



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: siting.council@ct.gov

www.ct.gov/csc

VIA ELECTRONIC MAIL

September 17, 2019

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **EM-VER-159-190904** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 250 Silas Deane Highway, Wethersfield, Connecticut.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) is in receipt of your correspondence of September 10, 2019 submitted in response to the Council's September 5, 2019 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/IN/emr



Robidoux, Evan

From: Dandeneau, Kathleen <KDANDENEAU@RC.com>
Sent: Tuesday, September 10, 2019 3:29 PM
To: Bachman, Melanie; CSC-DL Siting Council
Cc: Baldwin, Kenneth; Mayo, Rachel
Subject: EM-VER-159-190904 - 250 Silas Deane Highway, Wethersfield, CT - Additional Information
Attachments: Wethersfield_001.pdf

The original has been mailed to the Siting Council.

Kathleen M. Dandeneau
Legal Administrative Assistant

Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103
Direct 860.541.2689 | Fax 860.275.8299
kdandeneau@rc.com | www.rc.com

Robinson+Cole

Boston | Hartford | New York | Providence | Miami | Stamford
Los Angeles | Wilmington | Philadelphia | Albany | New London

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September 10, 2019

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

Re: **EM-VER-159-190904 – Celco Partnership d/b/a Verizon Wireless Notice of Intent to Modify an Existing Telecommunications Facility Located at 250 Silas Deane Highway, Wethersfield, Connecticut**

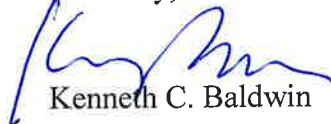
Dear Ms. Bachman:

In response to your September 5, 2019 letter regarding the above-referenced exempt modification filing, I offer the following additional information.

1. We have reached out to the Town of Wethersfield and have confirmed, through its Planning and Zoning Department that there are no records of any zoning approval for the Police Department tower at 250 Silas Deane Highway.
2. I have enclosed a set of Construction Drawings for the proposed antenna swap project prepared by Dewberry Engineers Inc.
3. I have enclosed a Mount Analysis Report and Design Calculations for the Verizon Wireless antenna modifications at the Wethersfield Police Department tower referenced above.

If you have any questions or need any additional information regarding the EM-VER-159-190904 filing please do not hesitate to contact me.

Sincerely,



Kenneth C. Baldwin

KCB/kmd
Enclosures

19801545-v1

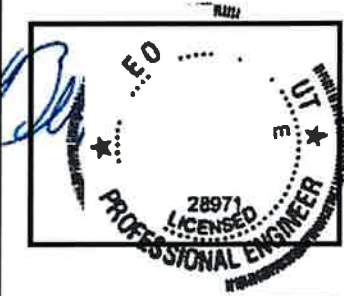
**HARTFORD 9 CT
ANTMO**

CONSTRUCTION DRAWINGS

D	08/29/19	FOR SUBMITTAL
A	08/09/19	FOR COMMENT



Dewberry Engineers Inc.
99 SUMMER STREET
SUITE 700
BOSTON, MA 02110
PHONE: 617.895.3400
FAX: 617.895.3310



DRAWN BY:	MR
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50002925
JOB NUMBER:	50114613

SITE ADDRESS:

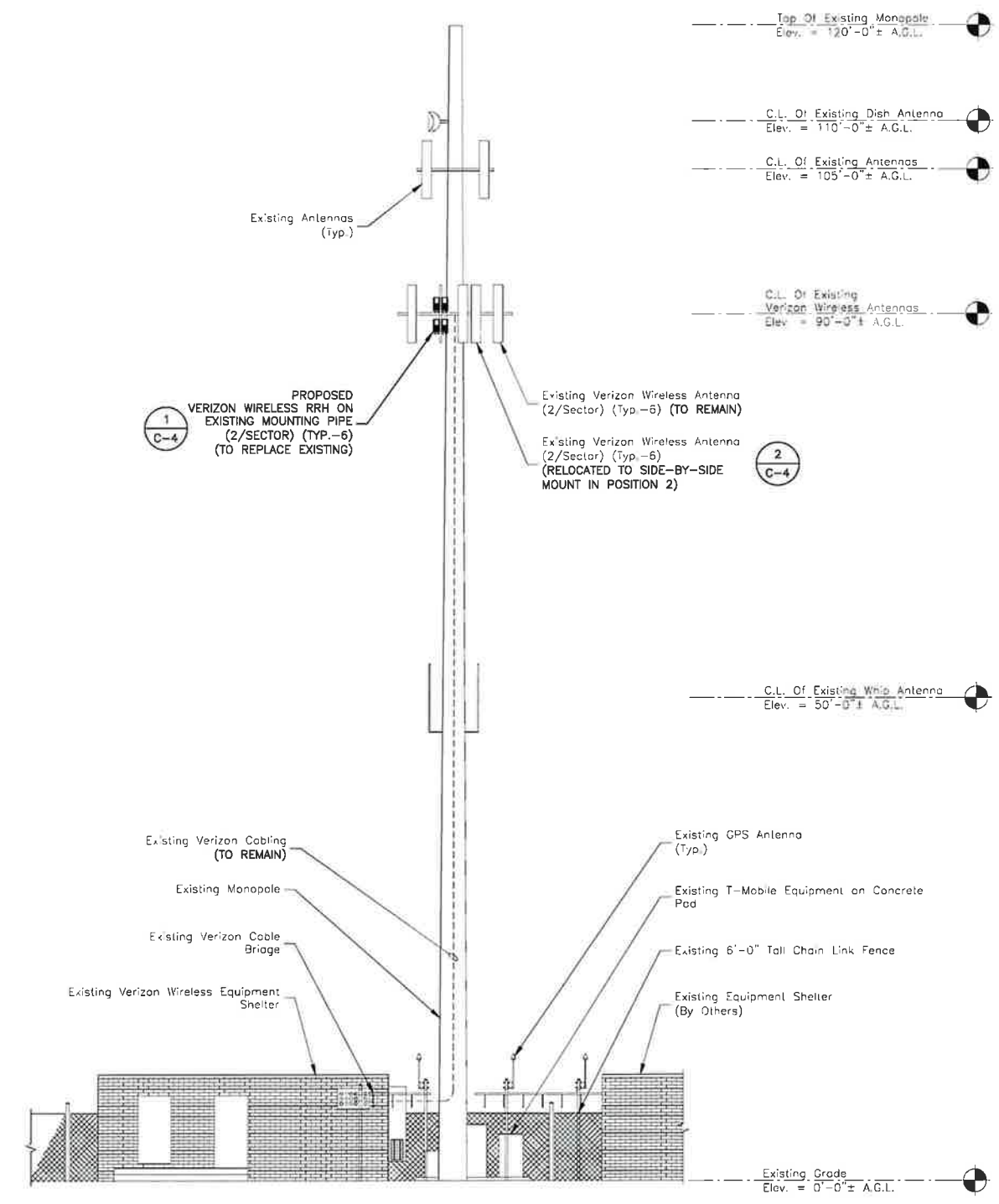
250 SILAS DEANE HIGHWAY
WETHERSFIELD, CT 06109
HARTFORD COUNTY

SHEET TITLE

WEST ELEVATION

SHEET NUMBER

C-2



WEST ELEVATION
SCALE: 1/16"=1' FOR 11"x17"
1/8"=1' FOR 22"x34"

0' 4' 8' 16'

- NOTES:**
- ELEVATION SHOWN AS APPROXIMATE.
 - SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
 - SITE PLAN & ELEVATION BASED ON A SITE VISIT BY DEWBERRY ENGINEERS INC. ON 07/26/19.
 - EXISTING ANTENNAS SHOWN AS APPROXIMATE. ELEVATION BASED ON EXISTING INFORMATION AND VISUAL INSPECTION AND HAVE NOT BEEN VERIFIED THROUGH AN ANTENNA MAPPING.
 - MOUNT ALL ANTENNAS, COAX, RRH, OVP BOXES, ETC. IN ACCORDANCE WITH TOWER STRUCTURAL ANALYSIS BY DEWBERRY ENGINEERS INC. DATED 08-09-19 & MOUNT STRUCTURAL ANALYSIS BY DEWBERRY ENGINEERS INC. DATED 08-02-19.
 - REUSE EXISTING ANTENNA MOUNTS AND COAX. INSPECT FOR DAMAGE OR DECAY AND REPLACE AS NEEDED PER STRUCTURAL ANALYSIS.
 - THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAINS. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

**HARTFORD 9 CT
ANTMO**

CONSTRUCTION DRAWINGS

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A	08/09/19	FOR COMMENT



Dewberry Engineers Inc.
99 SUMMER STREET
SUITE 700
BOSTON, MA 02110
PHONE: 617.895.3400
FAX: 617.695.3310



DRAWN BY: MR

REVIEWED BY: CDH

CHECKED BY: BBR

PROJECT NUMBER: 50002925

JOB NUMBER: 50114613

SITE ADDRESS:

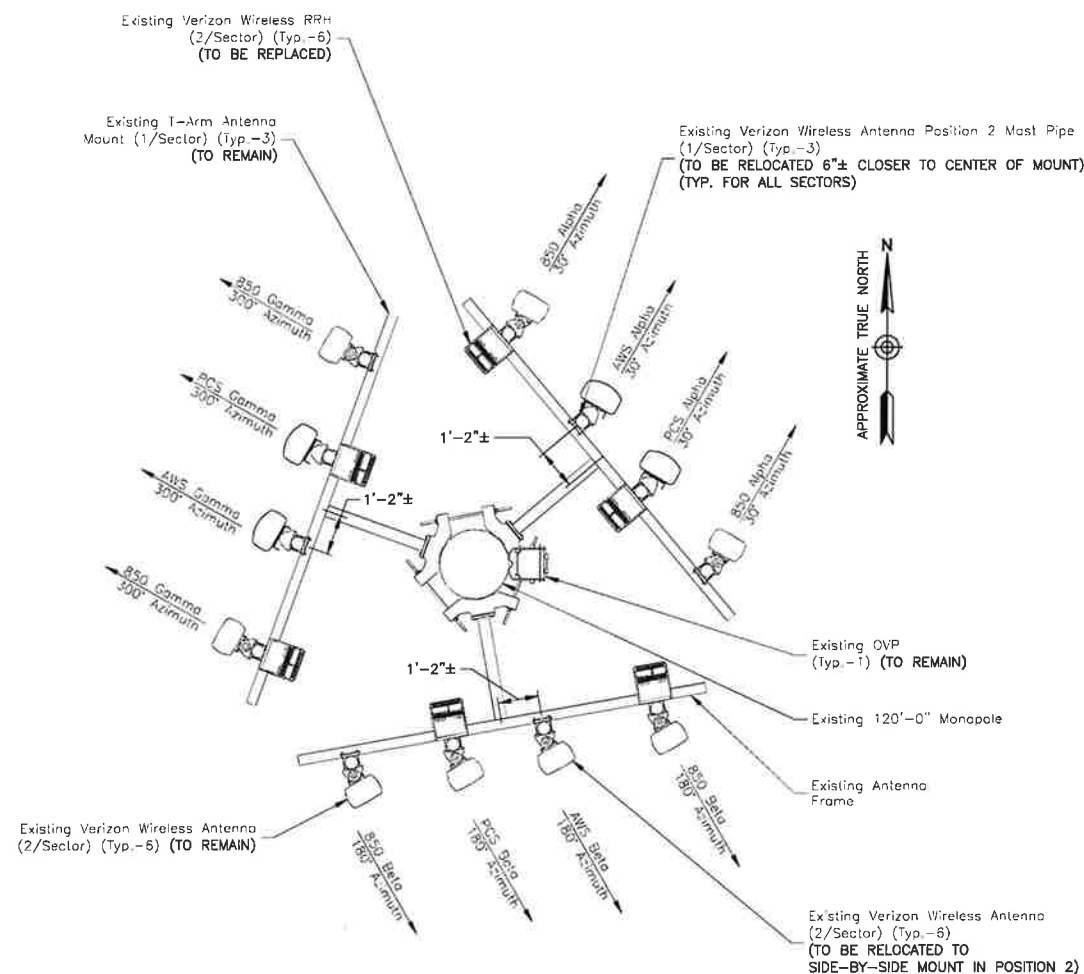
250 SILAS DEANE HIGHWAY
WETHERSFIELD, CT 06109
HARTFORD COUNTY

SHEET TITLE

ANTENNA PLANS

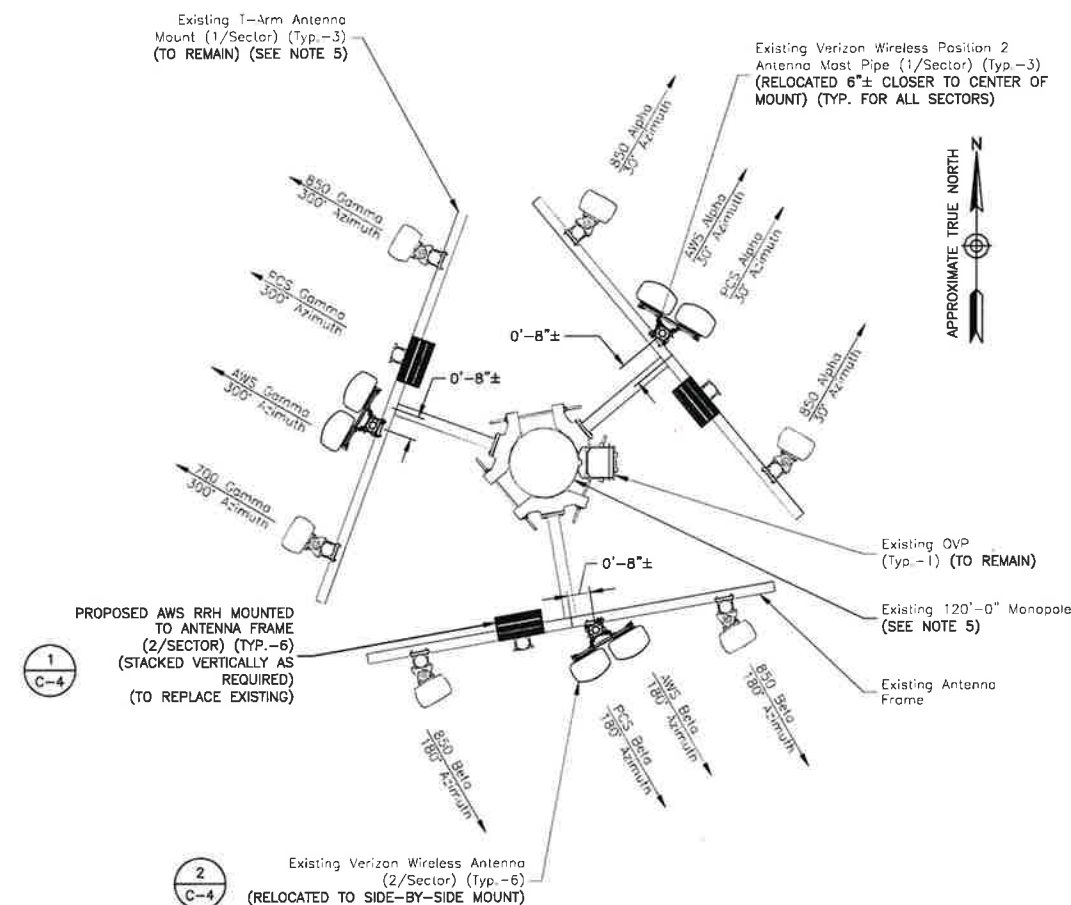
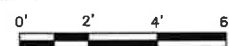
SHEET NUMBER

C-3



EXISTING ANTENNA PLAN

SCALE: 3/16"=1' FOR 11"x17"
3/8"=1' FOR 22"x34"



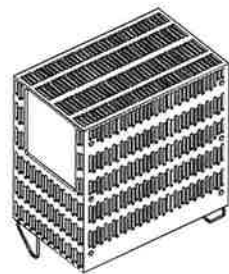
PROPOSED ANTENNA PLAN

SCALE: 3/16"=1' FOR 11"x17"
3/8"=1' FOR 22"x34"



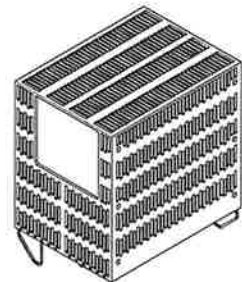
NOTES:

- NORTH SHOWN AS APPROXIMATE.
- SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
- SITE PLAN & ELEVATION BASED ON A SITE VISIT BY DEWBERRY ENGINEERS INC. ON 07/26/19.
- EXISTING ANTENNAS SHOWN AS APPROXIMATE. ELEVATION BASED ON EXISTING INFORMATION AND VISUAL INSPECTION AND HAVE NOT BEEN VERIFIED THROUGH AN ANTENNA MAPPING.
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MANUFACTURER: SAMSUNG
 MODEL: 700/850 RRH
 DIMENSIONS: 15.0"H X 15.0"W X 8.1"D
 WEIGHT: 82.0 LBS

LTE 700/850



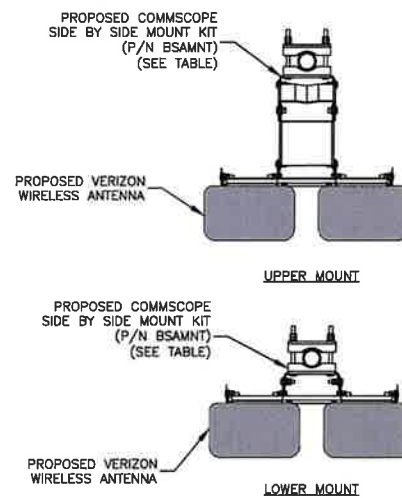
MANUFACTURER: SAMSUNG
 MODEL: AWS/PCS RRH
 DIMENSIONS: 15.0"H X 15.9"W X 10.0"D
 WEIGHT: 97.5 LBS

LTE PCS/AWS

REMOTE UNIT DETAILS

SCALE: N.T.S.

1



COMMSCOPE P/N: BSAMNT MOUNT TABLE				
COMMSCOPE P/N	SUPPORTED ANTENNAS	QUANTITY REQUIRED PER (2) ANTENNAS	NUMBER OF MOUNTING POINTS	GAP BETWEEN ANTENNAS
BSAMNT-SBS-1-2	SBNHH-1D65A/B/C NHH-65A/B/C-R2B	1	2	3-3/8"
BSAMNT-SBS-2-2	JAHH-65A/B/C-R3B JAHH-45A-R3B NHH-45A-R2B SBNHH-1D45A/B	1	2	2"
BSAMNT-SBS-2-3	JAHH-45B/C-R3B SBNHH-1D45C	1	3	2"

TABLE BASED ON POWER POINT PRESENTATION BY COMMSCOPE TITLED SIDE BY SIDE MOUNTS. CONTRACTOR TO VERIFY PART NUMBERS WITH MANUFACTURER PRIOR TO ORDERING. INSTALL PER MANUFACTURER RECOMMENDATIONS & SPECIFICATIONS.

NOTES:

- SPACING OF PROPOSED EQUIPMENT SHALL BE CONFIRMED AND PROPOSED MOUNTS SHALL NOT IMPEDE EQUIPMENT CLEARANCES. ACCESS TO EQUIPMENT SHALL BE MAINTAINED.
- PROPOSED ANTENNA MOUNT SHALL BE INSTALLED ACCORDING TO MANUFACTURER SPECIFICATIONS.

SIDE BY SIDE ANTENNA MOUNT

SCALE: N.T.S.

2

99 EAST RIVER DRIVE
 EAST HARTFORD, CT 06108

**HARTFORD 9 CT
 ANTMO**

CONSTRUCTION DRAWINGS

D	08/29/19	FOR SUBMITTAL
A	08/09/19	FOR COMMENT



Dewberry Engineers Inc.
 99 SUMMER STREET
 SUITE 700
 BOSTON, MA 02110
 PHONE: 617.666.3400
 FAX: 617.665.3310



DRAWN BY: MR

REVIEWED BY: CDH

CHECKED BY: BBR

PROJECT NUMBER: 50002925

JOB NUMBER: 50114613

SITE ADDRESS:
 250 SILAS DEANE HIGHWAY
 WETHERSFIELD, CT 06109
 HARTFORD COUNTY

SHEET TITLE

CONSTRUCTION DETAILS

SHEET NUMBER

**HARTFORD 9 CT
ANTMO**

CONSTRUCTION DRAWINGS

0	08/29/19	FOR SUBMITTAL
A	08/09/19	FOR COMMENT



Dewberry Engineers Inc.
99 SUMMER STREET
SUITE 700
BOSTON, MA 02110
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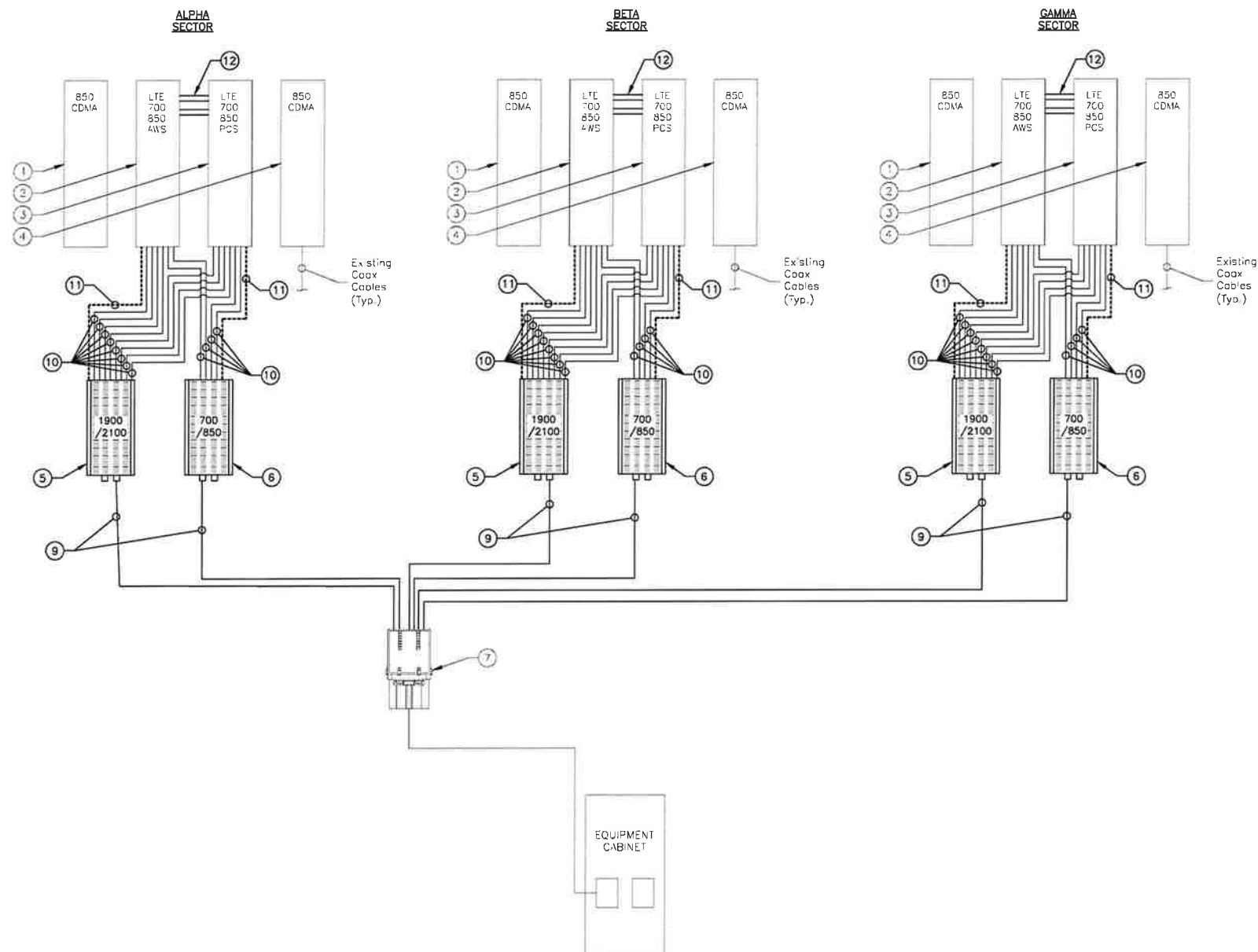
SITE ADDRESS:

250 SILAS DEANE HIGHWAY
WETHERSFIELD, CT 06109
HARTFORD COUNTY

SHEET TITLE

BILL OF MATERIALS &
PLUMBING RISER DIAGRAM

SHEET NUMBER



NOTE:
1. ANTENNAS VIEWED FROM BEHIND.

PLUMBING DIAGRAM
SCALE: N.T.S.

1

BILL OF MATERIALS

SITE NAME: HARTFORD 9 CT

ITEM	DESCRIPTION	QTY.	LENGTH	COMMENTS
1	ANTENNA LTE 700	3		MOUNTED TO ANTENNA FRAME (BXA-80063/6CF)
2	ANTENNA LTE 700/850/AWS	3		MOUNTED TO ANTENNA FRAME (SBNHH-1D65B) (RELOCATED TO SIDE-BY-SIDE MOUNT)
3	ANTENNA LTE 700/850/PCS	3		MOUNTED TO ANTENNA FRAME (SBNHH-1D65B) (RELOCATED TO SIDE-BY-SIDE MOUNT)
4	ANTENNA LTE 850	3		MOUNTED TO ANTENNA FRAME (BXA-80063/6CF)
5	SAMSUNG B2/B86A RRH	2		MOUNTED TO ANTENNA PIPE MAST
6	SAMSUNG B2/B13 RRH	2		MOUNTED TO ANTENNA PIPE MAST
7	OVP (UPPER)	1		MOUNTED TO PIPE MAST (EXISTING)
8	6X12 HYBRIFLEX	1	180 FT	ROUTED FROM SHELTER TO UPPER OVP
9	1X1 HYBRID JUMPER	3	20 FT	ROUTED FROM UPPER OVP TO RRH
10	TOP JUMPER	24	10 FT	ROUTED FROM RRH TO ANTENNA
11	RET CONTROL CABLE	6	3 M	ROUTE FROM RRH TO ANTENNA
12	SIDE-BY-SIDE MOUNT	3		COMMSCOPE BSAMT-SBS-1-2

* DENOTES EQUIPMENT DESIGNATED AS "FOR LEASING ONLY"

LEGEND

- LIGHT LINE DENOTES EXISTING
- DARK LINE DENOTES PROPOSED
- - - DASHED LINE DENOTES FUTURE
- - - - - DARK DASHED LINE DENOTES RET CABLE



Dewberry Engineers Inc. 617.695.3400
99 Summer Street, Suite 700 617.695.3310 fax
Boston, MA 02110-1200 www.dewberry.com

Mount Analysis Report and Design Calculations For a Wireless Telecommunications Upgrade

Site Name: Hartford 9 CT
Site No.: 468180
Site Address: 250 Silas Deane Highway
Wethersfield, CT 06109

Prepared for:
Verizon Wireless
118 Flanders Road
Westborough, MA 01581-3956

August 2, 2019
(Rev.0)

Prepared by:
Dewberry Engineers Inc.
99 Summer Street, 7th Floor
Boston, MA 02110
Dewberry Project Number: 50114613

Analysis Condition	Utilization	Results
Existing Mount	84.7%	Sufficient

Prepared by:

James DeCelle Jr.
Project Engineer

Reviewed by:

Sahnoune Abed
Structural Project Engineer

Approved by:



Ben Revette
Senior Associate

Table of Contents

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APPENDIX A	EXISTING MOUNT ANALYSIS
APPENDIX B	REFERENCE MATERIAL

1.0 INTRODUCTION AND PROJECT SUMMARY

The objective of this report is to assess the proposed installation of new RRH units and relocation of existing antennas on dual mounts to existing steel antenna mounts. This report is limited to the analysis of the existing sector frames only.

The existing structure is a 120-ft tall monopole located in Wethersfield, CT. There are currently existing antennas and support equipment mounted to steel frames in sectors Alpha, Beta, & Gamma. The existing antenna mount is attached at approximately 90-ft above grade with an approximate antenna centerline elevation of 90-ft.

2.0 EXISTING & PROPOSED ANTENNAS & EQUIPMENT

Currently, each sector has the following equipment:

- Sectors Alpha, Beta, & Gamma
 - Two (2) BXA-80063 6CF antennas measuring 71.1" H x 11.2" W x 4.5" D (14.9 lb)
 - Two (2) SBNHH-1D65B antennas measuring 72.9"H x 11.9"W x 7.1"D (40.6 lb)
 - One (1) B13 RRH 4x30 measuring 20.9"H x 11.8"W x 7.5"D (55.6 lb)*
 - One (1) B66A RRH 4x45 measuring 25.8"H x 11.8"W x 7.2"D (56.8 lb)*
 - One (1) OVP Box measuring 29.5"H x 16.5"W x 12.6"D (32.0 lb)**
 - Miscellaneous equipment and cables negligible in weight and profile
- * Equipment to be removed
 ** One Total

The following antennas and equipment are proposed for each sector:

- Sectors Alpha, Beta, & Gamma
 - One (1) BSAMNT SBS 1-2 dual mounting bracket weighing 25.4 lb.
 - One (1) Samsung B2/B66A RRH measuring 15"H x 15"W x 10"D (97.5 lb)
 - One (1) Samsung B5/B13 RRH measuring 15"H x 15"W x 8.1"D (82.0 lb)

Equipment weights include mounting kits

For the final configuration utilized for this analysis, refer to the table below.

Table 1: APPURTENANCE LOADING on TOWER			
Elev.	Status	Appurtenance Description	Mounting Location
90'	Final	(6) – BXA 80063 6CF	Positions 1 & 4
90'	Final	(6) – SBNHH-1D65B	Position 2
90'	Final	(3) – B2/B66 RRH	Position 3
90'	Final	(3) – B5/B13 RRH	Position 3
90'	Final	(1) – OVP Box	Ring Mount

3.0 CODES, STANDARDS, AND REFERENCES

The structure was analyzed and the proposed installation designed per the provisions of the following codes, standards, and references:

- *International Building Code (IBC) 2015*, International Code Council
- *2018 Connecticut State Building Code – Amendments to IBC 2015*
- *TIA-222-G-4, Structural Standard for Antenna Supporting Structures and Antennas*
- *Steel Construction Manual 14th Ed*, American Institute of Steel Construction
- Radio Frequency Data Sheet (RFDS) dated 06/04/19
- Mount mapping report by Northeast Union Inc. dated 9/18/17
- Site Visit by Dewberry Engineers Inc. on 07/26/19

4.0 LOADING AND PERFORMANCE CRITERIA

The following code-specified strength limit state (LRFD) load combinations were considered in the analysis of the antenna mount (*TIA-222-G*):

1. $1.2D + 1.6W$
2. $1.2D + 1.0D_i + 1.0W_i$

The following Code-specified serviceability load combination was considered in the deflection of the antenna mounts (*TIA-222-G*):

1. $1.0D + 1.0W_{service}$

Where:

- D = dead load of structure, steel, and new equipment.
- D_i = dead load of ice
- W = design wind load
- W_i = design ice wind load
- $W_{service}$ = service wind load

The following site-specific design parameters were considered in this analysis per the provisions of *TIA-222-G*:

Risk Category:	II	
Exposure Category:	C	
Ultimate Design Wind Speed:	125 mph	<i>CT 2018 Bld. Code</i>
Design Ice Wind Speed:	50 mph	<i>ASCE 7-10 Hazard Tool</i>
Design Ice Thickness:	1.00 in.	<i>ASCE 7-10 Hazard Tool</i>
Gust Effect Factor	1.0	<i>Sect. 2.6.7, TIA</i>
Wind Direction Probability Factor	0.95	<i>Table 2-2, TIA</i>
Serviceability Wind Speed:	60 mph	<i>Sect. 2.8.3, TIA</i>

5.0 ANALYSIS ASSUMPTIONS

- This analysis assumes the dual mounted antenna pipe is relocated 6" closer to the T-Arm, as shown in the latest Construction Drawings by Dewberry Engineers, Inc.

6.0 REQUIRED FIELD VERIFICATIONS

- N/A

7.0 CALCULATIONS

Calculations for this analysis and the design of the proposed installation are included in the Appendices of this report.

8.0 CONCLUSIONS, COMMENTARY, AND RECOMMENDATIONS

The analysis concludes that the existing sector frames, as described in the mount mapping report provided, have sufficient structural capacity to support the proposed installation. Under the proposed conditions, the maximum utilization of a single structural member is 84.7%.

This analysis is limited to the existing sector frames only. If actual field conditions vary from what was assumed in this analysis, the results and conclusions expressed herein are invalid and further evaluation is recommended for any proposed installation to continue. All proposed equipment shall be installed according to the latest associated construction drawings by Dewberry.

Dewberry Engineers Inc. reserves the right to add to or modify this report if more information becomes available. The conclusions reached by Dewberry Engineers Inc. in this report are only applicable to the previously mentioned existing structural elements supporting the proposed wireless telecommunications installation. The results of this report are based on the assumption that existing structural elements have been installed per the original design documents, have been well maintained, and are uncompromised. This report does not imply that a thorough inspection of the existing structure has been performed. Any deviation of the support condition, loading, location, placement, equipment configuration, etc., will require Dewberry Engineers Inc. to generate an additional structural analysis. Further, no structural qualification is made or implied by this report of any existing structural elements.

APPENDIX A



Job Number 50114613
 Made by: JSD
 Date: 07/29/19
 Checked by: SA
 Date: 08/01/19

(Hartford 9 CT) - Design Wind Load

\\CAPECOD\Projects\50002925\50114613 - Hartford 9 CT\Tech\Mount Analysis\Rev.0\50114613 - Hartford 9 CT Analysis Calc..xlsx

Wind Load Design Criteria

Site Name: Hartford 9 CT

General Information & Design Input from TIA-222-G

Item	Value	Description	Reference
V =	125.00	Design Wind Speed (mph)	ASCE 7-10
V _{max} =	97.00	(√0.6) * V	Except. #5, Sect. 1609.3.1, Eqn. 16-33, IBC 15
Location =	CT	Hartford County	ASCE 7-10, Hazard Tool
V _i =	50.00	Design Ice Wind Speed (mph)	
K _d =	0.95	Wind Direction Probability Factor	Table 2-2, TIA
Class	II	Structure Classification	Table 2-1, TIA
I =	1.00	Importance Factor (Without Ice)	Table 2-3, TIA
I _{ice} =	1.00	Importance Factor (Ice Thickness)	Table 2-3, TIA
z = h =	90.00	ft. (A.G.L.)	Max. Center of Appurtenance
Exp. Cat.	C	Exposure Category	Sect. 2.6.5.1, TIA
z _g =	900.00	Exposure Category Coeff.	Table 2-4, TIA
α' =	9.50	Exposure Category Coeff.	Table 2-4, TIA
K _{z(min)} =	0.85	Exposure Category Coeff.	Table 2-4, TIA
K _e =	1.00	Exposure Category Coeff.	Table 2-4, TIA
K _t =	N/A	Topographic Constant	Table 2-5, TIA ("N/A" if Topo. Cat. = 1)
K _z =	1.24	= 2.01(z/z _g) ^(2/α')	Sect. 2.6.5.2, TIA
Topo. Cat.	1	Topographic Category (1-5)	Sect. 2.6.6.2, TIA
e =	2.72	Natural Logarithmic base	
f =	N/A	Height Attenuation Factor	Table 2-5, TIA ("N/A" if Topo. Cat. = 1)
H =	N/A	ft. Height of crest above surrounding terrain	
K _h =	N/A	e ^{((f*z)/H)}	Sect. 2.6.6.4, TIA
K _{zt} =	1.00	= [1+((K _e *K _t)/K _h)] ²	Sect. 2.6.6.4, TIA
K _{iz} =	1.11	= (z/33) ^{0.10} ≤ 1.4 (Height escalation factor)	Sect. 2.6.8, TIA
G _h =	1.00	Gust Effect Factor	Sect. 2.6.7, TIA
t _i =	1.00	Design Ice Thickness	ASCE 7-10, Hazard Tool
t _{iz} =	2.22	= 2 t _i (I _{ice})K _{iz} (K _{zt}) ^{0.35}	Sect. 2.6.8, TIA
q _{z design} =	28.4 psf	= 0.00256(K _z)(K _{zt})(K _d)(V _{max} ²)(I)	Sect. 2.6.9.6, TIA
q _{z ice} =	7.6 psf	= 0.00256(K _z)(K _{zt})(K _d)(V _i ²)	Sect. 2.6.9.6, TIA

Design Wind Forces:

Section 2.6.9.2

$$F_A = q_{z \text{ design}} G_h (EPA)_A$$

(where (EPA)_A = effective projected area of the appurtenance = C_aA_a)

$$F_{Ai} = q_{z \text{ ice}} G_h (EPA)_{Ai}$$

(see calculation tables on following pages)

Design Ice Weight:

Section 2.6.8

$$F_i = [\pi(t_{iz})(D_c + t_{iz})] * 56 \text{ lb/ft}^3$$

(where D_c = largest out to out dimension of member)

(see calculation tables on following pages)



Job Number 50114613
 Made by: JSD
 Date: 07/29/19
 Checked by: SA
 Date: 08/01/19

(Hartford 9 CT) - Design Wind Load

\\CAPECOD\Projects\50002925\50114613 - Hartford 9 CT\Tech\Mount Analysis\Rev.0\50114613 - Hartford 9 CT Analysis Calc..xlsx

Element Definition

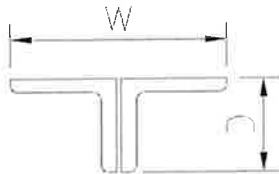
Description	Dimensions (in.)			Weight (lb)	Length / # Supports
	W	D	H		
BXA 80063 6CF	11.20	4.50	71.10	14.90	2.00
(2) SBNHH-1D65B	23.80	7.10	72.90	106.60	2.00
B2/B66A RRH	15.00	10.00	15.00	97.50	1.00
B5/B13 RRH	15.00	8.10	15.00	82.00	1.00
STRUCTURAL MEMBERS					
2-3/8" OD Pipe	2.38	2.38	12.00	STAAD	Pipe
3-1/2" OD Pipe	3.50	3.50	12.00	STAAD	Pipe
4-1/2" OD Pipe	4.50	4.50	12.00	STAAD	Pipe
4x4 HSS Tube	4.00	4.00	12.00	STAAD	Tube

(Mounting Pipe)

(See Note 2)

Note:

1) For Double Angles assume the following:



2) For mounting pipes that **do not** support equipment or portions which are not shielded by equipment, create an additional entry below.



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 Checked by: SA
 Date: 08/01/19

(Hartford 9 CT) - Design Wind Load

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Design Wind Load

Members	Dimensions (ft.)			Area (A _n) (normal) (sf)	Area (A _t) (tangent) (sf)	Aspect Ratio (normal)	Aspect Ratio (tangent)	C _{an} (normal) Table 2-8	C _{at} (tangent) Table 2-8
	Width (Normal)	Depth (Tangent)	Height (or span)						
BXA 80063 6CF	0.93	0.38	5.93	5.51	2.25	6.38	15.61	1.37	1.69
(2) SBNHH-1D65B	1.98	0.59	6.08	12.04	3.59	3.07	10.31	1.23	1.51
B2/B66A RRH	1.25	0.83	1.25	1.56	1.04	1.00	1.51	1.20	1.20
B5/B13 RRH	1.25	0.68	1.25	1.56	0.85	1.00	1.84	1.20	1.20
STRUCTURAL MEMBERS									
2-3/8" OD Pipe	0.20	0.20	1.00	0.20	0.20	5.00	5.00	0.76	0.76
3-1/2" OD Pipe	0.29	0.29	1.00	0.29	0.29	3.45	3.45	0.72	0.72
4-1/2" OD Pipe	0.38	0.38	1.00	0.38	0.38	2.63	2.63	0.70	0.70
4x4 HSS Tube	0.33	0.33	1.00	0.33	0.33	3.03	3.03	1.22	1.22

Design Effective Projected Area & Wind Loads

Members	EPA _a @ 0.0° (sf)	EPA _a @ 30.0° (sf)	EPA _a @ 60.0° (sf)	EPA _a @ 90.0° (sf)	F _a @ 0.0° (lb)	F _a @ 30.0° (lb)	F _a @ 60.0° (lb)	F _a @ 90.0° (lb)	Gravity Load @ Support (lb)
BXA 80063 6CF	7.55	6.61	4.74	3.80	107.2	93.9	67.3	54.0	7.5
(2) SBNHH-1D65B	14.81	12.46	7.77	5.42	210.3	177.0	110.3	77.0	53.3
B2/B66A RRH	1.87	1.72	1.40	1.25	53.2	48.7	39.9	35.4	97.5
B5/B13 RRH	1.87	1.66	1.23	1.02	53.2	47.1	35.0	29.0	82.0
STRUCTURAL MEMBERS									
2-3/8" OD Pipe	0.15	-	-	-	4.3	-	-	-	-
3-1/2" OD Pipe	0.21	-	-	-	5.9	-	-	-	-
4-1/2" OD Pipe	0.27	-	-	-	7.6	-	-	-	-
4x4 HSS Tube	0.40	-	-	-	11.4	-	-	-	-



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(Hartford 9 CT) - Design Wind Load

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Design Ice Wind Load

- Design ice thickness included in tabulated dimensions below.

Members	Dimensions (ft.)			Area (A _a) _{ni}	Area (A _a) _{ti}	Aspect Ratio	Aspect Ratio	C _{ani}	C _{ati}
	Width (Normal)	Depth (Tangent)	Height (or span)	(normal) (sf)	(tangent) (sf)	(normal)	(tangent)	(normal) Table 2-8	(tangent) Table 2-8
BXA 80063 6CF	1.30	0.75	6.30	8.19	4.73	4.85	8.40	1.30	1.45
(2) SBNHH-1D65B	2.35	0.96	6.45	15.16	6.19	2.74	6.72	1.21	1.39
B2/B66A RRH	1.62	1.20	1.62	2.62	1.94	1.00	1.35	1.20	1.20
B5/B13 RRH	1.62	1.05	1.62	2.62	1.70	1.00	1.54	1.20	1.20
STRUCTURAL MEMBERS									
2-3/8" OD Pipe	0.57	0.57	1.00	0.57	0.57	1.75	1.75	0.70	0.70
3-1/2" OD Pipe	0.66	0.66	1.00	0.66	0.66	1.52	1.52	0.70	0.70
4-1/2" OD Pipe	0.75	0.75	1.00	0.75	0.75	1.33	1.33	0.70	0.70
4x4 HSS Tube	0.70	0.70	1.00	0.70	0.70	1.43	1.43	1.20	1.20

Design Effective Projected Area & Wind Loads with Ice

Members	EPA _{ai} @ 0.0° (sf)	EPA _{ai} @ 30.0° (sf)	EPA _{ai} @ 60.0° (sf)	EPA _{ai} @ 90.0° (sf)	F _{ai} @ 0.0° (lb)	F _{ai} @ 30.0° (lb)	F _{ai} @ 60.0° (lb)	F _{ai} @ 90.0° (lb)	Ice Load F _i @ Support (lb)
BXA 80063 6CF	10.65	9.70	7.81	6.86	40.5	36.9	29.7	26.1	114.8
(2) SBNHH-1D65B	18.34	15.91	11.04	8.60	69.7	60.5	41.9	32.7	222.9
B2/B66A RRH	3.14	2.94	2.53	2.33	23.9	22.3	19.2	17.7	68.6
B5/B13 RRH	3.14	2.87	2.32	2.04	23.9	21.8	17.6	15.5	65.3
STRUCTURAL MEMBERS									
2-3/8" OD Pipe	0.40	-	-	-	3.0	-	-	-	12.5
3-1/2" OD Pipe	0.46	-	-	-	3.5	-	-	-	15.5
4-1/2" OD Pipe	0.53	-	-	-	4.0	-	-	-	18.2
4x4 HSS Tube	0.84	-	-	-	6.4	-	-	-	21.4



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 Date: 08/01/19

(Hartford 9 CT) - Serviceability Wind Load

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Serviceability Wind Load Design Criteria

General Information & Design Input from TIA-222-G

Item	Value	Description	Reference
$V_s =$	60.00	Service Wind Speed (mph)	Sect. 2.8.3, TIA
$V_m =$	30.00	Maintenance Wind Speed (mph)	
$K_d =$	0.85	Service Wind Direction Probability Factor	Sect. 2.8.3, TIA
Class	II	Structure Classification	Table 2-1, TIA
$z = h =$	90.00	ft. (A.G.L.)	Max. Center of Appurtenance
Exp. Cat.	C	Exposure Category	Sect. 2.6.5.1, TIA
$z_g =$	900.00	Exposure Category Coeff.	Table 2-4, TIA
$\alpha' =$	9.50	Exposure Category Coeff.	Table 2-4, TIA
$K_{z(\min)} =$	0.85	Exposure Category Coeff.	Table 2-4, TIA
$K_e =$	1.00	Terrain Constant	Table 2-4, TIA
$K_t =$	N/A	Topographic Constant	Table 2-5, TIA ("N/A" if Topo. Cat. = 1)
$K_z =$	1.24	$= 2.01(z/z_g)^{(2/\alpha')}$	Sect. 2.6.6.2, TIA
Topo. Cat.	1	Topographic Category (1-4)	Sect. 2.6.5.2, TIA
$e =$	2.72	Natural Logarithmic base	
$f =$	N/A	Height Attenuation Factor	Table 2-5, TIA ("N/A" if Topo. Cat. = 1)
$H =$	N/A	ft. Height of crest above surrounding terrain	
$K_h =$	N/A	$e^{((fz)/H)}$	Sect. 2.6.6.4, TIA
$K_{zt} =$	1.00	$= [1 + ((K_c * K_t) / K_h)]^2$	Sect. 2.6.6.4, TIA
$G_h =$	1.00	Gust Effect Factor	Sect. 2.6.7, TIA
$q_{z \text{ service}} =$	9.7 psf	$= 0.00256(K_z)(K_{zt})(K_d)(V_s^2)$	Sect. 2.6.9.6, TIA

Design Serviceability Wind Forces:

Section 2.6.11.2

$$F_{As} = q_{z \text{ service}} G_h (EPA)_A$$

(where $(EPA)_A = \text{effective projected area of the appurtenance} = C_a A_a$)

(see calculation tables on following pages)



Job Number 50114613
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(Hartford 9 CT) - Load Input for STAAD Model

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STAAD Gravity Load Input

Equipment	Dead Load (lb per support)	Ice Load (lb per support)
BXA 80063 6CF	7.5	114.8
(2) SBNHH-1D65B	53.3	222.9
B2/B66A RRH	97.5	68.6
B5/B13 RRH	82.0	65.3

STAAD Wind Load Calculation

Equipment	Axis	Case #1 0°	Case #2 30°	Case #3 60°	Case #4 90°	Case #5 120°	Case #6 150°	Case #7 180°	Case #8 210°	Case #9 240°	Case #10 270°	Case #11 300°	Case #12 330°
Not Shielded	Z	-F ₀	-0.87F ₃₀	-0.50F ₆₀	-	0.50F ₆₀	0.87F ₃₀	0.87F ₃₀	Inverse of Case #1	Inverse of Case #2	Inverse of Case #3	Inverse of Case #4	Inverse of Case #5
	X	-	0.50F ₃₀	0.87F ₆₀	F ₉₀	0.87F ₆₀	0.50F ₃₀	0.50F ₃₀					
Shielded	Z	N/A	N/A	-0.50F ₆₀	-	0.50F ₆₀	N/A						
	X	-	N/A	0.87F ₆₀	F ₉₀	0.87F ₆₀	N/A						



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Part Existing Sector Frame		
Ref		
By JSD	Date 29-Jul-19	Chd SA
File Hartford 9 CT.std	Date/Time 29-Jul-2019 12:14	

Job Title Hartford 9 CT

Client VZW

Job Information

	Engineer	Checked	Approved
Name:	JSD	SA	
Date:	29-Jul-19		

Project ID	
Project Name	

Structure Type	SPACE FRAME
----------------	-------------

Number of Nodes	32	Highest Node	32
Number of Elements	26	Highest Beam	26

Number of Basic Load Cases	20
Number of Combination Load Cases	36

Included in this printout are data for:

All	The Whole Structure
-----	---------------------

Included in this printout are results for load cases:

Type	L/C	Name
Primary	1	DEAD
Primary	2	WL#1
Primary	3	WL#2
Primary	4	WL#3
Primary	5	WL#4
Primary	6	WL#5
Primary	7	WL#6
Primary	8	DI
Primary	9	WLI#1
Primary	10	WLI#2
Primary	11	WLI#3
Primary	12	WLI#4
Primary	13	WLI#5
Primary	14	WLI#6
Primary	15	WLS#1
Primary	16	WLS#2
Primary	17	WLS#3
Primary	18	WLS#4
Primary	19	WLS#5
Primary	20	WLS#6
Combination	29	1.2D+1.6WL#1
Combination	30	1.2D+1.6WL#2
Combination	31	1.2D+1.6WL#3
Combination	32	1.2D+1.6WL#4
Combination	33	1.2D+1.6WL#5



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Part Existing Sector Frame

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Job Information Cont...

Type	L/C	Name
Combination	37	1.2D+1.6WL#9
Combination	38	1.2D+1.6WL#10
Combination	39	1.2D+1.6WL#11
Combination	40	1.2D+1.6WL#12
Combination	41	1.2D+1.0DI+1.0WI#1
Combination	42	1.2D+1.0DI+1.0WI#2
Combination	43	1.2D+1.0DI+1.0WI#3
Combination	44	1.2D+1.0DI+1.0WI#4
Combination	45	1.2D+1.0DI+1.0WI#5
Combination	46	1.2D+1.0DI+1.0WI#6
Combination	47	1.2D+1.0DI+1.0WI#7
Combination	48	1.2D+1.0DI+1.0WI#8
Combination	49	1.2D+1.0DI+1.0WI#9
Combination	50	1.2D+1.0DI+1.0WI#10
Combination	51	1.2D+1.0DI+1.0WI#11
Combination	52	1.2D+1.0DI+1.0WI#12
Combination	53	1.0D+1.0WLS#1
Combination	54	1.0D+1.0WLS#2
Combination	55	1.0D+1.0WLS#3
Combination	56	1.0D+1.0WLS#4
Combination	57	1.0D+1.0WLS#5
Combination	58	1.0D+1.0WLS#6
Combination	59	1.0D+1.0WLS#7
Combination	60	1.0D+1.0WLS#8
Combination	61	1.0D+1.0WLS#9
Combination	62	1.0D+1.0WLS#10
Combination	63	1.0D+1.0WLS#11
Combination	64	1.0D+1.0WLS#12



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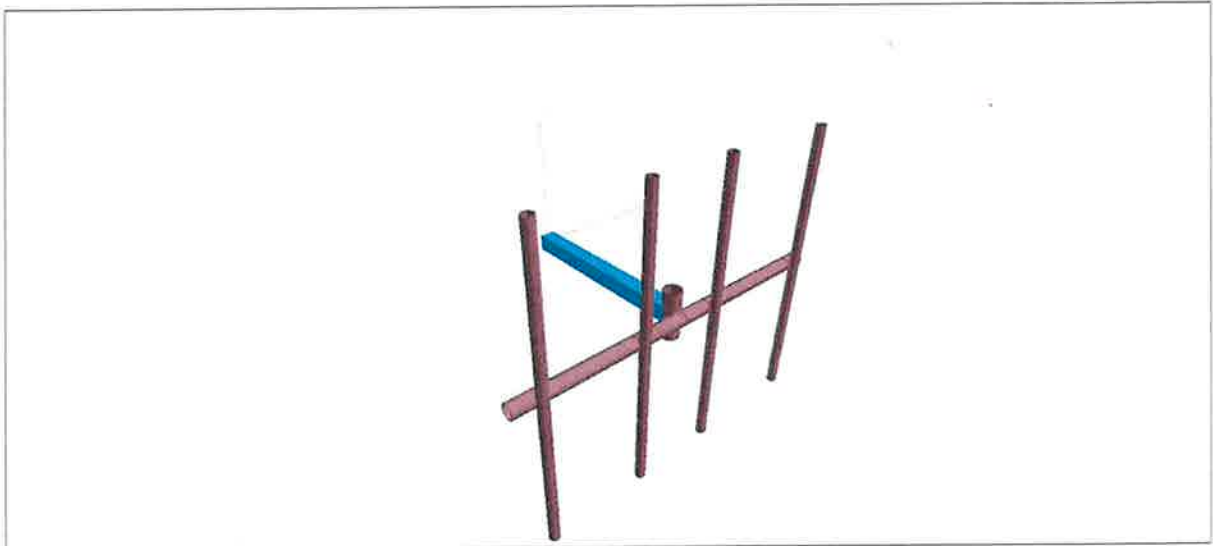
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3D Rendered View

Nodes

Node	X (ft)	Y (ft)	Z (ft)
1	0.000	0.000	0.000
2	0.000	0.000	4.000
3	0.000	0.000	4.250
4	-3.583	0.000	4.250
5	-3.125	0.000	4.250
6	-1.125	0.000	4.250
7	0.625	0.000	4.250
8	3.125	0.000	4.250
9	3.583	0.000	4.250
10	-3.125	0.000	4.500
11	-1.125	0.000	4.500
12	0.625	0.000	4.500
13	3.125	0.000	4.500
14	0.000	0.500	4.000
15	0.000	-0.500	4.000
16	-3.125	3.000	4.500
17	-1.125	3.000	4.500
18	0.625	3.000	4.500
19	3.125	3.000	4.500
20	-3.125	-3.000	4.500
21	-1.125	-3.000	4.500
22	0.625	-3.000	4.500
23	3.125	-3.000	4.500
24	-3.125	2.000	4.500
25	0.625	2.000	4.500



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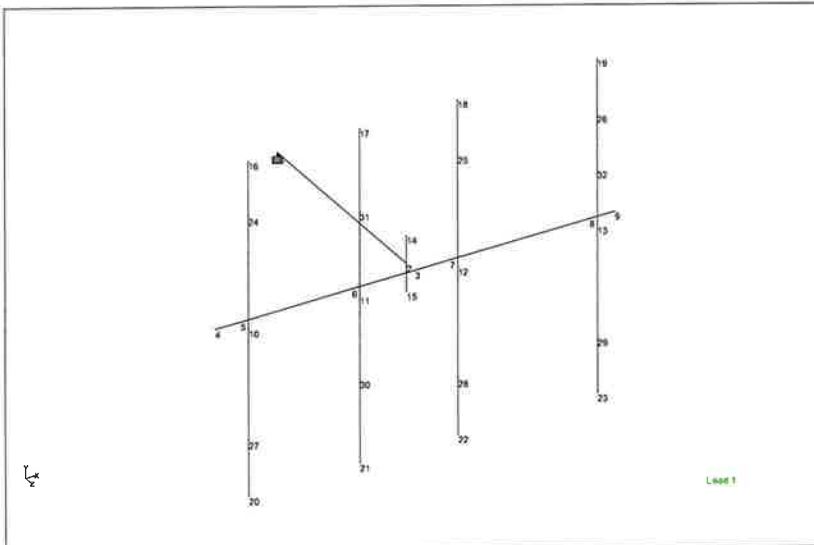
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Nodes Cont...

Node	X (ft)	Y (ft)	Z (ft)
26	3.125	2.000	4.500
27	-3.125	-2.000	4.500
28	0.625	-2.000	4.500
29	3.125	-2.000	4.500
30	-1.125	-1.500	4.500
31	-1.125	1.500	4.500
32	3.125	1.000	4.500



Node Labels

Beams

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
1	1	2	4.000	4	0
2	15	2	0.500	3	0
3	2	14	0.500	3	0
4	4	5	0.458	2	0
5	5	6	2.000	2	0
6	6	3	1.125	2	0
7	3	7	0.625	2	0
8	7	8	2.500	2	0
9	8	9	0.458	2	0
10	23	29	1.000	1	0
11	13	32	1.000	1	0
12	22	28	1.000	1	0



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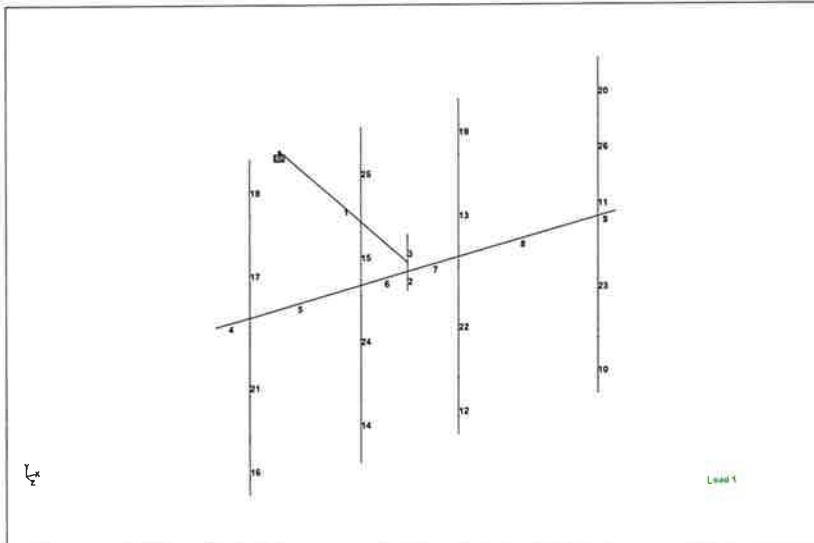
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Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
13	12	25	2.000	1	0
14	21	30	1.500	1	0
15	11	31	1.500	1	0
16	20	27	1.000	1	0
17	10	24	2.000	1	0
18	24	16	1.000	1	0
19	25	18	1.000	1	0
20	26	19	1.000	1	0
21	27	10	2.000	1	0
22	28	12	2.000	1	0
23	29	13	2.000	1	0
24	30	11	1.500	1	0
25	31	17	1.500	1	0
26	32	26	1.000	1	0



Beam Labels

Section Properties

Prop	Section	Area (in ²)	I _{yy} (in ⁴)	I _{zz} (in ⁴)	J (in ⁴)	Material
1	PIPS20	1.005	0.627	0.627	1.262	STEEL
2	PIPS30	2.083	2.850	2.850	5.689	STEEL
3	PIPS40	2.971	6.820	6.820	13.635	STEEL
4	HSST4X4X0.188	2.580	6.210	6.210	9.745	STEEL



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Materials

Mat	Name	E (kip/in ²)	ν	Density (kip/in ³)	α (1/°F)
1	STEEL	29E+3	0.300	0.000	6E-6
2	STAINLESSSTEEL	28E+3	0.300	0.000	10E-6
3	ALUMINUM	10E+3	0.330	0.000	13E-6
4	CONCRETE	3.15E+3	0.170	0.000	5E-6

Supports

Node	X (kip/in)	Y (kip/in)	Z (kip/in)	rX (kip-ft/deg)	rY (kip-ft/deg)	rZ (kip-ft/deg)
1	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed

Releases

There is no data of this type.

Primary Load Cases

Number	Name	Type
1	DEAD	Dead
2	WL#1	Wind
3	WL#2	Wind
4	WL#3	Wind
5	WL#4	Wind
6	WL#5	Wind
7	WL#6	Wind
8	DI	Ice
9	WLI#1	Wind on Ice
10	WLI#2	Wind on Ice
11	WLI#3	Wind on Ice
12	WLI#4	Wind on Ice
13	WLI#5	Wind on Ice
14	WLI#6	Wind on Ice
15	WLS#1	Wind
16	WLS#2	Wind
17	WLS#3	Wind
18	WLS#4	Wind
19	WLS#5	Wind
20	WLS#6	Wind



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Part Existing Sector Frame

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Combination Load Cases

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
29	1.2D+1.6WL#1	1	DEAD	1.20
		2	WL#1	1.60
30	1.2D+1.6WL#2	1	DEAD	1.20
		3	WL#2	1.60
31	1.2D+1.6WL#3	1	DEAD	1.20
		4	WL#3	1.60
32	1.2D+1.6WL#4	1	DEAD	1.20
		5	WL#4	1.60
33	1.2D+1.6WL#5	1	DEAD	1.20
		6	WL#5	1.60
34	1.2D+1.6WL#6	1	DEAD	1.20
		7	WL#6	1.60
35	1.2D+1.6WL#7	1	DEAD	1.20
		2	WL#1	-1.60
36	1.2D+1.6WL#8	1	DEAD	1.20
		3	WL#2	-1.60
37	1.2D+1.6WL#9	1	DEAD	1.20
		4	WL#3	-1.60
38	1.2D+1.6WL#10	1	DEAD	1.20
		5	WL#4	-1.60
39	1.2D+1.6WL#11	1	DEAD	1.20
		6	WL#5	-1.60
40	1.2D+1.6WL#12	1	DEAD	1.20
		7	WL#6	-1.60
41	1.2D+1.0DI+1.0WI#1	1	DEAD	1.20
		9	WLI#1	1.00
		8	DI	1.00
42	1.2D+1.0DI+1.0WI#2	1	DEAD	1.20
		10	WLI#2	1.00
		8	DI	1.00
43	1.2D+1.0DI+1.0WI#3	1	DEAD	1.20
		11	WLI#3	1.00
		8	DI	1.00
44	1.2D+1.0DI+1.0WI#4	1	DEAD	1.20
		12	WLI#4	1.00
		8	DI	1.00
45	1.2D+1.0DI+1.0WI#5	1	DEAD	1.20
		13	WLI#5	1.00
		8	DI	1.00
46	1.2D+1.0DI+1.0WI#6	1	DEAD	1.20
		14	WLI#6	1.00
		8	DI	1.00
47	1.2D+1.0DI+1.0WI#7	1	DEAD	1.20
		9	WLI#1	-1.00
		8	DI	1.00



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Combination Load Cases Cont...

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
48	1.2D+1.0DI+1.0WI#8	1	DEAD	1.20
		10	WLI#2	-1.00
		8	DI	1.00
49	1.2D+1.0DI+1.0WI#9	1	DEAD	1.20
		11	WLI#3	-1.00
		8	DI	1.00
50	1.2D+1.0DI+1.0WI#10	1	DEAD	1.20
		12	WLI#4	-1.00
		8	DI	1.00
51	1.2D+1.0DI+1.0WI#11	1	DEAD	1.20
		13	WLI#5	-1.00
		8	DI	1.00
52	1.2D+1.0DI+1.0WI#12	1	DEAD	1.20
		14	WLI#6	-1.00
		8	DI	1.00
53	1.0D+1.0WLS#1	1	DEAD	1.00
		15	WLS#1	1.00
54	1.0D+1.0WLS#2	1	DEAD	1.00
		16	WLS#2	1.00
55	1.0D+1.0WLS#3	1	DEAD	1.00
		17	WLS#3	1.00
56	1.0D+1.0WLS#4	1	DEAD	1.00
		18	WLS#4	1.00
57	1.0D+1.0WLS#5	1	DEAD	1.00
		19	WLS#5	1.00
58	1.0D+1.0WLS#6	1	DEAD	1.00
		20	WLS#6	1.00
59	1.0D+1.0WLS#7	1	DEAD	1.00
		15	WLS#1	-1.00
60	1.0D+1.0WLS#8	1	DEAD	1.00
		16	WLS#2	-1.00
61	1.0D+1.0WLS#9	1	DEAD	1.00
		17	WLS#3	-1.00
62	1.0D+1.0WLS#10	1	DEAD	1.00
		18	WLS#4	-1.00
63	1.0D+1.0WLS#11	1	DEAD	1.00
		19	WLS#5	-1.00
64	1.0D+1.0WLS#12	1	DEAD	1.00
		20	WLS#6	-1.00



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1 DEAD : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip·in)	MY (kip·in)	MZ (kip·in)
24	-	-0.007	-	-	-	-
25	-	-0.053	-	-	-	-
26	-	-0.007	-	-	-	-
27	-	-0.007	-	-	-	-
28	-	-0.053	-	-	-	-
29	-	-0.007	-	-	-	-
30	-	-0.097	-	-	-	-
31	-	-0.082	-	-	-	-

1 DEAD : Selfweight

Direction	Factor	Assigned Geometry
Y	-1.000	ALL

2 WL#1 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip·in)	MY (kip·in)	MZ (kip·in)
24	-	-	-0.107	-	-	-
25	-	-	-0.210	-	-	-
26	-	-	-0.107	-	-	-
27	-	-	-0.107	-	-	-
28	-	-	-0.210	-	-	-
29	-	-	-0.107	-	-	-
30	-	-	-0.053	-	-	-
31	-	-	-0.053	-	-	-

2 WL#1 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI	lbf/ft	GZ	-11.400	-	-	-
2	UNI	lbf/ft	GZ	-7.600	-	-	-
3	UNI	lbf/ft	GZ	-7.600	-	-	-
4	UNI	lbf/ft	GZ	-5.900	-	-	-
5	UNI	lbf/ft	GZ	-5.900	-	-	-
6	UNI	lbf/ft	GZ	-5.900	-	-	-
7	UNI	lbf/ft	GZ	-5.900	-	-	-
8	UNI	lbf/ft	GZ	-5.900	-	-	-
9	UNI	lbf/ft	GZ	-5.900	-	-	-



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3 WL#2 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	0.047	-	-0.082	-	-	-
25	0.089	-	-0.154	-	-	-
26	0.047	-	-0.082	-	-	-
27	0.047	-	-0.082	-	-	-
28	0.089	-	-0.154	-	-	-
29	0.047	-	-0.082	-	-	-
30	0.024	-	-0.042	-	-	-
31	0.024	-	-0.041	-	-	-

3 WL#2 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	-11.400	-	-	-	-
2	UNI lbf/ft	GZ	-7.600	-	-	-	-
3	UNI lbf/ft	GZ	-7.600	-	-	-	-
4	UNI lbf/ft	GZ	-5.900	-	-	-	-
5	UNI lbf/ft	GZ	-5.900	-	-	-	-
6	UNI lbf/ft	GZ	-5.900	-	-	-	-
7	UNI lbf/ft	GZ	-5.900	-	-	-	-
8	UNI lbf/ft	GZ	-5.900	-	-	-	-
9	UNI lbf/ft	GZ	-5.900	-	-	-	-

4 WL#3 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	0.059	-	-0.034	-	-	-
25	0.096	-	-0.055	-	-	-
26	0.059	-	-0.034	-	-	-
27	0.059	-	-0.034	-	-	-
28	0.096	-	-0.055	-	-	-
29	0.059	-	-0.034	-	-	-
30	0.035	-	-0.020	-	-	-
31	0.031	-	-0.018	-	-	-



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4 WL#3 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	11.400	-	-	-	-
2	UNI lbf/ft	GX	7.600	-	-	-	-
3	UNI lbf/ft	GX	7.600	-	-	-	-
4	UNI lbf/ft	GX	5.900	-	-	-	-
5	UNI lbf/ft	GX	5.900	-	-	-	-
6	UNI lbf/ft	GX	5.900	-	-	-	-
7	UNI lbf/ft	GX	5.900	-	-	-	-
8	UNI lbf/ft	GX	5.900	-	-	-	-
9	UNI lbf/ft	GX	5.900	-	-	-	-
10	UNI lbf/ft	GX	4.300	-	-	-	-
11	UNI lbf/ft	GX	4.300	-	-	-	-
12	UNI lbf/ft	GX	4.300	-	-	-	-
13	UNI lbf/ft	GX	4.300	-	-	-	-
14	UNI lbf/ft	GX	4.300	-	-	-	-
15	UNI lbf/ft	GX	4.300	-	-	-	-
16	UNI lbf/ft	GX	4.300	-	-	-	-
17	UNI lbf/ft	GX	4.300	-	-	-	-
18	UNI lbf/ft	GX	4.300	-	-	-	-
19	UNI lbf/ft	GX	4.300	-	-	-	-
20	UNI lbf/ft	GX	4.300	-	-	-	-
21	UNI lbf/ft	GX	4.300	-	-	-	-
22	UNI lbf/ft	GX	4.300	-	-	-	-
23	UNI lbf/ft	GX	4.300	-	-	-	-
24	UNI lbf/ft	GX	4.300	-	-	-	-
25	UNI lbf/ft	GX	4.300	-	-	-	-
26	UNI lbf/ft	GX	4.300	-	-	-	-

5 WL#4 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	0.054	-	-	-	-	-
25	0.077	-	-	-	-	-
26	0.054	-	-	-	-	-
27	0.054	-	-	-	-	-
28	0.077	-	-	-	-	-
29	0.054	-	-	-	-	-
30	0.035	-	-	-	-	-
31	0.029	-	-	-	-	-



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5 WL#4 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	11.400	-	-	-	-
2	UNI lbf/ft	GX	7.600	-	-	-	-
3	UNI lbf/ft	GX	7.600	-	-	-	-
4	UNI lbf/ft	GX	5.900	-	-	-	-
5	UNI lbf/ft	GX	5.900	-	-	-	-
6	UNI lbf/ft	GX	5.900	-	-	-	-
7	UNI lbf/ft	GX	5.900	-	-	-	-
8	UNI lbf/ft	GX	5.900	-	-	-	-
9	UNI lbf/ft	GX	5.900	-	-	-	-
10	UNI lbf/ft	GX	4.300	-	-	-	-
11	UNI lbf/ft	GX	4.300	-	-	-	-
12	UNI lbf/ft	GX	4.300	-	-	-	-
13	UNI lbf/ft	GX	4.300	-	-	-	-
14	UNI lbf/ft	GX	4.300	-	-	-	-
15	UNI lbf/ft	GX	4.300	-	-	-	-
16	UNI lbf/ft	GX	4.300	-	-	-	-
17	UNI lbf/ft	GX	4.300	-	-	-	-
18	UNI lbf/ft	GX	4.300	-	-	-	-
19	UNI lbf/ft	GX	4.300	-	-	-	-
20	UNI lbf/ft	GX	4.300	-	-	-	-
21	UNI lbf/ft	GX	4.300	-	-	-	-
22	UNI lbf/ft	GX	4.300	-	-	-	-
23	UNI lbf/ft	GX	4.300	-	-	-	-
24	UNI lbf/ft	GX	4.300	-	-	-	-
25	UNI lbf/ft	GX	4.300	-	-	-	-
26	UNI lbf/ft	GX	4.300	-	-	-	-

6 WL#5 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	0.059	-	0.034	-	-	-
25	0.096	-	0.055	-	-	-
26	0.059	-	0.034	-	-	-
27	0.059	-	0.034	-	-	-
28	0.096	-	0.055	-	-	-
29	0.059	-	0.034	-	-	-
30	0.035	-	0.020	-	-	-
31	0.031	-	0.018	-	-	-



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6 WL#5 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	11.400	-	-	-	-
2	UNI lbf/ft	GX	7.600	-	-	-	-
3	UNI lbf/ft	GX	7.600	-	-	-	-
4	UNI lbf/ft	GX	5.900	-	-	-	-
5	UNI lbf/ft	GX	5.900	-	-	-	-
6	UNI lbf/ft	GX	5.900	-	-	-	-
7	UNI lbf/ft	GX	5.900	-	-	-	-
8	UNI lbf/ft	GX	5.900	-	-	-	-
9	UNI lbf/ft	GX	5.900	-	-	-	-
10	UNI lbf/ft	GX	4.300	-	-	-	-
11	UNI lbf/ft	GX	4.300	-	-	-	-
12	UNI lbf/ft	GX	4.300	-	-	-	-
13	UNI lbf/ft	GX	4.300	-	-	-	-
14	UNI lbf/ft	GX	4.300	-	-	-	-
15	UNI lbf/ft	GX	4.300	-	-	-	-
16	UNI lbf/ft	GX	4.300	-	-	-	-
17	UNI lbf/ft	GX	4.300	-	-	-	-
18	UNI lbf/ft	GX	4.300	-	-	-	-
19	UNI lbf/ft	GX	4.300	-	-	-	-
20	UNI lbf/ft	GX	4.300	-	-	-	-
21	UNI lbf/ft	GX	4.300	-	-	-	-
22	UNI lbf/ft	GX	4.300	-	-	-	-
23	UNI lbf/ft	GX	4.300	-	-	-	-
24	UNI lbf/ft	GX	4.300	-	-	-	-
25	UNI lbf/ft	GX	4.300	-	-	-	-
26	UNI lbf/ft	GX	4.300	-	-	-	-

7 WL#6 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip in)	MY (kip in)	MZ (kip in)
24	0.047	-	0.082	-	-	-
25	0.089	-	0.154	-	-	-
26	0.047	-	0.082	-	-	-
27	0.047	-	0.082	-	-	-
28	0.089	-	0.154	-	-	-
29	0.047	-	0.082	-	-	-
30	0.024	-	0.042	-	-	-
31	0.024	-	0.041	-	-	-



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7 WL#6 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	11.400	-	-	-	-
2	UNI lbf/ft	GZ	7.600	-	-	-	-
3	UNI lbf/ft	GZ	7.600	-	-	-	-
4	UNI lbf/ft	GZ	5.900	-	-	-	-
5	UNI lbf/ft	GZ	5.900	-	-	-	-
6	UNI lbf/ft	GZ	5.900	-	-	-	-
7	UNI lbf/ft	GZ	5.900	-	-	-	-
8	UNI lbf/ft	GZ	5.900	-	-	-	-
9	UNI lbf/ft	GZ	5.900	-	-	-	-

8 DI : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	-	-0.115	-	-	-	-
25	-	-0.223	-	-	-	-
26	-	-0.115	-	-	-	-
27	-	-0.115	-	-	-	-
28	-	-0.223	-	-	-	-
29	-	-0.115	-	-	-	-
30	-	-0.069	-	-	-	-
31	-	-0.065	-	-	-	-

8 DI : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GY	-21.400	-	-	-	-
2	UNI lbf/ft	GY	-18.200	-	-	-	-
3	UNI lbf/ft	GY	-18.200	-	-	-	-
4	UNI lbf/ft	GY	-15.500	-	-	-	-
5	UNI lbf/ft	GY	-15.500	-	-	-	-
6	UNI lbf/ft	GY	-15.500	-	-	-	-
7	UNI lbf/ft	GY	-15.500	-	-	-	-
8	UNI lbf/ft	GY	-15.500	-	-	-	-
9	UNI lbf/ft	GY	-15.500	-	-	-	-
10	UNI lbf/ft	GY	-12.500	-	-	-	-
11	UNI lbf/ft	GY	-12.500	-	-	-	-
12	UNI lbf/ft	GY	-12.500	-	-	-	-
13	UNI lbf/ft	GY	-12.500	-	-	-	-
14	UNI lbf/ft	GY	-12.500	-	-	-	-
15	UNI lbf/ft	GY	-12.500	-	-	-	-
16	UNI lbf/ft	GY	-12.500	-	-	-	-
17	UNI lbf/ft	GY	-12.500	-	-	-	-



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8 DI : Beam Loads Cont...

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
18	UNI lbf/ft	GY	-12.500	-	-	-	-
19	UNI lbf/ft	GY	-12.500	-	-	-	-
20	UNI lbf/ft	GY	-12.500	-	-	-	-
21	UNI lbf/ft	GY	-12.500	-	-	-	-
22	UNI lbf/ft	GY	-12.500	-	-	-	-
23	UNI lbf/ft	GY	-12.500	-	-	-	-
24	UNI lbf/ft	GY	-12.500	-	-	-	-
25	UNI lbf/ft	GY	-12.500	-	-	-	-
26	UNI lbf/ft	GY	-12.500	-	-	-	-

9 WLI#1 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	-	-	-0.041	-	-	-
25	-	-	-0.070	-	-	-
26	-	-	-0.041	-	-	-
27	-	-	-0.041	-	-	-
28	-	-	-0.070	-	-	-
29	-	-	-0.041	-	-	-
30	-	-	-0.024	-	-	-
31	-	-	-0.024	-	-	-

9 WLI#1 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	-6.400	-	-	-	-
2	UNI lbf/ft	GZ	-4.000	-	-	-	-
3	UNI lbf/ft	GZ	-4.000	-	-	-	-
4	UNI lbf/ft	GZ	-3.500	-	-	-	-
5	UNI lbf/ft	GZ	-3.500	-	-	-	-
6	UNI lbf/ft	GZ	-3.500	-	-	-	-
7	UNI lbf/ft	GZ	-3.500	-	-	-	-
8	UNI lbf/ft	GZ	-3.500	-	-	-	-
9	UNI lbf/ft	GZ	-3.500	-	-	-	-



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10 WLI#2 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	0.019	-	-0.032	-	-	-
25	0.030	-	-0.053	-	-	-
26	0.019	-	-0.032	-	-	-
27	0.019	-	-0.032	-	-	-
28	0.030	-	-0.053	-	-	-
29	0.019	-	-0.032	-	-	-
30	0.011	-	-0.019	-	-	-
31	0.011	-	-0.019	-	-	-

10 WLI#2 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	-6.400	-	-	-	-
2	UNI lbf/ft	GZ	-4.000	-	-	-	-
3	UNI lbf/ft	GZ	-4.000	-	-	-	-
4	UNI lbf/ft	GZ	-3.500	-	-	-	-
5	UNI lbf/ft	GZ	-3.500	-	-	-	-
6	UNI lbf/ft	GZ	-3.500	-	-	-	-
7	UNI lbf/ft	GZ	-3.500	-	-	-	-
8	UNI lbf/ft	GZ	-3.500	-	-	-	-
9	UNI lbf/ft	GZ	-3.500	-	-	-	-

11 WLI#3 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	0.026	-	-0.015	-	-	-
25	0.036	-	-0.021	-	-	-
26	0.026	-	-0.015	-	-	-
27	0.026	-	-0.015	-	-	-
28	0.036	-	-0.021	-	-	-
29	0.026	-	-0.015	-	-	-
30	0.017	-	-0.010	-	-	-
31	0.015	-	-0.009	-	-	-



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Client **VZW**

File **Hartford 9 CT.std**

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11 WLI#3 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	6.400	-	-	-	-
2	UNI lbf/ft	GX	4.000	-	-	-	-
3	UNI lbf/ft	GX	4.000	-	-	-	-
4	UNI lbf/ft	GX	3.500	-	-	-	-
5	UNI lbf/ft	GX	3.500	-	-	-	-
6	UNI lbf/ft	GX	3.500	-	-	-	-
7	UNI lbf/ft	GX	3.500	-	-	-	-
8	UNI lbf/ft	GX	3.500	-	-	-	-
9	UNI lbf/ft	GX	3.500	-	-	-	-
10	UNI lbf/ft	GX	3.000	-	-	-	-
11	UNI lbf/ft	GX	3.000	-	-	-	-
12	UNI lbf/ft	GX	3.000	-	-	-	-
13	UNI lbf/ft	GX	3.000	-	-	-	-
14	UNI lbf/ft	GX	3.000	-	-	-	-
15	UNI lbf/ft	GX	3.000	-	-	-	-
16	UNI lbf/ft	GX	3.000	-	-	-	-
17	UNI lbf/ft	GX	3.000	-	-	-	-
18	UNI lbf/ft	GX	3.000	-	-	-	-
19	UNI lbf/ft	GX	3.000	-	-	-	-
20	UNI lbf/ft	GX	3.000	-	-	-	-
21	UNI lbf/ft	GX	3.000	-	-	-	-
22	UNI lbf/ft	GX	3.000	-	-	-	-
23	UNI lbf/ft	GX	3.000	-	-	-	-
24	UNI lbf/ft	GX	3.000	-	-	-	-
25	UNI lbf/ft	GX	3.000	-	-	-	-
26	UNI lbf/ft	GX	3.000	-	-	-	-

12 WLI#4 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	0.026	-	-	-	-	-
25	0.033	-	-	-	-	-
26	0.026	-	-	-	-	-
27	0.026	-	-	-	-	-
28	0.033	-	-	-	-	-
29	0.026	-	-	-	-	-
30	0.018	-	-	-	-	-
31	0.015	-	-	-	-	-



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By **JSD**

Date **29-Jul-19**

Chd **SA**

Client **VZW**

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12 WLI#4 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	6.400	-	-	-	-
2	UNI lbf/ft	GX	4.000	-	-	-	-
3	UNI lbf/ft	GX	4.000	-	-	-	-
4	UNI lbf/ft	GX	3.500	-	-	-	-
5	UNI lbf/ft	GX	3.500	-	-	-	-
6	UNI lbf/ft	GX	3.500	-	-	-	-
7	UNI lbf/ft	GX	3.500	-	-	-	-
8	UNI lbf/ft	GX	3.500	-	-	-	-
9	UNI lbf/ft	GX	3.500	-	-	-	-
10	UNI lbf/ft	GX	3.000	-	-	-	-
11	UNI lbf/ft	GX	3.000	-	-	-	-
12	UNI lbf/ft	GX	3.000	-	-	-	-
13	UNI lbf/ft	GX	3.000	-	-	-	-
14	UNI lbf/ft	GX	3.000	-	-	-	-
15	UNI lbf/ft	GX	3.000	-	-	-	-
16	UNI lbf/ft	GX	3.000	-	-	-	-
17	UNI lbf/ft	GX	3.000	-	-	-	-
18	UNI lbf/ft	GX	3.000	-	-	-	-
19	UNI lbf/ft	GX	3.000	-	-	-	-
20	UNI lbf/ft	GX	3.000	-	-	-	-
21	UNI lbf/ft	GX	3.000	-	-	-	-
22	UNI lbf/ft	GX	3.000	-	-	-	-
23	UNI lbf/ft	GX	3.000	-	-	-	-
24	UNI lbf/ft	GX	3.000	-	-	-	-
25	UNI lbf/ft	GX	3.000	-	-	-	-
26	UNI lbf/ft	GX	3.000	-	-	-	-

13 WLI#5 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	0.026	-	0.015	-	-	-
25	0.036	-	0.021	-	-	-
26	0.026	-	0.015	-	-	-
27	0.026	-	0.015	-	-	-
28	0.036	-	0.021	-	-	-
29	0.026	-	0.015	-	-	-
30	0.017	-	0.010	-	-	-
31	0.015	-	0.009	-	-	-



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13 WLI#5 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	6.400	-	-	-	-
2	UNI lbf/ft	GX	4.000	-	-	-	-
3	UNI lbf/ft	GX	4.000	-	-	-	-
4	UNI lbf/ft	GX	3.500	-	-	-	-
5	UNI lbf/ft	GX	3.500	-	-	-	-
6	UNI lbf/ft	GX	3.500	-	-	-	-
7	UNI lbf/ft	GX	3.500	-	-	-	-
8	UNI lbf/ft	GX	3.500	-	-	-	-
9	UNI lbf/ft	GX	3.500	-	-	-	-
10	UNI lbf/ft	GX	3.000	-	-	-	-
11	UNI lbf/ft	GX	3.000	-	-	-	-
12	UNI lbf/ft	GX	3.000	-	-	-	-
13	UNI lbf/ft	GX	3.000	-	-	-	-
14	UNI lbf/ft	GX	3.000	-	-	-	-
15	UNI lbf/ft	GX	3.000	-	-	-	-
16	UNI lbf/ft	GX	3.000	-	-	-	-
17	UNI lbf/ft	GX	3.000	-	-	-	-
18	UNI lbf/ft	GX	3.000	-	-	-	-
19	UNI lbf/ft	GX	3.000	-	-	-	-
20	UNI lbf/ft	GX	3.000	-	-	-	-
21	UNI lbf/ft	GX	3.000	-	-	-	-
22	UNI lbf/ft	GX	3.000	-	-	-	-
23	UNI lbf/ft	GX	3.000	-	-	-	-
24	UNI lbf/ft	GX	3.000	-	-	-	-
25	UNI lbf/ft	GX	3.000	-	-	-	-
26	UNI lbf/ft	GX	3.000	-	-	-	-

14 WLI#6 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	0.019	-	0.032	-	-	-
25	0.030	-	0.053	-	-	-
26	0.019	-	0.032	-	-	-
27	0.019	-	0.032	-	-	-
28	0.030	-	0.053	-	-	-
29	0.019	-	0.032	-	-	-
30	0.011	-	0.019	-	-	-
31	0.011	-	0.019	-	-	-



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14 WLI#6 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	6.400	-	-	-	-
2	UNI lbf/ft	GZ	4.000	-	-	-	-
3	UNI lbf/ft	GZ	4.000	-	-	-	-
4	UNI lbf/ft	GZ	3.500	-	-	-	-
5	UNI lbf/ft	GZ	3.500	-	-	-	-
6	UNI lbf/ft	GZ	3.500	-	-	-	-
7	UNI lbf/ft	GZ	3.500	-	-	-	-
8	UNI lbf/ft	GZ	3.500	-	-	-	-
9	UNI lbf/ft	GZ	3.500	-	-	-	-

15 WLS#1 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	-	-	-0.037	-	-	-
25	-	-	-0.072	-	-	-
26	-	-	-0.037	-	-	-
27	-	-	-0.037	-	-	-
28	-	-	-0.072	-	-	-
29	-	-	-0.037	-	-	-
30	-	-	-0.018	-	-	-
31	-	-	-0.018	-	-	-

15 WLS#1 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	-3.900	-	-	-	-
2	UNI lbf/ft	GZ	-2.600	-	-	-	-
3	UNI lbf/ft	GZ	-2.600	-	-	-	-
4	UNI lbf/ft	GZ	-2.000	-	-	-	-
5	UNI lbf/ft	GZ	-2.000	-	-	-	-
6	UNI lbf/ft	GZ	-2.000	-	-	-	-
7	UNI lbf/ft	GZ	-2.000	-	-	-	-
8	UNI lbf/ft	GZ	-2.000	-	-	-	-
9	UNI lbf/ft	GZ	-2.000	-	-	-	-



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16 WLS#2 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	0.016	-	-0.028	-	-	-
25	0.030	-	-0.052	-	-	-
26	0.016	-	-0.028	-	-	-
27	0.016	-	-0.028	-	-	-
28	0.030	-	-0.052	-	-	-
29	0.016	-	-0.028	-	-	-
30	0.008	-	-0.014	-	-	-
31	0.008	-	-0.014	-	-	-

16 WLS#2 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	-3.900	-	-	-	-
2	UNI lbf/ft	GZ	-2.600	-	-	-	-
3	UNI lbf/ft	GZ	-2.600	-	-	-	-
4	UNI lbf/ft	GZ	-2.000	-	-	-	-
5	UNI lbf/ft	GZ	-2.000	-	-	-	-
6	UNI lbf/ft	GZ	-2.000	-	-	-	-
7	UNI lbf/ft	GZ	-2.000	-	-	-	-
8	UNI lbf/ft	GZ	-2.000	-	-	-	-
9	UNI lbf/ft	GZ	-2.000	-	-	-	-

17 WLS#3 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	0.020	-	-0.012	-	-	-
25	0.033	-	-0.019	-	-	-
26	0.020	-	-0.012	-	-	-
27	0.020	-	-0.012	-	-	-
28	0.033	-	-0.019	-	-	-
29	0.020	-	-0.012	-	-	-
30	0.012	-	-0.007	-	-	-
31	0.010	-	-0.006	-	-	-



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17 WLS#3 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	3.900	-	-	-	-
2	UNI lbf/ft	GX	2.600	-	-	-	-
3	UNI lbf/ft	GX	2.600	-	-	-	-
4	UNI lbf/ft	GX	2.000	-	-	-	-
5	UNI lbf/ft	GX	2.000	-	-	-	-
6	UNI lbf/ft	GX	2.000	-	-	-	-
7	UNI lbf/ft	GX	2.000	-	-	-	-
8	UNI lbf/ft	GX	2.000	-	-	-	-
9	UNI lbf/ft	GX	2.000	-	-	-	-
10	UNI lbf/ft	GX	1.500	-	-	-	-
11	UNI lbf/ft	GX	1.500	-	-	-	-
12	UNI lbf/ft	GX	1.500	-	-	-	-
13	UNI lbf/ft	GX	1.500	-	-	-	-
14	UNI lbf/ft	GX	1.500	-	-	-	-
15	UNI lbf/ft	GX	1.500	-	-	-	-
16	UNI lbf/ft	GX	1.500	-	-	-	-
17	UNI lbf/ft	GX	1.500	-	-	-	-
18	UNI lbf/ft	GX	1.500	-	-	-	-
19	UNI lbf/ft	GX	1.500	-	-	-	-
20	UNI lbf/ft	GX	1.500	-	-	-	-
21	UNI lbf/ft	GX	1.500	-	-	-	-
22	UNI lbf/ft	GX	1.500	-	-	-	-
23	UNI lbf/ft	GX	1.500	-	-	-	-
24	UNI lbf/ft	GX	1.500	-	-	-	-
25	UNI lbf/ft	GX	1.500	-	-	-	-
26	UNI lbf/ft	GX	1.500	-	-	-	-

18 WLS#4 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	0.018	-	-	-	-	-
25	0.026	-	-	-	-	-
26	0.018	-	-	-	-	-
27	0.018	-	-	-	-	-
28	0.026	-	-	-	-	-
29	0.018	-	-	-	-	-
30	0.012	-	-	-	-	-
31	0.010	-	-	-	-	-



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18 WLS#4 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI	lbf/ft	GX	3.900	-	-	-
2	UNI	lbf/ft	GX	2.600	-	-	-
3	UNI	lbf/ft	GX	2.600	-	-	-
4	UNI	lbf/ft	GX	2.000	-	-	-
5	UNI	lbf/ft	GX	2.000	-	-	-
6	UNI	lbf/ft	GX	2.000	-	-	-
7	UNI	lbf/ft	GX	2.000	-	-	-
8	UNI	lbf/ft	GX	2.000	-	-	-
9	UNI	lbf/ft	GX	2.000	-	-	-
10	UNI	lbf/ft	GX	1.500	-	-	-
11	UNI	lbf/ft	GX	1.500	-	-	-
12	UNI	lbf/ft	GX	1.500	-	-	-
13	UNI	lbf/ft	GX	1.500	-	-	-
14	UNI	lbf/ft	GX	1.500	-	-	-
15	UNI	lbf/ft	GX	1.500	-	-	-
16	UNI	lbf/ft	GX	1.500	-	-	-
17	UNI	lbf/ft	GX	1.500	-	-	-
18	UNI	lbf/ft	GX	1.500	-	-	-
19	UNI	lbf/ft	GX	1.500	-	-	-
20	UNI	lbf/ft	GX	1.500	-	-	-
21	UNI	lbf/ft	GX	1.500	-	-	-
22	UNI	lbf/ft	GX	1.500	-	-	-
23	UNI	lbf/ft	GX	1.500	-	-	-
24	UNI	lbf/ft	GX	1.500	-	-	-
25	UNI	lbf/ft	GX	1.500	-	-	-
26	UNI	lbf/ft	GX	1.500	-	-	-

19 WLS#5 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip in)	MY (kip in)	MZ (kip in)
24	0.020	-	0.012	-	-	-
25	0.033	-	0.019	-	-	-
26	0.020	-	0.012	-	-	-
27	0.020	-	0.012	-	-	-
28	0.033	-	0.019	-	-	-
29	0.020	-	0.012	-	-	-
30	0.012	-	0.007	-	-	-
31	0.010	-	0.006	-	-	-



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19 WLS#5 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	3.900	-	-	-	-
2	UNI lbf/ft	GX	2.600	-	-	-	-
3	UNI lbf/ft	GX	2.600	-	-	-	-
4	UNI lbf/ft	GX	2.000	-	-	-	-
5	UNI lbf/ft	GX	2.000	-	-	-	-
6	UNI lbf/ft	GX	2.000	-	-	-	-
7	UNI lbf/ft	GX	2.000	-	-	-	-
8	UNI lbf/ft	GX	2.000	-	-	-	-
9	UNI lbf/ft	GX	2.000	-	-	-	-
10	UNI lbf/ft	GX	1.500	-	-	-	-
11	UNI lbf/ft	GX	1.500	-	-	-	-
12	UNI lbf/ft	GX	1.500	-	-	-	-
13	UNI lbf/ft	GX	1.500	-	-	-	-
14	UNI lbf/ft	GX	1.500	-	-	-	-
15	UNI lbf/ft	GX	1.500	-	-	-	-
16	UNI lbf/ft	GX	1.500	-	-	-	-
17	UNI lbf/ft	GX	1.500	-	-	-	-
18	UNI lbf/ft	GX	1.500	-	-	-	-
19	UNI lbf/ft	GX	1.500	-	-	-	-
20	UNI lbf/ft	GX	1.500	-	-	-	-
21	UNI lbf/ft	GX	1.500	-	-	-	-
22	UNI lbf/ft	GX	1.500	-	-	-	-
23	UNI lbf/ft	GX	1.500	-	-	-	-
24	UNI lbf/ft	GX	1.500	-	-	-	-
25	UNI lbf/ft	GX	1.500	-	-	-	-
26	UNI lbf/ft	GX	1.500	-	-	-	-

20 WLS#6 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip'in)	MY (kip'in)	MZ (kip'in)
24	0.016	-	0.028	-	-	-
25	0.030	-	0.052	-	-	-
26	0.016	-	0.028	-	-	-
27	0.016	-	0.028	-	-	-
28	0.030	-	0.052	-	-	-
29	0.016	-	0.028	-	-	-
30	0.008	-	0.014	-	-	-
31	0.008	-	0.014	-	-	-



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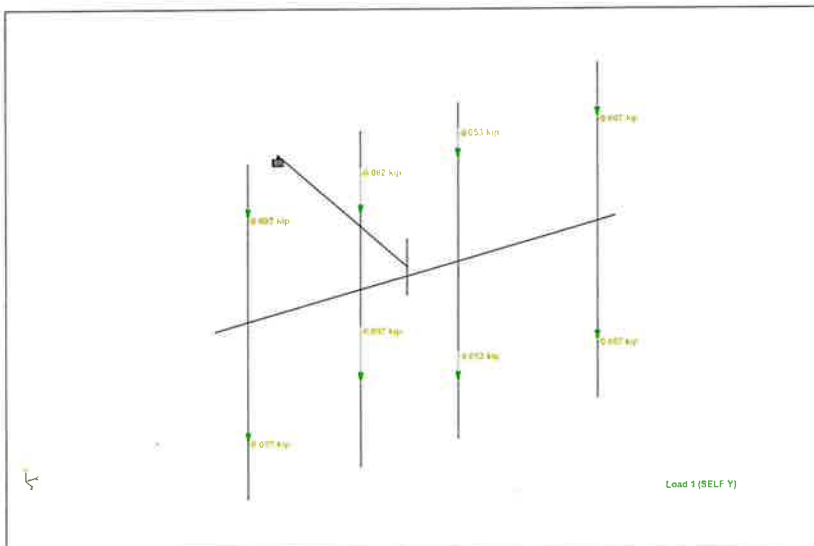
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20 WLS#6 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	3.900	-	-	-	-
2	UNI lbf/ft	GZ	2.600	-	-	-	-
3	UNI lbf/ft	GZ	2.600	-	-	-	-
4	UNI lbf/ft	GZ	2.000	-	-	-	-
5	UNI lbf/ft	GZ	2.000	-	-	-	-
6	UNI lbf/ft	GZ	2.000	-	-	-	-
7	UNI lbf/ft	GZ	2.000	-	-	-	-
8	UNI lbf/ft	GZ	2.000	-	-	-	-
9	UNI lbf/ft	GZ	2.000	-	-	-	-



Applied Dead Loads



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Utilization Ratio

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (in ²)	Iz (in ⁴)	Iy (in ⁴)	Ix (in ⁴)
1	HSST4X4X0	HSST4X4X0	0.847	1.000	0.847	Eq. H1-1b	43	2.580	6.210	6.210	10.000
2	PIPS40	PIPS40	0.000	1.000	0.000	Sec. G1	31	2.971	6.820	6.820	13.640
3	PIPS40	PIPS40	0.000	1.000	0.000	Sec. G1	31	2.971	6.820	6.820	13.640
4	PIPS30	PIPS30	0.001	1.000	0.001	Sec. G1	41	2.083	2.850	2.850	5.700
5	PIPS30	PIPS30	0.159	1.000	0.159	Eq. H1-1b	41	2.083	2.850	2.850	5.700
6	PIPS30	PIPS30	0.351	1.000	0.351	Eq. H1-1b	41	2.083	2.850	2.850	5.700
7	PIPS30	PIPS30	0.342	1.000	0.342	Eq. H1-1b	41	2.083	2.850	2.850	5.700
8	PIPS30	PIPS30	0.201	1.000	0.201	Eq. H1-1b	41	2.083	2.850	2.850	5.700
9	PIPS30	PIPS30	0.001	1.000	0.001	Sec. G1	41	2.083	2.850	2.850	5.700
10	PIPS20	PIPS20	0.002	1.000	0.002	Eq. H1-1b	31	1.005	0.627	0.627	1.254
11	PIPS20	PIPS20	0.214	1.000	0.214	Eq. H1-1b	30	1.005	0.627	0.627	1.254
12	PIPS20	PIPS20	0.002	1.000	0.002	Eq. H1-1b	31	1.005	0.627	0.627	1.254
13	PIPS20	PIPS20	0.404	1.000	0.404	Eq. H1-1b	34	1.005	0.627	0.627	1.254
14	PIPS20	PIPS20	0.004	1.000	0.004	Eq. H1-1b	31	1.005	0.627	0.627	1.254
15	PIPS20	PIPS20	0.082	1.000	0.082	Eq. H1-1b	30	1.005	0.627	0.627	1.254
16	PIPS20	PIPS20	0.002	1.000	0.002	Eq. H1-1b	31	1.005	0.627	0.627	1.254
17	PIPS20	PIPS20	0.214	1.000	0.214	Eq. H1-1b	30	1.005	0.627	0.627	1.254
18	PIPS20	PIPS20	0.002	1.000	0.002	Eq. H1-1b	31	1.005	0.627	0.627	1.254
19	PIPS20	PIPS20	0.002	1.000	0.002	Eq. H1-1b	31	1.005	0.627	0.627	1.254
20	PIPS20	PIPS20	0.002	1.000	0.002	Eq. H1-1b	31	1.005	0.627	0.627	1.254
21	PIPS20	PIPS20	0.214	1.000	0.214	Eq. H1-1b	30	1.005	0.627	0.627	1.254
22	PIPS20	PIPS20	0.404	1.000	0.404	Eq. H1-1b	30	1.005	0.627	0.627	1.254
23	PIPS20	PIPS20	0.214	1.000	0.214	Eq. H1-1b	30	1.005	0.627	0.627	1.254
24	PIPS20	PIPS20	0.086	1.000	0.086	Eq. H1-1b	31	1.005	0.627	0.627	1.254
25	PIPS20	PIPS20	0.004	1.000	0.004	Eq. H1-1b	31	1.005	0.627	0.627	1.254
26	PIPS20	PIPS20	0.107	1.000	0.107	Eq. H1-1b	30	1.005	0.627	0.627	1.254

Failed Members

There is no data of this type.



Software licensed to DEWBERRY

Job No
50114613Sheet No
28Rev
0

Part Existing Sector Frame

Job Title Hartford 9 CT

Ref

By JSD

Date 29-Jul-19

Chd SA

Client VZW

File Hartford 9 CT.std

Date/Time 29-Jul-2019 12:14

Node Displacement Summary

	Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
Max X	20	55:1.0D+1.0WI	0.127	-0.184	-0.081	0.237	0.004	0.002	0.002
Min X	16	61:1.0D+1.0WI	-0.126	-0.182	0.080	0.235	0.004	-0.002	0.002
Max Y	1	53:1.0D+1.0WI	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Min Y	16	56:1.0D+1.0WI	0.020	-0.184	0.202	0.274	0.004	0.002	0.001
Max Z	16	57:1.0D+1.0WI	0.027	-0.183	0.217	0.286	0.004	0.002	0.001
Min Z	20	63:1.0D+1.0WI	-0.028	-0.183	-0.218	0.286	0.004	-0.002	0.001
Max rX	22	53:1.0D+1.0WI	0.026	-0.132	-0.170	0.216	0.005	0.000	0.001
Min rX	1	53:1.0D+1.0WI	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Max rY	8	55:1.0D+1.0WI	0.061	-0.109	-0.075	0.146	0.004	0.002	0.000
Min rY	8	61:1.0D+1.0WI	-0.061	-0.109	0.075	0.146	0.004	-0.002	0.000
Max rZ	20	55:1.0D+1.0WI	0.127	-0.184	-0.081	0.237	0.004	0.002	0.002
Min rZ	23	61:1.0D+1.0WI	-0.067	-0.121	-0.056	0.149	0.004	-0.002	-0.000
Max Rst	16	57:1.0D+1.0WI	0.027	-0.183	0.217	0.286	0.004	0.002	0.001

TIA-222 Rev G Maximum Allowable Deflection = 1.5% x Cantilever

 $1.5\% \times 3' \times 12" / 1' = 0.540"$ $0.286" < 0.540" \text{ OK!}$

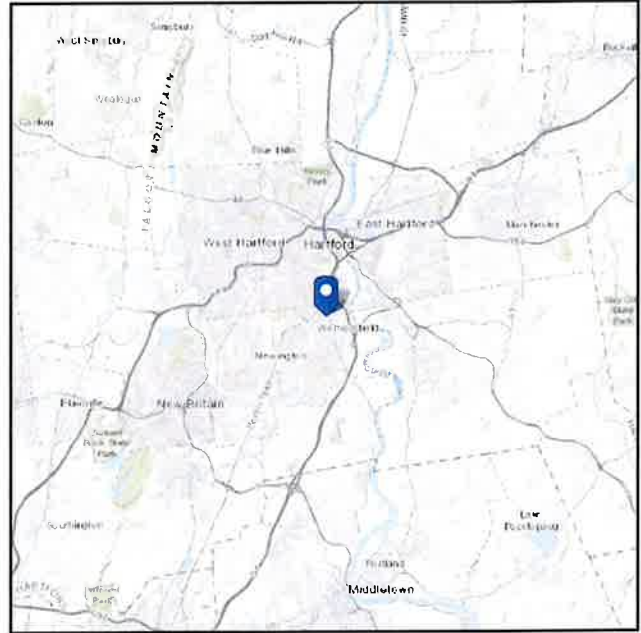
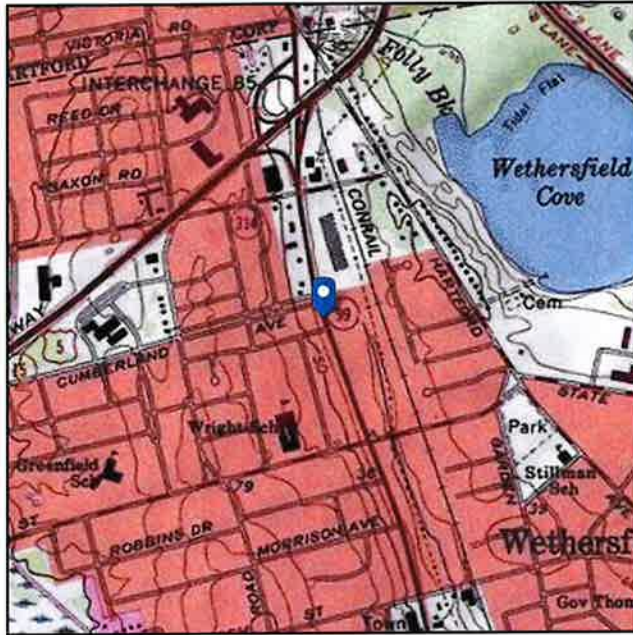
APPENDIX B

ASCE 7 Hazards Report

Address:
250 Silas Deane Hwy
Wethersfield, Connecticut
06109

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class:

Elevation: 36.77 ft (NAVD 88)
Latitude: 41.720291
Longitude: -72.667228



Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 5 F
Gust Speed: 50 mph

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

Date Accessed: Mon Jul 29 2019

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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

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

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



Northeast Union Inc.
2424 State Rd. Unit 7
Bensalem, PA 19020
P. 215-676-8036 F. 215-754-4623

Site mapping survey

Prepared for: Dewberry 600 Parsippany Road Suite 301
Parsippany, NJ 07054-3715
Site: Hartford 9 CT
Address: 250 Silas Deane Highway, Wethersfield, CT, 06109
Date of survey: 9/18/2017

Tower site overview

Type: Monopole
Address: 250 Silas Deane Highway, Wethersfield, CT, 06109
Latitude/Longitude:
FCC: N/A
N/A Owner: N/A
Owner site N/A
Climbable: Yes
Access Code: N/A









09.18.2017



09.18.2017



ALPHA







Beta























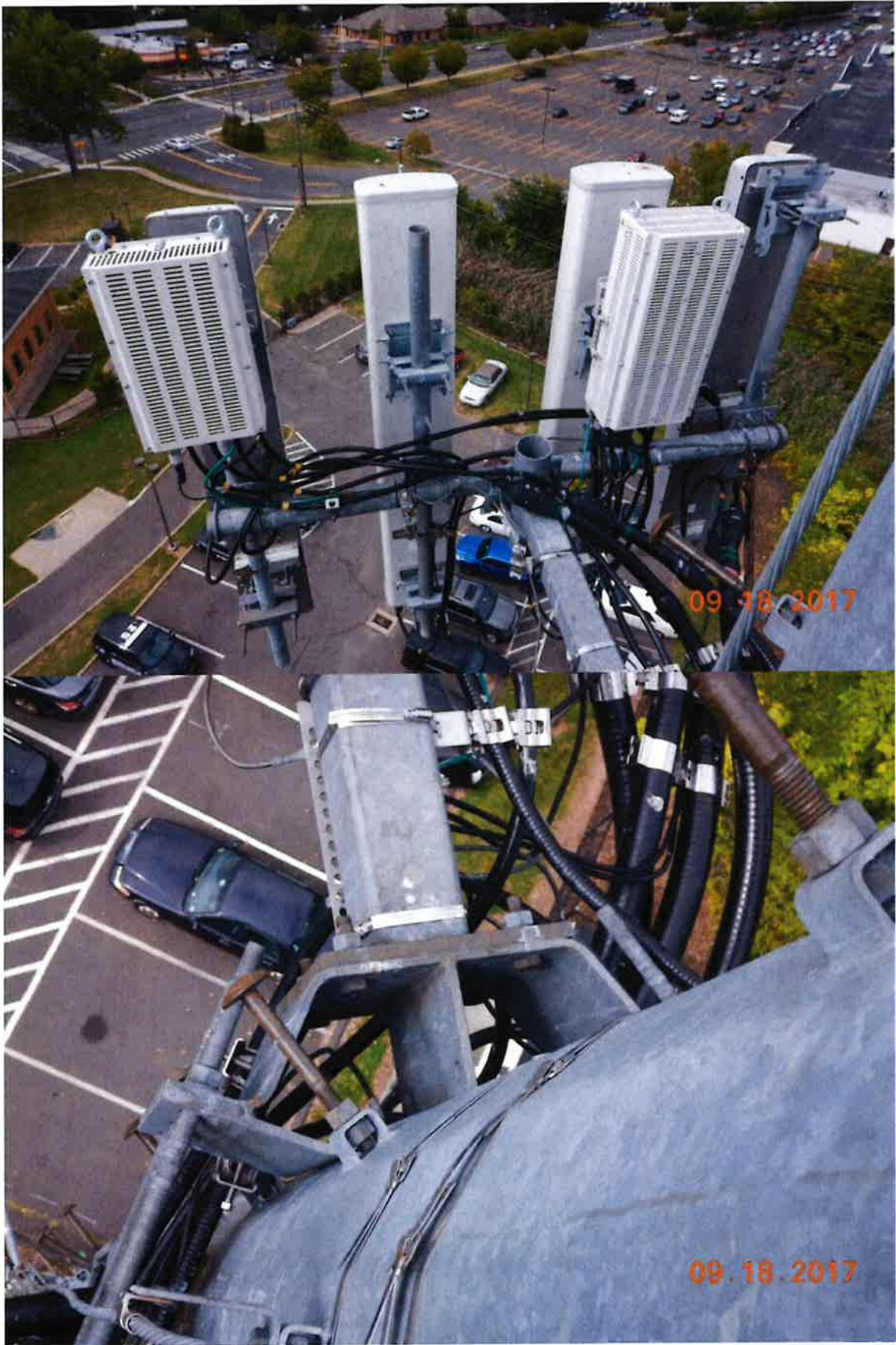








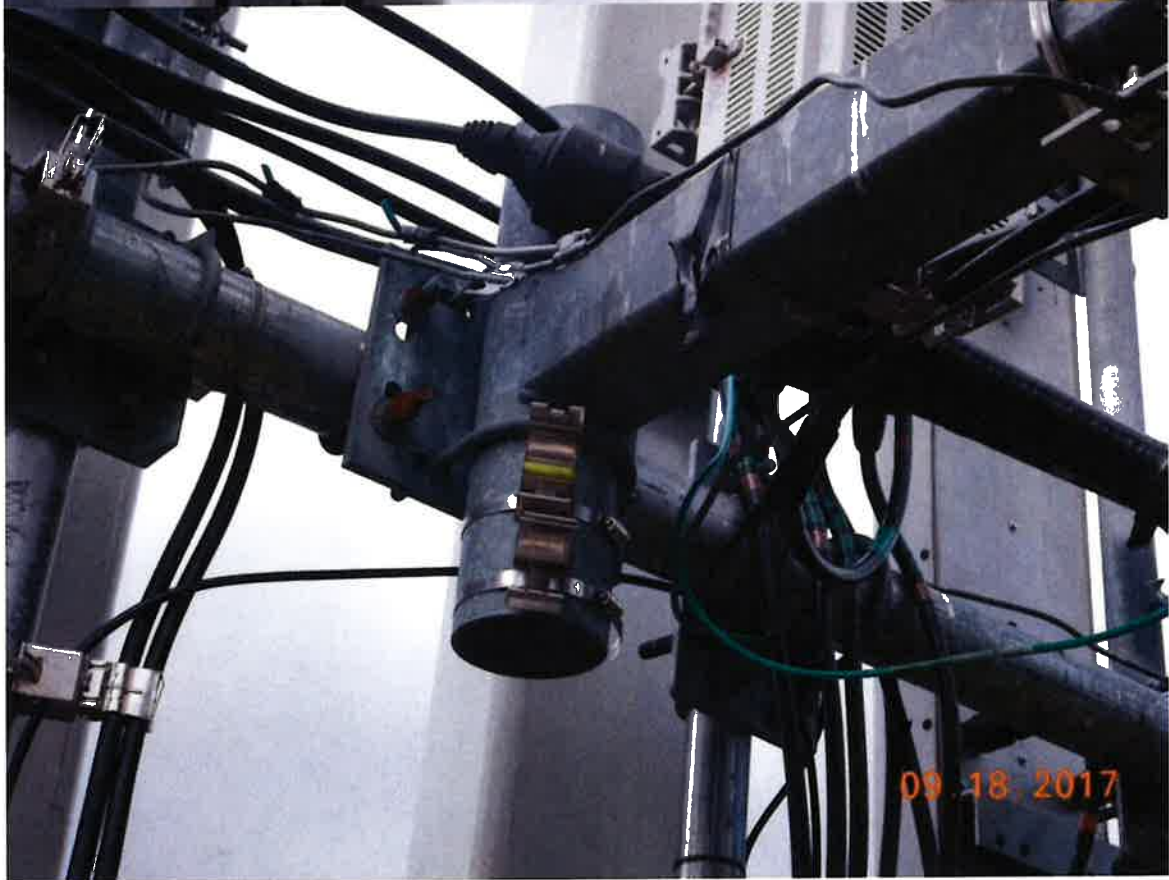
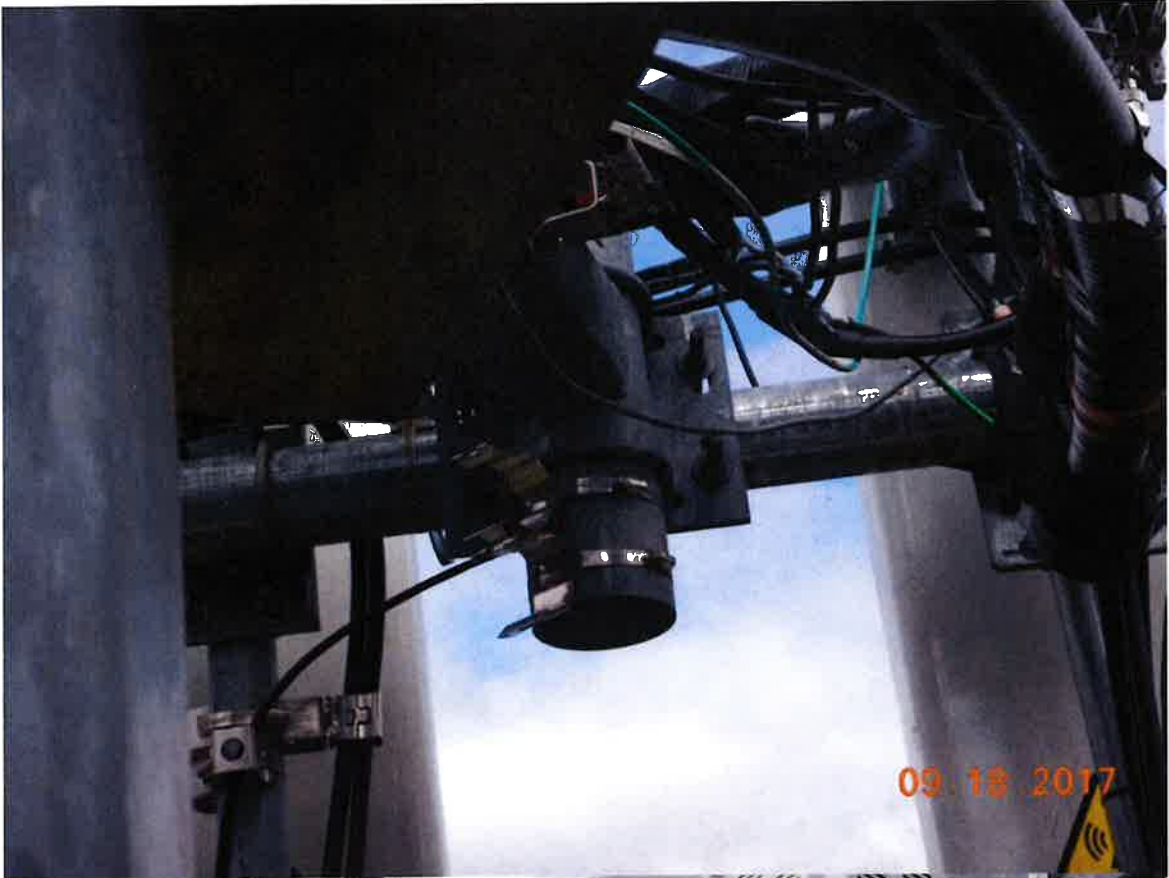
Gamma









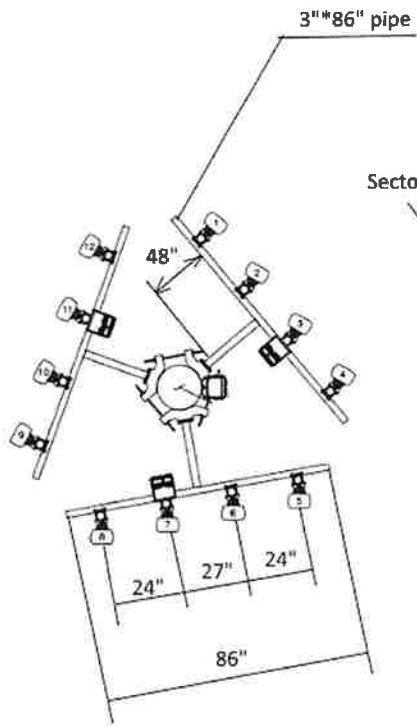






Gamma 233

Sector high 91'3"



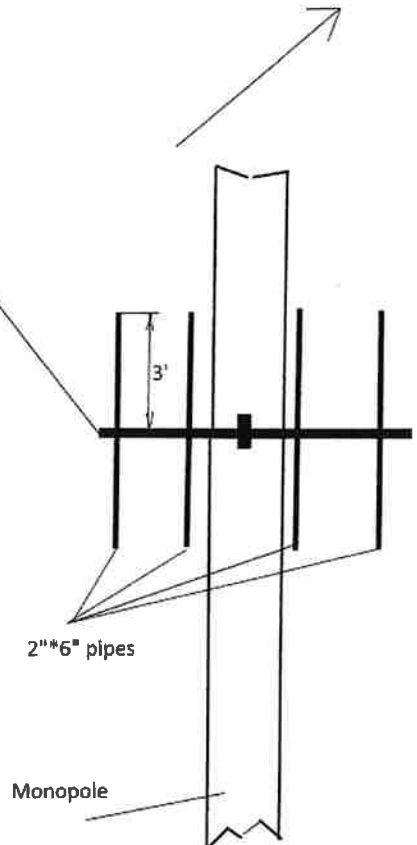
Sector

2" * 6" pipes

Monopole

Alpha 340

Beta 130



EAST > North East > New England > New England West > HARTFORD 9 CT

- Brauer, Mark - mark.brauer2@verizonwireless.com - 06/04/2019 13:09:16

Project Detail		Location Information	
Site Type		Siterra Site ID#	HARTFORD 9 CT
Carrier Aggregation	false	Site Name	
MPT Id		Siterra SR#	
eCIP-0	false	E-NodeB ID#	068620
Project Name	850 ADD	PSLC#	468180
RFDS Project ID	1498173	Switch Name	
Project ID	15625777	Tower Owner	
Site Traker Project ID		Tower Type	Monopole
RFDS Project Scope	PCS and 850 LTE add, keeping same antennas, adding spacing bracket to SBNHH antennas. Samsung dual band RRHs	Street Address	250 Silas Deane Highway
		City	Weathersfield
		State	CT
		Zip Code	06109
		County	Hartford
		Latitude	41.720597 / 41° 43' 14.1492" " N
		Longitude	-72.666044 / 72° 39' 57.7584" " W

Antenna Summary

Added Antennas														
700 LTE	850 CDM A	850 LTE	1900 CDM A	1900 LTE	2100 LTE	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	QTY
Removed Antennas														
700 LTE	850 CDM A	850 LTE	1900 CDM A	1900 LTE	2100 LTE	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	QTY
Retained Antennas														
700 LTE	850 CDM A	YES	1900 CDM A	YES	2100 LTE	ANDREW	SBNHH-1D65B_PORT 1 - 45 03DT_0725 (354020)	90	93	30(D1),300 (D3),180(D2)	true	true	PHYSICA L	3
YES		YES			YES	ANDREW	SBNHH-1D65B_PORT 2 - 45 02DT_2130 (329416)	90	93	180(D2),30 (D1),300(D3)	true	true	PHYSICA L	3
	YES					ANTEL INTERNATION AL, INC.	BXA-80063/6CF (181901)	90	93	30(D1),300 (D3),180(D2)	false	false	PHYSICA L	6

Added: 0	Removed: 0	Retained: 12
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Equipment Summary

Added Non Antennas													
Equipment Type	700 LTE	850 CDMA	850 LTE	1900 CDMA	1900 LTE	2100 LTE	Location	Make	Model	Cable Length	Cable Size	Inst. Type	Quantity
RRU				YES	YES	YES	Tower	Samsung	B2/B66A RRH-BR049 (RFV01U-D1A)			PHYSICAL	3
RRU	YES		YES				Tower	Samsung	B5/B13 RRH-BR04C (RFV01U-D2A)			PHYSICAL	3
Mount							Tower	Comscope	BSAMNT-SBS-1-2			PHYSICAL	3
Removed Non Antennas													
Equipment Type	700 LTE	850 CDMA	850 LTE	1900 CDMA	1900 LTE	2100 LTE	Location	Make	Model	Cable Length	Cable Size	Inst. Type	Quantity
RRU	YES						Tower	Nokia	UHBA B13 RRH 4x30			PHYSICAL	3
RRU						YES	Tower	Nokia	UHIE B66A RRH 4x45			PHYSICAL	3
Retained Non Antennas													
Equipment Type	700 LTE	850 CDMA	850 LTE	1900 CDMA	1900 LTE	2100 LTE	Location	Make	Model	Cable Length	Cable Size	Inst. Type	Quantity
Coaxial Cables							Tower					PHYSICAL	6
Hybrid Cable							Tower					PHYSICAL	1
OVP Box							Tower					PHYSICAL	1

Services

		700 MHz LTE			Proposed Version:		
		Current Version:			0002		
		0000			0002		
Sector	D1	D2	D3	D1	D2	D3	
Azimuth	30	180	300	30	180	300	D3
Cell/ENode B ID	068620	068620	068620	068620	068620	068620	
Antenna Model	SBNHH-ID65B_PORT 1 - 45_05DT_0725 (354024)	SBNHH-ID65B_PORT 1 - 45_03DT_0725 (354020)	SBNHH-ID65B_PORT 1 - 45_03DT_0725 (354020)	SBNHH-ID65B_PORT 1 - 45_05DT_0725 (354024)	SBNHH-ID65B_PORT 1 - 45_03DT_0725 (354020)	SBNHH-ID65B_PORT 1 - 45_03DT_0725 (354020)	
Antenna Make	ANDREW	ANDREW	ANDREW	ANDREW	ANDREW	ANDREW	ANDREW
Centerline(Ft)	90	90	90	90	90	90	
Mechanical DT(Deg.)	0	0	0	0	0	0	
Electrical DT	5	3	3	5	3	3	
Tip Height	93	93	93	93	93	93	
TMA make							
TMA model							
RRU make	Nokia	Nokia	Nokia	Samsung	Samsung	Samsung	
RRU model	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	
# of Tx, Rx Lines	2,4	2,4	2,4	4,4	4,4	4,4	
Position							

2100 MHZ LTE

		Current Version:			Proposed Version:		
		0000			0002		
Sector	D1	D2	D3	D1	D2	D3	
Azimuth	30	180	300	30	180	300	
Cell/ENode B ID	068620	068620	068620	068620	068620	068620	
Antenna Model	SBNHH-1D65B PORT 2 - 45 02DT 2130 (329416)	SBNHH-1D65B PORT 2 - 45 02DT 2130 (329416)	SBNHH-1D65B PORT 2 - 45 03DT 2130 (329418)	SBNHH-1D65B PORT 2 - 45 02DT 2130 (329416)	SBNHH-1D65B PORT 2 - 45 02DT 2130 (329416)	SBNHH-1D65B PORT 2 - 45 01DT 2130 (329414)	
Antenna Make	ANDREW	ANDREW	ANDREW	ANDREW	ANDREW	ANDREW	
Centerline(Ft)	90	90	90	90	90	90	
Mechanical DT(Deg.)	0	0	0	0	0	0	
Electrical DT	2	2	3	2	2	1	
Tip Height	93	93	93	93	93	93	
TMA make							
TMA model							
RRU make	Nokia	Nokia	Nokia	Samsung	Samsung	Samsung	
RRU model	UHIE B66A RRH 4x45	UHIE B66A RRH 4x45	UHIE B66A RRH 4x45	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	
# of Tx, Rx Lines	2,4	2,4	2,4	4,4	4,4	4,4	
Position							

Current Version:

Proposed Version:

	0002		
	D1	D2	D3
Sector	30	180	300
Azimuth	068620	068620	068620
Cell/ENode B ID	SBNHH-1D65B_PORT 2 - 45 02DT 1950(329415)	SBNHH-1D65B_PORT 2 - 45 02DT 1950(329415)	SBNHH-1D65B_PORT 2 - 45 01DT 1950(329413)
Antenna Model	ANDREW	ANDREW	ANDREW
Antenna Make	90	90	90
Centerline(Ft)	0	0	0
Mechanical DT(Deg.)	2	2	1
Electrical DT	93	93	93
Tip Height			
TMA make			
TMA model			
RRU make	Samsung	Samsung	Samsung
RRU model	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)
# of Tx, Rx Lines	4,4	4,4	4,4
Position			

850 MHz CDMA

		Current Version:			Proposed Version:		
		0000			0002		
Sector	D1	D2	D3	D1	D2	D3	
Azimuth	30	180	300	30	180	300	
Cell/ENode B ID							
Antenna Model	BXA-80063/6CF (181901)	BXA-80063/6CF (181901)	BXA-80063/6CF (181901)	BXA-80063/6CF (181901)	BXA-80063/6CF (181901)	BXA-80063/6CF (181901)	
Antenna Make	ANTEL INTERNATIONAL, INC.	ANTEL INTERNATIONAL, INC.	ANTEL INTERNATIONAL, INC.	ANTEL INTERNATIONAL, INC.	ANTEL INTERNATIONAL, INC.	ANTEL INTERNATIONAL, INC.	
Centerline(Ft)	90	90	90	90	90	90	
Mechanical DT(Deg.)	3	0	3	3	0	3	
Electrical DT	0	0	0	0	0	0	
Tip Height	93	93	93	93	93	93	
TMA make							
TMA model							
RRU make							
RRU model							
# of Tx, Rx Lines							
Position							

		Proposed Version:		
		0002		
	Current Version:	D1	D2	D3
Sector		30	180	300
Azimuth		068620	068620	068620
Cell/ENode B ID		SBNHH-1D65B_PORT 1 - 45 05DT 0850 (354025)	SBNHH-1D65B_PORT 1 - 45 03DT 0850 (354021)	SBNHH-1D65B_PORT 1 - 45 03DT 0850 (354021)
Antenna Model		ANDREW	ANDREW	ANDREW
Antenna Make		90	90	90
Centerline(Ft)		0	0	0
Mechanical DT(Deg.)		5	3	3
Electrical DT		93	93	93
Tip Height				
TMA make				
TMA model				
RRU make		Samsung	Samsung	Samsung
RRU model		B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)
# of Tx, Rx Lines		4,4	4,4	4,4
Position				

Service Comments

Callsigns Per Antenna - Proposed

Sector	Make	Model	Centerline	Tip Height	Azimuth (°)	Elec. Tilt	Mech. Tilt	Gain	Horiz. BW	Regulatory Power	700 Callsigns	850 Callsigns	1900 Callsigns	2100 Callsigns	28 GHz Callsigns	31 GHz Callsigns	39 GHz Callsigns
D1	ANTEL INTERNATIONAL, INC.	BXA-80063/6CF (181901)	90ft/27.43m	93ft/28.35m	30	0	3	14.5	61.25	497.74		KNKA404					
D3	ANTEL INTERNATIONAL, INC.	BXA-80063/6CF (181901)	90ft/27.43m	93ft/28.35m	300	0	3	14.5	61.25	497.74		KNKA404					
D2	ANDREW	SBNHH-1D65B_PORT 1-45_03DT_0850 (354021)	90ft/27.43m	93ft/28.35m	180	3	0	13.335	66	482.5		KNKA404					
D2	ANDREW	SBNHH-1D65B_PORT 2-45_02DT_2130 (329416)	90ft/27.43m	93ft/28.35m	180	2	0	16.139	61.5	149.15				WQGA906, WQGB276			
D3	ANDREW	SBNHH-1D65B_PORT 2-45_01DT_2130 (329414)	90ft/27.43m	93ft/28.35m	300	1	0	16.163	61	149.98				WQGA906, WQGB276			
D1	ANDREW	SBNHH-1D65B_PORT 1-45_05DT_0850 (354025)	90ft/27.43m	93ft/28.35m	30	5	0	13.351	64.5	484.28		KNKA404					
D1	ANDREW	SBNHH-1D65B_PORT 1-45_05DT_0725 (354024)	90ft/27.43m	93ft/28.35m	30	5	0	12.632	69.25	81.09	WQJQ689						

D2	ANTEL INTERN ATONA L, INC.	BXA- 80063/6CF (181901)	90ft/27.43 m	93ft/28.35 m	180	0	0	14.5	61.2 5	368.13	KNKA40 4				
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Callsigns

Callsigns	Market	Radio Code	Market Number	Block	State	County	Licensee Name	Wholly Owned	Total MHz	Freq Range 1	Freq Range 2	Freq Range 3	Freq Range 4	Regulatory Power	Threshold (W)	POPs/ Sq Mi	Status	Project Action
KNKA404	<i>Hartford-New Britain-Bristol, CT</i>	CL	CMA032	A	CT	Hartford	Cellco Partnership	Yes	25.000	824.000-835.000	869.000-880.000	845.000-846.500	890.000-891.500	484.28	500	1216.2	Active	Added
KNLH251	<i>Hartford, CT</i>	CW	BTA184	F	CT	Hartford	Cellco Partnership	Yes	10.000	1890.000-1895.000	1970.000-1975.000	.000-.000	.000-.000	303.99	1640	1216.2	Active	Added
WPLM398	<i>Hartford, CT</i>	LD	BTA184	B	CT	Hartford	Cellco Partnership	Yes	150.000	31000.000-31075.000	31225.000-31300.000	.000-.000	.000-.000			1216.2	Active	
WPOH943	<i>Hartford, CT</i>	LD	BTA184	A	CT	Hartford	Cellco Partnership	Yes	300.000	29100.000-29250.000	31075.000-31225.000	.000-.000	.000-.000			1216.2	Active	
WPOJ730	<i>Hartford, CT</i>	CW	BTA184	C	CT	Hartford	Cellco Partnership	Yes	15.000	1895.000-1902.500	1975.000-1982.500	.000-.000	.000-.000	303.99	1640	1216.2	Active	Added
WQGA906	<i>New York-No. New Jer.-Long Island, NY-NJ-CT-PA-MA-</i>	AW	BEA010	B	CT	Hartford	Cellco Partnership	Yes	20.000	1720.000-1730.000	2120.000-2130.000	.000-.000	.000-.000	149.98	1640	1216.2	Active	Added
WQGB276	<i>Hartford-New Britain-Bristol, CT</i>	AW	CMA032	A	CT	Hartford	Cellco Partnership	Yes	20.000	1710.000-1720.000	2110.000-2120.000	.000-.000	.000-.000	149.98	1640	1216.2	Active	Added
WQJO689	<i>Northeast</i>	WU	REA001	C	CT	Hartford	Cellco Partnership	Yes	22.000	746.000-757.000	776.000-787.000	.000-.000	.000-.000	81.09	1000	1216.2	Active	Retained
WRBA708	<i>Hartford, CT</i>	UU	BTA184	L1	CT	Hartford	Cellco Partnership	Yes	325.000	27500.000-27600.000	27700.000-27925.000	.000-.000	.000-.000			1216.2	Active	

WRBA709	Hartford, CT	UU	BTA184	CT	Hartford	Celco Partnership	Yes	325.000	27925.000-28050.000	28150.000-28350.000	.000-.000	.000-.000	.000-.000	1216.2	Active
WRBD571	New York, NY	UU	PEA001	CT	Hartford	Straight Path Spectrum, LLC	Yes	.000	.000-.000	.000-.000	.000-.000	.000-.000	.0	Active	
WRBD572	New York, NY	UU	PEA001	CT	Hartford	Straight Path Spectrum, LLC	Yes	.000	.000-.000	.000-.000	.000-.000	.000-.000	.0	Active	
WRBE444	New York, NY	UU	PEA001	CT	Hartford	Straight Path Spectrum, LLC	Yes	50.000	38800.000-38850.000	.000-.000	.000-.000	.000-.000	.0	Active	
WRBE445	New York, NY	UU	PEA001	CT	Hartford	Straight Path Spectrum, LLC	Yes	50.000	39500.000-39550.000	.000-.000	.000-.000	.000-.000	.0	Active	
WRBE704	New York, NY	UU	PEA001	CT	Hartford	Straight Path Spectrum, LLC	Yes	.000	.000-.000	.000-.000	.000-.000	.000-.000	.0	Active	
WRBE705	New York, NY	UU	PEA001	CT	Hartford	Straight Path Spectrum, LLC	Yes	.000	.000-.000	.000-.000	.000-.000	.000-.000	.0	Active	
WRBE864	New York, NY	UU	PEA001	CT	Hartford	Straight Path Spectrum, LLC	Yes	50.000	38900.000-38950.000	.000-.000	.000-.000	.000-.000	.0	Active	
WRBE865	New York, NY	UU	PEA001	CT	Hartford	Straight Path Spectrum, LLC	Yes	50.000	39600.000-39650.000	.000-.000	.000-.000	.000-.000	.0	Active	
WRBF500	New York, NY	UU	PEA001	CT	Hartford	Straight Path Spectrum, LLC	Yes	50.000	39000.000-39050.000	.000-.000	.000-.000	.000-.000	.0	Active	
WRBF501	New York, NY	UU	PEA001	CT	Hartford	Straight Path Spectrum, LLC	Yes	50.000	39700.000-39750.000	.000-.000	.000-.000	.000-.000	.0	Active	
WRBF792	New York, NY	UU	PEA001	CT	Hartford	Straight Path Spectrum, LLC	Yes	50.000	39050.000-39100.000	.000-.000	.000-.000	.000-.000	.0	Active	
WRBF793	New York, NY	UU	PEA001	CT	Hartford	Straight Path Spectrum, LLC	Yes	50.000	39750.000-39800.000	.000-.000	.000-.000	.000-.000	.0	Active	

WRBF968	New York, NY	UU	PEA001	11-A	CT	Hartford	Straight Path Spectrum, LLC	Yes	50.000	39100.000-39150.000	.000-.000	.000-.000	.000-.000	.0	Active
WRBF969*	New York, NY	UU	PEA001	11-B	CT	Hartford	Straight Path Spectrum, LLC	Yes	50.000	39800.000-39850.000	.000-.000	.000-.000	.000-.000	.0	Active
WRDG500	New York, NY	UU	PEA001	S2	CT	Hartford	Cellco Partnership	Yes	400.000	37800.000-38200.000	.000-.000	.000-.000	.000-.000	.0	Active