

# PLAPC

PARISI LAW ASSOCIATES, P.C.

**APPLICATION FOR SPECIAL PERMIT  
AND REQUEST FOR SITE PLAN REVIEW  
(Planning Board)  
AND  
PETITION FOR VARIANCE  
(Zoning Board of Appeals)  
FOR  
WIRELESS COMMUNICATIONS FACILITY**

**Applicant:** Vertex Tower Assets, LLC  
**Site Id:** VT-MA-2022  
**Property Address:** Reils Lane  
**Tax Assessors:** 1320-8-10  
**Property Owner:** Sean D. King and Robin A. King  
**Date:** July 6, 2020

1. Request for Special Permit (Planning Board)
2. Request for Site Plan Review (Planning Board)
3. Request for a Zoning Permit (Variance) (Zoning Board of Appeals)
4. Filing Fees
5. Abutters List (to be prepared by Town)
6. Letter of Authorization
7. Notice of Visibility Demonstration (balloon test)
8. Project Narrative
9. TOWAIR (FAA Analysis re No Hazard to Air Navigation)
10. Affidavit of Site Acquisition Specialist
11. Affidavit of RF Engineer and RF Coverage Maps
12. Site Emissions Report
13. Site Plans

Respectfully submitted,



Francis D. Parisi, Esq.  
Parisi Law Associates, P.C.  
225 Dyer Street  
Providence, RI 02903  
(401) 447-8500 cell  
[fparisi@plapc.com](mailto:fparisi@plapc.com)

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Application Number: \_\_\_\_\_



# TOWN OF COLRAIN

Planning Board

55 Main Road

Colrain, Massachusetts 01340

Telephone: (413) 624-3454

Fax: (413) 624-8852

TOWN WHERE A U.S. FLAG WAS FIRST RAISED  
OVER A SCHOOL, MAY 1812.

## Request for a Special Permit

Town Clerk  
55 Main Road  
Colrain, MA 01340

Pursuant to the provisions of Chapter 40A of the Massachusetts General Laws and the Zoning By-laws of the Town of Colrain, application is hereby made to the Planning Board for permission to:

construct a wireless communications facility  
consisting of a 161' tall lattice style telecommunications  
tower (167' to top of highest appurtenance) inside  
a 40' x 70' fenced in compound

On the premises of: Sean D. King and Robin A. King

Location: Reils Lane, Tax Assessor Parcel Id: 1320-8-10

Petitioner(s) Signature(s)	Address
Vertex Tower Assets, LLC By <u>Francis D. Parisi, Esq.</u> <u>Authorized Agent</u>	c/o Parisi Law Associates, P.C. 225 Dyer Street Providence, RI 02903

Received this date: \_\_\_/\_\_\_/\_\_\_ Fee Paid: \_\_\_\_\_ Town Clerk Signature: \_\_\_\_\_

Transferred to Planning Board this date: \_\_\_/\_\_\_/\_\_\_ by: \_\_\_\_\_

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# Town of Colrain, MA

## Request for a Site Plan Review

Please type or print all information and file it with the Town Clerk. A \$100 fee (check or money order payable to the Town of Colrain) is required and must accompany this request.

1. Name of Applicant: Vertex Tower Assets, LLC Phone #: 401 447-8500  
Mailing Address: clo Paris, Law Associates, P.C. 225 Dyer Street Providence RI 02903  
Applicant Status: Owner  Contract Purchaser  Lessee   
Other (please explain)

2. Property Owner: Sean D. King and Robin A. King Phone #: 401 447-8500  
Mailing Address: clo Paris, Law Associates, P.C. 225 Dyer Street, Providence, RI 02903

3. Parcel ID: Street Reils Lane Map# 1320-8-10 Lot #             
*\*This information is on your tax bill or you can call the tax collector.*

4. Existing Use of Structure/Property:  
undeveloped

5. Summary of Proposed Work/Project:  
wireless communication facility consist of a 161' tall lattice style telecommunication tower (167' to top of highest appurtenance) inside a 46' x 70' fenced in compound

6. Lot Size: 8.9 acres ± Frontage: 300' ± Front Setback: 2410'  
Left Side Setback: 852' Right Side Setback: 1082' Rear Setback: 533'

## **A site plan review is required for:**

1. Cluster Developments (see Section VI-6);
2. Outdoor storage, sales or display associated with any retail use;
3. Construction, exterior alteration or exterior expansion of more than 1,000 square feet of, or change of use within a municipal, institutional, commercial, industrial, or multi-family structure;
4. Construction or expansion of a parking lot for a municipal, institutional, commercial, industrial, or multi-family structure;
5. Grading, clearing, or other land development activity EXCEPT for the following: single family residences, landscaping on a lot with an existing dwelling, clearing necessary for percolation and other site tests, work incidental to agricultural activity, or work in conjunction with an approved subdivision plan or earth removal permit;
6. Any use listed in the Use Regulation Schedule (Section III-2) as requiring Site Plan Review.

## **Site Plan Documents**

The site plan must include all data, detail and supporting information as follows. All information must be included in the plan or a notation must be made as to the reason for its omission.

**The Planning Board may waive any of the requirements for Site Plan submittal and approval if the simplicity or scale of the project warrants such action.** For example, if the project is small in scale it may not be necessary to use 24" x 36" paper for the plans.

**Seven copies** of each of the site plan documents must accompany this request when filed with the Town Clerk.

### **Site plan requirements:**

The site plan must be

- Prepared by a registered architect, registered land surveyor, registered landscape architect, or professional engineer,
- A locus map at a scale of 1" = 100 feet shall be provided showing parcels and roads within 300 feet of the property line
- Plans shall be on standard 24" x 36" sheets, with continuation on 8 1/2" x 11" sheets as necessary for narrative, and prepared at a scale of 1"=40 feet or finer.

### **Requirements as set forth in Section XIII of the Town of Colrain Zoning Bylaws:**

1. Name of project, boundaries, locus map(s) showing site's location in Town, date, north arrow and scale of plan;
2. Name(s) and address(es) of the owner(s) of the land, the developer (if applicable), and/or their designee;
3. Name, title, and address of person(s) who prepared the plan;

4. Names and addresses of all owners of record of abutting lots and those within 300 feet of the property line;
5. All existing lot lines, easements and rights of way;
6. Location and use of buildings and structures within 300 feet of the site;
7. Location and use of all existing and proposed buildings and structures, including approximate height and floor area;
8. Location and size in acres of wetlands on the site reviewed and approved by the Colrain Conservation Commission;
9. The location and a description of all proposed septic systems, sewer connections, water supplies, storm drainage systems, utilities and other waste-disposal methods;
10. Location and date of all registered "perc" tests on the site;
11. Location of all proposed new lot lines;
12. Existing and proposed topography at a two-foot contour interval for the proposed grading and landscape plan;
13. Location of proposed public and private ways on the site;
14. Location and size of proposed parking and loading areas, driveways, walkways, access and egress points;
15. The location and a description of proposed open space or recreation areas;
16. Size and location of existing and proposed sign(s);
17. Surface drainage strategy that prevents increased drainage off-site or pollution;
18. Existing vegetation that will be left undisturbed and proposed landscape features, including the location and a description of screening, fencing and plantings using non-invasive species;
19. Design features which will integrate the proposed development into the existing landscape, maintain neighborhood character, and screen objectionable features from neighbors and roadways;
20. Estimated average daily and peak-hour vehicle trips to be generated by the site and traffic flow patterns for both vehicles and pedestrians, showing adequate access to and from the site and adequate circulation within the site.

Date: 7/6/20

Vertex Tower Assoc, LLC

Applicant's Signature: By Francis D Parini, EIT  
*Authorized Agent*

Received by Town Clerk:

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Town Clerk's Signature: \_\_\_\_\_

# Site Plan Review Checklist

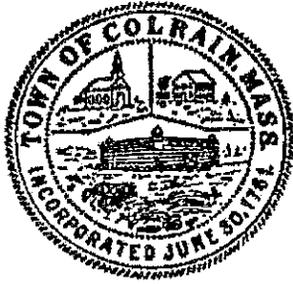
*See Colrain Zoning Bylaws Section XIII for full details*

Name of Applicant: \_\_\_\_\_ Phone #: \_\_\_\_\_

Parcel ID: \_\_\_\_\_ Street \_\_\_\_\_ Map# \_\_\_\_\_ Lot # \_\_\_\_\_

<p>1. Application Received From Applicant</p> <ul style="list-style-type: none"> <li><input type="radio"/> Application complete and signed by applicant and town clerk</li> <li><input type="radio"/> Application fee received</li> <li><input type="radio"/> Seven (7) copies of site plan and any supporting materials received</li> </ul>	<p>Date Application Received by Town Clerk:</p>
<p>2. Review by Town Boards within 45 days of filing application <i>Copies provided to the following boards by the Town Clerk upon receipt:</i></p> <ul style="list-style-type: none"> <li><input type="radio"/> The Planning Board</li> <li><input type="radio"/> Zoning Board of Appeals</li> <li><input type="radio"/> Conservation Commission</li> <li><input type="radio"/> The Board of Health</li> <li><input type="radio"/> The Building Inspector</li> <li><input type="radio"/> The Highway Superintendent</li> <li><input type="radio"/> The Fire Chief</li> <li><input type="radio"/> The Police Chief</li> </ul> <p><i>Notification by Town Clerk that a copy is available for review at the town hall:</i></p> <ul style="list-style-type: none"> <li><input type="radio"/> Historical Commission</li> <li><input type="radio"/> Open Space Committee</li> </ul>	
<p>3. Public Hearing within 65 days of filing application</p> <ul style="list-style-type: none"> <li><input type="radio"/> Notice and posting of the public hearing shall comply with the provisions of M.G.L. Chapter 40A, Section 11, regarding notice for public hearings.</li> <li><input type="radio"/> To the extent permitted by law, the public hearing should be coordinated with any other public hearing required for a definitive subdivision plan or a Special Permit</li> </ul>	<p>Date of Public Hearing:</p>
<p>4. Final action on application within 90 days of the close of the public hearing</p> <ul style="list-style-type: none"> <li><input type="radio"/> Approval</li> <li><input type="radio"/> Approval subject to conditions, modifications &amp;/or restrictions</li> <li><input type="radio"/> Denial</li> </ul>	<p>Date of final vote:</p>
<p>5. Written record of decision and approved plan provided to the clerk within 14 days of a final vote</p>	<p>Date provided to town clerk:</p>

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TOWN WHERE A U.S. FLAG WAS FIRST  
RAISED OVER A PUBLIC SCHOOL. MAY, 1812

Town of Colrain  
55 Main Road  
Colrain, MA 01340  
Tel 413-624-3454  
Fax 413-624-8852

Application No. \_\_\_\_\_  
Fee \$250. \_\_\_\_\_

ZONING BOARD OF APPEALS  
REQUEST FOR A ZONING PERMIT

Town Clerk  
55 Main Road  
Colrain, MA 01340

Pursuant to the provisions of Chapter 40A of the Massachusetts General Laws and the Zoning by-Laws of the Town of Colrain, application is hereby made to the Board of Appeals for permission:

to construct a wireless communications facility consisting of a 161' tall lattice style telecommunications tower (167' to top of highest appurtenance) inside a 40' x 70' fenced in compound

On premises of Sean D King and Robin A. King  
Location: Reils Lane, Tax Assessor Parcel Id: 1320-8-10

Petitioner(s):  
Vertex Tower Assets, LLC  
By: Francis D. Parisi, ESQ  
Authorized Agent

Address:  
c/o Parisi Law Associates, P.C.  
225 Dyer Street  
Providence, RI 02903

Received this date: \_\_\_\_\_

\_\_\_\_\_  
Town Clerk

Copy transmitted to the Board of Appeals this date: \_\_\_\_\_

\_\_\_\_\_  
Town Clerk

Chapter 40A, Section 11 requires notice to be sent to the following parties in interest: "petitioners, abutters, owners of land directly opposite on any public or private street or way, and abutters to the abutters within three hundred (300) feet of the property line of the petitioner(s) as they appear on the most recent applicable tax list, notwithstanding that the land of any such owner is located in another city or town, the planning board of the city or town, and the planning board of every abutting city or town." The assessors, maintaining any applicable tax list, shall certify to the permit granting authority or special permit granting authority the names and addresses of parties in interest and such certification shall be conclusive for all purposes.

MAILING LIST FOR (1) notice of hearing, and (2) notice of filing decision (if requested).

\*NOTE: Names and addresses of abutters and abutters to abutters must be furnished.

1. a. Petitioner:

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b. Abutters:

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c. Owners of land directly  
opposite on any public or private street or way:

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List to be prepared by tax Assessor

- d. Abutters to the abutters within three hundred (300) feet of the property line of the petitioner.

NAMES:

ADDRESSES:

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- e. Planning Board of the town and the Planning Board of every abutting town is to be sent a copy of the hearing notice.

Town of Colrain Planning Board – leave at town office  
Town of Leyden Planning Board, 16 West Leyden Road, Leyden, MA 01337  
Town of Greenfield Planning Board, 14 Court Square, Greenfield, MA 01301  
Town of Shelburne Planning Board, 51 Bridge Street, Shelburne Falls, MA 01370  
Town of Charlemont Planning Board, 157 Main Street, Charlemont MA 01339  
Town of Heath Planning Board, 1 East Main Street, Heath, MA 01346

OPTIONAL: Make the above list conclusive for all purposes.

2. We, the undersigned Board of Assessors, hereby certify to the permit granting authority or special permit granting authority that the names and addresses of the parties in interest as listed above are in accord with Chapter 40A of the Massachusetts General Laws.

Board of Assessors

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PARISI LAW ASSOCIATES, P.C.  
177 NORTH MAIN STREET  
PROVIDENCE, RI 02903

Citizens Bank®

57-12-115

7/6/2020

PAY TO THE  
ORDER OF

Town A Colvain

\$ 500.00

Fine Finched

DOLLARS

MEMO Vertex Tower Asset, LLC  
Plannng Board - Special  
Permit



*[Handwritten Signature]*

AUTHORIZED SIGNATURE

⑈002602⑈ ⑆011500120⑆ 1825 184 6⑈

Security features. Details on back.

PARISI LAW ASSOCIATES, P.C.

2602

PARISI LAW ASSOCIATES, P.C.

2602

PARISI LAW ASSOCIATES, P.C.  
177 NORTH MAIN STREET  
PROVIDENCE, RI 02903

Citizens Bank®

57-12-115

7/6/20

PAY TO THE ORDER OF

Town A Colrain

\$ 100<sup>00</sup>

One Hundred

DOLLARS

Vertex Tower Assets  
Planning Board - SPR

MEMO



*[Handwritten Signature]*

AUTHORIZED SIGNATURE

⑈002605⑈ ⑆011500120⑆ 1825 184 6⑈

PARISI LAW ASSOCIATES, P.C.

2605

PARISI LAW ASSOCIATES, P.C.

2605



PARISI LAW ASSOCIATES, P.C.

177 NORTH MAIN STREET  
PROVIDENCE, RI 02903

Citizens Bank®

57-12-115

7/6/2020

PAY TO THE  
ORDER OF

Town A Colrain

\$250<sup>00</sup>

Two Hundred Fifty

DOLLARS

MEMO

Town A Colrain  
Zoning Board



AUTHORIZED SIGNATURE

*[Handwritten Signature]*

Security features. Details on back.

⑈002603⑈ ⑆011500120⑆ 1825 184 6⑈

PARISI LAW ASSOCIATES, P.C.

2603

PARISI LAW ASSOCIATES, P.C.

2603



PARISI LAW ASSOCIATES, P.C.

177 NORTH MAIN STREET  
PROVIDENCE, RI 02903

Citizens Bank®

57-12-115

7/6/20

PAY TO THE  
ORDER OF

Town of Colrain

\$ 25.00

Twenty - Five

DOLLARS

MEMO

Town of Colrain  
Tax Assessor



Authorized signature

AUTHORIZED SIGNATURE

⑈002604⑈ ⑆011500120⑆ 1825 184 6⑈

Security features. Details on back.

PARISI LAW ASSOCIATES, P.C.

2604

PARISI LAW ASSOCIATES, P.C.

2604



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TOWN WHERE A U.S. FLAG WAS FIRST RAISED  
OVER A PUBLIC SCHOOL MAY, 1812

# TOWN OF COLRAIN

## ASSESSORS OFFICE

55 Main Road  
Colrain, Massachusetts 01340  
Telephone: (413) 624-3356  
Fax: (413) 624-8852

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**CERTIFIED ABUTTERS LIST REQUEST:  
FEE: \$25.00 [NEEDS TO SUBMITTED AT TIME OF REQUEST]**

The office has 10 days to complete this request.

Applicant: Vertex Tower Assets, LLC

Mailing Address: c/o Parisi Law Associates, P.C.

225 Dyer Street

Providence, RI 02903

Telephone: (401) 447-8500

Location of Property: Reils Lane

Map: \_\_\_\_\_ Lot: \_\_\_\_\_ Parcel ID 1320-0008-00010 Sean King and Robin Kin

For:  Board of Selectmen pole hearing

Conservation Commission (100')

Zoning Board of Appeals (300')

Planning Board (300')

Other-Please specify purpose: \_\_\_\_\_

Date Received: \_\_\_\_\_ By: \_\_\_\_\_

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**LETTER OF AUTHORIZATION**

We Sean D. King and Robin A. King, with a mailing address of 4247 RTE 112 Halifax, VT 05342, owners of a certain real property located on Reils Lane in the Town of Colrain, Franklin County, Massachusetts, which is depicted as Lot 3, on Assessor's Map 416, and being further described as the same real property conveyed by that certain deed recorded in Deed Book 4995 at Page 131 of the Franklin County Registry of Deeds.

As owners of the above-referenced property, we hereby authorize Vertex Tower Assets, LLC and any of its designated agents or assigns, to apply for all necessary municipal, state, federal and other permits necessary to accommodate the installation of a wireless telecommunication facility on our property.

Sign:   
Date: 10/1/2019

Sign: Robin D King  
Date: 10/1/19

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PUBLIC NOTICE  
TOWN OF COLRAIN

Vertex Tower Assets, LLC (the "Applicant") has applied to the Town of Colrain Planning Board for a Special Permit and to the Town of Colrain Zoning Board of Appeals for a Variance to construct a 161' tall lattice style Wireless Communications Facility (167' to the top of the highest appurtenance) **at Reils Lane, Colrain, MA 01340, Tax Assessors Parcel 1320-8-10**. The Applicant will conduct a Visual Demonstration to illustrate the location and height of the proposed Facility by raising a balloon at and to the height of the proposed Facility. Said Visual Demonstration will be held **TUESDAY JULY 28, 2020 from 8:00 am to 11:00 am**, weather and wind conditions permitting. In the event of inclement weather on July 28, 2020, the Visual Demonstration will rescheduled until the next day and each successive day until weather permits. If you have any questions concerning said Visual Demonstration, please contact Francis D. Parisi, Esq., Parisi Law Associates, P.C., PHONE: (401) 447-8500, EMAIL: **fparisi@plapc.com**. Please check the Town of Colrain website [www.colrain-gov](http://www.colrain-gov) after noon on the day before the scheduled date(s) to determine if the balloon will be up the following day.

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# PLAPC

PARISI LAW ASSOCIATES, P.C.

**APPLICATION FOR SPECIAL PERMIT  
AND SITE PLAN REVIEW  
(Planning Board)  
AND  
PETITION FOR VARIANCE  
(Zoning Board of Appeals)  
FOR  
WIRELESS COMMUNICATIONS FACILITY**

**Applicant:** Vertex Tower Assets, LLC  
**Site Id:** VT-MA-2022  
**Property Address:** Reils Lane, Colrain, MA 01340  
**Tax Assessors:** 1320-8-10  
**Property Owner:** Sean D. King and Robin A. King  
**Date:** July 6, 2020

## **PROJECT NARRATIVE**

### **INTRODUCTION**

The Applicant Vertex Tower Assets, LLC, a Massachusetts limited liability company (“Vertex”) is a telecommunications infrastructure developer. Vertex develops, manages and owns telecommunications facilities in strategic locations across the country. The Vertex team has been working in the industry since the industry was founded and has the experience and expertise to navigate the challenges of the most complex markets.

Vertex is sometimes herein referred to as the “Applicant”.

The Applicant’s proposed Wireless Communications Facility is shown on plans submitted with this Application (the “Plans”). The Applicant proposes to construct a 161’ tall lattice style tower (167’ to top of lightning rod) at Reils Lane, Colrain, MA 02332 Tax Assessors Parcel ID 1320-8-10 (the “Property”) that will structurally accommodate at least 4 wireless broadband telecommunications carriers and associated antennas, electronic equipment and cabling; and fence in the base of the tower to accommodate ground based telecommunications equipment. As shown on the Plans that accompany this Application, it is anticipated that various telecommunications companies, including AT&T Wireless, Verizon Wireless, T-Mobile/SprintPCS and other wireless communications companies will place panel style antennas and required electronic equipment at heights of approximately 155’, 145’, 135’ and 125’ (centerline) on the tower, and each will place telecommunications equipment and backup batteries inside equipment shelter(s) and/or weatherproof cabinets to be located immediately adjacent to the base of the tower. Power/telephone cabinets will be installed just outside the fenced in compound. Applicant’s Wireless Communications Facility is similar to other telecommunication facilities already located

in the surrounding area and has been designed in accordance with the Town's Bylaw as much as possible.

The Property is an 89 acre parcel in the Rural Zoning District.

The Applicant respectfully requests a SPECIAL PERMIT AND SITE PLAN APPROVAL from the Planning Board.

The Facility has been designed to be the minimum height necessary to achieve the coverage objective, facilitate co-location of multiple carriers and minimize the number of new towers in town. Given the height and density of the area tree canopy and the area terrain and topography relative to the height and structural capacity of the existing utility infrastructure and as well at the technical requirements and limitations of wireless carriers, the Facility represents the only technically viable alternative to achieve the coverage objectives and satisfy all of the other requirements of the Bylaw, including co-location. Because the Facility will be more than the lesser of fifty (50) feet over the remaining tree canopy or one hundred twenty (120) feet, the Applicant respectfully requests from the Zoning Board of Appeals a VARIANCE from Section X-3(e)(v) of the Town of Colrain Zoning Bylaw

## **THE PROJECT**

Wireless telecommunications carriers are in the process of independently designing, constructing and upgrading wireless telecommunications networks to serve areas in and around the Town of Colrain. Such a network requires a grid of radio transmitting and receiving cell sites located at varying distances depending on the location of existing and proposed installations in relation to the surrounding topography. The radio transmitting and receiving facilities require a path from the facility to the user on the ground. This requires the antennas to be located in a location above the tree line where the signal is not obstructed or degraded by buildings or topographical features.

Once constructed, the Facility will be unmanned and will involve only periodic maintenance visits. The only utilities required to operate the facility are electrical power as well as telephone service which are currently available at the property. The traffic generated by the facility will be one or two vehicle trips per month by maintenance and technical personnel to ensure the telecommunications site remains in good working order. These visits will not result in any material increase in traffic or disruption to patterns of access or egress that will cause congestion hazards or cause a substantial change in the established neighborhood character. The Applicant's maintenance personnel will make use of the access roads and parking to be constructed at the Property. The proposed Facility will not obstruct existing rights-of-way or pedestrian access and will not change the daily conditions of access, egress, traffic, congestion hazard, or character of the neighborhood. The installation will not require the addition of any new parking or loading spaces.

The construction of the Applicant's Facility will enhance service coverage in the Town of Colrain and surrounding communities. The enhancement of service coverage in the Town of Colrain is desirable to the public convenience for personal use of wireless services and for community safety in times of public crisis and natural disaster. Wireless communications service also provides a convenience to residents and is an attractive feature and service to businesses. In addition, the requested use at this location will not result in a change in the appearance of the surrounding neighborhoods. The use is passive in nature and will not generate any traffic, smoke, dust, heat, glare, discharge of noxious substances, nor will it pollute waterways or groundwater. Once constructed, the facility will comply with all applicable local, state and federal safety regulations.

Moreover and most importantly:

1. The proposed Facility will promote and conserve the convenience and general welfare of the inhabitants of Colrain by enhancing telecommunications services within the Town.
2. The proposed Facility will lessen the danger from fire and natural disasters by providing emergency communications in the event of such fires and natural disasters.
3. The proposed Facility will preserve and increase the amenities of the Town by enhancing telecommunications services.
4. The proposed Facility will facilitate the adequate provision of transportation by improving mobile telecommunications for business, personal and emergency uses.

Wireless service is important to public safety and convenience. As of the end of 2016, there were an estimated 396 million mobile wireless subscribers in the United States. See FCC's *Twentieth Report to Congress on the State of Competition in the Commercial Mobile Radio Services Marketplace*, p. 5 (September 2017). There are now more wireless subscriptions than landline telephone subscriptions in the United States, and the number of landline telephone subscribers across the nation is declining each year while the number of wireless users increases. Moreover, it is forecasted that wireless connections will become more significant as network service providers facilitate increase connectivity directly between devices, sensors, monitors, etc., and their networks. *Id.*

For many Americans, wireless devices have become an indispensable replacement for traditional landline telephones. Even when Americans maintain both types of telephone service, Americans are opting increasingly to use wireless devices over their landline telephones. For Americans living in "wireless-only" homes and for those others while away from their homes, cell phones are often their only lifeline in emergencies. Over 95% of Americans now own a cellphone of some kind and more than 77% own smartphones; more importantly, more than 50 percent of American households are now "wireless only." <http://www.pewinternet.org/fact-sheet/mobile/> The FCC estimates that approximately 70% of the millions of 911 calls made daily are placed from cell phones, and that percentage is growing. See <http://www.fcc.gov/guides/wireless-911-services>

**COMPLIANCE WITH SITING CRITERIA**  
**FOR WIRELESS COMMUNICATIONS FACILITIES**

**SECTION X: INSTALLATION OF WIRELESS COMMUNICATIONS FACILITIES**

**X-1 Purpose**

**Installation of wireless communication facilities constructed or installed on towers, buildings or structures require a special permit from the Planning Board and are subject to the following conditions to minimize the adverse impacts of towers, to avoid damage to adjacent properties, to lessen impacts to adjacent properties, to maximize the usage of towers, and to minimize the number constructed.**

The proposed Facility has been designed to fulfill the purpose and intent of the Town's Bylaw in all respects. The location of the proposed Facility is on a large undeveloped and heavily treed lot and will be set back substantially from all adjacent properties. There are no other structures of sufficient height anywhere near the Property which would provide the requisite telecommunications coverage. As a wireless infrastructure developer, Vertex encourages co-location and has relationships with all of the existing wireless telecommunications carriers licensed in this market and intends to provide space on the proposed Facility at commercially reasonable rates, which will minimize the total number of towers in the community. Once constructed, the proposed Facility will have no adverse impact on the Town's scenic and historic assets, safety, health, environment, general welfare, values and quality of life, and will facilitate the provision of telecommunications services throughout the municipality and enhance the ability of wireless carriers to provide telecommunications services to the community quickly, effectively and efficiently.

**X-2 Submittal**

**Submittal: An application for a permit shall be filed with the Planning Board and shall be accompanied by six (6) copies of the following:**

- (a) A site plan prepared by a professional engineer at a scale of 1"=40' which will show the following under conditions of full site build-out:**
- i. Tower location, including guy wires if any, and tower**
  - ii. Accessory building(s) and equipment**
  - iii. Topography (contours at 2 foot intervals), including wetlands**
  - iv. Other feasible sites, if any**

- v. **Fencing and landscaping**
- vi. **Lighting**
- vii. **Areas to be cleared of vegetation**
- viii. **Site boundaries**
- ix. **Abutters**
- x. **Access Road and power supply**

**(b) A locus map at a scale of 1"=80' which shall show all dwellings, streets, bodies of water, landscape features, and Priority Habitats for endangered species (as determined by the Massachusetts Natural Heritage & Endangered Species Program) within 1000 feet. Contour intervals of 10 feet shall also be shown on this map.**

**(c) A plan showing eight (8) site view lines in a one (1) mile radius from the site shown beginning at true north and continuing clockwise at 45-degree intervals. A profile of the ground surface elevation shall be shown, and a distinction shall be made between cleared areas and wooded areas along the profile. Scale shall be 1"=400 feet horizontal; 1"=100 feet vertical.**

**(d) A copy of the request to install the facilities and the certification that the request complies with the Federal Communications Commission (FCC) and Federal Aviation Administration (FAA) regulations.**

Accompanying this Application are detailed site plans providing all required information. Also accompanying this Application are the results of an FCC TOWAIR database search, indicating that no FAA registration, lighting or marking of the proposed Facility is required under current FAA regulations.

The Applicant will conduct a Visual Demonstration to illustrate the location and height of the proposed Facility by raising a balloon at and to the height of the proposed Facility. Said Visual Demonstration will be held TUESDAY JULY 28, 2020 from 8:00 am to 11:00 am, weather and wind conditions permitting. In the event of inclement weather on June 28, 2020, the Visual Demonstration will rescheduled until the next day and each successive day until weather permits. After completion of the visibility demonstration (balloon test) required by this Section, the Applicant will provide a visibility analysis and photographic simulations of the proposed Facility from several public vantage points surrounding the proposed Facility.

### **X-3 Approval Criteria**

**Approval Criteria: The following shall be considered prior to the approval/denial of an application and may be used as a basis to impose reasonable conditions on the applicant.**

**(a) Siting: Before any new wireless communication facility is approved, the applicant must demonstrate that it is not feasible to locate their antenna and facilities on an existing tower or structure. Before a new wireless communication facility is proposed in the agricultural/residential district, the applicant must demonstrate that it is not feasible to locate their antenna and facilities in other districts or on municipal property. Such demonstration studies shall include a summary of propagation studies and a plan for any network of facilities.**

As is evidenced by the Affidavit of Site Acquisition Specialist and related maps that accompanies this Application, there are no existing telecommunications towers in the area of the proposed Facility, nor are there existing structures of sufficient height in the area of the proposed Facility that will achieve the coverage objective of the proposed Facility. The proposed Facility will be located in the Rural Zoning District. Also accompanying this Application is an Affidavit of Radio Frequency Engineer and propagation maps showing the lack of reliable wireless coverage in the area as well as the wireless propagation from the proposed Facility.

**(b) Co-location: Any new wireless communication facility must be designed to the maximum extent that is practical and technologically feasible, for co-location of other telecommunications antennas, including offering space to all other providers at market rates.**

As a wireless infrastructure developer, Vertex encourages co-location and has relationships with all of the existing wireless telecommunications carriers licensed in this market and intends to provide space on the proposed Facility at commercially reasonable rates, which will minimize the total number of towers in the community.

**(c) Aesthetics: Telecommunications facilities must be designed, located and buffered to the maximum extent that is practical and technologically feasible. The Planning Board retains the option to require applicant to conduct balloon test or to require similar demonstration.**

The Facility has been designed to be as visually unobtrusive as possible, given the coverage objective and other technical requirements and limitations. The Facility will be sited to minimize the visibility of the Facility as much as possible from adjacent properties and shall be suitably screened from abutters and public rights of way.

Moreover, the tower has been designed to be the minimum height necessary to satisfy the coverage needs of multiple wireless carriers, thereby reducing the visual impact of the Facility. The Facility will be amply set back from abutting properties and buffered by a dense stand of existing trees, and as such will be as unobtrusive as much as possible to reduce the visual impact of the Facility.

The Applicant will conduct a Visual Demonstration to illustrate the location and height of the proposed Facility by raising a balloon at and to the height of the proposed Facility. Said Visual Demonstration will be held TUESDAY JULY 28, 2020 from 8:00 am to 11:00 am, weather and wind conditions permitting. In the event of inclement weather on July 28, 2020, the Visual Demonstration will rescheduled until the next day and each successive day until weather permits. After completion of the visibility demonstration (balloon test) required by this Section, the Applicant will provide a visibility analysis and photographic simulations of the proposed Facility from several public vantage points surrounding the proposed Facility.

**(d) Radio Frequency Effect: All telecommunications facilities shall be operated only at Federal Communications Commission designated frequencies and power levels. The applicant shall provide certifications to support that the maximum allowable frequencies and power levels will not be exceeded. Certifications shall include technical specifications, an explanation of those specifications, and, if necessary, field verification.**

As is evidenced by the Site Emissions Report which accompanies this Application, the proposed Facility will comply in all respects with all applicable radio frequency emission standards.

**(e) Location and Site Requirements:**

**i. The setback distance from property lines shall be a minimum distance at least equal to the height of the wireless communication facility, plus twenty (20) feet.**

As is demonstrated on the Site Plans that accompany this Application, the proposed Facility has been designed to, and will, comply with all applicable setback requirements.

**ii. Distance from all dwellings shall be at least 500 feet.**

As is demonstrated on the Site Plans that accompany this Application, the proposed Facility has been designed to, and will, comply with all applicable setback requirements.

**iii. Access shall be provided by a roadway to the site that respects the natural terrain and minimizes erosion and construction on unstable soils and steep slopes and is approved by the Planning Board and the Fire Chief to assure emergency access at all times.**

The Applicant proposes to utilize the existing access way off Reils Lane, and then extend the way to the base of the Facility. The extension of access way to the base of the Facility has been designed to minimize cut and fill and vegetation removal to the maximum extent practicable, and will provide sufficient construction, maintenance and emergency access

**iv. The wireless communication facility shall be designed to accommodate the maximum number of uses technologically practical.**

The Applicant proposes to construct a 161' tall lattice style tower (167' to top of lightning rod) that will structurally accommodate at least 4 wireless broadband telecommunications carriers and associated antennas, electronic equipment and cabling; and fence in the base of the tower to accommodate ground based telecommunications equipment. As a wireless infrastructure developer, Vertex encourages co-location and has relationships with all of the existing wireless telecommunications carriers licensed in this market and intends to provide space on the proposed Facility at commercially reasonable rates, which will minimize the total number of towers in the community.

**v. Height of the wireless communication facility shall not exceed the lesser of fifty (50) feet over the remaining tree canopy or one hundred twenty (120) feet.**

The Facility has been designed to be the minimum height necessary to achieve the coverage objective, facilitate co-location of multiple carriers and minimize the number of new towers in town. Given the height and density of the area tree canopy and the area terrain and topography relative to the height and structural capacity of the existing utility infrastructure and as well at the technical requirements and limitations of wireless carriers, the Facility represents the only technically viable alternative to achieve the coverage objectives and satisfy all of the other requirements of the Bylaw, including co-location. Because the Facility will be more than the lesser of fifty (50) feet over the remaining tree canopy or one hundred twenty (120) feet tall, the Applicant respectfully requests a VARIANCE from this provision from the Zoning Board of Appeals.

**vi. Existing on-site vegetation shall be preserved to the maximum extent possible.**

Other than what is necessary for the construction of the fenced in compound and extension of the existing driveway to the base of the compound, all existing on-site vegetation shall be preserved to the maximum extent practicable.

**(f) Removal of Tower: The applicant shall agree to remove any telecommunications facility that ceases to be used for its intended purpose for 12 consecutive months. The**

**Planning Board shall require a financial performance guarantee to insure that unused facilities are removed.**

The Applicant agrees to remove all unused above-ground structures and equipment that ceases to be used for its intended purpose for 12 consecutive months, and to provide a bond to insure that such structures and equipment are is so removed, such bond to be submitted to Building Inspector prior to issuance of a building permit.

**(g) Maintenance of Telecommunications Facility: All telecommunications facilities shall be maintained in good order and repair. Any paint and finish must be maintained and repaired when the blemishes are visible from the property line.**

The Facility will be constructed of galvanized steel which will not be painted. The Applicant agrees to maintain the Facility in good order and repair.

**X-4 Fees and Costs**

**Fees and Costs:**

**(a) Applicant shall pay a permit application fee of \$500.00 at the time of submittal.**

The requested permit application fee accompanies this Application.

**(b) The Planning Board reserves the right to engage independent consultant(s) to assist with its review of the submittal at a reasonable fee, to be borne by the applicant.**

No response required.

**X-5 Modifications Modifications:**

**(a) Any extension, addition of cells, or construction of new or replacement towers or transmitters or accessory buildings beyond those identified or shown in the site plan submitted shall be subject to an amendment to the Special Permit, following the procedures and fees in effect as of the date of the application for such modification.**

The Applicant agrees to comply with all reasonably and lawfully required procedural and other conditions generally and uniformly and lawfully imposed and applied by the Town with respect to the Facility.

**X-6 Exemptions Exemptions:**

**(a) Amateur radio towers in accordance with terms of any amateur radio service license issued by the Federal Communications Commission provided that the tower meets the height limits expressed above and is not used or licensed for any commercial purposes.**

Not applicable

**X-7 Waivers**

**Waivers:**

**(a) The Planning Board may, but is not required to, waive any individual submittal requirement in Section X-2.**

The Applicant believes that it has provided all applicable submittal requirements of Section X-2; however, to the extent that the Planning Board believes that the Application and accompanying materials do not satisfy the submittal requirements of Section X-2, the Application respectfully requires a WAIVER of that submittal requirement.

## **COMPLIANCE WITH THE CRITERIA FOR SPECIAL PERMITS**

### **Section XII Special Permits**

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**(c) Criteria. Special permits may be granted by the special permit granting authority only upon its written determination that the proposed use is in harmony with the general purpose and intent of this Zoning Bylaw and will not have adverse effects which overbalance its beneficial effects on either the neighborhood or the town, in view of the particular characteristics of the site and of the proposal in relation to that site. The determination shall take into consideration each of the following:**

- (1) Social, economic or community needs which are served by the proposal.**
- (2) Traffic flow and safety.**
- (3) Adequacy of utilities and other public services.**
- (4) Impacts on neighborhood character and historic and cultural resources.**
- (5) Protection of the natural environment.**
- (6) Potential fiscal impact.**
- (7) Attendance at public schools.**
- (8) Positive employment consequences.**
- (9) For manufacturing or industrial use, including processing, fabrication or assembly, no such use shall be permitted which would be detrimental or offensive or tend to reduce property values in the same or adjoining districts by reason of dirt, odor, fumes, gas, sewage, refuse, noise, excessive vibration, or danger of explosion or fire.**

As has been discussed throughout this Project Narrative, the proposed Facility has been designed to comply with all of the criteria for a Special Permit. Once constructed, the Facility will be unmanned and will involve only periodic maintenance visits. The only utilities required to operate the facility are electrical power as well as telephone service which are currently available at the property. The traffic generated by the facility will be one or two vehicle trips per month by maintenance and technical personnel to ensure the telecommunications site remains in good working order. These visits will not result in any material increase in traffic or disruption to patterns of access or egress that will cause congestion hazards or cause a substantial change in the established neighborhood

character. The Applicant's maintenance personnel will make use of the existing access way which will be extended to the base of the Facility. The proposed Facility will not obstruct existing rights-of-way or pedestrian access and will not change the daily conditions of access, egress, traffic, congestion hazard, or character of the neighborhood. The installation will not require the addition of any new parking or loading spaces.

The Facility will enhance service coverage in the Town of Colrain and surrounding communities. The enhancement of service coverage in the Town of Colrain is desirable to the public convenience for personal use of wireless services and for community safety in times of public crisis and natural disaster. Wireless communications service also provides a convenience to residents and is an attractive feature and service to businesses. In addition, the requested use at this location will not result in a change in the appearance of the surrounding neighborhoods. The use is passive in nature and will not generate any traffic, smoke, dust, heat, glare, discharge of noxious substances, nor will it pollute waterways or groundwater. There will be only a de minimus increase in impervious surfaces, and removal of surface waters will not adversely affect neighboring properties or the public storm drainage system. There will be no signage on the tower. Signage shall be limited to those needed at the base of the facility to identify the property and owners, and to comply with applicable safety standards. Once constructed, the Facility will comply with all applicable local, state and federal safety regulations.

## **COMPLIANCE WITH THE CRITERIA FOR SITE PLAN REVIEW**

### **XIII DEVELOPMENT SITE PLAN REVIEW**

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#### **j) Review Criteria**

**The Planning Board's evaluation of the proposed Site Plan shall include, as appropriate, the following:**

- 1. Adequacy and arrangement of vehicular traffic access and circulation, including intersections, road widths, pavement surfaces, dividers and traffic controls.**
- 2. Adequacy and arrangement of pedestrian traffic access and circulation, pedestrian walkways, control of intersections with vehicular traffic and overall pedestrian safety and convenience.**
- 3. Location, arrangement, appearance and sufficiency of off-street parking and loading.**
- 4. Location, arrangement, size, design and general site compatibility of buildings, lighting and signs in relation to the terrain and to the use, scale, and proportions of existing and proposed buildings in the vicinity.**
- 5. Selection and location of lighting fixtures so that they are pedestrian in scale, prevent light pollution of the night sky, and do not produce illumination beyond the property boundaries. Full cut-off down lighting fixtures that do not project light above the horizontal plane shall be used in all instances.**
- 6. Location of buildings to provide a solar and wind orientation which encourages energy conservation, if appropriate.**
- 7. Adequacy of landscaping to provide a visual buffer from abutting properties, to provide shade to improve energy efficiency during the summer months, and to improve the visual appearance of parking areas and the site in general.**
- 8. Findings of the Zoning Board of Appeals relative to whether approval of a proposed site plan, with or without conditions, modifications, or restrictions, would be contrary to the protection of the environmental or scenic characteristics of the neighborhood or the Town, or the avoidance of conditions likely to create a nuisance affecting abutting**

**properties.**

As has discussed throughout this Project Narrative, the proposed Facility has been designed to comply with all of the criteria for a Special Permit. Once constructed, the Facility will be unmanned and will involve only periodic maintenance visits. The only utilities required to operate the facility are electrical power as well as telephone service which are currently available at the property. The traffic generated by the facility will be one or two vehicle trips per month by maintenance and technical personnel to ensure the telecommunications site remains in good working order. These visits will not result in any material increase in traffic or disruption to patterns of access or egress that will cause congestion hazards or cause a substantial change in the established neighborhood character. The Applicant's maintenance personnel will make use of the existing access way which will be extended to the base of the Facility. The proposed Facility will not obstruct existing rights-of-way or pedestrian access and will not change the daily conditions of access, egress, traffic, congestion hazard, or character of the neighborhood. The installation will not require the addition of any new parking or loading spaces.

The Facility has been designed to be the minimum height necessary to achieve the coverage objective, facilitate co-location of multiple carriers and minimize the number of new towers in town. Given the height and density of the area tree canopy and the area terrain and topography relative to the height and structural capacity of the existing utility infrastructure and as well at the technical requirements and limitations of wireless carriers, the Facility represents the only technically viable alternative to achieve the coverage objectives and satisfy all of the other requirements of the Bylaw, including co-location. Other than what is necessary for the construction of the fenced in compound and extension of the existing driveway to the base of the compound, all existing on-site vegetation shall be preserved to the maximum extent practicable, and the Facility will be amply set back from all abutting property lines. The proposed Facility will not be lit or illuminated, and under current FAA regulations the proposed Facility will not require FAA lighting or marking.

**COMPLIANCE WITH CRITERIA FOR VARIANCES**

**Section IX-2**

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**The Board of Appeals shall have the following powers:**

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**(c) To hear and decide appeals or petitions for variances from the terms of this Zoning Bylaw including variances for use, with respect to particular land or structures. The Zoning Board of Appeals shall grant no variances which would amount to an amendment of this bylaw. Such variance shall be granted only in cases where the Zoning Board of Appeals finds all of the following:**

**(1) A literal enforcement of the provisions of this Zoning Bylaw would involve a substantial hardship, financial or otherwise, to the petitioner or appellant.**

**(2) The hardship is owing to unique circumstances relating to the soil conditions, shape or topography of such land.**

**(3) The hardship is especially affecting such land or structures, but not generally the zoning nor overly district in which it is located.**

**(4) Desirable relief may be granted without either:**

**(a) Substantial detriment to the public good; or**

**(b) Nullifying or substantially derogating from the intent or purpose of this Zoning Bylaw.**

The proposed Facility meets all of the requirements of a Variance under the Town of Colrain Zoning Bylaw and respectfully requests that the Zoning Board of Appeals make the requisite findings to issue the requested Variances under those and such other provisions of the Bylaw, if any, that the Board deems necessary to approve the Facility as proposed.

Given technical limitations with respect to:

(i) the location of the tower relative to the surrounding neighborhoods and other existing telecommunication sites in and around the Town of Colrain;

(ii) the topography of the surrounding area;

- (iii) the lack of viable alternatives in the area;
- (iv) the height restrictions of the tower imposed by the Bylaw;
- (v) the Town's requirement to accommodate multiple wireless communications companies;
- (vi) the demand for robust and reliable telecommunications coverage; and
- (vii) the requirement to accommodate rapidly evolving technologies;

the Applicant requires the requested Variances to permit construction of the Facility as proposed.

As the Plans indicate, the proposed Facility has been designed to accommodate the antennas at least 4 wireless broadband co-locators. There are no existing or previously approved telecommunications facilities in the area of the proposed Facility, nor are there existing structures of sufficient height in the area of the proposed Facility, that will achieve the coverage objective of the proposed Facility. The Facility has been situated on the Property in such a way to achieve the objectives of the Bylaw in all respects.

As has been shown throughout this Project Narrative, the granting of the Variances will not be detrimental to the public safety, health or welfare or injurious to other property and will promote the public interest. The Variances will substantially secure the objectives, standards and requirements of these regulations, and a particular hardship exists and special circumstances warrant the granting of the Variances.

In 1996, the U.S. Congress enacted the Telecommunications Act of 1996, Pub. L. No. 104-104, § 704; 110 Stat. 56 (1996) (the "TCA"). The intent of the TCA enacted by the U.S. Congress was to institute a framework to promote competition and innovation within this telecommunications industry. Under their respective licenses from the FCC, wireless telecommunications providers are obligated to provide a reliable "product" [i.e. wireless communications service] to the population in the metropolitan Boston region, which includes the Town of Colrain. Likewise, consumer expectations for increasingly robust and reliable service requires competing service providers to identify and remedy existing gaps in reliable network coverage, or gaps that result from increasing subscriber voice and data traffic beyond the limits of existing network infrastructure. A carrier's failure to remedy network gaps in a timely fashion can result in a significant loss of subscribers to competing telecommunications carriers. The proposed Facility and corresponding relief requested are necessary to remedy a gap in reliable service coverage within the various wireless carriers' existing network infrastructure.

The Applicant has investigated alternative sites in and around the defined geographic area within which engineers determined that a facility must be located to fill the gap in service coverage and to function effectively within the network of existing and planned facilities. No existing structure or property in or near the vicinity of the proposed Facility is feasible to accommodate the coverage network requirements.

Accordingly, a literal enforcement of the provisions of the Bylaw would prevent the Applicant from eliminating an existing gap in reliable service coverage, resulting in a potential loss of subscribers and the inability to effectively compete for subscribers with FCC licensed competitors in the market, contrary to the intent of the Bylaw and the U.S. Congress in enacting the TCA.

Moreover, this hardship is owing to the circumstances relating to topography of the surrounding area. The property is a large, commercially used parcel abutting business and industrial zones and undevelopable wetlands. The surrounding area is provides no other feasible location in which to install and operate a wireless telecommunications facility. Existing structures and buildings in the area are insufficient in height to allow wireless carriers to operate thereon and provide adequate coverage to this significant gap in its network. The property provides a unique opportunity, given the existing tower as well as the location and area topography surrounding the Facility, to minimize any adverse visual impacts to the surrounding area. The proposed design conforms to the existing characteristics of the Property, and utilizes the existing structures on the property to screen the proposed Facility, thereby minimizing potential impacts.

The wireless communications systems being developed by the various telecommunications carriers operating in the Colrain area have has been designed employing the most sophisticated radio frequency engineering methods available. Radio frequency engineers determine the placement of network points-of-presence using computer engineering models that simultaneously evaluate are topography and population patterns to identify specific geographic areas to be serviced by each antenna facility in the network. As a result of this modeling, combined with actual coverage data provided by existing “on air” facilities, the carriers’ radio frequency engineers have identified a limited geographic area as a necessary location for a communications facility to remedy an existing gap in reliable service coverage in the general vicinity of the Property. Without the requested relief, there would remain a substantial “gap” in reliable service coverage in the carriers’ respective networks. Radio frequency coverage maps confirm that a telecommunications facility located at the Property is required to remedy the existing gap in the wireless network coverage in the area. The requested height has been determined by engineers to be the minimum height necessary to connect coverage from the proposed Facility with coverage from adjacent cell sites in the carriers’ respective networks (i.e. to remedy the existing “gap” in service and to effect reliable handoffs between adjacent cell sites as a subscriber travels through the area).

Additionally, the Applicant will allow future carriers to co-locate on the Facility hereby minimizing the number of new facilities needed to provide coverage to the Town.

In the context of a utility service where the critical criteria in the development of each facility is its ability to integrate with a network of surrounding sites and subsequently, for each cluster of sites to function within a regional/national network, there is an underlying premise that each site chosen by the Applicant for a facility possesses a unique location and topographical characteristics.

Finally, as noted in *Nextel Communications of the Mid-Atlantic, Inc. v. Town of Wayland*, 231 F.Supp. 2d 396, 406-407 [D. Mass. 2002], the “need for closing a significant gap in coverage, in order to avoid an effective prohibition of wireless services, constitutes another unique circumstance when a zoning variance is required.” No existing structure or property in an allowed zoning district is technically suitable to resolve the existing gap in the wireless service coverage in the area. In addition, the existing structures located near the Property are not at a height sufficient to provide adequate coverage to this significant gap in its network. The Facility will be the minimum height necessary to provide coverage for multiple wireless carriers. Given the location and size of the Property, as well as the proposed design of the Facility, the proposed installation will have a minimal visual impact to the surrounding neighborhood while achieving the carriers’ requisite coverage.

- The proposed Facility will reduce the number of new structures ultimately needed to provide wireless communication services in the surrounding area by providing co-location potential;
- The proposed Facility is designed to be at the minimum height necessary to provide adequate coverage to the area and keep potential visual impacts to a minimum;
- The proposed Facility will comply in all respects with radio frequency emission standards established by the FCC;
- The proposed Facility will not have any adverse effect on the value of land and buildings in the neighborhood or on the amenities thereof. The proposed use is passive, requires no employees on the premises, and has no characteristics that are incompatible with the underlying zoning. Specifically, it will generate only about two vehicle trips per month by a service technician for routine maintenance, will be served by standard electrical and telephone service, and requires no water, septic or other town services;
- The proposed Facility will promote and conserve the convenience and general welfare of the inhabitants of the Town by enhancing telecommunications services within the town;

- The proposed Facility will lessen the danger from fire and natural disasters by providing emergency communications in the event of such fires and natural disasters;
- The proposed Facility will involve no overcrowding of land or undue concentration of population because it is an unmanned Facility;
- The proposed Facility will preserve and increase the amenities of the Town by enhancing the telecommunications services and will facilitate the adequate provisions of transportation by improving mobile telecommunications for business, personal and emergency uses;
- The proposed Facility will involve no adverse effects on public and private water supplies and indeed will utilize no water at all;
- The proposed Facility will involve no adverse effects on drainage, schools, parks, open space, or other public requirements, and will involve no excessive noise or pollution to the environment;
- The proposed Facility will have no adverse effect on historic sites; and
- The proposed Facility will be an appropriate use of land within the Town.

Due to the unique size, shape, location and elevation of the subject Property and the topography of the surrounding area as well as the existing zoning of the property and surrounding area, unique circumstances exist to justify the granting of the requested Variance. Moreover, Applicant's proposed Facility will have no impact on adjoining properties and the surrounding neighborhood in that the proposed Facility will produce no objectionable noise, glare, dust, smoke, fumes, odors, of effluent, and will not have any impact of traffic or circulation.

Accordingly, the Applicant requests findings that

1. a literal enforcement of the provisions of this chapter would involve a substantial hardship to the Applicant.
2. The hardship is owing to circumstances relating to the soil conditions, shape or topography of such land or structures and especially affecting such land or structures but not affecting generally the zoning district in which it is located.
3. Desirable relief may be granted without nullifying or substantially derogating from the intent or purpose of the zoning bylaw.

In addition (or in the alternative), the Applicant requests a finding that strict compliance would cause a conflict with the TCA.

## **THE TELECOMMUNICATIONS ACT OF 1996**

In 1996, the U.S. Congress enacted the Telecommunications Act of 1996, Pub. L. No. 104-104, § 704; 110 Stat. 56 (1996) (the “TCA” or the “Telecommunications Act”). The intent of the TCA as enacted by Congress was to institute a framework to promote competition and innovation within the telecommunications industry. Although this law specifically preserves local zoning authority with respect to the siting of wireless service facilities, it clarifies when the exercise of local zoning authority may be preempted by federal law. Section 704 of the TCA provides, in pertinent part, that

### **(7) PRESERVATION OF LOCAL ZONING AUTHORITY-**

**(A) GENERAL AUTHORITY-** Except as provided in this paragraph, nothing in this Act shall limit or affect the authority of a State or local government or instrumentality thereof over decisions regarding the placement, construction, and modification of personal wireless service facilities.

### **(B) LIMITATIONS-**

**(i) The regulation of the placement, construction, and modification of personal wireless service facilities by any State or local government or instrumentality thereof--**

**(I) shall not unreasonably discriminate among providers of functionally equivalent services; and**

**(II) shall not prohibit or have the effect of prohibiting the provision of personal wireless services.**

The intent of the TCA enacted by the U.S. Congress was to institute a framework to promote competition and innovation within this telecommunications industry. Under its respective licenses from the FCC, wireless telecommunications carriers are obligated to provide a reliable “product” [i.e. telecommunications service] to the population in western Massachusetts, which includes the Town of Colrain. Likewise, consumer expectations for increasingly robust and reliable service requires competing service providers to identify and remedy existing gaps in reliable network coverage, or gaps that result from increasing subscriber voice and data traffic beyond the limits of existing network infrastructure. A carrier’s failure to remedy network gaps in a timely fashion can result in a significant loss of subscribers to competing telecommunications carriers. As demonstrated in the Application and supplemental materials provided by the Applicant, the proposed Facility and corresponding relief requested are necessary to remedy a gap in reliable service coverage within the existing network infrastructure. In Daniels v. Town of Londonderry, 157 N.H. 519 (2008), the New Hampshire Supreme Court upheld the grant of use and area variances for the construction of a cell tower in an agricultural-residential zone, noting that the Londonderry ZBA correctly treated the TCA as an “umbrella” that preempted local law under certain circumstances.

In a growing number of cases, the federal courts have found that permit denials violate the TCA, even if such denials would be valid under state law. For example, in Omnipoint Telecommunications Facility v. Town of Lincoln, 107 F. Supp. 2d 108 (D. Mass. 2000), the court found that denial of a variance for a location outside of the town's wireless overlay district violated the TCA and ordered the variance to issue despite an Bylaw provision prohibiting use variances. The court in Nextel Telecommunications Facility v. Town of Wayland, 231 F. Supp. 2d 396 (D. Mass 2002) reached the same result. In that case, the court stated: "Although the Board's statement [regarding its lack of authority to issue a use variance] may be correct statement in Massachusetts regarding variances, it is not controlling in the special case of Telecommunications facilities...Under the Telecommunications Act, the Board cannot deny the variance if in so doing it would have the effect of prohibiting wireless services." Wayland at 406-407. Most notably, in Omnipoint Holdings, Inc. v. Town of Cranston, No. 08-2491 (1st Cir. Nov. 3, 2009), the United States Court of Appeals for the First Circuit affirmed a judgment of the United States District Court for the District of Rhode Island, which found that the Cranston Zoning Board of Review violated the TCA by effectively prohibiting the provision of wireless services in Cranston when it denied an application for a special use permit and variance to construct a wireless facility in a residential area. The Court noted that "[t]he effective prohibition clause does not stand alone; it is also part of the TCA's larger goal of encouraging competition to provide consumers with cheaper, higher-quality wireless technology.... As cell phone use increases, carriers need to build more facilities, especially in populated areas, to continue providing reliable coverage, and local regulations can present serious obstacles." Cranston, p. 25. More recently, in New Cingular Wireless, LLC v. City of Manchester, Case No. 11-cv-334-SM (USDC D. NH Feb. 28, 2014), the United States District Court for the District of New Hampshire indicated that the City of Manchester impermissibly denied a variance to construct a telecommunications tower in a (non-permitted) residential zone, in that the tower addressed significant coverage gaps and provided competitive and reliable wireless services and there was no feasible alternative. The Court noted that the City must consider the public benefits of wireless services in determining whether to grant a zoning variance for a tower. Id.

The Applicant has investigated alternative sites in and around the defined geographic area within which its engineers determined that a facility must be located to fill the gap in service coverage and to function effectively within the wireless network of existing and planned facilities. No existing structure or property in or near the vicinity of the proposed Facility is feasible to accommodate the wireless network requirements. The proposed Facility is on large substantially undeveloped parcel and provides a substantial vegetative buffer. The wireless communications systems being developed by the various telecommunications carriers operating in the Colrain area have been designed employing the most sophisticated radio frequency engineering methods available. Radio frequency engineers determine the placement of network points-of-presence using computer engineering models that simultaneously evaluate are topography and population patterns to identify specific geographic areas to be serviced by each antenna facility in the network. As a result of this modeling, combined with actual coverage data provided by existing "on air" facilities, the carriers' radio frequency engineers have identified a limited geographic area as a necessary location for a communications facility to remedy an existing gap in reliable service coverage in the general vicinity of the Property. Without the requested relief, there would remain a substantial "gap" in reliable service coverage in the carriers' respective networks. Radio frequency coverage

maps confirm that a telecommunications facility located at the Property is required to remedy the existing gap in the wireless network coverage in the area. The requested height has been determined by engineers to be the minimum height necessary to connect coverage from the proposed Facility with coverage from adjacent cell sites in the carriers' respective networks (i.e. to remedy the existing "gap" in service and to effect reliable handoffs between adjacent cell sites as a subscriber travels through the area).

Accordingly, denial of a permit to construct the Facility would prevent the Applicant from eliminating an existing gap in reliable service coverage, resulting in a potential loss of subscribers for the carriers and the inability to effectively compete for subscribers with other FCC licensed competitors in the market, contrary to the intent of the Bylaw and the U.S. Congress in enacting the TCA.

**SUMMARY**

Because the proposed facility meets all of the requirements for a Special Permit for Wireless communications Facility under the Town of Colrain Zoning Bylaw except for those provisions for which a VARIANCE have been requested from the Zoning Board of Appeals, and pursuant to §704(a) of the Federal Telecommunications Act of 1996 which provides, among other things, that wireless facilities may not be prohibited in any particular area and that any denial of zoning relief must be based upon substantial evidence, the Applicant respectfully requests that the Planning Board GRANT THE SPECIAL PERMIT and APPROVE THE SITE PLAN as proposed, the Zoning Board of Appeals GRANT THE VARIANCE(s) as requested, and the Town grant such other permits, relief or waivers deemed necessary by the Town of Colrain under the current Bylaw and pending Bylaws amendments, if any, so that the Applicant may construct and operate the Facility as proposed.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'F. Parisi', with a long horizontal stroke extending to the right.

Francis D. Parisi, Esq.  
Parisi Law Associates, P.C.  
225 Dyer Street  
Providence, RI 02903  
(401) 447-8500 cell  
[fparisi@plapc.com](mailto:fparisi@plapc.com)

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# TOWAIR Determination Results

## \*\*\* NOTICE \*\*\*

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

### DETERMINATION Results

**Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.**

### Your Specifications

#### NAD83 Coordinates

Latitude	42-41-54.8 north
Longitude	072-40-56.9 west

#### Measurements (Meters)

Overall Structure Height (AGL)	50.9
Support Structure Height (AGL)	49.1
Site Elevation (AMSL)	372.4

#### Structure Type

LTOWER - Lattice Tower

### [Tower Construction Notifications](#)

Notify Tribes and Historic Preservation Officers of your plans to build a tower.

CLOSE WINDOW

10

**STATEMENT OF STEPHEN KELLEHER**  
**Vertex Towers, LLC**

I, Stephen Kelleher, hereby state the following in support of the application submitted by Vertex Tower Assets, LLC for a multi-user Personal Wireless Service Facility (“PWSF”) to be located off Reils Lane, Colrain, MA (the “Property”), consisting of a 161’ Self-Support tower and related ground equipment contained within a fenced compound (the “Site”)

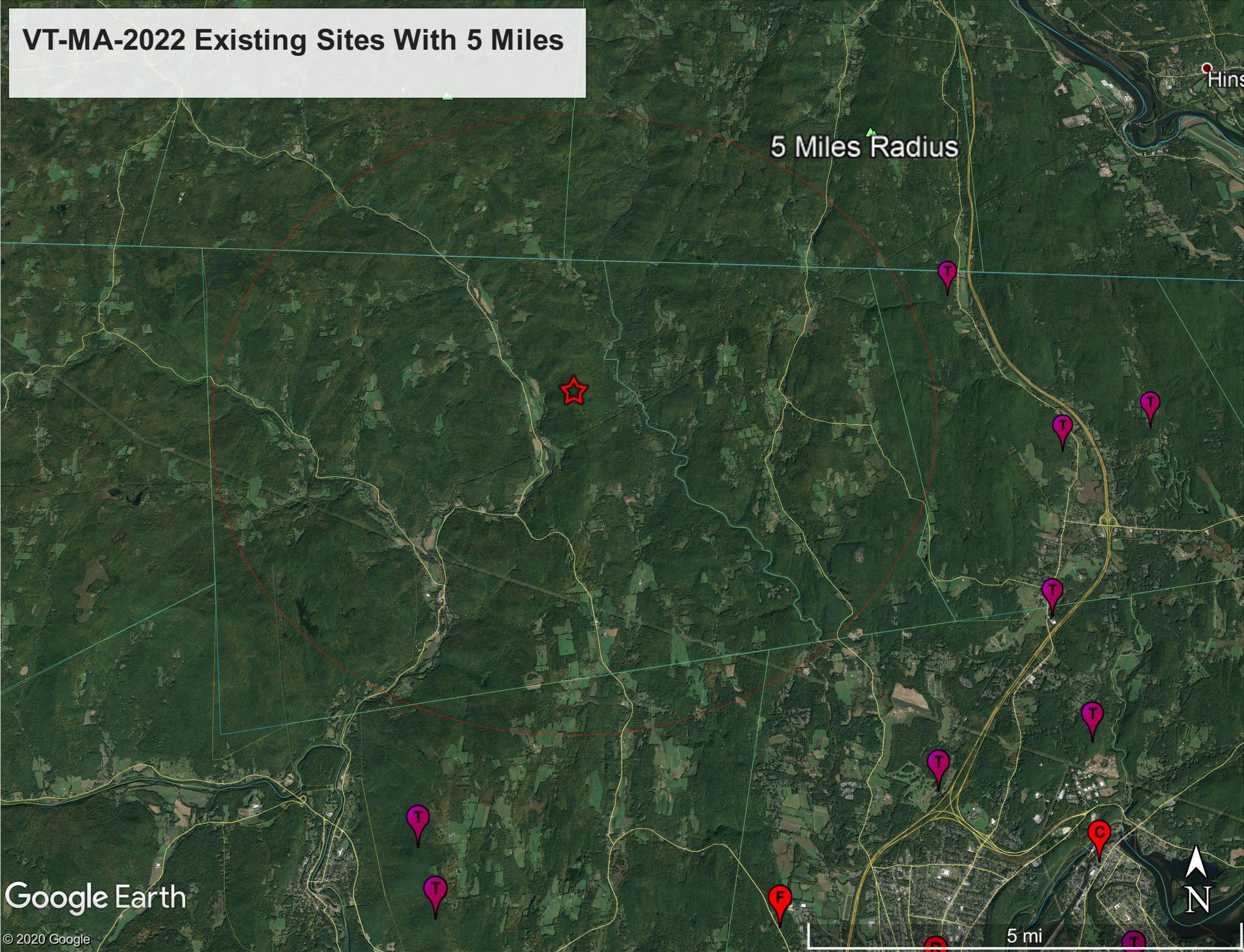
1. My name is Stephen Kelleher and I am the Manager for Vertex Tower Assets, LLC.
2. I have worked in the telecommunications industry for 13 years overseeing and assisting in the leasing, zoning, permitting and construction of wireless communications facilities and specifically in the investigation of all feasible alternatives and options locating a wireless communications facility within a search ring which would fill a significant gap in wireless coverage.
3. I have participated directly through my present and past employment in the development and analysis of hundreds of such facilities, including wireless communication facilities similar to the proposed Site.
4. I have personally visited the Property, and the areas surrounding the Property, on numerous occasions. I submit this affidavit based on my personal knowledge of the Property and the surrounding areas, while also working together with the experience and documentation provided by civil and radio frequency engineers, environmental consultants and based on my professional experience in the development of wireless communication facilities.
5. Part of my site acquisition and development duties include identifying potential candidates within an area identified as having a significant gap in coverage. The candidate identification process includes reviewing the applicable zoning ordinance with legal counsel, engineers, wetland scientists, and other professionals to identify areas where the proposed Site is allowed and feasible. First, I explore the area to determine whether there are any existing structures of sufficient height and structural capacity from which an antenna installation on such a structure would provide sufficient coverage. If there are no such existing structures, I identify properties, located within the narrowly defined search area, that appear to be suitable for the installation of a communications facility, while also eliminating certain properties that would not be suitable due various limitations or concerns related but not limited to, parcel size, access issues, landlocked parcels, conservation restrictions, wetlands, visibility, elevation, terrain and constructability. In order to be viable, a candidate must (i) provide adequate coverage to the identified significant gap in coverage and (ii) have a willing landowner with whom commercially reasonable lease terms may be negotiated. Preference is given to locations that closely comply with local zoning ordinances, or in the event no viable candidates are found within the search area, I attempt to identify other potentially suitable properties, with preference always given to existing structures.
6. In connection with this site, I have provided site acquisition services, including researching the area, and identifying potential alternative candidates to the leased ground space on the Property.

7. Based on my personal knowledge of the proposed Site and the and the surrounding area, there are no potential alternative candidates located within this geographically driven search ring that would be considered superior to the proposed Site. In addition, based on my experience, in my professional opinion, the proposed PWSF to be located off of Reils Lane is the least intrusive and only available and viable alternative to adequate meet the coverage objective to fill this significant gap in coverage.

Executed this <sup>2nd</sup> of July, 2020.

  
\_\_\_\_\_  
Stephen Kelleher  
Vertex Tower Assets, LLC

# VT-MA-2022 Existing Sites With 5 Miles



Google Earth

© 2020 Google

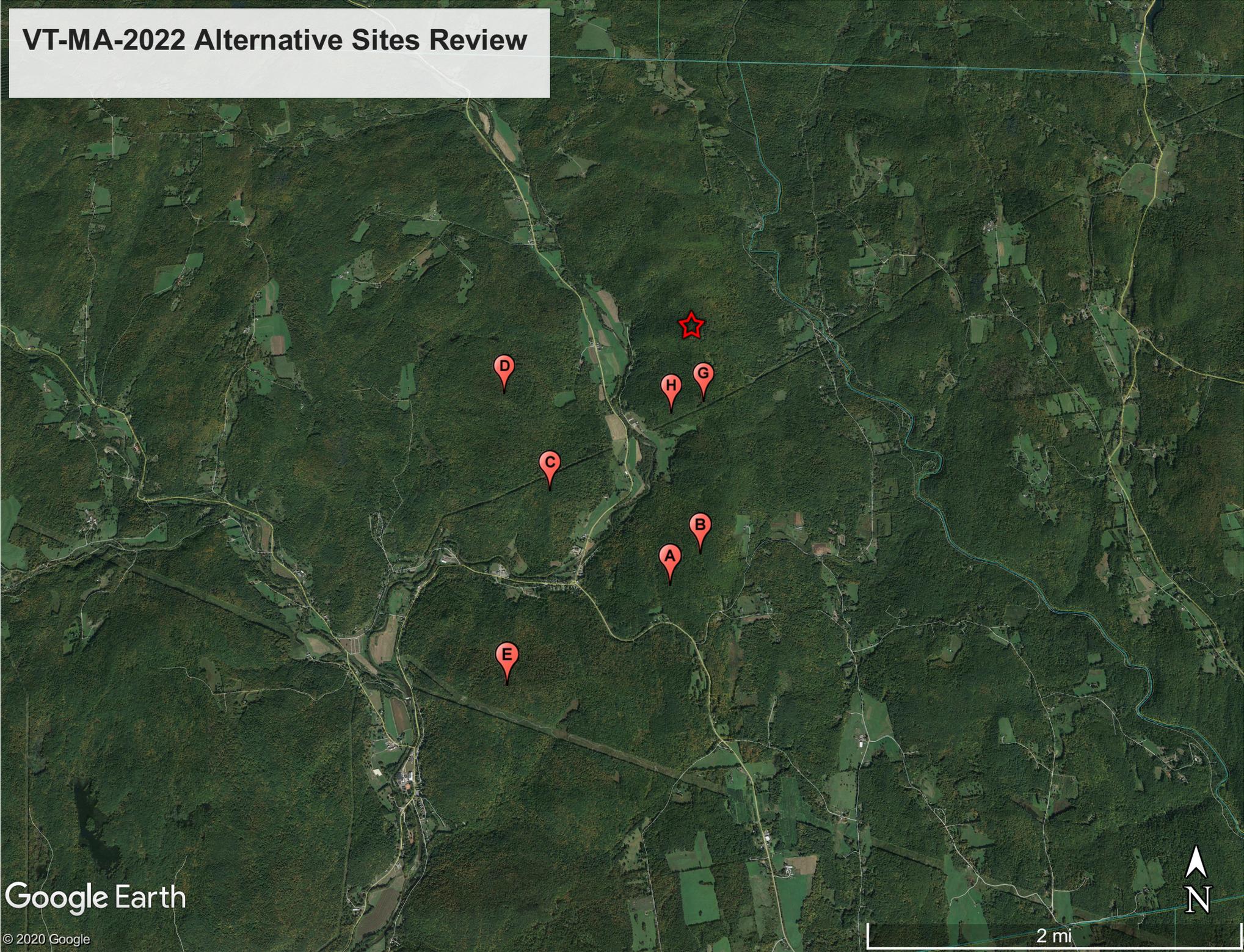
5 mi

N

**Alternative Site Analysis  
for Proposed Tower off Reils Land Colrain, MA**

<b>ID</b>	<b>Address</b>	<b>Map</b>	<b>Lot</b>	<b>ACRES</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Distance from Proposed Location</b>	<b>Comments</b>
<b>A</b>	Greenfield Road	4150	17	54	42.67248	-72.685859	1.82	Landonwer was unresponsive. Site would be difficult to access from the street and overall construction would be cost prohibitive. Would provide coverage to downtown area but limited to the North.
<b>B</b>	W Leydon Road	4150	22	186	42.675466	-72.682203	1.59	Had multiple discussions with landowner. Engineers walked the property and determined location insufficient due access and constructability concerns due to required wetlands crossing and slope.
<b>C</b>	Jacksonville Road	1300	4	140	42.681669	-72.700319	1.48	Landowner responded to our inquiry. Property would have been difficult to construct due to the steepness of the slope. Coverage would have been limited to due lower elevation
<b>D</b>	Jacksonville Road	1320	3	244	42.691766	-72.706403	1.3	High point on the property is inaccessible. Other areas of the property are not sufficient in elevation
<b>E</b>	Off Greenfield Road	4110	7	129	42.66342	-72.704561	2.68	Spoke with Landowner vial email multiple times. He was not interested in pursing and non-responsive. Site would not provide adequate coverage North on 112
<b>F</b>	Reils Lane	1320	8 10	88				Subject Property
<b>G</b>	Off Avery Hill Road	4200	7	48	42.69096	-72.681263	0.54	Spoke with Landowner multiple times. Parcel is landlocked. Engineers walked property and the site was deemed to be unfeasible due to development costs.
<b>H</b>	14 Roberts Lane	1300	7	101	42.689727	-72.685353	0.63	We reviewed this location and determined that we would not be able to construct a tower at the desired location due to the existing slope.

# VT-MA-2022 Alternative Sites Review



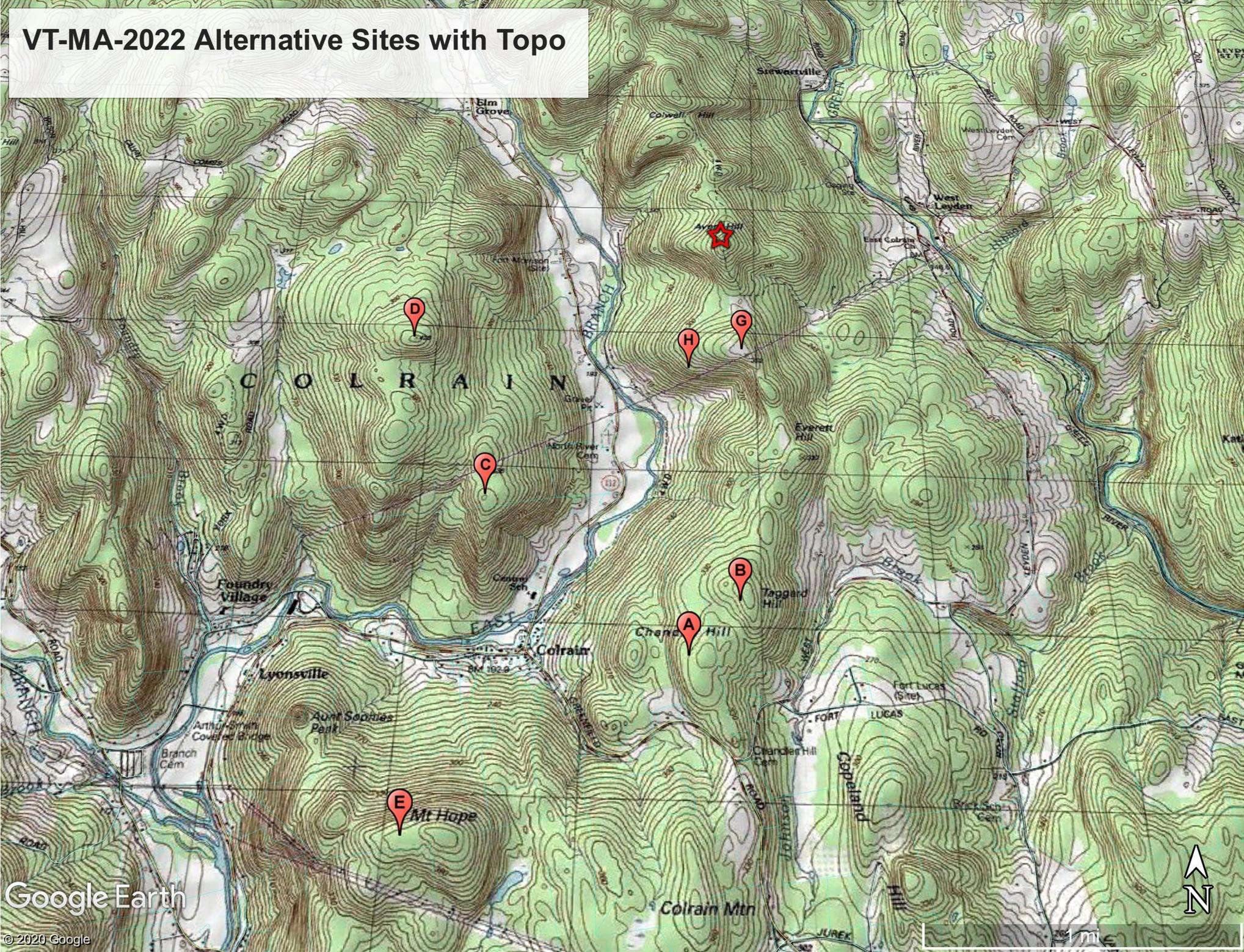
Google Earth

© 2020 Google

2 mi



# VT-MA-2022 Alternative Sites with Topo



Google Earth

© 2020 Google





## AFFIDAVIT OF RF ENGINEER

I, Jose Hernandez hereby state the following in support of the application for Vertex Tower Holdings, LLC (“Vertex”) of proposed monopole at 42.698550/-72.682475, Colrain, MA 01340 (the “Site”) and the attachment of antennas, cabling and other telecommunications equipment on and at the base of the monopole by various wireless broadband telecommunications carriers as proposed in the attached application (the “Facility”).

1. I am a currently an independent consultant Principal/Manager Radio Frequency Engineer. I have been involved with the wireless telecommunications industry for 20 years, and have held various technical, operational and supervisory positions with Nextel Communications, T-Mobile, AT&T Mobility and Sprint PCS.

2. In order to satisfy its obligations under its radio licenses acquired from the FCC and under the Code of Federal Regulations 47 C.F.R. § 27.14(a), wireless broadband telecommunications carriers must have in place a system of strategically deployed “cell sites” to provide wireless communications services to their subscribers’ throughout their licensed area. These cell sites generally consist of an antenna support structure such as a telecommunications tower, building, water tank, or other structures used to elevate the antennas to the height necessary for providing adequate service to the targeted area. The antennas are connected via cabling to radio equipment located near the antennas and/or at the base of the support structure. The cell sites operate by transmitting and receiving low power radio frequency signals to and from their subscribers’ portable wireless communication devices such as basic handheld phones, smartphones, PDA’s, tablets, and laptop aircards. These wireless voice and data signals are then transferred through ground telephone lines, fiber, microwave or other means of backhaul transport, and routed to their destinations by sophisticated electronic equipment.

3. Cell sites are a vital and necessary part of carriers’ network infrastructure. In order to maintain effective, uninterrupted service throughout a given area, there must be a series of cell sites, interconnected to each other with slightly overlapping coverage areas. This allows for the subscribers to move freely about a geographic area while maintaining a consistent and reliable wireless connection to the network.

4. A proposed cell site must consider the locations and coverage provided by the surrounding cell sites in the network, and must be located within a limited geographical area, which is defined by factors such as terrain, land use characteristics, and population density. By locating within this limited area and at a sufficient height, the cell site would have a high probability of meeting the targeted objectives, thereby providing reliable coverage and capacity throughout the cell.

5. In compliance with the requirements of its FCC licenses, carriers are actively building their respective networks to provide coverage throughout its licensed area. In order to meet the responsibility of providing seamless, uninterrupted service, carriers must continue to acquire

interest in sites for additional facilities, and is applying for and obtaining local governmental zoning approvals to construct its sites in order to eliminate deficient service areas due to gaps in coverage or insufficient capacity. Any delays severely curtail carriers' ability to satisfy both mandated time requirements, and to achieve a market position that will allow it to compete for customers with other similar companies also issued licenses to operate in this area.

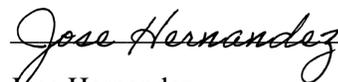
6. Using computer simulations to model radio frequency propagation, Vertex has determined that a wireless transmission facility located at or near to the proposed Facility would facilitate wireless communications within the local area along RT112 and Greenfield Road and surrounding areas of Colrain, MA. These simulations model characteristics such as antenna types, antenna height, output power, terrain, ground elevations and RF propagation effects of the frequency utilized.

7. In my opinion based upon substantial research and analysis, without a cell site located at or very near the proposed site, this area of Colrain would not meet the typical coverage requirements for multiple wireless carriers, resulting in a substantial gap in wireless coverage.

8. Based upon the technologies currently being deployed by wireless carriers, it is my opinion that the proposed Facility is at the minimum height necessary to satisfy the coverage objectives of multiple wireless carriers providing in the area.

9. All of the transmitter facilities to be located at the proposed location are required to comply, and when constructed and operational will comply with, all applicable regulations of the FCC regarding radio frequency (RF) exposure as detailed in FCC OET Bulletin 65, Edition 97-1.

Signed and sworn under the pains and penalties of perjury, Jun, 27, 2020.

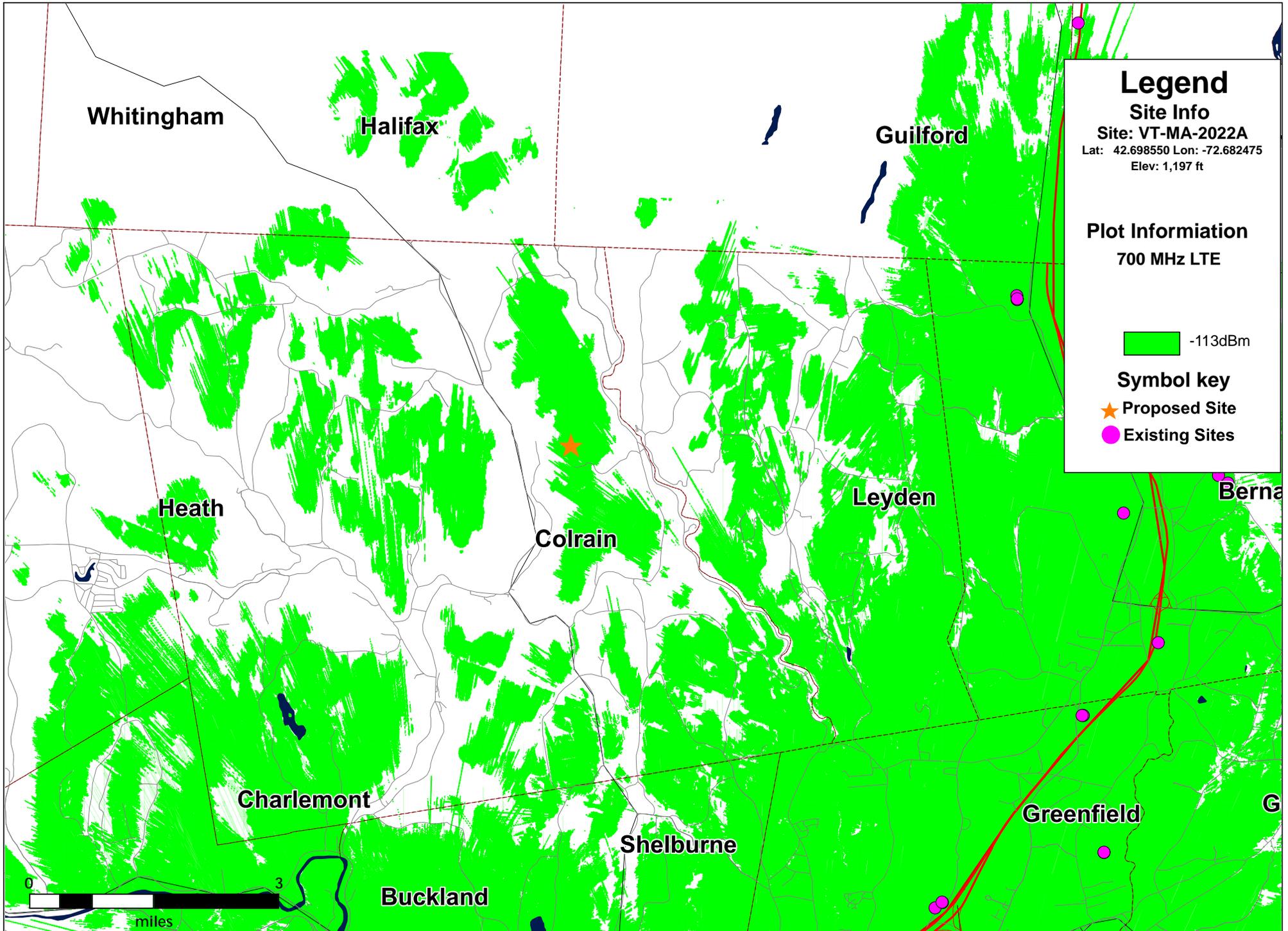
 \_\_\_\_\_

Jose Hernandez

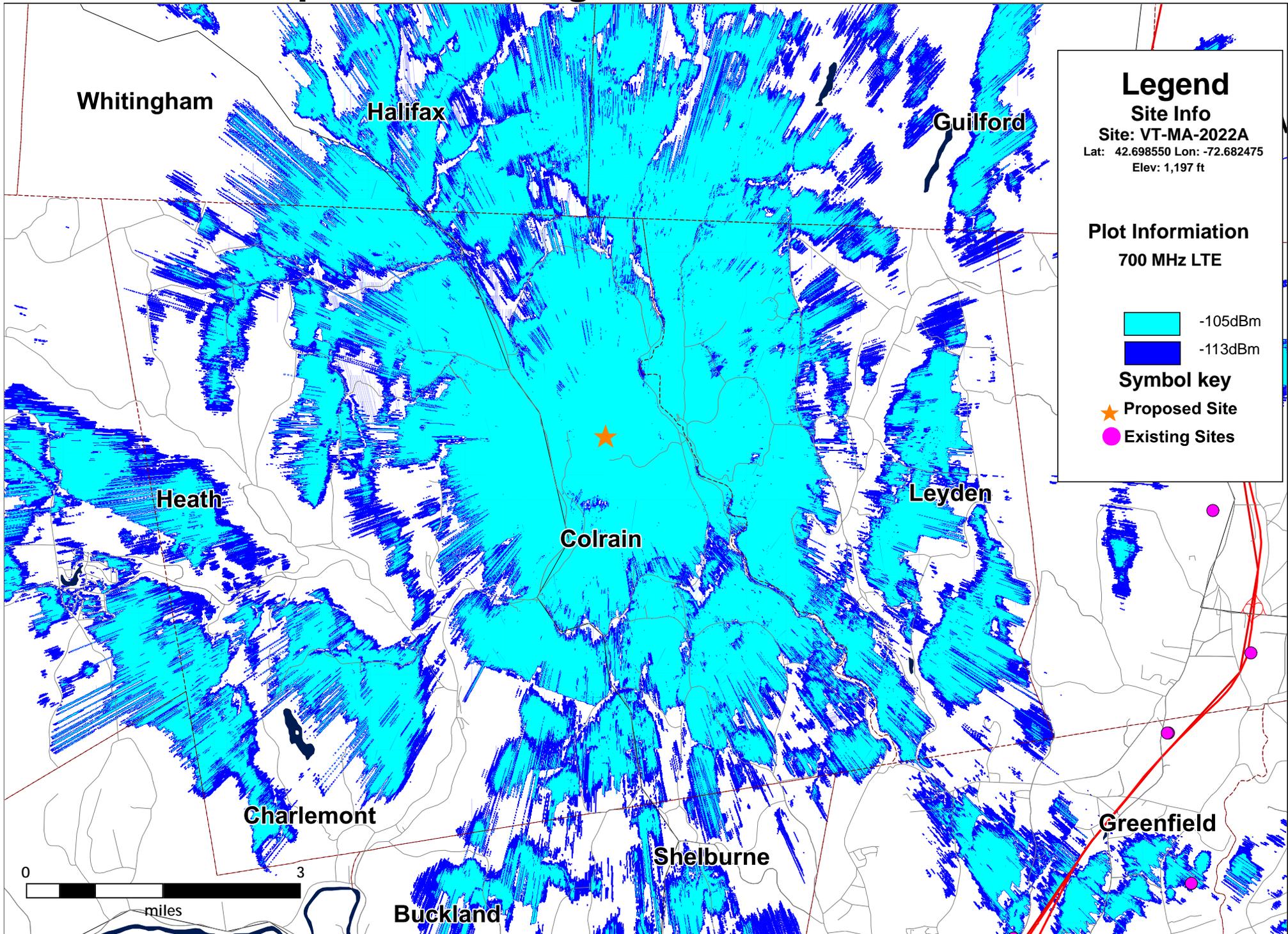
JNaerowaves.Corp

President / Principal Radio Frequency Engineer

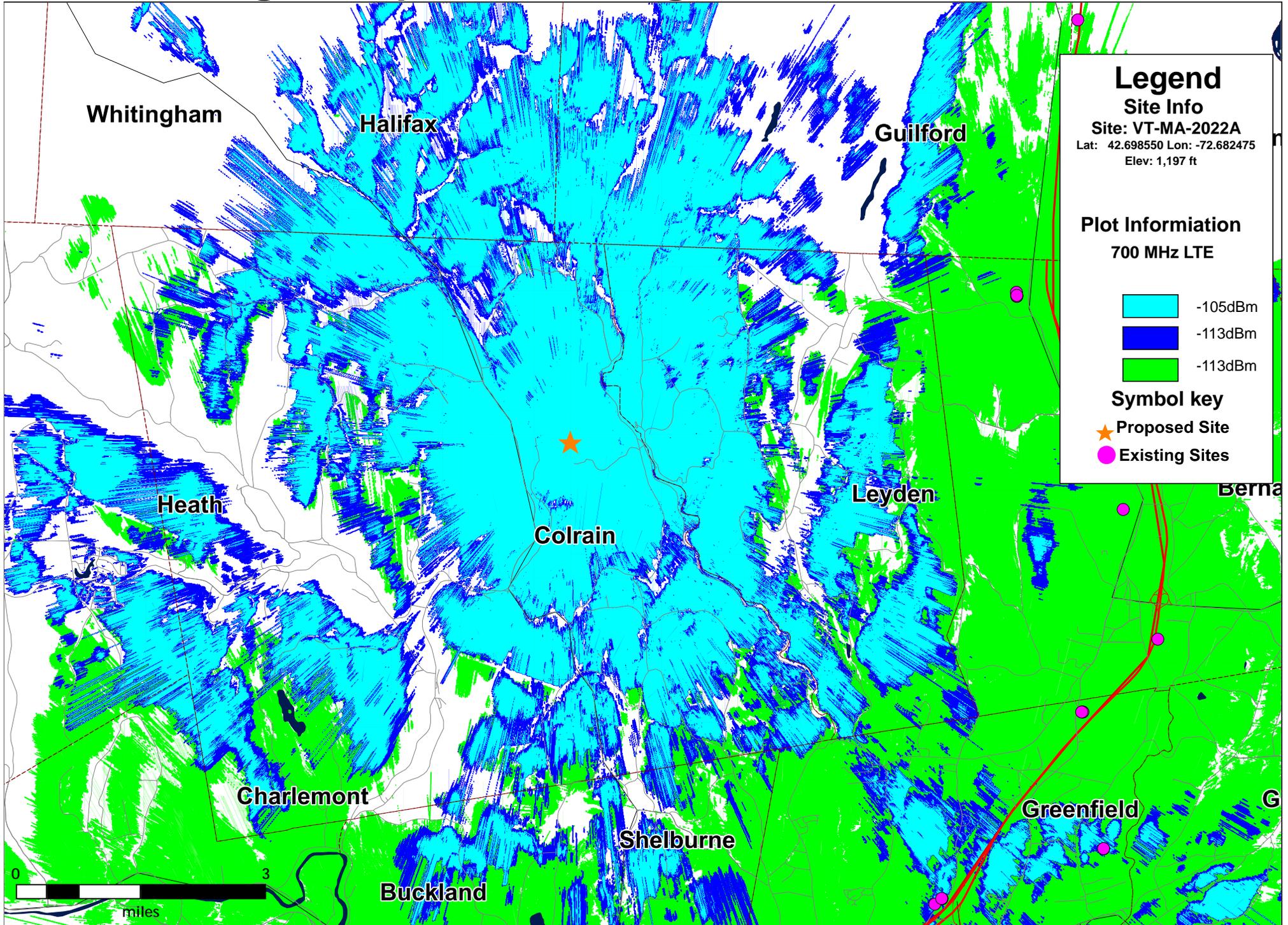
# RF Existing Coverage without VT-MA-2022A @155'



# RF Proposed Coverage for VT-MA-2022A@155'



# RF Existing & Proposed Coverage for VT-MA-2022A@155'



12

## Site Emissions Report For Colrain, MA

Date Performed: 06/27/2020

This site emissions analysis was created for Vertex Towers, LLC. The tower analysis was performed to include all 4 major carriers. According to the analysis, this tower located at Colrain MA , does pass the FCC requirements for Radio Frequency emissions. The FCC requirements used in this report were determined from the FCC OET65 documentation and calculations.

The tower assumes the worst-case scenario which would not occur in the real world. It assumes that all 4 carriers are using all frequency bands and are all on the lowest height of the tower.

The approach taken for calculations takes into account the typical antenna used, since a Cell Site antenna is directional and has different gains at different angles.

At the lowest height of 105ft, the highest emissions does not go above 1.76  $\mu\text{W}/\text{cm}^2$  which is **0.176%** of the Maximum Permissible Emissions requirements, which is less than 1% of the MPE requirements.

Site Name: VT-MA-2022A

Coordinates: ( 42.698550/-72.682475)

Location: REILS Ln, Franklin, MA 01340

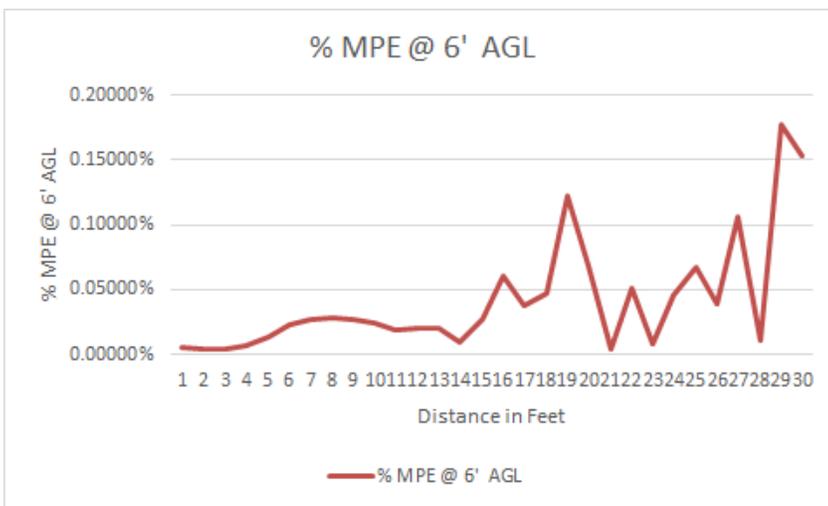
Carrier Available Heights (ft): 155, 145,135,125

### Equation for Predicting RF Fields:

$$S = \frac{EIRP}{4\pi R^2} \quad (4)$$

where: EIRP = equivalent (or effective) isotropically radiated power  
S = power density (in appropriate units, e.g.  $\text{mW}/\text{cm}^2$ )

Reference: OET Bulletin 65



Wireless Service Provider	Frequency Band	ERP (Watts)
Carrier 1	1900MHz	1250
Carrier 1	700MHz	1000
Carrier 1	850MHz	1000
Carrier 1	2100MHz	2500
Carrier 2	1900MHz	2000
Carrier 2	700MHz	1000
Carrier 2	850MHz	1000
Carrier 2	2100MHz	1000
Carrier 3	1900MHz	1360
Carrier 3	2100MHz	1360
Carrier 3	700MHz	1000
Carrier 4	850MHz	400
Carrier 4	1900MHz	1360

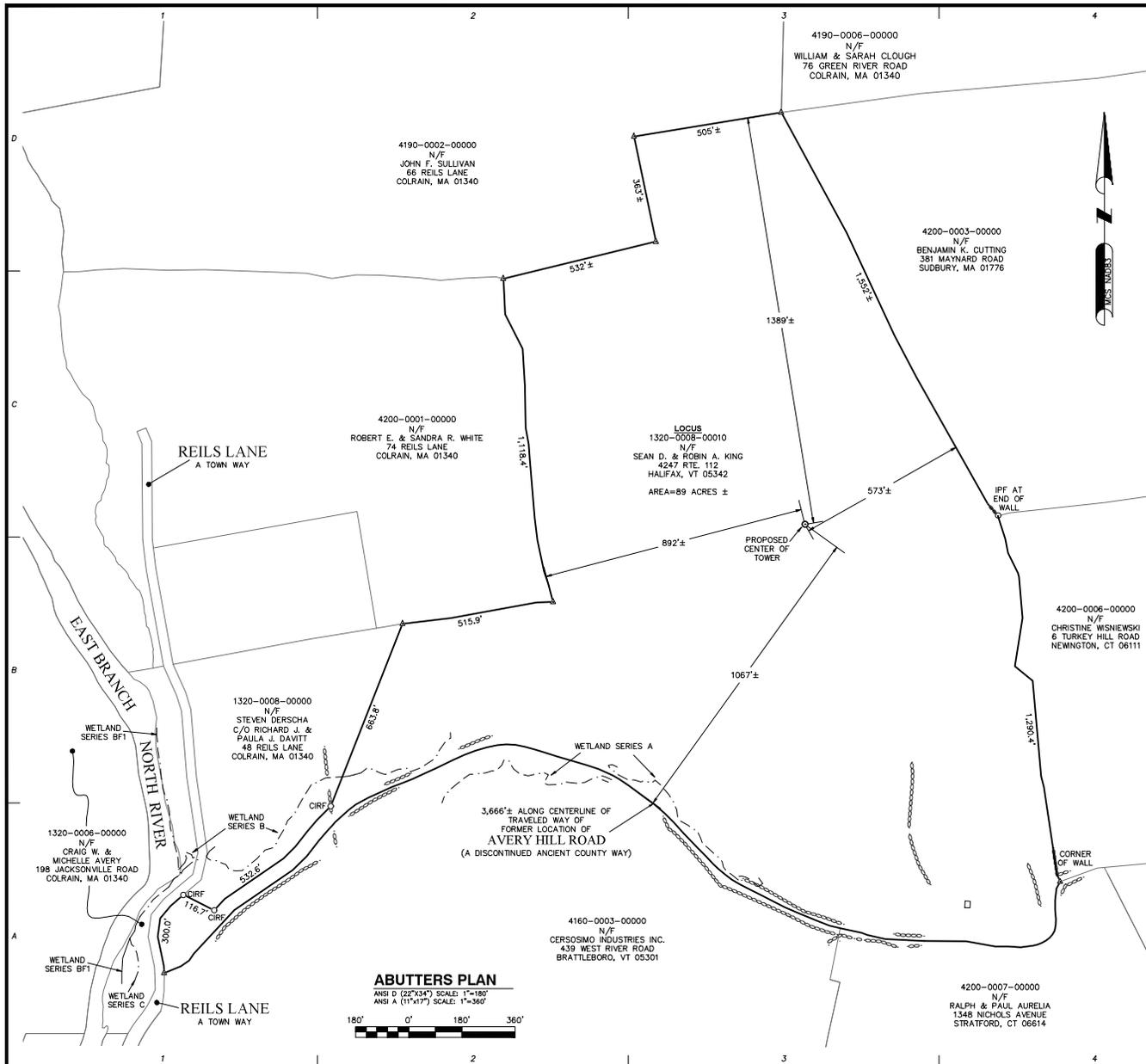
Analysis Performed by: Jose Hernandez  
Jose Hernandez – President / Principal, RF Engineer - JNaerowaves.Corp

Jose Hernandez is an independent Radio Frequency Engineer with 20 years of experience as an engineer in the Wireless Telecommunications field. Jose has performed numerous emissions reports for the Wireless Telecommunications Industry.

06/27/2020







**FAA 1-A CERTIFICATION**

I HEREBY CERTIFY THAT THE LATITUDE, LONGITUDE, AND ELEVATION PRESENTED HEREON MEET THE REQUIREMENTS OF THE FAA WITH THE FOLLOWING ACCURACIES:

THREE (3) FEET VERTICALLY  
TWENTY (20) FEET HORIZONTALLY

07-02-2020  
DATE

DANIEL F. STASZ, PLS #47160

- SURVEY NOTES**
- SITE DETAIL SHOWN ON THIS SURVEY IS BASED ON FIELD DATA COLLECTED ON OCTOBER 2019.
  - THE PURPOSE OF THIS SURVEY IS TO SUPPORT THE DESIGN AND CONSTRUCTION OF A TELECOMMUNICATION FACILITY. USE OF THIS SURVEY BY ANYONE OTHER THAN VERTEX TOWER ASSETS, LLC AND USE OF THIS SURVEY FOR ANY PURPOSE NOT RELATED TO THE DESIGN OF THE INTENDED FACILITY IS STRICTLY PROHIBITED.
  - PROPERTY LINES AND BOUNDARY DIMENSIONS SHOWN ON THIS SURVEY ARE BASED ON A COMPILATION OF RECORDED PLANS AND DEEDS AND ARE NOT INTENDED TO REPRESENT DEFINITIVE BOUNDARY LINES OR BE USED FOR THE PURPOSES OF CONVEYANCE. PROPERTY RELATED INFORMATION HAS NOT BEEN CONFIRMED BY FIELD SURVEY OBSERVATIONS AND NO ASSESSMENT OF LAND OCCUPATION HAS BEEN CONDUCTED IN THE PREPARATION OF THIS SURVEY. A PROPERTY LINE RETRACEMENT SURVEY HAS NOT BEEN CONDUCTED.
  - THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES DIVIDING EXISTING OWNERSHIP'S, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.
  - PRIMARY GEODETIC SURVEY CONTROL WAS ESTABLISHED FROM AN ON THE GROUND SURVEY USING THE GLOBAL POSITIONING SYSTEM (GPS) ON 10/28/2019. THE HORIZONTAL REFERENCED DATUM IS THE NAD 83 BASED ON THE GRS 80 REFERENCE ELLIPSOID. THE GRID COORDINATES ARE BASED ON THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM OF 1983. ELEVATIONS SHOWN ARE ASSUMED AND ARE APPROXIMATED TO THE NAVD 88 VERTICAL DATUM. VERTICAL AND HORIZONTAL INFORMATION SHOWN MEETS THE STANDARD CRITERIA FOR AN FAA 1A CERTIFICATION (20"± HORIZONTAL AND 3"± VERTICAL).
  - IN THE EVENT THAT BENCHMARKS (BM'S), ESTABLISHED FOR THIS PROJECT AND PUBLISHED ON THIS SURVEY, ARE DESTROYED, NOT RECOVERABLE OR A DISCREPANCY IS FOUND, THE USER SHOULD NOTIFY THIS FIRM IN WRITING PRIOR TO COMMENCING OR CONTINUING ANY WORK.
  - THE LOCUS PARCEL IS SHOWN AS ASSESSOR ID 1320-0008-00010 IN THE TOWN OF COLRAIN RURAL ZONING DISTRICT.
  - THE PROJECT AREA IS LOCATED IN FLOOD ZONE "C" (AREAS OF MINIMAL FLOODING, NO SHADING) AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 250113 0010 B, DATED 07/2/1980.
  - THE LOCUS PARCEL AND ALL ABUTTING PARCELS ARE LOCATED IN THE TOWN OF COLRAIN RURAL ZONING DISTRICT.
  - ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE EVIDENCE ONLY. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION NOTIFICATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY: DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 1-888-344-7233
  - WETLANDS SHOWN HEREON WERE DELINEATED BY LUCAS ENVIRONMENTAL, LLC ON 8/28/2019.

PROPERTY OWNER: SEAN D. & ROBIN A. KING  
4247 RTE. 112  
HALIFAX, VT 05342

LOCUS DEED REFERENCE: BOOK 4995 PAGE 131  
BOOK 4995 PAGE 133

PLAN REFERENCES: PLAN BOOK 119 PAGE 45  
PLAN BOOK 127 PAGE 36

- LEGEND**
- - TOWER CONTROL POINT
  - ▲ - CALCULATED POINT
  - CIRF - CAPPED IRON ROD FOUND
  - IPF - IRON PIPE FOUND
  - — — — — LOCUS PROPERTY LINE
  - — — — — ABUTTERS PROPERTY LINE
  - STONE WALL

**ProTerra**  
DESIGN GROUP, LLC

4 Bay Road  
Building A, Suite 200  
Hudson, MA 01535  
(413)320-4918

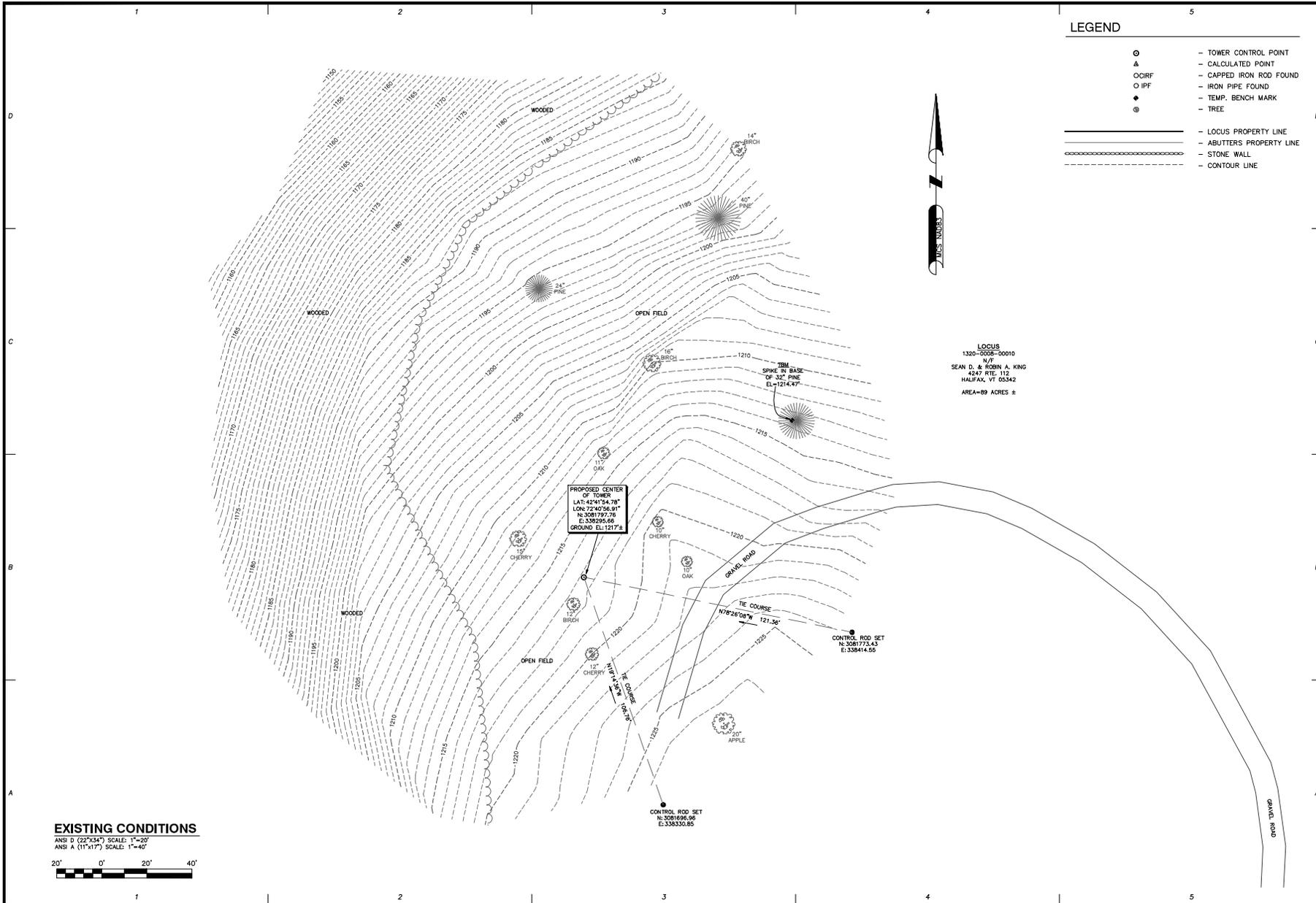
**CONSULTANTS:**  
NORTHEAST SURVEY CONSULTANTS  
116 Pleasant St., Ste. 302  
P.O. Box 109  
Coshington, MA 01027  
(413) 233-5144  
northeastsurvey.com

NO.	DATE	REVISIONS
1	7/02/20	ISSUED FOR REVIEW

**APPLICANT:**  
Vertex Towers LLC  
165 SOUTH STREET, SUITE 205  
WRENTHAM, MA 01908

**STAMP:**  
DANIEL F. STASZ  
REGISTERED PROFESSIONAL LAND SURVEYOR  
STATE OF MASSACHUSETTS  
No-47160

DATE: 07/02/2020  
DRAWN: BCF  
CHECK: BCF  
SCALE: 1"=180'  
JOB NO.: 19-209  
SHEET TITLE:  
**ABUTTERS PLAN**  
**C-1**



**ProTerra**  
 DESIGN GROUP, LLC

4 Bay Road  
 Building A, Suite 200  
 Hadley, MA 01035  
 (413)320-4918

**CONSULTANTS:**  
 NORTHEAST SURVEY  
 CONSULTANTS

116 Pleasant St., Ste. 302  
 P.O. Box 109  
 Southampton, MA 01027  
 (413) 533-5144  
 northeastsurvey.com

NO. DATE	REVISIONS
A 7/02/20	ISSUED FOR REVIEW

**JULIE**

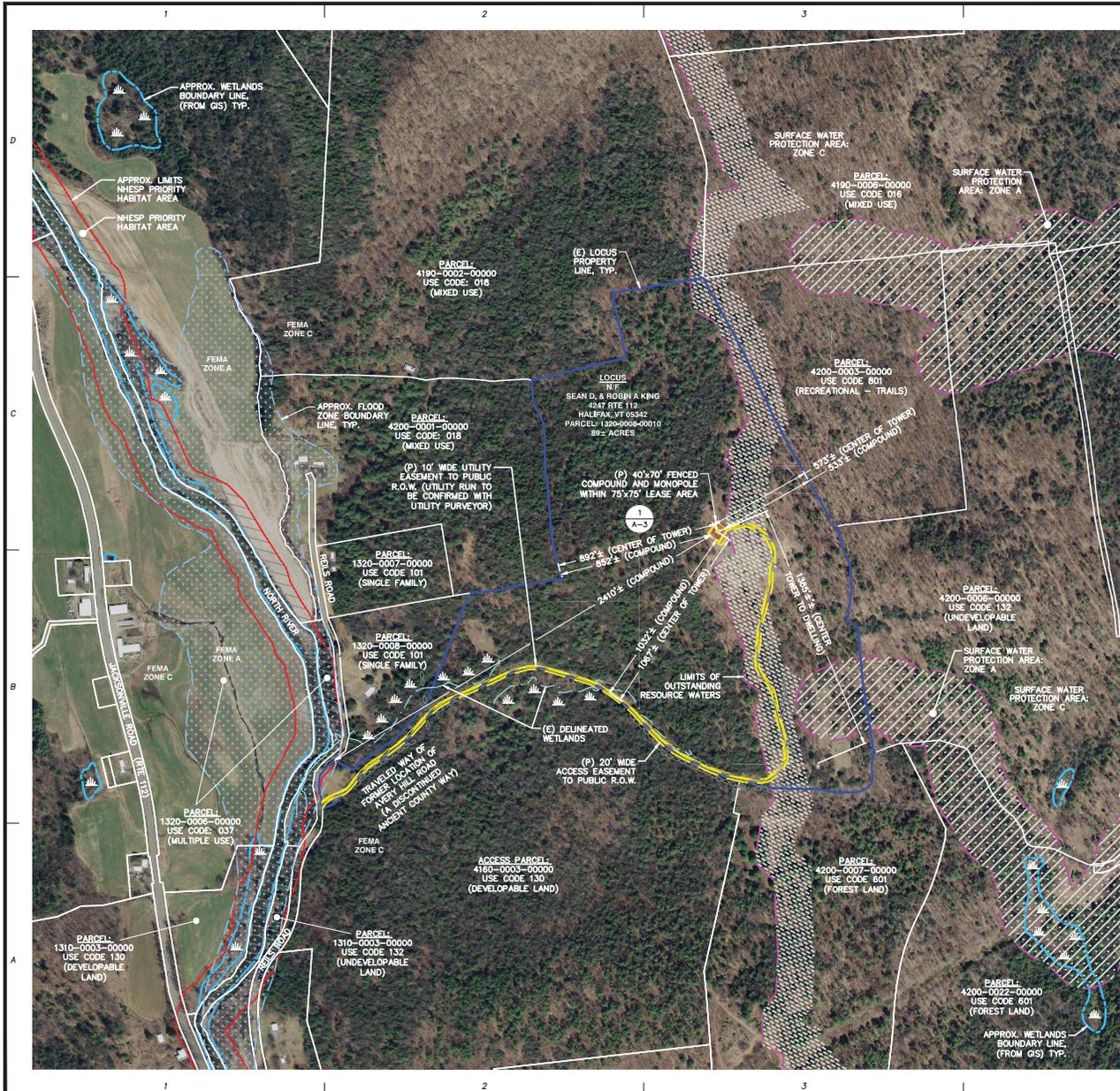
**APPLICANT:**  
**Vertex Towers LLC**  
 VERTEX TOWER ASSETS, LLC  
 155 SOUTH STREET, SUITE 205  
 WRENTHAM, MA 02093

**STAMP:**

DANIEL F. STASZ  
 No. 47160  
 REGISTERED PROFESSIONAL LAND SURVEYOR

DATE: 07/02/2020  
 DRAWN: BCF  
 CHECK: BCF  
 SCALE: 1"=20'  
 JOB NO.: 19-209

SHEET TITLE:  
**EXISTING CONDITIONS**  
**C-2**



### REFERENCES

PROPERTY LINE, TOPOGRAPHY AND EXISTING FEATURES - SEE SHEETS C-1 & C-2 PREPARED BY NORTHEAST SURVEY CONSULTANTS.

ZONING DISTRICTS - "OFFICIAL ZONING MAP TOWN OF COLRAIN, MAY 8, 2012" AVAILABLE ON THE TOWN OF COLRAIN WEBSITE.

THE FOLLOWING DATALAYERS PREPARED BY THE OFFICE OF GEOGRAPHIC INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS MASSIT:

- NHESP PRIORITY HABITATS OF RARE SPECIES;
- SURFACE WATER PROTECTION AREAS;
- OUTSTANDING RESOURCE WATERS;
- WELHEAD PROTECTION AREAS, ZONES IS AND IIS (NONE PRESENT IN GIS FOR SITE);
- DEP WETLANDS.

FLOODPLAIN - FLOOD INSURANCE RATE MAP (FIRM) MAP NUMBER 250113 0010 B EFFECTIVE DATE JULY 2, 1990 PREPARED BY FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), US DEPARTMENT OF HOMELAND SECURITY.

- ZONE A: AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARD FACTORS NOT DETERMINED.
- ZONE C: AREAS OF MINIMAL FLOODING. (NO SHADING)
- SURFACE WATER PROTECTION AREA: ZONE A
- SURFACE WATER PROTECTION AREA: ZONE C
- NHESP PRIORITY HABITAT AREA

### GENERAL NOTES

1. THE TYPE, DIMENSIONS, MOUNTING HARDWARE, AND POSITIONS OF ALL PROJECT OWNER'S EQUIPMENT ARE SHOWN IN ILLUSTRATIVE FASHION. ACTUAL HARDWARE DETAILS AND FINAL LOCATIONS MAY DIFFER SLIGHTLY FROM WHAT IS SHOWN.
2. THE PROJECT OWNER'S PCS FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. THE DESIGN OF THE TOWER, FOUNDATION AND ANTENNA MOUNTING HARDWARE WILL MEET THE ANS/ISA/TIA-222-G STANDARDS FOR STRUCTURAL STEEL ANTENNA SUPPORTING STRUCTURES AND STATE BUILDING CODE REQUIREMENTS. DETAILED CONSTRUCTION DRAWINGS AND STRUCTURAL CALCULATIONS WILL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER AND SUBMITTED WITH A BUILDING PERMIT APPLICATION FOR REVIEW AND APPROVAL BY THE LOCAL BUILDING CODE ENFORCEMENT OFFICIAL.
4. ONCE THE FACILITY BECOMES FULLY OPERATIONAL, NORMAL AND ROUTINE MAINTENANCE BY TOWER OWNER'S AND CARRIER'S TECHNICIANS WILL BE PERFORMED. THE ESTIMATED VEHICULAR TRAFFIC GENERATED BY THESE VISITS IS PREDICTED TO BE LESS THAN THE TYPICAL TRAFFIC GENERATED BY A SINGLE-FAMILY DWELLING.

### ZONING SUMMARY

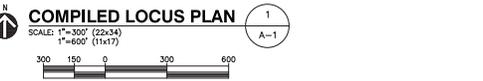
ZONING DISTRICT(S): RURAL (R)

ASSESSOR'S ID#: 1320-0008-00010

(P) USE: WIRELESS COMMUNICATIONS FACILITIES<sup>1</sup>

DIMENSION	PROVIDED	CONSTRAINT
LOT - AREA	89± ACRES	1.5 ACRES
LOT - FRONTAGE	300'±	300' MIN.
LOT - COVERAGE BY STRUCTURES (IMPERVIOUS)	<1%	25% MAX.
(P) COMPOUND - FRONT YARD	2,410'±	50' MIN.
(P) COMPOUND - REAR YARD	533'±	40' MIN.
(P) COMPOUND - SIDE YARD	852'±	40' MIN.
(P) TOWER - HEIGHT (HIGHEST APPURTENANCE)	161' (167')	115' MAX. <sup>2</sup>
(P) TOWER - PROPERTY LINE (SETBACK)	560'± (EDGE OF TOWER) 570'± (CENTER OF TOWER)	HEIGHT (TOWER) + 20' 187' MIN.
(P) TOWER (CENTER) TO NEAREST DWELLING	1,385'±	500' MIN.

- 1 - ZONING ORDINANCE OF THE TOWN OF COLRAIN SECTION III, USE REGULATIONS, WIRELESS COMMUNICATIONS FACILITIES SHALL BE PERMITTED IF A SPECIAL PERMIT IS GRANTED BY THE PLANNING BOARD.
  - 2 - ZONING ORDINANCE OF THE TOWN OF COLRAIN SECTION X, ARTICLE (a) v. HEIGHT OF THE WIRELESS COMMUNICATIONS FACILITY SHALL NOT EXCEED THE LESSER OF FIFTY (50) FEET OVER THE REMAINING TREE CANOPY OR ONE HUNDRED TWENTY (120) FEET
- (NOTE: 65± MEASURED ESTIMATED APPROXIMATE TOP (E) TREE CANOPY ADJACENT TO TOWER AREA (VARIES))



**ProTerra**  
DESIGN GROUP, LLC

4 Bay Road  
Building A, Suite 200  
Hudson, MA 01553  
(413)320-4918

NO.	DATE	REVISIONS
A	04/27/20	ISSUED FOR REVIEW
B	07/26/20	ISSUED FOR PERMITTING

SITE NAME: COLRAIN KING  
SITE NUMBER: VT-MA-2022  
ADDRESS: REILS LANE  
COLRAIN, MA 01640

APPLICANT: **Vertex Towers LLC**  
VERTEX POWER ASSETS, LLC  
165 SOUTH STREET  
WRENTHAM, MA 01983

STAMP:

DATE: 04/27/20  
DRAWN: STZ/JEB  
CHECK: JMM/TEJ  
SCALE: SEE PLAN  
JOB NO.: 18-015

SHEET TITLE:  
**COMPILED PLOT PLAN**  
**A-1**



NO.	DATE	REVISIONS
A	04/27/20	ISSUED FOR REVIEW
B	07/22/20	ISSUED FOR PERMITTING

**SITE NAME: COLRAIN KING**  
**SITE NUMBER: VT-MA-2022**  
**ADDRESS: REILS LANE**  
**COLRAIN, MA 01840**

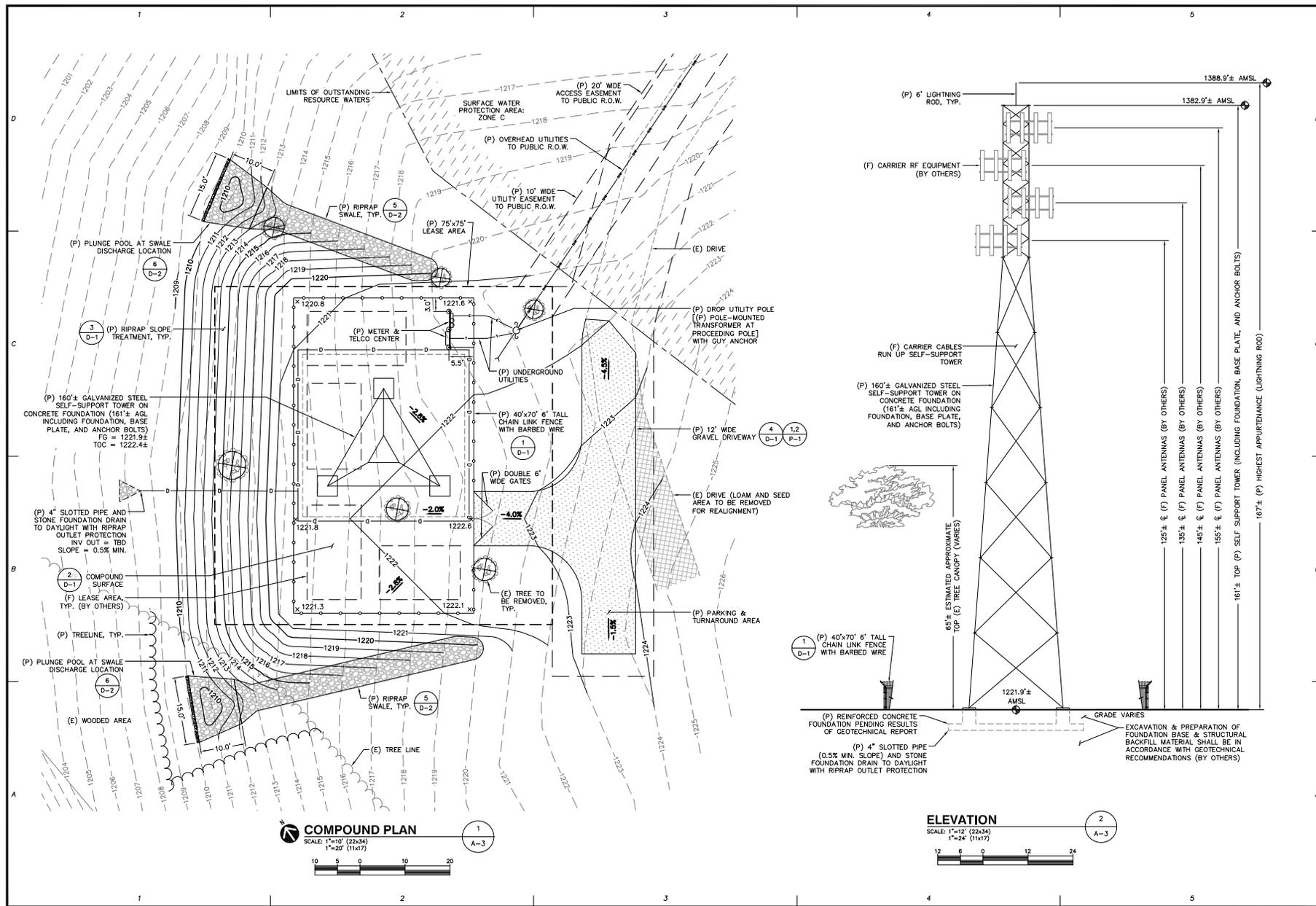
**APPLICANT:**  
**Vertex Towers LLC**  
VERTEX POWER ASSETS, LLC  
165 SOUTH STREET  
SUITE 205  
WRENTHAM, MA 01983

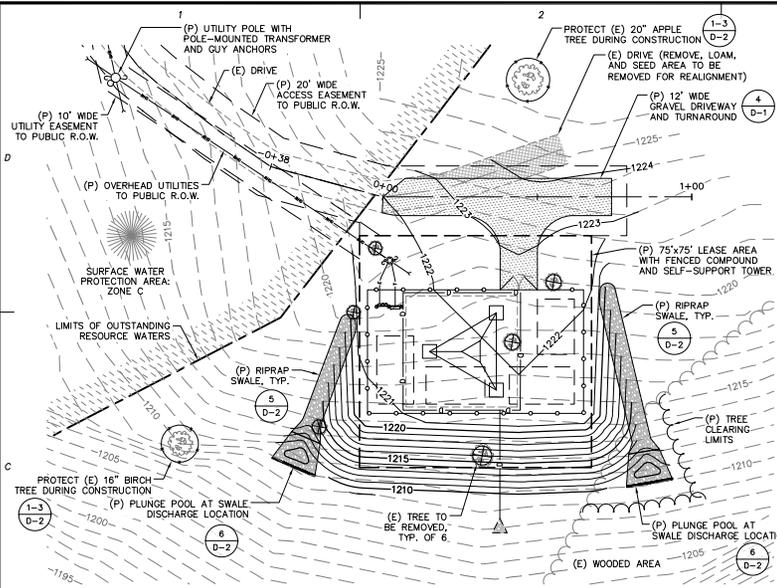
**STAMP:**

**DATE:** 04/27/20  
**DRAWN:** STZ/JEB  
**CHECK:** JMM/TEJ  
**SCALE:** SEE PLAN  
**JOB NO.:** 18-015

**SHEET TITLE:**  
**COMPOUND PLAN & ELEVATION**

**A-3**





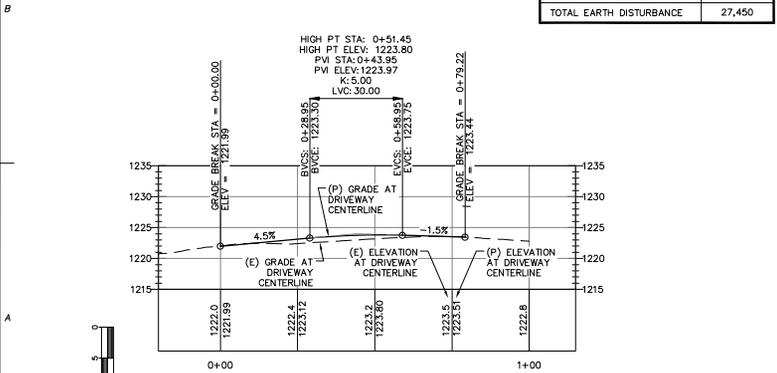
**DRIVEWAY PLAN (COMPOUND)**

SCALE (22x34): 1"=20' (22x34)  
1"=40' (11x17)



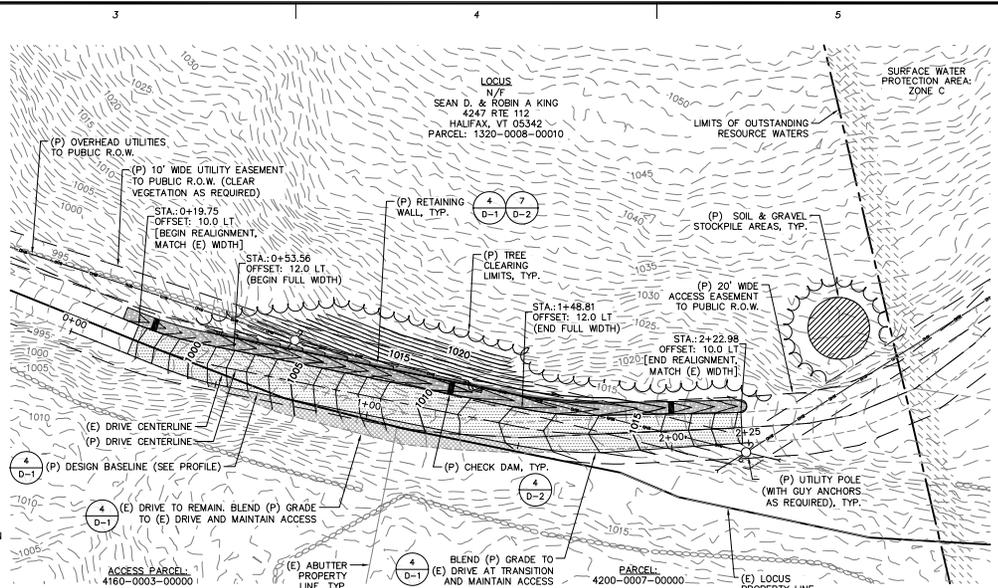
**DISTURBANCE SUMMARY**

ITEM	AREA (SF)
TREE CLEARING	3,750
(P) GRAVEL SURFACE (COMPOUND & DRIVEWAY)	7,555
RIPRAP (DRAINAGE)	1,660
RIPRAP (SLOPE TREATMENT)	2,780
LOAM & SEED	15,455
<b>TOTAL EARTH DISTURBANCE</b>	<b>27,450</b>



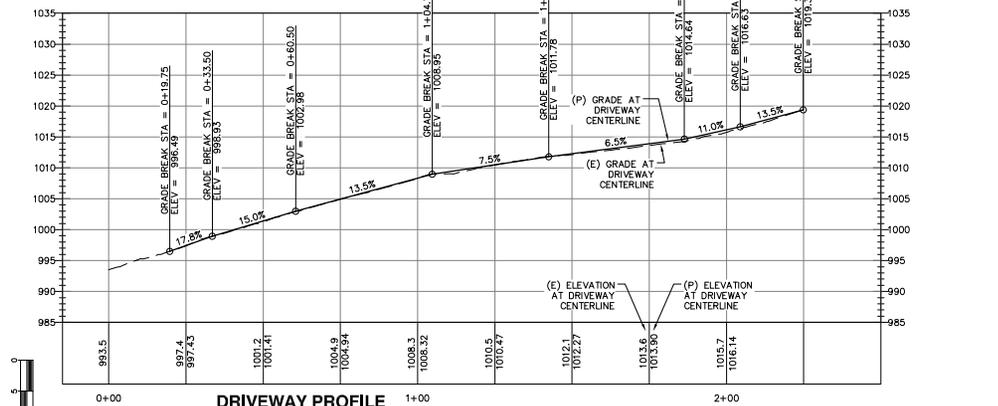
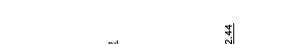
**DRIVEWAY PROFILE (COMPOUND)**

SCALE (22x34): 1"=20' HORIZONTAL  
1"=10' VERTICAL  
SCALE (11x17): 1"=40' HORIZONTAL  
1"=20' VERTICAL



**DRIVEWAY PLAN (REALIGNMENT)**

SCALE (22x34): 1"=20' (22x34)  
1"=40' (11x17)



**DRIVEWAY PROFILE (RIGHT HAND SIDE OF REALIGNMENT)**

SCALE (22x34): 1"=20' HORIZONTAL  
1"=10' VERTICAL  
SCALE (11x17): 1"=40' HORIZONTAL  
1"=20' VERTICAL



NO.	DATE	REVISIONS
A	04/27/20	ISSUED FOR REVIEW
B	07/16/20	ISSUED FOR PERMITTING

**SITE NAME: COLRAIN KING**  
**SITE NUMBER: VT-MA-2022**  
**ADDRESS: REILS LANE**  
**COLRAIN, MA 01840**

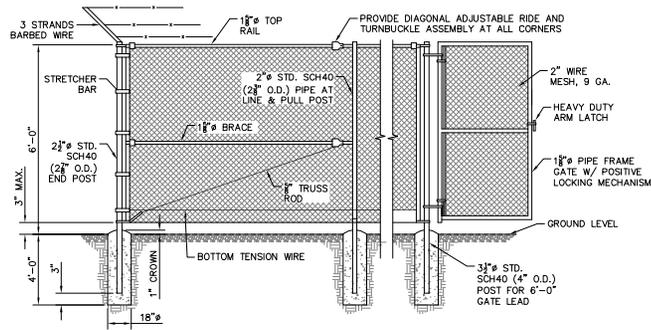
**APPLICANT:**  
VERTEX POWER ASSETS, LLC  
165 SOUTH STREET  
WRENTHAM, MA 01963

**VERTIX POWER ASSETS, LLC**

**STAMP:**

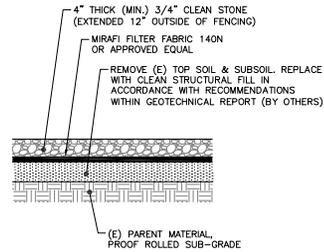
DATE: 04/27/20  
DRAWN: STZ/JEB  
CHECK: JMM/TEJ  
SCALE: SEE PLAN  
JOB NO.: 18-015

**SHEET TITLE:**  
**DRIVEWAY PLAN & PROFILE**



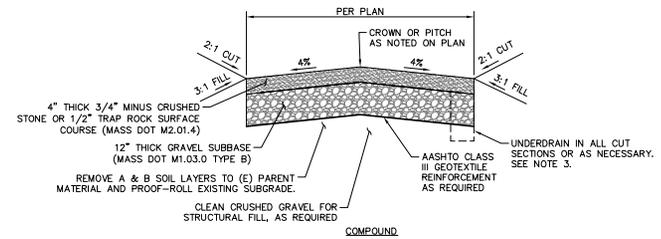
**CHAIN LINK FENCE**  
SCALE: NONE

1  
D-1

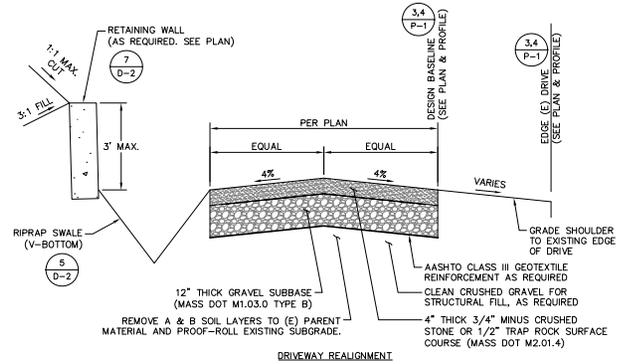


**COMPOUND SURFACE**  
SCALE: NONE

2  
D-1



**COMPOUND**



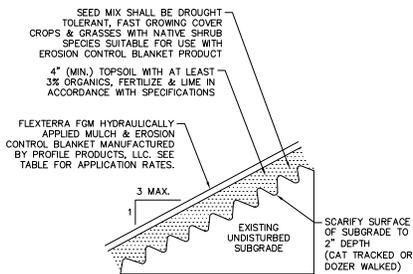
**DRIVEWAY REALIGNMENT**

**NOTES:**

1. ALL GRANULAR MATERIALS SHALL BE COMPACTED TO 95±% MAXIMUM DRY DENSITY BY STD. PROCTOR METHOD
2. ALL CUT AND FILL SLOPES TO BE COVERED WITH JUTE MESH EROSION CONTROL BLANKETS AND/OR HYDROSEEDS WITH NEW ENGLAND ROADSIDE MATRIX MIX AT 35LBS PER ACRE OR EQUAL.
3. THE REQUIREMENT FOR INSTALLATION OF SUBDRAINS SHALL BE AT ALL CUT SECTIONS OR AS DETERMINED BY THE ENGINEER-OF-RECORD BASED ON FIELD CONDITIONS AT THE TIME OF CONSTRUCTION. SUBDRAINS SHALL BE OUTLETTED TO DAYLIGHT AS APPROVED BY THE ENGINEER-OF-RECORD.
4. ALL MATERIALS TO CONFORM TO STATE AND/OR MUNICIPAL STANDARD AS REQUIRED.

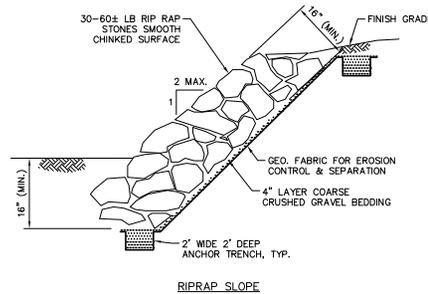
**DRIVEWAY SECTIONS**  
SCALE: NONE

4  
D-1



FLEXITERRA APPLICATION RATES	
SLOPE	RATE
LESS THAN 4:1	2500 LB/AC
4:1 TO 3:1	3000 LB/AC

EROSION CONTROL BLANKET TO BE USED ON 2:1 SLOPES.  
**VEGETATED SLOPE**



**RIPRAP SLOPE**

**SLOPE TREATMENT**  
SCALE: NONE

3  
D-1

NO.	DATE	REVISIONS
A	04/27/20	ISSUED FOR REVIEW
B	07/26/20	ISSUED FOR PERMITTING

**SITE NAME:** COLRAIN KING  
**SITE NUMBER:** VT-MA-2022  
**ADDRESS:** REILS LANE  
COLRAIN, MA 01840

**APPLICANT:** VERTIX POWER ASSETS, LLC  
165 SOUTH STREET  
SUITE 205  
WRETFHAM, MA 01893

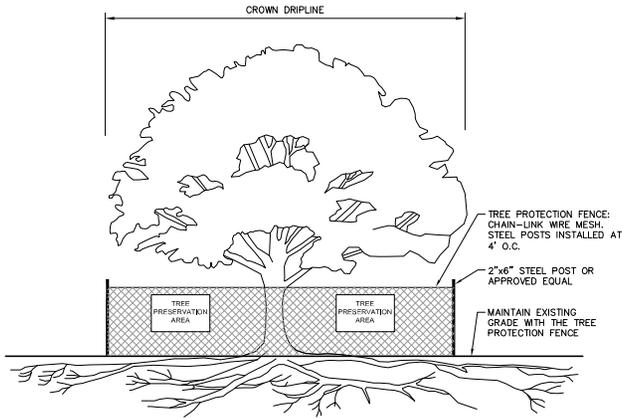
**VERTIX**  
**Towers LLC**

**STAMP:**

**DATE:** 04/27/20  
**DRAWN:** STZ/JEB  
**CHECK:** JMM/TEJ  
**SCALE:** SEE PLAN  
**JOB NO.:** 18-015  
**SHEET TITLE:**

**DETAILS**

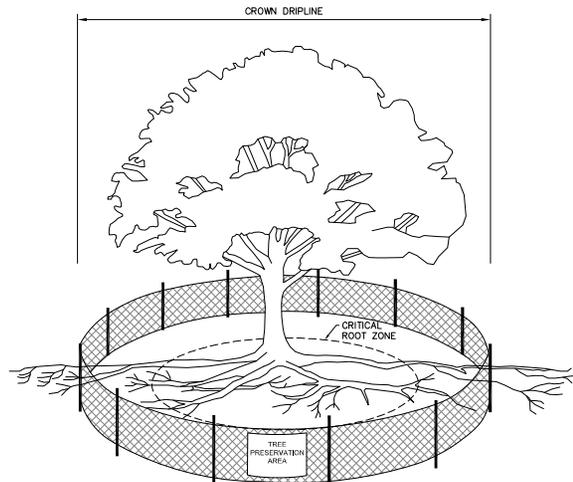
**D-1**



**TREE FENCING PROTECTION**

SCALE: NONE

1  
D-2



**TREE PROTECTION ZONE**

SCALE: NONE

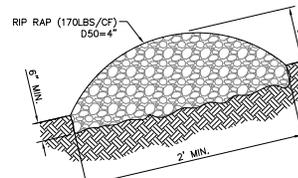
2  
D-2



**TREE PRESERVATION AREA SIGN**

SCALE: NONE

3  
D-2



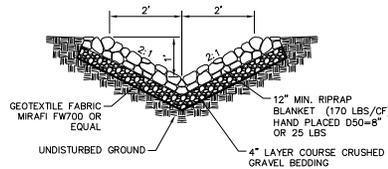
PLACE RIPRAP CHECK DAM WITHIN RIPRAP SWALES SPACED AT:  
 • 150' MIN. WHERE LONGITUDINAL SLOPES ARE 5-10%  
 • 100' MIN. WHERE LONGITUDINAL SLOPES ARE 10-20%

PLACE RIPRAP CHECK DAM WITHIN VEGETATED SWALES SPACED AT:  
 • THE MAXIMUM SPACING BETWEEN THE DAMS SHOULD BE SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE OVERFLOW ELEVATION OF THE DOWNSTREAM DAM.

**RIP RAP CHECK DAM**

SCALE: NONE

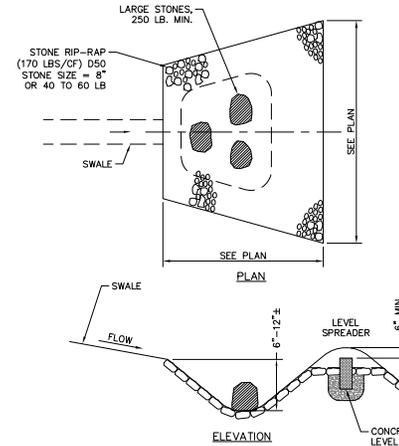
4  
D-2



**RIPRAP SWALE (V-BOTTOM)**

SCALE: NONE

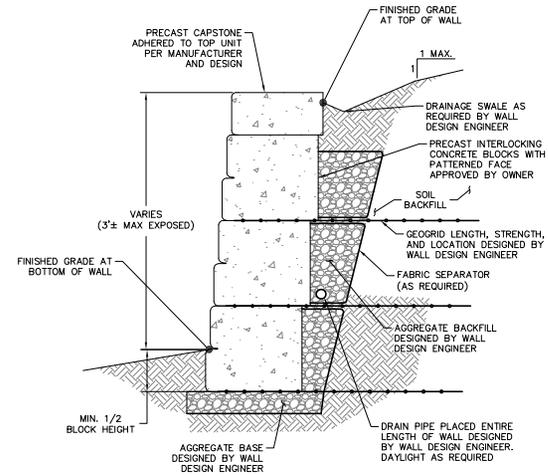
5  
D-2



**PLUNGE POOL**

SCALE: NONE

6  
D-2



**NOTES:**

1. THIS DETAIL IS FOR REFERENCE PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL DESIGN OF ALL RETAINING WALLS. SHOP DRAWINGS AND WALL CALCULATIONS SHALL BE DESIGNED AND STAMPED BY A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER.
2. DAYLIGHT DRAIN PIPE AT LOW POINTS THROUGH WALL FACE OR AT ENDS. MAXIMUM SPACING 40 FEET OR PER SITE CONDITIONS.

**TYPICAL RETAINING WALL SECTION**

SCALE: NONE

7  
D-2

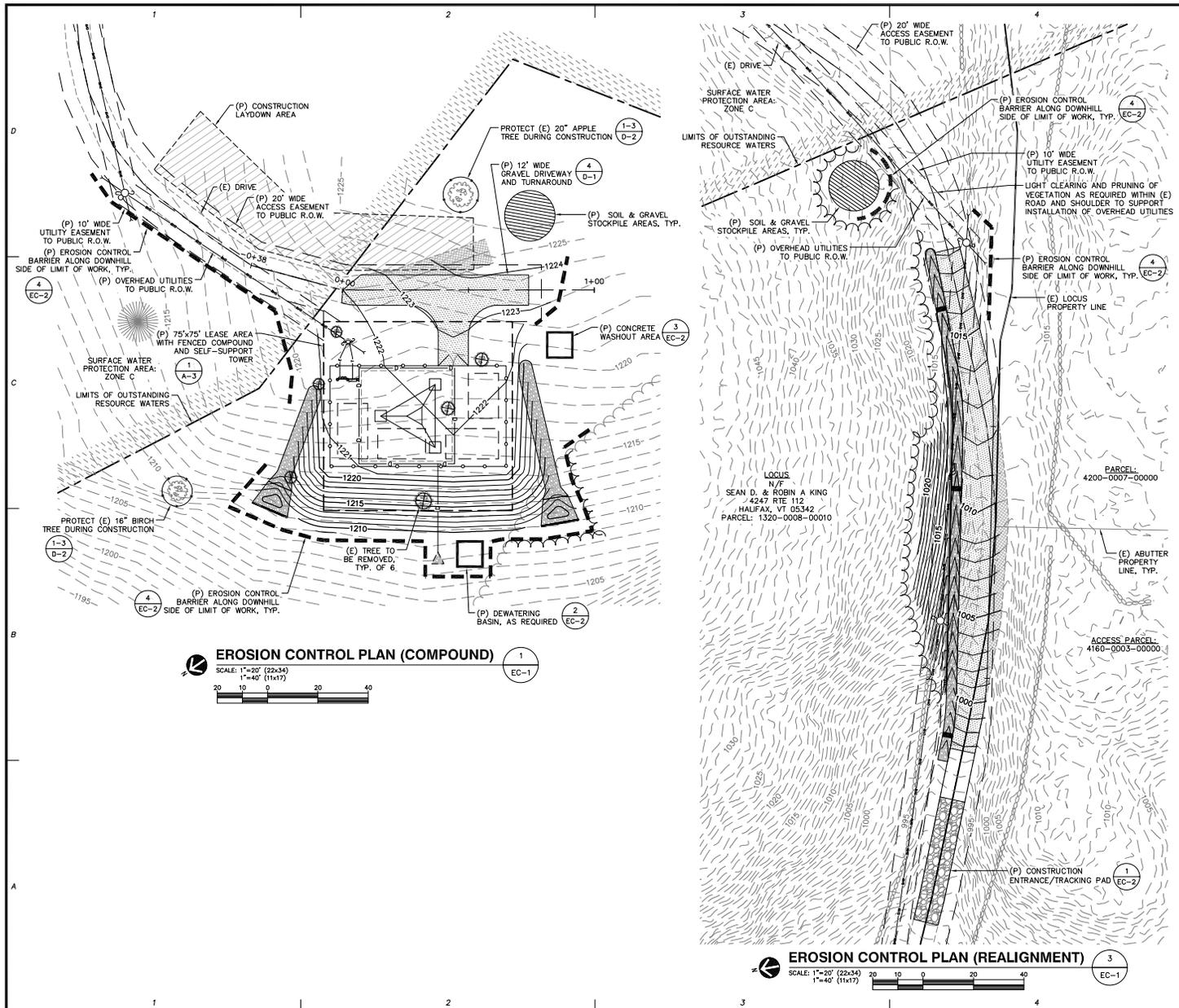
NO.	DATE	REVISIONS
A	04/27/20	ISSUED FOR REVIEW
B	07/22/20	ISSUED FOR PERMITTING

SITE NAME: COLRAIN KING SITE NUMBER: VT-MA-2022 ADDRESS: REILS LANE COLRAIN, MA 01840	APPLICANT: VERTEX POWER ASSETS, LLC 165 SOUTH STREET WRENTHAM, MA 01963 

DATE: 04/27/20
DRAWN: STZ/JEB
CHECK: JMM/TEJ
SCALE: SEE PLAN
JOB NO.: 18-015
SHEET TITLE:

**DETAILS**

**D-2**



**EROSION CONTROL NOTES**

1. APPLICANT PROPOSES TO CONSTRUCT A CELLULAR TELECOMMUNICATIONS FACILITY CONSISTING OF A FENCED COMPOUND AND UTILITY WORK WITHIN A LEASE AREA AND EASEMENTS.
2. TEMPORARY SILT FENCE EROSION CONTROL BARRIER SHALL BE MAINTAINED THROUGHOUT SITE CONSTRUCTION. STOCKPILE ON SITE 100 FT. OF SILT FENCE FOR EMERGENCY USE. TEMPORARY EROSION BARRIERS SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATIVE GROUND COVER IS ESTABLISHED.
3. THE CONTRACTOR SHALL CHIP ALL BRUSH AND SLASH CUTTINGS ON SITE AND STOCKPILE THE CHIPS TO BE USED ON ALL UNSTABLE, DISTURBED AREAS DURING CONSTRUCTION AS TEMPORARY STABILIZATION MULCH. NO BURNING WILL BE ALLOWED ON SITE.
4. TEMPORARY STABILIZATION MUST BE PROVIDED TO ANY DISTURBED EARTH THAT IS OPENED UP IN ANY ONE LOCATION FOR MORE THAN 14 DAYS. CHIPS FROM LAND CLEARING, EROSION CONTROL BLANKETS, OR FAST GROWING RYE GRASSES MAY BE USED FOR TEMPORARY STABILIZATION AS REQUIRED.
5. STRIPPED TOPSOIL SHALL BE STOCKPILED AND PROTECTED WITH STRAW MULCH. ALL STOCKPILES SHALL HAVE AN APPROVED SILTATION BARRIER TOTALLY SURROUNDING THE PILE. THE PILE SHALL BE IN AN APPROVED UPLAND AREA A MINIMUM OF TWENTY-FIVE FEET FROM ALL RESOURCE AREAS.
6. THE PHASING AND SEQUENCING OF THE WORK FOR THE SITE PREPARATION FOR THE TELECOMMUNICATIONS EQUIPMENT INSTALLATION CONSISTS OF INSTALLING TEMPORARY EROSION AND SEDIMENTATION CONTROL BARRIERS; CLEARING AND ROUGH GRADING AS NEEDED; FOUNDATION WORK; EXCAVATION FOR UTILITIES; BACK FILL FOUNDATIONS AND UTILITY TRENCHES; FENCED COMPOUND CONSTRUCTION; INSTALLATION OF TOWER AND GROUND EQUIPMENT; GRADING AND LIGHTING PROTECTION; EQUIPMENT TESTING; FINAL GRADING AND STABILIZATION OF DISTURBED AREAS; LOAM AND SEED DISTURBED AREAS OUTSIDE COMPOUND; FINAL CLEANUP; THE ESTIMATED TIME FOR COMPLETION OF THE WORK IS APPROXIMATELY SIXTEEN (16) WEEKS.
7. THE COMPOUND ENCLOSURE IS SURFACED WITH CRUSHED STONE UNDERLAIN BY A WEED-BLOCK SYNTHETIC FILTER FABRIC. DRAINAGE PATTERNS, RUNOFF VOLUMES AND PEAK FLOW RATES WILL NOT BE ALTERED BY THE PROPOSED CONSTRUCTION.
8. ALL DISTURBED AREAS OUTSIDE THE LIMITS OF THE FENCED COMPOUND SHALL BE PERMANENTLY ESTABLISHED WITH A NATIVE VEGETATIVE GROUND COVER AT THE CONCLUSION OF CONSTRUCTION. GRADED AREAS SHALL BE PROTECTED WITH STRAW MULCH UNTIL A GOOD VEGETATIVE COVER IS ESTABLISHED.
9. THE TOTAL IMPACT AREA OF THE DISTURBED CONSTRUCTION SITE IS BOUNDED BY THE "LIMIT OF WORK" AS SHOWN HEREON. THE MAXIMUM AREA OF DISTURBANCE WITHIN THE LIMIT OF WORK IS APPROXIMATELY 27,650 SQUARE FEET. THE PROJECT IMPACT AREA IS BEYOND THE EXEMPTION THRESHOLD OF 43,560 SQUARE FEET IN 40 CFR PARTS 9, 122-124 AND THEREFORE IS NOT SUBJECT TO REGULATION UNDER THE EPA NPDES GENERAL CONSTRUCTION PERMIT PROGRAM.
10. THE PROJECT OWNER'S GENERAL CONTRACTOR SHALL CONDUCT ALL SITE DEVELOPMENT WORK IN A MANNER THAT DOES NOT EXCEED THE LIMITS OF WORK SHOWN ON THE PLANS. ADDITIONALLY, THE PROJECT OWNER'S GENERAL CONTRACTOR SHALL CONDUCT ALL CONSTRUCTION ACTIVITIES IN A MANNER THAT DOES NOT RESULT IN STORM WATER DISCHARGES WITH AN ADVERSE IMPACT ON ANY RESOURCE AREAS OR DOWNSTREAM PROPERTIES.
11. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SILT FROM BEHIND SILTATION BARRIERS AND DISPOSE OF SILT EVENLY IN UPLAND AREAS. REMOVE ALL EROSION CONTROL DEVICES WHEN A GOOD VEGETATIVE COVER IS ESTABLISHED.
12. A CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON THIS PROJECT. SIGNS SHALL BE PLACED AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT. WASHOUT RESIDUE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.

**ProTerra**  
DESIGN GROUP, LLC

4 Bay Road  
Building A, Suite 200  
Hudson, MA 01553  
(413)320-4918

NO.	DATE	REVISIONS
A	04/27/20	ISSUED FOR REVIEW
B	07/26/20	ISSUED FOR PERMITTING

**SITE NAME: COLLAJN KING**  
**SITE NUMBER: VT-MA-2022**  
**ADDRESS: REILS LANE**  
**COLLAJN, MA 01840**

**APPLICANT:**  
**VERTIX POWER ASSETS, LLC**  
165 SOUTH STREET  
SUITE 205  
WRENTHAM, MA 01893

**VERTIX**  
**Towers LLC**

**STAMP:**

DATE: 04/27/20  
DRAWN: STZ/JEB  
CHECK: JMM/TEJ  
SCALE: SEE PLAN  
JOB NO.: 18-015

**EROSION CONTROL PLAN & DETAILS**

**EC-1**

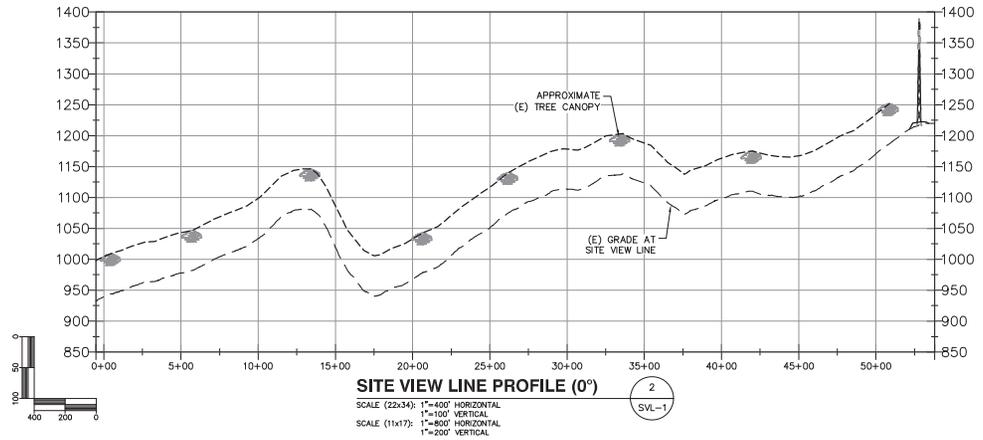




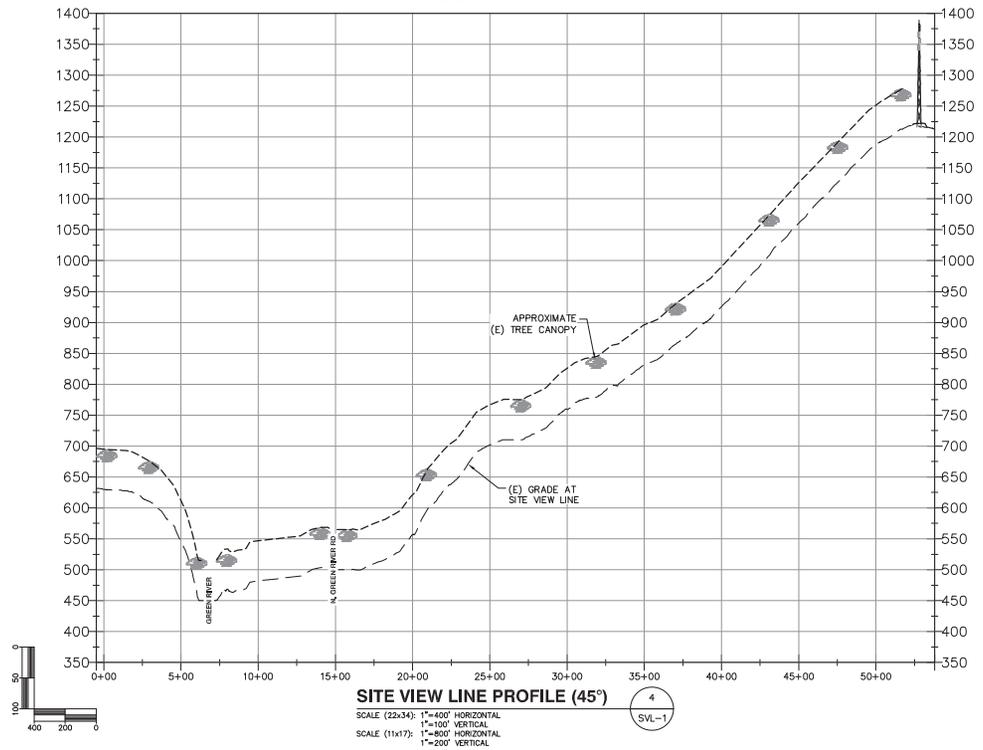
**SITE VIEW LINE PLAN (0°)** (1) SVL-1  
 SCALE: 1"=2000' (22x34)  
 1"=4000' (11x17)  
 2000 1000 0 2000 4000



**SITE VIEW LINE PLAN (45°)** (3) SVL-1  
 SCALE: 1"=2000' (22x34)  
 1"=4000' (11x17)  
 2000 1000 0 2000 4000



**SITE VIEW LINE PROFILE (0°)** (2) SVL-1  
 SCALE (22x34): 1"=400' HORIZONTAL  
 1"=100' VERTICAL  
 SCALE (11x17): 1"=800' HORIZONTAL  
 1"=200' VERTICAL



**SITE VIEW LINE PROFILE (45°)** (4) SVL-1  
 SCALE (22x34): 1"=400' HORIZONTAL  
 1"=100' VERTICAL  
 SCALE (11x17): 1"=800' HORIZONTAL  
 1"=200' VERTICAL

NO.	DATE	REVISIONS
A	04/27/20	ISSUED FOR REVIEW
B	07/28/20	ISSUED FOR PERMITTING

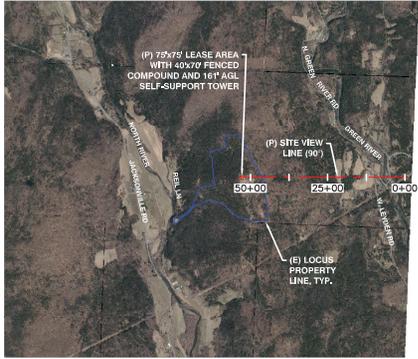
**TITLE:**  
**SITE NAME:** COLRAIN KING  
**SITE NUMBER:** VT-MA-2022  
**ADDRESS:** REILS LANE  
 COLRAIN, MA 01840  
**APPLICANT:**  
 VERTEX POWER ASSETS, LLC  
 165 SOUTH STREET  
 SUITE 205  
 WRENTHAM, MA 01983  
**VERTIX Towers LLC**

**STAMP:**  
 PROFESSIONAL SEAL OF ARCHITECT  
 JMM/TEJ  
 7-2-2020

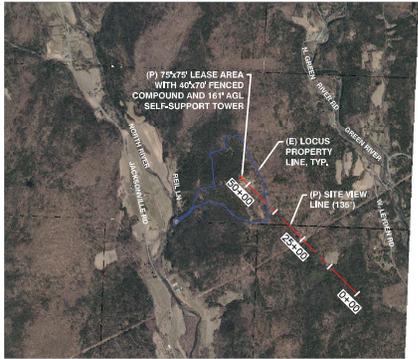
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**DRAWN:** BLM  
**CHECK:** JMM/TEJ  
**SCALE:** SEE PLAN  
**JOB NO.:** 18-015

**SHEET TITLE:**  
**SITE VIEW LINE PLAN & PROFILE**

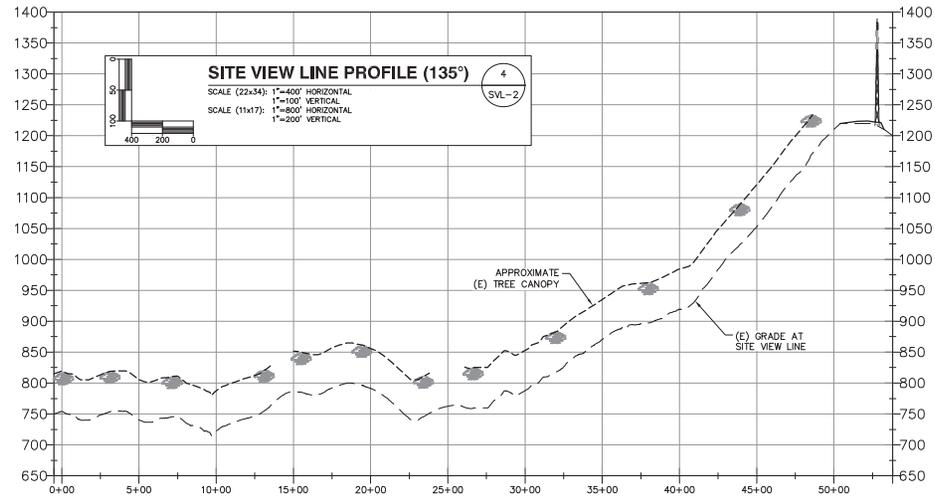
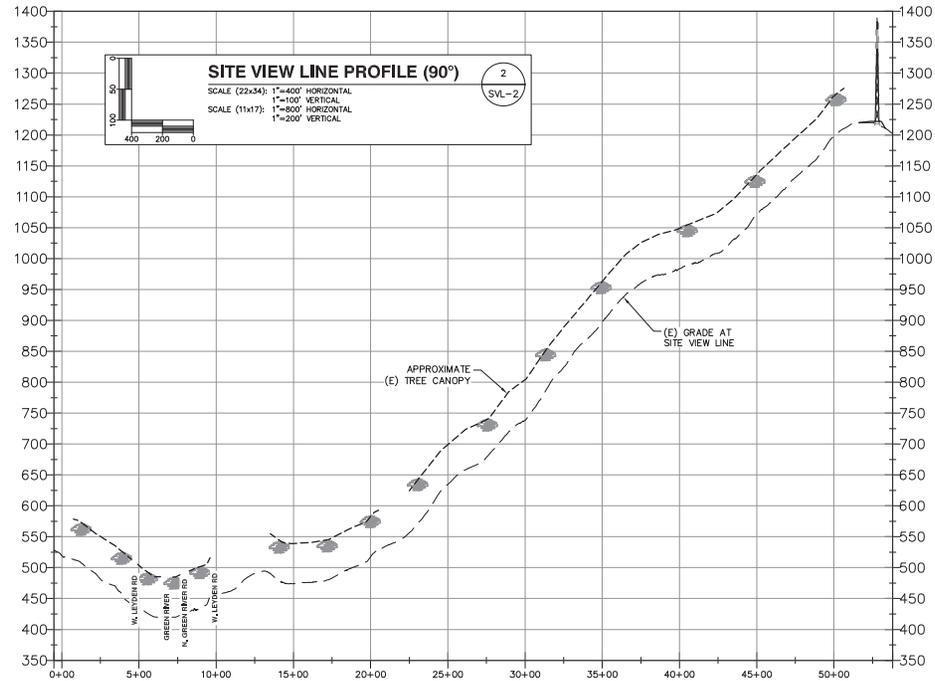
**SVL-1**



**SITE VIEW LINE PLAN (90°)**  
 SCALE: 1"=2000' (22x34)  
 1"=4000' (11x17)  
 SVL-2



**SITE VIEW LINE PLAN (135°)**  
 SCALE: 1"=2000' (22x34)  
 1"=4000' (11x17)  
 SVL-2

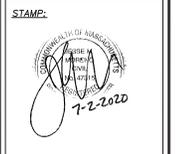


NO.	DATE	REVISIONS
A	04/27/20	ISSUED FOR REVIEW
B	07/28/20	ISSUED FOR PERMITTING

**TITLE:**  
 SITE NAME: COLRAIN KING  
 SITE NUMBER: VT-MA-2022  
 ADDRESS: RAILS LANE  
 COLRAIN, MA 01840

**APPLICANT:**  
 VERTEX POWER ASSETS, LLC  
 165 SOUTH STREET  
 SUITE 205  
 WRENTHAM, MA 01983

**Vertex Towers LLC**



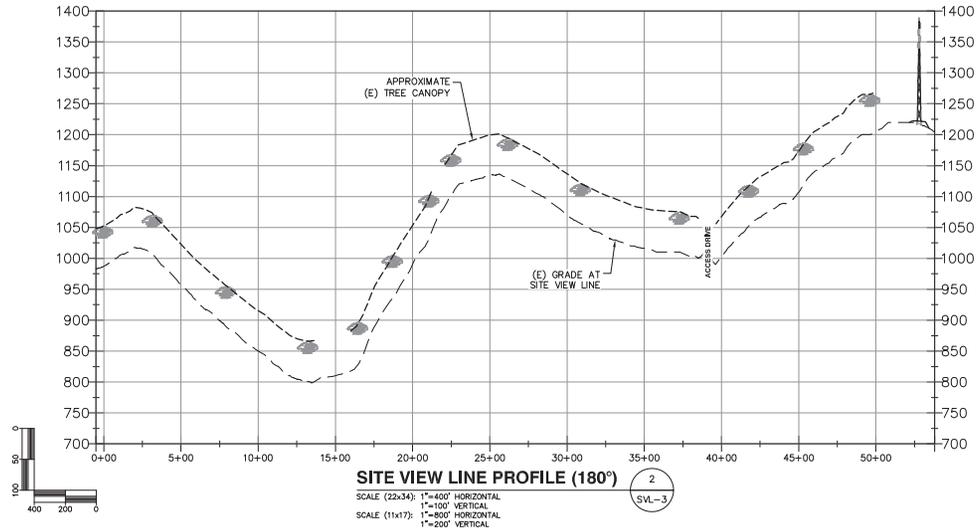
**DATE:** 04/24/20  
**DRAWN:** BLM  
**CHECK:** JMM/TEJ  
**SCALE:** SEE PLAN  
**JOB NO.:** 18-015

**SHEET TITLE:**  
 SITE VIEW LINE  
 PLAN & PROFILE

**SVL-2**



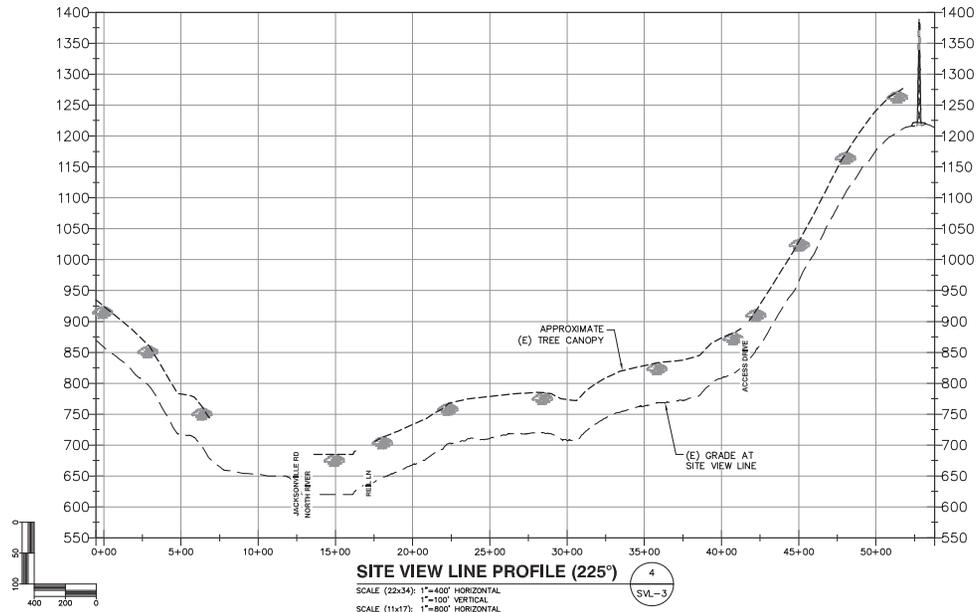
**SITE VIEW LINE PLAN (180°)**  
 SCALE: 1"=2000' (22x34)  
 1"=4000' (11x17)  
 SVL-3



**SITE VIEW LINE PROFILE (180°)**  
 SCALE (22x34): 1"=400' HORIZONTAL  
 1"=100' VERTICAL  
 SCALE (11x17): 1"=800' HORIZONTAL  
 1"=200' VERTICAL  
 SVL-3



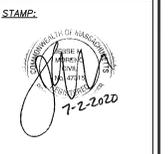
**SITE VIEW LINE PLAN (225°)**  
 SCALE: 1"=2000' (22x34)  
 1"=4000' (11x17)  
 SVL-3



**SITE VIEW LINE PROFILE (225°)**  
 SCALE (22x34): 1"=400' HORIZONTAL  
 1"=100' VERTICAL  
 SCALE (11x17): 1"=800' HORIZONTAL  
 1"=200' VERTICAL  
 SVL-3

NO.	DATE	REVISIONS
A	04/27/20	ISSUED FOR REVIEW
B	07/28/20	ISSUED FOR PERMITTING

**TITLE:**  
**SITE NAME:** COLRAIN KING  
**SITE NUMBER:** VT-MA-2022  
**ADDRESS:** REILS LANE  
 COLRAIN, MA 01840  
**APPLICANT:**  
 VERTEX POWER ASSETS, LLC  
 165 SOUTH STREET  
 SUITE 205  
 WRENTHAM, MA 01983  
**VERTIX Towers LLC**



**DATE:** 04/24/20  
**DRAWN:** BLM  
**CHECK:** JMM/TEJ  
**SCALE:** SEE PLAN  
**JOB NO.:** 18-015

**SHEET TITLE:**  
**SITE VIEW LINE PLAN & PROFILE**  
**SVL-3**

