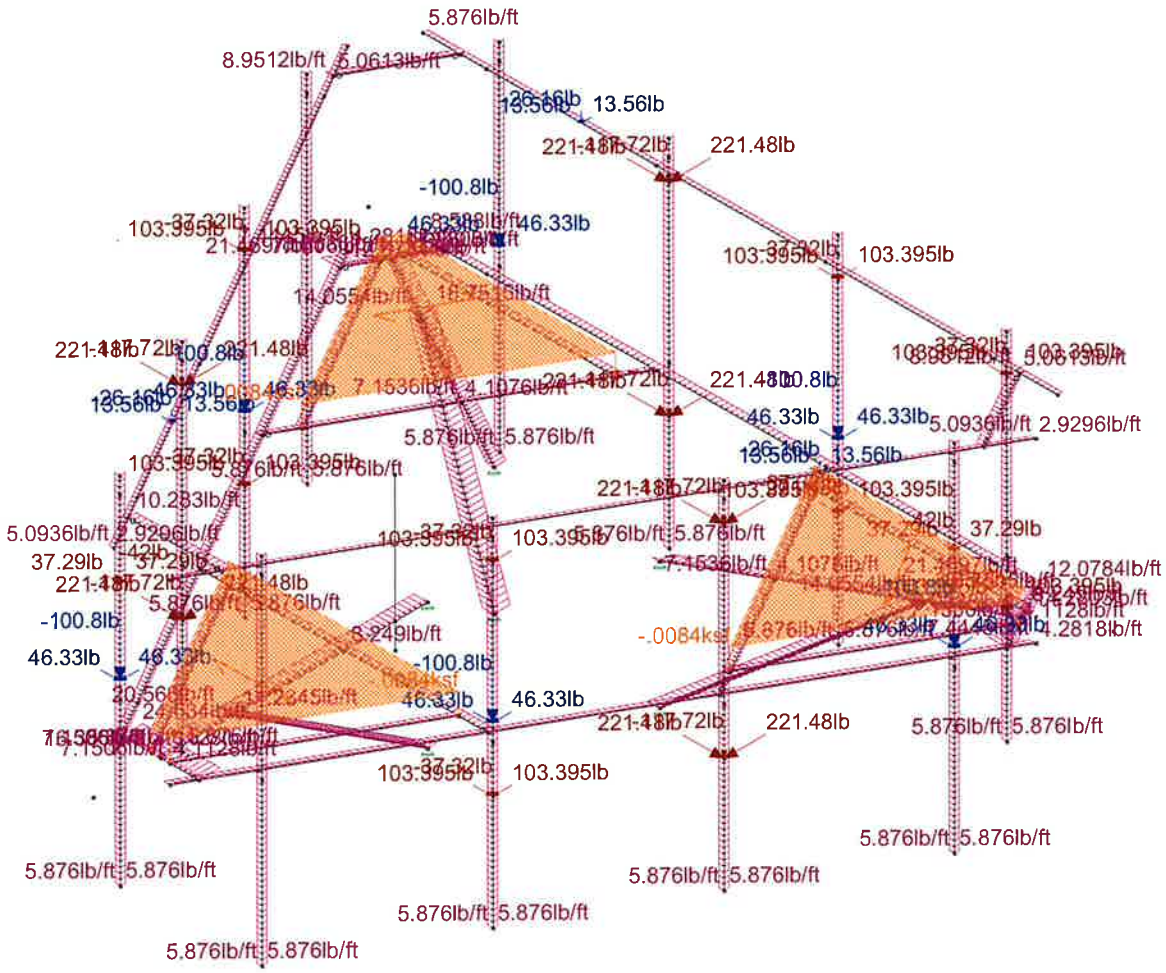
$q_z' =$ **22.88** psf
$q_{zi}' =$ **6.08** psf
$q_{zw}' =$ **0.55** psf
$t_i =$ **0.75** in

$G_h =$ 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_z	q_z, psf	Ice Thick., t_{iz}, in	q_{zi}, psf	q_w, psf	Dimensions: Width or Dia, in	Depth, in	Weight, lbs/ft	Loading, No ice: Flat or Round	Ca	Wind, lbs/ft	With ice: Width or Dia, in	Depth, in	Weight, lbs/ft	Ca	Wind, lbs/ft	Loading, Working: Flat or Round	Ca	Wind, lbs/ft
2.0" STD	88	0.953	21.80	1.65	5.79	0.52	2.375	2.375	3.66	Round	1.20	5.2	5.68	5.68	8.15	1.2	3.29	ROUND	1.20	0.12
3.0" STD	88	0.953	21.80	1.65	5.79	0.52	3.500	3.500	7.59	Round	1.20	7.6	6.81	6.81	10.42	1.2	3.94	ROUND	1.20	0.18
TS 4x4x1/4	88	0.953	21.80	1.65	5.79	0.52	4.000	4.000	12.21	FLAT	2.00	14.5	7.31	7.31	14.78	1.2	4.23	FLAT	2.00	0.35
L2x2x3/16	88	0.953	21.80	1.65	5.79	0.52	2.000	2.000	2.44	FLAT	2.00	7.3	5.31	5.31	9.06	1.2	3.08	FLAT	2.00	0.17
L2.5x2.5x1/4	88	0.953	21.80	1.65	5.79	0.52	2.500	2.500	3.07	FLAT	2.00	9.1	5.81	5.81	10.49	1.2	3.37	FLAT	2.00	0.22
PL 1/2"x6"	88	0.953	21.80	1.65	5.79	0.52	6.000	0.500	10.21	FLAT	2.00	21.8	9.31	3.81	15.52	1.2	5.39	FLAT	2.00	0.52

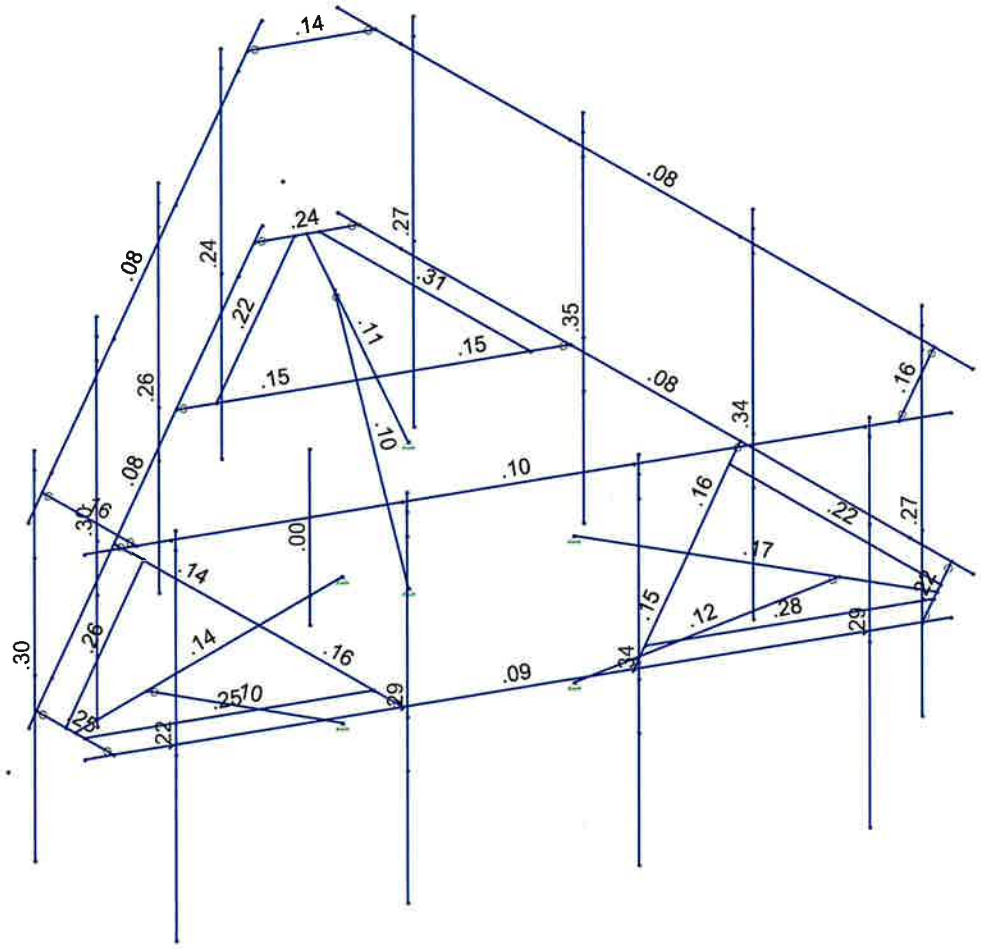


APT	MOUNTING PLATFORM	
MT		
BRIDGEPORT EAST	NODE & MEMBER LABELS	RMQP-4xx with HRK-12.r3d



Loads: LC 3, 1.2DL + 1.13(WLX + WLZ)
Envelope Only Solution

APT	MOUNTING PLATFORM	
MT		
BRIDGEPORT EAST	MAX LOADING - LC3: 1.2DL + 1.13(WLX + WLZ)	RMQP-4xx with HRK-12.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

APT	MOUNTING PLATFORM BENDING STRESSES	
MT		
BRIDGEPORT EAST		RMQP-4xx with HRK-12.r3d

(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)
RISAConnection 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

(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	1	2			3.0" STD	Beam	Pipe	A53 Gr.B	Typical
2	M2	12	14			3.0" STD	Beam	Pipe	A53 Gr.B	Typical
3	M3	13	15			3.0" STD	Beam	Pipe	A53 Gr.B	Typical
4	M4	26	27			PL 1/2 x 6	Beam	RECT	A36 Gr.36	Typical
5	M5	16	3			PL 1/2 x 6	Beam	RECT	A36 Gr.36	Typical
6	M6	4	17			PL 1/2 x 6	Beam	RECT	A36 Gr.36	Typical
7	M10	36	21			HSS4x4x1/4	Beam	SquareTube	A500 Gr.B...	Typical
8	M11	34	23			HSS4x4x1/4	Beam	SquareTube	A500 Gr.B...	Typical
9	M12	34	22			HSS4x4x1/4	Beam	SquareTube	A500 Gr.B...	Typical
10	M13	35	20			HSS4x4x1/4	Beam	SquareTube	A500 Gr.B...	Typical
11	M14	35	6			HSS4x4x1/4	Beam	SquareTube	A500 Gr.B...	Typical
12	M15	36	7			HSS4x4x1/4	Beam	SquareTube	A500 Gr.B...	Typical
13	M16	38	45			L2x2x3/16	Beam	Single Angle	A36 Gr.36	Typical
14	M17	37	44			L2x2x3/16	Beam	Single Angle	A36 Gr.36	Typical
15	M18	42	43			L2x2x3/16	Beam	Single Angle	A36 Gr.36	Typical
16	M19	41	48			L2x2x3/16	Beam	Single Angle	A36 Gr.36	Typical
17	M20	40	46			L2x2x3/16	Beam	Single Angle	A36 Gr.36	Typical
18	M21	39	47			L2x2x3/16	Beam	Single Angle	A36 Gr.36	Typical
19	M22	49	50			3.0" STD	Beam	Pipe	A53 Gr.B	Typical
20	M23	57	55			3.0" STD	Beam	Pipe	A53 Gr.B	Typical
21	M24	56	58			3.0" STD	Beam	Pipe	A53 Gr.B	Typical
22	M25	102	110			2.0" STD	Column	Pipe	A53 Gr.B	Typical
23	M26	106	114			2.0" STD	Column	Pipe	A53 Gr.B	Typical
24	M27	104	112			2.0" STD	Column	Pipe	A53 Gr.B	Typical
25	M28	100	108			2.0" STD	Column	Pipe	A53 Gr.B	Typical
26	M29	99	107			2.0" STD	Column	Pipe	A53 Gr.B	Typical
27	M30	103	111			2.0" STD	Column	Pipe	A53 Gr.B	Typical
28	M31	105	113			2.0" STD	Column	Pipe	A53 Gr.B	Typical
29	M32	101	109			2.0" STD	Column	Pipe	A53 Gr.B	Typical
30	M33	75	79			2.0" STD	Column	Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
31	M34	76	80			2.0" STD	Column	Pipe	A53 Gr.B	Typical
32	M35	77	81			2.0" STD	Column	Pipe	A53 Gr.B	Typical
33	M36	78	82			2.0" STD	Column	Pipe	A53 Gr.B	Typical
34	M37	5	67			RIGID	None	None	RIGID	Typical
35	M38	6	69			RIGID	None	None	RIGID	Typical
36	M39	7	71			RIGID	None	None	RIGID	Typical
37	M40	8	73			RIGID	None	None	RIGID	Typical
38	M41	54	74			RIGID	None	None	RIGID	Typical
39	M42	53	72			RIGID	None	None	RIGID	Typical
40	M43	52	70			RIGID	None	None	RIGID	Typical
41	M44	51	68			RIGID	None	None	RIGID	Typical
42	M45	25	87			RIGID	None	None	RIGID	Typical
43	M46	23	95			RIGID	None	None	RIGID	Typical
44	M47	21	91			RIGID	None	None	RIGID	Typical
45	M48	19	83			RIGID	None	None	RIGID	Typical
46	M49	18	85			RIGID	None	None	RIGID	Typical
47	M50	20	93			RIGID	None	None	RIGID	Typical
48	M51	22	97			RIGID	None	None	RIGID	Typical
49	M52	24	89			RIGID	None	None	RIGID	Typical
50	M53	65	90			RIGID	None	None	RIGID	Typical
51	M54	63	98			RIGID	None	None	RIGID	Typical
52	M55	61	94			RIGID	None	None	RIGID	Typical
53	M56	59	86			RIGID	None	None	RIGID	Typical
54	M57	60	84			RIGID	None	None	RIGID	Typical
55	M58	62	92			RIGID	None	None	RIGID	Typical
56	M59	64	96			RIGID	None	None	RIGID	Typical
57	M60	66	88			RIGID	None	None	RIGID	Typical
58	M61	116	115			L2.5x2.5x3/16	HBrace	Single Angle	A36 Gr.36	Typical
59	M62	118	117			L2.5x2.5x3/16	HBrace	Single Angle	A36 Gr.36	Typical
60	M63	119	120			L2.5x2.5x3/16	HBrace	Single Angle	A36 Gr.36	Typical
61	M64	139	138			2.0" STD	Column	Pipe	A53 Gr.B	Typical
62	M65	29	32			HSS4x4x1/4	Beam	SquareTube	A500 Gr.B...	Typical
63	M66	28	31			HSS4x4x1/4	Beam	SquareTube	A500 Gr.B...	Typical
64	M67	30	33			HSS4x4x1/4	Beam	SquareTube	A500 Gr.B...	Typical
65	M68	144	140			LL2.5x2.5x3/16	VBrace	Double Angle (...	A36 Gr.36	Typical
66	M69	143	141			LL2.5x2.5x3/16	VBrace	Double Angle (...	A36 Gr.36	Typical
67	M70	145	142			LL2.5x2.5x3/16	VBrace	Double Angle (...	A36 Gr.36	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				None
2	M2						Yes				None
3	M3						Yes				None
4	M4	BenPIN	BenPIN				Yes				None
5	M5	BenPIN	BenPIN				Yes				None
6	M6	BenPIN	BenPIN				Yes				None
7	M10		BenPIN				Yes	Default			None
8	M11		BenPIN				Yes	Default			None
9	M12		BenPIN				Yes	Default			None
10	M13		BenPIN				Yes	Default			None
11	M14		BenPIN				Yes	Default			None
12	M15		BenPIN				Yes	Default			None
13	M16						Yes				None
14	M17						Yes				None
15	M18						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
16	M19						Yes				None
17	M20						Yes				None
18	M21						Yes				None
19	M22						Yes				None
20	M23						Yes	Default			None
21	M24						Yes				None
22	M25						Yes	** NA **			None
23	M26						Yes	** NA **			None
24	M27						Yes	** NA **			None
25	M28						Yes	** NA **			None
26	M29						Yes	** NA **			None
27	M30						Yes	** NA **			None
28	M31						Yes	** NA **			None
29	M32						Yes	** NA **			None
30	M33						Yes	** NA **			None
31	M34						Yes	** NA **			None
32	M35						Yes	** NA **			None
33	M36						Yes	** NA **			None
34	M37						Yes	** NA **			None
35	M38						Yes	** NA **			None
36	M39						Yes	** NA **			None
37	M40						Yes	** NA **			None
38	M41		OOOOOX				Yes	** NA **			None
39	M42		OOOOOX				Yes	** NA **			None
40	M43		OOOOOX				Yes	** NA **			None
41	M44		OOOOOX				Yes	** NA **			None
42	M45						Yes	** NA **			None
43	M46						Yes	** NA **			None
44	M47						Yes	** NA **			None
45	M48						Yes	** NA **			None
46	M49						Yes	** NA **			None
47	M50						Yes	** NA **			None
48	M51						Yes	** NA **			None
49	M52						Yes	** NA **			None
50	M53		OOOOOX				Yes	** NA **			None
51	M54		OOOOOX				Yes	** NA **			None
52	M55		OOOOOX				Yes	** NA **			None
53	M56		OOOOOX				Yes	** NA **			None
54	M57		OOOOOX				Yes	** NA **			None
55	M58		OOOOOX				Yes	** NA **			None
56	M59		OOOOOX				Yes	** NA **			None
57	M60		OOOOOX				Yes	** NA **			None
58	M61	OOOOXO	OOOOXO				Yes	** NA **			None
59	M62	OOOOXO	OOOOXO				Yes	** NA **			None
60	M63	OOOOXO	OOOOXO				Yes	** NA **			None
61	M64						Yes	** NA **			None
62	M65						Yes				None
63	M66						Yes				None
64	M67						Yes				None
65	M68	BenPIN					Yes	** NA **			None
66	M69	BenPIN					Yes	** NA **			None
67	M70	BenPIN					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	3.0" STD	150			Lbyy						Lateral
2	M2	3.0" STD	150			Lbyy						Lateral
3	M3	3.0" STD	150			Lbyy						Lateral
4	M4	PL 1/2 x 6	18.1992			Lbyy						Lateral
5	M5	PL 1/2 x 6	18.1526			Lbyy						Lateral
6	M6	PL 1/2 x 6	18.1526			Lbyy						Lateral
7	M10	HSS4x4x1/4	34.6294			Lbyy						Lateral
8	M11	HSS4x4x1/4	34.0285			Lbyy						Lateral
9	M12	HSS4x4x1/4	34.0285			Lbyy						Lateral
10	M13	HSS4x4x1/4	34.6294			Lbyy						Lateral
11	M14	HSS4x4x1/4	33.5933			Lbyy						Lateral
12	M15	HSS4x4x1/4	33.5933			Lbyy						Lateral
13	M16	L2x2x3/16	50			Lbyy						Lateral
14	M17	L2x2x3/16	50			Lbyy						Lateral
15	M18	L2x2x3/16	50.071			Lbyy						Lateral
16	M19	L2x2x3/16	49.9303			Lbyy						Lateral
17	M20	L2x2x3/16	50.071			Lbyy						Lateral
18	M21	L2x2x3/16	49.9303			Lbyy						Lateral
19	M22	3.0" STD	150			Lbyy						Lateral
20	M23	3.0" STD	150			Lbyy						Lateral
21	M24	3.0" STD	150			Lbyy						Lateral
22	M25	2.0" STD	84			Lbyy						Lateral
23	M26	2.0" STD	84			Lbyy						Lateral
24	M27	2.0" STD	84			Lbyy						Lateral
25	M28	2.0" STD	84			Lbyy						Lateral
26	M29	2.0" STD	84			Lbyy						Lateral
27	M30	2.0" STD	84			Lbyy						Lateral
28	M31	2.0" STD	84			Lbyy						Lateral
29	M32	2.0" STD	84			Lbyy						Lateral
30	M33	2.0" STD	84			Lbyy						Lateral
31	M34	2.0" STD	84			Lbyy						Lateral
32	M35	2.0" STD	84			Lbyy						Lateral
33	M36	2.0" STD	84			Lbyy						Lateral
34	M61	L2.5x2.5x3/...	22.158			Lbyy						Lateral
35	M62	L2.5x2.5x3/...	22.158			Lbyy						Lateral
36	M63	L2.5x2.5x3/...	22.1878			Lbyy						Lateral
37	M64	2.0" STD	36									Lateral
38	M65	HSS4x4x1/4	63			Lbyy						Lateral
39	M66	HSS4x4x1/4	63			Lbyy						Lateral
40	M67	HSS4x4x1/4	63			Lbyy						Lateral
41	M68	LL2.5x2.5x3...	54.9181									Lateral
42	M69	LL2.5x2.5x3...	54.9181									Lateral
43	M70	LL2.5x2.5x3...	54.9181									Lateral

Load Combinations

	Description	S...	PDelta	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 + W...	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 + W...	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														

Load Combinations (Continued)

	Description	S...	PDelta	S...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
9	1.2DL + DLi + 0.707(W...	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(W...	Yes	Y		DL	1.2	OL1	1	OL2	-.7...	OL3	-.7...												
13	1.2DL + 1.6LL + 1.6WL...	Yes	Y		DL	1.2	LL	1.6	OL4	1.6														
14	1.2DL + 1.6LL + 1.6WL...	Yes	Y		DL	1.2	LL	1.6	OL5	1.6														
15	1.2DL + 1.6LL + 1.13(W...	Yes	Y		DL	1.2	LL	1.6	OL4	1.13	OL5	1.13												
16	1.2DL + 1.6LL + 1.6WL-...	Yes	Y		DL	1.2	LL	1.6	OL4	-1.6														
17	1.2DL + 1.6LL + 1.6WL-...	Yes	Y		DL	1.2	LL	1.6	OL5	-1.6														
18	1.2DL + 1.6LL + 1.13(W...	Yes	Y		DL	1.2	LL	1.6	OL4	-1....	OL5	-1....												

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	31	max	1100.01	4	665.87	11	2273.88	5	0	1	0	1	0	1
2		min	-1103.22	1	92.04	2	-4983.04	2	0	1	0	1	0	1
3	32	max	4051.9	6	724.69	7	2556.33	6	0	1	0	1	0	1
4		min	-1804.06	3	76.58	4	-1298.19	3	0	1	0	1	0	1
5	33	max	1757.87	4	624.67	10	2678.24	5	0	1	0	1	0	1
6		min	-4343	1	44.91	1	-1233.41	2	0	1	0	1	0	1
7	140	max	65.45	4	2458.96	8	3661.96	8	0	1	0	1	0	1
8		min	-65.44	1	334.67	5	522.46	5	0	1	0	1	0	1
9	141	max	-460.94	3	2361.13	12	-275.74	1	0	1	0	1	0	1
10		min	-3060.63	12	338.62	3	-1717.41	10	0	1	0	1	0	1
11	142	max	3578.07	7	2750.73	7	-374.95	4	0	1	0	1	0	1
12		min	711.64	4	516.17	4	-2020.12	7	0	1	0	1	0	1
13	Totals:	max	5731.78	4	8962.14	8	5832.64	5						
14		min	-5731.78	1	3813.13	5	-5832.65	2						

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

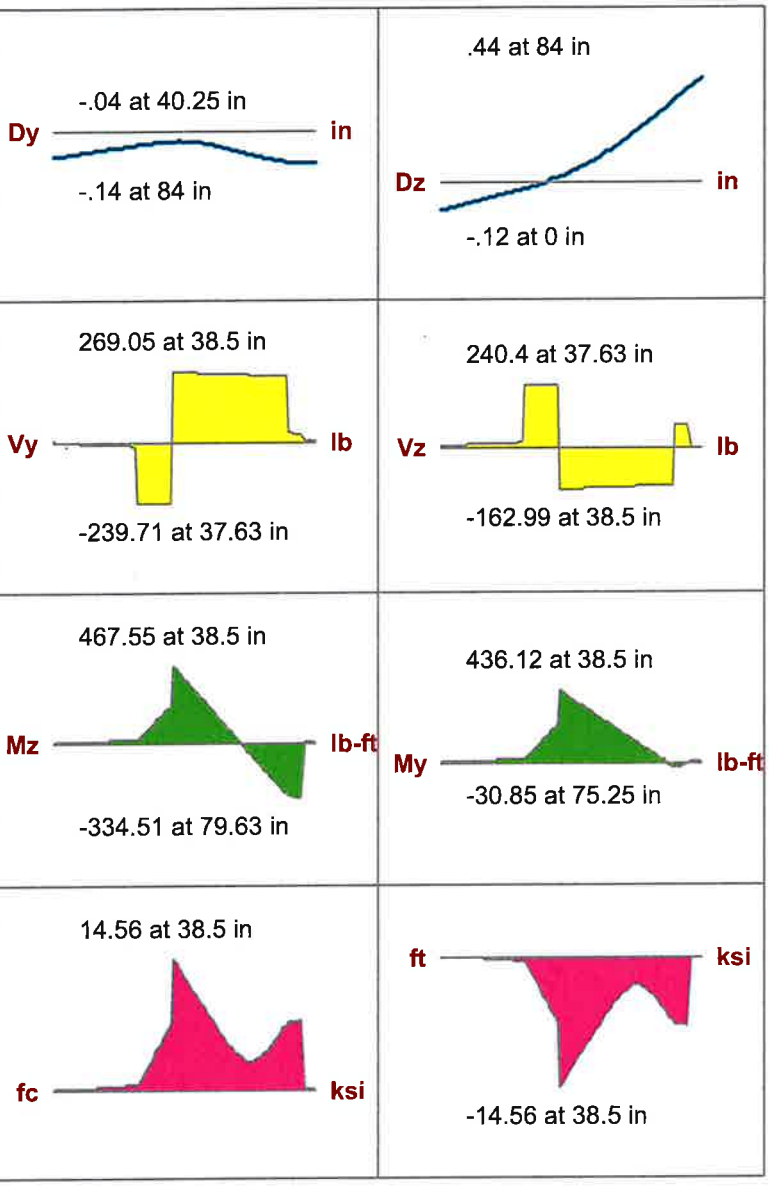
	Member	Shape	Code Che...	Loc[in]	LC	Shear Check	Loc[i...	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
1	M34	PIPE_2.0	.345	38.5	3	.059	38.5		3	17855.09	32130	1871.62	1871.62	1.97	H1-1b
2	M30	PIPE_2.0	.341	38.5	6	.068	38.5		5	17855.09	32130	1871.62	1871.62	1.76	H1-1b
3	M35	PIPE_2.0	.338	38.5	2	.054	38.5		1	17855.09	32130	1871.62	1871.62	1.91	H1-1b
4	M21	L2x2x3	.309	49.93	6	.017	49.93	y	14	9826.72	23392.8	557.72	1236.63	2.24	H2-1
5	M26	PIPE_2.0	.297	38.5	5	.076	38.5		2	17855.09	32130	1871.62	1871.62	1.87	H1-1b
6	M25	PIPE_2.0	.297	38.5	3	.120	38.5		2	17855.09	32130	1871.62	1871.62	2.01	H1-1b
7	M29	PIPE_2.0	.293	38.5	5	.092	38.5		1	17855.09	32130	1871.62	1871.62	1.39	H1-1b
8	M31	PIPE_2.0	.288	38.5	6	.104	38.5		2	17855.09	32130	1871.62	1871.62	1.7	H1-1b
9	M18	L2x2x3	.284	50.07	1	.017	50.07	y	18	9778.73	23392.8	557.72	1238.4	2.27	H2-1
10	M36	PIPE_2.0	.271	38.5	1	.046	38.5		5	17855.09	32130	1871.62	1871.62	1.94	H1-1b
11	M33	PIPE_2.0	.269	38.5	4	.054	38.5		6	17855.09	32130	1871.62	1871.62	1.98	H1-1b
12	M27	PIPE_2.0	.265	38.5	5	.082	38.5		6	17855.09	32130	1871.62	1871.62	1.37	H1-1b
13	M16	L2x2x3	.258	50	2	.017	50	y	17	9802.92	23392.8	557.72	1239.29	2.32	H2-1
14	M17	L2x2x3	.249	0	3	.018	50	y	14	9802.92	23392.8	557.72	1222.09	2.07	H2-1
15	M4	PL 1/2"x6"	.247	9.1	2	.142	6.82	y	1	42371.05	97200	1012.5	12150	1.44	H1-1b
16	M5	PL 1/2"x6"	.245	9.08	3	.160	11.35	y	2	42551.51	97200	1012.5	12150	1.39	H1-1b
17	M28	PIPE_2.0	.241	38.5	6	.090	38.5		4	17855.09	32130	1871.62	1871.62	2.21	H1-1b
18	M20	L2x2x3	.224	50.07	4	.018	50.07	y	17	9778.73	23392.8	557.72	1229.55	2.16	H2-1
19	M32	PIPE_2.0	.221	38.5	2	.105	38.5		2	17855.09	32130	1871.62	1871.62	2.02	H1-1b
20	M6	PL 1/2"x6"	.218	9.08	1	.156	11.35	y	6	42551.51	97200	1012.5	12150	1.46	H1-1b
21	M19	L2x2x3	.215	0	5	.017	49.93	y	13	9826.72	23392.8	557.72	1116.26	1.24	H2-1
22	M67	HSS4x4x4	.166	43.31	6	.040	17.06	y	7	124317....	139518	16180.5	16180.5	1.6	H1-1b
23	M63	L2.5x2.5x3	.165	22.19	3	.042	22.19	y	4	25715.06	29192.4	872.57	1971.83	1.28	H2-1
24	M62	L2.5x2.5x3	.163	22.16	6	.065	22.16	y	2	25722.64	29192.4	872.57	1971.83	2.09	H2-1

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

	Member	Shape	Code Che...	Loc[in]	LC	Shear Check	Loc[i...	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
25	M15	HSS4x4x4	.162	0	11	.103	26.94	z	2	135016....	139518	16180.5	16180.5	1.7	H1-1b
26	M11	HSS4x4x4	.158	0	9	.082	27.29	z	6	134900....	139518	16180.5	16180.5	1.69	H1-1b
27	M10	HSS4x4x4	.154	0	9	.097	27.78	z	3	134739....	139518	16180.5	16180.5	1.69	H1-1b
28	M13	HSS4x4x4	.152	0	10	.070	27.78	z	1	134739....	139518	16180.5	16180.5	1.7	H1-1b
29	M14	HSS4x4x4	.147	0	11	.097	26.94	z	5	135016....	139518	16180.5	16180.5	1.7	H1-1b
30	M61	L2.5x2.5x3	.143	0	5	.055	0	y	2	25722.64	29192.4	872.57	1971.83	1.32	H2-1
31	M12	HSS4x4x4	.142	0	10	.065	27.29	z	2	134900....	139518	16180.5	16180.5	1.7	H1-1b
32	M66	HSS4x4x4	.137	43.97	1	.052	17.06	y	7	124317....	139518	16180.5	16180.5	1.63	H1-1b
33	M70	LL2.5x2.5x3...	.116	54.92	7	.003	54.92	y	7	42682.94	58320	4643.06	2549.59	1.14	H1-...
34	M65	HSS4x4x4	.110	43.31	2	.041	17.06	y	12	124317....	139518	16180.5	16180.5	1.77	H1-1b
35	M68	LL2.5x2.5x3...	.103	54.92	8	.004	54.92	z	1	42682.94	58320	4643.06	2549.59	1	H1-...
36	M69	LL2.5x2.5x3...	.099	54.92	12	.003	0	y	12	42682.94	58320	4643.06	2549.59	1.14	H1-...
37	M24	PIPE_3.0	.096	54.69	1	.050	15.63		3	28250.55	65205	5748.75	5748.75	3.3	H1-1b
38	M3	PIPE_3.0	.092	56.25	2	.070	54.69		2	28250.55	65205	5748.75	5748.75	2.47	H1-1b
39	M23	PIPE_3.0	.085	56.25	4	.043	9.38		2	28250.55	65205	5748.75	5748.75	2.92	H1-1b
40	M1	PIPE_3.0	.084	93.75	3	.043	54.69		5	28250.55	65205	5748.75	5748.75	1.6	H1-1b
41	M2	PIPE_3.0	.077	135.94	9	.052	15.63		5	28250.55	65205	5748.75	5748.75	2.33	H1-1b
42	M22	PIPE_3.0	.077	54.69	5	.032	9.38		6	28250.55	65205	5748.75	5748.75	2.21	H1-1b
43	M64	PIPE_2.0	.000	30	9	.000	0		9	28843.41	32130	1871.62	1871.62	1.47	H1-1b

Column: ***M34***

Shape: **PIPE_2.0**
Material: **A53 Gr.B**
Length: **84 in**
I Joint: **76**
J Joint: **80**
LC 3: 1.2DL + 1.13(WLX + WLZ)
Code Check: **0.345 (bending)**
Report Based On 97 Sections



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

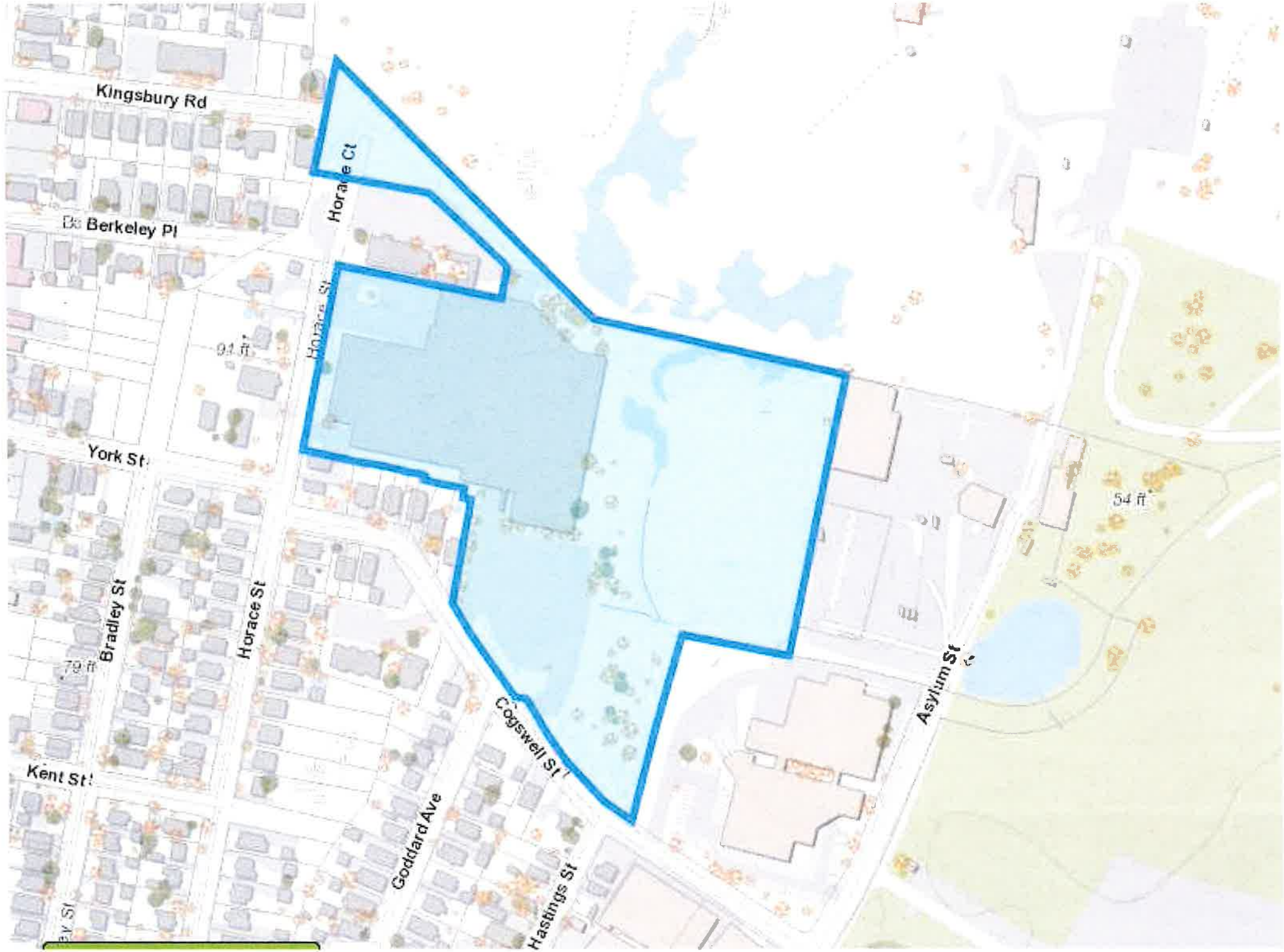
Direct Analysis Method

Max Bending Check	**0.345**	Max Shear Check	**0.059 (s)**
Location	**38.5 in**	Location	**38.5 in**
Equation	**H1-1b**	Max Defl Ratio	**L/150**

Bending	**Compact**	Compression	**Non-Slender**

			y-y	z-z
Fy	**35 ksi**	Lb	**84 in**	**84 in**
phi*Pnc	**17855.09 lb**	KL/r	**107.14**	**107.14**
phi*Pnt	**32130 lb**			
phi*Mny	**1871.62 lb-ft**	L Comp Flange	**84 in**	
phi*Mnz	**1871.62 lb-ft**	L-torque	**84 in**	
phi*Vny	**9639 lb**	Tau_b	**1**	
phi*Vnz	**9639 lb**			
phi*Tn	**1770.39 lb-ft**			
Cb	**1.97**			

ATTACHMENT 6


Kingsbury Rd
Berkeley Pl
Horace Ct
Horace St
York St
Bradley St
Horace St
Kent St
Goddard Ave
Cogswell St
Hastings St
Asylum St
91 ft
79 ft
54 ft

380 HORACE ST

Sales Print Field Card Map It

Location	380 HORACE ST	**Mblu**	62/ 2050/ 39/Y /
Acct#	R--0055600	**Owner**	416 HORACE REALTY LLC
Assessment	$2,074,540	**Appraisal**	$2,963,600
PID	19970	**Building Count**	2

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$1,736,220	$1,227,380	$2,963,600
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$1,215,370	$859,170	$2,074,540

Owner of Record

Owner	416 HORACE REALTY LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	380 HORACE ST BRIDGEPORT, CT 06610	**Book & Page**	10087/245
		Sale Date	09/04/2019
		Instrument	03

ATTACHMENT 7

UNITED STATES POSTAL SERVICE®

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here ***Postmark with Date of Receipt.***
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	3	3	neopost 05/26/2020 US POSTAGE $002.84⁰ ZIP 06103
	Postmaster, per *(name of receiving employee)* VP		

USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Joseph Ganim, Mayor City of Bridgeport Margaret E. Morton Government Center 999 Broad Street Bridgeport, CT 06604				
2.	Dennis Buckley, Zoning Administrator City of Bridgeport 45 Lyon Terrace Bridgeport, CT 06604		OLD STATE HOUSE STATION 06103 MAY 28 2020 USPS		
3.	416 Horace Realty LLC 380 Horace Street Bridgeport, CT 06610				
4.					
5.					
6.					