Centek Engineering, Inc.
3-2 North Branford Road
Branford, Connecticut 06405
Phone: (203) 488-0580
Fax: (203) 488-8587

Steven L. Levine
Real Estate Consultant

HAND DELIVERED

April 23, 2015

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 79 Putnam Pike, Killingly

Dear Ms. Bachman:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and/or Long Term Evolution ("LTE") capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, copies of this letter are being sent to the chief elected official of the municipality in which the affected cell site is located, the property owner of record, and the tower owner or operator.

UMTS technology offers services to mobile computer and phone users anywhere in the world. Based on the Global System for Mobile ("GSM") communication standard, UMTS is the planned worldwide standard for mobile users. UMTS, fully implemented, gives computer and phone users high-speed access to the Internet as they travel. They have the same capabilities even when they roam, through both terrestrial wireless and satellite transmissions.

LTE is a high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

The changes to the facility do not constitute modifications as defined in Connecticut General

Statutes ("C.G.S.") Section 16-50i(d) because the general physical and environmental characteristics of the site will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will not increase.

2. The proposed changes will not extend the site boundaries.

3. The proposed changes will not increase the noise level at the site boundary by six decibels or more, or to levels that exceed state and local criteria.

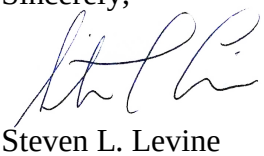
4. The changes will not add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection, pursuant to Section 22a-162 of the Connecticut General Statutes.

5. The proposed changes will not impair the structural integrity of the facility, as determined in a certification provided by a professional engineer licensed in Connecticut.

For the foregoing reasons, AT&T respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (860) 830-0380 with questions concerning this matter. Thank you for your consideration.

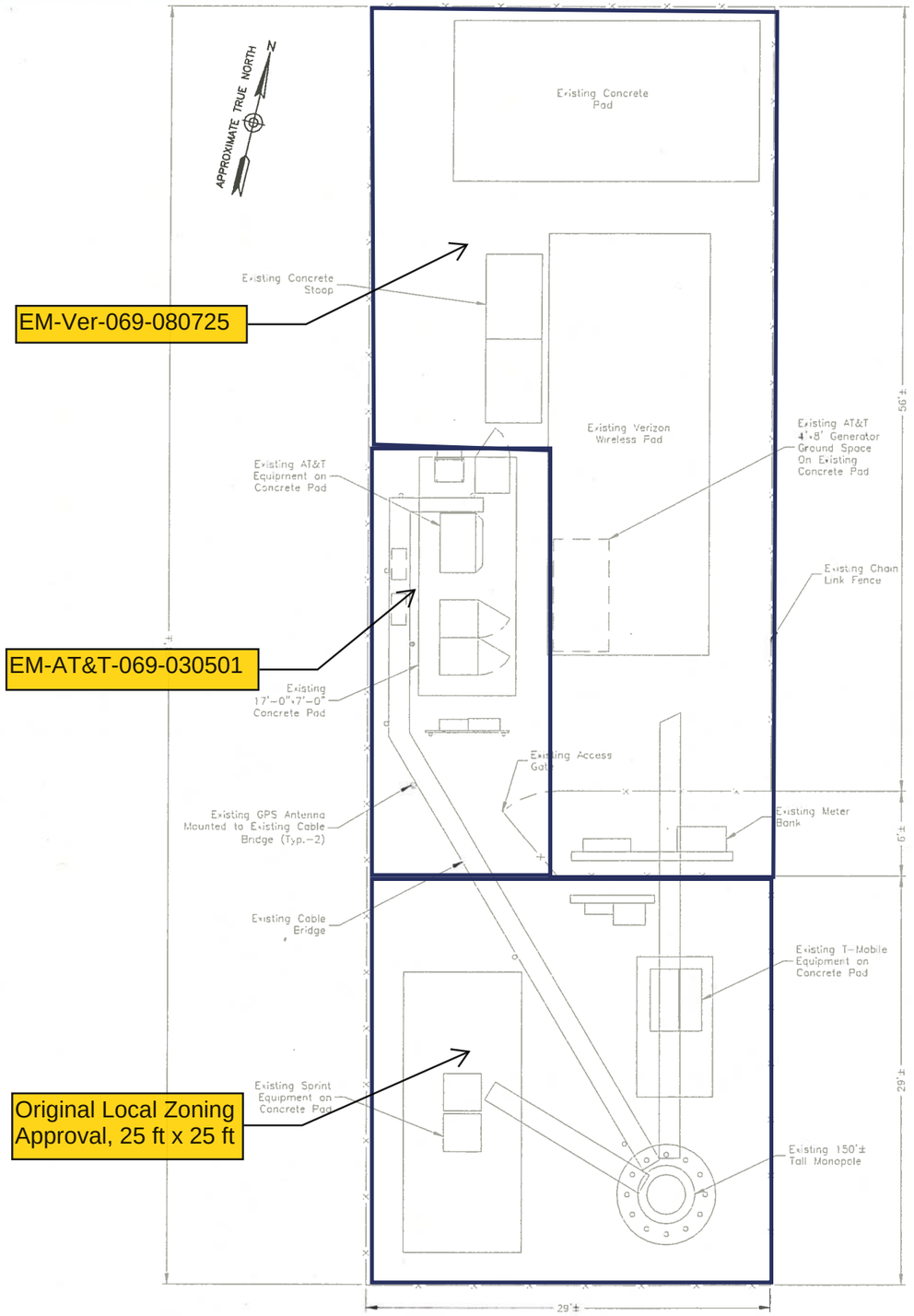
Sincerely,



Steven L. Levine
Real Estate Consultant

cc: TownCEO – Honorable Sean Hendricks, Town Manager, Killingly
Property owner of Record - Honorable Sean Hendricks, Town Manager, Killingly
Tower Owner - Honorable Sean Hendricks, Town Manager, Killingly

Attachments



EM-Ver-069-080725

EM-AT&T-069-030501

Original Local Zoning Approval, 25 ft x 25 ft

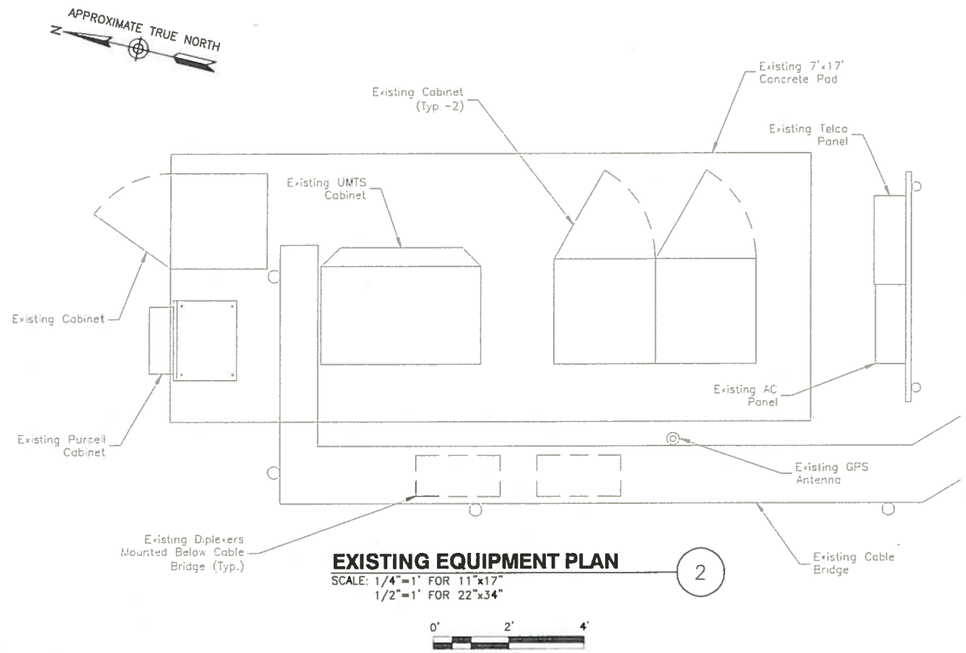
NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. SOME EXISTING & PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
3. MOUNT ALL ANTENNAS, COAX, SURGE ARRESTORS, RRUS, ETC. IN ACCORDANCE WITH STRUCTURAL ANALYSIS.

SITE PLAN 1

SCALE: 1"=10' FOR 11"x17"
1"=5' FOR 22"x34"

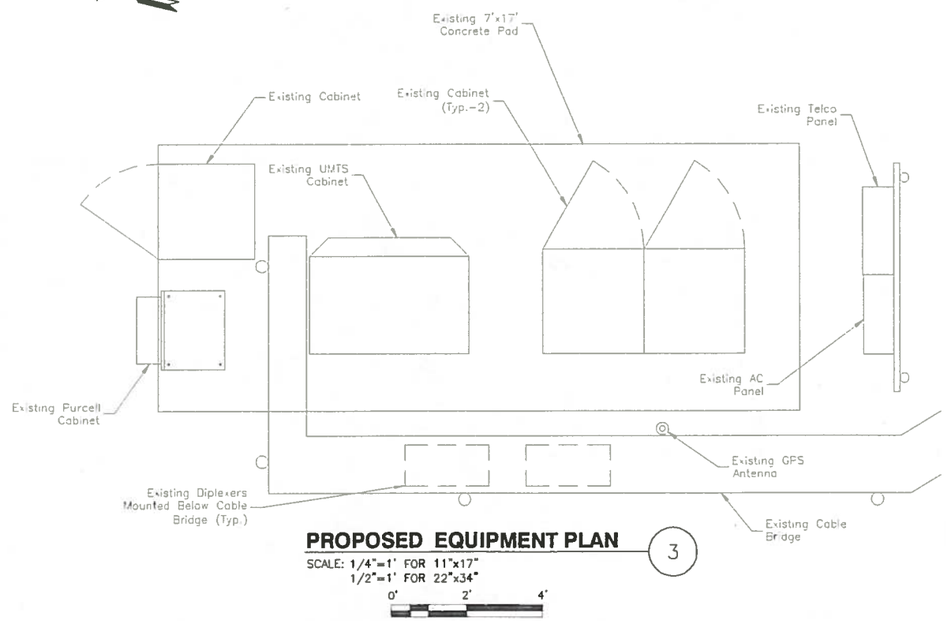
0' 5' 10'



EXISTING EQUIPMENT PLAN 2

SCALE: 1/4"=1' FOR 11"x17"
1/2"=1' FOR 22"x34"

0' 2' 4'



PROPOSED EQUIPMENT PLAN 3

SCALE: 1/4"=1' FOR 11"x17"
1/2"=1' FOR 22"x34"

0' 2' 4'

at&t

500 ENTERPRISE DRIVE SUITE 3A
ROCKY HILL, CT 06067

SAI

27 NORTHWESTERN DRIVE
SALEM, NH 03079

CT5463
KILLINGLY NORTH

CONSTRUCTION DRAWING

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STATE OF CONNECTICUT
JIANG YU
No. 23222
LICENSED
PROFESSIONAL ENGINEER

Jiang Yu, P.E.
CT LICENSE No. PEN.0023222

DRAWN BY:	JC
REVIEWED BY:	PD
CHECKED BY:	GHN
PROJECT NUMBER:	50055106
JOB NUMBER:	50065659
SITE ADDRESS:	

79 PUTNAM PIKE
DAYVILLE, CT 06241
WINDHAM COUNTY

SHEET TITLE

SITE PLAN &
EQUIPMENT PLANS

SHEET NUMBER

C-1

NEW CINGULAR WIRELESS PCS, LLC
Equipment Modification

79 Putnam Pike, Killingly, CT
Site Number 5463
Prior Decisions: Exempt Mods 5/03, 6/08, 12/08, 11/12, 2/14, 6/14

Tower Owner/Manager: Town of Killingly

Land Owner of Record: Town of Killingly

Lease Area: The Killingly site was originally approved by local zoning as a town-owned tower facility. (See attached site plan.) Its original footprint dimensions were approximately 25 ft x 25 ft. The Council approved expansions of the site to accommodate colocation by AT&T in EM-AT&T-069-030501 and by Verizon in EM-VER-069-080725. The Council approved a third size increase for Metro PCS in 2009, but this expansion does not appear to have been constructed. Since all proposed equipment modifications will occur either on the existing tower structure or AT&T's existing equipment pad areas, the proposed modifications will not extend either AT&T's lease area or the overall site boundaries.

Equipment configuration: Monopole

Current and/or approved:
Platform mount @ 128 ft
Six PowerWave 7770 antennas @ 130 ft c.l.
Three KMW AM-X-CD-17-65-00T-RET antennas @ 130 ft c.l.
Six PowerWave TMA's @ 130 ft
Three remote radio heads @ 130 ft
One surge arrestor @ 130 ft
Twelve lines 1 5/8 inch coax
One fiber and two DC cables
Concrete Equipment Pad
Diesel generator on pad

Proposed modifications:
Remove three PowerWave 7770 antennas. (3 to remain)
Remove all KMW AM-X-CD-17-65-00T-RETantennas.
Install six CCI OPA-65R-LCUU-H8 antennas @ 130 ft c.l.
Install nine remote radio heads and three associated A2 modules @ 130 ft.

Power Density:

Calculations for AT&T's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 87.7 % of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for AT&T's planned operations would be approximately 85.9 % of the standard.

Existing

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm^2)	Standard Limits (mW/cm^2)	Percent of Limit
Other Users *							78.56
AT&T UMTS *	130	880 - 894	2	500	0.0213	0.5867	3.63
AT&T UMTS *	130	1900 Band	1	500	0.0106	1.0000	1.06
AT&T LTE *	130	700	1	500	0.0106	0.4667	2.28
AT&T LTE *	130	1900 Band	1	500	0.0106	1.0000	1.06
AT&T LTE *	130	2300	1	500	0.0106	1.0000	1.06
Total							**87.7%**

***** Per CSC records

Proposed

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm^2)	Standard Limits (mW/cm^2)	Percent of Limit
Other Users *							78.56
AT&T LTE	130	700 Band	1	500	0.0106	0.4667	2.28
AT&T LTE	130	1900 Band	1	500	0.0106	1.0000	1.06
AT&T UMTS	130	880 - 894	1	296	0.0063	0.5867	1.07
AT&T UMTS	130	1900 Band	1	427	0.0091	1.0000	0.91
AT&T GSM	130	880 - 894	1	296	0.0063	0.5867	1.07
AT&T GSM	130	1900 Band	1	427	0.0091	1.0000	0.91
Total							**85.9%**

***** Per CSC records

Structural information:

The attached structural analysis demonstrates that the tower and foundation have adequate structural capacity to accommodate the proposed equipment modifications. (Hudson Design Group, 4/21/15).

SITE NAME: KILLINGLY NORTH
SITE NO.: CT5463
79 PUTNAM PIKE
DAYVILLE, CT 06241

VICINITY MAP N.T.S.

FROM ROCKY HILL, CT:

MERGE ONTO I-91N. TAKE EXIT 29 TO MERGE ONTO CT-15 N/US-5 N/ TOWARD I-84 E/ E HARTFORD/ BOSTON.CONTINUE ONTO CT-15 N. MERGE ONTO I-84 E. TAKE EXIT 69 FOR CONNECTICUT 74 TOWARD U.S. 44/ WILLINGTON/ PUTNAM. TURN RIGHT ONTO CT-74 E/ TOLLAND STAGE RD. CONTINUE TO FOLLOW US-44 E ONTO CT-101 E/ KILLINGLY ROAD. TAKE SHARP LEFT ONTO CT-12 N/ PUTNAM PIKE.

SITE COORDINATES:
LATITUDE: N 41° 50' 50.63" (NAD 83)*
LONGITUDE: W 71° 52' 44.42" (NAD 83)*
*AS PER GOOGLE EARTH

ELEVATION DATA
GRADE ELEVATION AT TOWER = 306'± A.M.S.L.
*AS PER GOOGLE EARTH

ANTENNA ELEVATION (TO C.L. OF ANTENNA)
ALPHA SECTOR: 130'-0"± A.G.L.
BETA SECTOR: 130'-0"± A.G.L.
GAMMA SECTOR: 130'-0"± A.G.L.

SITE INFORMATION

- REMOVE & REPLACE (1) EXISTING PANEL ANTENNA PER SECTOR FOR A TOTAL OF (3) NEW PANEL ANTENNAS.
- ADD (1) NEW RRU PER SECTOR FOR A TOTAL OF (3) NEW RRU'S.

PROJECT DESCRIPTION

SITE NAME:
KILLINGLY NORTH

SITE NUMBER:
CT5463

LOCATION:
79 PUTNAM PIKE, DAYVILLE
WINDHAM COUNTY, CT 06241

APPLICANT/LESSEE:
AT&T MOBILITY
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CONNECTICUT 06067

PROJECT INFORMATION

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 PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

A.D.A. COMPLIANCE:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

SHEET NUMBER	DESCRIPTION
T-1	TITLE SHEET
G-1	GENERAL NOTES
C-1	SITE PLAN & EQUIPMENT PLANS
C-2	ANTENNAS LAYOUTS & ELEVATIONS
C-3	CONSTRUCTION DETAILS & PLUMBING DIAGRAM
E-1	GROUNDING DETAILS

SHEET INDEX

at&t
500 ENTERPRISE DRIVE SUITE 3A
ROCKY HILL, CT 06067

SAI
27 NORTHWESTERN DRIVE
SALEM, NH 03079

CT5463
KILLINGLY NORTH

CONSTRUCTION DRAWING

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0	03/10/14	PRELIMINARY SUBMISSION

Dewberry
Dewberry Engineers Inc.
800 PARSIPPANY ROAD
SUITE 301
PARSIPPANY, NJ 07054
PHONE: 973 739 9400
FAX: 973 739 9710

STATE OF CONNECTICUT
JIANG YU
No. 23222
LICENSED PROFESSIONAL ENGINEER

JIANG YU, P.E.
CT LICENSE No PEN.0023222

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

DRAWN BY:	JC
REVIEWED BY:	PD
CHECKED BY:	GHN
PROJECT NUMBER:	50055106
JOB NUMBER:	50065659
SITE ADDRESS:	

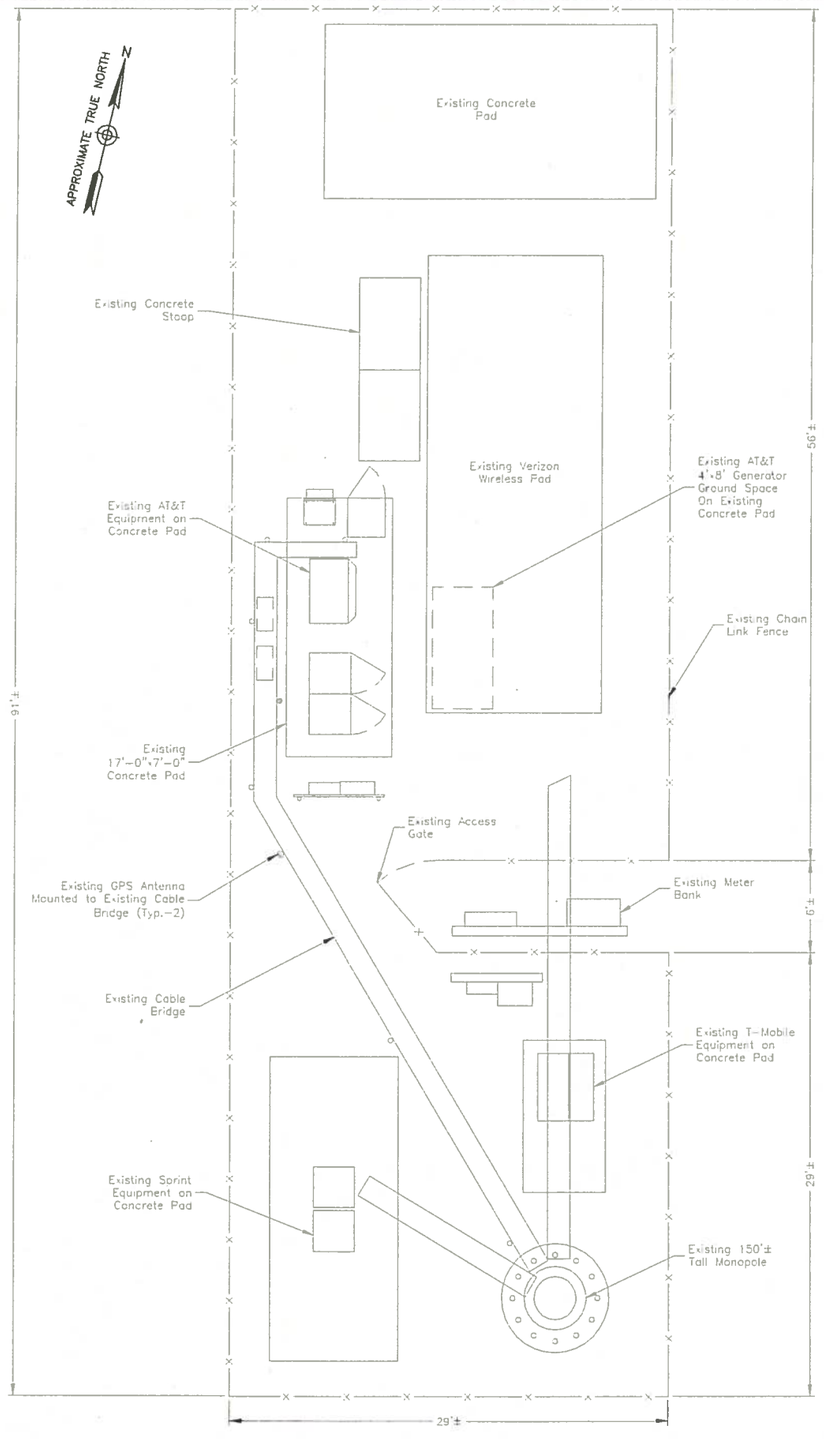
79 PUTNAM PIKE
DAYVILLE, CT 06241
WINDHAM COUNTY

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



SITE PLAN (1)
SCALE: 1"=10' FOR 11"x17"
1"=5' FOR 22"x34"
0' 5' 10'

NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
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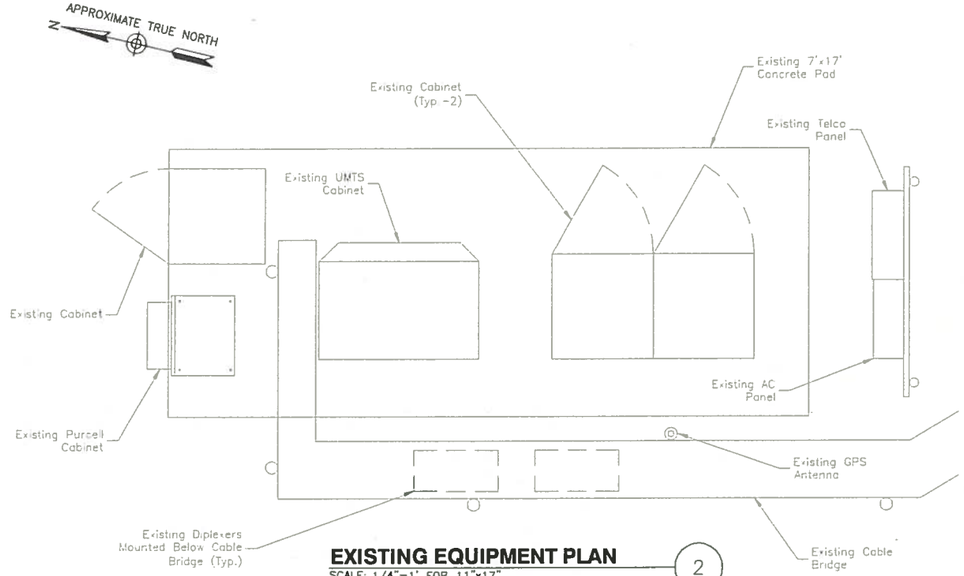
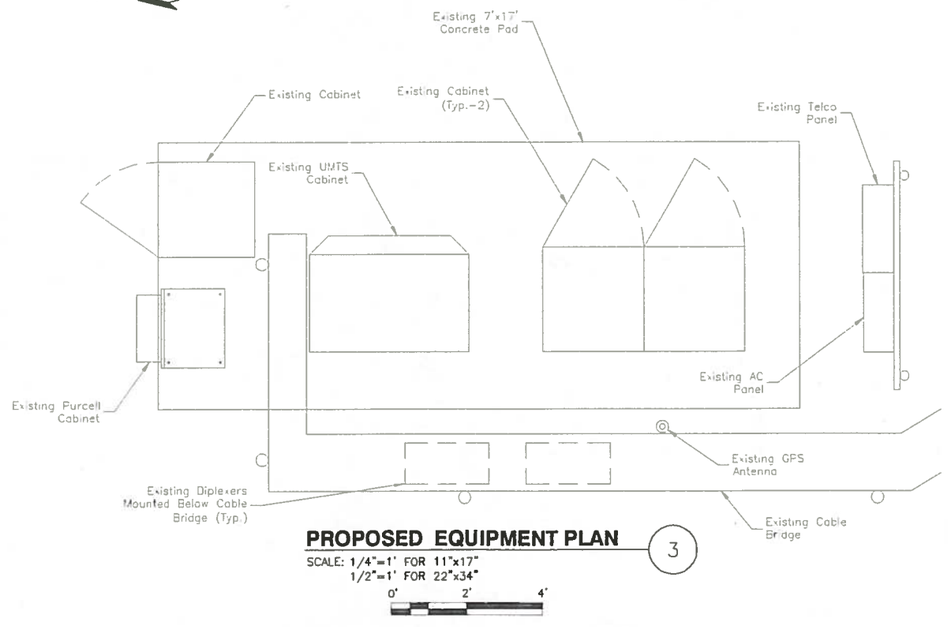


EXISTING EQUIPMENT PLAN (2)
SCALE: 1/4"=1' FOR 11"x17"
1/2"=1' FOR 22"x34"
0' 2' 4'



PROPOSED EQUIPMENT PLAN (3)
SCALE: 1/4"=1' FOR 11"x17"
1/2"=1' FOR 22"x34"
0' 2' 4'

at&t
500 ENTERPRISE DRIVE SUITE 3A
ROCKY HILL, CT 06067
SAI
27 NORTHWESTERN DRIVE
SALEM, NH 03079

CT5463
KILLINGLY NORTH

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SITE PLAN &
EQUIPMENT PLANS

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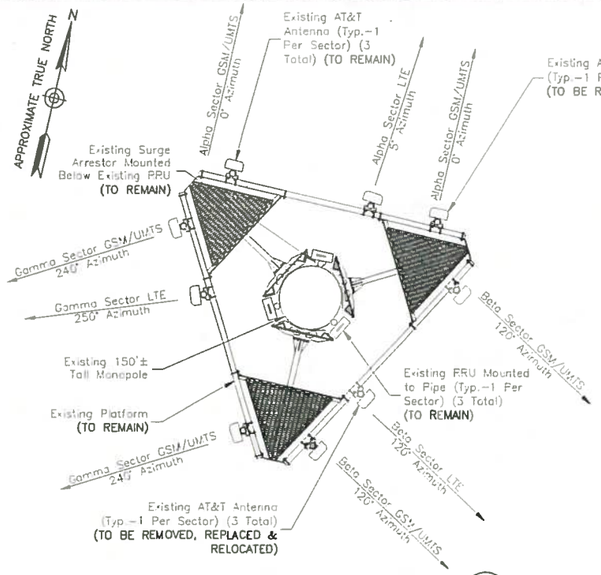
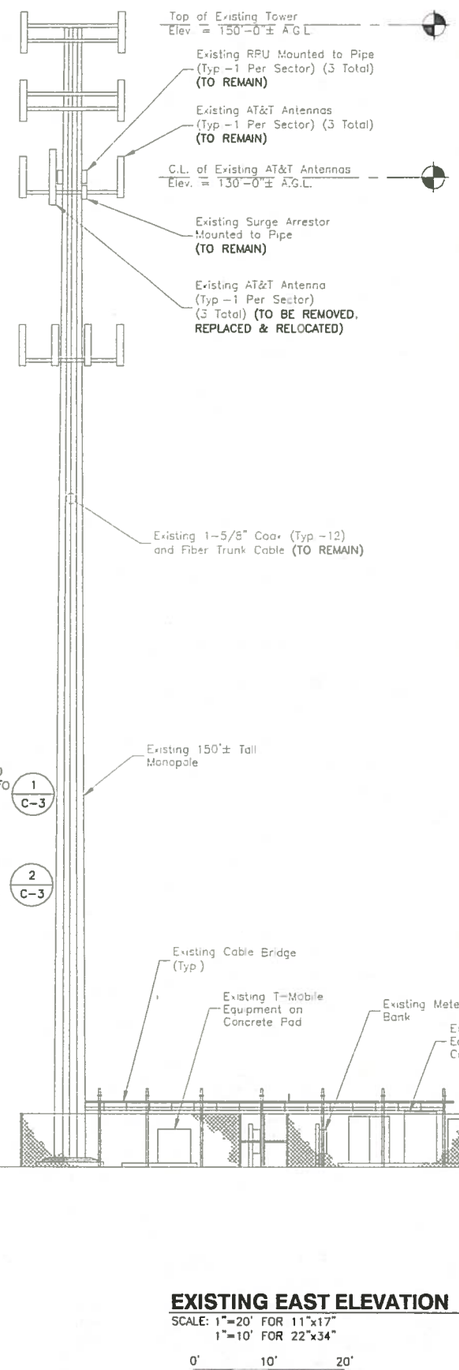


EXISTING ANTENNA LAYOUT

SCALE: N.T.S. (1)

NOTE:

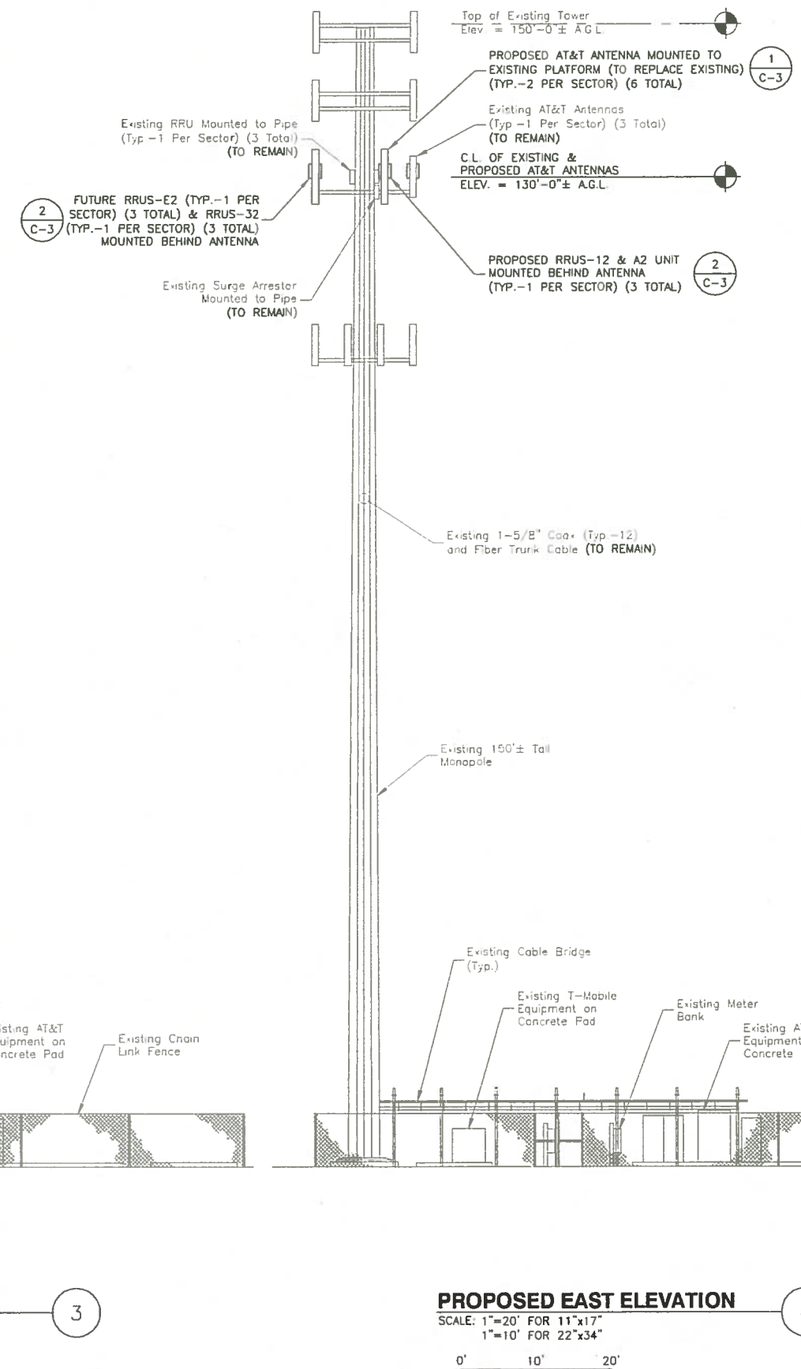
1. EXISTING TMA'S NOT SHOWN FOR CLARITY.



EXISTING EAST ELEVATION

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34" (3)

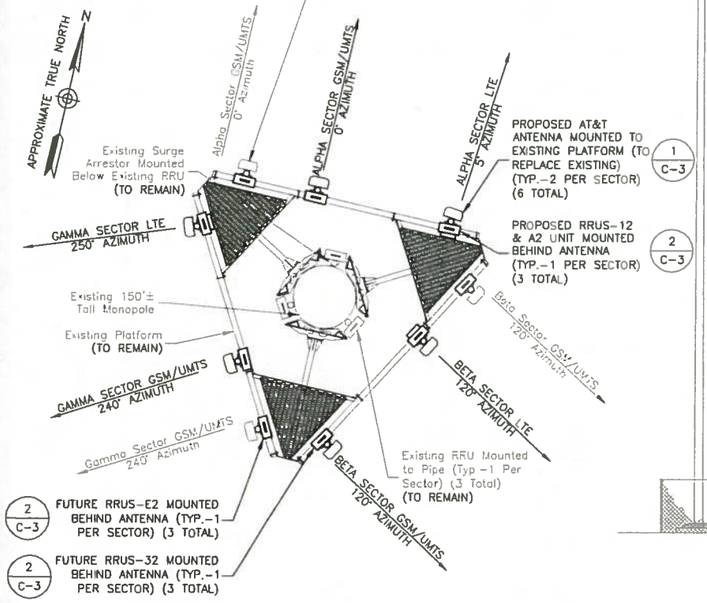
0' 10' 20'



PROPOSED EAST ELEVATION

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34" (4)

0' 10' 20'



PROPOSED ANTENNA LAYOUT

SCALE: N.T.S. (2)

NOTE:

1. EXISTING TMA'S NOT SHOWN FOR CLARITY.

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79 PUTNAM PIKE
DAYVILLE, CT 06241
WINDHAM COUNTY

SHEET TITLE

ANTENNA LAYOUTS & ELEVATIONS

SHEET NUMBER

C-2

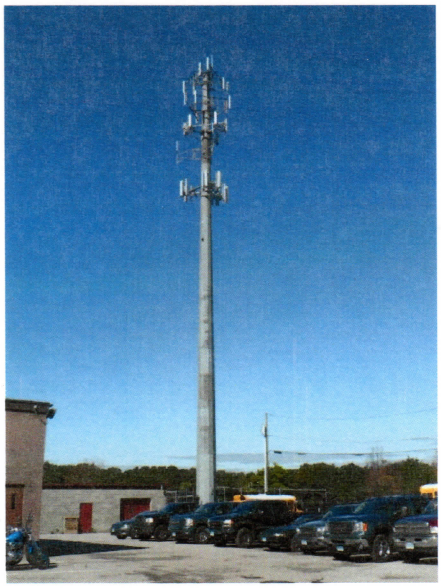
STRUCTURAL ANALYSIS REPORT

For

CT5463
KILLINGLY NORTH

79 Putnam Pike
Dayville, CT 06241

Antennas Mounted to the Monopole



Prepared for:

SAI

at&t

500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

Dated: April 21, 2015

Prepared by:

Hudson Design Group LLC

1600 Osgood Street Bldg. 20N Suite 3090
North Andover, MA 01845
(P) 978.557.5553 (F) 978.336.5586
www.hudsondesigngroupllc.com

STATE OF CONNECTICUT
GI KAI WANG
No. 28220
LICENSED
PROFESSIONAL ENGINEER

4/21/2015

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the 150' monopole supporting the proposed AT&T's antennas located at elevation 130' above the ground level.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's existing and proposed antennas listed below.

Manufacturer drawing of the existing monopole prepared by Fred A. Nudd Corporation, dated July 24, 1998 was available and obtained for our use. This office conducted an on-site visual survey and tower mapping on October 1, 2012 to record dimensional properties of the existing monopole and its appurtenances.

The previous structural analysis report prepared by Centek Engineering, dated August 8, 2014, was provided to this office.

The previous structural analysis report prepared by EBI Consulting, dated February 12, 2015, was provided to this office.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing monopole **is in conformance** with the ANSI/TIA-222-F Standard for the loading considered under the criteria listed in this report. The monopole structure is rated at **90.6%** - (Pole Section L6 from El.40' to El.51' Controlling).

APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
	Lightning Rod	152.5'	Top of Monopole
	(2) 4' Omni	153'	10.5' Pipe
T-MOBILE	(3) RV90-17-02DP Antennas	150'	12' T-Frame
T-MOBILE	(3) TMA	150'	12' T-Frame
T-MOBILE	(3) LNX-6515DS-VTM Antennas	148'	12' T-Frame
	(6) DB980H90E-M Antennas	138'	12' T-Frame
AT&T	(3) Powerwave 7770 Antennas	130'	Low Profile Platform
AT&T	(6) LGP21401 TMA	130'	Low Profile Platform
AT&T	(6) LGP21901 Diplexers	130'	Low Profile Platform
AT&T	(3) RRUS-11	130'	Low Profile Platform
AT&T	Surge Arrestor DC6-48-60-18-8F	130'	Low Profile Platform
AT&T	***(6) OPA-65R-LCUU-H8 Antennas***	130'	Low Profile Platform
AT&T	***(3) RRUS-12***	130'	Low Profile Platform
AT&T	***(6) RRUS-32***	130'	Low Profile Platform
AT&T	***(3) A2 Module***	130'	Low Profile Platform
	4' Omni	124.3'	6' Side Mount Standoff
	4' Omni	123.7'	6' Side Mount Standoff
VERIZON	(6) X7C-FRO-660 Antennas	108'	Low Profile Platform
VERIZON	(6) HBXX-6517DS-VTM Antennas	108'	Low Profile Platform
VERIZON	(3) RRH2X40-07-U	108'	Low Profile Platform
VERIZON	(3) RRH2X40 AWS	108'	Low Profile Platform
VERIZON	(3) RRH2X60 PCS	108'	Low Profile Platform
VERIZON	(2) DB-T1-6Z-8AB-0Z	108'	Low Profile Platform

Proposed AT&T Appurtenances shown in Bold.

AT&T EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
AT&T	(12) 1 5/8" Cables	130'	Inside Monopole
AT&T	Fiber Cable	130'	Inside Monopole
AT&T	(2) DC Power Cables	130'	Inside Monopole

Proposed AT&T Coax Cables shown in Bold.

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
Pole Section-L1	13.7 %	130 – 150	PASS	
Pole Section-L2	48.4 %	115 – 130	PASS	
Pole Section-L3	54.9 %	95 – 115	PASS	
Pole Section-L4	68.7 %	91 – 95	PASS	
Pole Section-L5	77.3 %	51 – 91	PASS	
Pole Section-L6	**90.6 %**	40 – 51	PASS	**Controlling**
Pole Section-L7	76.6 %	19 – 40	PASS	
Pole Section-L8	88.6 %	0 – 19	PASS	

DESIGN CRITERIA:

1. EIA/TIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

   County: Windham
   Wind Load: 85 mph (fastest mile)
   105 mph (3 second gust)
   Nominal Ice Thickness: 1/2 inch

2. Approximate height above grade to proposed antennas: 130'

***Calculations and referenced documents are attached.**

ASSUMPTIONS:

1. The monopole and foundation are properly constructed and maintained. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.

2. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.

3. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.

4. All prior structural modification, if any, are assumed to be as per the data supplied (if available), and installed properly.

5. The foundation of the monopole was not checked due to lack of information. As-built foundation drawings and geotechnical report would be required to determine whether the foundation is capable of supporting the proposed loadings.

SUPPORT RECOMMENDATIONS:

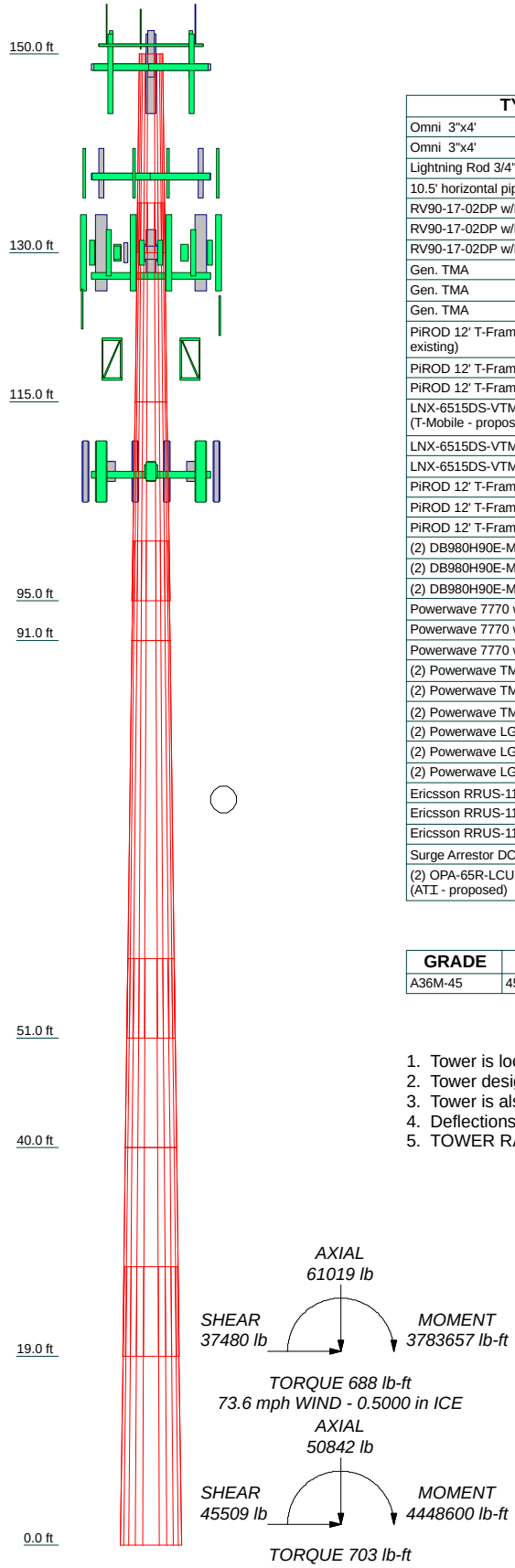
HDG recommends that the proposed antennas and RRHs be mounted on the existing steel platform supported by the monopole.

ONGOING AND PERIODIC INSPTECTION AND MAINTENANCE:

After the Contractor has successfully completed the installation and the work has been accepted, the Owner will be responsible for the ongoing and periodic inspection and maintenance of the tower.

The owner shall refer to TIA/EIA-222-F for recommendations for maintenance and inspection. The frequency of the inspection and maintenance intervals is to be determined by the owner based upon actual site and environmental conditions. It is recommended that a complete and thorough inspection of the entire tower structural system be performed at least yearly and more frequently as conditions warrant. According to TIA/EIA-222-F section 14.1, Note 1: It is recommended that the structure be inspected after severe wind and/or ice storms or other extreme loading conditions.

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	20.00	12	0.2500	5.00	27.8125	34.3125		1688.1
2	20.00	12	0.2500		32.1875	38.6875		1927.7
3	20.00	12	0.3125	6.00	38.6875	45.1875		2850.5
4	10.00	12	0.3125		42.6125	45.8125		1503.2
5	40.00	12	0.3750	8.00	45.8125	58.8750	A36M-45	8541.3
6	19.00	12	0.3750		55.5125	61.6875		4545.5
7	21.00	12	0.4375	9.00	61.6875	68.5000		6508.7
8	28.00	12	0.4375		64.7054	73.8125		9237.4
								36802.4



AXIAL
61019 lb

SHEAR
37480 lb

MOMENT
3783657 lb-ft

TORQUE 688 lb-ft
73.6 mph WIND - 0.5000 in ICE

AXIAL
50842 lb

SHEAR
45509 lb

MOMENT
4448600 lb-ft

TORQUE 703 lb-ft
REACTIONS - 85.0 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Omni 3"x4'	153	(2) OPA-65R-LCUU-H8 w/mount pipe	130
Omni 3"x4'	153	(2) OPA-65R-LCUU-H8 w/mount pipe	130
Lightning Rod 3/4"x6'	152.5	Ericsson RRUS-12	130
10.5' horizontal pipe	150.9	Ericsson RRUS-12	130
RV90-17-02DP w/Mount Pipe	150	Ericsson RRUS-12	130
RV90-17-02DP w/Mount Pipe	150	(2) Ericsson RRUS-32	130
RV90-17-02DP w/Mount Pipe	150	(2) Ericsson RRUS-32	130
Gen. TMA	150	(2) Ericsson RRUS-32	130
Gen. TMA	150	Ericsson A2 Module	130
Gen. TMA	150	Ericsson A2 Module	130
PiROD 12' T-Frame (T-Mobile - existing)	149	Ericsson A2 Module	130
PiROD 12' T-Frame	149	14' Low Profile Platform (ATI - existing)	128
PiROD 12' T-Frame	149	Omni 3"x4'	124.3
LNX-6515DS-VTM w/ Mount Pipe (T-Mobile - proposed)	148	Omni 3"x4'	123.7
LNX-6515DS-VTM w/ Mount Pipe	148	Pirod 6' Side Mount Standoff (1)	119.3
LNX-6515DS-VTM w/ Mount Pipe	148	Pirod 6' Side Mount Standoff (1)	119.3
PiROD 12' T-Frame	138	2' Side Mount Standoff	119.3
PiROD 12' T-Frame	138	14' Low Profile Platform	108
PiROD 12' T-Frame	138	(2) CSS X7C FRO-660 w/mount pipe	108
(2) DB980H90E-M w/Mount Pipe	138	(2) CSS X7C FRO-660 w/mount pipe	108
(2) DB980H90E-M w/Mount Pipe	138	(2) CSS X7C FRO-660 w/mount pipe	108
(2) DB980H90E-M w/Mount Pipe	138	(2) HBXX-6517DS-VTM w/ Mount Pipe	108
Powerwave 7770 w/mount pipe	130	(2) HBXX-6517DS-VTM w/ Mount Pipe	108
Powerwave 7770 w/mount pipe	130	(2) HBXX-6517DS-VTM w/ Mount Pipe	108
Powerwave 7770 w/mount pipe	130	RRH2X40-07-U	108
(2) Powerwave TMA LGP21401	130	RRH2X40-07-U	108
(2) Powerwave TMA LGP21401	130	RRH2X40-07-U	108
(2) Powerwave TMA LGP21401	130	RRH2X40 AWS	108
(2) Powerwave LGP21900	130	RRH2X40 AWS	108
(2) Powerwave LGP21900	130	RRH2X40 AWS	108
(2) Powerwave LGP21900	130	RRH2x60 PCS	108
Ericsson RRUS-11	130	RRH2x60 PCS	108
Ericsson RRUS-11	130	RRH2x60 PCS	108
Ericsson RRUS-11	130	RFS DB-T1-6Z-8AB-0Z	108
Surge Arrestor DC6-48-60-18-8F	130	RFS DB-T1-6Z-8AB-0Z	108
(2) OPA-65R-LCUU-H8 w/mount pipe (ATI - proposed)	130		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36M-45	45 ksi	60 ksi			

TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for a 85.0 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 73.6 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50.0 mph wind.
5. TOWER RATING: 90.6%

Hudson Design Group LLC
1600 Osgood Street Bldg. 20N Suite 3090
North Andover, MA 01845
Phone: (978) 557-5553
FAX: (978) 226-5586

Job:	***CT 5463 LTE 2C Dayville, CT***		
Project:	***150 ft Monopole***		
Client: AT&T	Drawn by: kw		App'd:
Code: TIA/EIA-222-F	Date: 04/21/15		Scale: NTS
Path:			Dwg No. E-1

Centek Engineering, Inc.
3-2 North Branford Road
Branford, Connecticut 06405
Phone: (203) 488-0580
Fax: (203) 488-8587

Steven L. Levine
Real Estate Consultant

April 23, 2015

Sean Hendricks, Town Manager
Town of Killingly
Town Hall 172 Main Street
Killingly, CT 06239

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 79 Putnam Pike, Killingly

Dear Mr. Hendricks:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and Long Term Evolution ("LTE") capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review AT&T's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The enclosed Notice fully sets forth the AT&T proposal. However, if you have any questions or require any further information on the plans for the site or the Siting Council's procedures, please contact the undersigned at 860-830-0380 or Ms. Melanie Bachman, Acting Executive Director, Connecticut Siting Council at (860) 827-2935

Sincerely,

Steven L. Levine
Real Estate Consultant

Enclosure

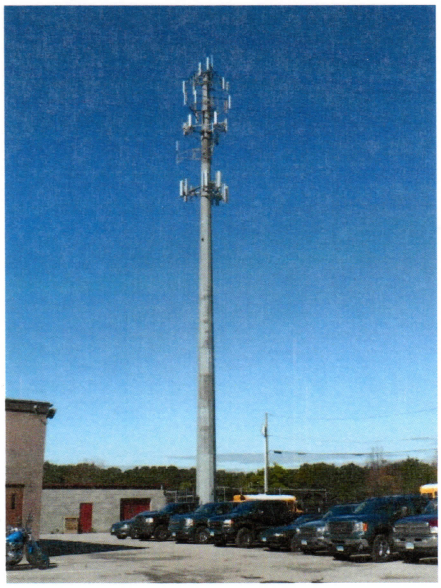
STRUCTURAL ANALYSIS REPORT

For

CT5463
KILLINGLY NORTH

79 Putnam Pike
Dayville, CT 06241

Antennas Mounted to the Monopole



Prepared for:

SAI

at&t

500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

Dated: April 21, 2015

Prepared by:

Hudson Design Group LLC

1600 Osgood Street Bldg. 20N Suite 3090
North Andover, MA 01845
(P) 978.557.5553 (F) 978.336.5586
www.hudsondesigngroupllc.com

STATE OF CONNECTICUT
GI KAI WANG
No. 28220
LICENSED
PROFESSIONAL ENGINEER

4/21/2015

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the 150' monopole supporting the proposed AT&T's antennas located at elevation 130' above the ground level.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's existing and proposed antennas listed below.

Manufacturer drawing of the existing monopole prepared by Fred A. Nudd Corporation, dated July 24, 1998 was available and obtained for our use. This office conducted an on-site visual survey and tower mapping on October 1, 2012 to record dimensional properties of the existing monopole and its appurtenances.

The previous structural analysis report prepared by Centek Engineering, dated August 8, 2014, was provided to this office.

The previous structural analysis report prepared by EBI Consulting, dated February 12, 2015, was provided to this office.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing monopole **is in conformance** with the ANSI/TIA-222-F Standard for the loading considered under the criteria listed in this report. The monopole structure is rated at **90.6%** - (Pole Section L6 from El.40' to El.51' Controlling).

APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
	Lightning Rod	152.5'	Top of Monopole
	(2) 4' Omni	153'	10.5' Pipe
T-MOBILE	(3) RV90-17-02DP Antennas	150'	12' T-Frame
T-MOBILE	(3) TMA	150'	12' T-Frame
T-MOBILE	(3) LNX-6515DS-VTM Antennas	148'	12' T-Frame
	(6) DB980H90E-M Antennas	138'	12' T-Frame
AT&T	(3) Powerwave 7770 Antennas	130'	Low Profile Platform
AT&T	(6) LGP21401 TMA	130'	Low Profile Platform
AT&T	(6) LGP21901 Diplexers	130'	Low Profile Platform
AT&T	(3) RRUS-11	130'	Low Profile Platform
AT&T	Surge Arrestor DC6-48-60-18-8F	130'	Low Profile Platform
AT&T	***(6) OPA-65R-LCUU-H8 Antennas***	130'	Low Profile Platform
AT&T	***(3) RRUS-12***	130'	Low Profile Platform
AT&T	***(6) RRUS-32***	130'	Low Profile Platform
AT&T	***(3) A2 Module***	130'	Low Profile Platform
	4' Omni	124.3'	6' Side Mount Standoff
	4' Omni	123.7'	6' Side Mount Standoff
VERIZON	(6) X7C-FRO-660 Antennas	108'	Low Profile Platform
VERIZON	(6) HBXX-6517DS-VTM Antennas	108'	Low Profile Platform
VERIZON	(3) RRH2X40-07-U	108'	Low Profile Platform
VERIZON	(3) RRH2X40 AWS	108'	Low Profile Platform
VERIZON	(3) RRH2X60 PCS	108'	Low Profile Platform
VERIZON	(2) DB-T1-6Z-8AB-0Z	108'	Low Profile Platform

Proposed AT&T Appurtenances shown in Bold.

AT&T EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
AT&T	(12) 1 5/8" Cables	130'	Inside Monopole
AT&T	Fiber Cable	130'	Inside Monopole
AT&T	(2) DC Power Cables	130'	Inside Monopole

Proposed AT&T Coax Cables shown in Bold.

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
Pole Section-L1	13.7 %	130 – 150	PASS	
Pole Section-L2	48.4 %	115 – 130	PASS	
Pole Section-L3	54.9 %	95 – 115	PASS	
Pole Section-L4	68.7 %	91 – 95	PASS	
Pole Section-L5	77.3 %	51 – 91	PASS	
Pole Section-L6	**90.6 %**	40 – 51	PASS	**Controlling**
Pole Section-L7	76.6 %	19 – 40	PASS	
Pole Section-L8	88.6 %	0 – 19	PASS	

DESIGN CRITERIA:

1. EIA/TIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

   County: Windham
   Wind Load: 85 mph (fastest mile)
   105 mph (3 second gust)
   Nominal Ice Thickness: 1/2 inch

2. Approximate height above grade to proposed antennas: 130'

***Calculations and referenced documents are attached.**

ASSUMPTIONS:

1. The monopole and foundation are properly constructed and maintained. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.

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SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed antennas and RRHs be mounted on the existing steel platform supported by the monopole.

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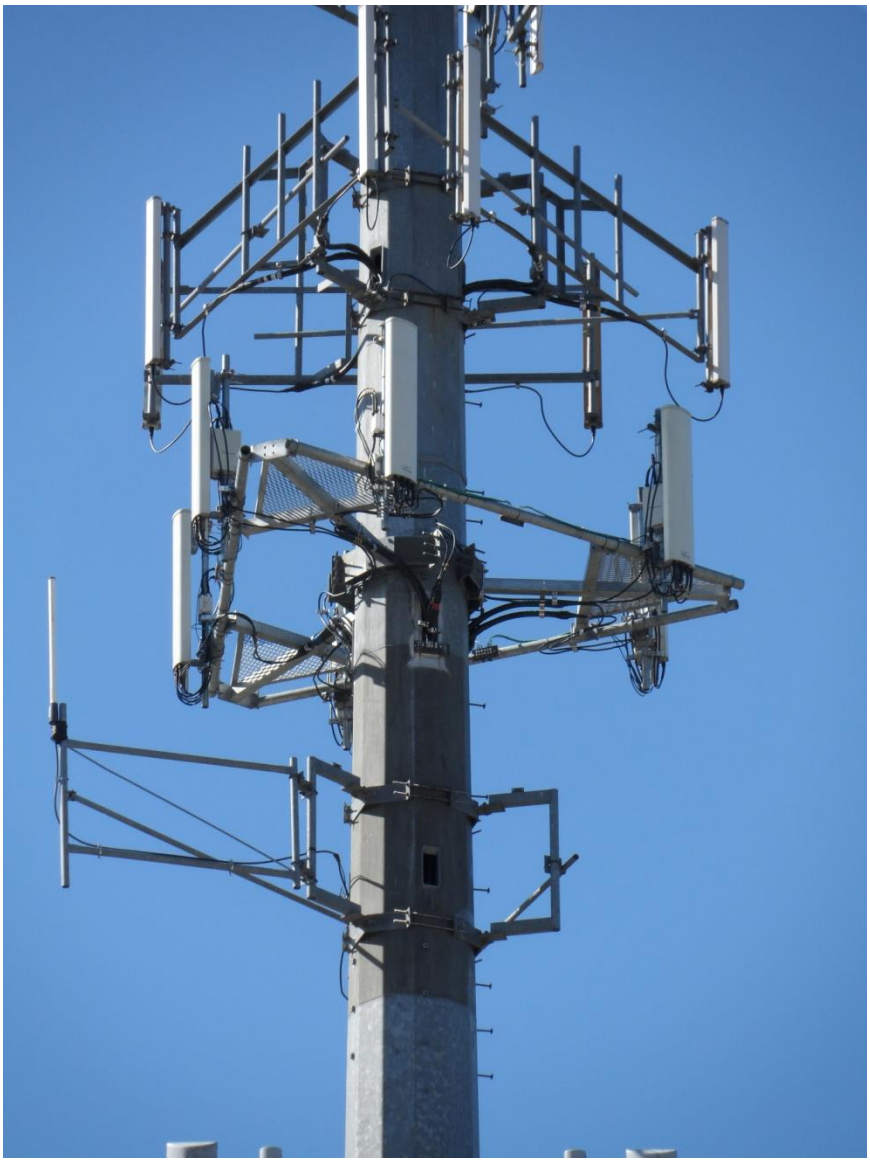

Photo 1: Photo illustrating the monopole with Appurtenances shown.

Hudson Design Group LLC

CALCULATIONS

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	20.00	12	0.2500	5.00	27.8125	34.3125		1688.1
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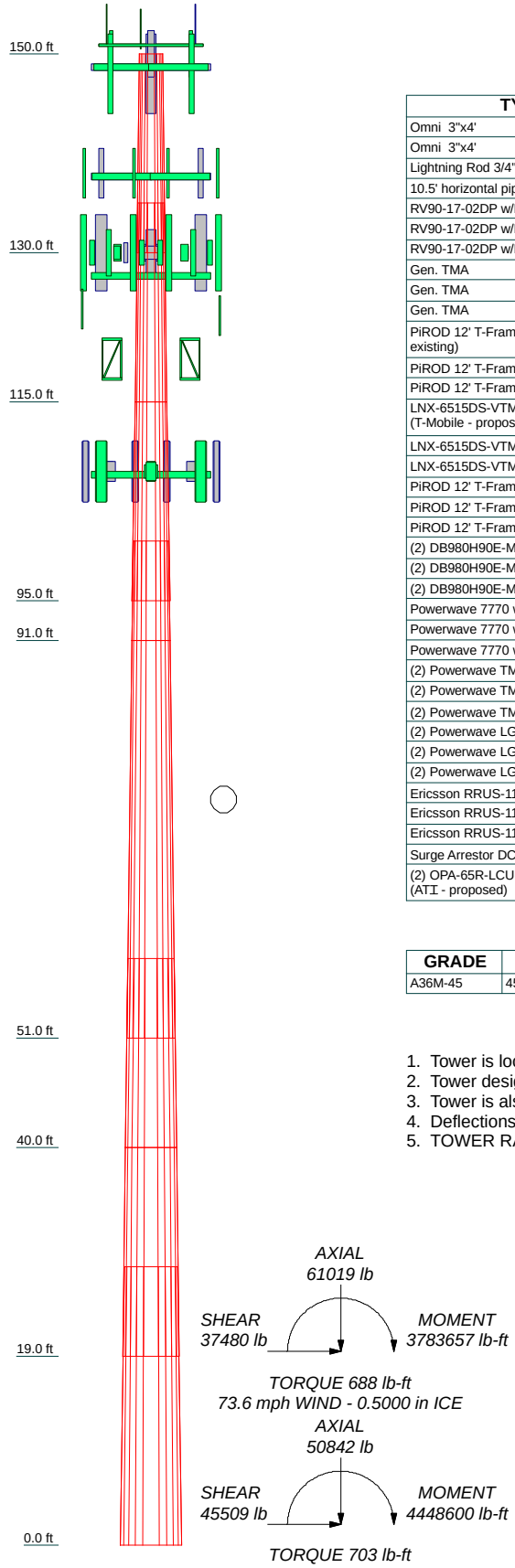

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RV90-17-02DP w/Mount Pipe	150	(2) Ericsson RRUS-32	130
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(2) DB980H90E-M w/Mount Pipe	138	(2) HBXX-6517DS-VTM w/ Mount Pipe	108
Powerwave 7770 w/mount pipe	130	(2) HBXX-6517DS-VTM w/ Mount Pipe	108
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(2) Powerwave TMA LGP21401	130	RRH2X40-07-U	108
(2) Powerwave TMA LGP21401	130	RRH2X40 AWS	108
(2) Powerwave LGP21900	130	RRH2X40 AWS	108
(2) Powerwave LGP21900	130	RRH2X40 AWS	108
(2) Powerwave LGP21900	130	RRH2x60 PCS	108
Ericsson RRUS-11	130	RRH2x60 PCS	108
Ericsson RRUS-11	130	RRH2x60 PCS	108
Ericsson RRUS-11	130	RFS DB-T1-6Z-8AB-0Z	108
Surge Arrestor DC6-48-60-18-8F	130	RFS DB-T1-6Z-8AB-0Z	108
(2) OPA-65R-LCUU-H8 w/mount pipe (ATI - proposed)	130		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36M-45	45 ksi	60 ksi			

TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for a 85.0 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 73.6 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50.0 mph wind.
5. TOWER RATING: 90.6%

Hudson Design Group LLC
1600 Osgood Street Bldg. 20N Suite 3090
North Andover, MA 01845
Phone: (978) 557-5553
FAX: (978) 226-5586

Job:	***CT 5463 LTE 2C Dayville, CT***		
Project:	***150 ft Monopole***		
Client: AT&T	Drawn by: kw		App'd:
Code: TIA/EIA-222-F	Date: 04/21/15		Scale: NTS
Path:			Dwg No. E-1

Hudson Design Group LLC
1600 Osgood Street Bldg. 20N Suite 3090
North Andover, MA 01845
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Job	Page
CT 5463 LTE 2C Dayville, CT	1 of 9
Project	**Date**
150 ft Monopole	10:25:25 04/21/15
Client	**Designed by**
AT&T	kw

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Windham County, Connecticut.
Basic wind speed of 85.0 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56.0 pcf.
A wind speed of 73.6 mph is used in combination with ice.
Temperature drop of 50.0 °F.
Deflections calculated using a wind speed of 50.0 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
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	150.00-130.00	20.00	5.00	12	27.8125	34.3125	0.2500	1.0000	A36M-45 (45 ksi)
L2	130.00-115.00	20.00	0.00	12	32.1875	38.6875	0.2500	1.0000	A36M-45 (45 ksi)
L3	115.00-95.00	20.00	6.00	12	38.6875	45.1875	0.3125	1.2500	A36M-45 (45 ksi)
L4	95.00-91.00	10.00	0.00	12	42.6125	45.8125	0.3125	1.2500	A36M-45 (45 ksi)
L5	91.00-51.00	40.00	8.00	12	45.8125	58.8750	0.3750	1.5000	A36M-45 (45 ksi)
L6	51.00-40.00	19.00	0.00	12	55.5125	61.6875	0.3750	1.5000	A36M-45 (45 ksi)
L7	40.00-19.00	21.00	9.00	12	61.6875	68.5000	0.4375	1.7500	A36M-45 (45 ksi)
L8	19.00-0.00	28.00		12	64.7054	73.8125	0.4375	1.7500	A36M-45 (45 ksi)

Feed Line/Linear Appurtenances - Entered As Area

Description	*Face or Leg*	*Allow Shield*	*Component Type*	*Placement* *ft*	*Total Number*		C_AA_A *ft²/ft*	*Weight* *plf*
7/8	A	No	Inside Pole	150.00 - 7.00	2	No Ice	0.00	0.54
						1/2" Ice	0.00	0.54
1 5/8 (T-Mobile)	A	No	Inside Pole	149.00 - 7.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1 5/8	A	No	Inside Pole	138.00 - 7.00	6	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
**********								
1 5/8	A	No	Inside Pole	130.00 - 7.00	12	No Ice	0.00	1.04

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Job	Page
CT 5463 LTE 2C Dayville, CT	2 of 9
Project	**Date**
150 ft Monopole	10:25:25 04/21/15
Client	**Designed by**
AT&T	kw

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
(AT&T - existing)						1/2" Ice	0.00	1.04
FB-L98B-002	A	No	Inside Pole	130.00 - 7.00	1	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25
WR-VG122ST-BRDA	A	No	Inside Pole	130.00 - 7.00	2	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25
**********								
1/2	A	No	Inside Pole	120.00 - 7.00	2	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25
1 5/8 Fiber Cable (Verizon)	A	No	Inside Pole	108.00 - 7.00	2	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Lightning Rod 3/4"x6'	C	From Leg	0.00	0.0000	152.50	No Ice	0.45	0.45	30.00
			0.00			1/2" Ice	1.06	1.06	34.66
			0.00						
10.5' horizontal pipe	C	None		0.0000	150.90	No Ice	2.01	2.01	61.00
						1/2" Ice	2.73	2.73	490.04
Omni 3"x4'	C	From Leg	4.00	0.0000	153.00	No Ice	1.00	1.00	15.00
			0.00			1/2" Ice	1.25	1.25	23.96
			0.00						
Omni 3"x4'	B	From Face	4.00	0.0000	153.00	No Ice	1.00	1.00	15.00
			0.00			1/2" Ice	1.25	1.25	23.96
			0.00						
**********									
PiROD 12' T-Frame	A	From Leg	2.00	0.0000	149.00	No Ice	12.20	12.20	360.00
(T-Mobile - existing)			0.00			1/2" Ice	17.60	17.60	490.00
			0.00						
PiROD 12' T-Frame	B	From Leg	2.00	0.0000	149.00	No Ice	12.20	12.20	360.00
			0.00			1/2" Ice	17.60	17.60	490.00
			0.00						
PiROD 12' T-Frame	C	From Leg	2.00	0.0000	149.00	No Ice	12.20	12.20	360.00
			0.00			1/2" Ice	17.60	17.60	490.00
			0.00						
RV90-17-02DP w/Mount Pipe	A	From Leg	3.50	0.0000	150.00	No Ice	4.91	3.64	43.55
			0.00			1/2" Ice	5.57	4.70	84.46
			0.00						
RV90-17-02DP w/Mount Pipe	B	From Leg	3.50	0.0000	150.00	No Ice	4.91	3.64	43.55
			0.00			1/2" Ice	5.57	4.70	84.46
			0.00						
RV90-17-02DP w/Mount Pipe	C	From Leg	3.50	0.0000	150.00	No Ice	4.91	3.64	43.55
			0.00			1/2" Ice	5.57	4.70	84.46
			0.00						
Gen. TMA	A	From Leg	3.50	0.0000	150.00	No Ice	0.68	0.45	13.20
			0.00			1/2" Ice	0.80	0.56	18.38
			0.00						
Gen. TMA	B	From Leg	3.50	0.0000	150.00	No Ice	0.68	0.45	13.20
			0.00			1/2" Ice	0.80	0.56	18.38
			0.00						
Gen. TMA	C	From Leg	3.50	0.0000	150.00	No Ice	0.68	0.45	13.20

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Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		*C_AA_A Front* ft^2	*C_AA_A Side* ft^2	*Weight* lb
			0.00 0.00			1/2" Ice	0.80	0.56	18.38
**********									
LNX-6515DS-VTM w/ Mount Pipe	A	From Leg	3.50 0.00	0.0000	148.00	No Ice 1/2" Ice	11.67 12.39	9.83 11.35	83.15 172.72
(T-Mobile - proposed)			0.00						
LNX-6515DS-VTM w/ Mount Pipe	B	From Leg	3.50 0.00	0.0000	148.00	No Ice 1/2" Ice	11.67 12.39	9.83 11.35	83.15 172.72
			0.00						
LNX-6515DS-VTM w/ Mount Pipe	C	From Leg	3.50 0.00	0.0000	148.00	No Ice 1/2" Ice	11.67 12.39	9.83 11.35	83.15 172.72
			0.00						
**********									
PiROD 12' T-Frame	A	From Leg	2.00 0.00	0.0000	138.00	No Ice 1/2" Ice	12.20 17.60	12.20 17.60	360.00 490.00
			0.00						
PiROD 12' T-Frame	B	From Leg	2.00 0.00	0.0000	138.00	No Ice 1/2" Ice	12.20 17.60	12.20 17.60	360.00 490.00
			0.00						
PiROD 12' T-Frame	C	From Leg	2.00 0.00	0.0000	138.00	No Ice 1/2" Ice	12.20 17.60	12.20 17.60	360.00 490.00
			0.00						
(2) DB980H90E-M w/Mount Pipe	A	From Leg	3.50 0.00	0.0000	138.00	No Ice 1/2" Ice	4.27 4.86	3.86 4.95	34.05 72.67
			0.00						
(2) DB980H90E-M w/Mount Pipe	B	From Leg	3.50 0.00	0.0000	138.00	No Ice 1/2" Ice	4.27 4.86	3.86 4.95	34.05 72.67
			0.00						
(2) DB980H90E-M w/Mount Pipe	C	From Leg	3.50 0.00	0.0000	138.00	No Ice 1/2" Ice	4.27 4.86	3.86 4.95	34.05 72.67
			0.00						
**********									
14' Low Profile Platform	A	None		0.0000	128.00	No Ice 1/2" Ice	17.30 22.10	17.30 22.10	1500.00 2030.00
(AT&T - existing)									
Powerwave 7770 w/mount pipe	A	From Leg	3.50 0.00	0.0000	130.00	No Ice 1/2" Ice	6.02 6.47	4.10 4.75	57.25 103.17
			0.00						
Powerwave 7770 w/mount pipe	B	From Leg	3.50 0.00	0.0000	130.00	No Ice 1/2" Ice	6.02 6.47	4.10 4.75	57.25 103.17
			0.00						
Powerwave 7770 w/mount pipe	C	From Leg	3.50 0.00	0.0000	130.00	No Ice 1/2" Ice	6.02 6.47	4.10 4.75	57.25 103.17
			0.00						
(2) Powerwave TMA LGP21401	A	From Leg	2.50 0.00	0.0000	130.00	No Ice 1/2" Ice	1.23 1.38	0.41 0.52	14.10 21.29
			0.00						
(2) Powerwave TMA LGP21401	B	From Leg	2.50 0.00	0.0000	130.00	No Ice 1/2" Ice	1.23 1.38	0.41 0.52	14.10 21.29
			0.00						
(2) Powerwave TMA LGP21401	C	From Leg	2.50 0.00	0.0000	130.00	No Ice 1/2" Ice	1.23 1.38	0.41 0.52	14.10 21.29
			0.00						
(2) Powerwave LGP21900	A	From Leg	2.50 0.00	0.0000	130.00	No Ice 1/2" Ice	0.23 0.30	0.12 0.17	5.50 7.70
			0.00						
(2) Powerwave LGP21900	B	From Leg	2.50 0.00	0.0000	130.00	No Ice 1/2" Ice	0.23 0.30	0.12 0.17	5.50 7.70

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Job	Page
CT 5463 LTE 2C Dayville, CT	4 of 9
Project	**Date**
150 ft Monopole	10:25:25 04/21/15
Client	**Designed by**
AT&T	kw

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* lb
			0.00						
(2) Powerwave LGP21900	C	From Leg	2.50	0.0000	130.00	No Ice	0.23	0.12	5.50
			0.00			1/2" Ice	0.30	0.17	7.70
			0.00						
Ericsson RRUS-11	A	From Leg	2.50	0.0000	130.00	No Ice	3.26	1.38	50.70
			0.00			1/2" Ice	3.50	1.56	71.57
			0.00						
Ericsson RRUS-11	B	From Leg	2.50	0.0000	130.00	No Ice	3.26	1.38	50.70
			0.00			1/2" Ice	3.50	1.56	71.57
			0.00						
Ericsson RRUS-11	C	From Leg	2.50	0.0000	130.00	No Ice	3.26	1.38	50.70
			0.00			1/2" Ice	3.50	1.56	71.57
			0.00						
Surge Arrestor	A	From Face	1.50	0.0000	130.00	No Ice	1.27	1.27	20.00
DC6-48-60-18-8F			0.00			1/2" Ice	1.46	1.46	35.12
			0.00						
**********									
(2) OPA-65R-LCUU-H8	A	From Leg	3.50	0.0000	130.00	No Ice	13.34	9.83	140.11
w/mount pipe			0.00			1/2" Ice	14.18	11.34	239.33
(AT&T - proposed)			0.00						
(2) OPA-65R-LCUU-H8	B	From Leg	3.50	0.0000	130.00	No Ice	13.34	9.83	140.11
w/mount pipe			0.00			1/2" Ice	14.18	11.34	239.33
			0.00						
(2) OPA-65R-LCUU-H8	C	From Leg	3.50	0.0000	130.00	No Ice	13.34	9.83	140.11
w/mount pipe			0.00			1/2" Ice	14.18	11.34	239.33
			0.00						
Ericsson RRUS-12	A	From Leg	2.50	0.0000	130.00	No Ice	3.67	1.49	58.00
			0.00			1/2" Ice	3.93	1.67	81.22
			0.00						
Ericsson RRUS-12	B	From Leg	2.50	0.0000	130.00	No Ice	3.67	1.49	58.00
			0.00			1/2" Ice	3.93	1.67	81.22
			0.00						
Ericsson RRUS-12	C	From Leg	2.50	0.0000	130.00	No Ice	3.67	1.49	58.00
			0.00			1/2" Ice	3.93	1.67	81.22
			0.00						
(2) Ericsson RRUS-32	A	From Leg	2.50	0.0000	130.00	No Ice	3.87	2.76	77.00
			0.00			1/2" Ice	4.15	3.02	104.93
			0.00						
(2) Ericsson RRUS-32	B	From Leg	2.50	0.0000	130.00	No Ice	3.87	2.76	77.00
			0.00			1/2" Ice	4.15	3.02	104.93
			0.00						
(2) Ericsson RRUS-32	C	From Leg	2.50	0.0000	130.00	No Ice	3.87	2.76	77.00
			0.00			1/2" Ice	4.15	3.02	104.93
			0.00						
Ericsson A2 Module	A	From Leg	2.50	0.0000	130.00	No Ice	2.42	0.54	22.00
			0.00			1/2" Ice	2.63	0.67	34.73
			0.00						
Ericsson A2 Module	B	From Leg	2.50	0.0000	130.00	No Ice	2.42	0.54	22.00
			0.00			1/2" Ice	2.63	0.67	34.73
			0.00						
Ericsson A2 Module	C	From Leg	2.50	0.0000	130.00	No Ice	2.42	0.54	22.00
			0.00			1/2" Ice	2.63	0.67	34.73
			0.00						
**********									
Pirod 6' Side Mount Standoff	C	From Leg	3.00	0.0000	119.30	No Ice	4.97	4.97	70.00
(1)			0.00			1/2" Ice	6.12	6.12	130.00
			0.00						

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Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* lb
Omni 3"x4'	C	From Leg	6.50 0.00 0.00	0.0000	124.30	No Ice 1/2" Ice	1.00 1.25	1.00 1.25	15.00 23.96
Pirod 6' Side Mount Standoff (1)	B	From Leg	3.00 0.00 0.00	0.0000	119.30	No Ice 1/2" Ice	4.97 6.12	4.97 6.12	70.00 130.00
Omni 3"x4'	B	From Leg	6.50 0.00 0.00	0.0000	123.70	No Ice 1/2" Ice	1.00 1.25	1.00 1.25	15.00 23.96
2' Side Mount Standoff	A	From Leg	1.00 0.00 0.00	0.0000	119.30	No Ice 1/2" Ice	1.00 1.50	1.00 1.50	30.00 50.00
**********									
14' Low Profile Platform	A	None		0.0000	108.00	No Ice 1/2" Ice	17.30 22.10	17.30 22.10	1500.00 2030.00
(2) CSS X7C FRO-660 w/mount pipe	A	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	10.46 11.13	7.53 8.72	57.75 135.86
(2) CSS X7C FRO-660 w/mount pipe	B	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	10.46 11.13	7.53 8.72	57.75 135.86
(2) CSS X7C FRO-660 w/mount pipe	C	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	10.46 11.13	7.53 8.72	57.75 135.86
(2) HBXX-6517DS-VTM w/ Mount Pipe	A	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	8.92 9.56	6.91 8.10	68.55 137.54
(2) HBXX-6517DS-VTM w/ Mount Pipe	B	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	8.92 9.56	6.91 8.10	68.55 137.54
(2) HBXX-6517DS-VTM w/ Mount Pipe	C	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	8.92 9.56	6.91 8.10	68.55 137.54
RRH2X40-07-U	A	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	2.29 2.49	1.21 1.36	50.00 66.78
RRH2X40-07-U	B	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	2.29 2.49	1.21 1.36	50.00 66.78
RRH2X40-07-U	C	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	2.29 2.49	1.21 1.36	50.00 66.78
RRH2X40 AWS	A	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	2.52 2.75	1.59 1.80	44.00 61.40
RRH2X40 AWS	B	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	2.52 2.75	1.59 1.80	44.00 61.40
RRH2X40 AWS	C	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	2.52 2.75	1.59 1.80	44.00 61.40
RRH2x60 PCS	A	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	2.51 2.73	1.55 1.74	55.00 72.75
RRH2x60 PCS	B	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	2.51 2.73	1.55 1.74	55.00 72.75

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RRH2x60 PCS	C	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	2.51 2.73	1.55 1.74	55.00 72.75
RFS DB-T1-6Z-8AB-0Z	A	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	5.60 5.92	2.33 2.56	44.00 80.13
RFS DB-T1-6Z-8AB-0Z	B	From Face	3.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	5.60 5.92	2.33 2.56	44.00 80.13

Load Combinations

Comb. No.	*Description*
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

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Maximum Reactions

Location	*Condition*	*Gov. Load Comb.*	*Vertical lb*	*Horizontal, X lb*	*Horizontal, Z lb*
Pole	Max. Vert	24	61019.03	37480.43	0.00
	Max. H_x	11	50842.25	45508.97	-0.00
	Max. H_z	2	50842.25	0.00	45365.69
	Max. M_x	2	4432722.95	0.00	45365.69
	Max. M_z	5	4448434.17	-45508.97	-0.00
	Max. Torsion	11	703.03	45508.97	-0.00
	Min. Vert	36	50842.25	15747.05	0.00
	Min. H_x	5	50842.25	-45508.97	-0.00
	Min. H_z	8	50842.25	0.00	-45365.69
	Min. M_x	8	-4433015.80	0.00	-45365.69
	Min. M_z	11	-4448599.69	45508.97	-0.00
	Min. Torsion	5	-703.03	-45508.97	-0.00

Tower Mast Reaction Summary

Load Combination	*Vertical lb*	*Shear$_x$ lb*	*Shear$_z$ lb*	*Overturning Moment, M_x lb-ft*	*Overturning Moment, M_z lb-ft*	*Torque lb-ft*
Dead Only	50842.25	0.00	0.00	142.99	80.75	0.00
Dead+Wind 0 deg - No Ice	50842.25	-0.00	-45365.69	-4432722.95	82.64	-173.48
Dead+Wind 30 deg - No Ice	50842.25	22754.49	-39287.84	-3838829.94	-2224178.09	201.26
Dead+Wind 60 deg - No Ice	50842.25	39411.93	-22682.85	-2216286.36	-3852447.26	522.08
Dead+Wind 90 deg - No Ice	50842.25	45508.97	0.00	145.72	-4448434.17	703.03
Dead+Wind 120 deg - No Ice	50842.25	39411.93	22682.85	2216578.16	-3852447.86	695.61
Dead+Wind 150 deg - No Ice	50842.25	22754.49	39287.84	3839122.44	-2224178.69	501.78
Dead+Wind 180 deg - No Ice	50842.25	-0.00	45365.69	4433015.80	82.64	173.48
Dead+Wind 210 deg - No Ice	50842.25	-22754.49	39287.84	3839122.54	2224344.03	-201.30
Dead+Wind 240 deg - No Ice	50842.25	-39411.93	22682.85	2216578.26	3852613.32	-522.13
Dead+Wind 270 deg - No Ice	50842.25	-45508.97	0.00	145.72	4448599.69	-703.03
Dead+Wind 300 deg - No Ice	50842.25	-39411.93	-22682.85	-2216286.46	3852612.71	-695.56
Dead+Wind 330 deg - No Ice	50842.25	-22754.49	-39287.84	-3838830.04	2224343.42	-501.73
Dead+Ice+Temp	61019.03	0.00	0.00	247.21	123.71	0.00
Dead+Wind 0 deg+Ice+Temp	61019.03	0.00	-37369.98	-3771163.20	127.89	-171.17
Dead+Wind 30 deg+Ice+Temp	61019.03	18740.21	-32363.35	-3265888.13	-1891637.83	195.64
Dead+Wind 60 deg+Ice+Temp	61019.03	32459.00	-18684.99	-1885452.70	-3276504.97	510.04
Dead+Wind 90 deg+Ice+Temp	61019.03	37480.43	-0.00	255.14	-3783401.24	687.79
Dead+Wind 120 deg+Ice+Temp	61019.03	32459.00	18684.99	1885963.39	-3276505.66	681.25
Dead+Wind 150 deg+Ice+Temp	61019.03	18740.21	32363.35	3266399.61	-1891638.52	492.16
Dead+Wind 180 deg+Ice+Temp	61019.03	0.00	37369.98	3771675.07	127.89	171.18
Dead+Wind 210 deg+Ice+Temp	61019.03	-18740.21	32363.35	3266399.74	1891894.37	-195.67
Dead+Wind 240 deg+Ice+Temp	61019.03	-32459.00	18684.99	1885963.51	3276761.66	-510.07
Dead+Wind 270 deg+Ice+Temp	61019.03	-37480.43	-0.00	255.14	3783657.31	-687.78
Dead+Wind 300 deg+Ice+Temp	61019.03	-32459.00	-18684.99	-1885452.83	3276760.97	-681.21
Dead+Wind 330 deg+Ice+Temp	61019.03	-18740.21	-32363.35	-3265888.26	1891893.69	-492.12
Dead+Wind 0 deg - Service	50842.25	0.00	-15697.47	-1534033.54	82.84	-60.14
Dead+Wind 30 deg - Service	50842.25	7873.52	-13594.41	-1328492.29	-769716.10	69.78
Dead+Wind 60 deg - Service	50842.25	13637.35	-7848.74	-766943.27	-1333247.94	180.99
Dead+Wind 90 deg - Service	50842.25	15747.05	-0.00	146.82	-1539514.90	243.72
Dead+Wind 120 deg - Service	50842.25	13637.35	7848.74	767236.95	-1333248.01	241.14
Dead+Wind 150 deg - Service	50842.25	7873.52	13594.41	1328786.04	-769716.17	173.95
Dead+Wind 180 deg - Service	50842.25	0.00	15697.47	1534327.34	82.84	60.14
Dead+Wind 210 deg - Service	50842.25	-7873.52	13594.41	1328786.06	769881.85	-69.78
Dead+Wind 240 deg - Service	50842.25	-13637.35	7848.74	767236.96	1333413.70	-181.00

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Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead+Wind 270 deg - Service	50842.25	-15747.05	-0.00	146.82	1539680.60	-243.72
Dead+Wind 300 deg - Service	50842.25	-13637.35	-7848.74	-766943.28	1333413.63	-241.13
Dead+Wind 330 deg - Service	50842.25	-7873.52	-13594.41	-1328492.30	769881.78	-173.94

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	lb	lb	lb	lb	lb	lb	
1	0.00	-50842.25	0.00	0.00	50842.25	0.00	0.000%
2	0.00	-50842.25	-45365.69	0.00	50842.25	45365.69	0.000%
3	22754.49	-50842.25	-39287.84	-22754.49	50842.25	39287.84	0.000%
4	39411.93	-50842.25	-22682.85	-39411.93	50842.25	22682.85	0.000%
5	45508.97	-50842.25	0.00	-45508.97	50842.25	-0.00	0.000%
6	39411.93	-50842.25	22682.85	-39411.93	50842.25	-22682.85	0.000%
7	22754.49	-50842.25	39287.84	-22754.49	50842.25	-39287.84	0.000%
8	0.00	-50842.25	45365.69	0.00	50842.25	-45365.69	0.000%
9	-22754.49	-50842.25	39287.84	22754.49	50842.25	-39287.84	0.000%
10	-39411.93	-50842.25	22682.85	39411.93	50842.25	-22682.85	0.000%
11	-45508.97	-50842.25	0.00	45508.97	50842.25	-0.00	0.000%
12	-39411.93	-50842.25	-22682.85	39411.93	50842.25	22682.85	0.000%
13	-22754.49	-50842.25	-39287.84	22754.49	50842.25	39287.84	0.000%
14	0.00	-61019.03	0.00	0.00	61019.03	0.00	0.000%
15	0.00	-61019.03	-37369.98	-0.00	61019.03	37369.98	0.000%
16	18740.21	-61019.03	-32363.35	-18740.21	61019.03	32363.35	0.000%
17	32459.00	-61019.03	-18684.99	-32459.00	61019.03	18684.99	0.000%
18	37480.42	-61019.03	0.00	-37480.43	61019.03	0.00	0.000%
19	32459.00	-61019.03	18684.99	-32459.00	61019.03	-18684.99	0.000%
20	18740.21	-61019.03	32363.35	-18740.21	61019.03	-32363.35	0.000%
21	0.00	-61019.03	37369.98	-0.00	61019.03	-37369.98	0.000%
22	-18740.21	-61019.03	32363.35	18740.21	61019.03	-32363.35	0.000%
23	-32459.00	-61019.03	18684.99	32459.00	61019.03	-18684.99	0.000%
24	-37480.42	-61019.03	0.00	37480.43	61019.03	0.00	0.000%
25	-32459.00	-61019.03	-18684.99	32459.00	61019.03	18684.99	0.000%
26	-18740.21	-61019.03	-32363.35	18740.21	61019.03	32363.35	0.000%
27	0.00	-50842.25	-15697.47	0.00	50842.25	15697.47	0.000%
28	7873.52	-50842.25	-13594.41	-7873.52	50842.25	13594.41	0.000%
29	13637.34	-50842.25	-7848.74	-13637.35	50842.25	7848.74	0.000%
30	15747.05	-50842.25	0.00	-15747.05	50842.25	0.00	0.000%
31	13637.34	-50842.25	7848.74	-13637.35	50842.25	-7848.74	0.000%
32	7873.52	-50842.25	13594.41	-7873.52	50842.25	-13594.41	0.000%
33	0.00	-50842.25	15697.47	0.00	50842.25	-15697.47	0.000%
34	-7873.52	-50842.25	13594.41	7873.52	50842.25	-13594.41	0.000%
35	-13637.34	-50842.25	7848.74	13637.35	50842.25	-7848.74	0.000%
36	-15747.05	-50842.25	0.00	15747.05	50842.25	0.00	0.000%
37	-13637.34	-50842.25	-7848.74	13637.35	50842.25	7848.74	0.000%
38	-7873.52	-50842.25	-13594.41	7873.52	50842.25	13594.41	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	150 - 130	14.3694	36	0.8255	0.0007

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L2	135 - 115	11.7927	36	0.8092	0.0006
L3	115 - 95	8.5382	36	0.7240	0.0005
L4	101 - 91	6.5376	36	0.6366	0.0003
L5	91 - 51	5.2507	36	0.5811	0.0002
L6	59 - 40	2.1410	36	0.3439	0.0001
L7	40 - 19	0.9671	36	0.2279	0.0001
L8	28 - 0	0.4930	36	0.1497	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
153.00	Omni 3"x4'	36	14.3694	0.8255	0.0007	98163
152.50	Lightning Rod 3/4"x6'	36	14.3694	0.8255	0.0007	98163
150.90	10.5' horizontal pipe	36	14.3694	0.8255	0.0007	98163
150.00	RV90-17-02DP w/Mount Pipe	36	14.3694	0.8255	0.0007	98163
149.00	PiROD 12' T-Frame	36	14.1967	0.8250	0.0007	98163
148.00	LNX-6515DS-VTM w/ Mount Pipe	36	14.0241	0.8244	0.0007	98163
138.00	PiROD 12' T-Frame	36	12.3041	0.8149	0.0007	40689
130.00	Powerwave 7770 w/mount pipe	36	10.9487	0.7952	0.0006	18955
128.00	14' Low Profile Platform	36	10.6151	0.7881	0.0006	16222
124.30	Omni 3"x4'	36	10.0062	0.7728	0.0006	12803
123.70	Omni 3"x4'	36	9.9086	0.7701	0.0006	12380
119.30	Pirod 6' Side Mount Standoff (1)	36	9.2041	0.7483	0.0005	9967
108.00	14' Low Profile Platform	36	7.5079	0.6799	0.0004	9794

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
L1	150 - 130	Pole	TP34.3125x27.8125x0.25	1	-4001.01	939803.62	13.7	Pass
L2	130 - 115	Pole	TP38.6875x32.1875x0.25	2	-10323.40	1072699.71	48.4	Pass
L3	115 - 95	Pole	TP45.1875x38.6875x0.3125	3	-15358.80	1554571.20	54.9	Pass
L4	95 - 91	Pole	TP45.8125x42.6125x0.3125	4	-18143.90	1632405.06	68.7	Pass
L5	91 - 51	Pole	TP58.875x45.8125x0.375	5	-26199.40	2378058.57	77.3	Pass
L6	51 - 40	Pole	TP61.6875x55.5125x0.375	6	-33471.80	2479259.93	90.6	Pass
L7	40 - 19	Pole	TP68.5x61.6875x0.4375	7	-37671.80	3235364.16	76.6	Pass
L8	19 - 0	Pole	TP73.8125x64.7054x0.4375	8	-50835.10	3408814.11	88.6	Pass
							Summary	
						Pole (L6)	90.6	Pass
						RATING =	**90.6**	**Pass**