



Staff Report to the Zoning Administrator

Application Number: 171172

Applicant: Aaron Salars for Verizon Wireless
Owner: County of Santa Cruz right-of-way;
PG&E owns the pole
APN: No APN Specified

Agenda Date: May 18, 2018

Agenda Item #: 5

Time: After 9:00 a.m.

Project Description: Proposal to construct a wireless communication microcell facility on an existing utility pole to include: replacement of the pole with a new 30-foot tall wood pole; installation of a disconnect switch, two remote radio units, antenna and associated equipment; and the installation of a pedestal electric meter adjacent to the utility pole. This project is located in the RM-6 zone district and is categorically exempt (Section 15303, Class 3) from further review under CEQA.

Location: The project is located on Soquel Drive within a public right-of-way near the intersection of Soquel Drive with Paseo Del Sol, the nearest parcel being APN 037-071-41, in Soquel.

Supervisory District: First District (District Supervisor: John Leopold)

Permits Required: Requires a Commercial Development Permit and a Telecommunications Act Exception for the construction of a new Wireless Communication Facility within the RM-6 zone district.

Staff Recommendation:

- Determine that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- Approval of Application 171172, based on the attached findings and conditions.

Exhibits

- | | |
|---|------------------------------|
| A. Categorical Exemption (CEQA determination) | F. Comments & Correspondence |
| B. Findings | G. Technical Reports |
| C. Conditions | H. Visual Simulations |
| D. Project plans | |
| E. Assessor's, Location, Zoning and General Plan Maps | |

Parcel Information

Parcel Size:	N/A	Right-of-way
Existing Land Use - Parcel:		Right-of-way (Residential)
Existing Land Use - Surrounding:		Residential, Commercial, & Public Facilities
Project Access:		Soquel Drive
Planning Area:		Soquel
Land Use Designation:		R-UM (Urban Medium Density Residential)
Zone District:		RM-6 (Multifamily Residential - 6,000 square foot minimum)
Coastal Zone:	<input type="checkbox"/> Inside	<input checked="" type="checkbox"/> Outside
Appealable to Calif. Coastal Comm.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Environmental Information

Geologic Hazards:	Not mapped/no physical evidence on site
Soils:	N/A
Fire Hazard:	Not a mapped constraint
Slopes:	0 to 15%
Env. Sen. Habitat:	Not mapped/no physical evidence on site
Grading:	No grading proposed
Tree Removal:	No trees proposed to be removed
Scenic:	Not a mapped resource
Drainage:	No change to existing drainage
Archeology:	Not mapped/no physical evidence on site

Services Information

Urban Services Line:	<input checked="" type="checkbox"/> Inside	<input type="checkbox"/> Outside
Rural Services Line:	<input type="checkbox"/> Inside	<input checked="" type="checkbox"/> Outside
Water Supply:	Soquel Creek Water District	
Sewage Disposal:	Santa Cruz Sanitation District	
Fire District:	Central Fire Protection District	
Drainage District:	Flood Control District 5	

Project Setting

The project site, a utility pole located on the north side of Soquel Drive, on a sidewalk nearby a residential driveway which provides vehicular access to and from Soquel Drive to four residential structures. The project site is approximately seven feet from the residential driveway. The project site is located across the street, on Soquel Drive, from residential structures and also across the street and to the east diagonally of the Soquel Creek Water District administrative offices, a public facility (approximately 360 feet from the project site).

Soquel Drive is a four-lane, arterial street running east-west through the core of Soquel. The portion of Soquel Drive adjacent to the project site is flanked by striped bicycle lanes and has a center turn lane for vehicles. Due to existing bicycle lanes, on-street vehicle parking is not permitted on either

side of Soquel Drive in the vicinity of the project site. The closest pedestrian crosswalks are located at the intersection of Soquel Drive with Crystal Heights Drive, approximately 240 feet from the project site. The closest school (Soquel Elementary) is approximately 2,400 feet from the project site.

The proposed wireless facility is to be sited at the location of an existing utility pole on the sidewalk on the northern side of Soquel Drive. The proposed location is entirely within a public right-of-way and would not impede driveway access to the nearby residences, nor impede pedestrian, bicycle, or vehicular uses of the Soquel Drive thoroughfare.. The closest residence is across Soquel Drive, approximately 66.5 feet away.

Proposed Installation

The applicant proposes to replace the existing 28' 6" - tall utility pole with a 30-foot tall utility pole. A "cantenna," which is an antenna placed within a cylindrical container, would be placed at the top of the pole, resulting in an overall height of 32' 3" (see Sheet A.3 of Exhibit D). A shroud would be provided to camouflage the antenna, with the intent being to make the cantenna appear to be a part of the utility pole. All of the equipment except for a pedestal electrical meter would be located on the side of the pole and would be painted to match the pole color. The pedestal electric meter would be located about four feet west of the utility pole.

Zoning & General Plan Consistency

Pursuant to County Code Section 13.10.661(A), all new wireless communication facilities are required to obtain a Commercial Development Permit considered at a public hearing. The proposed wireless communication facility is located within the Soquel Drive right-of-way where the zoning of the adjacent parcel extends to the centerline of the right-of-way. The zoning of the adjacent parcel and the project site is RM-6 (Multi-family Residential - 6,000 square-foot minimum) zone district and is designated R-UM (Urban Medium Density Residential) by the General Plan.

Per Section 13.10.661(B)(1) of the County Code, wireless communication facilities are prohibited in certain zone districts, including the RM (Multi-family Residential) zone district, unless a Telecommunications Act Exemption is approved pursuant to Section 13.10.668. In addition to providing the findings for a Telecommunications Act Exception, the project must comply with the other requirements of the County's wireless ordinance.

Telecommunication Act Exception

A Federal Telecommunication Act Exception is needed to allow the location of the proposed wireless communication facility (WCF) on a parcel that is zoned RM-6, which is one of the "prohibited" zone districts as per the County's WCF Ordinance, which states that WCFs cannot be constructed in "prohibited areas" except as follows (as per Sec. 13.10.661(b)(4)):

"If a Telecommunications Act Exception is approved pursuant to Section 13.10.668(a) that allows for siting a wireless communications facility within any of the ...prohibited areas, then such facility shall comply with the remainder of Sections 13.10.660 through 13.10.668 inclusive, and shall be co-located. Applicants proposing

new wireless communication facilities in any of the above-listed prohibited areas must submit as part of their application an Alternatives Analysis, as described in Section 13.10.662(C) below. Non-collocated wireless communication facilities may be sited in the prohibited areas listed above only in situations where the applicant can prove that:

- (i) The proposed wireless communication facility would eliminate or substantially reduce one or more significant gaps in the applicant carrier's network; and
- (ii) There are no viable, technically feasible, and environmentally (e.g., visually) equivalent or superior potential alternatives (i.e., sites and/or facility types and/or designs) outside the prohibited areas identified in Section 13.10.661(b) that could eliminate or substantially reduce said significant gap(s).

Any wireless communications facility and any associated development allowed in a prohibited area: (1) shall be sited and designed so that it is not visible from public vantage points to the maximum extent feasible; or (2) where some portion or all of such a facility and/or any associated development is unavoidably sited and/or designed in a manner that makes it visible from public vantage points (and cannot be sited and/or designed to not be visible), that portion shall be screened and/or camouflaged so that it is inconspicuous and designed to blend seamlessly into the existing public view."

The applicant has submitted information indicating that the proposed location is necessary to close a "significant gap" in the carrier's (Verizon's) network and has provided sufficient evidence indicating that no viable sites exist outside a prohibited district that would achieve the desired coverage objective (see Exhibit G). To demonstrate this, an Alternatives Analysis was provided that reviewed eight nearby utility poles that are located such that the coverage gap would be closed (Exhibit G). All but one site (a utility pole located on the Soquel Creek Water District property which is zoned Public Facilities) are located within a prohibited zone. When asked to provide additional analysis that included sites located outside of the prohibited zone districts, the applicant indicated that none would address the technical requirements to close the coverage gap. Given these constraints, staff accepted the Alternatives Analysis.

The submitted Alternatives Analysis indicates that none of the alternative sites would result in a visually superior project since the visual impacts of a wireless facility on one of the alternative sites would be virtually identical to the proposed location. In addition, all of the utility poles on the south side of Soquel Drive were ruled out because of the presence of existing equipment on the pole, which, with the addition of the proposed wireless facility, would not leave adequate climbing space for workers. According to the applicant, one quadrant is required to be free of equipment and designated as a climbing space. For the alternative sites on the north side, all were identified by the applicant as being closer to residences and thus deemed more "intrusive." Given these considerations, and the fact that any pole-mounted wireless facility in the vicinity would have a similar visual impact, the applicant was not required to pursue any of the alternative sites.

Additional Applicable Wireless Regulations

In addition to addressing the Telecommunication Act Exception requirement, County Code Section 13.10.661(B) requires any wireless communications facility and any associated development allowed in a "Prohibited Zoning District to: (i) be sited and designed so that it is not visible from public vantage points to the maximum extent feasible; or (ii) where some portion or all of such a facility and/or any associated development is unavoidably sited and/or designed in a manner that makes it visible from public vantage points (and cannot be sited and/or designed to not be visible), that portion shall be screened and/or camouflaged so that it is inconspicuous and designed to blend seamlessly into the existing public view."

Because the proposed wireless communication facility will be located on a utility pole adjacent to a public road (Soquel Drive), the facility will be viewable from public vantage points; however, measures have been taken to minimize its visual impact. All equipment will be camouflaged by being painted brown to match the color of the utility pole. Equipment bulk associated with the facility has been reduced as compared to the original project proposal by replacing some equipment enclosures with smaller features and requiring that a new electric utility line that was proposed to cross Soquel Drive be placed underground rather than overhead as originally proposed. A shroud has been proposed at the base of the cantenna to hide any light gap between the top of the utility pole and the base of the cantenna, blending the cantenna to the massing and color of the utility pole.

As far as siting, County Code Section 13.10.663(B)(5) encourages wireless facilities to be mounted on utility poles as a means of mitigating visual impacts of wireless communication facilities in general. As noted above, eight utility poles were evaluated as alternative sites for the project. Since the visual impact of a pole-mounted wireless facility would be virtually identical on any of the sites, no visually superior site was identified. As proposed, the project is camouflaged and is designed in an inconspicuous manner given its location in a public right-of-way.

County Code Section 13.10.661(D) of the County Code requires compliance with Federal Communications Commission (FCC) radio frequency (RF) electromagnetic radiation emission regulations. Consulting engineers retained by the applicant (Hammett & Edison, Inc, Consulting Engineers) submitted a report evaluating the project for compliance with FCC public exposure guidelines. The report concluded that the operation of the proposed wireless communication facility at the subject location will comply with the standards for limiting human exposure to radio frequency electromagnetic radiation. The report also recommended training authorized personnel who have access to the antenna and posting explanatory/warning signs to establish compliance with occupational exposure limits. These recommended signs are included in the project scope. In addition to the RF report, the applicant submitted an alternative sites analysis, which indicated that the proposed location of the wireless communication facility would be the furthest feasible location from any residential structure, as compared to the analyzed alternative sites.

Section 47 USC 332(c)(7)(iv) of the Telecommunications Act of 1996 prohibits jurisdictions from regulating the placement, construction, or modification of wireless communications facilities based on the environmental effects of RF emissions if these emissions comply with FCC standards.

Design Review

The proposed wireless communication facility complies with the requirements of the County Design Review Ordinance, in that the proposed project will incorporate site and architectural design features such as: camouflaging the facility by painting equipment to match the color of the utility pole, reducing the bulk and size of equipment to the extent that is feasible, and providing a shroud at the base of the cantenna to blend the cantenna to the massing and color of the utility pole. In addition, the overhead electrical line that was originally proposed is now proposed to be installed underground. Together, these efforts will reduce the visual impact of the proposed development on surrounding land uses and the natural landscape.

CEQA Exemption

Environmental review has not been required for the proposed project per the requirements of the California Environmental Quality Act (CEQA). The project is exempt per Section 15303, Class 3 - New Construction or Conversion of Small Structure, and is attached as Exhibit "A". This section allows construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures. The exemption applies to the installation of water main, sewage, electrical, gas, and other utility extensions.

Conclusion

As proposed and conditioned, the project is consistent with all applicable codes and policies of the Zoning Ordinance and General Plan/LCP. Please see Exhibit "B" ("Findings") for a complete listing of findings and evidence related to the above discussion.

Staff Recommendation

- Determine that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- **APPROVAL** of Application Number 171172, based on the attached findings and conditions.

Supplementary reports and information referred to in this report are on file and available for viewing at the Santa Cruz County Planning Department, and are hereby made a part of the administrative record for the proposed project.

The County Code and General Plan, as well as hearing agendas and additional information are available online at: www.co.santa-cruz.ca.us

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CALIFORNIA ENVIRONMENTAL QUALITY ACT

NOTICE OF EXEMPTION

The Santa Cruz County Planning Department has reviewed the project described below and has determined that it is exempt from the provisions of CEQA as specified in Sections 15061 - 15332 of CEQA for the reason(s) which have been specified in this document.

Application Number: 171172

Assessor Parcel Number: No APN Specified

Project Location: Public Right-of-Way

Project Description: Proposal to construct a new wireless communication facility mounted upon a new utility pole and ground mounted equipment shelter located within a public right of way.

Person or Agency Proposing Project: Aaron Salars for Verizon Wireless

Contact Phone Number: (707) 933-9633

- A. _____ The proposed activity is not a project under CEQA Guidelines Section 15378.
B. _____ The proposed activity is not subject to CEQA as specified under CEQA Guidelines Section 15060 (c).
C. _____ Ministerial Project involving only the use of fixed standards or objective measurements without personal judgment.
D. _____ Statutory Exemption other than a Ministerial Project (CEQA Guidelines Section 15260 to 15285).
E. X Categorical Exemption

Specify type: Class 3 - New Construction or Conversion of Small Structure (Section 15303)

F. Reasons why the project is exempt:

Type 3 exemption consists of construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures. The exemption applies to the installation of water main, sewage, electrical, gas, and other utility extensions. The construction of the proposed wireless communication facility is within the purview of the this exemption and is not anticipated to generate any environmental impacts. In addition, none of the conditions described in Section 15300.2 apply to this project.

In addition, none of the conditions described in Section 15300.2 apply to this project.

Annette Olson, Project Planner

Date: _____

EXHIBIT A

Wireless Communication Facility Use Permit Findings

1. That either: (1) the development of the proposed wireless communications facility as conditioned will not significantly affect any designated visual resources, environmentally sensitive habitat resources (as defined in the Santa Cruz County General Plan/LCP Sections 5.1, 5.10, and 8.6.6.), and/or other significant County resources, including agricultural, open space, and community character resources; or (2) there are no other environmentally equivalent and/or superior and technically feasible alternatives to the proposed wireless communications facility as conditioned (including alternative locations and/or designs) with less visual and/or other resource impacts and the proposed facility has been modified by condition and/or project design to minimize and mitigate its visual and other resource impacts.

This finding can be made, in that the location and design of the proposed wireless facility would not result in a significant visual impact to the character of the area. The proposed facility is to be co-located on a new utility pole within a public right-of-way. The co-location of wireless facilities on utility poles is encouraged under SCCC 13.10.663(D)(2).

The proposed wireless communication facility is not mapped within any designated scenic corridor and will not be visible from Highway 1, the closest mapped scenic corridor from the site. Although the wireless "small-cell" communication facility and equipment will not significantly affect any designated visual resources, the project is conditioned to be painted to match the color of the utility pole, minimize size and bulk of associated equipment as is feasible, and to retain the shroud at the base of the cantenna. These measures minimize visual impacts.

The applicant has submitted an alternatives analysis which evaluates eight potential locations that would achieve the desired coverage objectives. The alternative analysis indicates that no technically feasible or environmentally superior sites in an allowed zone would address the gap in coverage or result in a superior design with respect to visual impacts or impacts to existing structures and land uses in the vicinity.

Of the eight alternative sites that achieve the coverage objectives of this application, only one (Alternative Site #2) was located in an allowed zone district. The site is a utility pole located adjacent to Soquel Creek Water District's property which is zoned Public Facility. Because of the existing equipment on the pole, this site was deemed infeasible since State of California General Order 95 (*Rules for Overhead Electric Line Construction*) requires that one quadrant of the pole be free of equipment and be designated as a climbing space. Staff requested that additional analysis of sites located within allowed zone districts, but the applicant stated that there are no other feasible sites that meet the coverage objectives.

With respect to the remaining alternative sites, all are located in prohibited zone districts. Those located along the south side of Soquel Drive were all determined to be infeasible because of the same climbing space requirement affecting Alternative Site #2. The remaining four sites located along the north side of Soquel Drive were found to be closer to homes, and thus were determined to be more intrusive and potentially more environmentally damaging than the proposed location.

Based on these considerations, coupled with the fact that any other pole-mounted wireless facility would be virtually identical in terms of visual impacts, staff accepted the Alternatives Analysis and did not require the applicant to pursue one of the alternative sites.

2. That the site is adequate for the development of the proposed wireless communications facility and, for sites located in one of the prohibited and/or restricted areas set forth in SCCC 13.10.661(B) and (C), that the applicant has demonstrated that there are not environmentally equivalent or superior and technically feasible: (1) alternative sites outside the prohibited and restricted areas; and/or (2) alternative designs for the proposed facility as conditioned.

This finding can be made, in that this zone district is identified as a prohibited area under County Code Section 13.10.661(C), and the location of the proposed wireless co-located facility and the conditions under which it would be operated or maintained will be consistent with all pertinent County ordinances, and the directive of Public Utilities Code Section 7901.

The applicant has demonstrated, through the submittal of an Alternatives Analysis, that there are not environmentally equivalent or superior and technically feasible alternative sites outside the prohibited and restricted areas. As described in Finding 1 above, no alternative site was found that meets the coverage objectives, is visually superior and is located outside of the prohibited or restricted zone districts. In addition, the alternative design revisions proposed by staff have been incorporated into the project plans. These include the undergrounding of an electric line that was originally proposed to be located overhead, minimization of related equipment, and painting the addition of a shroud, which is intended to make the cantenna visually appear to be part of the utility pole and thus less visually intrusive.

3. That the subject property upon which the wireless communications facility is to be built is in compliance with all rules and regulations pertaining to zoning uses, subdivisions and any other applicable provisions of this title and that all zoning violation abatement costs, if any, have been paid.

This finding can be made, in that the proposed wireless facility is in compliance with the requirements of the County Code and General Plan designation. Although the project is proposed to be located in a "prohibited" zone district, findings for a Telecommunications Act Exception have been made based upon the Alternatives Analysis.

4. The proposed wireless communication facility as conditioned will not create a hazard for aircraft in flight.

This finding can be made, in that the proposed wireless small cell communication facility will not be located within the Watsonville Municipal Airport approach zone; therefore, the project is not subject to the adopted airport safety regulations for the Watsonville Municipal Airport. Additionally, the maximum height of the project (approximately 32 feet) will be located below the aircraft travel path.

5. The proposed wireless communication facility as conditioned is in compliance with all FCC and California PUC standards and requirements.

This finding can be made, in that the radio frequency exposure levels were evaluated based on the operation of the proposed antenna equipment and found to be within the required standards and requirements. The analysis required by the Wireless Communications Ordinance was conducted by Hammett and Edison, Inc., and is attached as Exhibit G. The proposed levels are within FCC prescribed limits. The maximum level of proposed equipment does not exceed 1.7 percent of the most restrictive public limit at ground level. The maximum exposure on the nearest second-floor elevation from any nearby building is projected to be approximately 3 percent of the most restrictive public exposure limit established by the Federal Communications Commission. Staff requested that the project engineer provide an exposure level for a two-story structure that could be built on APN 037-071-41 in the future. The engineer concluded that the maximum exposure would be 4.4% of the FCC exposure limit (see letter from Rajat Mathur, P.E. of Hammett & Edison, Inc.).

6. For wireless communication facilities in the coastal zone, the proposed wireless communication facility as conditioned is consistent with the applicable requirements of the Local Coastal Program.

The proposed project site is not located within the Coastal Zone.

Development Permit Findings

1. That the proposed location of the project and the conditions under which it would be operated or maintained will not be detrimental to the health, safety, or welfare of persons residing or working in the neighborhood or the general public, and will not result in inefficient or wasteful use of energy, and will not be materially injurious to properties or improvements in the vicinity.

This finding can be made, in that although the project is located in a prohibited zone (RM-6), it has been demonstrated through the submission of an alternatives analysis that no alternative would have less of a visual impact than the proposed project site while meeting the coverage objective of the project.

Construction will comply with prevailing building technology, the California Building Code, and the County Building ordinance to insure the optimum in safety and the conservation of energy and resources. The proposed wireless use will not deprive adjacent properties or the neighborhood of light, air, or open space. In addition, the project will not be materially injurious to properties or improvements in the vicinity.

The radio frequency exposure levels were evaluated by Hammett and Edison, Inc., based on the operation of the proposed antenna equipment. The analysis was conducted as required by the Wireless Communications Ordinance, and is attached as Exhibit G. This report evaluates the existing facility and evaluates projected emission levels. The existing and proposed levels are within FCC prescribed limits. The maximum level of both existing and proposed equipment does not exceed 1.7 percent of the most restrictive public limit at ground level. The maximum exposure on the nearest second-floor elevation from any nearby building is projected to be approximately 3 percent of the most restrictive public exposure limit established by the Federal Communications Commission. If a two-story dwelling were constructed at 037-071-41 sometime in the future, the calculated emissions level would be 4.4 percent of the FCC maximum. Given this, the project is not anticipated to be materially injurious to properties or people in the vicinity.

The location of the proposed wireless facility has been evaluated by the Department of Public Works, Encroachment for compliance with their standards. Given the project's location mounted on a utility pole, it will not obstruct drivers' line of sight or adversely impact vehicles. An encroachment permit is required as a Condition of Approval.

2. That the proposed location of the project and the conditions under which it would be operated or maintained will be consistent with all pertinent County ordinances and the purpose of the zone district in which the site is located.

This finding can be made, in that although the project is located in a prohibited zone (RM-6 Zone District) and requires a Telecommunications Act Exception, it has been demonstrated through the submission of an Alternatives Analysis that no alternative would be located in an allowed zone district and meet the coverage objective while simultaneously having less of a visual impact than the proposed project site. Eight alternative locations were evaluated by the applicant with respect to visual impacts and basic feasibility. The submitted analysis concluded that out of the eight alternative sites, no alternative would have less of a visual impact than the proposed project

site. The alternative sites considered were also existing utility poles and would require construction of a similar wireless facility that would appear virtually identical to the proposed design. Several of the alternative sites evaluated already have an excess of existing equipment on the utility pole, and lack the space needed to allow for the added Verizon wireless communication equipment. Other alternative sites were found to be closer to homes, and thus were determined to be more intrusive and potentially more environmentally damaging than the proposed location. All of the considered alternative utility poles would fill the coverage gap.

In addition to complying with the Telecommunications Act Exception requirements, the project complies with the rest of the County's wireless ordinance. County Code 13.10.661(E) requires compliance with FAA Regulations and requires compliance with adopted airport safety regulations for Watsonville Municipal Airport (Chapter 13.12 SCCC). The project is not located within the Watsonville Municipal Airport approach zone; therefore, the project is not subject to the adopted airport safety regulations for the Watsonville Municipal Airport. In addition, the project's maximum height will be well-below heights affecting airplanes.

County Code 13.10.661(F) requires wireless communication facilities to be sited in the least visually obtrusive location that is technically feasible, unless such site selection leads to other resource impacts that make such a site the more environmentally damaging location overall. As indicated in Section 13.10.663(B)(5) of the County Code, wireless facilities mounted on utility poles, such as the one proposed in this application, are encouraged as a means of mitigating visual impacts of wireless communication facilities. In addition, the project is proposed to be camouflaged to ensure that it appears to be a part of the existing utility infrastructure.

County Code 13.10.661(G) of the County Code generally encourages co-location of new wireless communication facilities onto existing wireless communication facilities and/or existing telecommunication towers if it does not create significant visual impacts. County Code Section 13.10.660(D) expands the notion of "co-location" to mean "placing new wireless communication facilities/antennas upon existing or new P.G. & E. or other utility towers or poles (e.g., "microcell" sites)". Though the wireless communication facility is not proposed to share the utility pole with other wireless communication carriers, the proposal is considered a co-location site per the definition of Section 13.10.660(D).

As indicated in County Code Section 13.10.663(A)(2), the co-location of the proposed facility on a utility pole is a preferred design to that of the construction of a new free standing wireless facility in that it will reduce ground disturbance and visual impacts to public views. Given this and the proposed camouflaging, the proposed site will preserve the visual character of the area in compliance with County Code 13.10.663(A)(1) in that the project will appear as a part of the existing utilities infrastructure. The project is not proposed to be located on a ridgeline, hillside or hilltop (County Code 13.10.663(A)(3)). Virtually no site disturbance will occur since the replacement of the utility pole will occur within the existing improved right-of-way. No vegetation is proposed for removal as a part of this application (County Code 13.10.663(A)(4)). Exterior lighting is expressly prohibited as a condition of approval (County Code 13.10.663(A)(5)). Strategies to minimize visual impacts to neighboring parcels have been incorporated into the project, including: requiring that a proposed overhead electric line be installed underground, minimizing the mass and bulk of the equipment, camouflaging the antenna with a shroud, and painting the equipment on the pole to match the pole color (13.10.663(A)(8 & 9)).

The project also complies with the applicable design review criteria specified in County Code 13.10.663(B). Although the wireless facility is to be installed on a wood pole (i.e., a flammable material), co-locations such as this one are encouraged by County Code. The exterior finish of the equipment shall be painted such that the installation blends in with the color of the utility pole (13.10.663(B)(4)). Visual impact mitigation will be achieved by installing a shroud to cover the antenna and make it appear to be a part of the utility pole, painting the equipment to match the utility pole, minimizing the amount of equipment, and placing the previously proposed overhead electrical line underground (13.10.663(B)(5)). The proposed height of the utility pole will be about 32 feet high, a height that addresses the coverage objectives of the carrier but is still similar to the utility poles in the vicinity (13.10.663(B)(6)). No permanent lighting is proposed as a part of this application and, by condition of approval, none is allowed in the future (13.10.663(B)(7)). Conditions of approval are included limiting construction to weekdays during the hours of 8 AM and 6 PM and no generators are allowed (13.10.663(B)(11)). To ensure the ongoing maintenance of the site, conditions are included requiring that the camouflaging remains in good condition as well as requiring that the equipment be modified or eliminated as superior technology becomes available to ensure that environmental impacts, including visual impacts, are minimized (13.10.663(B)(17)).

3. That the proposed use is consistent with all elements of the County General Plan and with any specific plan which has been adopted for the area.

This finding can be made, in that the proposed Wireless Communication small cell Facility use is consistent with the use requirements specified for the R-UM (Urban Medium Density Residential) land use designation in the County General Plan.

The proposed wireless communication facility is compatible with adjacent uses in that the wireless communications facility was subject to Design Review and its design is consistent with the design review standards, as specified in Policy 8.5.2 (Commercial Compatibility With Other Uses). By camouflaging the antenna with a shroud to make it appear to be a part of the utility pole and painting the equipment to match the pole color, the facility is expected to visually appear to be a part of the existing utilities infrastructure.

The proposed WCF will be consistent with the character of the neighborhood as specified in General Plan Policy 8.1.2 (Design Review Ordinance), in that the proposed wireless facility will comply with the design criteria and has been sited and designed to be visually compatible with the neighborhood. The project has been conditioned to ensure the facility is maintained in good condition and will continue to blend with the existing utilities infrastructure.

A specific plan has not been adopted for this portion of the County.

4. That the proposed use will not overload utilities and will not generate more than the acceptable level of traffic on the streets in the vicinity.

This finding can be made, in that the proposed wireless communication facility is to be installed on a new utility pole located within a public right-of-way. The project will not result in adverse impacts to existing utilities, and electric service is readily available at the proposed location. Given the small

scale of this installation, it will not overload utilities. Once installed, the proposed wireless facility, may require periodic maintenance; the occasional maintenance trip is not expected to adversely impact existing roads or intersections in the surrounding area.

5. That the proposed project will complement and harmonize with the existing and proposed land uses in the vicinity and will be compatible with the physical design aspects, land use intensities, and dwelling unit densities of the neighborhood.

As proposed, the project has been designed to complement the surrounding land uses in the vicinity and will result in a project which is compatible with the physical design aspects of the neighborhood. The area identified as having a gap in coverage contains mostly single- and multifamily-residential development and a few commercial and public facility uses. The location of the proposed facility is near to several residentially-zoned parcels and roughly 66.5 feet from the nearest residence.

The proposed facility's antenna is designed to appear as an extension of the utility pole. The equipment mounted on the side of the utility pole will be camouflaged (painted) to blend with the color and design of the utility pole. Camouflage shall be maintained in perpetuity. Together, these efforts are anticipated to make the site appear to be a part of the existing electrical and telephone infrastructure.

6. The proposed development project is consistent with the Design Standards and Guidelines (sections 13.11.070 through 13.11.076), and any other applicable requirements of this chapter.

This finding can be made, in that the proposed wireless small cell facility mounted on a new wood utility pole will be of an appropriate scale and type of design that will not reduce or visually impact any designated visual resources. The project is designed to visually appear to be a part of the existing electrical and telephone infrastructure. The project will be camouflaged so that the antennas appear to be an extension of the utility pole and the equipment on the side of the pole will be painted to match the utility pole. These efforts will minimize the visual impact of the project. The pedestal electrical meter is about four feet five inches in height so is not anticipated to have a significant visual impact.

Conditions of Approval

Exhibit D: Project plans, 14 sheets, prepared by On Air LLC, dated 11/22/17.

- I. This permit authorizes the construction of a utility pole mounted wireless communication facility and ground mounted electric pedestal meter as indicated on the approved Exhibit "D" for this permit. It is the permit-holder's responsibility to receive authorization from the pole-owner for the replacement of the pole and installation of the wireless facility. This approval does not confer legal status on any existing structure(s) or existing use(s) on the subject property that are not specifically authorized by this permit. Prior to exercising any rights granted by this permit including, without limitation, any construction or site disturbance, the applicant/owner shall:
 - A. Sign, date, and return to the Planning Department one copy of the approval to indicate acceptance and agreement with the conditions thereof.
 - B. Obtain a Building Permit from the Santa Cruz County Building Official.
 1. Any outstanding balance due to the Planning Department must be paid prior to making a Building Permit application. Applications for Building Permits will not be accepted or processed while there is an outstanding balance due.
 - C. Obtain an Encroachment Permit from the Department of Public Works.
 - D. Submit proof that these conditions have been recorded in the official records of the County of Santa Cruz (Office of the County Recorder) within 30 days from the effective date of this permit.
- II. Prior to issuance of a Building Permit the applicant/owner shall:
 - A. Submit final architectural plans for review and approval by the Planning Department. The final plans shall be in substantial compliance with the plans marked Exhibit "D" on file with the Planning Department. Any changes from the approved Exhibit "D" for this development permit on the plans submitted for the Building Permit must be clearly called out and labeled by standard architectural methods to indicate such changes. Any changes that are not properly called out and labeled will not be authorized by any Building Permit that is issued for the proposed development. The final plans shall include the following additional information:
 1. A copy of the text of these conditions of approval incorporated into the full size sheets of the architectural plan set.
 2. One elevation shall indicate materials and colors as they were approved by this Discretionary Application. If specific materials and colors have not been approved with this Discretionary Application, in addition to showing the materials and colors on the elevation, the applicant shall supply a color and material sheet in 8 1/2" x 11" format for Planning Department review and

EXHIBIT C

approval.

- a. Equipment shall be shown as painted to match the utility pole.
- b. The shroud shall cover the antenna and extend beyond the top of the pole. No gap between the top of the pole and the shroud is allowed.

- 3. Details showing compliance with fire department requirements. If the proposed structure(s) are located within the State Responsibility Area (SRA) the requirements of the Wildland-Urban Interface code (WUI), California Building Code Chapter 7A, shall apply.

- B. Meet all requirements and pay any applicable plan check fee of the Central Fire Protection District.

III. All construction shall be performed according to the approved plans for the Building Permit. Prior to final building inspection, the applicant/owner must meet the following conditions:

- A. All site improvements shown on the final approved Building Permit plans shall be installed.
- B. All inspections required by the building permit shall be completed to the satisfaction of the County Building Official.
- C. Lighting at the site is prohibited and signage shall be limited to Federal safety requirements at the minimum size allowed.
- D. Pursuant to Sections 16.40.040 and 16.42.080 of the County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this development, any artifact or other evidence of an historic archaeological resource or a Native American cultural site is discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner if the discovery contains human remains, or the Planning Director if the discovery contains no human remains. The procedures established in Sections 16.40.040 and 16.42.080, shall be observed.

IV. Operational Conditions

- A. In the event that future County inspections of the subject property disclose noncompliance with any Conditions of this approval or any violation of the County Code, the owner shall pay to the County the full cost of such County inspections, including any follow-up inspections and/or necessary enforcement actions, up to and including permit revocation.
- B. Installation of the approved wireless facility may occur only on weekdays during the hours of 8 AM and 6 PM.

- C. No expansion of equipment will be allowed to extend beyond the approved camouflaging.
- D. The use of temporary generators to power the wireless communication facility is not allowed. At no time shall the noise generated by the project exceed 45 Ldn within nearby residences. Should complaints about noise impacts be received, an acoustical study may be required.
- E. No permanent site lighting is allowed.
- F. The exterior finish and materials of the wireless communication facility, including the shroud, must be maintained on an annual basis to ensure that the camouflaging remains in excellent condition. Additional paint and/or replacement materials shall be installed as necessary to blend the wireless communication facility with the existing utilities infrastructure.
- G. Graffiti and or other vandalism of the site shall be removed and or repaired immediately upon the permittee or WCF owner becoming aware of it. No graffiti or other vandalism shall remain or be unrepaired for longer than 30 days.
- H. Unless otherwise approved as a part of an encroachment permit, during installation and maintenance of the wireless facility and associated equipment, the right-of-way shall be kept clear of all construction materials and vehicles.
- I. The operator of the wireless communication facility must submit within 90 days of commencement of normal operations (or within 90 days of any major modification of power output of the facility) a written report to the Santa Cruz County Planning Department documenting the measurements and findings with respect to compliance with the established Federal Communications Commission (FCC) Non-Ionizing Electromagnetic Radiation (NEIR) exposure standard. The wireless communication facility must remain in continued compliance with the NEIR standard established by the FCC at all times. Failure to submit required reports or to remain in continued compliance with the NEIR standard established by the FCC will be a violation of the terms of this permit.
- J. If, as a result of future scientific studies and alterations of FCC standards resulting from those studies, substantial evidence is presented to Santa Cruz County that radio frequency transmissions may pose a hazard to human health and/or safety, the Santa Cruz County Planning Department shall set a public hearing and in its sole discretion, may revoke or modify the conditions of this permit.
- K. If future technological advances would allow for reduced visual impacts resulting from the proposed telecommunication facility, the operator of the wireless communication facility must make those modifications which would allow for reduced visual impact of the proposed facility as part of the normal replacement schedule. If, in the future, the facility is no longer needed, the operator of the wireless communication facility must abandon the facility and be responsible for

the removal of all permanent structures and the restoration of the site as needed to re-establish the area consistent with the character of the surrounding natural landscape.

- L. Any modification in the type of equipment shall be reviewed and acted on by the Planning Department staff. The County may deny the modification or amend the approved conditions at that time, or the Planning Director may refer it for public hearing before the Zoning Administrator.
- M. Transfer of Ownership: In the event that the original permittee sells its interest in the permitted wireless communications facility, the succeeding carrier shall assume all responsibilities concerning the project and shall be held responsible to the County for maintaining consistency with all project conditions of approval, including proof of liability insurance. Within 30-days of a transfer of ownership, the succeeding carrier shall provide a new contact name to the Planning Department.
- N. As soon as possible, replace the pedestal electric meter with a pole-mounted meter if PG&E authorizes such an installation. This would require the removal of the pedestal meter and the patching footprint to create an even sidewalk surface compliant with the requirements of the County's Department of Public Works.
- V. As a condition of this development approval, the holder of this development approval ("Development Approval Holder"), is required to defend, indemnify, and hold harmless the COUNTY, its officers, employees, and agents, from and against any claim (including attorneys' fees), against the COUNTY, its officers, employees, and agents to attack, set aside, void, or annul this development approval of the COUNTY or any subsequent amendment of this development approval which is requested by the Development Approval Holder.
 - A. COUNTY shall promptly notify the Development Approval Holder of any claim, action, or proceeding against which the COUNTY seeks to be defended, indemnified, or held harmless. COUNTY shall cooperate fully in such defense. If COUNTY fails to notify the Development Approval Holder within sixty (60) days of any such claim, action, or proceeding, or fails to cooperate fully in the defense thereof, the Development Approval Holder shall not thereafter be responsible to defend, indemnify, or hold harmless the COUNTY if such failure to notify or cooperate was significantly prejudicial to the Development Approval Holder.
 - B. Nothing contained herein shall prohibit the COUNTY from participating in the defense of any claim, action, or proceeding if both of the following occur:
 - 1. COUNTY bears its own attorney's fees and costs; and
 - 2. COUNTY defends the action in good faith.
 - C. Settlement. The Development Approval Holder shall not be required to pay or perform any settlement unless such Development Approval Holder has approved the

settlement. When representing the County, the Development Approval Holder shall not enter into any stipulation or settlement modifying or affecting the interpretation or validity of any of the terms or conditions of the development approval without the prior written consent of the County.

- D. Successors Bound. "Development Approval Holder" shall include the applicant and the successor(s) in interest, transferee(s), and assign(s) of the applicant.

Minor variations to this permit which do not affect the overall concept or density may be approved by the Planning Director at the request of the applicant or staff in accordance with Chapter 18.10 of the County Code.

Please note: This permit expires three years from the effective date listed below unless a building permit (or permits) is obtained for the primary structure described in the development permit (does not include demolition, temporary power pole or other site preparation permits, or accessory structures unless these are the primary subject of the development permit). Failure to exercise the building permit and to complete all of the construction under the building permit, resulting in the expiration of the building permit, will void the development permit, unless there are special circumstances as determined by the Planning Director.

Approval Date: _____

Effective Date: _____

Expiration Date: _____

Jocelyn Drake
Deputy Zoning Administrator

Appeals: Any property owner, or other person aggrieved, or any other person whose interests are adversely affected by any act or determination of the Zoning Administrator, may appeal the act or determination to the Planning Commission in accordance with chapter 18.10 of the Santa Cruz County Code.

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1. INSTALL NEW TRENCH, UNLOCATE & EQUIP IT (B,C) ON A NEW 36" HI. REPLACEMENT WOOD POLE (3" ABOVE GROUND) TO BE INSTALLED ON A 6" RISER COMPONENT (2" INDENT) BRACKET.
2. DISCONNECT SWITCH (1) BUS BAR (2) ELECTRICAL FEEDER, PEDestal, METER, (1) EQUIPMENT TO BE PAIRED, (3) POWER SUPPLY UNIT, (4) EQUIPMENT TO BE PAIRED, (5) NEW 36" HI. WOOD POLE (3" ABOVE GROUND) TO BE INSTALLED ON A 6" RISER COMPONENT (2" INDENT) BRACKET.
3. UTILITY LINES BETWEEN EXISTING POINT OF CONNECTION & POLE TO BE UNDERGROUND.

SHEET NO:	SHEET TITLE
-----------	-------------

CONTRACTOR SHALL VERIFY ALL PLANS & (E) DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME IF USING 1"X17" PLOT. DRAWINGS WILL BE HALF SCALE

PROJECT #20161464340
PEOPLESOFT LOCATION #4255593

423899	ALBERTA CREDIT BUREAU 300 PARK TOWER SACRAMENTO, CA 95810 SACRAMENTO, CA 95810 SACRAMENTO, CA 95810 141.501.2600	VERBODEN TOEGANG 2253 MCINTOSH DRIVE, SUITE 8 WALTON CREEK, CA 94595	VERBODEN TOEGANG 4400 15TH AVE. S. SUITE 301 DENVER, CO 80202 TEL: 703.705.6555	VERBODEN TOEGANG 10000 141ST AVE. S.E. SUITE 100 BOZEMAN, MT 59715	VERBODEN TOEGANG SANTA CRUZ COUNTY SANTA CRUZ COUNTY SANTA CRUZ COUNTY
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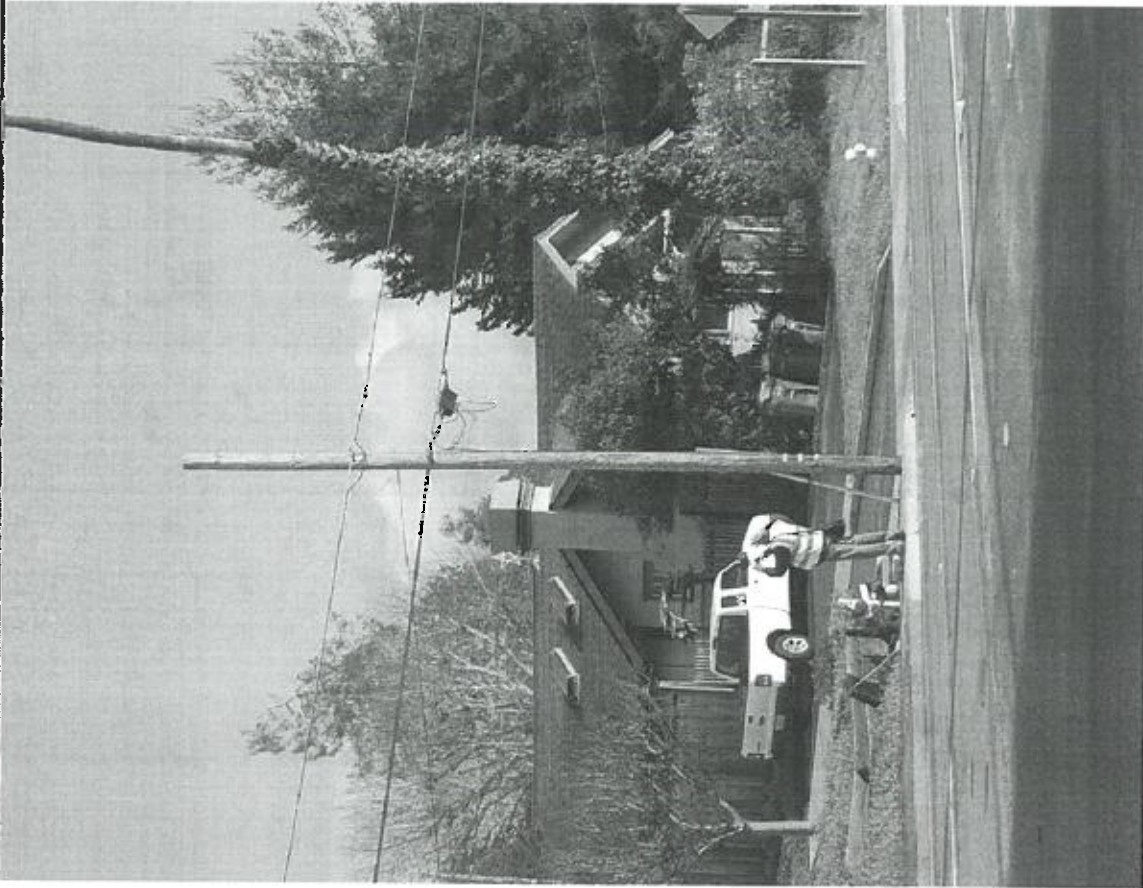
1. J. A. Roberts, *Journal of the Royal Society of Medicine*, 1998, 91, 103-104.
2. J. A. Roberts, *Journal of the Royal Society of Medicine*, 1998, 91, 103-104.
3. J. A. Roberts, *Journal of the Royal Society of Medicine*, 1998, 91, 103-104.
4. J. A. Roberts, *Journal of the Royal Society of Medicine*, 1998, 91, 103-104.
5. J. A. Roberts, *Journal of the Royal Society of Medicine*, 1998, 91, 103-104.
6. J. A. Roberts, *Journal of the Royal Society of Medicine*, 1998, 91, 103-104.
7. J. A. Roberts, *Journal of the Royal Society of Medicine*, 1998, 91, 103-104.
8. J. A. Roberts, *Journal of the Royal Society of Medicine*, 1998, 91, 103-104.
9. J. A. Roberts, *Journal of the Royal Society of Medicine*, 1998, 91, 103-104.
10. J. A. Roberts, *Journal of the Royal Society of Medicine*, 1998, 91, 103-104.

[illegible]

FACILITY IS UNARMED AND NOT FOR HUMAN HABITATION.
HANDICAPPED ACCESS NOT REQUIRED IN ACCORDANCE WITH
CALIFORNIA ADMINISTRATIVE STATE CODE PAR. 2, TITLE 21,
CHAPTER 11B, SECTION 11033

USA NORTH 84
Call 1-800-848-8484
1200 Franklin Street, Suite 100
Baltimore, MD 21201

NOT TO SCALE



POLE DETAIL

SC Curtis
Curtis C. Curtis, Inc. 10000 E. 1st Ave. Suite 100
Denver, CO 80231
Phone: (303) 733-1111
Fax: (303) 733-1112
www.curtisc.com

REVISIONS	
NO.	DATE
1	12/24/19
2	03/14/17
REV PER BIAL	
ISSUED FOR REVIEW	

Verizon

VERIZON WIRELESS
2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94598

425593
SOQUEL DRIVE SC2
NEAR 3010 PASCO DEL SOL
SOQUEL, CA 95073

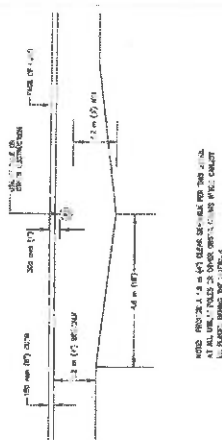
DATE: 03/17/17
JOB NO. 16031
SHEET NO.

C-2

EXHIBIT SHOWN IS BASED ON RECORD INFORMATION AND FIELD INVESTIGATION. THIS IS NOT A GUARANTEED PRODUCT. SITES SHOWN ARE APPROXIMATE.

5:10 PM 3/17/2017 11:40:23 AM PST



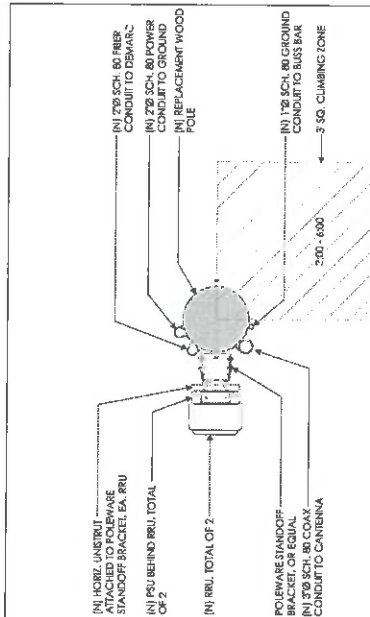


SIDEWALK TRANSITION AT CROSSING

SANTA CRUZ COUNTY SIDEWALK CLEARANCE STANDARDS (FIG. 5T-12)

CONDUITS/U-GUARDS SCHEDULE

1. FIBER FROM BASE OF POLE TO NEW TRANSPORT VAULT
2. FIBER FROM NEW TRANSPORT VAULT TO CHARLES CABINET
3. 2" AC POWER FROM EXISTING POE VAULT TO POE METER PED
4. 2" AC POWER FROM POE METER PED TO CHARLES CAB
5. 3" FIBER/DC POWER FROM CHARLES TO BRUS
6. 3" COAX FROM BRUS TO ANTENNA



STREET

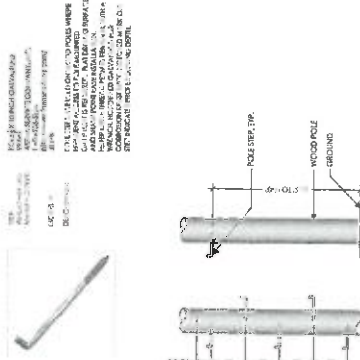
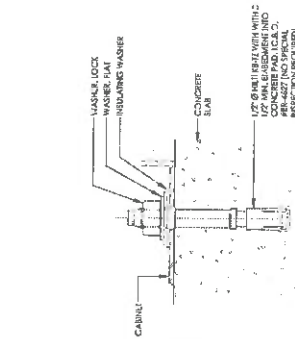
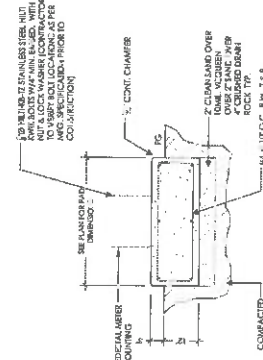
POLE PLAN ENLARGEMENT

BOY F ENL ADCEMENT

815



STANDARD BRACKET MOUNT, #PW-S03-13-R-S,
MFG. BY POLYFARE, LLC, (716) 941-1244, OR
EQUAL



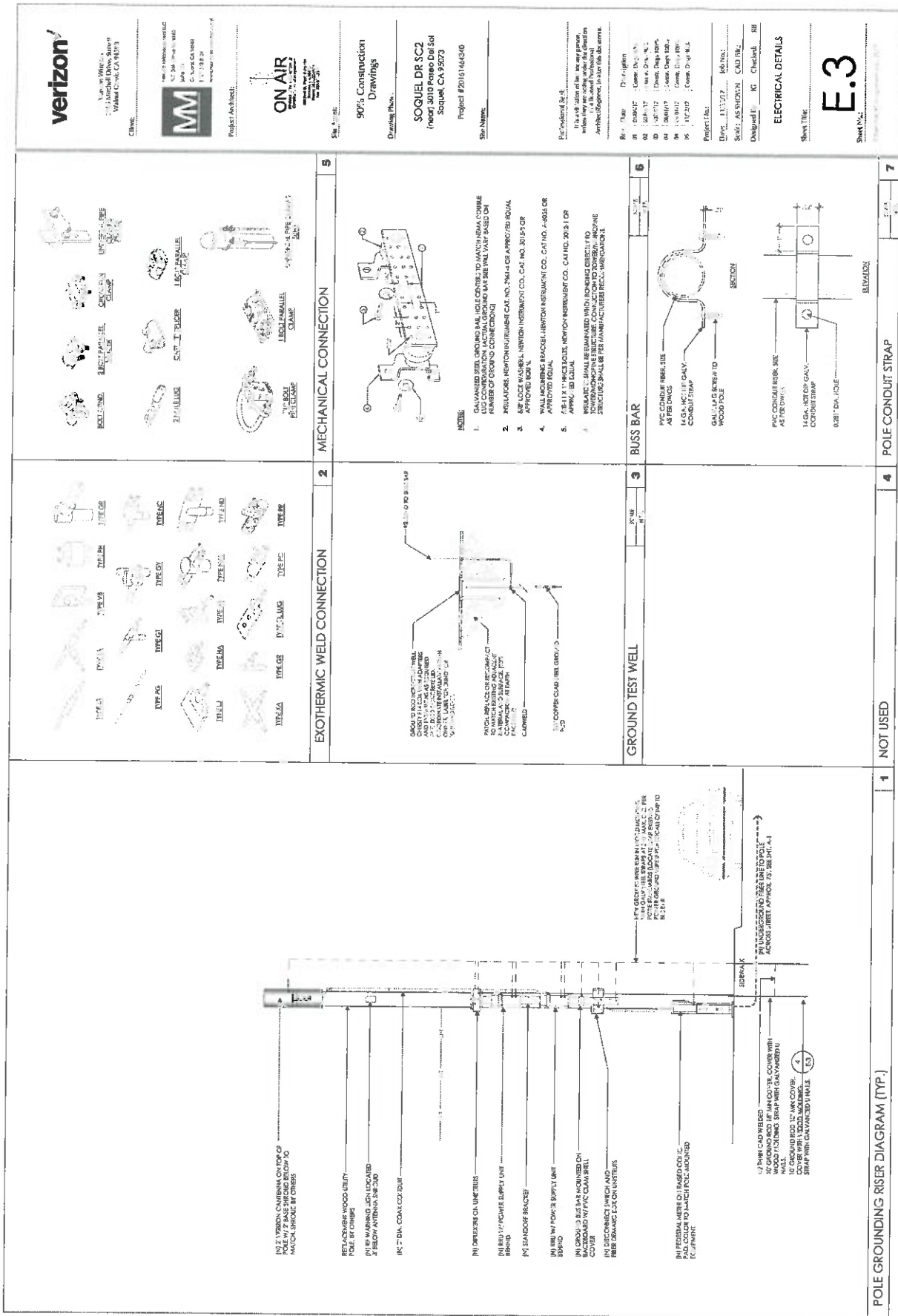
STANDOFF AND RFU MOUNTING BRACKET

CANTENNA POLETOP MOUNTING

CONCRETE PAD

CABINET ACHORAGE

OLE STEPS



Verizon

ON AIR

90% Construction Drawings

SOQUEL DR SC2

Project #2016144340

Electrical Details

E.3

Tax Area Code
96-038 96-076
96-101

POR. SOQUEL RANCHO
SEC. 10, T.11S., R.1W., M.D.B. & M.

CRYSTAL HEIGHTS SUB. TR# 456
44MB10 6/8/1985

FOR TAX PURPOSES ONLY

17PM72
2/24/87

02

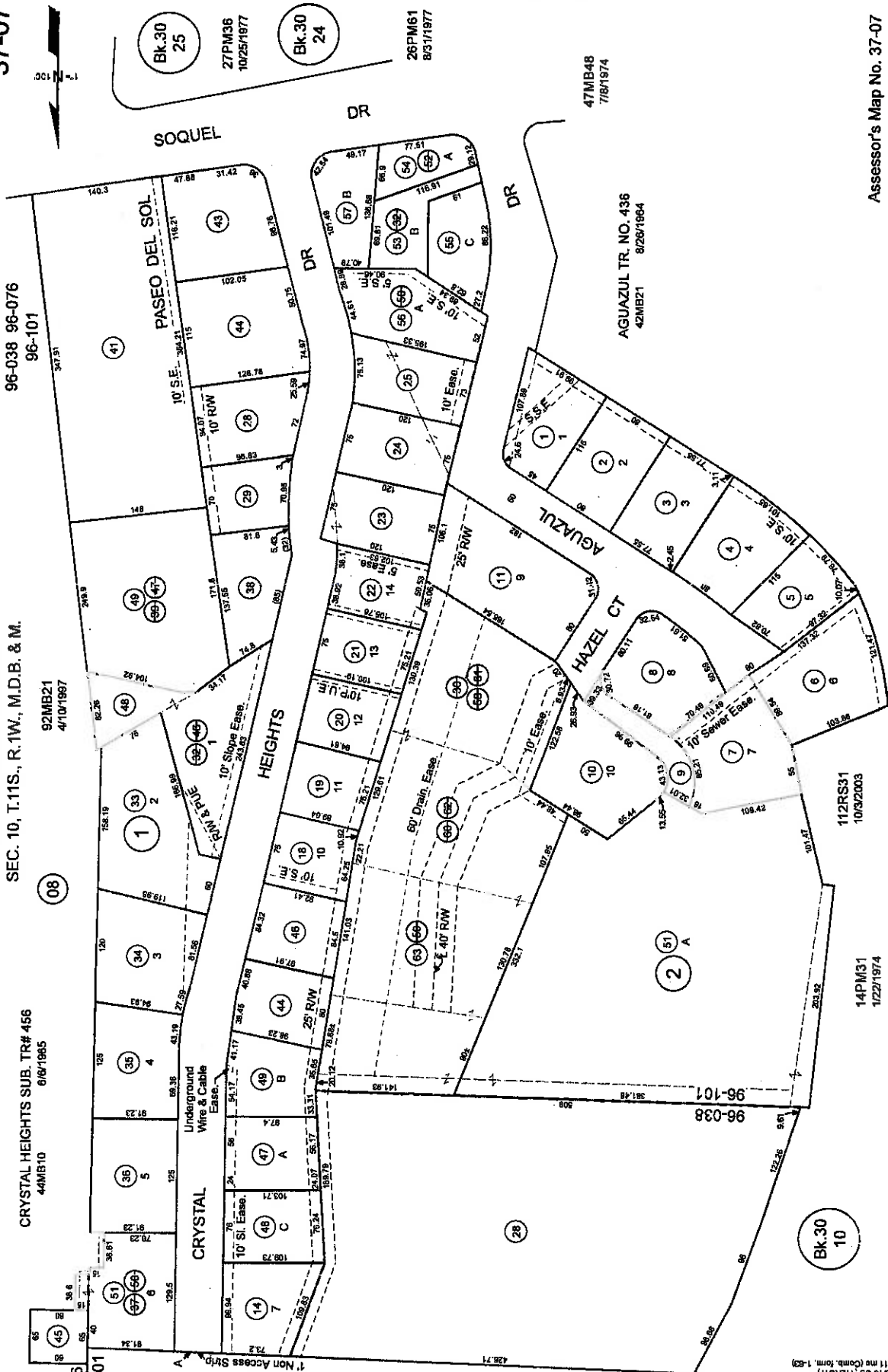
2PM30
1/7/1971

Bk. 30

Electrically drawn 4/256 with
 Rev. 8/8/88 CB (8-0004830 & 31, LBA 1-50)
 Rev. 12/8/88 CB (8-00063399, LBA 1-51)
 Rev. 4/25/89 CB (For pg 37-08)
 Rev. 4/25/89 mmm (changed page refs.)
 Rev. 12/7/93 mmm (et. name)
 Rev. 6/17/03 CB (Col. RTW as per 42M211)
 Rev. 6/1/04 CB (1124517)
 Rev. 5/2/11 mo (Comb. form, 1-83)

Note - Assessor's Parcel & Block Numbers Shown in Circles.

Assessor's Map No. 37-07
County of Santa Cruz, Calif.
Apr., 1998

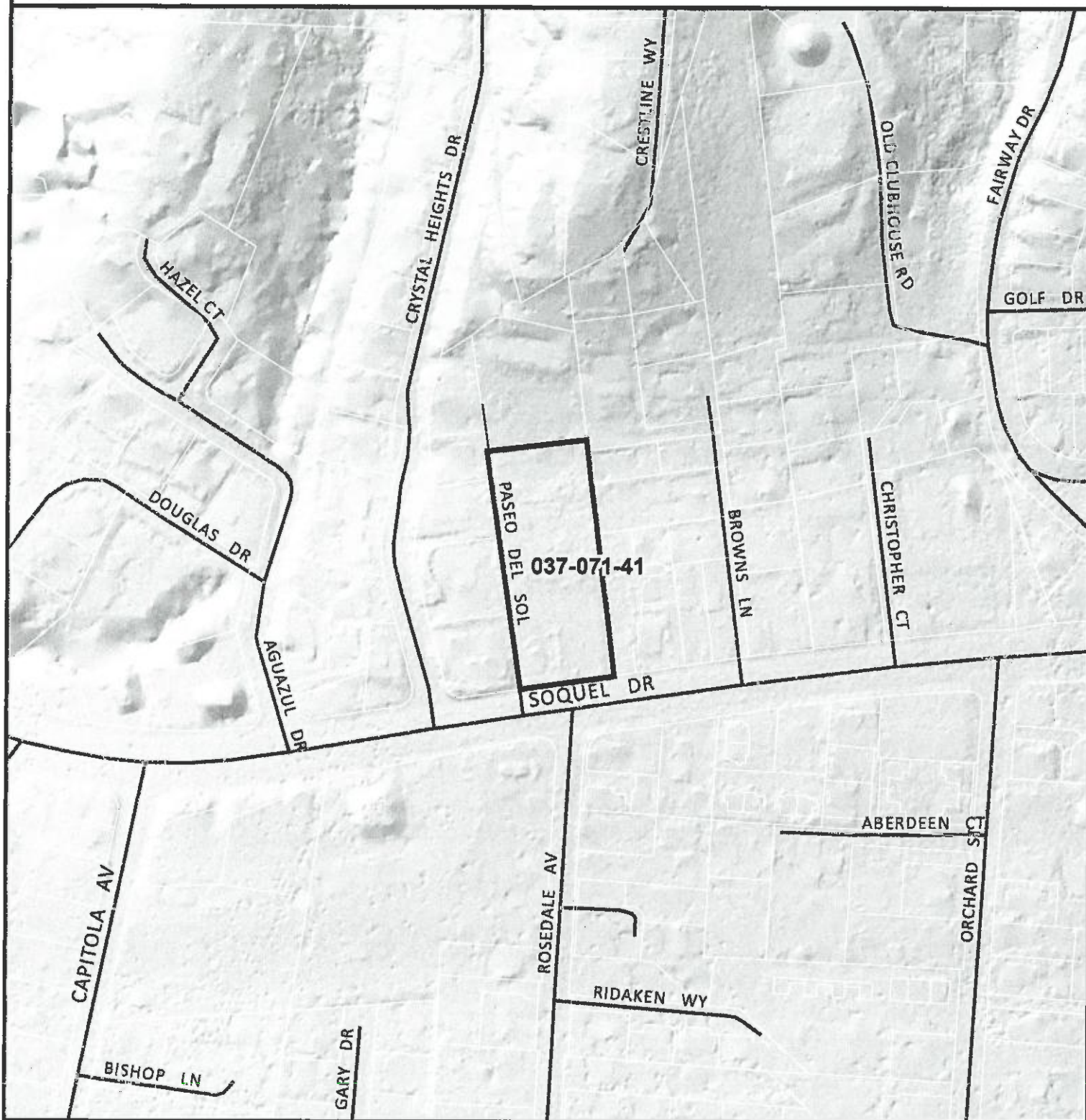




Parcel Location Map

Santa Cruz County Planning Department

Parcel Number
037-071-41
Apr. 30, 2018



Symbol Key

— Street



0 80 160
Feet



Parcel Zoning Map

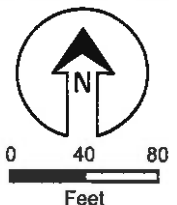
Santa Cruz County Planning Department

Parcel Number
037-071-41
Apr. 30, 2018



Zoning

- (PF) Public & Community Facilities
- (R-1) Single-Family Residential
- (RA) Residential Agricultural
- (RM) Residential Multi-Family
- (SU) Special Use





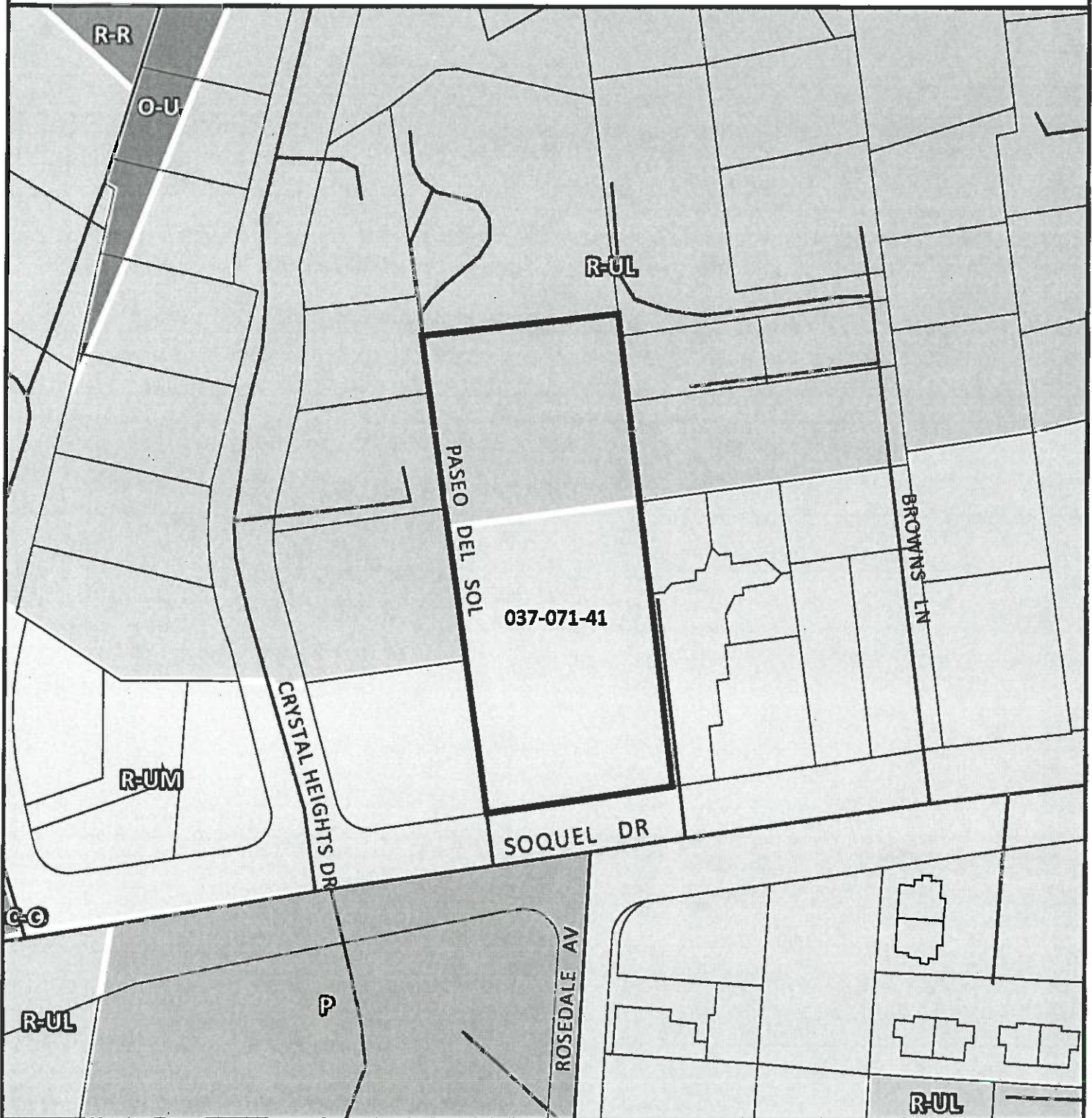
Parcel General Plan Map

Santa Cruz County Planning Department

Parcel Number

037-071-41

Apr. 30, 2018



General Plan

C-O - Commercial-Office

P - Public Facilities

R-R - Residential-Rural

R-UL - Residential - Urban Low Density

R-UM - Residential - Urban Medium Density

O-U - Urban Open Space



0 40 80
Feet

Exhibit F: Comments and Correspondence

None received as of 5/9/18

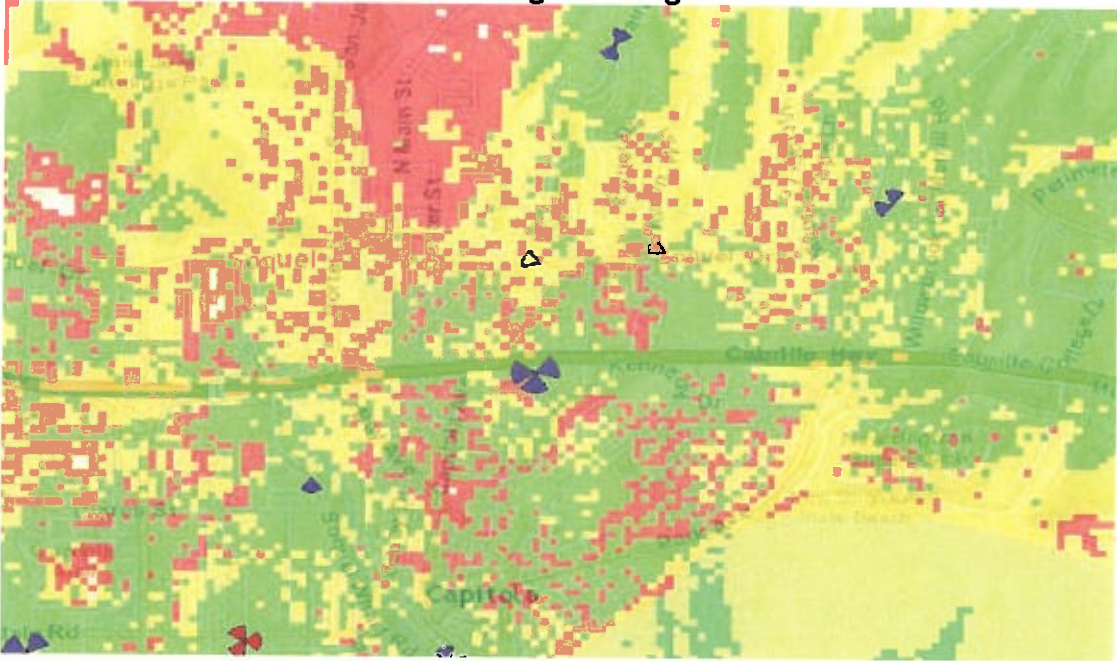
Soquel Drive SC2

Alternative Sites Analysis Revised 3/6/18

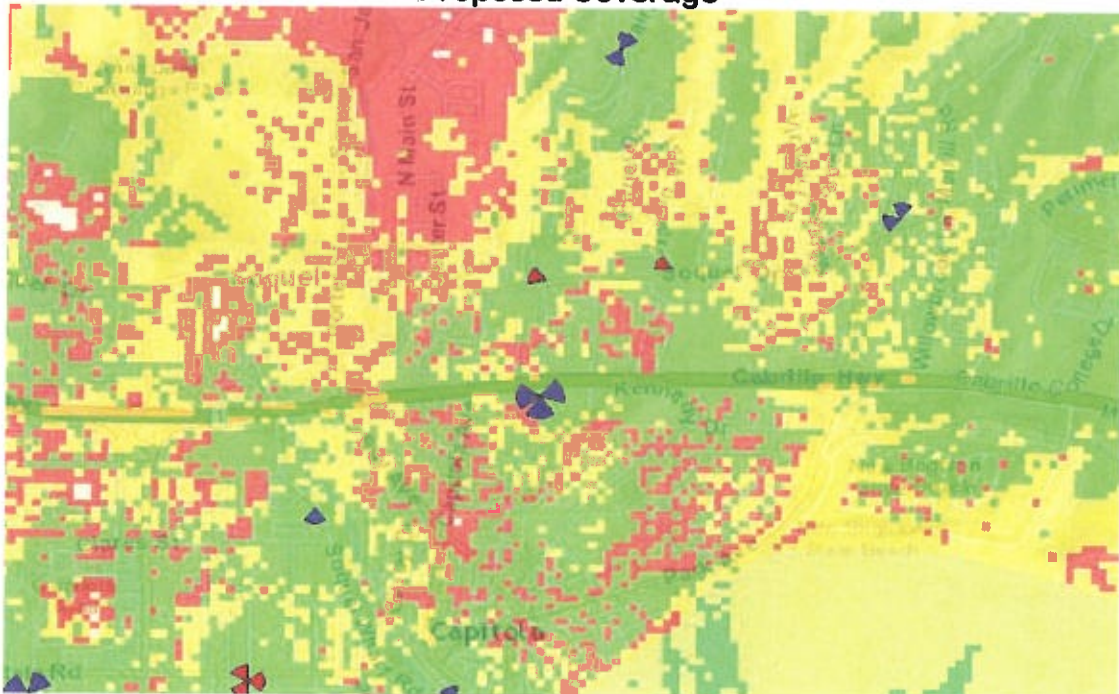
Soquel Drive Right of Way – Near 3010 Paseo Del Sol

The objective of this search ring is to find a site that will improve the coverage in and along Soquel Drive. There were several sites reviewed before Verizon Wireless decided to develop this location. This site provides the least intrusive way to fill the significant coverage gap described above. The coverage gap is illustrated more clearly, when comparing the existing coverage area and the proposed area on the coverage maps below.

Existing Coverage



Proposed Coverage



At the bottom of this page is an aerial view of the eight (8) alternative sites discussed in this report. It is important to understand that these sites are lower powered and do not cover the area that a full macro site would. Due to that the Verizon Wireless Radio Frequency Engineer (RF Engineer) has little flexibility in location of this site. Also the RF Engineer has to make sure that the site will be located in a position that it works well with the other existing and proposed sites in the local vicinity. The RF engineer has made a statement (See Exhibit A) on the flexibility of the location of this site per staff request to expand the search in areas that are not prohibited or restricted. The following was the statement via email that the RF engineer had regarding flexibility of the location.

"We can explore candidates to the east up to 350' away from our approved candidate. Any more and it will be too close to Soquel Dr SC1 (Application # 171172). Any movement to the west will bring it too close to another candidate we are working on for our Soquel Polygon."

In addition to the constraint from the RF engineer, Verizon has constraints on what they believe the county can legally require them to analyze as far as the type of technology Verizon should use. Verizon has chosen to use their microcell technology in the Right of Way (ROW) to cover the significant gap in coverage/capacity. Therefore this report reviews only the poles in the ROW. Furthermore, California courts have determined that local jurisdictions have a limited right to regulate aesthetics in the ROW for wireless facilities. As part of their aesthetic review, a local jurisdiction may evaluate alternate poles in the ROW that have less aesthetic impact. In our analysis we have found no pole in the ROW that would have less visual impact than the proposed location. The design would be identical to the subject design on the poles that are available and feasible to use.



EXHIBIT A

1) Alternate Site #1

Address: Soquel Drive ROW - near

Lat: 36.987503°N

Long: 121.949317°W

Reason (s) did not work:

This location is just to the west of the subject pole. It is a pole of similar height of the subject pole and owned by AT&T. It would be feasible to build a similar facility on this pole. However this pole was not selected as it is closer to two houses where the subject pole is farther away from the nearest house and thus we believe is a less intrusive site to fill the coverage gap. Also, it was brought to our attention after staff asked to expand the search further from the RF engineer that he doesn't want to move the site to the west. So while feasible from a construction standpoint we feel it is not a desired candidate for the two reasons listed above.



2) Alternate Site #2

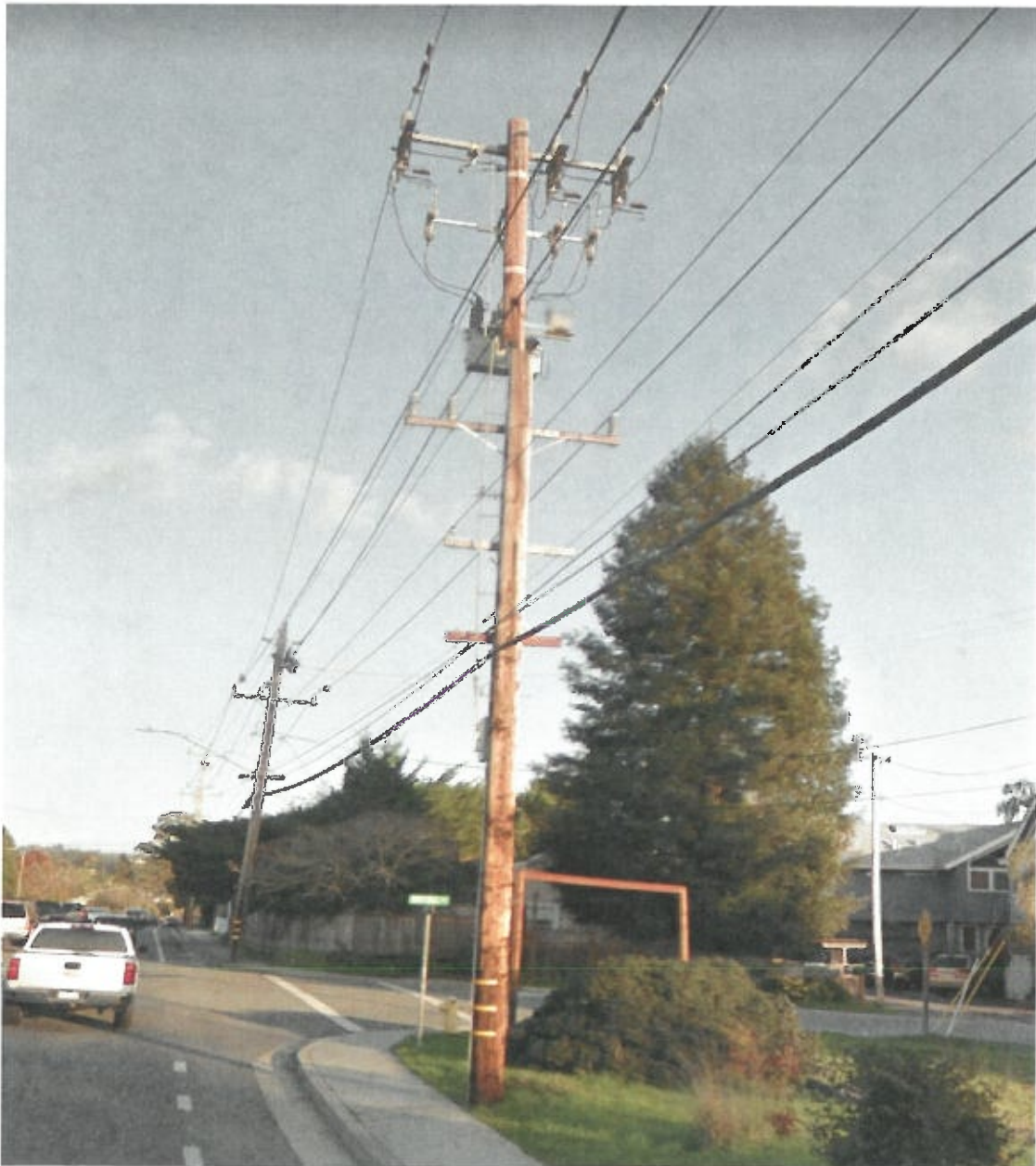
Address: Soquel Drive ROW

Lat: 36.987309°N

Long: 121.949265°W

Reason (s) did not work:

This location is just to the west and south of the subject pole. It is a pole of similar height of the majority of the poles along this line located on the south side of Soquel Drive. The pole is owned by PG&E. It not feasible to build a site on this pole due to General Order 95 requiring that at least one quadrant of the pole be free of equipment and be designed as climbing space. This pole has too much existing equipment on the pole so that there is no way add the needed Verizon equipment and also be able to have one quadrant of the pole remain free for climbing space.



3) Alternate Site #3

Address: Soquel Drive ROW

Lat: 36.987367°N

Long: 121.948835°W

Reason (s) did not work:

This location is directly across Soquel Drive to the south from the subject pole. It is a pole of similar height of the majority of the poles along this line located on the south side of Soquel Drive. The pole is owned by PG&E. It is not feasible to build a site on this pole due to General Order 95 requiring that at least one quadrant of the pole be free of equipment and be designed as climbing space. This pole has too much existing equipment on the pole so that there is no way add the needed Verizon equipment and also be able to have one quadrant of the pole remain free for climbing space.

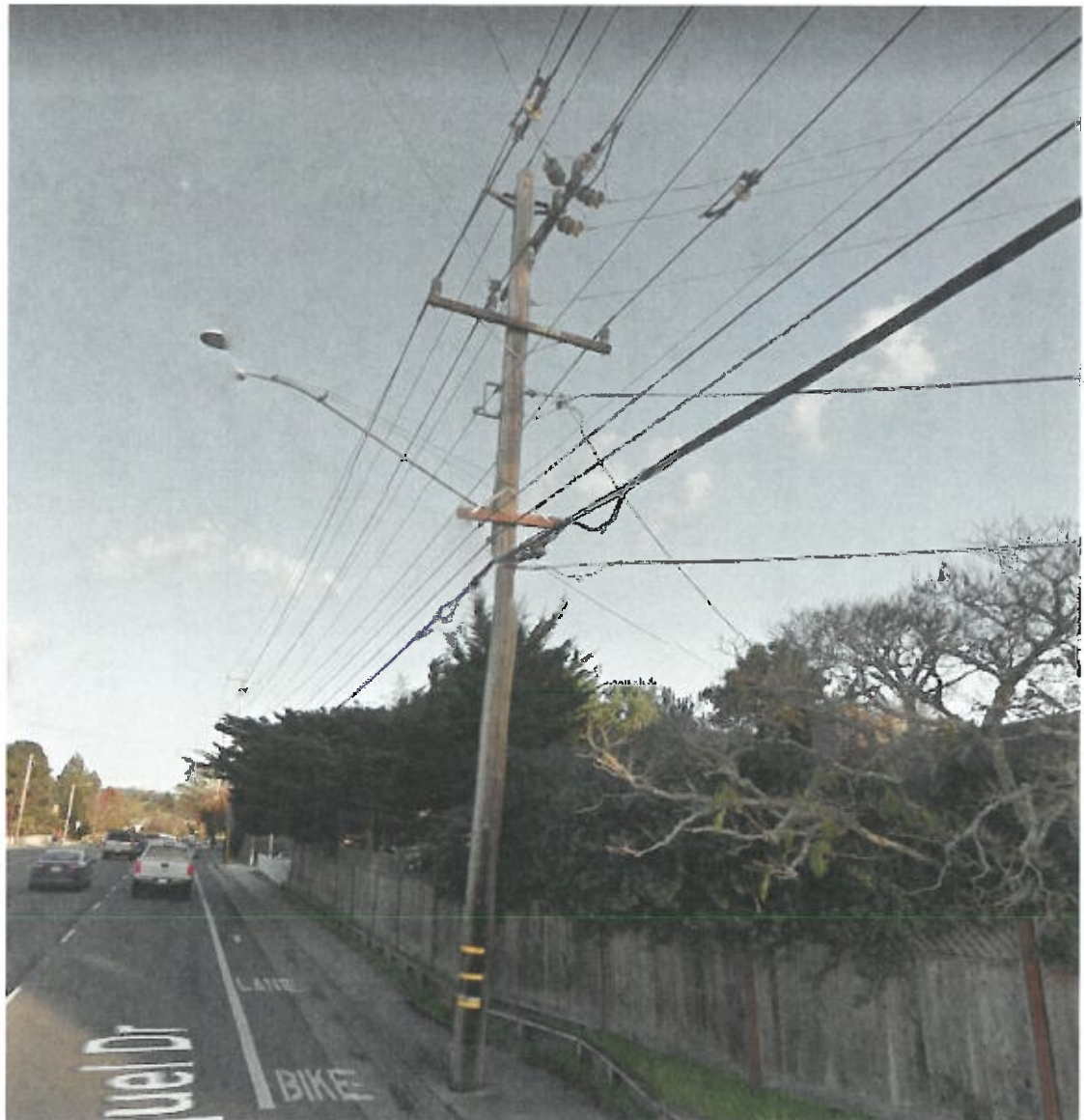


EXHIBIT G

4) Alternate Site #4

Address: Soquel Drive ROW

Lat: 36.987367°N

Long: 121.948835°W

Reason (s) did not work:

This location is just to the west of Alternative pole #3. It is a pole of similar height of the majority of the poles along this line located on the south side of Soquel Drive. The pole is owned by PG&E. It not feasible to build a site on this pole due to General Order 95 requiring that at least one quadrant of the pole be free of equipment and be designed as climbing space. This pole has too much existing equipment on the pole so that there is no way add the needed Verizon equipment and also be able to have one quadrant of the pole remain free for climbing space.



5) Alternate Site #5

Address: Soquel Drive ROW

Lat: 36.987367°N

Long: 121.948835°W

Reason (s) did not work:

This location is just to the east of the subject pole. It is a pole of similar height of the subject pole and owned by AT&T. It would be feasible to build a similar facility on this pole. However this pole was not selected as it is closer to three houses where the subject pole is farther away from the nearest home nearby and thus we believe is a less intrusive site to fill the coverage gap.



6) Alternate Site #6

Address: Soquel Drive ROW

Lat: 36.987683°N

Long: -121.948126°W

Reason (s) did not work:

This location is just to the east of the alternative pole #5. It is a pole of similar height of the subject pole and owned by AT&T. It would be feasible to build a similar facility on this pole. However this pole was not selected, as it is closer to two houses where the subject pole is farther away from the nearest home nearby and thus we believe is a less intrusive site to fill the coverage gap.



7) Alternate Site #7

Address: Soquel Drive ROW

Lat: 36.987697°N

Long: -121.947837°W

Reason (s) did not work:

This location is just to the east of the Alternative pole # 6. It is a pole of similar height of the subject pole and owned by AT&T. It would be feasible to build a similar facility on this pole. However this pole was not selected as it is directly in front of the house on the north side of Soquel Drive, where the subject pole is farther away from the nearest home and thus we believe the subject site is a less intrusive site to fill the coverage gap. Regarding the north side of Soquel Drive, this is the furthest east that the Verizon RF Engineer would be willing to move the site as the next site to the east is over the 350' threshold distance that the RF Engineer would be willing to move the site.



8) Alternate Site #8

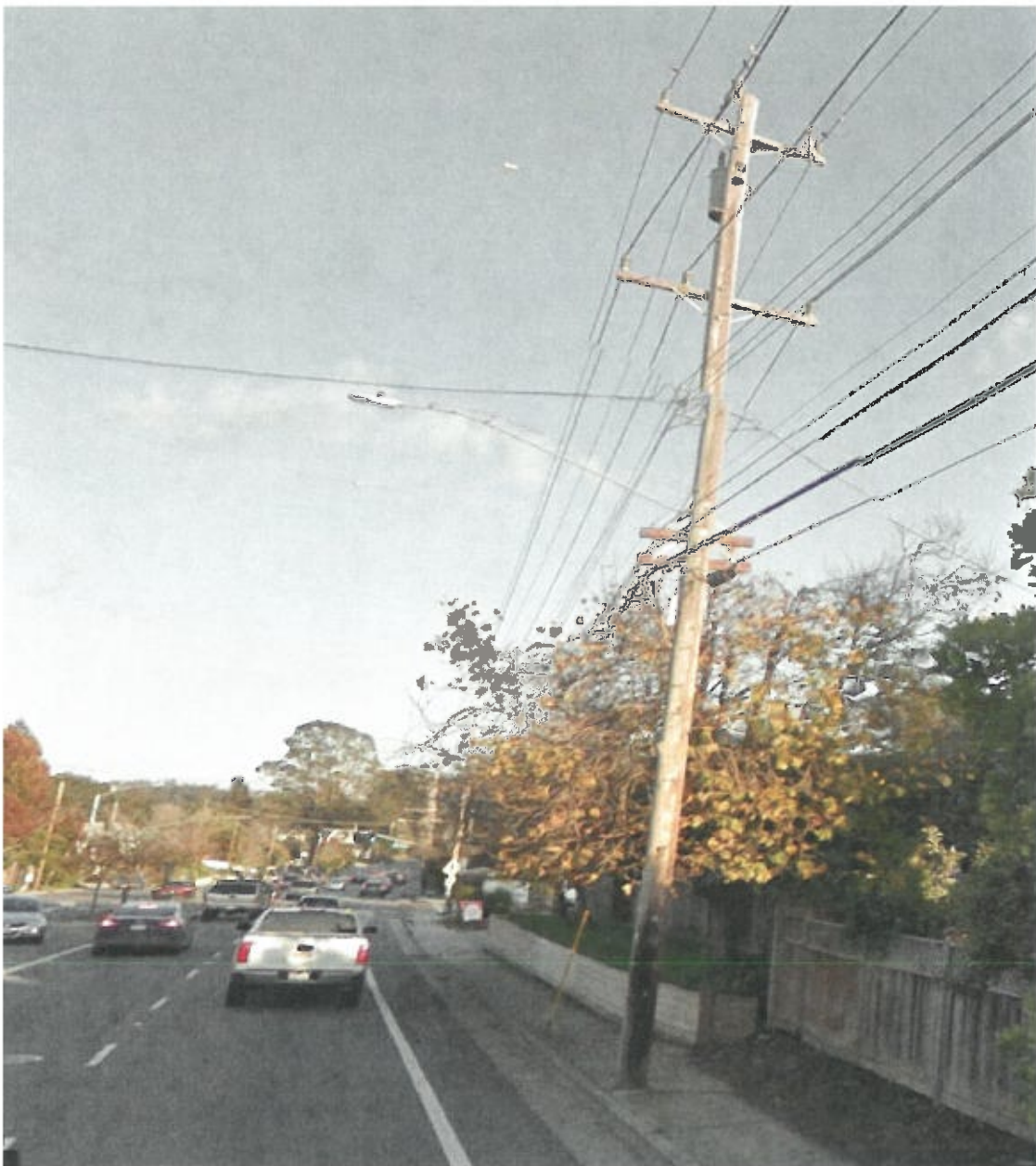
Address: Soquel Drive ROW

Lat: 36.987526°N

Long: -121.947752°W

Reason (s) did not work:

This location is just to the east of the Alternative pole #4. It is a pole of similar height of the majority of the poles along this line located on the south side of Soquel Drive. The pole is owned by PG&E. It not feasible to build a site on this pole due to General Order 95 requiring that at least one quadrant of the pole be free of equipment and be designed as climbing space. This pole has too much existing equipment on the pole so that there is no way add the needed Verizon equipment and also be able to have one quadrant of the pole remain free for climbing space.



Summary

In conclusion, there is a relatively small vicinity that the Verizon Wireless Radio Frequency Engineer would allow the facility to be placed. There has been a through search and analysis of the poles in this area. All of the feasible alternative poles (#'s 1, 5, 6, & 7) in this area are in the prohibited or restricted zones (See Exhibit B). In addition, the alternative pole(s) that have been identified as feasible to build a microcell facility on would all be closer to home(s) than the subject pole. Thus, Verizon has concluded that all of the alternative poles could not determined be any less intrusive than the subject pole. Therefore Verizon believes that the subject site is the least intrusive means to fill the known coverage gap.

Exhibit A

Radio Frequency Engineer's Statement

Stefano Iachella

November 7, 2017 at 10:38 AM

To: Aaron Cc: Joanna Wang

Re: [E] Soquel Dr SC2 - request to review Alt Analysis and give feedback

Aaron:

We can explore candidates to the east up to 350' away from our approved candidate. Any more and it will be too close to Soquel Dr SC1. Any movement to the west will bring it too close to another candidate we are working on it our Soquel Polygon.

Thanks,
Stefano

On Tue, Nov 7, 2017 at 9:55 AM, Aaron <aaronsalars@comcast.net> wrote:

Stefano - we are in planning for Soquel Dr SC2 and the county is asking us to expand our alternative analysis. Here is what the planner has asked.

The Alternatives Analysis is insufficient and additional information is needed. All but one of the properties considered in the analysis are located in prohibited zones. County Code 13.10.662 C 1 states, "Identify and indicate on a map, at a minimum two visible, technically feasible, and potentially environmentally equivalent or superior alternative locations outside the prohibited and restricted areas which could eliminate or substantially reduce the significant gaps)... If there are fewer than two such alternatives locations, the applicant must provide evidence establishing that fact." Additional sites should be evaluated. If there are no suitable alternative locations, then please document this.

I have also attached the Alt Analysis that was provided after the first letter of incomplete. Can you review the alt analysis and see if you would be willing to go further than the Alternative poles I explored in the analysis?

Thanks,

Aaron Salars
707-933-9633 Office
707-320-7248 Mobile

Exhibit B

Zoning Map with Alternative Pole Plotted



**Verizon Wireless • Proposed Base Station (Site No. 425593 "Soquel Drive SC2")
3010 Paseo Del Sol • Soquel, 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 the base station (Site No. 425593 "Soquel Drive SC2") proposed to be located at 3010 Paseo Del Sol in Soquel, 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 top of a tall utility pole sited in the public right-of-way on Soquel Drive near 3010 Paseo Del Sol in Soquel. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. A summary of the FCC's exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Wireless Service	Frequency Band	Occupational Limit	Public Limit
Microwave (Point-to-Point)	5–80 GHz	5.00 mW/cm ²	1.00 mW/cm ²
WiFi (and unlicensed uses)	2–6	5.00	1.00
BRS (Broadband Radio)	2,600 MHz	5.00	1.00
WCS (Wireless Communication)	2,300	5.00	1.00
AWS (Advanced Wireless)	2,100	5.00	1.00
PCS (Personal Communication)	1,950	5.00	1.00
Cellular	870	2.90	0.58
SMR (Specialized Mobile Radio)	855	2.85	0.57
700 MHz	700	2.40	0.48
[most restrictive frequency range]	30–300	1.00	0.20

General Facility Requirements

Base stations typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables. A small antenna for reception of GPS signals is also required, mounted with a clear view of the sky.



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VIVG
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EXHIBIT G

**Verizon Wireless • Proposed Base Station (Site No. 425593 “Soquel Drive SC2”)
3010 Paseo Del Sol • Soquel, California**

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

Computer Modeling Method

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, “Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation,” dated August 1997. Figure 2 describes the calculation methodologies, reflecting the facts that a directional antenna’s radiation pattern is not fully formed at locations very close by (the “near-field” effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the “inverse square law”). 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 construction drawings by Meridian Management, LLC, dated March 15, 2017, it is proposed to install one JMA Wireless Model CYL-QAP-2-H omnidirectional antenna on top of the 28½-foot utility pole sited in the public right-of-way next to the driveway to the residences at 5309-5315 Soquel Drive in Soquel. The antenna would employ no downtilt and would be mounted at an effective height of about 30½ feet above ground. The maximum effective radiated power in any direction would be 2,100 watts, representing simultaneous operation at 1,120 watts for AWS and 980 watts for PCS service. There are reported no other wireless telecommunications base stations at the site or nearby.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation is calculated to be 0.017 mW/cm², which is 1.7% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building* is 3.0% 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.

* Including nearby residences, located at least 65 feet away, based on photographs from Google Maps.

**Verizon Wireless • Proposed Base Station (Site No. 425593 "Soquel Drive SC2")
3010 Paseo Del Sol • Soquel, California**

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, 2017. 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
William F. Hammett, P.E.
707/996-5200

May 12, 2017



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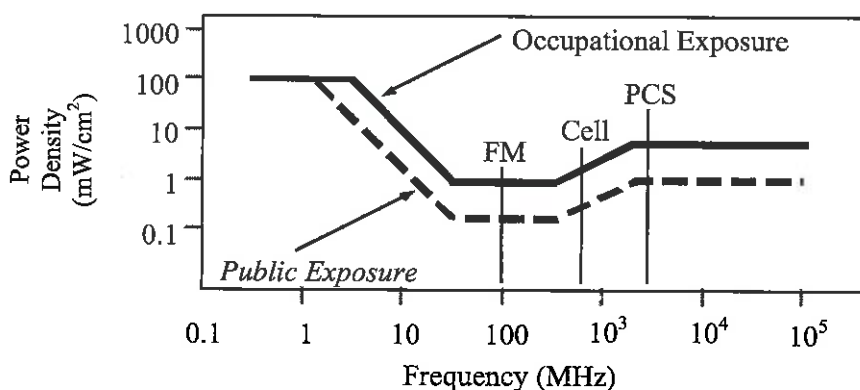
EXHIBIT G

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:

<u>Frequency</u>	<u>Electromagnetic Fields (f is frequency of emission in MHz)</u>					
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	<i>614</i>	1.63	<i>1.63</i>	100	<i>100</i>
1.34 – 3.0	614	<i>823.8/f</i>	1.63	<i>2.19/f</i>	100	<i>180/f²</i>
3.0 – 30	1842/f	<i>823.8/f</i>	4.89/f	<i>2.19/f</i>	900/f ²	<i>180/f²</i>
30 – 300	61.4	<i>27.5</i>	0.163	<i>0.0729</i>	1.0	<i>0.2</i>
300 – 1,500	3.54√f	<i>1.59√f</i>	√f/106	<i>√f/238</i>	f/300	<i>f/1500</i>
1,500 – 100,000	137	<i>61.4</i>	0.364	<i>0.163</i>	5.0	<i>1.0</i>



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.



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FCC Guidelines
Figure 1

EXHIBIT G

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/cm²,

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/cm²,

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:

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

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 ($1.6 \times 1.6 = 2.56$). 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.



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Methodology
Figure 2

EXHIBIT G

Hi Aaron,

Thank you for forwarding us the comments from the County of Santa Cruz regarding our reports for proposed Verizon sites Soquel Dr SC1 (near 5505 Soquel Drive) and Soquel Dr SC2 (near 3010 Paseo Del Sol). There are reported no other wireless base stations close (within about 100 feet) to the proposed sites, and so there is no cumulative/overall RF exposure assessment in our reports. Note that the two proposed sites themselves are about 1,500 feet apart, and the impact of one on the other would be negligible.

The maximum calculated RF exposure level at the second-floor elevation of a hypothetical building at APN 37-101-58, due to the operation of the proposed facility at Soquel Dr SC1, would be 5.0% of the FCC public limit, about 20 times below that limit. The maximum calculated RF exposure level at the second-floor elevation of a hypothetical building at APN 37-071-41, due to the operation of the proposed facility at Soquel Dr SC2, would be 4.4% of the FCC public limit, about 22 times below that limit. For both calculations, we assumed that the hypothetical building would be at the property line closest to the proposed facility.

Please let me know if you have any other questions.

Thanks,
Raj

Rajat Mathur, P.E.
Hammett & Edison, Inc.
rmathur@h-e.com
707/996-5200

Existing

Proposed

view from Paseo Del Sol looking east at site
425593 Soquel Drive SC2
3010 Paseo Del Sol, Soquel, CA
Photosims Produced on 6-14-2017



Proposed Verizon
Antennas & Equipment

AdvanceSim
Photo Simulation - 2017/06/14
Contact: 408.333.2928 ext. 8600