COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: May 16, 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 1175 Parrott Drive in the unincorporated San Mateo Highlands area of San Mateo County. This item was continued from the November 15, 2018 Zoning Hearing Officer hearing to allow the public additional time to review the application.

County File Numbers: PLN 2018-00079 (Verizon Wireless/Modus)

PROPOSAL

The applicant proposes to install new wireless telecommunication facility on an existing joint utility pole located in the public right-of-way in front of 1175 Parrott Drive in the unincorporated San Mateo Highlands area. The new facility will consist of a 7-foot pole extension, one 4-foot tall cylindrical antenna, and ancillary pole mounted equipment boxes. The new facility will have an effective height of 48'-11" above grade where the maximum allowed height is 36 feet above grade. No grading or tree removal activities are proposed.

This item was continued from the November 15, 2018 Zoning Hearing Officer meeting to allow members of the public additional time to review the proposed project. In response to public comments received, the applicant has evaluated the feasibility of locating the proposed antenna below the existing powerlines to reduce the facility's overall height. The applicant 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 2018-00079, 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: Verizon Wireless c/o Modus

Land Owner: San Mateo County Department of Public Works

Pole Owner: PG&E

Location: Public Right-of-Way in front of 1175 Parrott Drive

APN: Public Right-of-Way adjacent to 038-130-120

Existing Zoning: R-1/S-8 (Single-Family Residential/Minimum Lot Size 7,500 sq. ft.)

General Plan Designation: Medium Low Density Residential Urban

Flood Zone: Zone X (area of minimal flood risk); FEMA Panel No. 06081C 0165E; Effective October 16, 2012

Sphere of Influence: City of San Mateo

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

Environmental Evaluation: All projects are 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 the installation of small new equipment and facilities within a small structure.

Setting: The proposed project sites are located on existing utility poles in the public right-of-way (ROW) north of Highway 92 and east of Highway 280, in the unincorporated San Mateo Highlands area of San Mateo County. All proposed project sites are located in urbanized single-family residential neighborhoods.

Chronology:

Date		Action
April 11, 2018	-	Use Permit application submitted.
September 24, 2018	-	Application deemed complete.
November 15, 2018	-	Project continued from the Zoning Hearing Officer Public Hearing to allow additional time for public review.
February 21, 2019	-	Project continued from the Zoning Hearing Officer Public Hearing at the request of the applicant.
March 21, 2019	-	Project continued from the Zoning Hearing Officer Public Hearing to allow additional time for staff to respond to

subsequent materials submitted by the applicant in response to public comments.

May 16, 2019 - Zoning Hearing Officer Public Hearing.

DISCUSSION

A. KEY ISSUES

1. Compliance with the General Plan

Staff has determined that the proposed project complies with 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 local roads in an urban single-family residential area. To reduce the visual impacts of the proposed project, the antenna and mounted equipment, located 48'-11" above grade, will be painted to match the existing utility pole and shall be constructed of non-reflective materials.

2. Compliance with the Zoning Regulations

The proposed project is located within the public ROW in the R-1/S-8 (San Mateo Highlands) Zoning Districts. Zoning District standards, with the exception of height are not applicable to projects located within the ROW.

The proposed project consists of a 7-foot pole extension, one cylindrical antenna (approximately 4 feet tall), and ancillary pole mounted equipment and will exceed the 36-foot height limit of the R-1/S-8 Zoning District. Classified as a public utility, the safe installation and maintenance of wireless facilities is controlled by the California Public Utilities Commission (CPUC). General Order No. 95 (GO95), mandated by the CPUC, requires a 6-foot vertical separation between all cellular antennas and the nearest adjacent power supply lines. With existing primary and secondary power supply lines located at the top of the pole and communication lines located in the middle, the applicant has proposed to extend the height of the utility pole using a pole extension bracket to achieve this 6-foot vertical safety separation. With an existing pole height of 38'-5" the proposed project would increase the effective height of the utility pole from 38'-5" to 48'-11" above grade (See Table 1) and exceed the maximum allowed height for new wireless facilities in order to comply with minimum safety separation standards mandated by the State (see below for further discussion regarding height).

Section 6512.2.I.2 (*Development and Design Standards for New Wireless Facilities That Are Not Co-Location Facilities*)

Section 6512.2.I.2 of the San Mateo County Zoning Regulations provides height allowances for utility infrastructure (i.e. wireless facilities) located in the right-of-way. The Section states 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% or 5 feet, whichever is less. With a maximum district height of 36 feet, this provision would allow a maximum pole height of 39'-7". As outlined in the table below, the addition of the extension bracket coupled with the height of the antenna itself would add an average of 11 feet to the existing utility pole, result in an effective height of 48'-11" and would not adhere with the height limitations contained within Section 6512.2.I.2. In an effort to comply with both State safety standards and local height regulations the applicant provided an alternative pole analysis and a side arm mount analysis to determine the feasibility of locating the proposed equipment on a nearby pole or locating the equipment lower on the subject pole.

Table 1

Zoning District	Maximum District Height	Maximum Allowed Antenna Height	Existing Pole Height	Proposed Pole and Equipment Height
R-1/S-8	36'	39'-7"	37'-8"	48'-11"

Alternative Site Analysis

Verizon Wireless has identified this area of San Mateo Highlands as an area with marginal cellular coverage and has proposed a small wireless facility to improve cellular coverage, decrease dropped calls, and increase data capacity for the greater community and transient traffic by increasing signal propagation and unloading data traffic from the larger network. Small cell facilities typically cover a small geographic range (500-1,000-foot radius depending on topography) and must be located within, or in close proximity to identified target areas. In an effort to relocate the proposed project on adjacent nearby utility poles that would achieve the same level of service as the proposed utility pole and adhere both to the District's height regulations and State safety standards, the applicant performed an alternative utility pole analysis (Attachment E). The poles identified in this analysis 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 thus exceed the height criteria of Section 6512.2.I.2 (See Section 3.a. below for further discussion)

Side Arm Mount Analysis

The applicant also explored the feasibility of locating the proposed antenna between the secondary power and communication lines using a side arm mount in an effort to comply with State safety standards (GO95) and local height regulations. Submitted on March 5, 2019, the side mount analysis concluded that a side arm mount is not a feasible alternative for the proposed antenna.

From the top of the subject utility pole moving downwards, the existing pole consists of primary powerlines (38'-5" above grade) secondary power lines (32'-6") and communication lines (21'-11" and 20'-1"). As the overriding safety regulatory agency, the CPUC prohibits locating antennas between primary and secondary powerlines but does allow antennas to be located between the secondary powerlines and communication lines providing certain separation requirements are achieved. A minimum of 12-feet of clearance would be required to locate the proposed antenna between the secondary powerlines and communication lines. This 12-foot separation consists of: (1) a 6-foot separation from the bottom of the secondary powerlines to the top of the proposed antenna, (2) the proposed 4-foot antenna and (3) a 2-foot separation from the bottom of the antenna to the top of the communication lines. The current separation between the secondary power lines and the communication lines is only 8'-1" where 12 feet would be required to locate the antenna there per State safety standards.

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

As part of the feasibility analysis, the applicant evaluated the possibility of moving the secondary powerlines further up the pole and the communication lines further down the pole to create 12-feet of vertical clearance. PG&E requires a 6-foot minimum separation between the primary and secondary powerlines. With a current separation of 5'-11" the secondary powerlines cannot be moved further up the pole to provide more vertical spacing.

Possible Relocation of Communication Lines to Accommodate Side Arm Mount

The applicant also explored the possibility of shifting the communication lines farther down the pole in an effort to create the required 12-foot separation. Two separate communication lines (21'-11" and 20'-1" above grade) are located on the subject utility pole. Per CPUC regulations, communication lines shall be located a minimum of 18 feet above grade. Dropping the communication lines to 18 feet would only create a separation

of 10'-2" where 12 feet is required.[1] The applicant concluded that the side arm mount antenna is not physically feasible given the required separation requirements.

Imposition of the County's height regulations in conjunction with the requirements of GO95 would effectively prohibit the installation of a wireless facility in the identified service area due to the fact that: (1) no other feasible alternative sites were identified, (2) local jurisdictions cannot require wireless facilities to locate outside of the right-of-way, and (3) local jurisdictions cannot require providers to consider alternatives outside of the right-of-way. If additional height is not granted, the proposed project could not be placed on utility poles located in the target area and service could not effectively be extended to this area of San Mateo Highlands. When the application of the County's height criteria results in the effective prohibition of wireless facilities in an identified target area, local regulations (i.e., height in this case) are preempted by Federal law. In this instance, though the proposed project will exceed the height limit of the Zoning District, State (i.e., GO95) and Federal regulations supersede local regulations. Based on the foregoing, the applicant has requested that the proposed project be permitted to exceed the 36-foot height limitation to meet State (GO95) minimum safety requirements.

3. Compliance with the Wireless Telecommunication Facilities Ordinance

Staff has reviewed the 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 right-of-way within the R-1/S-8 Zoning District. As mentioned

[1] Communication lines have a tendency to sag from pole to pole. The calculation of moving the communication lines to 18 feet above grade does not account for this sag. As such, the communication line attachment to the pole could not feasibly be shifted down to 18 feet due to the sag in the lines.

previously, the proposed project employs small cell technology which requires sites to be placed closer to identified target areas than more traditional macro cell sites. Adopted before the advent of small cell technology, Section 6412.2.B 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. For example, CPUC Section 7901 classifies wireless facilities as a public utility and grants wireless providers a state mandated right to place their facilities in the public right-of-way regardless of if the right-of-way is located in a residentially zoned area or not. In addition, other 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 when they are located in the right-of-way. Consequently, the County's ability to request information demonstrating the need for the proposed facility in the public right-of-way is limited. As such, propagation maps and the 2.5-mile alternative site analyses were not required for this project in compliance with State law and recent legal rulings (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 local jurisdictions cannot require wireless providers to locate outside the right-of-way, a 2.5-mile radius alternatives map would not identify feasible alternative right-of-way locations to serve the identified target area. Instead, the applicant has identified and researched alternative utility pole sites within the required service area (Attachment E). These alternative utility poles could either not meet GO95 safety separation standards or would also require an extension bracket. 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 a pole top

mounted facility 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 to 18-feet above grade while the top of the antenna will be located 48'-11'' 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 light 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.

The maximum District height for wireless antennas is 36-feet in the R-1/S-8 Zoning District. Including the District height allowances contained in Section 6512.2.I.2 of the WTF Ordinance, the maximum height for wireless antennas is 39'-7". The proposed small cell site

would have a height of 48'-11" and exceed the maximum District height. The applicant has requested to exceed the maximum height to adhere to State safety regulations.

Classified as a public utility, wireless facilities are regulated by the CPUC. The CPUC, in conjunction with PG&E, have established spacing requirements for the safe installation and operation of equipment located on utility poles. For wireless facilities located on utility poles, CPUC General Order No. 95 (GO95), requires a 6-foot vertical safety separation between all wireless facilities and the nearest adjacent powerlines.

The applicant preformed a side arm mount analysis to explore the feasibility of locating the antenna lower on the utility pole in an effort to adhere to both local height regulations and State safety separation requirements. The analysis concluded that there is not enough room on the utility pole to locate the antenna below the secondary power lines. In addition, an alternative utility pole site analysis stated that the surrounding utility poles could either not support the equipment or would require a pole extension bracket exceeding the District height. When State mandated spacing requirements conflict with local standards, State regulations prevail.

Due to the fact that: (1) no other feasible alternative sites located in the public right-of-way were identified, (2) local jurisdictions cannot require wireless facilities to locate outside of the right-of-way, and (3) the antenna cannot be placed lower on the pole using a side arm mount, adherence to local height regulations would result in the effective prohibition of wireless facilities in the identified service area. When this occurs, Federal law preempts local regulations (i.e. the County's height criteria).

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 these projects. The equipment boxes necessary for these projects are small in size and will be mounted on the existing utility poles.

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 the proposed wireless telecommunication facility. All required utility boxes will be small in size and mounted between 7 to 18-feet above grade on the utility poles.

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

4. 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.

The FCC has established nationwide public exposure limits for radio frequency (RF) emissions. Federal law prohibits local jurisdictions from establishing their own RF emissions limits or regulating wireless facilities based on RF emissions so long as those facilities comply with emissions limits set by the FCC. As such, the WTF Ordinance does not identify its own RF emissions limits but does require wireless facility to maintain compliance with FCC limits.

The applicant submitted a radio frequency report 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 differ in their RF exposure estimations. The reports from EBI estimated that the facility would have a ground level RF exposure of 10.30% of the FCC's

maximum public exposure limits. However, the most updated report from Hammett & Edison estimated ground level RF exposures at 1.1% of the FCC's limits and second floor elevation RF exposure for the nearby two-story structures at 0.49% of the FCC's public exposure limits.

Table 2		
Planning Case No.	**Approximate Location**	**Radio Frequency Exposure at Ground Level**
PLN 2018-00079	1175 Parrott Drive	EBI Estimate: 10.30% Hammett & Edison Estimate: 1.1% ground; 0.49% second floor

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.

Though both the EBI and Hammett & Edison reports 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 37 to 49-feet above ground level, are not accessible to the general public, and dissipate quickly as one moves horizontally away from the antenna. Wireless 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 below the wireless facility (Condition of Approval No. 17) to bring this site into compliance with the FCC's rules and regulations.

Classified as a utility, wireless facilities are regulated by the CPUC. The CPUC provides design guidelines and standards for the installation, maintenance, and operation of 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 such as pole loads and 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).

The proposed wireless facility will be unmanned and 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 PG&E to de-energize the pole. 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 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. As PG&E is responsible for all work on utility poles that occur above the power lines, the installation of the proposed facility will be carried out by PG&E personnel to ensure that the facility is adheres to safety standards and does not impact the existing power lines.

Located in the designated urban neighborhood of the San Mateo Highlands/Baywood Park the proposed project will close a gap in service identified by Verizon Wireless, provide increased data speeds and decrease the incidence of dropped calls for the surrounding community and transient traffic. Due to the project's adherence to the RF limitations set by the FCC, safety requirements of GO95, maintenance activities outlined by the applicant, and review and conditional approval by Cal-Fire, 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 area 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 surrounding neighborhood, emergency services, public, and persons traveling through the area. As outlined above, the applicant explored the feasibility of utilizing a side arm mount to reduce the overall height of the proposed facility to comply with local height regulations and State safety regulations. Through this analysis, the applicant determined that there is inadequate space on the existing 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 the San Mateo Highlands area. The proposed facility will use existing utility infrastructure and add small equipment without disturbing the overall single-family residential nature of the neighborhood.

5. Neighborhood Concerns

Concerns from several 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:

Potential Health Effects

Section 704 of the Federal Telecommunications Act of 1996 states that *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*. As small cell facilities are designed to concentrate energy towards the horizon with little wasted towards the ground or sky, maximum RF exposure occurs when an individual is extremely close to the wireless antenna. Two RF reports were prepared for this project. Utilizing the most recent Hammett & Edison report which uses predictive modeling that accounts for topography of the area and signal propagation, the estimated ground level and second story RF emissions from the proposed are 1.1% and 0.49% respectfully, of the FCC's 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, 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 some areas directly in front of the antenna (37-49 feet above grade) may exceed maximum exposure 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). The proposed facility complies with the prevailing standards for limiting public exposure to radio frequency energy. While many comments received sited studies related to RF exposure limits, unless and until such time that the FCC amends national RF emission standards, the proposed project is held to be in conformance with the existing FCC rules and regulations.

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

Concerns that small cell facilities located on top of utility poles would decrease the property values of the surrounding parcels were expressed by members of the public.

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. Numerous 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 no third party independently verified studies have been submitted that prove 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.

In response to these concerns, the applicant provided a copy of a third-party study conducted by the Joint Venture of Silicone Valley[2] (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 power lines will add stress and strain to the existing utility pole

[2] 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.

and pose a safety risk for residents and those who utilize the roadway below.

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. The proposed project was 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 their own internal 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.

Potential 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 active electrical lines.

Located in a Very High fire severity SRA (State Responsibility Area), Cal-Fire is the reviewing fire agency for the San Mateo Highlands. Cal-Fire has reviewed these plans for safety, potential fire hazards, and adherence to applicable fire codes and has conditionally approved the project.

Classified as a utility, many of the regulations regarding the safe operation 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). 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).

The CPUC has stated that wireless carriers have a state-mandated right to locate infrastructure in the right-of-way (PUC Section 7901) regardless of whether that infrastructure is located in a residential or high fire area. While it is the responsibility of the CPUC to address the engineering and

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. 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 and safety requirements of GO95.

Maintenance and Installation Hazard

Community members were concerned that the installation and maintenance of the proposed facility would require frequent and prolonged power outages, interrupt service to the surrounding community, and cause traffic delays.

Located in the right-of-way, the proposed project will require an encroachment permit from the Department of Public Works (Condition of Approval No. 19). A traffic control plan will be required as part of the encroachment permit process. This plan will be reviewed by the Department of Public Works to ensure that though traffic is not unduly impacted by construction activities and to ensure that 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.

The applicant has stated that: (1) installation of the facility is typically completed within one day, (2) the facility would require twice yearly maintenance, and (3) a bucket truck would be used in both instances. In both cases, neither the installation nor maintenance of the facility would require PG&E to de-energize the pole. During installation activities, power to the pole will not be interrupted and PG&E will be present to perform all work above the power lines. The facility will be placed on its own meter and an emergency shut off switch will be installed to that the facility's power can be shut off without affecting power to the pole or surrounding neighborhood. Anticipated maintenance activities will 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. For both maintenance and replacement activities, the applicant estimates that the truck would not be on-site for more than 2-3 hours.

B. ENVIRONMENTAL REVIEW

The 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

ATTACHMENTS

A. Recommended Findings and Conditions of Approval
B. Vicinity Map
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 EBI Consulting RF report
L. Hammett & Edison RF Discrepancy Statement
M. PG&E Authorization Letter, Certificate of Public Convenience, NCJPA Membership Status

LAR:cmc: - LARDD0159_WCU.DOCX

Attachment A

County of San Mateo
Planning and Building Department

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Numbers: PLN 2018-00079 Hearing Date: May 16, 2019

Prepared By: Laura Richstone
Project Planner

For Adoption By: Zoning Hearing Officer

RECOMMENDED FINDINGS

Regarding the Environmental Review, Find:

1. That these projects are 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 projects 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 telecommunications facility is necessary for the public health, safety, convenience, or welfare of the community. The proposed facility contributes to an enhanced Verizon Wireless network that will increase clarity, range, and system capacity, and therefore, be 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 May 16, 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. This 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 require 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 May 16, 2029. If the applicant seeks to renew this permit, 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 this permit shall be considered at a public hearing.

4. The applicant shall paint the antenna and associated ancillary boxes a non-reflective light 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 encroachment 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 the 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. Once a use permit is obtained, the applicant shall obtain an encroachment permit and build in accordance with the approved plans.

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

12. 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 sites shall be restored to blend with the surrounding area. The owner and/or operator of the wireless telecommunication facility 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 Parrott 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, at the request of the Community Development Director, the applicant shall present a redesign incorporating this technology into the project for review.

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, 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.

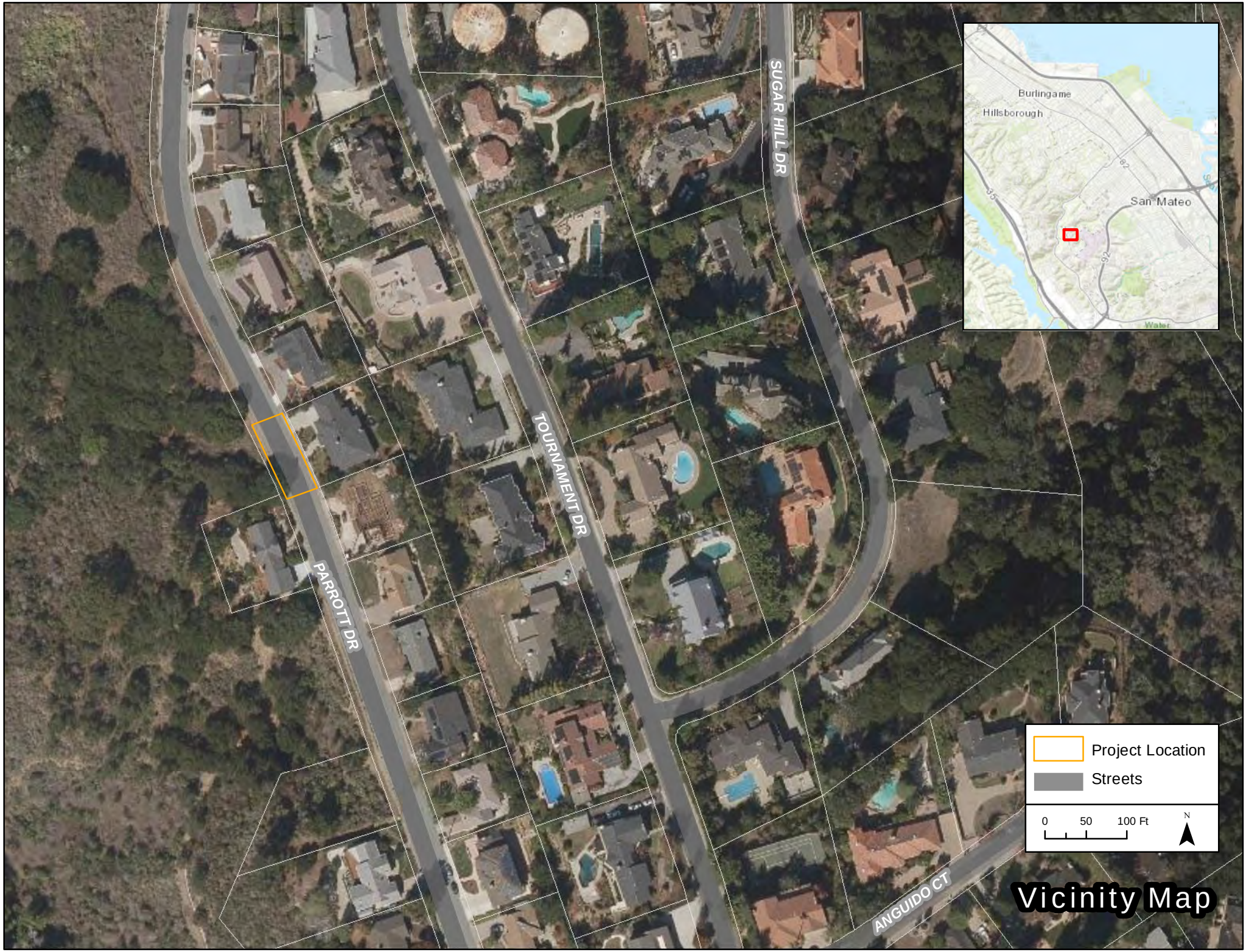
Cal-Fire

20. All alternative power sources shall have permanent signage, red in color, posted in a conspicuous place at the power source, or its main shut off. Such signage shall sate instructions on how to disconnect power feeding other electoral panels including any orderly shutdown requirements. Any other shutoffs shall be identified. Lettering shall be contrasting to the red background and be a minimum 1/2 inch tall and shall be permanently affixed.

LAR:cmc: - LARDD0159_WCU.DOCX

County of San Mateo - Planning and Building Department

ATTACHMENT B


SUGAR HILL DR
TOURNAMENT DR
PARROTT DR
ANGUIDO CT
Burlingame
Hillsborough
San Mateo
Project Location
Streets
0
50
100 Ft
N
Vicinity Map

County of San Mateo - Planning and Building Department

ATTACHMENT C

verizon

SF HIGHLANDS 005

(NEAR) 1175 PARROTT DRIVE
SAN MATEO, CA 94402

SITE ID:	SF HIGHLANDS BAYWOOD PARK 005
LOCATION CODE:	483409
PROJECT ID:	20171536395
SITE TYPE:	PG&E POLE TOP
POLE #:	120092292
COUNTY:	SAN MATEO

RECEIVED
MAR 01 2018
San Mateo County
Planning Division

PLN2018-00079

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES & MODIFICATIONS THEY MAY IMPOSE.

VERIZON CONSTRUCTION
SIGNATURE: _____ *DATE:* _____

VERIZON - RF ENGINEER
SIGNATURE: _____ *DATE:* _____

VERIZON - EQUIPMENT ENGINEER
SIGNATURE: _____ *DATE:* _____

VERIZON REAL ESTATE
SIGNATURE: _____ *DATE:* _____

MODUS - CONSTRUCTION
SIGNATURE: _____ *DATE:* _____

MODUS - LEASING
SIGNATURE: _____ *DATE:* _____

OTHER (IF APPLICABLE)
SIGNATURE: _____ *DATE:* _____

PROJECT TEAM

APPLICANT:
VERIZON WIRELESS
2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598
CONTACT: KAREN MCPHERSON
PHONE: (925) 200.6328
EMAIL:
karen.mcpherson@verizonwireless.com

SITE ACQUISITION:
MODUS, INC.
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108
CONTACT: SCOTT REVARD
PHONE: (415) 595.0938
EMAIL: srevard@modus-corp.com

PROJECT MANAGER:
MODUS, INC.
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108
CONTACT: SCOTT REVARD
PHONE: (415) 595.0938
EMAIL: srevard@modus-corp.com
CONTACT: KEVIN BOWYER
phone: (408) 219.5442
EMAIL: kbowyer@modus-corp.com

A&E PROJECT MANAGER:
COMM-SENSE CONSULTING
2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705
PHONE: (916) 412.7896
EMAIL: commsense.jim@gmail.com

CONSTRUCTION/IMPLEMENTATION MANAGER:
MODUS, INC.
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108
CONTACT: CAL BORDONARO
PHONE: (415) 261.0000
EMAIL: cbordonaro@modus-corp.com

LAND USE PLANNER:
MODUS, INC.
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108
CONTACT: KEVIN BOWYER
PHONE: (408) 219.5442
EMAIL: kbowyer@modus-corp.com

PROJECT DESCRIPTION

VERIZON WIRELESS PROPOSES TO INSTALL A NEW WIRELESS COMMUNICATION SITE ON A WOODEN UTILITY POLE IN THE PUBLIC RIGHT-OF-WAY.

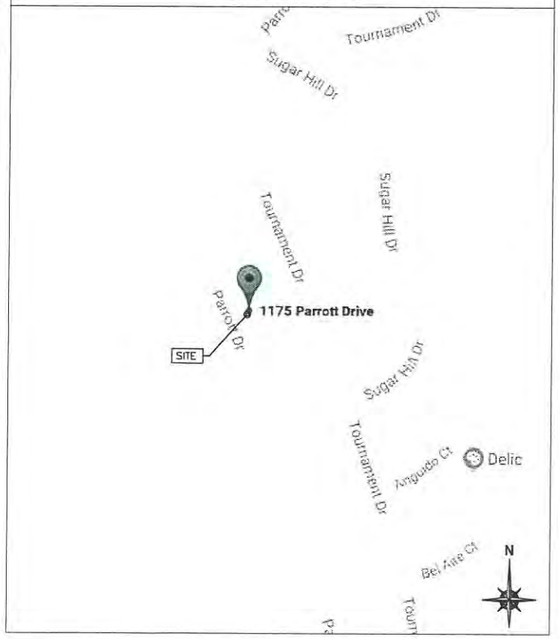
SCOPE:
- INSTALL (1) NEW 4' CANISTER ANTENNA ON TOP OF UTILITY POLE
- INSTALL (1) NEW 100A METER ON UTILITY POLE
- INSTALL (1) NEW 7' BAYONET EXTENSION
- INSTALL (1) NEW RRU2212 ON UTILITY POLE
- INSTALL (1) NEW RRUS32 ON UTILITY POLE
- INSTALL (1) NEW PSU AC 08 & (1) NEW PSU AC 02 ON UTILITY POLE
- INSTALL (1) NEW COAX CONDUIT FROM EQUIPMENT TO NEW CANISTER ANTENNA
- INSTALL (1) NEW POWER CONDUIT FROM P.O.C. TO EQUIPMENT
- INSTALL (1) NEW FIBER CONDUIT FROM P.O.C. TO EQUIPMENT
- INSTALL (1) NEW EQUIPMENT BRACKET ON UTILITY POLE
- INSTALL (6) NEW HYBRID COUPLERS ON UTILITY POLE
- INSTALL (1) NEW AC PANEL ON UTILITY POLE
- INSTALL (1) NEW FIBER DEMARC BOX ON UTILITY POLE
- CABLING TO BE INSTALLED IN A TIGHT NEAT MANNER WITHOUT EXCESS CABLE LOOPS
- ALL VERIZON ADDED APPURTENANCES SHALL BE PAINTED TO MATCH POLE COLOR (NON-GLOSSY "SABLE" BY SHERWIN WILLIAMS, OR EQUIVALENT)

DRIVING DIRECTIONS

DIRECTIONS FROM VERIZON WIRELESS OFFICE AT 2785 MITCHELL DRIVE, WALNUT CREEK, CA :

1. HEAD NORTHEAST ON MITCHELL DR TOWARD OAK GROVE RD
2. TURN RIGHT ONTO OAK GROVE RD
3. TURN RIGHT ONTO YGNACIO VALLEY RD
4. YGNACIO VALLEY RD TURNS RIGHT AND BECOMES HILLSIDE AVE
5. USE THE LEFT 2 LANES TO TURN LEFT ONTO INTERSTATE 680 S RAMP TO SAN JOSE
6. MERGE ONTO I-680 S
7. TAKE EXIT 30B TO MERGE ONTO I-580 W TOWARD DUBLIN/OAKLAND
8. KEEP LEFT AT THE FORK TO CONTINUE ON I-238 N, FOLLOW SIGNS FOR I-880
9. USE THE RIGHT 2 LANES TO TAKE EXIT 16A FOR I-880 S TOWARD SAN JOSE/SAN MATEO BRIDGE
10. MERGE ONTO I-880 S
11. USE THE RIGHT 2 LANES TO TAKE EXIT 17 TO MERGE ONTO CA-92 W TOWARD SAN MATEO BRIDGE/JACKSON ST
12. TAKE EXIT 10 FOR W HILLSDALE BLVD
13. TURN RIGHT ONTO W HILLSDALE
14. SLIGHT LEFT ONTO PERIMETER RD
15. TURN LEFT ONTO CSM DR
16. TURN RIGHT ONTO PARROTT DR
17. DESTINATION WILL BE ON THE RIGHT

VICINITY MAP



SITE INFORMATION

SITE ADDRESS:	(NEAR) 1175 PARROTT DRIVE SAN MATEO, CA 94402
OWNER:	PG&E
APPLICANT:	VERIZON WIRELESS 2785 MITCHELL DRIVE, SUITE 9 WALNUT CREEK, CA 94598
LATITUDE:	N 37° 32' 17.42"
LONGITUDE:	W 122° 20' 44.37"
COUNTY:	SAN MATEO
JURISDICTION:	CITY OF SAN MATEO
ASSESSORS PARCEL NUMBER:	PUBLIC RIGHT-OF-WAY ADJACENT TO 038-130-120
ZONING:	PUBLIC ROW
ELEVATION:	±490.0' AMSL

CALL 811 BEFORE YOU DIG
IT'S THE LAW

THE UTILITIES SHOWN HEREIN ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER/SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL THE UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO THE (E) UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

DRAWING INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
T-2	GENERAL NOTES
C1	SITE SURVEY
A-1	SITE PLAN
A-2	ENLARGED SITE PLAN & PROPOSED EQUIPMENT LAYOUT PLANS
A-3	ELEVATIONS
A-4	ELEVATIONS
D-1	DETAILS
D-2	DETAILS
E-1	ELECTRICAL GENERAL NOTES
E-2	ONE-LINE DIAGRAM & GROUNDING DETAILS
E-3	ELECTRICAL DETAILS

CODE COMPLIANCE

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

- 2016 CALIFORNIA CODE
- 2016 CALIFORNIA BUILDING CODE (CBC), BASED ON THE 2015 IBC
- 2016 CALIFORNIA RESIDENTIAL CODE (CRC), BASED ON THE 2015 IRC
- 2016 CALIFORNIA ELECTRICAL CODE (CEC), BASED ON THE 2014 NEC
- 2016 CALIFORNIA MECHANICAL CODE (CMC), BASED ON THE 2015 UMC
- 2016 CALIFORNIA PLUMBING CODE (CPC), BASED ON THE 2015 UPC
- 2016 CALIFORNIA GREEN BUILDINGS STANDARDS CODE (CALGREEN)
- 2016 CALIFORNIA FIRE CODES WITH ALL LOCAL AMENDMENTS
- ANY LOCAL BUILDING CODE AMENDMENTS TO THE ABOVE
- CITY / COUNTY ORDINANCES
- GO 95

HANDICAP REQUIREMENTS:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED IN ACCORDANCE WITH CALIFORNIA ADMINISTRATIVE STATE CODE PART 2, TITLE 24, CHAPTER 11B, SECTION 11038.

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

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

COMMSENSE
2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/05/17	90% CD
1	10/25/17	95% CD
2	12/20/17	100% CD
3	02/28/18	100% CD REV

REGISTERED PROFESSIONAL ENGINEER
JAMES M. STUMPFUS
No. 26633
EXP. 2-30-19
STATE OF CALIFORNIA

SF HIGHLANDS BAYWOOD PARK 005

(NEAR) 1175 PARROTT DRIVE
SAN MATEO, CA 94402

TITLE SHEET

T-1

GENERAL NOTES

GENERAL CONSTRUCTION NOTES

1. PLANS ARE INTENDED TO BE DIAGRAMMATIC ONLY, UNLESS NOTED OTHERWISE. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
2. THE CONTRACTOR SHALL OBTAIN, IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
3. CONTRACTOR SHALL CONTACT USA (UNDERGROUND SERVICE ALERT) AT (800) 227-2600, FOR UTILITY LOCATIONS, 2 WORKING DAYS BEFORE PROCEEDING WITH ANY EXCAVATION, SITE WORK OR CONSTRUCTION.
4. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE, OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CBC'S REQUIREMENTS REGARDING EARTHQUAKE RESISTANCE, FOR, BUT NOT LIMITED TO, PIPING, LIGHT FIXTURES, CEILING GRID, INTERIOR PARTITIONS, AND MECHANICAL EQUIPMENT. ALL WORK MUST COMPLY WITH LOCAL EARTHQUAKE CODES AND REGULATIONS.
6. REPRESENTATIONS OF TRUE NORTH, OTHER THAN THOSE FOUND ON THE PLOT OF SURVEY DRAWINGS, SHALL NOT BE USED TO IDENTIFY OR ESTABLISH BEARING OF TRUE NORTH AT THE SITE. THE CONTRACTOR SHALL RELY SOLELY ON THE PLOT OF SURVEY DRAWING AND ANY SURVEYOR'S MARKINGS AT THE SITE FOR THE ESTABLISHMENT OF TRUE NORTH, AND SHALL NOTIFY THE ARCHITECT / ENGINEER PRIOR TO PROCEEDING WITH THE WORK IF ANY DISCREPANCY IS FOUND BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND THE TRUE NORTH ORIENTATION AS DEPICTED ON THE CIVIL SURVEY. THE CONTRACTOR SHALL ASSUME SOLE LIABILITY FOR ANY FAILURE TO NOTIFY THE ARCHITECT / ENGINEER.
7. THE BUILDING DEPARTMENT ISSUING THE PERMITS SHALL BE NOTIFIED AT LEAST TWO WORKING DAYS PRIOR TO THE COMMENCEMENT OF WORK, OR AS OTHERWISE STIPULATED BY THE CODE ENFORCEMENT OFFICIAL HAVING JURISDICTION.
8. DO NOT EXCAVATE OR DISTURB BEYOND THE PROPERTY LINES OR LEASE AREA LINES, UNLESS OTHERWISE NOTED.
9. ALL EXISTING UTILITIES, FACILITIES, CONDITIONS, AND THEIR DIMENSIONS SHOWN ON THE PLAN HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THE ARCHITECT / ENGINEER AND THE OWNER ASSUME NO RESPONSIBILITY WHATSOEVER AS TO THE SUFFICIENCY OR THE ACCURACY OF THE INFORMATION SHOWN ON THE PLANS, OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTORS SHALL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL EXISTING UTILITIES AND FACILITIES PRIOR TO START OF CONSTRUCTION. CONTRACTORS SHALL ALSO OBTAIN FROM EACH UTILITY COMPANY DETAILED INFORMATION RELATIVE TO WORKING SCHEDULES AND METHODS OF REMOVING OR ADJUSTING EXISTING UTILITIES.
10. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES, BOTH HORIZONTAL AND VERTICALLY, PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHOULD BE IMMEDIATELY REPORTED TO THE ARCHITECT / ENGINEER FOR RESOLUTION AND INSTRUCTION, AND NO FURTHER WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT / ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT HIS/HER OWN RISK AND EXPENSE.
11. ALL NEW AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS TO BE DISTURBED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISH ELEVATIONS PRIOR TO FINAL INSPECTION OF WORK.
12. ANY EXISTING COMPONENTS DISTURBED DURING CONSTRUCTION SHALL BE RETURNED TO IT'S ORIGINAL CONDITION PRIOR TO COMPLETION OF WORK. SIZE, LOCATION AND TYPE OF ANY UNDERGROUND UTILITIES OR IMPROVEMENTS SHALL BE ACCURATELY NOTED AND PLACED ON "AS-BUILT" DRAWINGS BY GENERAL CONTRACTOR, AND ISSUED TO THE ARCHITECT / ENGINEER AT COMPLETION OF PROJECT.
13. ALL TEMPORARY EXCAVATIONS FOR THE INSTALLATION OF FOUNDATIONS, UTILITIES, ETC., SHALL BE PROPERLY LAID BACK OR BRACED IN ACCORDANCE WITH CORRECT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS.

GENERAL NOTES FOR EXISTING CELL SITES

1. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
2. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
3. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
4. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
5. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD (N) TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
6. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

APPLICABLE CODES, REGULATIONS AND STANDARDS:

1. CONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION.
2. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE TIME OF PERMITTING AWARD SHALL GOVERN THE DESIGN.
3. CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
   - 3.1. - AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   - 3.2. - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
   - 3.3. - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARD FOR STRUCTURAL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES
   - 3.4. - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRICAL EQUIPMENT.
   - 3.5. - IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")
4. TIA 607 COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
   - 4.1. TELCORDIA GR-63 NETWORK EQUIPMENT-BUILDING SYSTEM (NEBS): PHYSICAL PROTECTION
   - 4.2. TELCORDIA GR-347 CENTRAL OFFICE POWER WIRING
   - 4.3. TELCORDIA GR-1275 GENERAL INSTALLATION REQUIREMENTS
   - 4.4. TELCORDIA GR-1503 COAXIAL CABLE CONNECTIONS
5. ANY AND ALL OTHER LOCAL & STATE LAWS AND REGULATIONS
6. FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

GENERAL TRENCHING NOTES

1. MAINTAIN 24" MINIMUM COVER FOR ALL ELECTRICAL CONDUITS, U.O.N.
2. MAINTAIN 30" MINIMUM COVER FOR ALL TELECOMMUNICATIONS CONDUITS.
3. MINIMUM 1" SAND SHADING BELOW CONDUITS, AND 6" COVERING ON TOP OF CONDUITS REQUIRED.
4. REFER TO SHEET E-1 FOR ADDITIONAL REQUIREMENTS

GENERAL GROUNDING NOTES

1. GROUNDING SHALL BE TESTED AT 5 OHMS OR LESS.
2. WOOD MOLDING, STAPLED EVERY 3'-0" AND AT EACH END.

GENERAL CONDUIT NOTES

1. ALL CONDUITS WILL BE MANDRELED AND EQUIPPED WITH 3/8" PULL ROPE.
2. SCHEDULE 40 CONDUIT FOR UNDERGROUND USE.
3. SCHEDULE 80 CONDUIT FOR RISER USE AND ELSEWHERE AS NOTES. TRANSITION FROM SCHEDULE 40 PVC OR RIGID STEEL CONDUIT TO SCHEDULE 80 USING APPROVED FITTINGS DESIGNED TO PROVIDE A SMOOTH INTERIOR WALL TRANSITION TO THE REDUCED INTERIOR DIAMETER OF SCHEDULE 80. ADJUST CONDUIT SIZE IF NECESSARY TO MAINTAIN THE INTERIOR AREA REQUIRED FOR THE WIRING SPECIFIED.
4. GALVANIZED STEEL CONDUIT FOR ANY CONDUIT UNDER 3", STUB UP 10" THEN CONVERT TO SCHEDULE 80.
5. CONTRACTOR TO STUB UP POLE 10" w/ 3" POWER CONDUIT. POWER COMPANY TO CONVERT FROM 3" STUB SCHEDULE 80 TO 2" SCHEDULE 80 FROM TOP OF STUB UP.
6. ZRC COLD GALVANIZING COMPOUND OR EQUIVALENT IS REQUIRED ON EXPOSED THREADS IN RIGID STEEL CONDUIT AND THE CUT ENDS OF SUPPORT STRUTS, ETC. TO PREVENT RUSTING.

TYPICAL R.O.W. POLE CONSTRUCTION NOTES

1. CABLE NOT TO IMPEDE 15" CLEAR SPACE OFF POLE FACE.
2. ALL CLIMB STEPS NEXT TO CONDUIT SHALL HAVE EXTENDED STEPS.
3. NO BOLT THREADS TO PROTRUDE MORE THAN 1-1/2"
4. ALL HOLES IN POLE LEFT FROM REARRANGEMENT OF CLIMB STEPS TO BE FILLED.
5. 90° SHORT SWEEPS UNDER ANTENNA ARM, ALL CABLES MUST TRANSITION ON THE INSIDE OR BOTTOM OF THE ARM (NO CABLE ON TOP OF ARM).
6. USE 90° CONNECTOR AT CABLE CONNECTION FOR OMNI DOWN ANTENNAS.
7. USE CABLE CLAMPS TO SECURE CABLE TO ARMS, PLACE 2" VERIZON WIRELESS CABLE I.D. TAGS ON BOTH SIDES OF ARMS.
8. USE 1/2" DIA. CABLE ON ANTENNAS UNLESS OTHERWISE SPECIFIED.
9. PLACE GPS ON ARM OF SOUTHERN SKY EXPOSURE AT MINIMUM 6" FROM TRANSMIT ANTENNA WHICH IS 24" AWAY FROM CENTER OF POLE.
10. FILL VOID AROUND CABLES AT CONDUIT OPENING WITH FOAM SEALANT TO PREVENT WATER INTRUSION.

CONTRACTOR REQUIREMENTS

DO NOT SCALE OFF DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

ABBREVIATIONS

A.B.	ANCHOR BOLT	GLB. (GLU-LAM)	GLUE LAMINATED BEAM
ABV.	ABOVE	GPS	GLOBAL POSITIONING SYSTEM
ACCA	ANTENNA CABLE COVER ASSEMBLY	GRND.	GROUND
ADD'L	ADDITIONAL	HDR.	HEADER
A.F.F.	ABOVE FINISHED FLOOR	HGR.	HANGER
A.F.G.	ABOVE FINISHED GRADE	HT.	HEIGHT
AGL	ABOVE GROUND LEVEL	ICGB.	ISOLATED COPPER GROUND BUS
ALUM	ALUMINUM	IN.(")	INCH(ES)
ALT.	ALTERNATE	INT.	INTERIOR
AMSL	ABOVE SEA LEVEL	LB.(#)	POUND(S)
ANT.	ANTENNA	L.B.	LAG BOLTS
APPRX.	APPROXIMATE(LY)	L.F.	LINEAR FEET(FOOT)
ARCH.	ARCHITECT(URAL)	L.	LONGITUDINAL
AWG.	AMERICAN WIRE GAUGE	MAS.	MASONRY
BLDG.	BUILDING	MAX.	MAXIMUM
BLK.	BLOCK	M.B.	MACHINE BOLT
BLKG	BLOCKING	MECH.	MECHANICAL
BM.	BEAM	MFR.	MANUFACTURER
B.N.	BOUNDARY NAILING	MIN.	MINIMUM
BN	BACK-UP CABINET	MISC.	MISCELLANEOUS
BTCW.	BARE TINNED COPPER WIRE	MTL.	METAL
B.O.	BOTTOM	NO.(#)	NUMBER
B.O.F.	BOTTOM OF FOOTING	N.T.S.	NOT TO SCALE
CAB.	CABINET	(N)	NEW
CANT.	CANTILEVER(ED)	O.C.	ON CENTER
C.I.P.	CAST IN PLACE	OPNG.	OPENING
CLG.	CEILING	P/C	PRE CAST CONCRETE
℄	CENTERLINE	PCS	PERSONAL COMMUNICATION SERVICES
CLR.	CLEAR	ℙ	PLATE
COL.	COLUMN	PLY.	PLYWOOD
CONC.	CONCRETE	PPC.	POWER-PROTECTION CABINET
CONN.	CONNECTION(OR)	PRC.	PRIMARY FLEXING CABINET
CONST.	CONSTRUCTION	P.S.F.	POUNDS PER SQUARE FOOT
CONT.	CONTINUOUS	P.S.I.	POUNDS PER SQUARE INCH
d	PENNY (NAILS)	P.T.	PRESSURE TREATED
DBL.	DOUBLE	PWR.	POWER (CABINET)
DEPT.	DEPARTMENT	QTY.	QUANTITY
D.F.	DOUGLAS FIR	RAD.(R)	RADIUS
DIA.	DIAMETER	REF.	REFERENCE
DIAG.	DIAGONAL	REINF.	REINFORCING
DIM.	DIMENSION	REQ'D.	REQUIRED
DWG.	DRAWING(S)	RGS.	RIGID GALVANIZED STEEL
DWL.	DOWEL(S)	R.O.W.	RIGHT OF WAY
EA.	EACH	SCH.	SCHEDULE
EL.	ELEVATION	SHT.	SHEET
ELEC.	ELECTRICAL	SIM.	SIMILAR
ELEV.	ELEVATOR	SPEC.	SPECIFICATION(S)
EMT.	ELECTRICAL METALLIC TUBING	SQ.	SQUARE
E.N.	EDGE NAIL	S.S.	STAINLESS STEEL
ENGR.	ENGINEER	STD.	STANDARD
EQ.	EQUAL	STL.	STEEL
EXP.	EXPANSION	STRUC.	STRUCTURAL
EXST.(E)	EXISTING	TEMP.	TEMPORARY
EXT.	EXTERIOR	THK.	THICKNESS
FAB.	FABRICATION(OR)	T.N.	TOE NAIL
F.F.	FINISH FLOOR	T.O.A.	TOP OF ANTENNA
F.G.	FINISH GRADE	T.O.C.	TOP OF CURB
FIN.	FINISH(ED)	T.O.F.	TOP OF FOUNDATION
FLR.	FLOOR	T.O.P.	TOP OF PLATE(PARAPET)
FDN.	FOUNDATION	T.O.S.	TOP OF STEEL
F.O.C.	FACE OF CONCRETE	T.O.W.	TOP OF WALL
F.O.M.	FACE OF MASONRY	TYP.	TYPICAL
F.O.S.	FACE OF STUD	U.G.	UNDER GROUND
F.O.W.	FACE OF WALL	UL.	UNDERWRITES LABORATORY
F.S.	FINISH SURFACE	U.N.O.	UNLESS NOTED OTHERWISE
FT.(')	FOOT(FEET)	V.I.F.	VERIFY IN FIELD
FTG.	FOOTING	W	WIDE(WIDTH)
G.	GROWTH(CABINET)	W/	WITH
GA.	GAUGE	WD.	WOOD
GL	GALVANIZE(D)	W.P.	WEATHERPROOF
G.F.I.	GROUND FAULT CIRCUIT INTERRUPTER	WT.	WEIGHT

LEGEND

- NEW ANTENNA
- EXISTING ANTENNA
- GROUND ROD
- GROUND BUS BAR
- MECHANICAL GRND. CONN.
- CADWELD
- GROUND ACCESS WELL
- ELECTRIC BOX
- TELEPHONE BOX
- LIGHT POLE
- FND. MONUMENT
- SPOT ELEVATION
- SET POINT
- REVISION
- GRID REFERENCE
- DETAIL REFERENCE
- ELEVATION REFERENCE
- SECTION REFERENCE
- WOOD CONTINUOUS
- WOOD BLOCKING
- STEEL
- GROUT OR PLASTER
- (E) BRICK
- (E) MASONRY
- CONCRETE
- EARTH
- GRAVEL
- PLYWOOD
- SAND
- CENTERLINE
- PROPERTY/LEASE LINE
- MATCH LINE
- WORK POINT
- GROUND CONDUCTOR
- TELEPHONE CONDUIT
- ELECTRICAL CONDUIT
- ELECTRICAL & TELCO CONDUITS
- COAXIAL CABLE
- OVERHEAD SERVICE CONDUCTORS
- CHAIN LINK FENCING
- WOOD FENCING
- OHT/OHP — OVERHEAD TELEPHONE/ OVERHEAD POWER
- OHT — OVERHEAD TELEPHONE
- OHP — OVERHEAD POWER LINE
- E — E — POWER RUN

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WALNUT CREEK, CA 94598

modus

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

COMMSENSE

2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/05/17	90% CD
1	10/25/17	95% CD
2	12/20/17	100% CD
3	02/28/18	100% CD REV

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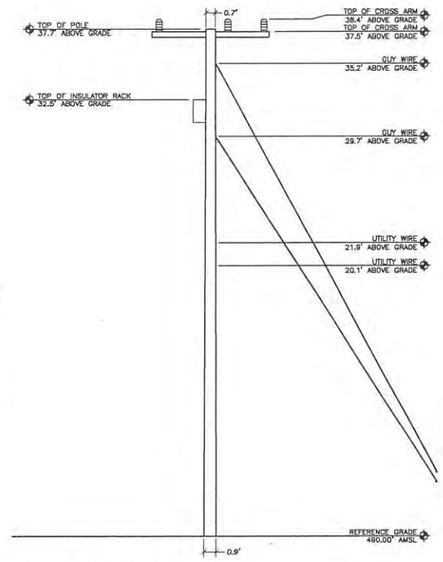
BAYWOOD PARK 005

(NEAR) 1175 PARROTT DRIVE
SAN MATEO, CA 94402

GENERAL NOTES

T-2

2 SITE PLAN
SCALE: 1"=5'



3 UTILITY POLE ELEVATION
SCALE: 1"=5'

BOUNDARY AND TITLE INFORMATION

THIS MAP IS A GRAPHIC DEPICTION OF DATA COMPILED FROM MAPS AND VARIOUS OTHER INFORMATION. IT IS NOT A BOUNDARY SURVEY. THIS MAP IS A TOPOGRAPHIC MAP SHOWING PROPERTY LINES PLOTTED FROM SAID RECORD DATA AND BEST FIT ONTO EXISTING IMPROVEMENTS. THE LIMITS OF TOPOGRAPHIC DATA AND/OR IMPROVEMENTS GATHERED AND DEPICTED ARE LIMITED TO THE CONTRACTUAL SCOPE FOR THIS PROJECT. NO MONUMENTS WERE SET OR WILL BE SET. NO TITLE RESEARCH WAS PERFORMED BY OMNI DESIGN GROUP INC. PROPERTY LINE LOCATION COULD POSSIBLY SHIFT FROM LOCATIONS SHOWN HEREON SHOULD A BOUNDARY SURVEY BE PERFORMED. LOCATIONS OF EXISTING FEATURES RELATIVE TO PROPERTY LINES THEREFORE ARE APPROXIMATE

BASIS OF BEARINGS

THE BEARINGS ARE BASED UPON CALIFORNIA COORDINATE SYSTEM, ZONE 3, NAD 83

BENCHMARK:

TRIMBLE R8 GPS SYSTEM WAS USED TO OBSERVE ONSITE CONTROL. DATA PROCESSED THROUGH NATIONAL GEODETIC SURVEY'S ONLINE POSITIONING USER SERVICE TO OBTAIN STATE PLANE COORDINATES AND LATITUDE AND LONGITUDE (NAD 83) ALONG WITH ELEVATIONS (NAVD 88).

NOTES:

1. DATE OF SURVEY: 06/08/17
2. NO UNDERGROUND UTILITIES WERE LOCATED.

LEGEND

EP	=	EDGE OF PAVEMENT
FL	=	FLOWLINE
FS	=	FINISHED SURFACE
GD	=	GROUND ELEVATION
TC	=	TOP OF CURB
AGL	=	ABOVE GRADE LEVEL
AMSL	=	ABOVE MEAN SEA LEVEL

1 BOUNDARY & LEGAL DESCRIPTIONS
SCALE: NONE

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PROJECT INFORMATION:

SF HIGHLANDS BAYWOOD PARK 005
VERIZON SITE #438409

1175 PARROTT DR
SAN MATEO, CA

CURRENT ISSUE DATE:

07/10/17

ISSUED FOR:

100% SURVEY

REV.:	DATE:	DESCRIPTION:	BY:

COORDINATING ARCHITECT:

omni design group
Architecture
Civil Engineering
Surveying
Telecommunications
711 Tank Farm Road, Suite 100
San Luis Obispo, California 93401
Phone: (805) 544-9700
www.omnidesigngroup.com
email: omni@odgslo.com

SEAL:

PROFESSIONAL LAND SURVEYOR
DAVID A. MARCHELL
EXP. 12-31-18
NO. PLS8375
STATE OF CALIFORNIA

CONSULTANT:

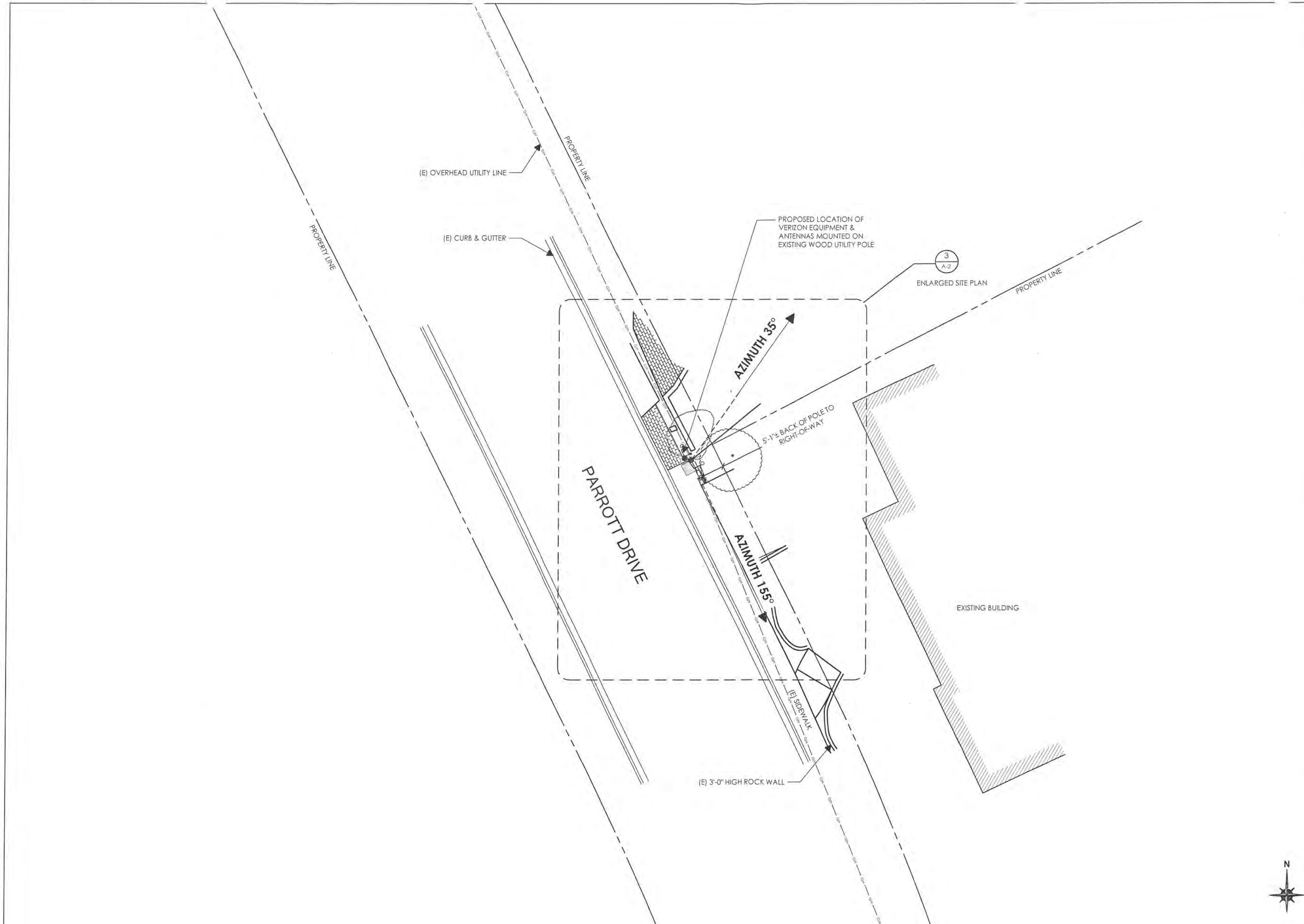
Modus, Inc.
240 Stockton Street, 3rd Floor
San Francisco, CA 94108

DRAWN BY:	CHK.:	APV.:
AK/DKN	DM	DM

SHEET TITLE:

SITE PLAN

SHEET NUMBER: C-1 REVISION: 1180-16



SITE PLAN

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

10 5 0 10'

1

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COMMSENSE

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BERKELEY, CA 94705

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CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/05/17	90% CD
1	10/25/17	95% CD
2	12/20/17	100% CD
3	02/28/18	100% CD REV

REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA
CIVIL

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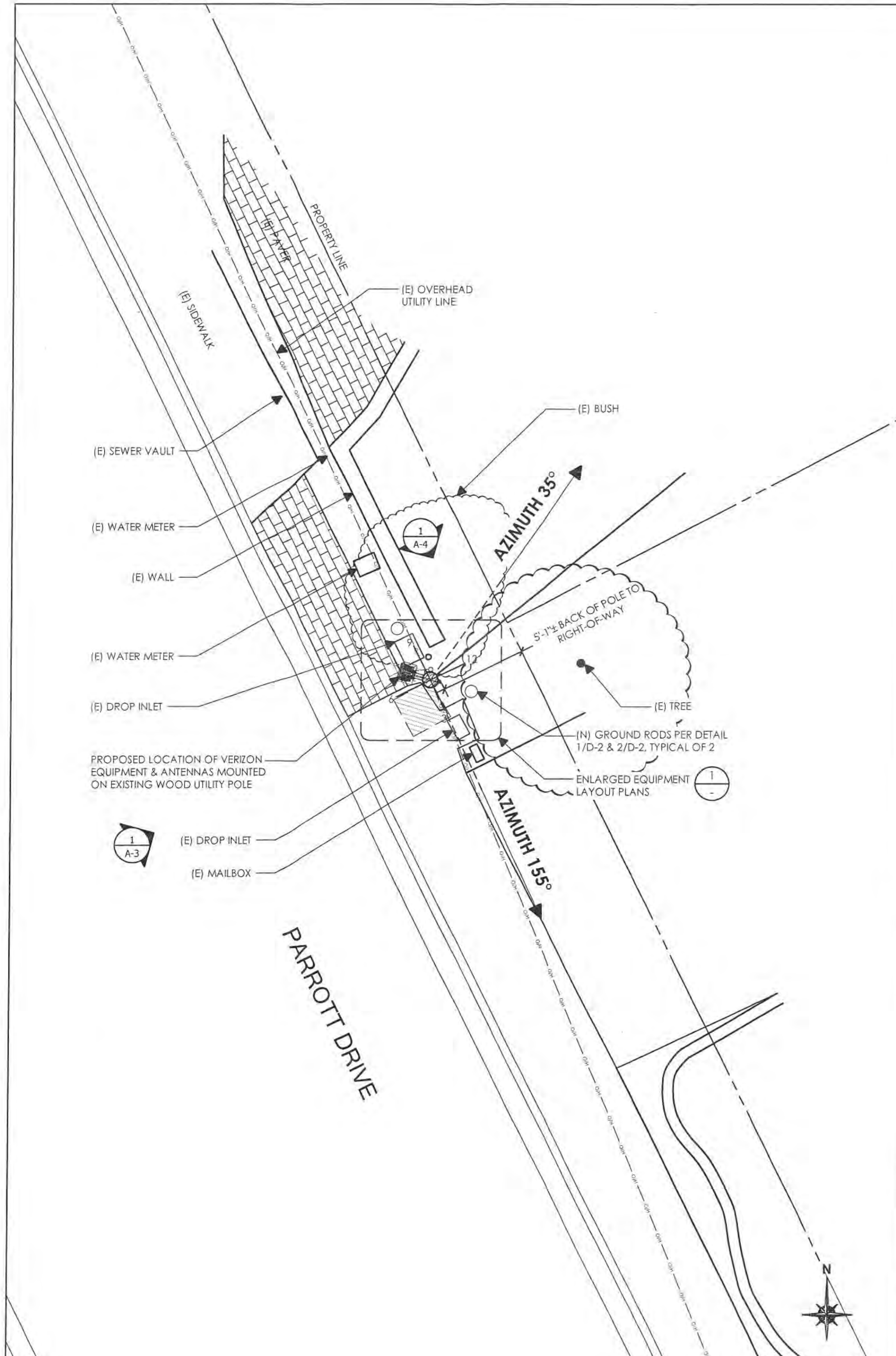
SITE PLAN

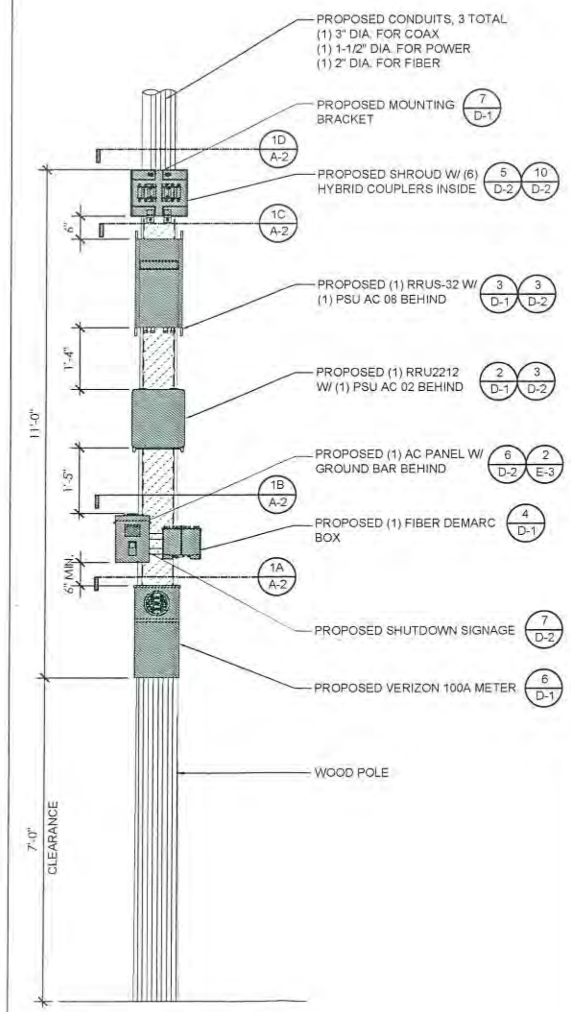
A-1



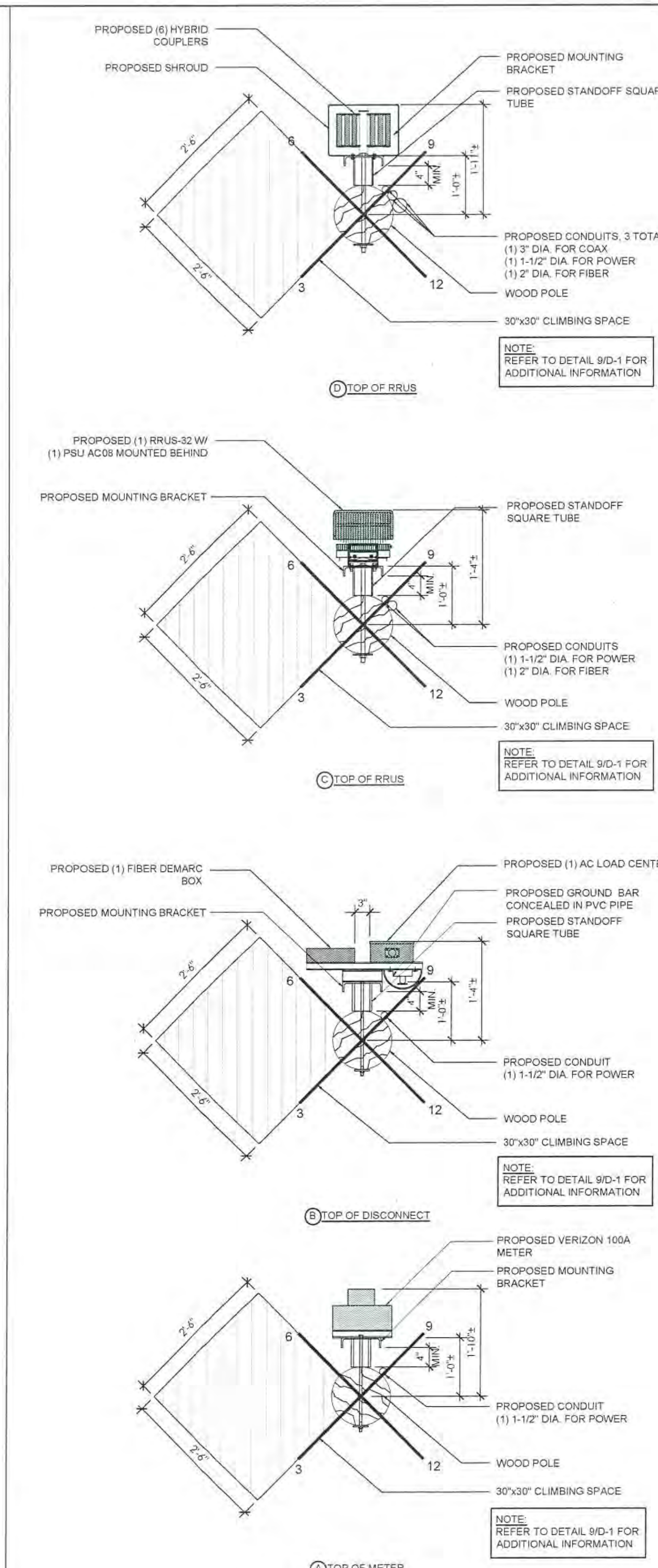
ENLARGED SITE PLAN 24"x36" SCALE: 1/4" = 1'-0" 11"x17" SCALE: 1/8" = 1'-0" | 3

NOTES:

1. ALL EQUIPMENT SHALL BE PLACED (VERTICALLY) AS CLOSE AS ALLOWED BY POLE OWNER, WHILE MAINTAINING MINIMUM CLEARANCE REQUIREMENTS.
2. MAINTAIN 4" MIN. OFFSET BETWEEN THE MOUNTING BRACKET FLANGE AND THE POLE
3. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT, AND OTHER EQUIPMENT WILL BE PAINTED TO MATCH POLE COLOR (NON-GLOSSY SABLE BY SHERWIN WILLIAMS, OR EQUIVALENT)
4. SWEEP CONDUIT RUNS AROUND (E) CROSS ARMS WHERE THEY OCCUR, SEE DETAIL 12/D-1
5. CABLING TO BE INSTALLED IN A TIGHT NEAT MANNER WITHOUT EXCESS CABLE LOOPS



PROPOSED ELEVATION 24"x36" SCALE: NTS 11"x17" SCALE: NTS | 2



(P) EQUIPMENT PLANS 24"x36" SCALE: 3/4" = 1'-0" 11"x17" SCALE: 3/8" = 1'-0" | 1

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SAN FRANCISCO, CA 94108

COMMSENSE

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BERKELEY, CA 94705

DRAWN BY: LM

CHECKED BY: JB

REV	DATE	DESCRIPTION
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1	10/25/17	95% CD
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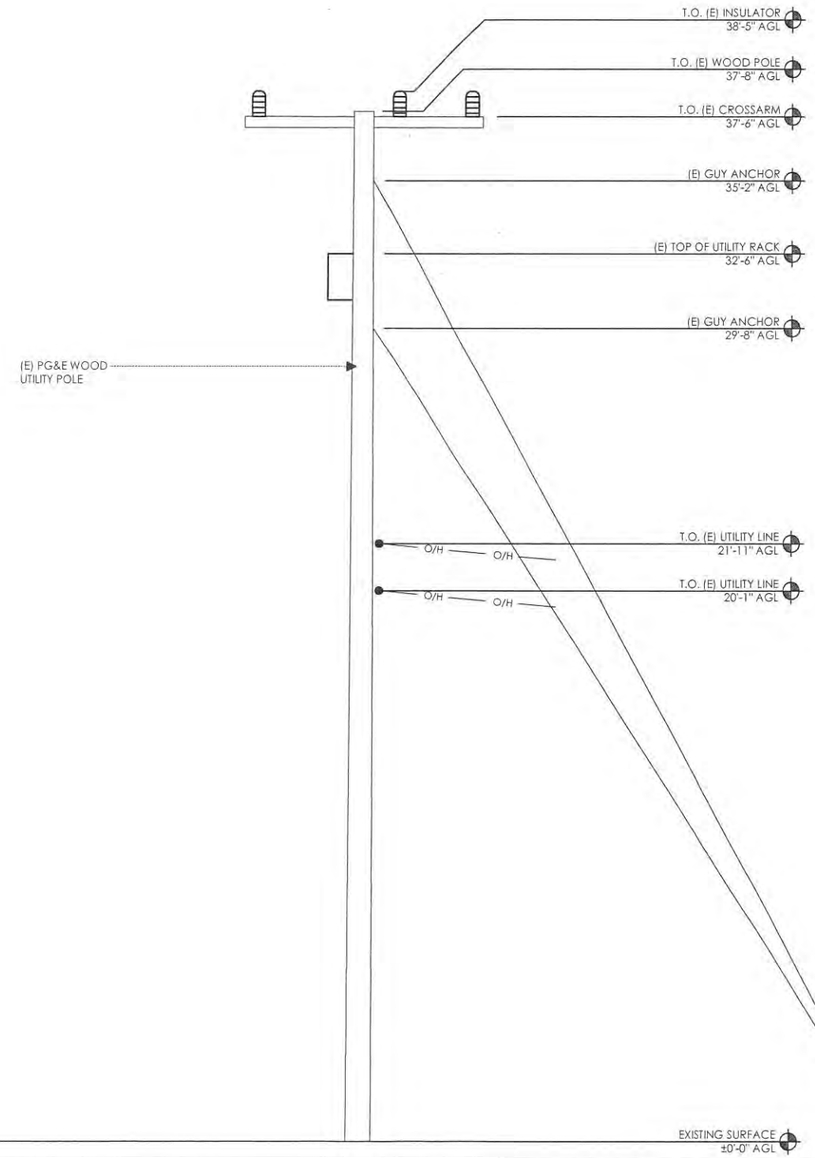
ENLARGED SITE PLAN & PROPOSED ELEVATION / EQUIPMENT PLANS

A-2



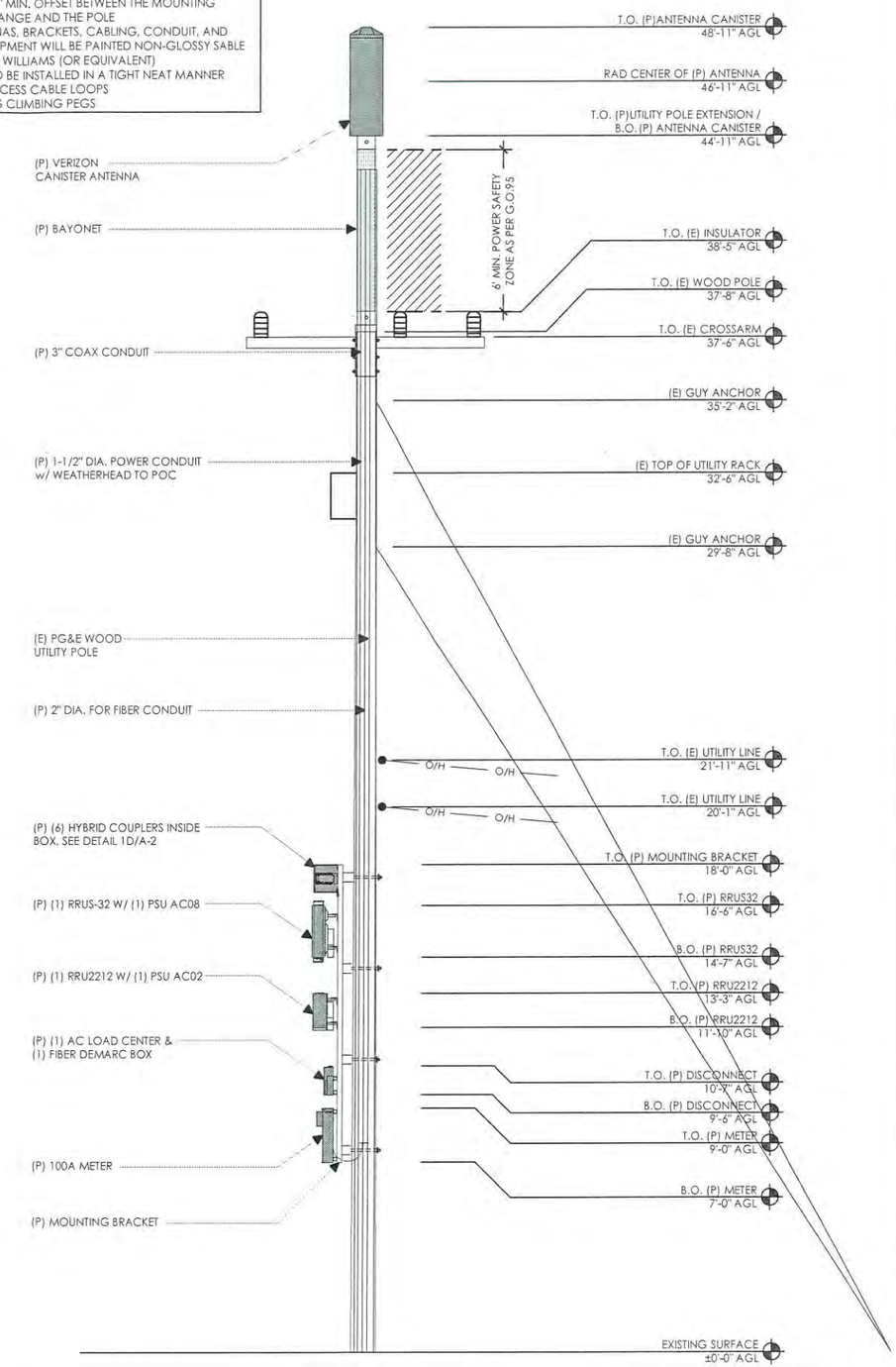
EXISTING FRONT ELEVATION

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

2

NOTES:

1. ALL EQUIPMENT SHALL BE PLACED (VERTICALLY) AS CLOSE AS ALLOWED BY POLE OWNER, WHILE MAINTAINING MINIMUM CLEARANCE REQUIREMENTS.
2. MAINTAIN 6" MIN. CLEARANCE TO GUY WIRE FROM PROPOSED EQUIPMENT.
3. MAINTAIN 4" MIN. OFFSET BETWEEN THE MOUNTING BRACKET FLANGE AND THE POLE
4. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT, AND OTHER EQUIPMENT WILL BE PAINTED NON-GLOSSY SABLE BY SHERWIN WILLIAMS (OR EQUIVALENT)
5. CABLING TO BE INSTALLED IN A TIGHT NEAT MANNER WITHOUT EXCESS CABLE LOOPS
6. NO EXISTING CLIMBING PEGS



PROPOSED FRONT ELEVATION

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

1

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REGISTERED PROFESSIONAL ENGINEER
JAMES BOSWORTH
No. 20853
Exp. 6/30/19
CIVIL
STATE OF CALIFORNIA

SF HIGHLANDS
BAYWOOD PARK 005

(NEAR) 1175 PARROTT DRIVE
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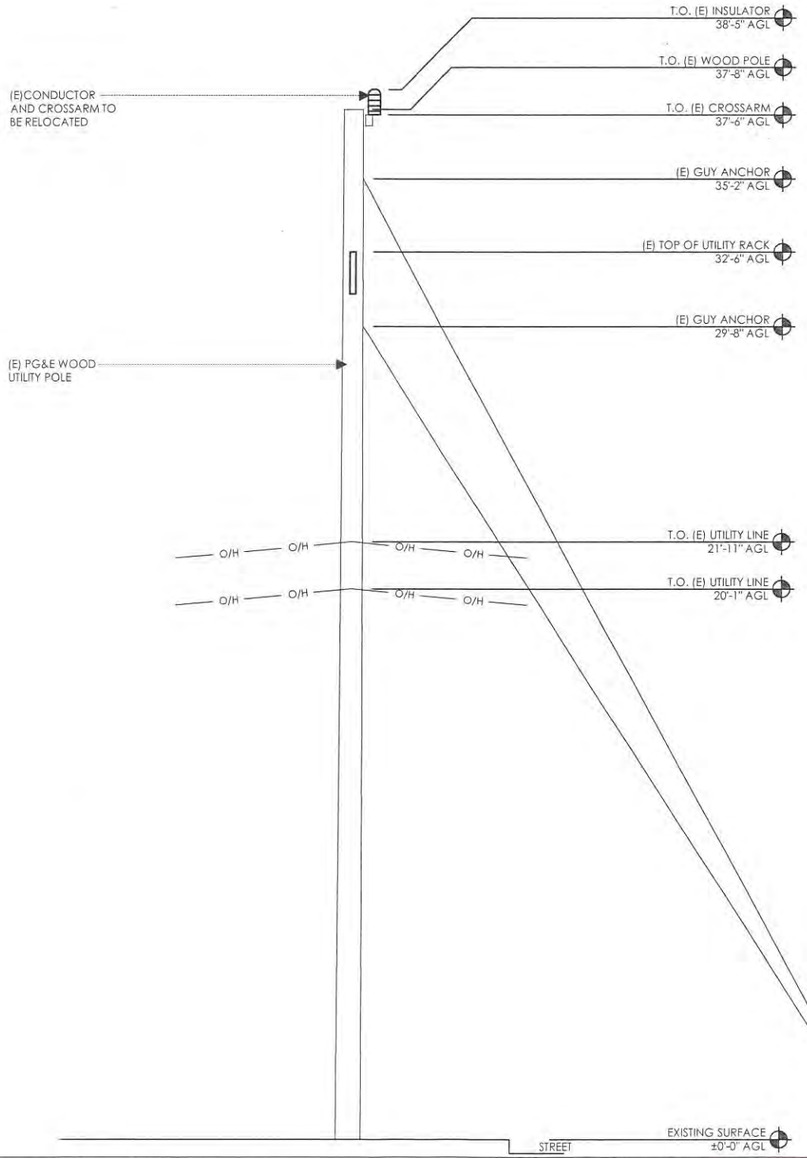
ELEVATIONS

A-3



EXISTING SIDE ELEVATION

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

2

NOTES:

1. ALL EQUIPMENT SHALL BE PLACED (VERTICALLY) AS CLOSE AS ALLOWED BY POLE OWNER, WHILE MAINTAINING MINIMUM CLEARANCE REQUIREMENTS.
2. MAINTAIN 6" MIN. CLEARANCE TO GUY WIRE FROM PROPOSED EQUIPMENT.
3. MAINTAIN 4" MIN. OFFSET BETWEEN THE MOUNTING BRACKET FLANGE AND THE POLE
4. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT, AND OTHER EQUIPMENT WILL BE PAINTED NON-GLOSSY SABLE BY SHERWIN WILLIAMS (OR EQUIVALENT)
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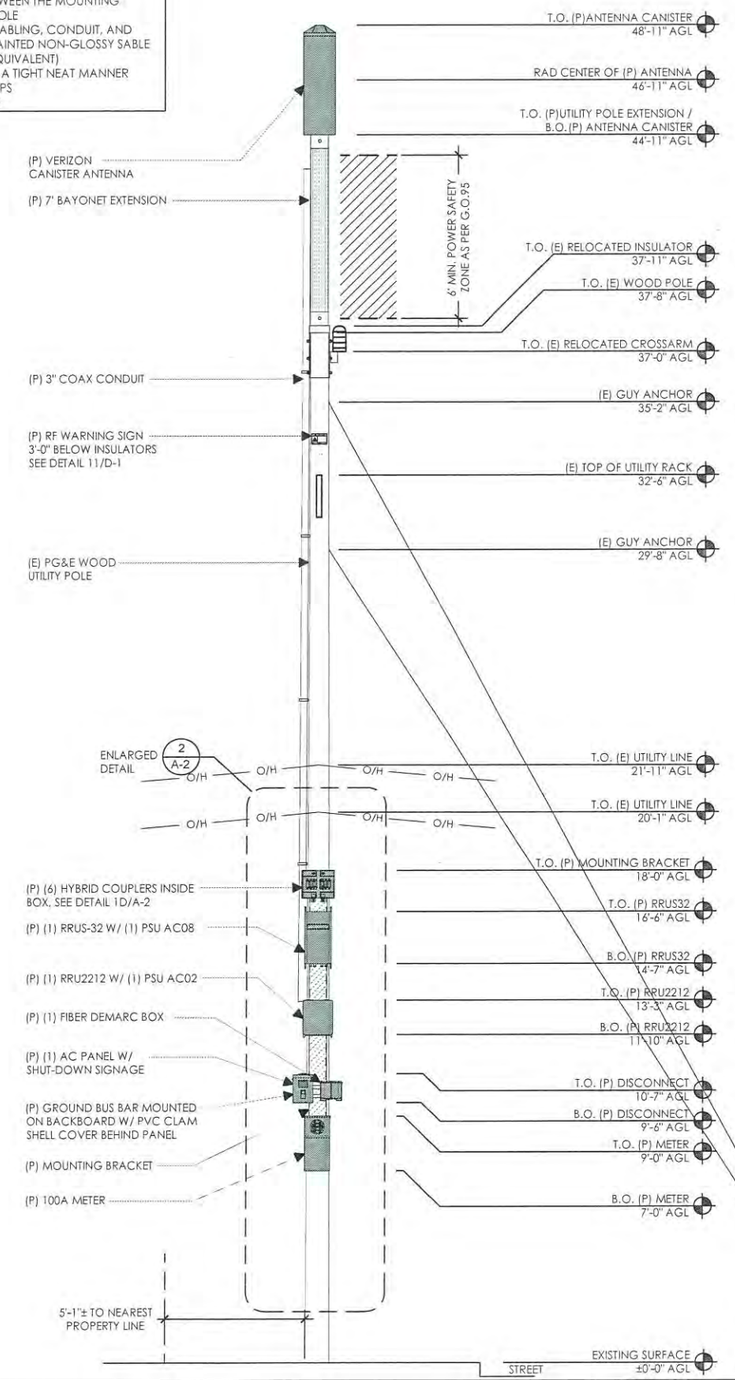

PROPOSED SIDE ELEVATION

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

1

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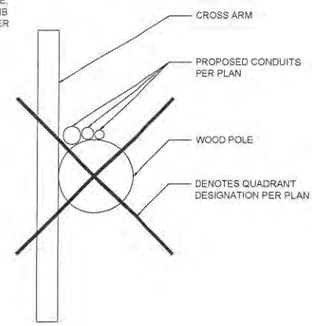
ELEVATIONS

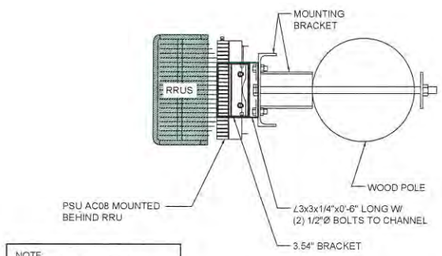
A-4

NOTE:
CONDUITS SHALL IN NO CASE, CROSS OVER INTO THE CLIMB SPACE QUADRANT, OR OTHER QUADRANTS



TYPICAL CROSS ARM OBSTRUCTION

TYP CROSS ARM OBSTRUCTION | 12



NOTE:
APPROVED EQUIVALENT ALTERNATE MOUNTING BRACKET MAY BE SUBSTITUTED FOR BRACKET SHOWN

PLAN VIEW

RRUS MOUNTING | SCALE NTS | 9

U21MTBL METER MAIN

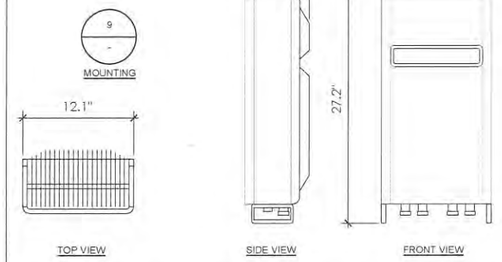
COLOR:	GRAY
DIMENSIONS:	24" TALL x 12.05" WIDE x 4"DEEP
NEUTRAL CONDUCTOR:	14 AWG-2/0 AWG
HUB PROV.:	AW
SERVICE TYPE:	4
VOLTAGE:	600
AMPACITY:	100 MAX / 100 CONT.
BRANCH CIRCUITS:	NONE
CONSTRUCTION TYPE:	3R CONSTRUCTION

BOTTOM VIEW | SIDE VIEW | FRONT VIEW

ELECTRIC METER | SCALE NTS | 6

ERICSSION RRUS-32 REMOTE RADIO UNIT
(OR APPROVED EQUIVALENT)

COLOR:	GRAY
DIMENSIONS:	27.2" TALL X 12.1" WIDE X 7.0"
TOTAL WEIGHT:	60 LBS.
POWER CONSUMPTION:	740 W



TOP VIEW | SIDE VIEW | FRONT VIEW

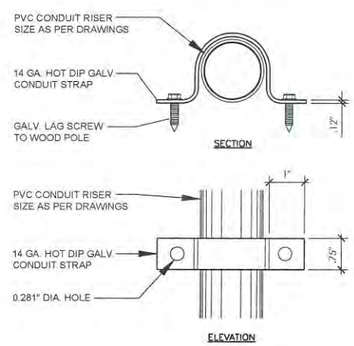
ERICSSON RRUS-32 | SCALE NTS | 3

NOTE:

ALUMINUM SUBSTRATE SIGNS PRINTED WITH UV RESISTANT ECO-SOLVENT INK, REINFORCED WITH UV, CHEMICAL, ABRASION, AND MOISTURE RESISTANT LAMINATE LAYER.

SUBSTRATE:	0.040" ALUMINUM, WHITE ENAMEL COATED BOTH SIDES
PRINTING LAYER:	4.0 MIL VINYL WITH PERMANENT ACRYLIC ADHESIVE UV STABLE ECO-SOLVENT INK
LAMINATE:	2.5 MIL, PVC FILM (OPTICALLY CLEAR) SCRATCH RESISTANT CHEMICAL RESISTANT UV RESISTANT
MOUNTING:	0.20" DIAMETER HOLES IN EACH OF 4 CORNER; OFFSET .025" FROM ADJACENT EDGE.
SIZE:	12X8, 7X5, 6X3

G.O. 95 RF SIGNAGE | SCALE NTS | 11

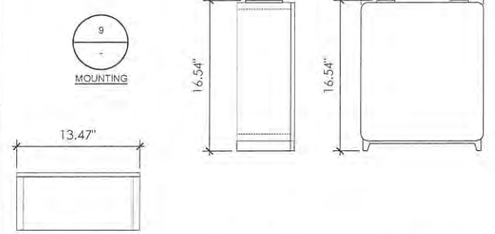


CONDUIT BRACKET | SCALE NTS | 8

NOT USED | SCALE NTS | 5

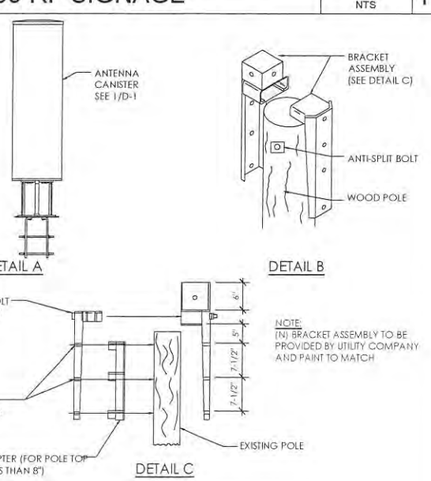
ERICSSION RRU2212 REMOTE RADIO UNIT
(OR APPROVED EQUIVALENT)

COLOR:	GRAY
DIMENSIONS:	16.54" TALL X 13.47" WIDE X 6.3"
TOTAL WEIGHT:	43 LBS.
POWER CONSUMPTION:	2x80 W



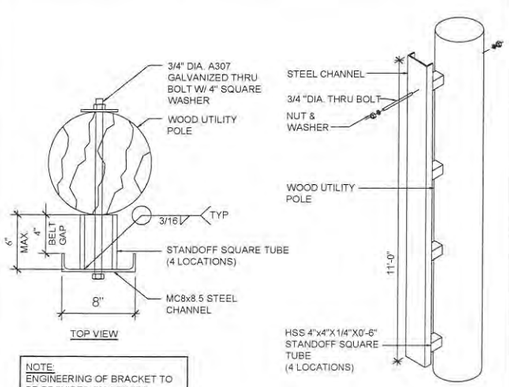
TOP VIEW | SIDE VIEW | FRONT VIEW

ERICSSON RRU2212 | SCALE NTS | 2



NOTE:
(N) BRACKET ASSEMBLY TO BE PROVIDED BY UTILITY COMPANY AND PAINT TO MATCH

UTILITY POLE TOP EXTENSION | SCALE NTS | 10

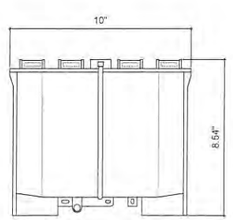


NOTE:
ENGINEERING OF BRACKET TO BE PROVIDED BY OTHERS
ALTERNATE:
PRE-MANUFACTURED BRACKET BY POLEWARE (OR EQUIVALENT)

MOUNTING BRACKET | SCALE NTS | 7

NETWORK INTERFACE DEVICE (NID)
NID-12 (OR APPROVED EQUIVALENT)

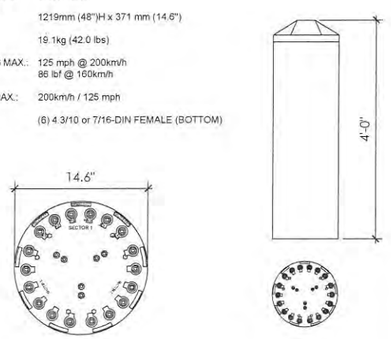
COLOR:	GRAY
DIMENSIONS:	8.54" TALL x 10" WIDE x 2.88"DEEP
CAPACITY:	6-PACK DUPLEX SC OR LC: 12 FIBERS



FRONT VIEW

FIBER BOX | SCALE NTS | 4

ANTENNA COLOR:	LIGHT GRAY
DIMENSIONS:	1219mm (48")H x 371 mm (14.6")
NET WEIGHT:	19.1kg (42.0 lbs)
WIND LOADING MAX.:	125 mph @ 200km/h 86 lbf @ 160km/h
WIND SPEED MAX.:	200km/h / 125 mph
CONNECTOR:	(6) 4.3/10 or 7/16-DIN FEMALE (BOTTOM)



ANTENNA | SCALE NTS | 1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

MODUS

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

COMMSENSE

2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

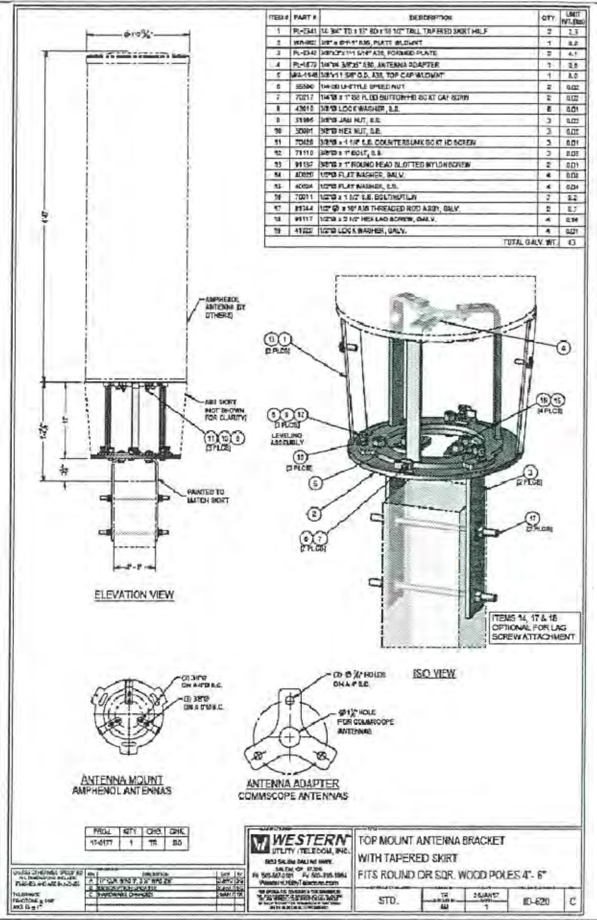
REV	DATE	DESCRIPTION
0	10/05/17	90% CD
1	10/25/17	95% CD
2	12/20/17	100% CD
3	02/28/18	100% CD REV

SF HIGHLANDS
BAYWOOD PARK 005

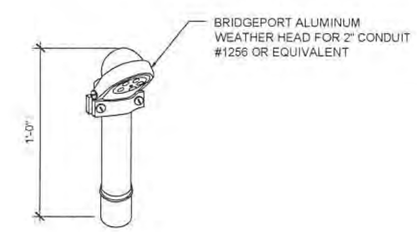
(NEAR) 1175 PARROTT DRIVE
SAN MATEO, CA 94402

DETAILS

D-1



ANTENNA CANISTER — 11



WEATHERHEAD — 9

AC LOAD CENTER
QO612L100RB

COLOR: GRAY

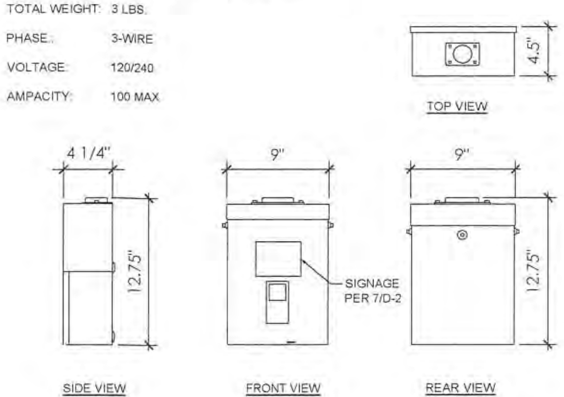
DIMENSIONS: 12.75" TALL x 9" WIDE x 4.25" DEEP

TOTAL WEIGHT: 3 LBS.

PHASE: 3-WIRE

VOLTAGE: 120/240

AMPACITY: 100 MAX



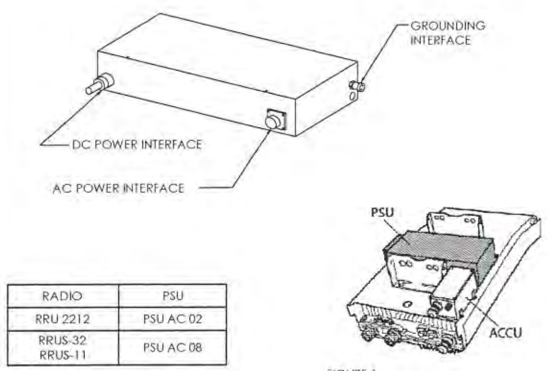
AC LOAD CENTER — 6

ERICSSION PSU AC

DIMENSIONS: 2.72" TALL x 10.79" WIDE x 7.09" DEEP

WEIGHT: 11.46 lbs

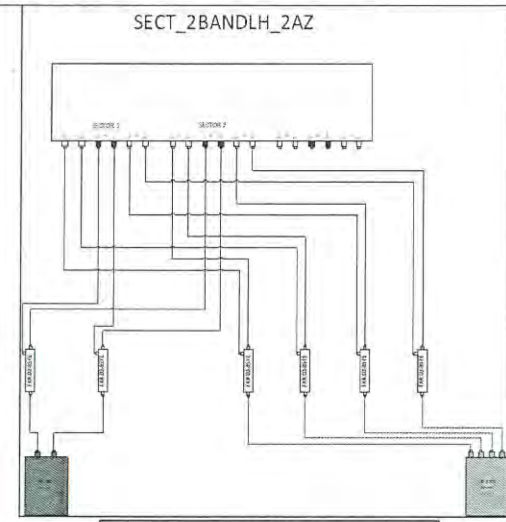
THE PSU IS REQUIRED TO OPERATE THE RRUS ON AC. IF THE RRUS IS INSTALLED OUTDOORS, THE ACCU IS ALSO REQUIRED, OTHERWISE THE ACCU IS OPTIONAL. THE EQUIPMENT FOR AC POWER SUPPLY IS SHOWN FIGURE 1



RADIO	PSU
RRU 2212	PSU AC 02
RRUS-32 RRUS-11	PSU AC 08

FIGURE 1

POWER SUPPLY UNIT (PSU) — SCALE NTS — 3



CABLE SIZE	
(6) & (8) PORT DESIGN	1/2" COAX CABLE
(12) & (18) PORT DESIGN	1/4" SUPERFLEX CABLE

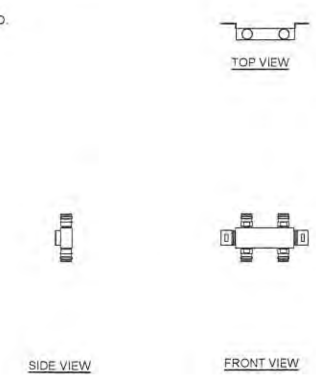
PLUMBING DIAGRAM — 8

2X2 HYBRID COUPLER
(OR APPROVED EQUIVALENT)

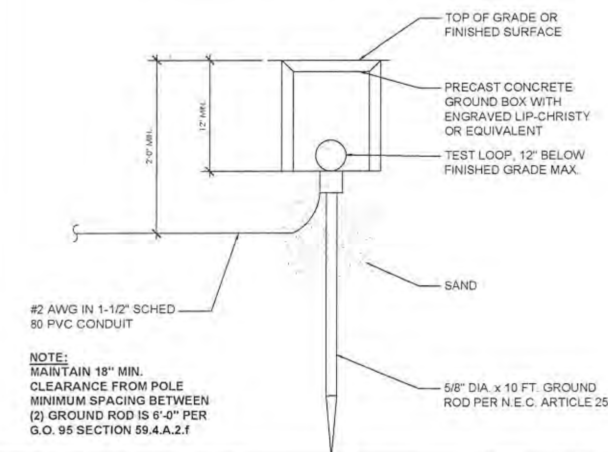
COLOR: GRAY

DIMENSIONS: T.B.D.

TOTAL WEIGHT: T.B.D.

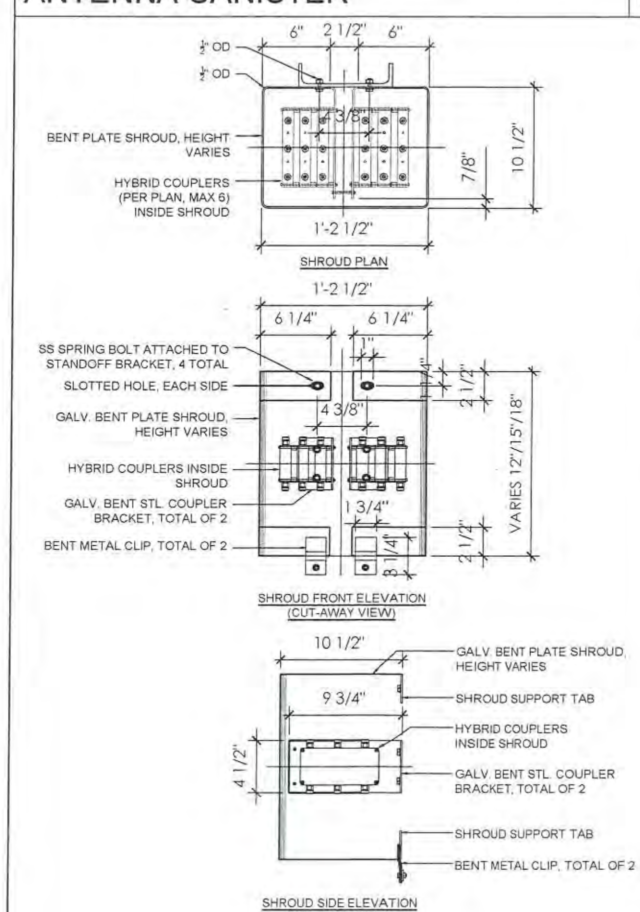


HYBRID COUPLER — SCALE NTS — 5

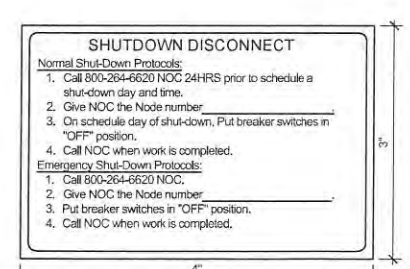


NOTE:
MAINTAIN 18" MIN. CLEARANCE FROM POLE MINIMUM SPACING BETWEEN (2) GROUND ROD IS 6'-0" PER G.O. 95 SECTION 59.4.A.2.f

GROUND ROD — SCALE NTS — 2



COMBINER SHROUD — 10



NOTES:

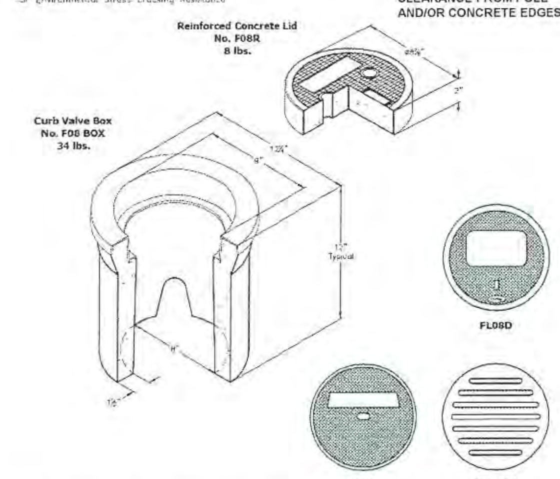
1. SIGN PROVIDED BY GC MOUNTED TO OUTSIDE OF LOAD CENTER COVER
2. CONTRACTOR TO NOTE SITE ID/ MARKET ID/ SITE NAME

LOAD CENTER SHUT-DOWN SIGNAGE — 7

NOT USED — SCALE NTS — 4

- Etched polypropylene face
- Face anchored in concrete
- Ultra-violet inhibitor
- Exceeds ASTM-D1693 Standards for Environmental Stress Cracking Resistance

NOTE:
MAINTAIN 18" MIN. CLEARANCE FROM POLE AND/OR CONCRETE EDGES



A high density reinforced concrete box with non-settling shoulders positioned to maintain grade and facilitate back filling. Approximate dimensions and weight shown.

Oldcastle Ordering Code	Item	Approx. Shipping Weight	Description
F08BOX	BOX	34 lbs.	F08 Curb Valve Box (8" I.D. x 12" High) — 48 per pallet
F08R	LID	8 lbs.	Reinforced Concrete Lid with Plastic Ring
F08C	LID	8 lbs.	Cast Iron Lid
FL08D	LID	2 lbs.	Fibrelyte Lid, Non-Concrete
V01-71C	LID	12 lbs.	Cast Iron Grate ADA Compliant

GROUND ROD ENCLOSURE — SCALE NTS — 1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

modus

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

COMMSENSE

2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/05/17	90% CD
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3	02/28/18	100% CD REV

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

SF HIGHLANDS BAYWOOD PARK 005

(NEAR) 1175 PARROTT DRIVE
SAN MATEO, CA 94402

DETAILS

D-2

A	AMPERE	ELEC	ELECTRICAL	MFR	MANUFACTURER	SAF	SAFETY
ACCA	ANTENNA CABLE COVER ASSEMBLY	EMT	ELECTRICAL METALLIC TUBING	MIN	MINIMUM	SDBC	SOFT DRAWN BARE COPPER
		ENCL	ENCLOSURE	MLO	MAIN LUGS ONLY	SEC	SECONDARY
AIC	AMPERE INTERRUPTING CAPACITY	EXIST	EXISTING	MTD	MOUNTED	S.N.	SOLID NEUTRAL
		FAC	FACTOR	MTG	MOUNTING	SURF	SURFACE
APPROX	APPROXIMATELY	F/A	FIRE ALARM	MTS	MANUAL TRANSFER SWITCH	SW	SWITCH
AT	AMPERE TRIP	FLUOR	FLUORESCENT	N	NEUTRAL	TEL	TELEPHONE
AWG	AMERICAN WIRE GAGE	FT	FOOT/FEET	(N)	NEW	TYP	TYPICAL
BATT	BATTERY	FU	FUSE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.	U/G	UNDERGROUND
BD	BOARD	G	GROUND			U.L.	UNDERWRITER'S LABORATORY INC.
BR	BRANCH	GEN	GENERATOR	OH	OVERHEAD		
BRKR	BREAKER	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	P	POLE	U.N.O.	UNLESS NOTED OTHERWISE
BTCW	BARE TINNED COPPER WIRE			PCS	PERSONAL COMMUNICATION SYSTEM	V	VOLT
BTS	BASE TRANSMISSION SYSTEM	GND	GROUNDING			VAC	VOLT ALTERNATING CURRENT
C	CONDUIT	GPS	GLOBAL POSITIONING SYSTEM	PH	PHASE	W	WATT OR WIRE
CAB	CABINET	GR	GROWTH	PNLBD	PANELBOARD	W/	WITH
CB	CIRCUIT BREAKER	HDBC	HARD DRAWN COPPER WIRE	PPC	POWER PROTECTION CABINET	W/O	WITHOUT
CKT	CIRCUIT	HPS	HIGH PRESSURE SODIUM	PRC	PRIMARY RADIO CABINET	XFER	TRANSFER
CONT	CONTINUOUS	LG	LENGTH	PRI	PRIMARY	XFMR	TRANSFORMER
DEM	DEMAND	LPS	LOW PRESSURE SODIUM	PWR	POWER	XLPE	CROSS-LINK POLYETHYLENE
(E)	EXISTING	MAX	MAXIMUM	RCPT	RECEPTACLE		
EGR	EMERGENCY GEN. RECEPTACLE	MECH	MECHANICAL	RGS	RIGID GALVANIZED STEEL		

GENERAL ABBREVIATIONS 3

OHT/OHP	OVERHEAD TELEPHONE/OVERHEAD POWER		LIGHTING FIXTURE, 1/175W, METAL HALIDE, HUBBELL CAT #MIC-0175H-336
OHT	OVERHEAD TELEPHONE LINE		5/8" X 10'-0" ,CU. GND ROD 24" MIN. BELOW GRADE.
OHP	OVERHEAD POWER LINE		5/8" X 10'-0" ,CU. GND ROD IN TEST WELL 24" MIN. BELOW GRADE.
E	POWER RUN		CHEMICAL GROUND ROD (XIT GROUND ROD)
T	TELCO RUN		CADWELD CONNECTION
E/T	POWER/TELCO RUN		MECHANICAL CONNECTION
	GROUNDING CONDUCTOR		HALO GROUND CONNECTION
	FUSE, SIZE AND TYPE AS INDICATED.		CIRCUIT BREAKER
	SAFETY SWITCH, 2P-240V-60A W/60A FUSES, NEMA 3R ENCLOSURE, SQ D CATALOG NO. H222NRB		UTILITY METER BASE
	MANUAL TRANSFER SWITCH, 2P-240V-200A, NO FUSE, NEMA 3R ENCLOSURE		RECEPTACLE, 2P-3W-125V-15A, DUPLEX, GROUND TYPE, HUBBEL CATALOG #5362
	LIGHTING FIXTURE, INCANDESCENT, 1/100W, WALL MOUNTING TYPE, HUBBELL LIGHTING CATALOG #BRH-100-06-1	S	TOGGLE SWITCH, 1P-125V-15A, HUBBELL CATALOG #HBL 1201CN
		S_{WP}	TOGGLE SWITCH, 1P-120V-15A, 'WP'

ELECTRICAL LEGENDS 2

1. GENERAL REQUIREMENTS

A. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE AND ALL STATE AND LOCAL CODES. NOTHING IN THESE PLANS OR SPECIFICATIONS SHALL BE CONSTRUED AS TO PERMIT WORK NOT CONFORMING TO THE MOST STRINGENT OF THESE CODES. SHOULD CHANGES BE NECESSARY IN THE DRAWINGS OR SPECIFICATIONS TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND CEASE WORK ON PARTS OF THE CONTRACT

B. THE CONTRACTOR SHALL MAKE A SITE VISIT PRIOR TO BIDDING AND CONSTRUCTION TO VERIFY ALL EXISTING CONDITIONS AND SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES. THE CONTRACTOR ASSUMES ALL LIABILITY FOR FAILURE TO COMPLY WITH THIS PROVISION.

C. THE EXTENT OF THE WORK IS INDICATED BY THE DRAWINGS, SCHEDULES, AND SPECIFICATIONS AND IS SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT. THE WORK SHALL CONSIST OF FURNISHING ALL LABOR, EQUIPMENT, MATERIALS AND SUPPLIES NECESSARY FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM. THE WORK SHALL ALSO INCLUDE THE COMPLETION OF ALL ELECTRICAL WORK NOT MENTIONED OR SHOWN WHICH ARE NECESSARY FOR SUCCESSFUL OPERATION OF ALL SYSTEMS.

D. THE CONTRACTOR SHALL PREPARE A BID FOR A COMPLETE AND OPERATIONAL SYSTEM, WHICH INCLUDES THE COST FOR MATERIAL AND LABOR.

E. WORKMANSHIP AND NEAT APPEARANCE SHALL BE AS IMPORTANT AS THE OPERATION. DEFECTIVE OR DAMAGED MATERIALS SHALL BE REPLACED OR REPAIRED PRIOR TO FINAL ACCEPTANCE IN A MANNER ACCEPTABLE TO OWNER AND ENGINEER.

F. COMPLETE THE ENTIRE INSTALLATION AS SOON AS THE PROGRESS OF THE WORK WILL PERMIT.

G. ANY ERROR, OMISSION OR DESIGN DISCREPANCY ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION OR CORRECTION BEFORE CONSTRUCTION.

H. "PROVIDE" INDICATES THAT ALL ITEMS ARE TO BE FURNISHED, INSTALLED AND CONNECTED IN PLACE.

I. CONTRACTOR SHALL SECURE ALL NECESSARY BUILDING PERMITS AND PAY ALL REQUIRED FEES.

2. EQUIPMENT LOCATION

A. ALL DRAWINGS INDICATE DIAGRAMMATICALLY THE DESIRED LOCATIONS OR ARRANGEMENTS OF CONDUIT RUNS, OUTLETS, EQUIPMENT, ETC., AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE. PROPER JUDGEMENT MUST BE EXERCISED IN EXECUTING THE WORK SO AS TO SECURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE AND TO OVERCOME LOCAL DIFFICULTIES DUE TO SPACE LIMITATIONS OR INTERFERENCE OF STRUCTURE CONDITIONS ENCOUNTERED.

B. IN THE EVENT CHANGES IN THE INDICATED LOCATIONS OR ARRANGEMENTS ARE NECESSARY, DUE TO FIELD CONDITIONS IN THE BUILDING CONSTRUCTION OR REARRANGEMENT OF EQUIPMENT, SUCH CHANGES SHALL BE MADE WITHOUT COST, PROVIDING THE CHANGE IS ORDERED BEFORE THE CONDUIT RUNS, ETC., AND WORK DIRECTLY CONNECTED TO THE SAME IS INSTALLED AND NO EXTRA MATERIALS ARE REQUIRED.

C. COORDINATE THE WORK OF THE SECTION WITH THAT OF ALL OTHER TRADES. WHERE CONFLICTS OCCUR, CONSULT WITH THE PERSPECTIVE CONTRACTOR AND COME TO AGREEMENT AS TO CHANGES NECESSARY. OBTAIN WRITTEN ACCEPTANCE FROM ENGINEER FOR THE PROPOSED CHANGES BEFORE PROCEEDING.

3. TESTS

A. BEFORE FINAL ACCEPTANCE OF WORK, THE CONTRACTOR SHALL INSURE THAT ALL EQUIPMENT, SYSTEMS, FIXTURES, ETC., ARE WORKING SATISFACTORILY AND TO THE INTENT OF THE DRAWINGS.

4. PERMITS

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING OUT AND PAYING FOR ALL THE REQUIRED PERMITS, INSPECTION AND EXAMINATION WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

5. GROUNDING

A. THE CONTRACTOR SHALL PROVIDE A COMPLETE, AND APPROVED GROUNDING SYSTEM INCLUDING ELECTRODES. ELECTRODE CONDUCTOR, BONDING CONDUCTORS, AND EQUIPMENT CONDUCTORS AS REQUIRED BY ARTICLE 250 OF NATIONAL ELECTRICAL CODE.

B. CONDUITS CONNECTED TO EQUIPMENT AND DEVICES SHALL BE METALLICALLY JOINED TOGETHER TO PROVIDE EFFECTIVE ELECTRICAL CONTINUITY.

C. FEEDERS AND BRANCH CIRCUIT WIRING INSTALLED IN A NONMETALLIC CONDUIT SHALL INCLUDE A CODE SIZED GROUNDING CONDUCTOR HAVING GREEN INSULATION. THE GROUND CONDUCTOR SHALL BE PROPERLY CONNECTED AT BOTH ENDS TO MAINTAIN ELECTRICAL CONTINUITY.

D. REFER TO GROUND BUS DETAILS, PROVIDE NEW GROUND SYSTEM COMPLETE WITH CONDUCTORS, GROUND ROD AND DESCRIBED TERMINATIONS.

E. ALL GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2 UNLESS NOTED OTHERWISE.

F. ALL NON-DIRECT BURIED TELEPHONE EQUIPMENT GROUND CONDUCTORS SHALL BE #2 STRANDED, THHN (GREEN) INSULATION.

G. ALL GROUND CONNECTIONS SHALL BE MADE WITH "HYGROUND" COMPRESSION SYSTEM BURNDY CONNECTORS EXCEPT WHERE NOTED OTHERWISE.

H. PAINT AT ALL GROUND CONNECTIONS SHALL BE REMOVED.

I. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE OWNER FOR FUTURE INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE. SUBMIT TEST REPORTS AND FURNISH TO VERIZON ONE COMPLETE SET OF PRINTS SHOWING "INSTALLED WORK".

6. UTILITY SERVICE

A. TELEPHONE AND ELECTRICAL METERING FACILITIES SHALL CONFORM TO THE REQUIREMENTS OF THE SERVING UTILITY COMPANIES. CONTRACTOR SHALL VERIFY SERVICE LOCATIONS AND REQUIREMENTS. SERVICE INFORMATION WILL BE FURNISHED BY THE SERVING UTILITIES.

B. CONFORM TO ALL REQUIREMENTS OF THE SERVING UTILITY COMPANIES.

7. PRODUCTS

A. ALL MATERIALS SHALL BE NEW, CONFORMING WITH THE NEC, ANSI, NEMA, AND THEY SHALL BE U.L. LISTED AND LABELED.

B. CONDUIT:

B.1. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR, RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.

B.2. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTINGS SHALL BE COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.

B.3. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE. SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL HAVE FULL SIZE GROUND WIRE.

B.4. ALL UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 24" BELOW GRADE.

B.5. ALL CONDUIT ONLY (C.O.) SHALL HAVE PULL ROPE.

C. ALL WIRE AND CABLE SHALL BE COPPER, 600 VOLT, #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED. TYPE THHN INSULATION USED UNLESS CONDUCTORS INSTALLED IN CONDUIT EXPOSED TO WEATHER, IN WHICH CASE TYPE THWN INSULATION SHALL BE USED.

D. PROVIDE GALVANIZED COATED STEEL BOXES AND ACCESSORIES SIZED PER CODE TO ACCOMMODATE ALL DEVICES AND WIRING.

E. TOGGLE SWITCHES SHALL BE 20 AMP, 120 VOLT AC. SPECIFICATION GRADE WHITE (UNLESS NOTED OTHERWISE) FINISH. MOUNT SWITCHES AT +48" ABOVE FINISHED FLOOR.

F. PANELBOARD SHALL BE DEAD FRONT SAFETY TYPE WITH ANTI-BURN SOLDERLESS COMPRESSION APPROVED FOR COPPER CONDUCTORS, COPPER BUS BARS, FULL SIZED NEUTRAL BUS, GROUND BUS AND EQUIPPED WITH QUICK-MAKE QUICK-BREAK BOLT-IN TYPE THERMAL MAGNETIC CIRCUIT BREAKERS. MOUNT TOP OF THE PANELBOARD AT 6'-3" ABOVE FINISHED FLOOR. PROVIDE TYPEWRITTEN CIRCUIT DIRECTORY.

G. ALL CIRCUIT BREAKERS, MAGNETIC STARTERS AND OTHER ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED.

H. GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8" ROUND AND 10' LONG. COPPERWELD OR APPROVED EQUAL.

I. SERVICE POWER SHALL BE 100A 1Ø, 3W, 120/208 OR 120/240V.

J. ALL WIRING SHALL BE COPPER 75° C U.N.O.

K. CONDUIT REQUIREMENTS (TYP., U.N.O.): UNDERGROUND: PVC (SCHED 40 OR 80). INDOOR: EMT (RGS IN TRAFFIC AREAS, OUTDOOR (ABOVE GRADE): RGS.

L. PLACE "TRUE TAPE" AND PULL ROPE IN THE CONDUITS AS REQUIRED.

8. INSTALLATION

A. PROVIDE SUPPORTING DEVICES FOR ALL ELECTRICAL EQUIPMENT. FIXTURES, BOXES, PANEL, ETC., EQUIPMENT SHALL BE BRACED TO WITHSTAND HORIZONTAL FORCES IN ACCORDANCE WITH STATE AND LOCAL CODE REQUIREMENTS. PROVIDE PRIOR ALIGNMENT AND LEVELING OF ALL DEVICES AND FIXTURES.

9. PROJECT CLOSEOUT

A. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.

B. PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS.

ELECTRICAL NOTES 1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

modus

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

COMMSENSE

2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/05/17	90% CD
1	10/25/17	95% CD
2	12/20/17	100% CD
3	02/28/18	100% CD REV

REGISTERED PROFESSIONAL ENGINEER
ELECTRICAL
STATE OF CALIFORNIA

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

SF HIGHLANDS
BAYWOOD PARK 005

(NEAR) 1175 PARROTT DRIVE
SAN MATEO, CA 94402

ELECTRICAL
GENERAL NOTES

E-1

NOTES:
1. GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 5/8" DIAMETER x 10'-0" LONG. ALL GROUND RODS MAY BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

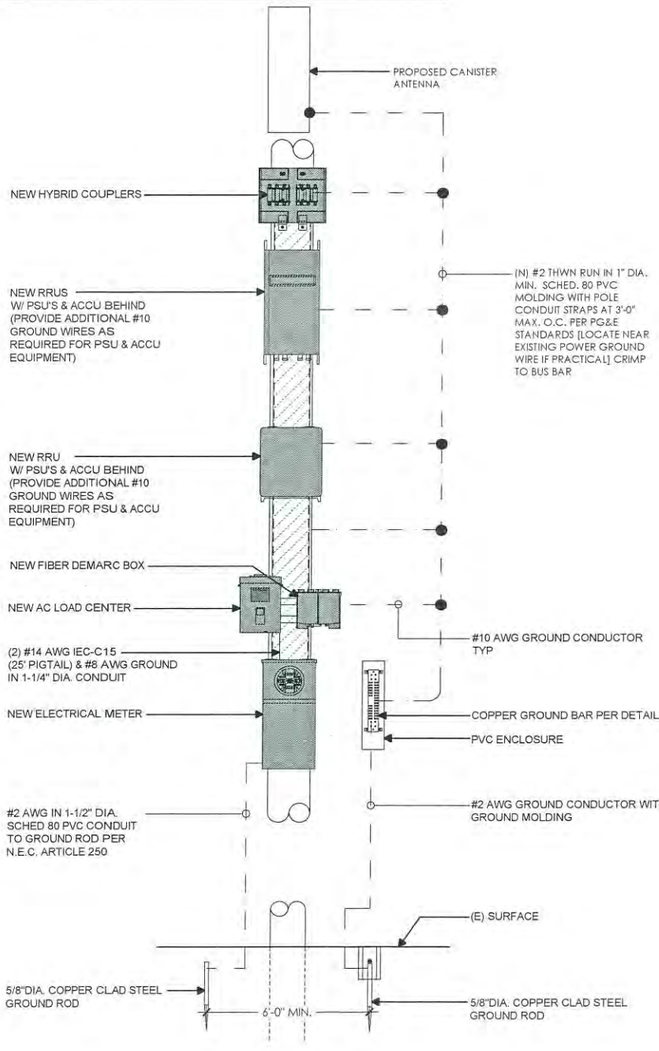
2. CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.

3. EXTERIOR UNIT BONDS: METALLIC OBJECTS SHALL BE BONDED TO THE EXTERIOR GROUND RING.

4. PROVIDE ALL ELECTRICAL WORK & MATERIALS AS SHOWN ON THE DWGS, AS CALLED FOR HEREIN, & AS IS NECESSARY TO FURNISH A COMPLETE INSTALLATION.

5. UNLESS SHOWN OTHERWISE, FUSED DISCONNECT SWITCHES SHALL BE PROVIDED WITH LOW-PEAK, S\DUAL ELEMENT FUSES SIZED TO EQUIPMENT NAMEPLATE FUSE CURRENT RATING. MOTOR STARTERS SHALL BE PROVIDED WITH SIMILARLY SIZED FUSIBLE ELEMENTS, SWITCHES, AND OTHER OUTDOOR EQUIPMENT SHALL BE RATED NEMA 3R AND/OR UL LISTED FOR WET ENVIRONMENT.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING THE GROUNDING SYSTEM AND ENSURING A .5 OHM OR LESS GROUNDING PATH. ADDITIONAL GROUND RODS AND/OR CHEMICAL ROD SYSTEM SHALL BE USED TO ACHIEVE THIS REQUIREMENT IF THE GIVEN DESIGN CANNOT BE MADE TO ACHIEVE THIS REQUIREMENT.



GROUNDING SCHEMATIC

SCALE NTS | 2

MOUNTING SURFACE — PANEL — "PPC A" — 10,000 A.I.C. SYM

240/120 VOLTS 1 PHASE 3 WIRE — MAIN 100A — BUS 100A

VOLT AMPS PHASE A	VOLT AMPS PHASE B	OTHER	REC	LTG	POLE	BKR	CIR		CIR	BKR	POLE	LTG	REC	OTHER	VOLT AMPS PHASE A	VOLT AMPS PHASE B
200		RRUS-11			1	30	1	2	2	-	-					
	800	RRUS-32			1	20	3	4	4	-	-					
		SPARE			1	15	5	6	6							
		SPARE			1	20	7	8	8							
							9	10	10							
							11	12	12							
200	800															

PHASE A = 200 — PHASE B = 800

CONTINUOUS LOADS			NON-CONTINUOUS LOADS						
1000	X1.25 =	1250	RECEPTACLES	UP TO 10KVA	-	x1.00 =	-	OTHER = -	x1.00 = -
				REMAINDER	-	x1.00 =	-		

TOTAL DESIGN KW = 1.25 — TOTAL DESIGN AMPS = 5.2

NOTE:
REFER TO ERICSSON SPECS FOR ADDITIONAL INFORMATION INCLUDING WIRING INSTRUCTIONS & GROUNDING REQUIREMENTS

ONE-LINE DIAGRAM

SCALE NTS | 1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

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

COMMSENSE
2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
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REGISTERED PROFESSIONAL ENGINEER — Thomas Andrew Sharp — E14644 — Dec. 31, 2018 — ELECTRICAL — STATE OF CALIFORNIA

SF HIGHLANDS
BAYWOOD PARK 005

(NEAR) 1175 PARROTT DRIVE
SAN MATEO, CA 94402

ONE-LINE DIAGRAM & GROUNDING DETAILS

E-2

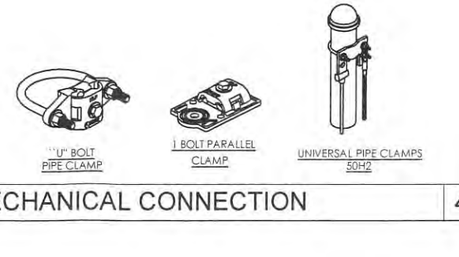
NOT USED 9

NOT USED 8

NOT USED 10

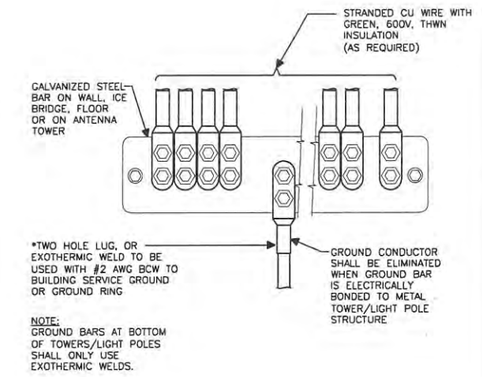
NOT USED 7

NOT USED 6

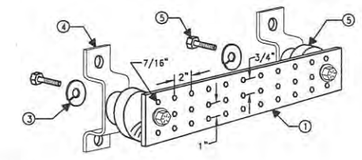


EXOTHERMIC WELD CONNECTION 5

MECHANICAL CONNECTION 4



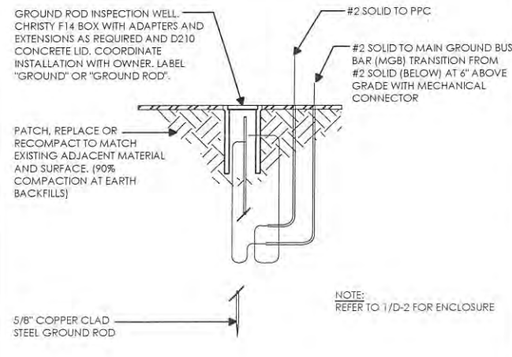
GROUND WIRE TO BAR 3



NOTES:

1. COPPER GROUND BAR, HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION. (ACTUAL GROUND BAR SIZE WILL VARY BASED ON NUMBER OF GROUND CONNECTIONS)
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4 OR APPROVED EQUAL
3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO., CAT. NO. 3015-8 OR APPROVED EQUAL
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO., CAT NO. A-6056 OR APPROVED EQUAL
5. 5/8-11 X 1" HHCS BOLTS, NEWTON INSTRUMENT CO., CAT NO. 3012-1 OR APPROVED EQUAL
6. INSULATORS SHALL BE ELIMINATED WHEN BONDING DIRECTLY TO TOWER/MONOPINE STRUCTURE. CONNECTION TO TOWER/MONOPINE STRUCTURE SHALL BE PER MANUFACTURERS RECOMMENDATIONS.
7. VALMONT TINMG212U-K (OR EQUIVALENT) 1/4"X2"X12"

GROUND BAR 2



GROUND TEST WELL 1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

MODUS

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

COMMSENSE

2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/05/17	90% CD
1	10/25/17	95% CD
2	12/20/17	100% CD
3	02/28/18	100% CD REV

REGISTERED PROFESSIONAL ENGINEER
Thomas Andrew Brown
E14844
Dec. 31, 2018
ELECTRICAL
STATE OF CALIFORNIA

SF HIGHLANDS
BAYWOOD PARK 005

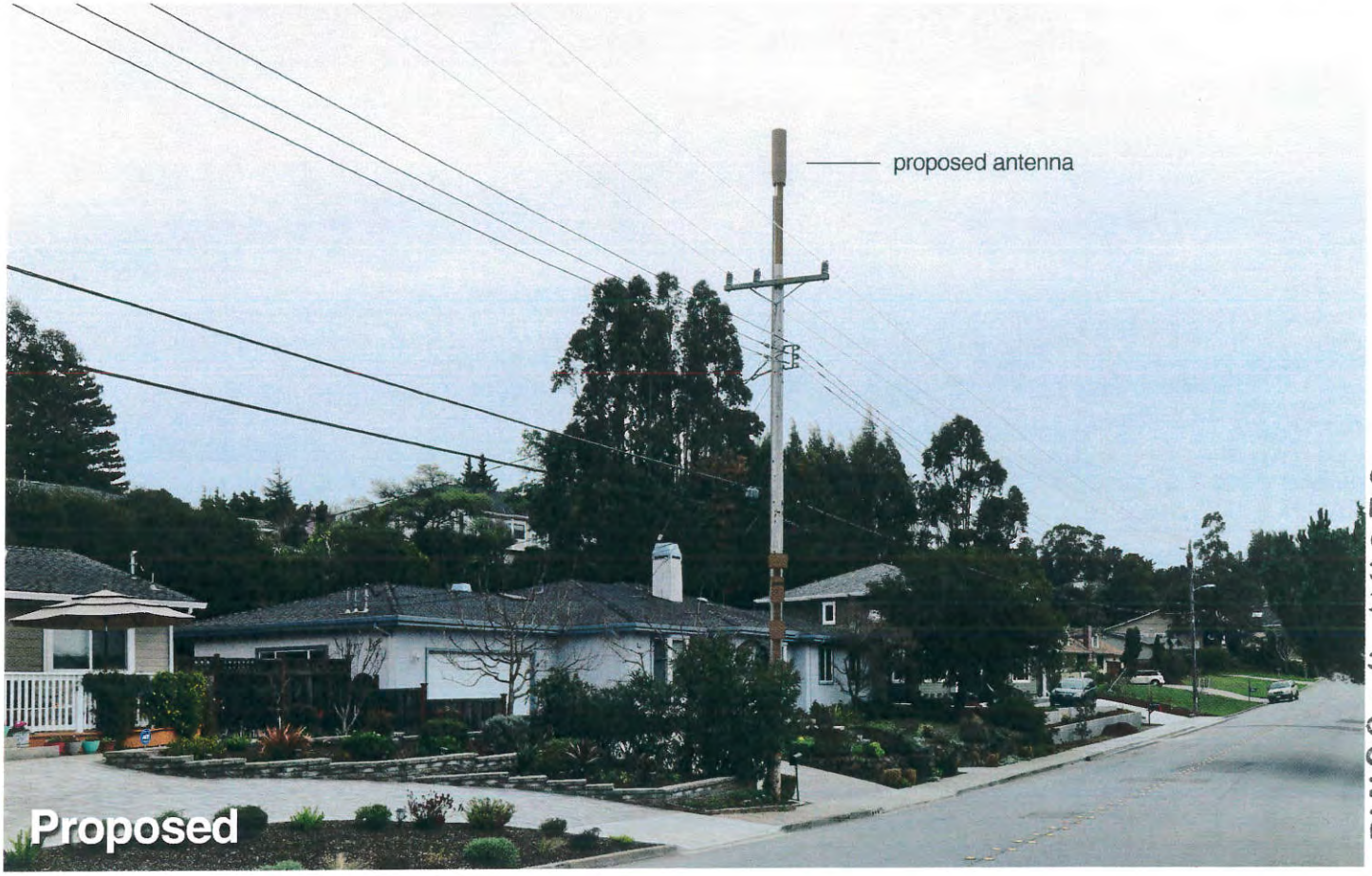
(NEAR) 1175 PARROTT DRIVE
SAN MATEO, CA 94402

ELECTRICAL DETAILS

E-3

County of San Mateo - Planning and Building Department

ATTACHMENT D



PLN2018-00079

verizon

SF Highlands 005 Site # 483409

(Near) 1175 Parrott Dr.
San Mateo, CA

2/16/18

Looking Southeast from Parrott Dr.

View #1

Applied Imagination 510 914-0500

verizon

SF Highlands 005 Site # 483409

(Near) 1175 Parrott Dr.
San Mateo, CA

2/16/18

Looking Northwest from Parrott Dr.

View #2

Applied Imagination 510 914-0500

verizon

SF Highlands 005 Site # 483409

(Near) 1175 Parrott Dr.
San Mateo, CA

Aerial Map

2/16/18

Applied Imagination 510 914-0500

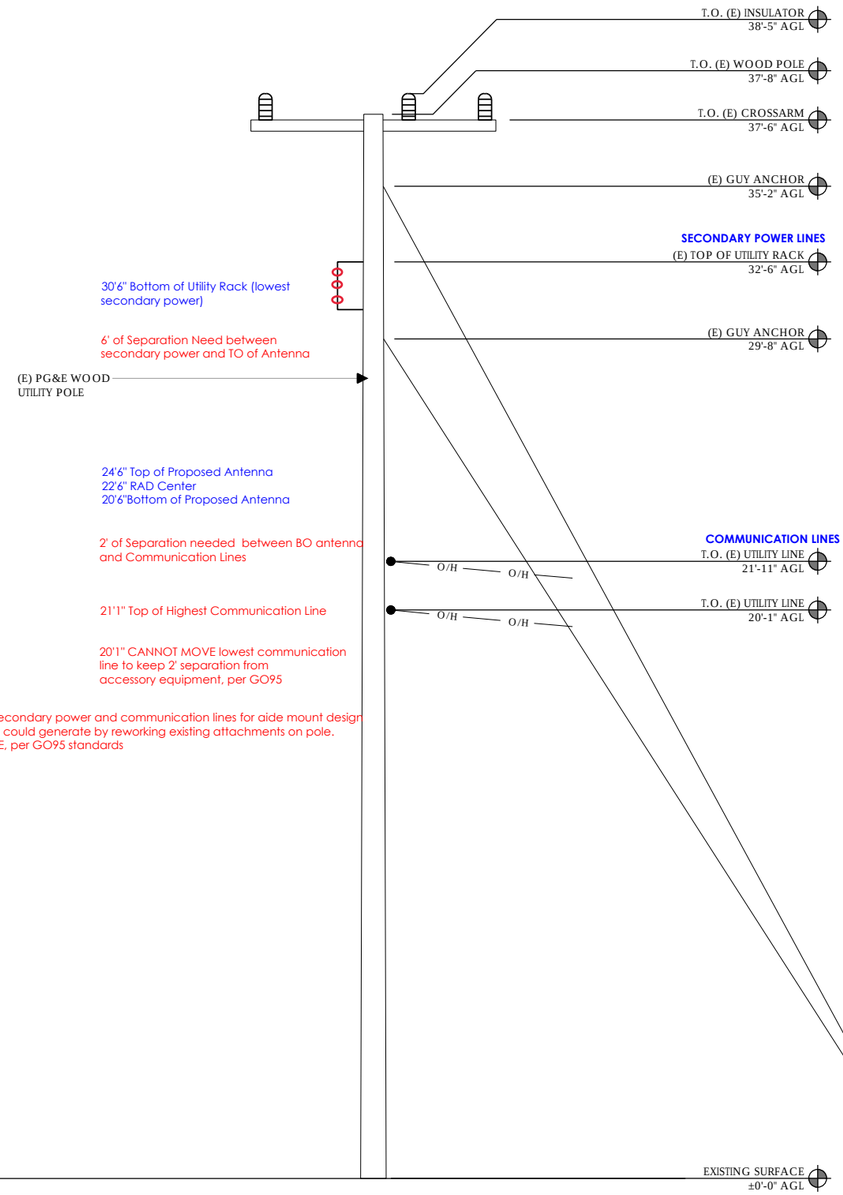
County of San Mateo - Planning and Building Department

ATTACHMENT E


This area has limited number of poles making the site selected the best option in the RF desired coverage area
PG&E Wood Pole: Insufficient space on pole for equipment and installation
PG&E Wood Pole: Pole is not viable because of antenna and limited space
Site Selected
PG&E Wood Pole: Pole is viable but site selected is better option because pole has more space and will be an easier installation

County of San Mateo - Planning and Building Department

ATTACHMENT F



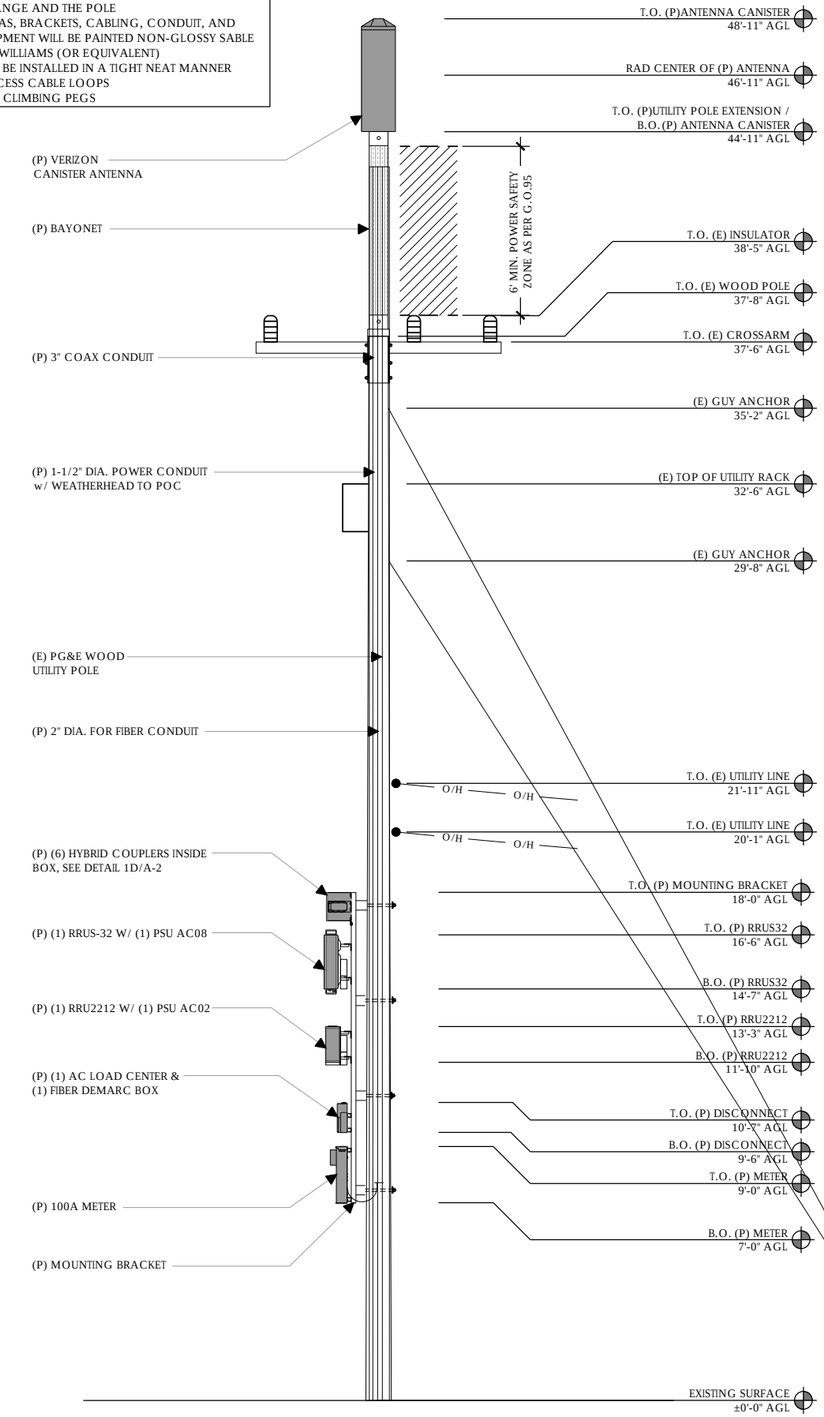
EXISTING FRONT ELEVATION

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

2

NOTES:

1. ALL EQUIPMENT SHALL BE PLACED (VERTICALLY) AS CLOSE AS ALLOWED BY POLE OWNER, WHILE MAINTAINING MINIMUM CLEARANCE REQUIREMENTS.
2. MAINTAIN 6" MIN. CLEARANCE TO GUY WIRE FROM PROPOSED EQUIPMENT.
3. MAINTAIN 4" MIN. OFFSET BETWEEN THE MOUNTING BRACKET FLANGE AND THE POLE
4. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT, AND OTHER EQUIPMENT WILL BE PAINTED NON-GLOSSY SABLE BY SHERWIN WILLIAMS (OR EQUIVALENT)
5. CABLING TO BE INSTALLED IN A TIGHT NEAT MANNER WITHOUT EXCESS CABLE LOOPS
6. NO EXISTING CLIMBING PEGS



PROPOSED FRONT 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

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

COMMSENSE
2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
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2	12/20/17	100% CD
3	02/28/18	100% CD REV

REGISTERED PROFESSIONAL ENGINEER
LEWIS JAMES BURROWS
NO. C64533
Exp. 6/30/19
CIVIL
STATE OF CALIFORNIA

SF HIGHLANDS
BAYWOOD PARK 005

(NEAR) 1175 PARROTT DRIVE
SAN MATEO, CA 94402

ELEVATIONS

A-3

County of San Mateo - Planning and Building Department

ATTACHMENT G

Verizon Wireless • Proposed Small Cell (No. 483409 "Highlands Baywood Park 005")
1175 Parrott Drive • San Mateo County, 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. 483409 "Highlands Baywood Park 005") proposed to be sited in San Mateo County, 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 1175 Parrott Drive in San Mateo County. 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 CommSense, dated February 2, 2018, it is proposed to install one Amphenol Model CUUT070X12F 4-foot tall, tri-directional cylindrical antenna, with two directions activated, on an extension above the top of the 37½-foot utility pole sited in the public right-of-way in front of the single-story residences located at 1163 and 1175 Parrott Drive in unincorporated San Mateo County, near the City of San Mateo. The antenna would employ no downtilt, would be mounted at an effective height of about 47 feet above ground, and would be orientated with its principal directions toward 35°T and 155°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.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation is calculated to be 0.011 mW/cm^2, which is 1.1% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 0.49% 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 1175 Parrott Drive in San Mateo County, 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

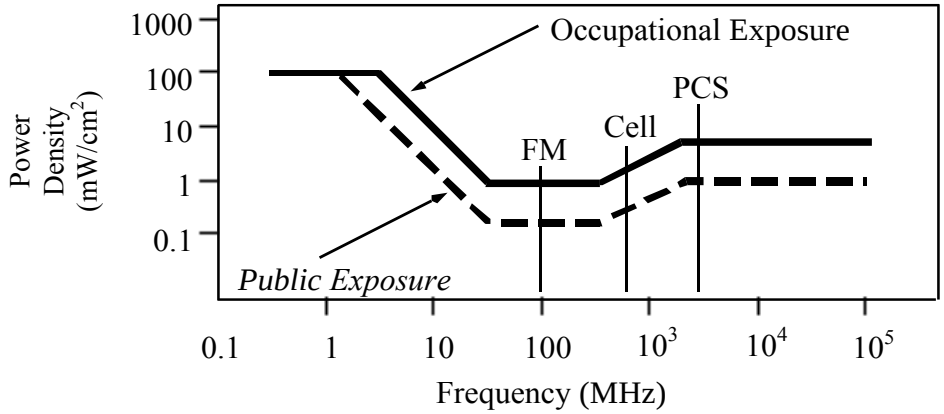
January 10, 2019

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

4746 Clayton Rd.,
Concord, CA., 94521
(925) 408-2159
splanneng@gmail.com
www.planneng.com

February 25, 2019

Modus Inc.
240 Stockton Street
San Francisco, CA 94108

Carrier:	Verizon Wireless
Client Site Number:	SF Highlands BayWood park 005
Site address:	Public Right of Way Adjacent to: (Near) 1175 Parrott Drive San Francisco, CA 94402

PROJECT DESCRIPTION:

The carrier proposes the following scope of work:

- Install (1) new 4' canister antenna on top of utility pole.
- Install (1) new 100A meter on utility pole.
- Install (1) new 7' bayonet extension.
- Install (1) new PRU 2212 on utility pole.
- Install (1) new PRUS32 on utility pole.
- Install (1) new PSU AC 08 & (1) new PSU AC 02 on utility pole.
- Install (1) new COAX conduit from equipment to new canister antenna.
- Install (1) new power conduit from P.O.C to equipment.
- Install (1) new fiber conduit from P.O.C to equipment.
- Install (1) new equipment bracket on utility pole.
- Install (6) new hybrid couplers on utility pole.
- Install (1) new AC panel on utility pole.
- Install (1) new fiber demark box on utility pole.
- Cabling to be installed in a tight neat manner without excess cable loops.
- All VERIZON added appurtenances shall be painted to match pole color (NON-GLOSSY) "SABLE" by Sherwin Williams, or equivalent.

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 5 Doug Fir
- Communication line bundles as listed in the analysis report

REFERENCES:

- Drawings for existing wireless project prepared by COMMSENSE consulting date 2/28/2018
- PG&E pre-flight
- Site Photos

RECOMMENDATIONS:

The wood pole <u>can safely support</u> the proposed scope of work.

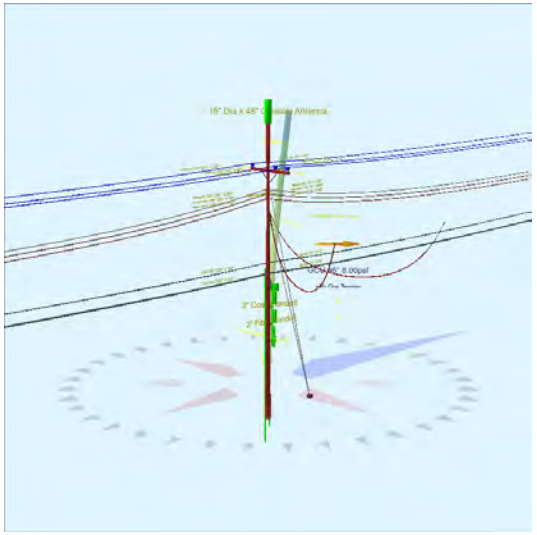
The installation of the proposed Personal Wireless Services facility will not compromise the structure integrity of the utility pole and will be in compliance with any standards imposed by Northern California Joint pole Association in the Operations/Routine Handbook. Additionally, the installation complies 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:	**SF Highlands Baywood Park 005**	Pole Length / Class:	**45 / 5**	Code:	**GO 95**	Structure Type:	**Guyed 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):	**6.00**	Construction Grade:	**A**	Transverse Wind LF:	**1.00**
Aux Data 3	**Unset**	G/L Circumference (in):	**34.66**	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):	**2,877**	Wind Speed (mph):	**55.90**	Pole Factor of Safety:	**4.15**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**8.00**	Vertical Factor of Safety:	**86.02**
Latitude:	**0.000000 Deg**	Longitude:	**0.000000 Deg**	Elevation:	**0 Feet**	Bending Factor of Safety:	**4.20**



Pole Capacity Utilization (%) Crossarm allowance 300 lbs		**Height (ft)**	**Wind Angle (deg)**
Maximum	**64.3**	0.0	45.6
Groundline	**64.3**	0.0	45.6
Vertical	**3.1**	23.3	270.0

Pole Moments (ft-lb) Crossarm allowance 300 lbs		**Load Angle (deg)**	**Wind Angle (deg)**
Max Cap Util	**20,068**	19.1	45.6
Groundline	**20,068**	19.1	45.6
GL Allowable	**31,609**		

Guy System Component Summary				**Load From Worst Wind Angle on Pole**	
Description	**Lead Length (ft)**	**Lead Angle (deg)**	**Height (ft)**	**Nominal Capacity (%)**	**Wind Angle (deg)**
? Single - 14" - Soil Class 4	10.0	90.0		**0.0**	45.6
? 10M (Down)			35.2	**0.0**	45.6
? 10M (Down)			29.7	**0.0**	45.6
			System Capacity Summary:	**Adequate**	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 19.1°

	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	92	10.7	**3,556**	17.7	**11.3**	**305**	274	3	**308**	**10.7**
Comms	79	9.1	**1,771**	8.8	**5.6**	**152**	266	3	**155**	**5.4**
GuyBraces	5	0.6	**180**	0.9	**0.6**	**16**	7	0	**16**	**0.5**
GenericEquipments	401	46.4	**6,809**	33.9	**21.5**	**585**	563	6	**591**	**20.5**
Pole	199	23.0	**4,026**	20.1	**12.7**	**346**	957	10	**356**	**12.4**
Crossarms	80	9.2	**3,375**	16.8	**10.7**	**290**	196	2	**292**	**10.1**
Insulators	8	1.0	**351**	1.8	**1.1**	**30**	47	0	**31**	**1.1**
Pole Load	864	100.0	**20,068**	100.0	**63.5**	**1,723**	2,311	24	**1,747**	**60.7**
Pole Reserve Capacity			**11,541**		**36.5**	**1,154**			**1,130**	**39.3**

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	38.45	50.30	0.3250	3.09	0.107	203.0	185.0	203.1	508	-18,855	-10	134	-18,731
Primary	2 (7/1) ACSR (SPARATE) SHORT SPAN	38.45	50.30	0.3250	3.12	0.107	201.0	355.0	201.1	551	19,240	-10	264	19,495
Primary	2 (7/1) ACSR (SPARATE) SHORT SPAN	38.45	16.92	0.3250	3.09	0.107	203.0	185.0	203.1	508	-18,855	9	134	-18,711
Primary	2 (7/1) ACSR (SPARATE) SHORT SPAN	38.45	16.92	0.3250	3.12	0.107	201.0	355.0	201.1	551	19,240	9	264	19,514
Primary	2 (7/1) ACSR (SPARATE) SHORT SPAN	38.45	50.30	0.3250	3.09	0.107	203.0	185.0	203.1	508	-18,855	19	134	-18,701
Primary	2 (7/1) ACSR (SPARATE) SHORT SPAN	38.45	50.30	0.3250	3.12	0.107	201.0	355.0	201.1	551	19,240	19	264	19,524
Neutral	1/0 COPPER 7 STRAND	34.30	6.25	0.3684	6.42	0.326	203.0	185.0	203.6	341	-11,331	-6	136	-11,201
Neutral	1/0 COPPER 7 STRAND	34.30	6.25	0.3684	6.32	0.326	201.0	355.0	201.5	356	11,117	-6	267	11,379
Secondary	1/0 COPPER 7 STRAND	33.50	6.25	0.3684	6.42	0.326	203.0	185.0	203.6	341	-11,067	-6	133	-10,940
Secondary	1/0 COPPER 7 STRAND	33.50	6.25	0.3684	6.32	0.326	201.0	355.0	201.5	356	10,858	-6	261	11,113

Secondary	1/0 COPPER 7 STRAND	32.70	6.25	0.3684	6.42	0.326	203.0	185.0	203.6	341	-10,803	-6	129	-10,679
Secondary	1/0 COPPER 7 STRAND	32.70	6.25	0.3684	6.32	0.326	201.0	355.0	201.5	356	10,598	-6	255	10,848
Secondary	TRIPLEX 1/0	30.29	5.75	1.0300	0.39	0.399	30.0	61.5	38.8	5	112	1	58	170
Secondary	TRIPLEX 1/0	30.29	5.75	1.0300	0.39	0.399	30.0	116.0	38.8	5	-18	1	292	275
										Totals:	**623**	**6**	**2,726**	**3,354**

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	21.92	6.46	0.2420	7.59	0.104	203.0	185.0	203.1	313	-6,652	2	152	-6,498
CATV	1" CATV	21.87	6.44	1.0000	332.26		203.0	185.0	203.1			5	152	157
Overlashed Bundle	6M	21.92	6.46	0.2420	7.44	0.104	201.0	355.0	201.1	313	6,268	2	299	6,569
CATV	1" CATV	21.87	6.45	1.0000	324.25		201.0	355.0	201.1			5	298	304
Overlashed Bundle	6M	20.08	6.57	0.2420	15.89	0.104	203.0	185.0	203.1	304	-5,918	2	244	-5,672
Telco	TELE 2.0	19.99	6.56	2.0000	2.94		203.0	185.0	203.1			14	243	258
Overlashed Bundle	6M	20.08	6.57	0.2420	15.59	0.104	201.0	355.0	201.1	304	5,570	2	484	6,056
Telco	TELE 2.0	19.99	6.56	2.0000	2.90		201.0	355.0	201.1			14	482	496
										Totals:	**-732**	**47**	**2,355**	**1,671**

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)**
Cylinder	15" Dia x 48" Canister Antenna	47.55	1.82	135.0	0.0	42.00	48.00	12.00	--	14.60	--	1,657	1,659
Box	Telco Box	18.00	5.87	45.0	0.0	10.00	18.00	3.00	9.00	--	4	233	237
Box	4 Hybrid Couplers	17.50	16.40	45.0	0.0	20.00	12.00	12.00	14.00	--	25	234	259
Box	Equipment Brckt 1 Standoff	17.00	6.18	45.0	0.0	1.50	4.00	3.50	4.00	--	1	22	22
Box	RRUS-32	15.53	14.02	45.0	0.0	60.00	25.00	7.00	12.00	--	63	371	434
Cylinder	3" Coax Conduit	14.75	6.32	120.0	0.0	64.00	384.00	12.00	--	3.50	--	985	979
Box	Equipment Brckt 1 Standoff	14.00	6.37	45.0	0.0	1.50	4.00	3.50	4.00	--	1	18	19
Box	Equipment Brckt 1	12.50	9.47	45.0	0.0	127.00	132.00	2.50	8.00	--	90	1,054	1,144
Box	RRUS-32	12.30	14.23	45.0	0.0	60.00	25.00	7.00	12.00	--	64	294	358
Cylinder	2" Fiber Conduit	11.75	5.95	100.0	0.0	57.00	456.00	12.00	--	2.38	--	632	637
Box	Equipment Brckt 1 Standoff	11.00	6.56	45.0	0.0	1.50	4.00	3.50	4.00	--	1	14	15
Box	Disconnect + Fiber 3	9.80	13.39	45.0	0.0	20.00	13.00	5.00	23.00	--	20	234	254
Box	Meter	8.00	13.51	45.0	0.0	50.00	24.00	5.00	12.00	--	51	184	234
Box	Equipment Brckt 1 Standoff	7.97	6.76	45.0	0.0	1.50	4.00	3.50	4.00	--	1	10	11
Cylinder	1.5" Power Conduit	5.22	6.13	220.0	0.0	47.00	372.00	12.00	--	1.90	--	183	161
										Totals:	**298**	**6,125**	**6,423**

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)
Pole Extension	Pole Extension	42.50	0.15	0.0	0.0	142.00	84.00	5.75	5.75	2	1,633	1,634
Normal	9HS (Heavy - 4 Post) 4-3/4" x 5-3/4" x 9'-0"	37.50	5.49	0.0	0.0	40.00	5.75	4.75	108.00	17	1,389	1,407
Pole Extension	3-Wire Secondary Spool Rack	33.50	4.41	270.0	270.0	14.00	24.00	2.00	3.00	-2	145	143
									Totals:	**17**	**3,167**	**3,184**

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)	37.74	-50.00	276.3	0.0	11.00	5.75	8.50	-10	92	82
Post	Post 8.5 (P/N 1)	37.74	16.00	71.0	0.0	11.00	5.75	8.50	10	92	102
Post	Post 8.5 (P/N 1)	37.74	50.00	83.7	0.0	11.00	5.75	8.50	20	92	112
Spool	Spool Insulator - 20 kV	34.30	4.00	270.0	0.0	1.00	2.50	2.12	0	9	9
Spool	Spool Insulator - 20 kV	33.50	4.00	270.0	0.0	1.00	2.50	2.12	0	9	9
Spool	Spool Insulator - 20 kV	32.70	4.00	270.0	0.0	1.00	2.50	2.12	0	9	9
Spool	Spool Insulator - 20 kV	30.29	0.00	90.0	90.0	1.00	2.50	2.12	0	8	8
Bolt	Three Bolt	21.92	0.00	90.0	0.0	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	20.08	0.00	90.0	0.0	5.00	3.00	0.00	1	0	1
								Totals:	**21**	**310**	**331**

Guy Wire and Brace		Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
10M	Down	35.16	0.00	10.00	0.306	75.00	90.0	73.8	0.165	36.48	0.00	
10M	Down	29.66	0.00	10.00	0.306	75.00	90.0	71.1	0.165	31.21	0.00	

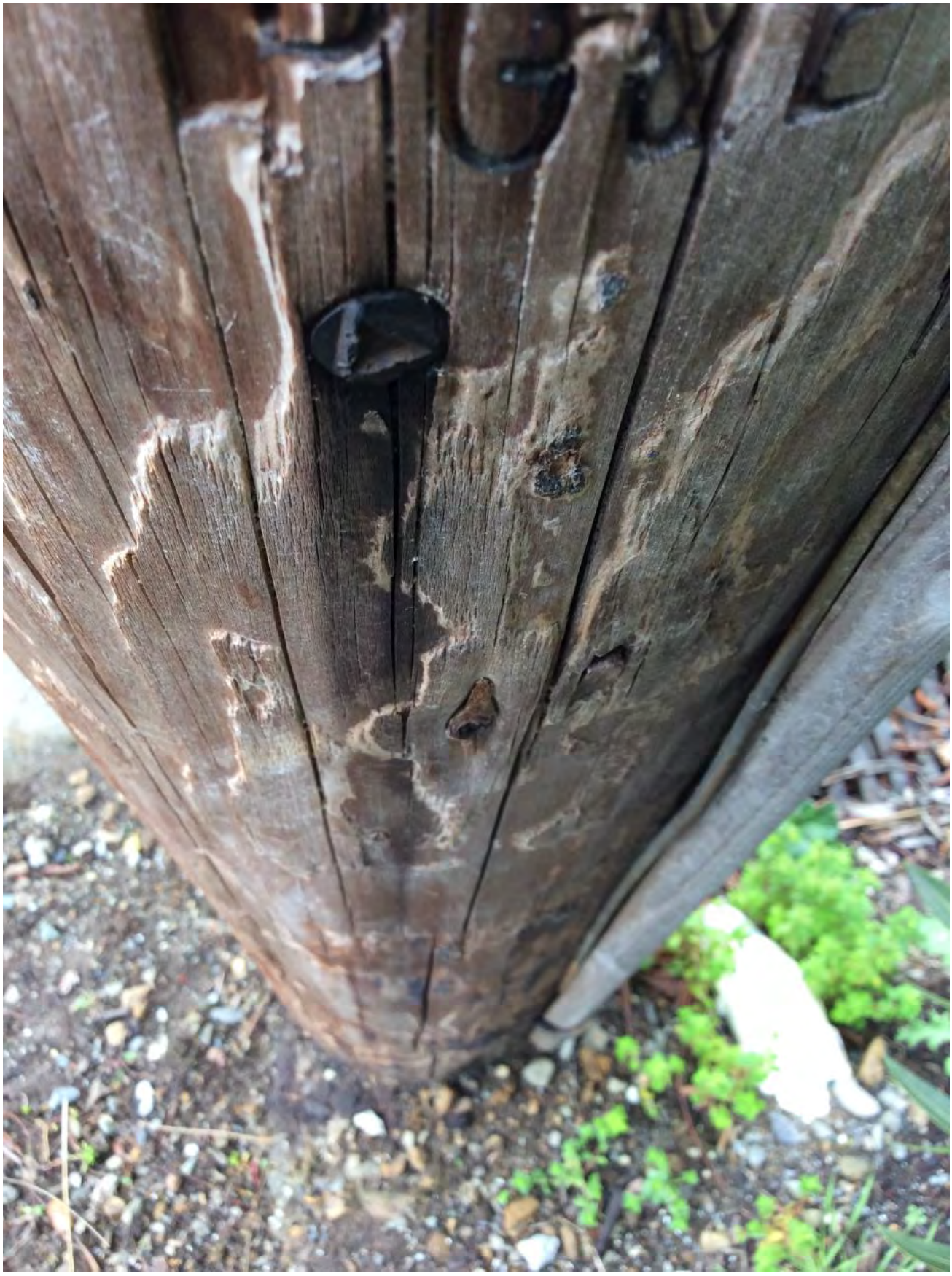
Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*[2] (lbs)	Maximum Tension[2] (lbs)	Applied Tension[3] (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL[3] (ft-lb)
10M	Down	2.30e+7	10,000	0.50	5,000	700	2,521	2,521	0	0	0	0	98
10M	Down	2.30e+7	10,000	0.50	5,000	700	2,276	2,276	0	0	0	0	72
									Totals:	**0**	**0**	**0**	**170**

Anchor/Rod Load Summary	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load[2] (lbs)	Load at Pole MCU[3] (lbs)	Max Required Capacity[2] (%)
Single - 14" - Soil Class 4	0.00	10.00	90.0	31,000	0.50	15,500	4,796	0	30.9

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
0.71	23.26	34.04	10.02	8.65	6.05	11.04	1.60e+6	60.00	57.00	39.00	74,852	**745.36**	**32.26**


Highlands 5 RF select okay




MCF
E-92
DFP60
6145
BCDE


JP
JA
OSMOSE
INSP. 2006
WOODFUME
OSMOSE
WOODFUME


DAVEY
INSPECTED

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.

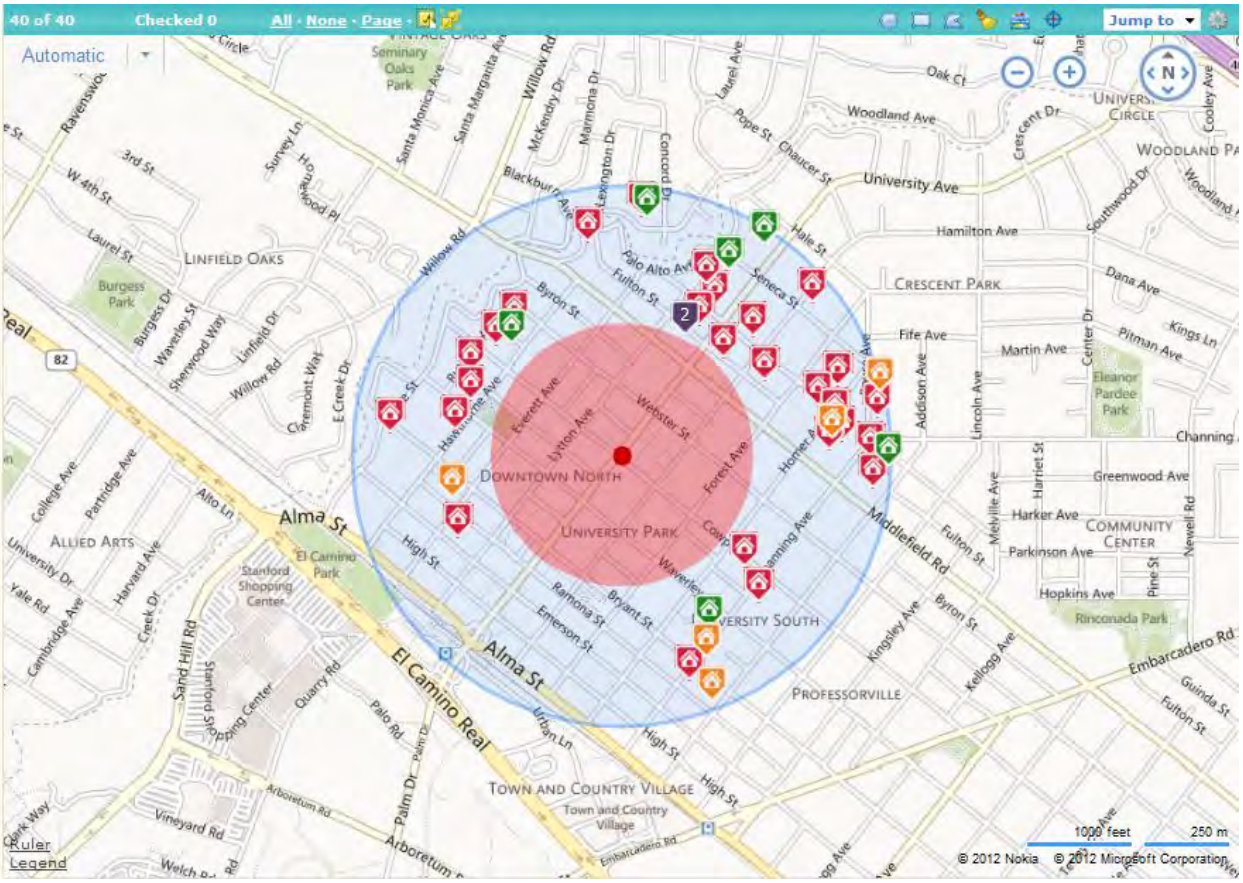
See Appendix B for more information about these organizations.

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

From: Gary Trott 2 [mailto:gary_trott@comcast.net]
Sent: Friday, April 19, 2019 4:51 PM
To: Laura Richstone <lrichstone@smcgov.org>; chandra.simon@gmail.com; 'Laurie Meisenheimer' <prapin@att.net>; 'William Fox' <william.w.fox@gmail.com>; kanayujuico@gmail.com; pjbayley@yahoo.com; yanli.mi@gmail.com; ztokyo@sbcglobal.net; tomfinke2010@gmail.com; zmhitchcock@gmail.com; liesjenicolas@gmail.com; laureltnagle@gmail.com; dylanashbrook@gmail.com; pamela@merkadeau.com; smalllittlet@yahoo.com
Cc: 'Gary Trott' <gary_trott@comcast.net>
Subject: RE: Small cell application PLN 2018-00079 (1175 Parrott Drive) Fire and RF concerns public input

Dear Ms Laura Richstone 19-April-2019

Re: PLN 2018-00079 at 1175 Parrott Dr.
References [1] https://spaces.hightail.com/receive/ya899YqnSi
[A] Highlands Baywood Park 005 - Alternatives Analysis.pdf
[B] Highlands Baywood Park 005 RF Exposure Study - H&E.pd
[C] Highlands Baywood Park 005_Side Mount Analysis.pdf
[D] PLN 2018-00079 Photo sims.pdf
[E] PLN 2018-00079 Plans.pdf
[F] SF Highlands Baywood Park 005 OCALC Stamped Letter.pdf
[2] State of Ca. Rules for Overhead Electric Line Construction General Order No. 95
[3] Bulletin No. 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation" August 1997

I still maintain the FCC "Small Cell" order FCC 18-133 and the California Public Utilities Code Section 7901, do not absolve the San Mateo County Zoning Commission from taking responsibility to protect the public welfare of people, property, and the environment from hazards associated with development of new wireless telecommunication facilities. It even states that requirement on the San Mateo County applicate application form.

The revised application has made important strides in correcting and updating the mechanical pole top information. At the same time the application again ignored GO-95 requirements that would minimize the fire danger due to shorts on the power lines outlined in my previous 16-Jan-2019 analysis. Furthermore, the RF hazard analysis is incomplete. The guy wire is attached in the high hazard area of the antenna. It extends to the ground level where people (kids and gardeners) can touch the guy wire. Yet the hazard was not assessed as per the FCC requirements. See below for specific details and code requirements.

I would be happy to raise these issues at a future public zoning officer meeting.

Regards
Gary Trott

Specifics:

1) Site and mechanical Drawings.

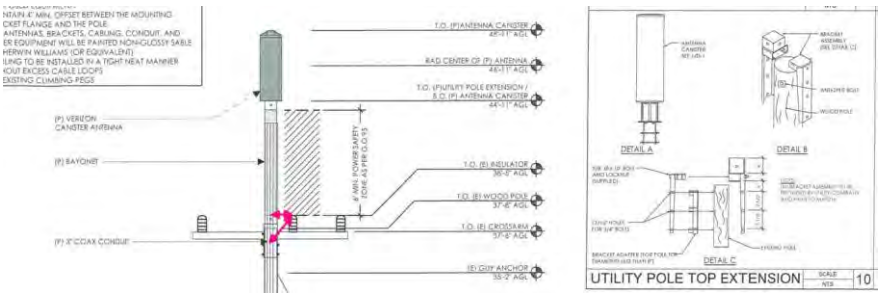
1D) Fire Concern: Powerline conductor distance with respect to metal brackets for the Utility Pole Top Extension, can and will, contribute to dry band arcing and leakage current. Thus resulting in a pole fire adjacent to a rural RM zone area with high fuel loading.

During the summer months dust and other contaminants will cling to the surface of the pole wood and insulators. When combined with moisture from normal seasonal fog the result will precipitate dry band arcing forming a path for leakage current. The current path will be concentrated through the closest metallic parts. Over time the leakage current will

increase resulting in wood pole fire. There are previous reports of half a dozen such fires within the Baywood Park and Highlands neighborhood in the past. One of which happened at my house.

In the drawings [1E pg A3] the cross arm holding the center power line together with the metallic Utility Pole Top Extension bracket assembly is an example of a metal object in close proximity to the energized electrical conductors. Furthermore, it is a violation of GO-95 codes. See the red arrows in the figure below and compare to the GO-95 code section:

> *GO 95 Sec IX, 94.4C, D, and Fig 94.1 "support element" top of pole antenna*
> *94.4 Clearances*
> *"C. Antennas, associated equipment (e.g. terminations, enclosures) and support elements installed above supply lines and/or communication lines of different ownership attached to the same structure shall maintain the vertical clearances specified in* ***Rule 38, Table 2, Case 21, Columns A - H.***
>
> *Note: Other vertical clearances between communication equipment and supply lines are specified in Rule 92.1-F(2)".*
>
> ➔ Table 2, Case 21 Column A says the spacing shown by the red arrows should be not less than 24inches to the metal Utility Pole Top Extension.



Of course, an easy solution is to lower the PG&E cross arm by 24 inches from the pole top. But it is not considered in the applicate design.

2) RF-EME Compliance and exposure hazard to people at ground level

Observe that the pole guy wires on the 1175 Parrott Dr. pole are not included in this project radio frequency report.[1E, 1B] The pole guy wire is attached at the pole in the high hazard RF zone near the new antenna. Some radiation will be absorbed and transferred by the metal guy wire to a location near ground level. Consider, what is the hazard to a person (gardener), in terms of the amount of RF energy from the new antenna, transferred to someone who touches the pole guy wire, on the ground?

Thus, the new certified analysis by the Hammett & Edison Inc [1B] is incomplete. It does an adequate job of estimating the direct, through the air, RF exposure hazard to show it is below the FCC limits. However, there is no analysis of hot spots or other hazards associated with reflections and re-radiation from metal objects in the vicinity of the antenna.[See ref. 3 pg 36 and definitions within of hot spots and re-radiation]

> *"When considering the contributions to field strength or power density from other RF sources, care should be taken to ensure that such variables as reflection and re-radiation are considered. In cases involving very complex sites predictions of RF fields may not be possible, and a measurement may be necessary."*

Therefore the RF safety of people in the presence of the guy wire is not assured. Taken together with the fire hazard discussed above, the application should be returned to the applicant for revision.

Regards
Gary Trott

From: Jacob Ritvo [mailto:jacobritvo@gmail.com]
Sent: Sunday, April 07, 2019 9:19 PM
To: Dave Pine <dpine@smcgov.org>; Laura Richstone <lrichstone@smcgov.org>; Deb Robinson <drobinson@smcgov.org>
Cc: highlandscapresident@gmail.com
Subject: Zoning permit hearing PLN 2018-00071 and PLN 2018-00079

Dear San Mateo County Supervisors,

I object to the proposed placement of 5G cell phone antennas on telephone poles close to my home in the Highlands neighborhood of Unincorporated San Mateo County and County Service Area #1.

I am writing in supports of your letter to the FCC dated September 19, 2018. I support San Mateo County ordinances that appropriately direct placement to alternative locations away from residents' homes, and I oppose overreach by the Federal Communications Commission (FCC) that would limit our local government's ability regulate, and our community's ability to review, the location and placement of such new infrastructure.

I am very concerned about the evidenced health risks, especially to children living within such proximity to these 5G antennas. Just last week, Brussels, Belgium became the first major city to stop 5G expansion over health concerns.

Please let me know what solutions the Board is considering in order to resolve this important matter for our community, and if there is anything I can do as well. Thank you for your efforts on behalf of San Mateo County residents.

Sincerely,
Jacob Ritvo
5 Powhatan Place
April 7, 2019

From: Chandra Simon Ritvo [mailto:chandra.simon@gmail.com]
Sent: Wednesday, March 20, 2019 9:08 PM
To: Debra Robinson <drobinson@smcgov.org>
Subject: Zoning permit hearing: PLN 2018-00071 and PLN 2018-00079

Dear Ms. Robinson,

As a resident of the San Mateo Highlands, I am writing to voice my objection to the proposal to place 5G antennas on telephone poles near the Highlands and County Service Area 1. As the mother of two young boys, I am very concerned about the (scientifically backed) health risks, especially to children of living within such proximity to these 5G antennas.

I support the County Board of Supervisors' letter to the FCC (Sept. 19, 2018), and I support San Mateo County ordinances that appropriately direct placement to alternative locations away from resident's homes. I oppose the FCC overreach that would limit local government regulations and public review of the location and placement of new infrastructure.

Thank you for your efforts to protect the health and well-being of San Mateo County residents.

Chandra Ritvo
5 Powhatan Place, San Mateo

From: Laurie Meisenheimer [mailto:prapin@att.net]
Sent: Monday, March 04, 2019 11:28 AM
To: Dave Pine <dpine@smcgov.org>
Cc: HighlandsCAPresident@gmail.com; Debra Robinson <drobinson@smcgov.org>; Laura Richstone <lrichstone@smcgov.org>
Subject: PLN 2018-00071 & PLN 2018-00079 Cell phone equipment placement

Dear Supervisor Pine and Board of Supervisors,

I am writing in support of your excellent September 19th letter to Secretary Dortch of the FCC. The FCC's ruling was indeed counterproductive and not well thought out in terms of benefitting the public. I urge you and the and County staff to continue to keep these excessive pieces of equipment in carefully selected sites and most specifically off of our telephone poles. We need your help and vigilance on this. The expediting of 5G service should not come at the expense of making neighborhoods ugly. And far more importantly, the placement of the additional equipment should not come at the cost of public safety. We have seen the devastating tragedies of the California wildfires and should not ever permit this amount of additional equipment to be added to telephone poles. There have been several documented cases of telephone pole fires and sparking in the last several years in the neighborhoods of the San Mateo Highlands and the area around Parrott Drive. As you know, we are adjacent to fields and heavily wooded areas that need to be protected from fires and sparking!! The poles and equipment are old, and PG &E is already struggling to maintain its equipment properly. Adding this amount of additional equipment to our neighborhood streets on the telephone poles is not helping to prevent wildfires. Keeping the equipment on co-locations in public locations is within the scope of power of the County and will help to keep us safe.

Sincerely,
Laurie Meisenheimer
San Mateo, CA

From: William Fox [mailto:william.w.fox@gmail.com]
Sent: Friday, March 01, 2019 3:26 PM
To: Dave Pine <dpine@smcgov.org>; Carole Groom <cgroom@smcgov.org>; Don Horsley <dhorsley@smcgov.org>; Warren Slocum <WSlocum@smcgov.org>; David Canepa <dcanepa@smcgov.org>
Cc: Laura Richstone <lrichstone@smcgov.org>; Debra Robinson <drobinson@smcgov.org>; HighlandsCAPresident@gmail.com
Subject: Zoning Permit Hearing: PLN 2018-00071 and PLN 2018-00079

Dear Board of Supervisors of the County of San Mateo:

I object to the proposed placement of 5G wireless infrastructure equipment on top of utility poles in such close proximity to residential homes in Unincorporated San Mateo Highlands and County Service Area #1.

I support your letter to the Federal Communications Commission (FCC) dated September 19, 2018. I support San Mateo County ordinances that appropriately direct placement of similar equipment to alternative locations, away from residential homes. I oppose FCC government overreach that would limit the enforcement of local government regulations and public review of the location and placement of new wireless infrastructure.

Please let me know what solutions the Board is considering in order to resolve this important issue for the taxpayers and residents of San Mateo County. Thank you for your efforts in this matter.

Bill Fox
1719 Monticello Rd, San Mateo, CA 94402
March 1, 2019

From: Kana Yujuico [mailto:kanayujuico@gmail.com]
Sent: Thursday, February 21, 2019 5:20 PM
To: Dave Pine <dpine@smcgov.org>; Laura Richstone <lrichstone@smcgov.org>; Debra Robinson <drobinson@smcgov.org>

Cc: HighlandsCAPresident@gmail.com
Subject: PLN 2018-00071 & PLN 2018-00079

Dear San Mateo County Supervisors,

I object to the proposed placement of 5G cell phone antennas on telephone poles close to resident's homes in Unincorporated San Mateo Highlands and County Service Area #1.

I am writing in support of the County Board of Supervisors' letter to the FCC dated September 19, 2018. I support San Mateo County ordinances that appropriately direct placement to alternative locations away from resident's homes. I oppose Federal Communications Commission (FCC) government overreach that would limit local government regulations and public review of the location and placement of new infrastructure.

Please let me know what solutions the Board is considering in order to resolve this important matter for taxpayers and residents of San Mateo County. Thank you for your efforts on behalf of San Mateo County residents.

Kana Yujuico
35 White Plains Ct, San Mateo, CA 94402

From: peter bayley [mailto:pjbayley@yahoo.com]
Sent: Monday, February 18, 2019 12:45 PM
To: Dave Pine <dpine@smcgov.org>; Laura Richstone <lrichstone@smcgov.org>; Debra Robinson <drobinson@smcgov.org>; Liesje Nicolas <highlandscapresident@gmail.com>
Subject: Fopposition Letter for Unsafe Cell Phone Antenna to Highlands Neighborhood PLN 2018-00071 and PLN 2018-00079)

Name: Peter Bayley
Date: 18 Feb 2019
Address: 1591 Lexington Ave, San Mateo, CA, 94402

To San Mateo County Supervisor Dave Pine, District 1
CC: Carole Groom, President of San Mateo County Board of Supervisors
Supervisor Don Horsley
Supervisor Warren Slocum
Supervisor David Canepa
San Mateo County Planning Department
Steve Monowitz, Director
Laura Richstone, SMC Planner
Debra Robertson, SMC Zoning Hearing Secretary

Re: PLN 2018-00071 and PLN 2018-00079

Dear San Mateo County Supervisors,

I object to the proposed placement of 5G cell phone antennas on telephone poles close to resident's homes in unincorporated San Mateo Highlands and County Service Area #1.

I am writing in support of the County Board of Supervisor's letter to the FCC dated September 19. 2018. I support San Mateo County ordiances that appropriately direct placement to alternative locations away from resident's homes. I oppose Federal Communications Commission (FCC) government overeach that would limit local government regulations and public review of the location and placement of new infrastructure.

Please let me know what solutions the Board is considering in order to resolve this important matter for taxpayers and residents of San Mateo County and if there is anything I can do as well. Thank you for your efforts on behalf of San Mateo County residents.

Best regards,

Peter Bayley

From: Yanli Mi [mailto:yanli.mi@gmail.com]
Sent: Monday, February 18, 2019 12:26 PM
To: Dave Pine <dpine@smcgov.org>; Laura Richstone <lrichstone@smcgov.org>; Debra Robinson <drobinson@smcgov.org>; HighlandsCAPresident@gmail.com
Subject: Opposition Letter for Unsafe Cell Phone Antenna to Highlands Neighborhood PLN 2018-00071 and PLN 2018-00079)

Name: Yanli Mi
Date: 18 Feb 2019
Address: 1591 Lexington Ave, San Mateo, CA, 94402

To San Mateo County Supervisor Dave Pine, District 1
CC: Carole Groom, President of San Mateo County Board of Supervisors
Supervisor Don Horsley
Supervisor Warren Slocum
Supervisor David Canepa
San Mateo County Planning Department
Steve Monowitz, Director
Laura Richstone, SMC Planner
Debra Robertson, SMC Zoning Hearing Secretary

Re: PLN 2018-00071 and PLN 2018-00079

Dear San Mateo County Supervisors,

I object to the proposed placement of 5G cell phone antennas on telephone poles close to resident's homes in unincorporated San Mateo Highlands and County Service Area #1.

I am writing in support of the County Board of Supervisor's letter to the FCC dated September 19. 2018. I support San Mateo County ordiances that appropriately direct placement to alternative locations away from resident's homes. I oppose Federal Communications Commission (FCC) government overeach that would limit local government regulations and public review of the location and placement of new infrastructure.

Please let me know what solutions the Board is considering in order to resolve this important matter for taxpayers and residents of San Mateo County and if there is anything I can do as well. Thank you for your efforts on behalf of San Mateo County residents.

Best regards,

Yanli Mi

From: matt Zal [mailto:ztokyo@sbcglobal.net]
Sent: Thursday, February 14, 2019 12:46 PM
To: Laura Richstone <lrichstone@smcgov.org>
Subject: PLN 2018-00071 & 2018-00079

We object to the proposed placement of 5G cell phone antennas on telephone poles close to resident's homes in Unincorporated San Mateo Highlands and County Service Area #1.

I am writing in support of the County Board of Supervisors' letter to the FCC dated Sept 19, 2018. I support San Mateo County ordinances that appropriately direct placement to alternative locations away from resident's homes. I oppose FCC government overreach that would limit local government regulations and public review of the location and placement of new Infrastructure.

Please let me know what solutions the Board is considering in order to resolve this important matter for taxpayers and residents of San Mateo County and if there is anything I can do as well.

Finally, please address the issue of electromagnetic radiation emitted by these transmitters. If you feel this radiation is perfectly safe, you can re-assure your voters by installing a transmitter next to your bedroom, and keeping us updated on you and your family's health.

Thank you.
Matthew & Kazuko Aida Zalewski
1425 Lexington Ave, San Mateo 94402

From: Tom Finke [mailto:tomfinke2010@gmail.com]
Sent: Thursday, January 31, 2019 7:36 PM
To: Laura Richstone <lrichstone@smcgov.org>
Cc: Debra Robinson <drobinson@smcgov.org>; Dave Pine <dpine@smcgov.org>; HighlandsCAPresident@gmail.com; HighlandsCAPres@gmail.com; Christine Tam <ctamsm@gmail.com>
Subject: Zoning permit hearing: PLN 2018-00071 and PLN 2018-00079

Hello Ms. Richstone,

Regarding the upcoming zoning permit hearing for the proposed 5G cell phone tower antennas on the telephone poles in San Mateo Highlands, I would like to add my voice to the community's disapproval of the project. I think the antennas are too big and unsightly for the streets of our residential neighborhood. An alternative idea would be to place the antennas on the various water towers in the area.

Thank you!

Tom Finke
San Mateo Highlands Resident

2067 New Brunswick Drive, San Mateo, CA 94402
650 571 6557

From: Gary Trott 2 [mailto:gary_trott@comcast.net]
Sent: Wednesday, January 16, 2019 4:09 PM
To: Laura Richstone <lrichstone@smcgov.org>
Cc: Gary_trott@comcast.net; 'Nagle Laurel' <laureltnagle@gmail.com>; 'Dylan Ashbrook' <dylanashbrook@gmail.com>; 'Pamela Merkadeau' <pamela@merkadeau.com>; Steve Monowitz <smonowitz@smcgov.org>; Dave Pine <dpine@smcgov.org>; Debra Robinson <drobinson@smcgov.org>; lgrote@smcgov.org; Liesje Nicolas <liesjenicolas@gmail.com>; 'Tania L' <smalllittlet@yahoo.com>
Subject: Re: PLN 2018-00079 Fire, property damage, and RF Concerns from wireless telecomm. facility at 1175 Parrott Dr.

Dear Ms Laura Richstone 16-Jan-2019

Re: PLN 2018-00079 at 1175 Parrott Dr.
References

[1] Document Item 1 Staff Report 15-Nov-2018
https://planning.smcgov.org/sites/planning.smcgov.org/files/events/PLNs2018.00071.FINAL__0.pdf

The FCC "Small Cell" order FCC 18-133 and the California Public Utilities Code Section 7901, do not absolve the San Mateo County Zoning Commission from taking responsibility to protect the public welfare of people, property, and the environment from hazards associated with development of new wireless telecommunication facilities. It even states that requirement on the applicate application form. However, the data collected and shared in the staff report of 15-November-2018 for project PLN2018-00079 has important errors, omissions, and is lacking validation criteria related to the general safety of the installation.

My original safety concerns are in the 2-December email at the very bottom and specific updates containing more data are just below.
I would be happy to raise these issues at the 21-February-2019 public meeting if they are not addressed at the staff level.

Regards
Gary Trott

Specifics :

1) Site and mechanical drawings.

1A: Concern – **The pole could break in storm winds** causing damage to local cars or buildings.
There is no justification or verification the pole can withstand the extra load of the antenna.
It is a GO-95 code requirement.

> *See GO-95 Rule 94.11 Pole Overtuning Calculation revised decision no. 16-01-046.*
> *A pole overturning calculation shall be performed before a pole-top antenna installation is added to a pole. The calculation shall use a safety factor of 3.0 for Grade A construction, and 2.0 for Grades B and C construction, and incorporate loads for the entire pole structure, including all existing attachments and guys (if any), and all elements of the planned pole-top antenna installation. After the installation, the safety factor shall comply with Rule 44.3.*
>
> *Note: The purpose of this calculation is to ensure that the pole overturning moment does not exceed the capacity of the soil, rock, or other material in which the pole is embedded to resist the pole overturning moment.*

1B) Concern: Damaged pole top. The pole has not been checked for fire damage at the pole top. This is common in our neighborhood due to summer dust plus coastal fog creating shorts between the wires igniting the dry old wooden poles. The fire will weaken the pole top at the connection point for the new mini-cell tower.

➔The project must have a written certification from PG&E that the pole is not damaged from fire or dry rot. As we have seen from all the PG&E induced fires, verbal or implicit assumptions of PG&E level of responsibility are not sufficient to protect the public safety. Get something in writing.

1C) Covers on ancillary pole installed equipment.

The drawings do not contain UL or NEMA certifications that the equipment covers will not blow off during winter storms and damage local structures. Only the antenna has such documented information

1D) Concern: Powerline conductor distance with respect to metal brackets for the PVC conduit, or the Utility Pole Top metal extension, can and will start fires.

i) Drawings A-3 and A-4 (Ref#1 pgs 50 & 51 are incorrect.

- There is a second set of power line conductors (not shown) below the cross arm. (See visual photos)
- A-3 and A-4 do not match cross arm height position with respect to the pole top extension metal bracket. (37 ft versus 36.6ft)

ii) Drawing A-3 of pole top extension metal bracket conductor distance is in violation of code GO-95. Shorts will increase the fire hazard. See red dot area in attached image.

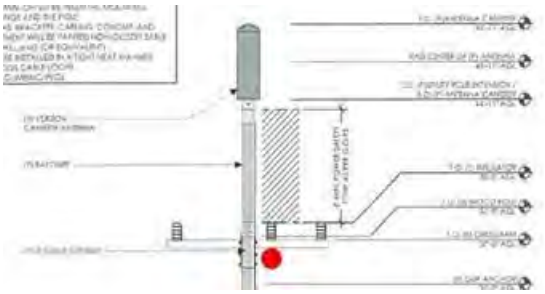
See GO 95 Sec IX, 94.4C, D, and Fig 94.1 "support element" top of pole antenna

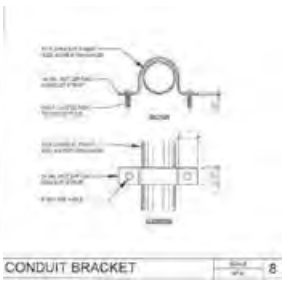
94.4 Clearances

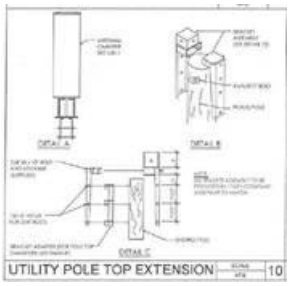
C. Antennas, associated equipment (e.g. terminations, enclosures) and support elements installed above supply lines and/or communication lines of different ownership attached to the same structure shall maintain the vertical clearances specified in Rule 38, Table 2, Case 21, Columns A - H.

Note: Other vertical clearances between communication equipment and supply lines are specified in Rule 92.1-F(2).

D. Antennas, associated equipment (e.g. terminations, enclosures) and support elements, installed above supply lines and/or communication lines of different ownership, shall maintain the radial clearances from unattached supply and communication lines specified in Rule 38, Table 2, Case 3.







2) RF-EME compliance RF energy and lack of validation.

Ref [1] Guy wire drawing C-1 pg48, photo pg54, and RF-EME report pgs60-76

RF CONCERN: The RF-EME report lacks validation. How do we know it was done correctly to protect the public safety? There is no expert review. For example, the report does not incorporate the pole guy wires. Which are critical passive, RF electrical elements for this installation accessible by a public person.

Observe that the pole guy wires on the 1175 Parrott Dr. pole are not included in this project radio frequency report. Consider, what is the hazard to a person (gardener), in terms of the amount of RF energy from the new antenna, transferred to someone who touches the pole guy wire on the ground?

2A) It is well known that a vertical conducting wire, stuck into the ground will act like an antenna or receiver. Manifestations include, lightning rods, Ham radio antennas, and aluminum foil sparking in microwave oven. Each is operating in a different part of the RF spectrum. The RF report uses "RoofView" software to estimate the RF power density surrounding the antenna. At ground level, the RF hazard through the air is at a large enough distances to be below the FCC safe limits for RF emissions. So a person on the sidewalk, below the antenna, is safe.

But why don't metal objects show up in the calculations? According to the release notes for Roofview version 4.9 (see link) the software uses one square foot pixels. This means all of the metal parts and equipment on the pole are invisible

to the calculations as the top cross sections are dimensionally less than one foot. However, from basic physical principles, objects larger than 1/10th the wavelength have a progressively larger effect on RF emissions, reflections and absorption. (Note for this application 700 MHz =1.4ft, 2100 MHz=0.46 ft wavelength). So while the pole metal boxes might not impact the calculations the guy wires, each longer than ***30 ft***, and grounded, will directly absorb RF energy from the antenna. The top end of the guy wires are well within the hazard area defined by the warning sign placements. So the pole guy wires are in a high field RF environment ***and*** can electrically conduct absorbed energy directly down to ground level. Similar to a lighting rod. Given the metal resistance of the pole guy wire is finite, there is some voltage potential developed along the wire. The voltage will be high near the antenna and near zero at ground level. A person can easily touch the guy wire between 4ft and 10ft for pruning bushes. Thus, there will be some voltage present. Where is the calculation, or verification by measurement, showing a person touching the guy wire above the ground will be safe from the 700MHz/2000MHz induced voltages? Will the skin touching the wire be heated like food in a microwave?

Therefore , the hazard to the public has not been evaluated or validated as safe in the RF model if a person is touching the pole guy wires 5ft-10ft above ground level.

2B) The material of the caution sign is metal. [Ref#1 pg 52 drawing D-1] So it can cause fires if it is implicit in an electrical short event. In the RF report, pg74, the caution sign is shown to be posted 12' below the antenna *at the junction* of the cross arm. That is the worst case position for causing shorts between the power line conductors. It is violation of the GO-95 codes. See above **1D ii)**

As a general note the grid size must be included in the RF report. As frequencies go up for 5G installations the surrounding metal objects must be incorporated into the model as absorbers or reflectors/redirectors of RF energy.

3) Justifiable need.[Ref#1, pg 9]
Finally, what data was provided by the applicant to justify the staff comment the installation will "increase clarity, range, and capacity"? Especially as the staff indicated propagation maps, 10-year plans, and co-location information of other carriers could not be requested due to the CA Public Utilities code sec. 7901 due to recent legal developments? [See Ref 1 pg 5]. What is the benefit to the public of having the antenna installed based on data?

From: Gary Trott 2 <gary_trott@comcast.net>
Sent: Sunday, December 2, 2018 8:53 PM
To: drobinson@smcgov.org; lrichstone@smcgov.org
Cc: 'Gary Trott' <gary_trott@comcast.net>
Subject: PLN2018-00071 and PLN2018-00079

Dear Ms Laura Richstone

Date: 2-Dec-18
RE: Projects PLN2018-00071 and PLN2018-00079 continued from the 15-November-2018 meeting.

References
[1] Document Item 1 Staff Report from
https://planning.smcgov.org/sites/planning.smcgov.org/files/events/PLNs2018.00071.FINAL__0.pdf
[2] SM County Zoning Regulations May 2018

Below are my concerns about the new wireless telecommunications facilities originally scheduled for a public hearing on 15-November-2108.

Regards
Gary Trott

Concerns.

I realize the installation of new wireless telecommunications equipment must comply with the recent FCC "Small Cell" order FCC 18-133 and the California Public Utilities Code Section 7901. However, that does not relieve the San Mateo County Planning Commission of the responsibility to protect the public safety of people, property, and the environment from new development activities. To that end the applicant should be required to provide documented means to ensure and verify the installation and equipment will cause no hazard to the local surroundings. I would be happy to raise these issues at a future public meeting if they are not addressed at the staff level.

Concerns General.

Sec 4a Staff finding statement "…will not be…Detrimental to public welfare or injurious to property. . ." [Ref#1 pg8] is not fully vetted for all hazards.

1) Site Locations.

A) The chosen pole location selected for both projects consists of the oldest PG&E poles in the area. New poles always have thicker diameters to be stronger. In heavy winter storm conditions the old pole could mechanically break during winter storms and cause damage to the local houses due to the extra wind/rain load of the new tower. I did not see any written inspections or certifications that the identified poles could withstand 125 mph winds and 86lbf loads with the cell tower extension. [see Ref #1 pg52 Antenna box for an example certification on the antenna shroud]

B) Check for fire damage at pole tops. This is common in our neighborhood due to summer dust plus coastal fog creating shorts between the wires igniting the dry old wooden poles. The fire will weaken the pole top at the connection point for the new mini-cell tower.

➔Thus the project must have a written certification from PG&E that the pole can withstand the high wind & water loads with the extended height. As we have seen from all the PG&E induced fires, verbal or implicit assumptions of PG&E level of responsibility are not sufficient to protect the public safety. Also see concern #6 below for new fire hazards.

2) Covers on ancillary equipment.

A similar concern is the covers of all the auxiliary equipment boxes.
Where is the UL listed certification or NEMA certification that the covers will not fly off and damage houses in the local area during winter storm wind/rain conditions?

➔ Ask the applicant for proper UL labeling with respect to wind/rain load hazards on the drawings

3) RF -EME compliance verification

A radio frequency report was created for each of the locations and reviewed by certified by a professional engineer.
Where is the verification that the model geometry set up and simulation was done correctly?
For example look at the Roofview Export files used for the simulations. From the mechanical drawings and site view, the PG&E pole wires and auxiliary metallic boxes are very different at each site. None of the other metallic structures for the ancillary equipment was incorporated in the models. [See Ref 1 pgs 46 and 76]. The simulation model results, as provided, are incomplete with respect to the incorporated site geometry, especially metallic, or conducting structures that impact radiation fields. This is especially import for ground planes. Note PLN2018-00071 does not use grounding rods like PLN2018-00079. A simulation model assumes a solid ground plane. Without a solid ground plane the simulation model provides invalid results that do not apply to the actual installation.

➔ Please ask for written verification that that geometry and metallic conducting elements (boxes, electrical coax cable, guy wires, and ground planes) are property included in the simulation models to verify public safety from RF exposure for each site specific geometry.

4) Compliance with the Use Permit Findings sec 4b. Staff recommendation [Ref 1 pg 9]
What data was used for the staff determination that installation will "increase clarity, range, and capacity" at these locations given that previously the county said propagation maps and 10year plans and co-location information of other carriers could not be requested due to the CA Public Utilities code sec. 7901? [See Ref 1 pg 5] Why does one carrier need the mini-cell tower and not all the other carriers.

➔ The zoning officer can ask for the data set provided to be complete for justification of the site as part of the application process completness, without denying the application irrespective of Ca Public Utilities Code 7901 and recent legal developments. Sec. 6512.2(B) and Sec. 6512.5(B10, B11, B12, B13, and B16) [Ref#2]

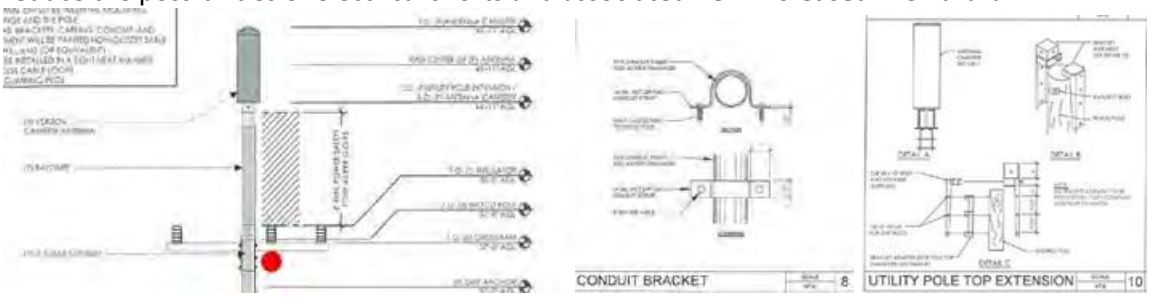
PLN2018-00071 Specific.

5) Drawings A-3 and A-4 (Ref#1 pgs 50 & 51) do not match. The cross arm to hold the insulators is at different heights between the new proposed front and side elevation profiles.
Which is correct 37ft or 37ft 6in?
➔ Get the drawings corrected and in sync.

6) Fire Hazard Increase. Drawing A-3. [Ref#1 pg50] Is in violation of NESC 234 code clearance for wires (or GO-95) to other metal structures and increases the fire hazard
A) The center insulator and conducting wire are too near the new CONDUIT BRACKET, galvanized metal clamp and/or the UTILITY POLE TOP EXTENSION metal parts on the center pole as shown in drawing D-1 [Ref1,pg52]. See red dot below. This increases the chance of an electrical short resulting in a fire.

B) Please have an electrical building inspector check the NESC or GO-95 codes for power wire clearance to coaxial cables inside PVC tubing on a utility pole.

➔ Verify clearance code compliance of *new metal hardware and PVC encased coaxial cables* on the new installations to reduce the possibilities of electrical shorts and associated **new increased** fire hazard.



C) Grounding requirement. PLN2018-0071 is missing a CABLING LINE & GROUNDING DIAGRAMS for electrical interconnects.
See example D-1 [Ref#1 pg23] for the Lexington site. Does this installation need a grounding rod same as PLN2018-00079?
➔ Ask for an electrical connection diagram for the 1175 Parrott site. Does it need a grounding rod?

PLN2018-00079 Specific. Withdrawn

From: Tom Finke [mailto:tomfinke2010@gmail.com]
Sent: Thursday, January 31, 2019 7:36 PM
To: Laura Richstone <lrichstone@smcgov.org>
Cc: Debra Robinson <drobinson@smcgov.org>; Dave Pine <dpine@smcgov.org>; HighlandsCAPresident@gmail.com;

HighlandsCAPres@gmail.com; Christine Tam <ctamsm@gmail.com>
Subject: Zoning permit hearing: PLN 2018-00071 and PLN 2018-00079

Hello Ms. Richstone,

Regarding the upcoming zoning permit hearing for the proposed 5G cell phone tower antennas on the telephone poles in San Mateo Highlands, I would like to add my voice to the community's disapproval of the project. I think the antennas are too big and unsightly for the streets of our residential neighborhood. An alternative idea would be to place the antennas on the various water towers in the area.

Thank you!

Tom Finke
San Mateo Highlands Resident

2067 New Brunswick Drive, San Mateo, CA 94402
650 571 6557

From: zmhitchcock@gmail.com [mailto:zmhitchcock@gmail.com]
Sent: Friday, January 18, 2019 2:55 PM
To: Laura Richstone <lrichstone@smcgov.org>
Cc: Debra Robinson <drobinson@smcgov.org>; Dave Pine <dpine@smcgov.org>
Subject: 5G cells

Good Afternoon,

I live in the San Mateo Highlands and wholeheartedly OPPOSE *any* new installation of 5G cellular nodes/transmissions/poles/extensions, etc. or any heightening of existing poles.

All existing, and any new utilities need to underground. Enough is enough.

Best,

Zack Hitchcock

From: Gary Trott 2 [mailto:gary_trott@comcast.net]
Sent: Thursday, January 10, 2019 1:26 PM
To: Laura Richstone <lrichstone@smcgov.org>; Debra Robinson <drobinson@smcgov.org>
Cc: 'Nagle Laurel' <laureltnagle@gmail.com>; 'Dylan Ashbrook' <dylanashbrook@gmail.com>; 'Pamela Merkadeau' <pamela@merkadeau.com>; 'Gary Trott' <gary_trott@comcast.net>; 'Tania L' <smalllittlet@yahoo.com>; Steve Monowitz <smonowitz@smcgov.org>; Dave Pine <dpine@smcgov.org>; Liesje Nicolas <liesjenicolas@gmail.com>
Subject: RE: 11/15/18 Request for Continuance PLN2018-00079 mini-cell tower

Dear Ms Laura Richstone

I saw from your other message sent 1/10/2019 that PLN2018-00079 (mini-cell tower at 1852 Lexington Avenue) is re-scheduled for a zoning hearing on 21-Feburary 2019. My original concerns submitted on 2-Dec-2018 are shown at the bottom below.

Do you have any updates with respect to protecting the public, structures, and environment by the county zoning commission, by ***validating the safety*** of the mini-cell tower installations?

Please let me know if you have updated drawings, or validation of guy wires RF safety (expanded concern) in the RF model, beyond the 15-Nov staff report [Ref 1] below.

Specifically:

Item 7. New A-2 Drawing. No pole shorts, fire or equipment validation

- Per Item 7 below, [Ref 1, pg21] Do you have an updated A-2 drawing showing the location of the cross arm insulators to compare to center mounted pole extension metal brackets?

CONCERN: Metal bracket items near the power conductors increase fog induced shorts and cause fires.

Code: General Order 95 Section VIII, Rule 84.8B "Attachments, (by means of hooks, knobs, or brackets) on the surface of pole shall be not less than 6 feet below or 4 feet above the level of the nearest unprotected supply conductor supported on the same pole.

Or GO 95 Sec IX, 94.4C, D, and Fig 94.1 "support element" top of pole antenna => Table 2 case 3 col C =24"

- Do you have updated mechanical validation that accessory equipment covers mounted on the pole meets proper environmental UL or NEMA certification environmental codes?

CONCERN: Equipment covers must not fail an fly off causing damage cars or buildings during storms.

- Has the pole been certified by PG&E to withstand the increased storm wind load with the new antenna?

CONCERN: The old pole could break during a storm causing damage to cars or buildings.

Item 3. RF-EME compliance RF energy and validation

Ref [1] Guy wire drawing C-1 pg19, photo pg25, and RF-EME report pgs30-46

Expanded RF CONCERN: The RF-EME report lacks validation and does not include the pole guy wires.
How is it validated the calculation is accurate, and appropriately correct, to protect the public safety?

Observe that the pole guy wires on the 1852 Lexington Ave pole are not included in this project radio frequency report. That location is near a school. What is the amount of RF energy transferred to a child who grabs the pole guy wire?

It is well known that a vertical conducting wire, stuck into the ground will act like an antenna or receiver. Think about Ham radio principles. Thus, the pole guy wire will act as a receiver. The RF report uses "RoofView" software to estimate the power density surrounding the antenna. Through the air distances are below the FCC safe limits for RF emissions. But why don't metal objects show up in the calculations? According to the release notes for Roofview version 4.9 (see link) the software uses one square foot pixels. This means all of the metal parts and equipment on the pole are invisible to the calculations as the top cross sections are dimensionally less than one foot. However, from basic physical principles, objects larger than 1/10th the wavelength have a progressively larger effect on RF emissions, reflections and absorption. (Note for this application 700 MHz =1.4ft, 2100 MHz=0.46 ft wavelength). So while the pole metal boxes might not impact the calculations the guy wires, each longer than ***30 ft***, and grounded, will directly absorb RF energy from the antenna. The top end of the guy wires are well within the hazard area defined by the warning sign placements. So the pole guy wires are in a high field RF environment ***and*** can electrically conduct absorbed energy directly to ground level. A similar thing happens when you put metal foil into a microwave oven.

Therefore , the hazard to the public has not been evaluated or validated as safe in the RF model if a person is touching the pole guy wires at ground level.

As a general note the grid size must be included in the RF report. As frequencies go up for 5G installations the surrounding metal objects must be incorporated into the model as absorbers or reflectors/redirectors of RF energy.

Regards
Gary Trott

Date:December 2, 2018

TO: Laura Richstone, County Project Planner
CC: Debra Robinson ZONING HEARING OFFICER SECRETARY

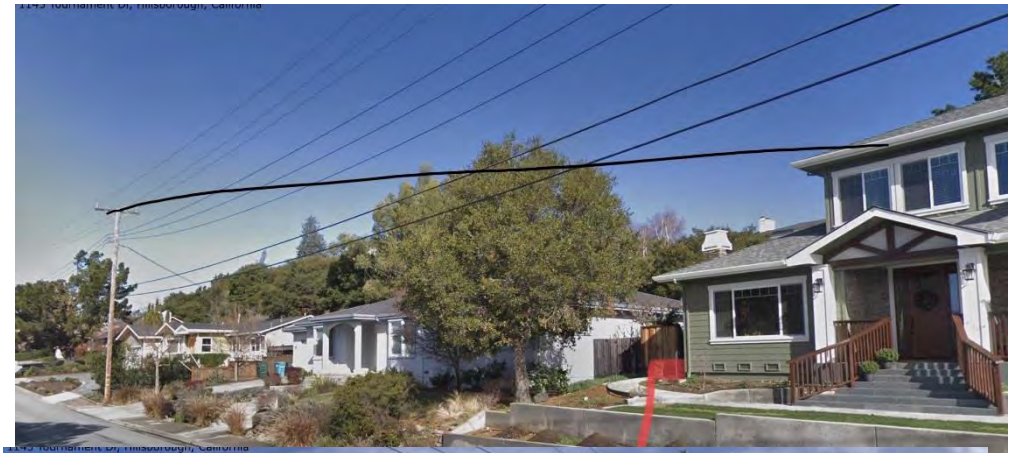
From: Tania Leung, member of the Baywood Park HOA and homeowner of 1127 Parrott Drive, San Mateo CA 94402

RE: Pacific Gas & Electric
Applicant: MODUS
File No.: PLN 2018-00071 and PLN 2018-00079 Planner Laura Richstone

Dear Ms Richstone/ Ms Robinson

I am writing to OPPOSE the approval of the above permits, specifically PLN 2018-00079 1175 Parrott Drive:

1. When looking at your staff report it was mentioned that the existing wooden PG&E pole will need to be extended and therefore exceed the local height restriction mentioned in section 6512.2.I.2 because it needs to comply with the GO-95 state and federal regulations. Adding these cell phone towers should and will need to comply with Federal,State and Local regulations.
2. On page 9 of your staff report it stated that the highest radiation (rf) would be at around 45ft. But as you can see in this picture that both the home behind the pole and next to the pole are 2 story homes that are raised at a higher elevation - which means both these home will have a high radiation exposure 24 hours a day and 7 days a week.



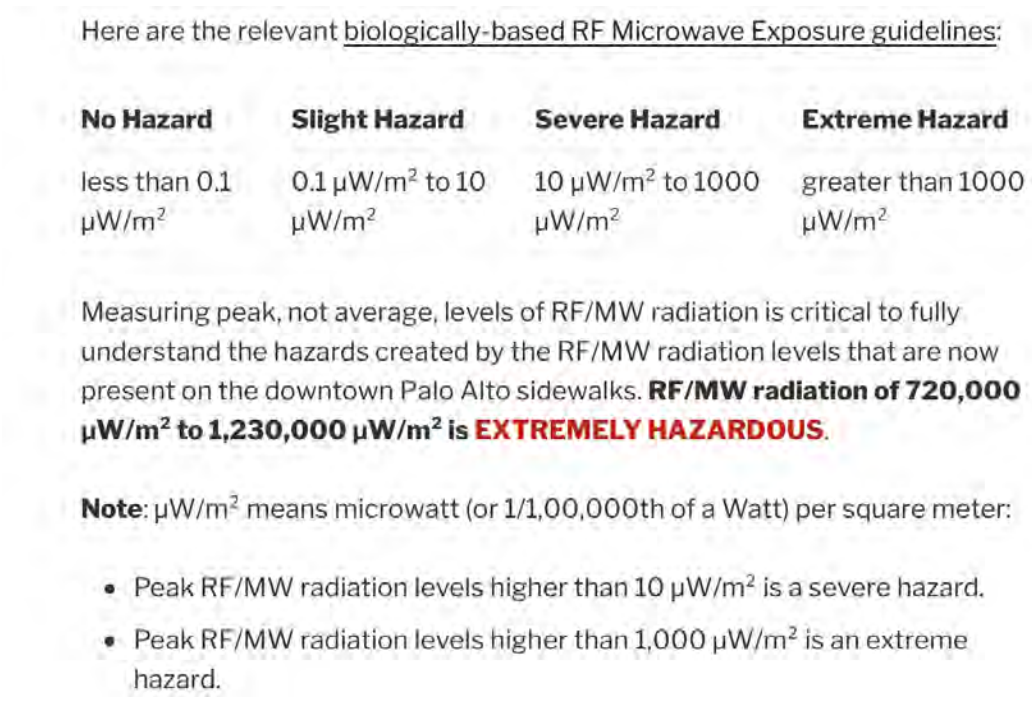
3. The health hazard of wireless device is well documented: International Agency for Research on Cancer (IARC), a part of the World Health Organization, classified radio-frequency radiation from wireless devices as a “possible human carcinogen” based largely on findings of increased risks of gliomas and Schwann cell tumors in the brain near the ear in humans after long term use of cellphones.

A recent study by the National Toxicology Program/National Institutes of Health (NTP/NIH) shows clear evidence of a causal link between cancer and exposure to wireless cell phone signals.

The NTP findings that cell phone radiation caused cancers in the heart and brain, DNA damage in brain cells, heart muscle disease and reduced birth weights clearly demonstrate that the assumption that non-ionizing radiation cannot cause cancer or other health effects is wrong.

Also, health concerns for children may be greater than that for adults due to increased penetration of cell phone radiation within the brains of children. Simply ignoring the cancer data from the NTP studies is not in the interest of public health.

These small cell towers are to start 5G services, but there had not been enough scientific studies on this 5G technology and 5G would use a combination of microwaves and millimeter waves, which are scientifically shown to harm people and nature. The 2 story home next to the pole in question on Parrott Dr is a state approved family daycare (facility#414001816) with a capacity of 14 children under 5 years of age, who will be present a their daycare from 7am to 6pm. And most homes within the vicinity have 2 or more children under the age of 10 (when their development is most crucial) and the allowance of these not fully scientifically tested cell towers to be so close to these minors will most definitely cause a long term effect on our future generations.
In addition *Scientists 4 wired tech*, did their own RF/MW radiation monitoring in Palo Alto where Verizon had placed their "small cell towers" at th location and the results peak levels of 4G/LTE RF/MW radiation are actually over 720,000 to 1,230,000 μW/m²



Here are the relevant biologically-based RF Microwave Exposure guidelines:

No Hazard	Slight Hazard	Severe Hazard	Extreme Hazard
less than 0.1 μW/m²	0.1 μW/m² to 10 μW/m²	10 μW/m² to 1000 μW/m²	greater than 1000 μW/m²

Measuring peak, not average, levels of RF/MW radiation is critical to fully understand the hazards created by the RF/MW radiation levels that are now present on the downtown Palo Alto sidewalks. **RF/MW radiation of 720,000 μW/m² to 1,230,000 μW/m² is EXTREMELY HAZARDOUS.**

Note: μW/m² means microwatt (or 1/1,00,000th of a Watt) per square meter:

- Peak RF/MW radiation levels higher than 10 μW/m² is a severe hazard.
- Peak RF/MW radiation levels higher than 1,000 μW/m² is an extreme hazard.

4. On p.9b of your staff report it stated, "staff determined that it will enhance services for the public…" and p. 11, "these telecommunication facilities are for public health, safety, convenience and the welfare of the community… proposed facilities only contribute to verizon wireless's clarity, range and capacity….etc to be utilized by residence, commuters"
if the new small towers are serving the public, how come there are only opposition from the local public, the local residences and the local HOA's. The only group that I hear at these meetings agreeing to these cell towers are the big wireless corporations, and since these planning commissioners are the voice of the local voters and taxpayers, your decisions should benefit the local residences and not the cooperations. The applicant also havent' verified the need for these mini towers according to the telecommunication zoining codes.

5. The aesthetic appearance does not conform to the neighboring PG&E poles and these actual pictures show that it is more un-pleasing than the one in the staff report. California state section 7901 states the use must be "in such manner and at such points as not to incommode the public use of the road…" The phrase "incommode the public use"in Section 7901 means "to unreasonably subject public use to inconvenience or discomfort; to unreasonably trouble, annoy, molest embarrass, inconvenience; to unreasonably hinder, impede, or obstruct the public use." "Incomode" is "broad enough 'to be inclusive of concerns related to the appearance of a facility'", and therefore, Section 7901 does not prohibit local governments from denying applications for facilities in particular locations in the public right-of-way under Section 7901. The aesthetic is embarrassing residence and cause discomfort due to the radiation affecting my child's development. please refer to *T-Mobile West LLC v. City and County of San Francisco* State appellate court decision.

6. According to Cal Fire's website, this site in question is a very high fire hazard severity zone. With history of the Santa Rosa Fire and the current Butte County fire sparked by PG&E electric poles and since cell towers generate microwaves and on 10/10/17 the la times post that "77 cell towers burned up or were damaged; they were not the source that lit the fires, but the feeder." Also there is a great amount of cell towers that had sparked fires. Following is a picture of it. This is definitely not the location to place the cell tower.

Again, My position is to OPPOSE the permit to place small cell towers at this location because of a violation of the local regulation section 6512.2.I.2, the close proximity to tall homes where radiation frequency is going to be high at those nearby homes and the close proximity to a family day care with kid there from 7am-6pm, the nonconforming design of the tower to our existing electrical poles,it's violation of Pub. Util. Code Section 7901 and the risk to spark fires at a very high risk fire zone.

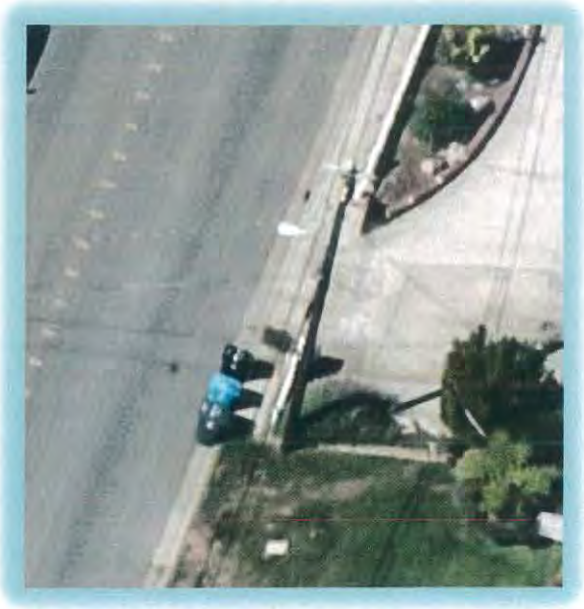
County of San Mateo - Planning and Building Department

ATTACHMENT K

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

Site No. 483409
SF Highlands Baywood Park 005
1175 Parrott Drive
San Mateo, California 94402
San Mateo County
37° 32' 17.42" N, -122° 20' 44.37" W NAD83

EBI Project No. 6218000845
February 15, 2018



Prepared for:

Verizon Wireless
c/o Modus, Inc.
115 Sansome Street, 14th Floor
San Francisco, CA 94104

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 483409 located at 1175 Parrott Drive in San Mateo, 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 antennas 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 antennas and their associated fields.

At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately **10.30** percent of the FCC's general public limit (**2.06** percent of the FCC's occupational limit).

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 1175 Parrott Drive in San Mateo, 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	35° 155°	10.35 14.05	46.92	30	30	44.92

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.

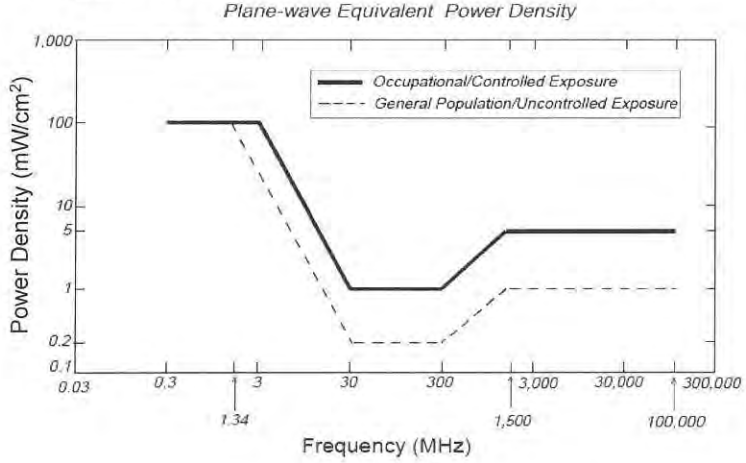
Table 1: Limits for Maximum Permissible Exposure (MPE)

(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
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $[E]^2$, $[H]^2$, or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

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

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)



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

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
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 and nearby rooftops 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 4 radio configuration for Sector A 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 antennas that exceed the FCC's occupational or general public exposure limits at this site. At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately 10.30 percent of the FCC's general public limit (2.06 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 antennas that exceed the FCC standards for occupational or general public exposure. All exposures above the FCC's safe limits require that individuals be elevated above the ground. In order to alert people accessing the pole, a Caution sign is recommended for installation approximately 12 feet below the antenna facing the street.

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 roof 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 483409 located at 1175 Parrott Drive in San Mateo, California to determine worst-case predicted RF-EME exposure levels from wireless communications equipment installed at this site. This report summarizes the results of RF-EME modeling in relation to relevant Federal Communications Commission (FCC) RF-EME compliance standards for limiting human exposure to RF-EME fields.

As presented in the sections above, based on the FCC criteria, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site. Workers should be informed about the presence and locations of antennas and their associated fields. Recommended control measures are outlined in Section 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.

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 16feb2018

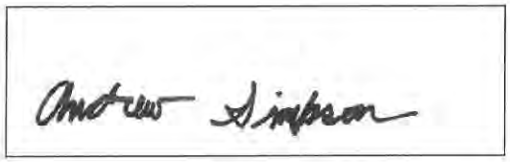
Michael McGuire
Electrical Engineer

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, Andrew Simpson, state that:

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



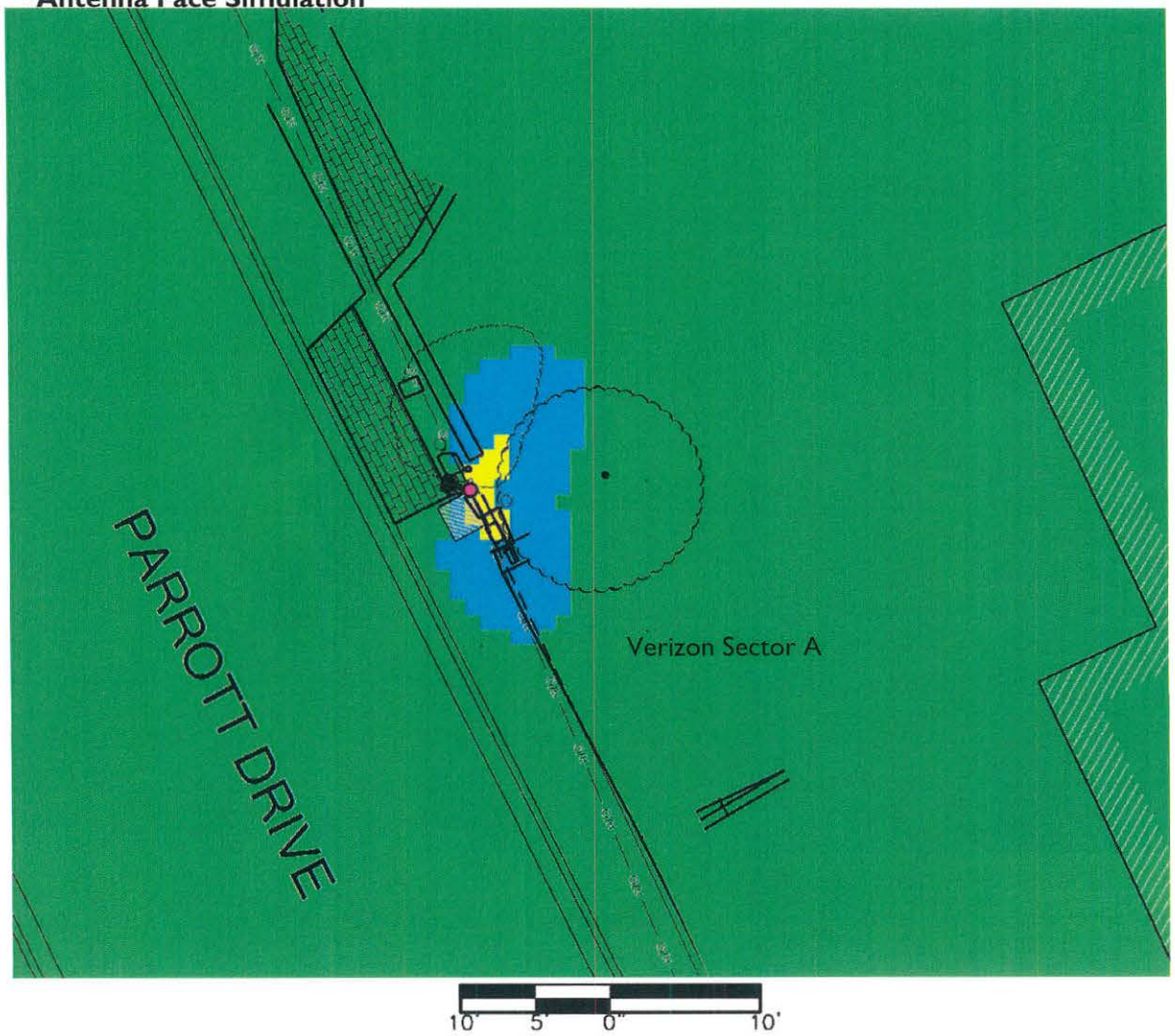
Appendix B

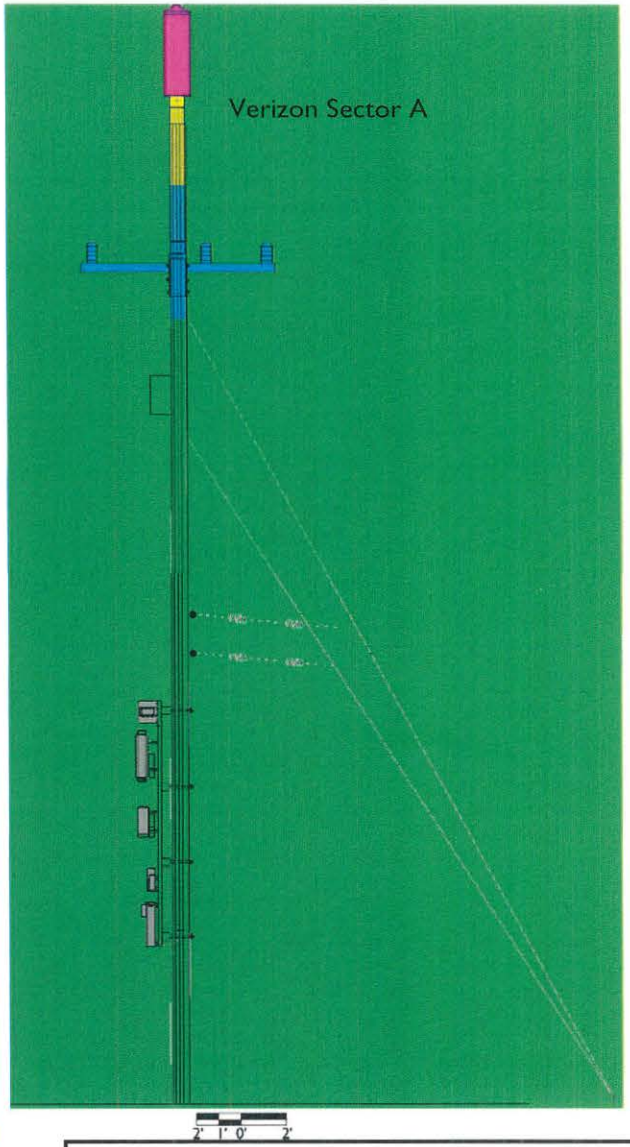
Radio Frequency Electromagnetic Energy

Safety / Signage Plans

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

*Antenna Face Simulation





Verizon Antennas

Roofview: Composite Exposure Levels

Facility Operator: Verizon Wireless

Site Name: SF Highlands Baywood Park 005

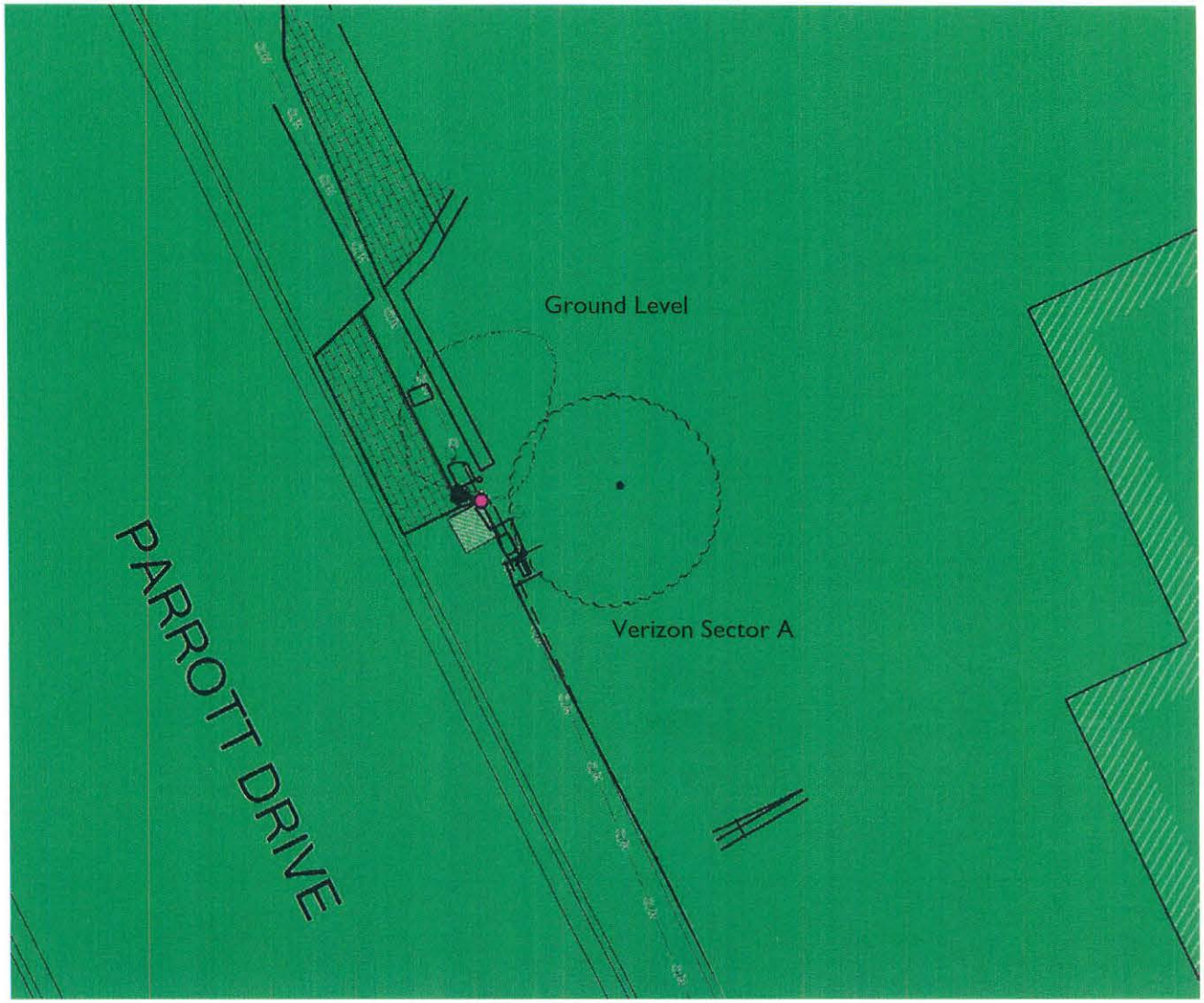
Verizon Site Number: 483409

Report Date: 02-15-18

EBI Consulting
environmental | engineering | due diligence

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

*Ground Level Simulation



Roofview: Verizon Exposure Levels

Facility Operator: Verizon Wireless

Site Name: SF Highlands Baywood Park 005

Verizon Site Number: 483409

Report Date: 02-15-18

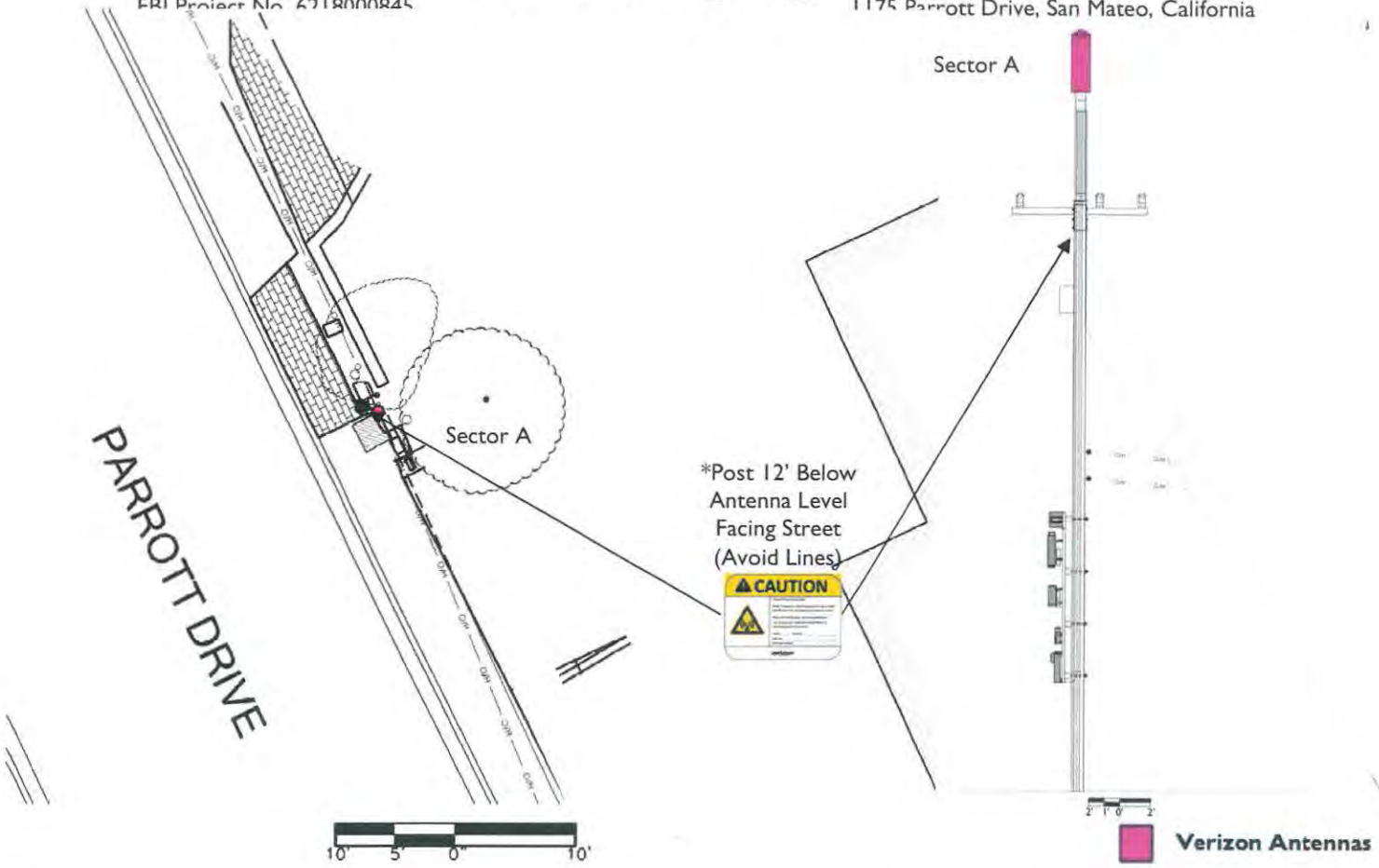
EBI Consulting
environmental | engineering | due diligence

Verizon Antennas

RF-EME Compliance Report
FBI Project No. 6218000845

Verizon Signage Plan

Site No. 483409
1175 Parrott Drive, San Mateo, California



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.	N/A	Not Required.
	**NOC Information Sign** Informational sign with NOC Phone Number and Base Transceiver Station (BTS) Number	N/A	Not Required.
	**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.	N/A	Not Required.
	**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 post 12' below the antenna in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.	Post 12' Below Antenna Level Facing Street
	**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).	N/A	Not Required.

Appendix C

Roofview® Export File

StartMapDefinition

Roof Max Y	Roof Max X	Map Max Y	Map Max X	Y Offset	X Offset	Number of envelope		
120	120	140	140	20	20	1	$AE$81:$E	$AE$81:$ET$200

StartSettingsData

Standard	Method	Uptime	Scale Facto	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		1		Amphenol	CUUT070X	30	30	44.92		4	10.35	82;35		ON
VZW A1	LTE	2100	60	1	0	0		1		Amphenol	CUUT070X	30	30	44.92		4	14.05	74;35		ON
VZW A1	LTE	700	60	1	0	0		1		Amphenol	CUUT070X	30	30	44.92		4	10.35	82;155		ON
VZW A1	LTE	2100	60	1	0	0		1		Amphenol	CUUT070X	30	30	44.92		4	14.05	74;155		ON

StartSymbolData

Sym	Map Marke	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

WILLIAM F. HAMMETT, P.E.
RAJAT MATHUR, P.E.
ROBERT P. SMITH, JR.
ANDREA L. BRIGHT, P.E.
NEIL J. OLIJ, P.E.
BRIAN F. PALMER
MANAS REDDY
M. DANIEL RO

ROBERT L. HAMMETT, P.E.
1920-2002
EDWARD EDISON, P.E.
1920-2009

DANE E. ERICKSEN, P.E.
CONSULTANT

BY E-MAIL JWANG@MODUS-CORP.COM

April 12, 2019

Modus, LLC
240 Stockton Street, Third Floor
San Francisco, California 94108

Re: Comments on EBI Report for Verizon Small Cell on Parrott Drive

To Whom It May Concern:

As requested, we have reviewed the "Radio Frequency – Electromagnetic Energy (RF-EME) Jurisdictional Report" dated February 15, 2018, prepared by EBI Consulting, analyzing RF exposure conditions for the Verizon Wireless small cell (Site No. 483409 "Highlands Baywood Park 005") proposed to be installed on top of the utility pole at 1175 Parrott Drive in unincorporated San Mateo County, near the City of San Mateo. That report gives the following result from EBI's calculations:

- 10.30% of the FCC public limit for a person at ground below the antenna

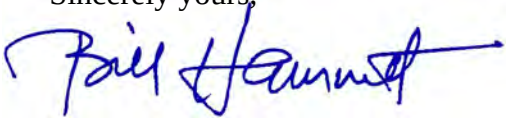
EBI performs its calculations with a commercial spreadsheet that does not account for the actual signal patterns of antennas, so we would expect different results compared with our more precise calculations. For instance, we reported in our study dated January 10, 2019, a maximum calculated level at ground of 1.1% of the public limit, much less than the figure reported by EBI and much more in line with actual levels, based on thousands of measurements at similar sites.

We note that EBI made no apparent effort to calculate exposure level at the nearby houses. 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 residence at 1175 Parrott Drive, about 35 feet from the pole, and we had reported the maximum calculated exposure level at any residence to be 0.49% at the public limit.

Thus, the EBI report correctly concludes that the Verizon small cell operation will comply with the FCC exposure limits; it just does not characterize anticipated conditions well.

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

Sincerely yours,



William F. Hammett, P.E.

County of San Mateo - Planning and Building Department

ATTACHMENT M

Pacific Gas and Electric Company

WE DELIVER ENERGY.™

October 4, 2017

Melissa Ross,
Senior Planner
San Mateo County Planning Department
455 County Center
Redwood City, CA 94063

PLN2018-00079

RE: Proposed Verizon telecommunications installation located on PG&E owned utility poles located in San Francisco. Site names: BURLINGAME 018,BURLINGAME 019,BURLINGAME 021,EL GRANADA 001, EL GRANADA 002,EL GRANADA 003,EL GRANADA 004,HIGHLANDS BAYWOOD PARK 001,HIGHLANDS BAYWOOD PARK 002 , HIGHLANDS BAYWOOD PARK 003,HIGHLANDS BAYWOOD PARK 004,HIGHLANDS BAYWOOD PARK 005, HIGHLANDS BAYWOOD PARK 006,HIGHLANDS BAYWOOD PARK 007,MONTARA 001,MONTARA 002,MOSS BEACH 001, MOSS BEACH 003,REDWOOD CITY 063, SAN CARLOS 019, SAN CARLOS 030

To whom it may concern:

PG&E entered into a Master License Agreement (MLA) with Verizon Wireless in October 2016. The MLA allows Verizon to attach their equipment and antennas to PG&E distribution poles, subject to PG&E approval. Verizon had already been authorized to attach their equipment below the primary and secondary power lines in the "communications zone." Under the MLA, Verizon is now licensed to use the "power zone" space owned by PG&E. The power zone is at the pole top, above the power lines. California Public Utilities Commission (CPUC) General Order 95, Rule 94 established that antennas can be installed at the pole top position.

PG&E will comply with CPUC regulations and standards with regard to its distribution poles and reviews of proposed attachments.

However, Verizon is solely liable and responsible for complying with all applicable requirements, including CPUC General Order 95, with regard to its attachments on distribution poles. PG&E provides no guarantees that any or all of Verizon's applications will be approved, but consents to Verizon filing jurisdictional permit applications for space on the pole(s) listed in this LOA.

Please call me at (925) 270-2729 if you have any questions or concerns regarding this matter.

Regards,

Lee Vaughan

Lee Vaughan
jlvf@pge.com

Sr. Electric Program Manager
PG&E Joint Utilities

{LOA for County of San Mateo jlv}

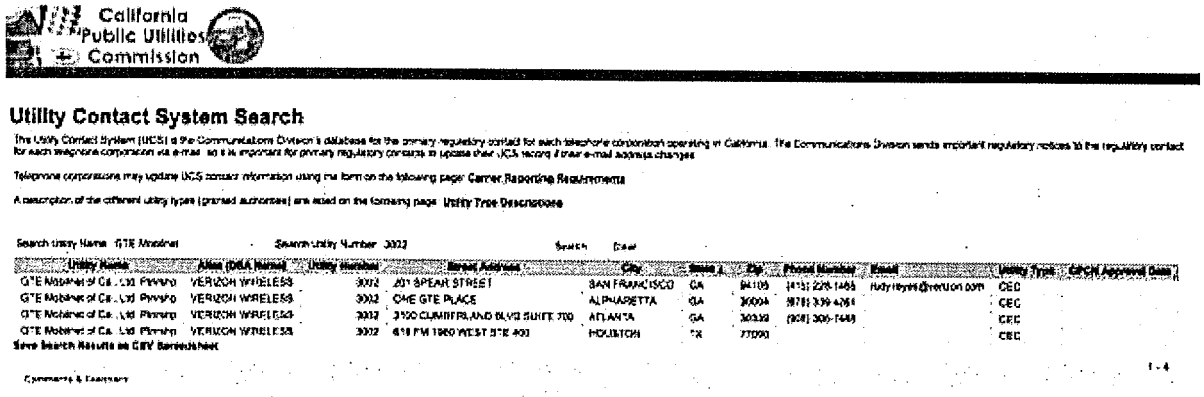
DECLARATION OF JESUS G. ROMAN

I, **Jesús G. Román**, declare and state:

1. I am the Associate General Counsel for GTE Mobilnet of California Limited Partnership dba Verizon Wireless (GTE Mobilnet). My business address is 15505 Sand Canyon Avenue, Irvine, CA 92618. My phone number is 949-286-7202.

2. I am providing this declaration in connection with establishing that GTE Mobilnet is authorized to use the Right of Way and operate in California pursuant to a Certificate of Public Convenience and Necessity (CPCN) with the California Public Utilities Commission (CPUC) and because it is deemed pursuant to law to hold a Wireless Identification Registration (WIR). GTE Mobilnet holds a CPCN by virtue of CPUC Decision No. 85-04-008. CPUC Decision 94-10-031, implementing Federal legislation that prohibits states from erecting barriers to wireless service entry, explicitly recognized that a wireless provider with a CPCN (like Mobilnet) is deemed to satisfy the WIR requirement, stating: "Such carriers are deemed to have complied with the Wireless Identification Registration requirement." See D.94-10-031, 1994 Cal. PUC LEXIS 700, *7, 56 CPUC2d 578 (Cal. P.U.C. Oct. 12, 1994).

3. The CPUC maintains a publicly available database of public utilities that have authority to operate in California. The CPUC assigns a Utility Number to each such public utility. GTE Mobilnet's CPCN can be verified by visiting the CPUC's website https://apps.cpuc.ca.gov/apex/f?p=102:1:0::NO:RP:: and entering GTE Mobilnet into the "Search Utility Name" field. Doing this will show the utility name as GTE Mobilnet of Ca., Ltd. Ptnrshp and show the dba as Verizon Wireless. It will also show the Utility number assigned to GTE Mobilnet as 3002. Graphically, it shows this:



California Public Utilities Commission

Utility Contact System Search

The Utility Contact System (UCS) is the Communications Division's database for the primary regulatory contact for each telephone corporation operating in California. The Communications Division sends important regulatory notices to the regulatory contact for each telephone corporation via e-mail, so it is important for primary regulatory contacts to update their UCS record if their e-mail address changes.

Telephone corporations may update UCS contact information using the form on the following page: Carrier Reporting Requirements

A description of the different utility types (granted authorities) are listed on the following page: Utility Type Descriptions

Search Utility Name: GTE Mobilnet Search Utility Number: 3002 Search Clear

Utility Name	Alias (DBA Name)	Utility Number	Street Address	City	State	Zip	Phone Number	Email	Utility Type	CPCN Approval Date
GTE Mobilnet of Ca. Ltd Ptnrshp	VERIZON WIRELESS	3002	201 SPEAR STREET	SAN FRANCISCO	CA	94105	(415) 226-1468	rudy.reyes@verizon.com	CEC	
GTE Mobilnet of Ca. Ltd Ptnrshp	VERIZON WIRELESS	3002	ONE GTE PLACE	ALPHARETTA	GA	30004	(678) 339-4268		CEC	
GTE Mobilnet of Ca. Ltd Ptnrshp	VERIZON WIRELESS	3002	3350 CUMMINS BLVD SUITE 700	ATLANTA	GA	30339	(908) 306-7449		CEC	
GTE Mobilnet of Ca. Ltd Ptnrshp	VERIZON WIRELESS	3002	616 FM 1960 WEST STE 400	HOUSTON	TX	77090			CEC	

Save Search Results as CSV Spreadsheet

1 - 4

Comments & Feedback

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

Executed on October 6, 2017 at Simi Valley, CA.

Jesús G. Román

Jesús G. Román
Associate General Counsel

NORTHERN CALIFORNIA JOINT POLE ASSOCIATION
1800 Sutter Street, Suite 830, Concord, California 94520
Telephone: 925-681-0378 | Website: www.ncjpa.org | Email: info@ncjpa.com

Thursday, February 8, 2018

Nicki DeArmon
Engineer IV – Specialist RE/Regulatory
2785 Mitchell Drive, Bldg 9
Walnut Creek, CA 94598
Nicki.DeArmon@VerizonWireless.com

NCJPA Membership Status – Verizon Wireless

Dear Nicki,

This letter serves as confirmation that, as of the above letter date, Verizon Wireless is a member company in good standing with the Northern California Joint Pole Association.

Please advise if I may be of additional assistance.

Sincerely,

Tina L. Simms

Tina L. Simms
Operations Manager,
Northern California Joint Pole Association