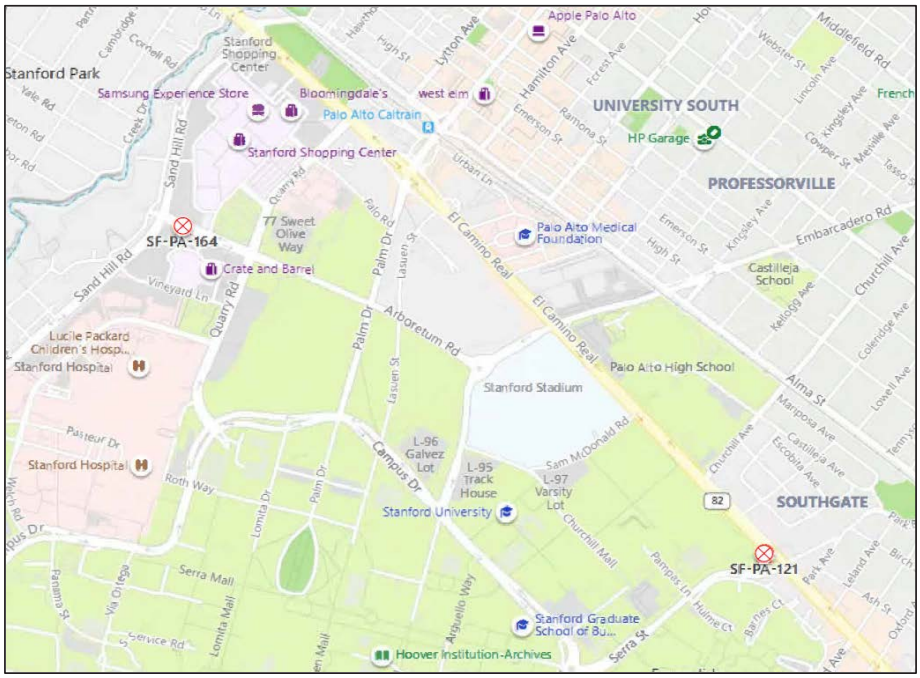
Verizon Wireless – Project Description
City Cluster 4 - Verizon Cluster 6 Batch "B"
June 11, 2021

Verizon Wireless is seeking approval for the design of two (2) proposed Wireless Communication Facility (WCF) attachments to metal streetlight poles owned and operated by the City of Palo Alto.

A brief overview of Verizon Wireless' citywide efforts to provide a more robust wireless network service to the community of Palo Alto through the attachment of 4G & 5G radio-antenna units on new replacement metal streetlight poles located in the public Right-of-Way (ROW) is provided hereafter. This application for a Tier 2 Wireless Communications Facility encompasses what is known as "City Cluster 5 - Verizon Cluster 6 Batch "B"" (Also known as "Cluster 6 Batch "B"") of metal streetlight poles adjacent to the Stanford Shopping Center.

NODE	ADJACENT ADDRESS	ADJACENT APN	STRUCTURE TYPE	POLE #	PUBLIC ROW ZONING CLASS
SF PALO ALTO 121	ACROSS FROM 1691 EL CAMINO REAL	124-25-044	METAL STREETLIGHT	167	N/A
SF PALO ALTO 164	ARBORETUM RD.	142-03-039	METAL STREETLIGHT	13/14	CC



Current Design for Consideration

Verizon Wireless' WCF design is modeled after the objective design standards *"For Streetlight Poles"* of Resolution No. 9873, *"Resolution of the Council of the City of Palo Alto Amending Objective Aesthetic, Noise, and Related Standards for Wireless Communication Facilities in the Public Right-of-Way"* as well as Verizon Wireless' network engineering needs.

The design consists of one (1) CommScope omnidirectional cylindical antenna and three (3) rectangular 5G radio-antenna units or three (3) rectangular 5G radio-antenna units, both top-mounted on new replacement metal streetlight poles located in the public ROW. Existing metal streetlight poles and foundations are required to be replaced per the Palo Alto WCF Performance Standards. One (1) pole in Cluster 6 Batch "B" (121) is required to be replaced with the "El Camino Real" Special Street Lighting style pole per the *Special Street Lighting Style Placement Guide*; see Attachment A. The remaining (1) pole in Cluster 6 Batch "B" (164) will be replaced with new like for like poles that does not require a Special Street Lighting pole. All poles in Cluster 6 Batch "B" will be increased in height by no more than the maximum allowable height increase of 5.5' for top-mounted designs per the WCF Design Standards. To protect the aesthetic qualities and design of the metal streetlight poles, the replacement poles and radio-antenna units and shrouds will be painted to match the existing pole color. The power disconnect will be located in an underground handhole vault. All wiring and cabling will be routed within the interior of the metal streetlight poles and down through underground conduits to the handhole vaults. The 5G radio-antenna units have interior cooling fans. Noise/acoustic engineering reports have been provided demonstrating the units comply with PAMC Chapter 9.10. Emergency battery backup is not part of this design.

FCC Small Wireless Facility Definition (FCC 18-133)

The Federal Communications Commission defined small wireless facilities as:

- Each antenna is no more than 3 cubic feet in volume
- All other equipment is cumulatively no more than 28 cubic feet in volume
- The structure is:
    - 50' or less in height OR
    - No more than 10% taller than adjacent structures OR
    - Is not extended to a height of more than 10% above its preexisting height

Each proposed 5G antenna is 0.50 cubic feet in volume and all other equipment is cumulatively no more than 28 cubic feet in volume. Each proposed 4G antenna is 12" in diameter and 1.57 cubic feet in volume and all other equipment is cumulatively no more than 28 cubic feet in volume. Each pole has either 3 or 4 antennas for a maximum of 1.5 or 3.07 cubic feet per SWF. None of the proposed WCF's are over 50' in height. All proposed SWF meet the FCC definition of FCC 18-133.

Shroud/Screening and Vaulting

The consensus opinion from previous Architectural Review Board (ARB) and City Council hearings was a desire to move all side-mounted equipment to the top of the pole or to underground facilities to the greatest extend feasible with all cables and wires screened behind the radio-antenna units and within the interior of the metal streetlight poles. Because the 5G radio-antenna units are singularly integrated, the units cannot be located underground, therefore, we are proposing the Secondary Option of a Top-Mounted Design for Streetlight Poles enclosed within a shroud. The shrouds fall under the individual and cumulative volume thresholds (0.85 and 2.6 cubic feet, respectively), and they are mounted two feet below the light mast or higher. We've included site plans, structural calculations, and photo simulations of this design for your review.

The power disconnect switch will now be installed in underground hand-hole vaults. This design accomplishes the desire of previous ARB and City Council hearings by moving all side-mounted equipment underground and locating the antenna units to a top-mounted design.

Verizon Wireless Principal RF Engineer, Brian Ung, has provided a Shrouding/Screening justification statement; Attachment D, "Statement of Verizon Wireless Principal RF Engineer Brian Ung Regarding Ultra Wideband 5G Antenna Screening Limitations".

Landscaping

We have worked closely with Katherine Naegele of Anderson's Tree Care Specialists, Inc., an independent Arborist certified with the City of Palo Alto's Urban Forestry Department, to propose amenity trees in order to provide screening. However, due to the sensitivity of millimeter wave technology, planting amenity trees in close proximity to the 5G radio-antenna units would interfere with signal propagation. Therefore, species of trees that have a mature height of 20' or less have been proposed based on the existing species palette in the immediate area.

Because all existing poles and pole foundations will be replaced with new poles and new foundations, any existing landscaping removed or damaged by installation will be replaced based on Urban Forestry's recommendation. Similarly, new underground hand-hole vaults installed within the public ROW that remove or damage existing landscaping will also be replaced based on Urban Forestry's recommendation.

Color

New replacement metal streetlight poles located in the public ROW are required to be painted to match the existing pole color. Upon review of existing metal streetlight poles in this cluster, each pole appears to be unpainted galvanized steel.

Cluster 6 Proposed WCF's

Project Overview

Verizon Wireless has entered into a Master License Agreement (MLA) with the City of Palo Alto allowing the attachment of antennas and other equipment to city-owned poles in the public ROW. Based on the need to provide network coverage and capacity, Verizon Wireless radio engineers identified locations throughout the city that require additional service. A total of ninety-three (93) such WCF installations are currently planned to be co-located on both wood utility and metal streetlight poles located in the public ROW. Approximately seventy-nine (79) of these small cells are proposed to be co-located on wood utility poles and fourteen (14) are proposed to be installed on city streetlights. No wood utility poles are part of this application. This application aims to provide the City of Palo Alto with additional 4G capacity and coverage and a new 5G network where none exist today.

Community Need for Small Cells

The unprecedented current and predictable demand for wireless service requires the densification of existing cellular networks. As a result, wireless communication facilities are diminishing in height and are located closer to the user and to provide essential coverage for emergency personnel. While the terrain of Palo Alto is relatively flat, the dense foliage of the tree canopy combined with the difficulty in permitting macro WCF's within residential neighborhoods presents unique challenges in the deployment of wireless service to the City of Palo Alto. Verizon Wireless must add additional coverage throughout the city in order to meet current and future customer demand. Deployment of WCF's are the least visually intrusive methods of providing necessary coverage required to the City of Palo Alto. The reduced size of the equipment used for cellular communication allows for WCF's to be located on existing infrastructure, reducing the need for new tower structures and minimizing visual impact to the surrounding community. Additionally, these small cells can be located in areas where traditional "macro" wireless communication facilities cannot be located so that essential communication services can be provided to critical areas while co-locating on existing utility infrastructure. The addition of WCF will help to maintain the technological lead that Palo Alto has become synonymous with.

Verizon Wireless Design Requirements

Verizon Wireless has engineered WCF's utilizing the most streamlined equipment currently available to develop the coverage requirements of its 4G and 5G network and the design standards of the City of Palo Alto. Verizon Wireless' network requires either three (3) 5G radio-antenna units or one (1) 4G antenna combined with three (3) 5G radio-antenna units, one (1) small electrical disconnect box located in the ground, and associated wires and cabling routed through the inside the pole and underground conduit. The following outlines the number of radio-antenna units proposed per node:

5G Only Radio-Antenna Design	4G/5G Radio-Antenna Design
SF Palo Alto 121	SF Palo Alto 164

While the proposed WCF's will be submitted in clusters and are linked to the greater Verizon Wireless network, it is important to note that each WCF acts independently of any other small cell. The utility of each facility is therefore not dependent on a neighboring wireless facility.

Planning Department Objective Design Standards – Resolution 9873

- Radio equipment shall be placed in an underground vault. The associated antenna(s) shall be placed in a shroud at the top of a nearby pole.
- Underground vaults shall be the minimum volume necessary to house WCF equipment and include information detailing why the proposed dimensions are required. Maximum vault size shall not exceed 5 feet 8-inches x 8 feet 2-inches x 5 feet 7-inches or 260 cubic feet, excluding space required for ventilation or sump pump equipment.
- Radio equipment and the associated antenna(s) shall be enclosed within a shroud at the top of the pole.
- Radio equipment shall be enclosed within one or two sunshields not exceeding 8 inches wide nor 0.75 cubic feet in volume each, mounted directly to the side of the pole. The associated antenna(s) shall be placed in a shroud at the top of the pole.
- Sunshields shall be attached at least 12 feet above ground level and, when located on wood utility poles, shall not interfere with the identified communication space.
- Radio equipment shall be attached to a pole behind existing signage under the following conditions:
    - Radio equipment shall be placed within a shroud that does not exceed the dimensions of the sign in height and width, nor 4 inches in depth, including any required mounting bracket.
    - In no event shall WCF equipment obscure or interfere with the visibility or functioning of the signage.
- The associated antenna(s) shall be placed in a shroud at the top of the pole.
- Antennas shall have the smallest size possible to achieve the coverage objective.
- The diameter of the antenna and shroud shall not exceed 15 inches at their widest.
- For Streetlight Poles: The maximum WCF height shall not exceed 3 feet (or 5.5 feet for top-mounted designs) from the top of the streetlight pole that meets the City standards for the proposed location.
- The associated "antenna skirt" shall taper to meet the pole above the mast arm.
- Antennas and/or equipment at the top of the pole shall be covered by a single integrated shroud and "antenna skirt" designed without gaps between materials or sky visible between component surfaces and between the shroud or skirt and the top of the pole.
- All components external to the pole shall have an integral color or shall be painted to match the color and/or materials of the pole.

- Equipment shall be oriented to face in either of the directions of travel in the right of way and shall not face or extend toward private property or the curb line.
- For Streetlight Poles: Equipment that cannot propagate an adequate signal within the shrouding required by the standard designs shall be attached to a streetlight pole at a height of 2 feet below the light mast or higher. Each instance of such equipment shall not exceed 0.85 cubic feet, nor shall the total volume of such equipment and any shrouding exceed 2.6 cubic feet per streetlight pole.
- Any WCF attachments placed below 16 feet above ground level shall not be placed closer than 18 inches to the curb, nor shall they extend over the sidewalk
- All WCF equipment shall maintain at least 3 feet from any curb cut.
- For Streetlight Poles: All wires and cabling shall be routed entirely underground and within the pole and any attached shroud.
- Safety signs shall be the smallest size possible to accomplish its purpose.
- For Streetlight Poles: Power disconnects shall be labeled and placed in a vault near the base of the pole.
- Except as provided in these standards, no equipment cabinets may be placed at grade.
- A WCF shall utilize an existing streetlight pole or wood utility pole location. Any new pole locations are prohibited unless approved through a City Public Works/Utilities pole placement application.

Code Compliance

The proposed project does not qualify for a Tier 1 WCF Eligible Facilities Request. The proposed project qualifies as a Tier 2 WCF under of PAMC 18.42.110 because it modifies an eligible support structure (metal streetlights), collocates new equipment, and substantially changes the physical dimensions of the eligible support structure on which it is mounted. The proposed project also supports the goals of Palo Alto Comprehensive Plan, including Goal B-3 for Palo Alto to serve as a Regional Shopping, Services, and Employment Center. Reliable wireless service is a critical aspect of the city's infrastructure, and these WCF installations will provide essential communication capability to the people of Palo Alto, as well as emergency services for years to come. Future expansion of additional WCF's, including 5G equipment, would be designed in accordance with the applicable laws and the City's Objective Standards to the greatest extent feasible. Lighting is not required for this project and therefore has not been proposed. The proposal for a small cell network in Palo Alto is consistent with the goals of the comprehensive plan to contribute to economic vitality in the area. The proposed project will provide additional network coverage and enhanced wireless communications services which will benefit the public health, safety, convenience, and welfare of the community.

Safety

Many of the design criteria for a WCF relates to safety. Because all pole mounted equipment is attached above 8', the public will not have access to the equipment which will prevent vandalism and graffiti. If maintenance of the streetlight is required, the Network Operations Center (NOC) contact information is located on the signage for each node, as agreed upon by City of Palo Alto Utilities (CPAU) engineering and management team. Verizon Wireless has agreed to allow CPAU to shut down the WCF if maintenance is required without calling the NOC.

All sites require a structural analysis, signed and stamped by a California Registered Professional Engineer for review by City engineering staff.

Small Cell Selection Process

Pole Selection

Based on the need to provide network coverage and capacity, Verizon Wireless engineers identify target streetlight pole locations throughout the city to add, improve, and optimize network performance. Each streetlight pole is then visited by a team to verify existing city-owned structures available for attachment within the targeted engineering area. During this fielding walk, guidelines from the Planning Department and the City of Palo Alto Utilities Engineering Department, as well as Verizon Wireless' Engineering, Real Estate, and Construction teams are utilized to determine the most viable pole, subsequently identifying it as the "Primary" location. The criteria used to select a pole in a given area has been compiled into the WCF Siting Guidelines below.

Collocation with Other Small Cells

The first step when a location is identified by Verizon Engineering is to visit the area and assess suitable structures for attachment. In some cases, there may be an existing WCF or small cell located on a utility pole in the area. While it may appear sensible to collocate on the same pole as an existing WCF, this is not feasible for many reasons. ROW poles are small and can only support a limited amount of equipment structurally. Signal interference between carrier technology can also present a problem in locating equipment on the same structure. Some carrier antennas and frequencies need significant separation to avoid interference, and most ROW poles don't have enough space to allow for this separation. For these reasons, Verizon Wireless has not proposed collocation on an existing WCF.

WCF Siting Guidelines

Our team has drafted a list of criteria and constraints used in selecting a pole, presented in the guidelines below. WCF's differ from traditional "macro" cells in that their "small cell" quality dictates that they be located in a very specific area and can only move a short distance (measured in feet) within an identified area of need when these criteria and constraints cannot be met. When selecting a pole to serve a specific area, Verizon Wireless performs a thorough analysis of the existing infrastructure to determine the most appropriate location. Criteria have been further adjusted as city staff from Planning, Urban Forestry, and CPAU have all made time to attend site walks with Verizon Wireless real estate, engineering, and construction teams in their fielding efforts.

Development Criteria

Development Standards from PAMC §18.42.110(i)

- Shall utilize the smallest antennae, radio, and associated equipment, as measured by volume, technically feasible to achieve a network objective
- Shall be screened from public view
- When attached to an existing structure, shall be shrouded or screened using materials or colors found on existing structure
- Shall be placed at a location that would not require the removal of any required landscaping or would reduce the quantity of landscaping to a level of noncompliance with the Zoning Code
- An antenna, base station, or tower shall be of a "camouflaged" or "stealth" design, including concealment, screening, and other techniques to hide or blend the antenna, base station, or tower into the surrounding area, such as the use of a monopine design
- Shall not be attached on a historic structure/site

Planning Department Objective Siting Standards – Resolution 9873

- Poles located in the public ROW are preferred. Poles on Public Utility Easements are not selected for attachment
- **Permitted Zoning Districts**: WCF placement is permitted in non-residential zoning districts.
- **Public School Boundary**: A WCF shall not be placed within 600 feet of a parcel containing a public school. No WCF Exception shall be granted allowing a WCF to be placed closer than 300 feet to a parcel containing a public school.
- **Residential Zone of Exclusion**: No WCF shall be placed within the public right of way in the area between the street centerline and the central fifty percent (50%) of the immediately adjacent parcel's front lot line. The central fifty percent standard shall be based on the parcel's lot width. For corner lots, the central fifty percent standard along the street lot line shall be based on the parcel's lot depth.
- **Residential Roadways**: Any request for a WCF Exception involving placement of a WCF within a residential zoning district shall prioritize WCF placement on the following roadway types
    - Expressways
    - Arterials
    - Residential Arterials
    - Roadways identified with a Special Setback (including collector and local streets)
      *In each instance above, the priority shall be for placement of WCF most distant from residential property.
- A WCF shall not be placed closer than 20 feet from any building used for occupancy in any zoning district.
- A WCF shall not be placed less than 600 feet away from another WCF. This requirement does not preclude WCFs collocating on the same structure where otherwise allowed.

- A WCF shall not be placed less than 20 feet away from any roadway intersection. An intersection is measured from the start of the curb radius.
- A WCF shall not be placed along an identified scenic route.
- A WCF shall not be placed within a listed historic district, nor immediately adjacent to a parcel with an historic structure, nor immediately adjacent to an historic site, as those terms are defined by PAMC Section 16.49.020.
- A WCF shall not be placed in a potential historic district, or immediately adjacent to a potential historic structure or site, where the application for historic designation was filed with the City prior to the filing of a WCF application, until a final decision has been made regarding that pending historic designation.
- No WCF is to be placed within 300 feet of a parcel containing a public school
- No WCF is to be placed within 20 feet of a habitable residential building in a residential zoning district
- No WCF is to be placed on wood utility poles within the Residential Zone of Exclusion described in this resolution
- No WCF is to be placed in an alley within a residential zoning district.

City of Palo Alto Utilities Standards

- Proposed SWF must have access to low voltage power source
- Power source must be independent of City streetlight power
- City streetlight power conduit cannot be shared with applicant

Verizon Wireless Engineer Standards

- Coverage gaps in service
- Proximity to tree foliage. Trees will interfere with the antenna signal
- Proximity to residences. Verizon Wireless' radio-antenna units need to be as close as possible to residences
- Street coverage needs for autonomous vehicles
- Proximity to power source
- Proximity to fiber source

Additional Considerations

Beyond the siting and engineering criteria, wherever possible, poles are selected to reduce the impact on views from streets as well as adjacent residences. Site selection was further constrained, wherever possible, to avoid poles located in private residential easements (e.g., backyards) and proximity to second story windows.

Because WCF's provide service over a small area, approximately five hundred (500) to one thousand (1000) feet, there is less flexibility in how far they can be moved from a defined engineering target. As a result, there are a limited number of existing structures located in the public ROW on wood utility poles or metal streetlights that will meet the required engineering objective for any given WCF.

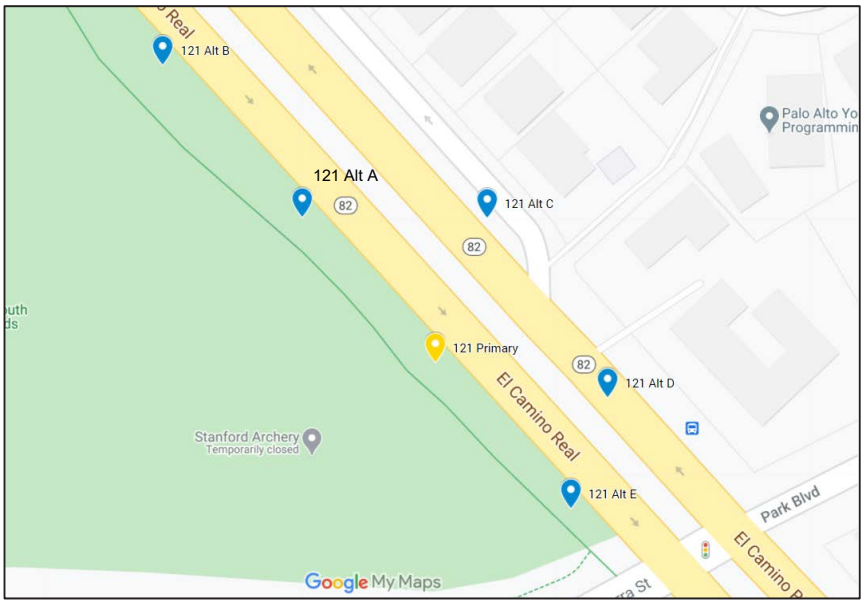
As our Alternative Siting Analyses demonstrates, many seemingly suitable poles must be eliminated due to Planning WCF Siting Standards, CPAU engineering requirements, or Verizon Wireless engineering needs. As these examples demonstrate, there is often only one suitable pole for a small cell within a designated coverage area.

Alternative Siting Analysis

SF Palo Alto 121 – ASA Map

1691 El Camino Real Rd.

Primary Pole - Yellow Pindrop

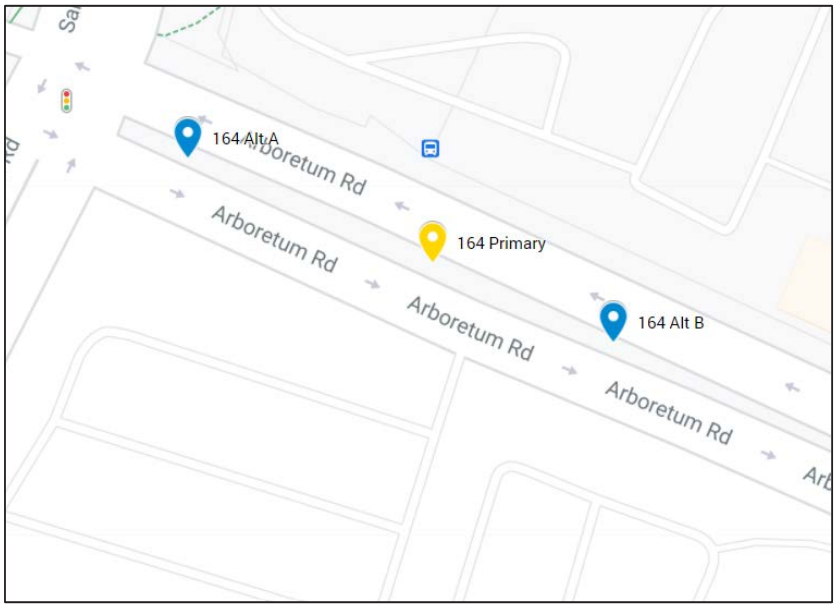


Pole Candidate	Structure Type	Pole #	Type of Provisions from Which Exception Are Required for Alternate Pole	Basis of Exception Request
SF Palo Alto 121 Primary	Metal Streetlight	167	No Exceptions Requested	N/A
SF Palo Alto 121 Alt A	Metal Streetlight	165	No Exceptions Requested	N/A
SF Palo Alto 121 Alt B	Metal Streetlight	163	No Exceptions Requested	N/A
SF Palo Alto 121 Alt C	Metal Streetlight	166	1. RESIDENTIAL 2. EQUIPMENT FACING PRIVATE PROPERTY	ALTERNATE POLE IS MORE INTRUSIVE THAN PRIMARY POLE.
SF Palo Alto 121 Alt D	Metal Streetlight	168	1. RESIDENTIAL 2. EQUIPMENT FACING PRIVATE PROPERTY	ALTERNATE POLE IS MORE INTRUSIVE THAN PRIMARY POLE.
SF Palo Alto 121 Alt E	Metal Streetlight	169	No Exceptions Requested	N/A

SF Palo Alto 164 – ASA Map

Arboretum Rd.

Primary Pole - Yellow Pindrop

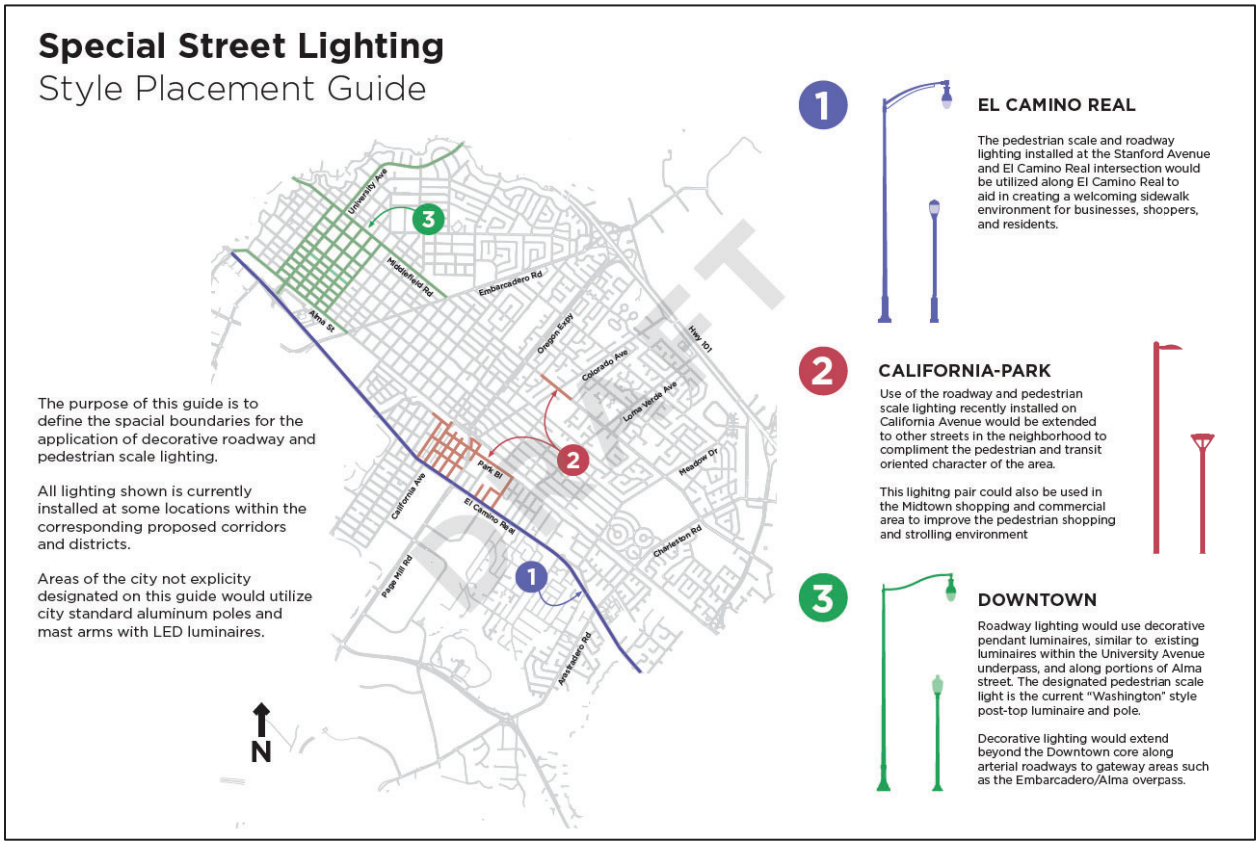


Pole Candidate	Structure Type	Pole #	Type of Provisions from Which Exception Are Required for Alternate Pole	Basis of Exception Request
SF Palo Alto 164 Primary	Metal Streetlight	14	No Exceptions Requested	N/A
SF Palo Alto 164 Alt A	Metal Streetlight	12-Nov	No Exceptions Requested	N/A
SF Palo Alto 164 Alt B	Metal Streetlight	15/16	No Exceptions Requested	N/A

Attachment A
Special Street Lighting - Style Placement Guide

The following proposed WCF's will be located along streets that require all replacement streetlight poles to be the “El Camino Real” style.

NODE	ADJACENT ADDRESS	ADJACENT APN	STRUCTURE TYPE	POLE #	PUBLIC ROW ZONING CLASS
SF PALO ALTO 121	ACROSS FROM 1691 EL CAMINO REAL	124-25-044	METAL STREETLIGHT	157	N/A



Verizon Wireless Small Cell Application – Exception Request

The proposed small cells referenced in the accompanying Verizon Wireless application submitted to the City of Palo Alto require one or more exceptions to the City's *Objective Standards for Wireless Communication Facilities in the Public Rights of Way on Streetlight Poles and Wood Utility Poles.* Palo Alto Municipal Code Section 18.42.110(k)(1) requires applicants for exceptions to show that:

A. The proposed WCF complies with the requirements of this Section 18.42.110 and any other requirements adopted by the City Council to the greatest extent feasible; and either
B. As applied to a proposed WCF, the provision(s) from which exception is sought would deprive the applicant of rights guaranteed by federal law, state law, or both; or
C. Denial of the application as proposed would violate federal law, state law, or both.

This proposed small cells satisfy Item A as they meet the objective standards with respect to design. Notably, the 5G integrated radio/antennas cannot be shrouded because that impedes signal propagation, and they qualify for an equipment adjustment because each is less than 0.85 cubic feet, and all three total less than the 2.6 cubic feet allowed.

The proposed small cells satisfy Items B and C because federal and state law compel approval. The federal Telecommunications Act provides that local government regulation of wireless facilities shall not "prohibit or have the effect of prohibiting" the provision of personal wireless service. 47 U.S.C. §§ 253(a), 332(c)(7)(B)(i)(II).

Under Ninth Circuit case law, a local government violates Section 332(c)(7)(B)(i)(II) if a wireless provider can show two things: (1) that it has a "significant gap" in service; and (2) that the proposed facility is the "least intrusive means," in relation to the land use values embodied in local regulations, to address the gap. *See T-Mobile USA, Inc. v. City of Anacortes*, 572 F.3d 987 (9th Cir. 2009). The accompanying *Statement of Verizon Wireless Radio Frequency Design Engineer Brian Ung* provides evidence of a significant gap in Verizon Wireless 5G service in Palo Alto. The accompanying alternatives site analysis provides evidence that alternatives to each proposed small cell require as many or more exceptions, or otherwise are infeasible. Federal law does not require that a proposed wireless facility be the "only" alternative, but rather that no feasible alternative is less intrusive. *See Metro PCS, Inc. v. City and County of San Francisco,* 400 F.3d 715, 400 F.3d 715, 734-35 (9th Cir. 2005).

In its September 2018 order addressing appropriate small cell approval criteria, the Federal Communications Commission determined that the Ninth Circuit's two-part test is too narrow, and that a wireless carrier need not show an insurmountable barrier, or even a significant gap, to prove a prohibition of service under the Telecommunications Act. *See Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment,* Declaratory Ruling and Third Report and Order, FCC 18-133 (September 27, 2018) ¶¶ 35, 37-40. Instead, "a state or local legal requirement constitutes an effective prohibition if it 'materially limits or inhibits the ability of any competitor or potential competitor to compete in a fair and balanced legal and regulatory environment.'" *Id.*, ¶ 35. Thus, local regulations of small

cells are preempted if they materially inhibit "densifying a wireless network, introducing new services, or otherwise improving service capabilities." *Id.*, ¶ 37.

These are Verizon Wireless's objectives for 5G small cells in Palo Alto. As the need for enhanced services increases, denial would defeat these objectives, leaving the area without 5G service, compromising network access and advanced capabilities for customers as described in the engineer's statement. The engineer's statement also explains that the high-band frequencies to be used 5G service have limited propagation characteristics, and require more small cell facilities closer together to provide reliable on-street service for Verizon Wireless customers. A denial of a small cell based on prohibitive standards, such as location restrictions, would materially inhibit Verizon Wireless's ability to improve service on its network and therefore effectively prohibit service in violation of the Telecommunications Act. To avoid such unlawful prohibition, the City must grant the exceptions.

As to state law, California Public Utilities Code Section 7901 grants telephone corporations such as Verizon Wireless a statewide right to place their equipment along any public road or highway, provided that it does not incommode the public use. While the City may exercise limited aesthetic discretion, the proposed small cell design complies with the City's objective aesthetic standards, and as a result, does not incommode the public's use of public roads or highways. However, the location restrictions would deprive Verizon Wireless of its right to use any public road or highway, and exceptions are warranted to avoid violating state law.

For all of the above reasons, the proposed small cells under this application qualify for an exception under Palo Alto Municipal Code Sections 18.42.110(k)(1)(A), (B) and (C).

verizon

Verizon Wireless Statement
5G Ultra Wideband Antenna Screening Limitations

November 24, 2020

Verizon's licensed spectrum of 28 GHz and 39 GHz have wavelengths often referred to as mmWave. This portion of the spectrum is best when using in a line of sight application. They are sensitive to any nearfield obstruction resulting in high loss and unpredictable signal propagation.

The only form of an acceptable concealment thus far is 3M film. The film is wrapped around the Integrated Antenna Radio unit and comes in a variety of colors to allow them to blend into the background.

Verizon has worked with several concealment manufactures to conduct tests on fiber reinforced polymer (FRP) and tests show high loss and high standard deviation. In addition to high losses, uncontrolled nearfield obstruction also greatly impact phase modulation. Phase distortion impact negatively to Massive MIMO Technology performance, a necessary component that couple antenna element array to enhance poor propagation characteristics of mmWave Technology. The test also shows that signal varies greatly with different distance settings between antenna and concealment material, making quality control of field installation difficult. This high loss will mean more nodes are required to achieve the same coverage objective. At this point Verizon does not allow the use of FRP concealment and 3M film is our sole option where screening of the antenna face is required

Sincerely,

Brian Ung
Verizon Wireless
Principal Engineer - RF Design

verizon

VERIZON WIRELESS
VIRTUAL EDUCATIONAL WEBINAR

Verizon Wireless is improving wireless service in Palo Alto!

We will be adding small wireless facilities to existing metal streetlight poles.

Want to learn more?
We would like to hear your feedback.

Please join us for a virtual educational webinar showcasing Verizon Wireless' proposed network and design.

Date: Thursday, January 7TH, 2021
Time: 6:00pm – 7:30pm

Registration Details:
https://zoom.us/webinar/register/WN_njgSArZlRcOIdOdXh7_8gw

Once you've registered you will receive a confirmation email containing information about joining the webinar.

AGENDA
Educational Presentations: 6:00pm – 6:30pm
Questions & Answer Session: 6:30pm – 6:45pm

Repeat Educational Presentations: 6:45pm – 7:15pm
Additional Questions & Answer Session: 7:15pm – 7:30pm

To confirm your Zoom Webinar reservation or for more questions please email or call to Jeremy Stroup
jstroup@qualtekwireless.com (925) 532-5304

City Cluster 4 - Verizon Cluster 6 Batch "B" Community Meeting Comments

The only member of the community to attend the Verizon Wireless Virtual Open House on Thursday, January 7, 2021 was Bill Campbell and his wife Marilyn Campbell of 620 Sand Hill Rd. Mr. and Mrs. Campbell asked many questions about how to improve Verizon Wireless service in Palo Alto and also near their home. We informed the Campbell's that our project is an attempt to increase the coverage and capacity of the network near their home. Additional questions about node locations, future expansion of Verizon's network within Palo Alto were also asked.

Certified Property Owner's
Affidavit

I, MICHAEL HIGGERSON

Hereby certify that the attached list contains the names and addresses of all persons to whom all property is assessed as they appear on the latest available assessment roll of the county within the area described on the attached application and for all properties within 625 feet from the exterior boundaries of the property described on the attached application, as of 12/16/2020

If the site address differs from the mailing address, or if there are multiple unit addresses, a label has also been included addressed to Occupant.

Subject Parcel number PALO ALTO CLUSTER 6 3 SITES BELOW

I certify under penalty of perjury the forgoing is true and correct to the best of my knowledge.

(Signed) [signature]

Name MICHAEL HIGGERSON

Address 11771 WALKER PENN VALLEY 95946

Phone # 800 568 7104

1. Palo Alto 121: 37.430385, -122.152517
2. Palo Alto 162: 37.442925, -122.168503
3. Palo Alto 164: 37.440400, -122.173608

ID	APN	NAME	ADDRESS	CITY	STATE	ZIP
PALOALTO162	120-31-009	LELAND STANFORD JR UNIVERSITY THE BD OF TR	PO BOX 10250	PALO ALTO	CA	94303
PALOALTO162	120-31-009	OCCUPANT	400 MITCHELL LN	PALO ALTO	CA	94301
PALOALTO121	124-23-001	BEE LEAF ORCHARD LLC	200 LOCUST ST #5B	PHILADELPHIA	PA	19106
PALOALTO121	124-23-001	RESIDENT	260 MIRAMONTE AVE	PALO ALTO	CA	94306
PALOALTO121	124-23-002	BRIAN H & LAURA K NORIMOTO	1616 MADRONO AVE	PALO ALTO	CA	94306
PALOALTO121	124-23-003	PO-CHI CHENG	1626 MADRONO AVE	PALO ALTO	CA	94306
PALOALTO121	124-23-004	STILLERMAN ROBERT AND STORM KAYE F TRUSTEE	1636 MADRONO AVE	PALO ALTO	CA	94306
PALOALTO121	124-23-005	NARAYAN SANJIV AND SHARMA NARAYAN ANSHU	1646 MADRONO AVE	PALO ALTO	CA	94306
PALOALTO121	124-23-006	BRUCE J & KATHY M GREENWOOD	1656 MADRONO AVE	PALO ALTO	CA	94306
PALOALTO121	124-23-007	HENDRIKA C VONK	1666 MADRONO AVE	PALO ALTO	CA	94306
PALOALTO121	124-23-008	THOMAS B & MARY E OKARMA	1651 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-23-009	FRANCIS & IRENE MCNEE	1641 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-23-010	ANUPAM & MARY R SHARMA	1633 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-23-011	LI BIN AND BI WEI	1621 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-23-012	STEVEN CARLSON	1611 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-23-013	SRINIJA SRININVASAN	220 MIRAMONTE AVE	PALO ALTO	CA	94306
PALOALTO121	124-24-015	ALAN S & CAROL E CLELAND	1550 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-24-016	CARY CHIN	1560 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-24-017	MUSTAFA & LUISA S OZGEN	101 MIRAMONTE AVE	PALO ALTO	CA	94306
PALOALTO121	124-24-018	NANETTE W SOLVASON	1563 EL CAMINO REAL	PALO ALTO	CA	94306
PALOALTO121	124-24-019	KAMALA NAIDU	1557 EL CAMINO REAL	PALO ALTO	CA	94306
PALOALTO121	124-24-052	PAULA P & GEORGE N CHALTAS	251 MIRAMONTE AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-001	WILFRED J & SOPHIE TSANG	1602 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-002	HAKEMAN DARREN J AND DELEON LORETO P TRUSTE	1610 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-003	SCHRADER VICTOR P AND TOULOUKIAN JILL S	1620 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-004	MOLANO PAMELA A AND BEIRNE FRANK T TRUSTEE	1630 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-005	ALBERT K & JEANNE Y CHIN	1638 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-006	LANDRETH HAROLD B AND SARANTIS ZOE TRUSTEE	1646 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-007	JEANNINE E OLSON	88 ARBOR DR	PROVIDENCE	RI	02908
PALOALTO121	124-25-007	RESIDENT	1654 PORTOLA AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-008	VENKATASUBRAMANIAM SHIVRAM AND GROVER SHUCH	202 SEQUOIA AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-009	ZONG S & FANG CHU LUO	214 SEQUOIA AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-010	HARVEY M & GREER E WOLFSON	222 SEQUOIA AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-011	HAWTHORNE JEFFREY AND HARRIS JANE TRUSTEE	230 SEQUOIA AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-012	ZHANG GUOHONG AND AN JIE	19400 STEVENS CREEK BLVD #200	CUPERTINO	CA	95014
PALOALTO121	124-25-012	RESIDENT	238 SEQUOIA AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-013	PRASUN & SUDESHNA RAHA	300 SEQUOIA AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-037	WEIHAN WANG/FENGXIA LI	1769 PARK BLVD	PALO ALTO	CA	94306
PALOALTO121	124-25-038	KATHLEEN S HIMMELBERGER	1763 PARK BLVD	PALO ALTO	CA	94306

PALOALTO121	124-25-039	JOHN N & SUSAN S THOMAS	1757 PARK BLVD	PALO ALTO	CA	94306
PALOALTO121	124-25-040	RONALD DIECK/ERIN MCGURK	335 LOWELL AVE	PALO ALTO	CA	94301
PALOALTO121	124-25-040	RESIDENT	1751 PARK BLVD	PALO ALTO	CA	94306
PALOALTO121	124-25-041,053	ANNA M POWERS	2028 PARK ROYAL DR	SAN JOSE	CA	95125
PALOALTO121	124-25-041	RESIDENT	1743 PARK BLVD	PALO ALTO	CA	94306
PALOALTO121	124-25-053	RESIDENT	1720 PARK BLVD	PALO ALTO	CA	94306
PALOALTO121	124-25-053	RESIDENT	1722 PARK BLVD	PALO ALTO	CA	94306
PALOALTO121	124-25-042	SLATTERY JOHN PATRICK III AND MARIAN TRUSTE	1737 PARK BLVD	PALO ALTO	CA	94306
PALOALTO121	124-25-043	SANDRA L WANNER	1731 PARK BLVD	PALO ALTO	CA	94306
PALOALTO121	124-25-044	FULANOVICH & SEID CHIROPRACTIC INC ETAL	2722 BYRON ST	PALO ALTO	CA	94306
PALOALTO121	124-25-044	OCCUPANT	1681 EL CAMINO REAL	PALO ALTO	CA	94306
PALOALTO121	124-25-044	OCCUPANT	1691 EL CAMINO REAL STE 400	PALO ALTO	CA	94306
PALOALTO121	124-25-044	OCCUPANT	1691 EL CAMINO REAL STE 100	PALO ALTO	CA	94306
PALOALTO121	124-25-044	OCCUPANT	1691 EL CAMINO REAL STE 200	PALO ALTO	CA	94306
PALOALTO121	124-25-044	OCCUPANT	1691 EL CAMINO REAL STE 300	PALO ALTO	CA	94306
PALOALTO121	124-25-045	TIEH S & LILY F CHIN	1671 EL CAMINO REAL	PALO ALTO	CA	94306
PALOALTO121	124-25-046	HARIS & CAROLINE JAPIC	1655 EL CAMINO REAL	PALO ALTO	CA	94306
PALOALTO121	124-25-047	PATRICIA LEWIS	1641 EL CAMINO REAL	PALO ALTO	CA	94306
PALOALTO121	124-25-048	JANINE N MORIN DIANE	1635 EL CAMINO REAL	PALO ALTO	CA	94306
PALOALTO121	124-25-049	JAE H & MISOON KIM	1621 EL CAMINO REAL	PALO ALTO	CA	94306
PALOALTO121	124-25-050	PETER J NAUGHTON	1611 EL CAMINO REAL	PALO ALTO	CA	94306
PALOALTO121	124-25-051	SIM SIM REALTY LLC/MQ BUILDERS INC	1601 EL CAMINO REAL	PALO ALTO	CA	94306
PALOALTO121	124-25-052	ANDREW T & CAROL C DUNCAN	2327 LOMA PRIETA LN	MENLO PARK	CA	94025
PALOALTO121	124-25-052	OCCUPANT	1707 EL CAMINO REAL	PALO ALTO	CA	94306
PALOALTO121	124-25-052	OCCUPANT	1705 EL CAMINO REAL	PALO ALTO	CA	94306
PALOALTO121	124-25-053	RESIDENT	1720 PARK BLVD	PALO ALTO	CA	94306
PALOALTO121	124-25-053	RESIDENT	1722 PARK BLVD	PALO ALTO	CA	94306
PALOALTO121	124-25-054,055	HORNIK DAVID M AND MILLER-HORNIK PAMELA E T	137 PARK AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-054	RESIDENT	129 PARK AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-056	BUNDY PAUL ARTHUR TRUSTEE & ET AL	143 PARK AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-057	MARION S EVISON	153 PARK AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-059	MIKAEL A HAGSTROEM	121 PARK AVE	PALO ALTO	CA	94306
PALOALTO121	124-25-060	CARDINAL FOUNTAIN LLC	1795 EL CAMINO REAL STE200	PALO ALTO	CA	94306
PALOALTO121	124-25-060	RESIDENT	1795 EL CAMINO REAL APT 3A	PALO ALTO	CA	94306
PALOALTO121	124-25-060	RESIDENT	1795 EL CAMINO REAL APT 3B	PALO ALTO	CA	94306
PALOALTO121	124-25-060	OCCUPANT	1795 EL CAMINO REAL STE 100	PALO ALTO	CA	94306
PALOALTO121	124-25-060	OCCUPANT	1795 EL CAMINO REAL STE 200	PALO ALTO	CA	94306
PALOALTO164	142-01-007,008/03-040	LELAND STANFORD JR UNIVERSITY BOARD OF TR	PO BOX 6120	INDIANAPOLIS	IN	46206
PALOALTO164	142-01-007	OCCUPANT	480 QUARRY RD	PALO ALTO	CA	94304
PALOALTO164	142-03-040	OCCUPANT	500 STANFORD SHOPPING CTR	PALO ALTO	CA	94304

PALOALTO164	142-03-040	OCCUPANT	530 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	STANFORD UNIVERSITY LELAND	P.O. BOX 6120	INDIANAPOLIS	IN	46206
PALOALTO162,164	142-01-009	OCCUPANT	180 EL CAMINO REAL STE 701	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	180 EL CAMINO REAL STE 206A	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	180 EL CAMINO REAL STE 206B	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	180 EL CAMINO REAL STE 74A	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	180 EL CAMINO REAL STE 74B	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	180 EL CAMINO REAL SPC 2	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	180 EL CAMINO REAL STE 1A	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	180 EL CAMINO REAL STE 860	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	180 EL CAMINO REAL STE 1301	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	180 EL CAMINO REAL STE 313B	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	180 EL CAMINO REAL STE 355A	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	2 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	6 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	9 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	10 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	11 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	12 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	14 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	15 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	16 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	18 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	36 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	71 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	78 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	79 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	83 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	87 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	88 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	91 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	99 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	101 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	110 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	111 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	113 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	114 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	115 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	119 STANFORD SHOPPING CTR	PALO ALTO	CA	94304

PALOALTO162,164	142-01-009	OCCUPANT	120 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	122 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	124 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	128 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	129 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	131 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	132 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	136 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	145 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	149 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	150 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	151 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	152 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	153 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	155 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	157 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	159 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	163 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	165 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	168 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	170 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	172 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	180 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	181 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	183 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	185 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	186 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	192 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	196 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	198 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	199 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	200 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	204 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	210 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	228 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	230 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	232 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	240 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	242 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	244 STANFORD SHOPPING CTR	PALO ALTO	CA	94304

PALOALTO162,164	142-01-009	OCCUPANT	300 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	301 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	305 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	313 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	317 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	329 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	345 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	351 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	355 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	359 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	361 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	365 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	369 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	371 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	379 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	383 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	385 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	391 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	393 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	395 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	399 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	400 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	450 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	605 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	606 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	607 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	608 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	609 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	610 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	650 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	660 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	675 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	700 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	701 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	705 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	711 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	715 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	717 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	721 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	800 STANFORD SHOPPING CTR	PALO ALTO	CA	94304

PALOALTO162,164	142-01-009	OCCUPANT	820 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	830 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	840 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	850 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	860 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	900 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	950 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1001 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1020 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1030 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1040 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1050 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1060 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1070 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1090 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1101 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1110 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1115 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1130 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1140 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1145 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1150 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1155 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1160 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1165 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1180 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1190 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1220 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1240 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	1301 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	10A STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	10B STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	11A STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	136A STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	206A STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	206B STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	244B STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	2B STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	385A STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	3K STANFORD SHOPPING CTR	PALO ALTO	CA	94304

PALOALTO162,164	142-01-009	OCCUPANT	74A STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162,164	142-01-009	OCCUPANT	74B STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO164	142-02-020,021,039,041	LELAND STANFORD JR UNIVERSITY BOARD OF TR	P O BOX 2196	CHICAGO	IL	60690
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 201A	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 205A	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 301A	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 302A	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 304A	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 305A	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 306A	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 401A	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 402A	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 404A	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 405A	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 406A	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 200B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 201B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 202B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 204B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 206B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 207B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 300B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 301B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 302B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 303B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 304B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 305B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 306B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 307B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 400B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 401B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 402B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 403B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 404B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 405B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 406B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 407B	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 200C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 201C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 203C	PALO ALTO	CA	94304

PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 205C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 206C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 207C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 300C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 301C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 302C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 303C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 304C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 305C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 306C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 307C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 400C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 401C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 402C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 403C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 404C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 405C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 406C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 407C	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 100D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 101D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 102D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 103D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 104D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 105D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 106D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 108D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 110D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 111D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 112D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 113D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 114D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 115D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 116D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 117D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 118D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 119D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 120D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 122D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 123D	PALO ALTO	CA	94304

PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 124D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 125D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 126D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 127D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 128D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 200D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 201D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 202D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 203D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 204D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 205D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 206D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 208D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 210D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 211D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 212D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 213D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 214D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 215D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 216D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 217D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 218D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 219D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 220D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 222D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 223D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 224D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 225D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 226D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 227D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 228D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 300D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 301D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 302D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 303D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 304D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 305D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 306D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 308D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 310D	PALO ALTO	CA	94304

PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 311D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 312D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 313D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 314D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 315D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 316D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 317D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 318D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 319D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 320D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 322D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 323D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 324D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 325D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 326D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 327D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 328D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 400D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 401D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 402D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 403D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 404D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 405D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 406D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 408D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 410D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 411D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 412D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 413D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 414D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 415D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 416D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 417D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 418D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 419D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 420D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 422D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 423D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 424D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 425D	PALO ALTO	CA	94304

PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 426D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 428D	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 101E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 102E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 103E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 104E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 105E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 106E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 107E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 108E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 109E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 110E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 112E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 113E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 114E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 115E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 116E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 117E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 118E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 119E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 120E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 121E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 122E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 200E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 201E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 202E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 203E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 204E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 205E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 206E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 207E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 209E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 210E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 212E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 213E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 214E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 215E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 216E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 217E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 218E	PALO ALTO	CA	94304

PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 219E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 220E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 221E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 222E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 300E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 301E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 302E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 303E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 304E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 305E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 306E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 307E	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 310E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 312E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 313E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 314E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 315E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 316E	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 400E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 401E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 402E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 403E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 404E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 405E	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 407E	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 410E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 412E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 413E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 414E	PALO ALTO	CA	94304

PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 415E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 416E	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 419E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 420E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 421E	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 100F	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 102F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 103F	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 105F	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 109F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 111F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 113F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 114F	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 117F	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 208F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 209F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 211F	PALO ALTO	CA	94304

PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 213F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 214F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 215F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 216F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 217F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 218F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 219F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 220F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 221F	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 301F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 302F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 303F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 304F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 305F	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 409F	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 411F	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 109G	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 210G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 211G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 212G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 213G	PALO ALTO	CA	94304

PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 214G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 215G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 300G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 301G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 302G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 303G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 304G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 305G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 307G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 309G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 310G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 311G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 312G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 313G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 314G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 315G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 400G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 401G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 402G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 403G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 404G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 405G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 407G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 409G	PALO ALTO	CA	94304
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PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 411G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 412G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 413G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 414G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	RESIDENT	620 SAND HILL RD APT 415G	PALO ALTO	CA	94304
PALOALTO164	142-02-020	OCCUPANT	620 SAND HILL RD	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD OFC	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD OFC	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD OFC	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD OFC	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD OFC	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD OFC	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD OFC	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD OFC	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 200H	PALO ALTO	CA	94304

PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 201H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 202H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 203H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 204H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 205H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 206H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 207H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 210H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 213H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 214H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 216H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 217H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 218H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 219H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 220H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 221H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 222H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 224H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 226H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 228H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 229H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 230H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 231H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 232H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 233H	PALO ALTO	CA	94304
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PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 235H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 236H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 238H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 241H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 243H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 245H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 247H	PALO ALTO	CA	94304
PALOALTO164	142-02-021	RESIDENT	600 SAND HILL RD APT 249H	PALO ALTO	CA	94304
PALOALTO164	142-03-039	OCCUPANT	551 SAND HILL RD	PALO ALTO	CA	94304
PALOALTO164	142-03-041	OCCUPANT	550 STANFORD SHOPPING CTR	PALO ALTO	CA	94304
PALOALTO162	142-04-019	LELAND STANFORD JR UNIVERSITY BOARD OF TR	415 BROADWAY 3RD FL ST #MC887	REDWOOD CITY	CA	94063
PALOALTO162	142-04-019	RESIDENT	213 QUARRY RD	PALO ALTO	CA	94304
PALOALTO162	142-04-019	OCCUPANT	211 QUARRY RD	PALO ALTO	CA	94304
PALOALTO162	142-04-019	OCCUPANT	211 QUARRY RD STE 201	PALO ALTO	CA	94304

PALOALTO162	142-04-019	OCCUPANT	215 QUARRY RD	PALO ALTO	CA	94304
PALOALTO121	142-04-036	LELAND STANFORD JR UNIVERSITY BOARD OF TR	415 BROADWAY ST	REDWOOD CITY	CA	94063
PALOALTO121	142-04-036	RESIDENT	76 BARNES CT APT 101	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	76 BARNES CT APT 102	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	76 BARNES CT APT 106	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	76 BARNES CT APT 107	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	76 BARNES CT APT 108	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	76 BARNES CT APT 109	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	76 BARNES CT APT 110	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	76 BARNES CT APT 111	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	76 BARNES CT APT 115	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	76 BARNES CT APT 116	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	77 BARNES CT APT 101	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	77 BARNES CT APT 102	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	77 BARNES CT APT 106	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	77 BARNES CT APT 107	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	77 BARNES CT APT 108	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	77 BARNES CT APT 109	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	78 BARNES CT APT 101	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	78 BARNES CT APT 102	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	78 BARNES CT APT 106	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	78 BARNES CT APT 107	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	78 BARNES CT APT 108	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	78 BARNES CT APT 109	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	80 OLMSTED RD APT 101	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	80 OLMSTED RD APT 102	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	80 OLMSTED RD APT 106	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	80 OLMSTED RD APT 107	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	80 OLMSTED RD APT 108	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	80 OLMSTED RD APT 109	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	80 OLMSTED RD APT 110	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	80 OLMSTED RD APT 111	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	80 OLMSTED RD APT 115	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	80 OLMSTED RD APT 116	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	81 OLMSTED RD APT 101	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	81 OLMSTED RD APT 102	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	81 OLMSTED RD APT 106	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	81 OLMSTED RD APT 107	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	81 OLMSTED RD APT 108	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	81 OLMSTED RD APT 109	STANFORD	CA	94305

PALOALTO121	142-04-036	RESIDENT	82 OLMSTED RD APT 101	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	82 OLMSTED RD APT 102	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	82 OLMSTED RD APT 103	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	82 OLMSTED RD APT 104	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	82 OLMSTED RD APT 108	STANFORD	CA	94305
PALOALTO121	142-04-036	RESIDENT	82 OLMSTED RD APT 109	STANFORD	CA	94305
PALOALTO121	142-04-036	OCCUPANT	691 PAMPAS LN	STANFORD	CA	94305
PALOALTO121	142-04-036	OCCUPANT	751 OLMSTED RD	STANFORD	CA	94305

CITY OF PALO ALTO

TIER 2 WIRELESS COMMUNICATIONS FACILITIES PROPOSED FOR THE PUBLIC RIGHT-OF-WAY APPLICATION SUBMITTAL REQUIREMENTS CHECKLIST

In-person appointments are required to submit all applications. Appointments can be scheduled by calling the Planning Division at (650) 329-2442 or scheduled in-person at the City's Development Center, located at 285 Hamilton Avenue.

The following information is required for the review of Tier 2 Wireless Communications Facilities (WCF) as defined in Palo Alto Municipal Code 18.42.110 and proposed for location in the public right-of-way.

Instructions: Complete and submit all items listed in the checklist below that are applicable to the application. The information identified below must be provided in order to accept the application as complete for review. If an item does not apply, write "N/A" (not applicable). The Planning Department is available to answer applicant questions in advance of application submittal and can be contacted at 650-329-2442.

Project Location(s)/Address(es): 250 Hamilton Ave., Palo Alto, CA 94301

Project Description (include Applicant name and Carrier name): Installation of small wireless facilities on City owned metal street light poles in the public right-of-way. This is a batched submittal containing 3 individual facilities.

Application Basic Information (Please circle the applicable response)**:**	
(Y) N, or N/A	Materials contain more than one wireless communication facility and the applications are batched.
Y, (N) or N/A	Materials show one or more wireless communication facility designs that meet all of the City's rules, regulations, and Objective Standards (**Refer to City Council Action on December 16, 2019**).
(Y) N, or N/A	Materials request one or more WCF exception requests to the City's rules, regulations, or Objective Standards.
(Y) N, or N/A	Materials show one or more wireless communication facilities that qualify as a "small wireless facility," as defined by any valid regulations adopted by the FCC.
Y, (N) or N/A	Materials show one or more wireless communication facilities that do not qualify as a "small wireless facility," as defined by any valid regulations adopted by the FCC.
(Y) N, or N/A	Materials show one or more wireless communication facilities that are subject to the applicant's Master License Agreement.
Y, (N) or N/A	Materials show one or more wireless communication facilities that are not subject to a Master License Agreement.
Application Submittal Requirements: Additional copies of application materials may be required if the application is referred after intake for review by the Architectural Review Board, City Council, Responsible Agency, or other reviewing body.	
☒	**Application Forms.** Per PAMC Section 18.42.110(d) and PAMC Section 18.42.110(e), all required application forms and required application materials necessary to initiate and process all entitlement and all permit reviews and decisions shall be submitted so that they can be processed concurrently. Application forms include the Planning Application with original wet signatures of the applicant and property owner(s). The Planning Application Number will be assigned at application intake. Copies of completed additional application forms are also required, as applicable, including but not limited to: Building Permit Application, Excavating and Grading Permit Application, Electrical or Other Utilities Permit Application, Street Work Permit Application,

	Insurance Certificate, and/or an Encroachment Permit Application. A Master License Agreement Exhibit (commonly referred to as Exhibit G) and a Utility Map Request will have likely been submitted to the City's Utilities Department as part of the applicant team gathering information necessary to investigate siting and prepare project plans and do not constitute entitlement or permit filing. **List the numbers and dates submitted for each applicable application and permit:** • Planning Application Number & Date Submitted: _____ • Building Permit Application Number & Date Submitted: _____ • Excavation and Grading Permit Application Number & Date Submitted: _____ • Street Work Permit Application Number & Date Submitted: _____ • Encroachment Permit Application Number & Date Submitted: _____ • Insurance Certificate Submittal Information & Date Submitted: _____ • Electrical Permit Application Number & Date Submitted: _____ • Other Application Number(s) & Date(s) Submitted: _____ • Master License Agreement Exhibit Tracking Information & Date Submitted: _____ • Utility Map Request Form Tracking Information & Date Submitted: _____
☒	**One (1) hardcopy of this TIER 2 WIRELESS COMMUNICATIONS FACILITIES PROPOSED FOR THE PUBLIC RIGHT-OF-WAY APPLICATION SUBMITTAL REQUIREMENTS CHECKLIST** completed and signed.
☒	**One (1) hardcopy of the Cost Recovery Form** with original wet signature of applicant. A signed cost recovery agreement may substitute for the cost recovery form.
❑	**Application Fees/Deposits**. Application submittal fees/deposits shall be invoiced and submitted during application intake. For batched applications, an invoice shall be prepared and the fees/deposits paid for each proposed location, unless the applicant coordinates with the City to prepare a mutually agreed upon separate cost recovery agreement. Consistent with the City's Municipal Fee Schedule, a separate deposit(s) may also be necessary to submit after application intake to cover the cost of the City's use of consultants to conduct independent review of application material(s) and/or serve as an extension of staff to conduct application reviews.
❑	**Application numbers** for any existing and/or approved wireless communication facilities at the proposed location and/or within 1,500 feet of the proposed WCF location on either public or private property: Verizon Wireless is proposing three (3) WCF exclusively in this application. Other existing and/or approved WCF have no bearing on this application.
☒	**One (1) electronic copy of all application materials** listed in this checklist.
☒	**Three (3) hardcopies of a Radio Frequency Report**, prepared by a professional engineer, that discusses and confirms the wireless communication facility planned compliance with the FCC regulations. The report shall include a list of the proposed equipment models, frequency bands, power, azimuths, minimum and maximum downtilts, distances to ground and adjacent single and multiple-story buildings, clarification if there are any other nearby wireless facilities considered as part of the analysis of cumulative conditions, a description of the standards, equations, and other methodology utilized, color maps and/or statements of distances and zones for public and occupational exclusion and/or exposure limits, and required signage and any other measures necessary for the facility to operate in compliance with FCC standards. The City may elect to have an outside consultant to perform a peer review of this report at the applicant's expense.
☒	**One (1) hardcopy of the manufacturer's specifications** for proposed equipment, including power operations and noise generation information.
☒	**Three (3) color hardcopies of existing and proposed coverage and capacity maps** with a legend and other graphics that describe the goals for the proposed wireless communication facility.
☒	**Three (3) hardcopies of the completed "A Local Government Official's Guide to Transmitting Antenna RF Emission Safety: Rules, Procedures, and Practical Guidance - APPENDIX A Optional**

	Checklist for Local Government To Determine Whether a Facility is Categorically Excluded" form.
☒	**Three (3) hardcopies of the completed "HAZARDOUS MATERIALS DISCLOSURE CHECKLIST"** form.
☒	**Three (3) hardcopies of the completed "ENVIRONMENTAL IMPACT ACCESSMENT WORKSHEET"** form.
☒	**One (1) hardcopy of a list of all of the carrier's existing or entitled antenna locations**, including the street address and latitude/longitude coordinates, within the City limits. Each site listed should include the type of installation (e.g. roof-mounted, monopole, faux tree, etc.).
☒	**One (1) color hardcopy of the location map** from the project plans printed on 11" x 17" paper.
❑	**One (1) color and materials board** including samples of actual colors and materials mounted on 8" x 14" foam board to be retained by the city as part of the permanent file.
☒	**Three (3) hardcopies of a Tree Protection Report (TPR) and arborist assessment.** Report shall be required for any new facility or construction within the tree protection zone (TPZ) of a protected and/or designated tree, and may be required for others, including street trees as deemed necessary by the City Arborist. The report shall be consistent with the City Tree Technical Manual and shall be prepared by an ISA certified Arborist. See Overview of Regulated Trees. If required, this report shall also be incorporated into the project plans.
☒	**Twelve (12) color hardcopies of a project description** that includes the following information, at minimum: • the existing and proposed use at the proposed location, • the proposed wireless carrier, • the purpose and goals for the wireless facility (e.g. network design, frequency bands, new technology use), • the proposed scope of work, including work above and below ground, • the dimensions and volume of the antenna and the dimensions and volume of other additional equipment and the overall facility, • the efforts taken to minimize visual impacts of the proposed design (e.g. substantial setback from major roads, presence of trees, stealth design, slim line monopole, reducing the number of proposed facilities, increasing distances from nearby windows and other openings; placing some equipment in an underground vault, avoidance of scenic corridors or gateways, avoidance of nearby historic buildings), • map and the pole numbers for the alternative project locations considered, including in regard to network design, search ring/polygons, and specific site selection criteria, as well as a description of the reasons why these alternatives were not selected as the WCF proposed, • graphic portrayal and description of the proposed design and the alternative designs considered, • the efforts to locate at existing wireless facilities, • the basis of how the project qualifies as a Tier 2 WCF under PAMC Section 18.42.110, • identification of the underlying Master License Agreement, if any, • statement that clarifies if the application materials contain more than one wireless communication facility, • statement that clarifies that either the application materials show one or more wireless communication facilities that meet all of the City's rules, regulations, and Objective Standards or a detailed statement detailing any and all requested WCF exceptions to any of the City's rules, regulations, or Objective Standards (See PAMC Section 18.42.110(k) for more information on requesting exceptions. The WCF exception(s) must satisfy the requirements of PAMC Section 18.42.110(k) and demonstrate why the rule, regulation, or Objective Standard is infeasible),

	• clarification of the materials, colors, and construction methods to be used, • clarification if one or more wireless communication facilities will generate any noise, • clarification on how any future expansion, including the addition of 5G equipment if not currently proposed, would be designed in accordance with applicable laws and the City's Objective Standards, • list of all wireless communication facilities proposed in application, including the applicant site identification number, closest adjacent APN, address of closest adjacent APN, existing zoning district, existing underground utility district number (if any), existing pole number, existing pole height, proposed pole height with facility, and proposed color of facility.
☒	**Twelve (12) hardcopies of a reduced-size (minimum of 11" x 17" and maximum 18" x 24") set of bound project plans** that include a north arrow, a graphic scale, and a notation of the drawing scale as either at 1/8" or 1/4" scale. All sheets shall be oriented in the same direction. Plans shall be legible and internally consistent. Plans shall include all information necessary for permitting and construction, as they will be the same plans submitted for Electrical permits, Street Work Permits, and/or Encroachment Permits. Applicants are encouraged to provide additional information where helpful. **Project data and site information** listing the wireless communication facility(ties) proposed in the application, applicant site identification number(s), latitude/longitude coordinates, elevation(s), closest adjacent parcels, address(es) of closest adjacent parcels, historic status of closest adjacent parcels, roadway type at the proposed location (expressway, arterial, residential arterial, collector, or local roadway), existing zoning district(s), existing underground utility district number (if any), existing pole number(s), and a brief description of work. **Vicinity map** showing the location of the proposed wireless communication facility within the City of Palo Alto. **Location map** showing north arrow, scale, parcel lines, and the distance and location of scenic routes, residence(s), schools, and other WCF facilities within 600 feet of the proposed wireless communication facility. **Stamped and signed site survey** of the wireless communication facility site area and pole completed within the last 12 months serving as the basis for other plan sheets. **Stamped and signed structural/loading calculations** completed for the proposed wireless communication facility design. **Separate and detailed existing and proposed site/landscape/utility plans** of the wireless communication facility site area including the following information: • North arrow (orient all sheets in the same direction), • Scale (1/8 minimum), • Dimensioned property lines and location of the right of way, including streets, paths, curb lines, sidewalks, planting strips, driveways, curb cuts, and utility lines, • Dimensioned residential zone of exclusion area, if the WCF is proposed in a residential zoning district, • Existing and proposed above ground and underground site improvements in the right-of-way within 50 feet of the proposed wireless communication facility, including signs, light fixtures, bicycle parking, trash and recycling (including proposed containers or related equipment), enclosures, fences, backflow preventers, above-ground electrical utilities,

boxes, transformers, meter mains, fire standpipes, vaults, underground utilities (sewer, gas, electric, water), communication facilities (fiber optic, conduit and any other facilities), and similar. (Applicants must submit a Utility Map Request form in order to receive existing underground utilities information),

- Easements, encumbrances, and/or roadway special setback lines,
- Proposed species and size for any new trees and the location, species, size, dripline area, and any necessary tree protection zone (TPZ) for all existing trees within 50 feet of the site area, including trees on neighboring properties that overhang the wireless communication facility site area. Dimension the distance from trees to the work area when the tree is located closer than 10' to proposed construction,
- Footprint of all buildings and structures on adjacent parcels with distances from the proposed WCF indicated,
- Creeks or waterways on or adjacent to the site,
- Azimuth direction(s),
- Distance to closest habitable/occupied structure for each azimuth proposed or distance to closest habitable/occupied structures in each direction if an omni-directional antenna is proposed,
- Pole quadrants showing proposed and existing risers, location of climbing space and/or working space and location of proposed and existing attached equipment,
- Single line diagram, equipment grounding diagrams, and panel schedule,
- Plan showing all proposed conduits or substructures, location of directional bores, receiving and exit pits indicated, size(s) of bore pits, boring profiles at utility crossings, location, size and extent of trenching, location and size of potholing, and volume of soil to be disturbed in cubic feet.

Additional information to include in project plans:

- Information necessary to determine GO 95 compliance,
- Model number and manufacturer dimensioned diagrams of proposed equipment, mounting brackets, shrouding, underground vaults and associated equipment,
- Manufacturer's pole specifications, decorative features (if any) and details,
- Equipment volume information summary with dimensioned front and side elevations that can be used to confirm equipment volume.

Project elevations, sections, and schematic details:

- Elevations showing all existing conditions, including all existing pole features and attachments and all proposed pole features and attachments. Elevations shall include all sides of the wireless communication facility, all existing and proposed signage and lighting, notation of grade elevation from where the maximum height is measured, notations of the type, colors, materials and finish for all project elements, notations of the height and dimensions for all project elements, and notations of the point of service for power, fiber, and similar,
- Illustrative vertical section including foundation to maximum height in context with surrounding site features, such as curb lines, sidewalks, electrical lines, communication lines, landscaping features, trees, and underground structures (drawing should be at a minimum of ½" = 1' scale),
- Illustrative horizontal section(s) showing the attachments and clearances for equipment and conduit mounted to pole(s),
- Schematic details demonstrating the quality and nature of the wireless communication facility design and code compliance of the design, including details of structural

	connections and attachments and the aesthetic details of how adjacent, dissimilar materials connect. Examples include: mounting of the equipment to poles and wires and cabling behind shrouds or internal to the pole, • Details, colors, and text of all new safety, power disconnect, and other signage and location/method of attachment. **Color photographs:** Photos of the existing site showing the relationship of the proposed wireless communication facility to adjacent buildings and to the neighborhood. **Color visual simulation(s):** Visual simulations prepared to scale comparing existing and proposed conditions and context utilizing views consistent with the existing and proposed elevations. **Lighting plan** (if any changes to existing lighting are proposed or required) showing photometric drawings including foot-candle numbers and catalog cut sheets of proposed exterior fixtures. **Urban Forestry Division Standard Tree Protection Plan Sheet (T-1)** filled out and signed by the property owner or applicant. When required, include completed Tree Protection Report(s) as Sheet T-2 and T-3. **Current City Standard Specifications sheets:** DWGs 401, 402, 403, 404, and 405. **Standard Public Works Engineering Services Standard Sheets** (Stormwater Pollution Prevention and Standard Conditions). **Traffic Logistics and Control Plan.**

Does Applicant seek an exception from any of the City's rules, regulations, or Objective Standards applicable to the application?

☒Yes ☐No

(If "Yes," provide a description of the specific exceptions sought and the manner in which the application complies with all applicable rules, regulations, and Objective Standards to the greatest extent feasible.)

Does Applicant allege that strict application on a City rule, regulation, or Objective Standard or failure to approve this application will violate preemptive state or federal law?

☒Yes ☐No

(If "Yes," provide all documentation to support allegation.)

Certification under Penalty of Perjury

I declare under penalty of perjury that the foregoing is true and correct.

Executed on February 03, 2021 (date) at Walnut Creek, CA (location), California.

Name (print): Jeremy Stroup

Signature: _____

Relationship to the Applicant of Record: Vendor

Please coordinate with Planning staff regarding the following items:

- **One (1) hardcopy and one (1) electronic copy of a Community Meeting notice and affidavit** containing proof that the applicant noticed and hosted the community meeting and a summary of comments received at the community meeting and what, if any, changes were made to the application as a result of the meeting, per PAMC Section 18.42.100(d)(7). This item may be submitted up to 15 days after initial application submittal.

- **One (1) electronic copy of photos showing notice board sign installation.** During the intake appointment, the applicant will receive a notice board sign from the City for each proposed wireless communication facility location. The applicant shall affix a site plan, elevation, and streetscape image of the proposed wireless facility design to the notice board sign. The notice board sign shall be prominently displayed so that it can be viewed from the sidewalk or elsewhere in the public right of way and shall remain in place until any entitlement decision is effective. Photographs of the notice board sign installed at the proposed location shall be submitted to the City within three (3) days of application submittal.

Planning Review Application

Department of Planning & Development Services
250 Hamilton Avenue, Palo Alto, CA 94301
650-329-2441 x0 planner@cityofpaloalto.org

Appointments are required for all application submittals, please call to schedule.

Date Received (Staff Use Only)
File Number (Staff Use Only)

❶ Application Request

- ☐ Architectural Review
- ☐ Conditional Use Permit / Amendment
- ☐ Design Enhancement Exception
- ☐ Historic Review
- ☐ Home Improvement Exception
- ☐ Individual Review
- ☐ Preliminary AR Review
- ☐ Council Prescreening
- ☐ Coordinated Development (SOFA 1)
- ☐ Site and Design Review
- ☐ Subdivision
- ☐ Temporary Use Permit
- ☐ Transfer of Development Rights
- ☐ Variance
- ☐ Zone Change
- ☐ Planned Community or Amendment
- ☒ Other: Tier 2 Wireless Communication Facility

Fees (Staff Use Only)

Fee Collected _____

Cost Recovery Yes / No

Cost Recovery # _____

Receipt # _____

❷ Property Location

Address of Subject Property: 250 Hamilton Ave., Palo Alto, CA 94301

Zone District: _____ Assessor's Parcel Number: _____ Historic Category (if applicable): _____

❸ Project Description

Qualifying Housing Project Under SB-35: ☐ Yes ☒ No

See Project Description submitted

❹ Applicant/Primary Contact/ Entitlement Recipient

Name: Jeremy Stroup on behalf of GTE Mobilnet of CA, LP, dba Verizon Wireless

Address: 575 Lennon Ln #125

City: Walnut Creek

Zip Code: 94598 State: CA

Phone: 925-202-8654

Email: jstroup@qualtekwireless.com

☒ Architect ☒ Engineer

Name: Zalzali & Associates, Inc, dba All States Engineering & Surveying

Address: 23675 Britcher Dr.

City: Lake Forest

Zip Code: 92630 State: CA

Phone: 714-230-5714

Email: dean@zalzali.com

Primary Contact If Different From Applicant

Name: _____

Address: _____

City: _____

Zip Code: _____ State: _____

Phone: _____

Email: _____

❺ Property Owner

Name: Public Right-of-Way / City of Palo Alto Email: _____

Address: 250 Hamilton Ave. Phone 1: _____

City: Palo Alto State: CA Zip: 94301 Phone 2: _____

I hereby certify that I am the owner of record of the property described in Box #2 above and that I approve of the requested action herein. If this application(s) is subject to 100% cost recovery of planning costs, I understand that charges for staff time spent processing this application(s) will be based on the Policy and

Procedures document provided to me. I understand that my initial deposit is an estimate of these charges and not a fee, and I agree to abide by the billing policy stated.

Signature of Owner: Date:

Action (Staff Use Only) ☐ Approved ☐ Denied Signature: Date:

DEPARTMENT OF PLANNING & DEVELOPMENT SERVICES
POLICY AND PROCEDURES FOR
APPLICATIONS SUBJECT TO COST RECOVERY

EFFECTIVE JULY 1, 2019

Planning and Development Services, in accordance with the Municipal Fee Schedule adopted by the City Council, has instituted a program of full and partial recovery fees for processing of the following types of applications. Each of these types of applications may also require review by the Attorneys' Office as well as the possible preparation of legal documents such as ordinances and/or resolutions, and either a deposit or fee for legal review will be collected:

Appeal Costs Exceeding Appeals Filing Fee
Architectural Review, Major Project
Administrative Extensions and Zoning Letters
Comprehensive Plan change
Development Agreement and Development Agreement Annual Review
Environmental Documents
Legal Review for Additional Hearings
Major Architectural Review Projects
Major Subdivision – Tentative Map and Subdivision Final Map
Mitigation Monitoring- EIR
Mitigation Monitoring – MND
Mills Act or Williamson Act – Establish or Withdraw
Planned Community
Pre-Screening
Site and Design
Transfers of Development Rights
Williamson Act – Establish or Withdraw
Wireless Applications
Zone Change

Our policy and procedures for recovering processing costs are as follows:

- A deposit in the amount indicated in the Municipal Fee Schedule will be accepted at the time the application is filed. If a project requires multiple entitlements, and any one of those entitlements is subject to cost recovery, as listed above, and the entitlements are being processed concurrently, then the entire processing of the project will be subject to cost recovery.

- An accounting of staff time charged towards the deposit will be sent to the applicant or property owner. If the amount incurred exceeds the amount of the deposit, an invoice will be generated. **The bill will be sent by the City's Administrative Services Department and shall be paid within 30 days, or legal interest will accrue. The City reserves the right to suspend application processing or delay issuance of a building permit due to nonpayment. The applicant and property owner are legally responsible for payment of all fees, regardless of whether an entitlement is granted.**

- In the event there are significant anticipated costs for outside consultants in excess of the amount deposited, a deposit for the full cost of the consultant work will be required at the time the consultant agreement is signed plus 25% for contract administration costs. In the event changes to the project result in additional costs, an additional deposit will be required at the time the consultant agreement is amended.

- Following a final decision on the application and project file closure, a final accounting will be sent, along with either a bill if actual processing costs exceeding the amount on deposit, or a refund if the deposit amount exceeds actual processing costs.

- The applicant or property owner applicant will be billed for all time charged to the application. A current table of rates and explanation of charges is printed on the back of this form.

AGREED UPON BY:

Applicant/Owner Name: Jeremy Stroup Signature: *Jeremy Stroup* Date: 02/03/21

Hourly cost recovery billing rates

Staff Rates	Effective 7/1/20	
Administrative Assistant	$	165.62
Administrative Associate I	$	141.98
Administrative Associate II	$	156.44
Administrative Associate III	$	167.68
Arborist	$	191.61
Assistant Director Planning and Development Services	$	370.23
Associate Engineer	$	224.72
Associate Planner	$	204.79
Building/Planning Technician	$	164.67
Business Analyst	$	238.90
Chief Planning Official	$	329.22
Chief Transportation Official	$	287.47
City Legal Counsel	$	346.29
Code Enforcement Officer	$	200.62
Code Enforcement Lead	$	222.18
Coordinator Transit Management Systems	$	202.96
Director of Planning and Development Services	$	401.10
Engineer	$	182.87
Engineering Tech III	$	134.73
Landscape Architect/Park Planner	$	203.15
Management Analyst	$	213.22
Planning Manager	$	260.58
Planner	$	214.65
Principal Planner	$	254.06
Project Engineer	$	263.49
Senior Engineer	$	217.07
Senior Management Analyst	$	247.35
Senior Planner	$	247.55
Urban Forestry Manager	$	227.54

CITY OF PALO ALTO

Revision Date: 7/19/2019

POLYCHLORINATED BIPHENYLS (PCBs) IN PRIORITY BUILDING MATERIALS DEMOLITION PROGRAM PLANNING APPLICABILITY FORM

COMPLETE THIS WORKSHEET IF THE PROJECT INCLUDES A BUILDING/STRUCTURE DEMOLITION

Part 1. PROJECT INFORMATION

Property Address: 250 Hamilton Ave., Palo Alto, CA 94301 APN: _____

Part 2. PCBs PROGRAM SCREENING CRITERIA

All buildings to be demolished that meet **BOTH** of these criteria must meet Program requirements:

A. The building to be demolished is NOT a wood-framed, single-family residential, or two-family residential (duplex).

B. The building to be demolished was constructed or remodeled between January 1, 1950 and December 31, 1980.

☐ YES *If the answer to (a) AND (b) are both "yes," then the project **must meet program requirements**.* ***CONTINUE TO PART 3.***

☒ NO *If the answer to either (a) OR (b) is "no," then the project is exempt from PCB requirements.* ***STOP HERE and sign the certification statement (Part 4)*** *and submit this form with planning application materials.*

Part 3. PCBs PROGRAM COMPLIANCE

The response is "Yes" to both 2(a) AND to 2(b). The project must meet Program requirements.

A. Sign and date the certification statement in Part 4 before submitting this application from.

B. **The PCBs Applicant Package must be submitted with the Demolition Building Permit Application. Details may be found at cityofpaloalto.org/pcbdemoprogram**.

NOTE: *Program requirements are considerable, and the required coordination with the Environmental Protection Agency and other agencies may take several months. It is recommended that projects conduct this step as early as possible prior to demolition (during the project planning process) to minimize delays.*

Part 4. CERTIFICATION STATEMENT

I certify that the information provided in this form is, to the best of my knowledge and belief, true, accurate, and complete. I further certify that I understand my responsibility for knowing and complying with all relevant laws and regulations related to reporting, abating, and handing and disposing of PCBs materials and wastes. I understand there are significant penalties for submitting false information. I will retain a copy of this form and the supporting documentation for at least 5 years.

Signature: _____ Date: _____
(Property Owner/Agent/Legal Representative)

Print/Type: _____
(Property Owner/Agent/Legal Representative Name)

Signature: *Jeremy Stroup* Date: 02/03/21
(Consultant Completing Application Form)

Print/Type: Jeremy Stroup
(Consultant Completing Application Form)

Questions?
Contact the City's Watershed Protection Group
Email: cleanbay@cityofpaloalto.org
Phone: (650) 329-2122

VERIZON WIRELESS
LIST OF EXISTING AND PROPOSED
WIRELESS COMMUNICATIONS FACILITIES
PALO ALTO, CA
UPDATED MAY 22, 2017

Existing and Under Constrution Verizon Wireless Communication Facilities in Palo Alto				
Verizon Site Name	**Status**	**Address**	**Latitude**	**Longitude**
ALMA	EXISTING MACRO		37.426278	-122.141086
EMBARCADERO EAST	EXISTING MACRO		37.452133	-122.11263
GUNN HIGH SCHOOL	EXISTING MACRO		37.411789	-122.1491
HWY 101 EMBARCADERO	EXISTING MACRO		37.450217	-122.123575
MEADOW MIDDLEFIELD	EXISTING MACRO		37.422722	-122.114278
MIDDLEFIELD EMBARCADERO	EXISTING MACRO		37.444444	-122.133461
PALO ALTO DOWNTOWN-P01	EXISTING SMALL CELL		37.443964	-122.163086
PALO ALTO DOWNTOWN-P02	EXISTING SMALL CELL		37.444839	-122.163156
PALO ALTO DOWNTOWN-P03	EXISTING SMALL CELL		37.445436	-122.162531
PALO ALTO DOWNTOWN-P04	EXISTING SMALL CELL		37.446083	-122.162022
PALO ALTO DOWNTOWN-P05	EXISTING SMALL CELL		37.446672	-122.161361
PALO ALTO DOWNTOWN-P06	EXISTING SMALL CELL		37.446997	-122.160094
PALO ALTO DOWNTOWN-P07	EXISTING SMALL CELL		37.446478	-122.158867
PALO ALTO DOWNTOWN-P08	EXISTING SMALL CELL		37.445314	-122.160031
PALO ALTO DOWNTOWN-P09	EXISTING SMALL CELL		37.444722	-122.159569
PALO ALTO DOWNTOWN-P10	EXISTING SMALL CELL		37.443478	-122.161864
PALO ALTO DOWNTOWN-P11	EXISTING SMALL CELL		37.442872	-122.162464
PALO ALTO DOWNTOWN-P12	EXISTING SMALL CELL		37.4478	-122.161911
PALO ALTO DOWNTOWN-P13	EXISTING SMALL CELL		37.445317	-122.164378
PALO ALTO DOWNTOWN-P14	EXISTING SMALL CELL		37.445933	-122.163764
PALO ALTO DOWNTOWN-P15	EXISTING SMALL CELL		37.446519	-122.163183
PALO ALTO DOWNTOWN-P16	EXISTING SMALL CELL		37.447147	-122.162558
PALO ALTO DOWNTOWN-P17	EXISTING SMALL CELL		37.44835	-122.161367
PALO ALTO DOWNTOWN-P18	EXISTING SMALL CELL		37.445878	-122.159472
PALO ALTO DOWNTOWN-P19	EXISTING SMALL CELL		37.444089	-122.161258
PALO ALTO VZW STORE SC	EXISTING		37.445033	-122.164086
STANFORD	EXISTING		37.448803	-122.159025
STANFORD SHOPPING	EXISTING		37.44085	-122.162284
PALO ALTO 129	UNDER CONSTRUCTION	ADJACENT TO 2490 LOUIS ROAD	37.439839	-122.127258
PALO ALTO 130	UNDER CONSTRUCTION	ADJACENT TO 2820 LOIUS ROAD	37.437258	-122.123153
PALO ALTO 131	UNDER CONSTRUCTION	ADJACENT TO 891 ELBRIDGE WAY	37.435061	-122.119675
PALO ALTO 133	UNDER CONSTRUCTION	ADJACENT TO 949 LOMA VERDE	37.433982	-122.115289
PALO ALTO 134	UNDER CONSTRUCTION	ADJACENT TO 3409 KENNETH DRIVE	37.434217	-122.110175
PALO ALTO 135	UNDER CONSTRUCTION	ADJACENT TO 795 STONE LANE	37.428342	-122.115231
PALO ALTO 137	UNDER CONSTRUCTION	ADJACENT TO 3090 ROSS ROAD	37.432497	-122.121828
PALO ALTO 138	UNDER CONSTRUCTION	ADJACENT TO 836 COLORADO AVENUE	37.435547	-122.123964
PALO ALTO 143	UNDER CONSTRUCTION	ADJACENT TO 419 EL VERANO AVENUE	37.424392	-122.124075
PALO ALTO 144	UNDER CONSTRUCTION	ADJACENT TO 201 LOMA VERDE AVENUE	37.423653	-122.130347
PALO ALTO 145	UNDER CONSTRUCTION	ADJACENT TO 737 LOMA VERDE AVENUE	37.429808	-122.121697

verizon

12/24/20

SF Palo Alto 121

Adjacent to 1664 El Camino Real
Palo Alto, CA

Looking Northwest from El Camino Real

View #1

Applied Imagination 510 914-0500

verizon

12/24/20

SF Palo Alto 121

Adjacent to 1664 El Camino Real
Palo Alto, CA

Looking Northwest from El Camino Real

View #1

Applied Imagination 510 914-0500

verizon

12/24/20

SF Palo Alto 121

Adjacent to 1664 El Camino Real
Palo Alto, CA

Looking South from El Camino Real

View #2

Applied Imagination 510 914-0500

verizon

12/24/20

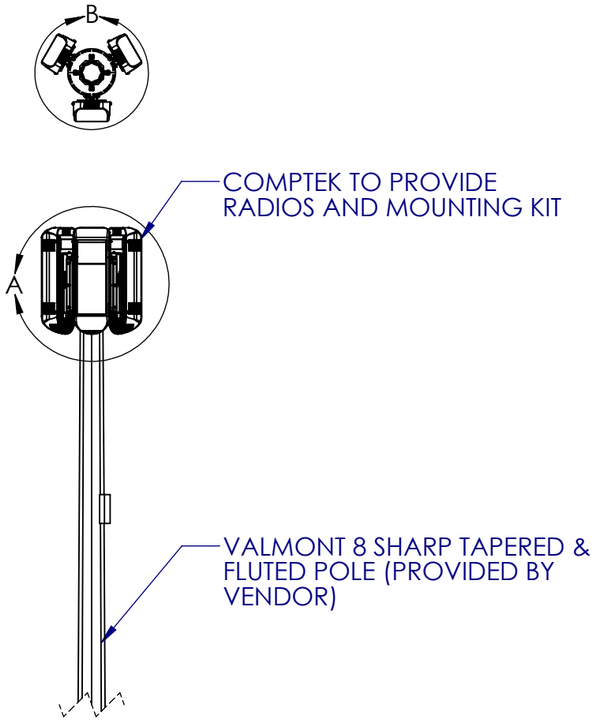
SF Palo Alto 121

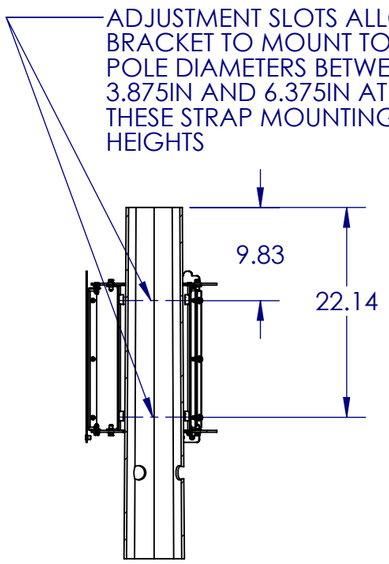
Adjacent to 1664 El Camino Real
Palo Alto, CA

Looking South from El Camino Real

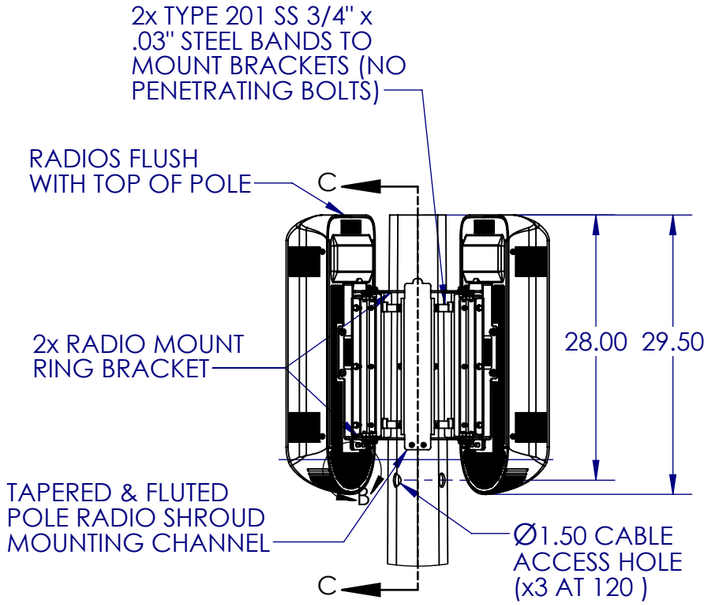
View #2

Applied Imagination 510 914-0500

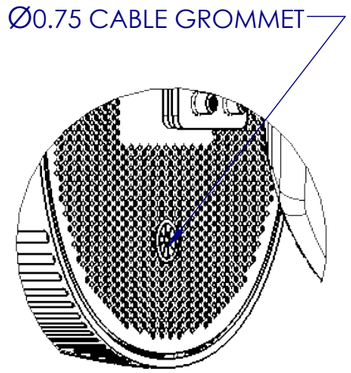




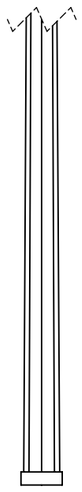
SECTION C-C
(ALL RADIOS HIDDEN FOR CLARITY)
SCALE 1 : 16

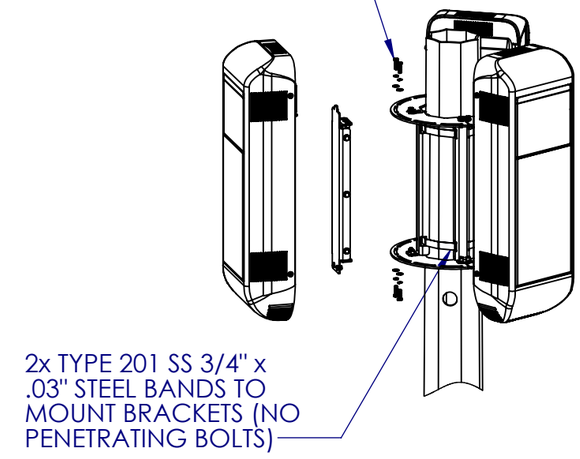


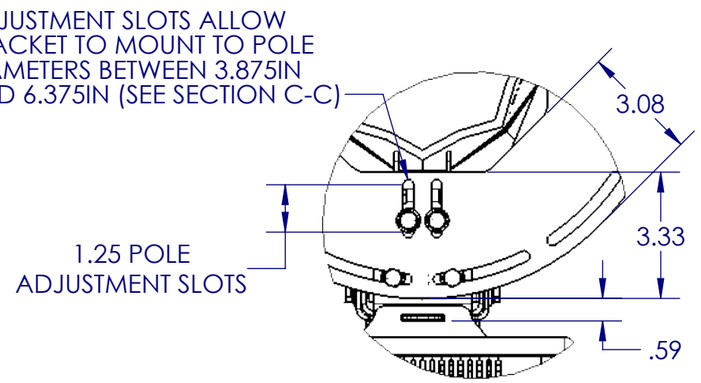
DETAIL A
(SECTOR 1 RADIO HIDDEN FOR CLARITY)
SCALE 1 : 16



DETAIL B
SCALE 1 : 3







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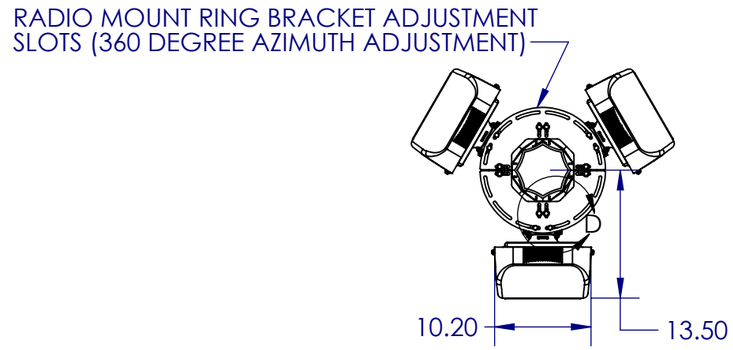
SCALE 1 : 4



DETAIL B
SCALE 1 : 16

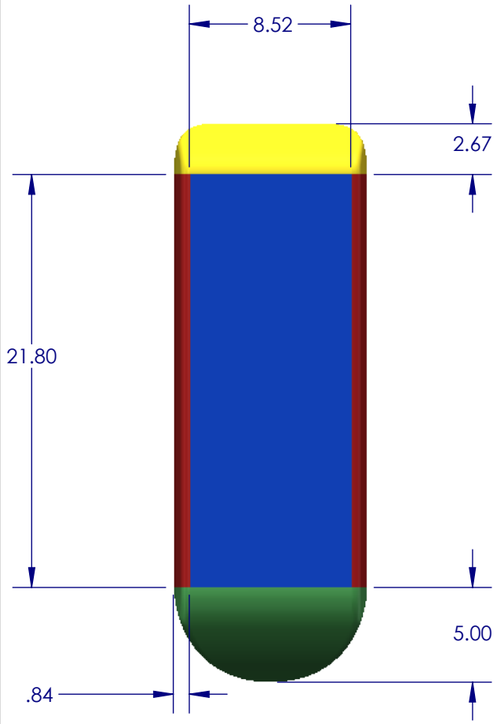
REVISIONS					
REV.	DESCRIPTION	DATE	DRAWN	APPR.	CCN #
01	INITIAL RELEASE	10/2/2020	JAD	JL	000426
02	UPDATED RADIO DESIGN	3/9/2021	MM	JL	
03	ADDED CABLE GROMMET	3/11/2021	MM	JL	
04	UPDATED POLE + BRACKET DESIGN	3/17/2021	MM	JL	

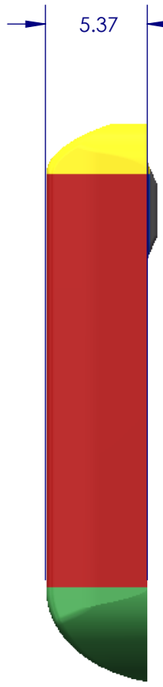
5555 CENTRAL AVE, SUITE 100,
BOULDER, CO 80301
PHONE: 303-531-5758
FAX: 303-531-5595
www.comptektechnologies.com

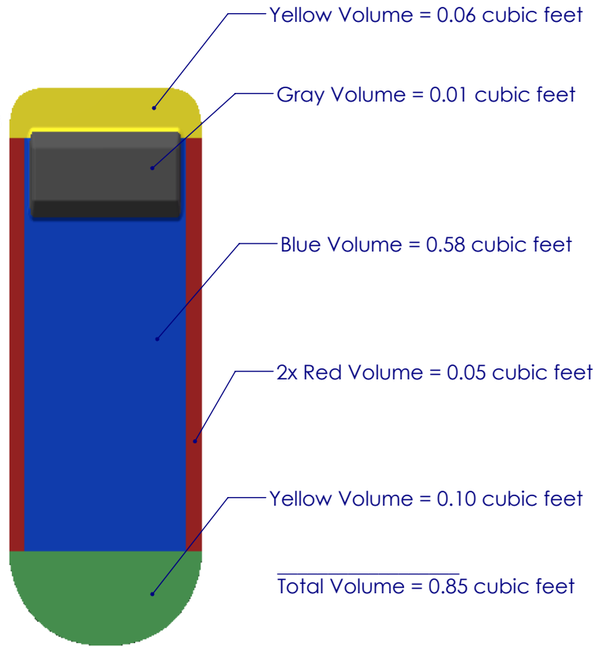
TITLE
VALMONT 8 SHARP FLUTED POLE STRAP MOUNT BRACKET

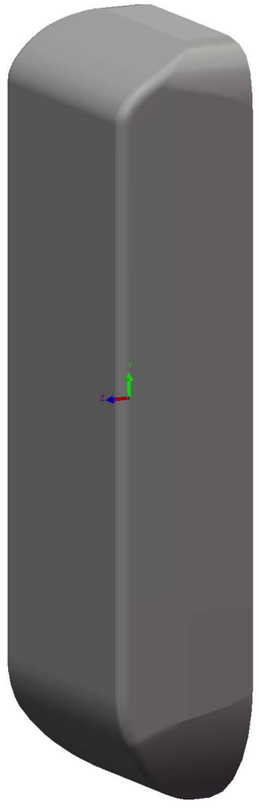
PROPRIETARY AND CONFIDENTIAL | DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED | DO NOT SCALE | SIZE **B** | SHEET 1 OF 1

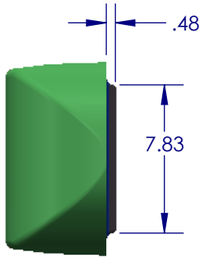
PROJECT. NO. 30464 | REV 04

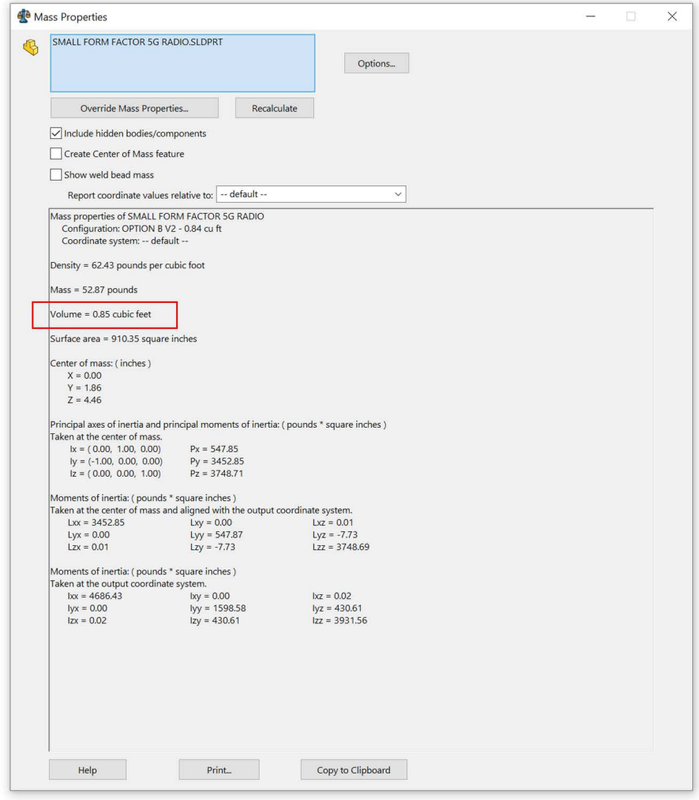












CityPole
Comptek
5555 CENTRAL AVE, SUITE 100,
BOULDER, CO 80301
PHONE: 303-531-5758
FAX: 303-531-5595
www.comptektechnologies.com

TITLE

SMALL FORM FACTOR 5G RADIO - VOLUME STUDY

PROPRIETARY AND CONFIDENTIAL	DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED	DO NOT SCALE	SIZE **B**	SHEET 1 OF 1

PROJECT. NO.	REV
–	–

Vinculums
575 Lennon Lane #125
Walnut Creek, CA 94598
(925) 482-8500

ALLSTATES ENGINEERING & SURVEYING
23675 Birtcher Dr.
Lake Forest, CA
(949) 273-0996

VERIZON
PALO ALTO_121

All States Engineering & Surveying
Project No: 64 – CLUSTER-6 \ PALO ALTO_121

Structural Analysis Report

ROW Adjacent to 1664 El Camino Real (CA-82), Palo Alto, 94306
Proposed 29'- 6" AGL 'Downtown' Style Aluminum Light Pole & Foundation

Rev. #	Reason for Revision	Total # of Sheets	Prepared By	Checked By	Approved /Accepted	Date
1	Updated Pole Specs	21	LeT	LeT	WZ	12/23/2020

	Quantity/Type /Shape	Strength (min.)	Dimensions	Thickness /Depth	Capacity Utilization	
Pole Shaft	Aluminum / 8-sided tapered	25 ksi*	5.65"Φ at top 10.0"Φ at bottom	0.219"	**41.3 %**	**PASS**
Anchor Bolts	4	36 ksi	1" Φ	-	**41.0 %**	**PASS**
Base Plate	1	36 ksi	13.6" Cast Base	-	**ADEQUATE**	
Foundation	*Circular Caisson*	*3.25 ksi*	*36"Dia.*	*7'-0"***	**ADEQUATE**	

* Pole grade is 6063-T6 per provided specs.

Required depth of caisson (Unrestrained** at G/L) - This analysis was performed without a soil report, and minimum soil properties from IBC-18 were used. Required pole foundation embedment depth may change with a soil report from the proposed pole location.

Steel Decorated Pole
Palo Alto
PALO ALTO_121

Project Description:
All States Engineering & Surveying (ASES) is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the metal pole.
The purpose of the analysis is to determine acceptability of the pole stress level. Based on our analysis we have determined the metal pole stress level for the structure and anchorage, under the following load case:

LC: Proposed Pole + Proposed Equipment without Shroud
(Please see page 5 for details)

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

Structural Analysis Parameters:
This analysis has been performed in accordance with AASHTO 2013 guidelines.

- Wind Speed: ***85 mph per AASHTO 2013***
- Exposure Category: ***C***
- Risk Category: ***II***
- Topographical: ***1***
- Crest Height = ***0***
- Ice Thickness = ***0 in***
- Min. Soil Lateral Bearing = ***100 psf/ft*2 = 200 psf/ft per CBC & IBC 1806.3.4***
- Min. Soil Bearing = ***1500 psf***

We at *All States Engineering & Surveying* appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or any other projects, please give us a call.

Hazards by Location

Search Information

Address: 1664 El Camino Real, Palo Alto, CA 94306, USA

Coordinates: 37.430475, -122.1524438

Elevation: 49 ft

Timestamp: 2020-12-04T18:10:34.720Z

Hazard Type: Seismic

Reference Document: ASCE7-16

Risk Category: II

Site Class: D-default

Basic Parameters

Name	Value	Description
S_S	1.775	MCE_R ground motion (period=0.2s)
S_1	0.637	MCE_R ground motion (period=1.0s)
S_{MS}	2.13	Site-modified spectral acceleration value
S_{M1}	* null	Site-modified spectral acceleration value
S_{DS}	1.42	Numeric seismic design value at 0.2s SA
S_{D1}	* null	Numeric seismic design value at 1.0s SA

* See Section 11.4.8

Additional Information

Name	Value	Description
SDC	* null	Seismic design category
F_a	1.2	Site amplification factor at 0.2s
F_v	* null	Site amplification factor at 1.0s
CR_S	0.915	Coefficient of risk (0.2s)
CR_1	0.9	Coefficient of risk (1.0s)
PGA	0.73	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	0.877	Site modified peak ground acceleration

T_L	12	Long-period transition period (s)
SsRT	2.057	Probabilistic risk-targeted ground motion (0.2s)
SsUH	2.248	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	1.775	Factored deterministic acceleration value (0.2s)
S1RT	0.82	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.912	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.637	Factored deterministic acceleration value (1.0s)
PGAd	0.73	Factored deterministic acceleration value (PGA)

* See Section 11.4.8

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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ALLSTATES ENGINEERING & SURVEYING

PROJECT : PALO ALTO_121
CLIENT : 102 - Sequoia VZW Bakersfield

DESIGN BY :
REVIEW BY : LeT
DATE : 12/23/2020

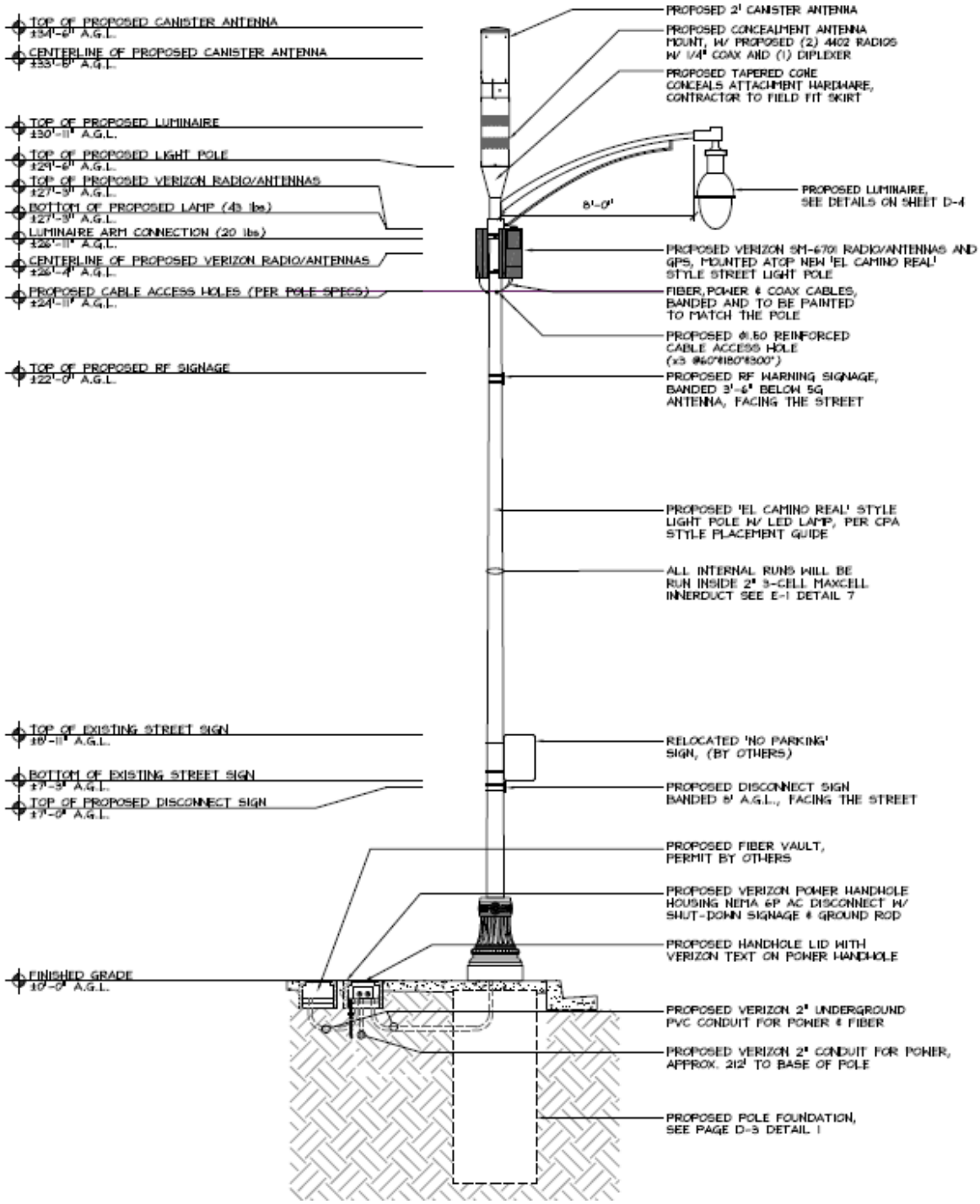
Pole Wind & Seismic Analysis Based on AASHTO 2013

Proposed Elevation

NOTES:

1. NEW GALVANIZED LIGHT POLE TO BE PAINTED WITH MUNSELL RAL6.5GY2.76/2.1 PAINT.
2. NEW RADIOS AND HARDWARE TO BE PAINTED MUNSELL RAL6.5GY2.76/2.1 OR WRAPPED AS ALLOWED BY THE MANUFACTURER.
3. ALL CABLE/WIRE BETWEEN THE POLE ACCESS HOLE AND THE ANTENNA PAINTED/COLORED TO MATCH POLE COLOR.

TOTAL ANETNNA/RADIO VOLUME (CU. FT.)		
MODEL	TOTAL	TOTAL VOLUME (CU. FT.)
SM6701	3	±1.52
4G CANISTER + CONE	1	±4.4



ALLSTATES ENGINEERING & SURVEYING

PROJECT : PALO ALTO_121
CLIENT : 102 - Sequoia VZW Bakersfield

DESIGN BY :
REVIEW BY : LeT
DATE : 12/23/2020

Pole Wind & Seismic Analysis Based on AASHTO 2013

Loading

PROPOSED COMPONENTS

Rad Center	Component Type	QUANTITY	MOUNT TYPE
26'-4"	(N) Canister Antenna w/ Shroud	1	Top Mounted Pole
26'-4"	(N) Ericsson SM6701 Antennas	3	Pole Mounted
17'-6"	Reserved 30" x 72" Banner	1	
9'-0"	(E) Street Sign	1	
-	(N) RF Signage	1	
-	(N) & (E) Conduit, Wire, & In-line Fuse	-	Inside Pole

WIND PRESSURE DERIVATION (AASHTO 2013)

Height of Pole	h =	29.5	ft	
Wind Speed	V =	85	mph	*(AASHTO 2013)*
Wind Exposure (B, C or D)		C		
Wind Directionality (Pole)	K_d =	0.95		*(AASHTO 2013, Table 3.8.5-1)*
Gust Effect Factor	G =	1.14		*(AASHTO 2013, Sec. 3.8.6)*
3-sec Gust Exponent	α =	9.50		*(ASCE 7-16, Table 26.11-1)*
Atmospheric Height	Z_g =	900	ft	*(ASCE 7-16, Table 26.11-1)*
Vel. Pressure Coeff. (Min)	$K_{z\,min.}$ =	0.84		*(ASCE 7-16, Table 29.10-1)*
Velocity Pressure Coeff.	$K_z = 2.0(z/Z_g)^{(2/\alpha)}$ =	0.97		*(AASHTO 2013, Equation 3.8.4-1)*
Wind Force @ Pole top	$F_H = 0.00256K_zK_dGV^2(C_dA)$ =	19.5	psf *C_dA	*(Wind Pressure Input For O-Calc Analysis)*
Total Applied Shear	V_u =	977	lbs	*(From TNX Report)*
Total Applied Moment	M_u =	15711	lb-ft	*(From TNX Report)*

CALCULATION OF WIND DRAG COEFFICIENTS (Cd) FROM AASTHO 2013, TABLE 3.8.7-1

C_v = 1.00 For V<105 mph

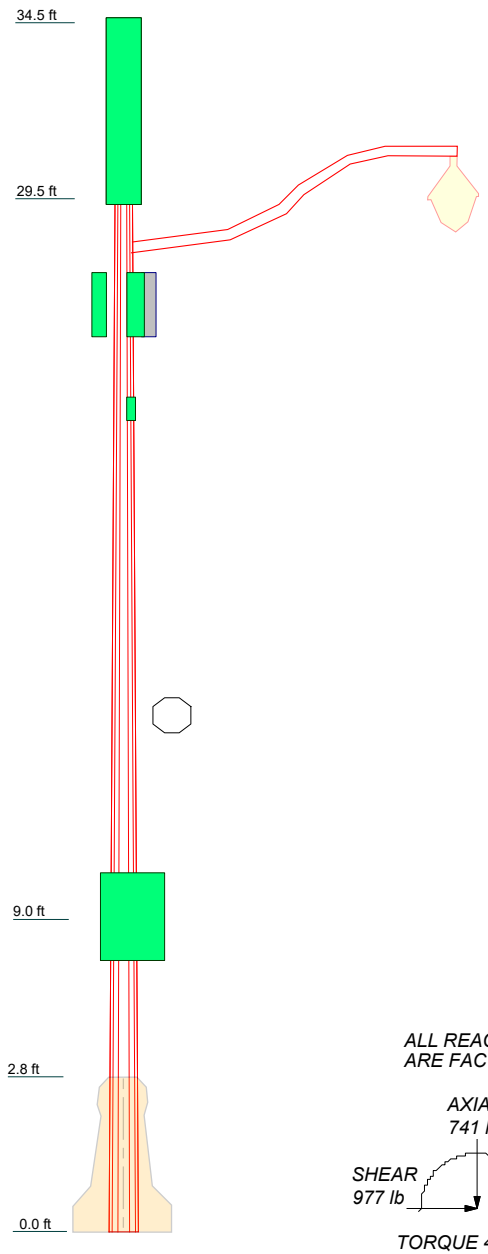
Appurtenance	Height (in)	Width (in)	Depth (in)	d (ft)	C_vVd	C_d
(N) Canister Antenna w/ Shroud	65.0	12.0	-	1.00	85	**0.45**
(N) Ericsson SM6701 Antennas	32.2	10.2	7.3	1.05	-	**1.70**
(E) Round Luminaire	2.9	88.0	-	0.24	20	**0.50**
(E) Round Pole	354	7.85	-	0.65	56	**0.69**

SEISMIC LOAD ANALYSIS (ASCE 7-16)

Total Pole Weight	W = P_u =	741	lbs	*[Approximate Wt. Including Pole With (N) Components]*
Spectral Response (Short)	S_{DS} =	1.775		*(ATC Hazards Design Maps Summary)*
Spectral Response (1 sec.)	S_1 =	0.637		*(ATC Hazards Design Maps Summary)*
Importance Factor	I_e =	1.0		*(ASCE 7-16, Section 15.4.1.1)*
Response Factor	R =	1.5		*(ASCE 7-16, Table 15.4-2)*
Seismic Response Coeff	$C_s = 0.044S_{DS}I$ =	0.078		*(ASCE 7-16, Section 15.4-1)*
Seismic Response Coeff	$C_s = 0.8S_1/(R/I_e)$ =	0.340		*(ASCE 7-16, Section 15.4-2)*
Seismic Response Coeff	$C_s = S_{DS}/(R/I_e)$ =	1.183		*(ASCE 7-16, Section 12.8-2)*
Lateral Seismic Force	$V_u = MAX(C_s)W$ =	1.183	*W	
Total Applied Shear	V_u =	877	lbs	
Total Applied Moment	$M_u = V_u(1/2h)$ =	12934	lb-ft	

(Wind Loads Governing For Pole Shaft Capacity Check)

Section	Length (ft)	Number of Sides	Thickness (in)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	29.50	8	0.2190	5.7650	10.0000	6063-T6	197.5
							197.5



ALL REACTIONS ARE FACTORED

AXIAL 741 lb

SHEAR 977 lb

MOMENT 15711 lb-ft

TORQUE 460 lb-ft

REACTIONS - 85 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
12"Dia. x65" Shroud w/ Antenna	32	8' x 2.875" O.D. Light Pole Arm	22.5
SM6701 with Mount	26.333	Light Luminarie	22.5
SM6701 with Mount	26.333	30"x30" Street Sign	9
SM6701 with Mount	26.333	2PC Cast Alum. Huntington Clamshell	1.416
FCC RF Notice Signage	23.5		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
6063-T6	25 ksi	30 ksi			

TOWER DESIGN NOTES

1. Tower is located in Santa Clara County, California.
2. Tower designed for Exposure C to the AASHTO 2013 Standard.
3. Tower designed for a 85 mph basic wind in accordance with the AASHTO 2013 Standard.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 41.3%

All States Engineering & Surveying
23675 Birtcher Drive
Lake Foreest, CA 92630
Phone: (949) 273-0996
FAX: (949) 606-7222

Job: ***Palo Alto_Light Pole***			
Project: ***PALO ALTO_121***			
Client: 64 - Vinculums_VZW	Drawn by: tle		App'd:
Code: AASHTO 2013	Date: 12/23/20		Scale: NTS
Path:			Dwg No. E-1

Steel Decorated Pole
Palo Alto
PALO ALTO_121

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Tower Input Data

The tower is a monopole.
This tower is designed using the AASHTO 2013 standard.
The following design criteria apply:
Tower is located in Santa Clara County, California.
Basic wind speed of 85 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Deflections calculated using a wind speed of 60 mph.

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	29.50-0.00	29.50		8	5.7650	10.0000	0.2190	0.8760	6063-T6 (25 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	6.0596	4.0324	16.3628	2.0187	3.1189	5.2464	33.5169	1.9653	1.4801	6.758
	10.6435	7.1116	89.7569	3.5603	5.4100	16.5909	183.8543	3.4661	3.2333	14.764

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 29.50-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
Existing Cable Inside Pole	C	No	Yes	CaAa (Out Of Face)	0.50 - 0.00	1	No Ice	0.06	0.15

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	29.50-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.032	0.07
		D	0.000	0.000	0.000	0.000	0.00

Steel Decorated Pole
Palo Alto
PALO ALTO_121

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Discrete Tower Loads

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft ft ft*	*Azimuth Adjustment* °	*Placement* *ft*		*C_AA_A Front* *ft²*	*C_AA_A Side* *ft²*	*Weight* *lb*
Light Luminarie	A	From Leg	6.50 0.00 0.00	0.0000	22.50	No Ice	2.36	2.36	55.00
8' x 2.875" O.D. Light Pole Arm	A	From Leg	4.00 0.00 1.75	0.0000	22.50	No Ice	1.92	0.06	65.00
FCC RF Notice Signage	C	From Leg	0.00 0.00 0.00	0.0000	23.50	No Ice	0.33	0.01	0.20
*									
SM6701 w/ Mount	C	From Leg	0.50 0.25 0.00	0.0000	26.33	No Ice	1.44	0.96	46.00
SM6701 w/ Mount	B	From Leg	0.50 0.25 0.00	0.0000	26.33	No Ice	1.44	0.96	46.00
SM6701 w/ Mount	D	From Leg	0.50 0.25 0.00	0.0000	26.33	No Ice	1.44	0.96	46.00
*									
30"x30" Street Sign	C	From Leg	0.00 0.00 0.00	0.0000	9.00	No Ice	7.50	0.05	5.00
*									
2PC Cast Alum. Huntington Clamshell	C	None		0.0000	1.42	No Ice	2.01	2.01	50.00
*									
12"Dia. x65" Shroud w/ Antenna	C	None		0.0000	32.00	No Ice	3.06	3.06	107.10

Load Combinations

Comb. No.	*Description*
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 45 deg - No Ice
5	0.9 Dead+1.6 Wind 45 deg - No Ice
6	1.2 Dead+1.6 Wind 90 deg - No Ice
7	0.9 Dead+1.6 Wind 90 deg - No Ice
8	Dead+Wind 0 deg - Service
9	Dead+Wind 45 deg - Service
10	Dead+Wind 90 deg - Service

Steel Decorated Pole
Palo Alto
PALO ALTO_121

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Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	29.5 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-740.03	-9114.73	10202.48
			Max. Mx	7	-554.40	-14559.31	-982.01
			Max. My	2	-739.62	1938.07	15590.85
			Max. Vy	6	972.11	-14502.41	-850.56
			Max. Vx	2	-972.24	1938.07	15590.85
			Max. Torque	5			460.79

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	4	741.42	-612.05	612.05
	Max. H_x	3	556.06	105.32	970.86
	Max. H_z	2	741.42	105.32	970.89
	Max. M_x	2	15590.88	105.32	970.89
	Max. M_z	7	14559.30	-970.87	-105.32
	Max. Torsion	5	459.72	-612.03	612.04
	Min. Vert	3	556.06	105.32	970.86
	Min. H_x	7	556.06	-970.87	-105.32
	Min. H_z	6	741.42	-970.85	-105.32
	Min. M_x	7	-982.20	-970.87	-105.32
	Min. M_z	2	-1937.87	105.32	970.89
	Min. Torsion	1	0.02	-0.16	-0.15

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	617.85	0.16	0.15	-438.73	455.49	-0.02
1.2 Dead+1.6 Wind 0 deg - No Ice	741.42	-105.32	-970.89	-15590.88	1937.87	-323.30
0.9 Dead+1.6 Wind 0 deg - No Ice	556.06	-105.32	-970.86	-15365.90	1788.59	-324.36
1.2 Dead+1.6 Wind 45 deg - No Ice	741.42	612.05	-612.05	-10202.31	-9114.92	-458.26
0.9 Dead+1.6 Wind 45 deg - No Ice	556.07	612.03	-612.04	-10007.37	-9200.76	-459.72
1.2 Dead+1.6 Wind 90 deg - No Ice	741.42	970.85	105.32	850.75	-14502.40	-324.62
0.9 Dead+1.6 Wind 90 deg - No Ice	556.06	970.87	105.32	982.20	-14559.30	-325.63
Dead+Wind 0 deg - Service	617.85	-29.32	-270.43	-4620.39	843.10	-90.60
Dead+Wind 45 deg - Service	617.85	170.51	-170.47	-3124.68	-2224.25	-128.17
Dead+Wind 90 deg - Service	617.85	270.39	29.37	-57.01	-3718.28	-90.67

Steel Decorated Pole
Palo Alto
PALO ALTO_121

ALLSTATES ENGINEERING & SURVEYING

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L1	29.5 - 0 (1)	TP10x5.765x0.219	29.50	29.50	99.4	7.1116	-739.62	126745.00	0.006

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	29.5 - 0 (1)	TP10x5.765x0.219	15710.83	38573.92	0.407	0.00	38573.92	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	29.5 - 0 (1)	TP10x5.765x0.219	977.95	99206.40	0.010	323.29	80323.58	0.004

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	29.5 - 0 (1)	0.006	0.407	0.000	0.010	0.004	0.413 ✔	1.000	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	29.5 - 0	Pole	TP10x5.765x0.219	1	-739.62	126745.00	41.3	Pass
							Summary	
						Pole (L1)	41.3	Pass
						RATING =	**41.3**	**Pass**

Hilti PROFIS Engineering 3.0.66

www.hilti.com

Company:	All State Eng. & Surveying	Page:	1
Address:	23675 Birtcher Dr. Lake Forest, CA 92630	Specifier:	
Phone I Fax:	9492730996 |	E-Mail:	
Design:	Concrete - Sep 9, 2020	Date:	12/23/2020
Fastening point:			

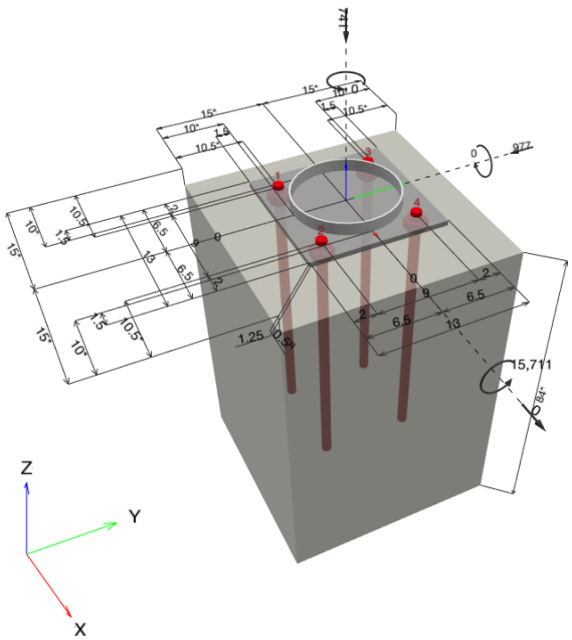
Specifier's comments:

1 Input data

Anchor type and diameter:	**Heavy Hex Head ASTM F 1554 GR. 36 1**
Item number:	not available
Effective embedment depth:	h_{ef} = 25.000 in.
Material:	ASTM F 1554
Evaluation Service Report:	Hilti Technical Data
Issued I Valid:	- | -
Proof:	Design Method ACI 318-08 / CIP
Stand-off installation:	without clamping (anchor); restraint level (anchor plate): 1.00; e_b = 1.250 in.; t = 0.500 in.
Anchor plate[R]:	l_x x l_y x t = 13.000 in. x 13.000 in. x 0.500 in.; (Recommended plate thickness: not calculated)
Profile:	Round HSS (AISC), HSS10X.188; (L x W x T) = 10.000 in. x 10.000 in. x 0.188 in.
Base material:	cracked concrete, , f_c' = 3,250 psi; h = 84.000 in.
Reinforcement:	tension: condition A, shear: condition B; anchor reinforcement: tension
	edge reinforcement: > No. 4 bar with stirrups
Seismic loads (cat. C, D, E, or F)	no

[R] - The anchor calculation is based on a rigid anchor plate assumption.

Geometry [in.] & Loading [lb, ft.lb]



Company:	All State Eng. & Surveying	Page:	2
Address:	23675 Birtcher Dr. Lake Forest, CA 92630	Specifier:	
Phone I Fax:	9492730996 |	E-Mail:	
Design:	Concrete - Sep 9, 2020	Date:	12/23/2020
Fastening point:			

1.1 Design results

Case	Description	Forces [lb] / Moments [ft.lb]	Seismic	Max. Util. Anchor [%]
1	Combination 1	N = -741; V_x = 0; V_y = -977; M_x = 15,711.000; M_y = 0.000; M_z = 0.000;	no	41

Company:	All State Eng. & Surveying	Page:	3
Address:	23675 Birtcher Dr. Lake Forest, CA 92630	Specifier:	
Phone I Fax:	9492730996 |	E-Mail:	
Design:	Concrete - Sep 9, 2020	Date:	12/23/2020
Fastening point:			

2 Proof I Utilization (Governing Cases)

		Design values [lb]		Utilization	
Loading	**Proof**	**Load**	**Capacity**	**β_N / β_V [%]**	**Status**
Tension	Pullout Strength	10,289	27,318	38 / -	OK
Shear	Steel failure (with lever arm)	244	855	- / 29	OK

Loading	**β_N**	**β_V**	**ζ**	**Utilization $\beta_{N,V}$ [%]**	**Status**
Combined tension and shear loads	0.404	0.286	5/3	35	OK

3 Warnings

- Please consider all details and hints/warnings given in the detailed report!

Fastening meets the design criteria!

Company:	All State Eng. & Surveying	Page:	4
Address:	23675 Birtcher Dr. Lake Forest, CA 92630	Specifier:	
Phone I Fax:	9492730996 |	E-Mail:	
Design:	Concrete - Sep 9, 2020	Date:	12/23/2020
Fastening point:			

4 Remarks; Your Cooperation Duties

- Any and all information and data contained in the Software concern solely the use of Hilti products and are based on the principles, formulas and security regulations in accordance with Hilti's technical directions and operating, mounting and assembly instructions, etc., that must be strictly complied with by the user. All figures contained therein are average figures, and therefore use-specific tests are to be conducted prior to using the relevant Hilti product. The results of the calculations carried out by means of the Software are based essentially on the data you put in. Therefore, you bear the sole responsibility for the absence of errors, the completeness and the relevance of the data to be put in by you. Moreover, you bear sole responsibility for having the results of the calculation checked and cleared by an expert, particularly with regard to compliance with applicable norms and permits, prior to using them for your specific facility. The Software serves only as an aid to interpret norms and permits without any guarantee as to the absence of errors, the correctness and the relevance of the results or suitability for a specific application.
- You must take all necessary and reasonable steps to prevent or limit damage caused by the Software. In particular, you must arrange for the regular backup of programs and data and, if applicable, carry out the updates of the Software offered by Hilti on a regular basis. If you do not use the AutoUpdate function of the Software, you must ensure that you are using the current and thus up-to-date version of the Software in each case by carrying out manual updates via the Hilti Website. Hilti will not be liable for consequences, such as the recovery of lost or damaged data or programs, arising from a culpable breach of duty by you.

All States Engineering & Surveying
Zalzali & Associates, Inc.
23675 Birtcher Drive
Lake Forest
CA
92630

Project Title: Lighht Pole Caisson Embedment Depth
Engineer:
Project ID: Palo Alto Light Pole
Project Descr:

Pole Footing Embedded in Soil

File: Caisson Depth.ec6

Lic. # : KW-06009186
Zalzali & Associates Inc.

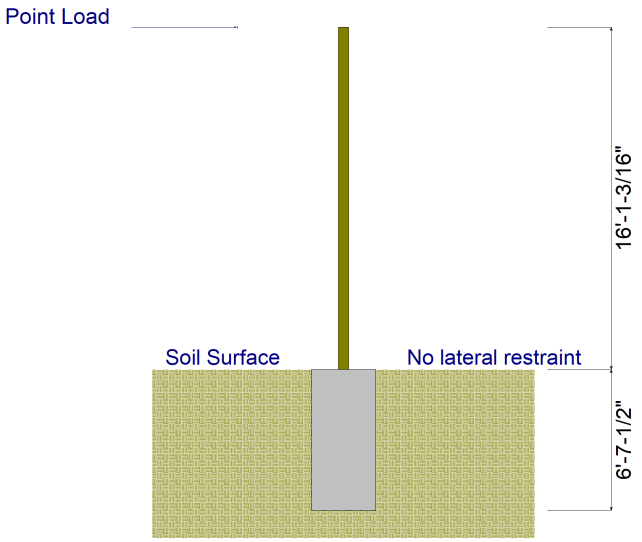
DESCRIPTION: Poposed Caisson embedment (soil values From IBC Table 1806.2 with lateral bearing load increase from IBC 1806.3.4)

Code References

Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16
Load Combinations Used : ASCE 7-16

General Information

Pole Footing Shape	Circular
Pole Footing Diameter	36.0 in
Calculate Min. Depth for Allowable Pressures	
No Lateral Restraint at Ground Surface	
Allow Passive	200.0 pcf
Max Passive	1,500.0 psf



Controlling Values

Governing Load Combination : +D+W

Lateral Load	0.9770 k
Moment	15.728 k-ft

NO Ground Surface Restraint

Pressures at 1/3 Depth

Actual	433.356 psf
Allowable	433.550 psf

Minimum Required Depth	6.625 ft

Footing Base Area	7.069 ft^2
Maximum Soil Pressure	0.09082 ksf

Applied Loads

Lateral Concentrated Load (k)		Lateral Distributed Loads (klf)		Vertical Load (k)	
D : Dead Load	k		k/ft	0.6420	k
Lr : Roof Live	k		k/ft		k
L : Live	k		k/ft		k
S : Snow	k		k/ft		k
W : Wind	0.9770 k		k/ft		k
E : Earthquake	k		k/ft		k
H : Lateral Earth	k		k/ft		k
Load distance above ground surface	16.098 ft	TOP of Load above ground surface	ft		
		BOTTOM of Load above ground surface	ft		

Load Combination Results

	Forces @ Ground Surface		Required	Pressure at 1/3 Depth		Soil Increase
Load Combination	Loads - (k)	Moments - (ft-k)	Depth - (ft)	Actual - (psf)	Allow - (psf)	Factor
+D+W	0.977	15.728	6.63	433.4	433.5	1.000

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Engineer:
Project ID: Palo Alto Light Pole
Project Descr:

Concrete Caisson

Lic. # : KW-06009186 — Zalzali & Associates Inc.

DESCRIPTION: Design Concrete Caisson

Code References

Calculations per ACI 318-14, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : ASCE 7-16

General Information

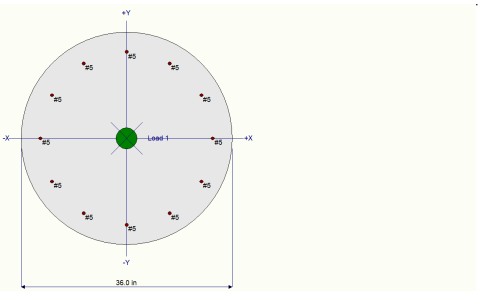
f'c : Concrete 28 day strength	=	3.250 ksi
E =	=	3,122.0 ksi
Density	=	150.0 pcf
β	=	0.850
fy - Main Rebar	=	60.0 ksi
E - Main Rebar	=	29,000.0 ksi
Allow. Reinforcing Limits		*ASTM A615 Bars Used*
Min. Reinf.	=	0.250 %
Max. Reinf.	=	8.0 %

Overall Caisson Height = 7.0 ft
End Fixity: Top Free, Bottom Fixed
Brace condition for deflection (buckling) along Caisson :
X-X (width) axis :
Fully braced against buckling ABOUT Y-Y Axis
Y-Y (depth) axis :
Fully braced against buckling ABOUT X-X Axis

Caisson Cross Section

Column Dimensions : 36.0in Diameter, Caisson Edge to Rebar Edge Cover = 3.0in

Column Reinforcing : 12 - #5 bars



Applied Loads

Entered loads are factored per load combinations specified by user.

Caisson self weight included : 7,422.01 lbs * Dead Load Factor
AXIAL LOADS . . .
Reaction from Pole: Axial Load at 7.0 ft above base, D = 0.7520 k
BENDING LOADS . . .
Reaction from Pole: Lat. Point Load at 7.0 ft creating Mx-x, W = 1.628 k
Reaction from Pole: Moment acting about X-X axisat 7.0 ft, W = 26.213 k-ft

DESIGN SUMMARY

Load Combination +0.90D+W+1.60H
Location of max.above base 6.953 ft

Maximum Stress Ratio 0.072 : 1
Ratio = (Pu^2+Mu^2)^.5 / (PhiPn^2+PhiMn^2)^.5

Pu =	7.357 k	φ * Pn =	98.643 k
Mu-x =	26.137 k-ft	φ * Mn-x =	-369.236 k-ft
Mu-y =	0.0 k-ft	φ * Mn-y =	0.0 k-ft
Mu Angle =	0.0 deg		
Mu at Angle =	26.137 k-ft	φMn at Angle =	363.063 k-ft

Pn & Mn values located at Pu-Mu vector intersection with capacity curve

Caisson Capacities . . .

Pnmax : Nominal Max. Compressive Axial Capacity	3,024.81 k
Pnmin : Nominal Min. Tension Axial Capacity	k
φ Pn, max : Usable Compressive Axial Capacity	1,799.76 k
φ Pn, min : Usable Tension Axial Capacity	k

Maximum SERVICE Load Reactions . .

Top along Y-Y	0.0 k	Bottom along Y-Y	0.0 k
Top along X-X	0.0 k	Bottom along X-X	0.9770 k

Maximum SERVICE Load Deflections . . .
Along Y-Y -0.003039 in at 7.0 ft above base
for load combination : W Only
Along X-X 0.0 in at 0.0 ft above base
for load combination :

General Section Information . φ = 0.70 β = 0.850 θ = 0.850
ρ : % Reinforcing 0.3655 % Rebar % Ok
Reinforcing Area 3.720 in^2
Concrete Area 1,017.88 in^2

All States Engineering & Surveying
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23675 Birtcher Drive
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CA
92630

Project Title: Lighht Pole Caisson Embedment Depth
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Project Descr:

Concrete Caisson

File: Caisson Depth.ec6

Lic. # : KW-06009186
Zalzali & Associates Inc.

DESCRIPTION: Design Concrete Caisson

Governing Load Combination Results

Governing Factored Load Combination	Moment X-X	Moment Y-Y	Dist. from base ft	Axial Load k Pu	φ * Pn	δx	δx * Mux	δy	δy * Muy	Bending Analysis k-ft Alpha (deg)	δ Mu	φ Mn	Utilization Ratio
+1.40D+1.60H			6.95	11.44	1,799.76					0.000			0.006
+1.20D+0.50Lr+L+W+1.60H	Actual		6.95	9.81	156.99	1.000	26.14			0.000	26.14	420.10	0.062
+0.90D+W+1.60H	Actual		6.95	7.36	98.64	1.000	26.14			0.000	26.14	363.06	0.072

Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	X-X Axis Reaction k @ Base	@ Top	Y-Y Axis Reaction @ Base	@ Top	Axial Reaction @ Base	My - End Moments k-ft @ Base	@ Top	Mx - End Moments @ Base	@ Top
+D+H					8.174				
+D+0.60W+H			0.977		8.174	8.889			
+0.60D+0.60W+0.60H			0.977		4.904	8.889			

Maximum Moment Reactions

Note: Only non-zero reactions are listed.

Load Combination	Moment About X-X Axis @ Base	@ Top	Moment About Y-Y Axis @ Base	@ Top
+D+H		k-ft		k-ft
+D+0.60W+H	8.889	k-ft		k-ft
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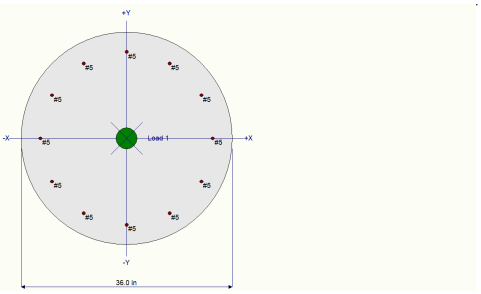

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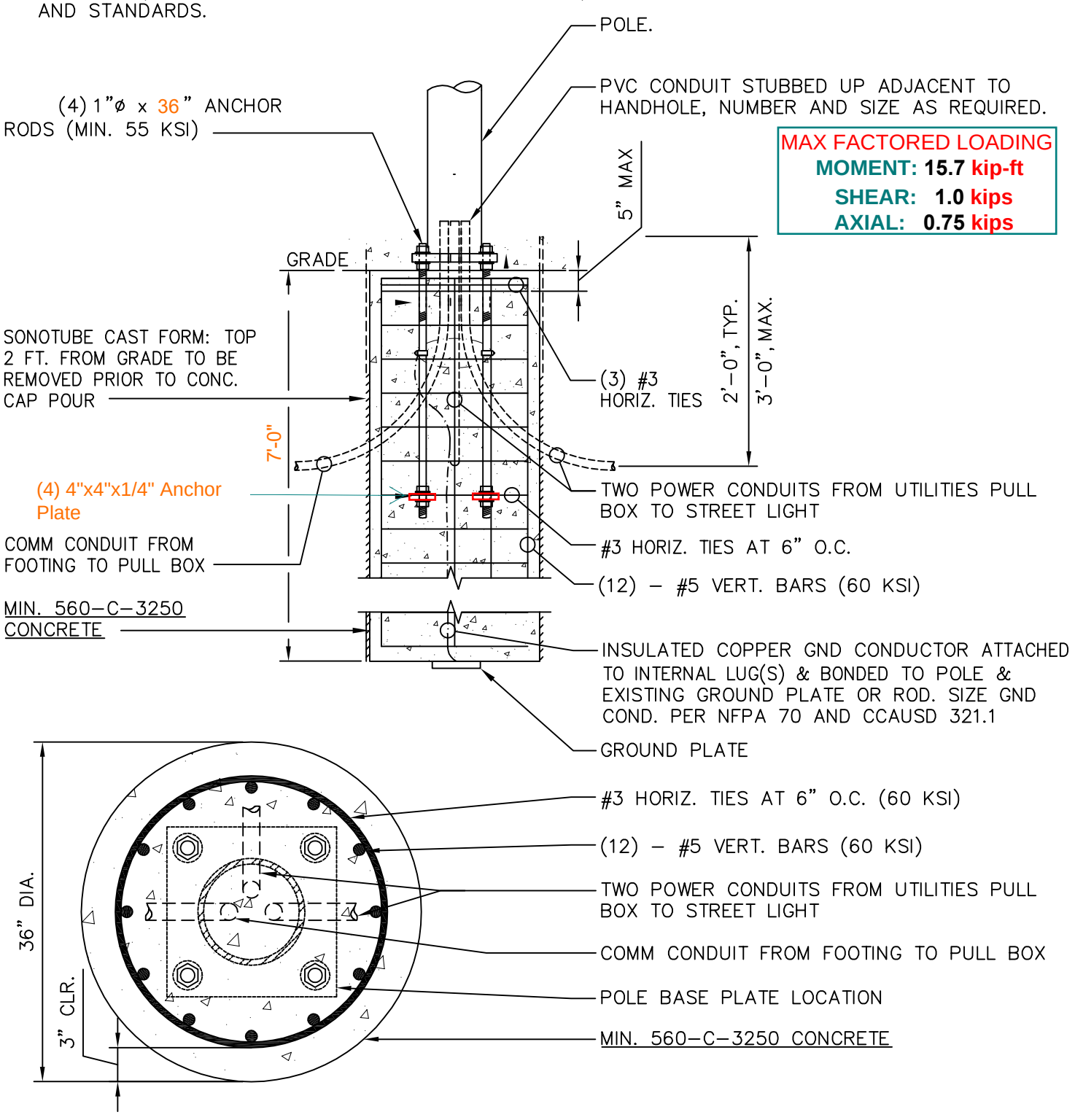
Load Combination	Moment About X-X Axis @ Base		@ Top		Moment About Y-Y Axis @ Base		@ Top	
+D+H				k-ft				k-ft
+D+0.60W+H	8.889			k-ft				k-ft
+0.60D+0.60W+0.60H	8.889			k-ft				k-ft

NOTE:
THIS INFORMATION MAY NOT CONTAIN ALL DETAILS REQUIRED FOR CONSTRUCTION. APPROPRIATE MODIFICATION MAY BE REQUIRED TO ENSURE SUITABILITY OF THESE DRAWINGS FOR THE SPECIFIC APPLICATION. IT IS THE USER'S RESPONSIBILITY TO ENSURE INSTALLATION OF THE EQUIPMENT/SYSTEM IS IN ACCORDANCE WITH BUILDING/PROJECT SPECIFICATIONS, APPLICABLE CODES AND STANDARDS.



FOUNDATION DETAIL

DO NOT SCALE DRAWINGS

THIS DRAWING IS NOT TO SCALE. SUBCONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS & FIELD CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

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ALLSTATES ENGINEERING & SURVEYING
23675 BIRTCHER DRIVE
LAKE FOREST, CA 92630

Vinculums
575 LENNON LANE #125
WALNUT CREEK, CA 94598
OFFICE: (925) 482-8500

Verizon Wireless • Proposed Small Cells
Three Pole Locations • Palo Alto, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a wireless telecommunications carrier, to evaluate three small cells proposed to be sited in Palo Alto, California, for compliance with municipal limits on sound levels from the installations.

Executive Summary

Verizon proposes to install antennas and equipment on three light poles sited in the public right-of-way in Palo Alto. Noise from the proposed operations will comply with the City's pertinent noise limits.

Prevailing Standard

Palo Alto adopted Resolution No. 9825 (April 15, 2019) "Resolution of the Council of the City of Palo Alto Adopting Objective Aesthetic, Noise, and Related Standards for Wireless Communication Facilities in the Public Rights of Way," which sets limits on noise at residential areas for wireless facilities installed in public rights-of-way. Noise at the nearest residential property line is limited to an increase of 5 dB over existing ambient levels, if the ambient noise level would remain below 60 dBA L_{dn}, or to an increase of 3 dB, otherwise. The composite "day-night" average L_{dn} incorporates a 10 dB penalty during nighttime hours (10 pm to 7 am), to reflect typical residential conditions, where noise is more readily heard at night. By definition, sound from a continuous noise source will be 6.4 dB higher when expressed in L_{dn}.

It is noted that the amended language also references Chapter 9.10 of the Code, which had set a more relaxed increase of 15 dB increase for such WCF sitings, assessed at 25 feet from the pole. It is assumed for this study that the minimum reference ambient level is 40 dBA, as defined in Chapter 9.10.

A summary of noise assessment and calculation methodologies is shown in Figure 1.

General Facility Requirements

Small cells typically consist of two distinct parts: the electronic transceivers (also called "radios"), that are connected to traditional wired telephone lines, and the antennas that send wireless signals created by the radios out to be received by individual subscriber units. The radios are typically mounted on the support pole or placed in a cabinet at the base of the pole, and are connected to the antennas by cables. Some radios require fans to cool the electronics inside. Some radios are integrated with the antennas as a single unit.

Site & Facility Description

According to information provided by Verizon, that carrier proposes to install a cylindrical antenna and two Ericsson Model 4402 radio units within a shroud on top of the light pole in the public right-of-way at each of the three locations listed in Table 1, and three Ericsson Model 6701 antennas, with integrated radios, within shrouds below the light arm on the pole.

Study Results

Ericsson reports that the maximum noise level from any one Model 4402 radio is 40.9 dBA,* and that the maximum noise level from three Model 6701 units is 39.6 dBA,* both at a reference distance of 5 feet. The cylindrical antenna is passively cooled, generating no noise.

At a distance of 6¼ feet, the calculated noise level from the simultaneous operation of this combined equipment would result in an increase not exceeding 5 dB above the minimum allowed ambient level of 40 dBA; the increase above the ambient would be less than 5 dB for any siting of the equipment beyond this distance. If the existing ambient were determined to be above 40 dBA statutory minimum, then the calculated increase due to the Verizon operation would, by definition, decrease. **All of the proposed small cells in Table 1 meet this distance requirement.**

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of these Verizon Wireless small cells proposed in Palo Alto will, under the conditions noted above, comply with the municipal standards limiting acoustic noise emission levels.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2021. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

William F. Hammett, P.E.
707/996-5200

December 16, 2020

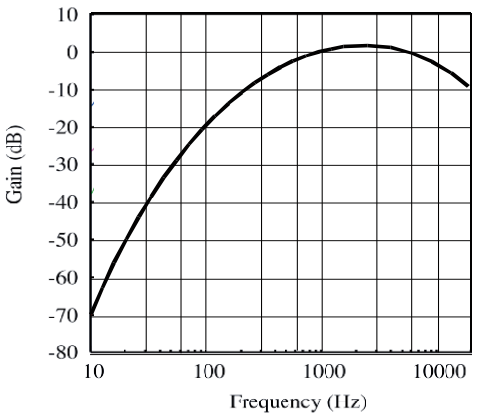
* Adjusted value based on manufacturer data, to reflect record high temperature of 107°F in Palo Alto.

Small Cell No.	Approximate Address	Nearest Residential Property
425225 "SF Palo Alto 121"	1600 El Camino Real (CA-82)	120 feet
425266 "SF Palo Alto 162"	158-164 Quarry Road	1,130 feet
425268 "SF Palo Alto 164"	Arboretum Road	200 feet

Table 1. Proposed Verizon small cells

Noise Level Calculation Methodology

Most municipalities and other agencies specify noise limits in units of dBA, which is intended to mimic the reduced receptivity of the human ear to Sound Pressure ("L_P") at particularly low or high frequencies. This frequency-sensitive filter shape, shown in the graph to the right as defined in the International Electrotechnical Commission Standard No. 179, the American National Standards Institute Standard No. 5.1, and various other standards, is also incorporated into most calibrated field test equipment for measuring noise levels.



30 dBA	library
40 dBA	rural background
50 dBA	office space
60 dBA	conversation
70 dBA	car radio
80 dBA	traffic corner
90 dBA	lawnmower

The dBA units of measure are referenced to a pressure of 20 µPa (micropascals), which is the threshold of normal hearing. Although noise levels vary greatly by location and noise source, representative levels are shown in the box to the left.

Manufacturers of many types of equipment, such as air conditioners, generators, and telecommunications devices, often test their products in various configurations to determine the acoustical emissions at certain distances. This data, normally expressed in dBA at a known reference distance, can be used to determine the corresponding sound pressure level at any particular distance, such as at a nearby building or property line. The sound pressure drops as the square of the increase in distance, according to the formula:

$$L_P = L_K + 20 \log(D_K/D_P),$$

where L_P is the sound pressure level at distance D_p and L_K is the known sound pressure level at distance D_K.

Individual sound pressure levels at a particular point from several different noise sources cannot be combined directly in units of dBA. Rather, the units need to be converted to scalar sound intensity units in order to be added together, then converted back to decibel units, according to the formula:

where L_T is the total sound pressure level and L_1, L_2, etc are individual sound pressure levels.

$$L_T = 10 \log \left(10^{L_1/10} + 10^{L_2/10} + \ldots\right),$$

Certain equipment installations may include the placement of barriers and/or absorptive materials to reduce transmission of noise beyond the site. Noise Reduction Coefficients ("NRC") are published for many different materials, expressed as unitless power factors, with 0 being perfect reflection and 1 being perfect absorption. Unpainted concrete block, for instance, can have an NRC as high as 0.35. However, a barrier's effectiveness depends on its specific configuration, as well as the materials used and their surface treatment.

Verizon Wireless • Proposed Small Cell (No. 425225 "SF Palo Alto 121")
1600 El Camino Real • Palo Alto, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate its small cell (No. 425225 "SF Palo Alto 121") proposed to be sited in Palo Alto, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

Verizon proposes to install three small antennas on the municipal light pole sited in the public right-of-way near 1600 El Camino Real in Palo Alto. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. A summary of the FCC's exposure limits is shown in Figure 1. 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. The most restrictive limit for exposures of unlimited duration at several wireless service bands are as follows:

Wireless Service Band	Transmit Frequency	"Uncontrolled" Public Limit	Occupational Limit (5 times Public)
Microwave (point-to-point)	1–80 GHz	1.0 mW/cm^2	5.0 mW/cm^2
Millimeter-wave	24–47	1.0	5.0
Part 15 (WiFi & other unlicensed)	2–6	1.0	5.0
CBRS (Citizens Broadband Radio)	3,550 MHz	1.0	5.0
BRS (Broadband Radio)	2,490	1.0	5.0
WCS (Wireless Communication)	2,305	1.0	5.0
AWS (Advanced Wireless)	2,110	1.0	5.0
PCS (Personal Communication)	1,930	1.0	5.0
Cellular	869	0.58	2.9
SMR (Specialized Mobile Radio)	854	0.57	2.85
700 MHz	716	0.48	2.4
600 MHz	617	0.41	2.05
[most restrictive frequency range]	30–300	0.20	1.0

General Facility Requirements

Small cells typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The radios are typically mounted on the support pole or placed in a cabinet at ground level, and they are

connected to the antennas by coaxial cables. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. This means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

Computer Modeling Method

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation," dated August 1997. Figure 2 describes the calculation methodologies, reflecting the facts that a directional antenna's radiation pattern is not fully formed at locations very close by (the "near-field" effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the "inverse square law"). This methodology is an industry standard for evaluating RF exposure conditions and has been demonstrated through numerous field tests to be a conservative prediction of exposure levels.

Site and Facility Description

Based upon information provided by Verizon, it is proposed to install three 2-foot-tall Ericsson Model 6701 directional panels with integrated radios on a new light pole to replace the existing pole sited in the public right-of-way on the southwest side of El Camino Real in Palo Alto, about 200 feet northwest of its intersection with Serra Street. The antennas would be mounted around the pole at an effective height of about 32½ feet above ground and would be oriented toward 0°T, 120°T, and 240°T, together forming an omnidirectional pattern. The maximum effective radiated power proposed in any direction is 193 watts for 28 GHz service. There are reported no other wireless telecommunications base stations at the site or nearby.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation is calculated to be 0.0037 mW/cm^2, which is 0.37% of the applicable public exposure limit. The maximum calculated level at any nearby building* is 0.28% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels from the proposed operation.

* Located at least 150 feet away, based on the drawings.

Recommended Mitigation Measures

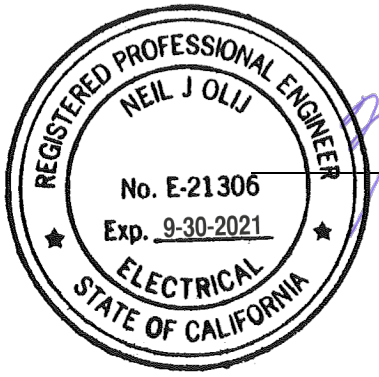
Due to their mounting location and height, the antennas would not be accessible to unauthorized persons, and so no measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training be provided to all workers who have access within 8 feet outward from the antennas. No access within 2 feet directly in front of the antennas should be allowed while they are in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. It is recommended that explanatory signs† be posted at the antennas and/or on the pole below the antennas, readily visible from any angle of approach.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the small cell proposed by Verizon Wireless near 1600 El Camino Real in Palo Alto, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating small cells. Training authorized personnel and posting explanatory signs are recommended to establish compliance with FCC guidelines.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration No. E-21306, which expires on September 30, 2021. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



Neil J. Olij, P.E.
707/996-5200

February 1, 2021

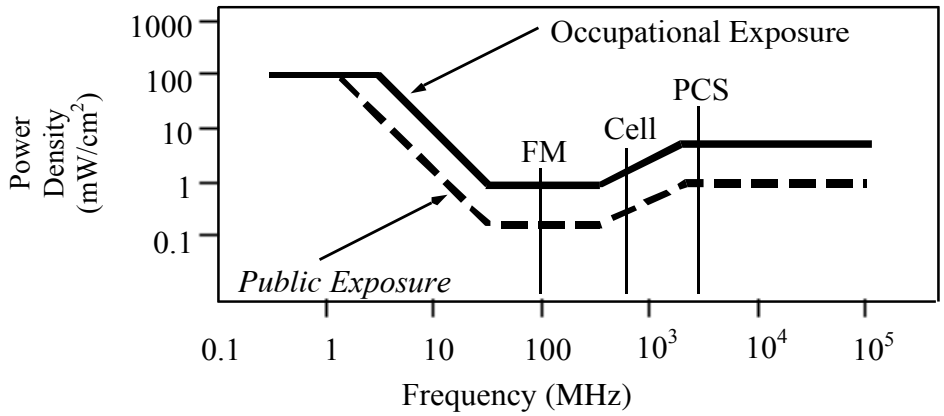
† Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidelines from the landlord, local zoning or health authority, or appropriate professionals may be required.

FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements ("NCRP"). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes similar limits. These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

Frequency	Electromagnetic Fields (f is frequency of emission in MHz)					
Applicable Range (MHz)	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm^2)	
0.3 – 1.34	614	*614*	1.63	*1.63*	100	*100*
1.34 – 3.0	614	*823.8/ f*	1.63	*2.19/ f*	100	*180/ f^2*
3.0 – 30	1842/ f	*823.8/ f*	4.89/ f	*2.19/ f*	900/ f^2	*180/ f^2*
30 – 300	61.4	*27.5*	0.163	*0.0729*	1.0	*0.2*
300 – 1,500	$3.54\sqrt{f}$	*$1.59\sqrt{f}$*	$\sqrt{f}/106$	*$\sqrt{f}/238$*	f/300	*f/1500*
1,500 – 100,000	137	*61.4*	0.364	*0.163*	5.0	*1.0*



Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has incorporated those formulas in a computer program capable of calculating, at thousands of locations on an arbitrary grid, the total expected power density from any number of individual radio frequency sources. The program allows for the inclusion of uneven terrain in the vicinity, as well as any number of nearby buildings of varying heights, to obtain more accurate projections.

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The maximum permissible exposure limits adopted by the FCC (see Figure 1) apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

Near Field.
Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications base stations, as well as dish (aperture) antennas, typically used for microwave links. The antenna patterns are not fully formed in the near field at these antennas, and the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives suitable formulas for calculating power density within such zones.

For a panel or whip antenna, power density $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$, in mW/cm^2,

and for an aperture antenna, maximum power density $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$, in mW/cm^2,

where θ_{BW} = half-power beamwidth of antenna, in degrees,
P_{net} = net power input to antenna, in watts,
D = distance from antenna, in meters,
h = aperture height of antenna, in meters, and
η = aperture efficiency (unitless, typically 0.5-0.8).

The factor of 0.1 in the numerators converts to the desired units of power density.

Far Field.
OET-65 gives this formula for calculating power density in the far field of an individual RF source:

power density $S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}$, in mW/cm^2,

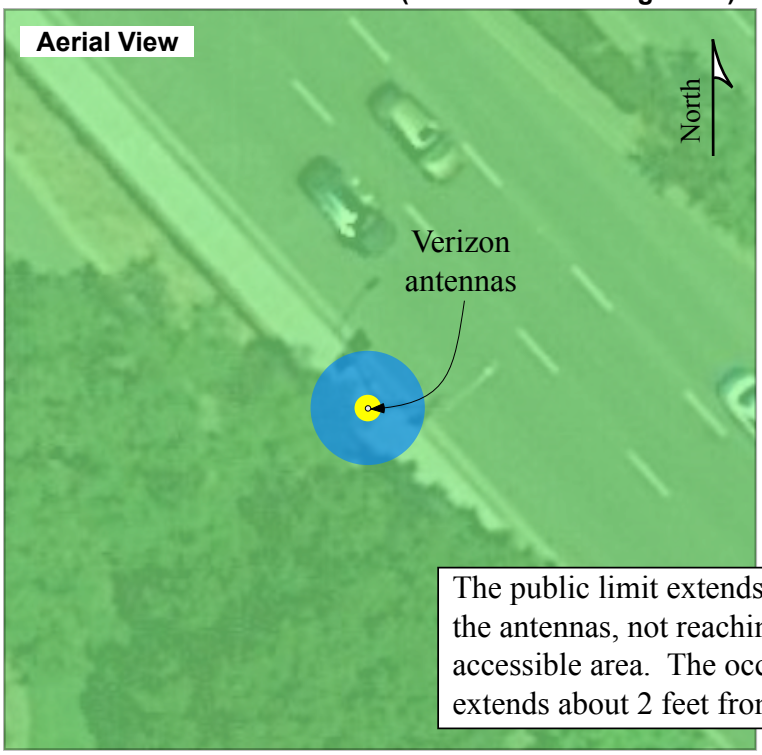
where ERP = total ERP (all polarizations), in kilowatts,
RFF = three-dimensional relative field factor toward point of calculation, and
D = distance from antenna effective height to point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula is used in a computer program capable of calculating, at thousands of locations on an arbitrary grid, the total expected power density from any number of individual radio frequency sources. The program also allows for the inclusion of uneven terrain in the vicinity, as well as any number of nearby buildings of varying heights, to obtain more accurate projections.

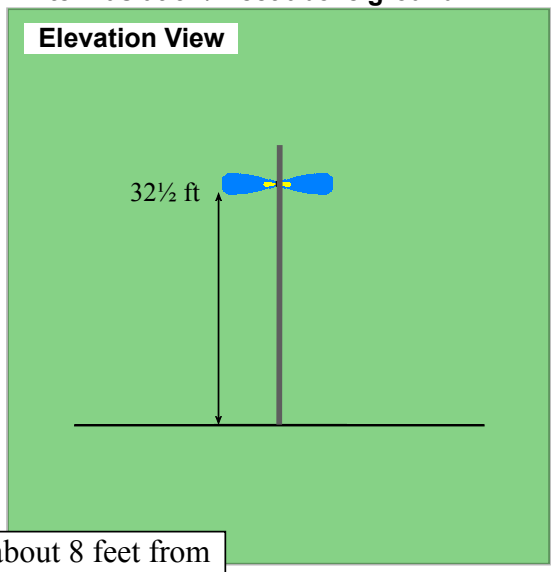
Verizon Wireless • Proposed Small Cell (No. 425225 "SF Palo Alto 121")
1600 El Camino Real • Palo Alto, California

Calculated RF Exposure Levels

at Elevation of Lower Antennas (31 – 34 feet above ground)

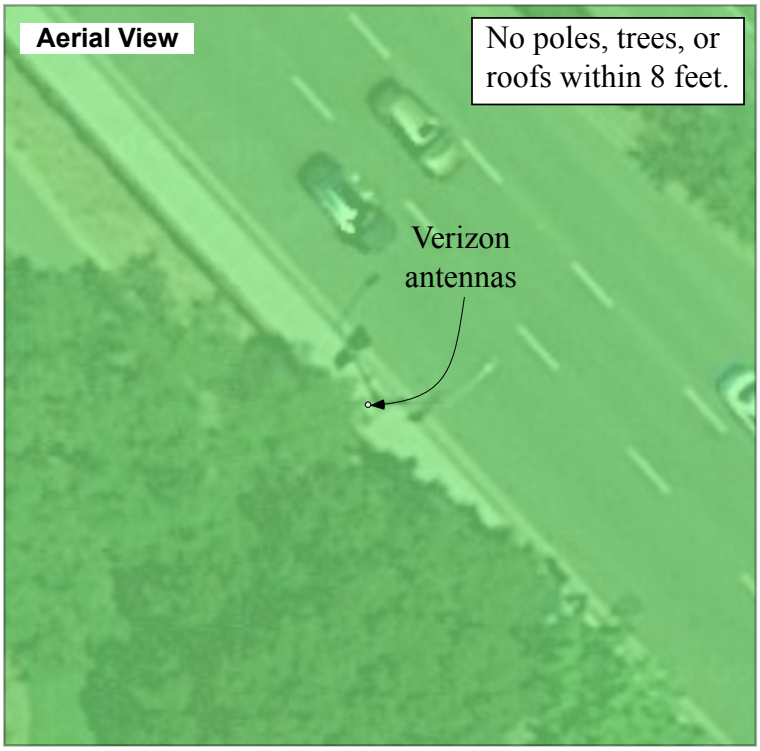


Antennas at 32½ feet above ground

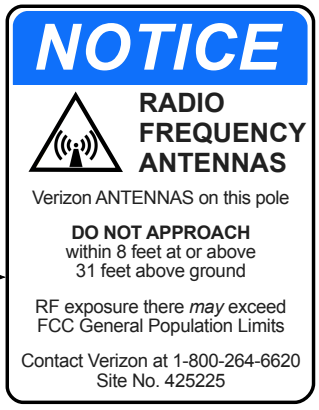


The public limit extends about 8 feet from the antennas, not reaching any publicly accessible area. The occupational limit extends about 2 feet from the antennas.

at Ground, at 10 feet above ground, and at Nearby Buildings



sign on pole at or below antennas →



Legend:

- less than FCC Public Limit
- greater than FCC Public Limit less than FCC Occupational Limit
- greater than FCC Occupational Limit

Notes:

Calculations performed according to OET Bulletin No. 65, August 1997.

Base image from Google Maps.

FEET
10 0 10 20

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)
12/23/2020

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

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

PRODUCER
Aon Risk Services Northeast, Inc.
New York NY Office
One Liberty Plaza
165 Broadway, Suite 3201
New York NY 10006 USA

CONTACT NAME:
PHONE (A/C. No. Ext): (866) 283-7122 **FAX (A/C. No.):** (800) 363-0105
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: National Union Fire Ins Co of Pittsburgh	19445
INSURER B:	
INSURER C:	
INSURER D:	
INSURER E:	
INSURER F:	

INSURED
GTE MOBILNET OF CALIFORNIA, LP
dba Verizon Wireless
1095 Avenue of the Americas
New York NY 10036 USA

COVERAGES **CERTIFICATE NUMBER:** 570085393291 **REVISION NUMBER:**

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

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC OTHER:			GL1728890	06/30/2020	06/30/2021	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$1,000,000 $1,000,000 $10,000 $1,000,000 $1,000,000 $1,000,000
A A A A	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			CA 4594298 AOS CA 4594299 MA CA 4594300 VA See Next Page	06/30/2020 06/30/2020 06/30/2020 06/30/2020	06/30/2021 06/30/2021 06/30/2021 06/30/2021	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$1,000,000
	UMBRELLA LIAB OCCUR EXCESS LIAB CLAIMS-MADE DED RETENTION						EACH OCCURRENCE AGGREGATE	
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below		N / A				PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT	

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

The above-referenced General Liability policy shall cover the tort liability of the Certificate Holder assumed under the underlying agreement between parties for which the certificate has been issued. The City of Palo Alto, its officers, officials, employees, agents and volunteers are included as Additional Insured with respect to the General Liability policy. The General Liability policy shall apply as Primary Insurance to each Additional Insured listed herein.

CERTIFICATE HOLDER

The City of Palo Alto
Public Works Engineering
Services Division
285 Hamilton Ave.
Palo Alto CA 94301 USA

CANCELLATION

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

AUTHORIZED REPRESENTATIVE

Aon Risk Services Northeast, Inc.

Holder Identifier :

Certificate No : 570085393291

AGENCY CUSTOMER ID: 570000027366
LOC #:

ADDITIONAL REMARKS SCHEDULE

AGENCY	NAMED INSURED
Aon Risk Services Northeast, Inc.	GTE MOBILNET OF CALIFORNIA, LP
POLICY NUMBER See Certificate Number: 570085393291	
CARRIER See Certificate Number: 570085393291 / NAIC CODE	EFFECTIVE DATE:

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
FORM NUMBER: ACORD 25 **FORM TITLE:** Certificate of Liability Insurance

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER	
INSURER	
INSURER	
INSURER	

ADDITIONAL POLICIES If a policy below does not include limit information, refer to the corresponding policy on the ACORD certificate form for policy limits.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS	
	AUTOMOBILE LIABILITY							
A				CA 4594301 NH - Primary	06/30/2020	06/30/2021		
A				CA 4594302 NH - Excess	06/30/2020	06/30/2021		

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - STATE OR GOVERNMENTAL AGENCY OR SUBDIVISION OR POLITICAL SUBDIVISION - PERMITS OR AUTHORIZATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

State Or Governmental Agency Or Subdivision Or Political Subdivision:
Any state, governmental or political agency or subdivision that grants you a permit to perform work or conduct an activity as a result of any contract or agreement you have entered into.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

A. **Section II** - **Who Is An Insured** is amended to include as an additional insured any state or governmental agency or subdivision or political subdivision shown in the Schedule, subject to the following provisions:

1. This insurance applies only with respect to operations performed by you or on your behalf for which the state or governmental agency or subdivision or political subdivision has issued a permit or authorization.

However:

a. The insurance afforded to such additional insured only applies to the extent permitted by law; and

b. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

2. This insurance does not apply to:

a. "Bodily injury", "property damage" or "personal and advertising injury" arising out of operations performed for the federal government, state or municipality; or

b. "Bodily injury" or "property damage" included within the "products-completed operations hazard".

B. With respect to the insurance afforded to these additional insureds, the following is added to **Section III** - **Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or

2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

PRIMARY AND NONCONTRIBUTORY - OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETEDOPERATIONS LIABILITY COVERAGE PART

The following is added to the **Other Insurance** Condition and supersedes any provision to the contrary:

Primary And Noncontributory Insurance

This insurance is primary to and will not seek contribution from any other insurance available to an additional insured under your policy provided that:

(1) The additional insured is a Named Insured under such other insurance; and

(2) You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to the additional insured.

City of Palo Alto
Public Works Engineering
Phone: 650/329-2151 FAX: 650/329-2240
Inspection: 650/496-6929

ENCROACHMENT PERMIT & TEMPORARY LEASE

Permit No. ___ENC-___

PERMIT TYPE:

X ENCROACHMENT PERMIT (Right-of-way or public utilities easement encroachments)
___ TEMPORARY LEASE (Encroachments on City-owned property)

PERMITTEE NAME AND ADDRESS:

Name: GTE MOBILNET OF CA, LP, DBA VERIZON WIRELESS
575 LENNON LN., STE. 125
WALNUT CREEK, CA 94598
Phone: 925 / 202 - 8654

LOCATION OF ENCROACHMENT/LEASE:

PALO ALTO 121 - 1691 EL CAMINO REAL
PALO ALTO 164 - ARBORETUM RD.

DURATION:

__Temporary (_____ Days)
X Indefinite

ESTIMATED START DATE: TBD

ENCROACHMENT PERMIT TYPE:

Residential (Single Family)

___ Standard: Architectural, structural, decks, spas, etc. in a Public Utilities Easement (PUE) or City right-of-way (ROW).

___ Dumpster or container (no insurance certificate is required).

___ Fence: Placement of a fence in a PUE or ROW (no insurance certificate is required)

Non-Residential (Commercial)

X Standard: Awnings, lane or sidewalk closures, pedestrian protection structures, structural or architectural features, private structures, other long term encroachments in a PUE or ROW, lasting more than 5 days.

___ Short-Term: Sidewalk/street/alley encroachments, lane or sidewalk closures, unloading of materials, etc., lasting 5 days or less.

___ 1 Day: Sidewalk or lane closure lasting 1 day or less.

___ Minor: Placement of dumpster within downtown districts (additional fee for parking space rental, if applicable), and restaurant tables & chairs on sidewalk.

--PW STAFF USE ONLY--

FEES:

Fee Paid $ _____

Parking $ _____

TOTAL $ _____

Date Paid:_____

INS CERT #: I-_____

REVIEWED AND RECOMMENDED FOR APPROVAL BY:

___ Transportation
___ Bldg Inspection
___ Planning
___ Real Estate
___ Light & Power
___ WGW

Pursuant to the provisions of Sec 12.12 * of the Palo Alto Municipal Code, permission is hereby requested to construct and maintain an encroachment, or to use City-owned property, at the above location and in the manner described below:

NATURE OF ENCROACHMENT OR USE: SEE SCOPE OF WORK

REASON FOR ENCROACHMENT/LEASE: SEE SCOPE OF WORK

Permittee shall, at Permittee expense, remove said encroachment or any improvements constructed, and this permit/lease shall terminate within thirty (30) days after written notice from the City Engineer/Real Property Manager*. Permittee agrees that in the event of failure to remove such encroachment/improvement* within the time specified, the same may be removed, and the City's property or easement restored, by the City, and the cost thereof made a lien upon/against* Permittee/Lessee, pursuant to the provisions of Sec 12.12 of the Palo Alto Municipal Code.

Permittee, in consideration of the issuance of this permit/lease, agrees to maintain required evidence of liability insurance, for the life of the encroachment, that indemnifies and holds harmless the City of Palo Alto, its officers, agents, and employees from any liability of any nature whatsoever caused in whole or in part by reason of or in any manner connected with any and all operations, structures or conditions authorized or permitted by this permit/lease. The Permittee agrees and understands that this permit vests no estate.

Permittee shall be responsible for obtaining any and all permits which may be required by an Agency having jurisdiction over the property and/or proposed use. Notwithstanding the above, nothing contained herein shall obligate City to issue any permits or approvals required for construction.

Permittee hereby accepts this permit/lease* subject to all conditions set forth herein, and the attached Special Provisions and conditions, and agrees that all of said conditions and provisions shall be binding on Permittee, co-owners, heirs, assigns, transferees and successors in interest of every nature. This permit/lease* shall expire if work on the encroachment described within does not commence within sixty (60) days of the date of approval, or by the anticipated start date as indicated above, whichever is later.

X JEREMY STROUP 01/29/21 _____ _____

Permittee Authorized Representative **Date** APPROVED BY Issuance Date

For inspection call the Public Works Inspector @ (650) 496-6929 – Provide minimum one working day advance notice.

Work Satisfactorily Completed: Inspector _____ Date _____

----PW Staff Use Only----

SPECIAL PROVISIONS

1. Permittee shall provide the City evidence of Personal Injury and Property Damage insurance in a form acceptable to the CPA Risk Manager, in the minimum amounts of $1,000,000 each for personal injury and property damage or else as indicated below. Said insurance shall name the City of Palo Alto, its officers and employees as an additional insured and shall be primary insurance with any City insurance being excess only. Said insurance shall be maintained so long as this permit/lease* remains in force, and evidence of said current insurance and subsequent renewals shall be submitted to the City of Palo Alto, Public Works Engineering Division.

   ___ ALTERNATE COVERAGE REQUIRED: $_____,000 personal injury and $_____,000 property damage

2. Encroachment, construction or use shall not extend beyond the area identified and specified as part of this permit/lease.
3. Encroachment shall not restrict visibility to any traffic control devices or signs.
4. No encroachment is permitted in exclusive bike lanes (where parking is not permitted); bus stops, or "no parking zones" unless specifically authorized within this permit.
5. Encroachment shall not block or cover access to any utility pole, manhole, vault, cleanout, valve, junction or meter box.
6. Permittee shall maintain encroaching or constructed facility and/or the property in a good and safe condition. Construction shall be in conformance with plans approved by the City.
7. Whenever construction, reconstruction or maintenance work to City facilities requires relocation or modification of the encroachment, construction or use, such relocation or modification work shall be done by Permittee at Permittee's sole expense.
8. Permittee shall assure adequate visibility of encroachment, construction or use during daytime and nighttime hours.
9. Permittee shall conform to all requirements of the Palo Alto Traffic Control Manual, as applicable.
10. The Permittee is required to maintain any underground facilities listed with Underground Service Alert (USA). When requested, the Permittee is responsible to mark out appropriately all underground facilities described in this permit.
11. Any public and/or private improvements damaged by the encroaching activities must be repaired or replaced in-kind to the satisfaction of the improvement owner and at Permittee expense.
12. All dumpsters used in this permitted encroachment are required to be ordered through the City's contracted collector for waste disposal services.
13. In addition to this permit, Permittee shall obtain the following permits:

    ___ Street Work Permit from Public Works Engineering (associated _____STR- _____).

    ___ Parking Permit from CPA Transportation Division.

    ___ Fence Permit from CPA Building Inspection Division.

    ___ Other special permit: _____

14. ___ See Attachment(s) A B C D E F _____ for additional permit conditions.
15. ___OTHER:_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

City of Palo Alto

Public Works Engineering

Phone: 650/329-2151 FAX: 650/329-2240

Inspection: 650/496-6929

STREET WORK PERMIT

Permit No. STR-

Type of Construction: x Sidewalk ___ Curb & Gutter ___ Driveway Approach ___ Underground Utilities x Other See scope of work

Location of Work: PALO ALTO 121 - 1691 EL CAMINO REAL, PALO ALTO 162 - 158-164 QUARRY RD., PALO ALTO 164 - ARBORETUM RD.

Permittee/Contractor: QualTek Wireless LLC

Address: 1150 First Avenue, Suite 600 King of Prussia, PA 19406

Contractor's License Number: 1042849 Class B & C10 Phone: 484-804-4500 / 925-202-8654

Expected Start Date: **Expected Completion Date:**

Estimate of Work in Public Right-of-Way:		Estimated Quantities	Estimated Cost
Curb & Gutter	- lineal feet	121: 80.222 sq.ft. x $23.00/sq.ft.	$1845.10
Sidewalk	- square feet	164: 36.388 sq.ft. x $23.00/sq.ft.	$836.92
DW Approach	- square feet		
Pavement	- square feet		
Utility Lateral	- lineal feet		
Other:			
		Total Cost: $	$2,682.02

--PW STAFF USE ONLY--

This Permit is subject to the following Conditions or Remarks:

___ See Permit Conditions on Attachment(s): A B C D E F G H I J K L

___ Other Permit Conditions:

--PW STAFF USE ONLY--

PERMIT FEES:

Fixed $ ____

5% Cost $ ____

Street Cut $ ____

Dewatering $ ____

Parking $ ____

TOTAL $ ____

Date Paid: ____

INSURANCE CERTIFICATE:

General Liability I- ____

Auto Liability I- ____

Permittee affirms that the facts stated hereon are true and agrees that they, their agents, employees and contractors shall perform all work described hereon in conformance with ordinances and standard specifications of the City of Palo Alto, all pertinent State laws and to the plans and specifications approved by the City Engineer. The work allowed in this permit shall be performed by an appropriately licensed contractor as required in the Palo Alto Municipal Code. The Permittee shall pay the cost of all soils investigation and compaction tests, and shall reimburse the City for any services provided as may be required by the City Engineer, Utilities Department or Police Department. Permittee further agrees to hold the City of Palo Alto, it's officers, agents, and employees harmless from all costs and damages which might arise from the Permittee's use or occupancy of the public right-of-way. The Permittee also agrees to maintain required insurance coverage through the closure of the permit and sign off by the Public Works Inspector. This permit is subject to all attached conditions made part of the permit document and may be revoked at any time for violation of any of these conditions.

X Jeremy Stroup	01/29/21		
Authorized Permittee Signature	**Date**	Permit Issuer	Issuance Date

Jeremy Stroup

Print Name

For inspection call the Public Works Inspector @ (650) 496-6929 -- Provide minimum one working day advance notice

Work Satisfactorily Completed: Inspector ____ Date ____

PALO ALTO FIRE DEPARTMENT
BUREAU OF FIRE PREVENTION

HAZARDOUS MATERIALS DISCLOSURE CHECKLIST

Palo Alto 121, 164
Business or Facility Name

PALO ALTO 121 - 1691 EL CAMINO REAL, PALO ALTO 164 - ARBORETUM RD.
Street Address, Suite or Bldg.#

Hazardous Materials are such items as following: fuels, virgin or waste oil, solvents, paints, and liquefied petroleum gases (LPG). There are hazardous material classifications such as:

1. Explosives
2. Compressed Gases
3. Flammable & Combustible Liquids
4. Flammable Solids
5. Oxidizers/Organic peroxides
6. Pyrophorics
7. Highly Toxic/Toxic
8. Radioactives
9. Corrosives
10. Cryogenics
11. Water Reactives
12. Other Health Hazards

	YES	NO
Does the operation of this facility involve hazardous materials?		X
Does this facility currently have a Hazardous Materials Storage permit?		X
- - - - - - - - - - - - - WILL THIS PROJECT:		
-involve a closure of present Hazardous Materials Storage Facilities?		X
-involve the storage/use of hazardous materials?		X
-generate a hazardous materials waste stream to the air, sewer, storm drain, or a waste facility?		X
-involve the aggregate quantity of any one chemical in quantities greater than: 200cuft, 55gal, 500lb?		X
-involve EPA listed Extremely Hazardous Substances?		X
-require the installation or removal of aboveground or underground storage tanks or sumps?		X
-involve hazmat related improvements (hoods, cabinets)?		X

I hereby certify under penalty of perjury that the information presented is true and correct to the best of my knowledge and belief. Intentional exclusion of any relevant information may be punishable under provisions set forth in Palo Alto Municipal Code, Title 17, Chapter 17.48. If you have any questions please call the Palo Alto Fire Dept. at (650) 329-2184 for further assistance.

Jeremy Stroup
Signature

01/29/21
Date

925-202-8654
Phone Number

Jeremy Stroup
Print Your Name / Title

Your Finn Name

White: Routing Yellow: File Pink: Applicant

ENVIRONMENTAL ASSESSMENT WORKSHEET

City of Palo Alto
Department of Planning & Development Services

Palo Alto 121

GENERAL INFORMATION: **Date Filed** 01/29/21

1. Address of Project: 1691 EL CAMINO REAL
2. Assessor's Parcel Number: 124-25-044 Book #:_____ Page #:_____
3. Application Number(s):_____
4. Applicant:
   Name Verizon Wireless c/o Vinculums Services Telephone 925-202-8654
   Address 575 Lennon Ln. #125 Fax # _____
   Walnut Creek, CA 94598 E-mail jstroup@vinculums.com
5. Owner:
   Name City of Palo Alto Utilities Telephone 650-329-2161
   Address 250 Hamilton Ave. Fax # 650-617-3142
   Palo Alto, CA 94301 E-mail _____
6. Current Zoning:_____ Comprehensive Plan Designation _____
7. Application for:

   Site and Design_____ Parcel Map_____ ARB Review_____
   Use Permit X Zone Change_____ EIA, EIR_____

EXISTING SITE:

8. State all known or suspected prior uses, operations, or other activities on the site over the past 20 years Utility pole - Right-of-Way

9. Size of site: Gross N/A Net N/A

10. Site is owned _____ Rented X by applicant.

11. Existing use of property: UTILITY POLE RIGHT-OF-WAY
*Attach photographs of project site, also include an aerial photo of the project site.

12. Number of existing structures N/A Current Use UTILITY POLE

13. Size of existing structures _____ Condition UTILITY POLE

14. Will any structure be demolished for this project Yes X No _____

15. Total square footage to be demolished N/A

16. Total number of building occupants for existing use N/A

17. Number of parking spaces N/A % compact spaces N/A # Bicycle spaces N/A

18. If current use is residential:

Number of owner-occupied units N/A
Number of renter-occupied units N/A

PROPOSED PROJECT:

19. Project description INSTALL SMALL CELL 5G ANTENNAS ON POLE

20. Future tenant if known UTILITY POLE

21. Number of structures proposed N/A Size (in square feet) N/A

22. Number of floors and building height N/A FAR N/A

23. Percentage of site to be covered (including bricks and pavers) N/A

24. Estimated number of employees per shift N/A

25. If the proposed project is residential:

    Total number of units N/A Number of units per acre N/A

    Expected sales price or monthly rent per dwelling unit N/A

    List kinds and size of community buildings N/A

    Area of private open space N/A Area of common open space N/A

    Provision of low/moderate income units:

    1) Number of units provided for: Sale N/A Rent N/A

    2) Sale and / or rental price N/A

26. Total number of vehicles expected daily for proposed project 1 PER QTR., 4 PER YEAR

27. Number of proposed parking spaces N/A Percentage compact spaces N/A

    Number of bicycle spaces N/A

28. Are there any toxic wastes to be discharged? Yes_____ No X

    (If yes, please complete a Sewer Discharge Questionnaire, which is furnished by the Building Department)

29. Has the facility in the past or will the operation of the proposed facility involve the storage or use of Hazardous materials? Yes_____ No X

    (If yes, please complete a Hazardous Materials Disclosure checklist, which is furnished by the Fire Department)

30. Expected amount of water usage (except for residential developments of fewer than 4 units not located in the foothills)

Domestic N/A gal/day Peak use N/A gal/day

Commercial N/A gal/day Peak use N/A gal/day

31. Daily sewer discharge (over 30 fixtures only) N/A

32. Expected energy use:

Gas N/A therms Electric 0.645 KWH Peak electric demand _____

Uses and equipment sizes

A. Space heating:

Gas N/A BTUH _____ Solar N/A

Electric N/A KW _____ Heat pump _____ Tons _____

Other N/A

B. Air conditioning:

Number of units N/A Total tonnage _____

C. Water heating:

Gas N/A BTUH _____ Solar N/A

Electric N/A KW _____ Heat Pump _____ Tons _____

Other N/A

Type: Central system N/A Individual system N/A

Recirculating Loop? Yes N/A No N/A

D. Other:

Indoor lighting N/A KW _____ Outdoor lighting N/A KW _____

Cooking N/A KW _____ Refrigeration N/A Tons or ft _____

Motors N/A HP _____ x-ray N/A Computer N/A

33. Air pollution emissions (Check applicable BAAQMD regulations).

Commercial / Industrial only: Source N/A

Type N/A Amount N/A

34. Noise generation: eg. Generators, chitlers, HVAC, drive through speakers, etc.

Source N/A _____ Amount (dBa) N/A

Please list outside noise sources that may affect the project: eg. Traffic, train etc._____

Sound proofing/mitigation proposed_____

_____

35. Site drainage provisions N/A

36. Amount of proposed grading (cubic yards) N/A Cut N/A Fill N/A

37. Disposition of excavated material N/A

38. Permits required from other agencies:

Santa Clara Valley Water District N/A

Bay Area Air Quality Management District N/A

Army Corps of Engineers N/A

Other_____

Environmental Setting:

39. Percent and direction of ground slope at site N/A

40. Is this site within a special flood hazard area? Yes_____ No X

41. Existing site vegetation (please list, and indicate any to be removed)
*Also include a tree disclodure statement. The size and location of all public, protected private, and heritage trees must be shown. (This form can be obtained at the Development Center or by calling (650) 617-314) PLEASE SEE TREE TABLE ON PAGE A-1 OF PLAN SET

42. Existing animal and bird life on site NONE

43. Detailed description of conditions and uses of adjacent properties RESIDENTIAL

Prepared by JEREMY STROUP Date 01/29/21

Note: More information may be required before the application for which this assessment has been prepared can be processed. Please call the Department of Planning & Development Services at (650) 329-2442 if you have any questions.

PLEASE RETURN COMPLETED WORKSHEET TO THE DEPARTMENT OF PLANNING & DEVELOPMENT SERVICES, DEVELOPMENT CENTER, 285 HAMILTON AVENUE, 1ST FLOOR.

Federal Communications Commission - Local and State Government Advisory Committee
(June 2000)

A Local Government Official's Guide to Transmitting Antenna RF Emission Safety: Rules, Procedures, and Practical Guidance

Over the past two years, the Federal Communications Commission (FCC) and its Local and State Government Advisory Committee (LSGAC) have been working together to prepare a voluntary guide to assist state and local governments in devising efficient procedures for ensuring that the antenna facilities located in their communities comply with the FCC's limits for human exposure to radiofrequency (RF) electromagnetic fields. The attached guide is the product of this joint effort.

We encourage state and local government officials to consult this guide when addressing issues of facilities siting within their communities. This guide contains basic information, in a form accessible to officials and citizens alike, that will alleviate misunderstandings in the complex area of RF emissions safety. This guide is not intended to replace OET Bulletin 65, which contains detailed technical information regarding RF issues, and should continue to be used and consulted for complex sites. The guide contains information, tables, and a model checklist to assist state and local officials in identifying sites that do not raise concerns regarding compliance with the Commission's RF exposure limits. In many cases, the model checklist offers a quick and effective way for state and local officials to establish that particular RF facilities are unlikely to exceed specific federal guidelines that protect the public from the environmental effects of RF emissions. Thus, we believe this guide will facilitate federal, state, and local governments working together to protect the public while bringing advanced and innovative communications services to consumers as rapidly as possible. We hope and expect that use of this guide will benefit state and local governments, service providers, and, most importantly, the American public.

We wish all of you good luck in your facilities siting endeavors.

William E. Kennard, Chairman
Federal Communications Commission

Kenneth S. Fellman, Chair
Local and State Government
Advisory Committee

Federal Communications Commission - Local and State Government Advisory Committee (June 2000)

A Local Government Official's Guide to Transmitting Antenna RF Emission Safety: Rules, Procedures, and Practical Guidance

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APPENDIX A

Optional Checklist for Local Government
To Determine Whether a Facility is Categorically Excluded

Purpose: The FCC has determined that many wireless facilities are unlikely to cause human exposures in excess of RF exposure guidelines. Operators of those facilities are exempt from routinely having to determine their compliance. These facilities are termed "categorically excluded." Section 1.1307(b)(1) of the Commission's rules defines those categorically excluded facilities. This checklist will assist state and local government agencies in identifying those wireless facilities that are categorically excluded, and thus are highly unlikely to cause exposure in excess of the FCC's guidelines. Provision of the information identified on this checklist may also assist FCC staff in evaluating any inquiry regarding a facility's compliance with the RF exposure guidelines.

BACKGROUND INFORMATION

1. Facility Operator's Legal Name: GTE MOBILENET OF CA, LP, dba VERIZON WIRELESS
2. Facility Operator's Mailing Address: 2785 MITCHELL DR., WALNUT CREEK, CA 94598
3. Facility Operator's Contact Name/Title: JEREMY STROUP - SITE ACQ. MANAGER
4. Facility Operator's Office Telephone: 925-202-8654
5. Facility Operator's Fax:
6. Facility Name: SF PALO ALTO 121
7. Facility Address: 1691 EL CAMINO REAL
8. Facility City/Community: PALO ALTO
9. Facility State and Zip Code: CA 94306
10. Latitude: 37.430385
11. Longitude: -122.152517

continue

Verizon Wireless • Proposed Small Cell (No. 425225 "SF Palo Alto 121")
1600 El Camino Real • Palo Alto, California

Optional Local Government Checklist (page 2)

EVALUATION OF CATEGORICAL EXCLUSION

12. Licensed Radio Service (see attached Table 1): 28 GHz (part 30)
13. Structure Type (free-standing or building/roof-mounted): free-standing
14. Antenna Type (omnidirectional or directional): directional
15. Height above ground of the lowest point of the antenna: 9.4 m
16. ☐ Check if all of the following are true:
    (a) This facility will be operated in the Multipoint Distribution Service, Paging and Radiotelephone Service, Cellular Radiotelephone Service, Narrowband or Broadband Personal Communications Service, Private Land Mobile Radio Services Paging Operations, Private Land Mobile Radio Service Specialized Mobile Radio, Local Multipoint Distribution Service, or service regulated under Part 74, Subpart I (see question 12).
    (b) This facility will not be mounted on a building (see question 13).
    (c) The lowest point of the antenna will be at least 10 meters above the ground (see question 15).

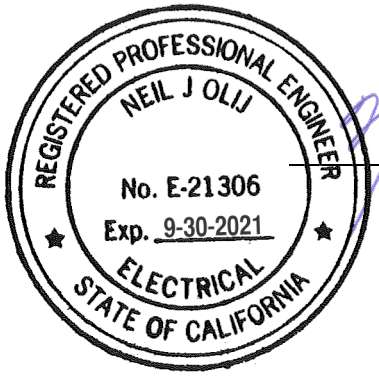
If box 16 is checked, this facility is categorically excluded and is unlikely to cause exposure in excess of the FCC's guidelines. The remainder of the checklist need not be completed. If box 16 is not checked, continue to question 17.

17. Enter the power threshold for categorical exclusion for this service from the attached Table 1 in watts ERP or EIRP: Table 1 does not include part 30
18. Enter the total number of channels: not applicable
19. Enter the ERP or EIRP per channel: not applicable
20. Total ERP or EIRP: 193 W
21. Is the answer to question 20 less than or equal to the value from question 17 (yes or no)? NO

If the answer to question 21 is YES, this facility is categorically excluded. It is unlikely to cause exposure in excess of the FCC's guidelines.

If the answer to question 21 is NO, this facility is not categorically excluded. Further investigation may be appropriate to verify whether the facility may cause exposure in excess of the FCC's guidelines.

Completion of this FCC checklist indicates that the proposed small cell operation is NOT categorically excluded from site-specific analysis. That further analysis has been done, as summarized in our report dated February 1, 2021. Our findings were that the proposed operation "will comply with the prevailing standards for limiting public exposure to radio frequency energy" and that "[t]raining authorized personnel and posting explanatory signs are recommended to establish compliance with FCC guidelines."



Neil J. Olij, P.E.

February 1, 2021
V1-Y8SU.1

TABLE 1: TRANSMITTERS, FACILITIES AND OPERATIONS SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION

SERVICE (TITLE 47 CFR RULE PART)	EVALUATION REQUIRED IF:
Experimental Radio Services (part 5)	power > 100 W ERP (164 W EIRP)
Multipoint Distribution Service (subpart K of part 21)	non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1640 W EIRP building-mounted antennas: power > 1640 W EIRP
Paging and Radiotelephone Service (subpart E of part 22)	non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1000 W ERP (1640 W EIRP) building-mounted antennas: power > 1000 W ERP (1640 W EIRP)
Cellular Radiotelephone Service (subpart H of part 22)	non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and total power of all channels > 1000 W ERP (1640 W EIRP) building-mounted antennas: total power of all channels > 1000 W ERP (1640 W EIRP)

TABLE 1 (cont.)

SERVICE (TITLE 47 CFR RULE PART)	EVALUATION REQUIRED IF:
Personal Communications Services (part 24)	(1) Narrowband PCS (subpart D): non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and total power of all channels > 1000 W ERP (1640 W EIRP) building-mounted antennas: total power of all channels > 1000 W ERP (1640 W EIRP) (2) Broadband PCS (subpart E): non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and total power of all channels > 2000 W ERP (3280 W EIRP) building-mounted antennas: total power of all channels > 2000 W ERP (3280 W EIRP)
Satellite Communications (part 25)	all included
General Wireless Communications Service (part 26)	total power of all channels > 1640 W EIRP
Wireless Communications Service (part 27)	total power of all channels > 1640 W EIRP
Radio Broadcast Services (part 73)	all included

TABLE 1 (cont.)

SERVICE (TITLE 47 CFR RULE PART)	EVALUATION REQUIRED IF:
Experimental, auxiliary, and special broadcast and other program distributional services (part 74)	subparts A, G, L: power > 100 W ERP subpart I: non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1640 W EIRP building-mounted antennas: power > 1640 W EIRP
Stations in the Maritime Services (part 80)	ship earth stations only
Private Land Mobile Radio Services Paging Operations (part 90)	non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1000 W ERP (1640 W EIRP) building-mounted antennas: power > 1000 W ERP (1640 W EIRP)
Private Land Mobile Radio Services Specialized Mobile Radio (part 90)	non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and total power of all channels > 1000 W ERP (1640 W EIRP) building-mounted antennas: total power of all channels > 1000 W ERP (1640 W EIRP)

TABLE 1 (cont.)

SERVICE (TITLE 47 CFR RULE PART)	EVALUATION REQUIRED IF:
Amateur Radio Service (part 97)	transmitter output power > levels specified in § 97.13(c)(1) of this chapter
Local Multipoint Distribution Service (subpart L of part 101)	non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1640 W EIRP building-mounted antennas: power > 1640 W EIRP LMDS licensees are required to attach a label to subscriber transceiver antennas that: (1) provides adequate notice regarding potential radiofrequency safety hazards, *e.g.,* information regarding the safe minimum separation distance required between users and transceiver antennas; and (2) references the applicable FCC-adopted limits for radiofrequency exposure specified in § 1.1310 of this chapter.

-end-

"Hands On Tree Care"
ANDERSON'S
Tree Care Specialists, Inc.
P.O. Box 2B • San Jose, CA 95109-0002
Tel: (408) 226-TREE (8733) • Fax: (408) 281-8733 • Lic: #706171
www.andersonstreecare.com

5/13/2021

Jeremy Stroup
Real Estate Specialist III
Vinculums Services, LLC
10 Pasteur, Suite 100
Irvine, CA 92618
jstroup@vinculums.com
925-202-8654

Re: Tree Protection Measures at SF PALO ALTO 121 (1600 El Camino Real)

Dear Jeremy,

Cellular equipment will be mounted on a new metal light pole, #167, adjacent to the above address, with three new handholes in the sidewalk adjacent to the pole, connected to the pole by conduits installed via trenching. A CPAU secondary box is proposed in the sidewalk northwest of the pole. The new light pole will be installed about four feet northwest of the existing pole. I visually estimated distances between trees and project features onsite.

One private non-regulated tree is present just beyond the project area. A metal private fence also lies just beyond the project area. Because this fence is present, no tree protection fencing will be needed for tree #1. Trenching must be performed by hand. If any live roots are encountered during excavation, the recommendations in section 2.20 C apply:

C. Trenching, Excavation and Equipment Use

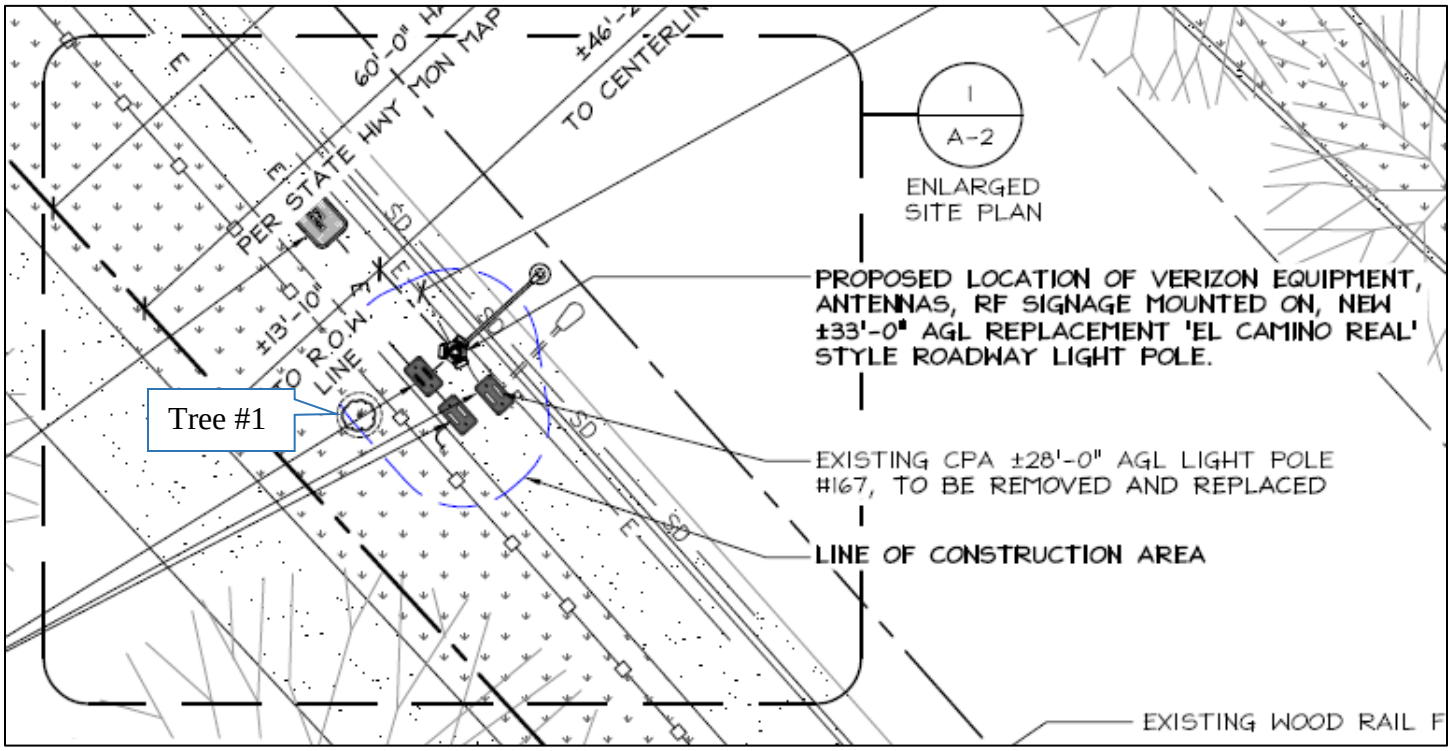
Trenching, excavation or boring activity within the TPZ is restricted to the following activities, conditions and requirements if approved by the *City Arborist*. *(See Restriction Zones for Excavation, Trenching or Boring Near Regulated Trees, Image 2.20-1 through 2.20-3)*. Mitigating measures shall include prior notification to and direct supervision by the *project arborist*.

1. Notification. Contractor shall notify the *project arborist* a minimum of 24 hours in advance of the activity in the TPZ.
2. Root Severance. Roots that are encountered shall be cut to sound wood and repaired (*see Root Injury, Section 2.25 A-1*). Roots 2-inches and greater must remain injury free.
3. Excavation. Any approved excavation, demolition or extraction of material shall be performed with equipment sitting outside the TPZ. Methods permitted are by hand digging, hydraulic or pneumatic air excavation technology. Avoid excavation within the TPZ during hot, dry weather.
    - If excavation or *trenching* for drainage, utilities, irrigation lines, etc., it is the duty of the contractor to tunnel under any roots 2-inches in diameter and greater.
    - Prior to excavation for foundation/footings/walls, grading or *trenching* within the TPZ, roots shall first be severed cleanly 1-foot outside the TPZ and to the depth of the future excavation. The trench must then be hand dug and roots pruned with a saw, sawzall, narrow trencher with sharp blades or other approved root pruning equipment.
4. Heavy Equipment. Use of backhoes, steel tread tractors or any heavy vehicles within the TPZ is prohibited unless approved by the *City Arborist*. If allowed, a protective *root buffer* (*see Root Buffer and Damage to Trees, Section 2.25.A-1*) is required. The protective buffer shall consist of a base course of tree chips spread over the root area to a minimum of 6-inch depth, layered by 3/4-inch quarry gravel to stabilize 3/4-inch plywood on top. This buffer within the TPZ shall be maintained throughout the entire construction process.
    - Structural design. If injurious activity or interference with roots greater than 2-inches will occur within the TPZ, plans shall specify a design of special foundation, footing, walls, concrete slab or pavement designs subject to *City Arborist* approval. Discontinuous foundations such as concrete pier and structural grade beam must maintain natural grade (not to exceed a 4-inch cut), to minimize root loss and allow the tree to use the existing soil.

An amenity tree providing only limited screening could be installed on the private property, northwest of the pole, if desired by the City of Palo Alto and agreed to by the property owner. I have been informed by my client that all trees planted near 5G equipment must reach a mature height of 20 feet or less. City staff has specified a drought-tolerant tree. Given these constraints, I recommend a swamp myrtle (*Tristaniopsis laurina*).

Tree #	Species	Common Name	DBH[1] (in.)	Dripline[2] (ft. and in.)	Regulated Status
1	Quercus agrifolia	Coast live oak	7.0	5’10”	Non-regulated private tree

Tree map (scale roughly approximated, tree location approximate)



[1] Diameter at breast height, a standard arboricultural measurement. Breast height is defined as 54 inches above grade.
[2] Defined in the Palo Alto Tree Technical Manual as ten times the tree’s DBH. Work within a tree’s dripline may negatively impact it.

Image of tree #1

ASSUMPTIONS AND LIMITING CONDITIONS

1. Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

2. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other government regulations.

3. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.

4. The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

5. Loss, alteration, or reproduction of any part of this report invalidates the entire report.

6. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant/appraiser.

7. Neither all nor any part of this report, nor any copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of the consultant/appraiser particularly as to value conclusions, identity of the consultant/appraiser, or any reference to any professional society or initialed designation conferred upon the consultant/appraiser as stated in his qualification.

8. This report and the values expressed herein represent the opinion of the consult/appraiser, and the consult/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

9. Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.

10. Unless expressed otherwise: 1) information in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in future.

Respectfully submitted,

Katherine Naegele
Consulting Arborist
Anderson's Tree Care Specialists, Inc.
A TCIA Accredited Company
Master of Forestry, UC Berkeley
ISA Certified Arborist #WE-9658A
ISA Tree Risk Assessment Qualified
American Society of Consulting Arborists, Member
Office: 408 226-8733
Cell: 650 209-0631

www.andersonstreecare.com

verizon

11/25/20

SF Palo Alto 164

Arboretum Road
Palo Alto, CA

Looking West from Arboretum Road

View #2

Applied Imagination 510 914-0500

verizon

12/24/20

SF Palo Alto 164

Arboretum Road
Palo Alto, CA

Looking West from Arboretum Road

View #2

Applied Imagination 510 914-0500

verizon

SF Palo Alto 164

Arboretum Road
Palo Alto, CA

Looking Northeast from Arboretum Road

View #1

11/25/20

Applied Imagination 510 914-0500

verizon

12/24/20

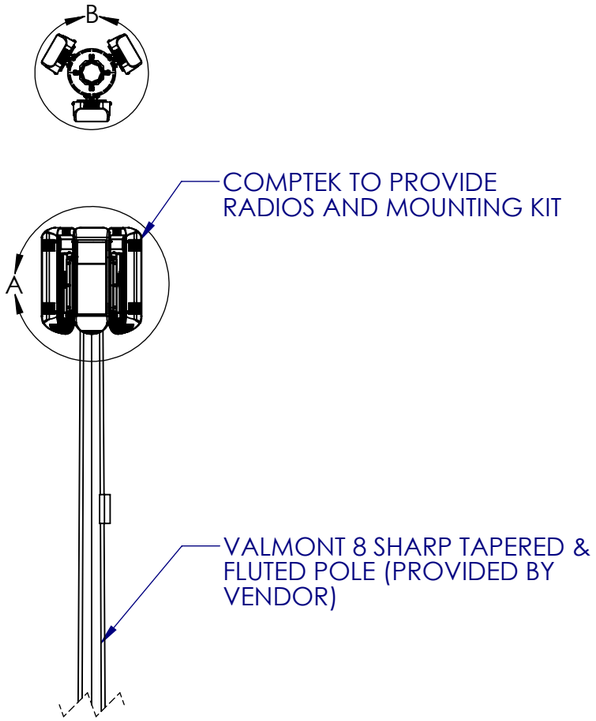
SF Palo Alto 164

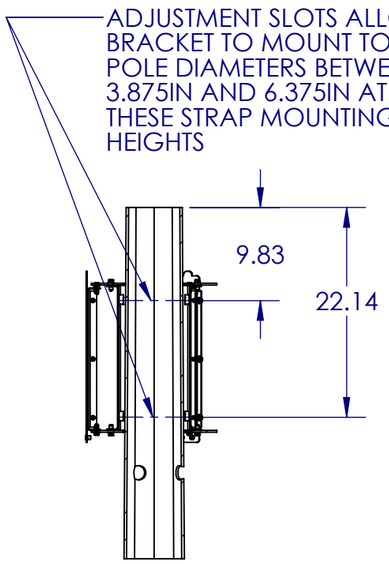
Arboretum Road
Palo Alto, CA

Looking Northeast from Arboretum Road

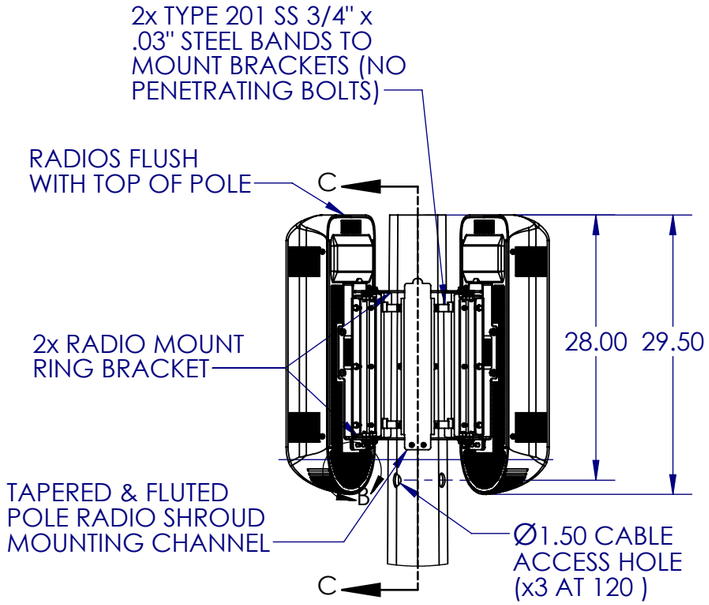
View #1

Applied Imagination 510 914-0500

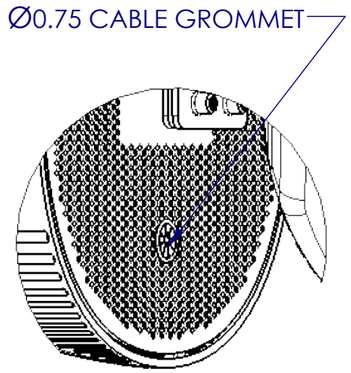




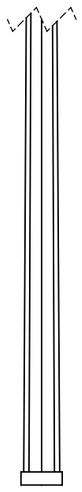
SECTION C-C
(ALL RADIOS HIDDEN FOR CLARITY)
SCALE 1 : 16

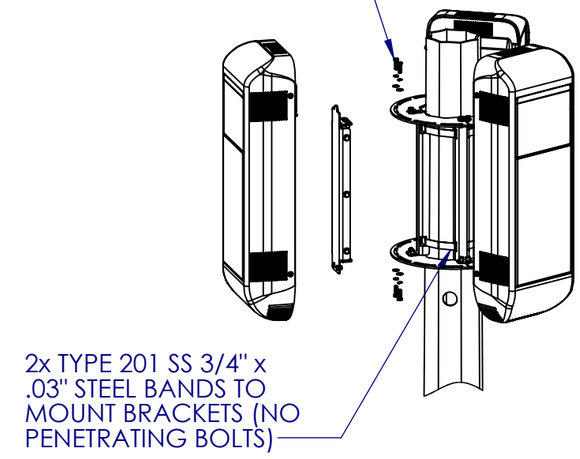


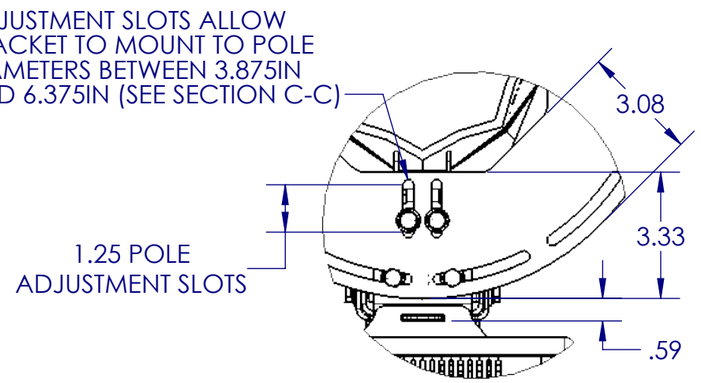
DETAIL A
(SECTOR 1 RADIO HIDDEN FOR CLARITY)
SCALE 1 : 16



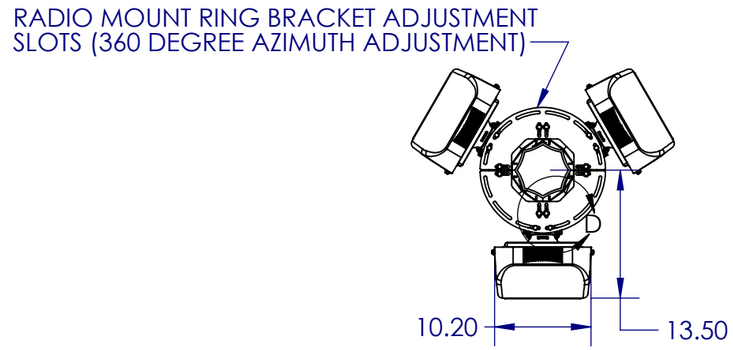
DETAIL B
SCALE 1 : 3







DETAIL D
SCALE 1 : 4



DETAIL B
SCALE 1 : 16

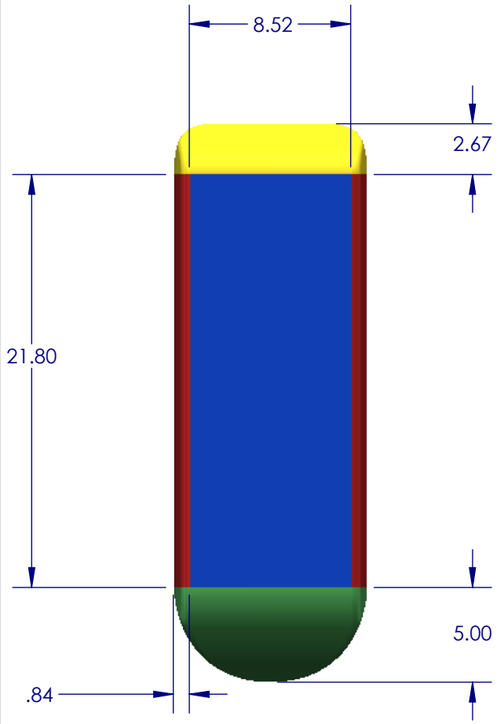
REVISIONS					
REV.	DESCRIPTION	DATE	DRAWN	APPR.	CCN #
01	INITIAL RELEASE	10/2/2020	JAD	JL	000426
02	UPDATED RADIO DESIGN	3/9/2021	MM	JL	
03	ADDED CABLE GROMMET	3/11/2021	MM	JL	
04	UPDATED POLE + BRACKET DESIGN	3/17/2021	MM	JL	

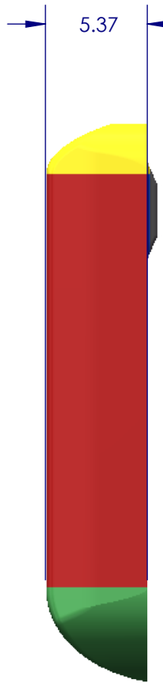
5555 CENTRAL AVE, SUITE 100,
BOULDER, CO 80301
PHONE: 303-531-5758
FAX: 303-531-5595
www.comptektechnologies.com

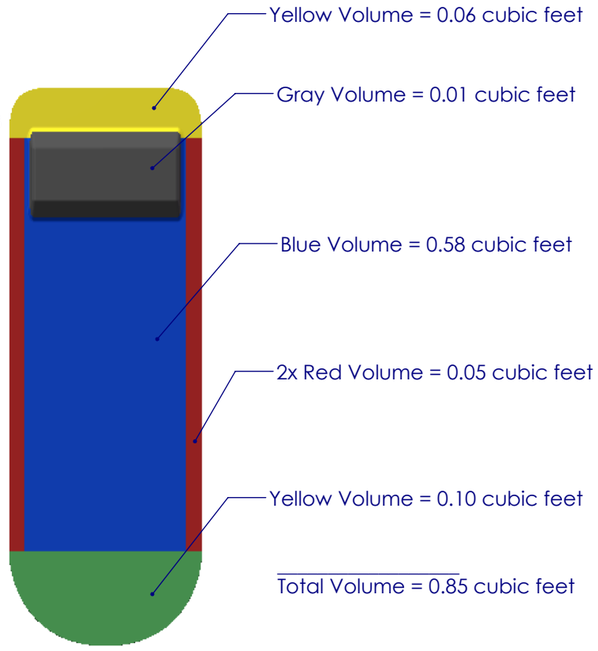
TITLE
VALMONT 8 SHARP FLUTED POLE STRAP MOUNT BRACKET

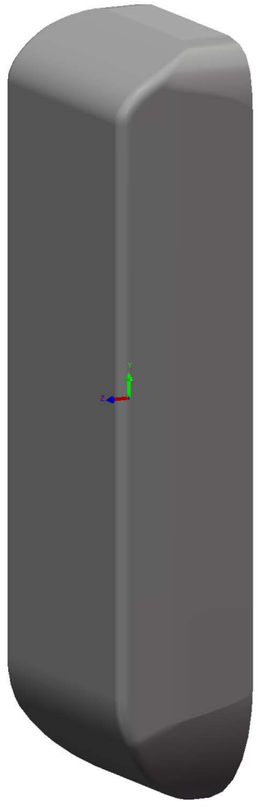
PROPRIETARY AND CONFIDENTIAL | DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED | DO NOT SCALE | SIZE **B** | SHEET 1 OF 1

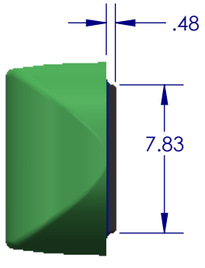
PROJECT. NO. 30464 | REV 04

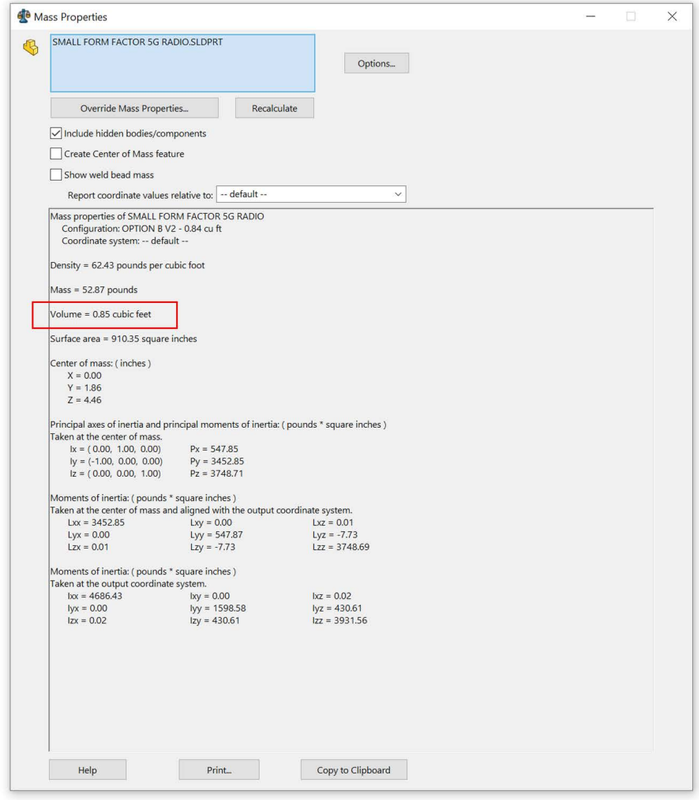












CityPole
Comptek
5555 CENTRAL AVE, SUITE 100,
BOULDER, CO 80301
PHONE: 303-531-5758
FAX: 303-531-5595
www.comptektechnologies.com

TITLE

SMALL FORM FACTOR 5G RADIO - VOLUME STUDY

PROPRIETARY AND CONFIDENTIAL	DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED	DO NOT SCALE	SIZE **B**	SHEET 1 OF 1

PROJECT. NO.	REV
–	–

Vinculums
575 Lennon Lane #125
Walnut Creek, CA 94598
(925) 482-8500

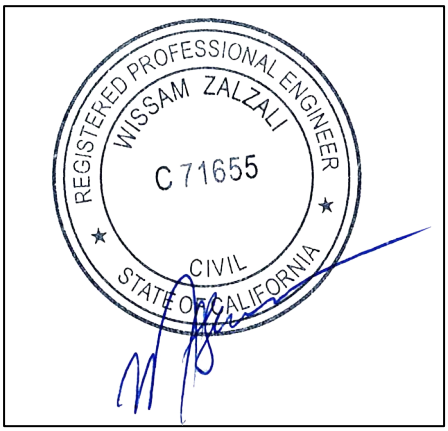
ALLSTATES ENGINEERING & SURVEYING
23675 Birtcher Dr.
Lake Forest, CA
(949) 273-0996

VERIZON
PALO ALTO_164

All States Engineering & Surveying
Project No: 64 – CLUSTER-6 \ PALO ALTO_164

Structural Analysis Report

ROW Adjacent to Arboretum Rd., Palo Alto, 94304
Proposed 28'- 6" AGL Steel Double-Arm Light Pole & Foundation



Rev. #	Reason for Revision	Total # of Sheets	Prepared By	Checked By	Approved /Accepted	Date
0	Updated Pole Specs	20	LeT	LeT	WZ	12/22/2020

	Quantity/Type /Shape	Strength (min.)	Dimensions	Thickness /Depth	Capacity Utilization	
Pole Shaft	Steel / 8-sided tapered	55 ksi*	4.01"Φ at top 8.0"Φ at bottom	0.1875"	**41.5 %**	**PASS**
Anchor Bolts	4	55 ksi	1" Φ	-	**55.0 %**	**PASS**
Base Plate	1	36 ksi	11.5"x11.5"x1"	-	**ADEQUATE**	
Foundation	*Circular Caisson*	*3.25 ksi*	*36"Dia.*	*7'-6"***	**ADEQUATE**	

* Pole grade is A595-55 per provided specs.

Required depth of caisson (Unrestrained** at G/L) - This analysis was performed without a soil report, and minimum soil properties from IBC-18 were used. Required pole foundation embedment depth may change with a soil report from the proposed pole location.

Steel Decorated Pole
Palo Alto
PALO ALTO_164

Project Description:
All States Engineering & Surveying (ASES) is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the metal pole.
The purpose of the analysis is to determine acceptability of the pole stress level. Based on our analysis we have determined the metal pole stress level for the structure and anchorage, under the following load case:

LC: Proposed Pole + Proposed Equipment without Shroud
(Please see page 5 for details)

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

Structural Analysis Parameters:
This analysis has been performed in accordance with AASHTO 2013 guidelines.

- Wind Speed: ***85 mph per AASHTO 2013***
- Exposure Category: ***C***
- Risk Category: ***II***
- Topographical: ***1***
- Crest Height = ***0***
- Ice Thickness = ***0 in***
- Min. Soil Lateral Bearing = ***100 psf/ft*2 = 200 psf/ft per CBC & IBC 1806.3.4***
- Min. Soil Bearing = ***1500 psf***

We at *All States Engineering & Surveying* appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or any other projects, please give us a call.

Hazards by Location

Search Information

Address: Arboretum Rd, Palo Alto, CA 94304, USA

Coordinates: 37.438972, -122.1694949

Elevation: 77 ft

Timestamp: 2020-12-07T22:27:38.781Z

Hazard Type: Seismic

Reference Document: ASCE7-16

Risk Category: II

Site Class: D-default

Basic Parameters

Name	Value	Description
S_S	1.791	MCE_R ground motion (period=0.2s)
S_1	0.663	MCE_R ground motion (period=1.0s)
S_{MS}	2.15	Site-modified spectral acceleration value
S_{M1}	* null	Site-modified spectral acceleration value
S_{DS}	1.433	Numeric seismic design value at 0.2s SA
S_{D1}	* null	Numeric seismic design value at 1.0s SA

* See Section 11.4.8

Additional Information

Name	Value	Description
SDC	* null	Seismic design category
F_a	1.2	Site amplification factor at 0.2s
F_v	* null	Site amplification factor at 1.0s
CR_S	0.91	Coefficient of risk (0.2s)
CR_1	0.896	Coefficient of risk (1.0s)
PGA	0.737	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	0.885	Site modified peak ground acceleration

T_L	12	Long-period transition period (s)
SsRT	2.104	Probabilistic risk-targeted ground motion (0.2s)
SsUH	2.312	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	1.791	Factored deterministic acceleration value (0.2s)
S1RT	0.844	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.942	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.663	Factored deterministic acceleration value (1.0s)
PGAd	0.737	Factored deterministic acceleration value (PGA)

* See Section 11.4.8

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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ALLSTATES ENGINEERING & SURVEYING

PROJECT : PALO ALTO_164
CLIENT : 102 - Sequoia VZW Bakersfield

DESIGN BY :
REVIEW BY : LeT
DATE : 12/22/2020

Pole Wind & Seismic Analysis Based on AASHTO 2013

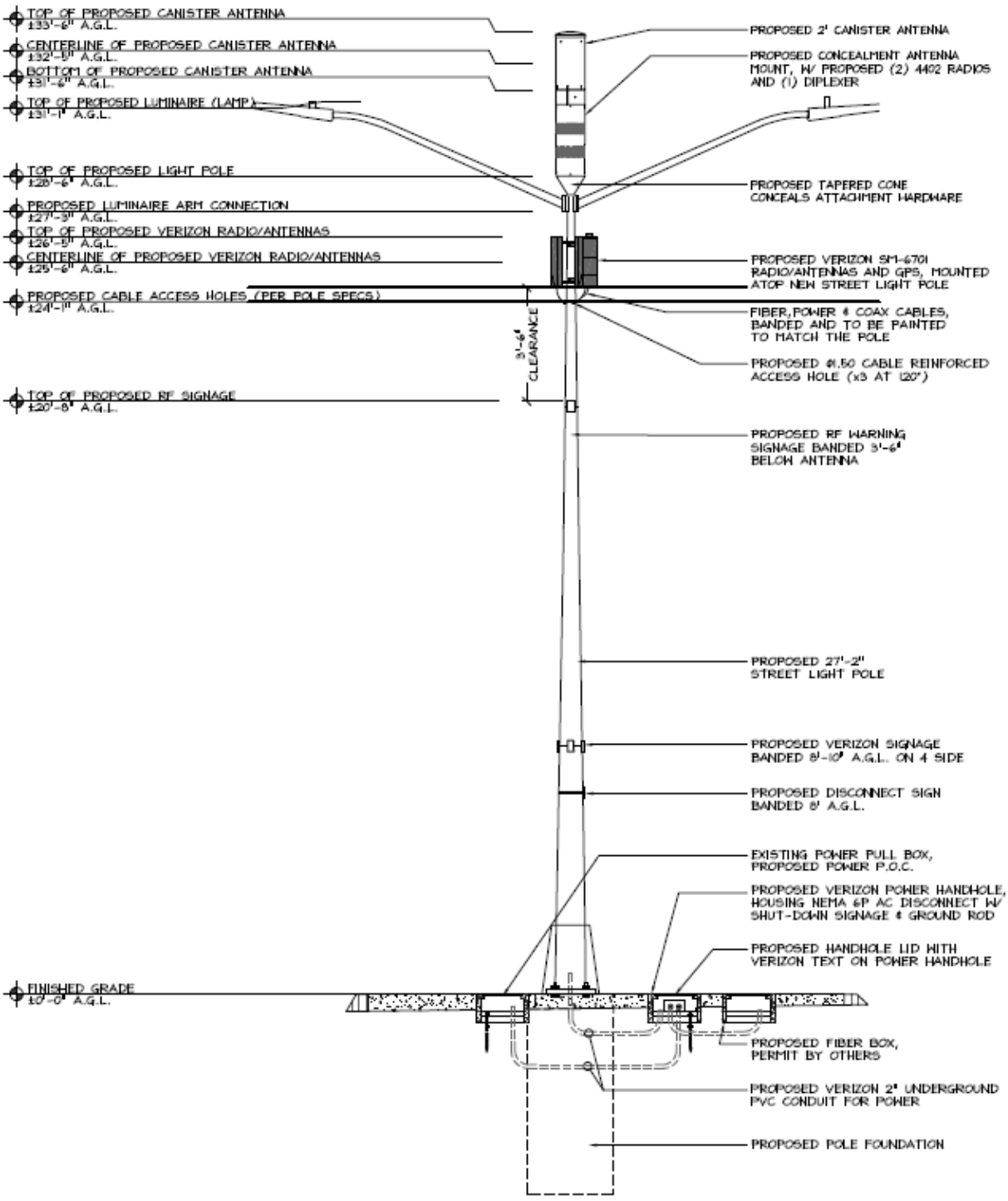
Proposed Elevation

NOTES:

1. NEW GALVANIZED LIGHT POLE TO BE PAINTED WITH MUNSELL RAL5.5GY2.76/2.1 PAINT.
2. NEW RADIOS AND HARDWARE TO BE PAINTED MUNSELL RAL5.5GY2.76/2.1 OR WRAPPED AS ALLOWED BY THE MANUFACTURER.
3. ALL CABLE/WIRE BETWEEN THE POLE ACCESS HOLE AND THE ANTENNA PAINTED/COLORED TO MATCH POLE COLOR.

TOTAL ANETNNA/RADIO VOLUME (CU. FT.)

MODEL	TOTAL	TOTAL VOLUME (CU. FT.)
4G	1	±4.41
5G	3	±1.52



ALLSTATES ENGINEERING & SURVEYING

PROJECT : PALO ALTO_164
CLIENT : 102 - Sequoia VZW Bakersfield

DESIGN BY :
REVIEW BY : LeT
DATE : 12/22/2020

Pole Wind & Seismic Analysis Based on AASHTO 2013

Loading

PROPOSED COMPONENTS

Rad Center	Component Type	QUANTITY	MOUNT TYPE
31'-0"	(N) Canister Antenna w/ Shroud	1	Top Mounted Pole
25'-6"	(N) Ericsson SM6701 Antennas	3	Pole Mounted
9'-0"	(E) / (N) Street Sign - Max 30"x30" EPA	1	
-	(N) RF Signage	-	
-	(N) & (E) Conduit, Wire, & In-line Fuse	-	Inside Pole

WIND PRESSURE DERIVATION (AASHTO 2013)

Height of Pole	h =	28.5	ft	
Wind Speed	V =	85	mph	*(AASHTO 2013)*
Wind Exposure (B, C or D)		C		
Wind Directionality (Pole)	K_d =	0.95		*(AASHTO 2013, Table 3.8.5-1)*
Gust Effect Factor	G =	1.14		*(AASHTO 2013, Sec. 3.8.6)*
3-sec Gust Exponent	α =	9.50		*(ASCE 7-16, Table 26.11-1)*
Atmospheric Height	Z_g =	900	ft	*(ASCE 7-16, Table 26.11-1)*
Vel. Pressure Coeff. (Min)	$K_{z\,min.}$ =	0.84		*(ASCE 7-16, Table 29.10-1)*
Velocity Pressure Coeff.	$K_z = 2.0(z/Z_g)^{(2/\alpha)}$ =	0.97		*(AASHTO 2013, Equation 3.8.4-1)*
Wind Force @ Pole top	$F_H = 0.00256K_zK_dGV^2(C_dA)$ =	19.4	psf *C_dA	*(Wind Pressure Input For O-Calc Analysis)*
Total Applied Shear	V_u =	938	lbs	*(From TNX Report)*
Total Applied Moment	M_u =	18155	lb-ft	*(From TNX Report)*

CALCULATION OF WIND DRAG COEFFICIENTS (Cd) FROM AASTHO 2013, TABLE 3.8.7-1

C_v = 1.00 For V<105 mph

Appurtenance	Height (in)	Width (in)	Depth (in)	d (ft)	C_vVd	C_d
(N) Canister Antenna w/ Shroud	65.0	12.0	-	1.00	85	**0.45**
(N) Ericsson SM6701 Antennas	32.2	10.2	7.3	1.05	-	**1.70**
(E) Round Luminaire	2.9	88.0	-	0.24	20	**0.50**
(E) Round Pole	342	7.85	-	0.65	56	**0.69**

SEISMIC LOAD ANALYSIS (ASCE 7-16)

Total Pole Weight	W = P_u =	1052	lbs	*[Approximate Wt. Including Pole With (N) Components]*
Spectral Response (Short)	S_{DS} =	1.791		*(ATC Hazards Design Maps Summary)*
Spectral Response (1 sec.)	S_1 =	0.650		*(ATC Hazards Design Maps Summary)*
Importance Factor	I_e =	1.0		*(ASCE 7-16, Section 15.4.1.1)*
Response Factor	R =	1.5		*(ASCE 7-16, Table 15.4-2)*
Seismic Response Coeff	$C_s = 0.044S_{DS}I$ =	0.079		*(ASCE 7-16, Section 15.4-1)*
Seismic Response Coeff	$C_s = 0.8S_1/(R/I_e)$ =	0.347		*(ASCE 7-16, Section 15.4-2)*
Seismic Response Coeff	$C_s = S_{DS}/(R/I_e)$ =	1.194		*(ASCE 7-16, Section 12.8-2)*
Lateral Seismic Force	V_u = MAX(C_s)W =	1.194	*W	
Total Applied Shear	V_u =	1256	lbs	
Total Applied Moment	$M_u = V_u(1/2h)$ =	17899	lb-ft	

(Wind Loads Governing For Pole Shaft Capacity Check)

DESIGNED APPURTENANCE LOADING

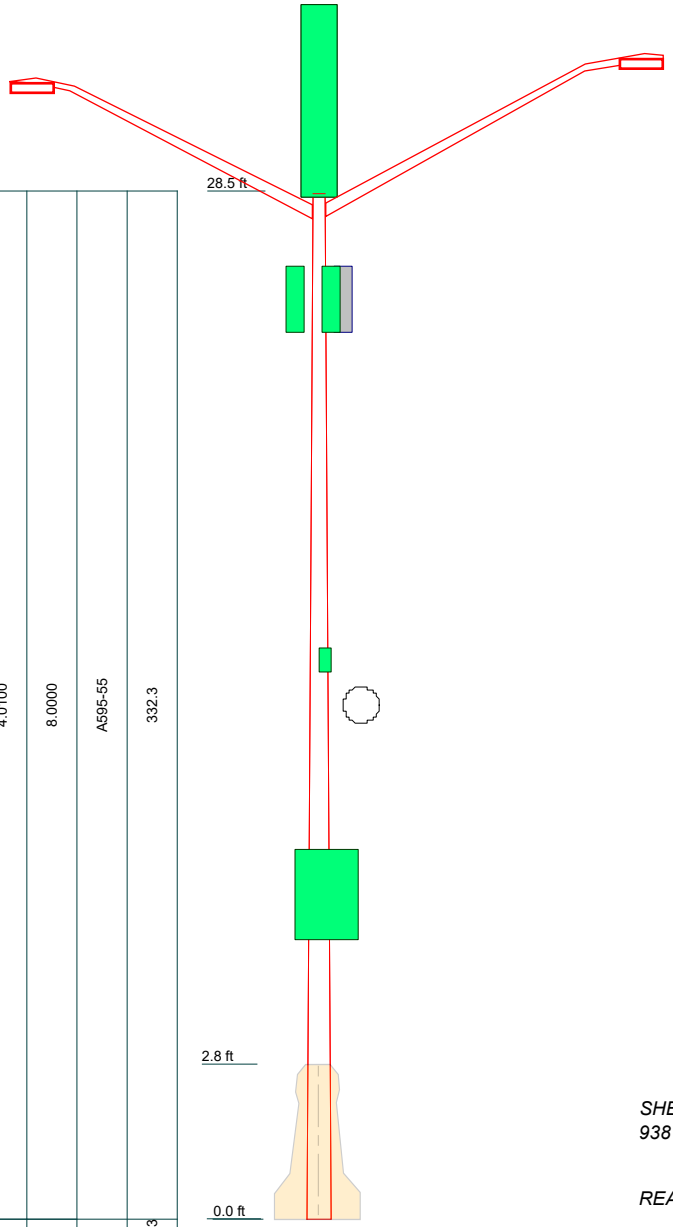
TYPE	ELEVATION	TYPE	ELEVATION
12"Dia. x65" Shroud w/ Antenna	31	SM6701 w/ Mount	25.5
Light Luminarie	30.5	SM6701 w/ Mount	25.5
Light Luminarie	30.5	FCC RF Notice Signage	15.5
8' x 2.875" O.D. Light Pole Arm	29.5	30"x30" Street Sign	9
8' x 2.875" O.D. Light Pole Arm	29.5	Decorative Base	1.416
SM6701 w/ Mount	25.5		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A595-55	55 ksi	65 ksi			

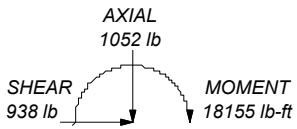
TOWER DESIGN NOTES

1. Tower is located in Santa Clara County, California.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 85 mph basic wind in accordance with the TIA-222-G Standard.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 41.5%



Section	Length (ft)	Number of Sides	Thickness (in)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	28.50	1	0.1875	4.0100	8.0000	A595-55	332.3
							332.3

ALL REACTIONS ARE FACTORED



TORQUE 21 lb-ft
REACTIONS - 85 mph WIND

All States Engineering & Surveying
23675 Birtcher Drive
Lake Foreest, CA 92630
Phone: (949) 273-0996
FAX: (949) 606-7222

Job: ***Palo Alto_Light Pole***			
Project: ***PALO ALTO_164***			
Client: 64 - Vinculums_VZW	Drawn by: tle	App'd:	
Code: AASHTO 2013	Date: 12/22/20	Scale: NTS	
Path:		Dwg No. E-1	

Steel Decorated Pole
Palo Alto
PALO ALTO_164

ALLSTATES ENGINEERING & SURVEYING

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Santa Clara County, California.
Basic wind speed of 85 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Deflections calculated using a wind speed of 60 mph.

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	28.50-0.00	28.50		Round	4.0100	8.0000	0.1875		A595-55 (55 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	4.0100	2.2516	4.1224	1.3531	2.0050	2.0560	8.2447	1.1251	0.0000	0
	8.0000	4.6019	35.1303	2.7629	4.0000	8.7826	70.2605	2.2996	0.0000	0

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 28.50-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
Existing Cable Inside Pole	C	No	Yes	CaAa (Out Of Face)	28.50 - 0.00	1	No Ice	0.06	0.15

Steel Decorated Pole
Palo Alto
PALO ALTO_164

ALLSTATES ENGINEERING & SURVEYING

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	28.50-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.796	4.28
		D	0.000	0.000	0.000	0.000	0.00

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Light Luminarie	A	From Leg	6.50 0.00 0.00	0.0000	30.50	No Ice	2.36	2.36	55.00
Light Luminarie	C	From Leg	6.50 0.00 0.00	0.0000	30.50	No Ice	2.36	2.36	55.00
8' x 2.875" O.D. Light Pole Arm	A	From Leg	4.00 0.00 1.75	0.0000	29.50	No Ice	1.92	0.06	65.00
8' x 2.875" O.D. Light Pole Arm	C	From Leg	4.00 0.00 1.75	0.0000	29.50	No Ice	1.92	0.06	65.00
FCC RF Notice Signage	C	From Leg	0.00 0.00 0.00	0.0000	15.50	No Ice	0.33	0.01	0.20
*									
SM6701 w/ Mount	C	From Leg	0.50 0.25 0.00	0.0000	25.50	No Ice	1.44	0.96	46.00
SM6701 w/ Mount	B	From Leg	0.50 0.25 0.00	0.0000	25.50	No Ice	1.44	0.96	46.00
SM6701 w/ Mount	D	From Leg	0.50 0.25 0.00	0.0000	25.50	No Ice	1.44	0.96	46.00
*									
30"x30" Street Sign	C	From Leg	0.00 0.00 0.00	0.0000	9.00	No Ice	7.50	0.05	5.00
*									
Decorative Base	C	None		0.0000	1.42	No Ice	2.01	2.01	50.00
*									
12"Dia. x65" Shroud w/ Antenna	C	None		0.0000	31.00	No Ice	3.06	3.06	107.10

Steel Decorated Pole
Palo Alto
PALO ALTO_164

ALLSTATES ENGINEERING & SURVEYING

Load Combinations

Comb. No.	*Description*
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 45 deg - No Ice
5	0.9 Dead+1.6 Wind 45 deg - No Ice
6	1.2 Dead+1.6 Wind 90 deg - No Ice
7	0.9 Dead+1.6 Wind 90 deg - No Ice
8	Dead+Wind 0 deg - Service
9	Dead+Wind 45 deg - Service
10	Dead+Wind 90 deg - Service
11	1.2 Dead+1.0 Ev+1.0 Eh 0 deg
12	0.9 Dead-1.0 Ev+1.0 Eh 0 deg
13	1.2 Dead+1.0 Ev+1.0 Eh 45 deg
14	0.9 Dead-1.0 Ev+1.0 Eh 45 deg
15	1.2 Dead+1.0 Ev+1.0 Eh 90 deg
16	0.9 Dead-1.0 Ev+1.0 Eh 90 deg

Maximum Member Forces

Section No.	*Elevation ft*	*Component Type*	*Condition*	*Gov. Load Comb.*	*Axial lb*	*Major Axis Moment lb-ft*	*Minor Axis Moment lb-ft*
L1	28.5 - 0	Pole	Max Tension	10	0.00	0.00	0.00
			Max. Compression	11	-1052.28	-18.25	-37.83
			Max. Mx	6	-1050.54	-17984.67	-2478.27
			Max. My	2	-1050.55	2418.46	17924.87
			Max. Vy	6	930.73	-17984.67	-2478.27
			Max. Vx	2	-930.73	2418.46	17924.87
			Max. Torque	6			-20.80

Maximum Reactions

Location	*Condition*	*Gov. Load Comb.*	*Vertical lb*	*Horizontal, X lb*	*Horizontal, Z lb*
Pole	Max. Vert	11	1052.28	0.05	0.10
	Max. H_x	3	789.21	130.00	928.84
	Max. H_z	3	789.21	130.00	928.84
	Max. M_x	2	17924.87	129.99	928.80
	Max. M_z	6	17984.67	-928.80	-129.99
	Max. Torsion	11	0.00	0.05	0.10
	Min. Vert	5	789.21	-564.80	564.80
	Min. H_x	7	789.21	-928.84	-130.00
	Min. H_z	7	789.21	-928.84	-130.00
	Min. M_x	6	-2478.26	-928.80	-129.99
	Min. M_z	2	-2418.46	129.99	928.80
	Min. Torsion	6	-20.77	-928.80	-129.99

Steel Decorated Pole
Palo Alto
PALO ALTO_164

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Tower Mast Reaction Summary

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead Only	876.90	-0.03	-0.07	31.48	-15.19	-0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	1052.28	-129.99	-928.80	-17924.87	2418.46	0.92
0.9 Dead+1.6 Wind 0 deg - No Ice	789.21	-130.00	-928.84	-17761.39	2400.60	0.91
1.2 Dead+1.6 Wind 45 deg - No Ice	1052.28	564.84	-564.85	-10940.95	-11000.80	15.35
0.9 Dead+1.6 Wind 45 deg - No Ice	789.21	564.80	-564.80	-10843.22	-10887.31	15.18
1.2 Dead+1.6 Wind 90 deg - No Ice	1052.28	928.80	129.99	2478.26	-17984.67	20.77
0.9 Dead+1.6 Wind 90 deg - No Ice	789.21	928.84	130.00	2444.66	-17805.44	20.53
Dead+Wind 0 deg - Service	876.90	-36.21	-280.25	-5219.90	658.99	1.06
Dead+Wind 45 deg - Service	876.90	172.56	-172.57	-3203.99	-3253.34	4.27
Dead+Wind 90 deg - Service	876.90	280.25	36.21	708.34	-5269.25	4.97
1.2 Dead+1.0 Ev+1.0 Eh 0 deg	1052.28	-0.05	-0.10	37.83	-18.25	-0.00
0.9 Dead-1.0 Ev+1.0 Eh 0 deg	789.21	-0.02	-0.05	28.31	-13.66	-0.00
1.2 Dead+1.0 Ev+1.0 Eh 45 deg	1052.28	-0.05	-0.10	37.83	-18.25	-0.00
0.9 Dead-1.0 Ev+1.0 Eh 45 deg	789.21	-0.02	-0.05	28.31	-13.66	-0.00
1.2 Dead+1.0 Ev+1.0 Eh 90 deg	1052.28	-0.05	-0.10	37.83	-18.25	-0.00
0.9 Dead-1.0 Ev+1.0 Eh 90 deg	789.21	-0.02	-0.05	28.31	-13.66	-0.00

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	lb	lb	lb	lb	lb	lb	
1	0.00	-876.90	0.00	0.03	876.90	0.07	0.008%
2	-130.01	-1052.28	-928.91	129.99	1052.28	928.80	0.007%
3	-130.01	-789.21	-928.91	130.00	789.21	928.84	0.006%
4	564.91	-1052.28	-564.91	-564.84	1052.28	564.85	0.007%
5	564.91	-789.21	-564.91	-564.80	789.21	564.80	0.013%
6	928.91	-1052.28	130.01	-928.80	1052.28	-129.99	0.008%
7	928.91	-789.21	130.01	-928.84	789.21	-130.00	0.006%
8	-36.22	-876.90	-280.39	36.21	876.90	280.25	0.014%
9	172.65	-876.90	-172.65	-172.56	876.90	172.57	0.013%
10	280.39	-876.90	36.22	-280.25	876.90	-36.21	0.015%
11	0.00	-1052.28	0.00	0.05	1052.28	0.10	0.011%
12	0.00	-789.21	0.00	0.02	789.21	0.05	0.007%
13	0.00	-1052.28	0.00	0.05	1052.28	0.10	0.011%
14	0.00	-789.21	0.00	0.02	789.21	0.05	0.007%
15	0.00	-1052.28	0.00	0.05	1052.28	0.10	0.011%
16	0.00	-789.21	0.00	0.02	789.21	0.05	0.007%

Steel Decorated Pole
Palo Alto
PALO ALTO_164

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Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L1	28.5 - 0 (1)	TP8x4.01x0.1875	28.50	28.50	123.8	4.6019	-1050.54	67853.00	0.015

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	28.5 - 0 (1)	TP8x4.01x0.1875	18154.58	45495.58	0.399	0.00	45495.58	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	28.5 - 0 (1)	TP8x4.01x0.1875	939.80	113898.00	0.008	20.77	72456.17	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	28.5 - 0 (1)	0.015	0.399	0.000	0.008	0.000	0.415 ✔	1.000	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	28.5 - 0	Pole	TP8x4.01x0.1875	1	-1050.54	67853.00	41.5	Pass
						Summary		
						Pole (L1)	41.5	Pass
						RATING =	**41.5**	**Pass**

Hilti PROFIS Engineering 3.0.66

www.hilti.com

Company:	All State Eng. & Surveying	Page:	1
Address:	23675 Birtcher Dr. Lake Forest, CA 92630	Specifier:	
Phone I Fax:	9492730996 |	E-Mail:	
Design:	Concrete - Sep 9, 2020 (1)	Date:	12/23/2020
Fastening point:			

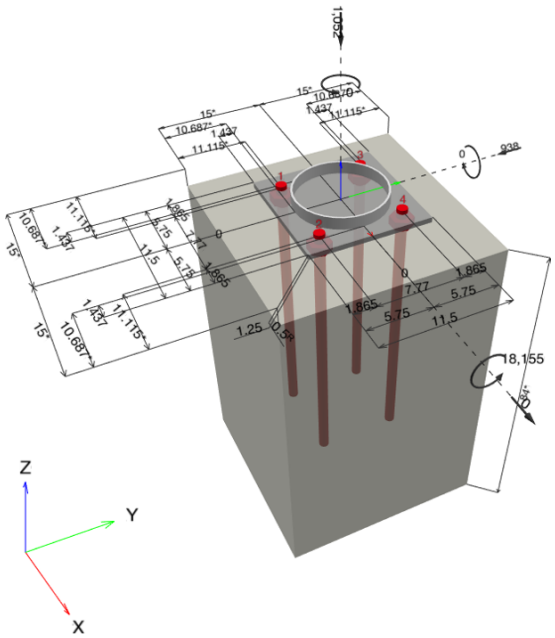
Specifier's comments:

1 Input data

Anchor type and diameter:	**Heavy Hex Head ASTM F 1554 GR. 55 1**
Item number:	not available
Effective embedment depth:	h_{ef} = 25.000 in.
Material:	ASTM F 1554
Evaluation Service Report:	Hilti Technical Data
Issued I Valid:	- | -
Proof:	Design Method ACI 318-08 / CIP
Stand-off installation:	without clamping (anchor); restraint level (anchor plate): 1.00; e_b = 1.250 in.; t = 0.500 in.
Anchor plate[R]:	l_x x l_y x t = 11.500 in. x 11.500 in. x 0.500 in.; (Recommended plate thickness: not calculated)
Profile:	Round HSS (AISC), HSS8-5/8X.188; (L x W x T) = 8.625 in. x 8.625 in. x 0.188 in.
Base material:	cracked concrete, 3000, f_c' = 3,000 psi; h = 84.000 in.
Reinforcement:	tension: condition A, shear: condition B; anchor reinforcement: tension
	edge reinforcement: > No. 4 bar with stirrups
Seismic loads (cat. C, D, E, or F)	no

[R] - The anchor calculation is based on a rigid anchor plate assumption.

Geometry [in.] & Loading [lb, ft.lb]



Company:	All State Eng. & Surveying	Page:	2
Address:	23675 Birtcher Dr. Lake Forest, CA 92630	Specifier:	
Phone I Fax:	9492730996 |	E-Mail:	
Design:	Concrete - Sep 9, 2020 (1)	Date:	12/23/2020
Fastening point:			

1.1 Design results

Case	Description	Forces [lb] / Moments [ft.lb]	Seismic	Max. Util. Anchor [%]
1	Combination 1	N = -1,052; V_x = 0; V_y = -938; M_x = 18,155.000; M_y = 0.000; M_z = 0.000;	no	55

Company:	All State Eng. & Surveying	Page:	3
Address:	23675 Birtcher Dr. Lake Forest, CA 92630	Specifier:	
Phone I Fax:	9492730996 |	E-Mail:	
Design:	Concrete - Sep 9, 2020 (1)	Date:	12/23/2020
Fastening point:			

2 Proof I Utilization (Governing Cases)

		Design values [lb]		Utilization	
Loading	**Proof**	**Load**	**Capacity**	**β_N / β_V [%]**	**Status**
Tension	Pullout Strength	13,756	25,217	55 / -	OK
Shear	Steel failure (with lever arm)	235	1,079	- / 22	OK

Loading	**β_N**	**β_V**	**ζ**	**Utilization $\beta_{N,V}$ [%]**	**Status**
Combined tension and shear loads	0.546	0.217	5/3	45	OK

3 Warnings

- Please consider all details and hints/warnings given in the detailed report!

Fastening meets the design criteria!

Company:	All State Eng. & Surveying	Page:	4
Address:	23675 Birtcher Dr. Lake Forest, CA 92630	Specifier:	
Phone I Fax:	9492730996 |	E-Mail:	
Design:	Concrete - Sep 9, 2020 (1)	Date:	12/23/2020
Fastening point:			

4 Remarks; Your Cooperation Duties

- Any and all information and data contained in the Software concern solely the use of Hilti products and are based on the principles, formulas and security regulations in accordance with Hilti's technical directions and operating, mounting and assembly instructions, etc., that must be strictly complied with by the user. All figures contained therein are average figures, and therefore use-specific tests are to be conducted prior to using the relevant Hilti product. The results of the calculations carried out by means of the Software are based essentially on the data you put in. Therefore, you bear the sole responsibility for the absence of errors, the completeness and the relevance of the data to be put in by you. Moreover, you bear sole responsibility for having the results of the calculation checked and cleared by an expert, particularly with regard to compliance with applicable norms and permits, prior to using them for your specific facility. The Software serves only as an aid to interpret norms and permits without any guarantee as to the absence of errors, the correctness and the relevance of the results or suitability for a specific application.
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All States Engineering & Surveying
Zalzali & Associates, Inc.
23675 Birtcher Drive
Lake Forest
CA
92630

Project Title: Lighht Pole Caisson Embedment Depth
Engineer:
Project ID: Palo Alto Light Pole
Project Descr:

Pole Footing Embedded in Soil

File: Caisson Depth.ec6

Lic. # : KW-06009186
Zalzali & Associates Inc.

DESCRIPTION: Poposed Caisson embedment (soil values From IBC Table 1806.2 with lateral bearing load increase from IBC 1806.3.4)

Code References

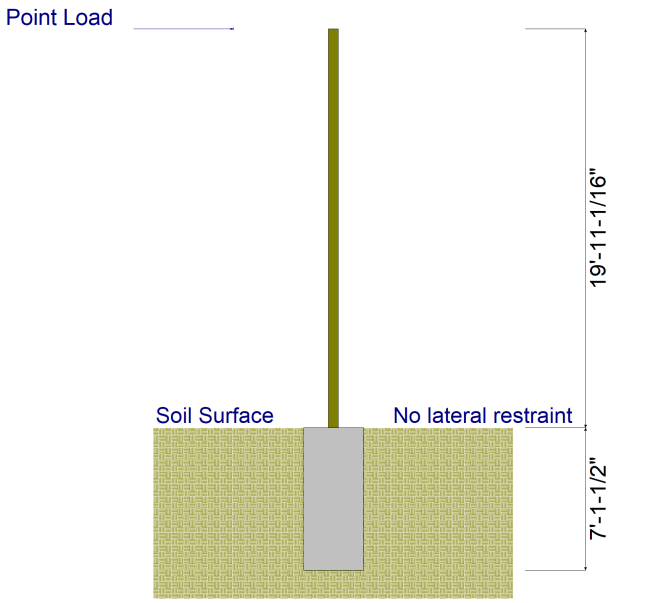
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16
Load Combinations Used : ASCE 7-16

General Information

Pole Footing Shape	Circular
Pole Footing Diameter	36.0 in
Calculate Min. Depth for Allowable Pressures	
No Lateral Restraint at Ground Surface	
Allow Passive	200.0 pcf
Max Passive	1,500.0 psf

Controlling Values

Governing Load Combination :	+D+W
Lateral Load	1.019 k
Moment	20.302 k-ft
NO Ground Surface Restraint	
Pressures at 1/3 Depth	
Actual	465.497 psf
Allowable	466.839 psf
Minimum Required Depth	7.125 ft
Footing Base Area	7.069 ft^2
Maximum Soil Pressure	0.1504 ksf



Provide 36" Dia. x 7.5' Embed. Circular Caisson

Applied Loads

	Lateral Concentrated Load (k)	Lateral Distributed Loads (klf)	Vertical Load (k)
D : Dead Load	k	k/ft	1.063 k
Lr : Roof Live	k	k/ft	k
L : Live	k	k/ft	k
S : Snow	k	k/ft	k
W : Wind	1.019 k	k/ft	k
E : Earthquake	k	k/ft	k
H : Lateral Earth	k	k/ft	k
Load distance above ground surface	19.923 ft	TOP of Load above ground surface: ft	
		BOTTOM of Load above ground surface: ft	

Load Combination Results

Load Combination	Forces @ Ground Surface: Loads - (k)	Forces @ Ground Surface: Moments - (ft-k)	Required: Depth - (ft)	Pressure at 1/3 Depth: Actual - (psf)	Pressure at 1/3 Depth: Allow - (psf)	Soil Increase: Factor
+D+W	1.019	20.302	7.13	465.5	466.8	1.000

All States Engineering & Surveying
Zalzali & Associates, Inc.
23675 Birtcher Drive
Lake Forest
CA
92630

Project Title: Lighht Pole Caisson Embedment Depth
Engineer:
Project ID: Palo Alto Light Pole
Project Descr:

Concrete Caisson

Lic. # : KW-06009186 — Zalzali & Associates Inc.

DESCRIPTION: Design Concrete Caisson

Code References

Calculations per ACI 318-14, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : ASCE 7-16

General Information

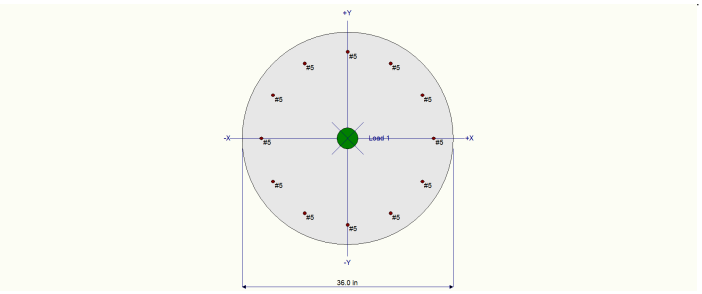
f'c : Concrete 28 day strength	=	3.250 ksi
E =	=	3,122.0 ksi
Density	=	150.0 pcf
β	=	0.850
fy - Main Rebar	=	60.0 ksi
E - Main Rebar	=	29,000.0 ksi
Allow. Reinforcing Limits		*ASTM A615 Bars Used*
Min. Reinf.	=	0.250 %
Max. Reinf.	=	8.0 %

Overall Caisson Height = 7.50 ft
End Fixity: Top Free, Bottom Fixed
Brace condition for deflection (buckling) along Caisson :
X-X (width) axis :
Fully braced against buckling ABOUT Y-Y Axis
Y-Y (depth) axis :
Fully braced against buckling ABOUT X-X Axis

Caisson Cross Section

Caisson Dimensions : 36.0in Diameter, Caisson Edge to Rebar Edge Cover = 3.0in

Caisson Reinforcing : 12 - #5 bars



Applied Loads

Entered loads are factored per load combinations specified by user.

Caisson self weight included : 7,952.16 lbs * Dead Load Factor
AXIAL LOADS . . .
Reaction from Pole: Axial Load at 7.50 ft above base, D = 1.063 k
BENDING LOADS . . .
Reaction from Pole: Lat. Point Load at 7.0 ft creating Mx-x, W = 1.698 k
Reaction from Pole: Moment acting about X-X axisat 7.0 ft, W = 33.836 k-ft

DESIGN SUMMARY

Load Combination: +0.90D+W+1.60H
Location of max.above base: 7.450 ft

Maximum Stress Ratio: 0.097 : 1
Ratio = (Pu^2+Mu^2)^.5 / (PhiPn^2+PhiMn^2)^.5

Pu =	8.114 k	φ * Pn =	86.887 k
Mu-x =	33.830 k-ft	φ * Mn-x =	-356.890 k-ft
Mu-y =	0.0 k-ft	φ * Mn-y =	0.0 k-ft
Mu Angle =	0.0 deg		
Mu at Angle =	33.830 k-ft	φMn at Angle =	350.522 k-ft

Pn & Mn values located at Pu-Mu vector intersection with capacity curve

Caisson Capacities . . .

Pnmax : Nominal Max. Compressive Axial Capacity	3,024.81 k
Pnmin : Nominal Min. Tension Axial Capacity	k
φ Pn, max : Usable Compressive Axial Capacity	1,799.76 k
φ Pn, min : Usable Tension Axial Capacity	k

Maximum SERVICE Load Reactions . .

Top along Y-Y	0.0 k	Bottom along Y-Y	0.0 k
Top along X-X	0.0 k	Bottom along X-X	1.019 k

Maximum SERVICE Load Deflections . . .
Along Y-Y -0.004886 in at 7.50 ft above base
for load combination : W Only
Along X-X 0.0 in at 0.0 ft above base
for load combination :

General Section Information . φ = 0.70 β = 0.850 θ = 0.850
ρ : % Reinforcing 0.3655 % Rebar % Ok
Reinforcing Area 3.720 in^2
Concrete Area 1,017.88 in^2

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92630

Project Title: Lighht Pole Caisson Embedment Depth
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Project ID: Palo Alto Light Pole
Project Descr:

Concrete Caisson

File: Caisson Depth.ec6

Lic. # : KW-06009186
Zalzali & Associates Inc.

DESCRIPTION: Design Concrete Caisson

Governing Load Combination Results

Governing Factored Load Combination	Moment X-X	Moment Y-Y	Dist. from base ft	Axial Load k Pu	φ * Pn	δx	δx * Mux	δy	δy * Muy	Bending Analysis k-ft Alpha (deg)	δ Mu	φ Mn	Utilization Ratio
+1.40D+1.60H			7.45	12.62	1,799.76					0.000			0.007
+1.20D+0.50Lr+L+W+1.60H	Actual		7.45	10.82	121.85	1.000	33.83			0.000	33.83	386.20	0.088
+0.90D+W+1.60H	Actual		7.45	8.11	86.89	1.000	33.83			0.000	33.83	350.52	0.097

Maximum Reactions

Note: Only non-zero reactions are listed.

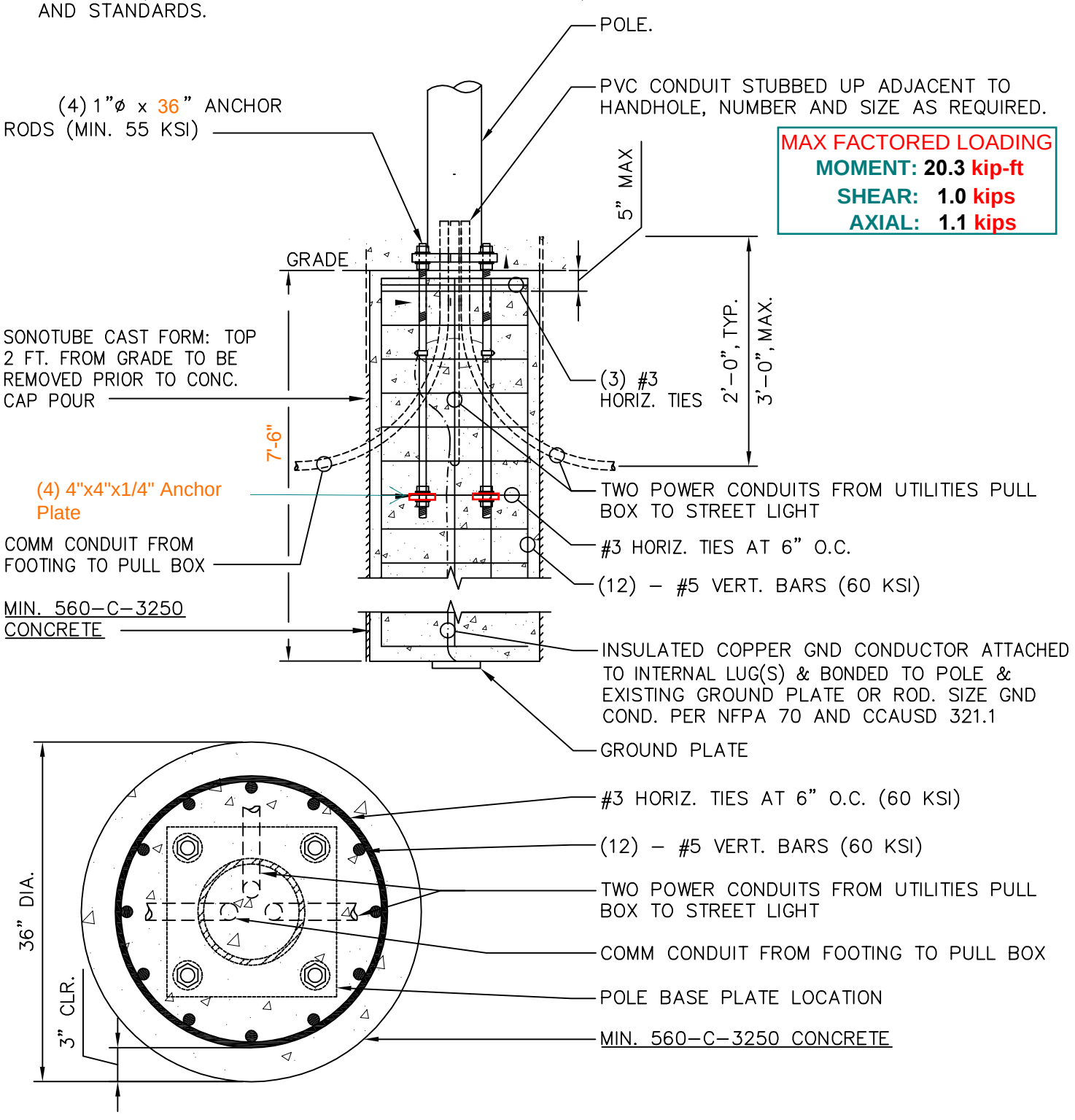
Load Combination	X-X Axis Reaction k @ Base	@ Top	Y-Y Axis Reaction @ Base	@ Top	Axial Reaction @ Base	My - End Moments k-ft @ Base	@ Top	Mx - End Moments @ Base	@ Top
+D+H					9.015				
+D+0.60W+H			1.019		9.015	13.169			
+0.60D+0.60W+0.60H			1.019		5.409	13.169			

Maximum Moment Reactions

Note: Only non-zero reactions are listed.

Load Combination	Moment About X-X Axis @ Base	@ Top		Moment About Y-Y Axis @ Base	@ Top	
+D+H			k-ft			k-ft
+D+0.60W+H	13.169		k-ft			k-ft
+0.60D+0.60W+0.60H	13.169		k-ft			k-ft

NOTE:
THIS INFORMATION MAY NOT CONTAIN ALL DETAILS REQUIRED FOR CONSTRUCTION. APPROPRIATE MODIFICATION MAY BE REQUIRED TO ENSURE SUITABILITY OF THESE DRAWINGS FOR THE SPECIFIC APPLICATION. IT IS THE USER'S RESPONSIBILITY TO ENSURE INSTALLATION OF THE EQUIPMENT/SYSTEM IS IN ACCORDANCE WITH BUILDING/PROJECT SPECIFICATIONS, APPLICABLE CODES AND STANDARDS.



FOUNDATION DETAIL

DO NOT SCALE DRAWINGS

THIS DRAWING IS NOT TO SCALE. SUBCONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS & FIELD CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

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.

ALLSTATES ENGINEERING & SURVEYING
23675 BIRTCHER DRIVE
LAKE FOREST, CA 92630

Vinculums
575 LENNON LANE #125
WALNUT CREEK, CA 94598
OFFICE: (925) 482-8500

Verizon Wireless • Proposed Small Cells
Three Pole Locations • Palo Alto, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a wireless telecommunications carrier, to evaluate three small cells proposed to be sited in Palo Alto, California, for compliance with municipal limits on sound levels from the installations.

Executive Summary

Verizon proposes to install antennas and equipment on three light poles sited in the public right-of-way in Palo Alto. Noise from the proposed operations will comply with the City's pertinent noise limits.

Prevailing Standard

Palo Alto adopted Resolution No. 9825 (April 15, 2019) "Resolution of the Council of the City of Palo Alto Adopting Objective Aesthetic, Noise, and Related Standards for Wireless Communication Facilities in the Public Rights of Way," which sets limits on noise at residential areas for wireless facilities installed in public rights-of-way. Noise at the nearest residential property line is limited to an increase of 5 dB over existing ambient levels, if the ambient noise level would remain below 60 dBA L_{dn}, or to an increase of 3 dB, otherwise. The composite "day-night" average L_{dn} incorporates a 10 dB penalty during nighttime hours (10 pm to 7 am), to reflect typical residential conditions, where noise is more readily heard at night. By definition, sound from a continuous noise source will be 6.4 dB higher when expressed in L_{dn}.

It is noted that the amended language also references Chapter 9.10 of the Code, which had set a more relaxed increase of 15 dB increase for such WCF sitings, assessed at 25 feet from the pole. It is assumed for this study that the minimum reference ambient level is 40 dBA, as defined in Chapter 9.10.

A summary of noise assessment and calculation methodologies is shown in Figure 1.

General Facility Requirements

Small cells typically consist of two distinct parts: the electronic transceivers (also called "radios"), that are connected to traditional wired telephone lines, and the antennas that send wireless signals created by the radios out to be received by individual subscriber units. The radios are typically mounted on the support pole or placed in a cabinet at the base of the pole, and are connected to the antennas by cables. Some radios require fans to cool the electronics inside. Some radios are integrated with the antennas as a single unit.

Site & Facility Description

According to information provided by Verizon, that carrier proposes to install a cylindrical antenna and two Ericsson Model 4402 radio units within a shroud on top of the light pole in the public right-of-way at each of the three locations listed in Table 1, and three Ericsson Model 6701 antennas, with integrated radios, within shrouds below the light arm on the pole.

Study Results

Ericsson reports that the maximum noise level from any one Model 4402 radio is 40.9 dBA,* and that the maximum noise level from three Model 6701 units is 39.6 dBA,* both at a reference distance of 5 feet. The cylindrical antenna is passively cooled, generating no noise.

At a distance of 6¼ feet, the calculated noise level from the simultaneous operation of this combined equipment would result in an increase not exceeding 5 dB above the minimum allowed ambient level of 40 dBA; the increase above the ambient would be less than 5 dB for any siting of the equipment beyond this distance. If the existing ambient were determined to be above 40 dBA statutory minimum, then the calculated increase due to the Verizon operation would, by definition, decrease. **All of the proposed small cells in Table 1 meet this distance requirement.**

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of these Verizon Wireless small cells proposed in Palo Alto will, under the conditions noted above, comply with the municipal standards limiting acoustic noise emission levels.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2021. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

William F. Hammett, P.E.
707/996-5200

December 16, 2020

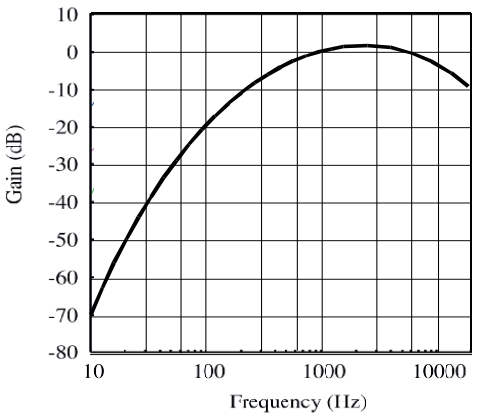
* Adjusted value based on manufacturer data, to reflect record high temperature of 107°F in Palo Alto.

Small Cell No.	Approximate Address	Nearest Residential Property
425225 "SF Palo Alto 121"	1600 El Camino Real (CA-82)	120 feet
425266 "SF Palo Alto 162"	158-164 Quarry Road	1,130 feet
425268 "SF Palo Alto 164"	Arboretum Road	200 feet

Table 1. Proposed Verizon small cells

Noise Level Calculation Methodology

Most municipalities and other agencies specify noise limits in units of dBA, which is intended to mimic the reduced receptivity of the human ear to Sound Pressure ("L_P") at particularly low or high frequencies. This frequency-sensitive filter shape, shown in the graph to the right as defined in the International Electrotechnical Commission Standard No. 179, the American National Standards Institute Standard No. 5.1, and various other standards, is also incorporated into most calibrated field test equipment for measuring noise levels.



30 dBA	library
40 dBA	rural background
50 dBA	office space
60 dBA	conversation
70 dBA	car radio
80 dBA	traffic corner
90 dBA	lawnmower

The dBA units of measure are referenced to a pressure of 20 µPa (micropascals), which is the threshold of normal hearing. Although noise levels vary greatly by location and noise source, representative levels are shown in the box to the left.

Manufacturers of many types of equipment, such as air conditioners, generators, and telecommunications devices, often test their products in various configurations to determine the acoustical emissions at certain distances. This data, normally expressed in dBA at a known reference distance, can be used to determine the corresponding sound pressure level at any particular distance, such as at a nearby building or property line. The sound pressure drops as the square of the increase in distance, according to the formula:

$$L_P = L_K + 20 \log(D_K/D_P),$$

where L_P is the sound pressure level at distance D_p and L_K is the known sound pressure level at distance D_K.

Individual sound pressure levels at a particular point from several different noise sources cannot be combined directly in units of dBA. Rather, the units need to be converted to scalar sound intensity units in order to be added together, then converted back to decibel units, according to the formula:

where L_T is the total sound pressure level and L_1, L_2, etc are individual sound pressure levels.

$$L_T = 10 \log \left(10^{L_1/10} + 10^{L_2/10} + \ldots\right),$$

Certain equipment installations may include the placement of barriers and/or absorptive materials to reduce transmission of noise beyond the site. Noise Reduction Coefficients ("NRC") are published for many different materials, expressed as unitless power factors, with 0 being perfect reflection and 1 being perfect absorption. Unpainted concrete block, for instance, can have an NRC as high as 0.35. However, a barrier's effectiveness depends on its specific configuration, as well as the materials used and their surface treatment.

Verizon Wireless • Proposed Small Cell (No. 425268 "SF Palo Alto 164")
Arboretum Road • Palo Alto, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate its small cell (No. 425268 "SF Palo Alto 164") proposed to be sited in Palo Alto, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

Verizon proposes to install four small antennas on the municipal light pole sited in the public right-of-way along Arboretum Road in Palo Alto. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. A summary of the FCC's exposure limits is shown in Figure 1. 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. The most restrictive limit for exposures of unlimited duration at several wireless service bands are as follows:

Wireless Service Band	Transmit Frequency	"Uncontrolled" Public Limit	Occupational Limit (5 times Public)
Microwave (point-to-point)	1–80 GHz	1.0 mW/cm^2	5.0 mW/cm^2
Millimeter-wave	24–47	1.0	5.0
Part 15 (WiFi & other unlicensed)	2–6	1.0	5.0
CBRS (Citizens Broadband Radio)	3,550 MHz	1.0	5.0
BRS (Broadband Radio)	2,490	1.0	5.0
WCS (Wireless Communication)	2,305	1.0	5.0
AWS (Advanced Wireless)	2,110	1.0	5.0
PCS (Personal Communication)	1,930	1.0	5.0
Cellular	869	0.58	2.9
SMR (Specialized Mobile Radio)	854	0.57	2.85
700 MHz	716	0.48	2.4
600 MHz	617	0.41	2.05
[most restrictive frequency range]	30–300	0.20	1.0

General Facility Requirements

Small cells typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The radios are typically mounted on the support pole or placed in a cabinet at ground level, and they are

connected to the antennas by coaxial cables. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. This means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

Computer Modeling Method

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation," dated August 1997. Figure 2 describes the calculation methodologies, reflecting the facts that a directional antenna's radiation pattern is not fully formed at locations very close by (the "near-field" effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the "inverse square law"). This methodology is an industry standard for evaluating RF exposure conditions and has been demonstrated through numerous field tests to be a conservative prediction of exposure levels.

Site and Facility Description

Based upon information provided by Verizon, including drawings by All States Engineering & Surveying, dated June 9, 2020, it is proposed to install four 2-foot-tall antennas – one CommScope Model VVSSP-360S-M omnidirectional* cylindrical and three Ericsson Model 6701 directional panels with integrated radios – on a new light pole to replace the existing pole sited in the public right-of-way in the median of Arboretum Road, about 190 feet southeast of its intersection with Sand Hill Road in Palo Alto. The CommScope antenna would be mounted on top of the pole at an effective height of about 31 feet above ground and would employ up to 13° downtilt. The Ericsson antennas would be mounted around the pole below the light arm at an effective height of about 21 feet above ground and would be oriented toward 40°T, 160°T, and 280°T, together forming an omnidirectional* pattern. The maximum effective radiated power proposed in any direction is 308 watts, representing 57 watts for AWS service and 58 watts for PCS service from the CommScope antenna and 193 watts for 28 GHz service from the Ericsson antennas. There are reported no other wireless telecommunications base stations at the site or nearby.

* Assumed to be omnidirectional, although manufacturer's patterns show reduced power in certain directions.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation is calculated to be 0.016 mW/cm^2, which is 1.6% of the applicable public exposure limit. The maximum calculated level at any nearby building[†] is 0.27% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels from the proposed operation.

Recommended Mitigation Measures

Due to their mounting locations and heights, the antennas would not be accessible to unauthorized persons, and so no measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training be provided to all workers who have access within 8 feet outward from the antennas.[‡] No access within 2 feet directly in front of the antennas should be allowed while they are in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. It is recommended that explanatory signs[§] be posted at the antennas and/or on the pole below the antennas, readily visible from any angle of approach.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the small cell proposed by Verizon Wireless along Arboretum Road in Palo Alto, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating small cells. Training authorized personnel and posting explanatory signs are recommended to establish compliance with FCC guidelines.

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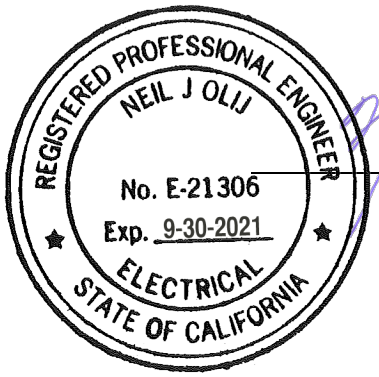
† Located at least 190 feet away, based on photographs from Google Maps.

‡ May include workers on the pole or on a lift to trim nearby trees.

§ Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidelines from the landlord, local zoning or health authority, or appropriate professionals may be required.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration No. E-21306, which expires on September 30, 2021. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



Neil J. Olij, P.E.
707/996-5200

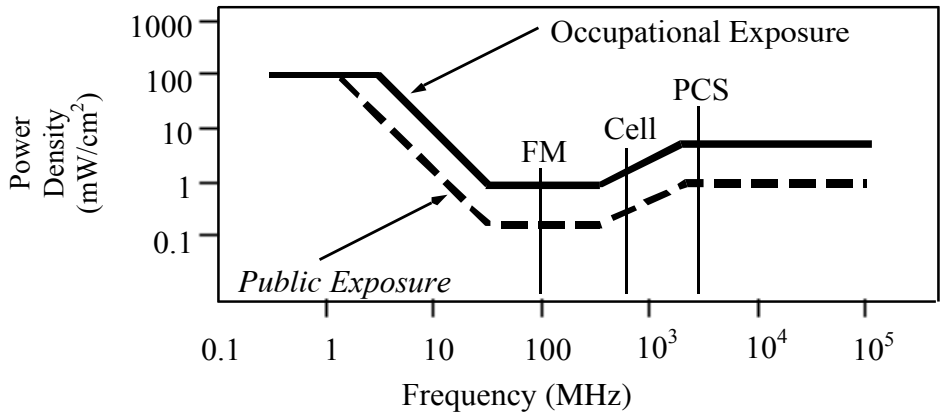
December 16, 2020

FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements ("NCRP"). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes similar limits. These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

Frequency	Electromagnetic Fields (f is frequency of emission in MHz)					
Applicable Range (MHz)	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm^2)	
0.3 – 1.34	614	*614*	1.63	*1.63*	100	*100*
1.34 – 3.0	614	*823.8/ f*	1.63	*2.19/ f*	100	*180/ f^2*
3.0 – 30	1842/ f	*823.8/ f*	4.89/ f	*2.19/ f*	900/ f^2	*180/ f^2*
30 – 300	61.4	*27.5*	0.163	*0.0729*	1.0	*0.2*
300 – 1,500	$3.54\sqrt{f}$	*$1.59\sqrt{f}$*	$\sqrt{f}/106$	*$\sqrt{f}/238$*	f/300	*f/1500*
1,500 – 100,000	137	*61.4*	0.364	*0.163*	5.0	*1.0*



Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has incorporated those formulas in a computer program capable of calculating, at thousands of locations on an arbitrary grid, the total expected power density from any number of individual radio frequency sources. The program allows for the inclusion of uneven terrain in the vicinity, as well as any number of nearby buildings of varying heights, to obtain more accurate projections.

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The maximum permissible exposure limits adopted by the FCC (see Figure 1) apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

Near Field.
Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications base stations, as well as dish (aperture) antennas, typically used for microwave links. The antenna patterns are not fully formed in the near field at these antennas, and the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives suitable formulas for calculating power density within such zones.

For a panel or whip antenna, power density $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$, in mW/cm^2,

and for an aperture antenna, maximum power density $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$, in mW/cm^2,

where θ_{BW} = half-power beamwidth of antenna, in degrees,
P_{net} = net power input to antenna, in watts,
D = distance from antenna, in meters,
h = aperture height of antenna, in meters, and
η = aperture efficiency (unitless, typically 0.5-0.8).

The factor of 0.1 in the numerators converts to the desired units of power density.

Far Field.
OET-65 gives this formula for calculating power density in the far field of an individual RF source:

power density $S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}$, in mW/cm^2,

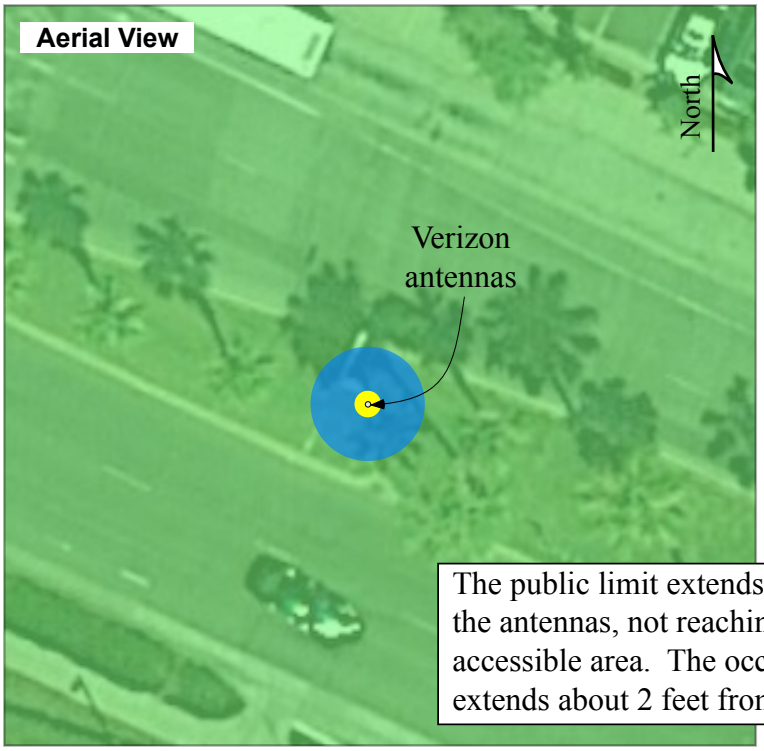
where ERP = total ERP (all polarizations), in kilowatts,
RFF = three-dimensional relative field factor toward point of calculation, and
D = distance from antenna effective height to point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula is used in a computer program capable of calculating, at thousands of locations on an arbitrary grid, the total expected power density from any number of individual radio frequency sources. The program also allows for the inclusion of uneven terrain in the vicinity, as well as any number of nearby buildings of varying heights, to obtain more accurate projections.

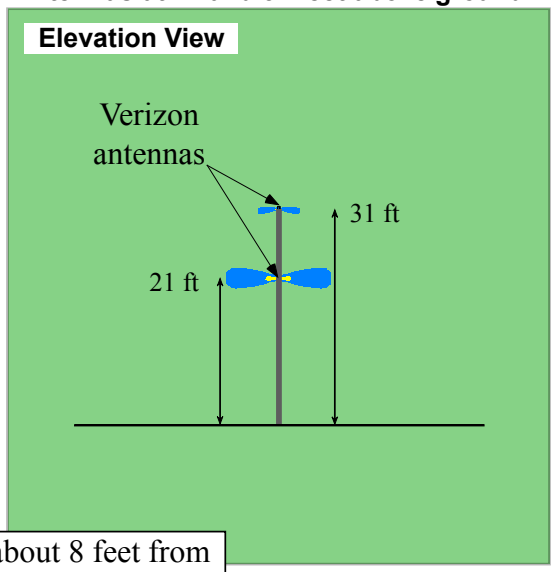
Verizon Wireless • Proposed Small Cell (No. 425268 "SF Palo Alto 164")
Arboretum Road • Palo Alto, California

Calculated RF Exposure Levels

at Elevation of Lower Antennas (19½ – 22½ feet above ground)



Antennas at 21 and 31 feet above ground



The public limit extends about 8 feet from the antennas, not reaching any publicly accessible area. The occupational limit extends about 2 feet from the antennas.

at Ground, at 10 feet above ground, and at Nearby Buildings

sign on pole at or below antennas →

NOTICE

RADIO FREQUENCY ANTENNAS

Verizon ANTENNAS on this pole

DO NOT APPROACH
within 8 feet at or above 19 feet above ground

RF exposure there *may* exceed FCC General Population Limits

Contact Verizon at 1-800-264-6620
Site No. 425268

Legend:

- less than FCC Public Limit
- greater than FCC Public Limit less than FCC Occupational Limit
- greater than FCC Occupational Limit

Notes:

Calculations performed according to OET Bulletin No. 65, August 1997.

Base image from Google Maps.

FEET
10 0 10 20

ENVIRONMENTAL ASSESSMENT WORKSHEET

City of Palo Alto
Department of Planning & Development Services

Palo Alto 164

GENERAL INFORMATION: **Date Filed** 01/29/21

1. Address of Project: ARBORETUM RD.
2. Assessor's Parcel Number: 142-03-039 Book #:_____ Page #:_____
3. Application Number(s):_____
4. Applicant:

   Name Verizon Wireless c/o Vinculums Services Telephone 925-202-8654

   Address 575 Lennon Ln. #125 Fax # _____

   Walnut Creek, CA 94598 E-mail jstroup@vinculums.com

5. Owner:

   Name City of Palo Alto Utilities Telephone 650-329-2161

   Address 250 Hamilton Ave. Fax # 650-617-3142

   Palo Alto, CA 94301 E-mail _____

6. Current Zoning:_____ Comprehensive Plan Designation _____

7. Application for:

   Site and Design_____ Parcel Map_____ ARB Review_____

   Use Permit X Zone Change_____ EIA, EIR_____

EXISTING SITE:

8. State all known or suspected prior uses, operations, or other activities on the site over the past 20 years Utility pole - Right-of-Way

9. Size of site: Gross N/A Net N/A

10. Site is owned _____ Rented X by applicant.

11. Existing use of property: UTILITY POLE RIGHT-OF-WAY
*Attach photographs of project site, also include an aerial photo of the project site.

12. Number of existing structures N/A Current Use UTILITY POLE

13. Size of existing structures _____ Condition UTILITY POLE

14. Will any structure be demolished for this project Yes X No _____

15. Total square footage to be demolished N/A

16. Total number of building occupants for existing use N/A

17. Number of parking spaces N/A % compact spaces N/A # Bicycle spaces N/A

18. If current use is residential:

Number of owner-occupied units N/A
Number of renter-occupied units N/A

PROPOSED PROJECT:

19. Project description INSTALL SMALL CELL 4G & 5G ANTENNAS ON POLE

20. Future tenant if known UTILITY POLE

21. Number of structures proposed N/A Size (in square feet) N/A

22. Number of floors and building height N/A FAR N/A

23. Percentage of site to be covered (including bricks and pavers) N/A

24. Estimated number of employees per shift N/A

25. If the proposed project is residential:

    Total number of units N/A Number of units per acre N/A

    Expected sales price or monthly rent per dwelling unit N/A

    List kinds and size of community buildings N/A

    Area of private open space N/A Area of common open space N/A

    Provision of low/moderate income units:

    1) Number of units provided for: Sale N/A Rent N/A

    2) Sale and / or rental price N/A

26. Total number of vehicles expected daily for proposed project 1 PER QTR., 4 PER YEAR

27. Number of proposed parking spaces N/A Percentage compact spaces N/A

    Number of bicycle spaces N/A

28. Are there any toxic wastes to be discharged? Yes_____ No X

    (If yes, please complete a Sewer Discharge Questionnaire, which is furnished by the Building Department)

29. Has the facility in the past or will the operation of the proposed facility involve the storage or use of Hazardous materials? Yes_____ No X

    (If yes, please complete a Hazardous Materials Disclosure checklist, which is furnished by the Fire Department)

30. Expected amount of water usage (except for residential developments of fewer than 4 units not located in the foothills)

Domestic N/A gal/day Peak use N/A gal/day

Commercial N/A gal/day Peak use N/A gal/day

31. Daily sewer discharge (over 30 fixtures only) N/A

32. Expected energy use:

Gas N/A therms Electric 0.645 KWH Peak electric demand _____

Uses and equipment sizes

A. Space heating:

Gas N/A BTUH _____ Solar N/A

Electric N/A KW _____ Heat pump _____ Tons _____

Other N/A

B. Air conditioning:

Number of units N/A Total tonnage _____

C. Water heating:

Gas N/A BTUH _____ Solar N/A

Electric N/A KW _____ Heat Pump _____ Tons _____

Other N/A

Type: Central system N/A Individual system N/A

Recirculating Loop? Yes N/A No N/A

D. Other:

Indoor lighting N/A KW _____ Outdoor lighting N/A KW _____

Cooking N/A KW _____ Refrigeration N/A Tons or ft _____

Motors N/A HP _____ x-ray N/A Computer N/A

33. Air pollution emissions (Check applicable BAAQMD regulations).

Commercial / Industrial only: Source N/A

Type N/A Amount N/A

34. Noise generation: eg. Generators, chitlers, HVAC, drive through speakers, etc.

Source FANS _____ Amount (dBa) 40.9 dBA

Please list outside noise sources that may affect the project: eg. Traffic, train etc._____

Sound proofing/mitigation proposed_____

_____

35. Site drainage provisions N/A

36. Amount of proposed grading (cubic yards) N/A Cut N/A Fill N/A

37. Disposition of excavated material N/A

38. Permits required from other agencies:

Santa Clara Valley Water District N/A

Bay Area Air Quality Management District N/A

Army Corps of Engineers N/A

Other_____

Environmental Setting:

39. Percent and direction of ground slope at site N/A

40. Is this site within a special flood hazard area? Yes_____ No X

41. Existing site vegetation (please list, and indicate any to be removed)
*Also include a tree disclodure statement. The size and location of all public, protected private, and heritage trees must be shown. (This form can be obtained at the Development Center or by calling (650) 617-314) PLEASE SEE TREE TABLE ON PAGE A-1 OF PLAN SET

42. Existing animal and bird life on site NONE

43. Detailed description of conditions and uses of adjacent properties COMMERCIAL

Prepared by JEREMY STROUP Date 01/29/21

Note: More information may be required before the application for which this assessment has been prepared can be processed. Please call the Department of Planning & Development Services at (650) 329-2442 if you have any questions.

PLEASE RETURN COMPLETED WORKSHEET TO THE DEPARTMENT OF PLANNING & DEVELOPMENT SERVICES, DEVELOPMENT CENTER, 285 HAMILTON AVENUE, 1ST FLOOR.

Federal Communications Commission - Local and State Government Advisory Committee
(June 2000)

A Local Government Official's Guide to Transmitting Antenna RF Emission Safety: Rules, Procedures, and Practical Guidance

Over the past two years, the Federal Communications Commission (FCC) and its Local and State Government Advisory Committee (LSGAC) have been working together to prepare a voluntary guide to assist state and local governments in devising efficient procedures for ensuring that the antenna facilities located in their communities comply with the FCC's limits for human exposure to radiofrequency (RF) electromagnetic fields. The attached guide is the product of this joint effort.

We encourage state and local government officials to consult this guide when addressing issues of facilities siting within their communities. This guide contains basic information, in a form accessible to officials and citizens alike, that will alleviate misunderstandings in the complex area of RF emissions safety. This guide is not intended to replace OET Bulletin 65, which contains detailed technical information regarding RF issues, and should continue to be used and consulted for complex sites. The guide contains information, tables, and a model checklist to assist state and local officials in identifying sites that do not raise concerns regarding compliance with the Commission's RF exposure limits. In many cases, the model checklist offers a quick and effective way for state and local officials to establish that particular RF facilities are unlikely to exceed specific federal guidelines that protect the public from the environmental effects of RF emissions. Thus, we believe this guide will facilitate federal, state, and local governments working together to protect the public while bringing advanced and innovative communications services to consumers as rapidly as possible. We hope and expect that use of this guide will benefit state and local governments, service providers, and, most importantly, the American public.

We wish all of you good luck in your facilities siting endeavors.

William E. Kennard, Chairman
Federal Communications Commission

Kenneth S. Fellman, Chair
Local and State Government
Advisory Committee

Federal Communications Commission - Local and State Government Advisory Committee (June 2000)

A Local Government Official's Guide to Transmitting Antenna RF Emission Safety: Rules, Procedures, and Practical Guidance

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APPENDIX A

Optional Checklist for Local Government
To Determine Whether a Facility is Categorically Excluded

Purpose: The FCC has determined that many wireless facilities are unlikely to cause human exposures in excess of RF exposure guidelines. Operators of those facilities are exempt from routinely having to determine their compliance. These facilities are termed "categorically excluded." Section 1.1307(b)(1) of the Commission's rules defines those categorically excluded facilities. This checklist will assist state and local government agencies in identifying those wireless facilities that are categorically excluded, and thus are highly unlikely to cause exposure in excess of the FCC's guidelines. Provision of the information identified on this checklist may also assist FCC staff in evaluating any inquiry regarding a facility's compliance with the RF exposure guidelines.

BACKGROUND INFORMATION

1. Facility Operator's Legal Name: GTE MOBILENET OF CA, LP, dba VERIZON WIRELESS
2. Facility Operator's Mailing Address: 2785 MITCHELL DR., WALNUT CREEK, CA 94598
3. Facility Operator's Contact Name/Title: JEREMY STROUP - SITE ACQ. MANAGER
4. Facility Operator's Office Telephone: 925-202-8654
5. Facility Operator's Fax:
6. Facility Name: SF PALO ALTO 164
7. Facility Address: ARBORETUM RD.
8. Facility City/Community: PALO ALTO
9. Facility State and Zip Code: CA 94304
10. Latitude: 37.440400
11. Longitude: -122.173608

continue

Optional Local Government Checklist (page 2)

EVALUATION OF CATEGORICAL EXCLUSION

		AWS (part 27)	PCS (part 24)	28 GHz (part 30)
12.	Licensed Radio Service (see attached Table 1):			
13.	Structure Type (free-standing or building/roof-mounted):	• • • • • • • free-standing • • • • • • • •		
14.	Antenna Type (omnidirectional or directional):	omni	omni	directional
15.	Height above ground of the lowest point of the antenna:	9.1 m	9.1 m	5.8 m

16. ☐ Check if all of the following are true:
   (a) This facility will be operated in the Multipoint Distribution Service, Paging and Radiotelephone Service, Cellular Radiotelephone Service, Narrowband or Broadband Personal Communications Service, Private Land Mobile Radio Services Paging Operations, Private Land Mobile Radio Service Specialized Mobile Radio, Local Multipoint Distribution Service, or service regulated under Part 74, Subpart I (see question 12).
   (b) This facility will <u>not</u> be mounted on a building (see question 13).
   (c) The lowest point of the antenna will be at least 10 meters above the ground (see question 15).

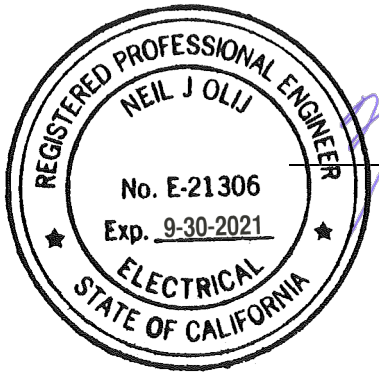
If box 16 is checked, this facility is categorically excluded and is unlikely to cause exposure in excess of the FCC's guidelines. The remainder of the checklist need not be completed. If box 16 is not checked, continue to question 17.

17.	Enter the power threshold for categorical exclusion for this service from the attached Table 1 in watts ERP or EIRP:	1,000 W	2,000 W		Table 1 does not include part 30
18.	Enter the total number of channels:	not applicable			
19.	Enter the ERP or EIRP per channel:	not applicable			
20.	Total ERP or EIRP:	57 W	58 W	193 W	
21.	Is the answer to question 20 less than or equal to the value from question 17 (yes or no)?	NO			

If the answer to question 21 is YES, this facility is categorically excluded. It is unlikely to cause exposure in excess of the FCC's guidelines.

If the answer to question 21 is NO, this facility is not categorically excluded. Further investigation may be appropriate to verify whether the facility may cause exposure in excess of the FCC's guidelines.

Completion of this FCC checklist indicates that the proposed small cell operation is NOT categorically excluded from site-specific analysis. That further analysis has been done, as summarized in our report dated December 16, 2020. Our findings were that the proposed operation "will comply with the prevailing standards for limiting public exposure to radio frequency energy" and that "[t]raining authorized personnel and posting explanatory signs are recommended to establish compliance with FCC guidelines."



Neil J. Olij, P.E.

December 16, 2020
P82&V1-G1PT

TABLE 1: TRANSMITTERS, FACILITIES AND OPERATIONS SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION

SERVICE (TITLE 47 CFR RULE PART)	EVALUATION REQUIRED IF:
Experimental Radio Services (part 5)	power > 100 W ERP (164 W EIRP)
Multipoint Distribution Service (subpart K of part 21)	non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1640 W EIRP building-mounted antennas: power > 1640 W EIRP
Paging and Radiotelephone Service (subpart E of part 22)	non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1000 W ERP (1640 W EIRP) building-mounted antennas: power > 1000 W ERP (1640 W EIRP)
Cellular Radiotelephone Service (subpart H of part 22)	non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and total power of all channels > 1000 W ERP (1640 W EIRP) building-mounted antennas: total power of all channels > 1000 W ERP (1640 W EIRP)

TABLE 1 (cont.)

SERVICE (TITLE 47 CFR RULE PART)	EVALUATION REQUIRED IF:
Personal Communications Services (part 24)	(1) Narrowband PCS (subpart D): non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and total power of all channels > 1000 W ERP (1640 W EIRP) building-mounted antennas: total power of all channels > 1000 W ERP (1640 W EIRP) (2) Broadband PCS (subpart E): non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and total power of all channels > 2000 W ERP (3280 W EIRP) building-mounted antennas: total power of all channels > 2000 W ERP (3280 W EIRP)
Satellite Communications (part 25)	all included
General Wireless Communications Service (part 26)	total power of all channels > 1640 W EIRP
Wireless Communications Service (part 27)	total power of all channels > 1640 W EIRP
Radio Broadcast Services (part 73)	all included

TABLE 1 (cont.)

SERVICE (TITLE 47 CFR RULE PART)	EVALUATION REQUIRED IF:
Experimental, auxiliary, and special broadcast and other program distributional services (part 74)	subparts A, G, L: power > 100 W ERP subpart I: non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1640 W EIRP building-mounted antennas: power > 1640 W EIRP
Stations in the Maritime Services (part 80)	ship earth stations only
Private Land Mobile Radio Services Paging Operations (part 90)	non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1000 W ERP (1640 W EIRP) building-mounted antennas: power > 1000 W ERP (1640 W EIRP)
Private Land Mobile Radio Services Specialized Mobile Radio (part 90)	non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and total power of all channels > 1000 W ERP (1640 W EIRP) building-mounted antennas: total power of all channels > 1000 W ERP (1640 W EIRP)

TABLE 1 (cont.)

SERVICE (TITLE 47 CFR RULE PART)	EVALUATION REQUIRED IF:
Amateur Radio Service (part 97)	transmitter output power > levels specified in § 97.13(c)(1) of this chapter
Local Multipoint Distribution Service (subpart L of part 101)	non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1640 W EIRP building-mounted antennas: power > 1640 W EIRP LMDS licensees are required to attach a label to subscriber transceiver antennas that: (1) provides adequate notice regarding potential radiofrequency safety hazards, *e.g.,* information regarding the safe minimum separation distance required between users and transceiver antennas; and (2) references the applicable FCC-adopted limits for radiofrequency exposure specified in § 1.1310 of this chapter.

-end-

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5/13/2021

Jeremy Stroup
Real Estate Specialist III
Vinculums Services, LLC
10 Pasteur, Suite 100
Irvine, CA 92618
jstroup@vinculums.com
925-202-8654

Re: Tree Protection Measures at SF PALO ALTO 164 (Median at 313-331 Arboretum Rd., dual pole #13/14)

Dear Jeremy,

Cellular equipment will be mounted on a new metal light pole, #13/14, in the median adjacent to the above address. The new pole will be in approximately the same location as the existing pole, with three new handholes adjacent to the pole, connected to the pole by conduits installed via trenching. I visually estimated distances between trees and project features onsite.

Two Street Trees, both Mexican fan palms (*Washingtonia robusta*) overhang the construction area. Type II Tree Protection is required for both: the planting strip shall be enclosed from the light pole, to the outside edge of the tree's dripline. Install 5-6' high chain link fencing mounted on 2-inch diameter galvanized iron posts, driven into the ground to a depth of at least 2 feet at no more than 10-foot spacing. Trenching must be performed by hand. If any live roots are encountered during excavation, the recommendations in section 2.20 C apply:

C. Trenching, Excavation and Equipment Use

Trenching, excavation or boring activity within the TPZ is restricted to the following activities, conditions and requirements if approved by the *City Arborist*. *(See Restriction Zones for Excavation, Trenching or Boring Near Regulated Trees, Image 2.20-1 through 2.20-3)*. Mitigating measures shall include prior notification to and direct supervision by the *project arborist*.

1. Notification. Contractor shall notify the *project arborist* a minimum of 24 hours in advance of the activity in the TPZ.
2. Root Severance. Roots that are encountered shall be cut to sound wood and repaired (*see Root Injury, Section 2.25 A-1*). Roots 2-inches and greater must remain injury free.
3. Excavation. Any approved excavation, demolition or extraction of material shall be performed with equipment sitting outside the TPZ. Methods permitted are by hand digging, hydraulic or pneumatic air excavation technology. Avoid excavation within the TPZ during hot, dry weather.
    - If excavation or *trenching* for drainage, utilities, irrigation lines, etc., it is the duty of the contractor to tunnel under any roots 2-inches in diameter and greater.
    - Prior to excavation for foundation/footings/walls, grading or *trenching* within the TPZ, roots shall first be severed cleanly 1-foot outside the TPZ and to the depth of the future excavation. The trench must then be hand dug and roots pruned with a saw, sawzall, narrow trencher with sharp blades or other approved root pruning equipment.
4. Heavy Equipment. Use of backhoes, steel tread tractors or any heavy vehicles within the TPZ is prohibited unless approved by the *City Arborist*. If allowed, a protective *root buffer* (*see Root Buffer and Damage to Trees, Section 2.25.A-1*) is required. The protective buffer shall consist of a base course of tree chips spread over the root area to a minimum of 6-inch depth, layered by 3/4-inch quarry gravel to stabilize 3/4-inch plywood on top. This buffer within the TPZ shall be maintained throughout the entire construction process.
    - Structural design. If injurious activity or interference with roots greater than 2-inches will occur within the TPZ, plans shall specify a design of special foundation, footing, walls, concrete slab or pavement designs subject to *City Arborist* approval. Discontinuous foundations such as concrete pier and structural grade beam must maintain natural grade (not to exceed a 4-inch cut), to minimize root loss and allow the tree to use the existing soil.

No amenity trees are recommended at this site, as they would conflict aesthetically with the existing palms.

Tree Map

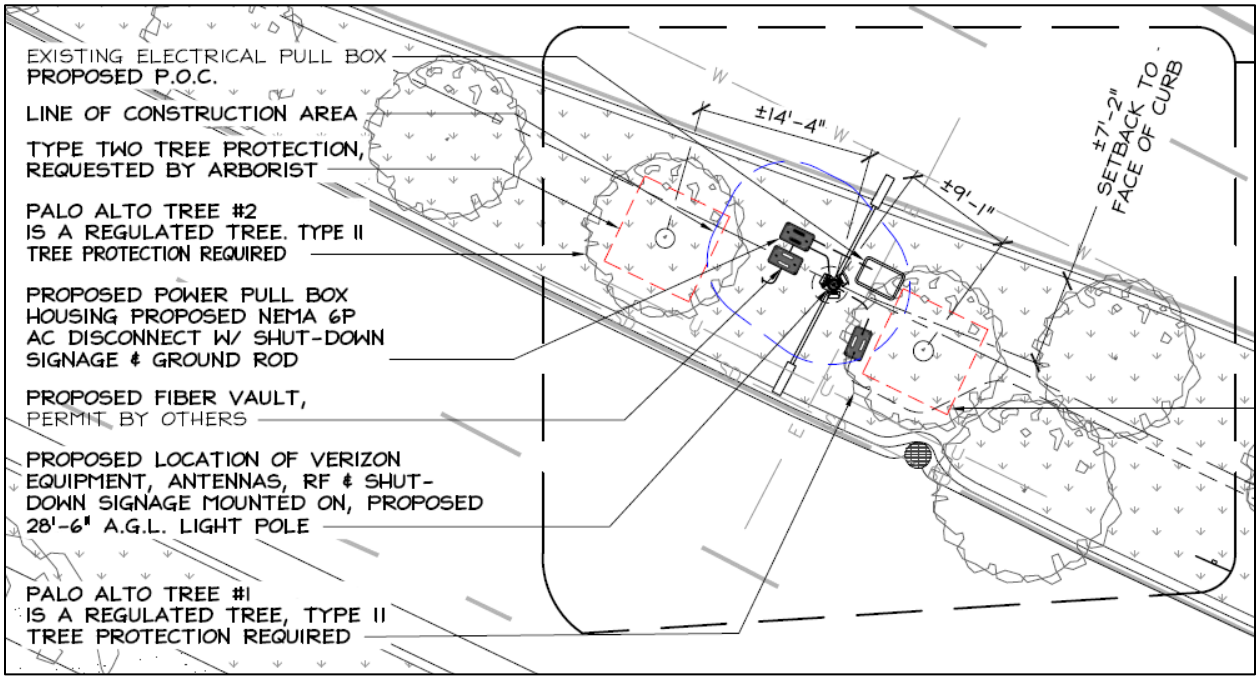

EXISTING ELECTRICAL PULL BOX
PROPOSED P.O.C.
LINE OF CONSTRUCTION AREA
TYPE TWO TREE PROTECTION, REQUESTED BY ARBORIST
PALO ALTO TREE #2 IS A REGULATED TREE. TYPE II TREE PROTECTION REQUIRED
PROPOSED POWER PULL BOX HOUSING PROPOSED NEMA 6P AC DISCONNECT W/ SHUT-DOWN SIGNAGE & GROUND ROD
PROPOSED FIBER VAULT, PERMIT BY OTHERS
PROPOSED LOCATION OF VERIZON EQUIPMENT, ANTENNAS, RF & SHUT-DOWN SIGNAGE MOUNTED ON, PROPOSED 28'-6" A.G.L. LIGHT POLE
PALO ALTO TREE #1 IS A REGULATED TREE, TYPE II TREE PROTECTION REQUIRED
±14'-4"
±9'-1"
±7'-2" SETBACK TO FACE OF CURB

Image 1: area around existing light pole

ASSUMPTIONS AND LIMITING CONDITIONS

1. Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

2. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other government regulations.

3. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.

4. The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

5. Loss, alteration, or reproduction of any part of this report invalidates the entire report.

6. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant/appraiser.

7. Neither all nor any part of this report, nor any copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of the consultant/appraiser particularly as to value conclusions, identity of the consultant/appraiser, or any reference to any professional society or initialed designation conferred upon the consultant/appraiser as stated in his qualification.

8. This report and the values expressed herein represent the opinion of the consult/appraiser, and the consult/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

9. Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.

10. Unless expressed otherwise: 1) information in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in future.

Respectfully submitted,

Katherine Naegele
Consulting Arborist
Anderson's Tree Care Specialists, Inc.
A TCIA Accredited Company
Master of Forestry, UC Berkeley
ISA Certified Arborist #WE-9658A
ISA Tree Risk Assessment Qualified
American Society of Consulting Arborists, Member
Office: 408 226-8733
Cell: 650 209-0631

www.andersonstreecare.com

COST RECOVERY AGREEMENT
BETWEEN THE CITY OF PALO ALTO
AND GTE MOBILNET OF CA, LP, DBA VERIZON WIRELESS FOR
SMALL CELL PROJECTS

This Cost Recovery Agreement ("Agreement") is entered into this 8th day of June, 2021 by and between the City of Palo Alto, a California chartered municipal corporation ("City"), GTE Mobilnet of CA, LP, dba Verizon Wireless with principal offices at 575 Lennon Lane, Ste. 125, Walnut Creek, CA 94598 ("Applicant").

WHEREAS, Applicant is seeking approval of numerous small cell wireless communication facilities in the City ("Project"); and

WHEREAS, level of review and processing for the Project exceeds the scope of services normally provided under the planning application and review fees established by the City; and

NOW, THEREFORE, in order to promote the fair and accurate cost-recovery for the services provided by City staff, the City and Applicant (collectively, the "Parties") agree as follows:

1. In lieu of the per-application planning fees specified in the Municipal Fee Schedule, the City shall bill Applicant at the currently applicable hourly cost recovery billing rates ("Hourly Rates") and pass-through consultant fees with the applicable administrative overhead rate. Hourly Rates effective $204.79 are provided in Exhibit A and subject to change by action of the Palo Alto City Council. Applicant to pay for all City staff and consultant time required to process and review the Project, including any appeals.

2. Within 10 days following full execution of this Agreement, Applicant shall provide the City with an initial deposit of nine thousand frou hundred eighty three dollars and fifty cents ($9,483.50) ("Initial Deposit") towards staff and consultant costs, as well as initial public notice costs. This Initial Deposit is in addition to deposits or other funds provided by Applicant prior to execution of this Agreement.

3. The City may require Applicant to provide additional deposits, for staff, consultant, and public noticing costs, each time Applicant submits an application related to the Project or in the event that one or more aspects of the project are appealed.

4. The City shall separately account for any amounts paid by Applicant for the Project. City shall debit Hourly Rates against such deposit account and provide Applicant with a periodic accounting of staff time charged towards the deposit. When the balance remaining in the deposit account falls below 20% of the Initial Deposit, the City will invoice Applicant for additional costs.

5. Applicant shall pay any additional invoices within 30 days and unpaid balances will accrue interest at the legal rate. The City reserves the right to suspend application processing or delay issuance of permits due to nonpayment. Applicant is legally responsible for payment of all fees, regardless of whether an entitlement is granted.

6. Following a final decision on the Project and project file closure, the City will provide Applicant with a final accounting, along with either a bill if actual processing costs exceeding the amount on deposit, or a refund if the remaining deposit amount exceeds actual processing costs.

7. The City's total billing for application processing shall not exceed the objectively reasonable costs to the City, with no exorbitant consultant fees, as required by the Federal Communications Commission and California law. FCC Rcd. 9088, ¶¶ 50, 56, 80; Government Code § 50030. Applicant reserves the right to challenge any deposit request, invoice or final accounting consistent with federal and state law requirements.

8. This Agreement is executed and delivered in the State of California and the rights and obligations of the parties hereunder shall be construed and enforced in accordance with the laws of the State of California.

9. This document represents the entire and integrated agreement between the parties and supersedes all prior negotiations, representations, and contracts, either written or oral. This document may be amended only by a written instrument, which is signed by the parties.

10. The individuals executing this Agreement represent and warrant that they have the legal capacity and authority to do so on behalf of their respective legal entities.

11. This Agreement may be signed in multiple counterparts, which shall, when executed by all the parties, constitute a single binding agreement

12. Each party affirms and acknowledges that he/she has had the opportunity to discuss this Agreement with legal counsel if so desired, and has read, fully appreciates, and understands the above words, terms, and provisions of the Agreement, is entirely satisfied with the terms described, and has fully executed the Agreement voluntarily and of his or her full free will and accord.

We agree to the Agreement set forth above.

Applicant

Jeremy Stroup

Title: Real Estate Specialist

Date: 06/08/21

City of Palo Alto

_____

City Manager

Date: _____

Approved as to form:

_____

Deputy City Attorney

PALO ALTO 164

CITY OF PALO ALTO

NOTICE OF PROPOSED PROJECT ON THIS SITE

Project Type: Tier 2 WCF

Date Submitted: February 09, 2021
Address: 250 HAMILTON AV
File Number: 21PLN-00056
Project Description: Request by Verizon Wireless for review of a Tier 2 Wireless Communication Facility Permit to locate three (3) antennas to metal streetlight poles owned and operated by the City of Palo Alto - also known as Vinculums Cluster 5. The project plans show the proposed locations, antennas/equipment design configurations, streetlight pole designs, power connections and additional siting information. Environmental Assessment: Pending.
Zoning District: PF (Public Facilities). For More Information Contact the Project Planner Garrett Sauls at Garrett.Sauls@CityofPaloAlto.org
Applicant / Phone:
Jeremy Stroup / 9252028654
Garrett Sauls / 650-329-2471
City Contact:
garrett.sauls@cityofpaloalto.org
Note: Project plans will be posted within seven days on:
www.cityofpaloalto.org/civicnet/permits. Or www.paloalto.buildingeye.com/planning.
Sign posting required by the Planning and Community Environment Department, 650-329-2441

The project information and plans are available for public review here:

bit.ly/PABuildingEye

For questions, or comments please contact the project manager listed on this notice.

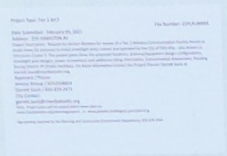
Sign posting required by the Planning and Development Services Department, 650-329-2441.

03/02/2021 15:12:51

PALO ALTO 121

CITY OF PALO ALTO

NOTICE OF PROPOSED PROJECT ON THIS SITE



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For questions, or comments please contact the project manager listed on this notice.

Sign posting required by the Planning and Development Services Department, 650-329-2441.

03/02/2021 14:55:48