

# Staff Report to the Zoning Administrator

Application Number: 201372

**Applicant:** Crown Castle Towers 06-2 LLC, **Agenda Date:** 11/19/2021

Jacob Sparks

Owner: Dana and Lynn Redington Agenda Item #: 1
APN: 090-251-22 Time: After 9:00 a.m.

Site Address: 675 Rebecca Drive, Boulder Creek, CA 95006

**Project Description**: Proposal to construct a new wireless communication facility (WCF) to replace an existing WCF located on the adjacent parcel to the east, including six 12-foot-tall antenna mounts, 12 antennas, and ground equipment within a platform enclosure.

Requires a Commercial Development Permit.

**Location**: The property is located on Rebecca Drive in Boulder Creek (675 Rebecca Dr.), approximately 200 feet south from the intersection with Santa Cruz Street.

**Permits Required**: Commercial Development Permit

**Supervisorial District**: 5<sup>th</sup> District (District Supervisor: Bruce McPherson

#### **Staff Recommendation:**

- Determine that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- Approval of Application 201372, based on the attached findings and conditions.

#### **Project Description & Setting**

The property is located at the end of the cul-de-sac on Rebecca Drive in a rural residential neighborhood in the hills above and southeast of Boulder Creek and Northeast of Brookdale. An existing wireless communication facility, currently serving the Rebecca Drive neighborhood and surrounding area is located at 653 Rebecca Drive (east of and adjacent to the subject property), will no longer be available to the carrier and will be removed. The project proposes to replace the existing wireless services provided by this current facility proposed for demolition.

Properties at the end of Rebecca Drive are developed with residential dwellings with exception of the subject property which is undeveloped. The property to the west of the subject property includes a portion of the garage and residence improvements that are over the property line of the subject property, creating a non-conforming structure. Given the rounded design of the cul-desac, location at the top of a ridge, as well as mature trees and shrubs, existing homes are screened

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from view from adjacent residential development. Furthermore, the existing facility is not visible to surrounding residential properties due to vegetation and topographic differences.

As noted on the title page of the plans, the project includes:

A (P) CROWN CASTLE UNMANNED TELECOMMUNICATION FACILITY CONSISTING OF INSTALLING:

- (P) CROWN CASTLE 29'-0" X 10'-0" (290 SQ FT) PLATFORM LEASE AREA
- (6) (P) 12'-0" TALL ANTENNA MOUNTS
- (6) (P) T-MOBILE ANTENNAS ON (P) ANTENNA MOUNTS
- (6) (P) AT&T ANTENNAS ON (P) ANTENNA MOUNTS
- (P) T-MOBILE B160 BATTERY CABINET
- (P) T-MOBILE 6160 CABINET
- (P) T-MOBILE RBS 6102 CABINET
- (2) (P) AT&T PURCELL CABINET
- (2) (P) AT&T RBA72 CABINET
- (1) (P) GPS ANTENNAS
- (P) 4'-0" WIDE ELEVATED STAIRS W/ RAILING
- (P) 400A ELECTRICAL SERVICE ENTRANCE W/ (2) (P) 200A METER

The proposed platform is between 4 feet to 8 feet above existing grade (grade is sloped), with 12-foot-tall antennas mounted to the platform structure. Overall height is proposed a maximum of between 16 and 20 feet above existing grade, from existing grade to the top of the antennas.

#### **Permit Type**

The County Code specifies the following basis for approval of a Commercial Development Permit for the proposed wireless facility:

#### 13.10.220 Use Approvals.

(A) Description. A use approval is a discretionary authorization of a land use allowed in accordance with the regulations of the governing zone district and issued as part of a development permit pursuant to Chapter 18.10 SCCC. A use approval shall be granted at the approval level specified by the governing zone district for the project property and may only authorize such development or use of the property as is allowed by the zone district or as otherwise provided in this chapter.

The use is allowed pursuant to the Residential Uses Chart in Santa Cruz County Code (SCCC) section 13.10.322. The chart indicates that wireless facilities are allowed within the Residential Agricultural (RA) zone district subject to a Level 5 review, with approval of a development permit by the Zoning Administrator, and subject to the wireless regulations. Further, the wireless regulations state:

"Required Permits: All new wireless communication facilities shall be subject to a commercial development permit, and a coastal development permit if in the Coastal Zone. Additionally, a building permit will be required for construction of new wireless communication facilities"

#### **Project Background**

The proposed facility at 675 Rebecca Drive replaces an existing permitted WCF located at 653

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Rebecca Drive. The project proposes to fill a significant gap created by demolition of this WCF. The proposed WCF project includes an alternative analysis evaluating potential facility locations in the Rebecca Drive neighborhood as well as other sites at a similar elevation as the existing facility to ensure that existing coverage provided to existing AT&T customers is not compromised by replacement of the current facility. Thus, the applicant identified the subject property as the only site available to fill the significant gap created by closure of the existing facility.

#### **Zoning & General Plan Consistency**

The subject property is a 3.1-acre lot, located on a split-zoned parcel, RA (Residential Agricultural) and R-1-20 (Residential Agriculture, single family residential, 20,000 square feet per unit). The proposed wireless communication facility is located in the portion of the property zoned RA located to the south of Rebecca Drive.

The Residential Agricultural Zone district is a restricted wireless zone district. In order for the wireless facility to be supported the applicant is required to prove that:

a) The proposed wireless facility would eliminate or substantially reduce one more significant gaps in the applicant carriers network; and

Closure of the existing facility will create a significant gap in current wireless coverage in AT&T's WCF network.

b) There are no viable, technically feasible, and environmentally equivalent or superior potential alternatives (i.e., sites and/or facility types and/or designs) outside the restricted areas that could eliminate or substantially reduce said significant gap.

The alternative analysis concludes that there are no viable, technically feasible, and environmentally equivalent or superior potential alternatives outside the residential agricultural zone district restricted area that could eliminate or substantially reduce the gap created by closure of the existing facility.

The applicant has provided an alternative analysis (Exhibit F) evaluating alternative sites to replace coverage by this existing facility. An alternative analysis evaluates potential sites meeting Federally mandated wireless service objectives, zoning district restrictions, site access requirements, leasing requirements, topography, and minimizing views to public roadways. It is the primary tool in establishing the most viable site for wireless facilities to fill the wireless gap while also minimizing visual impacts to the public roadways.

The alternative site analysis (ASA) evaluated all sites within 1/4 mile of the existing facility search ring, in addition to four sites located outside the search ring at a similar elevation that would fill the significant gap.

As enumerated in the analysis, the study substantiates that there are no sites available that would serve to eliminate or substantially reduce the existing gap in the carrier's network resulting from the closure of the wireless facility, while also being viable, technically feasible, and environmentally equivalent or superior due to a variety of factors. These factors eliminating all

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the other sites include landlord disinterest, lack of suitable coverage provided by replacement facility, lack of access, lack of ground space, etc. See the attached analysis for a full evaluation of all sites, establishing that the proposed site at 675 Rebecca Drive is the only site that is viable (has owner lease interest), technically feasible (capable to being constructed) and that is least visually obtrusive location.

The facility is proposed at the lowest height of all sites evaluated (capable of filling the wireless gap, viable, and technically feasible) at 20 feet in height, has little to no visual impacts to the larger community due to the small size of the equipment and relative long distance to Boulder Creek, Brookdale, Ben Lomond and surrounding public roadways. Although the proposed equipment is located in proximity to two residential dwellings, the proposed project site is screened from view by existing fencing and trees along the east property line and existing trees and shrubs along the west sides of the property, which obscure views of the proposed wireless facility. The facility is not required to be invisible from surrounding properties; however, equipment shall be screened, and view impacts minimized where feasible. Regarding the proposed facility, the equipment would be strategically blocked by existing trees and fencing, thereby screening and reducing view impacts from adjacent residential properties, thus meeting the objective to be the least visually obtrusive location on site feasible to fill the federally mandated wireless coverage gap.

The site plan, aerial drone photos, and visual simulations support the determination of the least visually intrusive location on site. Plans show the location of existing surveyed vegetation located between the proposed platform and residentially developed properties to the east and west. The aerial drone photo below shows the location of the property and existing fencing and existing trees and shrubs that screen the facility from adjacent property. Lastly, the visual simulations provided show that the site will not be visible from surrounding public roadways of the larger community.

#### **Site Standards**

#### Height

The Residential Agriculture zone district height allowance is 28 feet. The proposed facility, from existing grade to the top of the antennas, is approximately 20 feet in height. The antennas themselves are 12 feet in height and affixed to the proposed equipment platform. Thus, the proposed facility meets the height standards of the Residential Agricultural zone district applied to wireless facilities.

#### **Setbacks**

The proposed platform facility meets the setbacks established for the Residential Agriculture zone district as noted in the setback table below.

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Setback Table				
	Front	Side	Rear	
RA zone district Site Standards				
Required	40'	20'	20'	
Proposed	40'+	20'+	20'+	

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#### Visual Analysis/Design Review

Visual simulations (Exhibit G) are provided of the proposed facility, noting that limited if any public views of the facility are readily visible due to the substantial distance from public roadways in the area as well as the heavily forestation. As proposed, the wireless facility complies with the requirement to minimize visual impacts enumerated in the visual protection regulations of the Wireless Ordinance and the County Design Review Ordinance.

All commercial developments are subject to Design Review pursuant to County Code Section 13.11. This includes the site and project layout, including the physical appearance of the project improvements.

The proposed WCF complies with the building design requirements of the County Design Review Ordinance, in that the proposed project will incorporate architectural design features of other residential improvements, by following the natural topography and location below grade of surrounding properties. The facility design is the most natural design available and screened from view. This includes a stairway access following existing grade, and limited platform area for location of the proposed antennas. Antennas are proposed to be affixed to the structure and not readily accessible to the public. The equipment platform, antennas, and associated equipment are proposed a natural green color to blend with surrounding vegetation. Furthermore, the proposed facility is located at approximately the same elevation as the existing facility proposed to be dismantled, and currently not visible to adjacent properties. As designed and located, there is limited visibility on surrounding properties, cul-de-sac, and the natural landscape.

All power and utilities are proposed underground, extending from Rebecca Drive, with no apparent changes in visual appearance from the public roadway evident as a result of the proposed project. A single vehicle parking spot is proposed at the top of the site adjacent to Rebecca Drive. Otherwise, no other improvements will be visible.

#### Public Health and Safety/Radio Frequency (RF) Exposure

Section 47 USC 332(c)(7)(B)(iv) of the Telecommunications Act of 1996 forbids jurisdictions from regulating the placement, construction, or modification of Wireless Communications Facilities based on the environmental effects of radio frequency (RF) emissions if these emissions comply with Federal Communication Commission (FCC) standards.

The Federal Communication Commission requires that wireless facilities comply with FCC rules, regulations and standards by requiring that facilities comply with the radiofrequency (RF) emissions standards set forth by the FCC. A radio frequency report, prepared by Hammett and

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Edison, dated October 2, 2020, is attached as Exhibit H. Maximum RF emissions at the ground will be .71mW/cm2, or 90 percent of the applicable public exposure radio frequency exposure limit established by the (FCC). The maximum calculated level at any nearby building is 2.1 percent of the public exposure limit.

The report notes that due to the antenna mounting locations and heights within a fenced enclosure, the proposed antennas would not be accessible to the general public; therefore, no mitigation measures are necessary or recommended to comply with the FCC public exposure In addition, the permit is conditioned to require occupational safety measures for both proposed wireless carriers prior to issuance of a building permit, in compliance with the FCC occupational exposure guidelines for maintenance work required near the antennas. The proposed project is consistent with the FCC regulations as proposed and conditioned.

#### **Environmental Review**

The California Environmental Quality Act (CEQA) provides exemptions for classes of projects which do not have a significant effect on the environment.

The attached CEQA Notice of Exemption (Exhibit A) states that the project is exempt under the Guidelines section 15303 (Class 3) exemption, which applies to "construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structure from one use to another where only minor modifications are made in the exterior of the structure".

Consistent with this section, commercial structures such as the proposed project not exceeding 2500 square feet and not involving significant amounts of hazardous substances and not located within a sensitive habitat are exempt.

If a project falls within a catergorical exemption, no formal environmental evaluation is made.

Furthermore, pursuant to CEQA Section 15300.2 (c), the project is categorically exempt from the requirements of CEQA unless there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances. The CEOA guidelines state that "Unusual circumstances" require showing that the project has some specific feature that distinguishes it from others in the exempt class, such as its size or location, and is not satisfied by a mere reasonable possibility that an activity will have a significant effect on the environment.

No unusual circumstances apply to the subject property.

This supports the determination that the project is categorically exempt from CEQA under section 15303 (Class 3) exemption (Exhibit A).

#### **Final Action Required**

The final action on the proposed project is subject to a Federal Shot Clock deadline of 150 days from the date of application submission, excluding periods of time during which the application is deemed incomplete for plan requirements. The application was accepted for submittal on November 16, 2020. At this time, the local jurisdiction is required to act within 150 or by

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December 11, 2021. The Federal Telecommunications Act requires local jurisdictions to act on this deadline unless otherwise authorized an additional extension by the applicant.

#### 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 201372, 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: <a href="https://www.sccoplanning.com">www.sccoplanning.com</a>

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#### **Exhibits**

- A. Categorical Exemption (CEQA determination)
- B. Findings
- C. Conditions
- D. Project plans
- E. Assessor's, Location, Zoning and General Plan Maps
- F. Alternative Analysis
- G. Visual simulations
- H. RF Report
- I. Arborist Report
- J. Parcel information
- K. Comments & Correspondence (only if comments/correspondence are attached)

## 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.

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Assessor Parcel Number: 090-251-22

Project Location: 675 Rebecca Drive, Boulder Creek, CA 95006

<b>Project Description:</b> Proposal to construct a new wireless communication facility (WCF) to replace an existing WCF located on the adjacent parcel to the east, including six 12-foot-tall antenna mounts, 12 antennas, and ground equipment within a platform enclosure. Requires a Commercial Development Permit.
Person or Agency Proposing Project: Jacob Sparks Contact Phone Number: (977)955-1514x8
A The proposed activity is not a project under CEQA Guidelines Section 15378.  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.
<b>D.</b> Statutory Exemption other than a Ministerial Project (CEQA Guidelines Section 15260 to 15285).
E. X Categorical Exemption
Specify type: Section 15303 Class 3 - New Construction or Conversion of Small Structures Construction
F. Reasons why the project is exempt:
Class 3 - New Construction or Conversion of Small Structures Construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structure from one use to another where only minor modifications are made in the exterior of the structure.
The proposed wireless facility, including the lease area, wireless faux monopine, equipment within the lease area, and facility fencing do not exceed 2500 square feet in size and the facility is not located within a mapped biotic resource area, mapped sensitive habitat, mapped scenic highway or visual resource area, or include significant hazardous materials.
In addition, none of the conditions described in Section 15300.2 apply to this project.
Sheila McDaniel, Project Planner

#### **Wireless Communication Facility Use Permit Findings**

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 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 proposed wireless facility will be located on the ground outside any mapped visual resources, environmentally sensitive habitat resources, archaeological resources or other significant county resources. The property is zoned Residential Agriculture and is a restricted zone district. For the wireless facility within a restricted zone district, the project meets both below requirements, as substantiated by the alternative analysis, in that:

- a) The proposed wireless facility would eliminate or substantially reduce one more significant gaps in the applicant carrier's network; and
- b) There are no viable, technically feasible, and environmentally equivalent or superior potential alternatives (i.e., sites and/or facility types and/or designs) outside the restricted areas that could eliminate or substantially reduce said significant gap.
- 2. 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 Sections 13.10.661(B) and 13.10.661 (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 pursuant to County Code Section 13.10.661 (B) and 13.10.661 (C), the applicant provided an alternative analysis to substantiate that the proposed location is the only viable site, and the project is situated to result in the least visual impacts on site that meets the wireless objectives of the carrier. See Finding 1 above.

3. 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 (County Code 13.10.660) and that all zoning violation abatement costs, if any, have been paid.

This finding can be made, in that pursuant to County Code Section 13.10.312 the proposed wireless facility is an allowed use within the Residential Agriculture zone district, consistent with the Mountain Residential General Plan designation. At 20 feet in height, the proposed facility complies with the 28-foot maximum height allowed in the Residential Agricultural Zone District.

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The project plans, aerial drone views, and visual simulations provided in the Zoning Administrator staff report provide an adequate representation of the proposed facility to determine that the visual impacts of the facility would be minimized. The project is screened from adjacent residential properties by existing fencing and trees.

No zoning violation abatement fees are applicable to the subject property.

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 communications facility will be 16 feet in height and this elevation is too low to interfere with an aircraft in flight.

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 a radio frequency report, prepared by Hammett and Edison, dated October 2, 2020, is attached to the Zoning Administrator staff report. Maximum RF emissions at the ground will be .71mW/cm2, or 90 percent of the applicable public exposure radio frequency exposure limit established by the (FCC). The maximum calculated level at any nearby building is 2.1 percent of the public exposure limit.

The report notes that due to the antenna mounting locations and heights within a fenced enclosure, the proposed antennas would not be accessible to the general public, so no mitigation measures are necessary or recommended to comply with the FCC public exposure guidelines. In addition, the permit is conditioned to require occupational safety measures prior to issuance of a building permit, in compliance with the FCC occupational exposure guidelines for maintenance work required near the antennas. The proposed project is consistent with the FCC regulations as proposed and conditioned.

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

This finding does not apply in that the proposed project site is not located within the coastal zone.

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#### **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 the project is located in an area designated for wireless uses. Construction will comply with prevailing building technology, the California Building Code, and the County Building ordinance to ensure the optimum in safety and the conservation of energy and resources.

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 the proposed location of the wireless communication facility and the conditions under which it would be operated or maintained will be consistent with all pertinent County ordinances and the purpose of the RA (Residential Agriculture) site development area, R-1-20 (Residential Agriculture, single family residential, 20,000 square feet per unit) zone district as the primary use of the property will be one wireless communication facility that meets all current site standards for the zone district.

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 facility is consistent with the use and density requirements specified for the R-M (Mountain Residential) land use designation in the County General Plan.

The proposed wireless communication facility will be properly proportioned to the parcel size and the character of the neighborhood as specified in General Plan Policy 8.6.1 (Maintaining a Relationship Between Structure and Parcel Sizes), in that the proposed wireless communication facility will comply with the site standards for the RA (site development area), R-1-20 zone district (including setbacks, lot coverage, floor area ratio, height, and number of stories) and will result in a structure consistent with a design that could be approved on any similarly sized lot in the vicinity.

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 constructed on an existing undeveloped lot. The expected level of traffic generated by the

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proposed project is anticipated to be only occasional vehicular trips for maintenance of equipment, such an increase will not 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.

This finding can be made, in that the proposed structure is located in a mixed neighborhood containing a variety of architectural styles, and the proposed wireless communication facility is not inconsistent with the land use intensity and density of the neighborhood.

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 communication facility, including 16- to 20-foot-tall platform and antennas, and related ground mounted equipment will be of an appropriate scale and type of design that will not detract from the aesthetic qualities of the surrounding properties and will not reduce or visually impact available open space in the surrounding area.

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#### **Conditions of Approval**

Exhibit D: Project plans, prepared by Streamline Engineering and Design Inc., dated April 30, 2021

- I. This permit authorizes the construction of a new wireless communication facility (WCF) to replace an existing WCF located on the adjacent parcel to the east, including six 12-foot-tall antenna mounts, 12 antennas, and ground equipment within a platform enclosure, as indicated on the approved Exhibit "D" for this permit. 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 for all off-site work performed in the County road right-of-way.
  - D. The applicant shall obtain approval from the California Public Utilities Commission and the Federal Communications Commission to install and operate this facility.
- 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 approval.

- 3. Grading, drainage, and erosion control plans, as required.
- 4. 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.
- 5. Any new electric and telecommunications lines shall be placed underground.
- 6. A lighting plan. All lighting must be manually controlled and must not be visible from neighboring properties.
- 7. Details showing compliance with the FCC occupational exposure guidelines and safety measures.
- 8. Plans shall include tree protection measures for existing trees on site during construction.
- B. Meet all requirements of the Encroachment Division of Public Works:
  - 1. Obtain an encroachment permit for all work proposed in the County right-of-way.
  - 2. Please submit an encroachment permit application with 2 sets of the plans (only the sheets showing work in R-O-W) directly to the Department of Public Works.
- C. Meet all requirements of the Environmental Health Agency:
  - 1. Obtain a Hazardous Materials Permit from Environmental Health (EH) HM Program at (831) 454-2022. Approval of this application is strictly for a new wireless communication facility. No other construction or habitable structures allowed without the benefit of permits from EH and Planning. A Full Site Evaluation is the preliminary requirement for assessing water supply and sewage disposal for future development.
- D. Meet all requirements of and pay Zone 8 drainage fees to the County Department of Public Works, Stormwater Management. Drainage fees will be assessed on the net increase in impervious area.
- E. Meet all requirements of the Environmental Planning section of the Planning Department, including:

1. The project shall comply with the "Subsurface Exploration Report" dated February 25<sup>th</sup>, 2021, by Tower Engineering Professionals, Inc., and the "Geotechnical Engineering and Geologic Report" dated August 4<sup>th</sup>, 2021, by Universal Engineering Sciences, as well as the "Addendum Report – Limited Slope Stability Analysis" dated September 24<sup>th</sup>, 2021, by Universal Engineering Sciences.

These geotechnical reports have been reviewed and accepted by the Santa Cruz County Planning Department; letter dated 10/5/2021. The project shall also comply with the acceptance letter requirements, A-C, below.

- A. All project design and construction shall comply with the recommendations of the subject reports.
- B. Final plans shall reference the subject geotechnical investigation reports by titles, authors, and dates. Final Plans should also include a statement that the project shall conform to the report's recommendations; and
- C. After plans are prepared that are acceptable to all reviewing agencies, please submit a completed <u>Consultant Plan Review Form</u> (Form PLG-300) to Environmental Planning. The Geotechnical Engineer of Record for the project shall sign and stamp the completed form. Please note that the plan review form must reference the final plan set by last revision date.

Any updates to report recommendations necessary to address conflicts between the report and plans must be provided via a separate addendum to the soils report.

- 2. Plans shall include recommended tree protection measures to ensure that trees continue to screen the proposed wireless facility.
- F. Meet all requirements and pay any applicable plan check fee of the Boulder Creek Fire Protection District.
- G. Submit 3 copies of plan review letters prepared and stamped by the project Geotechnical Engineer.
- H. Pay the current fees for Child Care mitigation for .23 per square foot of commercial space. Currently, these fees are \$66.70.
- I. Pay the current Affordable Housing Impact Fee. The fees are based on new square footage and the current fee for non-residential construction is \$3 per square foot.
- J. Provide required off-street parking for 1 car. Parking spaces must be 8.5 feet wide by 18 feet long and must be located entirely outside vehicular rights-of way.

Parking must be clearly designated on the plot plan.

- K. Submit a written statement signed by an authorized representative of the school district in which the project is located confirming payment in full of all applicable developer fees and other requirements lawfully imposed by the school 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. The wireless communication facility may not be connected to a power source or operated until a final inspection and clearance from the Santa Cruz County Planning Department has been received.
  - D. The project must comply with all recommendations of the approved soils reports.
  - E. 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. In order to screen the wireless facility from view of adjacent residences to the east and west of the subject property, the existing trees on site shall be protected in place. Should trees die, they shall be replaced in kind.
- C. 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 always remain in continued compliance with the NEIR standard established by the FCC. 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.

- D. The exterior finish and materials of the wireless communication facility must be maintained on an annual basis to continue to blend with the existing utilities infrastructure. Additional paint and/or replacement materials shall be installed as necessary to blend the wireless communication facility with the existing utilities infrastructure.
- E. If, as a result of future scientific studies and alterations of industry-wide 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.
- F. 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.

#### V. Indemnification

The applicant/owner shall indemnify, defend with counsel approved by the COUNTY, and hold harmless the COUNTY, its officers, employees, and agents from and against any claim (including reasonable attorney's fees, expert fees, and all other costs and fees of litigation), against the COUNTY, its officers, employees, and agents arising out of or in connection to this development approval or any subsequent amendment of this development approval which is requested by the applicant/owner, regardless of the COUNTY's passive negligence, but excepting such loss or damage which is caused by the sole active negligence or willful misconduct of the COUNTY. Should the COUNTY in its sole discretion find the applicant's/owner's legal counsel unacceptable, then the applicant/owner shall reimburse the COUNTY its costs of defense, including without limitation reasonable attorney's fees, expert fees, and all other costs and fees of litigation. The applicant/owner shall promptly pay any final judgment rendered against the COUNTY (and its officers, employees, and agents) covered by this indemnity obligation. It is expressly understood and agreed that the foregoing provisions are intended to be as broad and inclusive as is permitted by the law of the State of California and will survive termination of this development

Owner: Dana and Lynn Redington

approval.

- A. The COUNTY shall promptly notify the applicant/owner of any claim, action, or proceeding against which the COUNTY seeks to be defended, indemnified, or held harmless. The COUNTY shall cooperate fully in such defense.
- 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. <u>Settlement</u>. The applicant/owner shall not be required to pay or perform any settlement unless such applicant/owner has approved the settlement. When representing the COUNTY, the applicant/owner 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. <u>Successors Bound</u>. The "applicant/owner" shall include the applicant and/or the owner and the successor'(s) in interest, transferee(s), and assign(s) of the applicant and/or the owner.

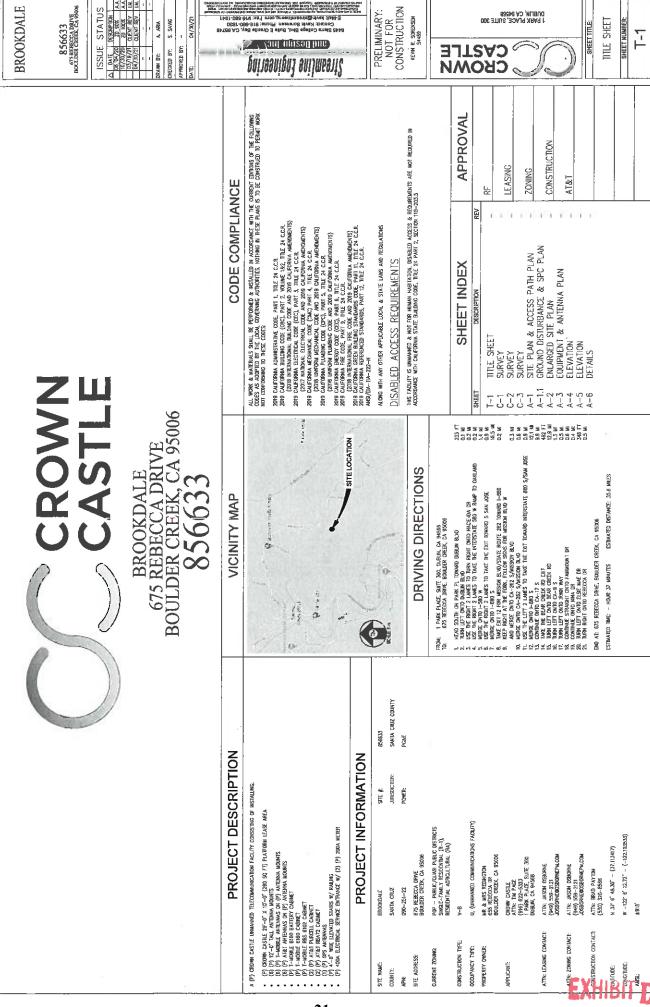
Minor variations to this permit which do not affect the overall concept or density may be approved by the Planning Director at the request of the applicant or staff in accordance with Chapter 18.10 of the County Code.

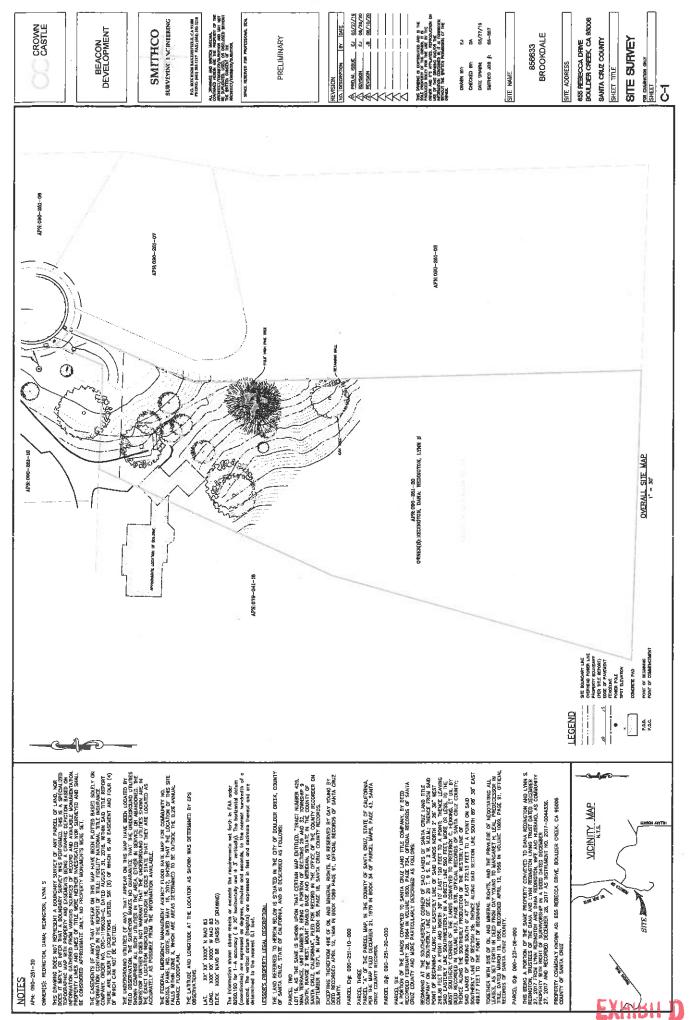
Please note: This permit expires three years from the effective date listed below unless a building permit (or permits) is obtained for the primary structure described in the development permit (does not include demolition, temporary power pole or other site preparation permits, or accessory structures 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.

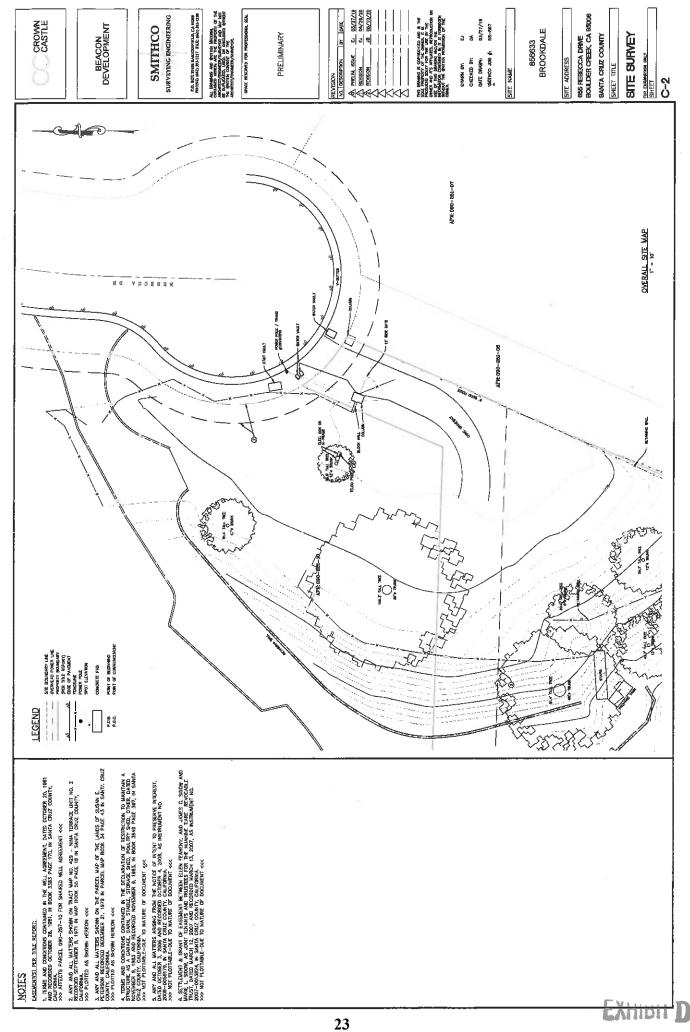
Approval Date:	
Effective Date:	
Expiration Date:	
	Jocelyn Drake Deputy Zoning Administrator

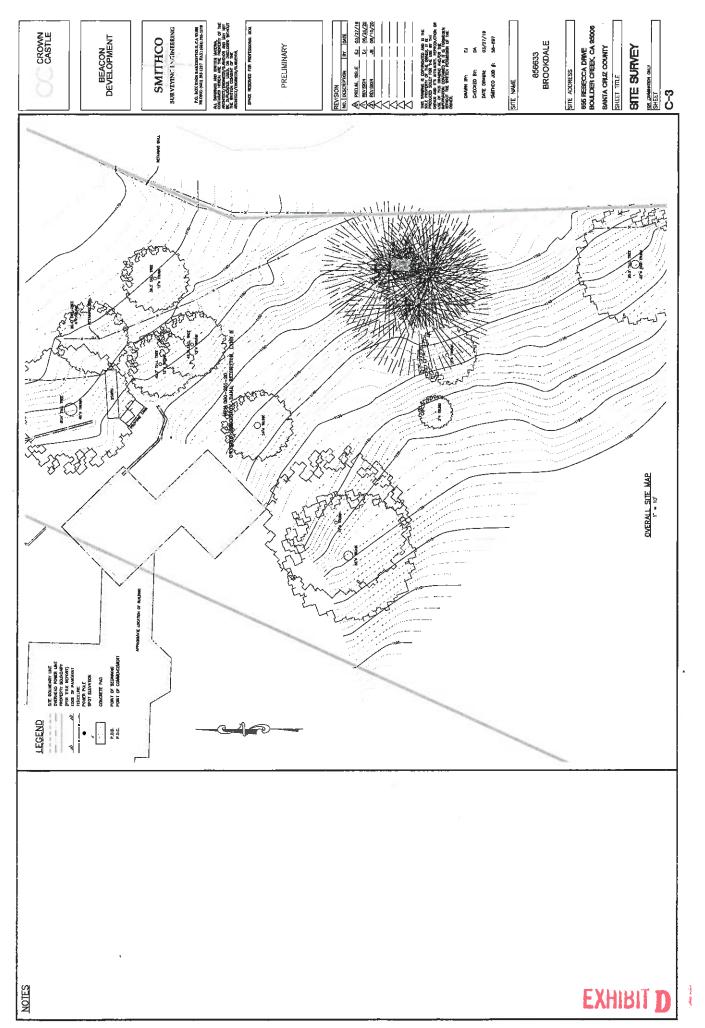
Owner: Dana and Lynn Redington

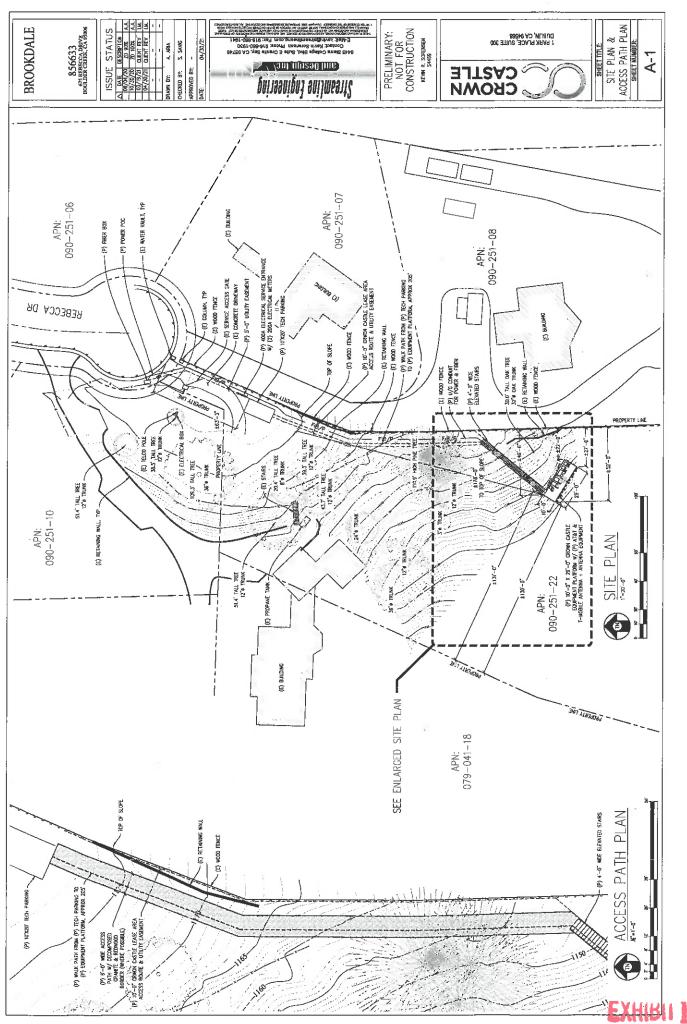
Appeals: Any property owner, or other person aggrieved, or any other person whose interests are adversely affected by any act or determination of the Zoning Administrator, may appeal the act or determination to the Planning Commission in accordance with chapter 18.10 of the Santa Cruz County Co

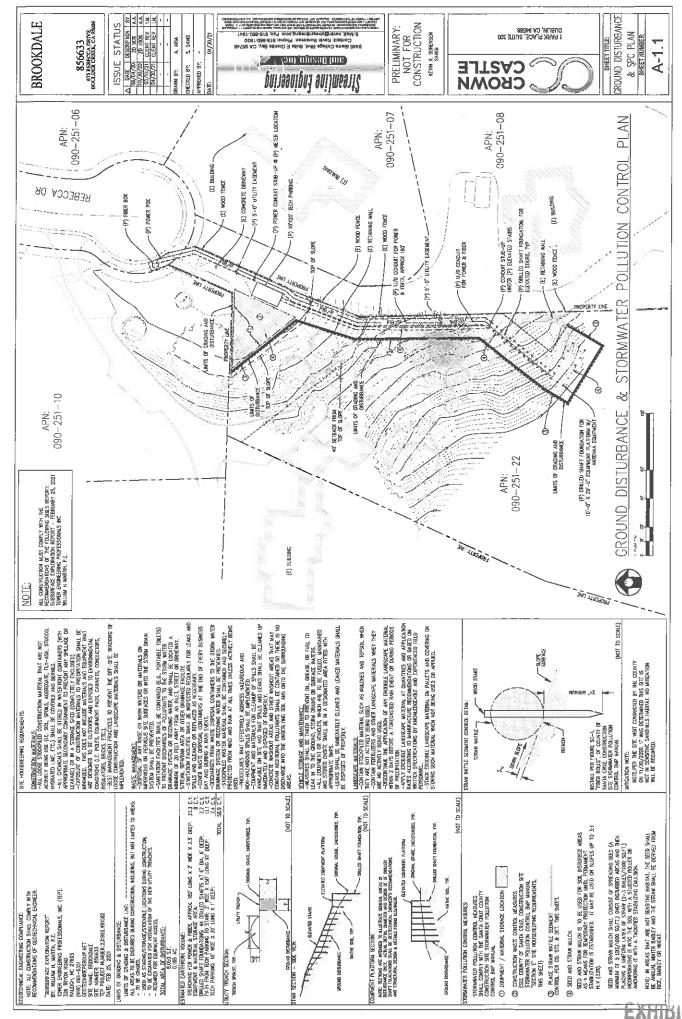


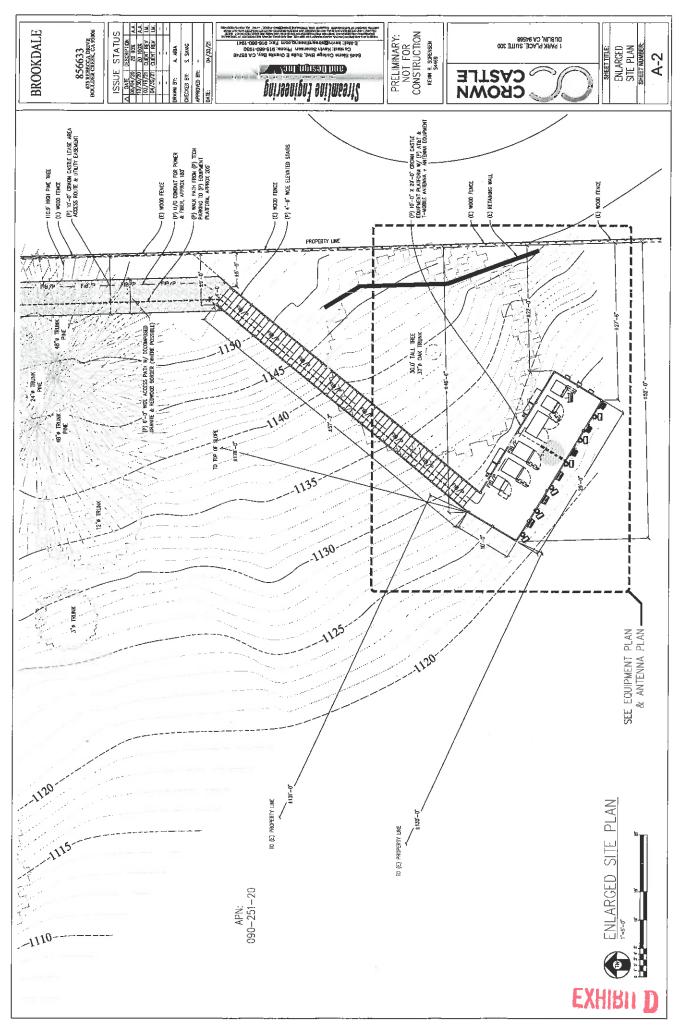


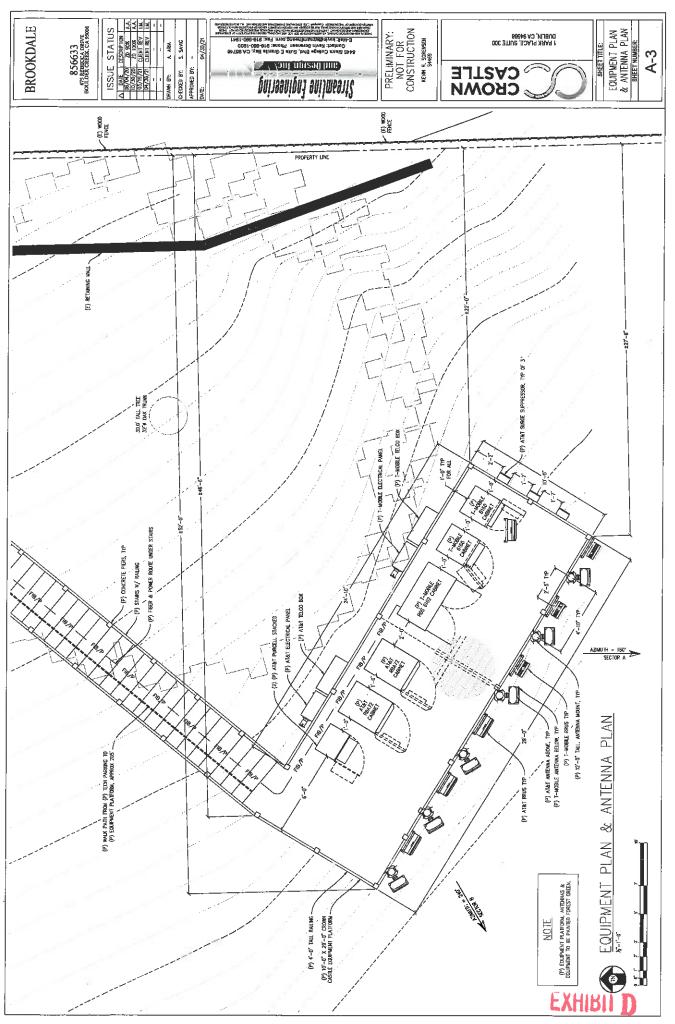


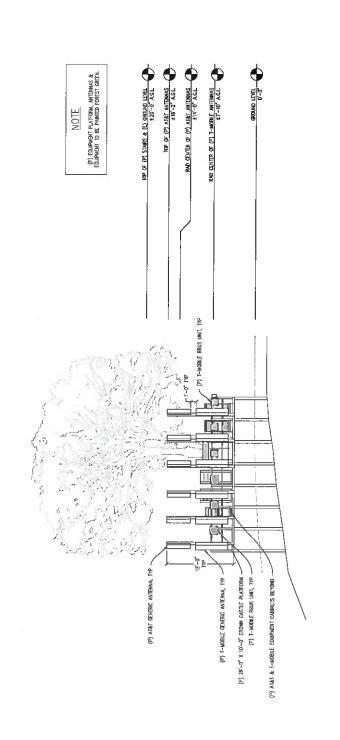












856633 675 REBECCA DRIVE BOULDER CREEK, CA 95006

ISSUE STATUS

DRAWN BY: A ABBA CHEOGED BY: S. SANG APPROVED BY: DATE: 04/30/21

BROOKDALE

SOUTHWEST ELEVATION

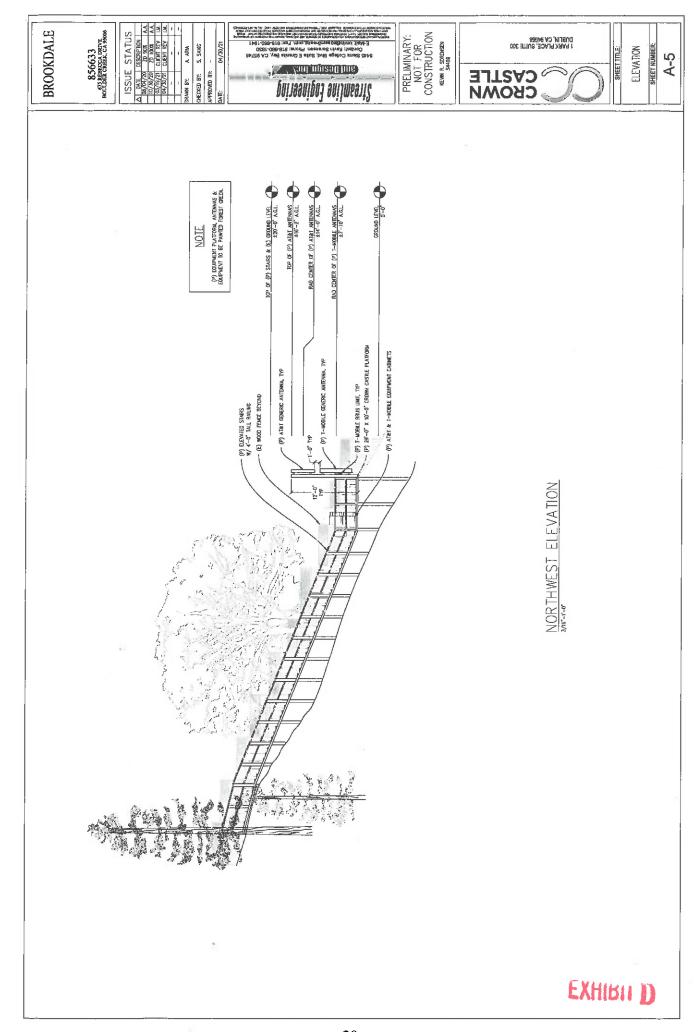
PRELIMINARY: NOT FOR CONSTRUCTION KEWN R. SORENSON

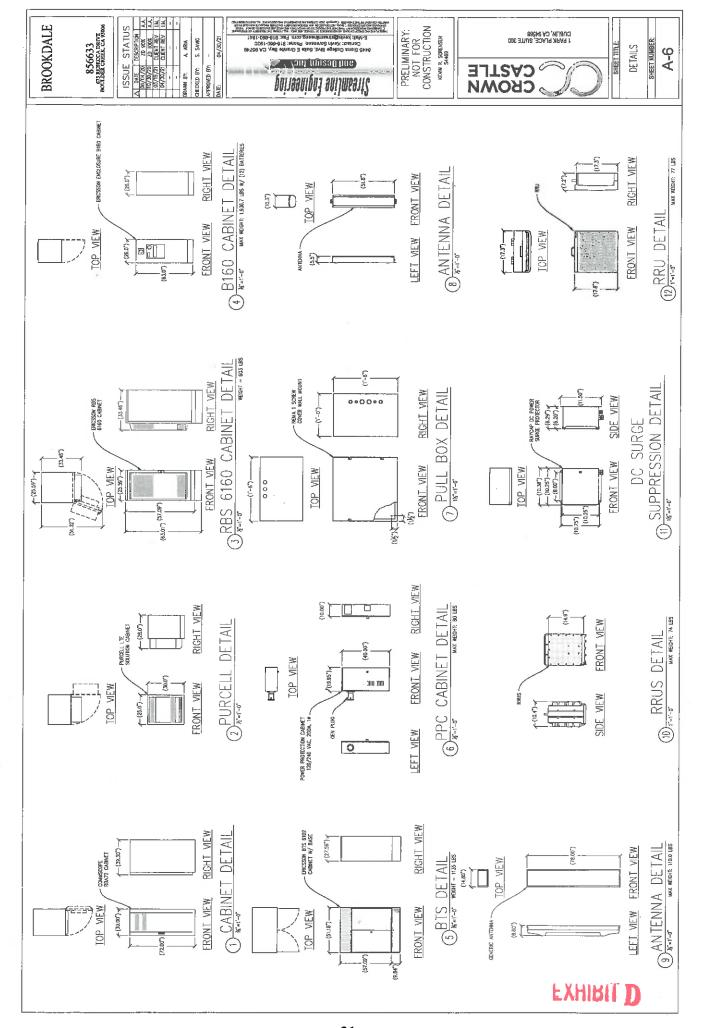
poinssoipol soilmestil Vant myrsau one PARK PLACE, SUITE 300 DUBLIN, CA 94568

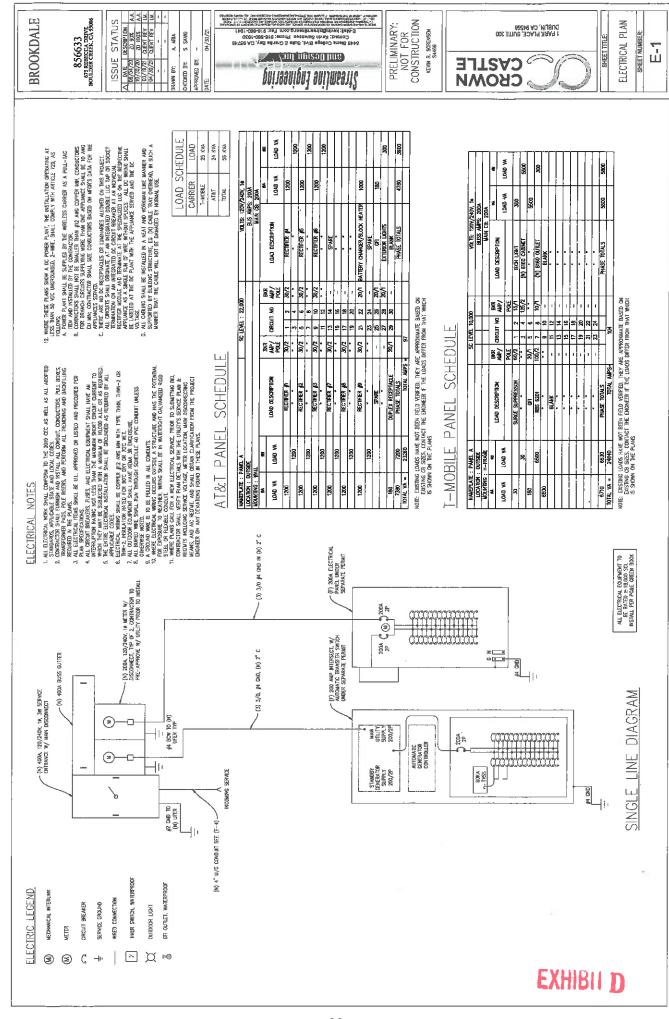
CRSTLE CROWN ELEVATION SHEET NUMBER:

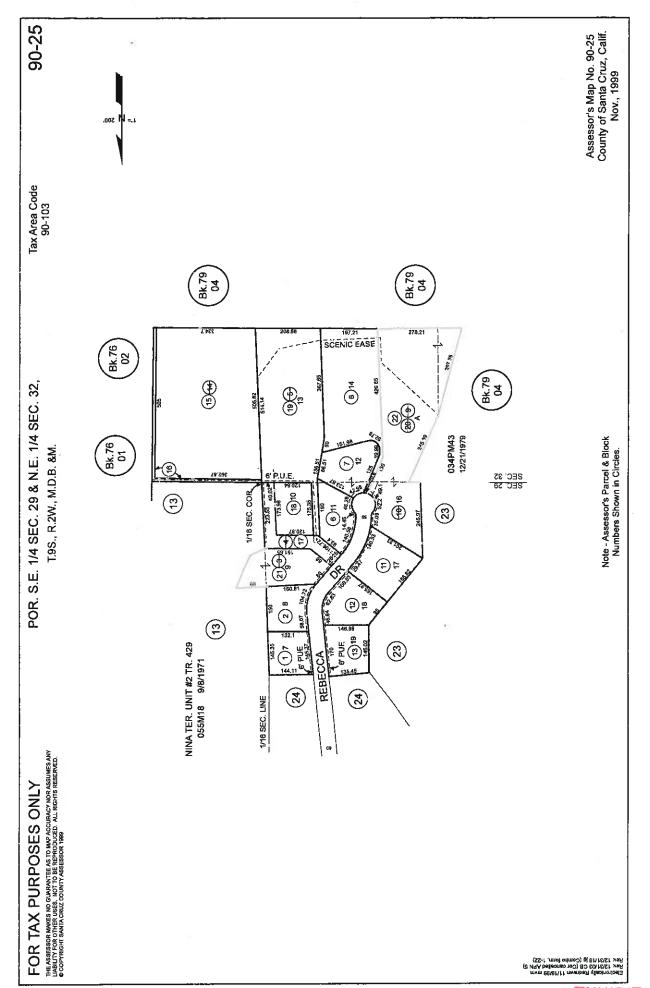
A-4

SHEET TITLE:







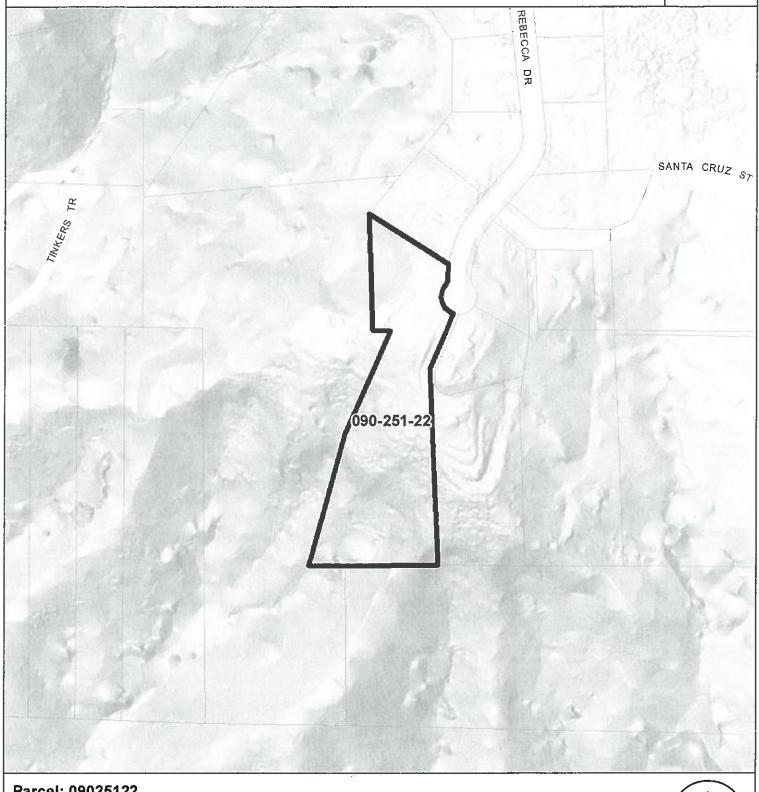




### SANTA CRUZ COUNTY PLANNING DEPARTMENT

### **Parcel Location Map**





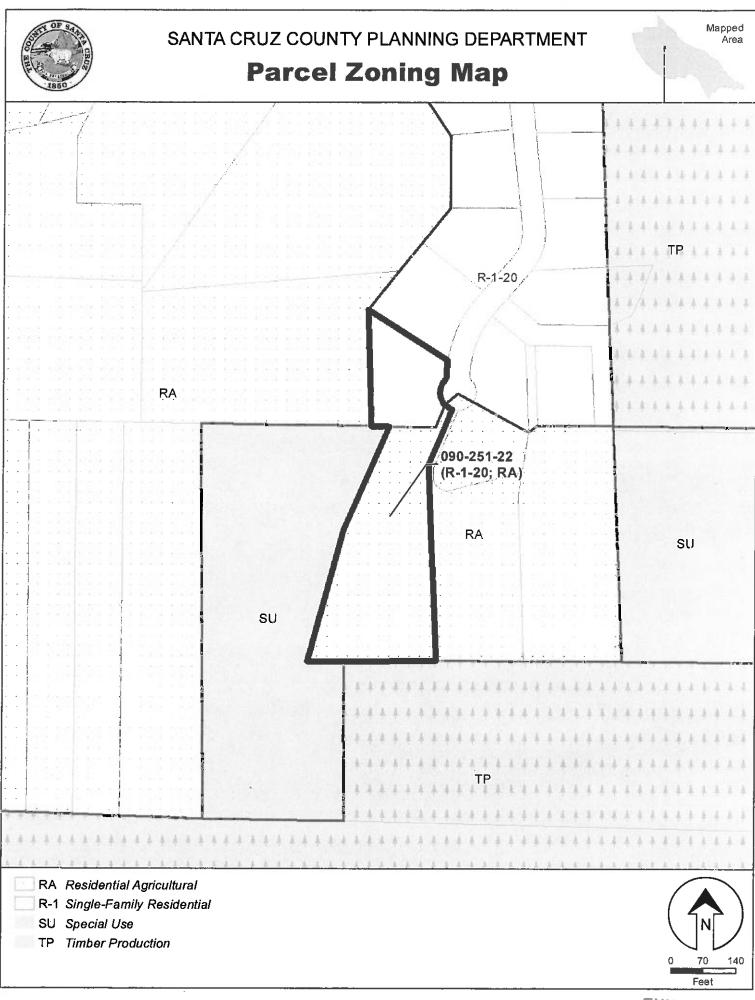
Parcel: 09025122

Study Parcel

\_\_\_ Assessor Parcel Boundary

Map printed: 9 Nov. 2021







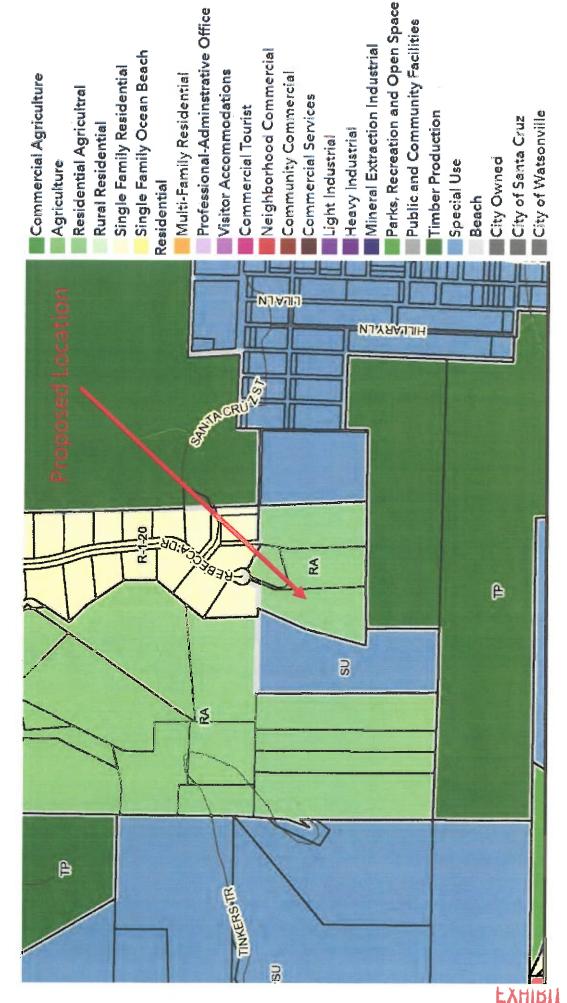
## CROWN

856633/827799 Alternatives Sites Analysis

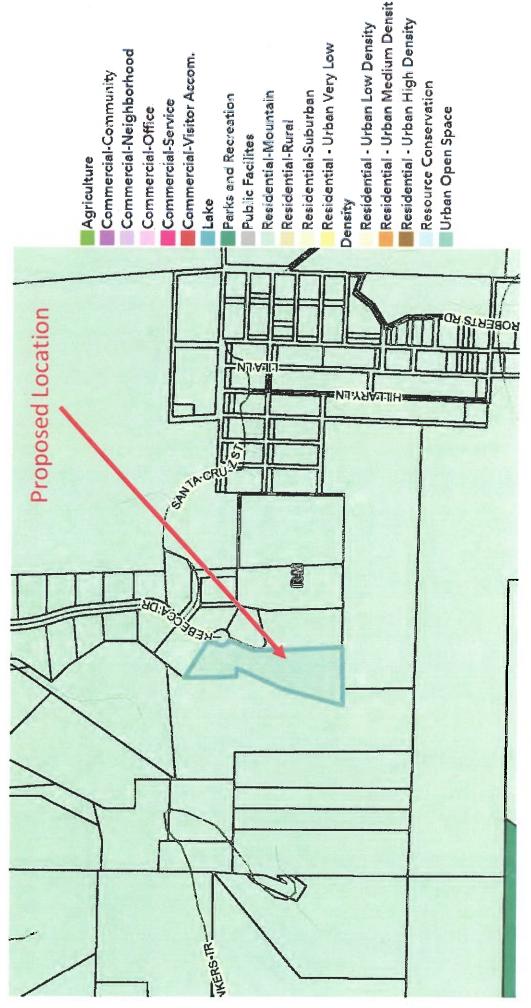
# Methodology For Obtaining Candidates

- Crown Castle undertakes this "search ring" effort when the existing site may need to relocate for any number of reasons (loss of ground lease, growth potential, technology changes, etc.).
- 1. Identify alternative landlords via mailing campaign (utilizing tax records, or ParcelQuest).
- 2. Conduct a zoning feasibility for each alternative location based on proximity to existing location as we must attempt to 'cover' the same area.
- 3. Complete construction analysis of alternative properties (is site buildable)?
- 4. Confirmation through RF analysis that any new location meets the current broadcast objective of carrier(s). No loss in subscriber coverage.
- 5. Contact potential landlords based on zoning feasibility, constructability, and RF requirements.
- after ranking the above wireless criteria (zoning, construction, and RF feasibility) and landowner interest. Primary candidate selected on the above, and final interest from "new" location determines final choice

## Santa Cruz County Zoning Map



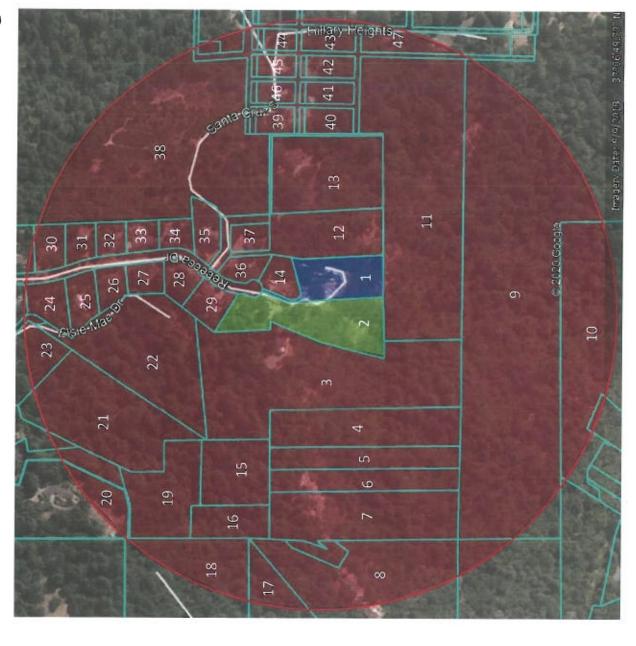
### Santa Cruz County General Plan Map



### **ASA Narrative**

- This new wireless facility meets the "two prong test" by filling a gap in coverage and will have the least obtrusive impact of any other replacement location.
- drainage. Wireless coverage is now known as the "fifth" utility. Unlike water, sewer, power, and drainage; wireless facilities do not require a public entity to create infrastructure. The majority of wireless facilities networks (macro cell towers) are created with a private agreement between a landowner and a cell tower provider or cell tower owner. Why is this important? Not only does an optimum location for a cell tower must be found an agreement between the landowner and provider/owner must be struck before the tower can be constructed. No other utility Wireless facilities share a relationship different from the other four primary utilities; water, sewer, power, and shares this unique private agreement relationship.
- Replacing an existing wireless facility is even more difficult than building one as part of an over network. Cell tower coverage are planned in rings with a specific geographic area covered by this ring. Imagine removing one sprinkler head from your lawn. As that area no longer receives water the grass dies. Removing on cell tower from an existing ring of cell tower creates a gap in coverage. The closer to the existing cell tower site, geographically and in elevation, the replacement site is the less loss of coverage will occur.
- rélative elevation. Both the existing site and proposed site share a southern downslope view of canyon toward the community of Boulder Creek. The ability of the proposed site to replicate the existing coverage objectives of AT&T and T-Mobile rule out the majority of other properties within the  $\frac{1}{4}$  mile search ring. The replacement site, 675 Rebecca Drive, sits the top of Rebecca Drive at approximately 1,130 feet in elevation. Th typical search criteria are to find a site within ¼ of a mile, or 1,340 feet, of the existing site and at or near the same
- It is important to note that even if a "perfect" replacement candidate could be found this does not mean that location is viable. Unlike other public utilities an agreement between Crown Castle and a private landowner must be agreeable to both parties for the project to be built.
- The project proposes to build a platform for the equipment and install pole mounted antennas attached to the platform. As a result, the new facility is not visible and is therefore the visually least intrusive means to cover a loss of coverage. See photo simulations.
- The existing wireless facility has been operating since 1994 first with AT&T and then T-Mobile collocating in 1996. This new proposal seeks to move an existing approved use from the current location at 653 Rebecca Drive approximately 145' west onto a different parcel and new landowner. The new location has the least impact to the surrounding neighborhood and is the best alternative location in consideration of CEQA analysis; aesthetics, agriculture and forest resources, air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazardous materials, hydrology and water quality, land use and environmental planning, mineral resources, noise, population and housing, recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire.

# Alternative Site Analysis Key Map: Areas reviewed within the given search ring.



## Areas reviewed within the given search ring.

			wed with the given sealen ing.
Color Key	Area	APN	Notes
Blue		APN: 090-251-08	Existing Site
Green	2	APN: 090-251-22	Proposed Location
Red	3	APN: 079-041-19	Same property owner as "Area 2". The property owner did not want the proposed site on this parcel, as their residential dwelling is located on this parcel.
Red	4	APN: 079-041-14	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage. (Same property owner for Areas 4-7)
Red	5	APN: 079-041-13	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage. (Same property owner for Areas 4-7)
Red	9	APN: 079-041-15	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage. (Same property owner for Areas 4-7)
Red	7	APN: 079-041-08	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage. (Same property owner for Areas 4-7)
Red	<b>∞</b>	APN: 079-041-17	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage.
Red	6	APN: 079-421-01	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage.
Red	10	APN: 079-121-06	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage.
Red	11	APN: 079-041-12	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage.
Red	12	APN: 090-251-19	Nonviable because of no owner interest, as well as a dramatic decrease in ground elevation this parcel would not provide suitable coverage.
Red	13	APN: 090-251-15	Nonviable because of no owner interest, as well as a dramatic decrease in ground elevation this parcel would not provide suitable coverage.

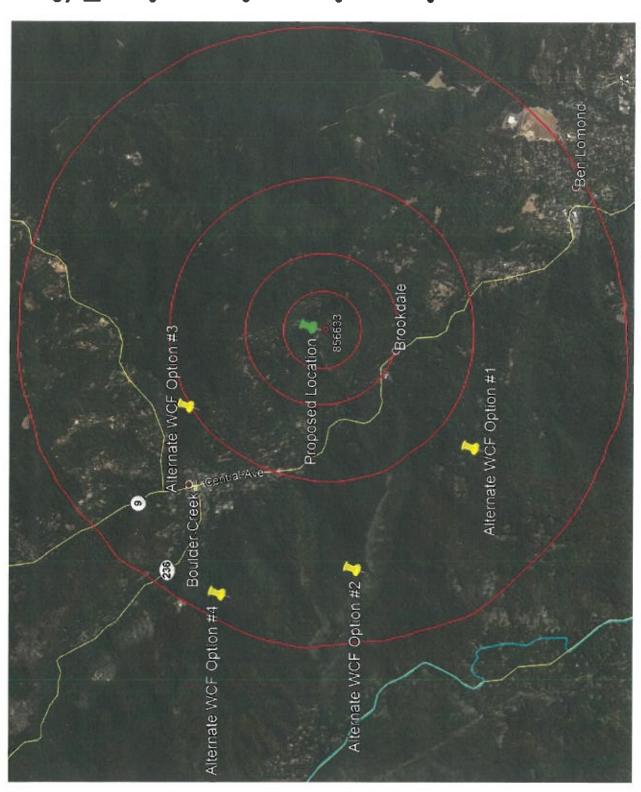
## **Area Key**Areas reviewed within the given search ring.

Color Key	Area	APN	Notes
Red	14	APN: 090-251-07	Nonviable because of no owner interest
Red	15	APN: 090-231-07	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage. (Same property owner for Areas 15 & 19)
Red	16	APN: 090-231-09	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage.
Red	17	APN: 079-041-16	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage.
Red	18	APN: 090-131-14	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage.
Red	19	APN: 090-231-08	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage. (Same property owner for Areas 15 & 19)
Red	20	APN: 090-231-34	Nonviable because of dramatic decrease in ground elevation this parcel would not provide suitable coverage.
Red	21	APN: 090-231-04	Nonviable because of no owner interest, as well as a dramatic decrease in ground elevation this parcel would not provide suitable coverage. (Same property owner for Areas 21 & 22)
Red	22	APN: 090-231-05	Nonviable because of no owner interest, as well as a dramatic decrease in ground elevation this parcel would not provide suitable coverage. (Same property owner for Areas 21 & 22)
Red	23	APN: 090-231-11	Nonviable because of no owner interest, as well as a dramatic decrease in ground elevation this parcel would not provide suitable coverage
Red	24	APN: 090-242-03	Nonviable because of no owner interest, and lack of available ground space. (Same property owner for Areas 24 & 25)
Red	25	APN: 090-242-02	Nonviable because of no owner interest, and lack of available ground space. (Same property owner for Areas 24 & 25)
Red	36	APN: 090-242-01	Norwiable because of no owner interest, and lack of available ground space.

## **Areas Key**Areas reviewed within the given search ring.

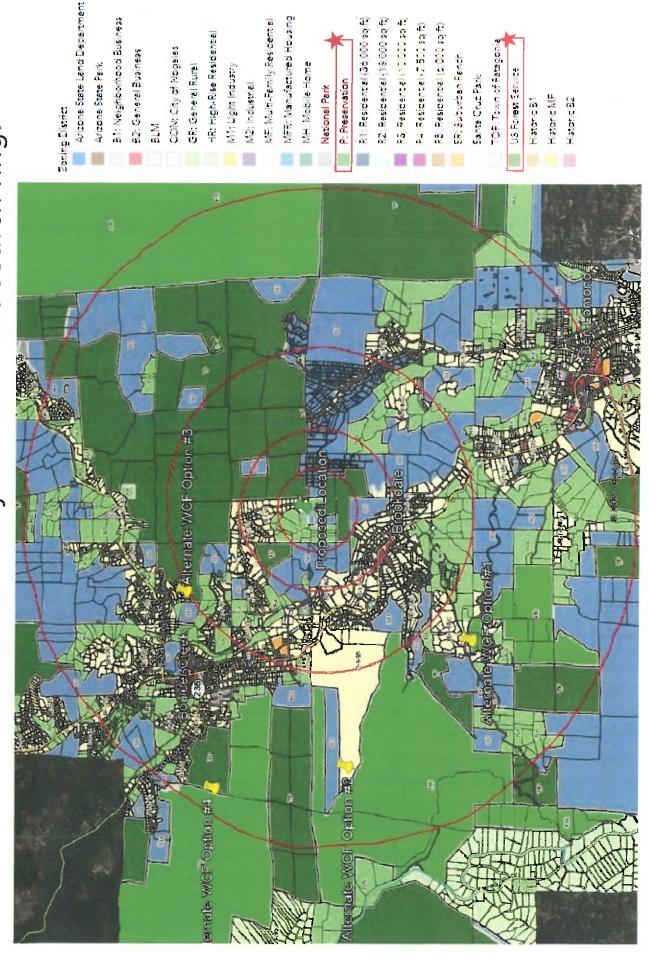
## Areas reviewed within the given search ring.

# Alternative Site Analysis Key Map:



- 0.25 Mi Radius
- 0.50 Mi Radius
- 1.00 Mi Radius
- 2.00 Mi Radius

# Alternative Site Analysis Key Map:





### Selection Criteria

- Each of the Alternate WCF locations (Options 1-4) were evaluated based on:
- Appropriate zoning
- Construction feasibility
- Reasonable ground elevation
- Visual Impacts
- Proximity to either Boulder Creek or Brookdale
- Each location was analyzed individually to determine what *overall* tower height would be necessary to mimic the coverage of Crown Castle's existing site as *closely as possible*.
- Due to extreme changes in ground elevations the alternate locations range from 1 mile to 2 miles away from the existing site.



	Key	Zoning	APN	Notes
	Existing Site BU 856633	RA: Residential	APN: 090-251-08	Ground Elevation: 1,122 ft. Lat: 37.113194°, Long: -122.103278° Structure Type: "Popsicle Sticks" Structure Height: 14 ft.
Pro	Proposed Location	RA: Residential	APN: 090-251-22	Ground Elevation: 1,125 ft. Lat: 37.113407°, Long: -122.103523° Structure Type: Platform & "Popsicle Sticks" Structure Height: 16 ft. Distance From Existing Site (856633): 100 ft.
∢ .	Alternate WCF Option #1	P: Preservation	APN: 078-021-55	Ground Elevation: 1,317 ft. Lat: 37.098185°, Long: -122.117648° Structure Type: Self-Support/Monopole Structure Height Needed to Mimic Existing Coverage: 150 ft. Distance From Existing Site (856633): 6,857 ft.
₹	Alternate WCF Option #2	P: Preservation	APN: 079-011-26	Ground Elevation: 1,730 ft. Lat: 37.109205°, Long: -122.131423° Structure Type: Monopole/"Popsicle Sticks" Structure Height Needed to Mimic Existing Coverage: 20 ft. Distance From Existing Site (856633): 8,305 ft.
₹	Alternate WCF Option #3	US Forest Service	APN: 090-271-02	Ground Elevation: 1,460 ft. Lat: 37.124912°, Long: -122.113040° Structure Type: Self-Support/Monopole Structure Height Needed to Mimic Existing Coverage: 120 ft. Distance From Existing Site (856633): 9,631 ft.
₹	Alternate WCF Option #4	US Forest Service	APN: 081-101-16	Ground Elevation: 1,150 ft. Lat: 37.121737°, Long: -122.134624° Structure Type: Self-Support/Monopole Structure Height Needed to Mimic Existing Coverage: 150 ft. Distance From Existing Site (856633): 5,123 ft.

### Final Review

# Areas reviewed outside of the 0.25-mile search ring.

### Alternate WCF Option #1

- Pros: Higher elevation, appropriate zoning
- Cons: Surrounded by residential dwellings, 120+ ft. tree line would cause the need for a 130-150 ft. tower, loss of coverage within the Boulder Creek community, no ease secured with landowner

### Alternate WCF Option #2

- Pros: Higher elevation, appropriate zoning, no residential dwellings nearby
- Cons: 0% Construction viability (nearest road is ~3,500 ft. away), no lease secured with landowner

### Alternate WCF Option #3

- Pros: Higher elevation, appropriate zoning
- for a 110-120 ft. tower, loss of coverage within the Brookdale community, no lease Cons: Surrounded by residential dwellings, 100+ ft. tree line would cause the need secured with landowner

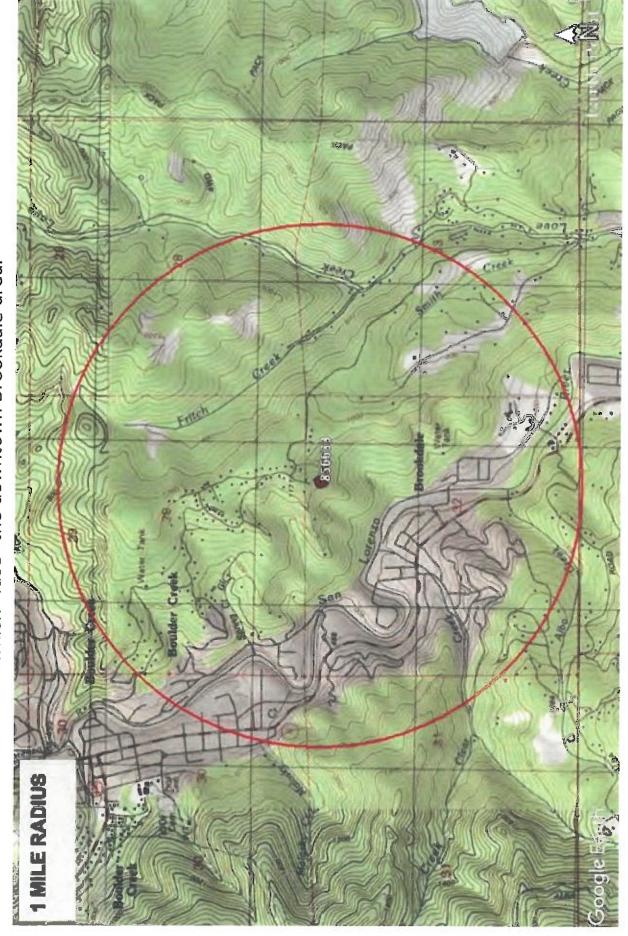
### Alternate WCF Option #4

- Pros: Slightly higher elevation, appropriate zoning, no residential dwellings nearby
- Cons: 0% Construction viability (nearest road is ~1,750 ft. away), no lease secured with landowner, loss of coverage within the Brookdale community



### Location Topography

Based on elevation, only two viable candidates (675 & 660 Rebecca Drive) which "face" the downtown Brookdale area.

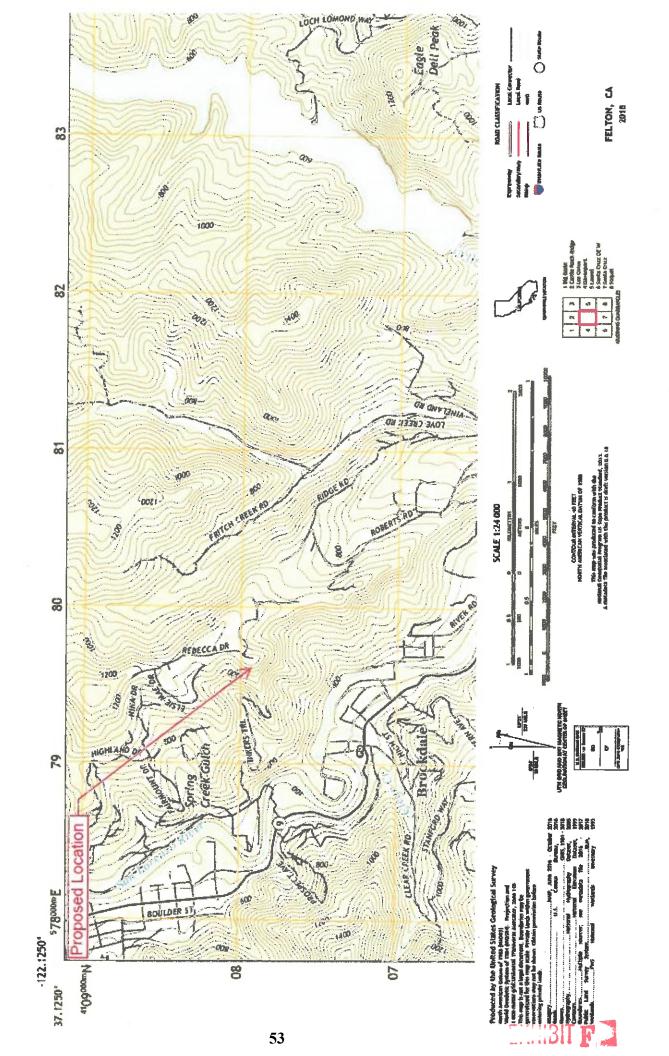






### U.S. DEPARTMENT OF THE INTERIOR U.S. GEOLOGICAL SURVEY



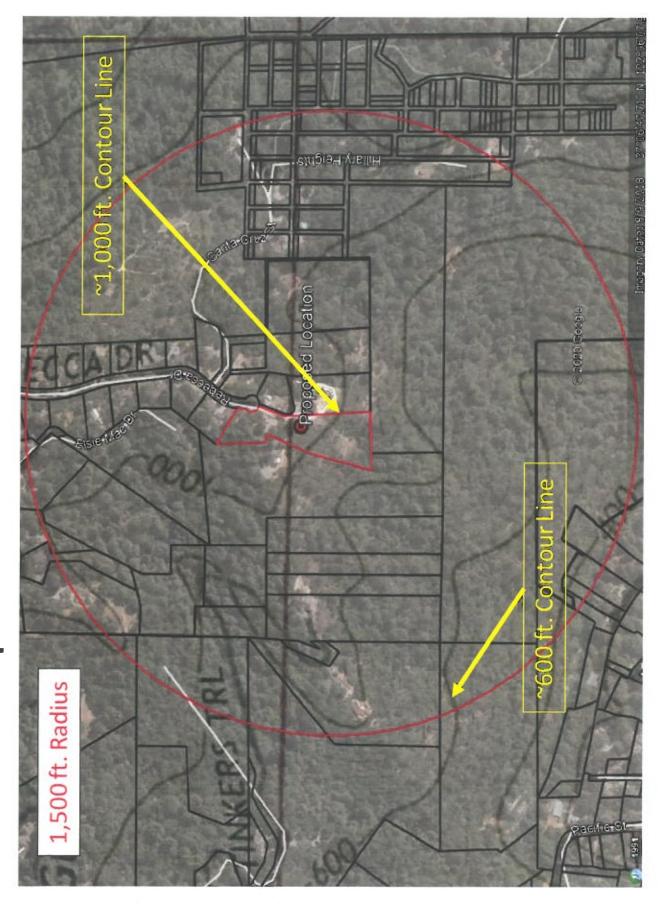


## Existing Tower Overview





## Proposed Location Overview

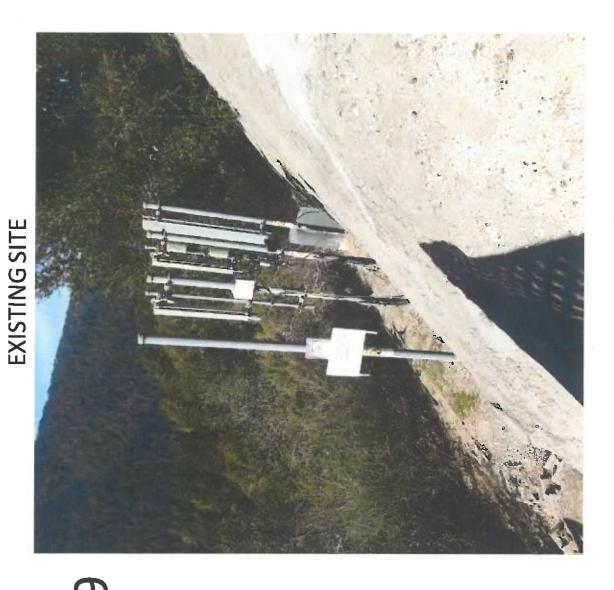




### CROWN SITE #'s: 856633 & 827799

653 REBECCA DRIVE BOULDER CREEK, CA 95006 14' Monopole(s), all "popsicle" sticks mounted to retaining wall.

T-Mobile / AT&T
Both operate at the facility and would be relocated (decommissioned) and moved to 675 Rebecca Drive

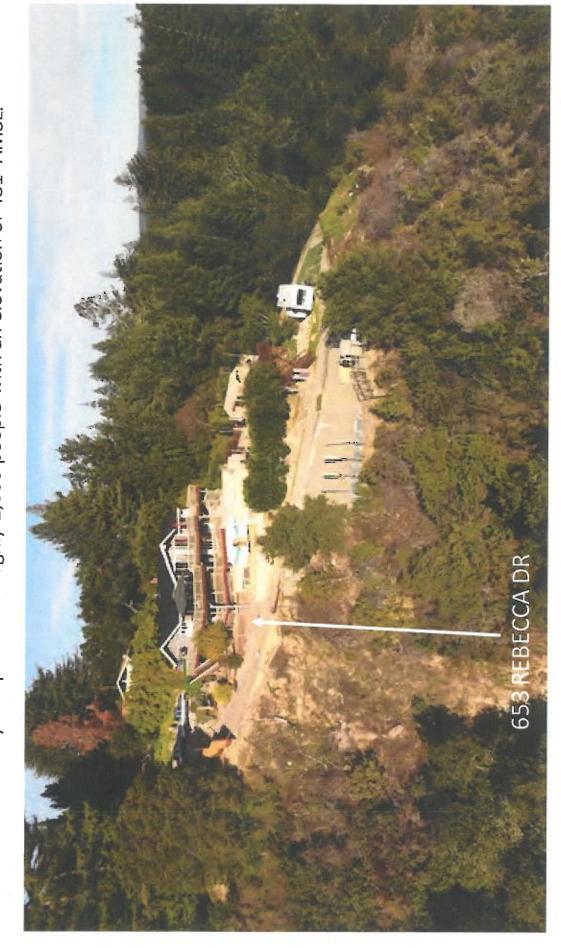


# Drone Photo Survey

Goal here is to reflect any location for a cell site to replicate existing cell tower coverage area.

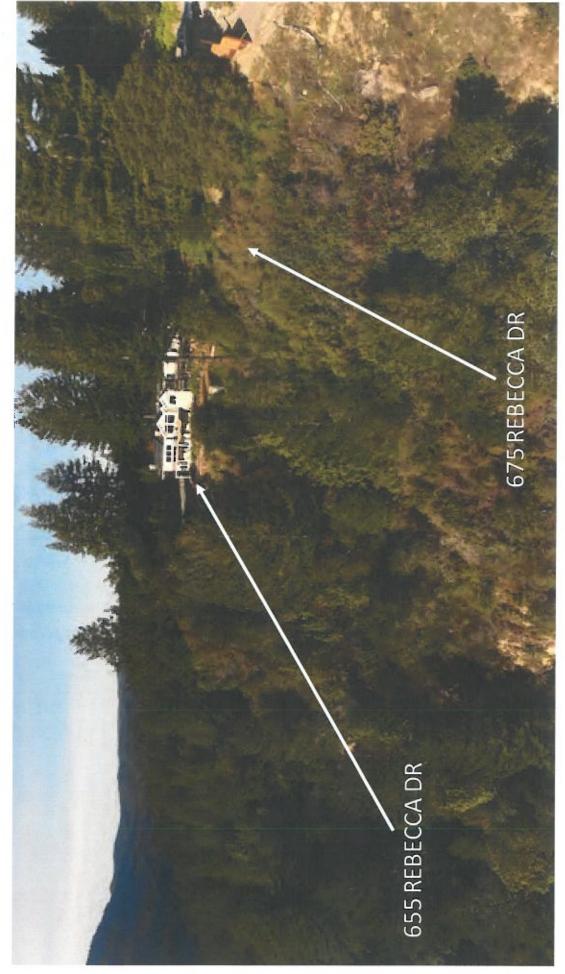
## (2) Crown Facilities on site (856633 & 827799)

Location of site sits on top of the mountain at 1107' AMSL looking down upon Brookdale, a community comprised of roughly 2,000 people with an elevation of 481' AMSL.

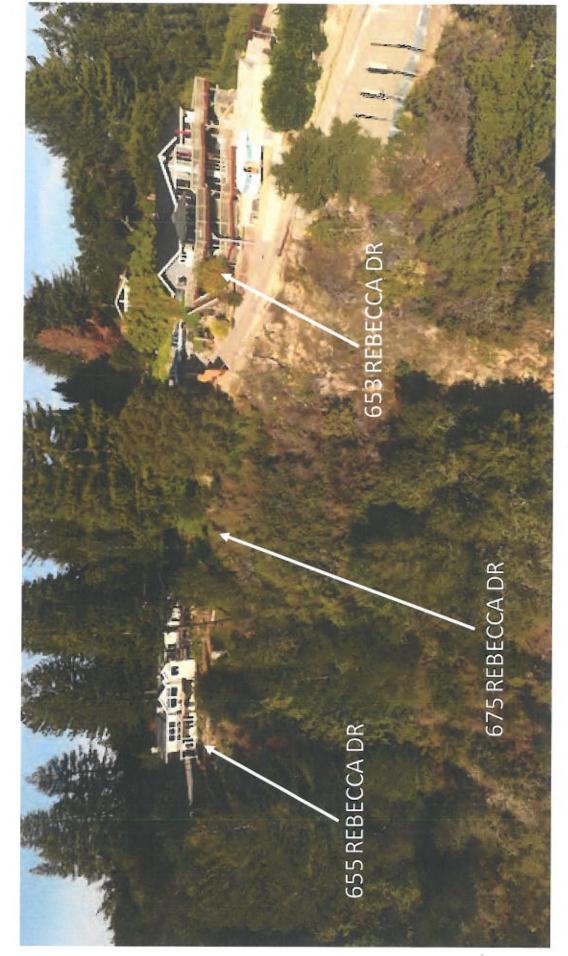




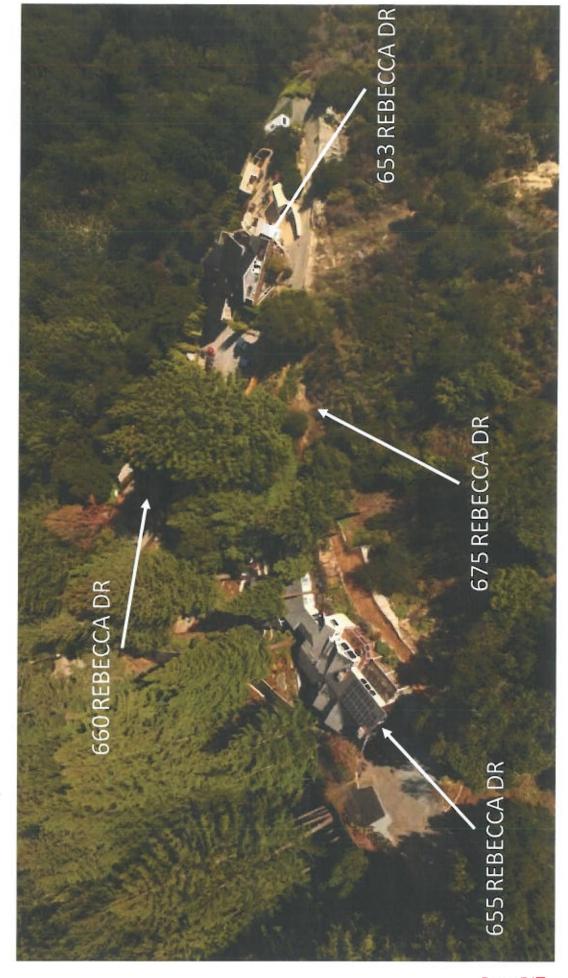
# 675 REBECCA DR, BOULDER CREEK (West of Existing Crown Site, see above slide)



Rebecca Drive, Boulder Creek. Existing antennas may be seen just below Existing site east of potential alternative 100 yards to the west of 653 the retaining wall (bottom right of picture) at 653 Rebecca Drive.



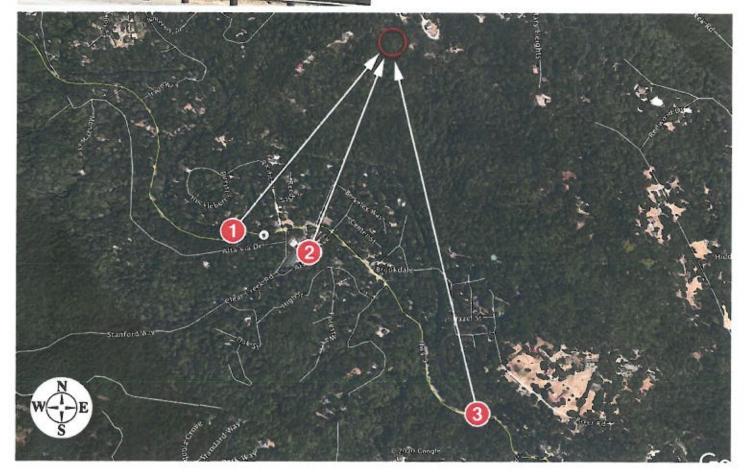
660 Rebecca could not "see" downtown due to the surrounding trees. Only (2) properties are near existing site, which face Boulder Creek,







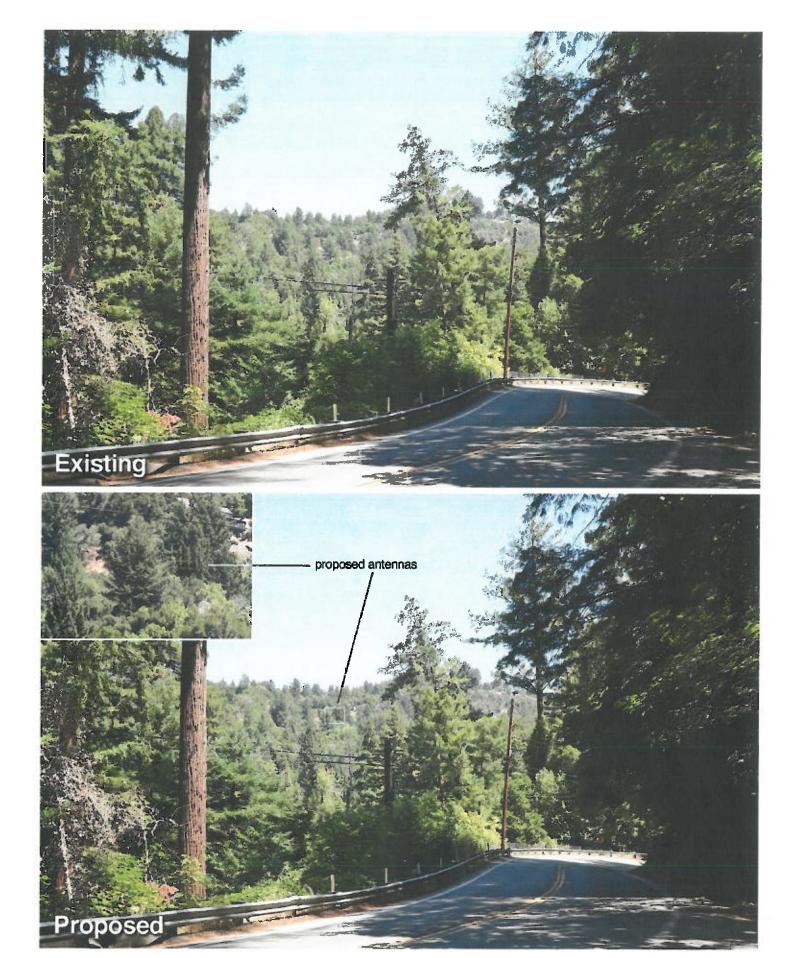






675 Rebecca Drive Boulder Creek,, CA Aerial Map





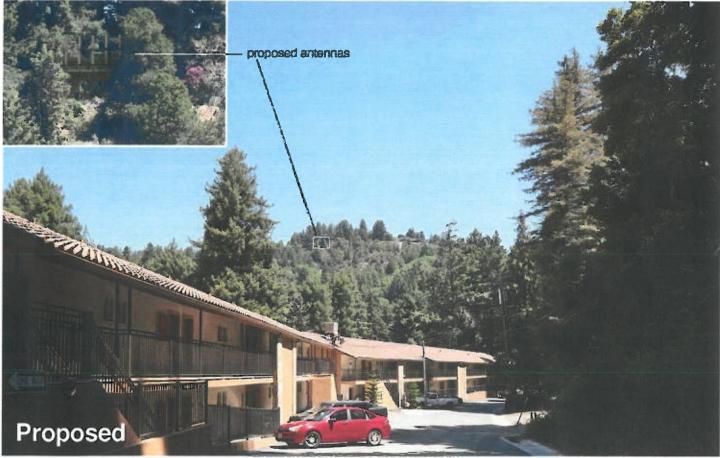


675 Rebecca Drive Boulder Creek,, CA Looking Northeast from Hwy 9

View #1 Applied Imagination 510 914-0500

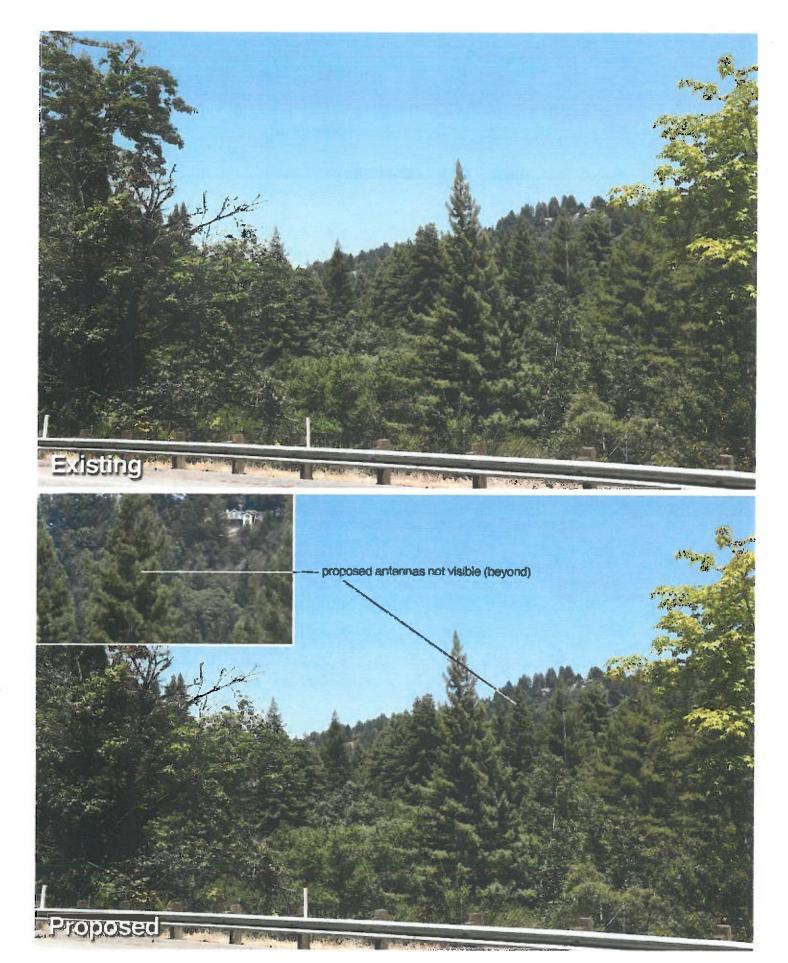








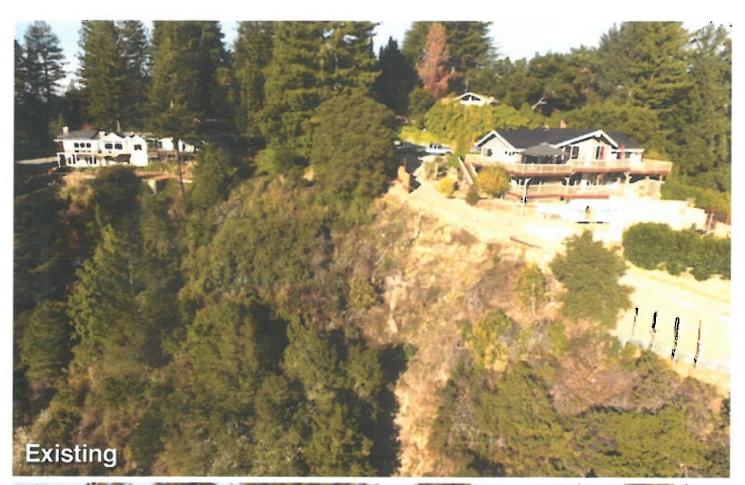
675 Rebecca Drive Boulder Creek,, CA Looking Northeast from Brookdale Inn





675 Rebecca Drive Boulder Creek,, CA Looking Northwest from Hwy 9

View #3
Applied Imagination 510 914-0500







655 Rebecca Drive Boulder Creek, CA Aerial View

View #1 Applied Imagination 510 914-0500



### Crown Castle • Proposed Base Station (Site No. 856633 "Brookdale") 675 Rebecca Drive • Boulder Creek, California

### Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Crown Castle, a wireless telecommunications facilities provider, to evaluate the base station (Site No. 856633 "Brookdale") proposed to be located at 675 Rebecca Drive in Boulder Creek, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

### **Executive Summary**

Crown Castle proposes to install directional panel antennas on new steel poles to be sited at 675 Rebecca Drive in Boulder Creek. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

### **Prevailing Exposure Standards**

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

Wireless Service Band	Transmit Frequency	"Uncontrolled" Public Limit	Occupational Limit (5 times Public)
Microwave (point-to-point)	1-80 GHz	$1.0 \mathrm{mW/cm^2}$	$5.0 \text{ mW/cm}^2$
Millimeter-wave	24-47	1.0	5.0
Part 15 (WiFi & other unlicensed)	26	1.0	5.0
CBRS (Citizens Broadband Radio)	3,550 MHz	1.0	5.0
BRS (Broadband Radio)	2,490	1.0	5.0
WCS (Wireless Communication)	2,305	1.0	5.0
AWS (Advanced Wireless)	2,110	1.0	5.0
PCS (Personal Communication)	1,930	1.0	5.0
Cellular	869	0.58	2.9
SMR (Specialized Mobile Radio)	854	0.57	2.85
700 MHz	716	0.48	2.4
600 MHz	617	0.41	2.05
[most restrictive frequency range]	30-300	0.20	1.0

### **General Facility Requirements**

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







### Crown Castle • Proposed Base Station (Site No. 856633 "Brookdale") 675 Rebecca Drive • Boulder Creek, California

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

### **Computer Modeling Method**

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

### Site and Facility Description

Based upon information provided by Crown Castle, including zoning drawings by Streamline Engineering and Design, Inc., dated August 4, 2020, it is proposed to install twelve directional panel antennas on six steel poles to be sited above a steel platform to be constructed on the hillside about 100 feet south of the residence located at 675 Rebecca Drive in the Boulder Creek area of unincorporated Santa Cruz County. Crown Castle presently operates a facility about 150 feet southeast of the proposed site; that facility would be dismantled once the proposed site is operational.

AT&T Mobility proposes to operate from this new facility using six CommScope Model SBNHH-1D65A antennas, mounted at an effective height of about 14 feet above ground and oriented in groups of three toward 180°T and 240°T. For the limited purpose of this study, it is assumed that the antennas would employ up to 6° downtilt and that the maximum effective radiated power in any direction would be 16,400 watts, representing simultaneous operation at 3,000 watts for WCS, 4,490 watts for AWS, 4,020 watts for PCS, 1,980 watts for cellular, and 2,910 watts for 700 MHz service.

T-Mobile also proposes to operate from the site, using six Ericsson Model AIR32 antennas mounted at an effective height of about 8 feet above ground and oriented in groups of three toward 180°T and 240°T. For the limited purpose of this study, it is assumed that the antennas would employ 4°



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### Crown Castle • Proposed Base Station (Site No. 856633 "Brookdale") 675 Rebecca Drive • Boulder Creek, California

downtilt and that the maximum effective radiated power in any direction would be 8,800 watts, representing simultaneous operation at 4,400 watts each for AWS and PCS service.

Crown Castle proposes\* to construct a secure fence off the south corner of the new platform, as shown in Figure 3, to preclude inadvertent access by unauthorized persons to that area.

### Study Results

For a person anywhere at ground outside the fenced area, the maximum RF exposure level due to the proposed operations is calculated to be 0.71 mW/cm<sup>2</sup>, which is 90% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby residence to the east is 2.1% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels from the proposed operation.

### No Recommended Mitigation Measures

Due to their mounting location and heights, the antennas would not be accessible to unauthorized persons, and so no measures are necessary to comply with the FCC public exposure guidelines. It is presumed that the two carriers, as FCC licensees, and Crown Castle will take adequate steps to ensure that their employees or contractors receive appropriate training and comply with FCC occupational exposure guidelines whenever work is required near the antennas themselves.

### Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the facility proposed by Crown Castle at 675 Rebecca Drive in Boulder Creek, 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 base stations.

Based on information from Crown Castle received subsequent to the date of the drawings.



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### Crown Castle • Proposed Base Station (Site No. 856633 "Brookdale") 675 Rebecca Drive • Boulder Creek, 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, 2021. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

6-50-2021

707/996-5200

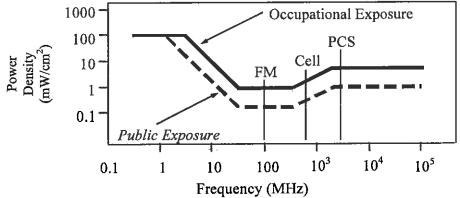
October 2, 2020

### **FCC Radio Frequency Protection Guide**

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

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

Frequency	Electro	magnetic Fi	ields (f is fr	equency of	emission in	MHz)
Applicable Range (MHz)	Field S	ctric trength m)	Field S	netic trength /m)	Equivalent Power l (mW/	Density
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√f	1.59√f	$\sqrt{f}/106$	$\sqrt{f}/238$	f/300	f/1500
1,500 - 100,000	137	61.4	0.364	0.163	5.0	1.0



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

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FCC Guidelines Figure 1



### RFR.CALC<sup>™</sup> 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<sup>2</sup>,

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<sup>2</sup>,

where  $\theta_{BW}$  = half-power beamwidth of antenna, in degrees,

 $P_{net}$  = net power input to antenna, in watts,

D = distance from antenna, in meters,

h = aperture height of antenna, in meters, and

 $\eta$  = 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<sup>2</sup>,

where ERP = total ERP (all polarizations), in kilowatts,

RFF = three-dimensional relative field factor toward point of calculation, and

D = distance from antenna effective height to point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 ( $1.6 \times 1.6 = 2.56$ ). 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 is used in a computer program capable of calculating, at thousands of locations on an arbitrary grid, the total expected power density from any number of individual radio frequency sources. The program also allows for the inclusion of uneven terrain in the vicinity, as well as any number of nearby buildings of varying heights, to obtain more accurate projections.

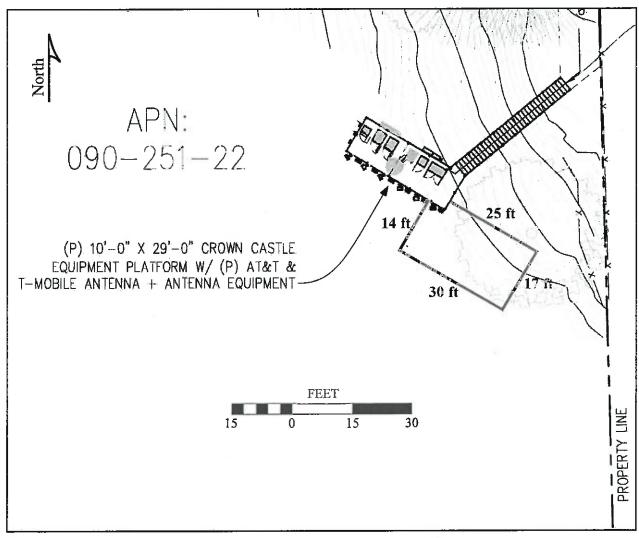


Methodology Figure 2



### Crown Castle • Proposed Base Station (Site No. 856633 "Brookdale") 675 Rebecca Drive • Boulder Creek, California

### **Proposed Fence Dimensions**



Notes: See text.

Base drawing from Streamline Engineering and Design, Inc., dated August 4, 2020.



HELIX Environmental Planning, Inc. 11 Natoma Street, Suite 155 Folsom, CA 95630 916.365.8700 tel 619.462.0552 fax www.helixepi.com



July 26, 2021

Project 04656.00002.001

Jacob Sparks Crown Castle 2055 S. Stearman Drive Chandler, AZ 85286

Subject:

**Brookdale Site #856633 Arborist Report** 

Dear Mr. Sparks:

The purpose of this letter is to assess potential impacts to a mature interior live oak (*Quercus wislizeni*) tree and provide tree protection recommendations for the proposed Brookdale telecommunication facility (Site #856633). The project site is located at 675 Rebecca Drive in the unincorporated community of Boulder Creek in Santa Cruz County, California. The proposed project will construct a 10-foot by 29-foot elevated platform to house telecommunications and GPS antennas and associated electrical and telecommunications cabinets. The platform will be accessed via an approximately 50-foot long, 4-foot-wide elevated stairway and an approximately 150-foot long, 6-foot-wide decomposed granite path. The elevated stairway runs along the west side and the elevated platform is located on the south side of a mature oak tree.

The County of Santa Cruz protects significant trees located within the coastal zone under County Code Section 16.34.030. This project is not located within the coastal zone, so a Significant Tree Removal Permit is not required.

The site was surveyed on July 7, 2021. The interior live oak of primary concern is located adjacent to the proposed platform on a relatively level bench near the top of a long, steep slope (Attachment A, Photo 1). It has a single trunk of 29 inches in diameter at breast height as measured with a diameter tape. It was visually estimated to have a dripline radius of 18 feet and to be approximately 45 feet tall. The tree is in fair-good health and has a fair structure. The trunk splits into multiple codominant stems at approximately ten feet with narrow crotches. The crown is vigorous and full, with amounts of deadwood typical to a mature tree that has not been regularly maintained. The canopy is slightly asymmetrical with more growth on the downhill side. On the west side, the bottom of the canopy is approximately eight feet above existing grade (Attachment A, Photo 2). On the south side it is approximately ten feet above existing grade at an elevation of approximately 1142 (Attachment A, Photo 3).

Other trees located near the proposed project include three small interior live oaks, a stand of redwoods (Sequoia sempervirens), and a large Atlas cedar (Cedrus atlantica), as well as smaller landscape trees.



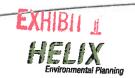
Tree protection fencing is recommended to be installed at the limit of grading to minimize impacts to these trees during construction (Figure 1) and no additional specific protection measures are recommended.

The elevated stairway will be approximately four feet above finished grade. Assuming a minimum 8 feet of clearance above the walkway, the west side of the tree canopy will need to be raised approximately 4 feet, to 12 feet above finished grade. The project fire suppression plan requires annual removal of vegetation within 30 feet of the platform, where possible on level ground. CalFire defensible space recommendations are to raise tree canopies to 6 feet clear above understory vegetation to minimize vertical fire ladders and to maintain 10 feet of horizontal clearance from structures. The area is currently densely vegetated (Attachment A, Photo 4). To achieve the required clearance, the south side of the tree canopy may need to be pruned back or up approximately ten feet to allow clearance from the electrical panels. As shown in Figure 2, approximately 30 percent of the tree canopy may require pruning. However, due to the existing slope and canopy elevation, this pruning is expected to consist primarily of branches one to two inches in diameter that will not have a significant impact on the health of the tree. In addition to raising the crown for required project clearances, all deadwood greater than one inch in diameter should be removed from the tree canopy.

Eight footings of the elevated stairway will be installed within the dripline radius on the west side of the tree (Figure 2). These footings will be 18 inches in diameter and drilled 5 feet deep. Due to the small size of the footings, impacts to the tree are expected to be minimal. Care should be taken to minimize ground compaction within the dripline radius by construction equipment or workers while the footings are being installed. If vehicles will be driven through the area or long-term repeated pedestrian traffic carrying heavy materials or equipment is required under the canopy, then a six-inch thick layer of wood chip mulch should be placed over access route reduce soil compaction. Upon completion of construction, the mulch may be removed or spread to a thickness of two to four inches and left in place.

The following tree protection measures should be integrated into the construction documents and specifications.

- Prior to any grading, movement of heavy equipment, or other construction activities,
   Tree Protection Fencing, consisting of a minimum four-foot tall high-visibility fence
   (orange plastic snow fence or similar), shall be installed one foot outside the limit of
   work. Whenever possible, fence multiple trees together in a single tree protection zone
   (TPZ). Fencing shall be removed following construction.
- Access to TPZ shall be limited to that required for vegetation clearing and tree pruning.
- No parking, portable toilets, dumping or storage of any construction materials, grading, excavation, trenching, or other infringement by workers or domesticated animals is allowed in the TPZ.
- If vehicular or repeated pedestrian construction access is required within the dripline of a protected oak tree, place six inches of wood chip mulch over ground prior to starting access and remove or spread to a depth of two to four inches once project is complete.



- No signs, ropes, cables, or any other item shall be attached to a protected tree, unless recommended by an ISA-Certified Arborist.
- Underground utilities within the TPZ should be placed as far from the trunk as possible. Avoid cutting roots over 2" in diameter to the greatest extent feasible.
- Cut or fill within the dripline of existing trees should be avoided to the greatest extent possible. Under no circumstances should fill soil be placed against the trunk of an existing tree.
- Pruning of living limbs or roots shall be done by experienced tree workers under the supervision of an ISA-Certified Arborist. All pruning shall be done in accordance with ANSI 233 A. Climbing spikes should not be used on living trees. Limbs should be removed with clean cuts just outside the crown collar.
- Minimize disturbance to the native ground surface (grass, leaf, litter, or mulch) under preserved trees except as required for fuel load vegetation management.

Please do not hesitate to call me at (916) 365-8700 or e-mail me at MeredithB@helixepi.com if you have any questions about this report.

Sincerely,

Meredith Branstad

ISA-Certified Arborist WE-6727A

Attachments:

Figure 1:

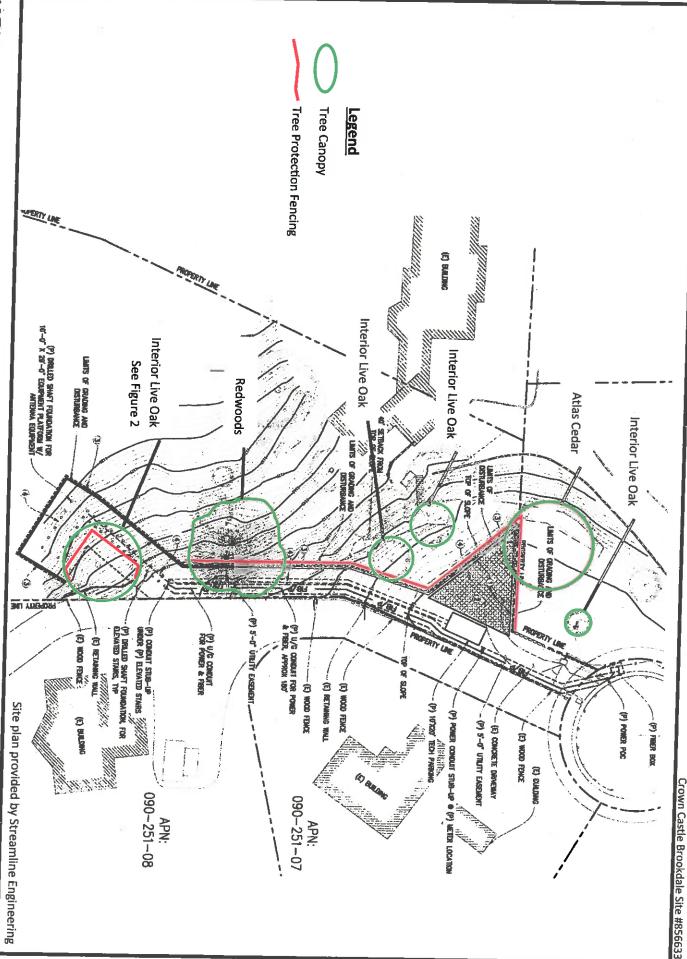
Site Plan

Figure 2:

Tree Impacts

Attachment A: Representative Site Photos





Site Plan

Figure 1

Minor impacts from construction of cles or repetitive foot traffic is rechip mulch within canopy if vehi-Install 6-inch thick layer of wood 8 stairway footings in this area quired beneath the canopy. Tree Protection Fencing Tree Canopy Legend Canopy Area to be Raised 30.0' TALL TREE Site plan provided by Streamline Engineering SMLI YTRIGHORM đ - (E) RETAINING WALL (E) WOOD FENCE - (P) 4'-0" NOE ELEVATED STAIRS (P) 10'-0" X 29'-0" CROING CASTLE EQUIPMENT PLATFORM W/ (P) ATRT & T-MOBILE ANTENNA + ANTENNA EQUIPMENT (E) WOOD FENCE (P) WALK PATH FROM (P) TECH PARIGNG TO (P) EQUIPMENT PLATFORM, APPROX 205' HOOD FENCE Crown Castle Brookdale Site #856633

Tree Impacts
Figure 2



Photo 1. Tree of concern is located on a relatively level bench on south-facing hillside.

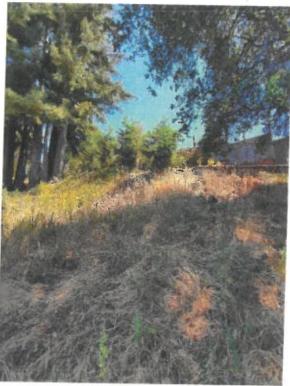


Photo 2. West side of canopy is approximately eight feet above existing grade.





Photo 3. South side of canopy is approximately 10 feet above existing grade.

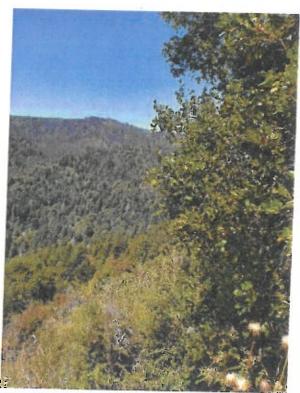


Photo 4. View of proposed platform area from south end of existing retaining wall.



Representative Site Photos

Attachment A

Application #: 201372 APN: 090-251-22

Owner: Dana and Lynn Redington

### **Parcel Information**

### **Services Information**

Urban/Rural Services Line:

Inside

x Outside

Water Supply:

N/A

Sewage Disposal:

N/A

Fire District:

Boulder Creek Fire Protection District

Drainage District: Zone 8

### Parcel Information

Parcel Size:

3.1 acres

Existing Land Use - Parcel:

Vacant - Undeveloped

Existing Land Use - Surrounding:

Residential

Project Access:

Rebecca Drive

Planning Area:

San Lorenzo Valley

Land Use Designation:

R-M (Mountain Residential)

Zone District:

RA (site development area), R-1-20 (Residential

Agriculture, single family residential, 20,000 square feet

per unit)

Coastal Zone:

Inside

\_x\_ Outside

### Technical Reviews: None

### **Environmental Information**

Geologic Hazards:

Not mapped/no physical evidence on site-see reports related to

location of facility on slopes greater than 30 percent

Fire Hazard:

Not a mapped constraint

Slopes:

Greater than 30 percent slope - project conditioned to meet accepted Subsurface Exploration Report, dated February 25<sup>th</sup>, 2021, by Tower Engineering Professionals, Inc., and the Geotechnical Engineering

and Geologic Report, dated August 4th, 2021, by Universal

Engineering Sciences, and the "Addendum Report – Limited Slope Stability Analysis" dated September 24<sup>th</sup>, 2021, by Universal

Engineering Sciences.

Env. Sen. Habitat:

A site visit was conducted on November 30, 2020, by Environmental Planning staff and it was determined that this site is not in sensitive sandhills habitat. No study or mitigation required as mapping is in

error.

Grading:

No grading proposed

Tree Removal:

No trees proposed to be removed, trees required to be protected in

place during construction and as operational condition of approval

Scenic:

Not a mapped resource

Archeology:

Not mapped/no physical evidence on site