



**PLANNING DEPARTMENT**  
**Community Development Agency**

County Administration Center  
 810 Court Street ▪ Jackson, CA 95642-2132  
 Telephone: (209) 223-6380  
 Website: www.amadorgov.org  
 E-mail: planning@amadorgov.org

**APPLICATION PROCEDURE FOR USE PERMIT**

A Public Hearing before the Planning Commission will be scheduled after the following information has been completed and submitted to the Planning Department Office:

- 1. Complete the following:
  - Name of Applicant Pinnacles Cellular Inc d/b/a Verizon Wireless C/O Complete Wireless Consulting Inc.
  - Mailing Address 2009 V Street, Sacramento Ca, 95818. Attn: Steve Proo

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  - Phone Number 916-838-6713
  - Assessor Parcel Number 021-390-006-000
  - Use Permit Applied For:
    - Private Academic School
    - Private Nonprofit Recreational Facility
    - Public Building and Use(s)
    - Airport, Heliport
    - Cemetery
    - Radio, Television Transmission Tower
    - Club, Lodge, Fraternal Organization
    - Dump, Garbage Disposal Site
    - Church
    - OTHER \_\_\_\_\_
  
- 2. Attach a letter explaining the purpose and need for the Use Permit.
- 3. Attach a copy of the deed of the property (can be obtained from the County Recorder's Office).
- 4. If Applicant is not the property owner, a consent letter must be attached.
- 5. Assessor Plat Map (can be obtained from the County Surveyor's Office).
- 6. Plot Plan (no larger than 11" X 17") of parcel showing location of request in relation to property lines, road easements, other structures, etc. (see Plot Plan Guidelines). Larger map(s) or plans may be submitted if a photo reduction is provided for notices, Staff Reports, etc. The need is for easy, mass reproduction.
  
- 7. Planning Department Filing Fee: \$ 1,112.00  
 Environmental Health Review Fee: \$ 738.00 CEQA  
 Public Works Agency Review Fee: \$ \$50 Recording Fee  
 Amador Fire Protection District Fee: \$ \_\_\_\_\_  
 Discretionary permits may be subject to a CA Fish & Wildlife fee: \$ \$50 Recording Fee
  
- 8. Complete an Environmental Information Form.
- 9. Sign Indemnification Form.

**ENVIRONMENTAL INFORMATION FORM**

To be completed by applicant; use additional sheets as necessary.  
Attach plans, diagrams, etc. as appropriate.

**GENERAL INFORMATION**

Project Name: Shake Ridge

Date Filed: 1/19/2024 File No. \_\_\_\_\_

Applicant/

Developer Pinnacles Cellular Inc d/b/a Verizon Wireless C/O Complete Wireless Consulting Inc. Landowner Antoinette Ryglisyn / Marty Hollander

Address 2009 V Street, Sacramento, CA 95818. Attn: Steve Proo Address 19585 Shake Ridge Rd, Volcano, Ca 95689

Phone No. 916-838-6713 Phone No. 650-996-9974

Assessor Parcel Number(s) 021-390-006-000

Existing Zoning District Single Family Residential & Agricultural (R1A).

Existing General Plan Residential Low Density

List and describe any other related permits and other public approvals required for this project, including those required by city, regional, state, and federal agencies Building Permit

**WRITTEN PROJECT DESCRIPTION** (Include the following information where applicable, as well as any other pertinent information to describe the proposed project):

1. Site Size
2. Square Footage of Existing/Proposed Structures
3. Number of Floors of Construction
4. Amount of Off-street Parking Provided (provide accurate detailed parking plan)
5. Source of Water
6. Method of Sewage Disposal
7. Attach Plans
8. Proposed Scheduling of Project Construction
9. If project to be developed in phases, describe anticipated incremental development.
10. Associated Projects
11. Subdivision/Land Division Projects: Tentative map will be sufficient unless you feel additional information is needed or the County requests further details.
12. Residential Projects: Include the number of units, schedule of unit sizes, range of sale prices or rents and type of household size expected.
13. Commercial Projects: Indicate the type of business, number of employees, whether neighborhood, city or regionally oriented, square footage of sales area, and loading facilities.
14. Industrial Projects: Indicate type, estimated employment per shift, and loading facilities.
15. Institutional Projects: Indicate the major function, estimated employment per shift, estimated occupancy, loading facilities, and community benefits to be derived from the project.
16. If the project involves a variance, conditional use permit, or rezoning application, state this and indicate clearly why the application is required.



**ADDITIONAL INFORMATION** Are the following items applicable to the project or its effects? Discuss below all items checked "yes" (attach additional sheets as necessary).

YES NO

- |                                     |                                     |   |
|-------------------------------------|-------------------------------------|---|
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 17. Change in existing features or any lakes or hills, or substantial alteration of ground contours.          |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 18. Change in scenic views or vistas from existing residential areas, public lands, or roads.                 |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 19. Change in pattern, scale, or character of general area of project.  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 20. Significant amounts of solid waste or litter.   |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 21. Change in dust, ash, smoke, fumes, or odors in the vicinity.  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 22. Change in lake, stream, or ground water quality or quantity, or alteration of existing drainage patterns. |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 23. Substantial change in existing noise or vibration levels in the vicinity.                                 |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 24. Site on filled land or has slopes of 10 percent or more.  |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 25. Use or disposal of potentially hazardous materials, such as toxic substances, flammables, or explosives.  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 26. Substantial change in demand for municipal services (police, fire, water, sewage, etc.).                  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 27. Substantially increase fossil fuel consumption (electricity, oil, natural gas, etc.).                     |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 28. Does this project have a relationship to a larger project or series of projects?                          |

**ENVIRONMENTAL SETTING**

29. Describe the project site as it exists before the project, including information on topography, soil stability, plants and animals, and any cultural, historical or scenic aspects. Describe any existing structures on the site, and the use of the structures. Attach photographs of the site (cannot be returned).
30. Describe the surrounding properties, including information on plants and animals and any cultural, historical, or scenic aspects. Indicate the type of land use (residential, commercial, etc.), intensity of land use (one family, apartment houses, shops, department stores, etc.), and scale of development (height, frontage, setback, rear yard, etc.). Attach photographs of the vicinity (cannot be returned).
31. Describe any known mine shafts, tunnels, air shafts, open hazardous excavations, etc. Attach photographs of any of these known features (cannot be returned).

Certification: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date 1/19/2024

Steve Proo  
 (Signature)  
 For Shake Ridge Wireless Facility

Site Name: Shake Ridge

**LETTER OF AUTHORIZATION**

**This authorization is not a commitment of any kind.** All land-use approvals obtained will be subject to the successful completion of lease negotiations and the approval of site configuration by an authorized representative.

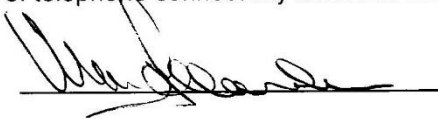
In order to determine the viability and permit the use of a wireless antenna facility on the real property ("Property") at the address stated below, the undersigned authority hereby grants, consents, and agrees with Verizon Wireless as follows:

1. Entry. Owner or authorized agent consents that approved Verizon Wireless representatives may enter upon the Property to conduct and perform the following permitted activities upon at least 24 hour notice to Owner: boundary and positioning surveys, radio propagation studies, soils boring/report, power and telephone existing service capacity, subsurface boring tests, an environmental site assessment, visual inspections of the Property, and other activities as Verizon Wireless may deem necessary. Verizon Wireless agrees to be responsible for all costs related to these surveys and investigations.

2. Filings. Owner or authorized agent consents that Verizon Wireless may make and file applications for the proposed wireless antenna facility on the Property to such local, state and federal governmental entities whose approval may be necessary for this type of use. Submittals and approvals include zoning applications, variances, land use descriptions, and other submittals necessary for this type of use. Verizon Wireless agrees to be responsible for all costs related to the governmental approvals for this project.

3. Telco. Owner or authorized agent consents that Verizon Wireless may order, coordinate, and install upgraded telephone connectivity to the site. Verizon Wireless agrees to be responsible for any and all costs related to this installation. Owner or authorized agent understands that the upgrade of telephone connectivity does not constitute construction start.

Authorized Signature:



Print Name:

Marty Hollander

Title:

\_\_\_\_\_

Company (if applicable):

\_\_\_\_\_

Phone number:

650 996 9974

Dated:

11/29/23

Authorized Signature:



Print Name: Antionette Ryglisyn

Title: \_\_\_\_\_

Company (if applicable): \_\_\_\_\_

Phone number: \_\_\_\_\_

Dated: 11/29/23

Assessor's Parcel Number: 021-390-006-000

Property Address: 19585 Shake Ridge Rd, Volcano, Ca 95689

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Name: Ryglisyn Party type: All Allow Partial Match: True Start Date: End Date:

6 Result(s)

Document Number	Grantors	Grantees	Docume
2006-0014443		RYGLISYN, ANTOINETTE	DEE
2006-0014444	RYGLISYN, ANTOINETTE		TRU
2010-0000123	RYGLISYN, ANTOINETTE		TRU
2010-0000502		RYGLISYN, ANTOINETTE	REC
	RYGLISYN, ANTOINETTE		SUB
2013-0005038	RYGLISYN, ANTOINETTE		TRU

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**Document Number:**

◀ 2013-0005038 ▶

Number of Pages: 19 Recording Date: 6/3/2013

**Document Types**

TRUST DEED

**Grantors**

HOLLANDER, MARTY  
RYGLISYN, ANTOINETTE

**Grantees**

MORTGAGE ELECTRONIC REGISTRATION SYSTEMS  
ROUNDPOINT MTG CO

Images may not be viewed online

2013-0005409

RYGLISYN, ANTOINETTE

RYGLISYN, ANTOINETTE

SUB  
REC

Geil Engineering  
Engineering \* Surveying \* Planning  
1226 High Street  
Auburn, California 95603-5015  
Phone: (530) 885-0426 \* Fax: (530) 823-1309

Project Name: Shake ridge  
Project A.P.N.: 021-390-006  
Project Site Location: 19584 Shake Ridge Road,  
Volcano, CA 95689  
Amador County

Title Company: First American Title Insurance Company  
Guarantee Number: 5026900-7008238  
Dated as of: June 28, 2023

The above referenced Title Guarantee has been reviewed along with the supplied supporting documents.

Exceptions 1-3, 7-8: Refer to taxes, liens or assessments. Not a survey matter. Not reviewed by this office.

Exception 4: Boundary line agreement, does not affect underlying parcel of land. No visible negative impact on the proposed lease area, access or utility easements noted at time of field survey.


Exception 5: Boundary line agreement affecting Southwesterly portion of underlying parcel. No visible negative impact on the proposed lease area, access or utility easements noted at time of field survey.

Exception 6: Easement to P.G & E. over northerly portion of underlying parcel. No visible negative impact on the proposed lease area, access or utility easements noted at time of field survey.

Exception 9: Right of public to any portion of land lying within ant Road, Street, Alley or Highway. No visible negative impact on the proposed A.T.& T. Mobility lease area and/or its access and utility easements noted at time of field survey.

Exception 10: No visible evidence of exercise of water rights noted at time of field survey. No visible negative impact on the proposed A.T.& T. Mobility lease area and/or its access and utility easements noted at time of field survey.

Unless noted hereon, no easement listed in the exception of referenced report appear to adversely affect the proposed project area as noted at time of field survey performed by this office on July 25, 2023.

  
Daniel G. Geil LS 7640



08-03-23

**PROJECT SUPPORT STATEMENT  
VERIZON WIRELESS**

**Site Name:** Shake Ridge  
**Location:** 19585 Shake Ridge Rd, Volcano, CA 95689  
**APN:** 021-390-006

**Introduction**

Verizon Wireless is seeking to improve communications services to residences, businesses, public services, and area travelers in Volcano, California. Verizon maintains a strong customer base in Amador County, and constantly strives to improve coverage for both existing and potential customers. The proposed facility is needed to bring improved wireless communication coverage and will accomplish this by expanding Verizon's existing network and improving call quality, signal strength, and wireless connection services in the County. The improved wireless service will benefit residents, travelers, public services, and roadway safety in the area.

**Facility Design & Description**

Verizon Wireless proposes a new 90' Monopine telecommunications facility, located at the property of 19585 Shake Ridge Rd, Volcano, CA 95689. The property is zoned R1A (low residential agricultural). The proposed design will include nine (9) antennas on three (3) sectors, mounted at two centerlines of 68' & 78'. The proposed design will also include three (3) outdoor equipment cabinets, and one (1) emergency 30KW standby generator. The 30' x 30' lease area will be enclosed by a chain link fence. The parcel is located on a 45.95 acre lot (2590 sq ft) and the telecommunications tower will site will be located to the NE of the parcel , (38.460419 -120.659617).

This proposed facility complies with Amador County's Municipal Code as well as state and federal standards.

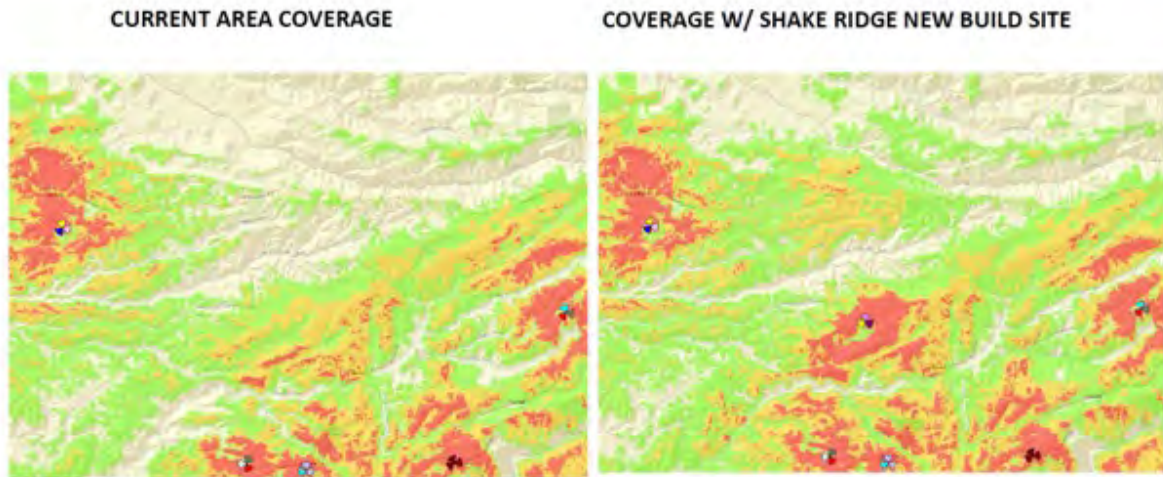
**Location Selection and Need for Facility**

Verizon Wireless seeks to improve wireless communications in Amador County area along Shake Ridge Rd and the town of Volcano with the addition of a new wireless telecommunications facility. Presently, this area of the county suffers from poor wireless coverage levels, which can cause recurring lost calls and ineffective service. The need for this proposed facility is due to complaints from Verizon Wireless customers, businesses, and travelers in this area. To remedy these problems, Verizon proposes this new tower which will improve service to Verizon subscribers and emergency services along this portion the county, as well as address capacity issues and close a significant gap in coverage that exists in this area.

See below the comparison of the two maps. The first map shows the target area currently lacking wireless coverage on the Verizon Wireless network. The second map shows what the coverage will be like upon activation of the proposed facility.



## Coverage Maps showing Existing and Proposed Coverage



As shown in these coverage maps, the target area is filled with a red, indicating far greater indoor coverage within the target area, as well as the surrounding vicinity. Larger versions of these coverage maps are provided with this application.

### **Safety Benefits of Improved Wireless Service**

Verizon offers its customers multiple services such as voice calls, text messaging, mobile email, picture/video messaging, mobile web, navigation, broadband access, V CAST, and E911 services. Mobile phone use has become an extremely important tool for first responders and serves as a back-up system in the event of a natural disaster.

### **Public Benefits of Improved Wireless Service**

Modern life has become increasingly dependent upon wireless communications. Wireless access is critical to many facets of everyday life, such as safety, recreation, and commerce. This site will allow current and future Verizon Wireless customers to have access to wireless services in the areas shown on the Coverage Plots included in this application. Additionally, this site will serve as a backup to the existing landline service in the area and will provide improved wireless communication, which is essential to first responders, community safety, local businesses, and area residents. As a backup system to traditional landline phone service, mobile phones have proven to be extremely important during natural disasters and other catastrophes.

### **Operations & Maintenance**

The site is unmanned and requires no on-site personnel. Visitation to the site by a service technician for routine maintenance may occur up to once per month. The proposed site is entirely self-monitored and connected directly to a central office where sophisticated computers alert

personnel to any equipment malfunction. Because the wireless facility is unmanned, there are no regular hours of operation and no impacts to existing local traffic patterns. No water or sanitation services will be required. The facility itself operates 24/7.

### **Emergency Stand-by Generator**

Verizon Wireless installs a standby generator and batteries at all its cell sites. The generator and batteries serve a vital role in Verizon Wireless' emergency and disaster preparedness plan. In the event of a power outage, Verizon Wireless' communications equipment will first transition over to the backup batteries. The batteries can run the site for approximately 8 hours, depending upon the demand placed upon the equipment. Should the power outage extend beyond the capacity of the batteries, the backup generator will automatically start and recharge the batteries. This two-stage backup plan is an extremely important component of every Verizon Wireless communications site. The standby generator is operated for approximately 10-15 minutes per week for maintenance purposes. During construction of the facility, which typically lasts around two months, acceptable noise levels will not be exceeded.

### **Lighting**

Unless tower lighting is required by the Federal Aviation Administration (FAA), the only lighting on the facility will be shielded lights inside the lease area for safety.

### **Construction Schedule**

The construction of the facility will be in compliance with all local rules and regulations. The crew size will range from two to ten individuals. The construction phase of the project will last approximately two months and will not exceed acceptable noise levels.

### **Compliance with FCC Standards**

Verizon Wireless complies with all Federal Communications Commission rules governing construction requirements, technical standards, interference protection, power and height limitations and radio frequency standards. A radio frequency (RF) report has been prepared by independent licensed engineering firm EBI Consulting, demonstrating that the Verizon facility has been designed to comply with FCC requirements. In addition, Verizon complies with all FAA rules on site location and operation.

### **Notice of Actions Affecting This Development Permit**

In accordance with California Government Code Section 65945(a), Verizon Wireless requests notice of any proposal to adopt or amend the: general plan, specific plan, zoning ordinance, ordinance(s) affecting building or grading permits that would in any manner affect this development permit. Any such notice may be sent to 2009 V Street, Sacramento, CA 95818.

**INDEMNIFICATION**

Project: Shake Ridge

In consideration of the County's processing and consideration of the application for the discretionary land use approval identified above (the "Project") the Owner and Applicant, jointly and severally, agree to defend, indemnify, and hold harmless the County of Amador from any claim, action, or proceeding against the County to attack, set aside, void or annul the Project approval, or any action relating related to the Project approvals as follows:

1. Owner and Applicant shall defend, indemnify, and hold harmless the County and its agents, officers or employees from any claim, action, or proceeding against the County or its agents, officers or employees (the "County") to attack, set aside, void or annul the Project approval, or any prior or subsequent determination regarding the Project, including but not limited to determinations related to the California Environmental Quality Act, or Project condition imposed by the County. The Indemnification includes, but is not limited to, damages, fees, and or costs, including attorneys' fees, awarded against County. The County in its sole discretion may hire outside counsel to handle its defense or may handle the matter internally. Indemnification also includes paying for the County's staff time associated with the litigation. The obligations under this Indemnification shall apply regardless of whether any permits or entitlements are issued.

2. The County may, within its unlimited discretion, participate in the defense of any such claim, action, or proceeding if the County defends the claim, action, or proceeding in good faith.

3. The Owner and Applicant shall not be required to pay or perform any settlement by the County of such claim, action, or proceeding unless the settlement is approved in writing by Owner and Applicant, which approval shall not be unreasonably withheld.

IN WITNESS WHEREOF, by their signature below, Owner and Applicant hereby acknowledge that they have read, understand, and agree to perform the obligations under this Indemnification.

Applicant:

Steve Proo  
Signature

Owner (if different than Applicant):

[Signature]  
Signature

Owner

[Signature]  
Signature



# SHAKE RIDGE

19585 SHAKE RIDGE ROAD, VOLCANO, CA 95689  
 MDG LOCATION ID: 5000918241  
 PROJECT ID: 16994468

Issued For:

## SHAKE RIDGE

19585 SHAKE RIDGE ROAD  
 VOLCANO, CA 95689

PREPARED FOR



2785 MITCHELL DRIVE, BLDG 9  
 WALNUT CREEK, CA 94598

Vendor:



MDG LOCATION ID: 5000918241

PROJECT ID: 16994468

DRAWN BY: SEAD

CHECKED BY: J. GRAY

APPROVED BY: -

### ISSUE STATUS

REV	DATE	DESCRIPTION	CAD
1	09/13/23	ZD 100%	D.H.
0	08/15/23	ZD 90%	XX

Licensee:

PRELIMINARY:  
 NOT FOR  
 CONSTRUCTION

KEVIN R. SORENSEN  
 S4469

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

ENGINEER:

8445 Sierra College Blvd, Suite E Granite Bay, CA 95746  
 Contact: Kevin Sorenson Phone: 916-660-1930  
 E-Mail: kevin@streamlineeng.com Fax: 916-660-1941

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SHEET TITLE:

TITLE SHEET

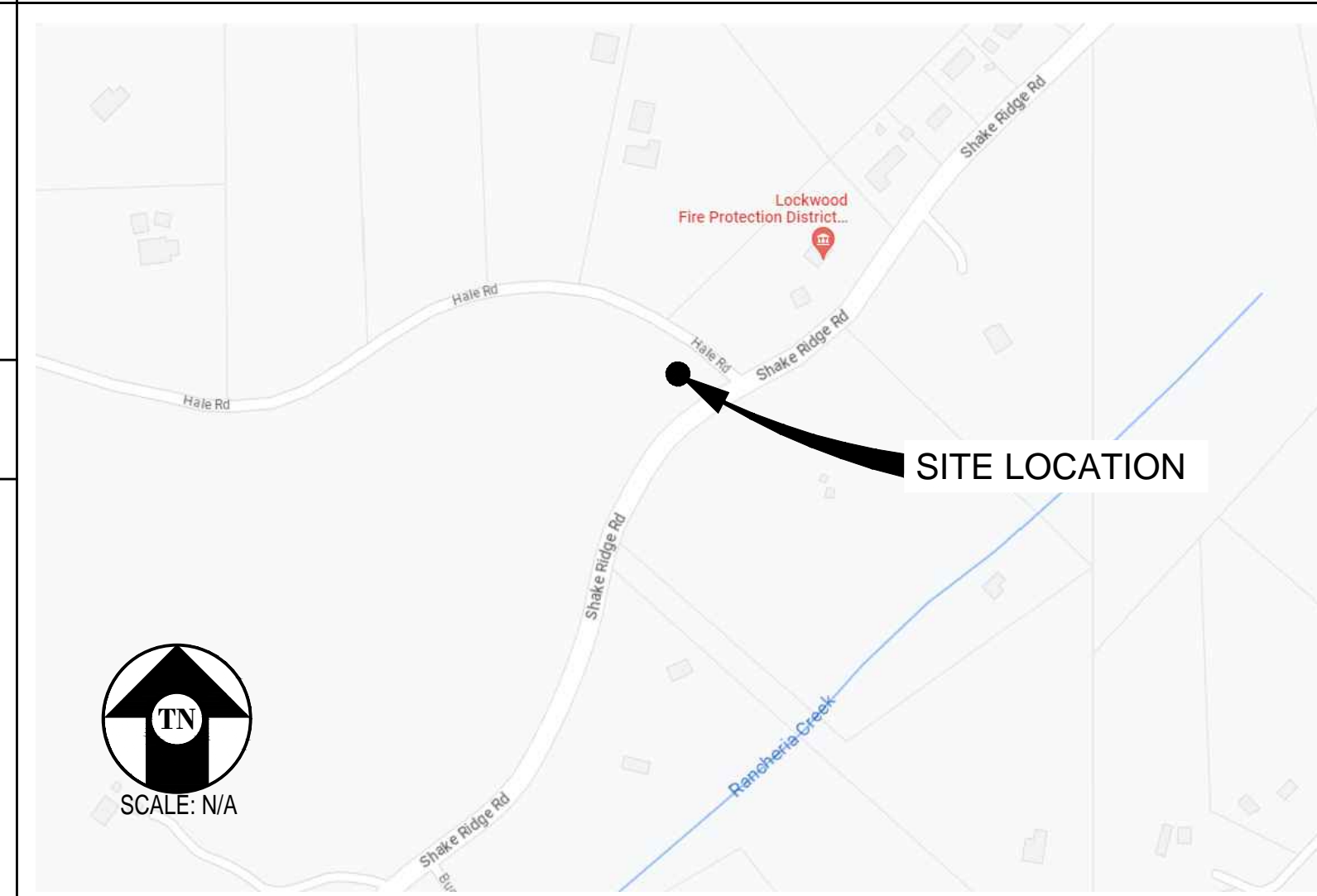
SHEET NUMBER:

T-1.1

### PROJECT DESCRIPTION

- A (N) VERIZON WIRELESS UNMANNED TELECOMMUNICATION FACILITY CONSISTING OF INSTALLING:
- (N) LEASE AREA W/ (N) GROUND MOUNTED CABINETS & (N) DIESEL GENERATOR & (N) UTILITIES TO (N) SITE LOCATION
  - (N) MONOPINE W/ (N) ANTENNAS & ANTENNA EQUIPMENT

### VICINITY MAP



### CODE COMPLIANCE

ALL WORK & MATERIALS SHALL BE PERFORMED & INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

- 2022 CALIFORNIA ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.
- 2022 CALIFORNIA BUILDING CODE (CBC), PART 2, VOLUME 1&2, TITLE 24 C.C.R. (2021 INTERNATIONAL BUILDING CODE AND 2022 CALIFORNIA AMENDMENTS)
- 2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (2020 NATIONAL ELECTRICAL CODE AND 2022 CALIFORNIA AMENDMENTS)
- 2022 CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE 24 C.C.R. (2021 UNIFORM MECHANICAL CODE AND 2022 CALIFORNIA AMENDMENTS)
- 2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R. (2021 UNIFORM PLUMBING CODE AND 2022 CALIFORNIA AMENDMENTS)
- 2022 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 C.C.R.
- 2022 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R. (2021 INTERNATIONAL FIRE CODE AND 2022 CALIFORNIA AMENDMENTS)
- 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE, PART 11, TITLE 24 C.C.R.
- 2022 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R.
- ANSI/EIA-TIA-222-H

ALONG WITH ANY OTHER APPLICABLE LOCAL & STATE LAWS AND REGULATIONS

### DISABLED ACCESS REQUIREMENTS

THIS FACILITY IS UNMANNED & NOT FOR HUMAN HABITATION. DISABLED ACCESS & REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH CALIFORNIA STATE BUILDING CODE, TITLE 24 PART 2, SECTION 11B-203.5

### SHEET INDEX

SHEET	DESCRIPTION	REV
T-1.1	TITLE SHEET	-
C-1	TOPOGRAPHIC SURVEY	-
A-1.1	OVERALL SITE PLAN	-
A-1.2	ENLARGED SITE PLAN	-
A-1.3	EQUIPMENT PLAN	-
A-2.1	ANTENNA PLANS	-
A-3.1	ELEVATIONS	-
A-4.1	ANTENNA DETAILS	-
A-4.2	EQUIPMENT DETAILS	-
E-1.1	ELECTRICAL PLAN	-

### PROJECT INFORMATION

SITE NAME:	SHAKE RIDGE	SITE ACQUISITION COMPANY:	COMPLETE WIRELESS CONSULTING 2009 V STREET SACRAMENTO, CA 95818
MDG LOCATION ID:	5000918241	LEASING CONTACT:	ATTN: PAUL BARNES (916) 217-2309 PBARNES@COMPLETEWIRELESS.NET
COUNTY:	AMADOR	ZONING CONTACT:	ATTN: STEVE PROO (916) 838-6713 SPROO@COMPLETEWIRELESS.NET
JURISDICTION:	AMADOR COUNTY	CONSTRUCTION CONTACT:	ATTN: ANDREW BUELL (916) 224-5578 ABUELL@COMPLETEWIRELESS.NET
APN:	021-390-006		
SITE ADDRESS:	19585 SHAKE RIDGE ROAD VOLCANO, CA 95689		
CURRENT ZONING:	SINGLE FAMILY RESIDENTIAL & AGRICULTURAL (R1A)		
CONSTRUCTION TYPE:	V-B		
OCCUPANCY TYPE:	U, (UNMANNED COMMUNICATIONS FACILITY)		
POWER:	PG&E		
PROPERTY OWNER:	HOLLANDER, MARTY / RYGLISYN, ANTOINETTE 19585 SHAKE RIDGE ROAD VOLCANO, CA 95689		
APPLICANT:	VERIZON WIRELESS 2785 MITCHELL DRIVE, BLDG 9 WALNUT CREEK, CA 94598		
LATITUDE:	N 38° 27' 37.68" NAD 83 N 38.460467		
LONGITUDE:	W 120° 39' 34.97" NAD 83 W 120.659713		
GROUND ELEVATION:	2668' AMSL		

ALL THAT CERTAIN LEASE AREA BEING A PORTION OF THE REAL PROPERTY IN THE UNINCORPORATED AREA OF THE COUNTY OF AMADOR, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

ALL THOSE PORTIONS OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER, AND THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER AND THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER AND THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 16, TOWNSHIP 7 NORTH, RANGE 12 EAST, MOUNT DIABLO BASE AND MERIDIAN, LYING NORTHERLY AND WESTERLY OF THE CENTERLINE OF THE COUNTY ROAD RUNNING FROM SUTTER CREEK TO SILVER LAKE, (SHAKE RIDGE ROAD) AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE CENTER OF SAID COUNTY ROAD WHICH POINT IS 637 FEET SOUTH OF THE NORTHEAST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 16; THENCE

1. SOUTH 45° 30' WEST, 430 FEET ALONG SAID ROAD; THENCE,
2. SOUTH 35° 20' WEST, 455.5 FEET ALONG SAID ROAD; THENCE,
3. SOUTH 57° 50' WEST, 465.5 FEET ALONG SAID ROAD; THENCE,
4. SOUTH 24° 29' WEST, 390.5 FEET ALONG SAID ROAD; THENCE,
5. SOUTH 20° 16' WEST, 367.5 FEET ALONG SAID ROAD; THENCE,
6. SOUTH 44° 13' EAST, 1320 FEET ALONG SAID ROAD; THENCE,
7. SOUTH 71° 00' WEST, 381.0 FEET ALONG SAID ROAD; THENCE,
8. SOUTH 52° 07' WEST, 318 FEET ALONG SAID ROAD; THENCE,
9. SOUTH 46° 57' WEST, 470.7 FEET ALONG SAID ROAD;

EXCEPTING THEREFROM ALL THAT PORTION THEREOF WHICH LIES NORTHERLY, NORTHEASTERLY AND NORTHWESTERLY OF THE SOUTHERLY LINE OF HALE ROAD, AS DESCRIBED IN DEED TO THE COUNTY OF AMADOR, A POLITICAL SUBDIVISION OF THE STATE OF CALIFORNIA, RECORDED JUNE 6, 1968 IN BOOK 174 PAGE 294 OF AMADOR COUNTY OFFICIAL RECORDS AND AS SAID SOUTHERLY LINE OF HALE ROAD IS SHOWN ON "RIGHT OF WAY MAP SHOWING REALIGNMENT OF A PORTION OF HALE ROAD" FILED ON OCTOBER 11, 1968 IN BOOK 1 OF RIGHT-OF-WAYS MAPS AT PAGE 2.

ALSO EXCEPTING THEREFROM ANY PORTION OF THAT CERTAIN PARCEL OF LAND AS DESCRIBED IN DEED TO CLAUDE DAWKINS, ET UX, RECORDED MAY 22, 1970, IN BOOK 195 PAGE 34 OF AMADOR COUNTY OFFICIAL RECORDS AND AS SHOWN ON "AMENDED PARCEL MAP NO. 174 FOR CLAUDE DAWKINS, ET UX" FILED FOR RECORD ON MAY 8, 1972, IN BOOK 20 OF MAPS AT PAGE 81 BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE EASTERLY TERMINUS OF THAT CERTAIN COURSE INCORRECTLY DESCRIBED AS NORTH 62°53'20" EAST, A DISTANCE OF 150.96' IN DEED TO THE COUNTY OF AMADOR, A POLITICAL SUBDIVISION OF THE STATE OF CALIFORNIA, RECORDED JUNE 6, 1968 IN BOOK 174 PAGE 294 OF AMADOR COUNTY OFFICIAL RECORDS; (COURSE SHOULD HAVE BEEN DESCRIBED AS NORTH 62°53'20" WEST) THENCE FROM SAID EASTERLY TERMINUS, SOUTH 56°41'42" WEST, A DISTANCE OF 133.21' TO THE TRUE POINT OF BEGINNING; THENCE FROM SAID POINT OF BEGINNING SOUTH 59°00'37" WEST, A DISTANCE OF 30.00'; THENCE NORTH 30°59'23" WEST, A DISTANCE OF 30.00'; THENCE NORTH 59°00'37" EAST, A DISTANCE OF 30.00'; THENCE SOUTH 30°59'23" EAST, A DISTANCE OF 30.00' TO THE POINT OF BEGINNING.

TOGETHER WITH AN EASEMENT FOR ACCESS AND UTILITY PURPOSES, TWENTY FEET IN WIDTH, THE CENTERLINE OF WHICH IS DESCRIBED AS FOLLOWS: COMMENCING AT A POINT ON THE NORTHEAST BOUNDARY OF THE ABOVE DESCRIBED LEASE AREA WHICH BEARS SOUTH 30°59'23" EAST, A DISTANCE OF 15.00' FROM THE NORTH MOST CORNER THEREOF; THENCE FROM SAID POINT OF BEGINNING NORTH 71°26'30" EAST, A DISTANCE OF 132.37' MORE OR LESS TO THE PUBLIC RIGHT OF WAY.

ALSO TOGETHER WITH AN EASEMENT FOR ACCESS AND UTILITY PURPOSES, FIFTEEN FEET IN WIDTH, THE CENTERLINE OF WHICH IS DESCRIBED AS FOLLOWS: COMMENCING AT A POINT ON THE SOUTHEAST BOUNDARY OF THE ABOVE DESCRIBED LEASE AREA WHICH BEARS SOUTH 59°00'37" WEST, A DISTANCE OF 5.00' FROM THE EAST MOST CORNER THEREOF; THENCE FROM SAID POINT OF BEGINNING SOUTH 40°13'49" EAST, A DISTANCE OF 73.43' TO THE PUBLIC RIGHT OF WAY.

ALSO TOGETHER WITH AN EASEMENT FOR ACCESS AND UTILITY PURPOSES, TEN FEET IN WIDTH, THE CENTERLINE OF WHICH IS DESCRIBED AS FOLLOWS: COMMENCING AT A POINT WHICH BEARS NORTH 59°00'37" EAST, A DISTANCE OF 5.00' FROM THE NORTH MOST CORNER THEREOF; THENCE FROM SAID POINT OF BEGINNING, PARALLEL TO AND 5.0 FEET DISTANT OF THE BOUNDARY OF THE ABOVE DESCRIBED LEASE AREA, SOUTH 30°59'23" EAST, A DISTANCE OF 35.00'; THENCE SOUTH 59°00'37" WEST, A DISTANCE OF 35.00'.

Project Name: Shake Ridge  
Project Site Location: 19585 Shake Ridge Road  
Volcano, CA 95689  
Amador County

Date of Observation: 07-25-23

Equipment/Procedure Used to Obtain Coordinates: Trimble Geo XT post processed with Pathfinder Office software.

Type of Antenna Mount: Proposed Monopine

Coordinates (Center Lease Area)

Latitude: N 38°27'37.68" (NAD83) N 38°27'38.01" (NAD27)  
Longitude: W 120°39'34.97" (NAD83) W 120°39'31.22" (NAD27)

Latitude: N 38.460467° (NAD83) N 38.460558° (NAD27)  
Longitude: W 120.659713° (NAD83) W 120.658672° (NAD27)

ELEVATION of Ground at Structure (NAVD88) 2668' AMSL

DATE OF SURVEY: 07-25-23

SURVEYED BY OR UNDER DIRECTION OF: KENNETH D. GEIL, R.C.E. 14803

LOCATED IN THE COUNTY OF AMADOR, STATE OF CALIFORNIA

BEARINGS SHOWN ARE BASED UPON MONUMENTS FOUND AND RECORD INFORMATION. THIS IS NOT A BOUNDARY SURVEY.

ELEVATIONS SHOWN ON THIS PLAN ARE BASED UPON U.S.G.S. N.A.V.D. 88 DATUM. ABOVE MEAN SEA LEVEL.

F.E.M.A. F.I.R.M. ZONE "X" PER FIRM 06005C0375F DATED 05/20/2010

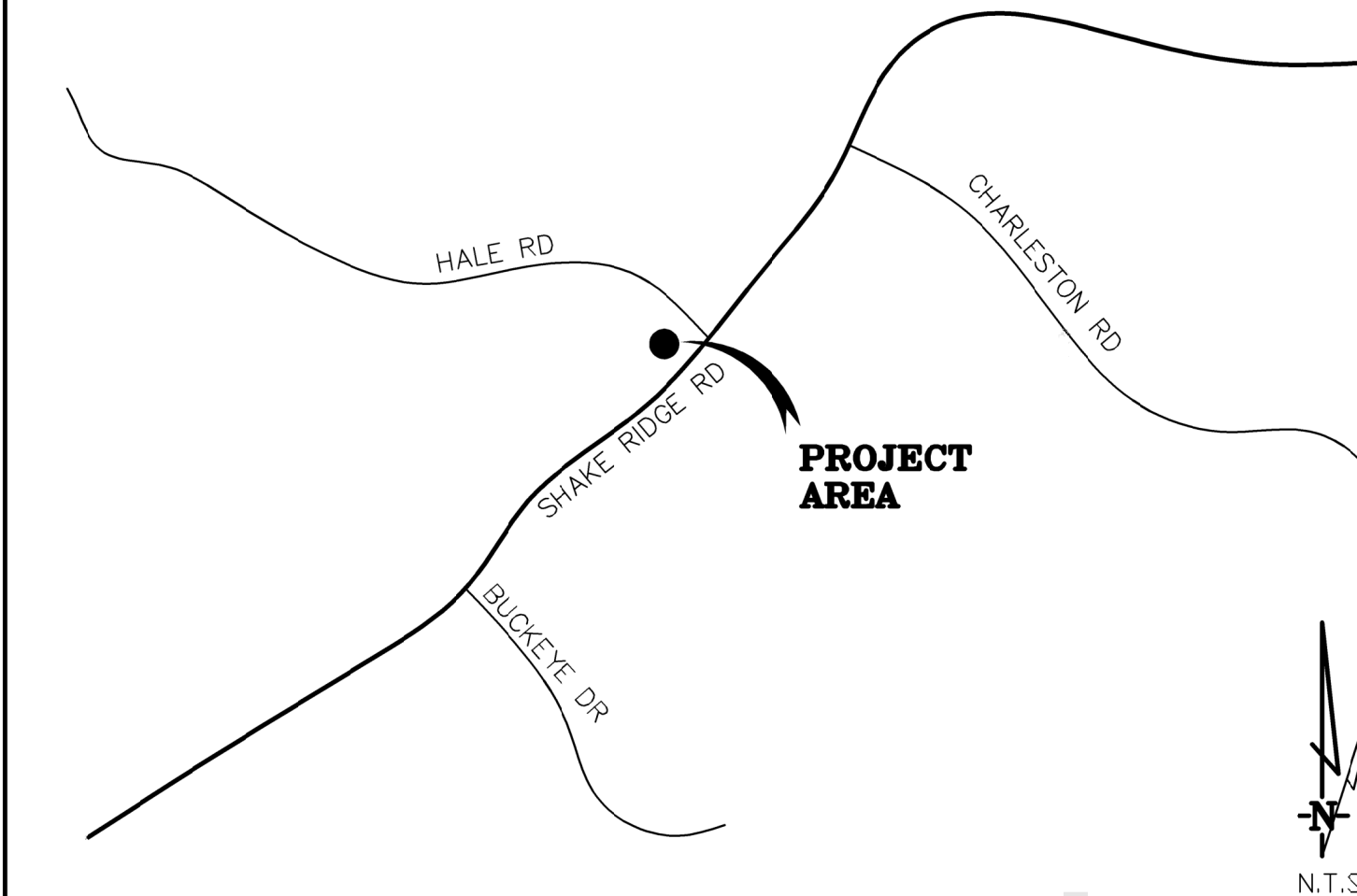
N.G.V.D. 1929 CORRECTION: SUBTRACT 2.73' FROM ELEVATIONS SHOWN.

CONTOUR INTERVAL: 1 FT.

CONTRACTOR IS RESPONSIBLE TO VERIFY LEASE AREA PRIOR TO CONSTRUCTION.

ASSESSOR'S PARCEL NUMBER: 021-390-006

OWNER(S): HOLLANDER, MARTY / RYGLISYN, ANTOINETTE  
19585 SHAKE RIDGE RD.  
VOLCANO, CA 95689

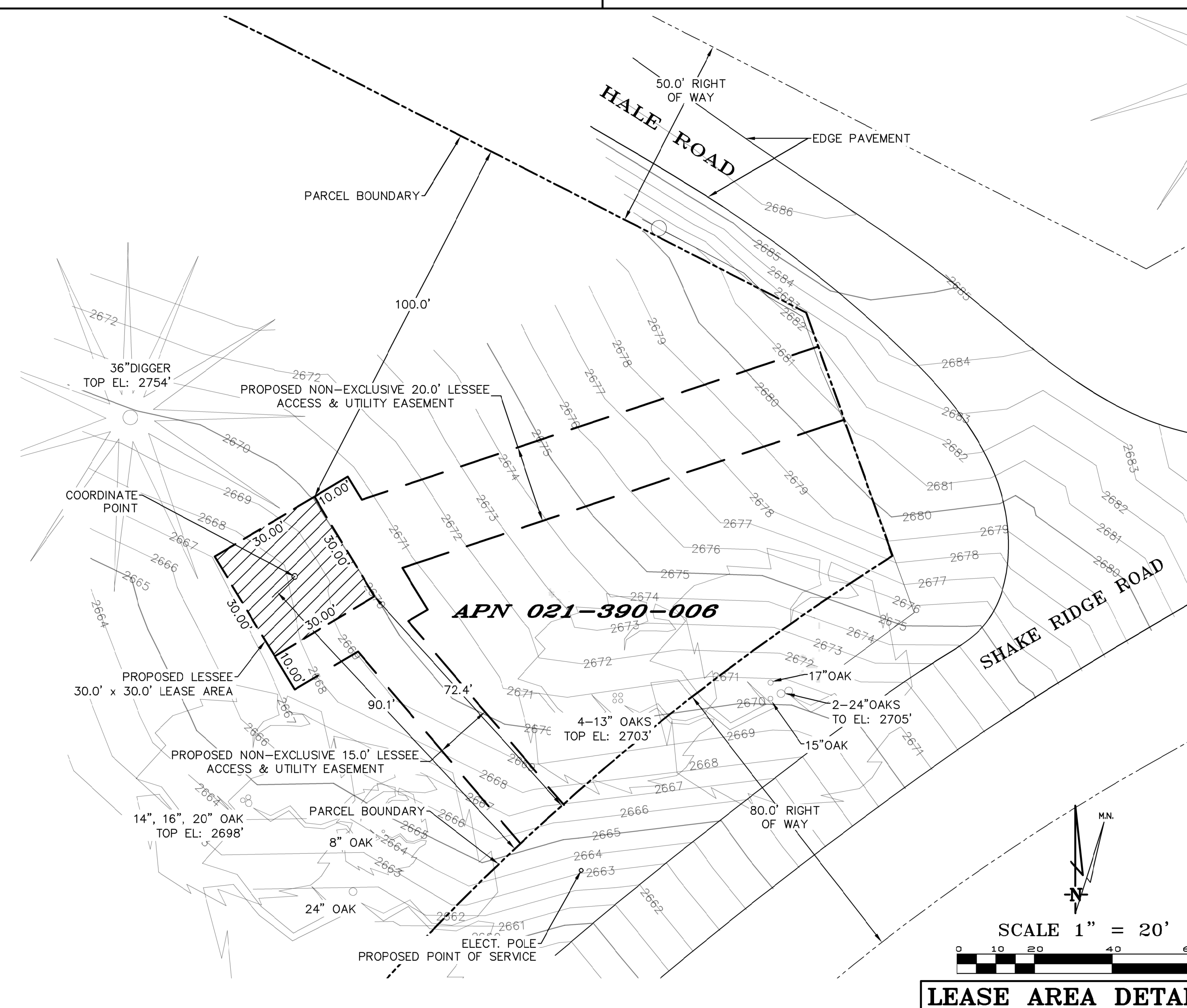
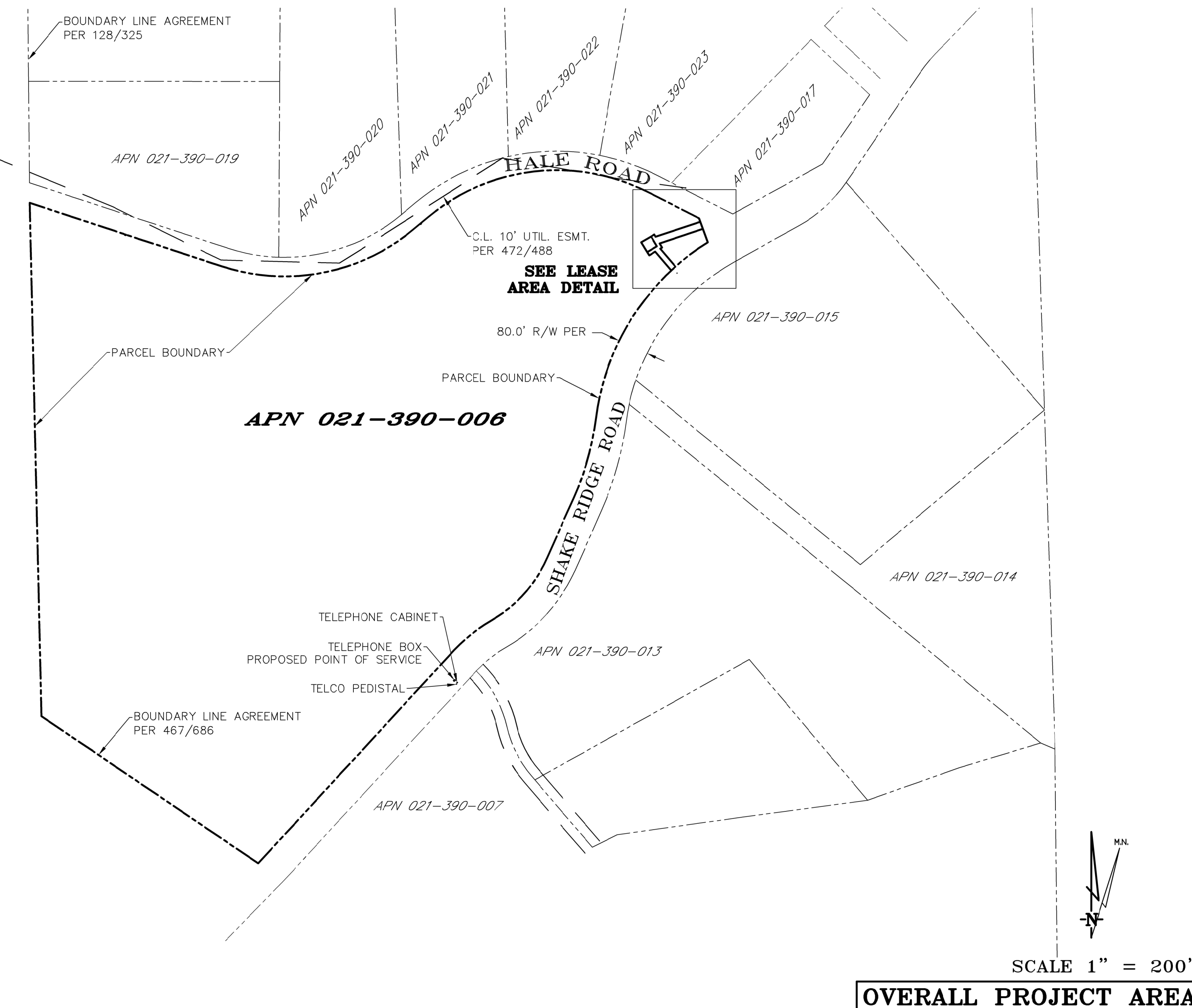


VOLCANO, CA

VICINITY MAP

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BOUNDARY SHOWN IS BASED ON MONUMENTATION FOUND AND RECORD INFORMATION. THIS IS NOT A BOUNDARY SURVEY. THIS IS A SPECIALIZED TOPOGRAPHIC MAP WITH PROPERTY LINES AND EASEMENTS BEING A GRAPHIC DEPICTION BASED ON INFORMATION GATHERED FROM VARIOUS SOURCES OF RECORD AND AVAILABLE MONUMENTATION FOUND DURING THE FIELD SURVEY. NO EASEMENTS WERE RESEARCHED OR PLOTTED. PROPERTY LINES AND LINES OF TITLE WERE NOT INVESTIGATED NOR SURVEYED. NO PROPERTY MONUMENTS WERE SET.



DEPT	APPROVED	DATE
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Surveyor  
**GEIL ENGINEERING**  
ENGINEERING • SURVEYING • PLANNING  
1520 HIGH STREET  
AMADOR, CALIFORNIA 95605  
Phone: (530) 848-1406  
Fax: (530) 848-1409

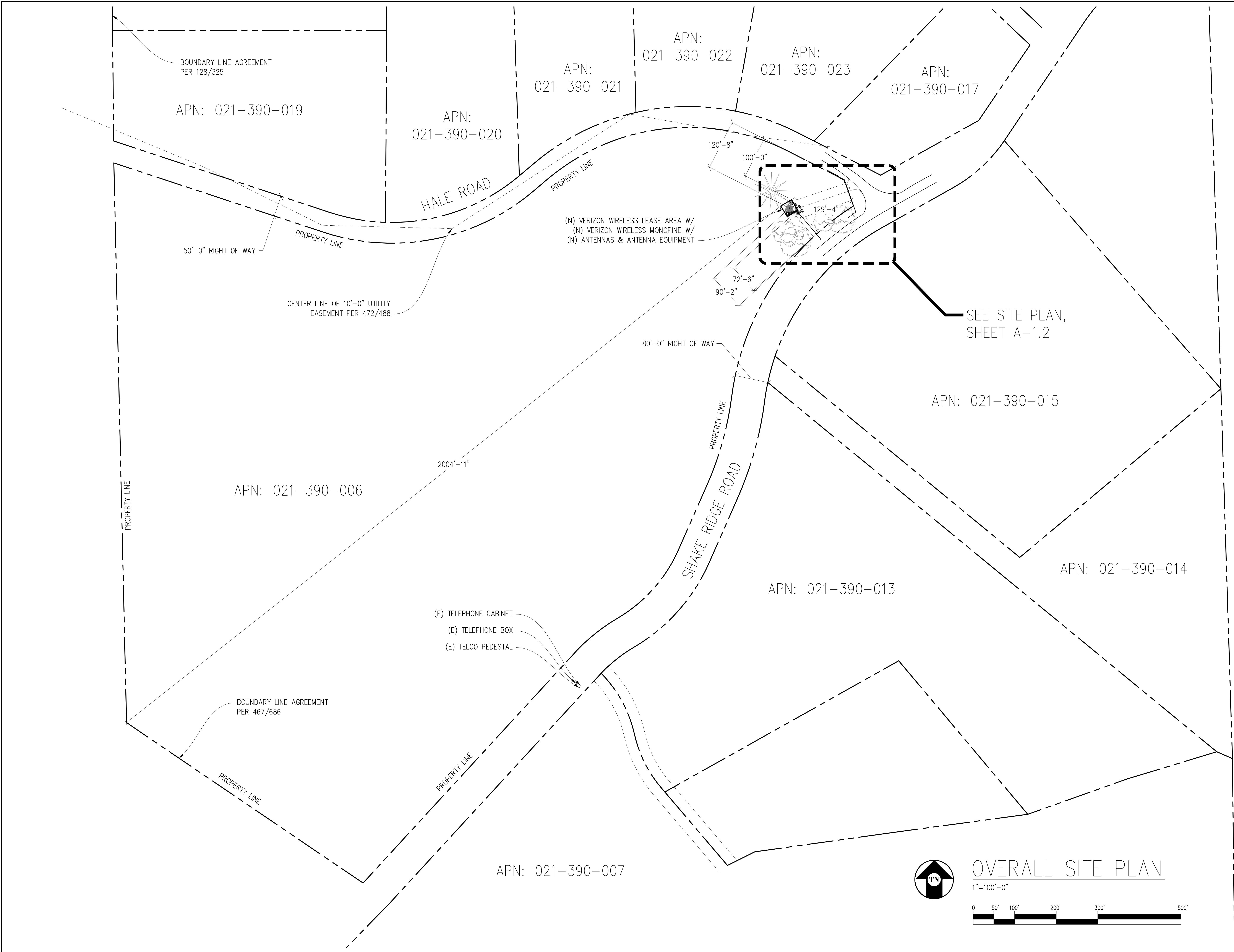
verizon

Shake Ridge  
19585 Shake Ridge Road  
Volcano, CA 95689

PLOT PLAN AND  
SITE TOPOGRAPHY

REVISIONS	DATE	BY	DESCRIPTION
08-03-23		dg	Preliminary Drawing
09-14-23		dg	rev. esmt.

Sheet  
**C-1**



Issued For:

**SHAKE RIDGE**

19585 SHAKE RIDGE ROAD  
VOLCANO, CA 95689

PREPARED FOR



2785 MITCHELL DRIVE, BLDG 9  
WALNUT CREEK, CA 94598

Vendor:



MDG LOCATION ID: 5000918241

PROJECT ID: 16994468

DRAWN BY: SEAD

CHECKED BY: J. GRAY

APPROVED BY: -

ISSUE STATUS			
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KEVIN R. SORENSEN  
S4469

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ENGINEER:

Streamline Engineering  
AMERICAN INDEPENDENT ENGINEERS AND SURVEYORS

8445 Sierra College Blvd, Suite E Granite Bay, CA 95746  
Contact: Kevin Sorenson Phone: 916-660-1930  
E-Mail: kevin@streamlineeng.com Fax: 916-660-1941

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SHEET TITLE:

**OVERALL SITE PLAN**

SHEET NUMBER:

**A-1.1**

APN: 021-390-006

APN: 021-390-017

Issued For:

# SHAKE RIDGE

19585 SHAKE RIDGE ROAD  
VOLCANO, CA 95689

PREPARED FOR



2785 MITCHELL DRIVE, BLDG 9  
WALNUT CREEK, CA 94598

Vendor:



**COMPLETE**  
Wireless Consulting, Inc.

MDG LOCATION ID: 5000918241

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APPROVED BY: -

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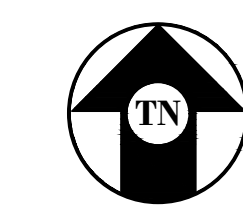
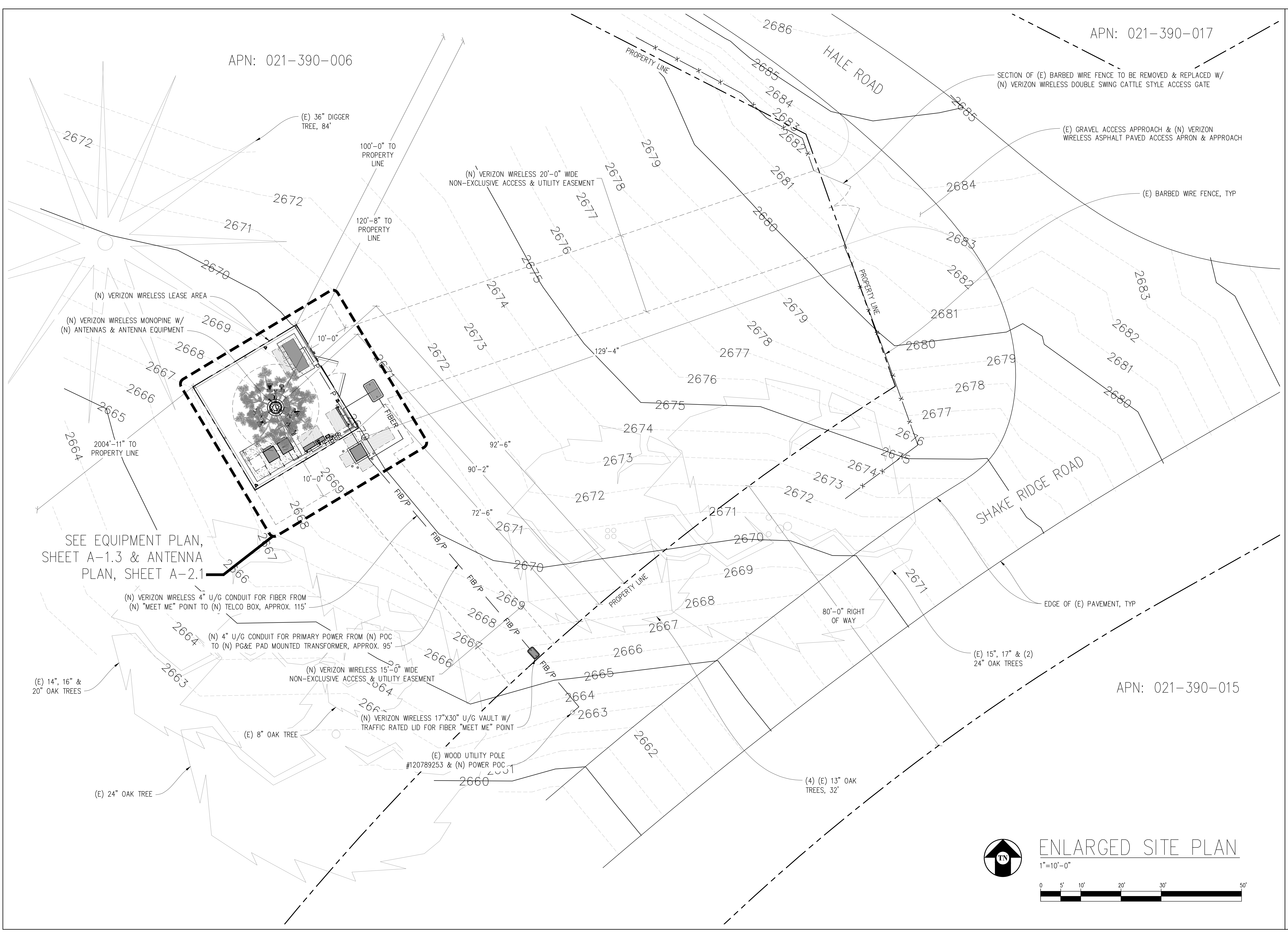
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SHEET TITLE:

## ENLARGED SITE PLAN

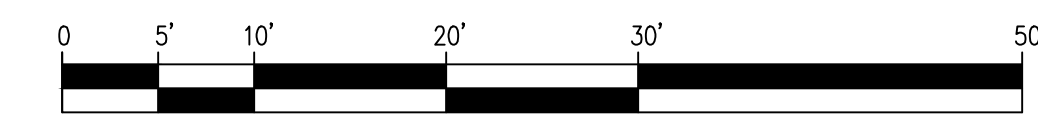
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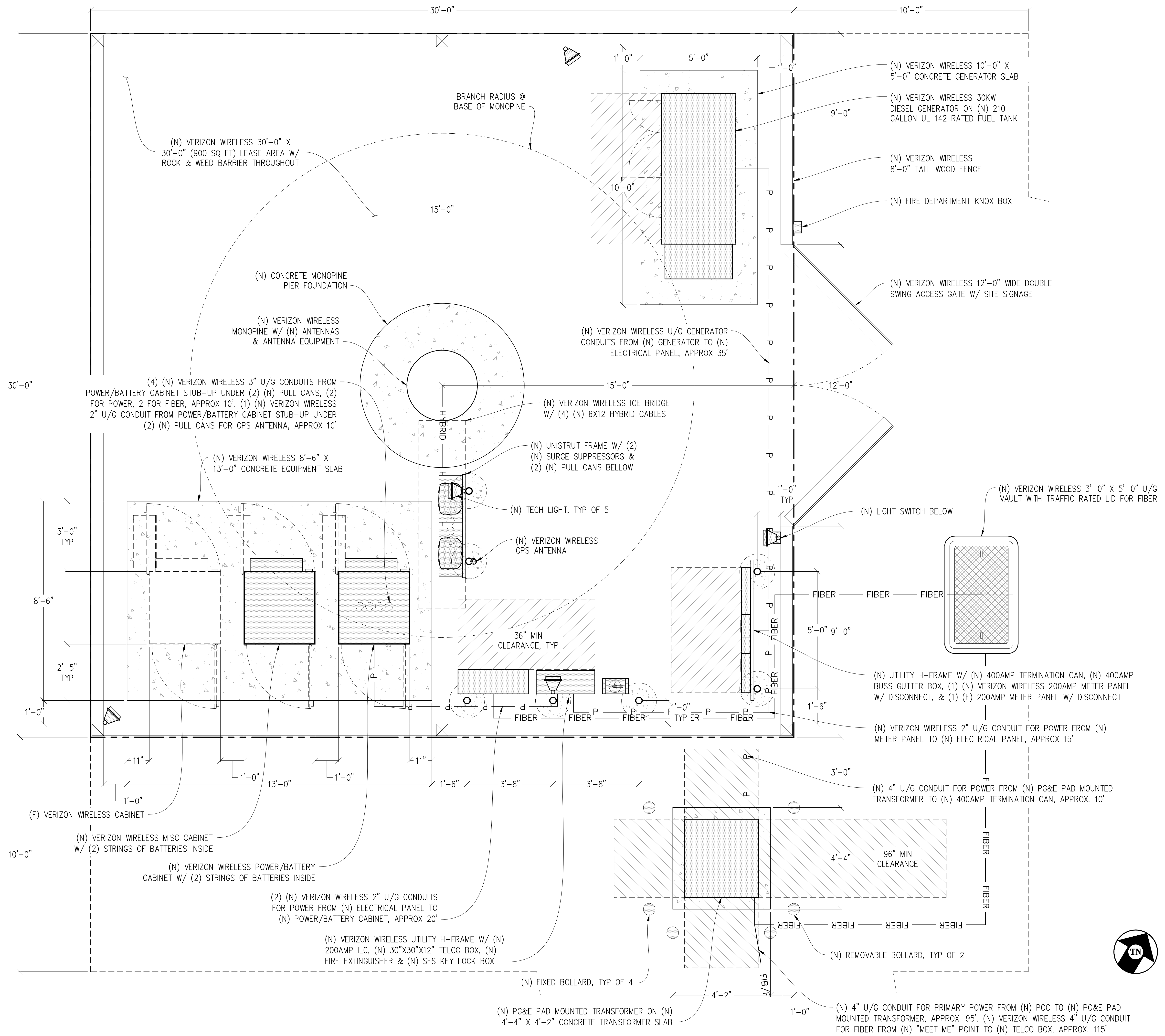
# A-1.2



### ENLARGED SITE PLAN

1"=10'-0"





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19585 SHAKE RIDGE ROAD  
VOLCANO, CA 95689

PREPARED FOR  
**verizon**  
2785 MITCHELL DRIVE, BLDG 9  
WALNUT CREEK, CA 94598

Vendor:  
**COMPLETE**  
Wireless Consulting, Inc.

MDG LOCATION ID: 5000918241

PROJECT ID: 16994468

DRAWN BY: SEAD

CHECKED BY: J. GRAY

APPROVED BY: -

ISSUE STATUS			
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Contact: Kevin Sorenson Phone: 916-860-1930  
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**EQUIPMENT PLAN**  
1/2" = 1'-0"  
0 6" 1' 2' 3' 5' 7' 10'

SHEET TITLE:  
**EQUIPMENT PLAN**

SHEET NUMBER:  
**A-1.3**



NOTE:  
 1. ANTENNA POSITIONS ARE LEFT TO RIGHT FROM BACK OF SECTOR.  
 2. EQUIPMENT IS PRELIMINARY & SUBJECT TO CHANGE.

NOTES:  
 1. ALL (N) ANTENNAS, ANTENNA MOUNTS, ANTENNA EQUIPMENT, & EXPOSED CABLES TO BE PAINTED TO MATCH (N) MONOPINE & BE FULLY WITHIN BRANCH RADIUS.  
 2. ALL (N) ANTENNAS TO BE COVERED IN MONOPINE SOCKS.  
 3. MONOPINE TRUNK TO BE PAINTED FLAT BROWN.

ANTENNA SCHEDULE (PRELIMINARY & SUBJECT TO CHANGE)																
SECTOR	ANTENNAS					RRU'S			CABLING							
	TECHNOLOGY	ANTENNA MODEL	NO. OF COAX PORTS	CENTER	AZIMUTH	RRU MODEL	NO. OF RRU'S	NO. OF HYBRID CABLES	SIZE OF HYBRID CABLES	LENGTH OF CABLES	NO. OF COAX CABLES	COAX DIA.	SURGE SUPPRESSOR	NO. OF DIPLEXERS	NO. OF COMBINERS	
ALPHA SECTOR	A1	5G L-SUB6	ERICSSON AIR6419	0	78'-0"	0°	INTEGRATED	0	SHARED	SHARED	SHARED	0	-	SHARED	0	0
	A2	LTE 700/850/1900/AWS/AWS3, 5G 850	COMMSCOPE NHH-85C-R2B	6	68'-0"	0°	(1) 4490	1	SHARED	SHARED	SHARED	0	-	SHARED	0	0
	A3	LTE 700/850/1900/AWS/AWS3, 5G 850	COMMSCOPE NHH-85C-R2B	6	68'-0"	0°	(1) 4890	1	2	6X12	85'	0	-	(1) 6627	0	0
BETA SECTOR	B1	5G L-SUB6	ERICSSON AIR6419	0	78'-0"	120°	INTEGRATED	0	SHARED	SHARED	SHARED	0	-	SHARED	0	0
	B2	LTE 700/850/1900/AWS/AWS3, 5G 850	COMMSCOPE NHH-85C-R2B	6	68'-0"	120°	(1) 4490	1	SHARED	SHARED	SHARED	0	-	SHARED	0	0
	B3	LTE 700/850/1900/AWS/AWS3, 5G 850	COMMSCOPE NHH-85C-R2B	6	68'-0"	120°	(1) 4890	1	2	6X12	85'	0	-	(1) 6627	0	0
GAMMA SECTOR	C1	5G L-SUB6	ERICSSON AIR6419	0	78'-0"	240°	INTEGRATED	0	SHARED	SHARED	SHARED	0	-	SHARED	0	0
	C2	LTE 700/850/1900/AWS/AWS3, 5G 850	COMMSCOPE NHH-85C-R2B	6	68'-0"	240°	(1) 4490	1	SHARED	SHARED	SHARED	0	-	SHARED	0	0
	C3	LTE 700/850/1900/AWS/AWS3, 5G 850	COMMSCOPE NHH-85C-R2B	6	68'-0"	240°	(1) 4890	1	SHARED	SHARED	SHARED	0	-	SHARED	0	0

Issued For:  
**SHAKE RIDGE**  
 19585 SHAKE RIDGE ROAD  
 VOLCANO, CA 95689

PREPARED FOR  
**verizon**  
 2785 MITCHELL DRIVE, BLDG 9  
 WALNUT CREEK, CA 94598

Vendor:  
**COMPLETE**  
 Wireless Consulting, Inc.

MDG LOCATION ID: 5000918241  
 PROJECT ID: 16994468  
 DRAWN BY: SEAD  
 CHECKED BY: J. GRAY  
 APPROVED BY: -

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1	09/13/23	ZD 100%	D.H.
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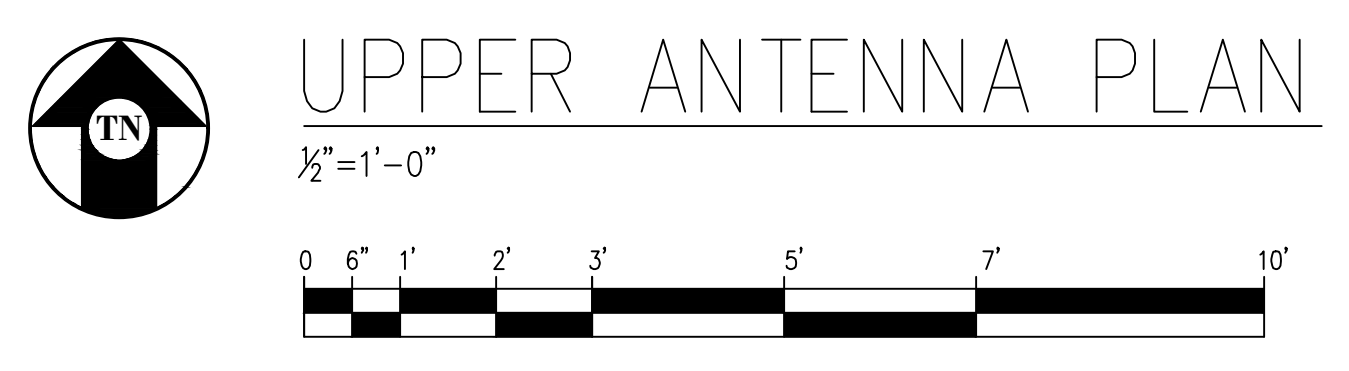
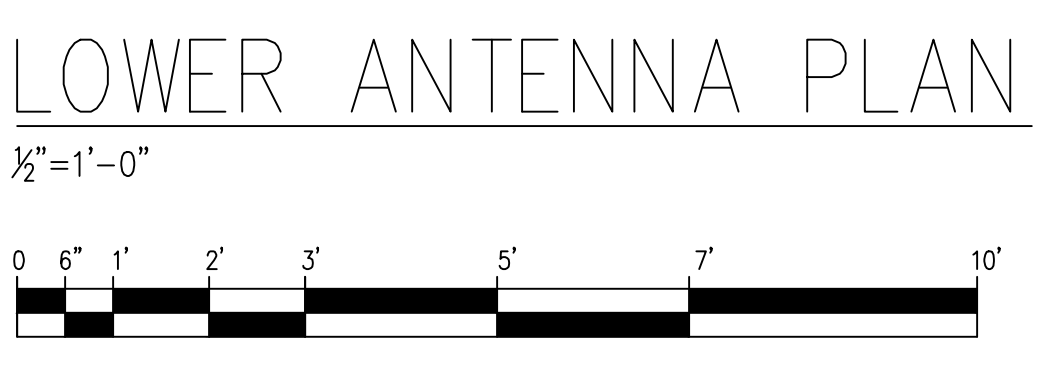
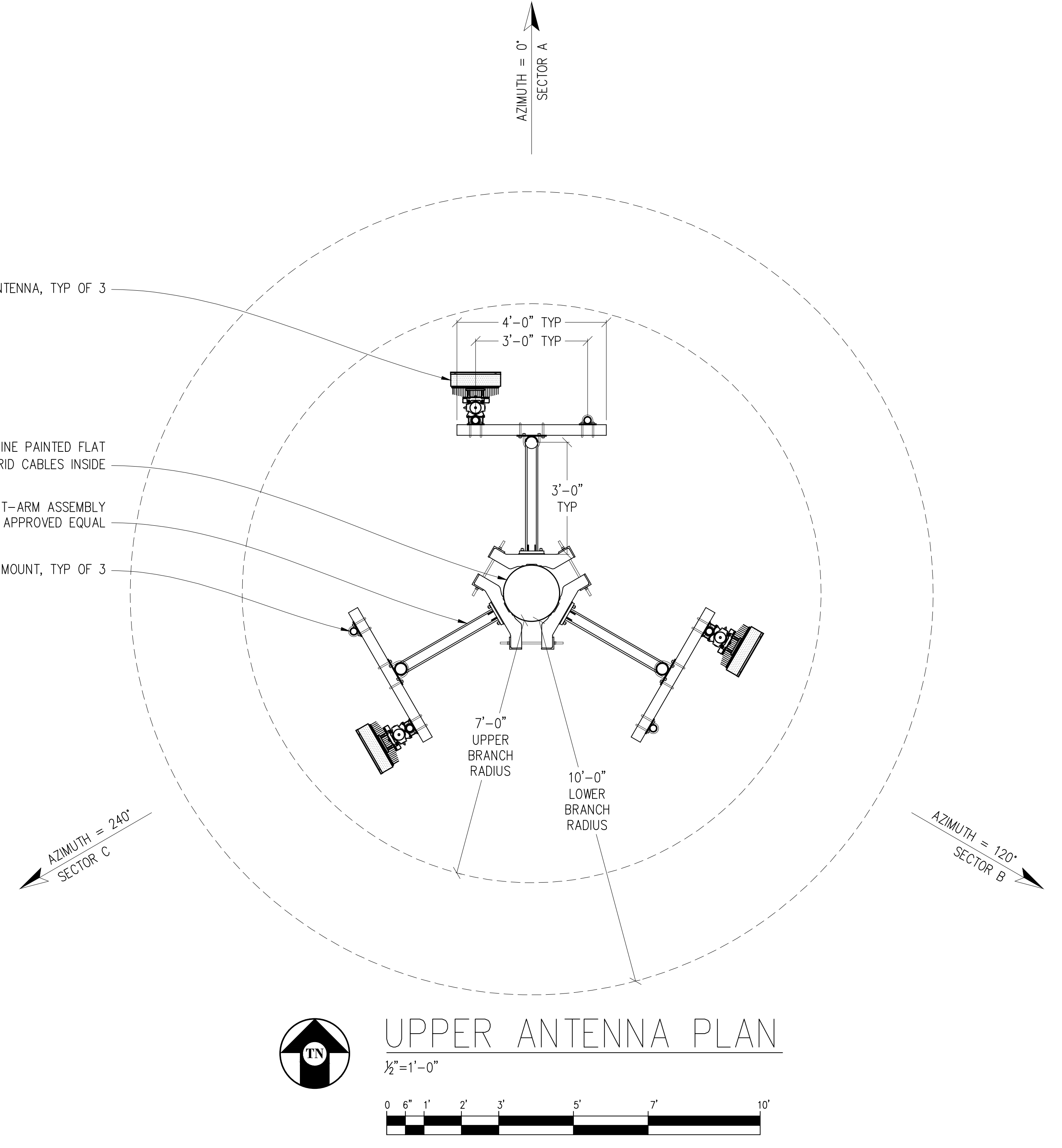
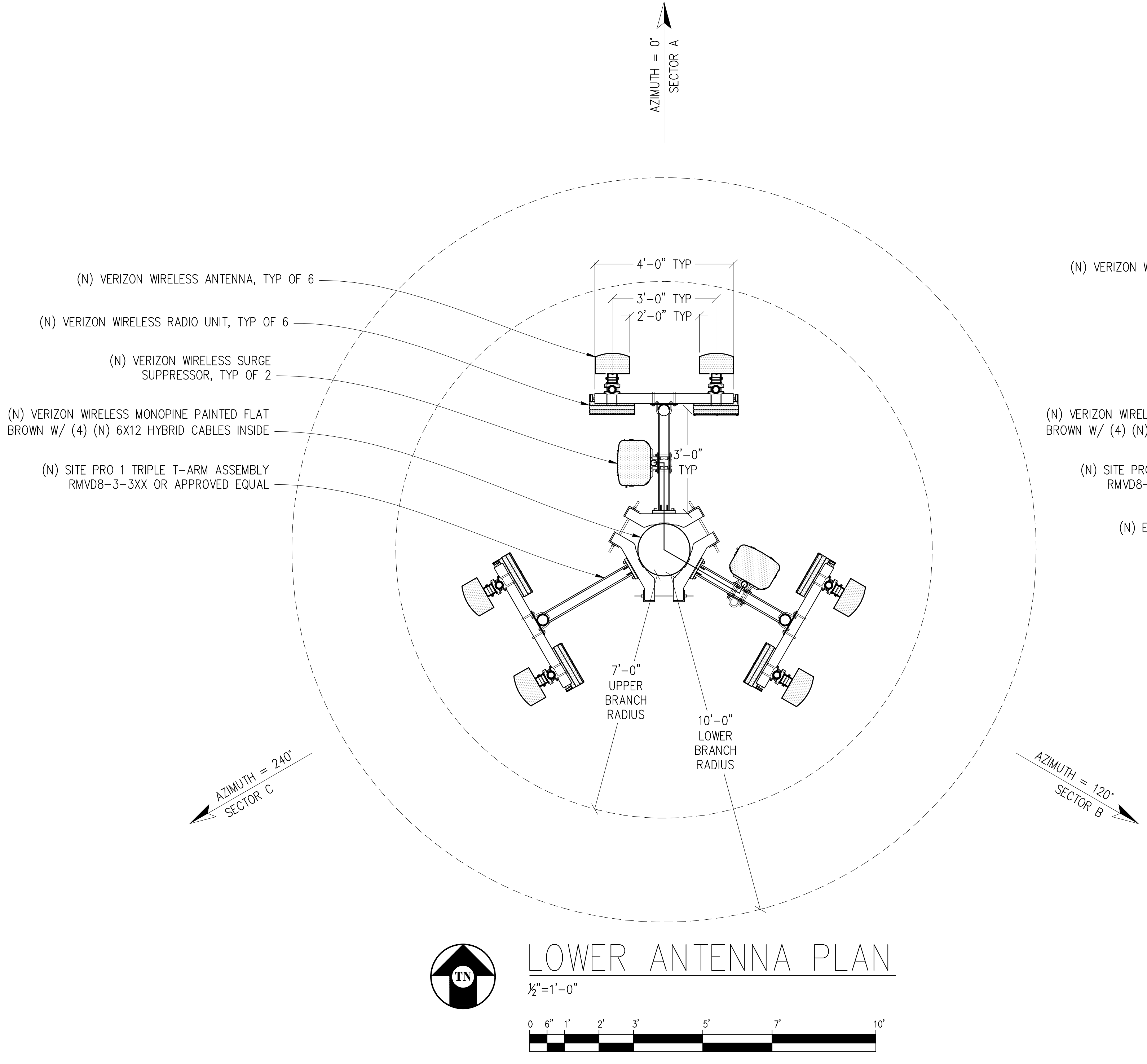
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 Contact: Kevin Sorenson Phone: 916-660-1930  
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SHEET TITLE:  
**ANTENNA PLANS**

SHEET NUMBER:  
**A-2.1**



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19585 SHAKE RIDGE ROAD  
VOLCANO, CA 95689

PREPARED FOR



2785 MITCHELL DRIVE, BLDG 9  
WALNUT CREEK, CA 94598

Vendor:



MDG LOCATION ID: 5000918241

PROJECT ID: 16994468

DRAWN BY: SEAD

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APPROVED BY: -

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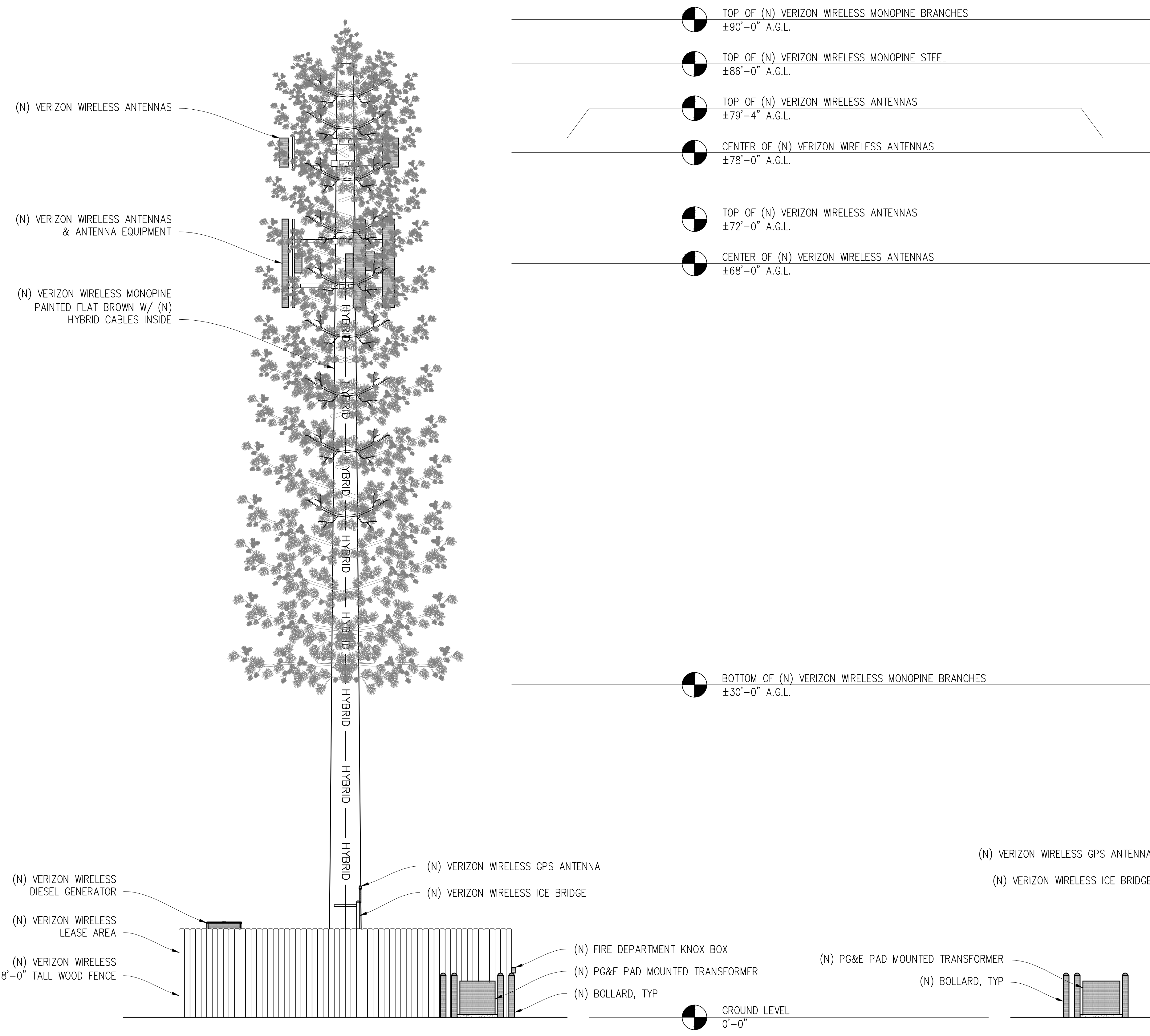
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SHEET TITLE:

## ELEVATIONS

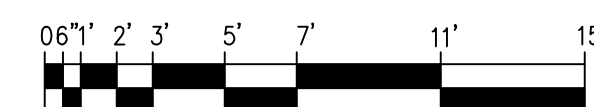
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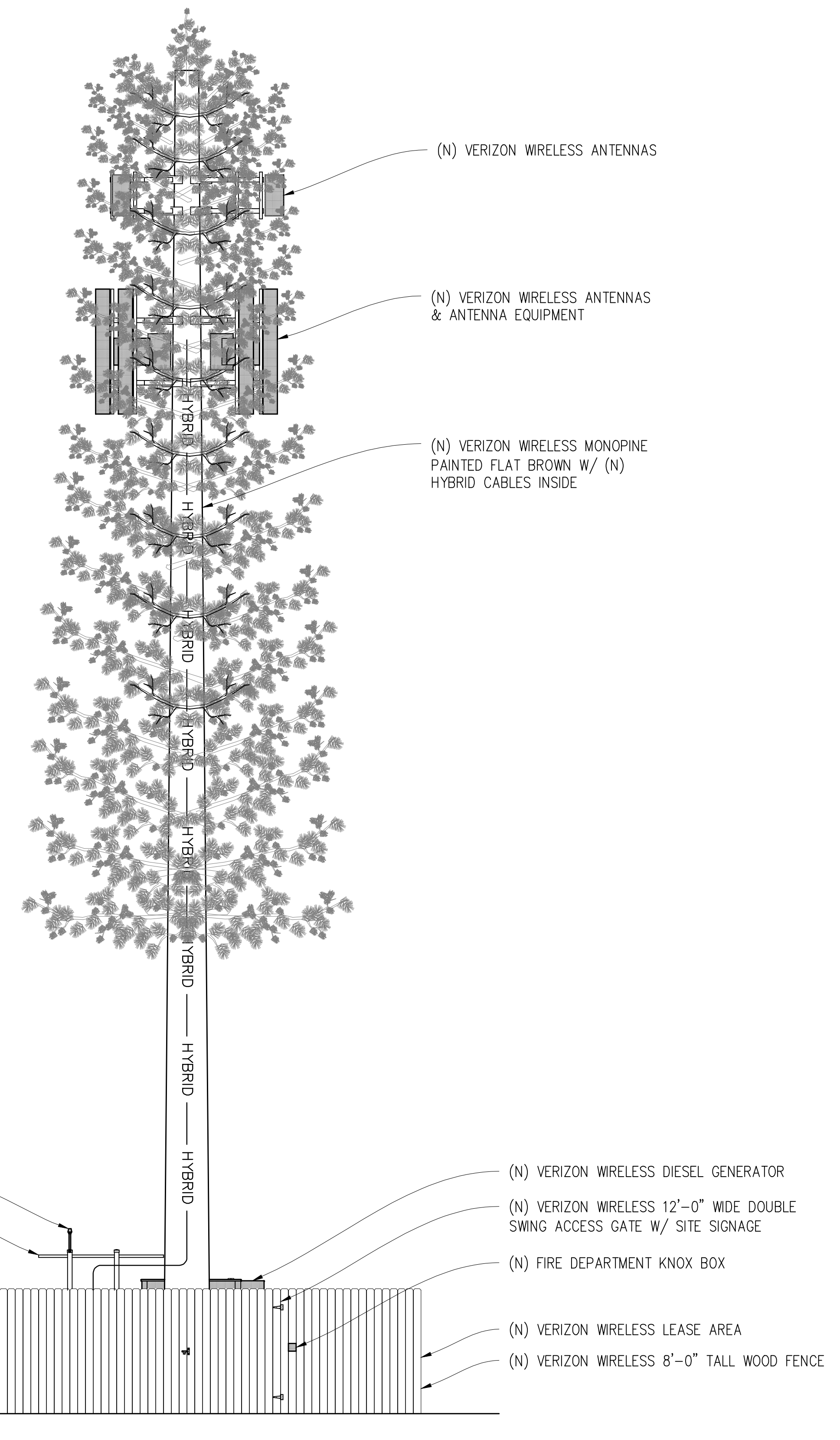


## SOUTHEAST ELEVATION

3/16" = 1'-0"

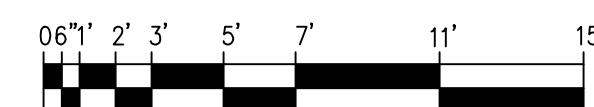


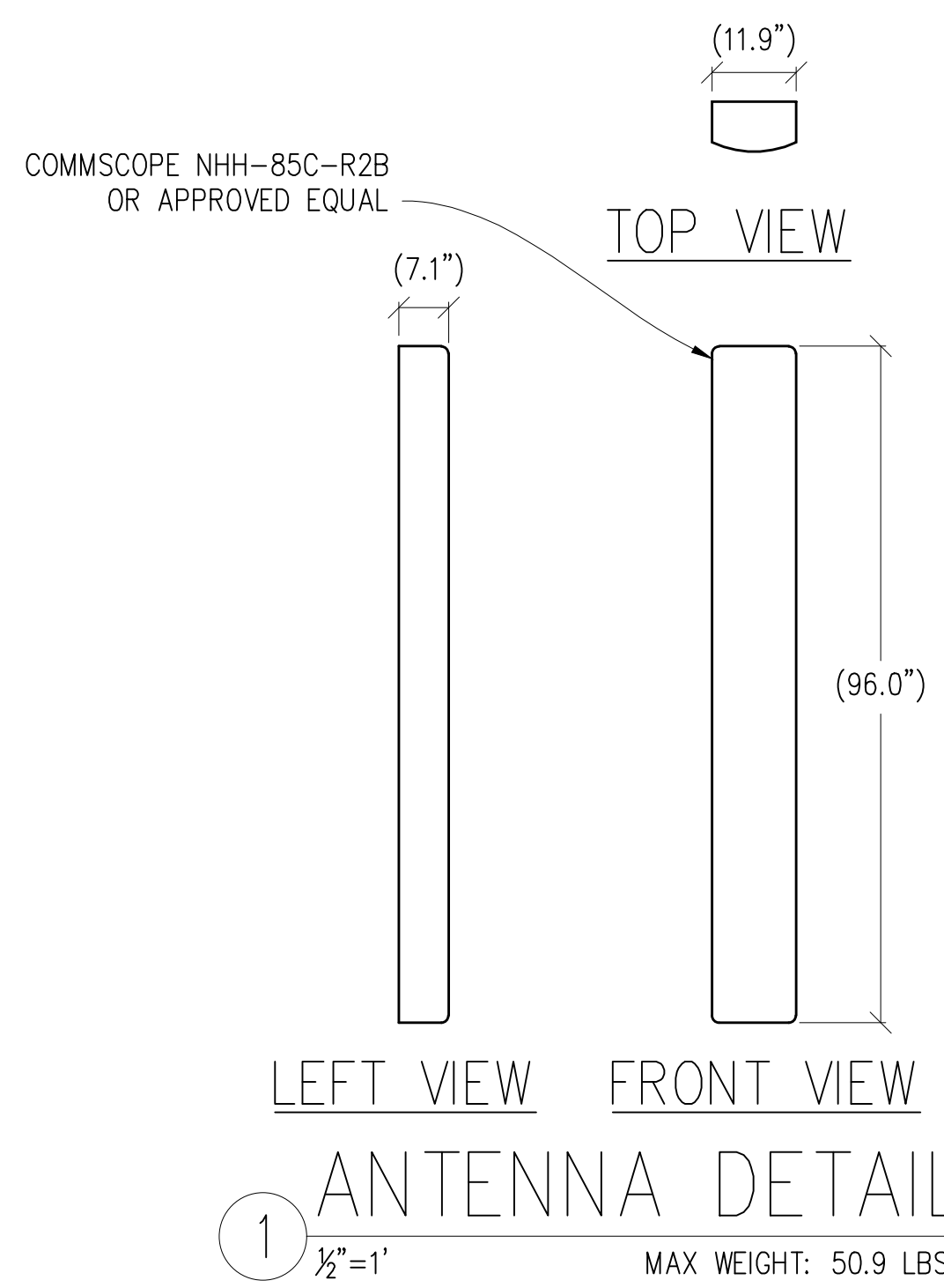
- NOTES:
1. ALL (N) ANTENNAS, ANTENNA MOUNTS, ANTENNA EQUIPMENT, & EXPOSED CABLES TO BE PAINTED TO MATCH (N) MONOPINE & BE FULLY WITHIN BRANCH RADIUS.
  2. ALL (N) ANTENNAS TO BE COVERED IN MONOPINE SOCKS.
  3. MONOPINE TRUNK TO BE PAINTED FLAT BROWN.



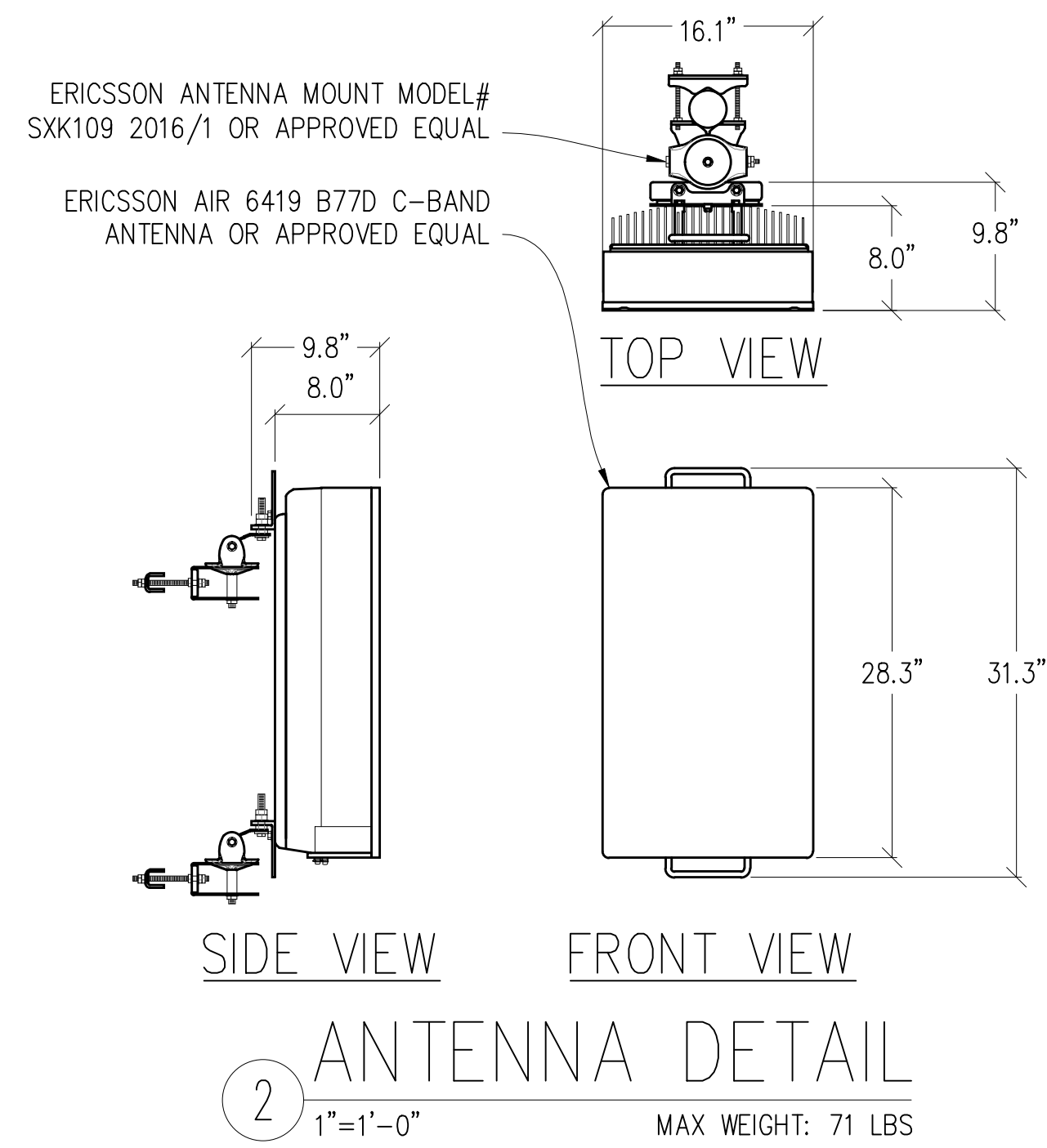
## NORTHEAST ELEVATION

3/16" = 1'-0"

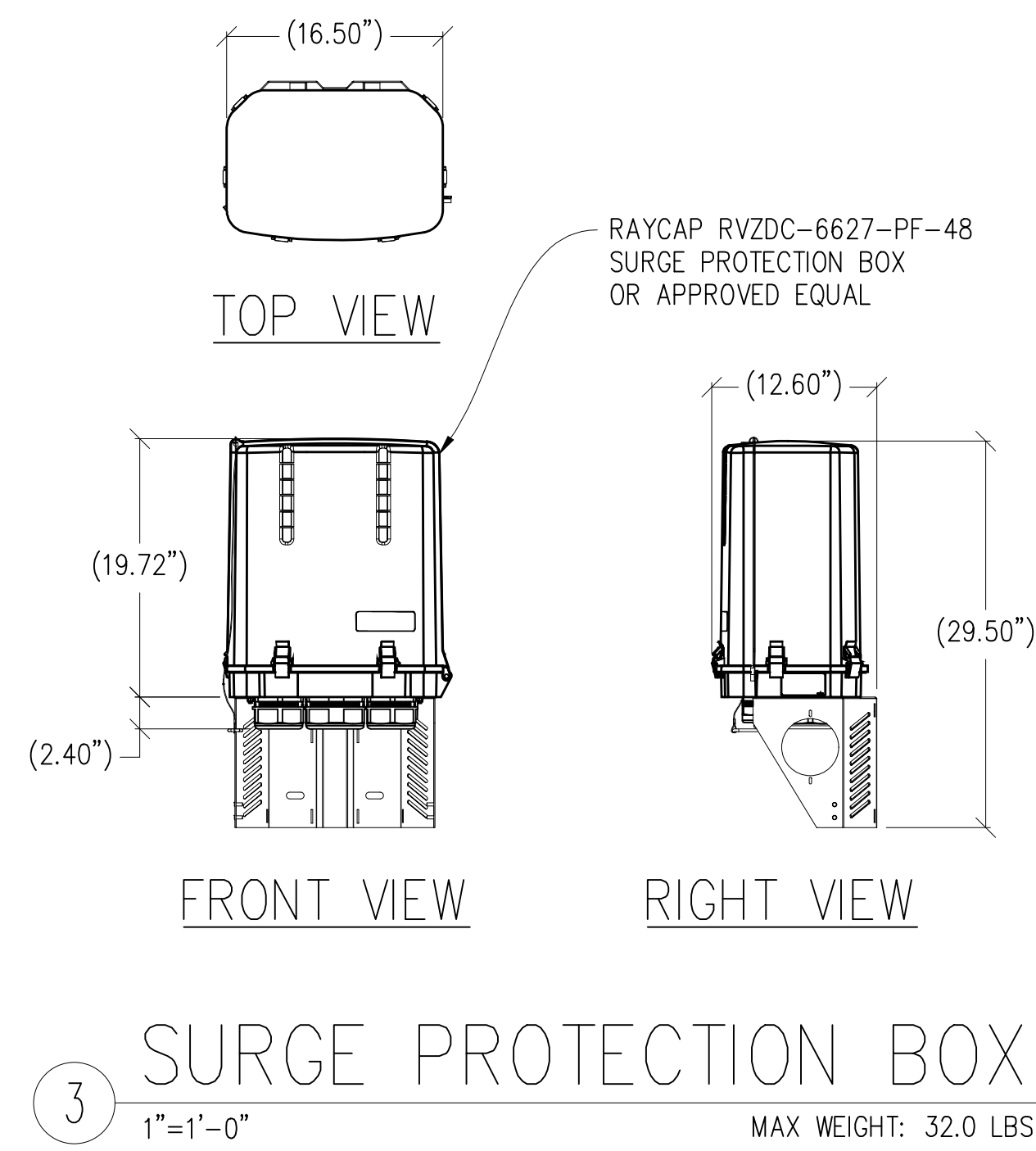




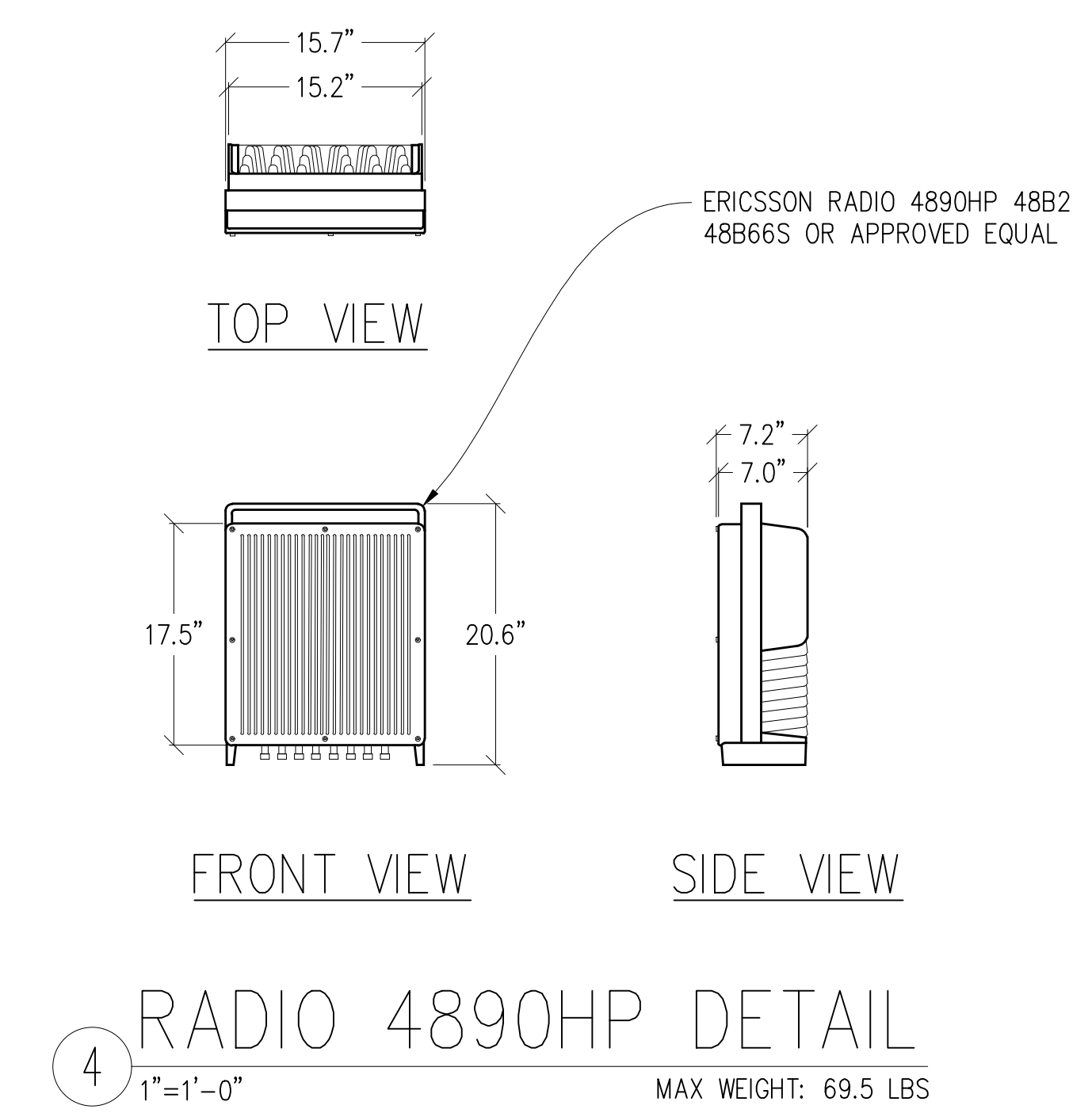
1 ANTENNA DETAIL  
 1/2"=1" MAX WEIGHT: 50.9 LBS



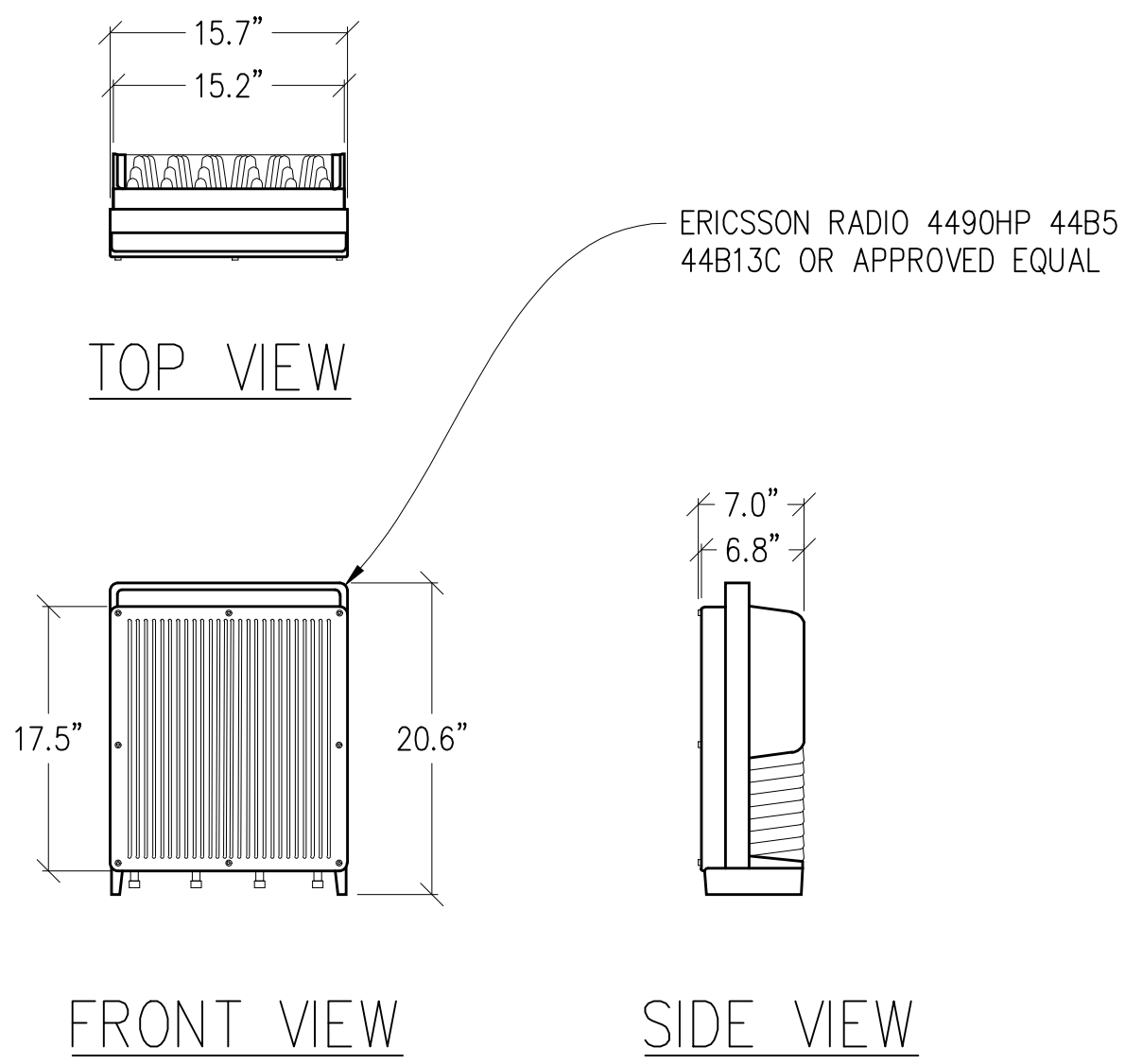
2 ANTENNA DETAIL  
 1"=1'-0" MAX WEIGHT: 71 LBS



3 SURGE PROTECTION BOX  
 1"=1'-0" MAX WEIGHT: 32.0 LBS



4 RADIO 4890HP DETAIL  
 1"=1'-0" MAX WEIGHT: 69.5 LBS



5 RADIO 4490HP DETAIL  
 1"=1'-0" MAX WEIGHT: 68.4 LBS

NOTE:  
 ANTENNAS & ANTENNA EQUIPMENT SHOWN  
 ARE PRELIMINARY & SUBJECT TO CHANGE

Issued For:  
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 19585 SHAKE RIDGE ROAD  
 VOLCANO, CA 95689

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 WALNUT CREEK, CA 94598

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ISSUE STATUS			
REV	DATE	DESCRIPTION	CAD
1	09/13/23	ZD 100%	D.H.
0	08/15/23	ZD 90%	XX

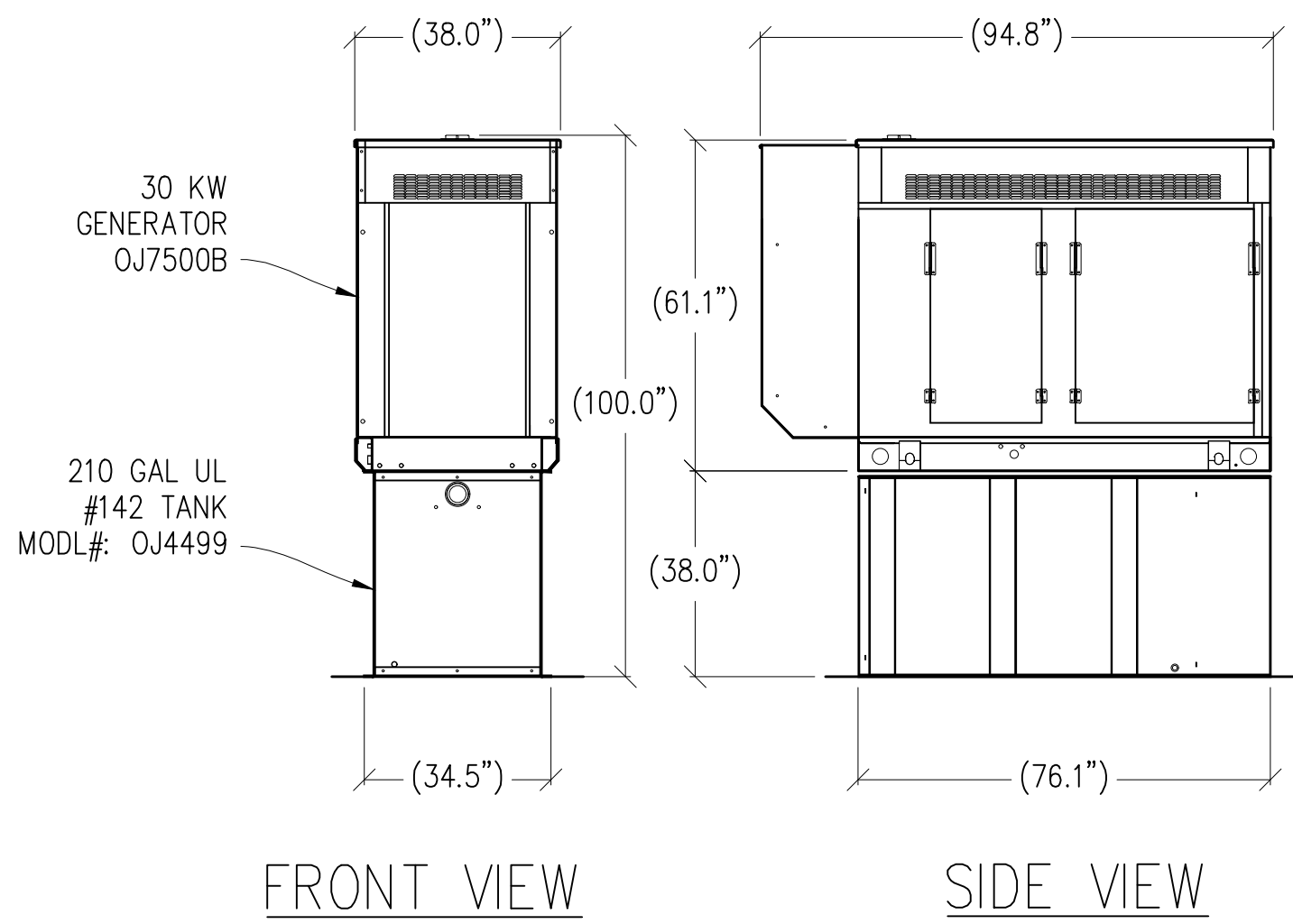
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 S4469

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 ENGINEER, TO ALTER THIS DOCUMENT.

ENGINEER:  
  
 Streamline Engineering  
 8445 Sierra College Blvd, Suite E Granite Bay, CA 95746  
 Contact: Kevin Sorenson Phone: 916-660-1930  
 E-Mail: kevin@streamlineeng.com Fax: 916-660-1941  
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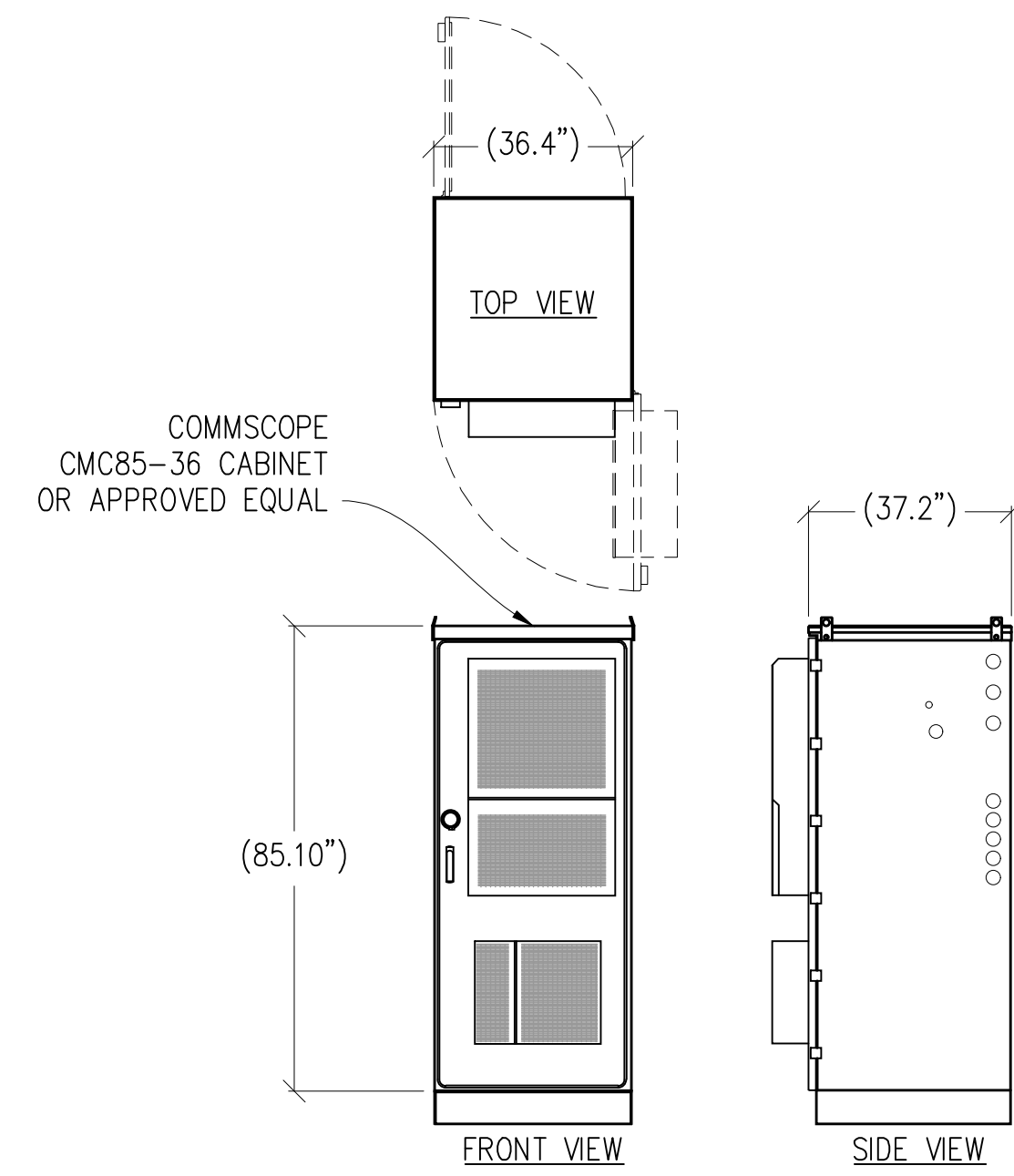
SHEET TITLE:  
**ANTENNA  
 DETAILS**

SHEET NUMBER:  
**A-4.1**



FRONT VIEW

SIDE VIEW



FRONT VIEW

SIDE VIEW

COMMSCOPE  
CMC85-36 CABINET  
OR APPROVED EQUAL

1 30KW GENERATOR DETAIL

3/8"=1'-0"

MAX WEIGHT: 3,119 LBS

2 CABINET DETAIL

3/8"=1'-0"

MAX WEIGHT: 2,352 LBS

Issued For:

SHAKE RIDGE

19585 SHAKE RIDGE ROAD  
VOLCANO, CA 95689

PREPARED FOR



2785 MITCHELL DRIVE, BLDG 9  
WALNUT CREEK, CA 94598

Vendor:



MDG LOCATION ID: 5000918241

PROJECT ID: 16994468

DRAWN BY: SEAD

CHECKED BY: J. GRAY

APPROVED BY: -

ISSUE STATUS			
REV	DATE	DESCRIPTION	CAD
1	09/13/23	ZD 100%	D.H.
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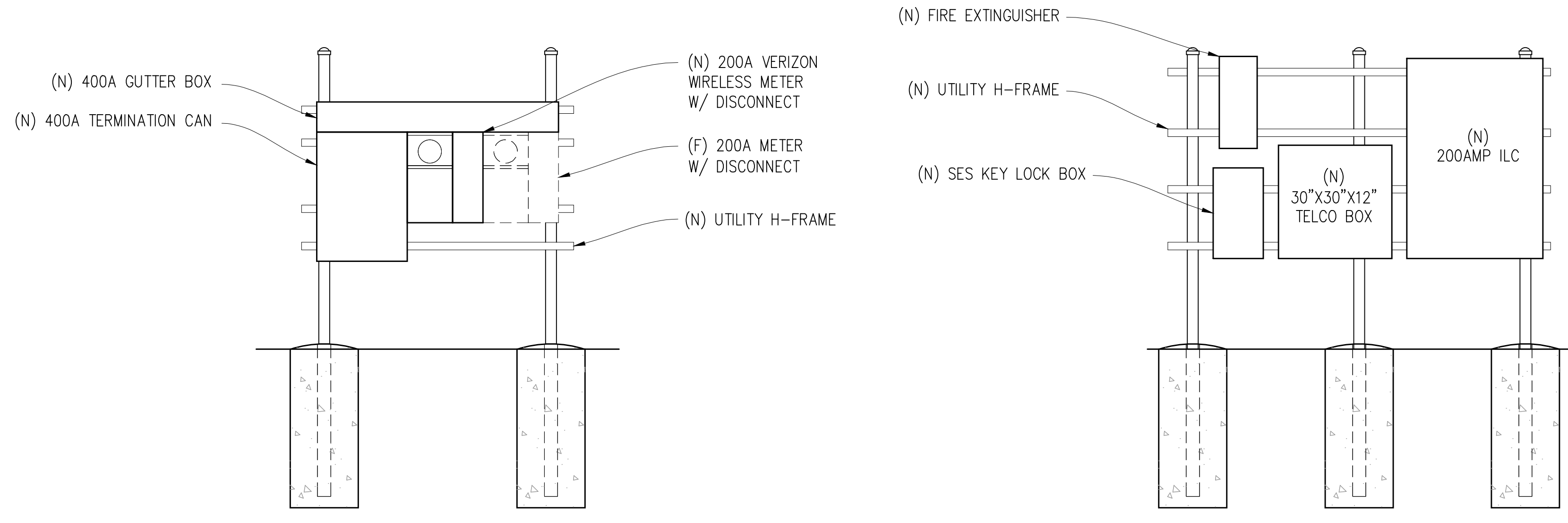
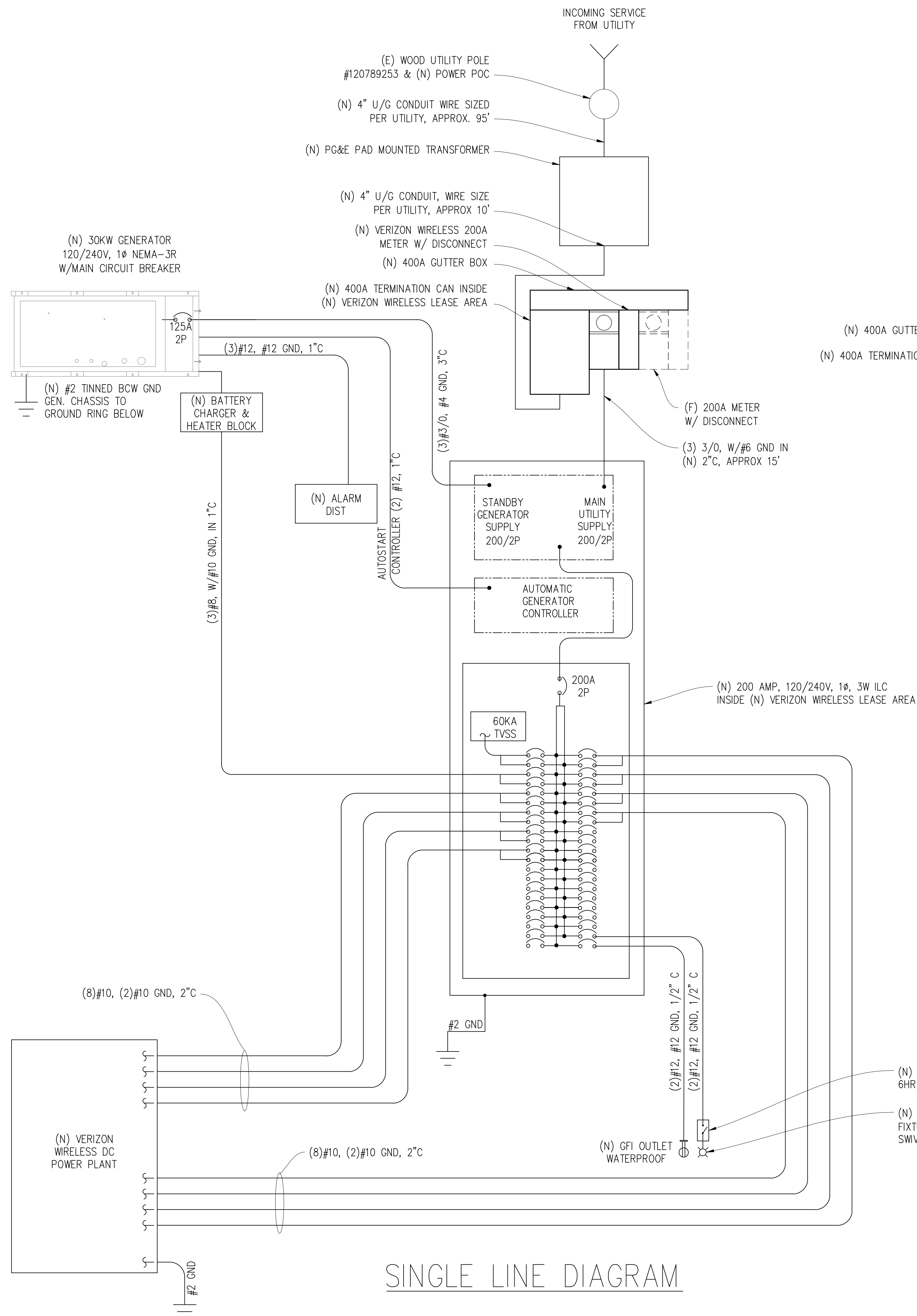
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SHEET TITLE:

EQUIPMENT  
DETAILS

SHEET NUMBER:

A-4.2



UTILITY ELEVATIONS

PANEL SCHEDULE

NAMEPLATE : PANEL A			SC LEVEL : 10,000			VOLTS: 120V/240V, 1Ø		
LOCATION : OUTSIDE			BUS AMPS: 200A			MAIN CB: 200A		
ØA	ØB	LOAD DESCRIPTION	BKR AMP/POLE	CIRCUIT NO	BKR AMP/POLE	LOAD DESCRIPTION	LOAD VA	LOAD VA
30	30	SURGE ARRESTOR	60/2	1 2	30/2	(N) DC POWER PLANT	1320	1320
3840	3840	(N) BATTERY CHARGER & HTR	40/2	5 6	30/2	" "	1320	1320
1320	1320	(N) DC POWER PLANT	30/2	9 10	30/2	" "	1320	1320
1320	1320	" "	30/2	11 12	" "	" "	1320	1320
1320	1320	" "	30/2	13 14	30/2	" "	1320	1320
1320	1320	" "	30/2	15 16	" "	" "	1320	1320
1320	1320	" "	30/2	17 18	-	BLANK		
1320	1320	" "	30/2	19 20	-	" "		
		" "	30/2	21 22	-	" "		
		" "	30/2	23 24	-	" "		
		BLANK	-	25 26	-	" "		
		" "	-	27 28	-	" "		
		" "	-	29 30	-	" "		
		" "	-	31 32	-	" "		
		" "	-	33 34	-	" "		
		" "	-	35 36	-	" "		
		" "	-	37 38	-	" "		
		" "	-	39 40	20/1	LIGHT		300
		" "	-	41 42	20/1	GFI RECEPTACLE	180	300
9150	9150	PHASE TOTALS				PHASE TOTALS	5460	5580
TOTAL VA =	29340	TOTAL AMPS =	122					
TOTAL KVA =	29.34							

Issued For:

**SHAKE RIDGE**

19585 SHAKE RIDGE ROAD  
VOLCANO, CA 95689

PREPARED FOR

**verizon**

2785 MITCHELL DRIVE, BLDG 9  
WALNUT CREEK, CA 94598

Vendor:

**COMPLETE**  
Wireless Consulting, Inc.

MDG LOCATION ID: 5000918241

PROJECT ID: 16994468

DRAWN BY: SEAD

CHECKED BY: J. GRAY

APPROVED BY: -

**ISSUE STATUS**

REV	DATE	DESCRIPTION	CAD
1	09/13/23	ZD 100%	D.H.
0	08/15/23	ZD 90%	XX

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ENGINEER:

**Streamline Engineering**  
ambleson@streamlineinc.com

8445 Sierra College Blvd, Suite E, Grants Pass, CA 97546  
Contact: Kevin Sorenson Phone: 916-660-1830  
E-Mail: kevin@streamlineinc.com Fax: 916-660-1941

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SHEET TITLE:

**ELECTRICAL  
PLAN**

SHEET NUMBER:

**E-1.1**

# PHOTO SIMULATIONS



16994468 Shake Ridge  
19585 Shake Ridge Road, Volcano, CA  
Photosims Produced on 10-3-2023



Existing



Proposed



view from Shake Ridge Road looking west at site



Existing



Proposed



Proposed Verizon Installation

view from Shake Ridge Road looking southwest at site

Existing



Proposed



view from Hale Road looking southeast at site

Existing



Proposed



Proposed Verizon Installation

view from Shake Ridge Road looking north at site

ALTERNATE  
SITE AND  
NETWORK  
ANALYSIS

## **ALTERNATE SITES ANALYSIS**

Verizon Wireless strives to minimize visual and noise impacts for each facility and seeks to incorporate ways to preserve the local community character to the greatest extent feasible at all stages of site selection and design process. Part of this involves seeking properties in areas with substandard wireless coverage that provide the ability to meet community needs, zoning standards, and engineering requirements.

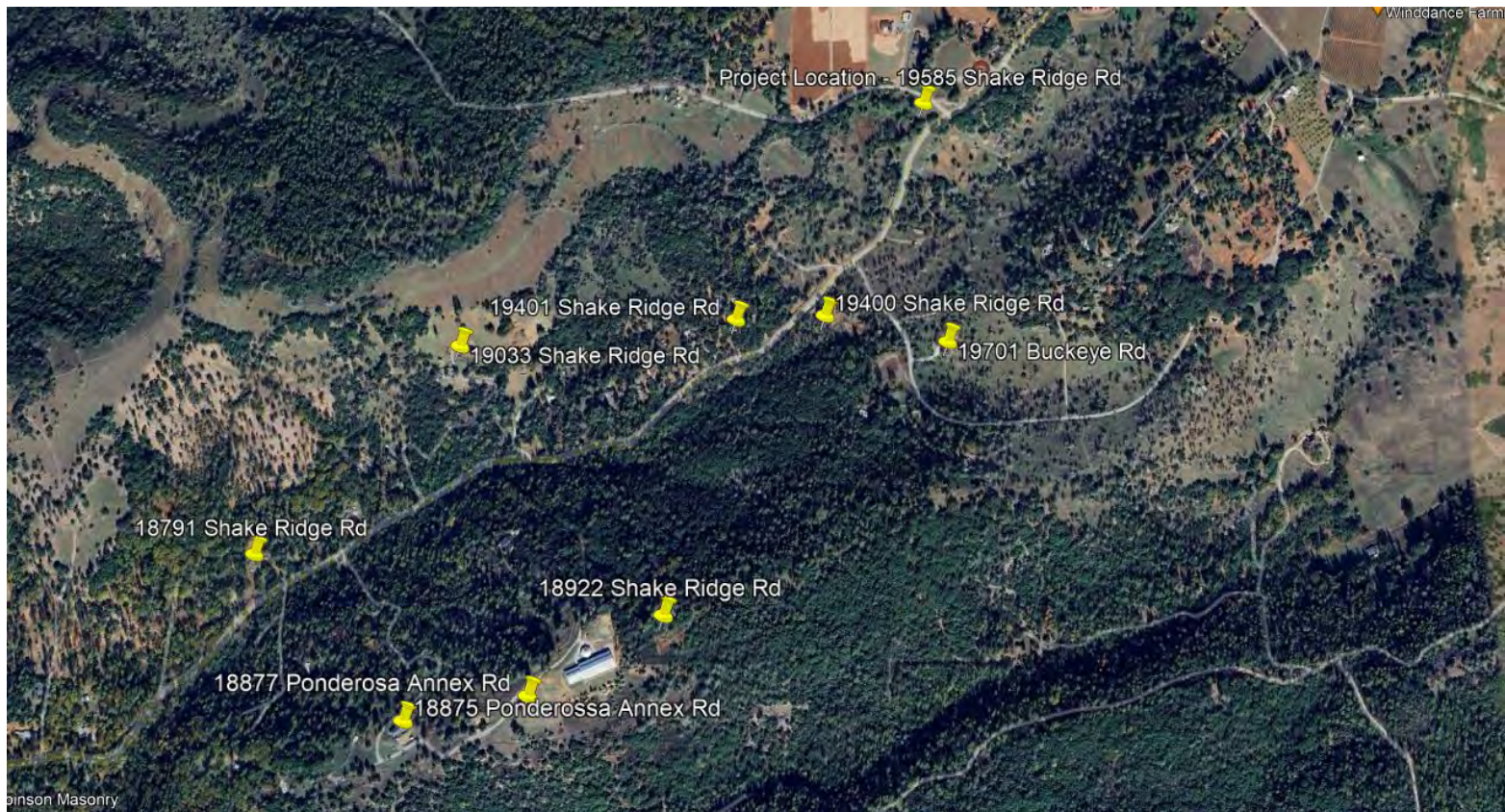
In identifying the location of a wireless telecommunication facility to fulfill the above referenced service objectives a variety of factors are evaluated. These factors include: a willing landlord, compliance with local zoning requirements, topography, existing structures, colocation opportunities, available utilities, and road access. Verizon conducted an exhaustive search for alternative sites, after which it determined that the proposed site at 19585 Shake Ridge Road is the best available location for a wireless telecommunications facility to meet the desired coverage objective along Shake Ridge Road to cover residences, as well as east and north of the site.

The following locations were explored as part of the due diligence process for this project and ruled out for the following reasons.

- 18877 Ponderosa Annex Rd, Sutter Creek, CA 95685: Owner was initially interested but then rescinded. Property had access issues and while this owner also owns the neighboring parcel (18875 below) Owner didn't want to deal with an easement or blocking the ideal spot on his property.
- 18875 Ponderosa Annex Rd, Sutter Creek, CA 95685. Refer to 18877 Ponderosa candidate above.
- 19401 Shake Ridge Rd, Volcano, CA 95689: Never responded to outreach. Also, the parcel is below the 20-acre requirement. Invasive removing of trees to build ground space area. Nearest residences to the north and east. Under 250'. Candidate was not pursued due to these reasons.
- 19400 Shake Ridge Rd, Volcano, CA 95689. Initially Interested in the site and established contact. However, they rescinded their interest and did not wish to move forward with a site visit. Eliminated for consideration.
- 19701 Buckeye Drive, Volcano, CA 95689: Owner of property rescinded their interest. Also, the parcel is below the 20-acre requirement.
- 18922 Shake Ridge Rd, Sutter Creek, CA 95685 – Not a viable candidate. The owner was initially interested with the project; however, the parcel is below the 20-acre requirement. Major tree height issues, no trees on property were over 25' and intrusive clearing of trees would be needed for the site location. Access road issues. Candidate not pursued further.

- 18791 Shake Ridge Rd, Sutter Creek, CA 95685 - Not a viable candidate. The owner was interested however, parcel is below the 20-acre requirement. Location is also at the lowest elevation in the area, making it difficult to have an optimum signal to clear the coverage issues in the area Was lowest ranking candidate. Site would involve invasive tree clearing for access issues.
- 19033 Shake Ridge Rd, Sutter Creek, CA 95685 – Never responded to outreach. Also, the parcel is below the 20-acre requirement. Nearest residence under 100 ft. Candidate was not pursued due to these reasons.

See map of sites on next page



# SHAKE RIDGE

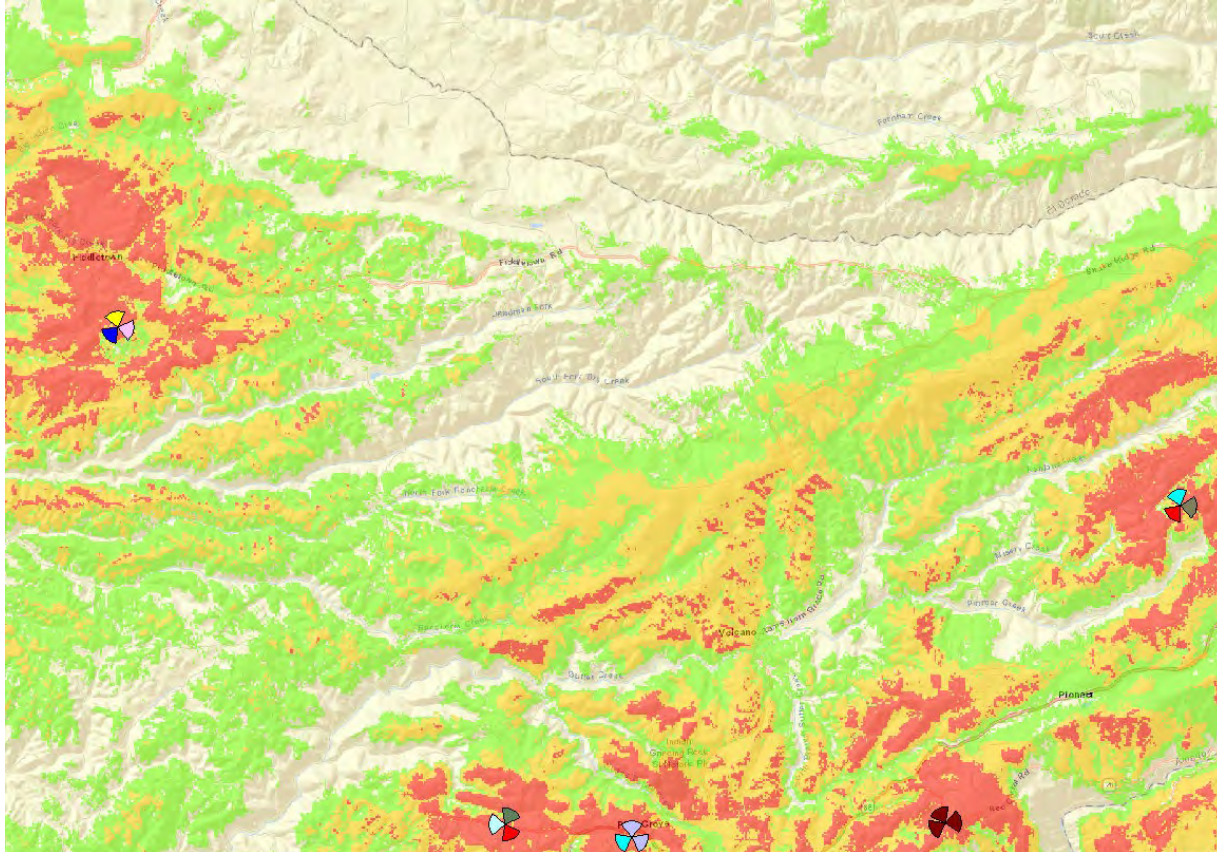
## PROPOGATION MAPS

Joshua Ehrlich, RF Engineer

10/11/2023

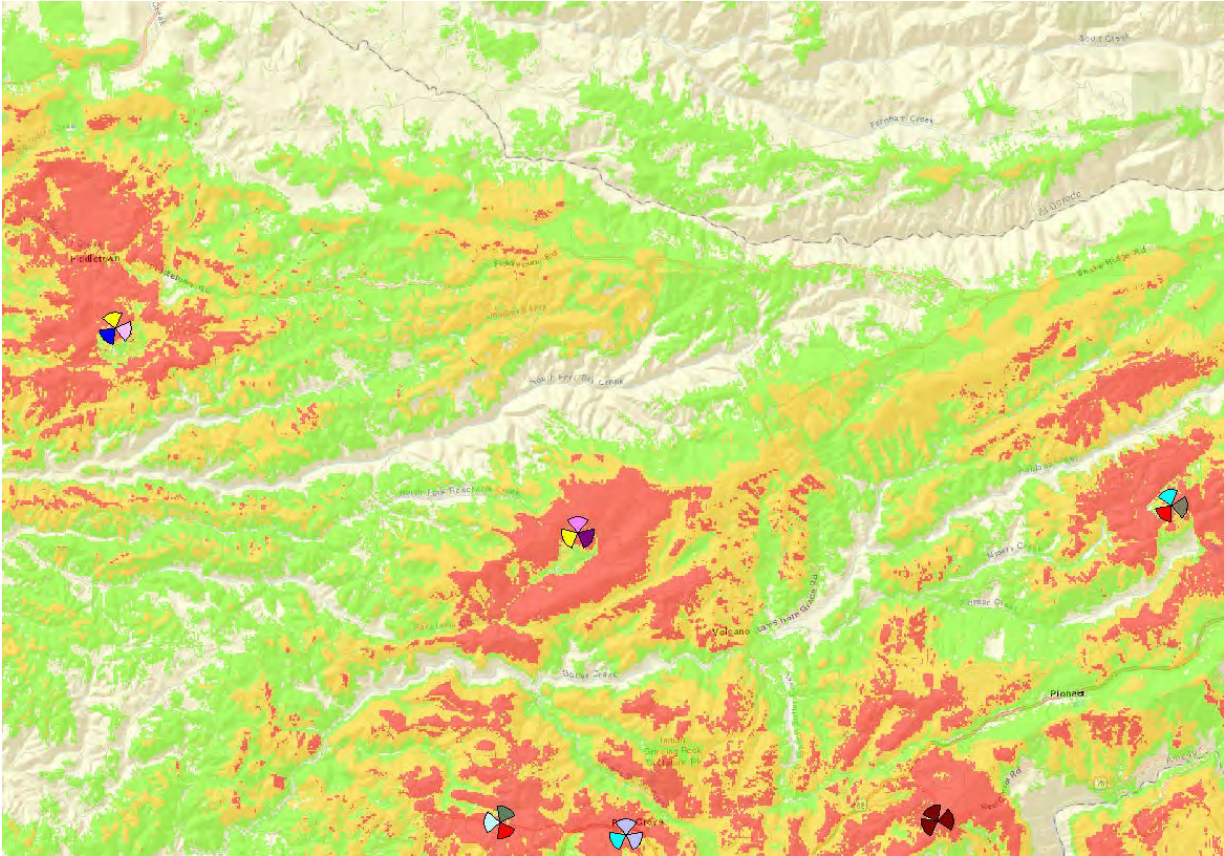


# CURRENT AREA COVERAGE





# COVERAGE W/ SHAKE RIDGE NEW BUILD SITE

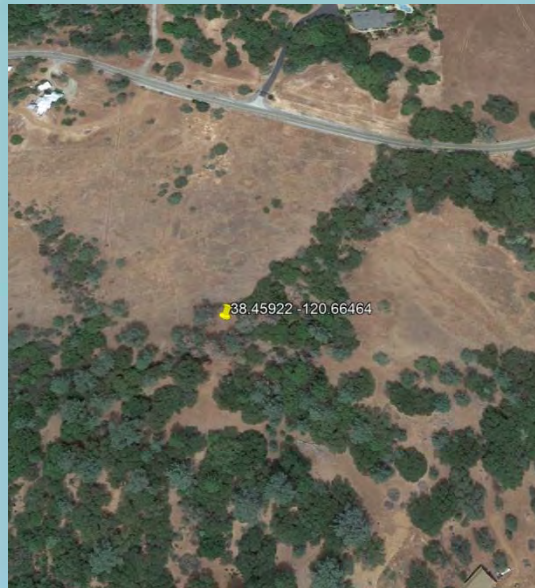


RADIO  
FREQUENCY  
REQUIREMENTS

# Radio Frequency - Electromagnetic Energy (RF-EME) Jurisdictional Report

Site No. 781398  
Shake Ridge  
19585 Shake Ridge Road  
Volcano, California 95689  
Amador County  
38° 27' 33.19" N, -120° 39' 52.70" W NAD83

EBI Project No. 6223003686  
September 25, 2023



Prepared for:  
Verizon Wireless  
c/o Complete Wireless Consulting, Inc.  
2009 V Street, Sacramento, CA 95818

Prepared by:  
 **EBI Consulting**  
environmental | engineering | due diligence

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## APPENDICES

- APPENDIX A CERTIFICATIONS**
- APPENDIX B RADIO FREQUENCY ELECTROMAGNETIC ENERGY SAFETY / SIGNAGE PLANS**
- APPENDIX C FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS**

## EXECUTIVE SUMMARY

### Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by Verizon Wireless (“Verizon”) to conduct radio frequency electromagnetic (RF-EME) modeling for Verizon Site 781398 located at 19585 Shake Ridge Road in Volcano, California to determine RF-EME exposure levels from proposed Verizon communications equipment at this site. As described in greater detail in Appendix C of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for the general public and for occupational activities. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

### Statement of Compliance

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

As presented in the sections below, based on worst-case predictive modeling, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed antennas that exceed the FCC’s occupational or general public exposure limits at this site.

At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately **22.95** percent of the FCC’s general public limit (**4.59** percent of the FCC’s occupational limit).

The composite exposure level from all carriers on this site is approximately **22.95** percent of the FCC’s general public limit (**4.59** percent of the FCC’s occupational limit) at the nearest walking/working surface to each antenna.

Recommended control measures are outlined in Section 4.0 and within the Site Safety Plan (attached); Verizon should also provide procedures to shut down and lockout/tagout this wireless equipment in accordance with Verizon’s standard operating protocol. Non-telecom workers who will be working in areas of exceedance are required to contact Verizon since only Verizon has the ability to lockout/tagout the facility, or to authorize others to do so.

## 1.0 INTRODUCTION

Radio frequency waves are electromagnetic waves from the portion of the electromagnetic spectrum at frequencies lower than visible light and microwaves. The wavelengths of radio waves range from thousands of meters to around 30 centimeters. These wavelengths correspond to frequencies as low as 3 cycles per second (or hertz [Hz]) to as high as one gigahertz (one billion cycles per second).

Personal Communication (PCS) facilities used by Verizon in this area will potentially operate within a frequency range of 700 to 5000 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed a distance above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of in areas in the immediate vicinity of the antennas.

MPE limits do not represent levels where a health risk exists, since they are designed to provide a substantial margin of safety. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size or health.

## 2.0 SITE DESCRIPTION

This project site includes the following proposed wireless telecommunication antennas on a monotree located at 19585 Shake Ridge Road in Volcano, California.

Ant #	Sector	Operator	Antenna Make	Antenna Model	Technology and Frequency (MHz)	Azimuth (Degrees)	Mechanical Downtilt (Degrees)	Horizontal Beamwidth (Degrees)	Aperture (feet)	Total Power Input (Watts)	Transmitter Count	Antenna Gain (dBd)	Total ERP (Watts)	Total EIRP (Watts)
1	Alpha	Verizon	ERICSSON	SON_AIR6419 TB 03.21.2023 3700 VZW	Cband 3700	0	0	11	2.4	320	1	23.45	70819.03	116143.21
2	Alpha	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-10DT 700	LTE 700	0	0	82	8.4	80	2	13.31	1714.31	2811.47
2	Alpha	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-10DT 850	LTE 850	0	0	83	8.4	80	2	13.39	1746.18	2863.74
2	Alpha	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-08DT 2100	LTE 2100	0	0	78	8.4	160	4	15.64	5863.00	9615.32
3	Alpha	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-10DT 700	LTE 700	0	0	82	8.4	80	2	13.31	1714.31	2811.47
3	Alpha	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-10DT 850	LTE 850	0	0	83	8.4	80	2	13.39	1746.18	2863.74
3	Alpha	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-08DT 1900	LTE 1900	0	0	78	8.4	160	4	15.23	5334.82	8749.11
4	Beta	Verizon	ERICSSON	SON_AIR6419 TB 03.21.2023 3700 VZW	Cband 3700	120	0	11	2.4	320	1	23.45	70819.03	116143.21
5	Beta	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-10DT 700	LTE 700	120	0	82	8.4	80	2	13.31	1714.31	2811.47
5	Beta	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-10DT 850	LTE 850	120	0	83	8.4	80	2	13.39	1746.18	2863.74
5	Beta	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-08DT 2100	LTE 2100	120	0	78	8.4	160	4	15.64	5863.00	9615.32
6	Beta	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-10DT 700	LTE 700	120	0	82	8.4	80	2	13.31	1714.31	2811.47
6	Beta	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-10DT 850	LTE 850	120	0	83	8.4	80	2	13.39	1746.18	2863.74
6	Beta	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-08DT 1900	LTE 1900	120	0	78	8.4	160	4	15.23	5334.82	8749.11
7	Gamma	Verizon	ERICSSON	SON_AIR6419 TB 03.21.2023 3700 VZW	Cband 3700	240	0	11	2.4	320	1	23.45	70819.03	116143.21

Ant #	Sector	Operator	Antenna Make	Antenna Model	Technology and Frequency (MHz)	Azimuth (Degrees)	Mechanical Downtilt (Degrees)	Horizontal Beamwidth (Degrees)	Aperture (feet)	Total Power Input (Watts)	Transmitter Count	Antenna Gain (dBd)	Total ERP (Watts)	Total EIRP (Watts)
8	Gamma	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-10DT 700	LTE 700	240	0	82	8.4	80	2	13.31	1714.31	2811.47
8	Gamma	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-10DT 850	LTE 850	240	0	83	8.4	80	2	13.39	1746.18	2863.74
8	Gamma	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-08DT 2100	LTE 2100	240	0	78	8.4	160	4	15.64	5863.00	9615.32
9	Gamma	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-10DT 700	LTE 700	240	0	82	8.4	80	2	13.31	1714.31	2811.47
9	Gamma	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-10DT 850	LTE 850	240	0	83	8.4	80	2	13.39	1746.18	2863.74
9	Gamma	Verizon	COMMSCOPE	SON_NHH-85C-R2B 00DT-08DT 1900	LTE 1900	240	0	78	8.4	160	4	15.23	5334.82	8749.11

• Note there are 3 Verizon antennas per sector at this site. For clarity, the different frequencies for each antenna are entered on separate lines.

Ant #	NAME	X	Y	Antenna Radiation Centerline	Z-Height Ground
1	Verizon	2.7	81.1	78.0	78.0
2	Verizon	5.3	81.1	68.0	68.0
3	Verizon	2.7	81.1	68.0	68.0
4	Verizon	9.5	86.0	78.0	78.0
5	Verizon	8.7	88.6	68.0	68.0
6	Verizon	9.5	86.0	68.0	68.0
7	Verizon	2.3	88.6	78.0	78.0
8	Verizon	0.4	86.4	68.0	68.0
9	Verizon	2.3	88.6	68.0	68.0

• Note the Z-Height represents the distance from the antenna centerline.

The above tables contain an inventory of proposed Verizon Antennas and other carrier antennas if sufficient information was available to model them. Note that EBI uses an assumed set of antenna specifications and powers for unknown and other carrier antennas for modeling purposes. The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general population/uncontrolled exposure limits for members of the general public that may be exposed to antenna fields. While access to this site is considered uncontrolled, the analysis has considered exposures with respect to both controlled and uncontrolled limits as an untrained worker may access adjacent rooftop locations. Additional information regarding controlled/uncontrolled exposure limits is provided in Appendix C. Appendix B presents a site safety plan that provides a plan view of the monotree with antenna locations.

### 3.0 WORST-CASE PREDICTIVE MODELING

EBI has performed theoretical MPE modeling using RoofMaster™ software to estimate the worst-case power density at the site's nearby broadcast levels resulting from operation of the antennas. RoofMaster™ is a widely-used predictive modeling program that has been developed by Waterford Consultants to predict RF power density values for rooftop and tower telecommunications sites

produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. Using the computational methods set forth in Federal Communications Commission (FCC) Office of Engineering & Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields" (OET-65), RoofMaster™ calculates predicted power density in a scalable grid based on the contributions of all RF sources characterized in the study scenario. At each grid location, the cumulative power density is expressed as a percentage of the FCC limits. Manufacturer antenna pattern data is utilized in these calculations. RoofMaster™ models consist of the Far Field model as specified in OET-65 and an implementation of the OET-65 Cylindrical Model (Sula9). The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

For this report, EBI utilized antenna and power data provided by Verizon and compared the resultant worst-case MPE levels to the FCC's occupational/controlled exposure limits outlined in OET Bulletin 65. The assumptions used in the modeling are based upon information provided by Verizon and information gathered from other sources. The parameters used for modeling are summarized in the Site Description antenna inventory table in Section 2.0.

There are no other wireless carriers with equipment installed at this site.

Based on worst-case predictive modeling, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed Verizon antennas that exceed the FCC's occupational or general public exposure limits at this site. At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately 22.95 percent of the FCC's general public limit (4.59 percent of the FCC's occupational limit). The composite exposure level from all carriers on this site is approximately 22.95 percent of the FCC's general public limit (4.59 percent of the FCC's occupational limit) at the nearest walking/working surface to each antenna.

The Site Safety Plan also presents areas where Verizon Wireless antennas contribute greater than 5% of the applicable MPE limit for a site. A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

The inputs used in the modeling are summarized in the Site Description antenna inventory table in Section 2.0. A graphical representation of the RoofMaster™ modeling results is presented in Appendix B. Microwave dish antennas are designed for point-to-point operations at the elevations of the installed equipment rather than ground level coverage. The maximum power density generated by all carrier antennas, including microwaves and panel antennas, is included in the modeling results presented within this report.

#### **4.0 MITIGATION/SITE CONTROL OPTIONS**

EBI's modeling indicates that there are no areas in front of the Verizon antennas that exceed the FCC standards for occupational or general public exposure. All exposures above the FCC's safe limits require that individuals be elevated above the ground. In accordance with the official Verizon Wireless Signage and Demarcation Policy for tower structures, no signage is recommended at this site.

There are no barriers recommended on this site.



These protocols and recommended control measures have been summarized and included with a graphic representation of the antennas and associated signage and control areas in a RF-EME Site Safety Plan, which is included as Appendix B. Individuals and workers accessing the monotree should be provided with a copy of the attached Site Safety Plan, made aware of the posted signage, and signify their understanding of the Site Safety Plan.

To reduce the risk of exposure, EBI recommends that access to areas associated with the active antenna installation be restricted and secured where possible. All workers and individuals, including arborists and landscapers, accessing the monotree along with nearby elevated structures or trees within areas exceeding the general public MPE must be made aware of the presence and locations of antennas and their associated fields, where applicable.

## **5.0 SUMMARY AND CONCLUSIONS**

EBI has prepared a Radiofrequency – Electromagnetic Energy (RF-EME) Compliance Report for telecommunications equipment installed by Verizon Site Number 781398 located at 19585 Shake Ridge Road in Volcano, California to determine worst-case predicted RF-EME exposure levels from wireless communications equipment installed at this site. This report summarizes the results of RF-EME modeling in relation to relevant Federal Communications Commission (FCC) RF-EME compliance standards for limiting human exposure to RF-EME fields.

As presented in the sections above, based on the FCC criteria, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site.

Workers should be informed about the presence and locations of antennas and their associated fields. Recommended control measures are outlined in Section 4.0 and within the Site Safety Plan (attached); Verizon should also provide procedures to shut down and lockout/tagout this wireless equipment in accordance with Verizon's standard operating protocol. Non-telecom workers who will be working in areas of exceedance are required to contact Verizon since only Verizon has the ability to lockout/tagout the facility, or to authorize others to do so.

## **6.0 LIMITATIONS**

This report was prepared for the use of Verizon Wireless. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by EBI are based solely on the information provided by the client. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to EBI so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.


# **Appendix A**

## **Certifications**

## Preparer Certification

I, Andrew Simpson, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified “occupational” under the FCC regulations.
- I am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.



Andrew Simpson

Reviewed and Approved by:



sealed 26sep2023

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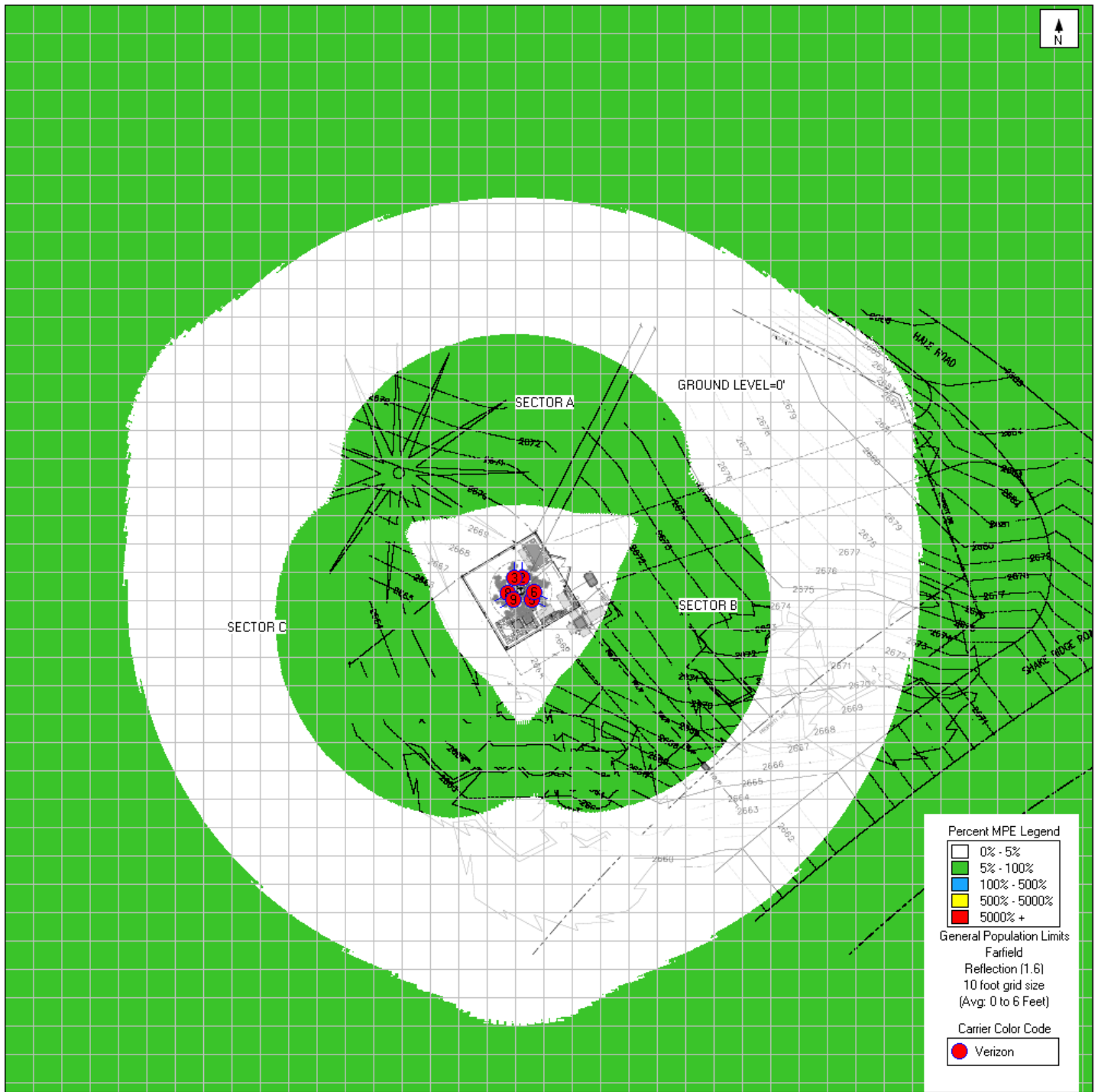
Michael McGuire  
Electrical Engineer  
[mike@h2dc.com](mailto:mike@h2dc.com)

Note that EBI's scope of work is limited to an evaluation of the Radio Frequency – Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the building and related structures, as well as the impact of the antennas and broadcast equipment on the structural integrity of the building, are specifically excluded from EBI's scope of work.

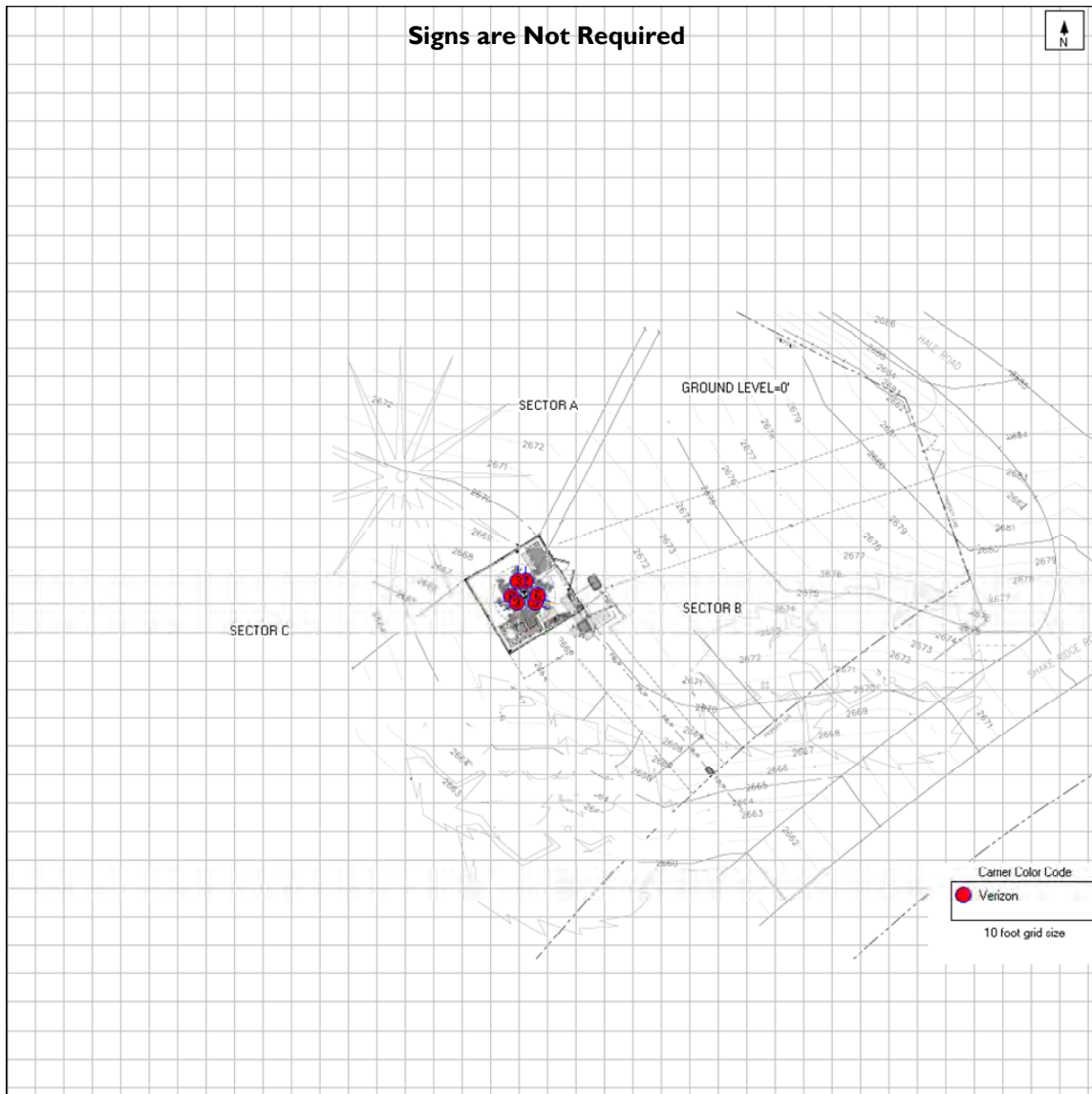
# **Appendix B**


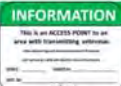
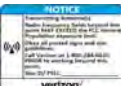
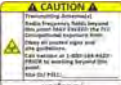

## **Radio Frequency Electromagnetic Energy Safety Information and Signage Plans**

### Nearest Walking Surface



## Verizon Signage Plan


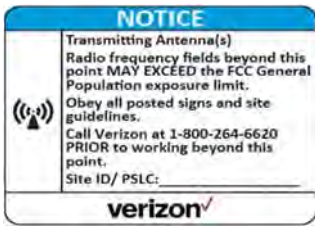





Sign	Posting Instructions	Required Signage / Mitigation
	Securely post at every point of access to the site in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.	Signage not required.
	Securely post at every point of access to the site in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.	Signage not required.
	Securely post in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.	Signage not required.
	Securely post in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.	Signage not required.
	Securely post in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.	Signage not required.

## RF Signage and Safety Information

### RF Signage

Areas or portions of any transmitter site may be susceptible to high power densities that could cause personnel exposures in excess of the FCC guidelines. These areas must be demarcated by conspicuously posted signage that identifies the potential exposure. Signage **MUST** be viewable regardless of the viewer's position.

GUIDELINES	Category Two - Notice	Category Three - Caution	Category Four - Warning
This sign will inform anyone of the basic precautions to follow when entering an area with transmitting radiofrequency equipment.	This sign indicates that RF emissions may exceed the FCC General Population MPE limit. <ul style="list-style-type: none"> <li>• Sign Color Blue</li> <li>• Sign Signal Word "Notice"</li> </ul>	This sign indicates that RF emissions may exceed the FCC Occupational MPE limit. <ul style="list-style-type: none"> <li>• Sign Color Yellow</li> <li>• Sign Signal Word "Caution"</li> </ul>	This sign indicates that RF emissions may exceed at least 10x the FCC Occupational MPE limit. <ul style="list-style-type: none"> <li>• Sign Color Orange for Warning</li> <li>• Sign Signal Word "Warning"</li> </ul>
			

Category One - Information
Information signs are used as a means to provide contact information for any questions or concerns. They will include specific cell site identification information and the Verizon Wireless Network Operations Center phone number. <ul style="list-style-type: none"> <li>• Sign Color Green</li> <li>• Sign Signal Word "Information"</li> </ul>


### Physical Barriers

Physical barriers are control measures that require awareness and participation of personnel. Physical barriers are employed as an additional administration control to complement RF signage and physically demarcate an area in which RF exposure levels may exceed the FCC General Population limit. **Example:** chain-connected stanchions

### Indicative Markers

Indicative markers are visible control measures that require awareness and participation of personnel, as they cannot physically prevent someone from entering an area of potential concern. Indicative markers are employed as an additional administration control to complement RF signage and visually demarcate an area in which RF exposure levels may exceed the FCC General Population limit. **Example:** paint stripes

### Occupational Safety and Health Administration (OSHA) Requirements

A formal adopter of FCC Standards, OSHA stipulates that those in the Occupational classification must complete training in the following: RF Safety, RF Awareness, and Utilization of Personal Protective Equipment. OSHA also provides options for Hazard Prevention and Control:

Hazard Prevention	Control
<ul style="list-style-type: none"> <li>• Utilization of good equipment</li> <li>• Enact control of hazard areas</li> <li>• Limit exposures</li> <li>• Employ medical surveillance and accident response</li> </ul>	<ul style="list-style-type: none"> <li>• Employ Lockout/Tag out</li> <li>• Utilize personal alarms &amp; protective clothing</li> <li>• Prevent access to hazardous locations</li> <li>• Develop or operate an administrative control program</li> </ul>



# **Appendix C**

## **Federal Communications Commission (FCC) Requirements**

The FCC has established Maximum Permissible Exposure (MPE) limits for human exposure to Radiofrequency Electromagnetic (RF-EME) energy fields, based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general public/uncontrolled exposure limits for members of the general public.

**Occupational/controlled exposure limits** apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general public/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

**General public/uncontrolled exposure limits** apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Table I and Figure I (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

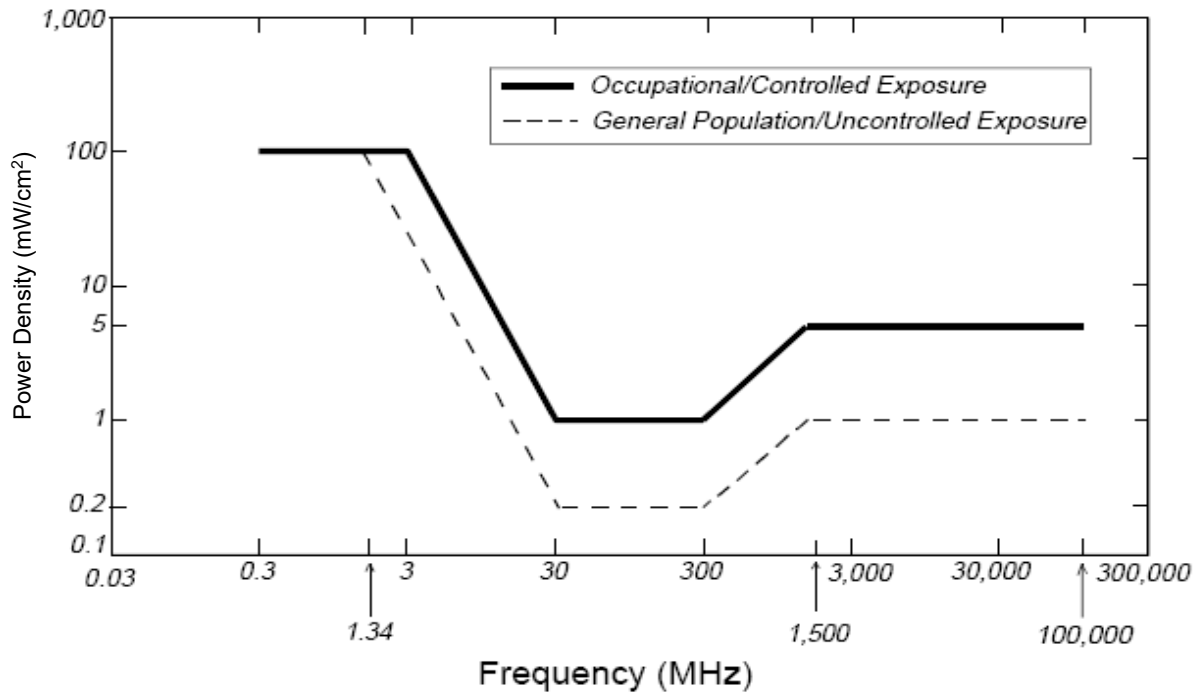
The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm<sup>2</sup>). Known as the power density, the FCC has established for equipment operating at frequencies range from 300 Mhz to 1,500 Mhz the Occupational/Controlled limit of  $(f/300)$  mW/cm<sup>2</sup> where f is the Frequency in (MHz) and the General Population / Uncontrolled limit of  $(f/1500)$  mW/cm<sup>2</sup> where f is the Frequency in (MHz). For equipment operating at frequency ranges from 1900 MHz to 100,000 MHz, the FCC's occupational MPE is 5.0 mW/cm<sup>2</sup> and an uncontrolled MPE limit of 1.0 mW/cm<sup>2</sup>. These limits are considered protective of these populations.

Table I: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time [E] <sup>2</sup> , [H] <sup>2</sup> , or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f <sup>2</sup> )*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time [E] <sup>2</sup> , [H] <sup>2</sup> , or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)

\* Plane-wave equivalent power density

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)  
 Plane-wave Equivalent Power Density



MPE limits are designed to provide a substantial margin of safety. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

Personal Communication (PCS) facilities used by Verizon in this area will potentially operate within a frequency range of 700 to 2100 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of areas directly in front of the antennas.

### **FCC Compliance Requirement**

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

# NOISE STUDY

# Environmental Noise Assessment

## Shake Ridge Verizon Cellular Facility

Amador County, California

BAC Job # 2023-119

Prepared For:

Complete Wireless Consulting

Attn: Jerry Agloro  
2009 V Street  
Sacramento, CA 95818

Prepared By:

**Bollard Acoustical Consultants, Inc.**



Dario Gotchet, Principal Consultant

September 28, 2023



## Introduction

The Shake Ridge Verizon Wireless Unmanned Telecommunications Facility (project) proposes the installation of cellular equipment within a lease area located at 19585 Shake Ridge Road Volcano (Amador County), California (APN: 021-390-006). The outdoor equipment cabinets and an emergency standby diesel generator have been identified as the primary noise sources associated with the project. The project overall site plan is presented in Figure 1. The studied site drawings are dated August 15, 2023.

Bollard Acoustical Consultants, Inc. has been contracted by Complete Wireless Consulting, Inc. to complete an environmental noise assessment regarding the proposed project cellular equipment operations. Specifically, the following assessment addresses daily noise production and exposure associated with operation of the project emergency generator and outdoor equipment cabinets.

Please refer to Appendix A for definitions of acoustical terminology used in this report. Appendix B illustrates common noise levels associated with various sources.

## Criteria for Acceptable Noise Exposure

### Amador County General Plan

Chapter 8 (Noise Element) of the Amador County General Plan establishes noise level performance standards for noise-sensitive land uses affected by non-transportation noise sources, such as those proposed by the project. The General Plan noise level standards are provided below in Table 1.

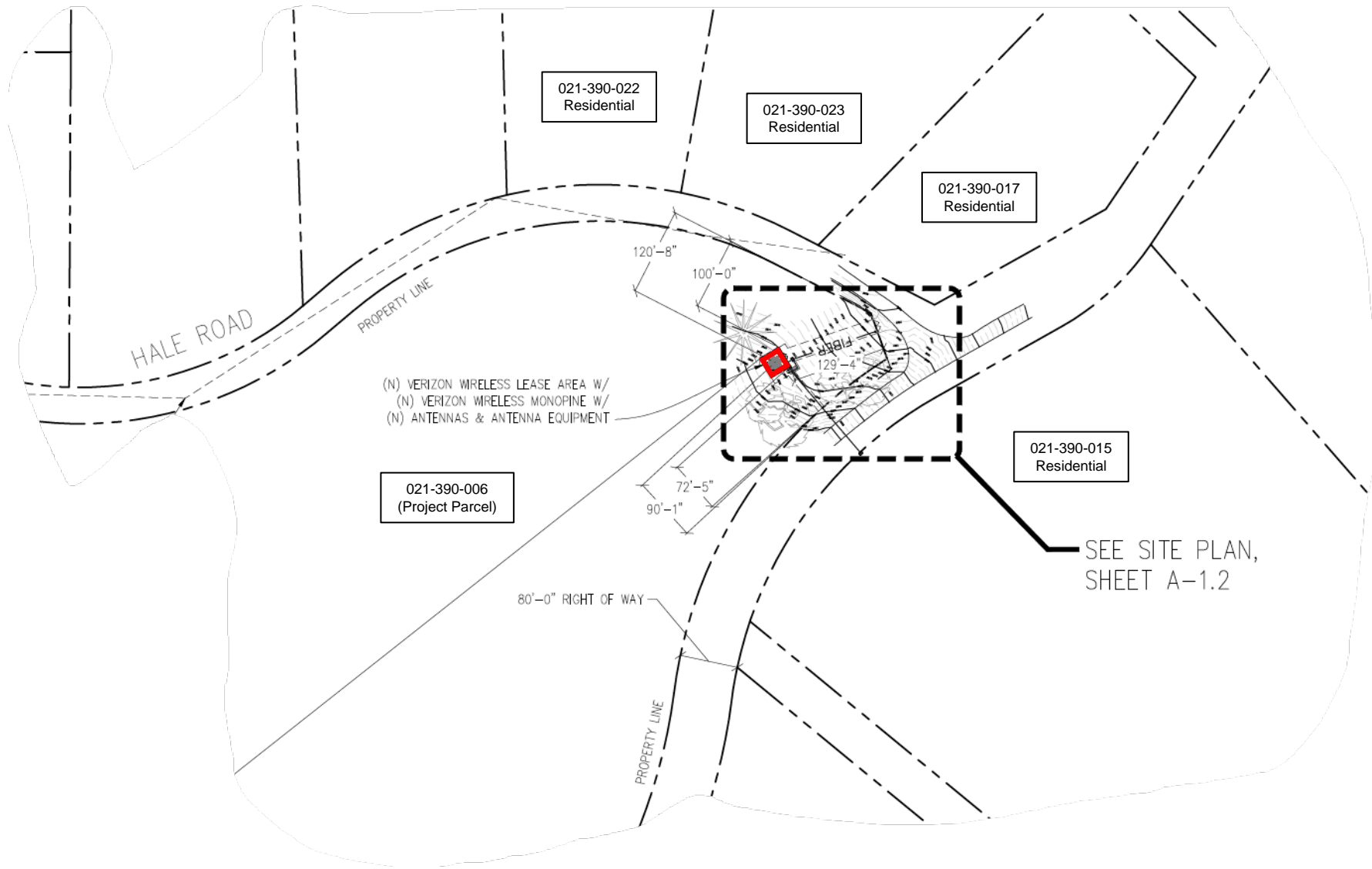
**Table 1**  
**Noise Level Performance Standards for Non-Transportation Sources<sup>1</sup>**

<b>Noise Level Descriptor (dB)</b>	<b>Daytime (7:00 a.m. to 10:00 p.m.)</b>	<b>Nighttime (10:00 p.m. to 7:00 a.m.)</b>
Hourly average, $L_{eq}$	60	45
Maximum level, $L_{max}$	75	65
<sup>1</sup> Each of the noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings). The noise standard is to be applied at the property planes of at the affected land use.		

Source: Amador County General Plan, Noise Element, Table N-4.

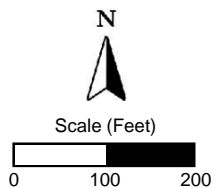
## Project Noise Generation

As discussed previously, there are two project noise sources which are considered in this evaluation: the equipment cabinet cooling systems and the emergency diesel generator. The evaluation of potential noise impacts associated with the operation of each noise source is evaluated separately as follows:



**Legend**

- █ Proposed Verizon Cellular Equipment Lease Area
- Parcel Boundaries



**Shake Ridge Verizon Cellular Facility**  
Amador County, California

Project Overall Site Plan

**Figure 1**





## Equipment Cabinet Noise Source and Reference Noise Level

According to the provided site drawings, the project proposes the installation of two (2) equipment cabinets within the equipment lease area shown in Figure 1. The cabinet models assumed for the project are as follows: one (1) Charles Industries 48V Power Plant and one (1) miscellaneous cabinet cooled by a McLean Model T-20 air conditioner. The cabinets and their respective reference noise levels are provided in Table 2. The manufacturer's noise level data specification sheets for the proposed equipment cabinets are provided as Appendix C.

**Table 2**  
**Reference Noise Level Data of Proposed Equipment Cabinets**

Equipment	Number of Cabinets	Reference Noise Level (dB)	Reference Distance (ft)
Charles Industries 48V Power Plant	1	60	5
McLean T-20	1	66	5
<i>Note: Manufacturer specification sheets provided as Appendix C.</i>			

## Generator Noise Source and Reference Noise Level

The project also proposes the installation of an emergency standby diesel generator within the lease area to maintain cellular service during emergency power outages. Based on the project site plans, the generator assumed for the project is a Generac Industrial Power Systems Model SD030. It is further assumed that the proposed generator will be equipped with the Level 2 Acoustic Enclosure resulting in a reference noise level of 68 dB at a distance of 23 feet. The manufacturer's noise level data specification sheet for the proposed generator and acoustical enclosure is provided as Appendix D.

The generator which is proposed at this site would only operate during emergencies (power outages) and brief daytime periods for periodic maintenance/lubrication. According to the project applicant, testing of the generator would occur twice per month on weekdays only, during daytime hours, for a duration of approximately 15 minutes. The emergency generator would not operate at night, except during power outages. It is expected that nighttime operation of the project emergency generator would be exempt from the county's exterior noise exposure criteria due to the need for continuous cellular service provided by the project equipment.

## Predicted Facility Noise Levels at the Nearest Off-Site Noise-Sensitive Uses

The nearest off-site noise-sensitive uses has been identified as residential, as identified in Figure 1. Assuming standard spherical spreading loss (-6 dB per doubling of distance from a stationary noise source), project-equipment noise exposure at the property lines of the nearest residential uses was calculated and the results of those calculations are presented in Table 3. Satisfaction of the county's noise level standards at the closest noise-sensitive uses would ensure for compliance at noise-sensitive uses located farther away.

The nearest residential uses have been identified as APN: 021-390-022 (northwest of the project), APN: 021-390-023 (north of the project), APN: 021-390-017 (northeast of the project) and APN: 021-390-015 (southeast of the project). The predicted equipment noise levels presented in Table 3 take into consideration the orientation of the proposed outdoor equipment cabinet cooling fans

relative to the nearest residential property lines. Based on the provided site plans, the cooling fans of the equipment cabinets are proposed to face northwest – away from residential property to the southeast, and side-faced relative to the residential property to the northeast. Reference noise level measurements conducted by BAC staff at a similarly configured facility in Livermore, California (5179 Preston Avenue) indicate that the proposed equipment cabinet cooling fans are approximately 8 dB quieter when measured from the opposite side (rear) of the cooling fans, and 3 dB quieter when measured from a 90 degree off-axis point (side). As a result, predicted equipment cabinet noise levels were adjusted by -8 dB at the residential property to the southeast and -3 dB at the residential property to the northeast.

**Table 3  
Project Equipment Noise Exposure at Nearest Noise-Sensitive Uses (Residential)**

Residential APN <sup>1</sup>	Distance from Equipment <sup>2</sup>		Predicted Equipment Noise Levels (dBA)	
	Cabinets	Generator	Cabinets, L <sub>eq</sub> <sup>3</sup>	Generator, L <sub>max</sub>
021-390-022 (Northwest)	285	275	32	46
021-390-023 (North)	185	165	36	51
021-390-017 (Northeast)	180	155	33	51
021-390-015 (Southeast)	160	175	29	50

<sup>1</sup> Residential parcels included in this analysis are shown in Figure 1.  
<sup>2</sup> Distances scaled from equipment to residential property lines using the provided site plans dated 8/15/23.  
<sup>3</sup> Predicted cabinet noise levels at APN's: 021-390-017 and 021-390-015 include off-axis directionality offsets, as discussed.

Source: BAC 2023.

Because the proposed equipment cabinets could potentially be in operation continuously during nighttime hours (i.e., throughout the duration of a given hour), the operation of the cabinets was appropriately assessed relative to the Amador County General Plan *nighttime* hourly average noise level standard of 45 dB L<sub>eq</sub> (Table 1). As indicated in Table 3, predicted equipment cabinet noise levels ranging from 29 to 36 dB L<sub>eq</sub> at the property lines of the closest residential uses would satisfy the General Plan 45 dB L<sub>eq</sub> nighttime noise level limit. As a result, no further consideration of equipment cabinet noise mitigation measures would be warranted for the project.

Because the project generator would only operate during daytime hours for brief periods required for testing and maintenance (i.e., approximately 15 minutes), and because generator noise is assumed to be exempt during emergency operations, noise from the generator was assessed relative to the Amador County General Plan *daytime* maximum noise level limit of 75 dB L<sub>max</sub> (Table 1). As shown in Table 3, predicted generator noise levels ranging from 46 to 51 dB L<sub>max</sub> at the closest residential property lines would satisfy the General Plan 75 dB L<sub>max</sub> daytime noise level standard. As a result, no further consideration of emergency generator noise mitigation measures would be warranted for the project.

## Conclusions

Based on the analysis and results presented in this report, project-related equipment noise exposure is expected to satisfy the applicable Amador County General Plan noise level criteria at the property lines of the nearest off-site noise-sensitive uses (residential). As a result, no further consideration of equipment noise mitigation measures would be warranted for this project.

This concludes our environmental noise assessment for the proposed Shake Ridge Verizon Cellular Facility in Amador County, California. Please contact BAC at (530) 537-2328 or [info@bacnoise.com](mailto:info@bacnoise.com) with any questions or requests for additional information.

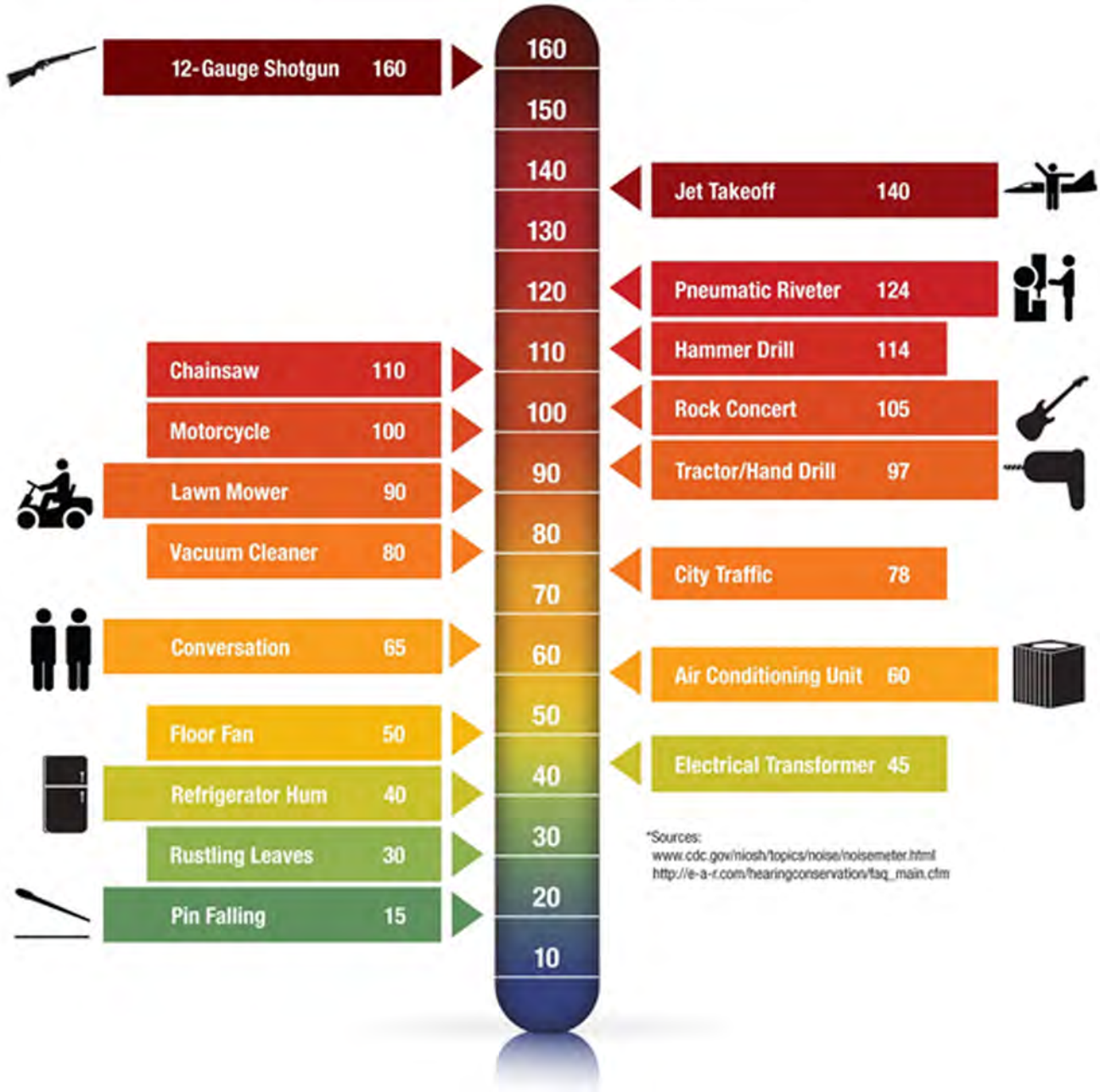
## Appendix A Acoustical Terminology

<b>Acoustics</b>	The science of sound.
<b>Ambient Noise</b>	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
<b>Attenuation</b>	The reduction of an acoustic signal.
<b>A-Weighting</b>	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
<b>Decibel or dB</b>	Fundamental unit of sound. A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
<b>CNEL</b>	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
<b>Frequency</b>	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
<b>IIC</b>	Impact Insulation Class (IIC): A single-number representation of a floor/ceiling partition's impact generated noise insulation performance. The field-measured version of this number is the FIIC.
<b>L<sub>dn</sub></b>	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
<b>Leq</b>	Equivalent or energy-averaged sound level.
<b>L<sub>max</sub></b>	The highest root-mean-square (RMS) sound level measured over a given period of time.
<b>Loudness</b>	A subjective term for the sensation of the magnitude of sound.
<b>Masking</b>	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
<b>Noise</b>	Unwanted sound.
<b>Peak Noise</b>	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the "Maximum" level, which is the highest RMS level.
<b>RT<sub>60</sub></b>	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
<b>STC</b>	Sound Transmission Class (STC): A single-number representation of a partition's noise insulation performance. This number is based on laboratory-measured, 16-band (1/3-octave) transmission loss (TL) data of the subject partition. The field-measured version of this number is the FSTC.



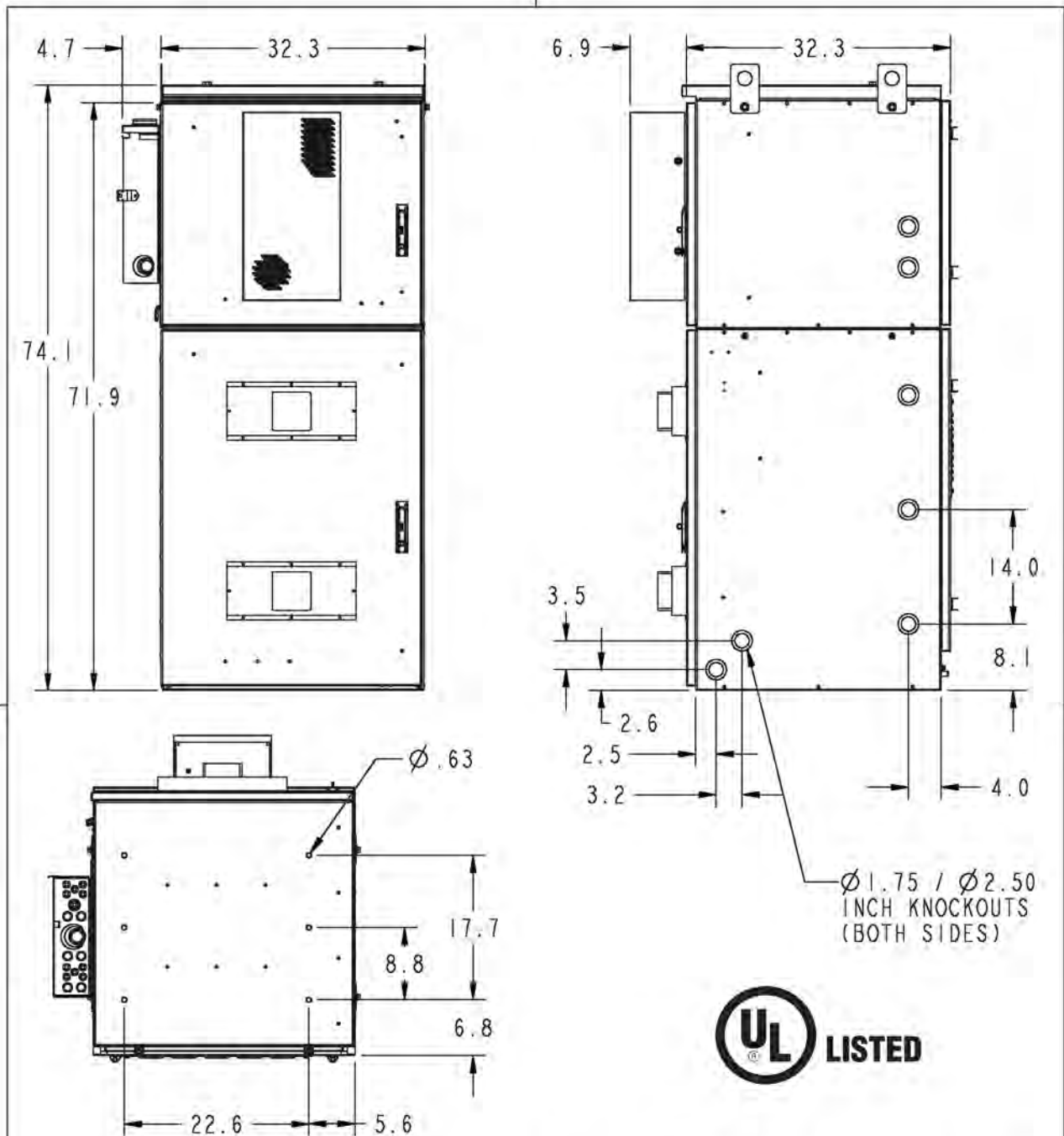
# Appendix B

## Typical A-Weighted Sound Levels of Common Noise Sources Decibel Scale (dBA)\*



\*Sources:  
[www.cdc.gov/niosh/topics/noise/noisemeter.html](http://www.cdc.gov/niosh/topics/noise/noisemeter.html)  
[http://e-a-r.com/hearingconservation/tag\\_main.cfm](http://e-a-r.com/hearingconservation/tag_main.cfm)

# Appendix C-1



**WEIGHT WITH BATTERIES:**  
**2296 LBS.**  
 NorthStar NSB-170FT batteries  
 at 128 lbs each, Qty 12

**WEIGHT WITHOUT BATTERIES:**  
**760 LBS.**

**MAX NOISE LEVEL:**  
**55-60dB**

**CHARLES PART #**  
**CUBE-SS4C215XC1**

**Charles**  
 Charles Industries Ltd.  
 Telecommunications Group  
 Charles Center, 5600 Apollo Drive  
 Rolling Meadows, IL 60008  
 Telephone: 847-608-6300

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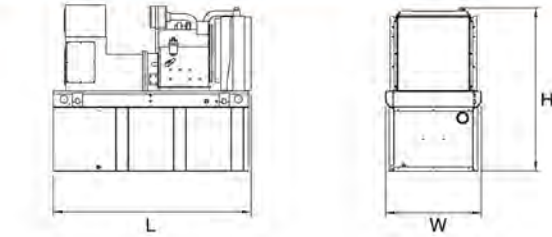
**Verizon Wireless**  
**Large Site Support Enclosure**



# Appendix D

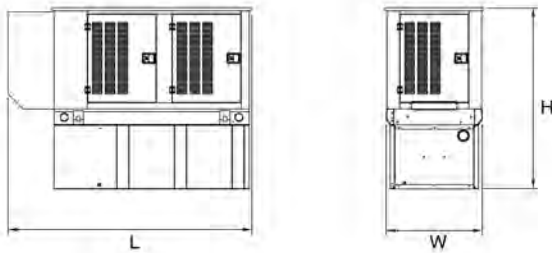
## SD030

## dimensions, weights and sound levels



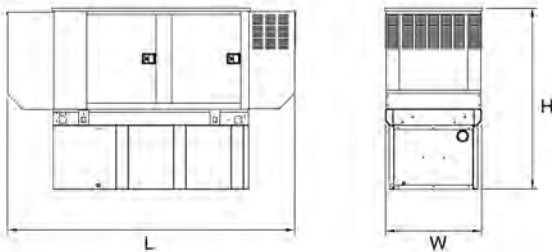
### OPEN SET

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBa*
NO TANK	-	76	38	46	2060	82
20	54	76	38	59	2540	
48	132	76	38	71	2770	
77	211	76	38	83	2979	
109	300	93	38	87	3042	



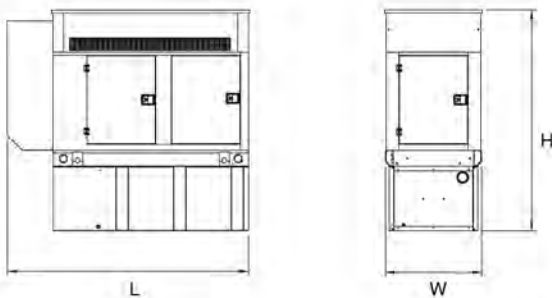
### STANDARD ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBa*
NO TANK	-	95	38	50	2362	77
20	54	95	38	63	2842	
48	132	95	38	75	3072	
77	211	95	38	87	3281	
109	300	95	38	91	3344	



### LEVEL 1 ACOUSTIC ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBa*
NO TANK	-	113	38	50	2515	70
20	54	113	38	63	2995	
48	132	113	38	75	3225	
77	211	113	38	87	3434	
109	300	113	38	91	3497	



### LEVEL 2 ACOUSTIC ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBa*
NO TANK	-	95	38	62	2520	68
20	54	95	38	75	3000	
48	132	95	38	87	3230	
77	211	95	38	99	3439	
109	300	95	38	103	3502	

\*All measurements are approximate and for estimation purposes only. Weights are without fuel in tank. Sound levels measured at 23ft (7m) and does not account for ambient site conditions.

- Tank Options
- MDEQ OPT
  - Florida DERM/DEP OPT
  - Chicago Fire Code OPT
  - IFC Certification CALL
  - ULC CALL

Other Custom Options Available from your Generac Industrial Power Dealer

**YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER**

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.



OAK  
WOODLANDS  
ASSESSMENT

**HELIX Environmental Planning, Inc.**  
1180 Iron Point Road, Suite 130  
Folsom, CA 95630  
916.435.1205 tel  
619.462.0552 fax  
[www.helixepi.com](http://www.helixepi.com)



April 5, 2024

Project 04335.00010.001

John Rea, Project Coordinator  
Complete Wireless Consulting, Inc.  
2009 V Street  
Sacramento, CA 95818

**Subject: Shake Ridge Telecommunications Project Tree Assessment, Amador County, California**

Dear Mr. Rea:

This letter documents the results of tree assessment conducted for the Shake Ridge Telecommunications Project in the community of Volcano, Amador County, California. HELIX Environmental Planning, Inc. (HELIX) was tasked with conducting a tree assessment on the site, as well as providing general preservation and avoidance guidance for trees that may be preserved on-site during and subsequent to construction. This letter report describes the methods and results of our arborist inventory.

## **PROJECT LOCATION AND BACKGROUND**

The project is situated at the intersection of Shake Ridge (west of) and Hale Road (south of) in the community of Volcano, Amador County, California (Figure 1). The proposed Verizon telecommunications project will involve the installation of a monopine antenna and equipment enclosed by an eight-foot wooden fence. Additionally, a twenty-foot-wide access road to the monopine tower will be constructed.

## **OAK PROTECTION POLICIES**

Amador County has limited tree protections in place. Tables 1 and 2 below provide a summary of the documents reviewed and applicable oak protection requirements.

**Table 1**  
**AMADOR TREE PROTECTION MEASURES**

	<b>Oak Tree Retention/ Replacement Provisions</b>	<b>Oak Protection During Construction</b>	<b>Heritage Tree Protection</b>	<b>Riparian Vegetation Protections</b>	<b>Oak Canopy Retention</b>	<b>Oak Woodland Conservation Program</b>
<b>Amador County General Plan FEIR</b>	References the California Oak Woodland Conservation Act, Senate Bill (SB) 1334, and Public Resources Code (PRC) Section 21083.4	None	None	None (may be subject to CDFW jurisdiction)	None	None
<b>Specific Ordinance</b>	None	None	None	None	None	None
<b>Voluntary Guidelines</b>	None	None	None	None	None	None

**Table 2**  
**SUMMARY OF GENERAL TREE PROTECTION POLICIES**

Policies	Summary
<b>Scenic Highway Element, 1973</b>	The Scenic Element requires development applications within scenic corridors to submit a landscaping plan that shows the locations of existing mature trees and their ultimate disposition. The County may require retention of mature trees when removal is not essential to the construction of the project. Attempts by a landowner to circumvent this requirement by removing trees before a project application may result in a more stringent and expensive landscaping plan being required. The County may require planting of native trees and shrubs to ensure survival.
<b>Open Space Element, 1973</b>	Open Space element implementation will be carried out by continued careful protection of natural scenic resources and environmental assets in all future major public and private development.
<b>Trees and Shrubbery, 12.36</b>	This ordinance makes it unlawful to cut any tree growing on public land, or land not owned by the individual without written permission from the owner. It is unlawful to cut more than five trees without having previously filed with both the sheriff of Amador County and the Federal or State Forest Ranger. The notice of intention to cut trees must contain a statement of the number and quantity of trees to be cut, a description of the land, dates, signature, and written consent.
<b>Zoning, Title 19</b>	Applications for Planned Developments must contain a topographic map showing natural features including a description of existing vegetation, wildlife, and natural features, planned clearing, grading, excavating, and filling.
<b>California OakWoodland Conservation Act, 2001</b>	The California OakWoodland Conservation Act was passed by the California Legislature in 2001 establishing a fund through the Wildlife Conservation Board (WCB) (CDFW's acquisition branch) to financially support counties' oak woodland conservation efforts. The act authorizes the WCB to purchase oak woodland conservation easements and provide grants for land improvements and restoration efforts. Grants resulting in the purchase of oak woodland conservation easements are given priority; however, funds may also be used for grants designed to provide technical assistance and to develop and implement oak conservation elements in local general plans. The WCB also funds the development of outreach efforts and education related to the preservation of oak woodlands.
<b>Senate Bill 1334, 2005</b>	Senate Bill (SB) 1334 was passed by the California Legislature, mandating that counties require feasible and proportional habitat mitigation for impacts on oak woodlands as part of the CEQA process. Under Public Resources Code (PRC) Section 21083.4, a county is required to determine whether projects "may result in a conversion of oak woodlands that will have a significant effect on the environment." The law applies to all oak woodlands except those dominated by black oak. When it is determined that a project may have a significant effect on oak woodlands, mitigation is required. PRC Section 21083.4 institutes a cap on planting oaks for habitat mitigation (cannot fulfill more than 50 percent of the required mitigation) and prescribes four mitigation options: <ul style="list-style-type: none"> <li>▶ conserving oak woodland using conservation easements</li> <li>▶ contributing funds to the Oak Woodlands Conservation Fund</li> <li>▶ replanting trees, or</li> <li>▶ implementing other mitigation actions as outlined or developed by the county.</li> </ul>

## METHODOLOGY

International Society of Arboriculture (ISA) certified arborist Marisa Brilts (WE-13338A) surveyed the project footprint on March 19, 2024. All trees within or overhanging the project footprint were tagged with a unique identification number and the location, species, and condition were recorded using an EOS Mapping Systems Arrow 100 GNSS receiver with sub-meter accuracy. A U.S. Tape Company forester's diameter tape measure was used to verify trunk DBH, defined as 4.5 feet above grade. Each tree was inspected, and data was taken on species, size, and condition. The measurement from the trunk to the end of the longest lateral limb was used as the estimate for drip line radius (DLR). Each tree was tagged with a pre-printed aluminum tag, which corresponds to the numbering in Attachment A and on Figure 2. The overall health and structure of each tree were evaluated on a five-point scale ranging from poor to good. The health rating considers factors such as the size, color, and density of the foliage; the amount of deadwood within the canopy; bud viability; evidence of wound closure; and the presence or evidence of stress, disease, nutrient deficiency, and insect infestation. The structural rating reflects the trunk and branch configuration; canopy balance; the presence of included bark and other structural defects such as decay; and the potential for structural failure. Photographs of the site are included in Attachment B.

## CONCLUSION AND RECOMMENDATIONS

The project footprint contains oak woodland canopy with an understory of annual grass species and a small area of lava cap. Various plant species such as bulbous bluegrass (*Poa bulbosa*), German knotgrass (*Scleranthus annuus*), and needle goldfields (*Lasthenia gracilis*) were observed on the lava cap. Coast live oak (*Quercus chrysolepis*) and interior live oak (*Quercus wislizeni*) are found in the southern portion of the project area, while Himalayan blackberries (*Rubus armeniacus*), gray pine (*Pinus sabiniana*), and common spikerush (*Eleocharis macrostachya*) were observed on the fringes of the northwestern part of the project footprint. Note that there is a drainage and associated wetland vegetation along the northeastern portion of the site. While the purpose of this study was not to map wetlands, this area is within the Study Area and immediately adjacent to project elements.

A total of 10 oak trees (tree tags #51-60) were inventoried in or overhanging the Study Area, including six canyon live oaks, three interior live oaks, and one gray pine. Eight of the ten trees are in good to fair health, while two are recommended for removal (Tree #53 and #59) due to extensive cavities and/or extensive limb failures.

Overall, the project will have minimal impacts on the oak canopy present in or overhanging the project footprint and will not affect oak canopy connectivity. Construction of the lease area may minimally impact the canopy and root zone of Trees #53, #54, and #60. Since the impact is expected to be less than 20 percent of the tree's critical root zone, it is not expected to cause the trees to decline, therefore no mitigation should be required. No oak trees will be removed for the construction of the facilities in the lease area. Pruning may be required for trees along the access road and around the lease area for construction access. Any required tree pruning should be conducted consistent with ISA standards. Tree data is included in Attachment A.

Letter to John Rea  
April 5, 2024

Page 5 of 5

Please do not hesitate to call me at (916) 435-1205 or e-mail me at [MarisaB@helixepi.com](mailto:MarisaB@helixepi.com) if you have any questions about this report.

Sincerely,



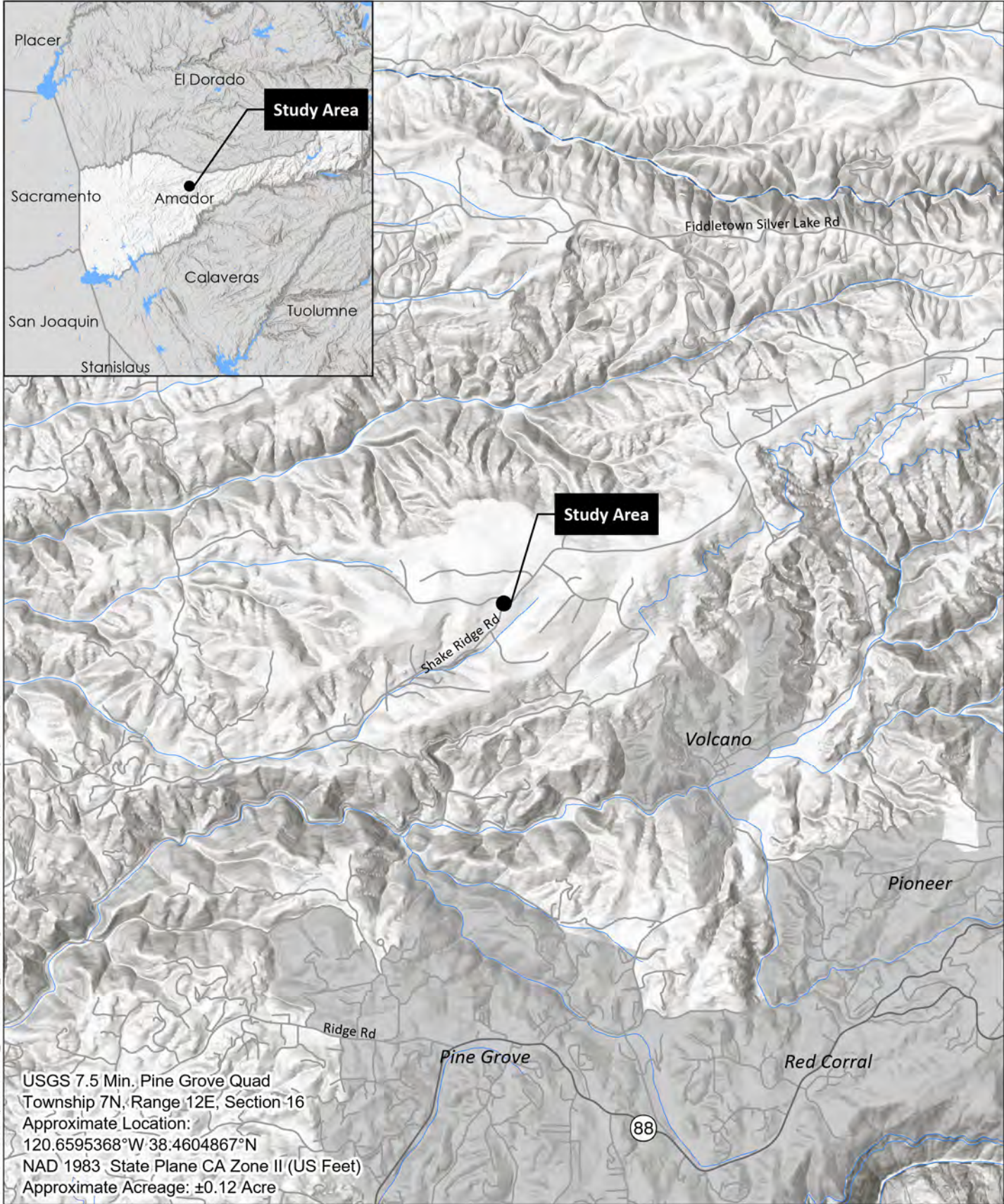
Marisa Brilts  
ISA-Certified Arborist WE-13338A

**Attachments:**

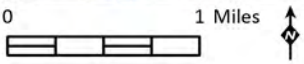
- Figure 1: Site and Vicinity Map
- Figure 2: Approximate Oak Tree Locations
- Attachment A: Oak Tree Data
- Attachment B: Representative Site Photos

# Figures

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T:\PROJECTS\CompleteWireless\_04335\00010\_ShakeRidgeTelecomm\ArborCul\Map\ShakeRidge.aprx 4/5/2024

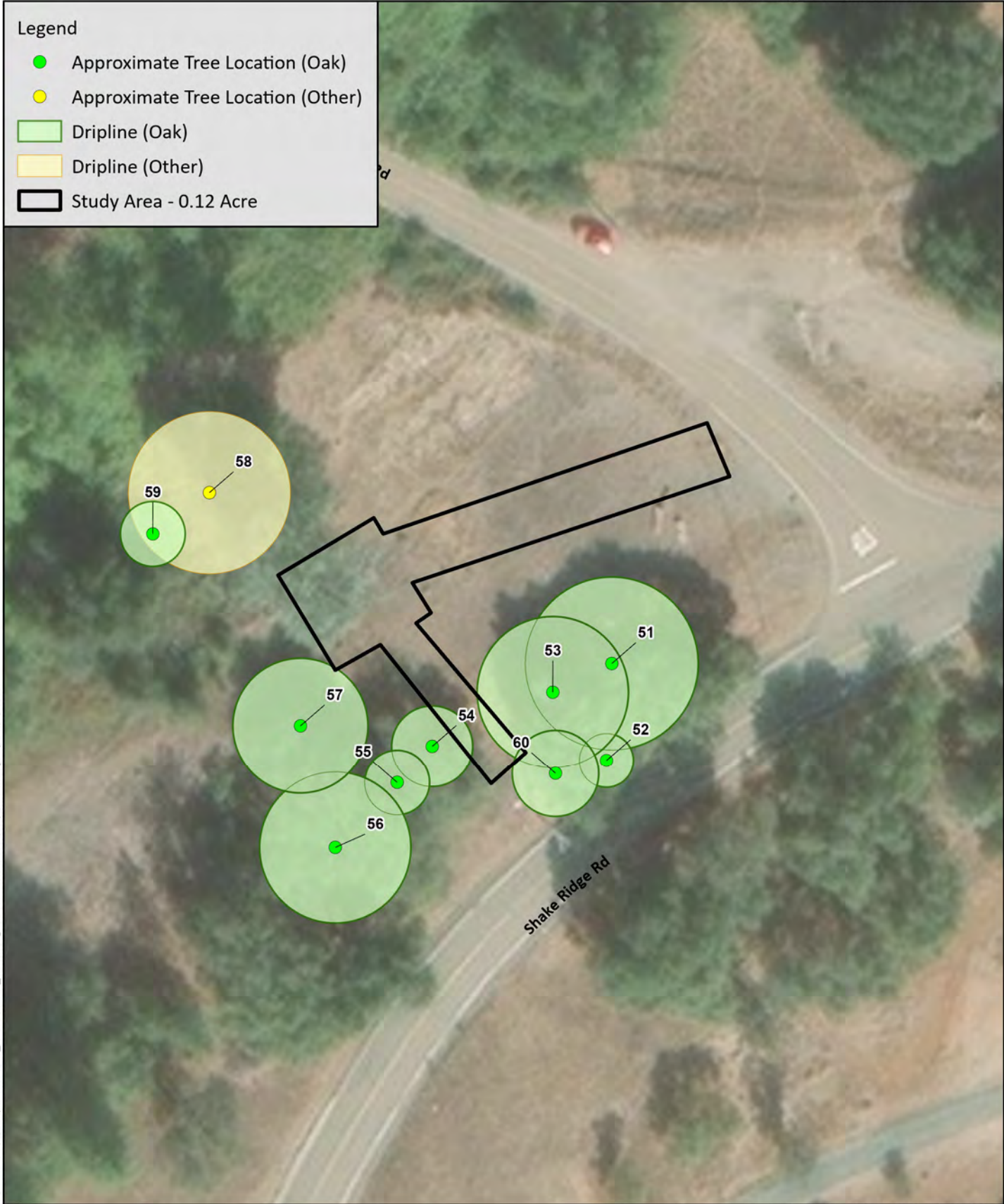


Source: Base Map Layers (Esri, USGS, NGA, NASA)



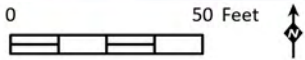
Legend

- Approximate Tree Location (Oak)
- Approximate Tree Location (Other)
- Dripline (Oak)
- Dripline (Other)
- Study Area - 0.12 Acre



T:\PROJECTS\CompleteWireless\_04335\00010\_ShakeRidgeTelecommArborCul\Map\ShakeRidge.aprx 4/5/2024

Source: Aerial (DigitalGlobe, 10/16/2023)



# Attachment A

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Tree Data

Tree #	Species	number of Trunks	DBH (in)	Dripline (ft)	Height (ft)	Condition	Structure	Impacts	Notes
51	Canyon live oak <i>Quercus chrysolepis</i>	4	22, 16, 14.2, 11.8	32	40	GF	GF	None	engulfed barbed wire fencing, good compartmentalization of decay, codominant leader
52	Interior live oak <i>Quercus wislizeni</i>	1	6.4	10	18	GF	F	None	lean due to growing in the understory of tree 51
53	Canyon live oak <i>Quercus chrysolepis</i>	4	14.2, 11.5, 10.8, 8	28	35	FP	F	None	<b>Recommended for removal</b> , extensive ground squirrel burrows at base, Multiple large cavities a base and at 4 and 8 feet
54	Canyon live oak <i>Quercus chrysolepis</i>	6	13.5, 8, 4.6, 4.3, 5, 4	15	18	F	F	Minor	dieback, codominant leader, minor epicormic sprouts
55	Canyon live oak <i>Quercus chrysolepis</i>	1	6	12	16	GF	F	None	lean
56	Canyon live oak <i>Quercus chrysolepis</i>	1	26.5	28	30	GF	GF	None	minor dieback
57	Canyon live oak <i>Quercus chrysolepis</i>	3	14, 16.2, 15.8	25	30	F	F	None	keyhole growth, crossing limbs, dieback, codominant leaders
58	Gray pine <i>Pinus sabiniana</i>	1	34	30	45	GF	GF	None	codominant leaders, minor lean
59	Interior live oak <i>Quercus wislizeni</i>	1	8	12	18	P	P	None	<b>Recommended for removal</b> , extensive limb failure of lateral limb, unbalanced canopy
60	Interior live oak <i>Quercus wislizeni</i>	2	16.8, 15.9	16	25	F	F	None	engulfed barbed wire fencing, good compartmentalization of decay, codominant leader

Health and Structure Condition Ratings:

G=Good

GF=Good Fair

F=Fair (dead branches, burns, rot, insects etc.; but will survive more than 5 years)

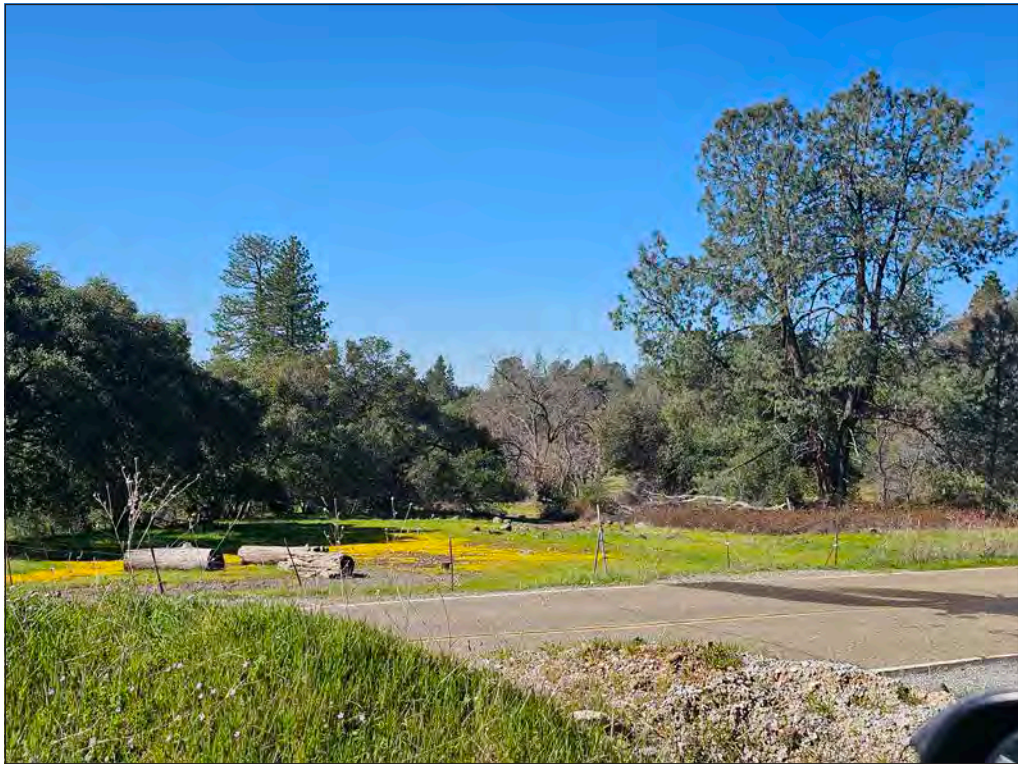
FP =Fair-Poor

P=Poor (likely to die within 5 years)

# Attachment B

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Representative Site Photos



Description: Overview of the site. Photo taken from Hale Road facing east.



Description: View of lava cap and oak woodland adjacent to Shake Ridge Road. Photo taken from the central portion of the Project site.

M:\PROJECTS\C\CompleteWireless\_04335100010\_ShakeRidgeTelecommArborCul\_Reports\Photo Page



Description: View of saturated soil, common spikerush, and gray pine pine cones located on the fringe of the Project footprint in northwestern section.



Description: View of tree #51, canyon live oak leaves and acorn.

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Description: View of tree #58, gray pine overhanging a portion of the northwestern section of the Project.



Description: View of large cavity at base of tree #54.

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# COMMENTS





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## TAC Project Referral - UP-24;4-1 Verizon Wireless - Completeness

---

katherine mokeriver.com <katherine@mokeriver.com>  
To: Ruslan Bratan <rbratan@amadorgov.org>

Thu, Apr 18, 2024 at 4:38 PM

Hi, Ruslan: Thanks for sending. I'm a Verizon customer who lives fairly close to this proposed location, so definitely not averse to better local cell service.

A few comments:

Nothing on that site in near view is anywhere close to 90-feet tall, the described height of the cell tower. The unnatural look of "monopine" towers and the out-of-scale height is going to stick out like a sore thumb shouting, "fake tree" in a rural residential area characterized by relatively small homes and outbuildings.

Also, is there some other design that wouldn't be so obviously a fake tree, and that might also not shed microplastics on the ground below it?

You might want to have the applicants re-do their photo simulations, too. If you look at the simulation on page 26 of the PDF, it's really clear that the fake monopine in the simulation is nowhere near 90-feet tall. Compare it to the height of the stop sign, which is probably about 8' tall. It's too short in the other photos, too.

I'm also attaching a Google Maps Earth View angle the applicant did not show – from Hale Road driving toward Shake Ridge, looking directly at the site. It shows the Gray Pine that is present in some of the applicant's images. I'd roughly estimate the height of that tree as 40-50 feet. Sticking a 90-foot tower on that site is not going to blend in with the rural environment.

I'll look more at the site options if I have time, but there are places on ridgetops with treeline in the area where a 90-foot tall tower wouldn't be so visually obvious when seen from the roadways.

Thanks,  
Katherine

---

**From:** Amador County Planning Department <planning@amadorgov.org>  
**Sent:** Thursday, April 18, 2024 3:58 PM  
**Subject:** TAC Project Referral - UP-24;4-1 Verizon Wireless - Completeness

[Quoted text hidden]



Screenshot 2024-04-18 at 4.26.48 PM.png  
5324K

Search Google Maps



19499 Hale Rd

Volcano, California

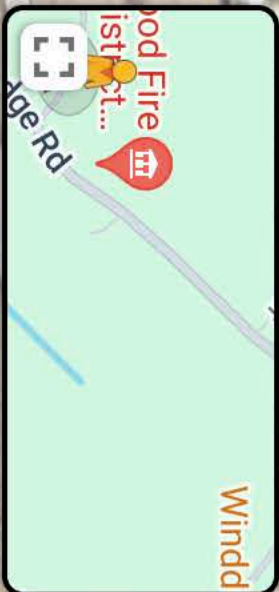


Google Street View



Jun 2023

See more dates



Windd

Google





Ruslan Bratan <rbratan@amadorgov.org>

---

## TAC Project Referral - UP-24;4-1 Verizon Wireless - Completeness

---

katherine mokeriver.com <katherine@mokeriver.com>  
To: Ruslan Bratan <rbratan@amadorgov.org>  
Cc: "dondowell@yahoo.com" <dondowell@yahoo.com>

Mon, Apr 22, 2024 at 10:21 AM

Thank you, Ruslan. I wish I had one of those scopes that foresters use to measure tree height, but I'm reasonably sure the scale in those photos is off. Maybe there's some way to figure it out in Google Earth Pro, but my Earth skills are pretty weak.

Back when I helped draft the very first county cell tower ordinance, I was commuting, so on the road a lot. It gave me time to think about what makes a tower stand out from its surrounding, and I concluded that it was largely a matter of color, shape and scale.

I can spot those fake tree antennas quite easily because they really do not look like any of the trees that grow here, and they're often far taller than the treeline seen from a road. I also understand that they can be a source of microplastic pollution.

Another important consideration I didn't think about for this one – and please pass it on to TAC: Lockwood Fire Protection District's Station 152 is located on the corner of Shake Ridge and Hale, across from this parcel. It is the local landing site for medical helicopters. A 90-foot tower in that location might be problematic from that perspective. LFPD should be notified of the application so they can weigh in. I'm cc'ing one of the directors here.

Thanks,  
Katherine

---

**From:** Ruslan Bratan <rbratan@amadorgov.org>  
**Sent:** Monday, April 22, 2024 10:03 AM  
**To:** katherine mokeriver.com <katherine@mokeriver.com>  
**Subject:** Re: TAC Project Referral - UP-24;4-1 Verizon Wireless - Completeness

Hi Katherine,

I'll pass along your comments to the applicant, TAC, and will attach them as comments in the file.

All the best,

**Ruslan Bratan**

Planner | Amador County Planning Department

810 Court Street, Jackson, CA 95642

rbratan@amadorgov.org | (209) 223-6332



---

**AMA-88-PM 22.96 Verizon Wireless WiFi Use Permit (UP-24:4-1) Tower Marty and Antoinette/Pinnacles Cellular Inc**

2 messages

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**Bauldry, Paul@DOT** <paul.bauldry@dot.ca.gov>  
To: Amador County Planning Department <planning@amadorgov.org>  
Cc: "Ponce, Gregoria@DOT" <gregoria.ponce@dot.ca.gov>

Tue, Apr 30, 2024 at 7:12 AM

Hello Ruslan,

California Department of Transportation (Caltrans) appreciates the opportunity to review and comment on the application for a Conditional Use Permit (UP-24:4-1).

The proposed project is located at 19585 Shake Ridge Rd, Volcano, approximately 7.48 miles from State Route (SR) 88. The Assessor's Parcel Number (APN) is 021-390-006.

Based on the description, the proposed project will not impact SR 88.

Caltrans has no additional comments. However, Caltrans requests to be included in the review process for any improvements to the encroachment on SR 88.

Let me know if you have any questions.

Respectfully,

**Paul Bauldry**

Caltrans District 10

Office of Rural Planning

Division of Planning, Local Assistance, and Environmental

1976 E. Dr. Martin Luther King Jr Blvd.

[Stockton CA 95205](#)

Telework # 209.670.9488

---

**Amador County Planning Department** <planning@amadorgov.org>  
To: "Bauldry, Paul@DOT" <paul.bauldry@dot.ca.gov>  
Cc: "Ponce, Gregoria@DOT" <gregoria.ponce@dot.ca.gov>

Tue, Apr 30, 2024 at 8:21 AM

Received, thank you.

Best,  
Ruslan

Amador County Planning Department  
810 Court Street  
Jackson, CA 95642  
(209) 223-6380  
[planning@amadorgov.org](mailto:planning@amadorgov.org)



---

## Public comment re permit request for possible Verizon tower install at Shake Ridge & Hale, Volcano

1 message

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**Carla Bowers** <carlab@volcano.net>  
To: planning@amadorgov.org

Wed, May 1, 2024 at 8:13 AM

I am a resident on Buckeye Drive about 1/2 mile as the crow flies from where that proposed tower may be installed. A question & a few points:

- 1) Is the proposed installation 4G or 5G?
- 2) I think the proposed location is too close to the Lockwood Fire Protection District Helipad right across the street (Hale).
- 3) I personally am in opposition to the proposed location because of the negative health affects of cell tower radio frequency EMF waves pulsing through our local atmosphere & into our bodies/brains, as well as into other animals, insects & plants. I moved out of the suburbs/city into the country to get away from the excessive radio frequency EMFs, pollution, lights, noise, etc. Please see attached 3 articles on the health dangers of radio frequency microwave radiation & 5G millimeter waves compared to 4G. Health & safety affects of this proposed tower must be part of the evaluation process. Substituting our health for convenience & speed is not an option in my book.
- 4) I think all the neighbors within close proximity to the proposed tower should be notified for their comments, i.e. residents nearby on Shake Ridge, Hale, Buckeye, Charleston, Lomo Ranchos Rd, & Mella Dr. They should be given full disclosure of the potential health hazard affects of a nearby cell tower in such notification.
- 5) I would recommend a location on a larger parcel of land of at least 100 acres & not so close to a concentration of residents as our area here near Shake Ridge & Hale.

Sincerely, Carla Bowers  
Volcano, CA

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### 3 attachments

**landmark-5g-study-highlights-health-threats-pdf.pdf**  
292K

**5g-health-hazards-pdf.pdf**  
108K

**5g-rollout-pdf.pdf**  
170K

# Landmark 5G Study Highlights Health Threats

Analysis by [Dr. Joseph Mercola](#) ✓ Fact Checked

## STORY AT-A-GLANCE

- › Newest data from the New Hampshire legislative commission confirms wireless technology produces significant negative effect on humans, animals, insects and plants
- › In the race for hyperfast internet speed and connectivity, experts are making comparisons between the release of 5G and the lies told by the tobacco and oil industries
- › The structure required to support 5G will place cell antenna ports close to your home and workplace, making it nearly impossible to avoid and raising your risk of excessive oxidative stress that may lead to anxiety, depression and Alzheimer's
- › It is important to get involved in helping to prevent implementation of 5G by contacting your local lawmakers and signing local petitions. Consider taking steps in your home to reduce exposure

**This article was previously published December 16, 2020, and has been updated with new information.**

Flying under the radar, so to speak, during the media coverage of the COVID-19 pandemic, is the rollout of a hyperfast speed 5G wireless network. As millions of Americans are suddenly working remotely, it has proven to be a powerful opportunity for regulators to move 5G forward. Yet, in the face of expanding wireless connections, a landmark study recommends reducing exposure.

Despite concern by many experts, the implementation is moving forward under the guise of bringing a faster and more efficient internet, at any cost. The term 5G stands for the fifth generation of wireless access, which Jonathon Adelstein, head of the Wireless Infrastructure Association, characterizes as "4G on steroids."<sup>1</sup> The association represents nearly 200 companies in the telecommunications industry.<sup>2</sup>

However, Adelstein's characterization of 4G on steroids is not quite accurate. While the 4G network uses under 6 gigahertz (GHz) on the radio frequency spectrum, 5G will occupy from 30 GHz to 300 GHz, which are shorter millimeter wavelengths.<sup>3</sup> The health effects of consistent exposure to pulses of these wavelengths have not been thoroughly studied, but the initial evidence shows it is likely dangerous.

If faster speed and reliability are truly the end goals, then fiber optic connections are a far better and safer way forward. It's not the faster speeds of 5G that are of concern to scientists but, rather, the distribution of wireless data when in most cases it could be routed more easily and less expensively over fiber optic cables.

## **Newest Data Confirm Past Evidence**

Following the passage of New Hampshire House Bill 522, the New Hampshire legislative Commission to Study the Environmental and Health Effects of Evolving 5G Technology was formed.<sup>4</sup> The commission was engaged to "study the environmental and health effects of 5G wireless technology in 2019."<sup>5</sup>

The commission was made up of 13 members whose education included epidemiology, occupational health, toxicology, physics, engineering electromagnetics and a representative from the wireless industry. As quoted from EMF Safety Network, the commission was asked to answer eight pointed questions, including:<sup>6</sup>

- Why thousands of peer-reviewed radiofrequency (RF) studies that show a wide range of health effects, including DNA damage, brain and heart tumors, infertility and many other ailments, have been ignored by the Federal Communication Commission (FCC)

- Why the FCC guidelines do not account for health effects of wireless technology
- Why the FCC RF limits are 100 times higher than those in other countries
- Why the FCC is ignoring the World Health Organization classification of wireless as a possible carcinogen
- Why, when the world's leading scientists signed an appeal to protect public health from wireless radiation, nothing has been done

The commission heard from experts and ultimately all except the telecommunication representative acknowledged that RF radiation coming from wireless devices had an effect on humans, animals, insects and plants. The commission wrote:<sup>7</sup>

*"There is mounting evidence that DNA damage can occur from radiation outside of the ionizing part of the spectrum. The Commission heard arguments on both sides of this issue with many now saying there are findings showing biological effects in this range. This argument gets amplified as millimeter waves within the microwave range are beginning to be utilized."*

Their first recommendation was "an independent review of the current RF standards of the electromagnetic radiation in the 300MHz to 300GHz microwave spectrum" to assess the health risks that were linked to cellular communications.<sup>8</sup>

The remaining recommendations included those that would reduce an individual's exposure to the 5G network and increase the public's knowledge and awareness of their exposure.

Included was a shorter minority report written by the business and industry representative and the telecommunications representative, who were not in agreement with the majority of experts. The EMF Safety Network wrote, "This minority report parrots the language of the telecommunications industry and exposes their agenda to ignore science and continue to confuse the public."<sup>9</sup>

## **Safety Is Taking a Backseat to Speed**



In much the same way the tobacco industry convinced the public that smoking was not dangerous, so is the telecommunications industry selling the public on speed over safety. In the interview above with Greater Earth Media, IT professional Jon Humphrey made the glaringly obvious comparison between the actions of telecommunication, tobacco and leaded gas industries, saying:<sup>10</sup>

*"So, they know the technology is dangerous and that's why they're just trying to get as much of it out there as they can before they're finally held accountable. Sadly, we've seen this all before.*

*We saw it with big tobacco, we saw it with leaded gas and in every single case the big corporations did what they always do – they lied and then they paid off politicians and they paid scientists and they silenced people and discredited them and sadly they did get away with a lot of it and that's what we need to make sure doesn't happen with 5G."*

The promise is that speeds will be from 10 to 100 times faster than 4G running primarily on millimeter-wave (MMW) bandwidth. According to EMF coach and author Lloyd Burrell, the signals will likely be weaker since the wavelengths do not penetrate buildings and tend to be incorporated into rain and plants. To adjust, the 5G network will use:<sup>11</sup>

*"... smaller cell stations (and the technology of beamforming) that'll scramble/unscramble and redirect packets of data on a no-interference path back to us. This could mean wireless antennas on every lamp post, utility pole, home and business throughout entire neighborhoods, towns and cities."*

This requires a new infrastructure mounting 5G cell stations on existing structures, such as utility poles. During U.S. Senate hearings on the topic, when asked about the safety studies on these small cell stations, representatives from the industry stated they were not aware if any such studies existed.<sup>12</sup>

This led Sen. Richard Blumenthal, D-Conn., to say, "So there really is no research ongoing. We're kind of flying blind here." An article published in Scientific American by Joel M. Moskowitz, Ph.D., director for the Center for Family and Community Health in

the School of Public Health at the University of California, Berkeley, identified another challenge:<sup>13</sup>

*"5G will not replace 4G; it will accompany 4G for the near future and possibly over the long term. If there are synergistic effects from simultaneous exposures to multiple types of RFR, our overall risk of harm from RFR may increase substantially. Cancer is not the only risk as there is considerable evidence that RFR causes neurological disorders and reproductive harm, likely due to oxidative stress."*

## **How Is 5G Different From 4G?**

As explained in this video by IEEE Spectrum, part of a large organization devoted to engineering, there are several differences between 4G and 5G technology. Considering there are already many who struggle with electromagnetic hypersensitivity, saturating cities and suburban areas with additional radio frequencies will only add to this once rare affliction.

One of the significant problems with the technology is that it relies primarily on MMW, which is known to penetrate human tissue up to 2 millimeters, where it is absorbed by the surface of the cornea and is conducted by sweat glands within the skin.<sup>14</sup> Each of these factors leads to an association with a number of potential health problems.

For example, the U.S. Department of Defense (DOD) is using MMW in crowd control weapons called the Active Denial System because it produces a severe burning sensation. The DOD writes, "The Active Denial System generates a focused and very directional millimeter-wave radio frequency beam."<sup>15</sup>

MMW is also known to suppress your immune function<sup>16</sup> and increase cellular stress, harmful free radicals, learning deficits<sup>17</sup> and, potentially, bacterial antibiotic resistance.<sup>18</sup> There is nothing to suggest that 5G will produce less harm than the current technology, and there are thousands of studies demonstrating the harmful effects from that.

Research by Martin Pall, Ph.D., details how excessive oxidative stress triggered by microwave exposure from wireless technology can lead to reproductive harm and neurological disorders such as anxiety, depression, autism and Alzheimer's.<sup>19</sup>

## **Without the Choice to Opt-Out, What Can You Do?**

Once it's installed in your neighborhood, you won't have a choice to opt out of 5G exposure. "5G will be virtually everywhere, with the options of being able to simply "get away from it" being very limited as millions of small cell devices are rolled out," Humphrey says.<sup>20</sup>

There's no doubt in my mind that microwave radiation from wireless technologies is a significant health hazard that needs to be addressed if you're concerned about your health. Unfortunately, the rollout of 5G will make remedial action difficult, which is why we all need to get involved and do what we can to prevent it in the first place, such as contacting your local lawmakers and signing local petitions.

Below are several suggestions to help reduce your exposure and mitigate the damage from wireless technology.

Identify major sources of EMF in your home, such as your cellphone, cordless phones, Wi-Fi routers, Bluetooth headsets and other Bluetooth-equipped items, wireless mice, keyboards, smart thermostats, baby monitors, smart meters and the microwave in your kitchen. Ideally, address each source and determine how you can best limit their use.

Barring a life-threatening emergency, children should not use a cellphone or a wireless device of any type. Children are far more vulnerable to cellphone radiation than adults due to having thinner skull bones and developing immune systems and brains.

Research also demonstrates that infants under the age of 1 do not effectively learn language from videos, and do not transfer what they learn from the iPad to the real

world, so it's a mistake to think electronic devices provide valuable educational experiences.<sup>21</sup>

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Connect your desktop computer to the internet via a wired Ethernet connection and be sure to put your desktop in airplane mode. Also avoid wireless keyboards, trackballs, mice, game systems, printers and portable house phones. Opt for the wired versions.

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If you must use Wi-Fi, shut it off when not in use, especially at night when you are sleeping. Ideally, work toward hardwiring your house so you can eliminate Wi-Fi altogether. If you have a notebook without any Ethernet ports, a USB Ethernet adapter will allow you to connect to the internet with a wired connection.

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Avoid using wireless chargers for your cellphone, as they too will increase EMFs throughout your home. Wireless charging is also far less energy efficient than using a dongle attached to a power plug, as it draws continuous power (and emits EMF) whether you're using it or not.

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Shut off the electricity to your bedroom at night. This typically works to reduce electrical fields from the wires in your wall unless there is an adjoining room next to your bedroom. If that is the case, you will need to use a meter to determine if you also need to turn off power in the adjacent room.

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Use a battery-powered alarm clock, ideally one without any light. I use a talking clock for the visually impaired.<sup>22</sup>

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If you still use a microwave oven, consider replacing it with a steam convection oven, which will heat your food as quickly and far more safely.

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Avoid using "smart" appliances and thermostats that depend on wireless signaling. This includes all new "smart" TVs as they emit a Wi-Fi signal and, unlike your computer, you cannot shut the Wi-Fi signal off. Consider using a large computer monitor as your TV instead, as they don't emit Wi-Fi.

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Refuse a smart meter on your home as long as you can, or add a shield to an existing smart meter, some of which have been shown to reduce radiation as much as 98%.<sup>23</sup>

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Consider moving your baby's bed into your room instead of using a wireless baby monitor. Alternatively, use a hard-wired monitor.

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Replace CFL bulbs with incandescent bulbs. Ideally remove all fluorescent lights from your house. Not only do they emit unhealthy light, but more importantly, they transfer current to your body just being close to the bulbs.

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Avoid carrying your cellphone on your body unless in airplane mode and never sleep with it in your bedroom unless it is in airplane mode. Even in airplane mode it can emit signals, which is why I put my phone in a Faraday bag.<sup>24</sup>

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When using your cellphone, use the speaker phone and hold the phone at least 3 feet away from you. Seek to radically decrease your time on the cellphone. Instead, use VoIP software phones that you can use while connected to the internet via a wired connection.

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Avoid using your cellphone and other electronic devices at least an hour (preferably several hours) before bed, as the blue light from the screen and EMFs both inhibit melatonin production.<sup>25,26</sup> If you must use your phone make sure you have the blue light filters activated and have it in dark mode.

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The effects of EMFs are reduced by calcium-channel blockers, so make sure you're getting enough magnesium. Most people are deficient in magnesium, which will worsen the impact of EMFs.

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Pall has published a paper suggesting that raising your level of Nrf2 may help ameliorate EMF damage.<sup>27</sup> One simple way to activate Nrf2 is to consume Nrf2-boosting foods, such as cruciferous vegetables and fermented foods and beverages.<sup>28</sup>

Exercise, calorie restriction (such as intermittent fasting) and activating the nitric oxide signaling pathway (one way of doing that is the Nitric Oxide Dump exercise) will also raise Nrf2.

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## Siim Land Interviews Dr. Mercola About 'EMF\*D'

Analysis by [Dr. Joseph Mercola](#)

✓ Fact Checked

December 27, 2022

### STORY AT-A-GLANCE

- › Electromagnetic fields (EMFs) cause massive mitochondrial dysfunction, thus raising the risk for, and worsening, chronic and degenerative diseases
- › A perfect storm of DNA and cellular protein and membrane destruction is created when you aren't burning fat for fuel (which creates excess superoxide) and then get exposed to EMFs
- › By creating doubt and controversy, the wireless industry effectively prevents the public from knowing the truth and demanding safer products. Another wireless industry strategy that prevents the problem from becoming public knowledge is the capturing of our federal regulatory agencies
- › Elon Musk's Starlink project, which was slated to deploy up to 42,000 satellites into orbit around the earth, will blanket the entire planet with 5G internet frequencies. You won't be able to escape it
- › Based on the studies already done on previous generations of wireless, we know it's harmful, and 5G is only going to make matters worse, as it will dramatically increase our exposures

I was recently interviewed by Siim Land about my new book, "EMF\*D," described by Siim as "the most comprehensive guide ... to everything you need to know about EMF."

In it, I explain what electromagnetic fields (EMFs) are, the different types of EMFs you're exposed to, the harms associated with exposure, the concerns surrounding 5G and,

ultimately, how to protect yourself and limit your exposure.

As I explain in the interview, the thing that catalyzed me to write "EMF\*D" was my deep appreciation of the impact of mitochondrial function in health and disease. Once I realized how EMFs impact mitochondrial function – because it's very clear that EMF causes massive mitochondrial dysfunction – the danger our wireless society poses became very clear to me.

I also read a study<sup>1</sup> stressing the importance of mitochondrial numbers for improving senescent cells – cells that are, in a manner of speaking, "senile" and have stopped reproducing properly. Instead, senescent cells produce inflammation, contributing to old age and, ultimately, death.

The fewer mitochondria you have, and the more dysfunctional they are, the faster you'll age and the more prone you'll be to chronic degenerative disease. By inducing mitochondrial dysfunction, our wireless world may well be driving us all into an early grave.

## **Cellphone Industry Hides Truth by Manufacturing Doubt**

Considering the research data now available, you'd think everyone would understand and accept the fact that EMF is a serious health danger, yet many are still completely in the dark. With "EMF\*D," I hope to help more people understand this biological threat.

In 2011, the World Health Organization's International Agency for Research on Cancer (IARC) classified radiofrequency EMFs as "possibly carcinogenic to humans."<sup>2</sup> Then, in 2018, the U.S. National Toxicology Program published two lifetime exposure studies conclusively showing [cellphone exposure causes cancer](#).

The NTP's findings were also duplicated by the Italian Ramazzini Institute just a couple of months later. In the wake of these studies, Fiorella Belpoggi, principal investigator and director of the Ramazzini Institute, urged the IARC to upgrade RF-EMF to "probably carcinogenic" or higher.<sup>3</sup>



Now, just like smoking cigarettes, EMF exposure takes decades before its effects become evident (and even then, the health problem might not be directly linkable to EMF exposure), and this is a significant part of the problem as it allows the telecom industry to – just like the tobacco industry before it – whitewash concerns, manipulate research and prevent proper safety studies from being done.

There's no doubt cellphone manufacturers are aware that EMFs from cellphones contribute to health problems, though. The evidence has been published for decades, and new research is constantly being added.

However, by downplaying positive findings and saying that findings of harm are inconclusive – in other words, by creating doubt and controversy – they effectively prevent the public from knowing the truth and demanding safer products.

## **Wireless Industry Is Even Worse Than the Tobacco Industry**

Another wireless industry strategy that prevents the problem from becoming public knowledge is the capturing of our federal regulatory agencies, which the tobacco industry wasn't even capable of.

The U.S. Environmental Protection Agency, the Surgeon General and the Centers for Disease Control and Prevention all warned people about smoking, yet the tobacco industry continued successfully selling cigarettes for another 20 or 30 years. The wireless industry, on the other hand, has captured the federal regulatory agencies, which prevents those warnings from being issued in the first place.

For example, the chief lobbyist for the wireless industry, Tom Wheeler, was appointed by President Obama to be the head of the Federal Communications Commission, which is a most egregious example of the fox guarding the hen house. Not surprisingly, then, in December 2019 the FCC announced they're going to fund rural 5G deployment to the tune of \$9 billion!<sup>4</sup>

The telecom industry has engaged in a vast and illegal fraud where, for decades, basic telephone rate payers – wire line customers – have funded the deployment of wireless

in general, and now 5G in particular, through their phone bills.

This illegal redirection of funds amounts to about \$1 trillion over the past 15 years, and without this money, 5G would not have been possible in the first place. Were the wireless industry forced to pay its fair share of infrastructure costs, 5G simply wouldn't be economically feasible as a consumer product.

## **What's so Great About 5G?**

What exactly is 5G and why do some people want it? In short, it's all about improving speed. Compared to 4G, 5G is 100 times faster. On a side note, you can determine what your bandwidth is by pulling up fast.com on your cellphone's browser. If you're on 4G, your bandwidth is probably not going to exceed 10 megabytes per second (mb/s). If you're on 5G, it's going to be between 500 and 800 mb/s.

So, the primary benefit of 5G is noticeably faster speed. The vast majority of people simply don't need this kind of bandwidth, but it has great applications for commercial uses such as self-driving cars.

The problem is, 5G may end up making the earth uninhabitable for many who are already struggling with electrosensitivity, and the countless others for whom 5G may prove to be the thing that tips them over the edge into electrohypersensitivity syndrome.

Elon Musk's Starlink project, which was slated to deploy up to 42,000 satellites into low earth orbit, will blanket the entire planet with 5G internet. You won't be able to escape it, no matter how far into the wilderness you go.

## **5G Is a Prescription for Biological Disaster**

Then there are the long-term dangers of 5G, which we still do not have a complete picture of. There has not been a single safety study done on 5G. Studies using 2G, 3G and 4G, however, including the NTP and Ramazzini studies, clearly show there's cause for concern.

5G is more complex, as it uses a variety of frequencies, which makes it a potentially greater threat. The frequency of 4G is typically around 2 to 5 gigahertz (GHz), while 5G will be around 20 to 30 GHz, initially.

Eventually, it may go as high as 80 GHz, which will cause problems for people trying to remediate exposures because there are currently no inexpensive meters that can measure frequencies that high.

Based on the studies already done on previous generations of wireless, we know it's harmful, and 5G is only going to make matters worse, as it will dramatically increase our exposures. 5G requires what essentially amounts to a mini cellphone tower outside every fifth or sixth house on every block.

We also have studies showing the impact of millimeter waves, which is what 5G is using, on insects, animals and plants, and those hazards are well-documented. So, it doesn't just pose a problem for human health, but for the ecosystem as a whole.

Martin Pall, Ph.D., wrote an excellent paper explaining how EMFs affect your voltage gated calcium channels (VGCCs) – channels in the outer plasma membrane of your cells. Each VGCC has a voltage sensor, a structure that detects electrical changes across the plasma membrane and opens the channel. EMFs work through the voltage sensor to activate the channel and radically increase intracellular calcium levels into dangerous ranges.

Similar channels are found in most biological life, including animals, insects, plants and trees. So, flooding the planet with these frequencies will undoubtedly have serious biological consequences across the ecosystem. As such, it's an existential threat to humanity.

One biological consequence is arrhythmia (irregular heartbeat). Other potential consequences include autism and Alzheimer's. Heart and neurological problems top the list because your heart and brain have the greatest density of VGCCs. Men's testes also have a very high density of VGCCs and, indeed, we have evidence showing **EMFs increase men's risk of infertility.**

Everything points to these frequencies being a prescription for biological disaster, and between skyrocketing autism, Alzheimer's and infertility rates, how can a society be sustained? It can't. It will be extinguished.

## **We Don't Need Wireless 5G**

In reality, we can still get the bandwidth of 5G without 5G wireless. The alternative would be to deploy fiber optic cable. It's faster, safer and less expensive.

Unfortunately, the money originally set aside to implement nationwide fiber optics was rerouted and illegally used to build the wireless infrastructure instead. This is why a group called The Irregulars<sup>5</sup> are now suing the FCC to put a stop to the illegal subsidy to the wireless industry.

Wireline customers paid for an upgrade to fast and safe fiber optic wiring across the nation, but now we're getting harmful 5G wireless instead. This lawsuit has the potential to alter the telecommunications industry from the ground up, and may be the "weapon" we need to halt to the 5G rollout in the U.S.

## **The Importance of EMF Avoidance to Protect Your NAD+ Level**

Along with practical remediation strategies, "EMF\*D" also covers things you can do to protect yourself on a biochemical level. A perfect storm of DNA and cellular protein and membrane destruction is created when you aren't burning fat for fuel (which creates excess superoxide) and then get exposed to EMFs.

This causes a radical increase in nitric oxide release that nearly instantaneously combines with superoxide to create enormous levels of peroxynitrate, which triggers a cascade of destructive events to your cellular and mitochondrial DNA, membranes and proteins.

Although all biologic damage is of concern, it is the DNA strand breaks that are most concerning as they will lead to a radical increase in inflammation and virtually all

degenerative diseases.

The good news is your body has the ability to repair this damaged DNA with a family of enzymes called poly ADP ribose polymerase or PARP. It is a very effective repair system and works wonderfully to repair the damage as long as it has enough fuel in the form of NAD<sup>+</sup>.

The bad news is many of us are running low on this fuel. When excess peroxynitrate activates PARP to repair the DNA damage, it consumes NAD<sup>+</sup>, and if you run out, you can't repair the damage. This appears to be a central cause for most of the diseases we now see in the modern world.

Optimizing your NAD<sup>+</sup> levels may be the single most important strategy for improving your mitochondrial health. The first step is to reduce NAD<sup>+</sup> consumption by the correct diet (low in processed foods and net carbohydrates and higher in healthy fats), along with EMF avoidance, as recent research shows NAD<sup>+</sup> levels dramatically drop when exposed to EMFs.

Time restricted eating is also very helpful, as is exercise, both of which are powerful, inexpensive and safe ways to boost your NAD<sup>+</sup> level.

## **Helpful Strategies to Limit EMF Damage**

In "EMF\*D" I also cover the Nrf2 pathway and the importance of minerals such as magnesium to limit the biological damage caused by EMFs. As explained in this interview, upregulating your Nrf2 pathway activates genes that have powerful antioxidant effects, thus helping protect against EMF damage, while magnesium — which is a natural calcium channel blocker — helps reduce the effects of EMF on your VGCCs.

On a side note, molecular hydrogen tablets are an excellent source of ionic elemental magnesium. Each tablet provides about 80 milligrams of ionic elemental magnesium.

# Addressing EMF Pollution – A 21st Century Health Imperative

There's no doubt in my mind that EMF exposure is an important lifestyle component that needs to be addressed if you're concerned about your health, which is why I spent three years writing "EMF\*D."

My aim was to create a comprehensive and informative guide, detailing not only the risks, but also what you can do to mitigate unavoidable exposures. If you know or suspect you might already be developing a sensitivity to EMFs (full-blown hypersensitivity can often strike seemingly overnight), mitigating your exposures will be particularly paramount.

Many sufferers become obsessed with finding solutions, as the effects can be severely crippling. My book can be a valuable resource in your quest for relief.

The EMF Experts website<sup>6</sup> also lists EMF groups worldwide, to which you can turn with questions, concerns and support. Should you need help remediating your home, consider hiring a trained building biologist to get it done right.

Brian Hoyer, a leading EMF expert<sup>7</sup> and a primary consultant for "EMF\*D" also has a company called [Shielded Healing](#) that can provide a thorough analysis of the EMF exposure in your home, and help you devise a remediation plan.

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# Pandemic Bill Mandate Accelerated 5G Rollout

Analysis by [Dr. Joseph Mercola](#)

✓ Fact Checked

March 05, 2023

## STORY AT-A-GLANCE

- › The Secure 5G and Beyond Act (S. 893) and the Broadband Deployment Accuracy and Technological Availability Act (S. 1822) were signed into law in March 2020
- › The duo will accelerate the adoption of 5G, or “5th Generation,” wireless networks across the U.S. – and in so doing, force Americans to receive unprecedented levels of exposure to the millimeter wave (MMW)
- › The COVID-19 pandemic is causing unprecedented numbers of Americans to work and communicate digitally, accelerating the push for widespread 5G networks
- › The U.S. government banned the use of Chinese components in the U.S. 5G network because of surveillance fears, but privacy concerns remain
- › Once installed, you won’t be able to opt out of 5G exposure, so it’s important to voice your concerns to your local officials and vote for those who will protect communities and fight for citizens’ health and safety

### From Dr. Joseph Mercola

Since COVID-19 first entered the scene, exchange of ideas has basically been outlawed. By sharing my views and those from various experts throughout the pandemic on COVID treatments and the experimental COVID jabs, I became a main target of the White House, the political establishment and the global cabal.

Propaganda and pervasive censorship have been deployed to seize control over every part of your life, including your health, finances and food supply. The major media are key players and have been instrumental in creating and fueling fear.

I am republishing this article in its original form so that you can see how the progression unfolded.

*Originally published: April 16, 2020*

In March 2020, with the U.S. reeling from the COVID-19 pandemic, the Secure 5G and Beyond Act (S. 893) and the Broadband Deployment Accuracy and Technological Availability Act (S. 1822) were signed into law.

The duo will accelerate the adoption of **5G**, or “5th Generation,” wireless networks across the U.S. — and in so doing, force Americans to receive unprecedented levels of exposure to the millimeter wave (MMW), which has shown potential to harm human health and the environment.

The 5G act requires the president to develop a strategy to ensure the security of 5G mobile telecommunications systems and infrastructures in the U.S., while assisting “allies and strategic partners” to maximize the security of such systems.<sup>1</sup>

The Broadband act requires the Federal Communications Commission (FCC) to issue rules regarding data collection to ultimately improve the accuracy of maps showing where broadband is available in the U.S.<sup>2</sup>

What’s more, the 5G Act requires the president to consult with the FCC, the Department of Homeland Security, the Department of Defense and other agencies and submit a plan to Congress within 180 days detailing how secure 5G will be implemented.

With millions of Americans suddenly working remotely, it’s an opportune time for regulators to move 5G forward — but it’s a move that has many experts concerned. Still, the legislation is moving forward under the guise of bringing faster internet to Americans, at any cost. The House Energy and Commerce Committee, which is led by chairman Frank Pallone, Jr., said in a statement:<sup>3</sup>

*“The bills signed into law ... by the President are critical to ensuring that all Americans can access broadband and that our networks are secure and trusted. The need for connectivity is even more critical now that millions of Americans*



*are teleworking and learning from home in response to the coronavirus pandemic.*

*We must prepare our networks for the 5G future and ensure federal agencies work together on a comprehensive plan to identify and address security risks in 5G and future wireless technologies – the Secure 5G and Beyond Act requires exactly that ...*

*It's also long past time to fix our nation's faulty broadband maps. Accurately mapping unserved and underserved communities is essential to promoting the deployment of high-speed service to all Americans and ensuring our investments have maximum impact. The Broadband DATA Act will help tremendously with those efforts ..."*

## **Does EMF Exposure Raise Coronavirus Risk?**

In the interview above, Brian Hoyer – one of the primary consultants for my latest book, "EMF\*D" – discusses how electromagnetic field (EMF) radiation may be impacting the COVID-19 epidemic and your infection risk. Many have raised questions about whether there is a connection between 5G and this pandemic.

While unproven, one current theory is that EMF radiation – and the addition of 5G in particular – could be having an impact. Hoyer cites data from Arthur Firstenberg's book, "The Invisible Rainbow,"<sup>4</sup> in which he catalogued epidemiological evidence showing that as electrification of the world was implemented, throughout the course of history, viral pandemics ensued.

To put it simply, poor immune function and ill health combined with environmental stressors such as heightened EMF exposure might create a perfect storm where the virus has an easy way to get into the body and can reproduce faster.

## **Smaller 5G Wavelengths Pose Unprecedented Risk**

In the video below – “5G Beware,” created by Greater Earth Media – three experts discuss the pitfalls of rolling out 5G technology before its effects on humans and the environment are understood. Unlike the “4th Generation” (4G) technology currently in use, which relies on huge 90-foot cell towers with about a dozen antenna ports on each, the 5G system uses “small cell” facilities or bases, each with about 100 antenna ports each.<sup>5</sup>

Expected to be 10 to 100 times faster than 4G technology and capable of supporting at least 100 billion devices,<sup>6</sup> 5G relies primarily on the MMW bandwidth, which is between 30GHz and 300GHz, according to EMF coach and author Lloyd Burrell.<sup>7</sup>

“MMWs ... do not travel well through buildings and they tend to be absorbed by rain and plants. This interferes with the signal. Added to this, high frequency waves like MMWs also have much shorter wavelengths that can’t travel far,” he says.

“To counter this problem 5G will utilize smaller cell stations (and the technology of beamforming) that’ll scramble/unscramble and redirect packets of data on a no-interference path back to us. This could mean wireless antennas on every lamp post, utility pole, home and business throughout entire neighborhoods, towns and cities,” Burrell explains,<sup>8</sup> and herein lies one of its greatest potential problems – and threats to public health.

In “5G Beware,” Atul Deshmane, commissioner of Whatcom County Public Utility District in Washington state, walks down the street with an EMF meter, which shows EMF levels “way above the safe limit” with 4G technology. “If 5G increases this by an order of magnitude, maybe that’s something to be concerned about,” he says.

## **‘This Is Our Generation’s Tobacco’**

Jon Humphrey, a music educator in Bellingham, Washington who has decades of professional IT experience, compared the telecommunications industry to Big Tobacco, stating that 5G technology is our generation’s tobacco. “As usual, 5G, like 4G and 3G

before it, is mostly a marketing term and most of what you're being told isn't accurate," Humphrey says.<sup>9</sup>

The antennae enclosures added to utility poles and lamp posts may not only be eye sores, including antennae enclosures that are up to 6 cubic feet each, but also pose a very real threat to public health. While MMWs have not been widely used before, there are some concerning findings to date, according to Telecom Power Grab, including that sweat ducts in human skin act as antennae when they come in contact with MMWs.<sup>10</sup>

Dr. Linda Goggin, of Feel Good Functional Medicine in Bellingham, also warns in the film that 5G technology will turn us all into lab rats, part of a giant experiment, as no one knows what 5G will do to human health:

*"We are in our infancy in terms of our understanding of what electromagnetic fields do to the body. And we're wondering if it is a problem. We function because of moving currents in our body. That's a basic principle.*

*Nerves function because of the shifts in movement of electric charge. The structure of the water in our body is very important for normal function and that also is affected by charge coming from outside the body. This whole field of the electromagnetic spectrum affects us ... It's got to be studied by scientists."*

## **5G Connection in Areas Hardest Hit by COVID-19**

Interestingly, many of the areas hardest hit by COVID-19 have recently implemented 5G, which might render residents more prone to serious infection by lowering their immune function. Hoyer cited Dr. Thomas Cowan, who brought up a potential connection between 5G and COVID-19 during a March 12, 2020, lecture at the Health and Human Rights Summit in Tucson, Arizona.

While I'm not saying 5G spreads the infection or is a vector of infection, it's possible that it raises your risk by impairing your innate immune system's ability to fight off coronavirus. According to Hoyer:

*"[Cowan] is a top-notch doctor, he's on the cutting edge ... he talks about Wuhan as one of the testing grounds for 5G, where 5G was first implemented in China. And what's interesting about Italy ... is that Milan – the Lombardi area of Italy where two-thirds of the cases are – is considered the 5G capital of the European Union according to Vodafone, which is the big 5G carrier out there ...*

*If you go on Vodafone's website, you can see the 5G map, and it's sprinkled throughout all Milan and Lombardi, that province up there. So that is definitely a more concentrated area.*

*... So, there's 5G in Milan, in Wuhan, and New York City is one of the highest, most intense [5G] areas I've seen, and Seattle ... But 5G doesn't matter so much to me. It's about the intensity of the EMF. New York was basically as intense as a 5G area already, before 5G was implemented, in my opinion. It maxes out all of our meters wherever I go. There are hidden antennas everywhere in New York City.*

*[Seattle] has a lot of hills in the city, and right on Queen Anne, there are two huge radio towers with probably 100 antennas on them, just blasting the whole city. We've had assessments there where we've maxed out [our meters], and even shielded rooms upstairs and it still maxed out."*

## **US Government Spending \$9.7 Billion for 5G C-Band Spectrum**

Part of the U.S. government's plan to fast-track the 5G rollout is an offer of \$9.7 billion in compensation payments to satellite operators to give up their C-band spectrum licenses.

The C-band spectrum (from the 3.7GHz to 4.2GHz band) is currently used by satellite operators but is desirable for the telecom industry as, according to news outlet CommsMEA, "It blends the ability to deliver hyperfast download speeds in excess of 1Gbps with much improved propagation ranges, when compared to higher frequency spectrums."<sup>11</sup>

In a statement, the FCC called this a “critical step in implementing our comprehensive 5G FAST Plan, as it will rapidly put mid-band spectrum into the hands of innovators and consumers and pave the way for the United States to lead the world in 5G deployment.”<sup>12</sup>

## **US Banned Chinese Components Over Fears of Espionage**

Privacy issues are another concern. Already, the U.S. government banned the use of Chinese components in the U.S. 5G network because of surveillance fears.<sup>13</sup> Further, U.S. companies have also been banned from selling computer chips to Huawei Technologies Co., which is producing 5G base stations, citing national security concerns. According to Bloomberg:<sup>14</sup>

*“US officials accuse Huawei of stealing valuable intellectual property and violating a trade embargo with Iran. The Trump administration blacklisted the company last year, saying there’s a risk Huawei could give Beijing access to sensitive data coursing through telecommunications networks that employ its gear.*

*Huawei has denied the allegations. Critics also said the US government imposed the sanctions to hobble China’s leadership in key aspects of 5G technology.”*

The ban hasn’t stopped Huawei, however, which has continued to produce base stations without U.S. components. As of February 2020, Huawei had shipped about 600,000 base stations to mobile phone companies.<sup>15</sup> China has also been fast-tracking their 5G networks and planned to activate more than 130,000 base stations by the end of 2019 in order to support its 5G network.<sup>16</sup>

Now, with people using technology to communicate digitally instead of face-to-face, virtually all communication is being sent through networks manufactured by China. If backdoors used for surveillance are built into 5G base stations, the tracking and surveillance that could result would be unprecedented in scope. According to Humphrey, however, even the race with China to roll out 5G is all smoke and mirrors. He states:<sup>17</sup>

*“We can’t keep up with China on networking including with 5G. Why? Because China manufactures most of the fiber-optic cabling in the world. Fiber isn’t expensive here [in the U.S.], and it’s even less expensive in China. Small cells, like the ones used in 5G, have to be hooked up to fiber-optic cabling and since China installs their fiber in a public manner they can leverage it for use in the most efficient, cost-effective manner possible.”*

Humphrey also states in “5G Beware” that the U.S. is far behind most of the rest of the developed world because it doesn’t have public fiber optics. While it’s sometimes said that 5G will ultimately replace fiber optics, Humphrey says this is laughable, since 5G requires fiber optics. “Fiber optics is safe,” he says, “it just carries light. You might as well just hook directly up to the fiber and have a choice in how much EMF exposure you’re getting.”

## **You Won’t Have a Choice to Opt Out, so What Can You Do?**

Once it’s installed in your neighborhood, you won’t have a choice to opt out of 5G exposure. “5G will be virtually everywhere, with the options of being able to simply “get away from it” being very limited as millions of small cell devices are rolled out,” Humphrey says.<sup>18</sup>

As for lowering your EMF exposure, you can [download a free chapter from my book, “EMF\\*D,”](#) that summarizes most of the major recommendations.

## **Sources and References**

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- <sup>1</sup> [WhiteHouse.gov March 23, 2020](#)
- <sup>2</sup> [CNet March 24, 2020](#)
- <sup>3</sup> [Benton Institute for Broadband & Society March 23, 2020](#)
- <sup>4</sup> [Amazon, The Invisible Rainbow, Arthur Firstenberg](#)
- <sup>5, 6, 7, 8</sup> [Electric Sense May 12, 2017](#)
- <sup>9</sup> [Northwest Citizen October 20, 2018](#)
- <sup>10</sup> [Phys Med Biol. 2011 Mar 7;56\(5\):1329-39](#)
- <sup>11</sup> [ITP.net. March 2, 2020](#)
- <sup>12</sup> [FCC News February 28, 2020](#)

- <sup>13</sup> CNBC March 20, 2020
- <sup>14, 15</sup> Bloomberg March 2, 2020
- <sup>16</sup> BBC News November 1, 2019
- <sup>17, 18</sup> NW Citizen October 20, 2018



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## Additional comment on Verizon proposal at Shake Ridge and Hale

2 messages

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**katherine mokeriver.com** <katherine@mokeriver.com>  
To: Ruslan Bratan <rbratan@amadorgov.org>

Thu, May 9, 2024 at 3:32 PM

Dear Ruslan: I just took a quick look at the tree information provided in the packet. As you can see, none of the trees listed in the woodland report are anywhere close to the proposed height of this tower, reinforcing my earlier assertions that the photo simulations are misleading.

Thanks,  
Katherine Evatt  
Volcano

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**From:** Amador County Planning Department <planning@amadorgov.org>  
**Sent:** Thursday, May 9, 2024 3:23 PM  
**Subject:** Amador County TAC agenda and Zoom link for Thursday, May 16th at 1:00 p.m.

Below is the link to the May 16, 2024 agenda for the Amador County Technical Advisory Committee.  
<https://www.amadorgov.org/Home/Components/Calendar/Event/8215/15>

First time user Zoom Support can be accessed at <https://support.zoom.us/hc/en-us/articles/206175806> - Please familiarize yourself with Zoom before the meeting.

The project applications are being reviewed in the CAC-1 Board Chambers Thursday, May 16th at 1:00 p.m. in the Amador County Administration Center located at 810 Court St., Jackson, CA.

While the Amador County Technical Advisory Committee will be conducting its meeting in person, the public can participate from home by calling in using any of the following numbers:

Meeting ID: 537 512 8983  
One tap mobile  
+16699006833,,5375128983# US (San Jose)  
+13462487799,,5375128983# US (Houston)

Dial by your location  
+1 669 900 6833 US (San Jose)  
+1 346 248 7799 US (Houston)  
+1 253 215 8782 US (Tacoma)  
+1 301 715 8592 US (Germantown)  
+1 312 626 6799 US (Chicago)  
+1 929 205 6099 US (New York)

Meeting ID: 537 512 8983

You may also view and participate in the meeting using this link: <https://us02web.zoom.us/j/5375128983>

The Chairman will call the meeting to order and after TAC input, will invite the public to comment via phone/online to receive public comment. Public comment will also be accepted by email at [planning@amadorgov.org](mailto:planning@amadorgov.org). All emails must be received prior to the start of the meeting.

Thank you!

Amador County Planning Department  
810 Court Street  
Jackson, CA 95642  
(209) 223-6380  
[planning@amadorgov.org](mailto:planning@amadorgov.org)

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**Ruslan Bratan** <rbratan@amadorgov.org>  
To: Planning Department <planning@amadorgov.org>

Thu, May 9, 2024 at 3:33 PM

**Ruslan Bratan**

Planner | Amador County Planning Department

810 Court Street, Jackson, CA 95642

[rbratan@amadorgov.org](mailto:rbratan@amadorgov.org) | (209) 223-6332





Ruslan Bratan <rbratan@amadorgov.org>

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## Additional comment on Verizon proposal at Shake Ridge and Hale

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katherine mokeriver.com <katherine@mokeriver.com>  
To: Ruslan Bratan <rbratan@amadorgov.org>  
Cc: Jackie V <bombadearvn@gmail.com>

Mon, May 13, 2024 at 8:51 AM

Thanks, Ruslan.

A medevac helicopter just used the helispot at LFPD Station 152 yesterday morning. I also spoke to Jackie Vaughan with the Lockwood local emergency radio group when I ran into her yesterday (cc'ing her here). The group intentionally kept their radio tower on the site at 30 feet high so it would not interfere with emergency helicopters.

Did Planning notify LFPD about this project? Seems like that should be part of the TAC process. LFPD does not cover the entire county.

Have a good week,  
Katherine

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**From:** Ruslan Bratan <rbratan@amadorgov.org>  
**Sent:** Monday, May 13, 2024 8:42 AM  
**To:** katherine mokeriver.com <katherine@mokeriver.com>  
**Subject:** Re: Additional comment on Verizon proposal at Shake Ridge and Hale

[Quoted text hidden]