..title
Conduct a noticed public hearing to consider Use Permit U-21-02 by New Cingular Wireless c/o Complete Wireless Consulting to establish a new wireless communication facility located at 5078 Maple Road, east of the City of Vacaville, within the Rural Residential "RR-2.5" Zoning District; APN 0134-270-030. The Department of Resource Management is recommending that the project is exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15303, New Construction of Small Structures.

..body
Public Hearing Required? Yes _X___ No ____
Public Notice Required? Yes _X___ No ____

DEPARTMENTAL RECOMMENDATION:

The Department of Resource Management recommends that the Planning Commission:

1. Conduct a noticed public hearing to consider Use Permit U-21-02; and

2. Adopt a resolution approving U-21-02 subject to the findings and conditions of approval contained in Attachment A.

SUMMARY:

I. EXECUTIVE SUMMARY:

New Cingular Wireless is pursuing a use permit to construct and operate a new wireless communication facility consisting of an 86-foot-tall monopole and associated equipment within a 625 square foot lease area on property located along Maple Road in unincorporated Solano County.

Pursuant to Section 28.81(E)(2)(a), Wireless Communication Facilities section of the County Zoning Regulations, Planning Commission approval is required for new facilities within the Rural Residential Zoning District. As part of its application materials, the project proponent has provided an Alternatives Site Analysis, Radio Frequency compliance report, and Noise Assessment study. These studies are included as attachments to this report and are detailed further below. In summary, the RF report details compliance with Federal Communications Commission "FCC" regulations upon proper installation of recommended signage. In addition, the Noise Assessment details compliance with noise level standards set forth in the County General Plan and Zoning Regulation through the incorporation of noise attenuation in the form of wooden fencing around the site lease area. Initial concerns regarding aesthetics that were identified during the project review phase have been addressed by the applicant in the form of a project redesign. The project now proposes a monopine designed tower which blends more naturally with the existing environment.

II. BACKGROUND

On July 15, 2021, the Planning Services Division received Use Permit application U-21-02 to construct a new wireless communication facility at 5078 Maple Road within unincorporated Solano County. An incomplete letter from the Planning Division was issued August 4, 2021 and response to some of those incompleteness items were submitted by the applicant August 10, 2021. On September 1, 2021, the project was solicited for review by the County's Development Review Committee "DRC" which also included review and comment by the City of Vacaville. Based on comments received, the project proponent made the decision to redesign the project to a monopine design. Confirmation on the change to the project description and the accompanying photo-simulations were submitted by the applicant February 16, 2022. On May 27, 2022 the Department entered into a tolling agreement with the project proponent to extend the project review and processing beyond the 150-day "shot clock"

timeframe as specified by federal law (47 U.S.C. § 332(c)(7)(B)(ii); 47 C.F.R. § 1.6003(c)(3).

III. PROJECT DESCRIPTION:

AT&T Mobility (AT&T) seeks to improve wireless communication services in Vacaville. Presently, this area of Vacaville suffers from poor wireless coverage and low capacity levels, which can cause recurring lost calls and ineffective service. The need for this proposed facility is due to complaints from AT&T customers, businesses, and travelers in this area. To remedy these problems, AT&T proposed this new tower which will improve service to subscribers and emergency services in an approximately one-mile radius around the new facility activation.

The subject site is located at 5078 Maple Road just east of the City of Vacaville. The project is located on a 4.89-acre parcel within a rural residential area known as the Locke Paddon subdivision. The property is developed with a dwelling and residential accessory structures. Water well, septic system and utilities for the single-family dwelling are on-site.

Rural residential development, similar to that of the subject site, surrounds the project, with the exception of a religious facility located across Maple Road to the north and higher density residential development located within the City of Vacaville, 250 feet to the east. An aerial map of the project site and its vicinity is included as Attachment F.

The project includes an 86-foot-tall monopine designed wireless communication tower within a 25' by 25' lease area situated near the southeast corner of the lot. Nine panel antennas with associated equipment would be mounted at the 73-foot centerline of the tower.

In addition to the tower, the associated ground level equipment of the facility includes an 8' by 8' concrete walk-in equipment cabinet, standby 30kw diesel generator with 190-gallon fuel tank, electrical service panel, lighting, and miscellaneous equipment within a six-foot-tall wooden fence enclosure with overlapping slat construction.

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 week. The proposed site is entirely self-monitored and connected electronically 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. No water or sanitation services will be required.

It is estimated that the facility would be constructed within a timeframe of 3 to 6 months.

Access to the property is provided by Maple Road. Access to the facility is via proposed 20' wide all-weather gravel access road running along the western lot line of the property.

IV. ANALYSIS:

A. Environmental Determination:

The Department of Resource Management is recommending that the project is exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15303, New Construction of Small Structures.

B. General Plan Consistency:

The proposed project would occur on land designated Rural Residential per the Solano County General Plan.

C. Zoning Consistency:

The site is located on land zoned Rural Residential "RR5". This designation allows new wireless telecommunications facilities subject to approval of a Conditional Use Permit by the Planning Commission.

D. Airport Land Use Compatibility

As seen in the Travis AFB Land Use Compatibility Plan, the project is located within Compatibility Zone "D" which prohibits hazards to flight warranting ALUC review for objects taller than 200 feet above ground level. At 86 feet AGL, this project does not trigger ALUC review. The project is located outside the boundaries of the Nut Tree Airport compatibility plan.

E. Alternatives Analysis:

Per Section 28.81(F) of the Zoning Regulations, an Alternatives Analysis shall be provided for any facility requiring a Use Permit before the Planning Commission. The Alternatives Analysis shall consider alternative locations and designs for the proposed facility, including those which would not require a Use Permit. At a minimum, alternatives included in the analysis shall include:

1. Co-location at all existing wireless communication facilities whether in the unincorporated County, a city, or an adjacent county.

2. Lower, more closely spaced wireless communication facilities, and

3. Mounting on any existing non-residential structure within 2-mile of the proposed facility in unincorporated Solano County.

The project proponent has provided an Alternatives Site Analysis included as Attachment D to this report. The Alternatives Analysis considers a total of 15 potential locations in addition to AT&T's objective to improve communications service to residences, businesses, public services, and area travelers in the Vacaville area of Solano County, California and along Highway 80.

Selecting a location for a wireless telecommunications facility needed to improve service and provide reliable coverage depends on many factors, such as: topography, zoning regulations, existing structures, co-location opportunities, available utilities, access, and the existence of a willing landlord. Wireless communication utilizes a line-of-sight technology that requires facilities to be in relatively close proximity to the wireless handsets to be served. Each proposed site is unique and must be investigated and evaluated on its own terms.

In conclusion, after an exhaustive search for potential sites and co-location possibilities and a review of the applicable zoning code, the proposed location was selected because it is the best available candidate to improve service to the area and to meet the wireless coverage objective lacking in the area.

Presented in Attachment I is the comparison of two coverage maps. The first map shows the target area currently lacking wireless coverage on the AT&T wireless network. The second map shows what the coverage will be like upon activation of the proposed facility. The area in blue shows inadequate outdoor and indoor coverage, the area marked in yellow shows some indoor coverage and good outdoor coverage, and the area marked in green indicated good indoor, in-car, and outdoor coverage. Note that much of the blue and yellow areas are replaced by green following activation of the proposed facility.

F. Radio-Frequency Exposure Review:

Per Section 28.81(H) of the Zoning Regulations, a Radio Frequency "RF" Environmental Evaluation Report shall be provided which demonstrates that RF emissions from the facility in combination with existing RF emissions from nearby facilities will meet the current FCC adopted exposure standard.

The project proponent has provided a radio frequency – electromagnetic energy "RF-EME" compliance report prepared by EnviroBusiness, Inc. "EBI" Consulting, included as Attachment E to this report.

In summary, EBI has conducted theoretical modeling to estimate the worst-case power density from AT&T antennas to document potential MPE levels at the proposed location and ensure that site control measures are adequate to meet FCC and OSHA requirements, as well as AT&T's corporate RF safety policies. As presented in the compliance report, based on worst-case predictive modeling, there are no modeled exposures on any accessible rooftop or ground walking/working surface related to ATT&T's proposed antennas that exceed the FCC's occupational and/or general public exposure limits at this site. Additionally, however, there are areas where elevated workers may be exposed to power densities greater than occupational limits. The worst-case emitted power density may exceed the FCC's occupational limit within approximately 23 feet of AT&T's proposed antennas at the antenna face level. Workers and the general public should be informed about the presence and locations of antennas and their associated fields.

In order to reduce the risk of exposure and/or injury, the EBI report recommends that the access to the monopole or areas associated with the active antenna installation be restricted and secured where possible. Signage is recommended at the site as presented in Section 4.0 of the RF-EME report. Posting of the signage brings the site into compliance with FCC rules and regulations and AT&T's corporate RF safety policies.

G. Noise Assessment:

The project proponent has provided a Noise Assessment prepared by Bollard Acoustical Consultants, Inc. included as Attachment F to this report.

The project proposes the installation of a pre-manufactured concrete walk-in cabinet equipped with one (1) externally mounted HVAC unit within the equipment lease area. According to the project site plans, the HVAC unit assumed for installation at this site is a Marvair Airxcel, Inc. Model ECUA18ACA. Based on reference noise level data obtained from the manufacturer (Marvair Airxcel, Inc.), this specific HVAC unit model has a reference noise level of 62 dB at a distance of 5 feet.

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 installation at this site 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.

Noise Standards Applied to the Project

The Public Health and Safety Element of the Solano County General Plan, Zoning Regulations, and Wireless Ordinance each establish acceptable noise standards applicable to this project.

The General Plan establishes noise level limits for non-transportation noise sources for both daytime and nighttime use, at limits of 70 dB and 65 dB, respectively. These limits are measured from nearby

residential uses, such as the backyards of homes in the area.

Section 28.70.10(B)(1)(b) of the Zoning Regulation, pertaining to general development standards applicable to all uses in every zoning district, requires that all uses of land shall not generate noise that exceeds 65 dBA DNL at any property line.

Section 28.81(D)(10) of the Wireless Ordinance, limits wireless facilities within a residential district to a maximum exterior noise level of 50 dB DNL at the facility site's property lines.

Noise Attenuation Recommendation

The Noise Assessment concludes that the predicted combined project equipment noise levels of 39 to 54 dB DNL at the nearest property lines would satisfy the 65 dB DNL noise level standard by a wide margin. However, the predicted combined equipment noise levels would exceed the 50 dB DNL noise level standard at the property lines of adjacent parcels; APN's 0134-270-020 and 0134-290-020 (also project property lines). As a result, additional consideration of project equipment noise mitigation measures would be warranted for the project relative to the applicable County Code 50 dB DNL noise level standard.

To mitigate this identified exceedance to a state of compliance with the County Code 50 dB DNL noise standard at the nearest property lines, it is recommended that a 6-foot tall wood (or wood composite) dog-ear fence noise barrier be constructed along the facility lease area perimeter. The wood (or wood composite) fence would provide the necessary noise attenuation provided the slats overlap by a minimum of 2 inches and are screwed into the framing. The purpose of overlapping slats and using screws rather than nails is to ensure that prolonged exposure to the elements does not result in visible gaps through the slats which would result in reduced noise barrier effectiveness.

The construction of the 6-foot tall barrier fencing would reduce project equipment noise level exposure to 48 dB DNL or less at the nearest property lines and ensure a state of compliance with the applicable noise level standards. Condition of Approval No. 4 ensures that construction of the fencing around the lease area would achieve proper noise attenuation as recommended per the Noise Assessment prepared by Bollard Acoustical Consultants, Inc. dated June 28.2021.

ATTACHMENTS:

A – Draft Resolution
B – APN Map
C – Development Plans
D – Alternative Site Analysis
E – Radio Frequency Compliance Report
F – Noise Assessment
G – Photo Simulations
H – Aerial Photo of Project Vicinity
I – Coverage Maps

SOLANO COUNTY PLANNING COMMISSION
RESOLUTION NO. XX

WHEREAS, the Solano County Planning Commission has considered Use Permit Application No. U-21-02 of **New Cingular Wireless** for a new wireless communication facility consisting of an 86-foot-tall monopole and associated equipment within a 625 square foot lease area located at 5078 Maple Road, east of the City of Vacaville, within the Rural Residential "RR-2.5" Zoning District, APN 0134-270-030, and;

WHEREAS, the Commission has reviewed the report of the Department of Resource Management and heard testimony relative to the subject application at the duly noticed public hearing held on August 18, 2022, and;

WHEREAS, after due consideration, the Planning Commission has made the following findings in regard to said proposal:

1. The establishment, maintenance, or operation of the proposed use is in conformity with the County General Plan with regard to traffic circulations, population densities and distribution, and other aspects of the General Plan.

The operation and maintenance of a wireless communication facility is consistent with the goals, objectives, and policies of the Solano County General Plan, including but not limited to the Land Use, Resources, and Public Facilities and Service Chapters.

2. Adequate utilities, access roads, drainage and other necessary facilities have been or are being provided.

Access to the property is from Maple Road (County Road No. 641) and access to the wireless communication facility is proposed via 20-foot-wide all-weather gravel driveway. The site has electrical power and no domestic water or septic system is required for the unmanned facility.

3. The subject use will not, under the circumstances of the particular case, constitute a nuisance or be detrimental to the health, safety, peace, morals, comfort or general welfare of persons residing or working in or passing through the neighborhood of such proposed use, or be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the County.

As conditioned, the proposed wireless communication facility will not constitute a nuisance to surrounding properties, nor will it be detrimental to the health, safety, or welfare of County residents. The Radio Frequency emissions report prepared for the project indicates that the facility will be in compliance with applicable Federal Communications Commission Rules and Regulations for RF emission with the inclusion of recommended signage at the facility.

4. The proposed facility complies with all applicable sub-sections of Wireless Communications Facilities, Section 28.81 of the Solano County Zoning Regulations.

5. No alternative site or design is available that would allow for issuance of a Use Permit before the Zoning Administrator for the facility. The applicant has submitted an Alternatives Analysis which describes other locations in the vicinity that were considered. Its conclusion is that this site provides the best location for optimal antenna performance that will provide full communication services to the community, integration with the local AT&T Mobility network to handle higher call volume, maximize

call quality, optimize data speed and capacity, and increase network dependability for commercial and emergency services.

6. The RF Environmental Evaluation Report for the facility shows that the cumulative radio-frequency energy emitted by the facility and any near-by facilities will be consistent with FCC regulations.

7. The facility blends in with its existing environment and will not have significant visual impacts.

The pine tree design of the proposed monopole blends more naturally with the existing environment.

8. The project is exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15303, New Construction of Small Structures. A Notice of Exemption shall be filed with the State Clearinghouse.

BE IT THEREFORE RESOLVED, that the Planning Commission does hereby approve Use Permit application U-21-02 subject to the following recommended conditions of approval:

1. Approval is hereby granted to New Cingular Wireless to construct and operate a wireless communication facility consisting of an 86-foot-tall monopole, nine panel antenna at the 73' centerline of the monopole, and associated ground equipment within a 25 foot by 25 foot lease area located at 5078 Maple Road. The proposed use shall be established in accord with use permit application U-21-02 submitted July 15, 2021 by Complete Wireless Consulting and the development plans drawn by MST Architects, dated February 3, 2022, and as approved by the Solano County Planning Commission.

2. Pursuant to Section 28.81(J) of the Wireless Ordinance, the subject use permit shall be granted for a fixed term of ten (10) years and shall expire August 18, 2032. Consideration of an amended land use permit is required should the need for the wireless communication facility remain upon permit expiration.

Upon termination or expiration of the subject use permit, the proposed wireless communication infrastructure shall be removed from the site. All equipment, including concrete pads, shall be removed within 90 days of discontinuation of the use and the site shall be restored to its natural condition. The County shall have access across the subject property to affect such removal.

3. Prior to issuance of a building permit, the permittee shall submit design specifications and samples regarding the branch and needle spacing, densities, and paint samples to the Planning Division for review and approval.

a. High density foliage shall be provided as needed to fully cover all antenna arrays and other pole mounted equipment. The antenna arrays shall not be the dominant visual feature, and painted a flat color (green) to match the faux needles and covered with antennas socks to blend in with the tree branches.

b. Branches shall have varied angles and lengths as needed to resemble the appearance of a natural tree.

c. The support pole shall be designed to appear like a natural tree trunk and painted a flat brown.

3. Prior to operation of the facility, the permittee shall comply with all requirements of the Federal Communications Commission including RF signage. Signage shall be consistent with the recommended signage/compliance plan contained in the provided RF report.

4. The 25 foot by 25 foot lease area shall be fenced with a 6-foot-tall wood (or wood composite) fence enclosure with overlapping slat construction. Fencing shall be consistent with the recommendations made by the provided Noise Assessment report in order to achieve noise attenuation.

5. As proposed, all on-site utility lines leading to and connecting the leased areas and equipment shelters shall be located underground.

6. All facility components including, but not limited to, tower, antennas, microwave dishes, remote radio units, equipment cabinets, and fencing shall be maintained in good condition, including ensuring the facilities are reasonably free of:

a. Rust and corrosion;
b. Chipped, faded, peeling and cracked paint;
c. Graffiti, bill, stickers, advertisements, litter and debris; and
d. Broken or misshapen structural parts

7. No additional uses (including outdoor storage), new or expanded buildings shall be established or constructed beyond those identified on the approved development plans without prior approval of a new, revised, or amended use permit.

8. The permittee shall take such measures as may be necessary or as may be required by the County to prevent offensive noise, lighting, dust or other impacts which constitute a hazard or nuisance to surrounding properties.

9. The premises shall be maintained in a neat and orderly manner and kept free of accumulated debris and junk

Building Division

10. Prior to any construction or improvements taking place, a building permit application shall first be submitted as per Section 105 of the California Building Code or the latest edition of the codes enforced at the time of building permit application. "Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit."

11. A geotechnical/soils report will be required as part of building permit submittal.

Environmental Health Division

12. A Hazardous Materials Business Plan (HMBP) shall be submitted to the California Environmental Reporting System (CERS) within 30 days of exceeding any hazardous materials quantity threshold, including: hazardous material in quantities equal to or greater than 55 gallons of liquids, 200 cubic feet for gases, 500 lbs. for solids

The facility proposes to store up to 190 gallons of diesel fuel at the project site.

The HMBP shall be submitted to California Environmental Reporting System (CERS) at:

https://cersbusiness.calepa.ca.gov/Account/SignIn?ReturnUrl=%2f

Additional Information can be found at:
http://www.solanocounty.com/depts/rm/environmental_health/hazmat/default.asp and
http://www.caloes.ca.gov/for-businesses-organizations/plan-prepare/hazardous-materials/hazmat-business-plan

For more information contact a Hazardous Materials Specialist within Solano County, Division of Environmental Health at (707) 784-6765.

Public Works Engineering

13. Prior to any on-site construction or grading, the applicant shall apply for, secure, and abide by the conditions of an encroachment permit for any work within the public right-of-way. Driveways must be maintained in such a manner as to prevent soil, rocks, and debris from tracking onto public roads.

Applicant shall construct a commercial width driveway at the location shown on the development plans. The driveway shall conform to the Solano County Road Standards. The driveway shall be paved with asphaltic concrete.

14. Prior to any on-site construction or grading , the applicant shall apply for, secure, and abide by the conditions of a grading permit for the construction of the private access improvements, parking areas, as well as any onsite grading.

****

I hereby certify that the foregoing resolution was adopted at the regular meeting of the Solano County Planning Commission on August 18, 2022 by the following vote:

AYES: Commissioners _____

_____

NOES: Commissioners _____

ABSTAIN: Commissioners _____

ABSENT: Commissioners _____

_____
Kelly Rhoads-Poston, Chairperson
Solano County Planning Commission

Attest:

By: _____
Terry Schmidtbauer, Secretary

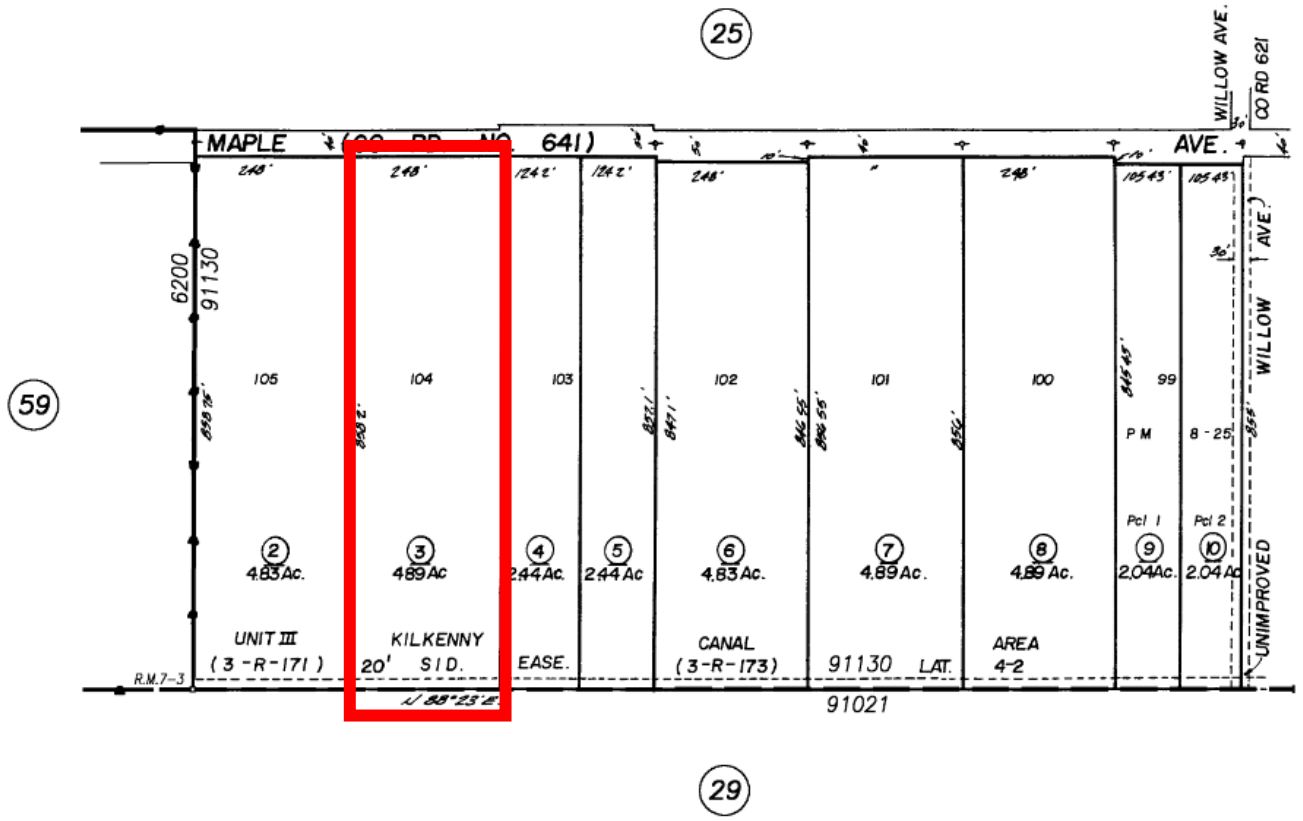
ATTACHMENT B

POR. SW.1/2 SEC.12, T.6N., R.1W., M.D.B.& M.

Tax Area Code
91130

134-27

1"= 200'



C. Locke Paddon Colony No. 16 , R.M. Bk. 7 Pg. 3

Assessor's Block Numbers Shown in Ellipses, Assessor's Parcel Numbers Shown in Circles

REVISION	DATE	BY
SBE 17-006	1-17-17	Cr
S.B.E. 07-008	8-25-06	Cr
270-11&12 to Sub	9-19-05	SE
270-11&12 (Dd)	8-12-97	DJ

NOTE: This map is for assessment purposes only. It is not intended to define legal boundary rights or imply compliance with land division laws.

Assessor's Map Bk. 134 Pg. 27
County of Solano, Calif.

17-18

SITE NUMBER: CCL02212

SITE NAME: LEISURETOWN RD - PEREZ

at&t

FA CODE: 14758135
USID#: 298851
PACE: MRSFR053947
PTN: 3701A0KTLE

5078 MAPLE ROAD
VACAVILLE, CA 95687
JURISDICTION: SOLANO COUNTY
APN: 0134-270-030

SITE TYPE: PREMANUFACTURED WALK-IN CABINET / MONOPINE

PROJECT DESCRIPTION

NEW SITE BUILD UNMANNED TELECOMMUNICATIONS FACILITY.

1. BRING POWER / TELCO / FIBER TO SITE LOCATION.
2. INSTALL AT&T APPROVED PREMANUFACTURED WALK-IN CABINET AND ASSOCIATED INTERIOR EQUIPMENT.
3. ADD STANDBY GENERATOR WITH FUEL TANK.
4. PROPOSED AT&T MONOPINE WITH ANTENNAS & ASSOCIATED TOWER-MOUNTED EQUIPMENT.
5. PROPOSED AT&T GPS ANTENNA.

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND 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 CONTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1) 2019 CALIFORNIA ADMINISTRATIVE CODE
2) 2019 CALIFORNIA BUILDING CODE
3) 2019 CALIFORNIA ELECTRICAL CODE
4) 2019 CALIFORNIA MECHANICAL CODE
5) 2019 CALIFORNIA PLUMBING CODE
6) 2019 CALIFORNIA ENERGY CODE
9) 2019 CALIFORNIA FIRE CODE
11) 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE
12) 2019 CALIFORNIA REFERENCE STANDARDS CODE

OCCUPANCY AND CONSTRUCTION TYPE

OCCUPANCY : U (UNOCCUPIED TELECOMMUNICATIONS FACILITY)

CONSTRUCTION TYPE: V-B

ACCESSIBILITY REQUIREMENTS

THIS IS AN UNOCCUPIED TELECOMMUNICATIONS FACILITY. ACCESSIBILITY FEATURES ARE NOT REQUIRED AS DESCRIBED BY 2019 CBC 118-203.5. AND 118-202.4 EXCEPTION 7.

PROJECT INFORMATION

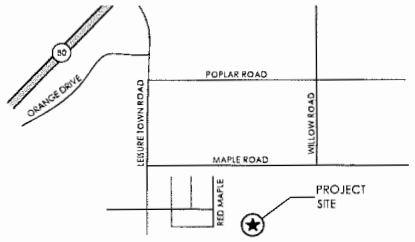
PROPERTY INFORMATION:

SITE NAME:	LEISURETOWN RD - PEREZ
SITE NUMBER:	CCL02212
SITE ADDRESS:	5078 MAPLE ROAD VACAVILLE, CA 95687
A.P.N. NUMBER:	0134-270-030
CURRENT ZONING:	RR (RURAL RESIDENTIAL)
JURISDICTION:	SOLANO COUNTY
LATITUDE:	N38° 22' 24.08" NAD 83
LONGITUDE:	W121° 55' 45.05" NAD 83
GROUND ELEVATION:	83.5 FT. AMSL

PROPERTY OWNER:
TONY & AURORA PEREZ
406 REGENCY CIRCLE
VACAVILLE, CA 95687

POWER AGENCY:
PACIFIC GAS & ELECTRIC
2225 FOLSOM ST.
SAN FRANCISCO, CA 94110

VICINITY MAP



VACAVILLE, CA

PROJECT TEAM

APPLICANT / LESSEE:
AT&T
2600 CAMINO RAMON
SAN RAMON, CA 94583

CONSTRUCTION MANGER:
QUALTEK WIRELESS
475 SENTRY PARKWAY E. SUITE 200
BLUE BELL, PA 19422
CONTACT: MATTHEW STEWART
EMAIL: mstewart@qualtekwireless.com
PH: (702) 622-9458

RF ENGINEER:
AT&T
5001 EXECUTIVE PARKWAY
SAN RAMON, CA 94583
CONTACT: HAKAN ATKAS
EMAIL: ha3021@att.com
PH: (925) 520-5760

SURVEYOR:
GEIL ENGINEERING
1226 HIGH STREET
AUBURN, CA 95603
CONTACT: DAN GEIL
PH: (530) 885-0426

ARCHITECT / ENGINEER:
MST ARCHITECTS INC.
1520 RIVER PARK DRIVE
SACRAMENTO, CA 95815
CONTACT: MANUEL S. TSIHLAS
EMAIL: manuel@mstarchitects.com
PH: (916) 567-9630

SITE ACQUISITION:
COMPLETE WIRELESS CONSULTING, INC.
2009 V STREET
SACRAMENTO, CA 95818
CONTACT: RANDY MIKUNI
EMAIL: rmikuni@completewireless.net
PH: (916) 747-0624

ZONING MANAGER:
COMPLETE WIRELESS CONSULTING, INC.
2009 V STREET
SACRAMENTO, CA 95818
CONTACT: MACY HABIBEH
EMAIL: mhabibeh@completewireless.net
PH: (916) 224-8018

DIRECTIONS FROM AT&T

DIRECTIONS FROM AT&T'S OFFICE AT 2600 CAMINO RAMON, SAN RAMON, CA

1. MERGE ONTO I-680 NORTH FROM BOLLINGER CANYON ROAD
2. CONTINUE ON I-680 NORTH
3. TAKE EXIT 71A ONTO I-80 EAST
4. CONTINUE ON I-80 EAST
5. TAKE EXIT 57 AND TURN RIGHT ONTO LEISURE TOWN ROAD
6. TURN LEFT ONTO MAPLE ROAD
7. TURN RIGHT ONTO SITE ACCESS ROAD
8. CONTINUE ON SITE ACCESS ROAD
   SITE WILL BE STRAIGHT AHEAD

APPROVALS

APPROVED BY:	INITIALS:	DATE:
AT&T:		
VENDOR:		
R.F.:		
LEASING / LANDLORD:		
ZONING:		
CONSTRUCTION:		
POWER / TELCO:		
PG&E:		

SHEET INDEX

CONSTRUCTION DRAWINGS STILL PENDING THE FOLLOWING:

- CIVIL ENGINEERING GRADING/DRAINAGE/EROSION CONTROL PLANS

NOTE: FINAL COORDINATION WITH TOWER STRUCTURAL DESIGN IS REQUIRED PRIOR TO ISSUANCE FOR PERMITTING/CONSTRUCTION

GENERAL CONTRACTOR NOTES

DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE FORMATTED TO BE FULL SIZE AT 24" x 36". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOBSITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME.

DIGALERT
800-227-2600
Call 2 Full Working Days in Advance

Issued For:
CCL02212
LEISURETOWN RD - PEREZ
5078 MAPLE ROAD
VACAVILLE, CA 95687

PREPARED FOR
at&t
2600 Camino Ramon
San Ramon, California 94583

Vendor:
COMPLETE Wireless Consulting, Inc.

AT&T SITE NO:	CCL02212
PROJECT NO:	162.2776
DRAWN BY:	TLS
CHECKED BY:	SV

REV	DATE	DESCRIPTION
	02/03/22	90% CD REV 4
	01/18/22	90% CD REV 3
	12/02/21	90% CD REV 2
	11/01/21	90% CD REV 1
	10/01/21	90% CD
	09/24/21	100% ZD REV 1
	02/16/21	100% ZD
	01/28/21	90% ZD

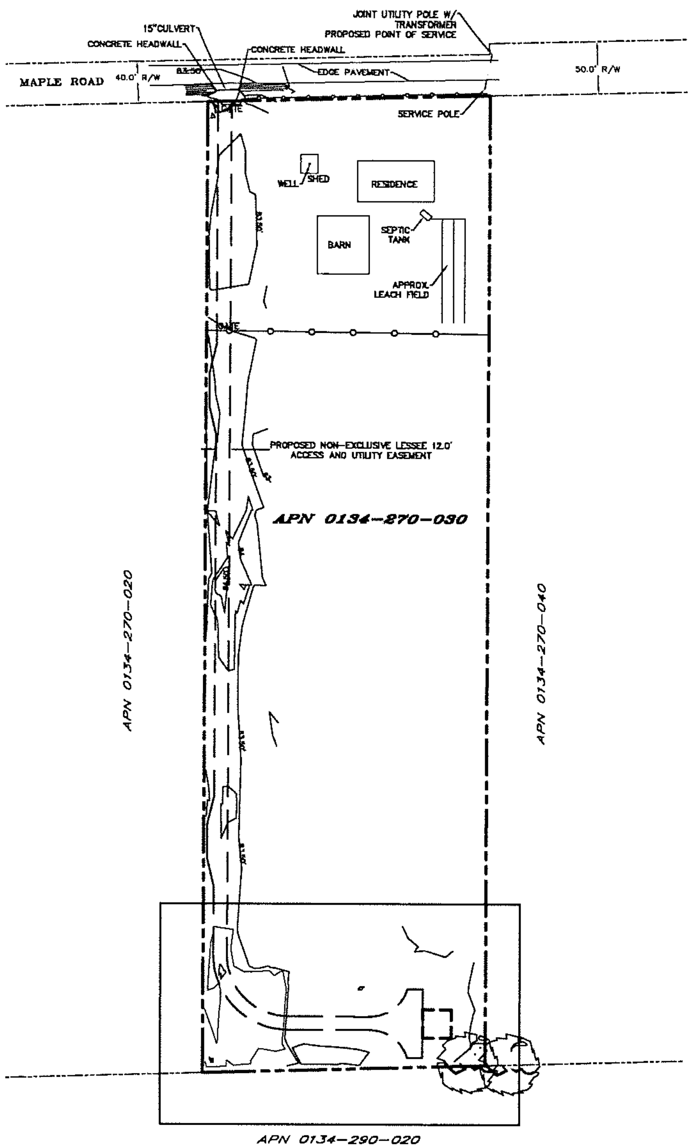
Licensee:

Architect:
MST ARCHITECTS
1520 River Park Drive
Sacramento, California 95815

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1

ATTACHMENT C



DATE OF SURVEY: 01-18-21

SURVEYED BY OR UNDER DIRECTION OF: KENNETH D. GEIL, RCE 14803

LOCATED IN THE COUNTY OF SOLANO 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 UNLESS OTHERWISE NOTED.

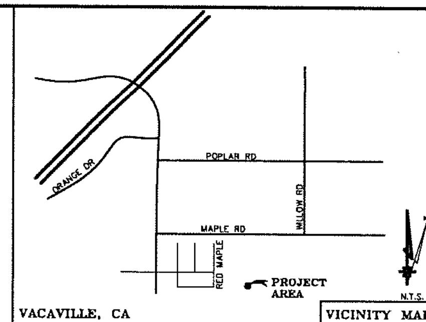
N.G.V.D. 1929 CORRECTION: SUBTRACT 2.58' FROM ELEVATIONS SHOWN.

FEMA FIRM: FLOOD ZONE X PER FIRM 06095C0281E, DATED 05-04-2009.

CONTOUR INTERVAL: 0.5 ft.

ASSESSOR'S PARCEL NUMBER: 0134-270-030

LANDLORD(S): PEREZ, TONY / PEREZ, AURORA
406 REGENCY CIR.
VACAVILLE, CA 95687



VACAVILLE, CA

VICINITY MAP

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.

Project Name: CCL02212
Project Site Location: 5078 Maple Road
Vacaville, CA 95678
Solano County

Assessor Parcel Number: 0134-270-030

Date of Observation: 01-18-21

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

Type of Antenna Mount: Proposed Monopole

Coordinates

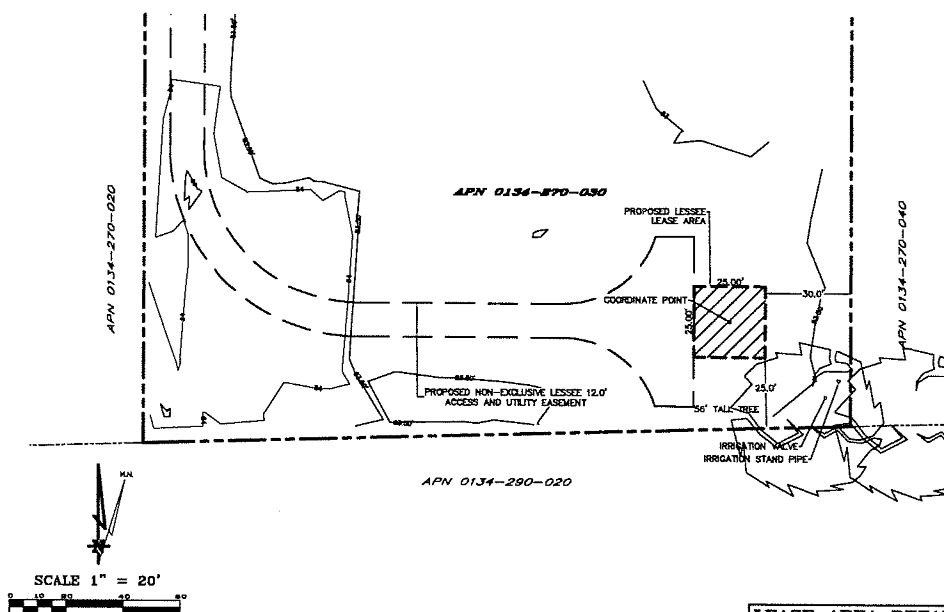
Latitude: N 38°22'24.08" (NAD83) N 38°22'24.40" (NAD27)

Longitude: W 121°55'45.05" (NAD83) W 121°55'41.17" (NAD27)

Latitude: N 38.373356° (NAD83) N 38.373444° (NAD27)

Longitude: W 121.929181° (NAD83) W 121.928103° (NAD27)

ELEVATION of Ground at Structure (NAVD88) 83.5' AMSL



SCALE 1" = 20'

LEASE AREA DETAIL

DEPT	APPROVED	DATE
A&C		
RE		
RF		
INT		
EE\IN		
OPS		
EE\OUT		

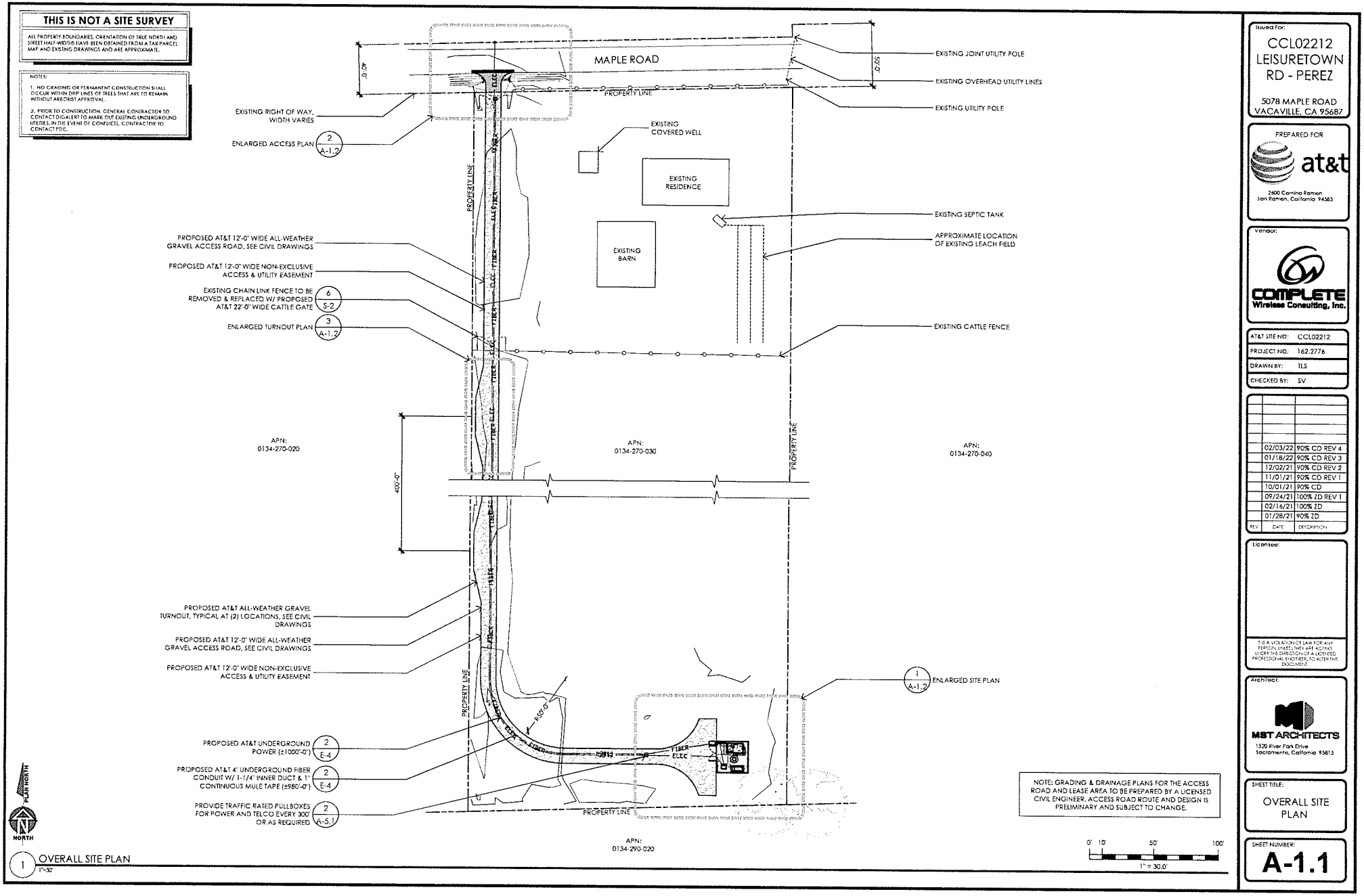
Surveyor
GEIL ENGINEERING

at&t MOBILITY

CCL02212
5078 Maple Road
Vacaville, CA 95678
PLOT PLAN AND SITE TOPOGRAPHY

REVISIONS		
01-22-21	Preliminary Drawing	dg
03-01-21	corr. gen.	dg
09-29-21	rev. esmt.	dg
11-01-21	rev. esmt.	dg
02-03-22	rev. esmt.	dg

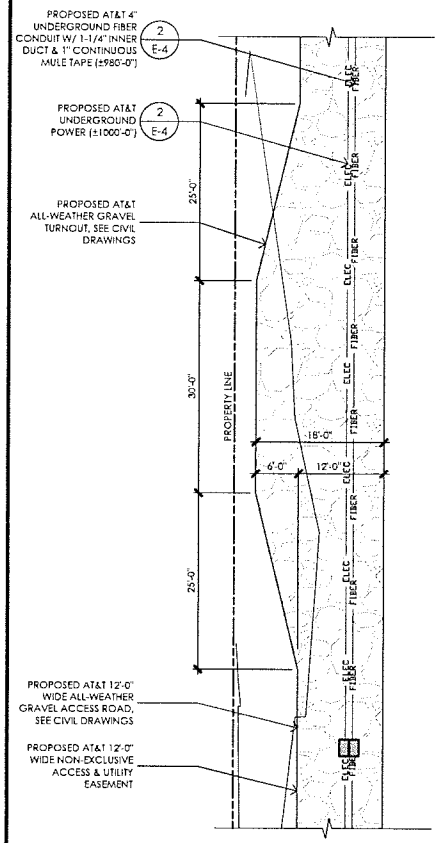
Sheet
C-1


THIS IS NOT A SITE SURVEY
ALL PROPERTY BOUNDARIES, ORIENTATION OF TRUE NORTH AND STREET HALF-WIDTHS HAVE BEEN OBTAINED FROM A TAX PARCEL MAP AND EXISTING DRAWINGS AND ARE APPROXIMATE.
NOTES:
1. NO GRADING OR PERMANENT CONSTRUCTION SHALL OCCUR WITHIN DRIP LINES OF TREES THAT ARE TO REMAIN WITHOUT ARBORIST APPROVAL.
2. PRIOR TO CONSTRUCTION, GENERAL CONTRACTOR TO CONTACT DIGALERT TO MARK OUT EXISTING UNDERGROUND UTILITIES. IN THE EVENT OF CONFLICTS, CONTRACTOR TO CONTACT PG&E.
MAPLE ROAD
40'-0"
50'-0"
PROPERTY LINE
EXISTING JOINT UTILITY POLE
EXISTING OVERHEAD UTILITY LINES
EXISTING UTILITY POLE
EXISTING RIGHT OF WAY, WIDTH VARIES
ENLARGED ACCESS PLAN 2 A-1.2
EXISTING COVERED WELL
EXISTING RESIDENCE
EXISTING SEPTIC TANK
APPROXIMATE LOCATION OF EXISTING LEACH FIELD
EXISTING BARN
PROPOSED AT&T 12'-0" WIDE ALL-WEATHER GRAVEL ACCESS ROAD, SEE CIVIL DRAWINGS
PROPOSED AT&T 12'-0" WIDE NON-EXCLUSIVE ACCESS & UTILITY EASEMENT
EXISTING CHAIN LINK FENCE TO BE REMOVED & REPLACED W/ PROPOSED AT&T 22'-0" WIDE CATTLE GATE 6 S-2
ENLARGED TURNOUT PLAN 3 A-1.2
EXISTING CATTLE FENCE
APN: 0134-270-020
APN: 0134-270-030
APN: 0134-270-040
400'-0"
PROPOSED AT&T ALL-WEATHER GRAVEL TURNOUT, TYPICAL AT (2) LOCATIONS, SEE CIVIL DRAWINGS
PROPOSED AT&T 12'-0" WIDE ALL-WEATHER GRAVEL ACCESS ROAD, SEE CIVIL DRAWINGS
PROPOSED AT&T 12'-0" WIDE NON-EXCLUSIVE ACCESS & UTILITY EASEMENT
1 A-1.2 ENLARGED SITE PLAN
R50'-0"
PROPOSED AT&T UNDERGROUND POWER (±1000'-0") 2 E-4
PROPOSED AT&T 4" UNDERGROUND FIBER CONDUIT W/ 1-1/4" INNER DUCT & 1" CONTINUOUS MULE TAPE (±980'-0") 2 E-4
PROVIDE TRAFFIC RATED PULLBOXES FOR POWER AND TELCO EVERY 300' OR AS REQUIRED 2 A-5.1
FIBER ELEC
APN: 0134-290-020
NOTE: GRADING & DRAINAGE PLANS FOR THE ACCESS ROAD AND LEASE AREA TO BE PREPARED BY A LICENSED CIVIL ENGINEER. ACCESS ROAD ROUTE AND DESIGN IS PRELIMINARY AND SUBJECT TO CHANGE.
0' 10' 50' 100'
1" = 30.0'
PLAN NORTH
NORTH
1 OVERALL SITE PLAN
1"=30'
Issued For:
CCL02212
LEISURETOWN RD - PEREZ
5078 MAPLE ROAD
VACAVILLE, CA 95687
PREPARED FOR
at&t
2600 Camino Ramon
San Ramon, California 94583
Vendor:
COMPLETE Wireless Consulting, Inc.
AT&T SITE NO: CCL02212
PROJECT NO: 162.2776
DRAWN BY: TLS
CHECKED BY: SV
02/03/22 90% CD REV 4
01/18/22 90% CD REV 3
12/02/21 90% CD REV 2
11/01/21 90% CD REV 1
10/01/21 90% CD
09/24/21 100% ZD REV 1
02/16/21 100% ZD
01/28/21 90% ZD
REV. DATE DESCRIPTION
Licensee:
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.
Architect:
MST ARCHITECTS
1520 River Park Drive
Sacramento, California 95815
SHEET TITLE:
OVERALL SITE PLAN
SHEET NUMBER:
A-1.1

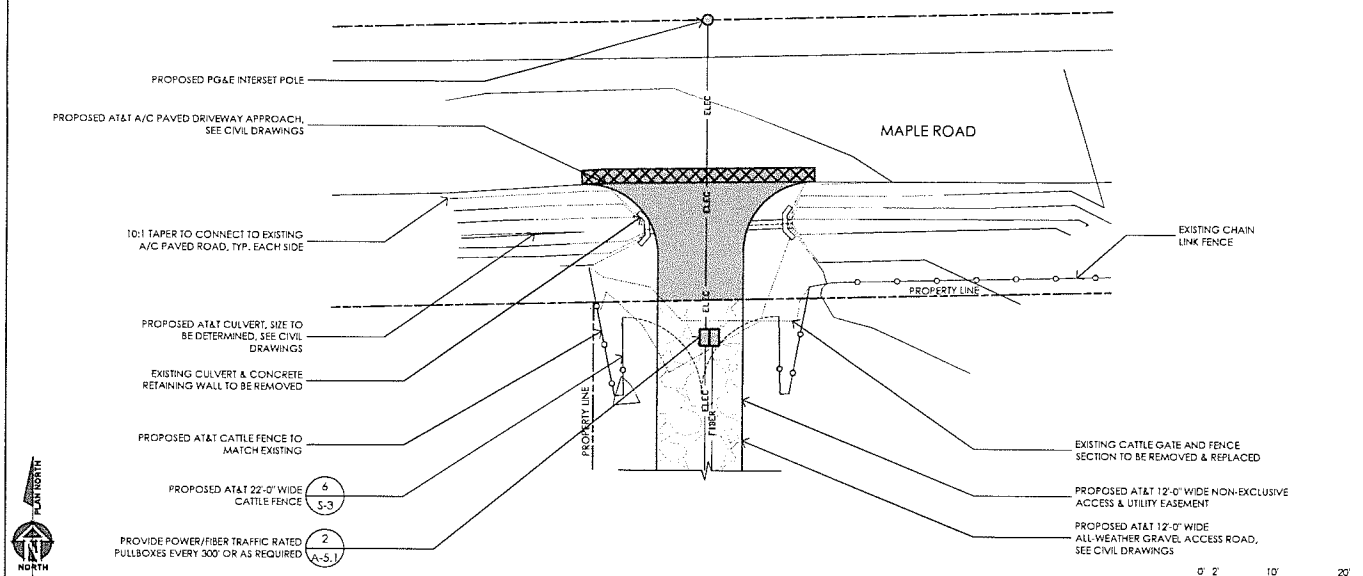
NOTES:

1. NO GRADING OR PERMANENT CONSTRUCTION SHALL OCCUR WITHIN DRIP LINES OF TREES THAT ARE TO REMAIN WITHOUT ARBORIST APPROVAL.

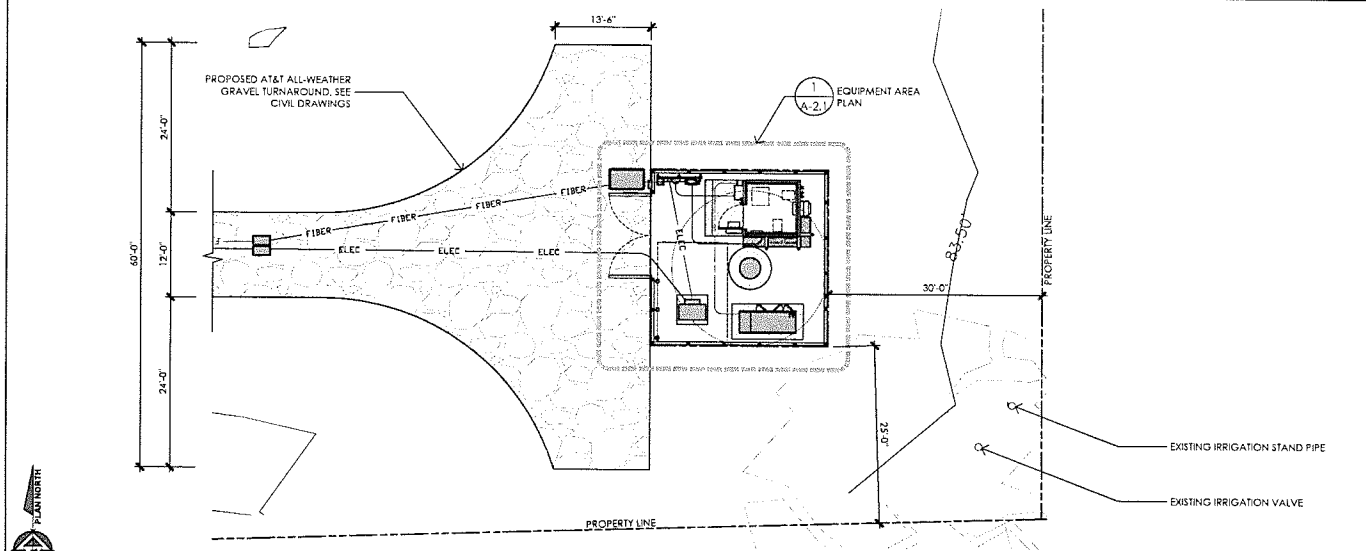
2. PRIOR TO CONSTRUCTION, GENERAL CONTRACTOR TO CONTACT DIGALERT TO MARK OUT EXISTING UNDERGROUND UTILITIES. IN THE EVENT OF CONFLICTS, CONTRACTOR TO CONTACT POC.



3 ENLARGED TURNOUT PLAN
1/8" = 1'-0"



2 ENLARGED ACCESS PLAN
1/8" = 1'-0"



1 ENLARGED SITE PLAN
1/8" = 1'-0"

Issued For:
CCL02212
LEISURETOWN RD - PEREZ
5078 MAPLE ROAD
VACAVILLE, CA 95687

PREPARED FOR
at&t
2600 Camino Ramon
San Ramon, California 94583

Vendor:
COMPLETE Wireless Consulting, Inc.

AT&T SITE NO:	CCL02212
PROJECT NO:	162.2776
DRAWN BY:	TLS
CHECKED BY:	SV

REV.	DATE	DESCRIPTION
	02/03/22	90% CD REV 4
	01/18/22	90% CD REV 3
	12/02/21	90% CD REV 2
	11/01/21	90% CD REV 1
	10/01/21	90% CD
	09/24/21	100% ZD REV 1
	02/16/21	100% ZD
	01/28/21	90% ZD

Licensee:

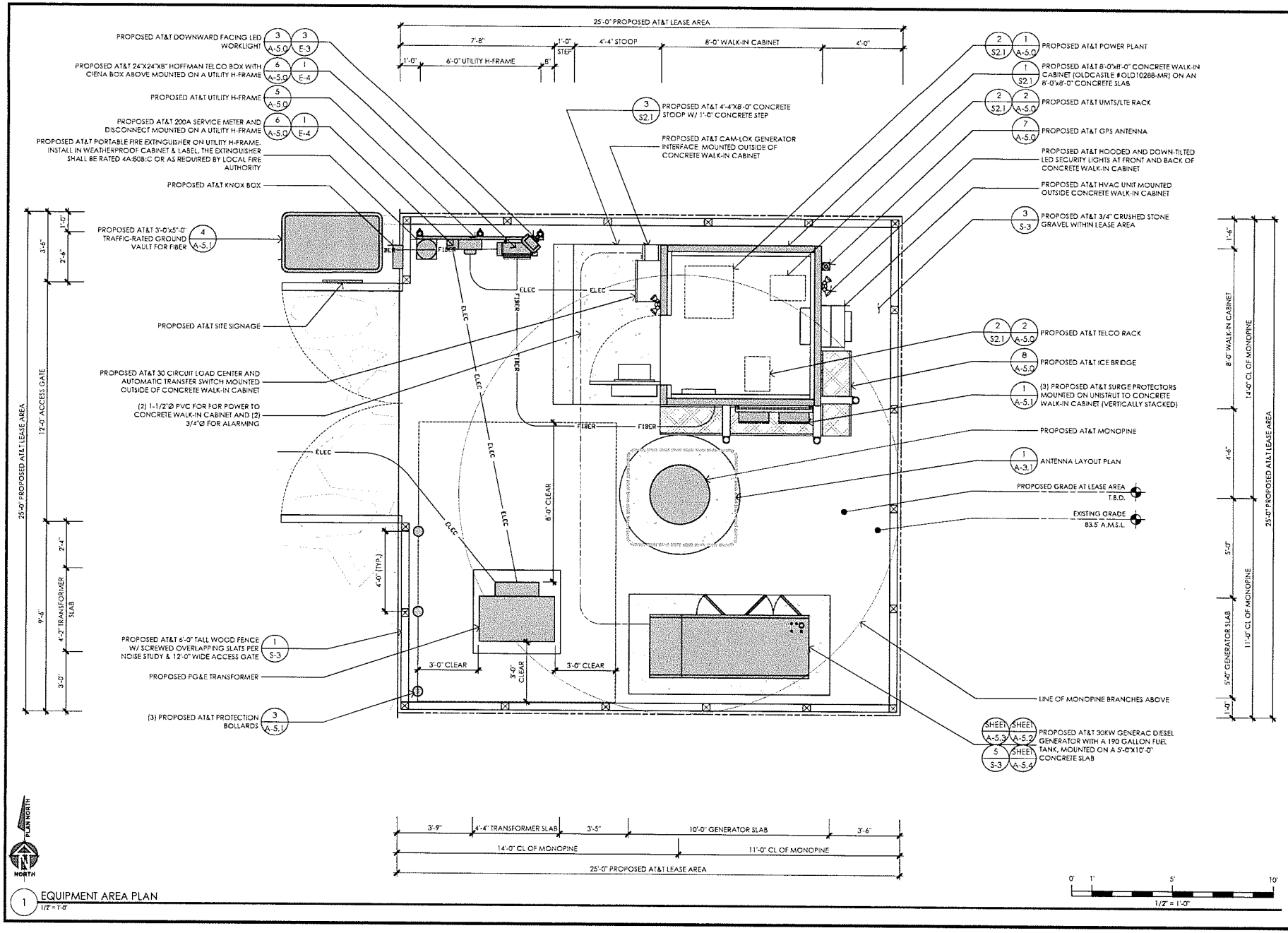
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

Architect:
MST ARCHITECTS
1520 River Park Drive
Sacramento, California 95815

SHEET TITLE:
ENLARGED PLANS

SHEET NUMBER:
A-1.2

ATTACHMENT C



1 EQUIPMENT AREA PLAN
1/2" = 1'-0"

Issued For:
CCL02212
LEISURETOWN RD - PEREZ
507B MAPLE ROAD
VACAVILLE, CA 95687

PREPARED FOR
at&t
2600 Camino Ramon
San Ramon, California 94583

Vendor:
COMPLETE Wireless Consulting, Inc.

AT&T SITE NO:	CCL02212
PROJECT NO:	162.2776
DRAWN BY:	TLS
CHECKED BY:	SV

REV	DATE	DESCRIPTION
	02/03/22	90% CD REV 4
	01/18/22	90% CD REV 3
	12/02/21	90% CD REV 2
	11/01/21	90% CD REV 1
	10/01/21	90% CD
	09/24/21	100% ZD REV 1
	02/16/21	100% ZD
	01/28/21	90% ZD

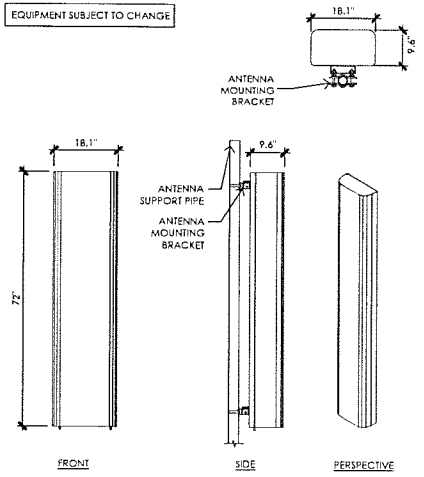
Licensee:

Architect:
MST ARCHITECTS
1520 River Park Drive
Sacramento, California 95815

SHEET TITLE:
EQUIPMENT AREA PLAN

SHEET NUMBER:
A-2.1

EQUIPMENT SUBJECT TO CHANGE



ANTENNA = QUINTEL (QD6612-7)
WEIGHT = 112 LBS
DIMENSIONS = 72" (H) x 18.1" (W) x 9.6" (D)

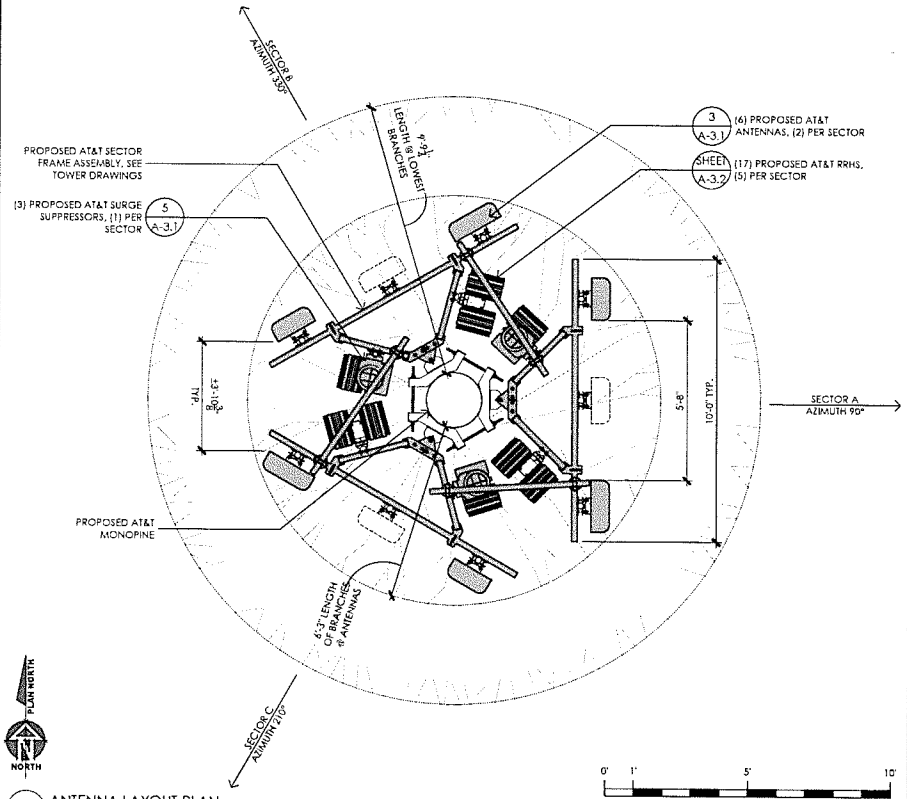
4 PROPOSED ANTENNA SPEC
3/4" = 1'-0"

RF SCHEDULE

SECTOR		ANTENNA MODEL NO.	AZIMUTH	CENTERLINE	RRH	TMA	FIBER LENGTH	COAX LENGTH	JUMPER TYPE	RRU NO.
ALPHA	A1	QUINTEL - QD6612-3D	90°	± 73'-0"	(1) 4449 B5/B12 / (1) B843 B2/B66A / (1) 4415 B30	-	± 95'-0"	-	LDF4	(3)
	A2	-	-	-	-	-	-	-		
	A3	QUINTEL - QD6612-7	90°	± 73'-0"	(1) 4478 B14 / (1) 2012 B29	-	± 95'-0"	-	LDF4	(2)
	A4	-	-	-	-	-	-	-	-	-
BETA	B1	QUINTEL - QD6612-3D	330°	± 73'-0"	(1) 4449 B5/B12 / (1) B843 B2/B66A / (1) 4415 B30	-	± 95'-0"	-	LDF4	(3)
	B2	-	-	-	-	-	-	-	LDF4	
	B3	QUINTEL - QD6612-7	330°	± 73'-0"	(1) 4478 B14 / (1) 4415 B30 / (1) 2012 B29	-	± 95'-0"	-	LDF4	(3)
	B4	-	-	-	-	-	-	-	-	-
GAMMA	C1	QUINTEL - QD6612-3D	210°	± 73'-0"	(1) 4449 B5/B12 / (1) B843 B2/B66A / (1) 4415 B30	-	± 95'-0"	-	LDF4	(3)
	C2	-	-	-	-	-	-	-	LDF4	
	C3	QUINTEL - QD6612-7	210°	± 73'-0"	(1) 4478 B14 / (1) 4415 B30 / (1) 2012 B29	-	± 95'-0"	-	LDF4	(3)
	C4	-	-	-	-	-	-	-	-	-

RF DATA SHEET v2.00 DATED 11/17/2021 NOTE: ANTENNA POSITIONS ARE LEFT TO RIGHT FROM FRONT OF ANTENNA EQUIPMENT IS PRELIMINARY AND SUBJECT TO CHANGE.

2 RF SCHEDULE
NO SCALE



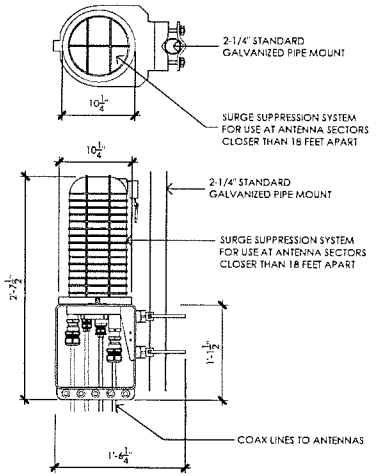
1 ANTENNA LAYOUT PLAN
1/2" = 1'-0"

RAYCAP DC9-48-60-24-8C-EV SURGE SUPPRESSION SOLUTION

COLOR: BLACK/SILVER

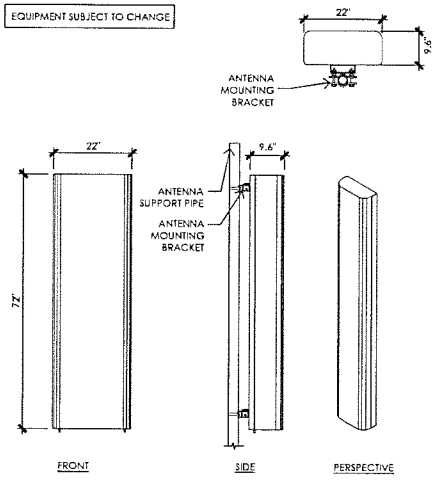
DIMENSIONS: 10.25" DIA X 2'-7.5" TALL W/ 1'-1.5" BASE

WEIGHT: 26.2 LBS.±



5 DC SURGE SUPPRESSION (SQUID)
1-1/2" = 1'-0"

EQUIPMENT SUBJECT TO CHANGE



ANTENNA = QUINTEL (QD66512-30)
WEIGHT = 163 LBS
DIMENSIONS = 72" (H) x 22" (W) x 9.6" (D)

3 PROPOSED ANTENNA SPEC
3/4" = 1'-0"

Issued For:
CCL02212
LEISURETOWN RD - PEREZ

5078 MAPLE ROAD
VACAVILLE, CA 95687

PREPARED FOR
at&t
2600 Camino Ramon
San Ramon, California 94583

Vendor:
COMPLETE Wireless Consulting, Inc.

AT&T SITE NO:	CCL02212
PROJECT NO:	162.2776
DRAWN BY:	TLS
CHECKED BY:	TST

REV	DATE	DESCRIPTION
	02/03/22	90% CD REV 4
	01/18/22	90% CD REV 3
	12/02/21	90% CD REV 2
	11/01/21	90% CD REV 1
	10/01/21	90% CD
	09/24/21	100% ZD REV 1
	02/16/21	100% ZD
	01/28/21	90% ZD

Licensee:

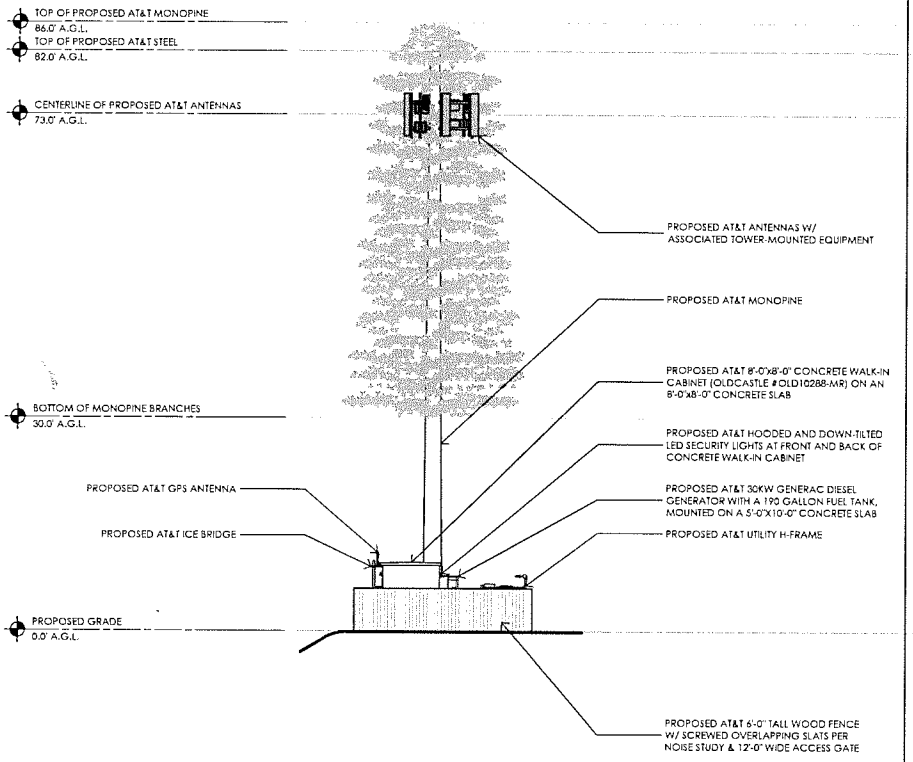
Architect:
MBT ARCHITECTS
1520 River Park Drive
Sacramento, California 95815

SHEET TITLE:
ANTENNA PLAN, SCHEDULE, & DETAILS

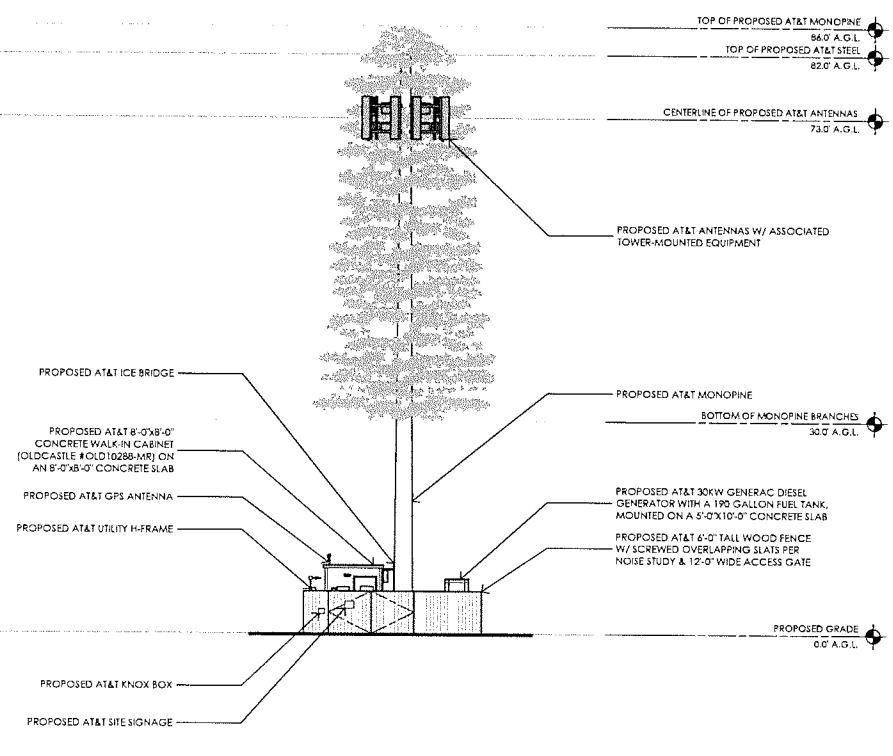
SHEET NUMBER:
A-3.1

NOTES:

1. AT&T TO INSTALL "NEEDLE SOCKS" ON ALL PROPOSED PANEL ANTENNAS & RRH UNITS. ALL ANTENNAS & EQUIPMENT TO BE PAINTED FLAT BROWN.
2. BRANCHES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. NOT TO SCALE.
3. MONOPINE TO BE STRUCTURALLY ENGINEERED FOR A TOTAL OF (3) WIRELESS CARRIERS.
4. AT&T TO MAINTAIN BRANCH DENSITY OF (3) BRANCHES PER LINEAL FOOT.
5. AT&T TO INSTALL (3) 24 PAIR FIBER TRUNKS & (9) DC POWER TRUNKS IN (6) 2" INNER DUCTS WITHIN THE MONOPOLE.



2 NORTH ELEVATION
1/8" = 1'-0"



1 WEST ELEVATION
1/8" = 1'-0"

Issued For:

CCL02212
LEISURETOWN RD - PEREZ

5078 MAPLE ROAD
VACAVILLE, CA 95687

PREPARED FOR

at&t

2600 Camino Ramon
San Ramon, California 94583

Vendor:

COMPLETE Wireless Consulting, Inc.

AT&T SITE NO:	CCL02212
PROJECT NO:	162.2776
DRAWN BY:	TLS
CHECKED BY:	SV

REV	DATE	DESCRIPTION
	02/03/22	90% CD REV 4
	01/18/22	90% CD REV 3
	12/02/21	90% CD REV 2
	11/01/21	90% CD REV 1
	10/01/21	90% CD
	09/24/21	100% ZD REV 1
	02/16/21	100% ZD
	01/28/21	90% ZD

Licensee:

Architect:

MBT ARCHITECTS
1520 River Park Drive
Sacramento, California 95815

SHEET TITLE:

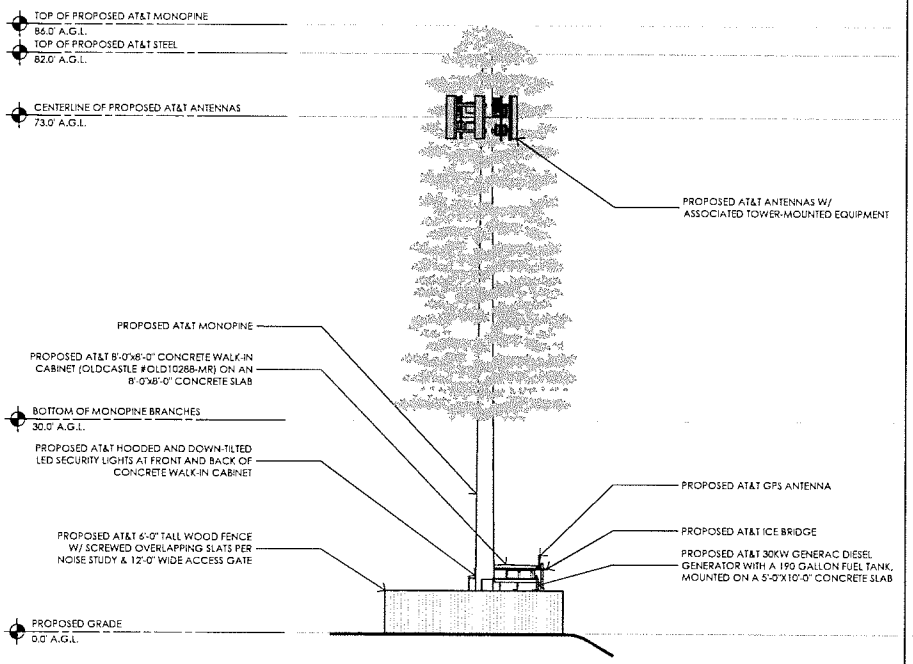
PROPOSED ELEVATIONS

SHEET NUMBER:

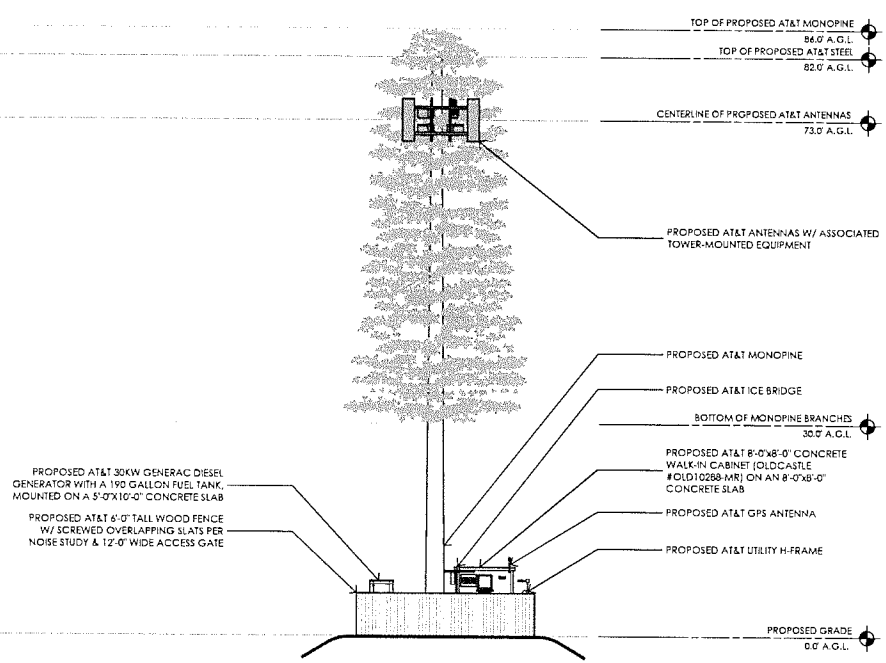
A-4.1

NOTES:

1. AT&T TO INSTALL "NEEDLE SOCKS" ON ALL PROPOSED PANEL ANTENNAS & RRH UNITS. ALL ANTENNAS & EQUIPMENT TO BE PAINTED FLAT BROWN.
2. BRANCHES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. NOT TO SCALE.
3. MONOPINE TO BE STRUCTURALLY ENGINEERED FOR A TOTAL OF (3) WIRELESS CARRIERS.
4. AT&T TO MAINTAIN BRANCH DENSITY OF (3) BRANCHES PER LINEAL FOOT.
5. AT&T TO INSTALL (3) 24 PAIR FIBER TRUNKS & (9) DC POWER TRUNKS IN (6) 2" INNER DUCTS WITHIN THE MONOPOLE.



2 SOUTH ELEVATION
1/8" = 1'-0"



1 EAST ELEVATION
1/8" = 1'-0"

Issued For:

CCL02212
LEISURETOWN RD - PEREZ

5078 MAPLE ROAD
VACAVILLE, CA 95687

PREPARED FOR

at&t

2600 Camino Ramon
San Ramon, California 94583

Vendor:

COMPLETE Wireless Consulting, Inc.

AT&T SITE NO:	CCL02212
PROJECT NO:	162.2776
DRAWN BY:	TLS
CHECKED BY:	SV

REV	DATE	DESCRIPTION
	02/03/22	90% CD REV 4
	01/18/22	90% CD REV 3
	12/02/21	90% CD REV 2
	11/01/21	90% CD REV 1
	10/01/21	90% CD
	09/24/21	100% ZD REV 1
	02/16/21	100% ZD
	01/28/21	90% ZD

License:

Architect:

MST ARCHITECTS

1520 River Park Drive
Sacramento, California 95815

SHEET TITLE:

PROPOSED ELEVATIONS

SHEET NUMBER:

A-4.2

ALTERNATIVE SITE ANALYSIS
AT&T MOBILITY

Site Name: CCL02212 Leisuretown Road
Address: 5078 Maple Road
APN: 0134-270-030

HISTORY

AT&T Mobility is seeking to improve communications service to residences, businesses, public services, and area travelers in the Vacaville area of Solano County, California and along Highway 80. The most recent attempt to fill this gap in coverage was the proposal of a new monopole tower. Power, telco, and access are all located within the owner's parcel or public right of way. The public right of way is Leisure Town Road, which is roughly 1,344' from the proposed lease area.

METHODOLOGY

Selecting a location for a wireless telecommunications facility needed to improve service and provide reliable coverage depends on many factors, such as: topography, zoning regulations, existing structures, co-location opportunities, available utilities, access, and the existence of a willing landlord. Wireless communication utilizes a line-of-sight technology that requires facilities to be in relatively close proximity to the wireless handsets to be served. Each proposed site is unique and must be investigated and evaluated on its own terms.

The proposed coverage area consists of Rural Residential uses in Vacaville, Solano County. Providing service to this area is particularly challenging due to the surrounding topography, and scenic corridor. AT&T strives to minimize the visual and acoustic impacts of each facility and seeks to preserve and incorporate the local community character to the greatest extent feasible at all stages of site selection and design process.

The proposed facility is needed to close AT&T's significant service coverage gap in Vacaville, and along Hwy 80. The proposed location best serves the interest of Solano County and the local community because it is the least intrusive means available to improve service to the area.

The proposed facility will consist of AT&T panel antennas mounted on a 90' monopole. AT&T considered numerous potential sites in its initial analysis and expended this analysis more recently to consider additional sites. Of multiple candidates considered, the proposed site was selected by AT&T as the best available by which AT&T can close its significant service coverage gap in this portion of the County.

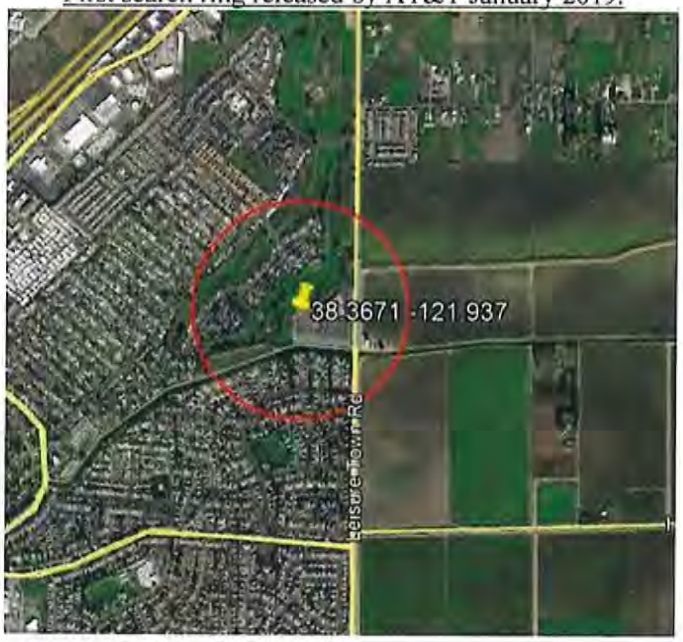
SELECTION PROCESS AND CANDIDATES CONSIDERED

In January 2019, AT&T determined that the service objectives discussed above must be met. After establishing the need for the proposed facility, AT&T set out to identify the least intrusive means of achieving the necessary service objective. A total of three candidates were considered in the process of selecting the proposed location. AT&T begins its process by identifying a search area in a required centerline height for the antennas to provided needed service.

The search area represents the area within which a facility can be located to produce the desired coverage objective. The centerline height of 85' represents the required height of the antennas to produce the desired coverage objective. After evaluating the County's zoning regulations, the next step is to identify any existing towers within the search ring that could allow for co-location. In this case, AT&T determined that there were no possible co-location opportunities.

AT&T identified several potential alternative sites prior to selecting the presently proposed location. Below is a list of the candidate properties that were considered for the proposed facility, as well as an explanation as to why each site was not selected.

First search ring released by AT&T January 2019.



In February and March of 2019, a request for a new search ring was made due to challenges with the current ring zoning. A large percentage of the ring was in residential districts. The remaining options were a golf course and the church. The golf course is closing to develop more residential and commercial properties. The church did not respond to requests.

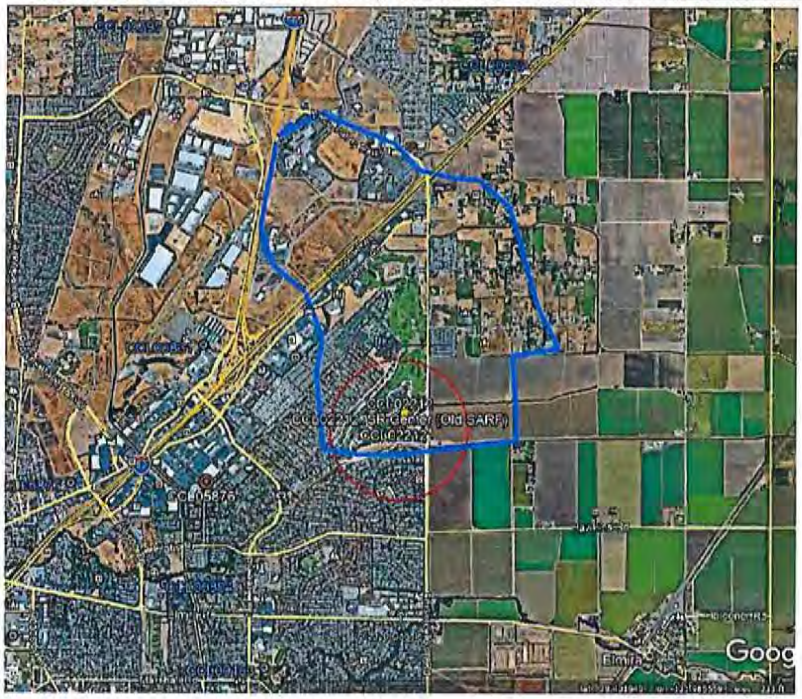
In April 2019, the new search ring released covered more of the agricultural districts to the east of Leisure Town Rd in order to utilize the PG&E line running north to south near the center of the search ring. The next round proposed 3 PG&E collocations. After candidate promotion, PG&E contacted the owners. Candidate C will be converting the land into residential development. The landlords for Candidate A (PG&E1) and Candidate B (PG&E3) both declined collocation requests.

Alternative Site Analysis – AT&T CCL02212 Leisure Town Road

Second Ring released by AT&T to include PG&E candidates.

March 2020, we looked into the existing ATC & CCI sites to the west, in Vacaville. These sites were 2,750'-3000' west of the search ring border. The ATC sites were not viable according to ATC due to challenging renewal discussions with the landlords. The CCI sites were not viable due to AT&T already collocating on one of the towers. The other CCI site is 675' apart from each other which was too close to our already collocated tower.

New Search ring (blue outline) to include Auto mall, ATC & CCI sites



March 2020, after the ATC & CCI collocation options were removed from consideration, we dug into automall sites. From March to May of 2020, the automall sites were considered as candidates, when it was discovered that a SBA 60' monopine, just north of Kaiser, prevented the construction of any new build sites within 1-mile. This eliminated all automall candidates. Essentially, the ATC, CCI and SBA existing tower prevents any new build facility to the east and north of Leisure Town Road in the City of Vacaville.

1. **PG&E 1 –** (5215 Hawkins Road)
   This candidate was reviewed for a co-location facility. PG&E contacted the landlord who declined the co-location offer. This candidate is not available.

2. **PG&E 3** (6388 Leisure Town Road)
   This candidate was reviewed for a co-location facility. PG&E contacted the landlord who declined the co-location offer as they want to turn the land into a residential development. This candidate is not available.

3. **PG&E 4** (Unaddressed Property – Meridian Road (at Water St. & Elmir Rd)
   This candidate was reviewed for a co-location facility. PG&E contacted the landlord who declined the co-location offer. This candidate is not available.

4. **PG&E 5** (Unaddressed property – Elmir Road at Tulip St)
   This candidate was reviewed for a co-location facility. PG&E contacted the landlord who declined the co-location offer. This candidate is not available.

5. **PG&E 1 Raysons Investments Co (**Unaddressed property – Leisure Town Road south of Sequoia Dr.)
   This candidate was reviewed for a co-location facility. PG&E contacted the landlord who declined the co-location offer. This candidate is not available.

Alternative Site Analysis – AT&T CCL02212 Leisure Town Road

Please see map below of PG&E candidates.

6. **ATC-1** – (321 Nut Tree Rd, Ste 2)
   ATC said the sites are not available for collocation due to renegotiations with the landlords not going well. This candidate is not available.

7. **ATC-2** (799 Orange Drive)
   ATC said the sites are not available for collocation due to renegotiations with the landlords not going well. This candidate is not available.

8. **Hyundai** – automall (641 Orange Drive)
   Site exists within 1 mile setback of the SBA monopine. Not allowed to build new freestanding facility. This candidate is not available.

9. **KIA -1** automall (651 Orange Drive)
   Site exists within 1 mile setback of the SBA monopine. Not allowed to build new freestanding facility. This candidate is not available.

10. **Nissan** – automall (671 Orange Drive)
    Site exists within 1 mile setback of the SBA monopine. Not allowed to build new freestanding facility. This candidate is not available.

11. **Jeep, Ram, Chrysler, Dodge** – automall (681 Orange Drive)
    Site exists within 1 mile setback of the SBA monopine. Not allowed to build new freestanding facility. This candidate is not available.

12. **VW** – automall (721 Orange Drive)
    Site exists within 1 mile setback of the SBA monopine. Not allowed to build new freestanding facility.

13. **Harley Davidson** – automall (100 Auto Center Drive)
    Site exists within 1 mile setback of the SBA monopine. Not allowed to build new freestanding facility. This candidate is not available.

14. **CCI/AT&T 127'** Monopine – (251 County Airport Rd)
    AT&T already co-located on this existing tower. This candidate is not available.

15. **CCI/TM1CCI/TM1** 95' Monopole (301 County Airport Road)
    Adjacent to the CCI tower above where AT&T previous co-located. This candidate is not available.

Conclusion

After an exhaustive search for potential sites and co-location possibilities and a review of the applicable zoning laws, the proposed candidate along Leisure Town Road was selected because it is the best available candidate to improve service to the area and to meet the wireless coverage objective lacking in this area.

Radio Frequency – Electromagnetic Energy (RF-EME) Compliance Report

Site No. CCL02212
MRSFR067344, MRSFR053947, MRSFR067095, MRSFR067315, MRSFR067394, MRSFR067380, MRSFR067423
Leisuretown Road - Perez
5078 Maple Road
Vacaville, California 95687
Solano County
38.37335556; -121.92918056 NAD83
Monopole

The proposed AT&T installation will be in compliance with FCC regulations upon proper installation of recommended signage.

EBI Project No. 6221003079
June 17, 2021

Prepared for:

AT&T Mobility, LLC
c/o Complete Wireless Consulting Inc
2009 V Street
Sacramento, CA 95818

Prepared by:

EBI Consulting
environmental | engineering | due diligence

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by AT&T Mobility, LLC to conduct radio frequency electromagnetic (RF-EME) modeling for AT&T Site CCL02212 located at 5078 Maple Road in Vacaville, California to determine RF-EME exposure levels from proposed AT&T wireless communications equipment at this site. As described in greater detail in Section 1.0 of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. 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.

This report contains the RF EME analysis for the site, including the following:

- Site Plan with antenna locations
- Graphical representation of theoretical MPE fields based on modeling
- Graphical representation of recommended signage and/or barriers

This document addresses the compliance of AT&T's transmitting facilities independently and in relation to all collocated facilities at the site.

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 exposures on any accessible rooftop or ground walking/working surface related to ATT's proposed antennas that exceed the FCC's occupational and/or general public exposure limits at this site. Additionally, there are areas where elevated workers may be exposed to power densities greater than the occupational limits. The worst-case emitted power density may exceed the FCC's occupational limit within approximately 23 feet of AT&T's proposed antennas at the antenna face level. Workers and the general public should be informed about the presence and locations of antennas and their associated fields.

As such, the proposed AT&T installation is in compliance with FCC regulations upon proper installation of recommended signage and/or barriers.

AT&T Recommended Signage/Compliance Plan

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated October 28, 2014, requires that:

1. All sites must be analyzed for RF exposure compliance;
2. All sites must have that analysis documented; and
3. All sites must have any necessary signage and barriers installed.

Site compliance recommendations have been developed based upon protocols presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated October 28, 2014, additional guidance provided by AT&T, EBI's understanding of FCC and OSHA requirements, and common

industry practice. Barrier locations have been identified (when required) based on guidance presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated October 28, 2014.

The following signage is recommended at this site:

- Yellow CAUTION 2B sign posted at the base of the monopole near the climbing ladder.

The signage proposed for installation at this site complies with AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document and therefore complies with FCC and OSHA requirements. Barriers are not recommended on this site. To reduce the risk of exposure and/or injury, EBI recommends that access to the monopole or areas associated with the active antenna installation be restricted and secured where possible. More detailed information concerning site compliance recommendations is presented in Section 4.0 and Appendix B of this report.

1.0 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 1 and Figure 1 (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^2). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm^2) and an uncontrolled MPE of 1 mW/cm2 for equipment operating in the 1900 MHz frequency range. For the AT&T equipment operating at 850 MHz, the FCC's occupational MPE is 2.83 mW/cm^2 and an uncontrolled MPE of 0.57 mW/cm^2. For the AT&T equipment operating at 700 MHz, the FCC's occupational MPE is 2.33 mW/cm^2 and an uncontrolled MPE of 0.47 mW/cm^2. These limits are considered protective of these populations.

Table 1: Limits for Maximum Permissible Exposure (MPE)

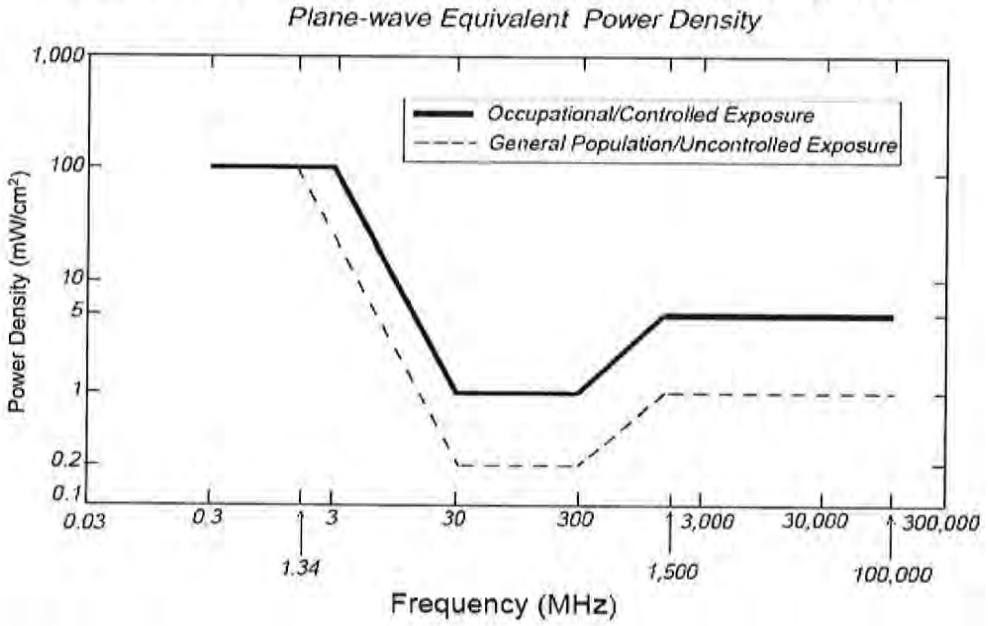
(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $[E]^2$, $[H]^2$, or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	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^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	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)



Based on the above, the most restrictive thresholds for exposures of unlimited duration to RF energy for several personal wireless services are summarized below:

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Microwave (Point-to-Point)	5,000 - 80,000 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Broadband Radio (BRS)	2,600 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Wireless Communication (WCS)	2,300 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Advanced Wireless (AWS)	2,100 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Cellular Telephone	870 MHz	2.90 mW/cm^2	0.58 mW/cm^2
Specialized Mobile Radio (SMR)	855 MHz	2.85 mW/cm^2	0.57 mW/cm^2
Long Term Evolution (LTE)	700 MHz	2.33 mW/cm^2	0.47 mW/cm^2
Most Restrictive Frequency Range	30-300 MHz	1.00 mW/cm^2	0.20 mW/cm^2

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 AT&T in this area operate within a frequency range of 700-1900 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.

2.0 AT&T RF Exposure Policy Requirements

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated October 28, 2014, requires that:

1. All sites must be analyzed for RF exposure compliance;
2. All sites must have that analysis documented; and
3. All sites must have any necessary signage and barriers installed.

Pursuant to this guidance, worst-case predictive modeling was performed for the site. This modeling is described below in Section 3.0. Lastly, based on the modeling and survey data, EBI has produced a Compliance Plan for this site that outlines the recommended signage and barriers. The recommended Compliance Plan for this site is described in Section 4.0.

3.0 Worst-Case Predictive Modeling

In accordance with AT&T's RF Exposure policy, EBI performed theoretical modeling using RoofMaster™ software to estimate the worst-case power density at the site rooftop and ground-level and/or nearby rooftops resulting from operation of the antennas. RoofMaster™ is a widely-used predictive modeling program that has been developed 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 (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 AT&T 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 AT&T and information gathered from other sources. There are no other wireless carriers with equipment installed at this site.

Based on worst-case predictive modeling, there are no modeled exposures on any accessible rooftop or ground walking/working surface related to ATT's proposed antennas that exceed the FCC's occupational and/or general public exposure limits at this site. Additionally, there are areas where

elevated workers may be exposed to power densities greater than the occupational limits. The worst-case emitted power density may exceed the FCC's occupational limit within approximately 23 feet of AT&T's proposed antennas at the antenna face level. Workers and the general public should be informed about the presence and locations of antennas and their associated fields.

At the nearest walking/working surfaces to the AT&T antennas on the equipment shelter roof, the maximum power density generated by the AT&T antennas is approximately 0.20 percent of the FCC's general public limit (0.04 percent of the FCC's occupational limit). The composite exposure level from all carriers on this site is approximately 0.20 percent of the FCC's general public limit (0.04 percent of the FCC's occupational limit) at the nearest walking/working surface to each antenna. Based on worst-case predictive modeling, there are no areas at ground/street level related to the proposed AT&T antennas that exceed the FCC's occupational or general public exposure limits at this site. At ground/street level, the maximum power density generated by the antennas is approximately 0.15 percent of the FCC's general public limit (0.03 percent of the FCC's occupational limit).

A graphical representation of the RoofMaster™ modeling results is presented in Appendix B.

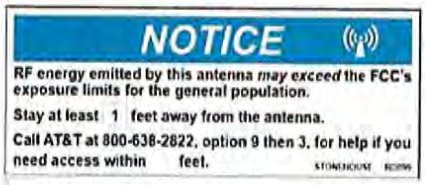
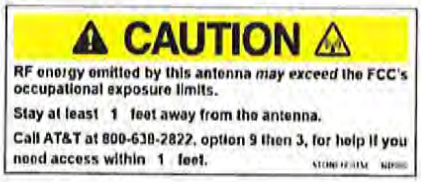
Microwave dish antennas are designed for point-to-point operations at the elevations of the installed equipment rather than ground-level coverage. Based on AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated October 28, 2014, microwave antennas are considered compliant if they are higher than 20 feet above any accessible walking/working surface. There are no microwaves installed at this site.

4.0 RECOMMENDED SIGNAGE/COMPLIANCE PLAN

Signs are the primary means for control of access to areas where RF exposure levels may potentially exceed the MPE. As presented in the AT&T guidance document, the signs must:

- Be posted at a conspicuous point;
- Be posted at the appropriate locations;
- Be readily visible; and
- Make the reader aware of the potential risks prior to entering the affected area.

The table below presents the signs that may be used for AT&T installations.

CRAN / HETNET Small Cell Decals / Signs		Alerting Signs	
	NOTICE DECAL	 TRILINGUAL NOTICE	 NOTICE 2
	NOTICE SIGN	 CAUTION 2 – ROOFTOP	 CAUTION 2A
	CAUTION DECAL	 CAUTION 2B - TOWER	 CAUTION 2C - PARAPETS
	CAUTION SIGN	 WARNING 1B	 WARNING 2A

Based upon protocols presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated October 28, 2014, and additional guidance provided by AT&T, the following signage is recommended on the site:

- Yellow CAUTION 2B sign posted at the base of the monopole near the climbing ladder.

No barriers are required for this site. The signage is graphically represented in the Signage Plan presented in Appendix B.

5.0 SUMMARY AND CONCLUSIONS

EBI has prepared this Radiofrequency Emissions Compliance Report for the proposed AT&T telecommunications equipment at the site located at 5078 Maple Road in Vacaville, California.

EBI has conducted theoretical modeling to estimate the worst-case power density from AT&T antennas to document potential MPE levels at this location and ensure that site control measures are adequate to meet FCC and OSHA requirements, as well as AT&T's corporate RF safety policies. As presented in the preceding sections, based on worst-case predictive modeling, there are no modeled exposures on any accessible rooftop or ground walking/working surface related to ATT's proposed antennas that exceed the FCC's occupational and/or general public exposure limits at this site. Additionally, there are areas where elevated workers may be exposed to power densities greater than the occupational limits. The worst-case emitted power density may exceed the FCC's occupational limit within approximately 23 feet of AT&T's proposed antennas at the antenna face level. Workers and the general public should be informed about the presence and locations of antennas and their associated fields.

To reduce the risk of exposure and/or injury, EBI recommends that access to the monopole or areas associated with the active antenna installation be restricted and secured where possible. Signage is recommended at the site as presented in Section 4.0 and Appendix B. Posting of the signage brings the site into compliance with FCC rules and regulations and AT&T's corporate RF safety policies.

6.0 LIMITATIONS

This report was prepared for the use of AT&T Mobility, LLC to meet requirements outlined in AT&T's corporate RF safety guidelines. 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.

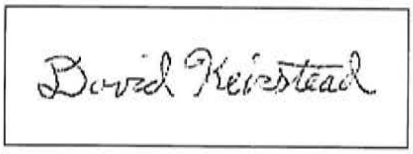
Appendix A

Personnel Certifications

Preparer Certification

I, David Keirstead, 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 been trained in on the procedures outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document (dated October 28, 2014) and on RF-EME modeling using RoofMaster™ modeling software.
- 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.



Reviewed and Approved by:

sealed 17jun2021

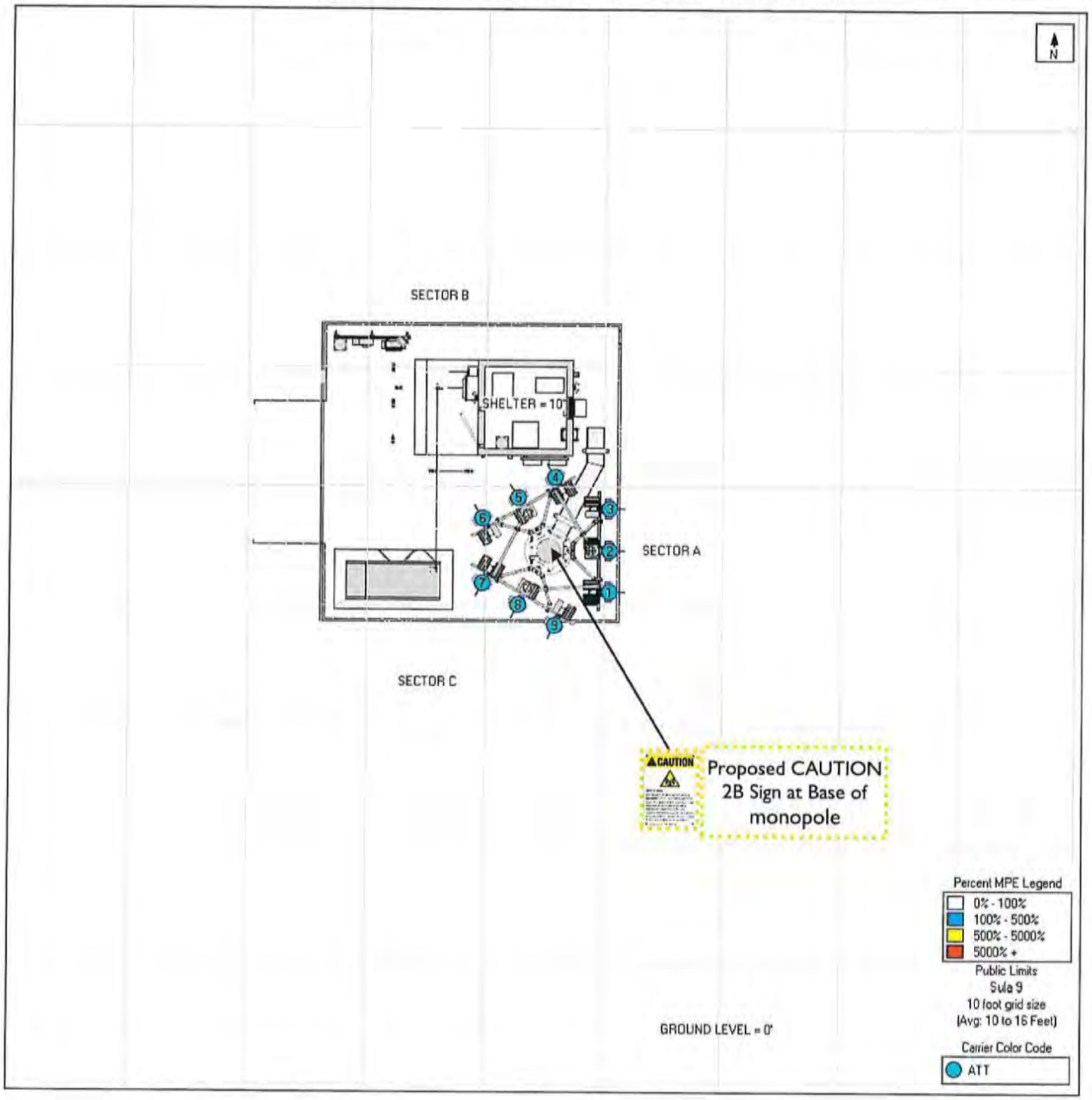
Michael McGuire
Electrical Engineer
mike@h2dc.com

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

Compliance/Signage Plan

Equipment Shelter Roof Level (10 feet AGL)



Existing Sign

Proposed Sign

Installed Sign

SIGN IDENTIFICATION LEGEND			
	AT&T NOTICE 2 Sign		AT&T CAUTION 2 – Rooftop Sign
	AT&T WARNING 1B and 2A Signs		AT&T CAUTION 2B – Tower Sign
	AT&T NOTICE Small Cell Signs		AT&T CAUTION 2C – Parapet Sign
	AT&T CAUTION Small Cell Signs		AT&T TRILINGUAL NOTICE Sign

Environmental Noise Assessment

CCL02212 AT&T Cellular Facility

Solano County, California

BAC Job # 2021-115

Prepared For:

Complete Wireless Consulting

Attn: Steve Proo
2009 V Street
Sacramento, CA 95818

Prepared By:

Bollard Acoustical Consultants, Inc.

Dario Gotchet, Senior Consultant

June 28, 2021

BOLLARD
Acoustical Consultants

Introduction

The CCL02212 AT&T Wireless Unmanned Telecommunications Facility (project) proposes the installation of cellular equipment within a lease area located at 5078 Maple Road in Solano County, California (APN: 0134-270-030). The externally mounted HVAC unit of a pre-manufactured concrete walk-in cabinet and an emergency diesel standby generator have been identified as the primary noise sources associated with the project. The proposed project site location is shown on Figure 1. The studied site design is dated February 16, 2021.

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 HVAC equipment.

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

Solano County General Plan

The Public Health and Safety Element of the Solano County General Plan contains a noise section that establishes acceptable noise level limits for non-transportation (stationary) noise sources, such as those proposed by the project. The General Plan non-transportation noise level standards applied to residential uses have been reproduced and are provided below in Table 1. The General Plan requires that the noise level standards set forth below in Table 1 be applied at the outdoor activity areas (e.g., backyards) of residential uses.

Table 1
Noise Level Standards for Non-Transportation Noise Sources – Residential Uses

Noise Level Descriptor	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly L_{eq}, dB	55	50
Maximum Level (L_{max}), dB	70	65

Source: Solano County General Plan, Health and Safety Element.

Solano County Code

Section 28.70.10(B)(1)(b) of the Solano County Code, which pertains to general development standards applicable to all uses in every zoning district, requires that all uses of land shall not generate noise that exceeds 65 dBA DNL at any property line.

In addition, Section 28.81(D)(10) of the Solano County Code, which pertains to noise generation of wireless communications facilities, reads as follows:

Legend

- Proposed AT&T Cellular Equipment Lease Area (Approximate)
- Parcel Boundaries (Approximate)
- # Residential Receivers

N

Scale (Feet)

0 100 200

CCL02212 AT&T Cellular Facility

Solano County, California

Proposed Cellular Facility Lease Area
& Nearest Residential Uses

Figure 1

BOLLARD Acoustical Consultants

ATTACHMENT F

All wireless communication facilities shall be designed to minimize noise. If a facility is located in or within 100 feet of a residential district, noise attenuation measures shall be included to reduce noise levels to a maximum exterior noise level of 50 dB DNL at the facility site's property lines.

Noise Standards Applied to the Project

The Solano County General Plan non-transportation (stationary) noise level standards identified in Table 1 were applied at the outdoor activity areas (backyards) of the nearest off-site residential uses to the project. In addition to the General Plan noise level standards, the noise level standard of 65 dB DNL identified in Section 28.70.10(B)(1)(b) of the Solano County Code was applied at the nearest property lines. Compliance with the 65 dB DNL noise level standard at the nearest property lines would ensure compliance at property lines located farther away.

The project parcel and adjacent parcels are zoned rural residential. The nearest residential property line is located approximately 30 feet from the proposed facility equipment lease area. Because the proposed facility is located within 100 feet from the nearest residential property, Section 28.81(D)(10) of Solano County Code would be applicable to the project. Specifically, the 50 dB DNL noise level standard was applied at the nearest project property lines adjacent to the residential use.

Project Noise Generation

As discussed previously, there are two project noise sources which are considered in this evaluation: the externally mounted HVAC unit of the pre-manufactured concrete walk-in cabinet and the emergency diesel generator. The evaluation of potential noise impacts associated with the operation of each noise source is evaluated separately as follows:

HVAC Equipment Noise Source and Reference Noise Level

The project proposes the installation of a pre-manufactured concrete walk-in cabinet equipped with one (1) externally mounted HVAC unit within the equipment lease area illustrated on Figure 1. According to the project site plans, the HVAC unit assumed for installation at this site is a Marvair Airxcel, Inc. Model ECUA18ACA. Based on reference noise level data obtained from the manufacturer (Marvair Airxcel, Inc.), this specific HVAC unit model has a reference noise level of 62 dB at a distance of 5 feet. The manufacturer's noise level data specification sheet for the proposed HVAC equipment is provided as Appendix C.

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 installation at this site 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, during daytime hours only, for a duration of approximately 15 minutes. The emergency generator would not operate at night, except during power outages.

Predicted Facility Equipment Noise Level Exposure

Assessment Relative to Solano County General Plan Noise Level Criteria

Assuming standard spherical spreading loss (-6 dB per doubling of distance), project-equipment noise exposure at the outdoor activity areas (backyards) of the nearest residential uses was calculated and the results of those calculations relative to the Solano County General Plan hourly average (L_{eq}) and maximum (L_{max}) noise level descriptors are presented below in Table 2.

Table 2
Summary of Project-Related Noise Exposure at the Nearest Residential Uses

Nearest Residential Receiver[1]	Distance from Cellular Facility Lease Area (ft)[2]	Predicted Equipment Noise Levels (dBA)	
		HVAC, L_{eq}	Generator, L_{max}
1	650	20	39
2	730	<20	38
3	480	22	42

[1] Residential receiver locations are illustrated on Figure 1.
[2] Distances obtained using the provided site plans and the Solano County iMap application measurement tool.
Source: Bollard Acoustical Consultants, Inc. (2021)

Because the proposed HVAC unit could potentially be in operation during nighttime hours, the operation of the HVAC unit would be subject to the Solano County General Plan *nighttime* noise level standard of 50 dB L_{eq} (Table 1). As indicated in Table 2, the predicted HVAC equipment noise levels of less than 20 to 22 dB L_{eq} at the nearest residential uses would satisfy the General Plan 50 dB L_{eq} nighttime noise level limit by a wide margin. As a result, no further consideration of HVAC equipment noise mitigation measures would be warranted for the project relative to the Solano County General Plan noise level criteria.

Project representatives have indicated that the proposed generator would be in operation for routine testing and maintenance twice a month during daytime hours for no more than 15 minutes and would only operate at night during emergencies. Because the project generator would only operate during daytime hours for brief periods required for testing and maintenance, the operation of the generator would be subject to the Solano County General Plan *daytime* noise level standard of 70 dB L_{max}. As shown in Table 2, the predicted generator noise levels of 38 to 42 dB L_{max} at the nearest residential uses would satisfy the General Plan 70 dB L_{max} daytime noise level standard by a wide margin. As a result, no further consideration of emergency generator noise mitigation measures would be warranted for the project relative to the Solano County General Plan noise level criteria.

Assessment Relative to Solano County Code Noise Level Criteria

Assuming standard spherical spreading loss (-6 dB per doubling of distance), project-equipment noise exposure at the nearest property lines was calculated and the results of those calculations relative to the Solano County Code day-night average (DNL) noise level descriptors is presented below in Table 3.

To calculate cellular facility equipment noise exposure relative to the Solano County Code day-night average (DNL) noise level criteria, the number of hours per day the equipment would be in operation must be known. For the purposes of this analysis, the HVAC unit of the pre-manufactured walk-in cabinet was conservatively assumed to be operating continuously for 24 hours. As mentioned previously, the project applicant has indicated that routine testing and maintenance of the emergency generator is limited to daytime hours, twice per month, for a duration of less than 15 minutes. As a result, the assumption of one hour of generator operation during daytime hours is considered conservative.

Table 3
Summary of Project-Related Noise Exposure at the Nearest Property Lines

	Distance from Equipment (ft)[2]		Predicted Equipment Noise Level, DNL (dBA)		
APN[1]	HVAC	Generator	HVAC	Generator	Combined
0134-270-004	35	45	52	48	53
0134-270-020	215	195	36	36	39
0134-290-020	45	25	44	53	54

[1] Parcel boundaries are illustrated on Figure 1.
[2] Distances obtained using the provided site plans.
Source: Bollard Acoustical Consultants, Inc. (2021)

As indicated in Table 3, the predicted combined project equipment noise levels of 39 to 54 dB DNL at the nearest property lines would satisfy the Solano County Code 65 dB DNL noise level standard by a wide margin. However, the predicted combined equipment noise levels shown in Table 3 would exceed the County Code 50 dB DNL noise level standard at the property lines of 0134-270-02 and 0134-290-020 (also project property lines). As a result, additional consideration of project equipment noise mitigation measures would be warranted for the project relative to the County Code 50 dB DNL noise level standard.

To mitigate this identified exceedance to a state of compliance with the County Code 50 dB DNL noise standard at the nearest property lines, it is recommended that a 6-foot tall wood (or wood composite) dog-ear fence noise barrier be constructed along the facility lease area perimeter. The location of the recommended barrier is illustrated on Figure 2. Barrier insertion loss calculation worksheets are provided in Appendix E. The wood (or wood composite) fence would provide the necessary noise attenuation provided the slats overlap by a minimum of 2 inches and are screwed into the framing. The purpose of overlapping slats and using screws rather than nails is to ensure that prolonged exposure to the elements does not result in visible gaps through the slats which would result in reduced noise barrier effectiveness. Alternatively, lining the proposed 6-foot-tall chain link fence with acoustic curtains at the location shown on Figure 2 would also serve as a sufficient noise barrier. If suspended acoustic curtains are installed on the proposed chain link fence, an acoustical vinyl product with a minimum STC (Sound Transmission

Class) rating of 28 should be considered. An example of such a product can be found at http://www.acoustiblok.com/acoustical_fence.php. Appendix F illustrates the use of an acoustical vinyl curtain at a photovoltaic inverter facility.

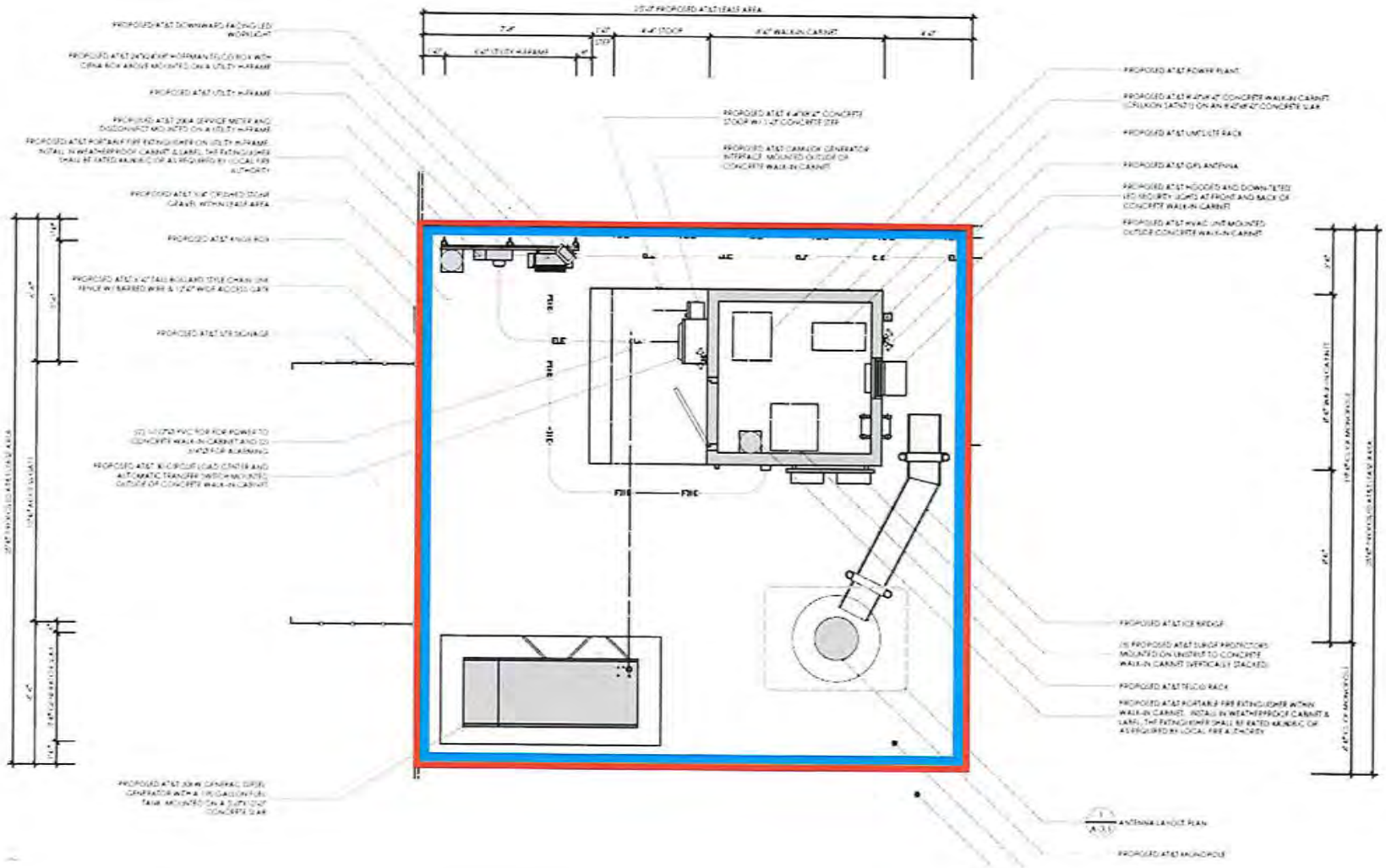
The predicted combined equipment noise levels including consideration of the recommended 6-foot-tall barrier are provided in Table 4.

Table 4
Summary of Project-Related Noise Exposure at the Nearest Property Lines – Mitigated

APN[1]	Predicted Equipment Noise Levels with 6' Barrier, DNL (dBA)[2]		
	HVAC	Generator	Combined
0134-270-004	46	43	48
0134-290-020	39	46	47

[1] The location of the recommended barrier is illustrated on Figure 2.
[2] Barrier insertion loss calculation worksheets are provided as Appendix E.
Source: Bollard Acoustical Consultants, Inc. (2021)

As indicated in Table 4, the construction of a 6-foot-tall barrier at the location illustrated on Figure 2 would reduce project equipment noise level exposure to a state of compliance with the Solano County Code 50 dB DNL noise level standard at the nearest property lines.



Legend

Proposed AT&T Cellular Equipment Lease Area

Recommended 6' Solid Noise Barrier

N

Scale (Feet)

0 5 10

CCL02212 AT&T Cellular Facility

Solano County, California

Equipment Layout Plan – Mitigation

Figure 2

BOLLARD Acoustical Consultants

ATTACHMENT F

Conclusions & Recommendations

Project-related equipment noise exposure is expected to satisfy the applicable Solano County General Plan and County Code noise level criteria at the nearest property lines provided that the following specific equipment noise mitigation measure is implemented:

1A. A 6-foot-tall wood (or wood composite) fence with overlapping slat construction be constructed at the location illustrated on Figure 2. To ensure an effective noise barrier, the composite wood fence slats should overlap by a minimum of 2 inches and should be screwed to the frame rather than nailed.

OR

1B. Line the proposed 6-foot-tall chain link fence with an acoustical curtain product with a minimum STC rating of 28 at the location illustrated on Figure 2.

This concludes our environmental noise assessment for the proposed CCL02212 AT&T Cellular Facility in Solano County, California. Please contact BAC at (916) 663-0500 or dariog@bacnoise.com with any questions or requests for additional information.

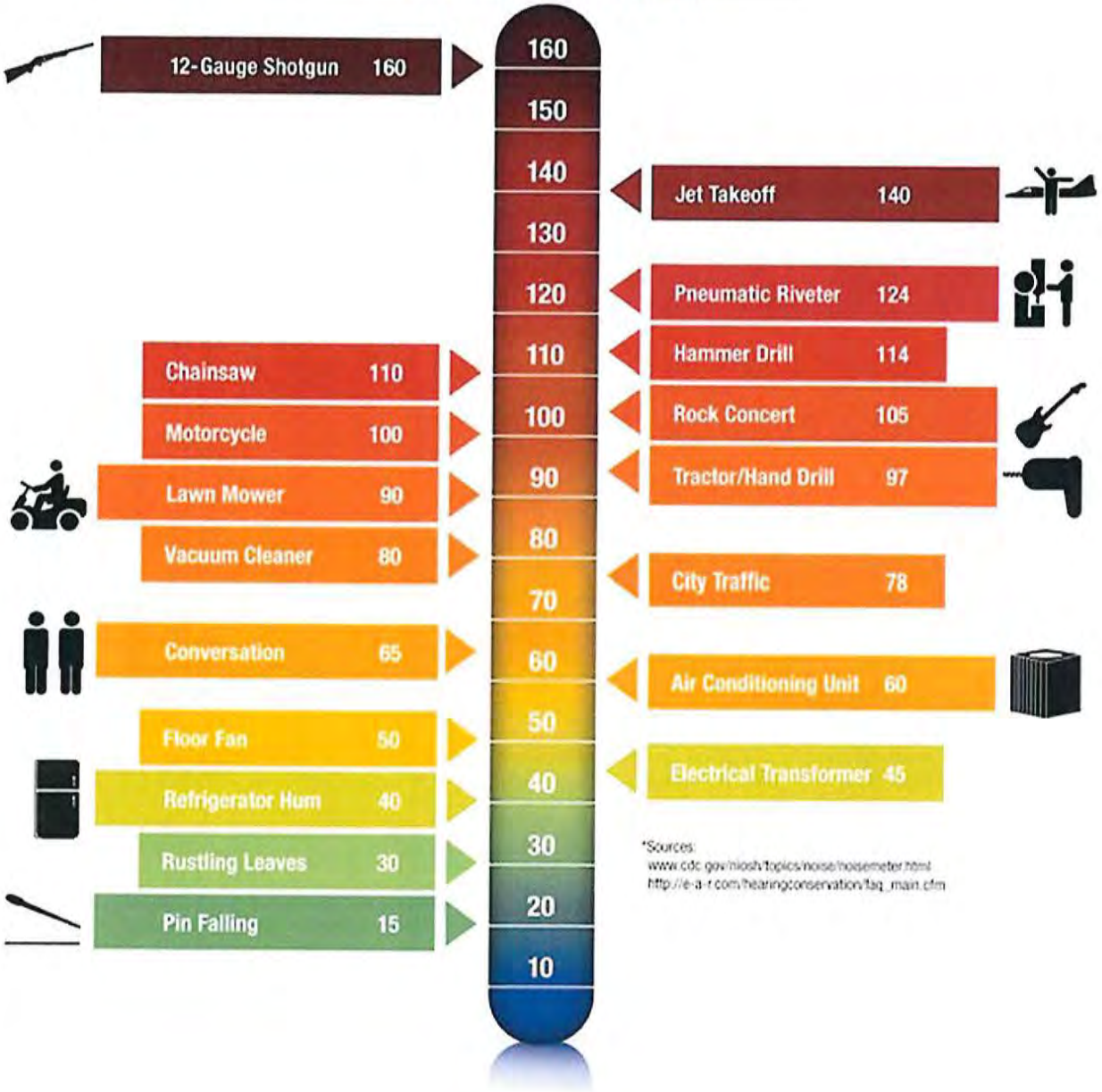
Appendix A
Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	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.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	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.
CNEL	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.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
IIC	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.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	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.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
STC	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://e-a-r.com/hearingconservation/faq_main.cfm

Appendix C

Marvair

156 Seedling Drive
Cordele, Georgia 31015
229-273-0753

Sound Pressure Level for the Industrial Product Air Conditioners (dBA)						
Distance From Unit (Feet)	Model Number					
	ECUA06ACA	ECUA08ACA	ECUA012ACA	ECUA018ACA		
5			51.5	62		
10			50.7	58		
20			47.8	55		
30			46.5	51		
40			45.6			
50			45.6			
60						
70						
80						

Notes: (1) Date: July 1,2019
(2) Background Sound Pressure Level: 41 dBA
(3) Sound Level Meter 1 Meter Above Ground Directly in Line with Outdoor Coil
(4) All units - 410A Refrigerant

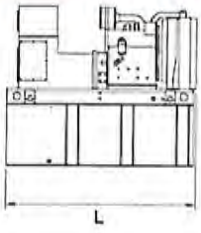
Appendix D

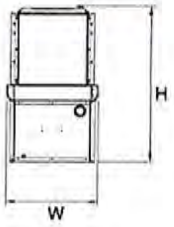
GENERAC | INDUSTRIAL POWER

30 kW Diesel

SD030

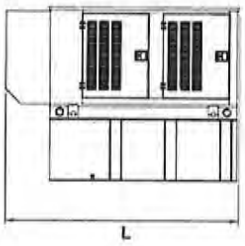
dimensions, weights and sound levels

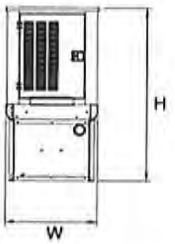




OPEN SET

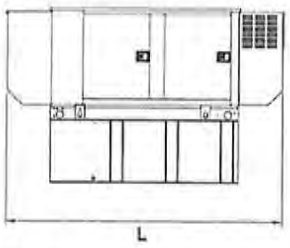
RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBA*
NO TANK	-	76	38	46	2060	82
20	54	76	38	59	2540	
48	132	76	38	71	2770	
77	211	76	38	83	2979	
109	300	93	36	87	3042	

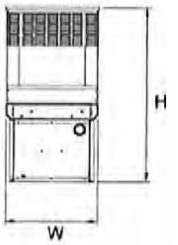




STANDARD ENCLOSURE

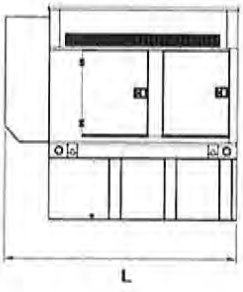
RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBA*
NO TANK	-	95	38	50	2362	77
20	54	95	38	63	2842	
48	132	95	38	75	3072	
77	211	95	38	87	3281	
109	300	95	38	91	3344	

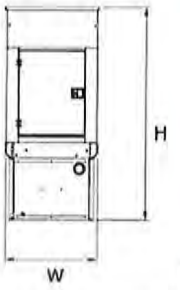




LEVEL 1 ACOUSTIC ENCLOSURE

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.

Generac Power Systems, Inc. • S45 W29290 HWY. 59, Waukesha, WI 53189 • generac.com

Appendix E-1
Barrier Insertion Loss Calculation

Project Information:

Job Number: 2021-115
Project Name: CCL02212 AT&T Cellular Facility
Location: Solano County, CA

Noise Level Data:

Source Description: HVAC Equipment
Source Noise Level, DNL (dBA): 52
Source Frequency (Hz): 500
Source Height (ft): 5

Site Geometry:

Receiver Description: Property Line - APN: 0134-270-004
Source to Barrier Distance (C_1): 3
Barrier to Receiver Distance (C_2): 32

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss (dB)	Noise Level, DNL (dB)	Barrier Breaks Line of Site to Source?
6	6	-6.4	45.6	Yes
7	7	-8.9	43.1	Yes
8	8	-10.7	41.3	Yes
9	9	-12.1	39.9	Yes
10	10	-13.4	38.6	Yes
11	11	-14.3	37.7	Yes
12	12	-14.6	37.4	Yes
13	13	-15.3	36.7	Yes
14	14	-15.9	36.1	Yes
15	15	-16.3	35.7	Yes
16	16	-16.9	35.1	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

BOLLARD
Acoustical Consultants

Appendix E-2
Barrier Insertion Loss Calculation

Project Information:

Job Number: 2021-115
Project Name: CCL02212 AT&T Cellular Facility
Location: Solano County, CA

Noise Level Data:

Source Description: Generator Equipment
Source Noise Level, DNL (dBA): 48
Source Frequency (Hz): 500
Source Height (ft): 5

Site Geometry:

Receiver Description: Property Line - APN: 0134-270-004
Source to Barrier Distance (C_1): 15
Barrier to Receiver Distance (C_2): 30

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss (dB)	Noise Level, DNL (dB)	Barrier Breaks Line of Site to Source?
6	6	-5.4	42.6	Yes
7	7	-6.6	41.4	Yes
8	8	-7.9	40.1	Yes
9	9	-9.3	38.7	Yes
10	10	-10.3	37.7	Yes
11	11	-11.3	36.7	Yes
12	12	-12.3	35.7	Yes
13	13	-13.3	34.7	Yes
14	14	-13.9	34.1	Yes
15	15	-14.6	33.4	Yes
16	16	-14.6	33.4	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

BOLLARD
Acoustical Consultants

Appendix E-3
Barrier Insertion Loss Calculation

Project Information:

Job Number: 2021-115
Project Name: CCL02212 AT&T Cellular Facility
Location: Solano County, CA

Noise Level Data:

Source Description: HVAC Equipment
Source Noise Level, DNL (dBA): 44
Source Frequency (Hz): 500
Source Height (ft): 5

Site Geometry:

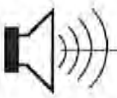
Receiver Description: Property Line - APN: 0134-290-020
Source to Barrier Distance (C_1): 17
Barrier to Receiver Distance (C_2): 28

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss (dB)	Noise Level, DNL (dB)	Barrier Breaks Line of Site to Source?
6	6	-5.4	38.6	Yes
7	7	-6.6	37.4	Yes
8	8	-7.8	36.2	Yes
9	9	-9.1	34.9	Yes
10	10	-10.3	33.7	Yes
11	11	-11.1	32.9	Yes
12	12	-12.1	31.9	Yes
13	13	-13.0	31.0	Yes
14	14	-13.8	30.2	Yes
15	15	-14.5	29.5	Yes
16	16	-14.6	29.4	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).



BOLLARD
Acoustical Consultants

Appendix E-4
Barrier Insertion Loss Calculation

Project Information:

Job Number: 2021-115
Project Name: CCL02212 AT&T Cellular Facility
Location: Solano County, CA

Noise Level Data:

Source Description: Generator Equipment
Source Noise Level, DNL (dBA): 53
Source Frequency (Hz): 500
Source Height (ft): 5

Site Geometry:

Receiver Description: Property Line - APN: 0134-290-020
Source to Barrier Distance (C_1): 2
Barrier to Receiver Distance (C_2): 23

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss (dB)	Noise Level, DNL (dB)	Barrier Breaks Line of Site to Source?
6	6	-6.9	46.1	Yes
7	7	-9.7	43.3	Yes
8	8	-11.5	41.5	Yes
9	9	-13.0	40.0	Yes
10	10	-14.0	39.0	Yes
11	11	-14.6	38.4	Yes
12	12	-15.3	37.7	Yes
13	13	-15.9	37.1	Yes
14	14	-16.3	36.7	Yes
15	15	-16.9	36.1	Yes
16	16	-17.1	35.9	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

BOLLARD
Acoustical Consultants

Appendix F

Photovoltaic Inverter Facility

Chain Link Fence Lined with Acoustical Vinyl Product

BOLLARD

Acoustical Consultants

ATTACHMENT F

Existing

Proposed

view from Maple Road looking southwest at site

AT&T Wireless

CCL02212 Leisuretown Road - Perez
5078 Maple Road, Vacaville, CA
Photosims Produced on 11-24-2021

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

Existing

Proposed

view from Sweet Bay Circle looking east at site

AT&T Wireless

CCL02212 Leisuretown Road - Perez
5078 Maple Road, Vacaville, CA
Photosims Produced on 11-24-2021

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

Existing

Proposed

view from Leisure Town Road looking northeast at site

AT&T Wireless

CCL02212 Leisuretown Road - Perez
5078 Maple Road, Vacaville, CA
Photosims Produced on 11-24-2021

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

Attachment H—Aerial Photo, Vicinity of Subject Property

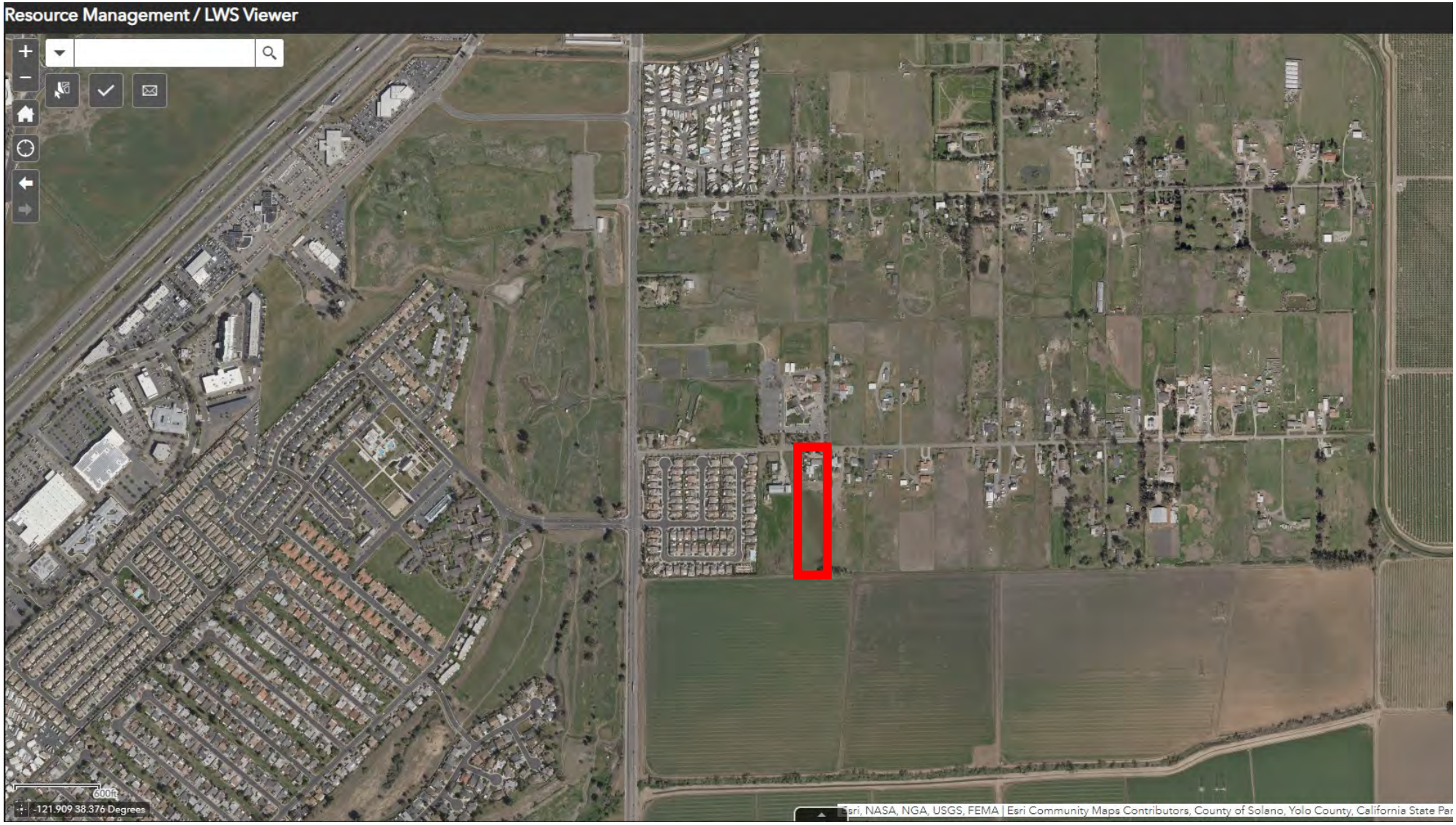


Figure 1. Existing Coverage Map

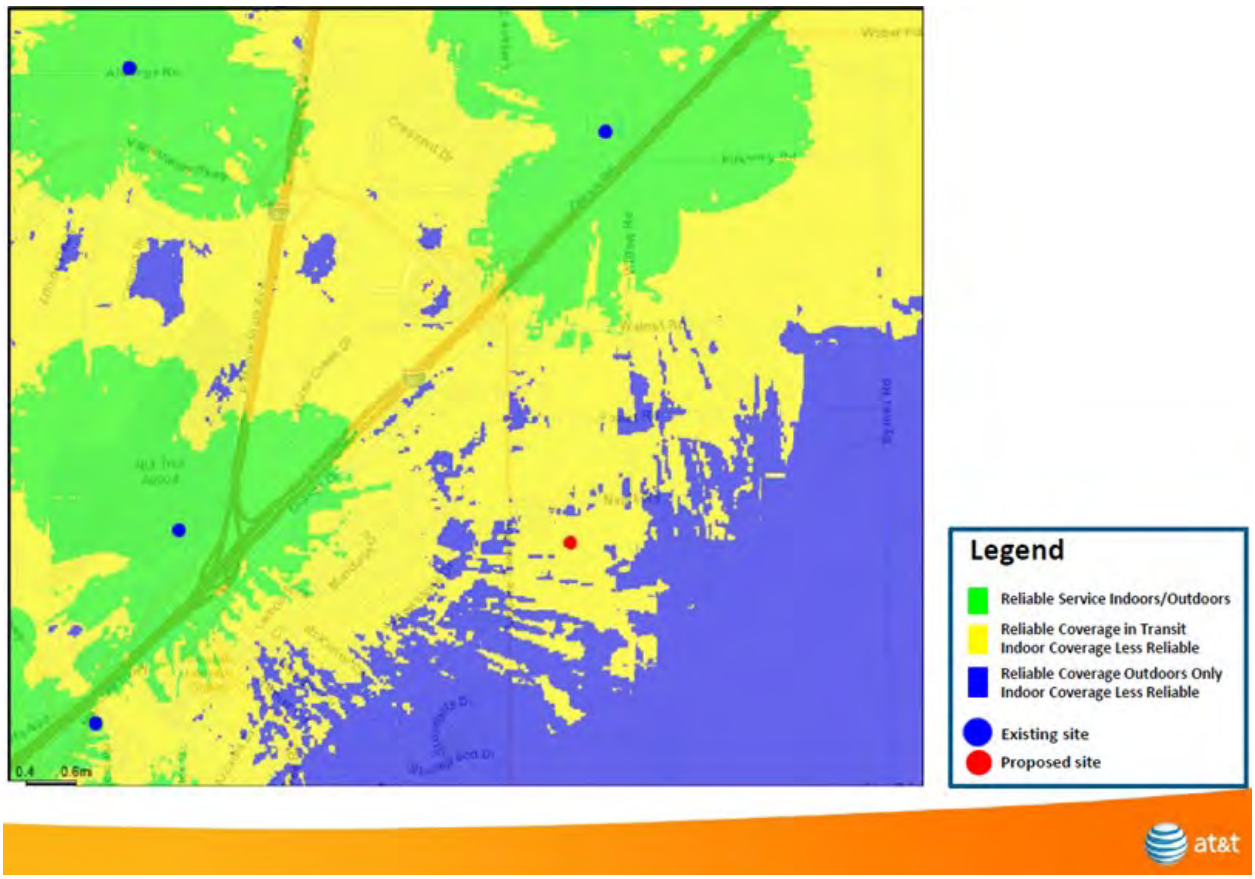


Figure 2. Proposed Coverage Map