COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: February 21, 2019

TO: Zoning Hearing Officer

FROM: Planning Staff

SUBJECT: Consideration of a Use Permit, pursuant to Section 6500 of the San Mateo County Zoning Regulations, to install a new wireless telecommunication facility on an existing joint utility pole located in the public right-of-way in front of 165 South Palomar Drive in the unincorporated Palomar Park area of San Mateo County. This item was continued from the December 6, 2018 Zoning Hearing Officer Hearing to further evaluate locating the proposed cellular antenna lower on the joint utility pole.

County File Numbers: PLN 2018-00093 (Verizon Wireless/Modus)

PROPOSAL

The applicant proposes to install a new wireless telecommunication facility on an existing joint utility pole located in the public right-of-way in front of 165 South Palomar Drive in the unincorporated Palomar Park area. The facility will consist of a 7-foot pole extension, one 4-foot tall cylindrical antenna, and ancillary pole mounted equipment boxes and will have an effective height of 50'-5'' above grade where the maximum height allowed is 28 feet above grade. No grading or tree removal activities are proposed.

This item was continued from the December 6, 2018, Zoning Hearing Officer meeting to allow the applicant, as requested by the Zoning Hearing Officer, to evaluate the feasibility of locating the proposed cylindrical antenna below the existing powerlines. The applicant has evaluated this proposal and has determined that such a location is not feasible due to inadequate clearance between the communication lines, powerlines, and the proposed antenna. Consequently, the applicant has elected to request a decision on their original proposal.

RECOMMENDATION

That the Zoning Hearing Officer approve the Use Permit, County File Number PLN 2018-00093, by making the required findings and adopting the conditions of approval listed in Attachment A.

BACKGROUND

Report Prepared By: Laura Richstone, Project Planner, 650/363-1829

Applicant: Yadira Cerrato, Modus for Verizon Wireless

Land Owner: San Mateo County Department of Public Works

Pole Owner: PG&E

Location: Public Right-of-Way in front of 165 South Palomar Drive

APN: Public Right-of-Way adjacent to 051-052-050

Existing Zoning: R-1/S-91/DR (Single-Family Residential/Minimum Lot Size 10,000 sq. ft.)

General Plan Designation: Medium Low Density Residential Urban

Sphere-of-Influence: City of San Carlos

Existing Land Use: Utility Pole in the Public Right-of-Way

Environmental Evaluation: The project is categorically exempt under the provisions of Class 3, Section 15303, of the California Environmental Quality Act (CEQA) Guidelines for the construction of a new small structure and installation of small new equipment and a facility in a small structure.

Setting: The proposed project site is located on an existing utility pole in the public right-of-way (ROW) north of Edgewood Road and east of Highway 280 in the unincorporated Palomar Park area. The project site is located in an urbanized single-family residential neighborhood.

Chronology:

Date		Action
April 11, 2018	-	Use Permit application submitted.
September 24, 2018	-	Application deemed complete.
December 6, 2018	-	Project continued from the Zoning Hearing Officer Public Hearing to evaluate locating the antenna lower on the pole.
January 3, 2019	-	Project continued from the Zoning Hearing Officer Public Hearing to allow for additional time as requested by the applicant.
February 7, 2019	-	Project continued from the Zoning Hearing Officer Public Hearing to allow for additional time as requested by the applicant.

February 21, 2019 - Zoning Hearing Officer Public Hearing.

DISCUSSION

A. KEY ISSUES

1. Prior Zoning Hearing Officer Meetings

On December 6, 2018 the proposed project went before the Zoning Hearing Officer for consideration. During this hearing, the Zoning Hearing Officer heard presentations from Planning Staff, Palomar Park community representative Mr. Kubiak, and the applicant, in addition to numerous public comments. The primary concerns expressed by Palomar Park community members were related to the safety risk of locating wireless facilities above existing power lines, radio frequency (RF) emissions, the height of the overall structure, and the aesthetics of the facility itself.

The Zoning Hearing Officer (ZHO) continued the item to the January 3, 2019 ZHO meeting and directed the applicant to explore the feasibility of locating the proposed antenna below the existing powerlines using a side arm mount. This project was continued from the January 3, 2019 and February 7, 2019 ZHO meetings to allow additional time to evaluate the feasibility of the proposed side arm mount alternative.

2. Side Arm Mount Alternative

On January 15, 2019 the applicant submitted an updated radio frequency (RF) report, a side mount feasibility analysis, and structural calculations for the proposed project (Attachments F-H). This analysis concluded that a side arm mount is not a feasible alternative for the proposed antenna.

The subject joint utility pole consists of primary power lines located at its top (38'-3'' above grade), a transformer located immediately below (34'-11"), secondary power lines (29'-2"), and communication lines (21'-8''). In order to locate the proposed antenna between the secondary power lines and communication lines, 14-feet of clearance is required to accommodate the 4-foot tall antenna (6-foot separation from the secondary powerlines and 4-foot separation from the communication lines) per PG&E separation requirements. Currently, only 7'-6" of separation exists (see Attachment F).

Primary and Secondary Power Lines and Transformer Possible Relocation to Accommodate Side Arm Mount

As part of their feasibility analysis, the applicant evaluated the possibility of moving the existing secondary power lines upward in an effort to create the required 14-foot clearance. PG&E requires a 30-inch minimum separation between a transformer and the primary power lines (current separation is

40 inches) and a minimum of 10 inches between the transformer and the secondary powerline (current separation is 18 inches). Using these standards, the existing transformer and secondary powerlines can be shifted a maximum of 18 inches farther up the pole which would result in a separation of 9 feet between the secondary powerlines and communication lines, where 14 feet is required.

Communication Line Possible Relocation to Accommodate Side Arm Mount

The applicant also explored the possibility of shifting the communication lines farther down the pole to achieve the required 14-foot separation. The communication lines currently rest at 21'-8" above grade. Per the California Public Utilities Commission (CPUC) regulations, communication lines shall be located a minimum of 18 feet above grade at its lowest point. Shifting the powerlines farther up the pole and communication lines down to 18 feet above grade would only create a separation of 12'-8" where 14 feet is required.[1]

The applicant concluded that a side arm mounted antenna is not physically feasible given the constraints and separation requirements.

3. Subsequent Palomar Park Community Meeting

On January 14, 2019 community members from Palomar Park presented their concerns regarding the proposed project to the Planning and Building Department. Present at this meeting were several community members from Palomar Park, the Community Development Director, Project Planner, County Counsel, Supervisor Pine, and an aide for Supervisor Pine. Previously discussed concerns raised during this meeting included the location of the facility in a residential neighborhood, RF emissions, height of the structure, and the facility's potential impact on property values. A discussion regarding these concerns can be found in Section A.6.a and Section A.8 of this staff report. New concerns raised at this meeting included the potential fire and safety hazard of placing equipment above powerlines and maintenance and installation questions regarding the proposed facility. A brief response to these concerns is outlined below.

a. Fire and Safety Hazard

Community members stated that installing infrastructure above powerlines poses a fire risk (due to the possibility of the wireless structure falling onto an active electrical line) and that PG&E would not allow these types of installations if they had the ability to prevent them.

[1] Communication lines have a tendency to sag. This calculation of moving the communication lines to 18 feet above grade does not account for sag. This means that in practice, the communication line attachment to the pole could not be shifted all of the way down to 18 feet.

Staff's Response: Wireless carriers are classified as a utility. As a utility, many of the regulations regarding the safety and installation of wireless facilities are regulated by the CPUC. Installation of wireless facilities above existing powerlines has been anticipated by the CPUC and regulations relating to the design, installation, maintenance, and operation of such facilities can be found in CPUC's General Order 95 (GO95). The CPUC has stated that wireless carriers have a state-mandated right to use and locate their infrastructure in the right-of-way (PUC Section 7901).

Safety requirements found within GO95 includes rules and standards for utility pole loads (i.e., the weight and stress on utility poles from attachments) and separation requirements between equipment, powerlines, and communications lines. Under GO95, applicants perform their own pole loading calculations (which includes wind load, pole strength, pole overturn calculations, etc.) prior to placing attachments on utility poles in order to ensure that the pole continues to meet the required safety standards. These calculations have been performed by the applicant and show that the proposed project adheres to the safety requirements of GO95 (Attachment H).

While Palomar Park is located in a Very High fire severity SRA (State Responsibility Area), it is the responsibility of the CPUC to address the safety concerns of wireless facilities installed above utility lines (i.e., General Order 95). The County, through the issuance or denial of the subject use permit, determines if the proposed land use of the wireless facility adheres to the applicable portions of the Wireless Telecommunication Facilities Ordinance (see Section A.7 of this report for use permit findings). The applicant has shown that the facility cannot be located below the primary powerlines and that the subsequent pole extension and antenna adhere to the engineering requirements of GO95.

b. Maintenance and Installation Hazards

Community members were concerned that the installation and maintenance of the proposed facility would necessitate the closure of South Palomar Drive and require frequent and prolonged power outages for the installation and maintenance of the proposed facility.

Staff's Response: Due to its location in the right-of-way, the proposed project requires an encroachment permit from the Department of Public Works (Condition of Approval No. 19). As part of the encroachment permit process, a traffic control plan is required. The Department of Public Works reviews these plans to ensure that through traffic is not unduly impacted due to construction activities and to ensure that proper traffic control measures such as signs, flags, and traffic controllers are present. Condition of Approval No. 16, which

requires routine maintenance activities to occur during non-peak commute hours, has been added to minimize any traffic impact that may arise during the life of the proposed project.

Regarding installation and maintenance of the facility, the applicant has stated that the proposed facility can be installed in approximately one day and would require twice yearly maintenance. Maintenance activities would most likely be associated with equipment failure or a power outage. In the case of a power outage, one pickup sized truck would visit the site to ensure the equipment is functioning properly. Installation activities or equipment maintenance/replacement would require one bucket truck. In both instances, the applicant estimates that the truck would not be on-site for more than 2-3 hours.

Regarding community concerns about power outages related to equipment installation and maintenance, the applicant has stated that the neither the installation nor maintenance of the facility would require PG&E to de-energize the pole. Power to the pole will stay on during facility construction and will not result in an interruption of service to the surrounding neighborhood. In addition, a PG&E inspector will be present on-site to monitor work above the conductors during the installation of the facility to ensure the safety and integrity of the powerlines. The facility will be placed on its own meter and an emergency shut off switch that would shut off power to the site without affecting power to the pole or the surrounding neighborhood, is part of the project proposal.

4. Compliance with the General Plan

Staff has determined that the proposed project complies with the all applicable County General Plan policies, specifically:

Visual Quality Policies

Policy 4.21 (*Utility Structures*) requires minimizing adverse visual impacts generated by utility structures. The project site is located within the public right-of-way (ROW) along a local road in single-family residential area. To reduce the visual impacts of the proposed project, the antenna and mounted equipment, located at 50'-5" above grade, will be painted to match the existing utility pole and shall be constructed of non-reflective materials.

5. Compliance with the Zoning Regulations

The proposed project area is located within the public ROW in the R-1/S-91/DR (Palomar Park) Zoning District. Zoning district standards, with the exception of height are not applicable to projects located within the public right-of-way.

The maximum height allowed for antennas in the R-1/S-91/DR Zoning District is 28 feet. The subject pole consists of primary and secondary power supply lines located at its top and communication lines located in the middle of the pole. The applicant has proposed to extend the height of the utility pole with an extension bracket to achieve the 6-foot vertical safety separation between the wireless antenna and the nearest power supply lines required by the safety regulations of GO95. This pole extension and antenna would increase the height of the utility pole from 39'-4" to 50'-5".

In an effort to comply with State safety standards (GO95) and local height regulations, the applicant explored the feasibility of locating the proposed antenna between the secondary power and communication lines using a side arm mount. As discussed in Section 3 above, such an alternative does not comply with the safety regulations of GO95. As such, the applicant has decided to move forward with the original proposal.

Section 6512.2.I.2 (*Development and Design Standards for New Wireless Facilities That Are Not Co-Location Facilities*) of the San Mateo County Zoning Regulations state that, in any Residential (R) District, no monopole or antenna shall exceed the maximum height for structures allowed in that district, except that new equipment on an existing facility in the public right-of-way shall be allowed to exceed the maximum height for structures allowed in that district by 10% of the height of the existing facility, or by 5 feet, whichever is less. As previously stated and outlined in Table 1 below, the proposed project will exceed the allowed height for new facilities in the right-of-way and will not be in compliance with Section 6512.2.I.2 due to required compliance with GO95 safety regulations.

Table 1

Planning Case No.	Zoning District	Maximum Height Allowed in Zoning District	Existing Pole Height	Proposed Pole and Equipment Height
PLN 2018-00093	R-1/S-91/DR	28 ft.	39'-4"	50'-5"

While the alternative site analyses submitted by the applicant (Attachment E) identified nearby alternative utility poles, these poles either: (1) did not have adequate space to support the proposed equipment, or (2) the equipment would require extension brackets to comply with the GO95 and would also exceed the height criteria of Section 6512.2.I.2. As illustrated by the alternative analysis, if the additional height is not granted the proposed project could not be located on any of the nearby utility poles. As small cell facilities are designed to unload traffic from macro sites and only cover a 500- to 700-foot radius, these project must be located within, or in close proximity to, identified target areas. If the project cannot be placed

on a utility pole within the identified target area, then Verizon Wireless cannot effectively extend its service to this area of Palomar Park.

The imposition of the County's height regulations in conjunction with the requirements of GO95 would effectively prohibit the installation of the proposed wireless facility in the identified service area due to the fact that: (1) no other feasible alternative sites located in the public ROW were identified, (2) local jurisdictions cannot require wireless facilities to locate outside of the right-of-way, (3) the antenna cannot be placed lower on the pole using a side arm mount, and (4) local jurisdictions cannot require providers to consider alternatives outside of the right-of-way. When the application of the County's height criteria results in the effective prohibition of wireless facilities, local regulations (i.e., height in this case) are preempted by federal law. In this instance, though the proposed project will exceed the zoning district's height limit, State safety (i.e., GO95) and Federal regulations supersede local regulations.

6. Compliance with the Wireless Telecommunication Facilities Ordinance

Staff has reviewed this project against the provisions of the Wireless Telecommunications Facilities (WTF) Ordinance and determined that the project complies with the applicable standards discussed below:

a. Development and Design Standards

Section 6512.2.A prohibits location in a Sensitive Habitat as defined by Policy 1.8 of the General Plan for facilities proposed outside the Coastal Zone.

The proposed project is not located in or near mapped sensitive habitats, as defined by Policy 1.8 of the General Plan.

Section 6512.2.B prohibits wireless facilities to be located in residential-zoned areas, unless the applicant demonstrates that no other site allows feasible or adequate capacity and coverage. Evidence shall include an alternative site analysis within 2.5 miles of the proposed facility.

The proposed facility will be located on existing joint utility pole in the public ROW within the R-1/S-91/DR Zoning District. Small cell technology requires sites to be much closer together than larger macro sites. These sites are not meant to increase the coverage of an area but to assist with unloading traffic from the macro site network to provide increased data speeds and decrease dropped calls for the surrounding residences and transient traffic. As such, small cell facilities are frequently located in residential neighborhoods where data traffic is high. Adopted before the advent of small cell technology, Section 6412.2.B of the WTF Ordinance was written to

limit the proliferation of macro cell towers in residential areas unless no other feasible alternative site existed. Recent State and Federal laws, however, have preempted many sections of the WTF Ordinance. PUC Section 7901, which states that wireless providers have a state mandated right to place their facilities in the public right-of-way, in conjunction with recent legal developments indicate that wireless providers are not required to consider alternatives outside of the right-of-way, nor prove the need for their facilities (i.e., propagation maps) when they are located in the right-of-way. Consequently, the County's ability to request information demonstrating the need for proposed facilities in the public right-of-way is limited. As such, propagation maps and the 2.5-mile alternative site analyses were not submitted for this project (see below for further discussion).

Section 6512.2.C C prohibits wireless telecommunication facilities to be located in areas where co-location on existing facilities would provide equivalent coverage with less environmental impact.

The small cell technology proposed by the applicant is the least environmentally impactful wireless technology currently available. As small cell technology requires sites to be located in close proximity to one another and closer to targeted service areas, co-locating small cell sites on macro cell towers (which are often located far outside service areas) is often infeasible. As discussed above, a 2.5-mile radius alternative map was not required. As local jurisdictions cannot force wireless providers to locate outside the public ROW, this map would not identify feasible alternative right-of-way locations to serve the target area. Instead, the applicant has identified and researched alternative sites within the required service area. This alternative site analysis (Attachment E) assessed the feasibility of locating the proposed small wireless facility on nearby joint utility poles. The utility poles identified in the alternative site analysis would either require significant tree trimming, could not meet GO95 safety separation standards, or would also require a pole extension. As such, the applicant was unable to identify any existing wireless facilities or alternative poles that would allow an opportunity for co-location or provide the necessary coverage to the target area.

Section 6512.2.D requires wireless telecommunication facilities to be constructed so as to accommodate and be made available for co-location unless technologically infeasible.

Future co-locations are technically feasible as long as the proposed facility complies with GO95 engineering requirements. As pole top mounted facilities cannot accommodate additional wireless facilities in a manner that complies with both PG&E and GO95 requirements, the

applicant does not expect future co-locations given the present equipment configuration of the utility pole.

Sections 6512.2.E and F seek to minimize and mitigate visual impacts from public views by siting new facilities outside of public view, using natural vegetation for screening, painting equipment to blend with existing landscaping, and designing the facility to blend in with the surrounding environment.

The proposed facility includes a 4-foot cylindrical antenna attached to a 7-foot pole extension and ancillary equipment boxes mounted onto an existing joint utility pole. The equipment boxes will be located 7 feet to 18 feet above grade while the top of the antenna will be located 50'-5" above grade. To mitigate the visual impact of the proposed project, the antenna and utility boxes shall be painted a non-reflective brown color to blend-in with the existing utility pole (Condition of Approval No. 4). No trees or vegetation are proposed for removal to accommodate the proposed project.

Section 6512.2.G requires that the exterior of wireless telecommunication facilities be constructed of non-reflective materials.

The proposed facility shall be constructed of non-reflective materials, and as stated in the section above, shall be painted a non-reflective brown color to blend-in with the existing utility pole.

Section 6512.2.H requires that wireless telecommunication facilities comply with all the requirements of the underlying zoning district, including, but not limited to setbacks.

The existing utility pole is situated in the public right-of-way. As discussed in Section 2 above, zoning district standards (with the exception of height) are not applicable to wireless facilities located in the right-of-way.

Section 6512.2.I.2 requires that no new equipment located on existing facilities in the public right-of-way in any Residential (R) District shall be allowed to exceed the maximum height for structures allowed in that district by 10% of the height of the existing facility, or by 5 feet, whichever is less.

GO95 requires a 6-foot vertical safety separation between all wireless facilities and the nearest adjacent powerlines for facilities located on utility poles. Due to the height of the existing utility pole, and the 4-foot height of the antenna, the proposed project is not in compliance with this section and will exceed the height limit of the R-1/S-91 Zoning District. The applicant also explored the possibility of mounting

the proposed antenna lower on the pole in an effort adhere to the County's height regulations and the safety requirements of GO95. As discussed in Sections A.2 and A.5 above, such an alternative does not meet the safety and engineering requirements of GO95. In this case, the imposition of the County's height regulations in conjunction with the requirements of GO-95 would effectively prohibit the installation of the wireless facility in this area. Such a prohibition is preempted by Federal law because wireless carriers: (1) have a state mandated right to utilize the public ROW, (2) must abide by a 6-foot safety separation (GO95), and (3) are not required to consider alternative sites outside the ROW, this is a situation in which State and Federal regulations supersede location regulations (i.e., height criteria). As such, the height of the proposed facility (while exceeding local height regulations) is the minimum necessary to comply with the State's safety requirements for clearance between the proposed equipment and the powerlines.

Section 6512.2.J seek to regulate the size, quantity, and location of accessory buildings required for wireless facilities located in any Residential (R) District.

No accessory buildings or ground floor equipment boxes are required for the project. The equipment boxes necessary for this project are small in size and will be mounted on the existing utility pole.

Section 6512.2.K requires the overall footprint of a facility to be as minimal as possible and not cover more than 15% in area of the lot or an area greater than 1,600 sq. ft. in residential districts.

No new ground structures will be built or utilized to support the operation of this wireless telecommunication facility. All required utility boxes will be small in size and mounted between 7 to 18 feet above grade on the utility pole.

Section 6512.2.L prohibits diesel generators as emergency power sources unless electricity, natural gas, solar, wind or other renewable energy sources are not feasible.

No generators are proposed.

b. Performance Standards

The proposed project meets the required standards of Section 6512.3 (*Performance Standards for New Wireless Telecommunication Facilities that are Not Co-Location Facilities*) for lighting, licensing, provision of a permanent power source, timely removal of the facility, and visual resource protection. There is no lighting proposed, proper licenses will be obtained from both the Federal Communications

Commission (FCC) and the California Public Utilities Commission (CPUC), power for the facility will be provided by PG&E, visual impacts will be minimal, and conditions of approval will require maintenance and/or removal of the facility when they are no longer in operation. Furthermore, road access to the proposed project site is existing and no noise in excess of San Mateo County's Noise Ordinance will be produced.

7. Compliance with the Use Permit Findings

For the Use Permit to be approved by the Zoning Hearing Officer, the following findings must be made:

a. That the establishment, maintenance and/or conducting of the use will not, under the circumstances of this particular case, be detrimental to the public welfare or injurious to property or improvements in said neighborhood.

Utilities (including wireless carriers) are regulated by the CPUC. Through the rules and regulations of GO95, the CPUC provides design guidelines and installation, maintenance, operation standards for wireless facilities located on utility poles to ensure the safe utilization of utility infrastructure. The CPUC has anticipated the installation of wireless facilities above power lines and GO95 includes rules and standards (i.e., pole loads, separation requirements, etc.) to ensure such infrastructure is installed safely. Structural calculations performed by the applicant (Attachment H) illustrate that the proposed facility adheres to the safety requirements of GO95 while an independent analysis by PG&E concluded that the existing pole can support the proposed facility (i.e., a replacement pole is not required). In addition, a PG&E inspector will be on-site to monitor work above the conductors during the construction of the facility. Based on the foregoing, staff has determined that the proposed project will not be detrimental to the public welfare or injurious to property or improvements in the neighborhood.

In addition to adhering to GO95, wireless facilities must also comply with FCC RF guidelines. The WTF Ordinance requires the submittal and review of a RF report to ensure proposed projects do not exceed public exposure limits.

The applicant submitted two radio frequency reports prepared by EBI Consulting (EBI) (Attachment K) and an updated radio frequency report by Hammett & Edison Inc., dated January 10, 2019 (Attachment G). Though reports from both RF consulting firms confirm that the proposed facility will comply with the prevailing standards for limiting public exposure to radio frequency energy, they do differ in their RF exposure estimations. The reports from EBI estimated that the facility

would have an RF exposure of 10.90% at ground level and 19.9% at a second floor elevation. However, the most updated report from Hammett & Edison estimated ground level RF exposures at 1.6% and second floor elevation RF exposures at 3.1% of the public exposure limits. When questioned about the discrepancy between the reports, Hammett & Edison stated that the EBI calculations were based on general information that did not account for the actual signal patterns of the antenna. Hammett & Edison stated that their analysis accounted for how the topography of the area would affect signal strength/propagation and the actual locations of the nearest buildings. Hammett & Edison's RF discrepancy statement can be found in Attachment L.

Using the estimates from the most recent Hammett & Edison report, the ground floor and second floor RF exposure for the proposed facility is 1.6% and 3.1% of the FCC maximum public exposure limit. The Hammett & Edison RF report estimated the highest RF exposure experienced by any nearby buildings was 3.1% for the building located at 178 S. Palomar Drive.

Table 2

Planning Case No.	Approximate Location	Radio Frequency Exposure at Ground Level	Radio Frequency Exposure at Second Story
PLN 2018-00093	165 South Palomar Drive	1.6%	3.1%

Though reports from both EBI and Hammett & Edison stated that the RF emissions from the proposed facility would comply with the FCC's maximum public exposure limits, the earlier reports from EBI noted that the facility would emit RF radiation that exceeds these limits along the upper 10-15 feet of the pole in close proximity to the antenna. However, these exposures occur roughly 45 to 50 feet above ground level, are not accessible to the general public, and dissipate quickly as one moves horizontally away from the antenna. Wireless communication facilities are considered to be out of compliance with FCC's rules and regulations if there are areas that exceed the FCC limits and if there are no RF hazard mitigation measures in place (i.e., warning signs). As recommended by the RF reports, the applicant will be required to post caution signs on the utility pole (Condition of Approval No. 17) to bring this site into compliance with the FCC's rules and regulations.

The proposed wireless facility will be unmanned, serviced twice a year by a Verizon technician with a pickup sized truck for no more than a couple of hours, and does not require the PG&E to de-energize the

pole[2]. Installation of the facility will require a bucket truck, will not require PG&E to shut off power to the surrounding neighborhood, and will require a traffic control plan (issued and approved by the Department of Public Works as part of an Encroachment Permit) to ensure that impact to the neighborhood traffic is minimal. In addition, Condition of Approval No.16 requiring all non-emergency maintenance activities to occur outside of rush hour has been included to ensure minimal impacts to the surrounding community. Due to the proposed project's adherence to the RF limitations set by the FCC, safety requirements of GO95, and the maintenance activities outlined by the applicant, staff has determined that the installation and operation of the proposed project will not be detrimental to the public welfare, or injurious to property or improvements to the unincorporated San Mateo Highlands or Palomar Park areas of San Mateo County.

b. That this telecommunication facility is necessary for the public health, safety, convenience or welfare of the community.

Staff has determined that installation of a cellular facility at this location will allow for increased clarity, range, and capacity of the existing cellular network and will enhance services for the community, emergency services, public, and persons traveling through the area. As outlined in Section 2 above, the applicant explored the feasibility of utilizing a side arm mount to reduce the overall height of the proposed facility. Through this analysis, the applicant determined that there is inadequate space on the pole to allow for a side arm mounted facility.

The proposed facility is the least intrusive option available to expand Verizon Wireless's network capacity and service coverage in this area of Palomar Park. The proposed facility will use existing utility infrastructure and add small equipment without disturbing the overall character of the neighborhood.

8. Neighborhood Concerns

Concerns from multiple individuals have been received by the Planning Department regarding the proposed facility (See Attachment J). The major concerns raised by the neighborhood include: (1) the health effects of the proposed facility, (2) how to ensure that the facility will stay within the emissions limits that were projected in the RF report, (3) the unwanted noise associated with the proposed facility, (4) the facility's impact on property values, and (5) the ability (and structural integrity) of the pole itself to safely support the proposed facility. A brief response to these concerns are outlined below:

[2] PG&E requires an emergency shut-off switch that would shut off power to the antenna without affecting power to the pole or surrounding community.

Potential Health Effects

Small cell facilities are designed to concentrate energy toward the horizon with little wasted energy toward the sky or ground. This means that maximum RF exposure only occurs when an individual is extremely close to the wireless antenna. The RF report prepared by Hammett & Edison estimated ground level RF emissions and second story RF emission to be 1.6% and 3.1% of the maximum exposure limits. These estimations account for the worst-case scenario and include the assumption that the Verizon equipment will always operate at maximum power, that there will be large RF reflections from ground and nearby structures, and that there will be no signal attenuation from trees, buildings, or other objects. These assumptions generally result in overstated RF exposure levels that are 2-10 times greater than what is experienced in the field. Though the County's Wireless Telecommunication Ordinance does not identify RF emissions limits, it does require wireless facilities to maintain compliance with FCC regulations and licensing/registration rules. Section 704 of the Federal Telecommunications Act of 1996 contains provisions for the restriction of such emission limits and states…*no State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the* [Federal Communications] *Commission's regulations concerning such emissions*. Though some area directly in front of the antenna (45-50 feet above grade) may exceed MPE limits, wireless facilities are only considered out of compliance with FCC regulations if there are no RF hazard mitigation measures in place (i.e., signage, which this facility will have). Given this language, the proposed project complies with all FCC health and safety regulations.

RF Limits

This question was poised to the EBI and Hammett & Edison RF engineers. EBI and Hammett & Edison use modeling software that has been approved by the FCC and their reports are conducted based on worst case scenarios by assuming that the antennas are operating at maximum power and that there is no signal attenuation from trees, buildings, or other objects. Though the RF estimates from EBI and Hammett & Edison differ (see Section 7.a above for further discussion), the Planning Department will defer to the estimates from the most recent Hammett & Edison RF report considering its modeling is based on actual signal patterns. Using predictive modeling, and accounting for the hilly topography of the area, Hammett & Edison estimated that RF exposure a ground level and second story elevations would be 1.6% and 3.1% of the FCC maximum public exposure limit and stated that while emissions are not likely to reach the levels projected in the RF report, the proposed project meets all FCC exposure standards.

Noise

The proposed facility will draw power directly from the power lines located on the existing utility pole and will not require a generator or battery to operate or provide emergency power. Furthermore, the proposed antenna is a passive device cooled by natural air flow, does not require cooling fans, and thus does not emit noise. In addition, the construction and maintenance of the proposed facility will be regulated by the San Mateo County Noise Ordinance Code Section 4.88.360 (see Condition of Approval No.14).

Property Values

The community expressed a concern that small cell facilities located on top of utility poles would decrease the property values of the surrounding parcels. A project's potential impact (whether positive or negative) on surrounding property values is speculative, based on many factors, and is generally not considered when processing a planning permit. Many different variables contribute to the value of a property and establishing a direct causal link (beyond anecdotal evidence) between a proposed project and decreased property values is difficult. As there are no independently verified third party studies that have proven that small cell facilities cause a direct and substantial decrease in property values, the Planning Department is not in the position to evaluate this claim. However, in response to these concerns, the applicant provided a copy of a third party study conducted by the Joint Venture of Silicone Valley[3] (Attachment I). This 2012 study explored this issue and found that proximity to a wireless facility had no apparent impact on property values. The study identified 70 different types of wireless facilities (including cell towers, mono-pines, mono-poles, and rooftop mounted equipment etc.), located in Palo Alto, Redwood City, Saratoga, and San Jose and evaluated the "list" and "sale" price of all home transactions located within a 1-mile radius of the identified cellular facilities. The study evaluated over 1,600 single-family home transactions and found that homes located within a 1-mile radius from existing wireless facilities sold for 99% to 106% of their listing price and concluded that the relationship between the list and sale price of a home remained the same across multiple cities regardless of their proximity to a cell site.

Structural Integrity of the Facility/Safety Concerns

Public comments raised a concern that the placement of the facility above the powerlines will add stress and strain to the existing utility pole and pose a safety risk for residents and those who utilize the roadway below. In response to these concerns, the applicant has stated that this bracket and antenna configuration is a standard design for the Bay Area. Prior to its

[3] Joint Venture of Silicon Valley is a non-profit independent third party that brings together local business, community activists, local governments, academia, labor, and the broader community to address community and regional issues and work toward solutions.

implementation, this design was reviewed by Verizon Wireless' RF and structural engineers to ensure its structural integrity. Per GO95, the applicant has also performed structural calculations to ensure that the proposed pole can support the equipment and that the equipment itself would be structurally sound. These applications were also reviewed by PG&E prior to submittal for local permits. PG&E's review process consists of: (1) pre-site walk to inspect the condition of the pole and its existing equipment, (2) preforming structural calculations on the existing pole to determine if the pole is structurally sound and if it can support the new proposed equipment, and (3) a post installation site inspection to ensure that the equipment was installed and attached per the plans and PG&E standards. PG&E has reviewed the project utility pole and has determined that the existing pole can safely support the proposed wireless facility.

B. ENVIRONMENTAL REVIEW

This project is categorically exempt pursuant to Section 15303, Class 3, of the California Environmental Quality Act (CEQA) related to the construction of a new, small structure and installation of small new equipment and a facility in a small structure.

C. REVIEWING AGENCIES
Department of Public Works
Cal-Fire
Palomar Park Property Owners

ATTACHMENTS

A. Recommended Findings and Conditions of Approval
B. Vicinity Maps
C. Project Plans
D. Photo Simulations
E. Alternative Pole Analysis
F. Side Arm Feasibility Analysis
G. Updated Radio Frequency Report, prepared by Hammett & Edison, dated January 10, 2019
H. Structural Calculations
I. Joint Venture Property Value Study
J. Public Correspondence
K. Previous RF reports
L. Hammett & Edison RF Discrepancy Statement

LR:pac - LARDD0077_WPU.DOCX

Attachment A

County of San Mateo
Planning and Building Department

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Numbers: PLN 2018-00093 Hearing Date: February 21, 2019

Prepared By: Laura Richstone
Project Planner

For Adoption By: Zoning Hearing Officer

RECOMMENDED FINDINGS

Regarding the Environmental Review, Find:

1. That this project is categorically exempt from environmental review, per Class 3, Section 15303, of the California Environmental Quality Act (CEQA) Guidelines for construction of a new, small structure and the installation of small new equipment and a facility in a small structure.

Regarding the Use Permit, Find:

2. That the establishment, maintenance, and/or conducting of the use will not, under the circumstances of this particular case, result in a significant adverse impact, or be detrimental to the public welfare or injurious to the property or improvements in said neighborhood because the project will meet the health and safety standards set by the California Public Utilities Commission (CPUC) and the Federal Communications Commission (FCC). The project has been conditioned to maintain a valid FCC license and has been reviewed and granted conditional approval by Cal-Fire and the Department of Public Works.

3. That the telecommunication facility is necessary for the public health, safety, convenience, or welfare of the community. The proposed facility contributes to an enhanced Verizon wireless network for increased clarity, range, and system capacity, and therefore, are a benefit to both public and private users. The wireless network will be utilized by residents, commuters, and emergency personnel and is considered necessary for public health, safety, convenience, and welfare for the area.

RECOMMENDED CONDITIONS OF APPROVAL

Current Planning Section

1. This approval applies only to the proposal, documents, and plans described in this report and submitted to and approved by the Zoning Hearing Officer on

February 21, 2019. Minor revisions or modifications may be approved by the Community Development Director if they are consistent with the intent of and in substantial conformance with this approval.

2. The use permit shall be for the proposed project only. Any modification or change in intensity of use shall require an amendment to the use permit. Amendments to the use permit requires an application for amendment, payment of applicable fees, and consideration at a public hearing prior to any changes to the facility.

3. The permit shall be valid for ten (10) years until February 21, 2029. If the applicant seeks to renew these permits, renewal shall be applied for six (6) months prior to expiration with the Planning and Building Department and shall be accompanied by the renewal application and fee applicable at that time. Renewal of the permit shall be considered at a public hearing.

4. The applicant shall paint the antenna and associated ancillary boxes a non-reflective brown color to match the existing utility pole. Color verification will be confirmed by the Current Planning Section prior to a final inspection for the building permit.

5. During project construction, the applicant shall, pursuant to Chapter 4.100 of the San Mateo County Ordinance Code, minimize the transport and discharge of stormwater runoff from the construction site into storm drain systems by:

    a. Stabilizing all denuded areas and maintaining erosion control measures continuously between October 1 and April 30. Stabilizing shall include both proactive measures, such as the placement of hay bales or coir netting, and passive measures, such as revegetating disturbed areas with plants propagated from seed collected in the immediate area.

    b. Storing, handling, and disposing of construction materials and wastes properly, so as to prevent their contact with stormwater.

    c. Controlling and preventing the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, and non-stormwater discharges to storm drains and watercourses.

    d. Avoiding cleaning, fueling, or maintaining vehicles on-site, except in a designated area where wash water is contained and treated.

    e. Delineating with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses.

    f. Protecting adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.

g. Performing clearing and earth-moving activities only during dry weather.

h. Limiting and timing application of pesticides and fertilizers to prevent polluted runoff.

i. Limiting construction access routes and stabilizing designated access points.

j. Avoiding tracking dirt or other materials off-site; cleaning off-site paved areas and sidewalks using dry sweeping methods.

k. The contractor shall train and provide instruction to all employees and subcontractors regarding the construction best management practices.

6. This permit does not allow for the removal of any trees. Any tree removal will require a separate permitting process.

7. The applicant shall not enter into a contract with the landowner or lessee which reserves for one company exclusive use of structures on this site for telecommunications facilities.

8. The wireless telecommunications facility shall not be lighted or marked unless required by the Federal Communications Commission (FCC) or the Federal Aviation Administration (FAA).

9. The applicant shall file, receive, and maintain all necessary licenses and registrations from the Federal Communications Commission (FCC), the California Public Utilities Commission (CPUC), and any other applicable regulatory bodies prior to initiating the operation of this facility. The applicant shall supply the Planning and Building Department with evidence of each of these licenses and registrations. If any required license is ever revoked, the applicant shall inform the Planning and Building Department of the revocation within ten (10) days of receiving notice of such revocation.

10. The project's final inspection approval shall be dependent upon the applicant obtaining a permanent and operable power connection from the applicable energy provider.

11. The wireless telecommunication facility and all equipment associated with it shall be removed in its entirety by the applicant within 90 days if the FCC and/or CPUC license and registration are revoked or the facility is abandoned or no longer needed, and the site shall be restored to blend with the surrounding area. The owner and/or operator of the wireless telecommunication facilities shall notify the Planning Department upon abandonment of the facility. Restoration shall be completed within two (2) months of the removal of the facility.

13. The wireless telecommunications facility shall be maintained by the permittee(s) and subsequent owners in a manner that implements visual resource protection

requirements of Section 6512.2.E and F above (e.g., painting), as well as all other applicable zoning standards and permit conditions.

14. Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property shall be limited to the hours from 7:00 a.m. to 6:00 p.m., weekdays and 9:00 a.m. to 5:00 p.m., Saturdays. Said activities are prohibited on Sundays, Thanksgiving, and Christmas (San Mateo Ordinance Code Section 4.88.360).

15. If technically practical and without creating any interruption in commercial service caused by electronic magnetic interference (EMI), floor space, tower space and/or rack space for equipment in a wireless telecommunication facility shall be made available to the County for public safety communication use.

16. With the exception of emergency maintenance activities, all routine maintenance activities for the proposed wireless facility shall occur during non-peak commute hours. If maintenance activities should require the partial obstruction of South Palomar Drive the applicant shall obtain an encroachment permit from the Department of Public Works.

17. Caution signs are required to be posted 10-15 feet below the antenna readily visible from any angle of approach to person who might need to work within the project area as recommended by the attached RF reports.

18. If a less visually obtrusive/reduced antenna technology becomes available for use during the life of this project, the applicant shall present a redesign incorporating this technology into the project for review by the Community Development Director and any parties that have expressed an interest.

Department of Public Works

19. No proposed construction work within the County right-of-way shall begin until County requirements for the issuance of an encroachment permit, including review of the plans and traffic control plans have been met and an encroachment permit issued. Applicant shall contact a Department of Public Works Inspector 48 hours prior to commencing work in the right-of-way.

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County of San Mateo - Planning and Building Department

ATTACHMENT B

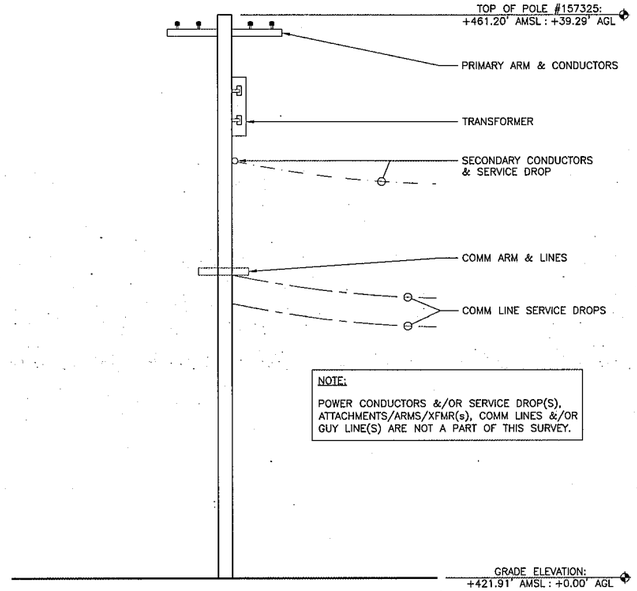
San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **Modus/Verizon** Attachment: **B**

File Numbers: **PLN 2018-00093**

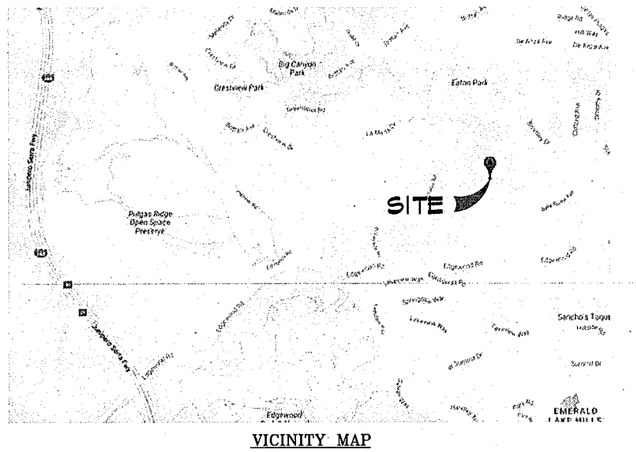
County of San Mateo - Planning and Building Department

ATTACHMENT C

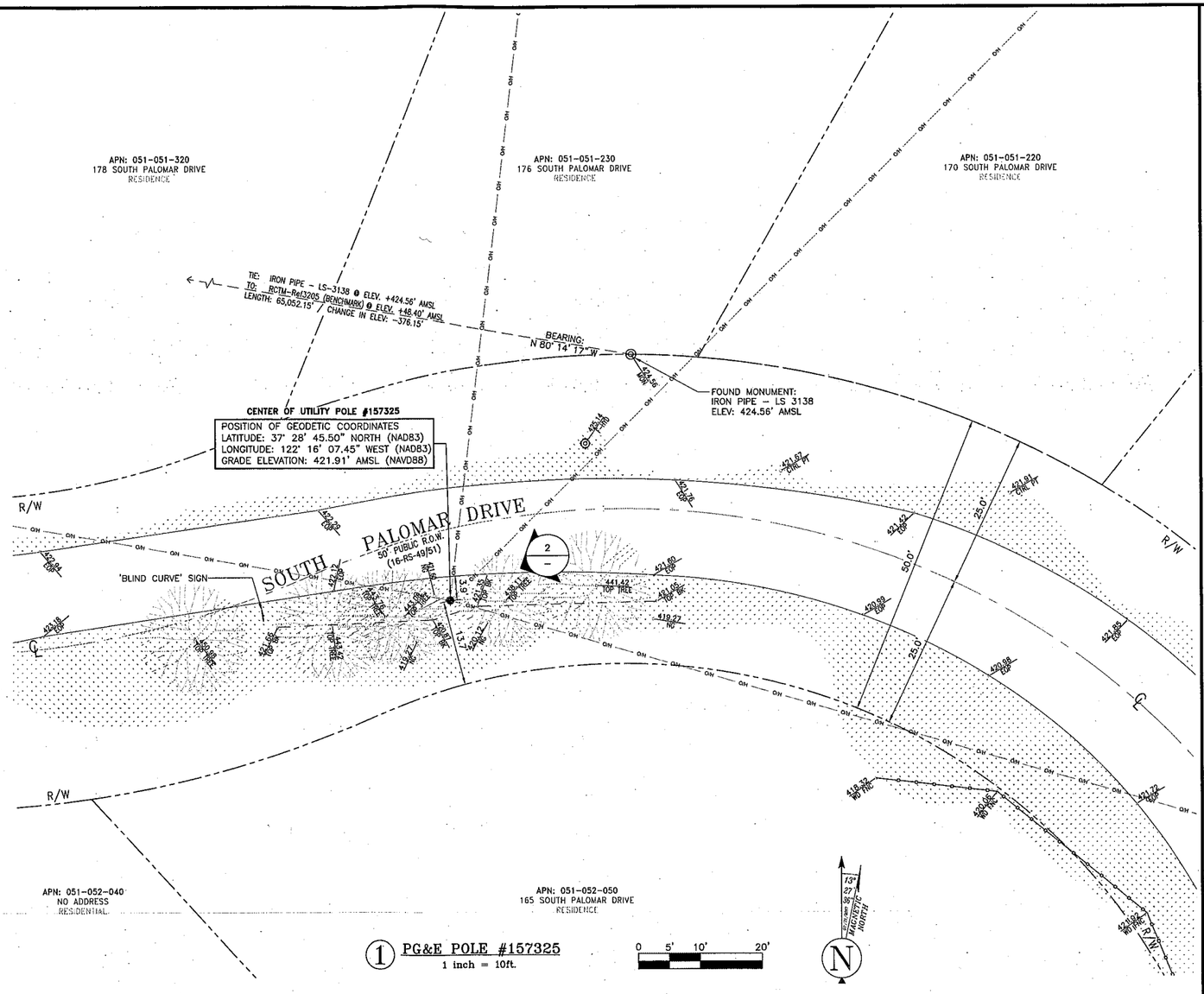


2 POLE ELEVATION
1 inch = 5ft.

0 2.5' 5' 10'



VICINITY MAP



1 PG&E POLE #157325
1 inch = 10ft.

0 5' 10' 20'

UTILITY NOTE:

SURVEYOR DOES NOT GUARANTEE THAT ALL UTILITIES ARE SHOWN OR THEIR LOCATIONS ARE DEFINITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND DEVELOPER TO CONTACT BLUE STAKE AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. REMOVAL, RELOCATION AND/ OR REPLACEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

NOTES:

1. THIS IS NOT A BOUNDARY SURVEY. THIS IS A SPECIALIZED TOPOGRAPHIC MAP. THE PROPERTY LINES AND EASEMENTS SHOWN HEREON ARE FROM RECORD INFORMATION AS NOTED HEREON. ALL STATES ENGINEERING & SURVEYING/ZALZALI & ASSOCIATES, INC. TRANSLATED THE TOPOGRAPHIC SURVEY TO RECORD INFORMATION USING THE TWO FOUND MONUMENTS SHOWN HEREON. NO TITLE RESEARCH WAS PERFORMED BY ALL STATES ENGINEERING & SURVEYING/ZALZALI & ASSOCIATES, INC.
2. ANY CHANGES MADE TO THE INFORMATION ON THIS PLAN, WITHOUT THE WRITTEN CONSENT OF ALL STATES ENGINEERING & SURVEYING / ZALZALI & ASSOCIATES, INC. RELIEVES ALL STATES ENGINEERING & SURVEYING / ZALZALI & ASSOCIATES, INC. OF ANY AND ALL LIABILITY.
3. THESE DRAWINGS & SPECIFICATIONS ARE THE PROPERTY & COPYRIGHT OF ALL STATES ENGINEERING & SURVEYING / ZALZALI & ASSOCIATES, INC. & SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY AGREEMENT WITH THE SURVEYOR. WRITTEN DIMENSIONS SHALL TAKE PREFERENCE OVER SCALED & SHALL BE VERIFIED ON THE JOB SITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF THE SURVEYOR PRIOR TO COMMENCEMENT OF ANY WORK.
4. EXCEPTIONS/EASEMENTS/INSTRUMENTS/COVENANTS LISTED UNDER LEGAL DESCRIPTION/EXCEPTIONS/ADDITIONAL EXCEPTIONS PER TITLE INFORMATION ARE NOT SHOWN ON THIS PLAN.
5. THIS SITE IS PROPOSED TO BE DEVELOPED ON A PG&E WOOD UTILITY POLE WITHIN THE CITY OF REDWOOD CITY PUBLIC RIGHT OF WAY (SOUTH PALOMAR DRIVE) [NO PRIVATE PROPERTY].

LEGEND

U.G. UTILITY VAULT	BOL	BOLLARD	FL	FLOW LINE
MANHOLE	TOP _	TOP OF ITEM	FC	FACE OF CURB
UTILITY POLE	BOT _	BOTTOM OF ITEM	R.O.W.	RIGHT OF WAY
SPOT ELEVATION	BLDG	TOP OF BUILDING	AP	ASPHALT
WATER VALVE	LP	LIGHT POLE	SW	SIDEWALK
FOUND MONUMENT	------	LIMITS OF PROPERTY	— OH —	OVERHEAD LINE
GEODETIC MARKER	— x —	CHAIN LINK FENCE	——o——	METAL FENCE
TREE	——□——	WOOD FENCE	·—·—·	GRADE BREAK

SURVEY DATE
07/21/2017

BASIS OF BEARING
BEARINGS SHOWN HEREON ARE BASED UPON U.S. STATE PLANE NAD83 COORDINATE SYSTEM CALIFORNIA STATE PLANE COORDINATE ZONE THREE, DETERMINED BY GPS OBSERVATIONS.

BENCHMARK
RTCM-Ref3205

TITLE RPORT
NOT APPLICABLE (RIGHT-OF-WAY)

LEGAL DESCRIPTION
NOT APPLICABLE (RIGHT-OF-WAY)

ASSESSOR'S PARCEL NUMBER
NOT APPLICABLE (RIGHT-OF-WAY)

verizon
2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108

ALL STATES ENGINEERING & SURVEYING
A ZALZALI & ASSOCIATES COMPANY
23675 BIRTCHER DRIVE
LAKE FOREST, CA 92630
PHONE: (949) 273-0996

PROJECT ID:	438731
DRAWN BY:	NC
CHECKED BY:	BC/DW

REV	DATE	DESCRIPTION	
0	08/31/2017	FINAL SURVEY	NC
A	08/29/2017	PRELIMINARY DRAWING	NC

PROFESSIONAL LAND SURVEYOR
BRUCE T. CRAWTON
No. 9039
STATE OF CALIFORNIA

SAN CARLOS 019
PUBLIC R.O.W. ADJACENT TO:
176 SOUTH PALOMAR DRIVE
REDWOOD CITY, CA 94062
(SOUTHERLY CURB ACROSS STREET FROM ADDRESS)

SHEET TITLE
SITE SURVEY

SHEET NUMBER
C-1

APN: 051-051-320
178 SOUTH PALOMAR DRIVE

APN: 051-051-230
176 SOUTH PALOMAR DRIVE

APN: 051-051-220
170 SOUTH PALOMAR DRIVE

APN: 051-052-050
165 SOUTH PALOMAR DRIVE

APN: 051-052-040
NO ADDRESS

EXISTING BUILDING

EXISTING AC OR CONCRETE PAVED DRIVEWAY, TYP.

APPROXIMATE LOCATION OF EXISTING PROPERTY LINE, TYP.

EXISTING OVERHEAD UTILITY LINE, TYP.

PROPERTY LINE

SECTOR B
AZIMUTH
300°

SECTOR A
AZIMUTH
180°

EXISTING FIRE HYDRANT

10'-0" SETBACK TO C/L R.O.W.

3'-5" SETBACK TO EOP

PROPOSED LOCATION OF VERIZON EQUIPMENT & ANTENNA MOUNTED ON EXISTING WOOD UTILITY POLE

PROPOSED LOCATION OF VERIZON GROUND ROD/WELL AT GRADE, AS REQUIRED

EXISTING UTILITY POLE #157325

11'-10" SETBACK TO P/L

18'-4" PAVING VARIES

15'-4" PAVING VARIES

18'0"-11" PAVING VARIES

21'-5" PAVING VARIES

50'-0" R.O.W.

S PALOMAR DRIVE

EXISTING ROAD SIGN

EXISTING TREE, TYP.

LINE OF TOP OF SLOPE

1 / A-2
ENLARGED SITE PLAN

NOTES:

1. ALL EQUIPMENT ENCLOSURES TO BE STACKED TOGETHER (VERTICALLY) AS CLOSE AS ALLOWED BY POLE OWNER
2. 4" OFFSET BETWEEN THE FLANGE AND THE POLE
3. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT AND OTHER EQUIPMENT WILL BE PAINTED NON-GLOSSY SABLE BROWN BY SHERWIN WILLIAMS (OR EQUIVALENT)

N
W E
S

24"x36" SCALE: 1" = 10'-0"
11"x17" SCALE: 1" = 20'-0"
10' 5' 0" 10'

SITE PLAN 1

verizon
2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108

ALL STATES
ENGINEERING & SURVEYING
A ZALZALI & ASSOCIATES COMPANY
23675 BIRTCHER DRIVE
LAKE FOREST, CA 92630
PHONE: (949) 273-0996

PROJECT NO:	438731
DRAWN BY:	HG
CHECKED BY:	DW

REV	DATE	DESCRIPTION	
A	02/21/2018	90% CD'S FOR REDLINE	NC

REGISTERED PROFESSIONAL ENGINEER
7159
CIVIL
STATE OF CALIFORNIA

NOT TO BE USED FOR CONSTRUCTION

438731
SAN CARLOS 019
176 SOUTH PALOMAR DRIVE
EMERALD HILLS, CA 94062
NEW SITE BUILD

SHEET TITLE
SITE PLAN

SHEET NUMBER
A-1

APN: 051-051-320
178 SOUTH PALOMAR DRIVE

APN: 051-051-230
176 SOUTH PALOMAR DRIVE

PROPERTY LINE

APPROXIMATE LOCATION OF EXISTING PROPERTY LINE, TYP.

EXISTING OVERHEAD UTILITY LINE, TYP.

O/H

EXISTING FIRE HYDRANT

EXISTING GRASS AREA

S PALOMAR DRIVE

PAVING VARIES 14'-2"

SECTOR B
AZIMUTH
300°

PROPOSED LOCATION OF VERIZON GROUND ROD/WELL AT GRADE, AS REQUIRED

CLIMB SPACE ON WOOD POLE

3'-5" TO EOP

2'-1" TO EOP

1 / A-4 EQUIPMENT LAYOUT PLAN

EXISTING UTILITY POLE #157325

EXISTING ROAD SIGN

EXISTING TREE, TYP.

PROPOSED LOCATION OF VERIZON EQUIPMENT & ANTENNA MOUNTED ON EXISTING WOOD UTILITY POLE

1 / A-3

2 / A-3

11'-10" TO EDGE OF R.O.W.

EXISTING GRASS AREA

SECTOR A
AZIMUTH
180°

APN: 051-052-050
165 SOUTH PALOMAR DRIVE

PROPERTY LINE

N
W E
S

NOTES:

1. ALL EQUIPMENT ENCLOSURES TO BE STACKED TOGETHER (VERTICALLY) AS CLOSE AS ALLOWED BY POLE OWNER
2. 4" OFFSET BETWEEN THE FLANGE AND THE POLE
3. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT AND OTHER EQUIPMENT WILL BE PAINTED NON-GLOSSY SABLE BROWN BY SHERWIN WILLIAMS (OR EQUIVALENT)

ENLARGED SITE PLAN

24"x36" SCALE: 1/4" = 1'-0"
11"x17" SCALE: 1/8" = 1'-0"
4' 3' 2' 1' 0" 4'

1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108

ALL STATES
ENGINEERING & SURVEYING
A ZALZALI & ASSOCIATES COMPANY
23675 BIRTCHER DRIVE
LAKE FOREST, CA 92630
PHONE: (949) 273-0996

PROJECT NO:	438731
DRAWN BY:	HG
CHECKED BY:	DW

REV	DATE	DESCRIPTION	
A	02/21/2018	90% CD'S FOR REDLINE	NC

REGISTERED PROFESSIONAL ENGINEER
WESLEY G. ZALZALI
71553
CIVIL
STATE OF CALIFORNIA

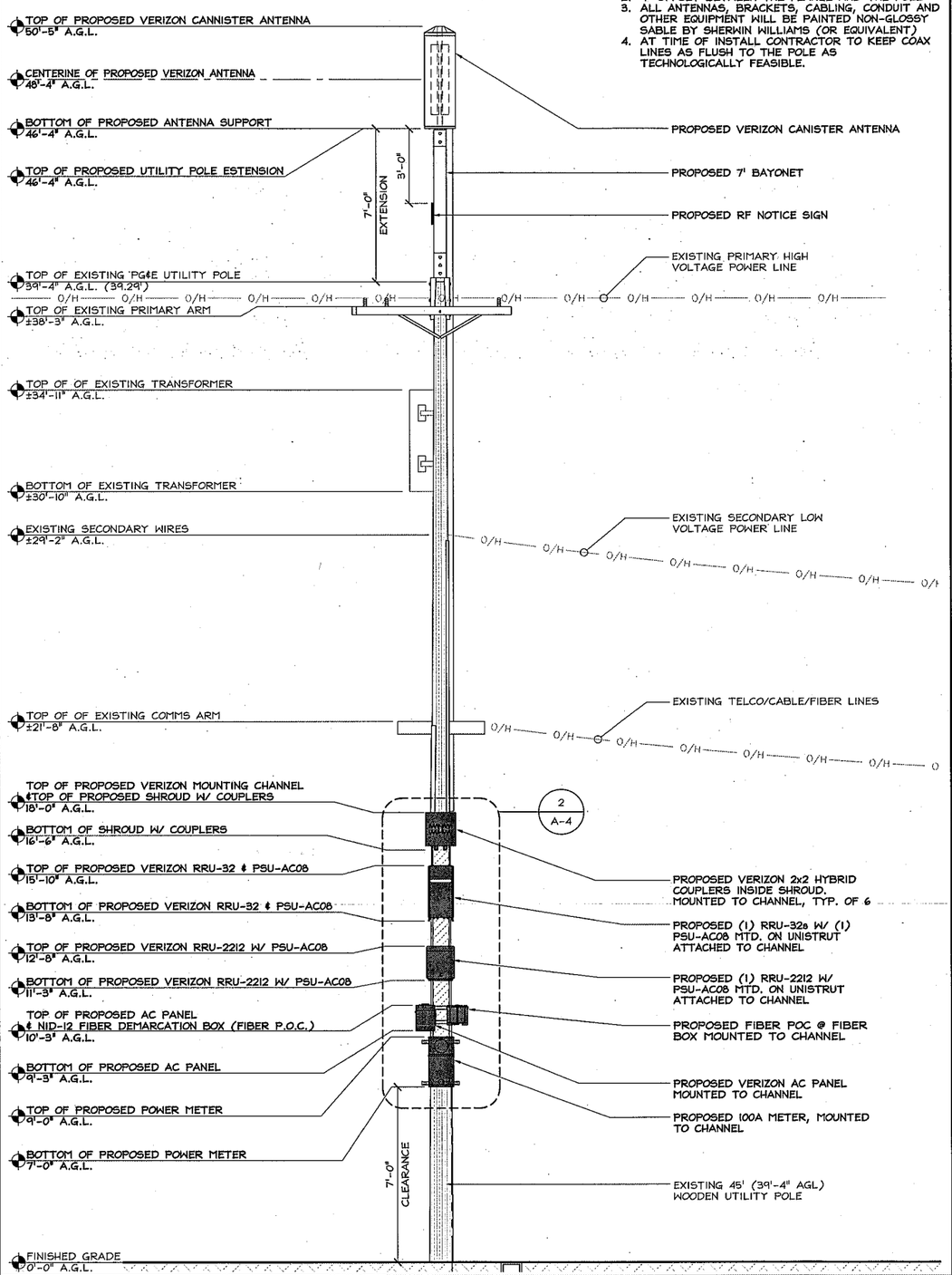
NOT TO BE USED FOR CONSTRUCTION

438731
SAN CARLOS 019
176 SOUTH PALOMAR DRIVE
EMERALD HILLS, CA 94062
NEW SITE BUILD

SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER
A-2

NOTES:
1. ALL EQUIPMENT ENCLOSURES TO BE STACKED TOGETHER (VERTICALLY) AS CLOSE AS ALLOWED BY POLE OWNER
2. 4" OFFSET BETWEEN THE FLANGE AND THE POLE
3. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT AND OTHER EQUIPMENT WILL BE PAINTED NON-GLOSSY SABLE BY SHERWIN WILLIAMS (OR EQUIVALENT)
4. AT TIME OF INSTALL CONTRACTOR TO KEEP COAX LINES AS FLUSH TO THE POLE AS TECHNOLOGICALLY FEASIBLE.

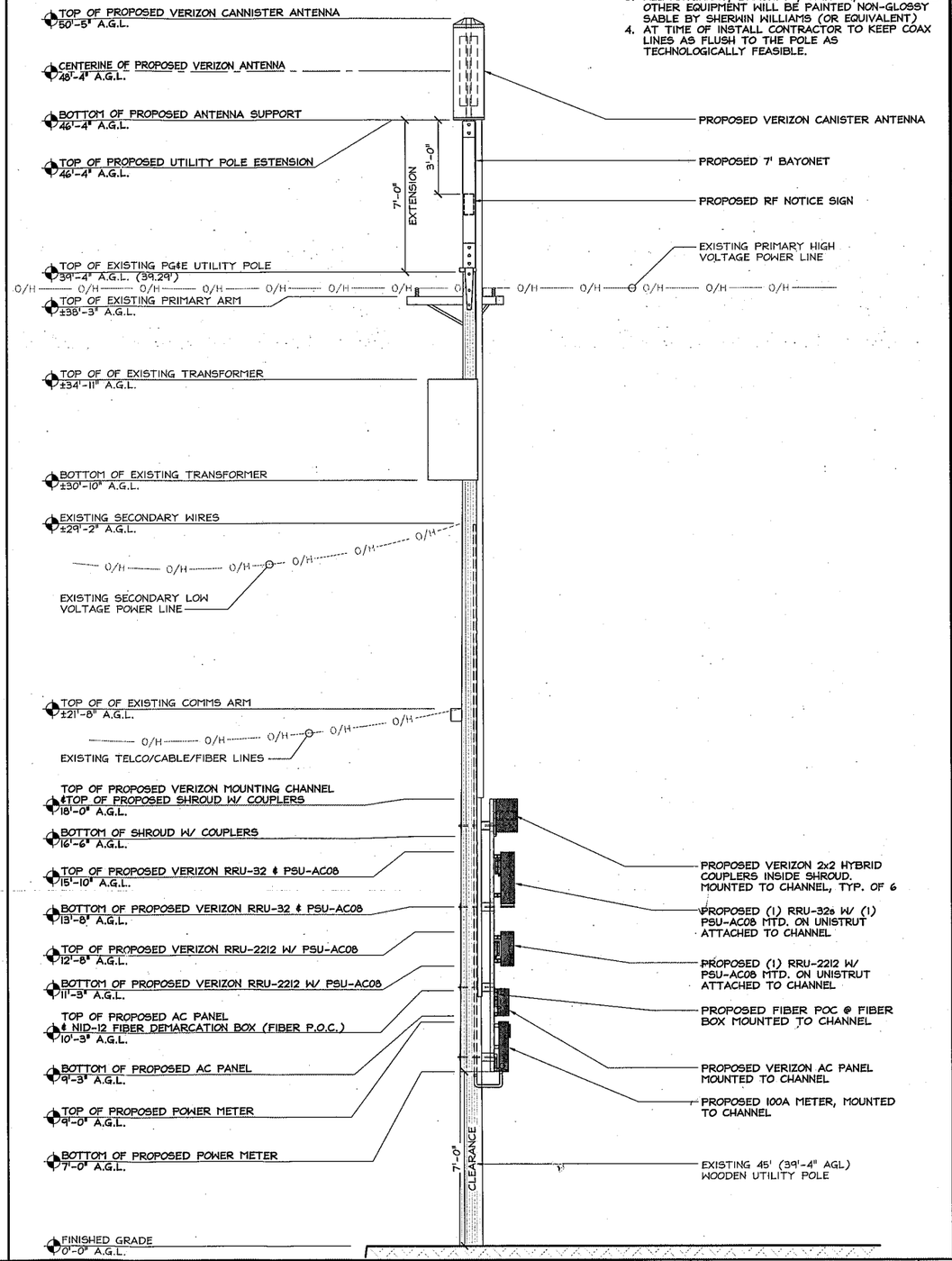


PROPOSED SOUTHEAST ELEVATION

24"x36" SCALE: 3/8" = 1'-0"
11"x17" SCALE: 3/16" = 1'-0"
2' 1' 0" 2'

2

NOTES:
1. ALL EQUIPMENT ENCLOSURES TO BE STACKED TOGETHER (VERTICALLY) AS CLOSE AS ALLOWED BY POLE OWNER
2. 4" OFFSET BETWEEN THE FLANGE AND THE POLE
3. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT AND OTHER EQUIPMENT WILL BE PAINTED NON-GLOSSY SABLE BY SHERWIN WILLIAMS (OR EQUIVALENT)
4. AT TIME OF INSTALL CONTRACTOR TO KEEP COAX LINES AS FLUSH TO THE POLE AS TECHNOLOGICALLY FEASIBLE.



PROPOSED SOUTHWEST ELEVATION

24"x36" SCALE: 3/8" = 1'-0"
11"x17" SCALE: 3/16" = 1'-0"
2' 1' 0" 2'

1

verizon
2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108

ALL STATES ENGINEERING & SURVEYING
A ZALZALI & ASSOCIATES COMPANY
23675 BIRTCHER DRIVE
LAKE FOREST, CA 92630
PHONE: (949) 273-0996

PROJECT NO:	438731
DRAWN BY:	HG
CHECKED BY:	DW

REV	DATE	DESCRIPTION	
A	02/21/2018	90% CD'S FOR REDLINE	NC

REGISTERED PROFESSIONAL ENGINEER — WILLIAM ZALZALI — 7168 — CIVIL — STATE OF CALIFORNIA

NOT TO BE USED FOR CONSTRUCTION

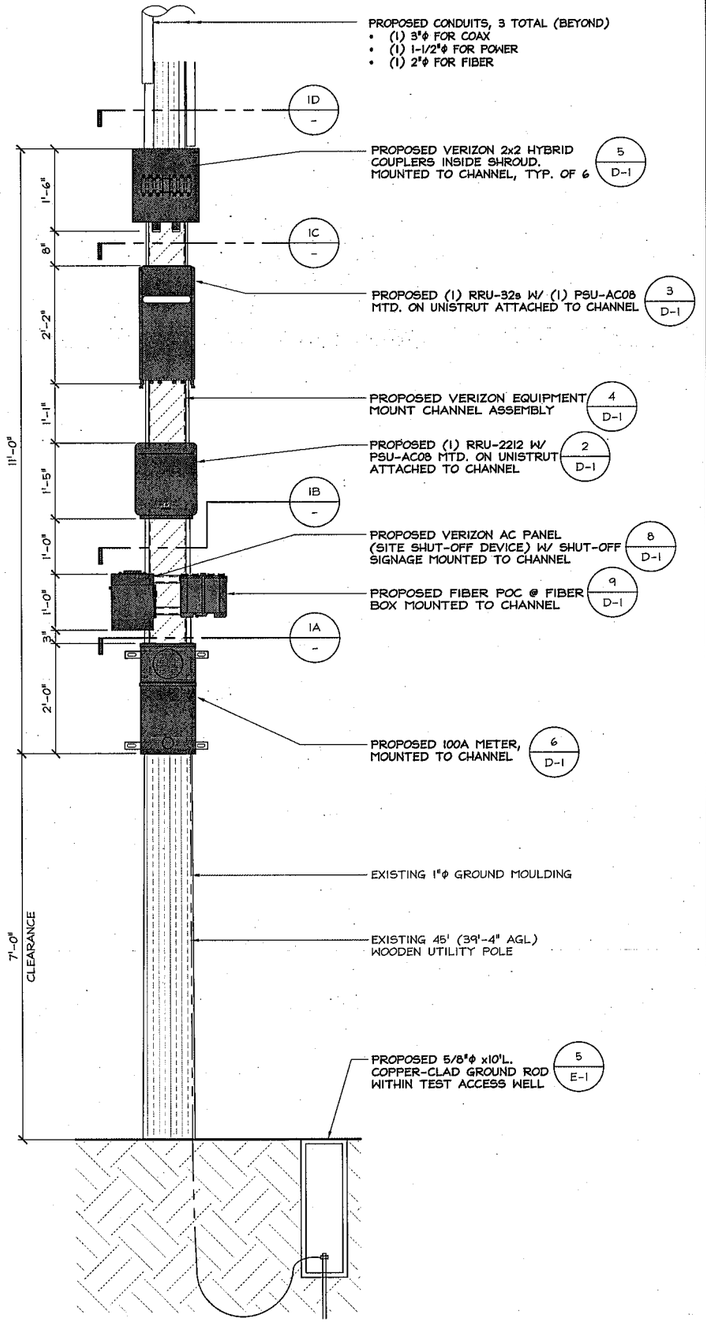
438731
SAN CARLOS 019
176 SOUTH PALOMAR DRIVE
EMERALD HILLS, CA 94062
NEW SITE BUILD

SHEET TITLE
ELEVATIONS

SHEET NUMBER
A-3

NOTES:

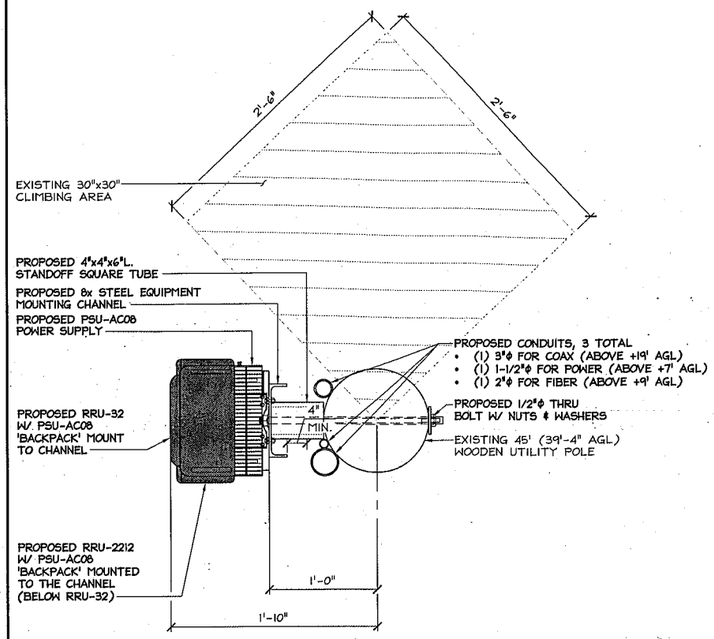
1. 4" OFFSET BETWEEN THE FLANGE AND THE POLE
2. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT AND OTHER EQUIPMENT WILL BE PAINTED NON-GLOSSY SABLE BY SHERWIN WILLIAMS (OR EQUIVALENT)



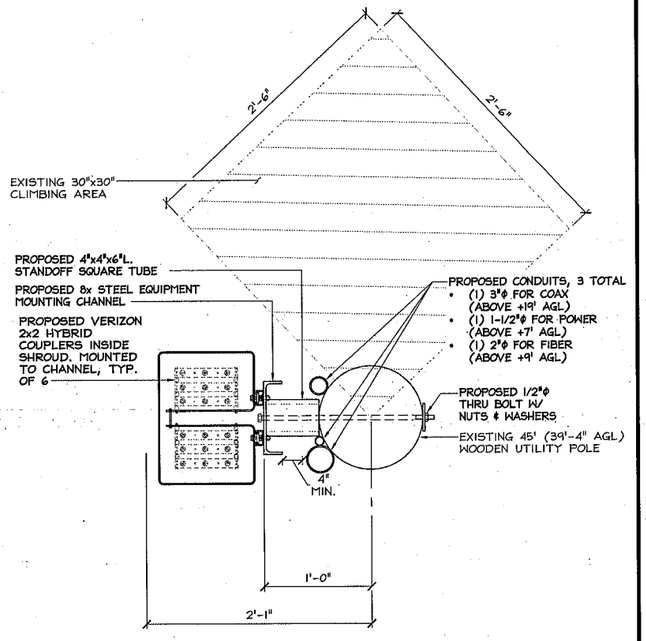
PROPOSED ELEVATION

24"x36" SCALE: 3/4" = 1'-0"
11"x17" SCALE: 3/8" = 1'-0"

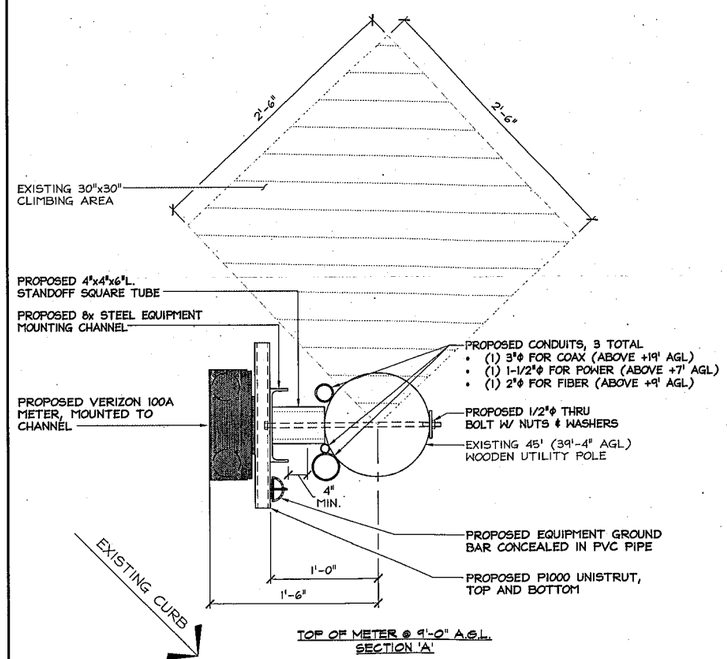
2



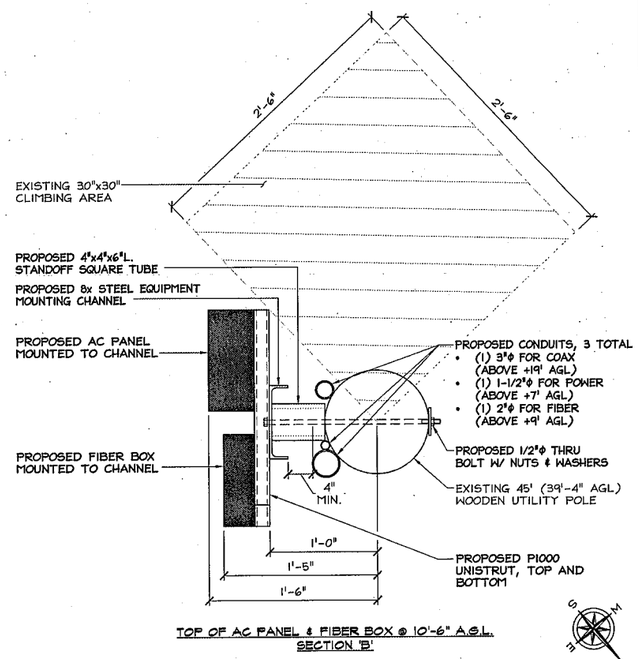
TOP OF RRU-32 & RRUS-11 @ 16'-0" A.G.L.
SECTION 'C'



TOP OF COMBINER SHROUD @ 18'-0" A.G.L.
SECTION 'D'



TOP OF METER @ 9'-0" A.G.L.
SECTION 'A'



TOP OF AC PANEL & FIBER BOX @ 10'-6" A.G.L.
SECTION 'B'

PROPOSED EQUIPMENT LAYOUT PLAN

24"x36" SCALE: 1-1/2" = 1'-0"
11"x17" SCALE: 3/4" = 1'-0"

1

verizon
2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108

ALL STATES ENGINEERING & SURVEYING
A ZALZALI & ASSOCIATES COMPANY
23675 BIRTCHER DRIVE
LAKE FOREST, CA 92630
PHONE: (949) 273-0996

PROJECT NO:	438731
DRAWN BY:	HG
CHECKED BY:	DW

REV	DATE	DESCRIPTION	
A	02/21/2018	90% CD'S FOR REDLINE	NC

REGISTERED PROFESSIONAL ENGINEER — WILLIAM E. ZALZALI — 7655 — CIVIL — STATE OF CALIFORNIA

NOT TO BE USED FOR CONSTRUCTION

438731
SAN CARLOS 019
176 SOUTH PALOMAR DRIVE
EMERALD HILLS, CA 94062
NEW SITE BUILD

SHEET TITLE
EQUIPMENT LAYOUT PLANS

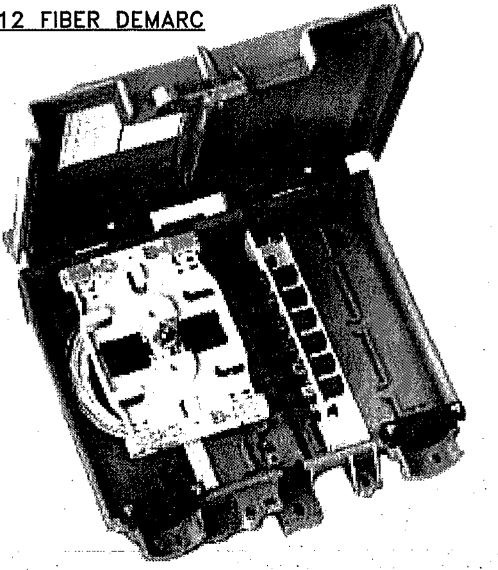
SHEET NUMBER
A-4

FIBER NETWORK INTERFACE DEVICE (NID)

24"x36" SCALE: NTS
11"x17" SCALE: NTS
9

ARIA TECH – PART No. NID-12 FIBER DEMARC

DIMENSION (HxWxD):	8.54"x10"x2.88"
SHIPPING WEIGHT:	< 10 LBS.
CAPACITY:	12 FIBERS *(6-PACK OF DUPLEX SC OR LC JUMPERS)*
SPECIAL FEATURES:	AVAILABLE AS A SINGLE OR DUAL-DOOR ENCLOSURE
EXPOSURE RATING:	OUTDOOR / NEMA-3R + FOREIGN MATTER INTRUSION (FMI) PROPTECTION NON-METALLIC ENCLOSURE
ATTACHMENT:	DIRECT-MOUNT, BACKBOARD, UNISTRUT OR PIPE-MOUNT
COLOR:	GRAY
UL LISTING:	UL 497

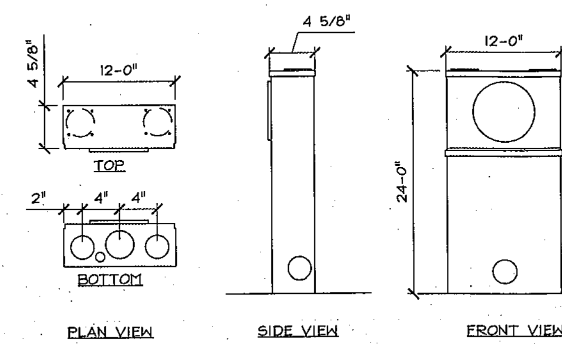


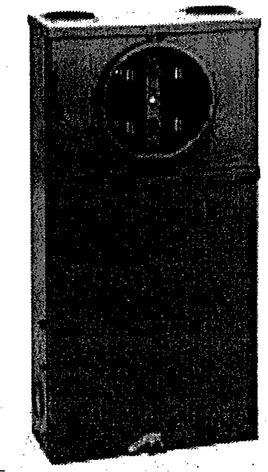
CIRCLE AW/114TB METER

24"x36" SCALE: NTS
11"x17" SCALE: NTS
6

COOPER B-LINE – CIRCLE AW/114TB METER

COLOR:	GRAY
DIMENSIONS:	24" TALL X 12" WIDE X 4 5/8"
SERVICE TYPE:	3W , 1 PHASE
VOLTAGE:	600
AMP CAPACITY:	100A
CONSTRUCTION TYPE:	NEMA 3R ENCLOSURE





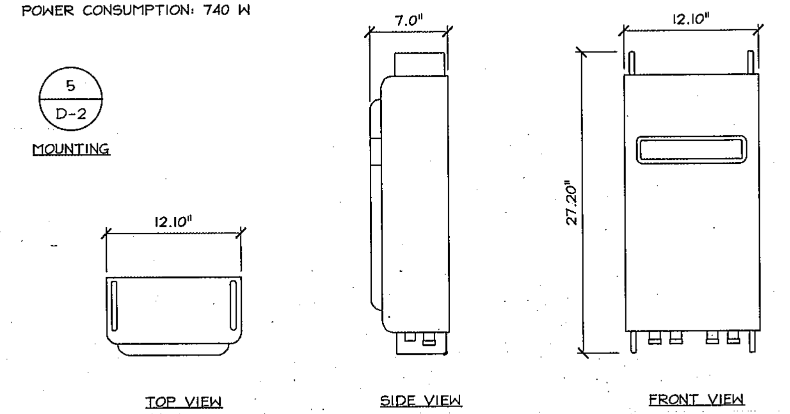
ERICSSON RRUS-32 REMOTE RADIO UNIT

24"x36" SCALE: NTS
11"x17" SCALE: NTS
3

ERICSSION RRUS-32 REMOTE RADIO UNIT

COLOR:	GRAY
DIMENSIONS:	27.2" TALL X 12.0" WIDE X 7.0"
TOTAL WEIGHT:	60 LBS.
POWER CONSUMPTION:	740 W

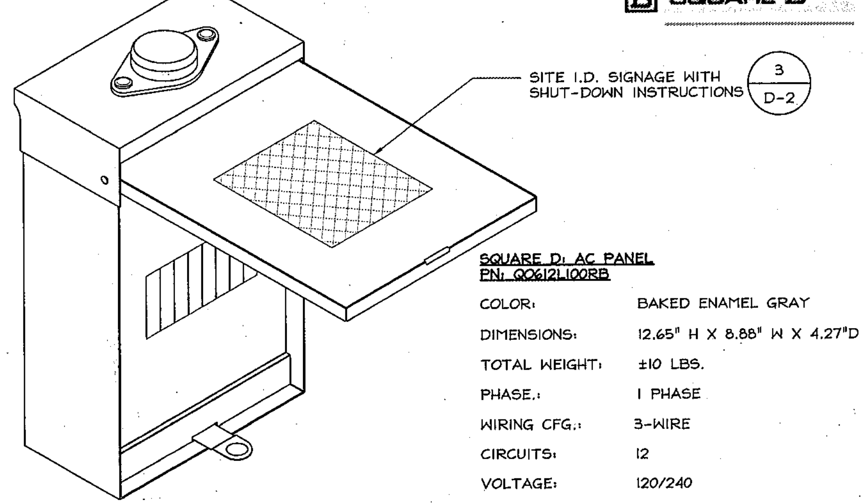
5 / D-2 MOUNTING



SQUARE D: QO612L100RB

24"x36" SCALE: NTS
11"x17" SCALE: NTS
8

SQUARE D



SQUARE D: AC PANEL
PN: QO612L100RB

COLOR:	BAKED ENAMEL GRAY
DIMENSIONS:	12.65" H X 8.88" W X 4.27"D
TOTAL WEIGHT:	±10 LBS.
PHASE.:	1 PHASE
WIRING CFG.:	3-WIRE
CIRCUITS:	12
VOLTAGE:	120/240
AMPACITY:	100 MAX

AWS/PCS DIPLEXER SPECS

24"x36" SCALE: NTS
11"x17" SCALE: NTS
5

COMMSCOPE H-3-CPUSE-NA16 HYBRID COUPLER
AIR DIELECTRIC HYBRID COUPLER, 555-2700 MHz

COLOR: GRAY

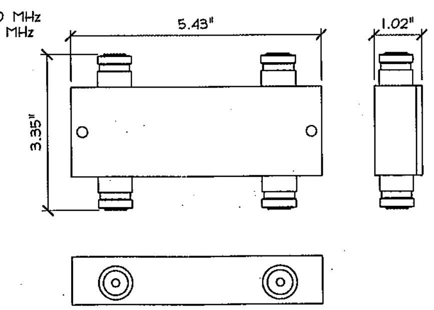
DIMENSIONS, HxWxD: 85x138x26MM (3.35"x5.43"x1.02")

WEIGHT: .5KG (1.10 LBS)

ELECTRICAL SPECIFICATIONS (BAND 1)

OPERATION FREQUENCY BAND:	555 – 2700 MHz
3RD ORDER IMD:	-160 dBc
AVERAGE POWER, MAX:	200 W
COUPLING	3.1 dB
IMPEDANCE:	50 ohm
INSERTION LOSS AT BAND:	0.2 dB @ 555-2700 MHz
ISOLATION AT FREQUENCY:	26 dB @ 555-2700 MHz
PEAK POWER, MAX:	1 KW
REFLECTED POWER, MAXIMUM:	200 W
RETURN LOSS, MIN:	20.8 dB
VSWR:	1.2:1

7 / – MOUNTING



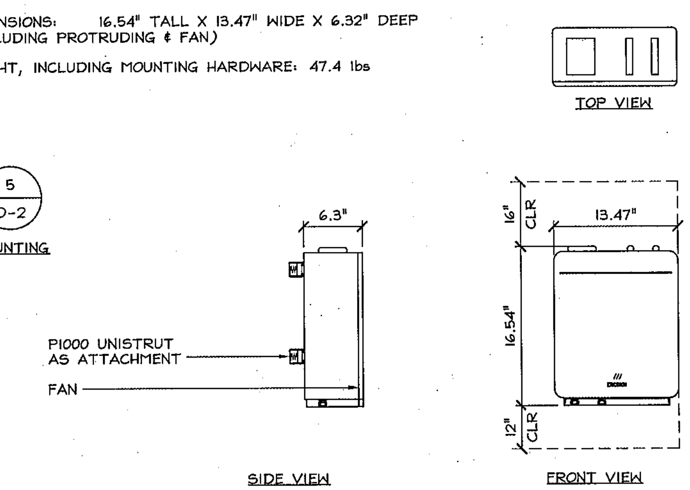
ERICSSON RRUS - RADIO 2212 B13/B5

24"x36" SCALE: NTS
11"x17" SCALE: NTS
2

ERICSSION RRUS-2212 B13/B5 REMOTE RADIO UNIT

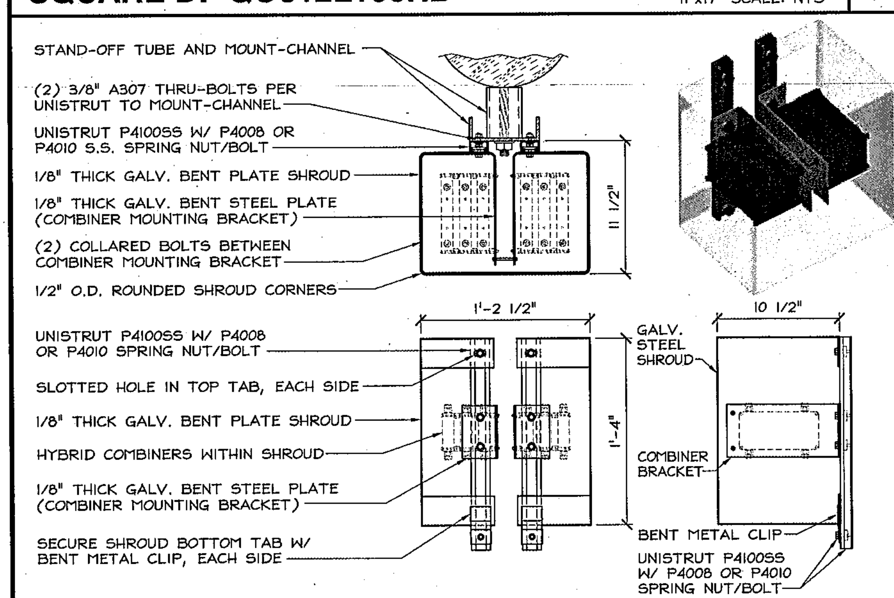
COLOR:	GRAY
DIMENSIONS: (INCLUDING PROTRUDING & FAN)	16.54" TALL X 13.47" WIDE X 6.32" DEEP
WEIGHT, INCLUDING MOUNTING HARDWARE:	47.4 lbs

5 / D-2 MOUNTING



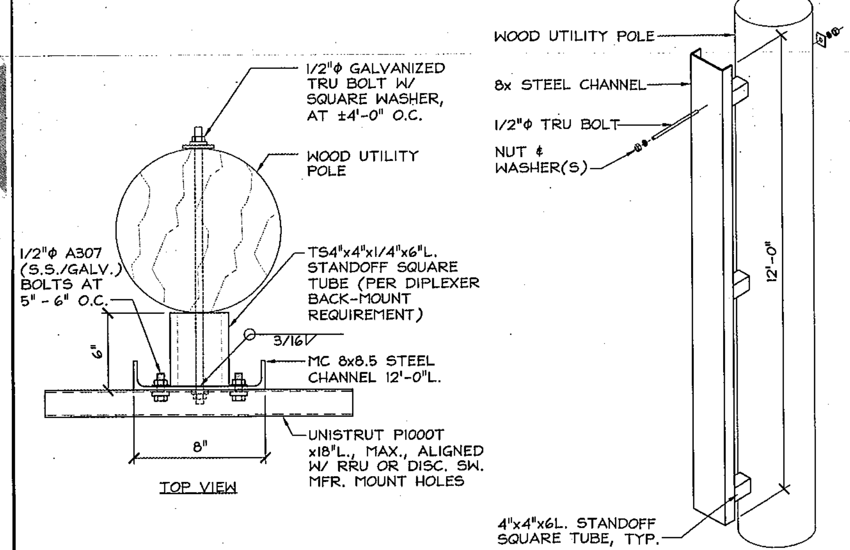
2x2 HYBRID COUPLERS W/ SHROUD

24"x36" SCALE: NTS
11"x17" SCALE: NTS
7



MOUNTING CHANNEL DETAIL

24"x36" SCALE: NTS
11"x17" SCALE: NTS
4

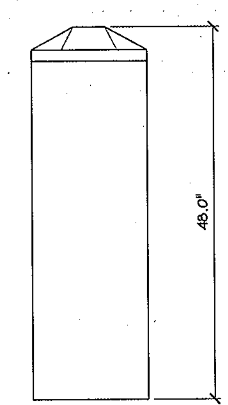


ANTENNA SPECIFICATION

24"x36" SCALE: NTS
11"x17" SCALE: NTS
1

CANISTER ANTENNA

DIMENSIONS:	1219mm (48" H) x 371mm (14.6" ϕ)
NET WEIGHT:	17.3kg (38.1 lbs)



2 / D-2 MOUNTING

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verizon

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REGISTERED PROFESSIONAL ENGINEER
CIVIL
STATE OF CALIFORNIA

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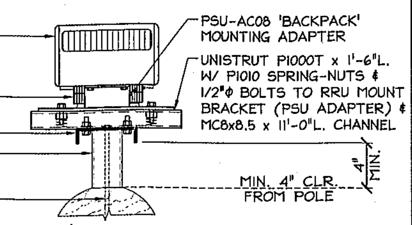
438731
SAN CARLOS 019
176 SOUTH PALOMAR DRIVE
EMERALD HILLS, CA 94062
NEW SITE BUILD

SHEET TITLE
DETAILS

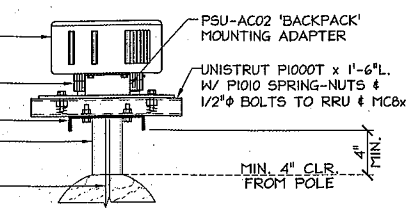
SHEET NUMBER
D-1

NOT USED

24"x36" SCALE: NTS
11"x17" SCALE: NTS
7



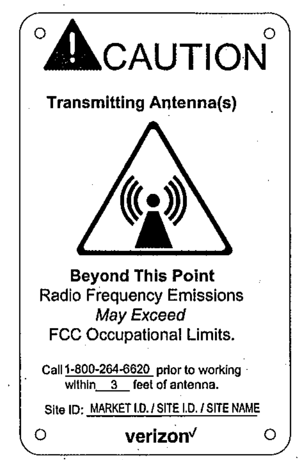
RRU-32 W/ PSU-AC08



RRU-2212 W/ PSU-AC02

RRU MOUNTING DETAIL

24"x36" SCALE: NTS
11"x17" SCALE: NTS
5



NOTES:

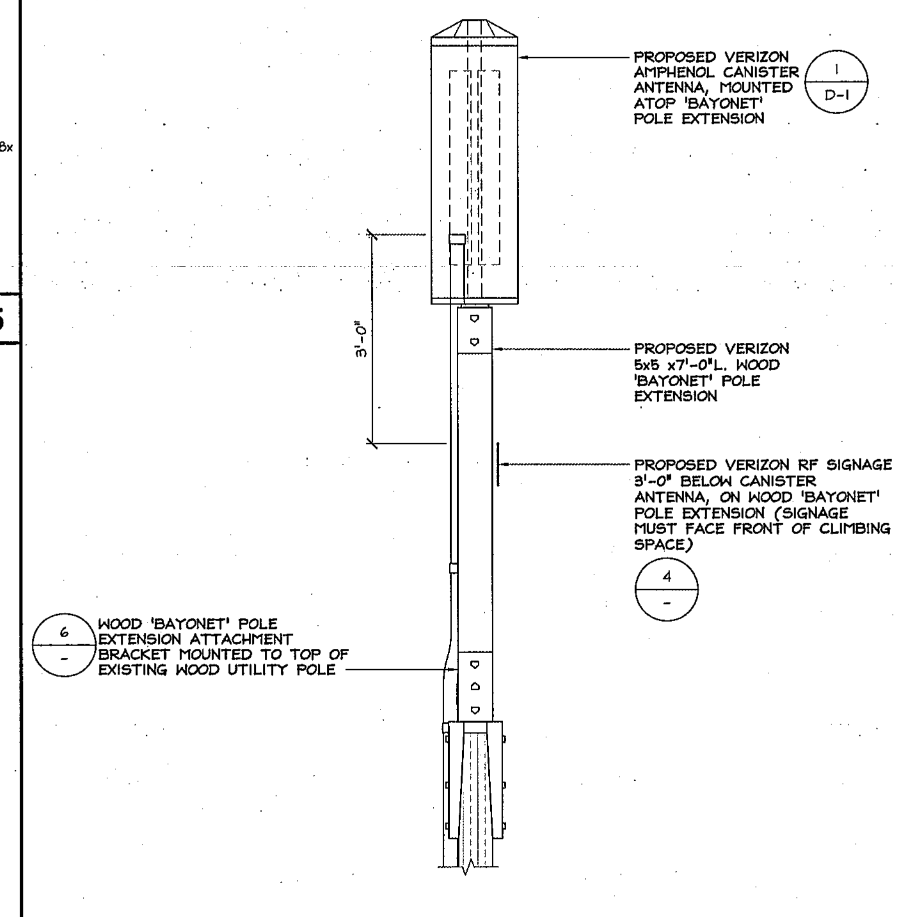
1. INSTALL ONE SIGN 3-4' BELOW THE ANTENNA (FROM TOP OF SIGN)

GO95 RF SIGNAGE

24"x36" SCALE: NTS
11"x17" SCALE: NTS
4

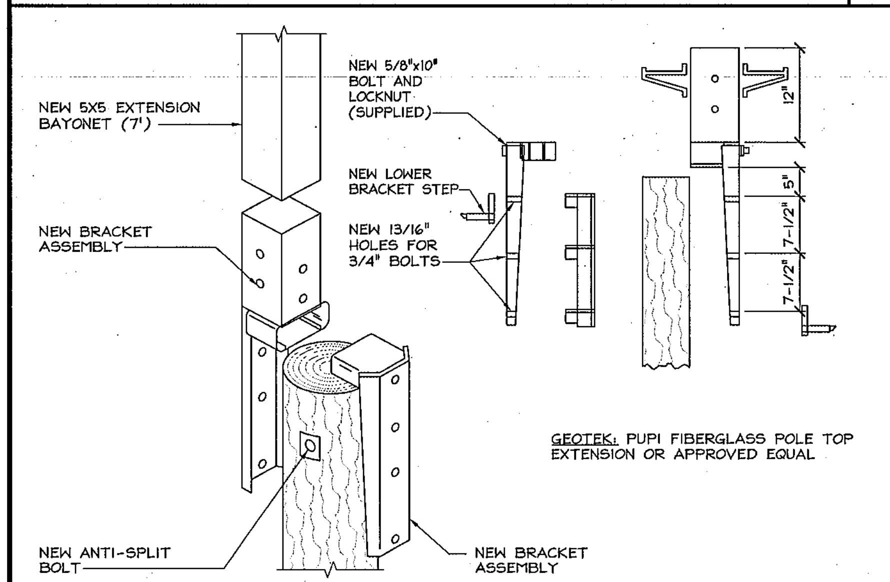
NOTE:

ALL ANTENNA, BRACKETS, CABLING, CONDUIT AND OTHER EQUIPMENT SHALL BE PAINTED NON-GLOSSY SABLE BROWN BY SHERWIN WILLIAMS (OR EQUIVALENT)



ARRAY ASSEMBLY

24"x36" SCALE: NTS
11"x17" SCALE: NTS
2

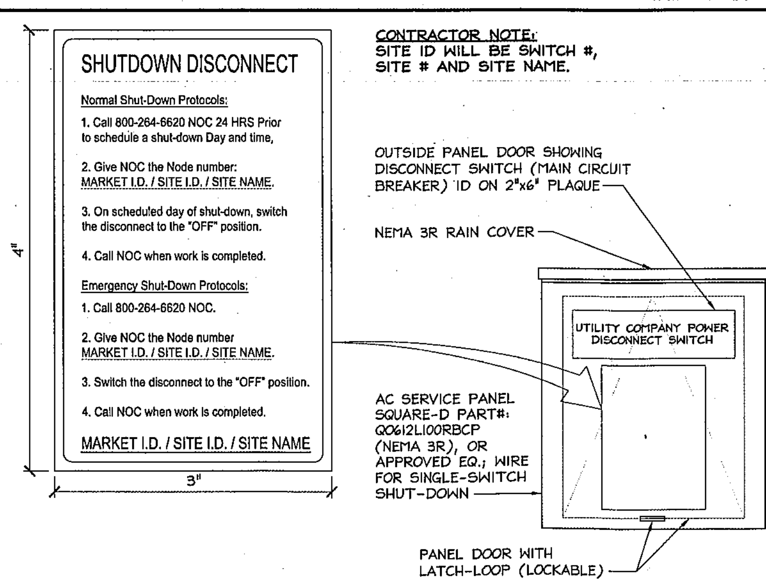


GEOTEK: PUPI FIBERGLASS POLE TOP EXTENSION OR APPROVED EQUAL

UTILITY POLE TOP EXTENSION

24"x36" SCALE: NTS
11"x17" SCALE: NTS
6

CONTRACTOR NOTE:
SITE ID WILL BE SWITCH #, SITE # AND SITE NAME.



SHUTDOWN SIGN ON AC PANEL

24"x36" SCALE: NTS
11"x17" SCALE: NTS
3

ERICSSON PSU-AC08

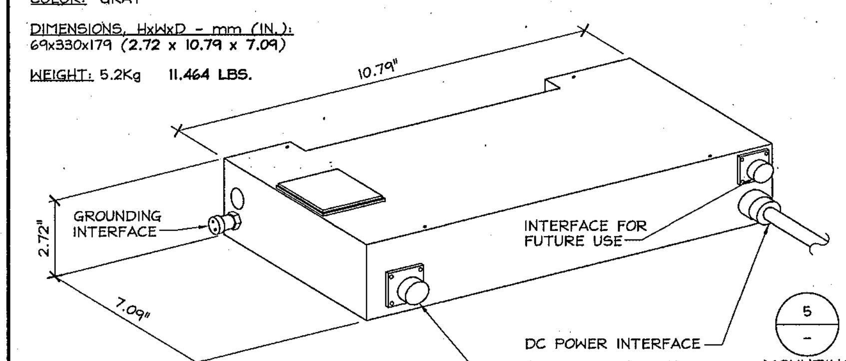
ELECTRICAL SPECIFICATIONS:

MAX. PWR. DISSAPATION:	80W	INPUT CURRENT RATING:	13A @ 100 VAC
OPERATIONAL TEMP. RANGE:	-40°C TO +55°C	DEFAULT OUTPUT VOLTAGE:	-54.5 VDC
NOMINAL INPUT VOLTAGE:	100-250 VAC	VOLTAGE RANGE:	-54.0 VDC TO -55.0 VDC
RATED OPER. VOLTAGE RANGE:	85-275 VAC		
EXTERNAL INPUT FUSE:	16A @ 100VAC, FOR 1,000 W OUTPUT PWR.	OUTPUT POWER:	1,000 W

COLOR: GRAY

DIMENSIONS, HxWxD - mm (IN.):
69x330x179 (2.72 x 10.79 x 7.09)

WEIGHT: 5.2Kg 11.464 LBS.



PSU-AC08 DETAIL

24"x36" SCALE: NTS
11"x17" SCALE: NTS
1

verizon

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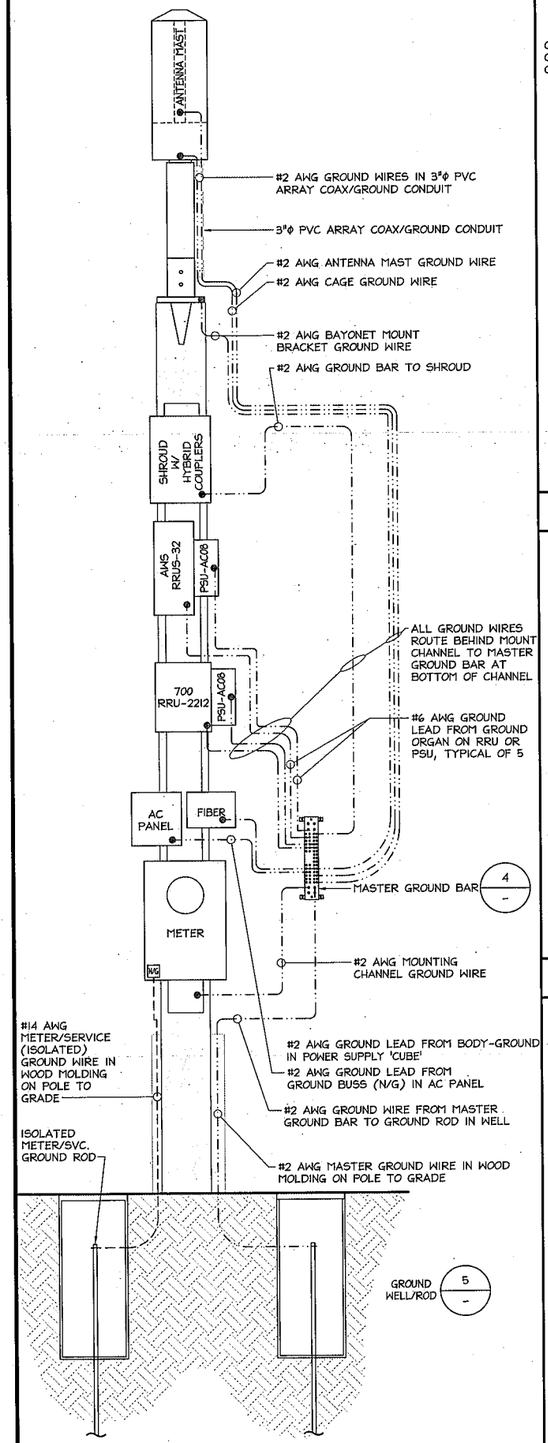
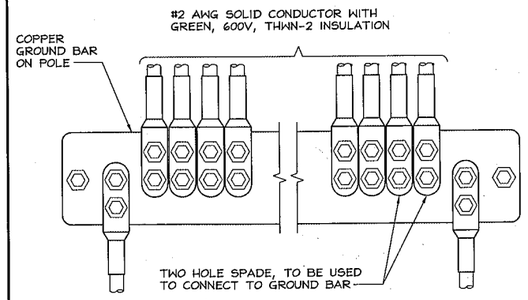
438731
SAN CARLOS 019
176 SOUTH PALOMAR DRIVE
EMERALD HILLS, CA 94062
NEW SITE BUILD

SHEET TITLE
DETAILS

SHEET NUMBER
D-2



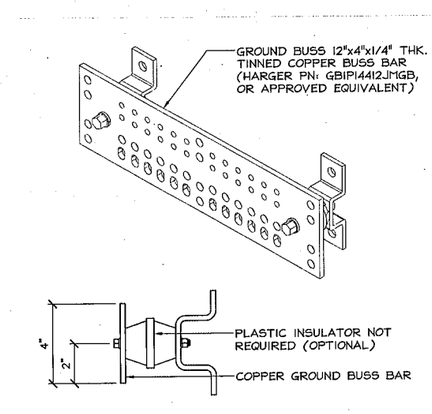
GROUND RISER DIAGRAM | 7



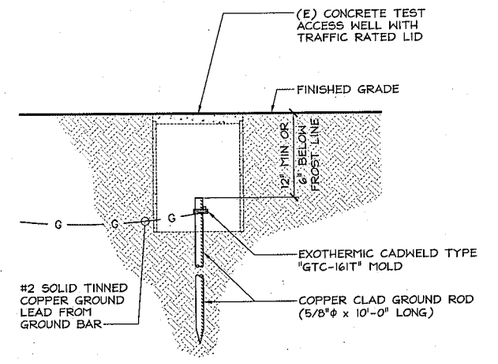
NOTE:

1. APPLY NO-OX TO LUG AND BAR CONTACT SURFACE. DO NOT COAT INLINE LUG.
2. IF STOLEN GROUND BARS ARE ENCOUNTERED, CONTACT VERIZON.CM FOR REPLACEMENT THREADED ROD KIT.

GROUND BAR | 4



GROUND CONNECTION | 6



GROUND TEST ACCESS WELL | 5

PANEL 'A'

SITE NAME: SAN CARLOS 019

PANEL DESIGNATION: PANEL 'A'

VOLTAGE: 120 V
PHASE: 1
WIRE: 2
MAIN BREAKER: 70 AMP
BUSS RATING: 100 AMP
LOCATION: SURFACE-EXTERIOR

CKT	LOAD DESCRIPTION	BREAKER AMPS	BREAKER POLES	BREAKER STATUS	SERVICE LOAD VA	USAGE FACTOR	PHASE A VA	PHASE B VA	PHASE A VA	PHASE B VA	USAGE FACTOR	SERVICE LOAD VA	BREAKER STATUS	BREAKER POLES	BREAKER AMPS	LOAD DESCRIPTION	CKT
1	MAIN	70	1	ON			0		0		1.25					SPACE (MANDATORY)	2
3	SPACE (NO 'B' PHASE)							0		0	1.25					SPACE (NO 'B' PHASE)	4
5	PSU-AC08 (RRU-2212)	20	1	ON	1000	1.25	1250		1250		1.25	1000	ON	1	20	PSU-AC08 (RRU-32)	6
7	SPACE (NO 'B' PHASE)							0		0						SPACE (NO 'B' PHASE)	8

SQUARE 'D' #QO612L100RB AC LOAD CENTER (100A, 120/240V, 1PH, 3W - NEMA-3R) BE FED 120V, 2-WIRE SERVICE FROM METER — TO

PHASE A TOTAL VA	2500
PHASE B TOTAL VA	0
TOTAL KVA	2.50
TOTAL AMPS	10.42

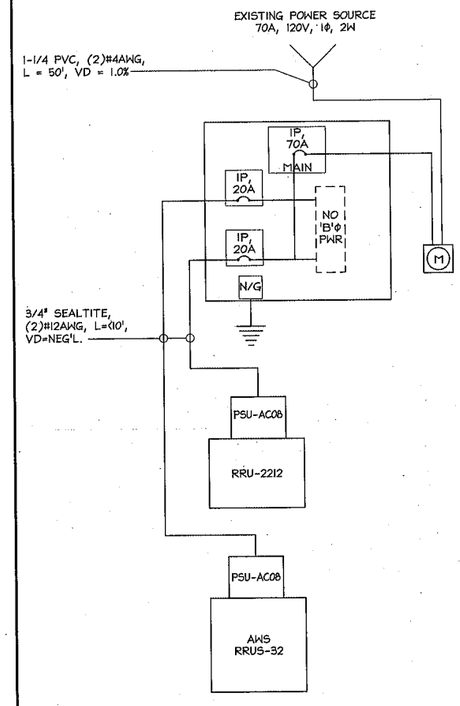
NOTES:
1. MAIN CIRCUIT BREAKER IS THE AC SERVICE DISCONNECT SWITCH
2. ALL LOADS ARE COUNTED AS LCL/MCL (DESIGN TO 100% CAPACITY-OK)
3. UNUSED BREAKERS SHALL BE MARKED 'SPARE' & SWITCHED 'OFF'

PANEL SCHEDULE | 2

ELECTRICAL NOTE:

1. ALL WORK SHALL COMPLY TO THE CURRENT EDITION OF THE CALIFORNIA ELECTRICAL CODE, CALIFORNIA BUILDING CODE, NATIONAL ELECTRICAL CODE, ALL APPLICABLE REGULATIONS GOVERNING NON-JPA UTILITY POLES (G.O. 95), AND ALL APPLICABLE LOCAL CODES.
2. ALL WORK SHALL COMPLY WITH VERIZON CARRIER CONSTRUCTION STANDARDS FOR SMALL CELL INSTALLATION.
3. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
4. AC PANEL SHALL HAVE A 'MAIN' BREAKER AFFIXED TO BOTH POLES OF THE MAIN LUG BUSS AND FED THROUGH LOAD SIDE TO PROVIDE SINGLE SHUT-OFF SWITCH FOR ALL SMALL CELL POWER ON AC PANEL.
5. POWER, CONTROL AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT. SHALL BE SINGLE CONDUCTOR (#14 AWG AND LARGER), 600V, OIL RESISTANT. THWN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED.
6. REFER TO PANEL SCHEDULE (2/-) AND ONE-LINE DIAGRAM (1/-) FOR CIRCUIT ARRANGEMENT & WIRING CONNECTION.
7. SUBCONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY BEFORE THE START OF CONSTRUCTION. POWER AND TELEPHONE CONDUIT SHALL BE PROVIDED AND INSTALLED PER UTILITY REQUIREMENTS.
8. SUBCONTRACTOR SHALL PROVIDE 100 AMP, SINGLE PHASE, 120V 60Hz SERVICE FOR VERIZON SITE.

ELECTRICAL NOTES | 3



ONE-LINE DIAGRAM | 1

verizon
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NOT TO BE USED FOR CONSTRUCTION

438731
SAN CARLOS 019
176 SOUTH PALOMAR DRIVE
EMERALD HILLS, CA 94062
NEW SITE BUILD

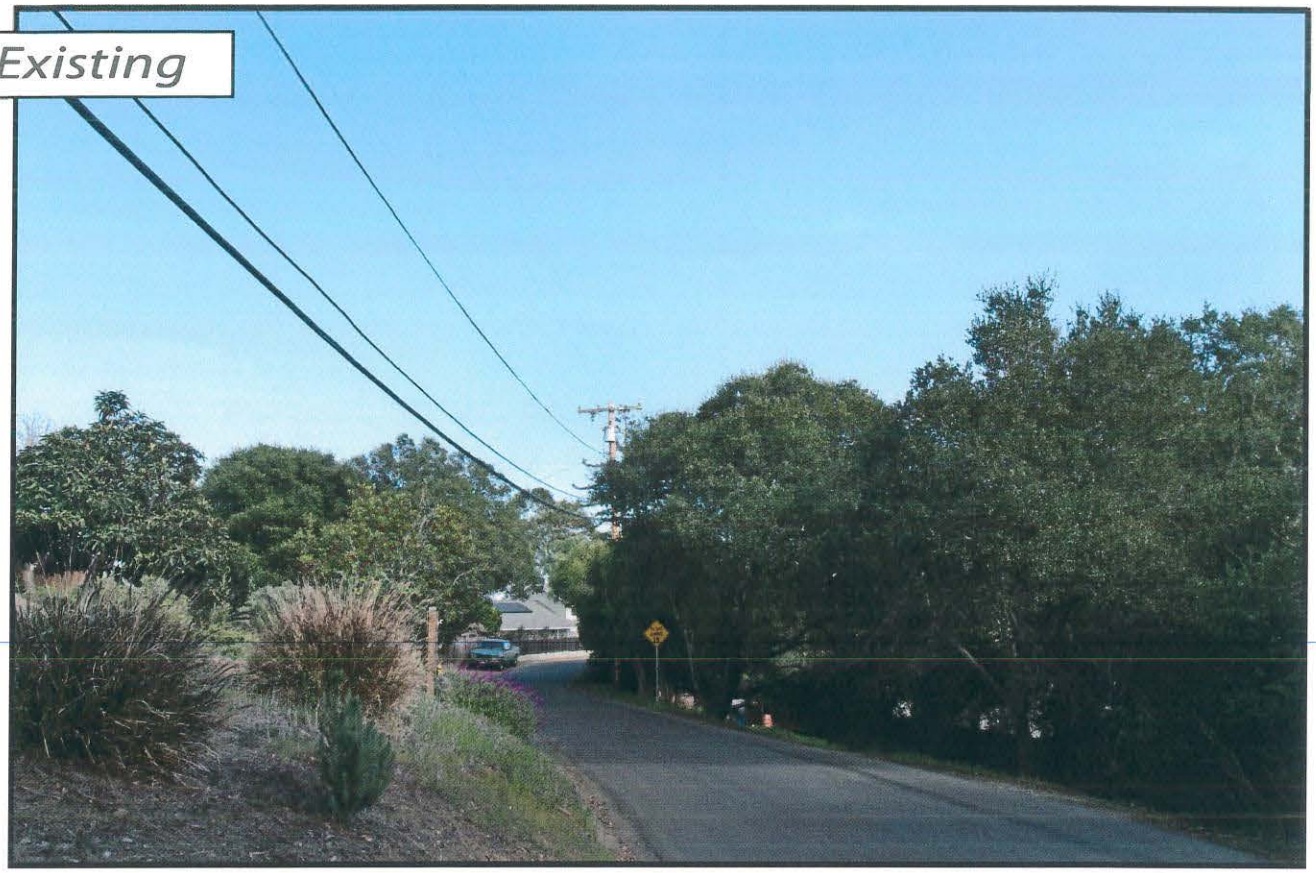
SHEET TITLE
ONE-LINE DIAGRAM & GROUNDING DETAILS

SHEET NUMBER
E-1

County of San Mateo - Planning and Building Department

ATTACHMENT D

Existing



Proposed

view from South Palomar Drive looking east at site

SF San Carlos 019
Adjacent to 165 South Palomar Drive, Redwood City, CA
Photosims Produced on 3-5-2018

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

view from South Palomar Drive looking southwest at site

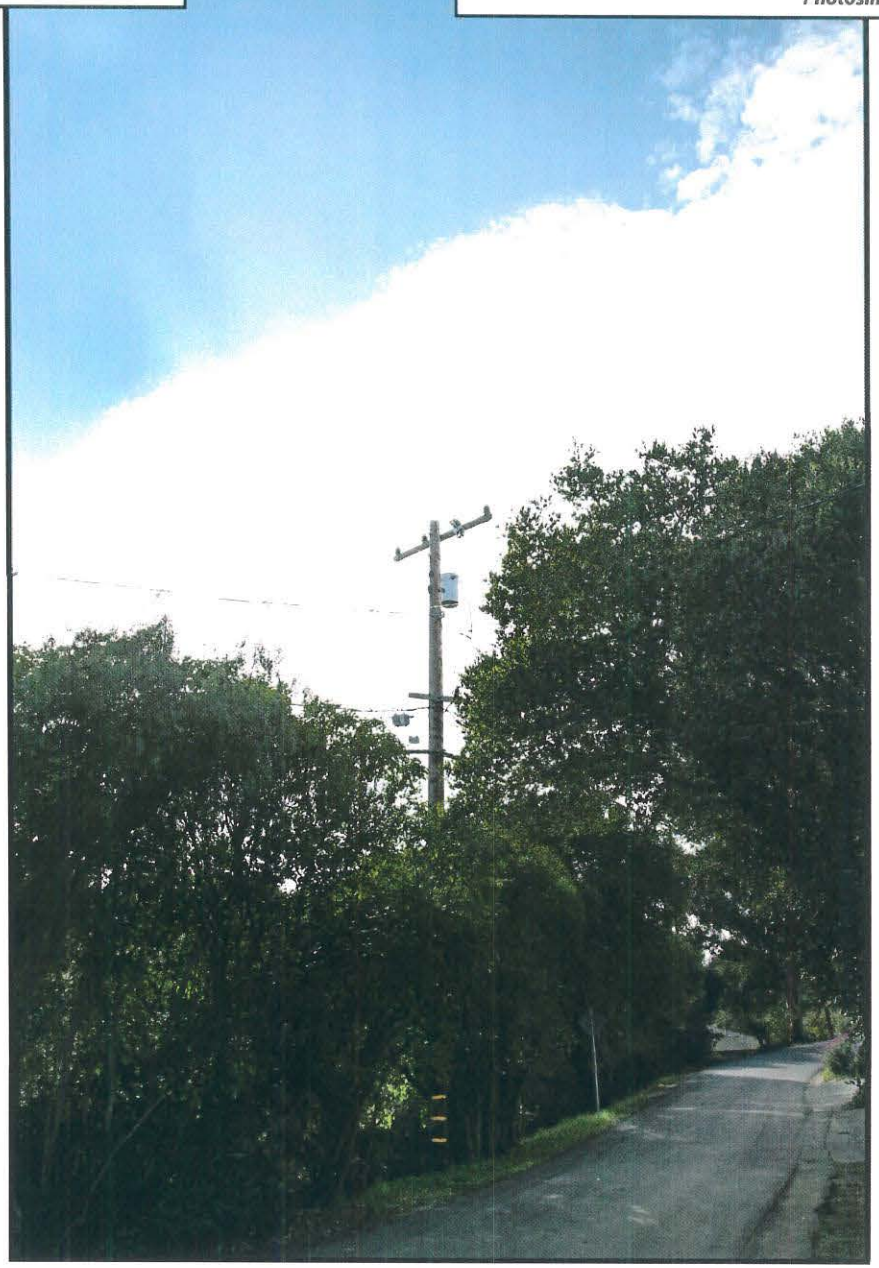
verizon

SF San Carlos 019

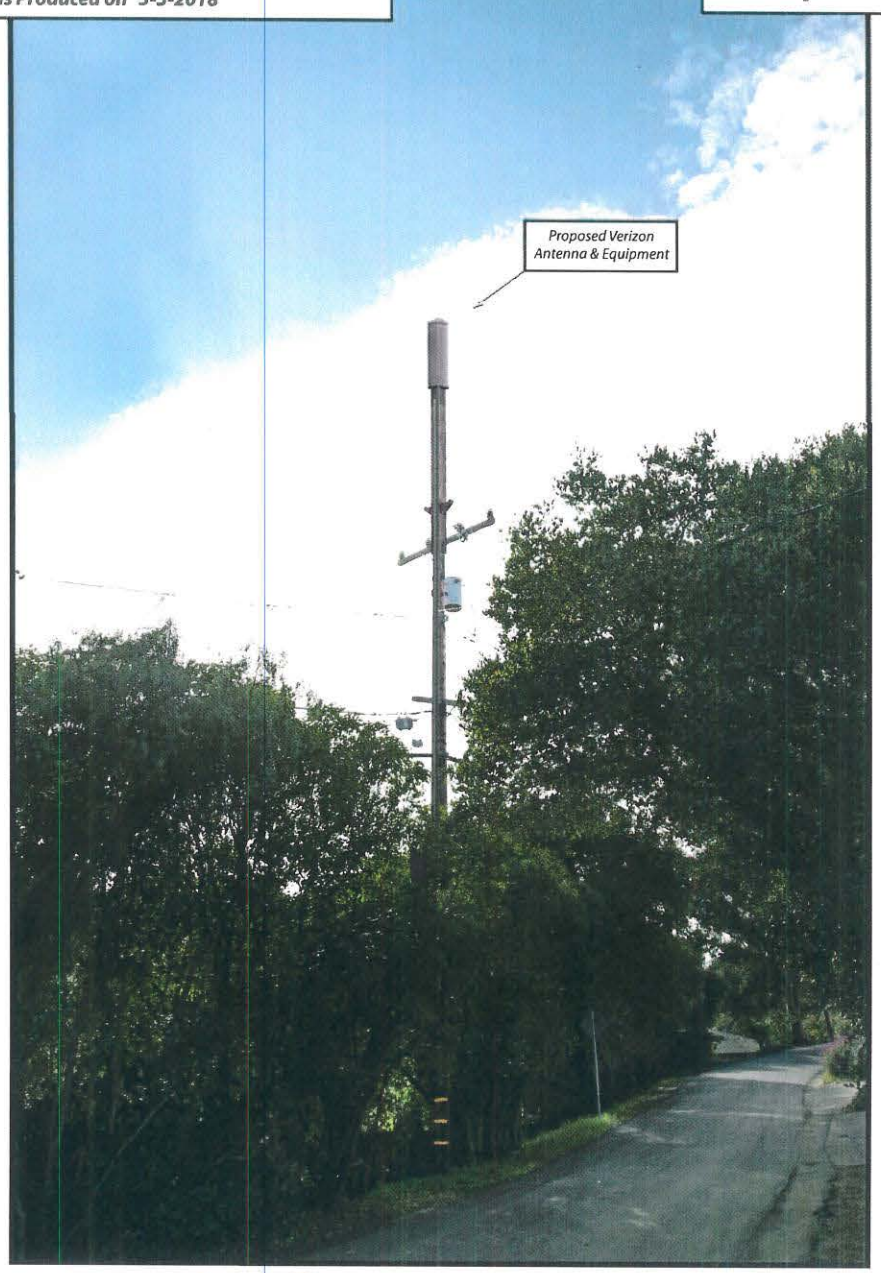
Adjacent to 165 South Palomar Drive, Redwood City, CA

Photosims Produced on 3-5-2018

Existing



Proposed



AdvanceSim

Photo Simulation Solutions

Contact (925) 202-8507

modus

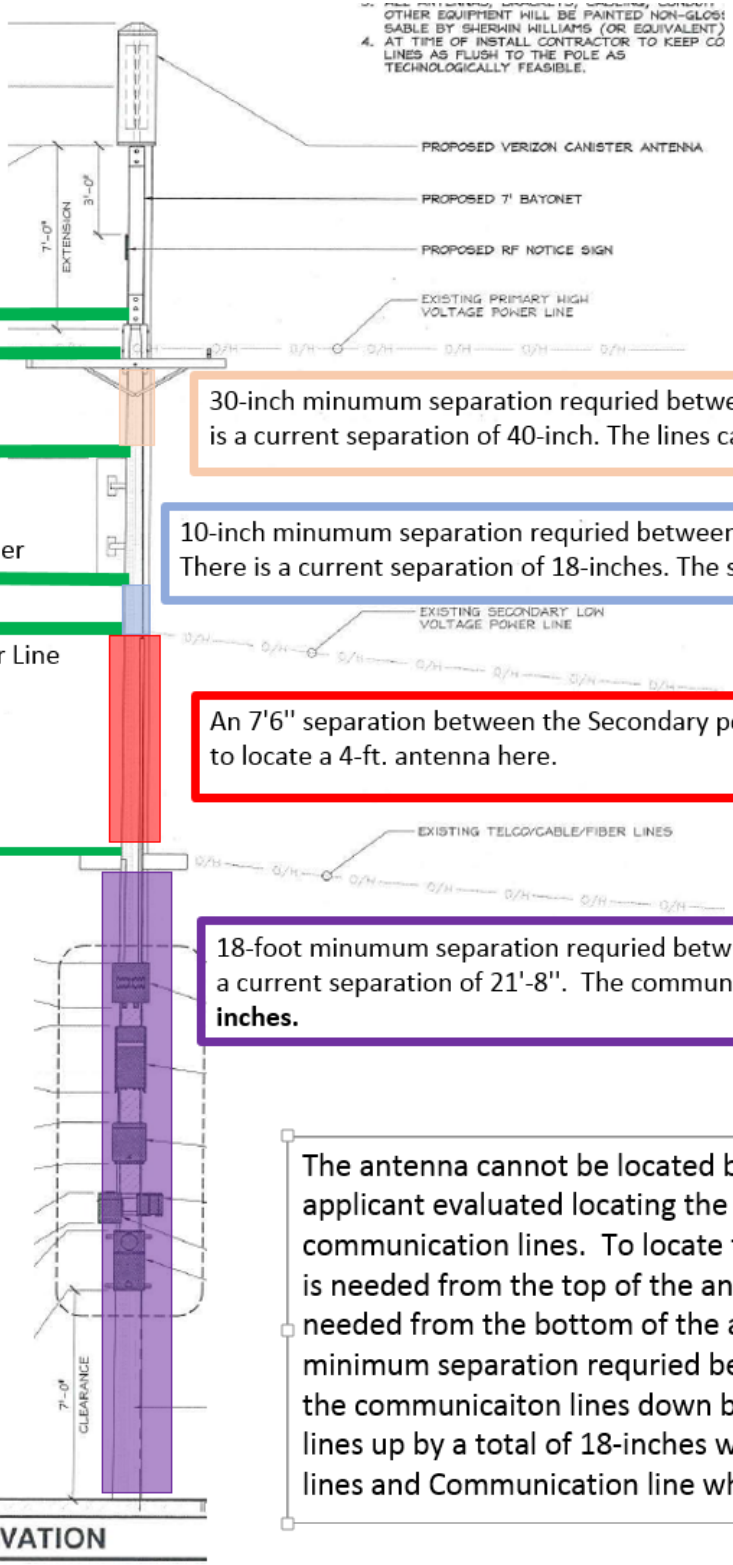
County of San Mateo - Planning and Building Department

ATTACHMENT E


SAN CARLOS 019
PG&E Wood Utility Pole: Pole is on private property and inaccessible
PG&E Wood Utility Pole: Pole is not viable because it is located between driveways, against PG&E safety protocol. It is unclear if this pole is locate in the right of way. Another concern are the crossing lines at the top of the pole, which PG&E has advised us to avoid.
PG&E Wood Utility Pole: too busy, pole does not have sufficient available space for equipment and installation. Crossing lines at the top of the pole will likely lead to PG&E rejection.

County of San Mateo - Planning and Building Department

ATTACHMENT F



39'-4'' Top of Existing Pole

38'-3'' Top of Existing Primary Arm

34'-11'' Top of Existing Transformer

30'-10'' Bottom of Existing Transformer

29'-2'' Existing Secondary Power Line

21'-8'' Top of Communication Arm

30-inch minumum separation requried between Primary power lines and transformer. There is a current separation of 40-inch. The lines can be moved up **10-inches.**

10-inch minumum separation requried between the transformer and the Secondary power lines. There is a current separation of 18-inches. The secondary power lines can be moved up **8-inches**

An 7'6'' separation between the Secondary power and Communication lines. 14-ft. of separation is requried to locate a 4-ft. antenna here.

18-foot minumum separation requried between the Communiation lines and . There is a current separation of 21'-8''. The communication lines can be moved down **44-inches.**

The antenna cannot be located between the primary and secondary power lines. The applicant evaluated locating the antenna between the secondary power lines and communication lines. To locate the 4-foot antenna between these lines a 6-ft. separation is needed from the top of the antenna to the secondary power line and a 4-ft separation is needed from the bottom of the antenna to the communication lines. This results in a 14-ft. minimum separation requried between the powerlines and commuincation lines. Moving the communicaiton lines down by 44-inches and the transformer and secondary power lines up by a total of 18-inches would only create a 12'8'' between the secondary power lines and Communication line where 14-ft. is required.

PROPOSED SOUTHEAST ELEVATION

County of San Mateo - Planning and Building Department

ATTACHMENT G

Verizon Wireless • Proposed Small Cell (No. 438731 "San Carlos 019")
165 South Palomar Drive • Emerald Hills, 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. 438731 "San Carlos 019") 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 a cylindrical antenna on the utility pole sited in the public right-of-way at 165 South Palomar Drive in Emerald Hills. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standard

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 human 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 FCC limit for exposures of unlimited duration to radio frequency energy for various wireless services 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
BRS (Broadband Radio)	2,490 MHz	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
[most restrictive frequency range]	30–300	0.20	1.0

Power line frequencies (60 Hz) are well below the applicable range of this standard, and there is considered to be no compounding effect from simultaneous exposure to power line and radio frequency fields.

General Facility Requirements

Small cells typically consist of two distinct parts: the electronic transceivers (also called "radios") 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 transceivers are typically mounted on the support pole or placed in a cabinet at ground level. 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 in front of 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"). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

Site and Facility Description

Based upon information provided by Verizon, including drawings by All States Engineering & Surveying, dated February 21, 2018, it is proposed to install one Amphenol Model CUUT070X12F 4-foot tri-directional cylindrical antenna, with two directions activated, on an extension above the top of the 39½-foot utility pole sited in the public right-of-way on the south side of South Palomar Drive in the Emerald Hills area of unincorporated San Mateo County,* opposite the driveway for the single-story residence at 176 South Palomar Drive. The antenna would employ no downtilt, would be mounted at an effective height of about 48½ feet above ground, and would be oriented with its principal directions oriented toward 180°T and 300°T. The maximum effective radiated power in any direction would be 2,370 watts, representing simultaneous operation at 1,890 watts for AWS and 480 watts for 700 MHz service. There are reported no other wireless telecommunications base stations at this site or nearby.

* The residence at 165 South Palomar Drive is downhill to the south from the proposed site.

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 the second-floor elevation of any nearby building is 3.1% 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 its mounting location and height, the Verizon antenna would not be accessible to unauthorized persons, and so no mitigation 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, to include review of personal monitor use, be provided to all authorized personnel who have access to the antenna. No access within 8 feet at the same height as the antenna, such as might occur during certain maintenance activities at the top of the pole, should be allowed while the small cell is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. It is recommended that an explanatory sign† be posted at the antenna and/or on the pole below the antenna, readily visible to persons who might need to work within that distance.

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 at 165 South Palomar Drive in Emerald Hills, 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 occupational exposure limits.

† 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 guidance from the landlord, local zoning or health authority, or appropriate professionals may be required. Signage may also need to comply with the requirements of California Public Utilities Commission General Order No. 95.

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, 2019. 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

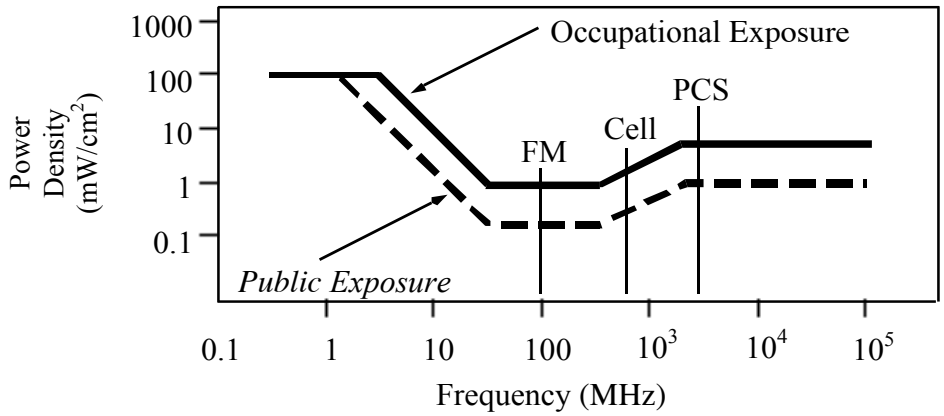
January 10, 2019

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 built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required 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 the antenna, in degrees, and
P_{net} = net power input to the antenna, in watts,
D = distance from antenna, in meters,
h = aperture height of the 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 = relative field factor at the direction to the actual point of calculation, and
D = distance from the center of radiation to the 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 has been built into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radiation sources. The program also allows for the description of uneven terrain in the vicinity, to obtain more accurate projections.

County of San Mateo - Planning and Building Department

ATTACHMENT H

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Concord, CA., 94521
(925) 408-2159
splanneng@gmail.com
www.planneng.com

December 20, 2018

Modus Inc.
240 Stockton Street
San Francisco, CA 94108

Carrier:	Verizon Wireless
Client Site Number:	SF San Carlos 019
Site address:	Public Right of Way Adjacent to: 165 South Palomar Dr Emerald Hills, CA 94062

PROJECT DESCRIPTION:

The carrier proposes the following scope of work:

- Install (1) new 7' bayonet extension on top of existing wood utility pole.
- Install (1) new canister antenna on top of existing wood utility pole.
- Install (1) new 120V/100A meter on existing wood utility pole.
- Install (1) new fiber box (POC) on existing wood utility pole.
- Install (6) new 2X2 hybrid couplers on existing wood utility pole.
- Install (2) new PRUs-(1 PRU-32 & 1 PRU 2212) on existing wood utility pole.
- Install (2) new PSU – AC08 power supplies on existing wood utility pole.
- Install (1) new AC panel on existing utility pole.
- Install new power / fiber cables from power/cable POC'S to equip. And coax cables from equip. To new canister antenna, within (3) separate conduits.

ANALYASIS:

The purpose of this analysis is to determine if the wood pole is structurally adequate to support the proposed loading. The pole has been analyzed in accordance with the Public Utilities Commission of the State of California General Order No. 95 (January 2015) and the Northern California Joint Pole Association Operations / Routine handbook (2016).

- Would not compromise the structural integrity of the Utility, Transit, or Street Light Pole and will be in compliance with any standards imposed by the Northern California Joint Pole Association in its Operations/Routine Handbook, or the pole owner if other than the Northern California Joint Pole Association;
- Would comply with the California Public Utilities Commission General Order 95 and/or the National Electric Safety Code.

RESULTS:

Based on our review of the structure with the proposed loading, we have determined the following:

Pole OK*

*See recommendation section

ASSUMPTION:

- The pole is plumbing and has not deteriorated while maintaining one-hundred percent (100%) of its design capacity. It has been inspected and found to have adequate remaining strength according to the National Electric Safety Code ("NESC"), the General Order No. 95 ("GO 95")
- Class 1 Doug Fir
- Communication line bundles as listed in the analysis report

REFERENCES:

- Drawings for existing wireless project prepared by All States Engineers & surveying dated 5/03/2018
- PG&E pre-flight
- Site Photos

RECOMMENDATIONS:

The wood pole can safely support the proposed scope of work.

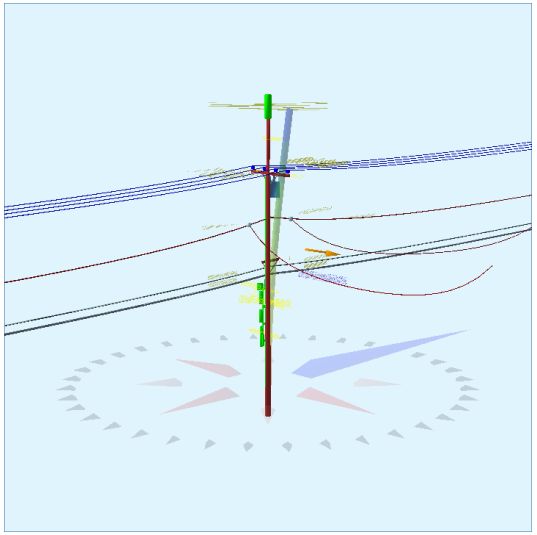
The installation of the proposed Personal Wireless Services facility will not compromise the structure integrity of the utility pole and will be in compliance with any standards imposed by Northern California Joint pole Association in the Operations/Routine Handbook. Additionally, the installation complies with the California Public Utilities General Order 95.

All assumptions listed above to be verified prior to the installation of the equipment as listed in the project description.

Sincerely,

Sumair Syed Arif

Pole Num:	**San_Carlos_019**	Pole Length / Class:	**45 / 3**	Code:	**GO 95**	Structure Type:	**Unguyed Tangent**
Aux Data 1	**Unset**	Species:	**DOUGLAS FIR**	GO 95 Rule:	**At Replace (Existing)**	Pole Strength Factor:	**0.38**
Aux Data 2	**Unset**	Setting Depth (ft):	**5.58**	Construction Grade:	**A**	Transverse Wind LF:	**1.00**
Aux Data 3	**Unset**	G/L Circumference (in):	**37.66**	Loading District:	**Light**	Wire Tension LF:	**1.00**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.00**	Vertical LF:	**1.00**
Aux Data 5	**Unset**	Allowable Stress (psi):	**2,904**	Wind Speed (mph):	**55.90**	Pole Factor of Safety:	**3.35**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**8.00**	Vertical Factor of Safety:	**10.18**
Latitude:	**0.000000 Deg**	Longitude:	**0.000000 Deg**	Elevation:	**0 Feet**	Bending Factor of Safety:	**3.39**



Pole Capacity Utilization (%) Crossarm allowance 300 lbs		**Height (ft)**	**Wind Angle (deg)**
Maximum	**79.5**	0.0	86.3
Groundline	**79.5**	0.0	86.3
Vertical	**26.2**	25.2	86.3

Pole Moments (ft-lb) Crossarm allowance 300 lbs		**Load Angle (deg)**	**Wind Angle (deg)**
Max Cap Util	**32,154**	86.2	86.3
Groundline	**32,154**	86.2	86.3
GL Allowable	**40,917**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 86.2°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	235	17.9	**8,489**	26.4	**20.8**	**570**	129	1	**571**	**19.7**
Comms	346	26.3	**7,550**	23.5	**18.5**	**507**	192	2	**508**	**17.5**
GenericEquipments	402	30.6	**7,879**	24.5	**19.3**	**529**	1,173	10	**539**	**18.6**
Pole	254	19.3	**5,273**	16.4	**12.9**	**354**	1,226	11	**365**	**12.6**
Crossarms	65	4.9	**2,517**	7.8	**6.2**	**169**	210	2	**171**	**5.9**
Insulators	11	0.9	**447**	1.4	**1.1**	**30**	55	0	**30**	**1.0**
Pole Load	1,312	100.0	**32,154**	100.0	**78.6**	**2,158**	2,985	26	**2,184**	**75.2**
Pole Reserve Capacity			**8,763**		**21.4**	**747**			**720**	**24.8**

Detailed Load Components:

Power		Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	2 (7/1) ACSR (SPARATE) SHORT SPAN	37.95	50.38	0.3250	2.65	0.107	142.0	180.0	142.1	372	-930	-31	582	-380
Primary	2 (7/1) ACSR (SPARATE) SHORT SPAN	37.95	50.38	0.3250	2.88	0.107	150.0	0.0	150.1	369	923	-33	614	1,504
Primary	2 (7/1) ACSR (SPARATE) SHORT SPAN	37.95	17.15	0.3250	2.88	0.107	150.0	0.0	150.1	369	923	-10	614	1,527
Primary	2 (7/1) ACSR (SPARATE) SHORT SPAN	37.95	17.15	0.3250	2.65	0.107	142.0	180.0	142.1	372	-930	-10	582	-358
Primary	2 (7/1) ACSR (SPARATE) SHORT SPAN	37.95	17.15	0.3250	2.65	0.107	142.0	180.0	142.1	372	-930	10	582	-338
Primary	2 (7/1) ACSR (SPARATE) SHORT SPAN	37.95	17.15	0.3250	2.88	0.107	150.0	0.0	150.1	369	923	11	614	1,548
Primary	2 (7/1) ACSR (SPARATE) SHORT SPAN	37.95	50.38	0.3250	2.65	0.107	142.0	180.0	142.1	372	-930	32	582	-317
Primary	2 (7/1) ACSR (SPARATE) SHORT SPAN	37.95	50.38	0.3250	2.88	0.107	150.0	0.0	150.1	369	923	34	614	1,571
Secondary	1/0 ACSR TPX AC LT	29.58	6.49	0.9900	4.41	0.420	150.0	0.0	150.4	590	1,150	17	1,458	2,625
Secondary	TRIPLEX 6 AWG	28.77	60.35	0.5800	0.56	0.113	50.0	30.0	53.5	5	77	0	186	263
Secondary	1/0 ACSR TPX AC LT	29.58	6.49	0.9900	4.00	0.420	142.0	180.0	142.3	594	-1,158	16	1,380	239

Secondary	TRIPLEX 6 AWG	28.82	60.35	0.5800	0.54	0.113	50.0	90.0	53.5	5	139	0	1	140
										Totals:	**181**	**35**	**7,809**	**8,025**

Comm		**Height (ft)**	**Horiz. Offset (in)**	**Cable Diameter (in)**	**Sag at Max Temp (ft)**	**Cable Weight (lbs/ft)**	**Lead/Span Length (ft)**	**Span Angle (deg)**	**Wire Length (ft)**	**Tension (lbs)**	**Tension Moment* (ft-lb)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Overlashed Bundle	6M	21.16	7.24	0.2420	6.15	0.104	150.0	0.0	150.1	208	290	5	679	974
CATV	1" CATV	21.11	7.22	1.0000	132.03		150.0	0.0	150.1			14	678	692
Overlashed Bundle	6M	21.16	7.24	0.2420	5.54	0.104	142.0	180.0	142.0	209	-291	4	646	359
CATV	1" CATV	21.11	7.21	1.0000	113.40		142.0	180.0	142.0			13	644	657
Overlashed Bundle	6M	19.91	7.32	0.2420	12.99	0.104	150.0	0.0	150.1	203	266	5	1,130	1,401
Telco	TELE 2.0	19.82	7.31	2.0000	2.11		150.0	0.0	150.1			36	1,125	1,161
Overlashed Bundle	6M	19.91	7.32	0.2420	11.65	0.104	142.0	180.0	142.0	203	-266	4	1,063	801
Telco	TELE 2.0	19.82	7.31	2.0000	1.99		142.0	180.0	142.0			35	1,058	1,092
										Totals:	**-1**	**116**	**7,023**	**7,138**

GenericEquipment		**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Imported	25 kVA 1PH TX	34.84	17.68	0.0	0.0	610.00	47.00	--	--	--	--	869	928
Cylinder	15" Dia x 48" Canister Antenna	48.33	1.17	135.0	0.0	42.00	48.00	12.00	--	14.60	--	1,882	1,879
Cylinder	3" Coax Conduit	15.15	6.85	160.0	0.0	64.00	384.00	12.00	--	3.50	--	1,131	1,141
Cylinder	2" Fiber Conduit	17.65	6.14	176.5	0.0	57.00	456.00	12.00	--	2.38	--	1,062	1,062
Cylinder	1.5" Power Conduit	15.12	6.05	189.0	0.0	47.00	372.00	12.00	--	1.90	--	594	588
Box	Telco Box	18.00	6.43	220.0	0.0	10.00	18.00	3.00	9.00	--	-4	169	165
Box	4 Hybrid Couplers	17.50	16.96	220.0	0.0	20.00	12.00	12.00	14.00	--	-20	242	222
Box	Equipment Brckt 1 Standoff	17.00	6.74	220.0	0.0	1.50	4.00	3.50	4.00	--	-1	23	22
Box	RRUS-32	15.53	14.57	220.0	0.0	60.00	25.00	7.00	12.00	--	-50	324	274
Box	Equipment Brckt 1 Standoff	14.00	6.91	220.0	0.0	1.50	4.00	3.50	4.00	--	-1	19	18
Box	Equipment Brckt 1	12.50	10.00	220.0	0.0	127.00	132.00	2.50	8.00	--	-73	752	679
Box	RRUS-32	12.30	14.77	220.0	0.0	60.00	25.00	7.00	12.00	--	-51	257	206
Box	Equipment Brckt 1 Standoff	11.00	7.09	220.0	0.0	1.50	4.00	3.50	4.00	--	-1	15	14
Box	Disconnect + Fiber 3	9.80	13.91	220.0	0.0	20.00	13.00	5.00	23.00	--	-16	154	138
Box	Meter	8.00	14.02	220.0	0.0	50.00	24.00	5.00	12.00	--	-40	142	102
Box	Equipment Brckt 1 Standoff	7.97	7.27	220.0	0.0	1.50	4.00	3.50	4.00	--	-1	11	10
										Totals:	**-196**	**7,644**	**7,448**

Crossarm		**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Normal	9HS (Heavy - 4 Post) 4-3/4" x 5-3/4" x 9'-0"	37.00	6.18	0.0	0.0	40.00	5.75	4.75	108.00	1	98	99

Normal	CROSSARM 3-1/2 X 4-1/2 X 4	22.08	6.44	90.0	90.0	28.00	4.50	3.50	48.00	15	422	437
Pole Extension	Pole Extension	42.90	0.79	0.0	0.0	142.00	84.00	5.75	5.75	1	1,842	1,842
									Totals:	**17**	**2,362**	**2,379**

Insulator		**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Post	Post 8.5 (P/N 1)	37.24	-50.00	277.0	0.0	11.00	5.75	8.50	-45	101	56
Post	Post 8.5 (P/N 1)	37.24	-16.00	291.1	0.0	11.00	5.75	8.50	-14	101	87
Post	Post 8.5 (P/N 1)	37.24	16.00	68.9	0.0	11.00	5.75	8.50	15	101	116
Post	Post 8.5 (P/N 1)	37.24	50.00	83.0	0.0	11.00	5.75	8.50	46	101	148
Spool	Spool 2.5	29.58	0.00	90.0	0.0	1.00	2.50	2.12	1	9	9
Bolt	Three Bolt	21.16	0.00	90.0	0.0	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	19.91	0.00	90.0	0.0	5.00	3.00	0.00	3	0	3
								Totals:	**8**	**414**	**423**

Pole Buckling

Buckling Constant	**Buckling Column Height* (ft)**	**Buckling Section Height (% Buckling Col. Hgt.)**	**Buckling Section Diameter (in)**	**Minimum Buckling Diameter at GL (in)**	**Diameter at Tip (in)**	**Diameter at GL (in)**	**Modulus of Elasticity (psi)**	**Pole Density (pcf)**	**Ice Density (pcf)**	**Pole Tip Height (ft)**	**Buckling Load Capacity at Height (lbs)**	**Buckling Load Applied at Height (lbs)**	**Buckling Load Factor of Safety**
2.00	25.24	33.74	10.98	17.17	7.32	11.99	1.60e+6	60.00	57.00	39.42	11,099	**113.93**	**3.82**

VM

County of San Mateo - Planning and Building Department

ATTACHMENT I

Wireless Communications Initiative Study

Wireless Facilities Impact on Property Values

November 2012

Background

Wireless technology has dramatically changed the way the world communicates. There are over 6 billion wireless phones being used worldwide. In the United States the number of wireless phones is greater than the population. Conversely, with the advent of smart phones and wireless devices, there is increasing strain being put our already stressed wireless infrastructure. The goal of the Wireless Communications Initiative (WCI) is to enable the deployment of a 21st century wireless infrastructure. Silicon Valley is clearly driving wireless innovation and the region has consistently been an early adopter of these products.

However, compared to feature phones, smartphones place 24 times the demand on wireless networks, and smart devices such as tablets command 120 times as much. Carriers are trying to respond to this revolution in technology by deploying what is called Next Generation technology. Carriers tout the capacity of their 4G or LTE (Long Term Evolution) networks as significantly more efficient in managing the burgeoning demand placed on networks by applications such as streaming video.

The significant challenge facing the next phase in technology deployment is the need to place wireless facilities in residential neighborhoods. These facilities need to be closer to consumers to allow signals to be accessible within homes. This is increasingly important given that about 30 percent of homes rely solely on wireless phone service. In addition, almost 400,000 calls to 911 are made each day using wireless phones. Access to a wireless network has now become a public safety imperative.

Carriers are working with cities to identify neighborhood sites for wireless facilities. However, this task has been made more difficult in some cases when a few residents raise concerns about the placement of wireless towers. These residents oppose carrier applications because of

trepidations related to Radio Frequency (RF) emissions or suspicions about a negative impact on property values. The anxiety that wireless towers impact property values has been a powerful argument used by opponents to carrier applications. Oftentimes, anecdotal evidence is used to bolster these arguments, absent any factual evidence regarding the veracity of these claims.

Carrier and city attempts to address these concerns can lead to long delays in deploying and upgrading wireless facilities. It isn't unusual for a single application to be delayed for a year or more while community concerns are being addressed.

This study has been designed to assess the actual effects of wireless facilities on property values. We have the capability to consider wireless facilities that have been in place for several years. We can look at hundreds of recent real estate transactions to determine what effects are present.

The Study Partners

The Santa Clara County Association of REALTORS® and the Silicon Valley Association of REALTORS® (SILVAR) partnered with WCI to produce the study. The members of these two organizations are involved with most transactions involving single family residences in Silicon Valley. The Associations are over 100 years old and have a rich history paralleling the growth of the region. The organizations represent thousands of real estate agents who have a deep commitment to furthering the professionalism of the industry.

In addition, WCI partnered with MLS Listings to perform the actual data analysis. MLSListings, Inc. was founded in 2007 by a collaboration between several established regional multiple listing services, notably Silicon Valley's RE InfoLink and California's Central Valley MLS. The company created by this merger, MLSListings Inc. serves nearly 16,000 subscribers and 6,000 firms. MLSListings typically handles listings totaling nearly $70 billion annually.

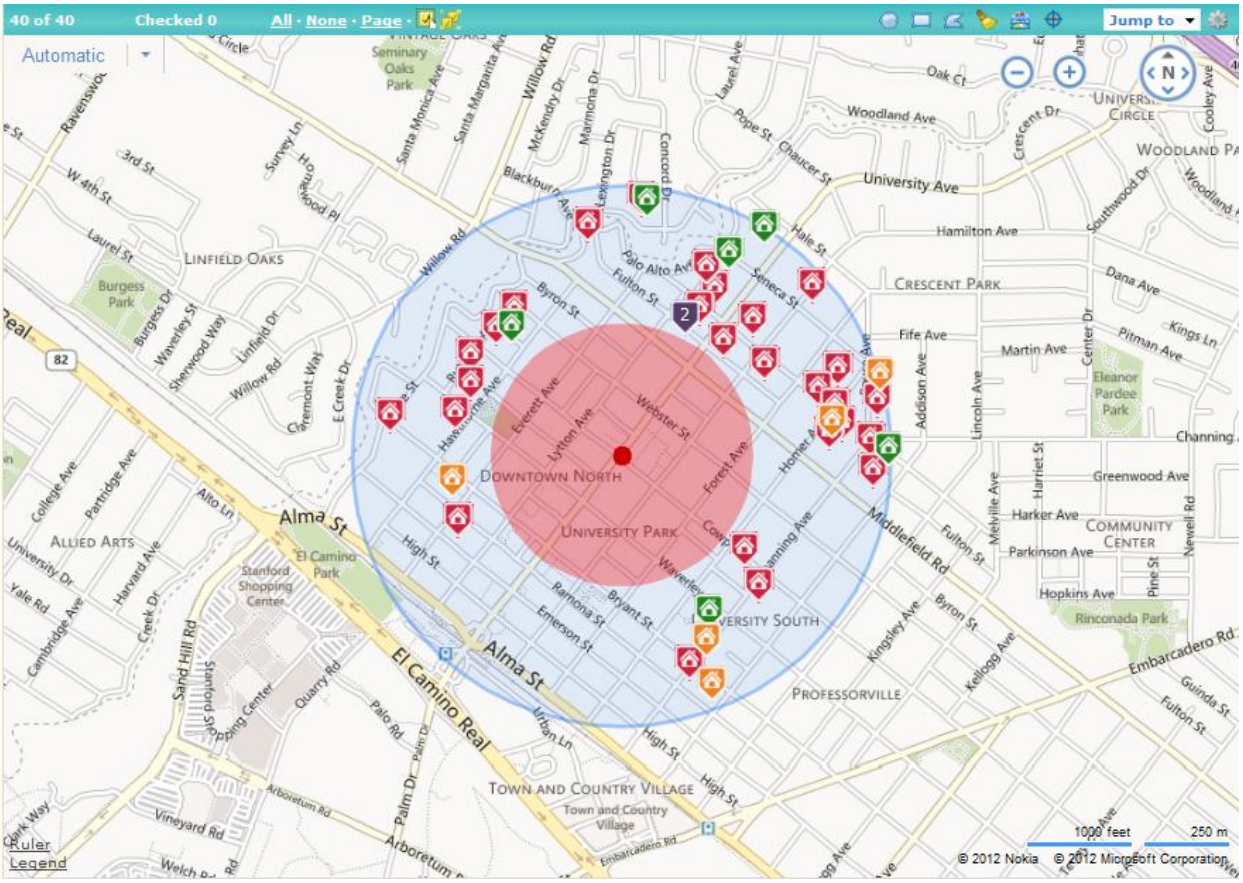
See Appendix B for more information about these organizations.

The Methodology

The data was compiled using over 1600 single-family home transactions from January to September 2012. A total of 70 wireless sites were selected in Palo Alto, Redwood City, Saratoga and San Jose. The survey compared the "list" and "sale" price for transactions based on the distant from the wireless facility. The transactions were grouped by those 1) within 1/8th of a mile, 2) 1/8 to a quarter mile and 3) a quarter to one-half mile.

In addition, the study included all types of wireless facilities. These facilities may be A) a wireless tower, B) equipment placed on buildings (e.g. church, offices) or C) placed on a utility structure (e.g. pole, tower).

See Appendix D for sample photographs of the sites.



Sample MLS listing data query

The chart below displays the aggregated results for the study. The list and sale prices are an aggregate of the all of the transactions that occurred within the specified distance from the wireless site during January to September 2012. The fourth column is derived as a percentage of the sale price to the list price.

	Total List Price	Total Sale Price	%List to Sale
Palo Alto			
0-0.125 mile	$ 33,093,000	$ 34,243,125	**103%**
0.125-0.25	$ 219,641,507	$ 233,276,629	**106%**
0.25-0.5	$ 1,058,288,821	$ 1,094,507,081	**103%**
Redwood City			
0-0.125 mile	$ 9,111,888	$ 9,306,000	**102%**
0.125-0.25	$ 36,670,398	$ 36,738,500	**100%**
0.25-0.5	$ 91,938,794	$ 92,571,249	**101%**
Saratoga			
0-0.125 mile	$ 11,116,000	$ 11,168,000	**100%**
0.125-0.25	$ 77,914,560	$ 77,601,045	**100%**
0.25-0.5	$ 353,092,390	$ 350,550,126	**99%**
San Jose			
0-0.125 mile	$ 29,024,249	$ 28,695,250	**99%**
0.125-0.25	$ 57,135,400	$ 57,075,940	**100%**
0.25-0.5	$ 157,404,541	$ 158,404,215	**101%**

A listing of the addresses for the wireless sites is in Appendix A.

Conclusion

It is quite clear from the data that the distance from a wireless facility has no apparent impact on the value or sale price of a home. The relationship between the list and sale price remained the same no matter how close the property was to the wireless facility. In addition, we see that all the cities in the survey had similar results. The sites across all cities represent a variety of properties including those in neighborhoods with higher priced homes versus those in communities with more moderately priced homes.

Most real estate professionals believe there are multiple factors that affect property values. These professionals still believe in the old adage that there are three factors: location, location, location. However, it is quite obvious that the overall economic climate can have an overriding effect on the real estate market. This year has seen a significantly stronger market for home sales, both in the number of transactions and sellers' ability to obtain their asking price. Other factors that tend to impact property values include schools and access to transportation.

This study should provide a data-based explanation of the relationship between home values and the proximity to wireless facilities. The conclusions can be understood to suggest that communities and carriers have done well in considering the placement of the technology. The Wireless Communications Initiative believes this continued commitment to resolving deployment issues will benefit our region and its neighborhoods.

(Appendix A)

Wireless Facilities Included In Study

Palo Alto

1082 Coronado

101 Alma St

1985 Louis Road

3990 El Camino

305 N California

10950 Channing

1501 Page Mill Rd

200 Page Mill Rd

2047 bayshore

2300 Geng Rd

260 Sheridan

2666 E Bayshore Rd

2675 Hanover St

2701 Middlefield Rd

300 Pasteur Dr

3000 Alexis

3141 Maddux Dr

3401 & 3431 Hillview

345 Hamilton Ave

3475 Deer Creek Rd

3600 W Bayshore Rd

3600 Middlefied

3672 Middlefied

3862 Middleflied

4009 Miranda

4243 Manuela Ave

4249 El Camino Real

488 University Ave

525 University Ave

531 Stanford Ave

695 Arastradero

711 Colorado

724 Arastradero

850 Webster St

855 El Camino

900 Blake Wilbur Dr

799 Arastradero

760 Porter

3000 El Camino Real

675 El Camino Real

2595 E Bayshore

Junipero & Stanford

Page Mill & Foothill

Redwood City

3025 Jefferson Ave

468 Grand St

1175 Palomar

1251 Annette

2900 Whipple Ave

Saratoga

14407 Big Basin Way

14000 Fruitvale

13000 Glen Brae

13750 Prune Blossom

14091 Quito Rd

12770 Saratoga Ave

1777 Saratoga Ave

13601 Saratoga Ave

20508 Saratoga Los Gatos

19491 Saratoga Los Gatos

12393 Saratoga Sunnyvale

12413 Saratoga Sunnyvale

Hwy 9 & Quito

San Jose

2827 Flint Ave

930 Remillard Ct

3675 Payne Ave

144 S Jackson

366 Saint Julie Dr

1529 Newport Ave

1200 Fleming Ave

2110 Story Rd

1635 Park Ave

1700 Moffat St

Disclaimer: the data was pulled on 10/2/2012 pulling only single family residence (class 1 in MLSListings, Inc.) with a time frame of all sales from 1/1/2012 to 10/2/2012

Appendix B

Santa Clara County Association of REALTORS®

History

Santa Clara County Association of REALTORS®, established in 1896, has a long and rich history paralleling the history of Santa Clara Valley. SCCAOR, the first trade association in California, is the largest real estate board in Northern California, and was listed as one of the nation's top 20 associations by the Foundation of the American Society of Association Executives. It has come a long way since its first members took potential buyers to preview properties in horse-drawn buggies.

Over the years, its members have made very significant contributions, both in the real estate industry and to the quality of life in Santa Clara County, through their community service activities. Santa Clara County Association of REALTORS®'s history is one of recognizing changing needs in the real estate industry, economy, and technology, and leading the way in responding to those needs.

Santa Clara County Association of REALTORS® was the first real estate board in California to employ a Government Affairs Director to represent the interest of property owners, REALTORS® and the real estate industry, at all levels of government. Threats to property rights remain an increasingly "hot" item on legislative agendas.

The Board's educational activities for members and the public consistently win state and national awards for high quality and leadership, including the Real Estate Assistants Program, developed in 1994. Ongoing classes and seminars provide Members with the most current, professional education for the benefit of their clients and their careers.

In support of the many communities our members serve, SCC REALTORS® FOUNDATION, a nonprofit corporation designed to direct Member's monetary contributions to the most vital community needs, was formed in 1991.

Integrity, strength and innovation are the foundation of Santa Clara County Association of REALTORS®'s history. In the same tradition, established during the past century, we are committed to being an industry leader, bringing positive action and service to our Members and communities for the next 100 years.

The Silicon Valley Association of REALTORS®

The Silicon Valley Association of REALTORS® (SILVAR) is a professional trade organization representing over 4000 REALTORS® and Affiliate members engaged in the real estate business on the Peninsula and in the South Bay. SILVAR promotes the highest ethical standards of real estate practice, serves as an advocate for homeownership and homeowners, and represents the interests of property owners in Silicon Valley.

It is the duty and responsibility of every REALTOR® member of this Association to abide by the "Code of Ethics" of the National Association of REALTORS®. The term "REALTOR®" is a registered collective membership mark which identifies a real estate professional who is a member of the National Association of REALTORS® & who subscribes to its strict Code of Ethics.

MLSListings, Inc. was founded in 2007 as a collaboration between several established regional multiple listing services, notably Silicon Valley's RE InfoLink and California's Central Valley MLS. As the company created by this merger, MLSListings Inc. serves nearly 16,000 subscribers and 6,000 firms in Santa Clara, Santa Cruz, Monterey, San Mateo, San Benito, Merced, San Joaquin and Stanislaus Counties – an area of approximately 28,000 square miles, reaching from San Francisco to Big Sur, and including some of the most valuable real estate in the world. MLSListings typically handles listings totaling nearly $70 billion annually.

In April, 2008, MLSListings, Inc. joined with three other Northern California MLS services – San Francisco MLS, Bay Area Real Estate Services, and MetroList Services – in an unprecedented alliance to share multiple listing data throughout Northern California. This new alliance serves nearly 50,000 brokers in 19 Northern California Counties, a total population of nearly 9 million people.

Appendix C

Wireless Site Photographs (Sampling)

366 St. Julie Drive, San Jose

2110 Story Road, San Jose

3675 Payne, San Jose

12770 Saratoga Ave, Saratoga

14407 Big Basin Way

675 El Camino, Palo Alto

1082 Colorado St. Palo Alto

1985 Louis Road, Palo Alto

4009 Miranda, Palo Alto

4243 Manuela, Palo Alto, CA

2575 Hanover, Palo Alto

County of San Mateo - Planning and Building Department

ATTACHMENT J

Correspondence Organized from Most Recent to Oldest

From: Laura Richstone
Sent: Thursday, October 11, 2018 10:58 AM
To: mwkubiak06@gmail.com
Cc: ppoboard@googlegroups.com; palomarnews@gmail.com; Steve Monowitz <smonowitz@smcgov.org>
Subject: RE: PLN2018-00093 (165 S. Palomar Dr.): PPO Comments (CPUC GO95) + Status of Use Permit Application

Hi Michael,

The County is subject to State and Federal Law. These regulations have become more permissive towards allowing the installation and/or replacement of cellular facilities. The County has an obligation to process and bring all permits to hearing. These wireless permits are reviewed by the Planning Department to ensure compliance with all applicable Federal, State, and Local regulations. Where applications cannot meet all local regulations due to Federal or State pre-emption, the Planning Department reviews these applications to ensure that they are as compliant with local regulations as reasonably possible. In some instances, this may mean placing an antenna above a powerline as opposed to placing an antenna below a powerline because such an action would either not abide by GO-95 regulations, require the reconfiguration of communication lines on the subject pole and numerous surrounding poles, and/or would not allow for the proper propagation of signal. The County cannot impose regulations that result in the effective prohibition of the installation of wireless antennas in targeted areas.

So to answer your questions, while the County enforces our adopted regulations some local regulations are pre-empted by State and Federal Law. While the County does have height criteria for utility pole mounted facilities, this criteria must take into account: 1) state regulations regarding the allowed location of wireless facilities on utility poles (in relation to existing infrastructure), and 2) FCC regulations that prohibit local jurisdictions from imposing regulations that result in the effective prohibition of wireless facilities in targeted areas. This means that some facilities may be installed above the height limits as described in the Wireless Ordinance. When application are submitted that do not meet local regulations due to compliance with State and Federal Laws, each application is reviewed on a case by case basis to ensure that the facility is as compliant with local regulations (i.e. height) as reasonably possible (i.e. meet minimum state safety separation requirements in order to limit the overall height of facilities).

All future comments will be addressed in the staff report and will be part of the public record. Your new concern about the overall integrity/safety of the facility will also be addressed in the staff report. If you find that comments are not addressed in the staff report you are free to attend the public hearing to voice your comments.

Thank you,

Laura Richstone

From: mwkubiak06@gmail.com [mailto:mwkubiak06@gmail.com]
Sent: Tuesday, September 25, 2018 7:46 AM
To: Laura Richstone <lrichstone@smcgov.org>

Cc: ppoboard@googlegroups.com; palomarnews@gmail.com; Steve Monowitz <smonowitz@smcgov.org>
Subject: Proposed Cell Sites: PPO Comments (CPUC GO95)

Hello Laura,

In our 9/14 email to Steve Monowitz, we raised the following concern which was not addressed in your subsequent response.

> "In Laura's response she references California Public Utilities Commission's General Order 95 (GO95) stating that there must be **a minimum 6' vertical separation** between antennas and power lines. "The over height nature of the facility in regards to the County's local regulations is allowed due to: 1) the requirements of GO95…". ***GO95 does not specify that the 6' minimum vertical separation needs to be above the high voltage power lines. Rather the 6' minimum is a bubble around the power lines. As a result, the County is within its rights to request that the cell antenna be 6' below the power lines because it would meet both State and County regulations.*** "

The letter from Verizon's outside counsel goes through a series of arguments as to why the County is severely limited in what it can require of Verizon. The letter states Verizon may construct a facility in the public right-of-way "… in such manner and at such points as not to incommode the public use of the road or highway or interrupt the navigation of the waters."

Is it the County's intention to allow Verizon and other service providers to build antennas whose heights are unlimited in residential neighborhoods?

Furthermore, is it the County's intention to require that all antennas be constructed in such a manner that they are above the high voltage power lines? If that is the case, then the County is setting the precedent that **all** cell sites in the public right-of-way must be of a type which includes a spire and antenna on top of the existing or proposed structure.

Assuming that these are not its intentions, then the County is within its rights to request that the cell antenna be 6' below the high-voltage power lines.

In addition, if the antenna is located 6' above the high-voltage power lines it poses safety concerns for residents and users of the roadway. The heavy RF equipment and accessories at the top of the utility pole will add stress and attendant strain. Strong, gusty winds are a regular occurrence in Palomar Park. We request that the use permit application include stress and load strain tests which reflect this condition.

The residents of Palomar Park remain opposed to Verizon's use permit application and request that the County immediately deny said use permit application and not move forward with a hearing before a Zoning Officer.

Regards,

Michael Kubiak
President
Palomar Property Owners

419 Palomar Drive
Redwood City (Palomar Park), CA 94062-3236

From: Laura Richstone
Sent: Tuesday, September 18, 2018 11:28 AM
To: mwkubiak06@gmail.com
Cc: ppoboard@googlegroups.com; palomarnews@gmail.com; Steve Monowitz <smonowitz@smcgov.org>
Subject: RE: Proposed Cell Sites: PPO Comments

Hi Michael,

Sorry for the oversight. Please see my responses in red below. I have also attached a letter from the applicant's attorney to our County Counsel.

1. You have not specifically addressed the concerns we raised to the case references you discussed in an earlier email. In that earlier email, you wrote that County Counsel would be reviewing the concerns we raised and you would get back to us after that review had occurred. What is its status? – Answered in previous email.
2. What is / are the reason(s) for the withdrawal by MODUS/Verizon of four applications? I don't know. A reason is not required to withdraw an application. You are welcome to contact MODUS directly (415-989-1102) to inquire why these applications were withdrawn by Verizon/AT&T.
3. What types of health concerns have been cited for the application (069-352-070) which is under appeal? Also, what is the appellant's contact information? These are the points of the appeal: *1) "I'd like to receive reports comparing the simulated RF energy and the actual readings in the field tests for the same antenna and same height above the ground, 2) What process do we have to ensure that the RF energy stays within the proposed limits over the years of operation? 3) I'd like to see the specs regarding the noise that will be introduced by the equipment that powers the antenna, 4) I'd like to have a written statement on the location of the RF safety signs 5) There are several concerns regarding the negative effect of wireless antennas to nearby house values."* Contact info: Mehmet Emre Sargin 805-722-2855 (I do not have an email).
4. Were health issues raised about other applications? If so, please note them on the attached spreadsheet and provide us with contact information. Because I am not the assigned Planner for all of the applications on the list, I don't know if health issued were raised with the other applications. You are welcome to contact the Planner assigned to these applications directly to inquire. You can find the assigned Planner by accessing our online permitting system (see question #5 below for details).
5. Some of the locations in the "Open small cell sites" spreadsheet you emailed to us do not have a precise address. See attached. Please provide us with that additional information. All of these applications are located in the ROW and as such they do not technically have an APN. We typically provide the most adjacent APN to help locate the site in the project description. You are welcome to use our online permit system to look up the projects to find the most adjacent APNs. Just go to the Permit Center on our website. Scroll to the bottom of the page (do not login), click Planning and Code Compliance search, and enter the permit number (using all caps, no spaces, and include the hyphen). If some descriptions do not have an adjacent APN this more than likely means that the APN is not helpful in locating the project. In this instance, you would

have to look at the site plan to locate the facility. You are welcome to come in and view these files if you would like.

6. Has a Zoning Hearing Officer (ZHO) been assigned? If so, please provide us with the person's contact information. These items have not been scheduled for a hearing yet. As such, the ZHO is not aware of the project nor have they had the opportunity to review the application or staff report (as the staff report is not finalized yet). The ZHO does not discuss or deliberate on items before a hearing. However, the ZHO does review public comments before the hearing. I will include all of the email chains between you and the other members of Palomar Park in the staff report. However, if you would like to submit another/different public comment you are welcome to forward it to the ZHO Secretary Deb Robinson at DRobinson@smcgov.org. She will forward all public comments to the ZHO when they receive the staff report (i.e. 10 days before the hearing)

Thank you,

Laura Richstone

From: Laura Richstone
Sent: Monday, September 17, 2018 5:51 PM
To: mwkubiak06@gmail.com
Cc: ppoboard@googlegroups.com; palomarnews@gmail.com; Steve Monowitz <smonowitz@smcgov.org>
Subject: RE: Proposed Cell Sites: PPO Comments

Hi Michael,

Your concerns, as well as those expressed by the applicant's attorney, were communicated to County Counsel, who will assist staff in formulating a staff report in support of a recommendation (either in support of the application, or against) for Zoning Hearing Officer action on the permit. Our process contemplates that these resources and your input will be utilized in the creation of the staff recommendation and the conduct of public hearings rather than by individual inquiries. Your most recent email to Steve that summarizes your objections, and all other public comments that have been received relating to these projects, will be forwarded to the Zoning Hearing Officer for their review and consideration. Unless the applicant withdraws their applications, the Planning Department is obligated to bring all permits to a hearing for a decision. When these applications are scheduled for a hearing, you will be notified and are more than welcome to attend to address the Zoning Hearing Officer directly.

Thank you,

Laura Richstone
Project Planner
lrichstone@smcgov.org
COUNTY OF SAN MATEO
PLANNING AND BUILDING
Planning and Building Department
455 County Center, 2nd Floor
Redwood City, CA 94063
(650) 363-1829 T

From: mwkubiak06@gmail.com [mailto:mwkubiak06@gmail.com]
Sent: Friday, September 14, 2018 3:05 PM
To: Steve Monowitz <smonowitz@smcgov.org>
Cc: Laura Richstone <lrichstone@smcgov.org>; ppoboard@googlegroups.com; palomarnews@gmail.com
Subject: RE: Proposed Cell Sites: PPO Comments

Hello Steve,

While waiting for Laura's response to our questions, we have reviewed the available documentation and are opposed to the proposed site based on the following reasons:

1. In Laura's response she references California Public Utilities Commission's General Order 95 (GO95) stating that there must be a minimum 6' vertical separation between antennas and power lines. "The over height nature of the facility in regards to the County's local regulations is allowed due to: 1) the requirements of GO95…". GO95 does not specify that the 6' minimum vertical separation needs to be above the high voltage power lines. Rather the 6' minimum is a bubble around the power lines. As a result, the County is within its rights to request that the cell antenna be 6' below the power lines because it would meet both State and County regulations.

2. MODUS / Verizon withdrew four applications and one is under appeal. Based on the information which the County has provided to us, we have determined that these locations are less than 2,500 feet from a school. The proposed location at 165 S. Palomar Drive is within 1,700 feet of Clifford School. Based on the analysis, the proposed location should be rejected. See table just below.

3. The Court cases referenced by the County as a basis for not requesting additional information from Verizon contradict and undercut the basis for the position articulated by the County. Both Court decisions resulted in the Court flatly rejecting attempts by Verizon and another wireless provider to limit local government's ability to regulate wireless providers. Laura stated in a prior email that she would review our conclusions with County Counsel. We are still waiting for a response to our 8/22 email sent to you and Laura.

Verizon's proposed design, the withdrawal and appeal of other applications within 2,500 feet of a school, and the referenced court cases illustrate that Verizon has not complied with local, state and federal laws related to cell tower usage. The County not only has the authority, but an obligation to the County and community to deny Verizon's permit application.

Therefore, the residents of Palomar Park request that the County immediately deny Verizon's use permit application and not move forward with a hearing before a Zoning Officer.

Regards,

Michael Kubiak
President

From: Laura Richstone
Sent: Sunday, September 09, 2018 12:54 PM
To: 'mwkubiak06@gmail.com' <mwkubiak06@gmail.com>
Cc: ppoboard@googlegroups.com; palomarnews@gmail.com
Subject: Proposed Cell Sites
Hi Michael,

The County has deemed these projects complete and will continue on to public hearing (date TBD). Your position on the health effects of the proposed small cell site(s) have been received, will be addressed in the staff report, and will be forwarded to the decision maker in this process for their review and consideration.

Though new studies may have come out regarding the health effects of RF radiation, the County does not/cannot set additional rules or emission limits for RF radiation. The County is preempted from setting its own standards by Federal Law. The FCC has established rules and emissions standards related to RF radiation that all jurisdictions must follow. The most recent FCC guidelines/emissions standards can be found at this link: https://www.fcc.gov/engineering-technology/electromagnetic-compatibility-division/radio-frequency-safety/faq/rf-safety . You can also contact the FCC directly if you would like to discuss amending the laws/emissions limits.

The County is aware that the proposed cell site exceeds the height regulations outlined in Section 6512.2 of the Zoning Regulations. This is a case in which state laws supersede local regulations. Per the California's Public Utilities Commission's General Order 95 (GO95) there must be a minimum 6' vertical separation between antennas and power lines. The over height nature of the facility in regards to the County's local regulations is allowed due to: 1) the requirements of GO95, 2) the fact that cellular carriers have a right to locate their equipment within the right-of-way (see previous email), and 3) because the County cannot require cellular carriers to locate their facilities outside of the right-of-way nor require carriers to prove the need for their facilities. This will be addressed in more detail in the staff report

Regarding the other cell site applications, MODUS/Verizon has withdrawn 4 applications – PLN2018-00073, PLN2018-00078, PLN2018-00072 & PLN2018-00080. One application, PLN2017-00500 has been appealed based on health concerns. All other applications are under review.

These applications face no more hurdles than any other use permit applications. All use permit applications are reviewed to ensure that they are compliant with all applicable federal, state, and local laws and regulations. While Planning reviews these types of applications and provides recommendations to the decision maker (i.e. the Zoning Hearing Officer), use permits are not approved by the Planning Department. Your concerns and comments have been placed in the file and will be forwarded onto the decision maker for their review and consideration. Though this permit is not scheduled for hearing yet, all neighbors within 300 feet of the proposed project (in addition to all members of the public who provided comment on this application) will receive a notice of public hearing 10 days before the hearing date. You are welcome to speak/provide additional public comment at the public hearing itself if you desire.

Thank you,

Laura Richstone
Project Planner
lrichstone@smcgov.org
COUNTY OF SAN MATEO
PLANNING AND BUILDING
Planning and Building Department
455 County Center, 2nd Floor
Redwood City, CA 94063
(650) 363-1829 T

From: mwkubiak06@gmail.com [mailto:mwkubiak06@gmail.com]
Sent: Wednesday, August 22, 2018 7:55 AM
To: Laura Richstone <lrichstone@smcgov.org>; Steve Monowitz <smonowitz@smcgov.org>
Cc: ppoboard@googlegroups.com; palomarnews@gmail.com
Subject: 165 S. Palomar Drive Use Permit App: Case References

Hello Laura,
Thank you again for your response on behalf of the County and for continuing to work with residents of Palomar Park to protect our beautiful community. In addition to the many points we have made previously regarding Verizon's failure to comply with local and federal requirements, we believe it is important to shed light on the case references you provided in your earlier email.

Surprisingly, the very cases the County referenced as a basis for not requesting additional information from Verizon, contradict and undercut the basis for the following position articulated by the County:
"the County's ability to request information demonstrating the need for the proposed facility (such as propagation maps and an alternatives analysis) is limited for facilities located in the public right-of-way..."

Both of the court decisions referenced by the County resulted in the court flatly rejecting attempts by Verizon and another wireless provider to limit local government's ability to regulate wireless providers.

For example, in *T-Mobile West LLC v. City and County of San Francisco*, 3 Cal. App. 5th 334 (2016) the court flatly rejected T-Mobile West's argument that the City of San Francisco's ability to regulate cell tower-related construction was limited by PUC code sections 7901 and 7901.1. The court turned to the legislative history of PUC sections 7901 and 7901.1 to explain that:

"This bill is intended to bolster the [cities'] abilities with regard to construction management and to send a message to telephone corporations that cities have authority to manage their construction...." (Sen. Rules Com., Off. of Sen. Floor Analyses, 3d reading analysis of Sen. Bill No. 621 (1995-1996 Reg. Sess.) as amended May 3, 1995, pp. 1, 3, italics added.)

Although the County references the *T-Mobile West* case to explain why no further information will be requested from Verizon, the case actually re-enforces and bolsters the County's ability to manage or control construction and to seek additional information from Verizon.

Similarly, the reference to *In re GTE MobilNet of California L.P. v. City and County of San Francisco*, 440 F. Supp. 2d 1097, 1103 (2006) lends additional support to Palomar Park's position. In an overt jab to the merit of Verizon's "Alice in Wonderland" argument, the judge wrote:

"the City has the authority to regulate the placement and appearance of telecommunications equipment installed on its public rights-of-way. Thus, San Francisco need not grant wireless providers blanket permission to install their equipment throughout the city, but may require them to go through a site-specific permitting process provided it is not so burdensome that it runs afoul of § 7901."
The above case law combined with Verizon's design exceeding the maximum height limit from the applicable County ordinance and their improper calculation of Radio Frequency exposure illustrate that Verizon has not complied with local, state and federal laws related to cell tower usage. The County not only has the authority, but an obligation to the county and community to deny Verizon's permit application.

Therefore, the residents of Palomar Park respectfully request that the County immediately deny Verizon's use permit application.
Sincerely,

Michael Kubiak
President

Palomar Property Owners
419 Palomar Drive
Redwood City (Palomar Park), CA 94062-3236

From: Laura Richstone <lrichstone@smcgov.org>
Sent: Friday, August 17, 2018 6:32 PM
To: Michael Kubiak <mwkubiak06@gmail.com>
Subject: 165 S. Palomar Drive Use Permit Application

From: mwkubiak06@gmail.com [mailto:mwkubiak06@gmail.com]
Sent: Monday, August 20, 2018 2:15 PM
To: Laura Richstone <lrichstone@smcgov.org>; Steve Monowitz <smonowitz@smcgov.org>
Cc: ppoboard@googlegroups.com; palomarnews@gmail.com
Subject: 165 S. Palomar Drive Use Permit Application: Emission Levels

Hello Laura,

Below is our position on the emission level risk of the proposed antenna to our neighborhood.

1. As you know, the FCC sets maximum permissible exposure limits (MPE). The Verizon report contains a 3rd party estimate of the exposure levels and concludes that the emissions levels are well beneath the MPE. The report does not show the results of the simulation but a simple calculation shows that the emissions will be roughly 0.012mW/cm^2. The FCC MPE is 1mW/cm^2 for 30 minutes of exposure. Residents of Palomar Park will certainly be exposed for more than 30 minutes. They will be exposed for hours every day resulting in a significant health risk for the residents who, in turn, receive no benefit.
2. The FCC regulations focus on "30 minutes of exposure" because they pertain to macro-cell towers. For macro-cells, people are typically far away; if they are close-by it is only for a short period of time such as driving past a macro-cell. The use of micro-cells began in the mid-2000's. This makes a very tangible difference because a micro-cell radiating at full macro-cell power in a residential neighborhood creates a scenario in which residences receive continuous exposure. This was not contemplated in the development of the FCC Specific Absorption Rate (SAR) limits.
3. Moreover, the exposure levels reported in Verizon's 3rd party simulation are based on Verizon's proposed antenna height. Lowering the antenna height by ~7 to meet zoning requirements invalidates Verizon's simulation and will result in even higher RF exposure levels to residents in the neighborhood.
4. Since 1996, new studies have cast doubt about the assumptions going into the FCC limits. Here is a link to a 2018 Scientific American article summarizing new studies showing that both near-field and far-field RF exposure can cause brain tumors: https://www.scientificamerican.com/article/new-studies-link-cell-phone-radiation-with-cancer/.
5. Regarding the Federal emissions standards, what is the issue date of the current Federal emissions standards? We are concerned that they are out-of-date and therefore not applicable to Verizon's proposed design.

In conclusion, given currently available information we think this technology poses tangible health risks to our community and ask the County to reject Verizon's application for a use permit within the boundaries of Palomar Park.

Sincerely,

Michael Kubiak
President
Palomar Property Owners
419 Palomar Drive
Redwood City (Palomar Park), CA 94062-3236

From: mwkubiak06@gmail.com [mailto:mwkubiak06@gmail.com]
Sent: Monday, August 20, 2018 1:21 PM
To: Laura Richstone <lrichstone@smcgov.org>; Steve Monowitz <smonowitz@smcgov.org>
Cc: ppoboard@googlegroups.com; palomarnews@gmail.com
Subject: 165 S. Palomar Dr. Use Permit App: Code Issue

Hello Laura,

Thank you for providing us with an update on the status of this application.

Code Issue:

- PPO's analysis of the plans has found that the proposal violates the height restriction in the Zoning code and **the application should be rejected by the County as non-compliant to the height limits** as it is exceeds them by 7'-2". We request that the applicant redesign the antenna to meet the County ordinance. The maximum increase to the pole height per code is 3.933' (current pole height is 39'-4") or total increase to height of 43'-3" versus the proposed final height of 50'-5". See attachment of screen shot of page A-3 of Verizon site proposal for site 438731.

Status of Other Applications:

- Earlier you sent us a list of outstanding applications. What is the status of the other 28 applications? Have any applications been denied? If so, on what grounds? I've attached your original spreadsheet to facilitate making updates to it.

Biggest Hurdles:

- Can the County identify what they see as the biggest hurdles for Verizon to obtain a use permit?

We will address our concerns about emissions from the proposed antenna in a separate email.

We look forward to your responses to the items we've raised above.

Sincerely,
Michael Kubiak
President
Palomar Property Owners
419 Palomar Drive
Redwood City (Palomar Park), CA 94062-3236

From: Laura Richstone <lrichstone@smcgov.org>
Sent: Friday, August 17, 2018 6:32 PM
To: Michael Kubiak <mwkubiak06@gmail.com>
Subject: 165 S. Palomar Drive Use Permit Application

Hi Michael,

I understand that you and the other members of the Palomar Park Property Owners Association believe that the application for a new wireless facility on the existing utility pole adjacent to 165 S. Palomar Drive is incomplete. Specifically, you asked to see propagation maps and an alternative analysis, as described by the County's Wireless Ordinance. You also expressed concerns about the health effects of the proposed facility.

Recent legal developments indicate that the County's ability to request information demonstrating the need for the proposed facility (such as propagation maps and an alternatives analysis) is limited for facilities located in the public right-of-way. (See, for more information, California Public Utilities Code Section 7901, *In re GTE MobilNet of California L.P. v. City and County of San Francisco*, 440 F. Supp. 2d 1097, 1103 (2006), and *T-Mobile West LLC v. City and County of San Francisco*, 3 Cal. App. 5th 334 (2016).) As a result, the County will not require Verizon Wireless to submit propagation

maps or an alternatives analysis in this case. As such, no further application materials are required. This application will be deemed complete and will be scheduled for a future public hearing (date TDB).

With respect to the issue of health concerns, federal law limits the County's ability to consider such concerns in its evaluation of an application. Specifically, the Telecommunications Act of 1996 preempts local jurisdictions (such as the County) from regulating cell sites based on their health effects if the cell sites meet current FCC rules, regulations, and emissions standards. The County does have the authority to request a Radio Frequency Report to verify that the facility meets those FCC emissions standards. The applicant has already submitted that report.

Thank you,

Laura Richstone
Project Planner
lrichstone@smcgov.org
COUNTY OF SAN MATEO
PLANNING AND BUILDING
Planning and Building Department
455 County Center, 2nd Floor
Redwood City, CA 94063
(650) 363-1829 T

From: Laura Richstone
Sent: Wednesday, July 11, 2018 3:21 PM
To: Michael Kubiak <mwkubiak06@gmail.com>
Cc: ppoboard@googlegroups.com; palomarnews@gmail.com; adam@schwartz-home.com; Steve Monowitz <smonowitz@smcgov.org>
Subject: RE: Proposed Verizon Cell Tower in Palomar Park: Notification Guidelines

Hi Michael,

Your concerns are understandable. Let me take a moment to explain the Use Permit process and where these applications stand.

Process:

1) Application submitted.
2) Application is reviewed and routed to agencies for comment (i.e. fire, building, HOA, public works etc.)
3) Applicant responds to comments and resubmits application. Resubmittal reviewed for compliance with regulations.
4) Application deemed complete or incomplete.
5) Planner waits until application receives conditional approval from other agencies then begins to write a staff report.
6) Project scheduled for a public hearing.
7) Neighbors within a 300-foot radius of the project are notified by mail of the pending public meeting 10 business days before the meeting is held. The staff report is uploaded to the Planning website for public review and comment. This is called the comment period. During this time the public may contact the Planner to view the plans and/or express their concerns/comments/questions/or approval of the project to the Planner. These comments are noted and forwarded to the decision maker. The public is also welcomed to come to the meeting and speak of their concerns or support before the decision maker. Public notification only occurs after the project has received conditional approval from other departments. The Planning Department would not present a project for permit approval that could not be approved by all departments. For example, the Planning Department would not present a project that complies with Planning Regulations but does not comply with the Building Code or the Fire Code.

Where these applications are:

These applications are at step 2/3. The applications were submitted and routed for agency review and comment. The county noted that the applications were missing some materials and is waiting for these materials to be submitted so that we can perform a full review of this project. To summarize, public notification has not yet occurred because these applications are not ready for a public hearing.

Thank you,

Laura Richstone
Project Planner
lrichstone@smcgov.org
COUNTY OF SAN MATEO
PLANNING AND BUILDING
Planning and Building Department
455 County Center, 2nd Floor
Redwood City, CA 94063
(650) 363-1829 T

From: Michael Kubiak [mailto:mwkubiak06@gmail.com]
Sent: Wednesday, July 11, 2018 9:21 AM
To: Laura Richstone <lrichstone@smcgov.org>; Steve Monowitz <smonowitz@smcgov.org>
Cc: ppoboard@googlegroups.com; palomarnews@gmail.com; adam@schwartz-home.com
Subject: RE: Proposed Verizon Cell Tower in Palomar Park: Notification Guidelines

Hi Laura,

Thank you for the information. We reviewed it at our Board Meeting yesterday. In Palomar Park, we understand that none of the neighbors were notified. Given the various concerns which we and neighbors have raised with the SMCo Planning and Building Dept., what guidelines is the County using to communicate with residents when a cell tower site is proposed for their neighborhood /community?

Cheers,

Michael Kubiak
President
Palomar Property Owners
419 Palomar Drive
Redwood City, CA 94062-3236

From: Laura Richstone <lrichstone@smcgov.org>
Sent: Tuesday, July 10, 2018 6:22 PM
To: Michael Kubiak <mwkubiak06@gmail.com>; Steve Monowitz <smonowitz@smcgov.org>
Cc: ppoboard@googlegroups.com; palomarnews@gmail.com; adam@schwartz-home.com
Subject: RE: Proposed Verizon Cell Tower in Palomar Park: Follow Up Question

Hi Michael,

I have attached an excel spreadsheet with all pending applications for small cell sites within the unincorporated county.

Thank you,

Laura Richstone
Project Planner

lrichstone@smcgov.org
COUNTY OF SAN MATEO
PLANNING AND BUILDING
Planning and Building Department
455 County Center, 2nd Floor
Redwood City, CA 94063
(650) 363-1829 T

From: Michael Kubiak [mailto:mwkubiak06@gmail.com]
Sent: Tuesday, July 03, 2018 8:19 AM
To: Laura Richstone <lrichstone@smcgov.org>; Steve Monowitz <smonowitz@smcgov.org>
Cc: ppoboard@googlegroups.com; palomarnews@gmail.com; adam@schwartz-home.com
Subject: Proposed Verizon Cell Tower in Palomar Park: Follow Up Question

Hello Laura and Steve,

At a County-wide level, how many of these applications have been submitted to the SMCo Planning and Building Dept. and by which carriers?

Cheers,

Michael Kubiak
President
Palomar Property Owners
419 Palomar Drive
Redwood City, CA 94062-3236

From: ppoboard@googlegroups.com <ppoboard@googlegroups.com> **On Behalf Of** Adam Schwartz
Sent: Monday, July 2, 2018 8:29 PM
To: smonowitz@smcgov.org
Cc: adam@schwartz-home.com
Subject: [ppoboard] proposed Verison Cell Tower in Palomar Park

Dear Steve,

I'm writing to object to the proposed cell tower installation near 165 S. Palomar Dr. in Palomar Park. My primary objections are the following:

1. The FCC sets maximum permissible exposure limits (MPE). The Verizon report contains a 3rd party estimate of the exposure levels and concludes that the emissions levels are well beneath the MPE. The report does not show the results of the simulation but a simple calculation shows that the emissions will be roughly 0.012mW/cm^2. The FCC MPE is 1mW/cm^2 for 30 minutes of exposure. Residence of Palomar Park will certainly be exposed for more than 30 minutes! We will be exposed for hours each and every day. This is a significant health risk imposed on the residence who, in turn, receive no benefit.
2. Furthermore, the FCC exposure limits were established in 1996. Since then, new studies have cast doubt about the assumptions going into those limits. Here is a link to a 2018 Scientific American article summarizing new studies showing that both near-field and far-field RF exposure can cause brain tumors: https://www.scientificamerican.com/article/new-studies-link-cell-phone-radiation-with-cancer/
3. The presence of a cell tower in Palomar Park will certainly cause a reduction in property values. How does Verizon plan to compensate residents for this loss of property value?

Thank you for your consideration,

Adam Schwartz
415-516-9934
176 S. Palomar Dr.
Redwood City, CA 94062

PalomarPropertyOwnersBoard
http://groups.google.com/group/ppoboard

From: Laura Richstone
Sent: Monday, June 18, 2018 3:48 PM
To: Terri Plemons <ttunes68@hotmail.com>
Subject: RE: Cell Tower Palomar Park

Hi Terri,

Apologies for the late reply. I have been on vacation since May 11th and have been trying to catch up on emails.

I first want to say that your comments have been received and have been forwarded on to Mr. Monowitz.. While this project is not yet complete and will not be scheduled for a public hearing for several months, the Planning Department welcomes all comments etc. All comments (inclusive of your 5/10 and 6/13 email) will be forwarded on to the Zoning Hearing Officer for consideration before a decision on the project is made. In a similar manner, you are more than welcome to voice your concerns in person during the public meeting for this project (date TBD). All neighbors within a 300 foot radius of the project (and any interested person who requests to be on the mailing list) will be notified by mail of all public meetings for this project.

While your comments concerning property values and potential health benefits may be valid, the approval or denial of a cell application is guided by the criteria contained within the Zoning Regulations (attached). In addition, local jurisdictions (including San Mateo County) are federally preempted from regulating cell sites based on their health effects if the cell sites meet current FCC rules and regulations. Per the FCC's Telecommunications Act of 1996 "…*No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions."* (*https://www.fcc.gov/general/telecommunications-act-1996*) . I have attached a copy of the current proposal along with their Radio Frequency Report for your review. If you have questions regarding the report/plans I would be happy to address them. Though I, as the Project Planner, cannot recommend approval or denial based on the project's possible health affects (or potential decrease in property values) you are more than welcome to attend the Zoning Hearing Officer Meeting (date TBD) and voice your concerns.

To address your comments about the cell site at 1175 Palomar Drive and the potential noise implications for 165 S. Palomar Drive…From my understanding the ground mounted technology used at 1175 Palomar is larger and different from the utility pole mounted technology proposed for 165 Palomar. Though I am unaware of other noise complaints related to the operation of other small cell sites located throughout the County, I will follow up with the applicant regarding the noise generation of the proposed technology and get back to you.

Thank you,

Laura Richstone
Project Planner
lrichstone@smcgov.org
COUNTY OF SAN MATEO
PLANNING AND BUILDING

Planning and Building Department
455 County Center, 2nd Floor
Redwood City, CA 94063
(650) 363-1829 T

From: Adam Mittleman [mailto:adam.mittleman@gmail.com]
Sent: Monday, June 18, 2018 1:45 PM
To: Laura Richstone <lrichstone@smcgov.org>
Cc: ppoboard@googlegroups.com; Palomar Park Owners <palomarnews@gmail.com>; Michael Kubiak <mwkubiak06@gmail.com>; Steve Monowitz <smonowitz@smcgov.org>; Janneth Lujan <JLujan@smcgov.org>
Subject: Re: PLN2018-0093: New Verizon Wireless Telcom Facility, 165 S. Palomar Dr., 94062, HOA Comments

Thank you Laura. I hope your vacation was super fun and I appreciate the update.

Adam

On Jun 18, 2018, at 1:32 PM, Laura Richstone <lrichstone@smcgov.org> wrote:

Hi Adam,

Apologies for the late reply, I was out on vacation during your 5/22 email and I am now catching up on my inbox.

What was referred to the Palomar Park HOA was the proposed project's initial submittal. I want to make clear that this project is NOT complete and is NOT scheduled for a hearing yet.

Planning's review of the project also noted that the application was missing propagation maps and an alternatives analysis. I gave these comments to the applicant and they have not yet submitted revised plans or supporting documents to the Planning Department. A copy of these documents will be sent to the HOA once they are submitted for comment.

Thank you,

Laura Richstone
Project Planner
lrichstone@smcgov.org
<image001.png>
Planning and Building Department
455 County Center, 2nd Floor
Redwood City, CA 94063
(650) 363-1829 T

From: Adam Mittleman [mailto:adam.mittleman@gmail.com]
Sent: Tuesday, June 12, 2018 10:30 PM
To: Laura Richstone <lrichstone@smcgov.org>; Steve Monowitz <smonowitz@smcgov.org>; Camille Leung <cleung@smcgov.org>; Janneth Lujan <JLujan@smcgov.org>
Cc: ppoboard@googlegroups.com; Palomar Park Owners <palomarnews@gmail.com>; Michael Kubiak <mwkubiak06@gmail.com>
Subject: Re: PLN2018-0093: New Verizon Wireless Telcom Facility, 165 S. Palomar Dr., 94062, HOA Comments

Hello Ms. Richstone and Mr. Monowitz,

I have not received a response to my email on May 22 so I am sending again to move it to the top of your inbox. I would greatly appreciate an acknowledgement of the stated objections and an update on the proposal from Verizon. My neighbors are greatly concerned about this matter and would like to know the latest information.

thank you,
Adam Mittleman
Palomar Park Property Owners Board of Directors

From: Terri Plemons [mailto:ttunes68@hotmail.com]
Sent: Tuesday, June 12, 2018 9:52 AM
To: Laura Richstone <lrichstone@smcgov.org>
Subject: Cell Tower Palomar Park

Dear Laura,

I have been waiting for a response to my email to you sent on 5/10/ 2018. I would appreciate you giving me one. In addition to what I wrote, we have learned that a property at 1175 Palomar which has a tower in the rear of the property, took months to sell and was price reduced several 100,000's. A contractor bought it knowing he would not live in it and renovated the home. It has been for sale for some months now and has not sold which is unusual for our area. He has priced reduced it with no luck. Many real estate agents that have worked all over the bay area have mentioned that it is very difficult to sell a property with a cell tower nearby. The property has to be price reduced over and over again before it might sell. There is also a high humming noise that we noted in the yard on 1175 Palomar Drive and I have heard this is another disagreeable issue with these towers from people that have had them placed near there home in Belmont.. I have been told that health issues are not listened to and you will have a rebuttal towards them. Although, what do you have to say about noise issues and depreciation of our properties? There will be plenty of people that will buy in another neighborhood that does not have a tower rather than ours no matter how much they love the property.

I hope to hear from you soon and once again please forward this email and my last one to Mr. Monovitz and any other officer that will make the final decision.

Sincerely,

Terri & Jim Plemons
158 So. Palomar Drive
Redwood City, Ca

From: Leslie Hoffman [mailto:leslie94062@yahoo.com]
Sent: Monday, June 11, 2018 5:37 PM
To: Laura Richstone <lrichstone@smcgov.org>
Cc: Steve Monowitz <smonowitz@smcgov.org>
Subject: Re: Cell Tower Proposal: 165 South Palomar Dr., Redwood City

Zoning Dept.

I was informed by a resident over the weekend that an 11-foot antenna exceeds the 10% increase in height that is allowed for telephone pole additions.

In addition to significantly lowering property values a cell antenna needs to be denied. South Palomar Drive is not an industrial zone.

Thank you,
Leslie Hoffman

From: Laura Richstone <lrichstone@smcgov.org>
To: Leslie Hoffman <leslie94062@yahoo.com>
Sent: Friday, June 8, 2018 4:53 PM
Subject: RE: Cell Tower Proposal: 165 South Palomar Dr., Redwood City

Hi Leslie,

Thank you for your comments and sorry for the late reply. I just returned from vacation and am in the process of answering the emails I received while I was away.

Let me take a moment to outline the typical Planning application process as I believe that will address some the comments raised in your email…

Neither myself nor the Planning Department will be the decision maker in this application. This project requires a public hearing and the decision to approve or deny the proposed project will be determined by the Zoning Hearing Officer.

The project is still undergoing internal review to ensure that it meets all Planning, Building, Fire, and Public Works criteria/regulations. Once conditionally approved by the other departments, the Planning Department (and myself as the Project Planner) drafts a staff report that outlines how the proposed project meets (or does not meet) the applicable zoning regulations and provides a recommendation of approval or denial of the project to the Zoning Hearing Officer. Once the staff report is complete, I will place the proposed project on the agenda for the next Zoning Hearing Officer public meeting.

Ten days before the public hearing the Planning Department sends out a written public notice to all home owners within 300 feet of the proposed project, all home owners associations, and all interested parties asked to be informed of the project. This notice informs the public of the proposed project, provides a brief description, lists the date of the public hearing, and provides the contact information of the Project Planner (myself) if any member of the public has any more questions or would like to view the project plans etc. In addition, any member of the public is welcomed/encouraged to speak before the Zoning Hearing Officer. The Zoning Hearing Officer also reviews all written public comments received by the Project Planner before rendering a decision.

Once the project has been deemed complete you are more than welcome to review the plans and supporting documents etc. You will also be able to review the staff report when it is posted for public review (10 days before the public hearing).

Though there has been a lot of national dialogue in regards to the health effects of cell towers, there is little that local jurisdictions can do to regulate cells towers based on their health effects if the towers meet current FCC rules and regulations. Per the FCC's Telecommunications Act of 1996 "…*No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions."* (*https://www.fcc.gov/general/telecommunications-act-1996*) .

Though the County cannot regulate cellular facilities based on their potential health effects we can (and do) require all cellular facilities to submit Radio Frequency reports (prepared by licensed civil engineers) to show that proposed cellular facilities are compliant with the FCC's rules/regulations/emission standards. Once a final RF report is received by the County I would be more than happy to forward you a copy of the report to review.

Please let me know you if you have any other questions or concerns regarding this project.

Thank you,

Laura Richstone
Project Planner
lrichstone@smcgov.org
COUNTY OF SAN MATEO
PLANNING AND BUILDING
Planning and Building Department
455 County Center, 2nd Floor
Redwood City, CA 94063
(650) 363-1829 T

On Tue, May 22, 2018 at 6:29 PM, Adam Mittleman <adam.mittleman@gmail.com> wrote:
Hello Ms. Richstone and Mr. Monowitz,

My name is Adam Mittleman, I serve on the Palomar Park Property Owners Board and am writing on Mike Kubiaks's behalf while he is away travelling.

I am writing to see if you have received any response from Verizon to the request for more information regarding site 438731 near 165 S. Palomar Drive. Specifically:
1. coverage maps of the existing area and with the proposed changes
2. detailed study of the alternatives within a 2.5mi radius and explanation why co-location on existing facilities is not possible.

The PPO board also would like to stress that the proposal is non-compliant with Section 6512.2.I.2 (page 24.5.3) from the January 2018 San Mateo County zoning regulations. These state that any proposed antenna would have a height restriction to add no more than 10% of the existing 39'-4" height. This proposal would add 11'-1" to the height of the existing structure, bringing it to 50'-5" total and exceed the max allowance by 7'-2". The height restrictions in this residential neighborhood warrant rejecting this proposal as non-compliant.

Thank you for your time and we look forward to hearing from you.

Regards,
Adam Mittleman
Palomar Park Property Owners Board of Directors

From: Leslie Hoffman [mailto:leslie94062@yahoo.com]
Sent: Thursday, May 31, 2018 4:54 PM
To: Steve Monowitz <smonowitz@smcgov.org>
Cc: Laura Richstone <lrichstone@smcgov.org>
Subject: Re: SAY NO to Cell Towers: 165 South Palomar Dr., Redwood City

Steve and Laura,

A neighbor of mine is freaking out about the possibility of a cell tower in Palomar Park. The whole thing is terribly unsettling.

Please, please do not allow an installation to happen. This will impact our physical and mental well being. I can see this will disrupt peace between friends and change the quality of life. Bottom line: People should not live closer to a tower than 1/4 mile.

Thank you for keeping unwanted technology out of our homes.

Sincerely,
Leslie Hoffman
150 South Palomar Drive

Redwood City, CA 94062

From: Adam Mittleman [mailto:adam.mittleman@gmail.com]
Sent: Tuesday, May 22, 2018 6:29 PM
To: Laura Richstone <lrichstone@smcgov.org>; Steve Monowitz <smonowitz@smcgov.org>; Camille Leung <cleung@smcgov.org>; Janneth Lujan <JLujan@smcgov.org>
Cc: ppoboard@googlegroups.com; Palomar Park Owners <palomarnews@gmail.com>; Michael Kubiak <mwkubiak06@gmail.com>
Subject: Re: PLN2018-0093: New Verizon Wireless Telcom Facility, 165 S. Palomar Dr., 94062, HOA Comments

Hello Ms. Richstone and Mr. Monowitz,

My name is Adam Mittleman, I serve on the Palomar Park Property Owners Board and am writing on Mike Kubiaks's behalf while he is away travelling.

I am writing to see if you have received any response from Verizon to the request for more information regarding site 438731 near 165 S. Palomar Drive. Specifically:
1. coverage maps of the existing area and with the proposed changes
2. detailed study of the alternatives within a 2.5mi radius and explanation why co-location on existing facilities is not possible.

The PPO board also would like to stress that the proposal is non-compliant with Section 6512.2.I.2 (page 24.5.3) from the January 2018 San Mateo County zoning regulations. These state that any proposed antenna would have a height restriction to add no more than 10% of the existing 39'-4" height. This proposal would add 11'-1" to the height of the existing structure, bringing it to 50'-5" total and exceed the max allowance by 7'-2". The height restrictions in this residential neighborhood warrant rejecting this proposal as non-compliant.

Thank you for your time and we look forward to hearing from you.

Regards,
Adam Mittleman
Palomar Park Property Owners Board of Directors

From: ANNMARIE RYAN [mailto:amarieryan@comcast.net]
Sent: Saturday, May 19, 2018 11:58 AM
To: Laura Richstone <lrichstone@smcgov.org>
Subject: Cell phone tower in Palomar Park

Dear Laura,

I strongly oppose placing a cell phone tower at 165 So. Palomar.

Sincerely,

Ann Marie Ryan
154 So Palomar Dr.

From: Leslie Hoffman [mailto:leslie94062@yahoo.com]
Sent: Wednesday, May 16, 2018 4:14 PM
To: Laura Richstone <lrichstone@smcgov.org>
Cc: Steve Monowitz <smonowitz@smcgov.org>
Subject: Cell Tower Proposal: 165 South Palomar Dr., Redwood City

Dear Laura,

Recently I learned from a neighbor that there is a proposal to put a cell tower on a telephone pole on South Palomar Drive in Redwood City. If this is the case, I am strongly opposed for several reasons.

First, it's alarming that the residents of South Palomar Drive and Palomar Drive were not notified in writing of this matter. To find out by word of mouth and not from San Mateo County or the cell provider seems unprofessional and unethical. We should be told directly and individually in writing what type and size of equipment is in discussion and informed of all health hazards and the impact to the natural environment. This would affect wildlife as well.

There is ample information available that shows cell towers are harmful to human health. I already experience many of the below symptoms and dread the thought of having a cell transmitter within yards of my home. I am surrounded by technology at my place of employment and purposely live in a quiet area to rest from modern living.

The hidden health effects of cell towers:
-Headaches
-Sleep disturbance
-Fatigue
-Visual issues
-Dizziness
-Hearing disruption
-Irritability
-Concentration
-Memory problems
-Cancer (I am a cancer survivor)

Naila Study 2004
Kempton West Study 2007
France Questionnaire 2003
http://electromagnetichealth.org/wp-content/uploads/2014/07/Cell-tower-studies-re-cancer.pdf

Santini Study 2003 - This is a compelling survey of 270 men and 260 women showing changes in symptoms in relation to cell tower proximity. Note the decrease in reported headaches the further from the cell site.

Table I. Percentages of complaints reported compared to responses of a level of « 0 », by persons living in the vicinity of base stations as a function of their distance away from a base station.

Symptoms	Distances from base stations in meters (m)											
	< 10 m		10 to 50 m		50 to 100 m		100 to 200 m		200 to 300 m		> 300 m ...	
	2	3	2	3	2	3	2	3	2	3	2	3
Fatigue	76 *	72 *	63.5*	50.9*	60.6	56.6*	64.2	41.1	66.6*	43.7	40.7	27.2
Irritability	32.8	23.2*	41.7*	25.7*	47.2*	44.1*	25.8	4.1	25	9	18	3.3
Headaches	51 *	47.8*	40 *	26.1*	40.6*	36.7*	60.7*	31.2*	19.3	0	15.6	1.8
Nausea	14.5*	6.9	8.4	3	5.7	3.8	2.4	4,6	0	2.3	2,1	1.1
Loss of Appetite	20.4*	8.3	8	5.5	5	5	6.9	0	4.2	0	3.3	3.3
Sleep Disruption	41.3*	57.1*	41.4*	57.5*	46.9*	58.5*	45.8*	50*	33.3	35.5	13.8	21.1
Depression	16,9	26.8*	21.6	19.7*	11.6	24 *	16.2	3.1	13.6	2.5	10.3	3.7
Feeling of Discomfort	28 *	45.4*	25.2*	18.9	30.6*	12.8	15.7*	0	9.7	5.1	2.4	8.1
Difficulty in concentration	39.3	28.8*	37.5	16.6	34.2	26.4*	25	12.5	43.3	5.5	26.7	7.1
Memory Loss	27.8	25.4*	29.4	26.6*	37.1*	29 *	25	15.6	17.2	11.1	17.9	5.8
Skin Problems	18.1*	17.1*	6.6	10.8	11.1*	11.1	13.9*	7.5	8.7	0	1.2	4.6
Visual Disruptions	14.5	24.3*	23	13.5	22	7.1	2.5	4.9	15	2.8	13.6	4.1
Hearing Disruptions	33.3*	17.4	17.7*	12	8.3	15.5	7.7	7.7	11.6	9.5	5.6	8.7
Dizziness	10	12.5*	17.3*	7,5*	9.6	9.6*	12.2	2.7	7.7	5.2	6.2	0
Movement Difficulties	5.6	7.7*	8.2	1.7	3	3	0	0	2	0	2.9	1
Cardio-vascular Problems	10.1*	13 *	15.3*	9.6	12.3*	7.4	8.7	0	8.5	6.5	1	3

* Significant difference ($p < 0.05$) in comparison to reference subjects found at > 300 m or not exposed, for the responses 2 – « often » and 3 – « very often».

.

Palomar has jetliners flying directly overhead constantly. We do not need another level of continuous 24/7 pollution.

Please keep in mind you could be writing off someone's good health and possibly their life whenever this equipment is installed in a residential area. There are older people and young people living adjacent to the South Palomar telephone pole in question. The adverse impact is greater to the young and elderly.

Thank you in advance for voting down any new cell tower in Redwood City and San Carlos. Enough is enough. Redwood City and San Carlos are changing far too fast and are practically unrecognizable. Growth must slow down and return to a sustainable pace. Both communities are clearly suffering and people are becoming needlessly over stressed. I've witnessed some disturbing aggressive behavior in the past two months on the road and I am seriously concerned for the welfare of my hometown. Please stop this disturbing trend now and turn down cell towers or at least find better suited locations.

Sincerely,
Leslie Hoffman
150 South Palomar Drive
Redwood City, CA 94062

From: Terri Plemons [mailto:ttunes68@hotmail.com]
Sent: Thursday, May 10, 2018 7:31 PM
To: Laura Richstone <lrichstone@smcgov.org>
Subject: Cell Phone Tower in Palomar Park

Dear Laura,

It has been brought to our attention that Verizon has a proposal to install a cell phone tower at 165 So. Palomar Drive in Redwood City. It will be attached to a telephone pole across the street from us which we can clearly see from my master bedroom which is on the second story of our house. After hours of research about the potential health effects of the tower being so close to our residence, we are very concerned and we are opposed to them doing so.

These health effects include:
Damage to cell tissue & DNA
Cancers-Especially Brain & Leukemia due to reduced immune system competence
Headaches & Fatigue
Memory Loss & Confusion
Sleep & hearing disruption
Cardiovascular problems
Dizziness

We have lived in Palomar Park for almost forty years and have been blessed with good health. We would hate to see that change. We have both worked hard to stay healthy.
It certainly frightens us that down the road due to this tower that this could all change.

We know that towers have not been around long enough for long term studies but just in the short time there have been some placed, many neighborhoods & a fire department with towers nearby, have reported on the negative health effects it has caused already. Both with Asbestos and Thalidomide (given to pregnant women for nausea) as examples, the health effects did not show up until later. It could take some time for the health effects from this tower to show up. Until a study with the highest merit can prove they are safe we are not at all comfortable having one near our home. We are also concerned that our property value could be adversely affected due to the fact that a lot of people like ourselves have concerns regarding RF exposure from these cell towers.
The revenue from placing this tower is in exchange for our potential well being/health, our peace of mind and our property values. None of us, we are sure, is willing to take that risk.

Thank you for reading our concerns why we do not want this tower on our street. We would appreciate you forwarding this letter to Steve Monowitz.

Sincerely,

Terri & Jim Plemons
158 So. Palomar Drive
Redwood City, Ca 94062

From: Michael Kubiak <mwkubiak06@gmail.com>
Sent: Wednesday, April 25, 2018 8:22 AM
To: lrichstone@smcgov.org
Cc: 'Steve Monowitz' <smonowitz@smcgov.org>; 'Camille Leung' <cleung@smcgov.org>; 'Janneth Lujan' <JLujan@smcgov.org>; ppoboard@googlegroups.com; palomarnews@gmail.com
Subject: PLN2018-0093: New Verizon Wireless Telcom Facility, 165 S. Palomar Dr., 94062
Importance: High

Hello Ms. Richstone,

We received a request for comment from you yesterday, 4/24, which is due today. Given the tight timeframe, we are requesting an extension so that our Board can carefully consider this proposal from Verizon.

Please note that Kurt Oppenheimer has not been our President for ten years. We have notified the County previously. Also, we have requested that the County communicate with us also via email to ensure our prompt response. Please email us the packet of information which you sent to us via mail so that we can quickly distribute to our Board.

Based on my quick review of the packet sent, please be aware that it does not:
Define the area which needs to be improved,
Include the current quality of coverage maps,
Include the proposed coverage maps with the new facility, and
Include what other alternatives were considered and their respective coverage maps

This information is critical for us to be able to conduct a thoughtful and considered review of the application.

I have attached our most recent communication to the County and the Planning Commission with respect to our opposition to a prior Verizon application. Camille and I can fill you in on subsequent communications from Verizon about a subsequent application which they withdrew in August 2016.

Please advise your receipt of the email by return communication.

Regards,

Michael Kubiak
President
Palomar Property Owners
419 Palomar Drive
Redwood City, CA 94062-3236
Mobile: 650-464-1372

On Wed, Apr 25, 2018 at 2:13 PM, Michael Kubiak <mwkubiak06@gmail.com> wrote:
Hello Ms. Richstone and Mr. Monowitz,

I have completed and attached this form on behalf of the Palomar Property Owners Association. Given the information made available to us and the very limited time we had to review it, our position is that the County deny this application and direct Verizon to prepare an adequate application. The email below and the Key Takeaways and Recommendation document attached provide supporting documentation.

What is clear to us is that the applicant did not:
Define the area which needs to be improved,
Include the current quality of coverage maps,
Include the proposed coverage maps with the new facility, and
Include what other alternatives were considered and their respective coverage maps

Without these, an assessment cannot be made as to the merits of the application.

Sincerely,

Michael Kubiak
President
Palomar Property Owners
419 Palomar Drive
Redwood City (Palomar Park), CA 94062-3236
Mobile: 650-464-1372

County of San Mateo - Planning and Building Department

ATTACHMENT K

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

Site No. 438731
SF SAN CARLOS 019
165 South Palomar Drive
Emerald Hills, California 94062
San Mateo County
37° 28' 45.50" N, -122° 16' 7.45" W NAD83

EBI Project No. 6218000813
September 11, 2018

Prepared for:

Verizon Wireless
c/o Modus Inc
240 Stockton St. 3rd floor
San Francisco CA, 94108

Prepared by:

EBI Consulting
environmental | engineering | due diligence

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by Verizon Wireless to conduct radio frequency electromagnetic (RF-EME) modeling for Verizon Site 438731 located at 165 South Palomar Drive in Emerald Hills, California to determine RF-EME exposure levels from proposed Verizon wireless communications equipment at this site. As described in greater detail in Section 2.0 of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

Statement of Compliance

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

As presented in the sections below, based on worst-case predictive modeling, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed antenna that exceed the FCC's occupational or general public exposure limits at this site. Additionally, there are areas where workers who may be elevated above the ground may be exposed to power densities greater than the occupational limits. Therefore, workers should be informed about the presence and locations of the antenna and its associated fields.

At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antenna is approximately **10.90** percent of the FCC's general public limit (**2.18** percent of the FCC's occupational limit).

Modeling was also performed at 10 feet above ground level to simulate exposure levels for nearby 2-story buildings. 10 feet is the approximate height of a standard 2nd floor. The maximum power density generated by the Verizon antenna is approximately **19.9** percent at 10 feet above ground level. This value pertains to the area directly below the antenna. As you move away from the antenna in a horizontal direction, the power density dissipates quickly. The power density drops below 5% less than 4 feet from the antenna.

The composite exposure level from all carriers on this site is approximately **10.90** percent of the FCC's general public limit (**2.18** percent of the FCC's occupational limit) at the nearest walking/working surface to the antenna.

Recommended control measures are outlined in Section 5.0 and within a Site Safety Plan (attached); this plan includes instructions to shut down and lockout/tagout this wireless equipment in accordance with Verizon's standard operating protocol.

1.0 INTRODUCTION

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

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

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

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

2.0 SITE DESCRIPTION

This project site includes one (1) wireless telecommunication antenna on a utility pole located at 165 South Palomar Drive in Emerald Hills, California.

Verizon Antenna Information (proposed Configuration)									
Antenna # and Model	Frequency (MHz)	# of Transmitters	Transmit Power (Watts)	Azimuth	Gain (dBd)	Feet above Ground (CL)	X	Y	Z (feet)
A1 Amphenol CUUT070X12Fxyz0	700 2100	2 2	60 60	180° 300°	10.35 14.05	48.33	75	75	46.33

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general population/uncontrolled exposure limits for members of the general public that may be exposed to antenna fields. While access to this site is considered uncontrolled, the analysis has considered exposures with respect to both controlled and uncontrolled limits as an untrained worker may access adjacent rooftop locations. Additional information regarding controlled/uncontrolled exposure limits is provided in Section 3.0. Appendix B presents a site safety plan that provides a plan view of the utility pole with antenna locations.

3.0 FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

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

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

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

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

Table 1 and Figure 1 (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm^2). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm^2) and an uncontrolled MPE of 1 mW/cm2 for equipment operating in the 1900 MHz frequency range. For the Verizon equipment operating at 700 MHz or 850 MHz, the FCC's occupational MPE is 2.83 mW/cm^2 and an uncontrolled MPE of 0.57 mW/cm^2. These limits are considered protective of these populations.

Table 1: Limits for Maximum Permissible Exposure (MPE)

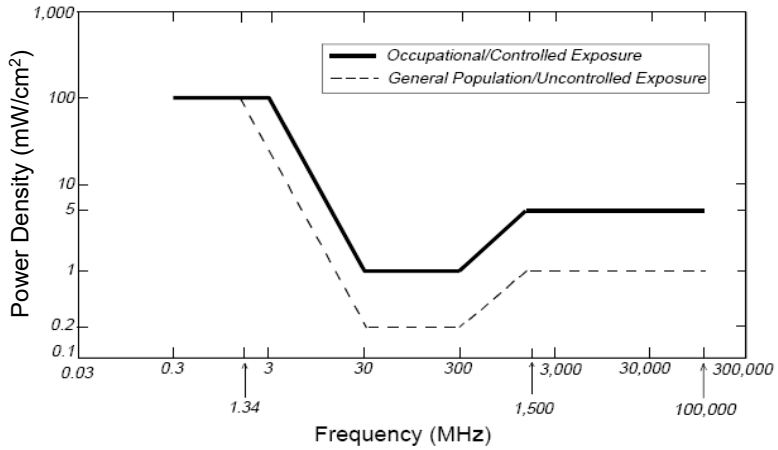
(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $[E]^2$, $[H]^2$, or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6

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

f = Frequency in (MHz)
* Plane-wave equivalent power density

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



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

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Cellular Telephone	870 MHz	2.90 mW/cm^2	0.58 mW/cm^2
Specialized Mobile Radio	855 MHz	2.85 mW/cm^2	0.57 mW/cm^2
Most Restrictive Freq, Range	30-300 MHz	1.00 mW/cm^2	0.20 mW/cm^2

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

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

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

4.0 WORST-CASE PREDICTIVE MODELING

EBI has performed theoretical modeling using RoofView® software to estimate the worst-case power density at the site ground-level resulting from operation of the antennas. RoofView® is a widely-used predictive modeling program that has been developed by Richard Tell Associates to predict both near field and far field RF power density values for roof-top and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

The modeling is based on worst-case assumptions for the number of antennas and transmitter power. The modeling assumes a maximum 2-2 radio configuration for Sectors A and B, with a power level of 48 dBm (60 watts) per transmitter for 700 and 2100 frequencies, in order to provide a worst-case evaluation of predicted MPE levels. The assumptions used in the modeling are based upon information provided by Verizon, and information gathered from other sources. The parameters used for the modeling are summarized in the RoofView® export files presented in Appendix C.

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

Based on worst-case predictive modeling, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed Verizon antenna that exceed the FCC's occupational or general public exposure limits at this site. At the nearest walking/working surfaces to the Verizon antenna, the maximum power density generated by the Verizon antenna is approximately 10.90 percent of the FCC's general public limit (2.18 percent of the FCC's occupational limit).

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

The inputs used in the modeling are summarized in the RoofView® export file presented in Appendix C. A graphical representation of the RoofView® modeling results is presented in Appendix B. It should be noted that RoofView is not suitable for modeling microwave dish antennas; however, these units are designed for point-to-point operations at the elevations of the installed equipment rather than ground level coverage.

5.0 MITIGATION/SITE CONTROL OPTIONS

EBI's modeling indicates that there are no areas in front of the Verizon antenna that exceed the FCC standards for occupational or general public exposure. All exposures above the FCC's safe limits require that individuals be elevated above the ground. In order to alert people accessing the utility pole, a CAUTION sign is recommended for installation on the street side of the pole 12 feet below the antenna.

There are no barriers recommended on this site.

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

Implementation of the signage recommended in the Site Safety Plan and in this report will bring this site into compliance with the FCC's rules and regulations.

6.0 SUMMARY AND CONCLUSIONS

EBI has prepared a Radiofrequency – Electromagnetic Energy (RF-EME) Compliance Report for telecommunications equipment installed by Verizon Site Number 438731 located at 165 South Palomar Drive in Emerald Hills, California to determine worst-case predicted RF-EME exposure levels from wireless communications equipment installed at this site. This report summarizes the results of RF-EME modeling in relation to relevant Federal Communications Commission (FCC) RF-EME compliance standards for limiting human exposure to RF-EME fields.

As presented in the sections above, based on the FCC criteria, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed antenna that exceed the FCC's occupational or general public exposure limits at this site. Workers should be informed about the presence and locations of antennas and their associated fields. Recommended control measures are outlined in Section 5.0 and within a Site Safety Plan (attached); this plan includes procedures to shut down and lockout/tagout this wireless equipment in accordance with Verizon's standard operating protocol.

Based on worst-case predictive modeling at the antenna face level, the maximum power density may exceed the FCC's general public MPE limits within approximately 12 feet of the antenna face.

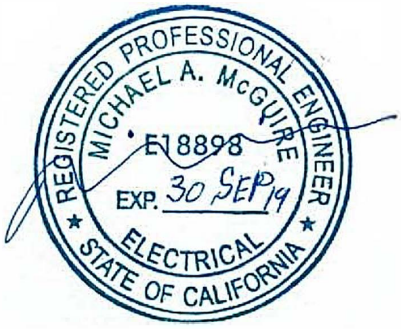
7.0 LIMITATIONS

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

Appendix A

Certifications

Reviewed and Approved by:



sealed 12sep2018

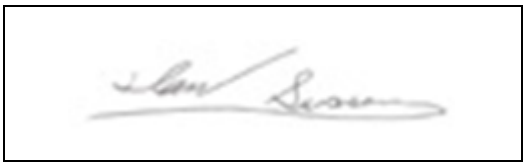
Michael McGuire
Electrical Engineer

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

Preparer Certification

I, Ian Swanson, state that:

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



Appendix B

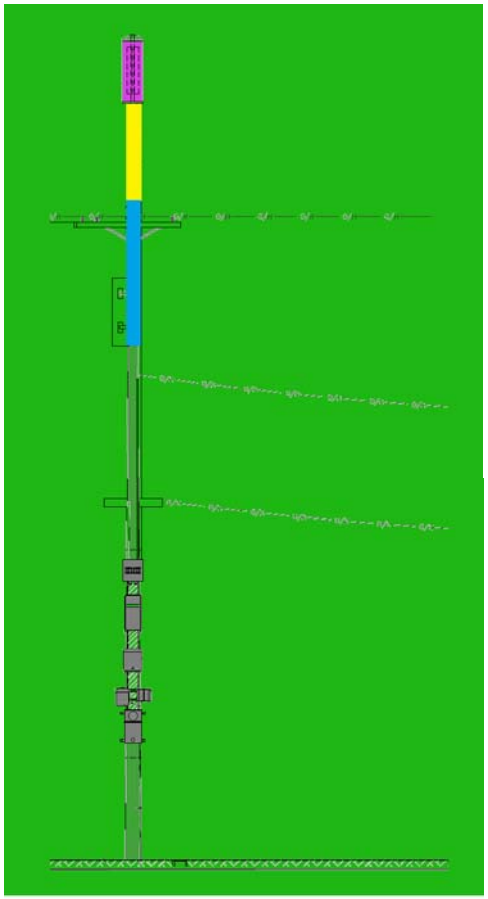
Radio Frequency Electromagnetic Energy

Safety / Signage Plans

% FCC Public Exposure Limit	
	Exposure Level ≥ 5,000
	500 < Exposure Level ≤ 5,000
	100 < Exposure Level ≤ 500
	Exposure Level ≤ 100

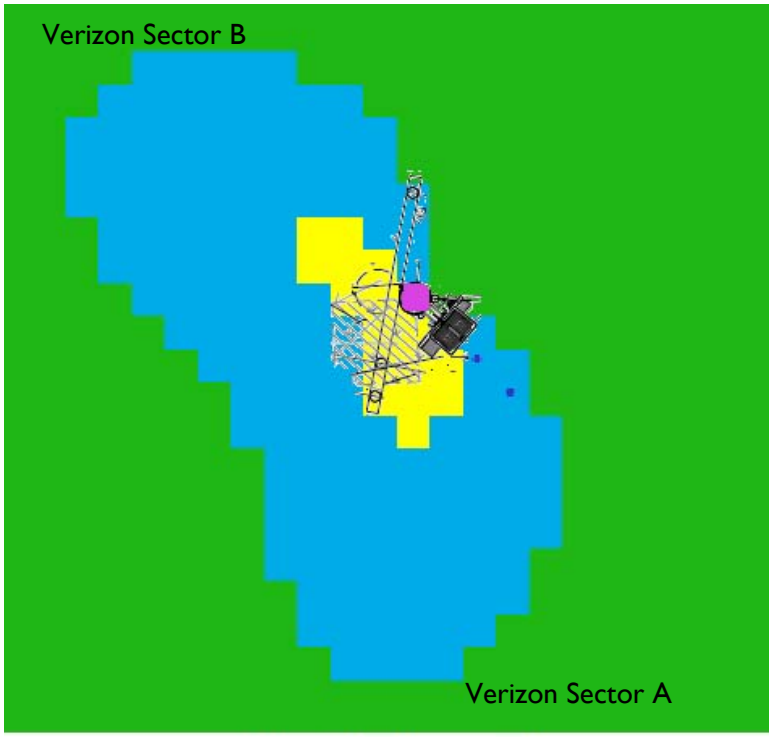
N

Down Pole



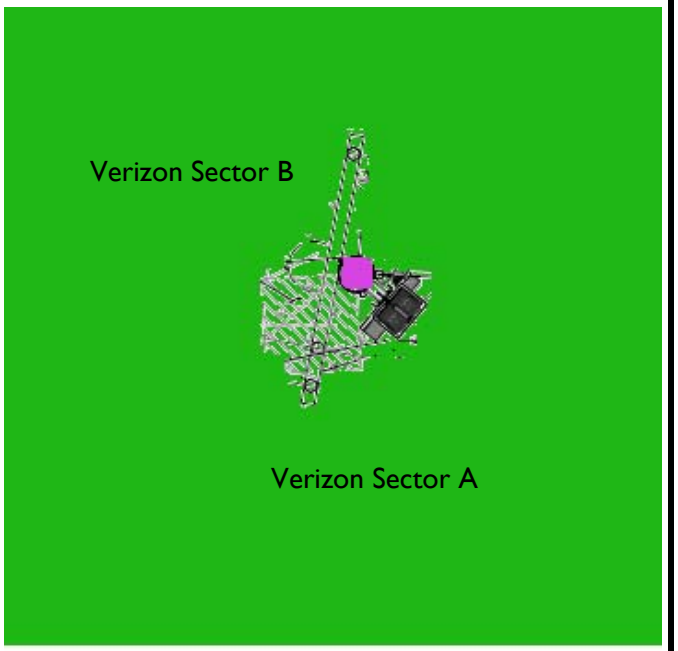
2' 0' 2'

Antenna Face



4' 2' 0' 4'

Ground Level



4' 2' 0' 4'

Verizon Antennas

RoofView: Composite Exposure Levels

Facility Operator: Verizon Wireless
Site Name: SF SAN CARLOS 019
Verizon Site Number: 438731
Report Date: 03-09-18

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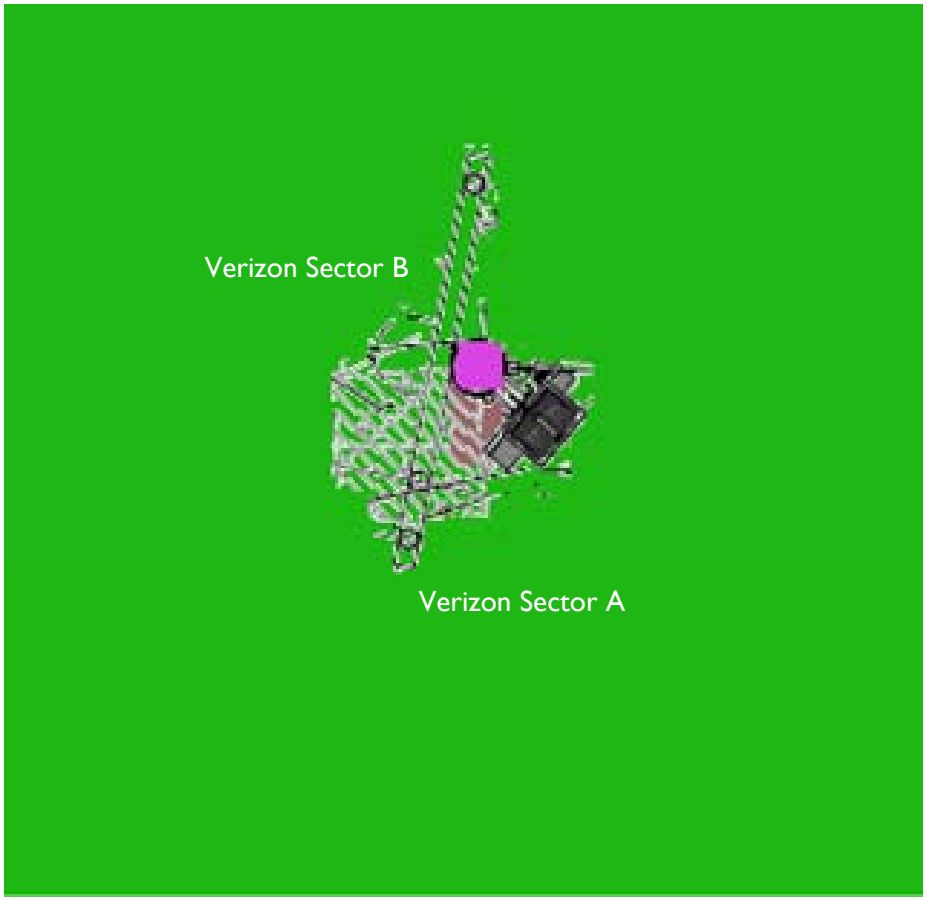
% FCC Public Exposure Limit	
	Exposure Level > 5
	Exposure Level ≤ 5



4' 2' 0' 4'

Verizon Antennas

RoofView: Verizon Exposure Levels

Facility Operator: Verizon Wireless

Site Name: SF SAN CARLOS 019

Verizon Site Number: 438731

Report Date: 03-09-18

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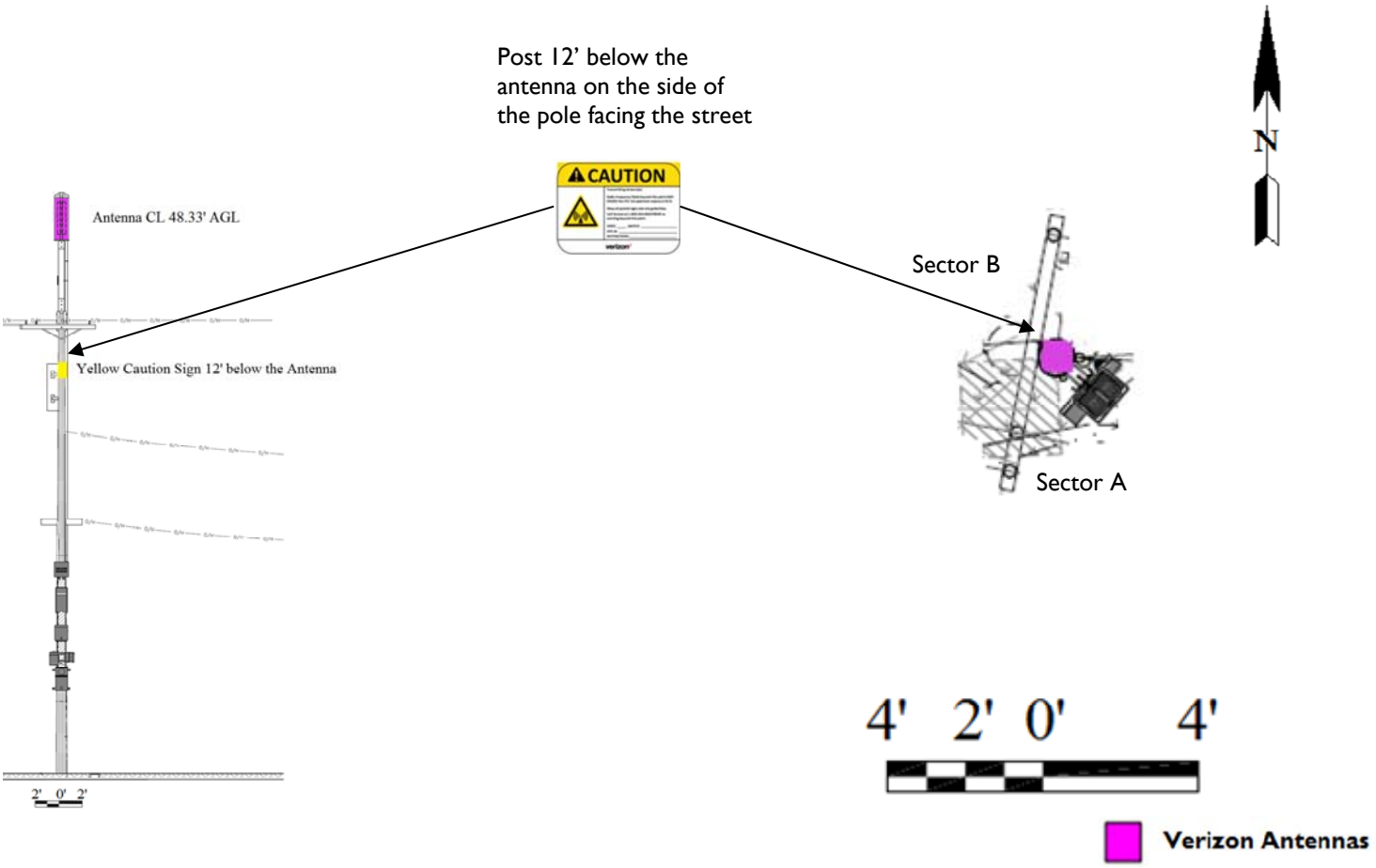
Verizon Signage Plan



Sign Image	Description	Posting Instructions	Required Signage
	**Notice To Workers** Informational sign, used to notify workers that there are active antennas installed and provide guidelines for working in RF environments.	Not Required.	N/A
	**NOC Information Sign** Informational sign with NOC Phone Number and Base Transceiver Station (BTS) Number	Not Required.	N/A
	**Blue Notice Sign** Used to alert individuals that they are entering an area where the power density emitted from transmitting antennas exceeds the FCC's maximum permissible exposure limit for the general public but is less than the occupational exposure limit.	Not Required.	N/A
	**Yellow Caution Sign** Used to alert individuals that they are entering an area where the power density emitted from transmitting antennas may exceed the FCC's maximum permissible exposure limit for the general public and the occupational exposure limit.	Securely 12 feet below the antenna on the side of the pole facing the street as indicated in the signage plan.	1 on the side of the pole facing the street 12 feet below the antenna.
	**Red Warning Sign** Used to alert individuals that they are entering an area where the power density emitted from the transmitting is substantially above the FCC's maximum permissible limit for occupational exposure (greater than ten times the Occupational limit).	Not Required.	N/A

Appendix C

RoofView® Export File

StartMapDefinition

Roof Max X	Roof Max Y	Map Max X	Map Max Y	Y Offset	X Offset	Number of	envelope
160	160	160	160	0	0	1	$K$61:FNK$61:$FN$220

StartSettingsData

Standard	Method	Uptime	Scale Fact	Low Thr	Low Color	Mid Thr	Mid Color	Hi Thr	Hi Color	Over Color	Ap Ht Mult	Ap Ht Method
4	2	1	1	100	1	500	4	5000	2	3	1.5	1

StartAntennaData It is advisable to provide an ID (ant 1) for all antennas

ID	Name	(MHz) Freq	Trans Power	Trans Count	Coax Len	Coax Type	Other Loss	Input Power	Calc Power	Mfg	Model	(ft) X	(ft) Y	(ft) Z	Type	(ft) Aper	dBd Gain	BWdth Pt Dir	Uptime Profile	ON flag
VZW A1	LTE	700	60	1	0	0	0.5		53.47506	Amphenol	CUUT070X	75	75	46.33		4	10.35	82;180		ON•
VZW A1	LTE	2100	60	1	0	0	0.5		53.47506	Amphenol	CUUT070X	75	75	46.33		4	14.05	73.7;180		ON•
VZW B1	LTE	700	60	1	0	0	0.5		53.47506	Amphenol	CUUT070X	75	75	46.33		4	10.35	82;300		ON•
VZW B1	LTE	2100	60	1	0	0	0.5		53.47506	Amphenol	CUUT070X	75	75	46.33		4	14.05	73.7;300		ON•

StartSymbolData

Sym	Map Mark	Roof X	Roof Y	Map Label	Description (notes for this table only)
Sym		5	35	AC Unit	Sample symbols
Sym		14	5	Roof Access	
Sym		45	5	AC Unit	
Sym		45	20	Ladder	

County of San Mateo - Planning and Building Department

ATTACHMENT L

HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
BROADCAST & WIRELESS

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February 8, 2019

Modus, LLC
240 Stockton Street, Third Floor
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Re: Comments on EBI Report for Verizon Small Cell on South Palomar Drive

To Whom It May Concern:

As requested, we have reviewed the "Radio Frequency – Electromagnetic Energy (RF-EME) Jurisdictional Report" dated September 11, 2018, prepared by EBI Consulting, analyzing RF exposure conditions for the Verizon Wireless small cell (Site No. 438731 "San Carlos 019") proposed to be installed on top of the utility pole at 165 South Palomar Drive in the Emerald Hills area of unincorporated San Mateo County. That report gives several results from EBI's calculations:

- 10.90% of the FCC public limit for a person at ground below the antenna
- 19.9% of the limit for a person at the "2-story" height of 10 feet above ground

EBI performs its calculations with a commercial spreadsheet that does not account for the actual signal patterns of the antennas, so we would expect different results compared with our more precise calculations. For instance, we reported in our study dated January 10, 2019, a maximum calculated level at ground of 1.6% of the public limit, much less than the 10.90% reported by EBI and much more in line with actual levels, based on thousands of measurements at similar sites.

For EBI's result at a second-story height, we note that no effort was made to identify where such a building actually is located, with EBI reporting a number "directly below the antenna." In our analysis, we account for the actual building locations, as well as for the fact that the terrain in this neighborhood is not flat. For this proposal, the nearest building is the garage for the residence at 165 South Palomar Drive, about 30 feet away and downhill from the site. The highest calculated exposure level at any nearby building, which we reported as 3.1%, occurs at the two-story residence at 178 South Palomar Drive, about 150 feet uphill to the north. It should be noted that our results include several "worst-case" assumptions and therefore are themselves expected to overstate actual power density levels from the proposed operation.

Thus, the numbers reported by EBI are not necessarily wrong; they just do not characterize the anticipated exposure conditions from Verizon's operation of the proposed small cell facility at this site in Emerald Hills.

We appreciate the opportunity to review this material. Please let us know if any further questions arise.

Sincerely yours,

William F. Hammett, P.E.

dm