

**EXHIBIT 3**  
**AUTHORIZATION OF PROPERTY OWNER**



# Town of Harpswell

P.O. Box 39

Harpswell, ME 04079

September 17, 2020

To the Harpswell Planning Board:

Whereas the Town is in the final stages of negotiating a long-term lease with Blue Sky Towers for a communications tower at Mitchell Field, and

Whereas the Harpswell Board of Selectmen expects the parties will have a signed agreement prior to the October 21, 2020 Planning Board meeting, and

Whereas the deadline for submitting a Planning Board application for consideration at the October 21, 2020 Planning Board meeting is September 30, 2020;

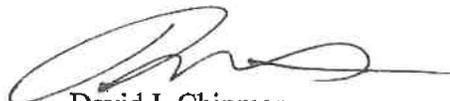
Therefore, the Harpswell Board of Selectmen authorizes Blue Sky to submit application material to the Harpswell Planning Board by September 30, 2020 in anticipation of the execution of a long-term lease between the Town of Harpswell and Blue Sky Towers III, LLC, prior to October 21, 2020,

AUTHORIZED THIS 17<sup>th</sup> DAY OF SEPTEMBER, 2020

HARPSWELL BOARD OF SELECTMEN



Kevin E. Johnson, Chair



David I. Chipman



Jane G. Covey

**EXHIBIT 4**  
**STATEMENT OF COMPLIANCE WITH FCC**  
**REGULATIONS**

September 28, 2020

Town of Harpswell  
Planning Board  
263 Mountain Road  
Harpswell, Maine 04079

**Re: Ordinance Section 7.2.2.2 - Statement of Compliance with FCC Regulations  
George J. Mitchell Field at 1410 Harpswell Neck Road**

Dear Board Members:

The Federal Communications Commission has promulgated rules and regulations that govern the installation of a new telecommunications tower. A new tower construction may require:

- Approval from the state or local governing authority for the proposed site;
- Compliance with FCC rules implementing the National Environmental Policy Act (NEPA), which includes separate procedures for the
- Endangered Species Act (ESA); and,
- National Historic Preservation Act (NHPA) (including Section 106).
- Depending on the tower's height and location, Federal Aviation Administration (FAA) notification; and,
- Antenna Structure Registration (ASR) with the FCC.

In compliance with Section 7.2.2.2 of the Wireless Telecommunications Facilities Ordinance, Blue Sky Towers III, LLC provides this signed statement attesting that the installation and operation of the telecommunications tower at George J. Mitchell Field at 1410 Harpswell Neck Road in the Town of Harpswell, Maine shall comply with all of the Commission's applicable rules and regulations including those implementing the (NEPA), other federal environmental statutes and related regulations pertaining to the Antenna Structure Registration (ASR) system.

If you have any questions, please don't hesitate to contact me at 978-543-0010. Thank you.

Sincerely,



Elizabeth Thompson  
General Counsel

**EXHIBIT 5**  
**FCC TOWER REGISTRATION DATABASE**



**EXHIBIT 6**  
**RADIO FREQUENCY EMISSION REPORT**

# ***DONALD L. HAES, JR., CHP, CLSO***

*Radiation Safety Specialist*

PO Box 198, Hampstead, NH 03841

617-680-6262

Email: donald\_haes\_chp@comcast.net

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September 7, 2020

**RE: Installation of radio base station antennas and associated equipment for the proposed Blue Sky Towers III, LLC lattice tower at 1410 Harpswell Neck Road, Harpswell, ME.**

## **PURPOSE**

I have reviewed the information pertinent to the proposed installation at the above location. To determine regulatory compliance, theoretical calculations of maximal radio-frequency (RF) fields have been prepared. The physical conditions are that AT&T proposes to install personal wireless services (PWS) directional panel antennas (several antennas each in three “arrays” aimed along three different azimuths) on a proposed Blue Sky Towers III, LLC lattice tower. For proposed location, see Figure 2. The lattice tower is proposed to be 199 feet tall, above ground level (AGL). The proposed installation will allow AT&T to continue deployment of their wireless telecommunication systems. The lattice tower will also host the town’s omni-directional “whip” antennas and is designed to host three additional PWS provider’s antennas (See Figure 3). This report includes not only the AT&T, but the hypothetical condition of being “loaded” to capacity.

This report considers the contributions of all the proposed AT&T and town of Harpswell, along with three additional hypothetical PWS transmitters operating at their typical FCC licensed capacities. The calculated values of RF fields are presented as a percent of current Maximum Permissible Exposures (%MPE) as adopted by the Federal Communications Commission (FCC).<sup>i,ii</sup>

## **SUMMARY**

Theoretical RF field calculations data indicate the summation of the proposed AT&T and town of Harpswell maximum PWS RF contributions would be within the established RF exposure guidelines; see Figure 4. The additional calculations also suggest that even if the lattice tower had three additional PWS provider’s antennas attached, the site would comply with all established RF exposure guidelines; see Figure 5.

This includes all publicly accessible areas, and the surrounding neighborhood in general. The results support compliance with the pertinent sections of the FCC’s Rules regarding PWS facilities, and the FCC’s guidelines for RF exposure.

Based on the results of the additional theoretical RF fields I have calculated, it is my expert opinion that this facility would comply with all regulatory guidelines for RF exposure.

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**Note:** The analyses, conclusions and professional opinions are based upon the precise parameters and conditions of this particular site; **Lattice tower at 1410 Harpswell Neck Road, Harpswell, ME.** Utilization of these analyses, conclusions and professional opinions for any personal wireless services installation, existing or proposed, other than the aforementioned has not been sanctioned by the author, and therefore should not be accepted as evidence of regulatory compliance.

## EXPOSURE LIMITS AND GUIDELINES

RF exposure guidelines enforced by the FCC were established by the American National Standards Institute (ANSI)<sup>iii</sup> and the National Council on Radiation Protection and Measurement (NCRP).<sup>iv</sup> The RF exposure guidelines are listed for RF workers and members of the public. The applicable FCC RF exposure guidelines for the public are listed in Table 1, and depicted in Figure 1. All listed values are intended to be averaged over any contiguous 30-minute period. Note that limits for “RF workers” are five times those listed in Table 1.

Table 1: Maximum Permissible Exposure (MPE) Values in Public Areas			
Frequency Bands	Electric Fields	Magnetic Fields	Equivalent Power Density
0.3 – 1.34 MHz	614 (V/m)	1.63 (A/m)	(100) mW/cm <sup>2</sup>
1.34 - 30 MHz	824/ <i>f</i> (V/m)	2.19/ <i>f</i> (A/m)	(100) mW/cm <sup>2</sup>
30 - 300 MHz	27.5 (V/m)	0.073 (A/m)	0.2 mW/cm <sup>2</sup>
300 - 1500 MHz	--	--	<i>f</i> / 1500 mW/cm <sup>2</sup>
1500 - 100,000	--	--	1.0 mW/cm <sup>2</sup>

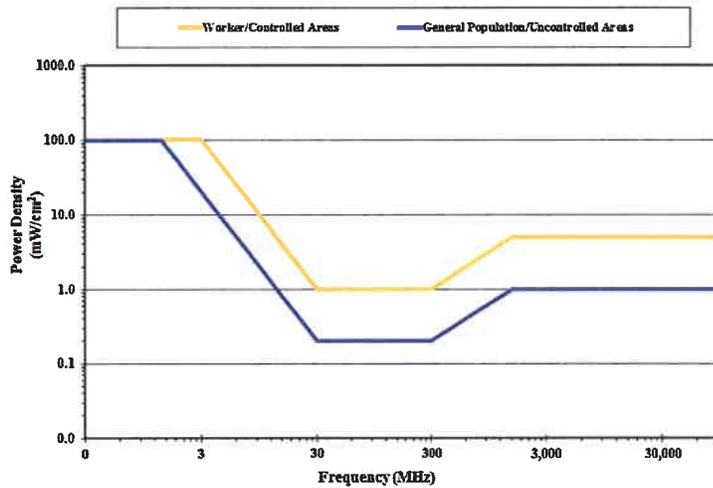


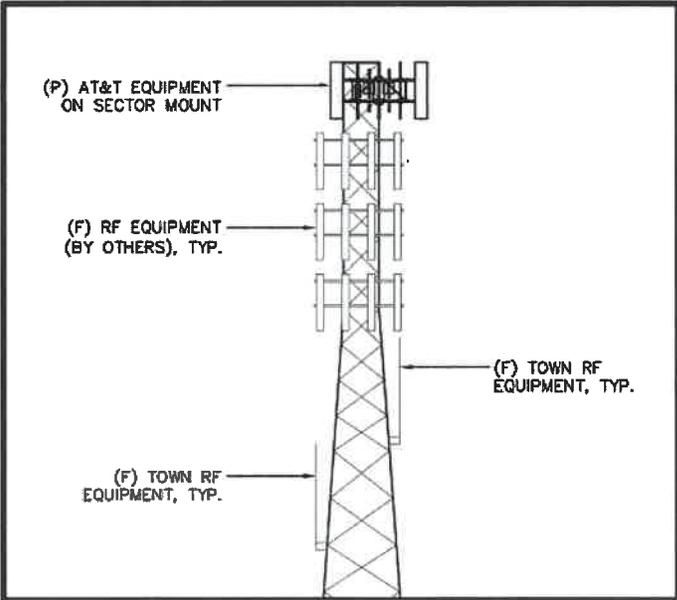
Figure 1: FCC Limits for Maximum Permissible Exposure (MPE)

**NOTE: FCC “5% Rule”** – When the exposure limits are exceeded in an accessible area due to the emissions from multiple fixed RF sources, actions necessary to bring the area into compliance are the shared responsibility of all licensees whose RF sources produce, at the area in question, levels that exceed 5% of the applicable exposure limit proportional to power. <sup>v</sup>

**FACILITY LOCATION AND BUILD-OUT**



**Figure 2: Proposed Lattice Tower Location  
1410 Harpswell Neck Road, Harpswell, ME**  
*(Picture courtesy Google Earth Pro® and may not represent current conditions.)*



**Figure 3: Hypothetical Loading of Lattice Tower  
1410 Harpswell Neck Road, Harpswell, ME**  
*(Picture courtesy PRO TERRA, LLC.)*

## INTRODUCTORY INFORMATION: MAKING SENSE OF THE “G”S

There are many references to the so-called “generation” of wireless technologies in use. Each new “generation” of wireless technologies has colloquially been designated a numbered “G”.<sup>1</sup> The latest “G” to come out, the fifth generation of wireless technologies or so called “5G”, has attracted extensive research interest, both inside and outside the scientific community. According to the 3<sup>rd</sup> generation partnership project,<sup>2</sup> 5G networks should support three major families of applications: (1) Enhanced mobile broadband; (2) Machine type communications, and (3) Ultra-reliable and low-latency communications. There are also enhanced “vehicle-to-everything” communications which are expected to be supported by 5G networks. These situations require much more “connectivity” than the latest fourth generation (aka “4G” or “Long Term Evolution (LTE)”) networks can handle.

Thus, new networks must be able to handle this high system throughput, in addition to supporting existing older technologies still in use. This is being accomplished through additional spectrum assignments both higher and lower than currently assigned frequencies used by PWS facilities. In fact, currently deployed 5G networks are operating at frequencies once used by television stations.

Nonetheless, frequencies assigned by the FCC for 5G use are all within the bands currently under regulatory oversight, including setting safe limits of exposure to RF energy for both workers, and members of the public. Just recently (4/2020) the FCC has reaffirmed the efficacy of their regulatory exposure limits to RF energy, including those for 5G. From an RF safety standpoint, there is nothing peculiar about the fifth generation of wireless technologies that would set it apart from any of the other advancements of technologies; including the first two generations (first analog then digital communications), the third generation (the first to be referred to a numbered-series as “3G”), and the currently deployed fourth generations (LTE). Recently published studies in peer-reviewed journals<sup>vi</sup> have shown typical exposures to RF energy from operating 5G systems to be well-within the exposure limits.

The FCC currently has categories for Citizens Broadband Radio Service (CBRS): Category “A” refers to a lower power base station, Category “B” must be deployed outdoors and has higher maximum power limits compared with Category “A” devices, and Category “C”. The maximum allowable Equivalent Isotropically Radiated Power (EIRP; the total RF power radiated by the antenna.) is 30 dBm (1 watt), 47 dBm (50 watts), and 62 dBm (1585 watts) for the listed categories “A”, “B”, and “C”, per 10 MHz of bandwidth, respectively.

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<sup>1</sup> PWS “Generations”: 1G: Analog voice; 2G: Digital voice; 3G: Mobile data; 4G: LTE and mobile Internet; 5G: Mobile networks interconnect people, control machines, objects, and devices with multi-Gbps peak rates and ultra-low latency.

<sup>2</sup> SOURCE: (<https://www.3gpp.org/about-3gpp>) The 3<sup>rd</sup> Generation Partnership Project (3GPP) unites [Seven] telecommunications standard development organizations (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC), known as “Organizational Partners” and provides their members with a stable environment to produce the Reports and Specifications that define 3GPP technologies.

## THEORETICAL RF FIELD CALCULATIONS - GROUND LEVELS

### METHODOLOGY

These calculations are based on what are called "worst-case" estimates. That is, the estimates assume 100% use of all transmitters simultaneously. Additionally, the calculations make the assumption that the surrounding area is a flat plane, and there is no degradation of signal strength due to the presence of foliage, building materials, atmospheric conditions, etc. The resultant values are thus conservative in that they over predict actual resultant power densities.

The calculations are based on the following information (See Table 2 data for AT&T and town of Harpswell calculations, and Table 3 for hypothetical data representing a "fully loaded" lattice tower):

1. Effective Radiated Power (ERP).
2. Antenna height (centerline, above ground level (AGL)).
3. Antenna vertical energy patterns (See Appendix A); the source of the negative gain (G) values. "Directional" antennas are designed to focus the RF signal, resulting in "patterns" of signal loss and gain. Antenna energy patterns display the loss of signal strength relative to the direction of propagation due to elevation angle changes. The gain is expressed as " $G^E$ ".

**Note:** "G" is a unitless factor usually expressed in decibels (dB); where  $G = 10^{(dB/10)}$   
For example: for an antenna *gain* of 3 dB, the net factor (G) =  $10^{(3/10)} = 2$   
For an antenna *loss* of -3 dB, the net factor (G) =  $10^{(-3/10)} = 0.5$

To determine the magnitude of the RF field, the power density (S) from an isotropic RF source is calculated, making use of the power density formula as outlined in FCC's OET Bulletin 65, Edition 97-01:<sup>vii</sup>

$$S = \frac{P \cdot G}{4 \cdot \pi \cdot R^2}$$

Where:

P → Power to antenna (watts)

G → Gain of antenna

R → Distance (range) from antenna source to point of intersection with the ground (feet)

$R^2 = (\text{Height})^2 + (\text{Horizontal distance})^2$

Since:  $P \cdot G = \text{EIRP}$  (Effective Isotropic Radiated Power) for broadcast antennas, the equation can be presented in the following form:

$$S = \frac{\text{EIRP}}{4 \cdot \pi \cdot R^2}$$

In the situation of off-axis power density calculations, apply the negative elevation gain ( $G^E$ ) value from the vertical energy patterns with the following formula:

$$S = \frac{\text{EIRP} \cdot G^E}{4 \cdot \pi \cdot R^2}$$

Ground reflections may add in-phase with the direct wave, and essentially double the electric field intensity. Because power density is proportional to the *square* of the electric field, the power density may quadruple, that is, increase by a factor of four (4). Since ERP is routinely used, it is necessary to convert ERP into EIRP by multiplying by the factor of 1.64 (the gain of a half-wave dipole relative to an isotropic radiator). Therefore, downrange power density estimates can be calculated by using the formula:

$$S = \frac{4 \cdot (\text{ERP} \cdot 1.64) \cdot G^E}{4 \cdot \pi \cdot R^2} = \frac{\text{ERP} \cdot 1.64 \cdot G^E}{\pi \cdot R^2} = \frac{0.522 \cdot \text{ERP} \cdot G^E}{R^2}$$

To calculate the % MPE, use the formula:

$$\% \text{ MPE} = \frac{S}{\text{MPE}} \cdot 100$$

The results of the calculations for the potential maximum RF emissions resulting from the summation of the *proposed* AT&T PWS and town of Harpswell system (See Table 2 inventory) are depicted in Figure 4 as plotted against linear distance from the base of the lattice tower in any direction. The results of the calculations for the potential maximum RF emissions resulting from the summation of the *proposed* AT&T PWS and town of Harpswell plus three *future hypothetical additional PWS carrier's* transmitter and antenna installation (See Table 3 inventory) are similarly depicted in Figure 5. Note that the values have been calculated for a height of 6' AGL in accordance with regulatory rationale, and assumes all antennas are directed along the same azimuths.

Also depicted on the graphs are values for a height of 16' AGL (height of a typical 2<sup>nd</sup> story). A logarithmic scale was used to plot the calculated theoretical %MPE values in order to compare with the MPE limit values of 100% (Public) and 500% (note that 100% Worker limit = 500% Public limit), which are so much larger that they would be off the page in a linear plot. The curves are variable due to the application of the vertical energy patterns (See Appendix A).

## **OBSERVATIONS IN CONSIDERATION WITH FCC RULES §1.1307(B) & §1.1310**

*Will it be physically possible to stand next to or touch any omnidirectional antenna and/or stand in front of a directional antenna?*

**NO**; access to the lattice tower will be restricted, and the site will adhere to RF safety guidelines regarding the transmitting antennas, including appropriate signage.

## ANTENNA INVENTORY

<b>Table 2: Proposed and Possible Antenna &amp; Transmitter Inventory                      199' Lattice Tower at 1410 Harpswell Neck Road, Harpswell, ME</b>			
Antenna Centerline (AGL)	Typical Antenna Configuration	Typical Parameters: ERP & Transmit Frequencies	Typical Use
<b>Proposed by AT&amp;T</b>			
195'	Panel Antenna "Arrays"; 3 Sectors of Up To 4 Panels Each	1019 watts ERP; ≈ 777 MHz 682 watts ERP; ≈ 850 MHz 2723 watts ERP; ≈ 2170 MHz 1941 watts ERP; ≈ 1950 MHz 2871 watts ERP; ≈ 2350 MHz	LTE-700 UMTS-850 AWS-2100 PCS/LTE-1900 WCS-2300
<b>Town of Harpswell</b>			
155' and 145'	Omni-directional "whip"	100 watts ERP; ≈ 153.770 MHz 2260 watts ERP; ≈ 155.565 MHz	2-Way Mobile (IG)
<b>Table Notes:</b> AWS: Advanced Wireless Services LTE: Long Term Evolution (a.k.a. "4G") IG: FCC designation for "Industrial/Business Pool - Private, Conventional" PCS: Personal Communication System UMTS: Universal Mobile Telecommunications Services WCS: Wireless Communication Service			

**Table 3: Hypothetical Antenna & Transmitter Inventory  
199' Lattice Tower at 1410 Harpswell Neck Road, Harpswell, ME**

Antenna Centerline (AGL)	Typical Antenna Configuration	Typical Parameters: ERP & Transmit Frequencies	Typical Use
<b>Hypothetical PWS Carriers</b>			
185'	Panel Antenna "Arrays"; 3 Sectors of Up To 4 Panels Each	4541 watts @ 1865-1870 MHz 2087 watts @ MHz 860 - 890 MHz 4161 watts @ 700 MHz 5226 watts @ 2150 MHz	PCS CDMA LTE AWS
175'	Panel Antenna "Arrays"; 3 Sectors of Up To 4 Panels Each	2589 watts ERP; ≈ 1900 MHz 4357 watts ERP; ≈ 1700 MHz 2972 watts ERP; ≈ 2170 MHz 1596 watts ERP; ≈ 650 MHz	PCS/LTE-1900 AWS-1700 AWS-2100 Mid-band 5G
165'	Panel Antenna "Arrays"; 3 Sectors of Up To 4 Panels Each	2400 watts ERP; ≈ 750 MHz 2400 watts ERP; ≈ 850 MHz	"700" (LTE) 850 "Cellular"

## RESULTS OF THEORETICAL RF FIELD CALCULATIONS

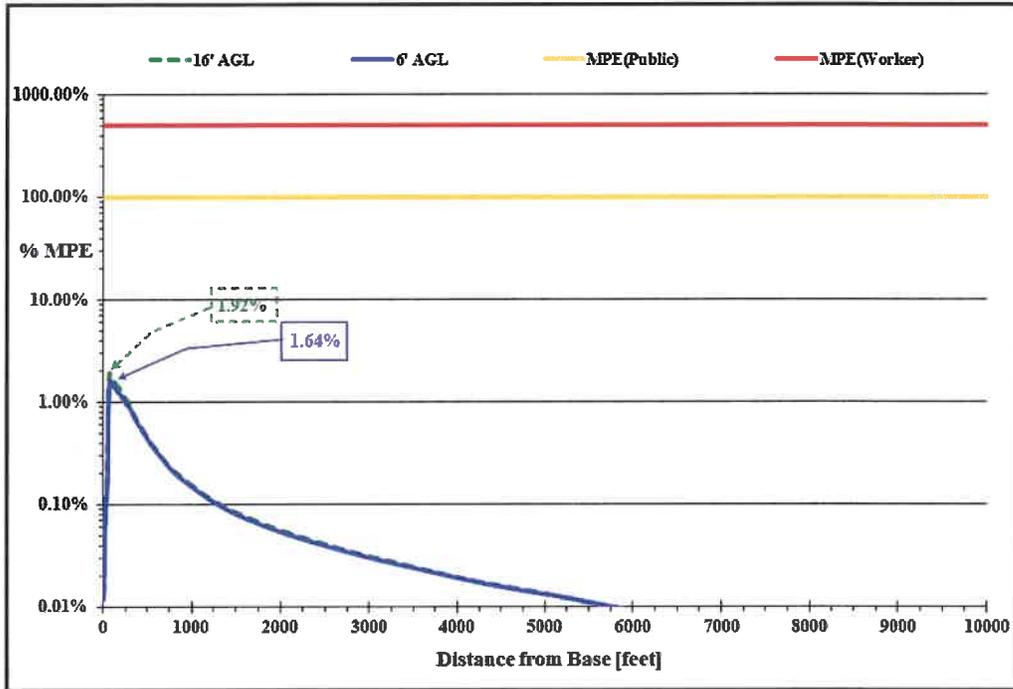


Figure 4: Theoretical Cumulative Maximum Percent MPE - vs. - Distance (Combined AT&T and Town of Harpswell RF Contributions)

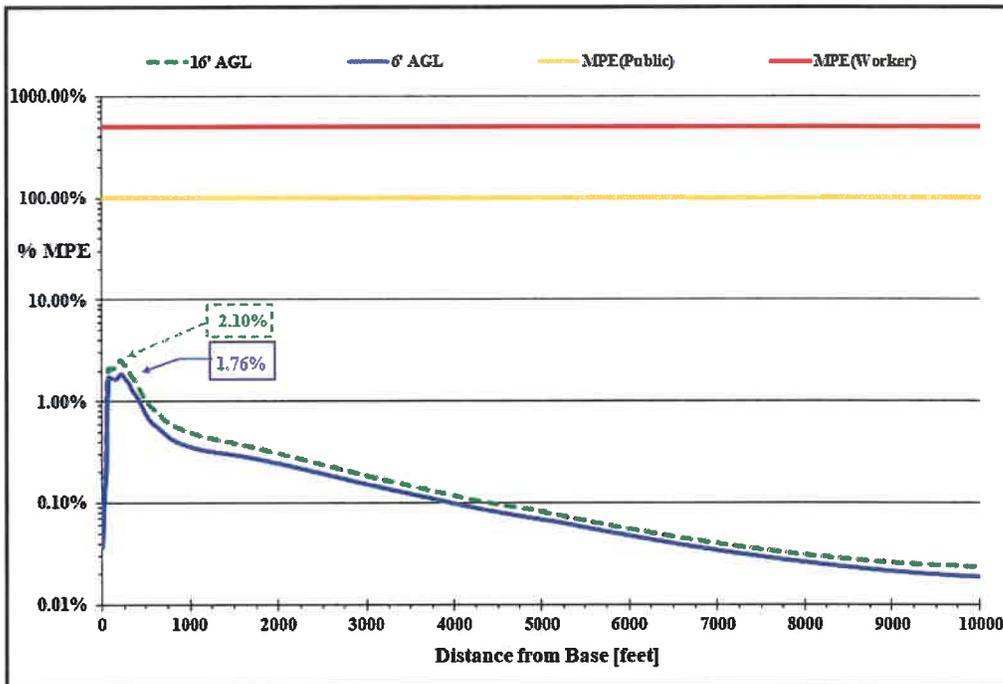


Figure 5: Theoretical Cumulative Maximum Percent MPE - vs. - Distance (Combined RF Contributions Representing a "Fully Loaded" Monopole)

## CONCLUSION

Theoretical RF field calculations data indicate the summation of the proposed AT&T and town of Harpswell maximum PWS RF contributions would be within the established RF exposure guidelines; see Figure 4. The additional calculations also suggest that even if the lattice tower had three additional PWS provider's antennas attached, the site would comply with all established RF exposure guidelines; see Figure 5.

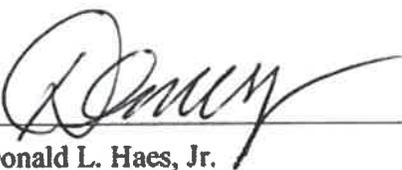
This includes all publicly accessible areas, and the surrounding neighborhood in general. The results support compliance with the pertinent sections of the FCC's Rules regarding PWS facilities, and the FCC's guidelines for RF exposure.

The number and duration of calls passing through PWS facilities cannot be accurately predicted. Thus, in order to estimate the highest RF fields possible from operation of these installations, the maximal amount of usage was considered. Even in this so-called "worst-case", the resultant increase in RF field levels are far below established levels considered safe.

Based on the results of the additional theoretical RF fields I have calculated, it is my expert opinion that this facility would comply with all regulatory guidelines for RF exposure.

Feel free to contact me if you have any questions.

Sincerely,



Donald L. Haes, Jr.

*Certified Health Physicist*

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**Note:** The analyses, conclusions and professional opinions are based upon the precise parameters and conditions of this particular site; **Lattice tower at 1410 Harpswell Neck Road, Harpswell, ME.** Utilization of these analyses, conclusions and professional opinions for any personal wireless services installation, existing or proposed, other than the aforementioned has not been sanctioned by the author, and therefore should not be accepted as evidence of regulatory compliance.

## **DONALD L. HAES, JR., CHP, CLSO**

*Radiation Safety Specialist*

PO Box 198, Hampstead, NH 03841

617-680-6262

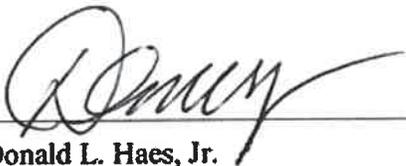
Email: donald\_haes\_chp@comcast.net

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### **STATEMENT OF CERTIFICATION**

1. I certify to the best of my knowledge and belief, the statements of fact contained in this report are true and correct.
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are personal, unbiased professional analyses, opinions and conclusions.
3. I have no present or prospective interest in the property that is the subject of this report and I have no personal interest or bias with respect to the parties involved.
4. My compensation is not contingent upon the reporting of a predetermined energy level or direction in energy level that favors the cause of the client, the amount of energy level estimate, the attainment of a stipulated result, or the occurrence of a subsequent event.
5. This assignment was not based on a requested minimum environmental energy level or specific power density.
6. My compensation is not contingent on an action or event resulting from the analyses, opinions, or conclusions in, or the use of, this report.
7. The consultant has accepted this assessment assignment having the knowledge and experience necessary to complete the assignment competently.
8. My analyses, opinions, and conclusions were developed and this report has been prepared, in conformity with the *American Board of Health Physics* (ABHP) statements of standards of professional responsibility for Certified Health Physicists.

Date: September 7, 2020



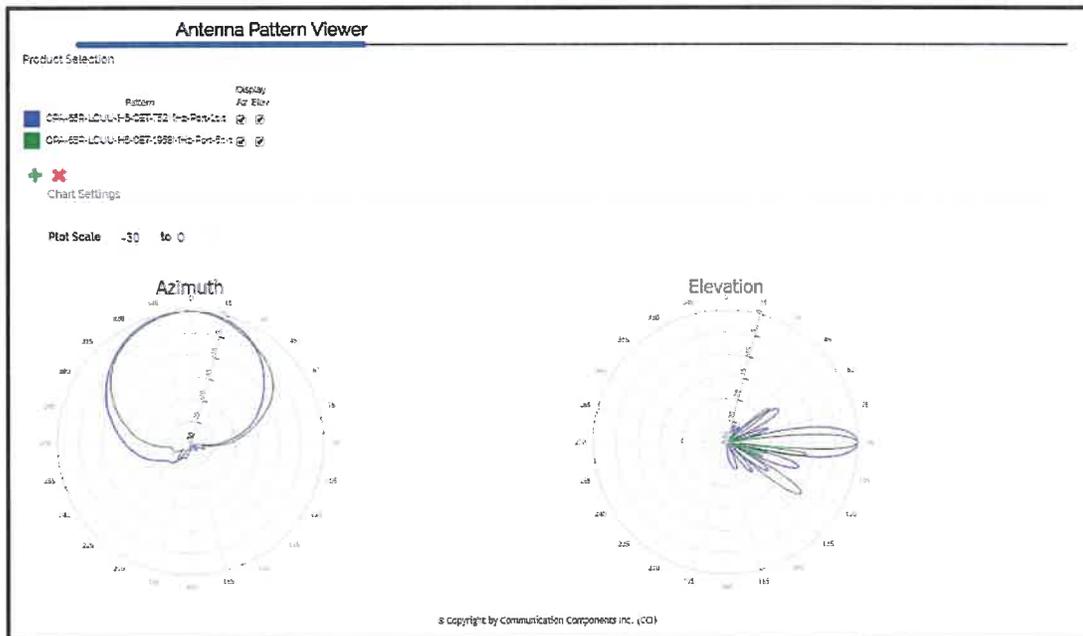
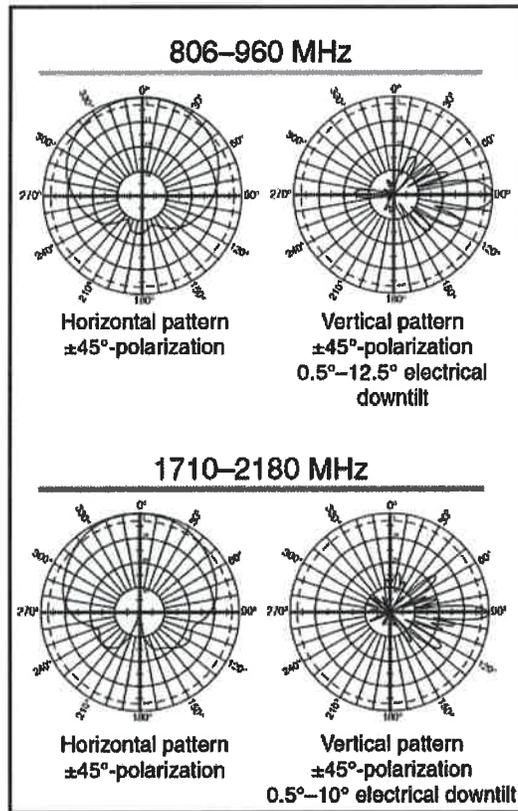
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**Donald L. Haes, Jr.**

*Certified Health Physicist*

# APPENDIX A

## Vertical & Horizontal Energy Patterns



# *DONALD L. HAES, JR., CHP, CLSO*

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## **SUMMARY OF QUALIFICATIONS**

### • **Academic Training -**

- Graduated from Chelmsford High School, Chelmsford, MA; June 1973.
- Completed Naval Nuclear Power School, 6-12/1976.
- Completed Naval Nuclear Reactor Plant Mechanical Operator and Engineering Laboratory Technician (ELT) schools and qualifications, Prototype Training Unit, Knolls Atomic Power Laboratory, Windsor, Connecticut, 1-9/1977.
- Graduated Magna Cum Laude from University of Lowell with a Bachelor of Science Degree in *Radiological Health Physics*; 5/1987.
- Graduated from University of Lowell with a Master of Science Degree in *Radiological Sciences and Protection*; 5/1988.

### • **Certification -**

- Board Certified by the American Board of Health Physics 1994; renewed 1998, 2002, 2006, 2010, 2014, and 2018. Expiration 12/31/2022.
- Board Certified by the Board of Laser Safety 2008; renewed 2011, 2014, 2017. Expiration 12/31/2020.

### • **Employment History -**

- Consulting Health Physicist; Ionizing/Nonionizing Radiation, 1988 - present.
- Radiation, RF and Laser Safety Officer; BAE Systems, 2005–2018 (retired).
- Assistant Radiation Safety Officer; MIT, 1988 – 2005 (retired).
- Radiopharmaceutical Production Supervisor - DuPont/NEN, 1981 – 1988 (retired).
- United States Navy; Nuclear Power Qualifications, 1975 – 1981 (Honorably Discharged).

### • **Professional Societies -**

- Health Physics Society [HPS].
- American Academy of Health Physics [AAHP]
- Institute of Electrical and Electronics Engineers [IEEE];
- International Committee on Electromagnetic Safety [ICES] (ANSI C95 series).
- Laser Institute of America [LIA].
- Board of Laser Safety [BLS].
- American National Standards Institute Accredited Standards Committee [ASC Z136].
- Committee on Man and Radiation [COMAR].

## ENDNOTES

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- i. Federal Register, Federal Communications Commission Rules; *Radiofrequency radiation; environmental effects evaluation guidelines* Volume 1, No. 153, 41006-41199, August 7, 1996. (47 CFR Part 1; Federal Communications Commission).
- ii. Telecommunications Act of 1996, 47 USC; Second Session of the 104<sup>th</sup> Congress of the United States of America, January 3, 1996.
- iii. IEEE C95.1-1999: American National Standard, *Safety levels with respect to human exposure to radio frequency electromagnetic fields, from 3 kHz to 300 GHz (Updated in 2020 to IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz)*.
- iv. National Council on Radiation Protection and Measurements (NCRP); *Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields*, NCRP Report 86, 1986.
- v. Federal Register, Federal Communications Commission Rules; Vol. 85, No. 63 / Wednesday, April 1, 2020 / Rules and Regulations 18145.
- vi. Jamshed, Muhammad Ali (Institute of Communication Systems (ICS), Home of 5G Innovation entre (5GIC), University of Surrey, Guildford GU2 7XH, U.K). *Electro-magnetic field exposure reduction/avoidance for the next generations of wireless communication systems*. IEEE Journal of Electromagnetics, RF, And Microwaves in Medicine and Biology, Vol. 4, No. 1, March 2020.
- vii. OET Bulletin 65: Federal Communications Commission Office of Engineering and Technology, *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*; Edition 97-01, August 1999.

**EXHIBIT 7**  
**AT&T RADIO FREQUENCY REPORT**

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RF Report  
Proposed Wireless Facility



ME3116  
1410 Harpswell Neck Road  
Harpswell, ME 04079

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September 24, 2020

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## 1. Overview

This RF Report has been prepared on behalf of AT&T Mobility in support of its application to the Town of Harpswell for the installation and operation of a wireless facility located at 1410 Harpswell Neck Road in Harpswell, ME. The proposed facility consists of ground based equipment cabinets, and antennas mounted at a centerline of 195' AGL on a proposed 199' lattice tower.

This report concludes that the proposed site will provide coverage improvement to Harpswell in order to improve deficient service areas along State Highway 24, State Highway 123 and South Street and the surrounding roads, businesses, and neighborhoods in the proximity of the proposed site.

Included in this report is: a brief summary of the site's objectives, maps showing AT&T's neighboring sites, and predicted Radio Frequency coverage maps of the subject site and the surrounding sites in AT&T's network.

## 2. Introduction

To maintain a reliable and robust communications system for the individuals, businesses, public safety workers and others who use its network, AT&T deploys a network of cell sites (also called wireless communications facilities) throughout the areas in which it is licensed to provide service. These cell sites consist of antennas mounted on structures, such as buildings and towers, supported by radio and power equipment. The receivers and transmitters at each of these sites process signals within a limited geographic area known as a "cell."

Mobile subscriber handsets and wireless devices operate by transmitting and receiving low power radio frequency signals to and from these cell sites. Handset signals that reach the cell site are transferred through land lines (or other means of backhaul transport) and routed to their destinations by sophisticated electronic equipment. In order for AT&T's network to function effectively, there must be adequate overlapping coverage between the "serving cell" and adjoining cells. This not only allows a user to access the network initially, but also allows for the transfer or "hand-off" of calls and data transmissions from one cell to another and prevents unintended disconnections or "dropped calls."

AT&T's antennas also must be located high enough above ground level to allow transmission (a.k.a. propagation) of the radio frequency signals above trees, buildings, and other natural or man-made structures that may obstruct or diminish the signals. Areas without adequate radio frequency coverage have substandard service, characterized by dropped and blocked calls, slow data connections, or no wireless service at all, and are commonly referred to as coverage gaps.

The size of the area potentially served by each cell site depends on several factors including the number of antennas used, the height at which the antennas are deployed, the topography of the surrounding land, vegetative cover, and natural or man-made obstructions in the area. The actual service area at any given time also depends on the number of customers who are on the network in range of that cell site. As customers move throughout the service area, the transmission from the phone or other device is automatically transferred to the AT&T facility with the best reception, without interruption in service, provided that there is overlapping coverage between the cells.

Each cell site must be primarily designed to strike a balance between the overall geographic coverage area it will serve, and the site's capacity to support the usage within the coverage footprint. In rural areas, cell sites are generally designed

to have broader coverage footprints because the potential traffic is sparser and distributed over a larger area. In more densely populated suburban and urban environments, the capacity to handle calls and data transmissions is of increasing concern, and cell sites must limit their coverage footprint to an area where the offered network traffic can be supported by the radio equipment and resources. Due to the aggressive historical and projected growth of mobile usage, particularly for mobile data (42% in 2016-2017, 35% CAGR 2016-2021 in North America)<sup>1</sup>, instances arise where the usage demand can no longer be supported by the site(s) serving an area, and new facilities must be integrated to provide capacity relief to the overloaded sites.

We have concluded that by developing the proposed wireless communication facility on Harpswell Neck Road at an antenna centerline height of 195' AGL (above ground level), AT&T will be able to provide substantially improved coverage to residents, businesses, and traffic corridors within Harpswell that are currently located within deficient service areas of AT&T's network.

### 3. Coverage Objectives

In order to expand and enhance their wireless services throughout New England, AT&T must fill in existing coverage gaps and address capacity, interference, and high-speed broadband issues. As part of this effort, AT&T has determined that significant gaps in service exist in and around sections of the Town of Harpswell, ME, as described further below.

AT&T currently operates wireless facilities similar to the proposed facility within the surrounding cities/towns. Due in large part to the distances between the existing sites, the intervening topography, and volume of user traffic in the area, these existing facilities do not provide sufficient coverage to portions of Harpswell. Specifically, AT&T determined that much of Harpswell is without reliable service in the following areas and town roads, including but not limited to:

- State Highway 24
- State Highway 123
- South Street
- The surrounding roads, businesses, and neighborhoods in the proximity of the proposed site and the above-mentioned roads.

### 4. Site Search and Selection Process

To find a site that provides acceptable service and fills the gaps in coverage, computer modeling software is used to define a search area. The search ring identifies the area within which a site could be located and the necessary height that would have a high probability of addressing the significant coverage gap established by the AT&T RF engineers.

Once a search ring is determined, AT&T's real estate specialists search within the proximity of the defined area for existing buildings, towers, and other structures of sufficient height that would meet the defined objectives. If none are found, then the focus shifts to "raw land" sites. A suitable site must satisfy the technical requirements identified by the RF engineers, must be available for lease, and must have access to a road and be

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<sup>1</sup> "Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2016-2021", February 7, 2017, Cisco Systems, Inc. <http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/mobile-white-paper-c11-520862.html>

otherwise suitable for constructing a cell site of the required size and height. Every effort is made to use existing structures before pursuing a “raw land” build to minimize the number of new towers throughout the towns being served.

After the search of the area had been completed, AT&T determined that locating on the planned wireless communications facility at 1410 Harpswell Neck Road is the most appropriate solution to address the targeted coverage objectives with respect to its network requirements.

## 5. Pertinent Site Data

Table 1 below details the site-specific information for the on-air AT&T macro-sites used to perform the coverage analysis and generate the coverage plots provided herein.

Site Name	Address	City/State	Location		Antenna Height (ft AGL)	Structure Type	Status
			Latitude	Longitude			
ME5003	Route 209 Stoney Brook Road	Phippsburg	43.8336	-69.8277	175/180	Self Support	On-Air
ME5010	Hillside Road	Brunswick	43.9037	-70.0358	178	Self Support	On-Air
ME5011	Bath Road	West Bath	43.9041	-69.8475	166	Guyed	On-Air
ME5012	Range Way	Cumberland	43.7636	-70.2294	160	Self Support	On-Air
ME5014	Beech Hill Road/Dorrington Road	Freeport	43.8748	-70.1180	150	Guyed	On-Air
ME5020	Route 1	Yarmouth	43.7865	-70.1897	148	Utility Pole	On-Air
ME5033	1469 Us Route 1	Freeport	43.8982	-70.0719	127	Self Support	On-Air
ME5034	47 Stagecoach Road	Freeport	43.8336	-70.1225	57	Water Tank	On-Air
ME5042	Drinkwater Point Road (Map 2 Lot 25 Or 28)	Yarmouth	43.7800	-70.1605	145	Utility Pole	On-Air
ME5335	22 Old Bath Road	Brunswick	43.913	-69.9011	180	Monopole	On-Air
ME5339	42 Community Drive	Harpswell	43.8144	-69.9414	265/290	Guyed	On-Air
ME5345	356 Route 1	Falmouth	43.7363	-70.2265	97	Monopole	On-Air
ME5346	East Main Street	Yarmouth	43.8132	-70.1694	84	Water Tank	On-Air
ME5355	8 College Street	Brunswick	43.9058	-69.9634	140/144/180	Rooftop	On-Air

**Table 1: AT&T Mobility Site Information Used in Coverage Analysis<sup>2</sup>**

<sup>2</sup> Some sites listed in this table are outside the plot view but are included for completeness of information.

## 6. Coverage Analysis and Propagation Plots

The radio frequency coverage plots provided in this report were produced using deciBel Planner™, a Windows-based RF propagation computer modeling program and network planning tool. The software takes into account the geographical features of an area, land cover, antenna models, antenna heights, RF transmitting power and receiver thresholds to predict coverage and other related RF parameters used in site design and wireless network expansion.

The plots included as Exhibits show coverage based on the minimum required signal strength needed to support reliable 4G LTE service in this area. All other areas (depicted in white) fall within coverage areas characterized by poor voice and data quality, slow data speeds, latency<sup>3</sup>, and the substantial likelihood of unreliable service.

While AT&T holds licenses in the 700 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands, this report focuses on the 700 MHz layer, which is representative of the 4G LTE service most readily available to AT&T subscribers in Harpswell, and is the spectrum layer that is essential to AT&T's ability to address the coverage needs for their 4G LTE service offerings. It is relevant to note that the 700 MHz coverage layer, which serves as the "base" layer for the LTE service, has a substantially larger coverage footprint due to the propagation characteristics of the frequency band. The 1900 MHz, 2100 MHz and 2300 MHz overlay layers will have incrementally smaller footprints and are used by AT&T to manage capacity.

The following paragraphs discuss each of the AT&T maps attached hereto.

**Exhibit 1** titled "ME3116 - Existing 700 MHz LTE Coverage" depicts the 700 MHz LTE coverage provided from existing sites listed in Table 1 and demonstrates that there are currently gaps in 700 MHz LTE coverage affecting service along key roadways, and the surrounding neighborhoods in Harpswell. The coverage shown is where the signal strengths are: > -83 dBm (minimum required for reliable, high quality service and performance at 700 MHz) and, > -93 dBm (minimum required for adequate level of service at 700 MHz).

**Exhibit 2** titled "ME3116 - Existing 700 MHz LTE Coverage with Proposed Site" shows how this proposed site would fill in the existing coverage gaps and improve AT&T's 700 MHz LTE network within the targeted areas. As evident when compared against Exhibit 1, the proposed facility provides adequate coverage improvement along key roadways such as State Highway 24 and State Highway 123 and the surrounding neighborhoods, community areas, and to Harpswell:

- ~ 2.5 miles of State Highway 24;
- ~ 3.9 miles of State Highway 123;
- ~ 1,075 additional residents within the surrounding area at the 700 MHz frequency;
- ~ 102 additional employees within the proximity of the proposed facility.

**Exhibit 3** titled "ME3116 - Existing 700 MHz LTE Coverage (-108 dBm)" depicts the 700 MHz LTE outdoor coverage provided from existing sites listed in Table 1 and demonstrates that there are currently gaps in 700 MHz LTE outdoor coverage effecting service along key roadways and the surrounding neighborhoods in Harpswell. The

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<sup>3</sup> In data transfer it is the delay or lapse in the time between initiating a request from the wireless device and receiving the response.

coverage shown is where the signal strengths is:  $> -108$  dBm (outdoor coverage). The deficient areas of 700 MHz LTE outdoor coverage are defined by the unshaded or “white” areas.

**Exhibit 4** titled “ME3116 – Existing 700 MHz LTE Coverage with Proposed Site (-108 dBm)” shows how this proposed site would fill in the existing 700 MHz LTE outdoor coverage gaps and improve AT&T’s 700 MHz LTE network within the targeted areas. As evident when compared against Exhibit 3, the proposed facility provides outdoor coverage improvement along key roadways such as State Highway 24, State Highway 123 and South Street and the surrounding neighborhoods, businesses, and to Harpswell:

- ~ 2.9 miles of State Highway 24;
- ~ 1.6 miles of State Highway 123;
- ~ 0.5 miles of South Street;
- ~ 1,083 additional residents within the surrounding area at the 700 MHz frequency;
- ~ 186 additional employees within the proximity of the proposed facility.

The surrounding roads, and neighborhoods, within the proximity of the proposed site and the above-mentioned roadways.

**Exhibit 5** titled “ME3116 - Area Terrain Map” details the topographical features around the proposed “ME3116” site. These terrain features play a key role in dictating both the unique coverage areas served from a given location, and the coverage gaps within the network. This map is included to provide a visual representation of the terrain variations that must be considered when determining the appropriate location and design of a proposed wireless facility. The blue and green shades correspond to lower elevations, whereas the yellow, orange, red, grey and white shades indicate higher elevations.

**Exhibit 6** titled “ME3116 - Neighbor Sites & Radial Distances” provides a “zoomed-out” view of the subject area showing the locations of AT&T’s existing sites in neighboring cities and towns that may be contributing to the aggregate coverage in Harpswell.

## 7. Summary

In undertaking its build-out of 4G LTE service in Cumberland County, AT&T has determined that an additional facility is needed to provide reliable service throughout areas of Harpswell, ME. AT&T determined that developing the proposed wireless communications facility on Harpswell Neck Road in Harpswell at an antenna centerline height of 195 feet (AGL) will provide coverage needed in the targeted coverage areas including key roadways such as State Highway 24, State Highway 123 and South Street and the surrounding roads, businesses and neighborhoods in the proximity of the proposed site.

As discussed in this report and depicted in the attached plots, the proposed AT&T site will provide the public need for service in this area, by providing an appropriate coverage footprint for the Harpswell community along with effective connectivity to the rest of AT&T existing network. In addition to providing improved LTE service to AT&T's customers throughout the targeted areas of Harpswell, AT&T is providing enhanced services for first responders through the implementation of FirstNet's National Public Safety Broadband Network ("NPSBN").

Without a site in this area, at the height requested, significant gaps in service will continue to exist within the Town of Harpswell, and the identified public need for reliable wireless services in this area will not be met; therefore, AT&T respectfully request that the Town of Harpswell act favorably upon the proposed facility.

## 8. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate.



Martin J. Lavin  
Senior RF Engineer  
C Squared Systems, LLC

September 24, 2020  
Date

## 9. Exhibits

Exhibit 1: ME3116 – Existing 700 MHz LTE Coverage

ME3116 - Existing 700 MHz LTE Coverage



Exhibit 2: ME3116 – Existing 700 MHz LTE Coverage with Proposed Site

ME3116 - Existing 700 MHz LTE Coverage with Proposed Site

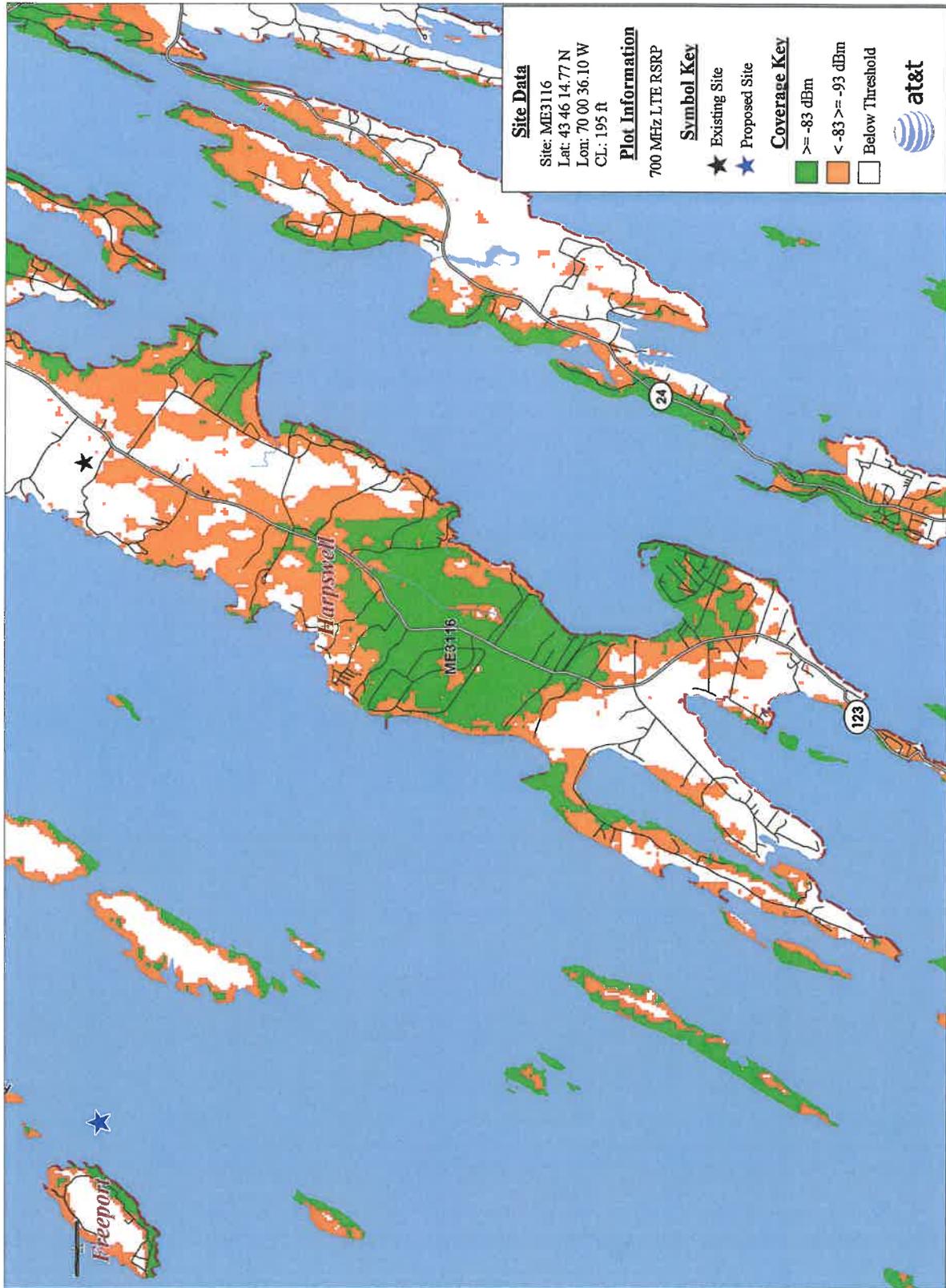


Exhibit 3: ME3116 – Existing 700 MHz LTE Coverage (-108 dBm)

ME3116 - Existing 700 MHz LTE Coverage



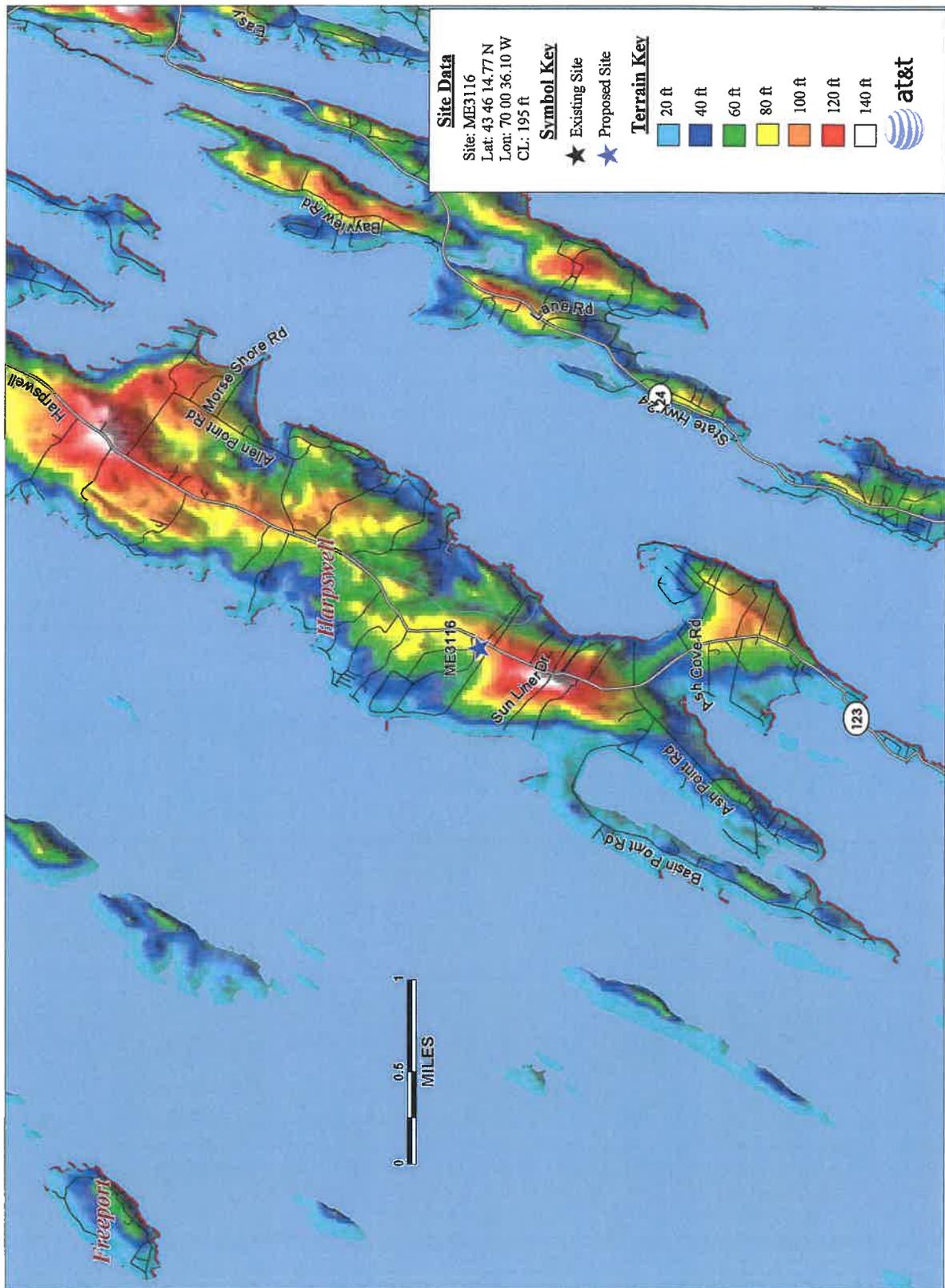
Exhibit 4: ME3116 – Existing 700 MHz LTE Coverage with Proposed Site (-108 dBm)

ME3116 - Existing 700 MHz LTE Coverage with Proposed Site



Exhibit 5: ME3116 – Area Terrain Map

ME3116 - Area Terrain Map





**EXHIBIT 8**  
**STATEMENT OF COLLOCATION**

September 8, 2020

Town of Harpswell  
Planning Office  
263 Mountain Road  
P.O. Box 39  
Harpswell, Maine 04079

**RE: Application for Planning Board Approval for a Wireless  
Telecommunications Facility - George J. Mitchell Field  
1410 Harpswell Neck Road (Map 13, Lot 4)**

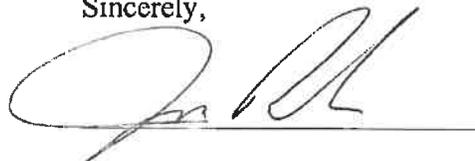
Dear Board Members:

In support of Blue Sky Towers III, LLC's application for approval of a wireless telecommunications facility and in compliance with Section 8.3.1 of the Town of Harpswell Wireless Telecommunications Facilities Ordinance, I am providing this duly signed statement on behalf of the owner its successors and assigns of the referenced proposed wireless telecommunications facility agreeing to:

1. Respond in a timely, comprehensive manner to a request for information from a potential co-location applicant, in exchange for a reasonable fee not in excess of the actual cost of preparing a response.
2. Negotiate in good faith for shared use of the wireless telecommunications facility by third parties.
3. Allow shared use of the wireless telecommunications facility if an applicant agrees in writing to pay reasonable charges for co-location.
4. Require no more than a reasonable charge for shared use, based on community rates and generally accepted accounting principles. This charge may include, but is not limited to, a pro rata share of the cost of site selection, planning project administration, land costs, site design, construction, financing, return of equity, depreciation, and all of the costs of adapting the tower or equipment to accommodate a shared user without causing electromagnetic interference. The amortization of the above costs by the facility owner shall be accomplished at a reasonable rate, over the useful life span of the facility.

I appreciate your consideration of this application. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to be "George J. Mitchell", written over a horizontal line.

**EXHIBIT 9**  
**REMOVAL COST ESTIMATE**

**ProTerra**  
DESIGN GROUP, LLC

September 29, 2020

Mr. Patrick Hynes  
Asset / Construction Manager  
Park Place West  
352 Park Street, Suite 106  
North Reading, MA 01864

**RE: Opinion of Cost for Removal of Tower  
Blue Sky Towers III, LLC  
Harpswell (ME-5029)  
1410 Harpswell Neck Road  
Harpswell, ME 04079**

Mr. Hynes:

The Engineer's estimate attached herein has been prepared for the take down and removal costs of the proposed Blue Sky Towers III, LLC telecommunications tower referenced above. These costs are based upon the permitting plan set dated September 29, 2020 and on data compiled in the *2019 Site Work & Landscape Cost Data, 38<sup>th</sup> Annual Edition* published by RSMMeans with industry specific data adjusted to location and present-day costs.

The estimate includes removal of the compound fence, compound surface, self-support (lattice) tower, disconnection of utilities, removal of utility cabinets, removal of concrete foundations to a depth of one foot below grade, and revegetation of the compound area and access road area. Removal of carrier specific tower and ground mounted equipment shall be handled by the individual carriers. The estimate assumes underground portions of the tower foundation, grounding ring, utility conduit, and drainage features will remain. No salvage value has been credited and any power supply systems shall be recycled.

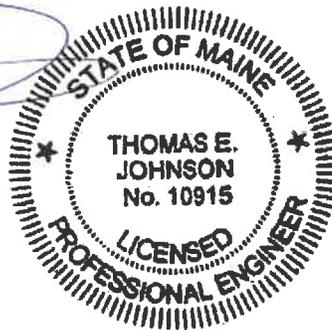
Based on the construction cost estimates provided, it is my professional opinion that approximately \$34,900 will be adequate to recover the take down costs of the proposed telecommunications tower including cabinet equipment listed above in the current construction environment.

If you have any questions or need further information, please do not hesitate to call.

Sincerely,  
*ProTerra Design Group, LLC*

Thomas Johnson, PE  
Managing Partner

Enclosure



ProTerra Design Group, LLC  
4 Bay Road; Building A; Suite 200  
Hadley, MA 01035

(413) 320-4918  
info@proterra-design.com

**EXHIBIT 10**  
**INSURANCE CERTIFICATE**



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
09/18/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Novak Insurance Agency, Inc. 30775 Bainbridge Road, Ste 100  Solon OH 44139		<b>CONTACT NAME:</b> Stacy Helpman <b>PHONE (A/C, No, Ext):</b> (440) 349-2120 <b>E-MAIL ADDRESS:</b> stacy@novakinsurance.com <b>FAX (A/C, No):</b> (440) 349-2195	
<b>INSURED</b> Blue Sky Towers III, LLC Park Place West 352 Park St, Ste 106 North Reading MA 01864		<b>INSURER(S) AFFORDING COVERAGE</b> <b>INSURER A:</b> Federal Insurance Co. NAIC # 20281 <b>INSURER B:</b> <b>INSURER C:</b> <b>INSURER D:</b> <b>INSURER E:</b> <b>INSURER F:</b>	

**COVERAGES**      **CERTIFICATE NUMBER:** CL2012919037      **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input checked="" type="checkbox"/> LOC OTHER:	Y		35993628	10/23/2019	10/23/2020	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
A	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY			73600411	10/23/2019	10/23/2020	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED    RETENTION \$ 0			79898482	10/23/2019	10/23/2020	EACH OCCURRENCE \$ 10,000,000 AGGREGATE \$ 10,000,000
A	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	7178-19-75	10/01/2019	10/01/2020	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	Property incl. Business Income and Builder's Risk			35993628	10/23/2019	10/23/2020	Property/BI Limit \$100,000,000 Builder's Risk \$750,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Town of Harpswell is included as Additional Insured/Lessor with respect to Site ID No. ME-5029 Harpswell.

### CERTIFICATE HOLDER

Town of Harpswell  
 263 Mountain Road  
 P.O. Box 39  
 Harpswell ME 04079

### CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

**EXHIBIT 11**  
**ENGINEER STAMPED STRUCTURAL LETTER**

September 25, 2020

Mr. Patrick Hynes  
Asset / Construction Manager  
Park Place West  
352 Park Street, Suite 106  
North Reading, MA 01864

**RE: Proposed Tower Structural Standards  
Blue Sky Towers III, LLC  
Harpswell (ME-5029)  
1410 Harpswell Neck Road  
Harpswell, ME 04079**

Mr. Hynes:

In accordance with the Town of Harpswell Wireless Telecommunications Facilities Ordinance, *Section 8.2.10 - Structural Standards*, ProTerra Design Group, LLC (ProTerra) as the site civil Engineer of Record for the proposed Blue Sky Tower III, LLC telecommunications tower referenced above will review the tower design, to be provided by the Tower Engineer of Record, to confirm the proposed tower complies with the following codes and adopted standards:

- Maine Uniform Building and Energy Code (MUBEC) (International Building Code 2015)
- ANSI/EIA/TIA-222 Rev G "*Structural Standard for Antenna Supporting Structures*"

The proposed tower is intended to support up to four (4) typical wireless carriers' tower mounted equipment including the towns RF equipment. The tower and foundation will be designed to withstand forces imparted on the structure based on the site specific parameters for code induced wind, ice, and snow including associated combinations of loading scenarios.

If you have any questions or need further information, please do not hesitate to call.

Sincerely,  
*ProTerra Design Group, LLC*

Thomas Johnson, PE  
Managing Partner

