COUNTY OF SAN MATEO PLANNING AND BUILDING DEPARTMENT

DATE: September 20, 2018

- **TO**: Zoning Hearing Officer
- **FROM**: Planning Staff
- **SUBJECT**: Consideration of a Coastal Development Permit, Use Permit amendment, Resource Management-Coastal Zone Permit, and Grading Permit, pursuant to Zoning Regulations Section 6328, 6500, 6900, respectively, and Section 9283 of the San Mateo County Building Regulations, to allow modifications to an existing wireless telecommunication facility and road improvements to the existing access road. The project is located off Bean Hollow Road in the unincorporated Pescadero area of San Mateo County. The project is appealable to the California Coastal Commission.

County File Number: PLN 2016-00547 (Crown Castle/County of San Mateo)

PROPOSAL

The applicant, AT&T, proposes to modify an existing wireless telecommunications facility (approved under PLN2010-00190). Modifications include: (1) removal of three existing 5 feet 7 inch tall lollipop poles and construction of one new 35-foot tall monopole within an approximate 1,312 sq. ft. existing fenced lease area, and (2) six new panel antennas, one microwave antenna, and other associated wireless equipment (e.g., surge suppressors, remote radio units) mounted on the new monopole. Three new equipment cabinets are also proposed on a concrete pad adjacent to the existing concrete equipment pad, two free standing H-frames and one equipment cabinet located outside of the fenced lease area will be removed. The existing 15-foot wide access dirt/gravel road will also be widened 5 feet (a total of a 20-foot wide asphalt road; to include a fire truck turnaround adjacent to the lease area) to meet fire access requirements. No trees are proposed for removal and minimal vegetation removal is proposed to widen the existing access road. The site of the facility is located outside of the Pescadero Creek Road designated County Scenic Corridor.

RECOMMENDATION

That the Zoning Hearing Officer approve the Coastal Development Permit, Use Permit amendment, Resource Management-Coastal Zone Permit, and Grading Permit, County

File Number PLN 2016-00547, subject to the findings and conditions of approval listed in Attachment A.

BACKGROUND

Report Prepared By: Melissa Ross and Olivia Boo, Planners, Telephone 650/599-1559 and 650/363-1818

Applicant: Jason Osborne for AT&T

Owner: Crown Castle (facility); County of San Mateo (landowner)

Location: Bean Hollow Road, Pescadero

APN: 086-180-060

Size: 118.464 acres

Existing Zoning: RM-CZ/CD (Resource Management-Coastal Zone/Coastal Development)

General Plan Designation: Open Space Rural

Existing Land Use: Existing wireless facility, CSA 11 facility

Water Supply: None required for the facility. Existing CSA 11 wells located adjacent to lease area.

Sewage Disposal: None required for the facility.

Flood Zone: FEMA flood Zone X (area of minimal flooding). Community panel 06081C0432E; effective October 12, 2012.

Environmental Evaluation: Categorically exempt pursuant to Section 15301, Class 1 (Existing Facilities) of the California Environmental Quality Act; minor alteration of existing private structures or topographical features, involving negligible or no expansion of use.

Setting: The facility is located near the center of the 118 acre parcel and takes access from Bean Hollow Road. The facility is located on a small hilltop, approximately 2,000 feet south of Pescadero Creek Road and approximately 5,200 feet east of Highway 1. The majority of the parcel is undeveloped with the exception of an existing CSA 11 water treatment facility serving the Pescadero rural service center and also serves as a storage area for roadway materials. The Pacific Ocean is approximately one mile west of the site. The site is located above the water treatment facility.

DISCUSSION

A. KEY ISSUES

1. <u>Conformance with the General Plan</u>

Staff has reviewed the project for conformance with all applicable General Plan Policies, as discussed below.

Vegetative, Water, Fish and Wildlife Resources Policies

Policy 1.23 (*Regulate Development to Protect Vegetative, Water, Fish and Wildlife Resources*) discusses regulating land uses and development activities to prevent, and if infeasible mitigate to the extent possible, significant adverse impacts on vegetative water, fish and wildlife resources.

The applicant submitted a biologist report, prepared by Trileaf Corporation, evaluating the project for potential impacts to sensitive habitats within the project area. A field study was conducted by Trileaf Natural Resources Specialists on May 31, 2018 and June 1, 2018. The report noted that the project site has been recently disturbed by an ongoing Department of Public Works project (approved Coastal Development Permit No. PLN2015-00506) not related to the subject proposal. The report also noted that the project site consists primarily of ruderal species dominated by non-native grasses including wild oats, Italian ryegrass, and Mediterranean barley, among others. In accordance with the County's Local Coastal Program and General Plan policies for sensitive habitats, the report also evaluated the site for special status plant and animal species.

No aquatic resources exist in the area of the proposed improvements (nearest pond is over 450 feet east of the project site). The report identified 12 special status plant species (i.e., coast iris, perennial goldfields, Choris' popcornflower) known to occur within the vicinity of the project site and determined, based on field investigation, that suitable habitat was not present within the project site nor were any of the plant species observed. Special status animal species were also noted in the report and of the 13 special status species known to occur within the Pescadero region, 11 were not observed within the project site nor is suitable habitat available (i.e., San Francisco dusky-footed woodrat, Myrtle's silverspot butterfly). Both California red-legged frog and San Francisco garter snake are unlikely to occur within the project site area due to the lack of suitable habitat, distance, and gradient from the project site to the nearest pond. In the unlikely event that special status species are encountered and to ensure no significant adverse impacts occur as a result of project implementation, the report identified two mitigation measures, included as conditions of approval, regarding compliance with the provisions of the Grading Permit,

including standard erosion control measures compliant with Best Management Practices, and the installation of qualified biologist approved exclusion fencing around the perimeter of the project site prior to construction activities.

Soil Resources Policies

Policies 2.17 (*Regulate Development to Minimize Soil Erosion and Sedimentation*) and 2.23 (*Regulate Excavation, Grading, Filling, and Land Clearing Activities Against Accelerated Soil Erosion*) discuss regulating development to minimize and protect against accelerated soil erosion and sedimentation, and to stabilize disturbed areas.

Earthwork for the road improvements includes 947 cubic yards of excavation to widen the existing 15-foot wide dirt and gravel access road by 5 feet and constructing a turnaround to meet fire access requirements. The facility is accessed via Bean Hollow Road, a paved 20-foot wide road, where the paved portion of Bean Hollow Road ends near the existing CSA 11 water tanks, the dirt/gravel access road begins. Approximately 940 linear feet (0.18 mile) of the access road will be improved. At its starting point, the access road is at an approximate elevation of 200 feet with the lease area at approximately 275 feet in elevation (average slope of 7.9%). Due to the potential for erosion to occur, the applicant will be required to submit an erosion and sediment control plan for review and approval as part of the building permit submittal to ensure potential erosion and sedimentation is minimized. The project has been reviewed by the Building Department and the Department of Public Works and has received conditional approval.

Visual Quality Policies

Policy 4.21 (*Utility Structures*) discusses minimizing adverse visual quality of utility structures, including roads. The AT&T site is accessed by an existing 4,000 ft. long uphill dirt road that branches off of Bean Hollow road. There is an existing 35-foot tall County of San Mateo antenna facility also on the site, just south of the project site. Due to the project sites location on a hill, and its distance from the intersection of Pescadero Creek Road and Bean Hollow Road, neither the County facility nor AT&T's cellular facility are significantly visible from Bean Hollow Road and are minimally visible, if at all, from Pescadero Creek Road, which is a designated County Scenic Corridor. The project site is not visible from Cabrillo Highway, a State Scenic Corridor, due to distance and topography. The project site area, itself, is not located in a mapped scenic corridor. A condition of approval is recommended for the project to be painted/maintained grey in color (similar to the County facility) to blend with the sky in order to minimize potential visual impacts.

Policy 4.25 (*Location of Structures*) discusses locating, siting and designing all structures and paved areas to carefully conform with the natural vegetation, landforms and topography of the site so that their presence is compatible with the pre-existing character of the site. Policy 4.26 (*Earthwork Operations*) discusses keeping grading or earth-moving operations to a minimum and, where grading is necessary, make graded areas blend with adjacent landforms through the use of contour grading rather than harsh cutting or terracing of the site.

The existing fenced lease area consists of an equipment area and three (3) monopoles. Additional equipment structures are located outside of the fenced area and will be removed as part of this project. Installation of the proposed 35-foot tall monopole will occur within the fenced lease area to minimize further land disturbance.

The lease area is relatively flat with an approximate 2% slope. Though grading is proposed, it is required primarily to widen the 940-foot long section of an existing dirt access road to the site to comply with Cal-Fire access requirements. Minor grading will be required to expand the existing equipment cabinet pad in order to accommodate the new cabinets but this earthwork will occur within the lease area. Grading for the road improvements will follow the existing topography and only remove vegetation necessary to widen the road. Erosion and sediment control plans required as part of the building permit application, will ensure that disturbed areas are stabilized and that vegetation removed is replaced.

2. Conformance with the Local Coastal Program

Staff has reviewed the project for conformance with all applicable Local Coastal Program Policies, as discussed below.

Sensitive Habitats Component

Policy 7.3 (*Protection of Sensitive Habitats*) prohibits any land use or development which would have significant adverse impacts on sensitive habitat areas, development adjacent to sensitive habitats shall be sited and designed to prevent impacts that could significantly degrade the sensitive habitats.

As previously discussed, the submitted biologist report indicated no special status species within the project area and that implementation of erosion control best management practices and exclusion fencing for San Francisco garter snake and California red-legged frog will ensure that the project will not have significant adverse impacts on sensitive habitats should they occur during construction, however unlikely. The operation of the facility is also not likely to adversely affect sensitive habitats given that the facility is

unmanned and maintenance of the equipment is limited to one to two times per month. Additionally, the proposed monopole height is below the maximum height of 199 feet identified in the biologist report for potential impacts to migratory birds and raptors and no exterior lighting is proposed. No significant adverse impacts are anticipated as part of this project.

Visual Resources Component

Policy 8.17 (*Alteration of Landforms; Roads and Grading*) requires that development be located and designed to conform with, rather than change, landforms. Policy 8.19 (*Colors and Materials*) discusses using colors and materials in new development which blend, rather than contrast, with the surrounding physical conditions of the site.

The fenced lease area is approximately 2,470 feet (0.47 mile) south of the intersection of Pescadero Creek Road and Bean Hollow Road and not located in either the Pescadero Creek Road or Cabrillo Highway Scenic Corridor. Alterations to the access road will follow the existing topography and only remove that vegetation necessary to widen the road. The project is conditioned to require the equipment to be painted/maintained a gray color to blend with the sky to minimize potential visual impacts. Staff visited the site and the existing and proposed site is very minimally visible, if at all, from Pescadero Creek Road.

3. <u>Conformance with the Zoning Regulations</u>

a. <u>Conformance with the Resource Management-Coastal Zone District</u>

Wireless Telecommunications Facilities are allowed uses in the RM-CZ District subject to use permit approval. AT&T was granted a Resource Management permit in 1994 (RMD94-0018) for the facility. As proposed, the project is compliant with the RM-CZ Development Standards as discussed below.

	Development Standard	Proposed	
Minimum Front Setback	50 feet	>1,800 feet	
Minimum Rear Setback	20 feet	>1,200 feet	
Minimum Side Setbacks	20 feet	>500 feet	
Maximum Height	36 feet	35 feet	

b. Conformance with the RM-CZ Development Review Criteria

The project is compliant with the Development Review Criteria as discussed below.

(1) Section 6912.1 (*Environmental Quality Criteria*) requires development to be designed and located in a manner to conserve energy resources, and thereby reduce the impacts of energy consumption on air, land, water and living resources including clustering and locating development to reduce grading, meeting air pollutant standards, and no significant adverse environmental impacts on wildlife resources.

The project includes modification of the existing site, grading to widen the existing access road to comply with Cal-Fire requirements, and installation of new equipment. The existing access road will be utilized; no new road is proposed. Standard erosion control measures will be required for the duration of the construction project to minimize runoff and erosion. No tree removal is proposed and only minimal vegetation will be removed for the road improvements. Construction of the road improvements and installation of the new monopole may result in temporary construction emissions. The project is conditioned to require revegetation of disturbed areas as part of the erosion and sediment control plan and submittal of a dust control plan to minimize temporary air quality impacts resulting from construction. No pollutants, or chemicals are proposed with the installation of the equipment or after the facility is in operation. No long term noise is expected upon operation of the site. As discussed early in the report, the site is located 450 feet from any water bodies and complies with height limits to avoid interference with migratory birds. No sensitive communities or habitats are present on the site.

(2) Section 6912.2 (Site Design Criteria) requires all structural improvements or land coverage to be located, sited and designed to fit the natural topography and minimize grading and modification of existing land forms and natural characteristics; all development shall be designed to minimize impacts of noise, light, glare and odors to adjacent properties and the community; and wherever possible, vegetation removed during construction shall be replaced.

As previously discussed, the earthwork will improve the existing access road by widening the road 5 feet and constructing a fire turnaround adjacent to the fenced lease area to meet fire access

requirements. No new roads are proposed. Typical of cellular facilities, no odor, glare, light, or noise is expected. Vegetation removed as a result of the road improvements is conditioned to be replaced with native vegetation. No trees are located in the project vicinity.

(3) Section 6912.3 (Utilities) public utility structures, including overhead wires and utility poles, shall be of minimum bulk and height and designed to have an uncluttered appearance and be subordinate to the setting; public water shall be available; land shall be suitable for septic system where no sewer system exists.

The proposed 35-foot tall monopole will consolidate the three (3) existing lollipop antennas and be capable of accommodating the proposed upgrades including the new panel antennas and microwave antenna. The monopole is the minimum height and bulk necessary to accommodate these attached structures in order to provide service and be structurally sound. The non-habitable facility does not require water or septic.

(4) Section 6912.4 (*Water Resources Criteria*) discusses minimizing impacts to hydrologic processes by minimizing grading and other landscape alterations, reducing erosion, and maintaining surface water runoff at or near existing levels.

Land disturbance for the road improvements will not significantly alter the existing topography such that hydrologic processes are significantly impacted. Standard erosion control measures will be required to be installed and implemented throughout the duration of the project.

(5) Section 6912.5 (*Cultural Resources Criteria*) states that when there is substantial indication that an archaeological or paleontological site may exist in the project area a survey shall be conducted.

Road improvements are limited to road widening and paving in previously disturbed areas and areas adjacent to the existing road and lease area. Given this, it is not expected that cultural resources will be adversely impacted, if present within the project area. However, a condition of approval is recommended requiring protection of such resources should they be encountered during construction. (6) Section 6912.6 (*Hazards to Public Safety Criteria*) provide reasonable and appropriate setbacks from hazardous areas.

A portion of the project site is located adjacent to but not within a mapped potential landslide area. Both the road improvements and cell facility are non-habitable and will be constructed to meet building code requirements. Road improvements will ensure that adequate fire access is provided in case of emergency at the site.

(7) Section 6913.1 (*Primary Scenic Resources Areas Criteria*) development within Scenic Corridors shall not detract from or significantly obscure the quality of public views.

The project site is not located within the Pescadero Creek Road or Cabrillo Highway Scenic Corridors. The new facility equipment is conditioned to be painted/maintained a light gray color to blend with the sky to minimize potential visual impacts. Due to the distance and topography from the scenic corridors, the project site is minimally visible, if at all.

(8) Section 6913.2 (*Primary Fish and Wildlife Habitat Areas Criteria*) prohibits the following: development that significantly reduces primary habitat areas, including negatively impacting the food chain of marine and other wildlife, direct removal of primary habitat areas shall be avoided by clustering development on other portions of the property, development, including public recreational uses shall not occur on spawning and nesting areas.

As previously discussed, the submitted biologist report indicated no special status species are within the project area and that implementation of erosion control best management practices and exclusion fencing for San Francisco garter snake and California red-legged frog will ensure that the project will not have adverse impacts on sensitive habitats should they occur during construction, however unlikely. Biologist recommendations have been included as conditions of approval.

(9) Section 6913.3 (*Primary Agricultural Resources Area Criteria*) applies to land within agricultural preserves and designated agricultural districts.

The project site is not located within an agricultural preserve nor is it located within an agricultural district.

(10) Section 6913.4 (*Primary Water Resources Area Criteria*) the project shall demonstrate that the ground water supply will not be jeopardized and development shall not interfere with natural patterns of ground water recharge.

The AT&T facility does not propose or require ground water use, thereby groundwater supply will not be affected and the road improvements are minimal given the size of the parcel such that ground water recharge is not adversely impacted.

- (11) Section 6913.5 (Ocean Shoreline Criteria), 6913.6 (Primary Mineral Resources Area Criteria), Section 6914 (Supplementary Review Criteria for Special Hazard Areas), and Section 6914.1 (Flood Plain Area Criteria) are not applicable to this project since the project is not located along the ocean, no mineral extraction is proposed, and the project site is not located in a mapped special hazard area or floodplain.
- (12) Section 6913.7 (*Primary Natural Vegetative Areas Criteria*) prohibits the significant reduction and removal of vegetation by clustering development and uses on other portions of the property.

Only that vegetation removal is necessary for construction of the road improvements is proposed. An erosion and sediment control plan is required at the building permit stage that will include revegetation of disturbed areas.

4. <u>Conformance with the Wireless Telecommunications Ordinance</u>

According to Section 6512.6 of the Wireless Telecommunication Facilities Ordinance, existing facilities built prior to January 9, 2009 are subject to the provisions of the Ordinance related to new facilities. Staff has reviewed the project against the provisions of the Wireless Telecommunication Facilities Ordinance and determined that the project complies with the applicable standards discussed below:

- a. <u>Development and Design Standards</u>
 - Section 6512.2 A prohibits location in a Sensitive Habitat as defined by Policy 7.1 of the Local Coastal Program for facilities proposed in the Coastal Zone.

As discussed previously, the biologist report did not find sensitive habitats, both plant and animal species, within the project area. Conditions of approval are recommended to reduce potential adverse impacts to these species in the unlikely event they are encountered during construction.

(2) Section 6512.2.B prohibits wireless facilities to be located in residential-zoned areas.

The site is located in the Resource Management District, which is not a residentially zoned district.

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

AT&T states that, the County facility would not structurally support the cellular equipment and would have to be retrofitted, requiring a new pole to be installed. If the County facility were to accommodate AT&T's equipment, the retrofit would require a new monopole that would exceed the allowable height limit of 36 feet of the Resource Management Zoning District in order to provide adequate service as well as new ground disturbance, whereas modifying AT&T's existing facility proposes minimal disturbance of an existing site. As technology increases, the AT&T's facility will continue to adjust/modify the existing tower to adhere to new standards, which could impact the County facility.

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

The proposed monopole tower would be able to facilitate another wireless carrier.

(5) Sections 6512.2.E-G seek to minimize and mitigate visual impacts from public views by ensuring that appropriate vegetative screening, painting of equipment, or other methods of blending equipment in with the surrounding environment are implemented and requiring facilities to be constructed of nonreflective materials.

The facility is not located in a scenic corridor and will be minimally visible, if at all, from Cabrillo Highway or Pescadero Creek Road. The equipment will be painted/maintained a light gray color to blend with the sky. (6) Section 6512.2.H requires compliance with the underlying zoning district.

As noted in the zoning regulations table under Section 3 of this report, the project is compliant with the 36 ft. height limit and setbacks for the RM-CZ zoning district.

(7) Section 6512.2.I(3) requires building mounted telecommunication facilities to comply with the maximum height allowed for structures allowed in the zoning district or 16 feet above the building roofline, whichever is higher.

The facility will not be mounted on a building.

- (8) Sections J and K are not applicable to this project because the parcel is not residentially zoned.
- (9) Section 6512.2.L prohibits diesel generators as emergency power sources unless electricity, natural gas, solar, wind or other renewable energy sources are not feasible.

A generator is not proposed.

5. <u>Conformance with the Grading Ordinance</u>

The project is compliant with the finding of the Grading Ordinance as discussed below.

a. That the granting of the permit will not have a significant adverse effect on the environment.

The project, as proposed and conditioned, limits the area of disturbance to that necessary as required, primarily to widen a 940-foot section of an existing dirt access road to the site. The grading will widen the specific stretch of the dirt road from 15 ft. to 20 ft. wide to comply with Cal-Fire requirements. The site location is relatively flat with approximately a 2% grade. Though grading is proposed, it is minor grading that will be required to expand the existing equipment cabinet pad in order to accommodate the new cabinets. All ground disturbance will occur outside of identified water bodies and sensitive habitat areas. No tree removal is proposed. An erosion and sediment control plan will be submitted at the building permit stage to ensure significant erosion and sedimentation does not occur as a result of the project. In the unlikely event that special status species are encountered and to ensure no significant adverse impacts occur as a result of project implementation, the project is

conditioned to required exclusion fencing around the perimeter of the project site prior to construction and implementation of Best Management Practices.

b. That the project conforms to the criteria of this chapter [Grading Ordinance Section 9280], including the standards referenced in Section 9296 and that the project is consistent with the General Plan.

The project, as conditioned, conforms to the criteria for review contained in the Grading Ordinance. Namely, an erosion and sediment control plan and geotechnical study were submitted and conditions have been placed on the project for fire safety and grading moratoriums. As discussed in previous sections, the proposed grading and site impacts associated with this project are consistent with the County's General Plan and Local Coastal Program policies regarding land use compatibility, sensitive habitats, and development standards to minimize land use conflicts with the natural environment. The project is also consistent with the intent of the Grading Ordinance that calls for the minimization of alterations to topography and vegetation and will be required to meet all Geotechnical requirements at the building permit stage. Further, the development will be located beyond the identified sensitive habitat areas.

6. Conformance with the Use Permit Findings

Under the provisions of Section 6500 (Use Permits), wireless telecommunications facilities are permitted in the RM-CZ/CD Zoning District after issuance of a use permit. In order to allow the operation and amendment of this facility, the following use permit findings are necessary:

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

The project has been reviewed by Cal-Fire and the County's Building Inspection Section and was granted conditional approval.

The impacts from this project are considered minimal. The radio frequency report prepared by Hammett & Edison, Inc. for AT&T's proposed amendment, concluded that the total cumulative emission limit at ground level is calculated to be no greater than 9.6% of the applicable public exposure limit, which is below the Maximum Permissible Exposure. The maximum calculated level at any building

offsite (located at least 690 ft. away based on a photo from Google maps) is 0.14% of the public exposure limit. The maximum calculated level at the second-floor elevation of a nearby residence is 0.018% of the public exposure limit (the residence is located approximately a 1/2 mile away based on photographs from Google maps. Any exposure resulting in a level higher than 100% exceeds the Limits and requires further action, such as a fence barrier. AT&T's existing and proposed telecommunication facilities will meet emission criteria as required by the California Public Utilities Commission and the Federal Communications Commission.

b. That the use is necessary for the public health, safety, convenience or welfare.

The continued use is to enhance coverage for AT&T cellular carriers. The Federal Communications Commission (FCC) has established the desirability and need for wireless telecommunications facilities to enable communication between mobile units and the existing wiredependent telephone system. This facility will enhance the existing wireless network for increased clarity, range, and system capacity for the Pescadero area, specifically Pescadero Creek Road and downtown Pescadero, and therefore is a benefit to both public and private users. The wireless network is considered necessary for public health, safety, convenience, and welfare. Staff has determined that no adverse effects to public health and safety would result from the proposed operation of this facility.

7. Compliance with Conditions of Last Approval

The following conditions of the last approval are recommended for modification. The remaining conditions of the last approval are retained and included in Attachment A.

a. This approval applies only to the proposal, documents and plans described in this report and submitted to and approved by the Zoning Hearing Officer on April 4, 2012. Minor adjustments to the project in this course of applying for building permits may be approved by the Community Development Director if they are consistent with the intent of and in substantial conformance with this approval.

Compliance with Condition? Yes.

<u>Recommend to Retain Condition</u>? Yes, but modified to reflect current date and language.

b. The applicant shall receive and maintain approval from the Federal Communications Commission (FCC) for the operation of the project at this site. Upon receipt of this approval, the applicant shall supply the Planning Department with proof of approval. If this approval is ever revoked, the applicant shall inform the Planning Department of the revocation within 30 days of notice of revocation.

Compliance with Condition? Yes.

<u>Recommend to Retain Condition</u>? Yes, but modified to reflect current and language.

c. This installation shall be removed in its entirety at that time when this technology becomes obsolete or this facility is no longer needed. Applicant shall notify the Current Planning Section within 30 days if it ceases to use the facility.

Compliance with Condition? Yes.

<u>Recommend to Retain Condition</u>? Yes, but modified to reflect current language.

- d. During the project construction, the applicant shall, pursuant to Section 5022 of the San Mateo County Ordinance Code, minimize the transport and discharge of stormwater runoff from the construction site into storm drain systems and water bodies by:
 - (1) Using filtration materials on storm drain covers to remove sediment from dewatering effluent.
 - (2) Stabilizing all denuded areas and maintaining erosion control measures continuously between October 15 and April 15.
 - (3) Removing spoils promptly, avoiding stockpiling of fill materials, when rain is forecast. If rain threatens, stockpiled soils and other materials shall be covered with a tarp or other waterproof material.
 - (4) Storing, handling, and disposing of construction materials and wastes so as to avoid their entry to the storm drain system or water body.
 - (5) Avoiding, cleaning fueling, or maintaining vehicles on-site, except in an area designated to contain and treat runoff.

(6) Limiting and timing application of pesticides and fertilizers to avoid polluting runoff.

Compliance with Condition? Yes.

<u>Recommend to Retain Condition</u>? Yes, but modified to current language.

Conditions of Approval Nos. 5 through 14 are retained from the previous Use Permit approval.

Additional Recommended Conditions of Approval Nos. 15 through 42 are recommended to take into consideration the proposed project.

C. <u>ENVIRONMENTAL REVIEW</u>

The project is exempt pursuant to Section 15301, Class 1 (*Existing Facilities*) of the California Environmental Quality Act; minor alteration of existing private structures or topographical features, involving negligible or no expansion of use.

D. <u>REVIEWING AGENCIES</u>

Building Inspection Section Geotechnical Division Department of Public Works Cal-Fire California Coastal Commission

ATTACHMENTS

- A. Recommended Findings and Conditions of Approval
- B. Vicinity Map and Location Map
- C. Site Plan
- D. Plans
- E. Photos
- F. Radio Frequency report by Hammett & Edison, Inc.

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County of San Mateo Planning and Building Department

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN2016-00547 Hearing Date: September 20, 2018

Prepared By: Melissa Ross and Olivia Boo For Adoption By: Zoning Hearing Officer Project Planners

RECOMMENDED FINDINGS

Regarding the Environmental Review, Find:

1. This project is exempt from environmental review pursuant to the California Environmental Quality Act (CEQA), Section 15301, Class 1 (*Existing Facilities*) of the California Environmental Quality Act; minor alteration of existing private structures or topographical features, involving negligible or no expansion of use.

Regarding the Coastal Development Permit, Find:

- 2. That the project, as described in the application and accompanying materials required by Section 6328.7 and as conditioned in accordance with Section 6328.14, conforms with the plans, policies, requirements, and standards of the San Mateo County Local Coastal Program. The required application forms and plans have been submitted and the project has been conditioned to ensure conformance with Local Coastal Program policies.
- 3. That the project conforms to specific findings required by policies of the San Mateo County Local Coastal Program. As discussed in this staff report, the project will not adversely impact sensitive habitats and will minimize vegetation removal and topography alterations.

Regarding the Use Permit, Find:

4. That the establishment, maintenance and/or conducting of the use will not, under the circumstances of the particular case, result in a significant adverse impact, or be detrimental to the public welfare or injurious to property or improvements in said neighborhood. Radio frequency emission resulting from the project are compliant with FCC regulations and are not expected to adversely impact the public or improvements in the area.

5. That the use is necessary for the public health, safety, convenience or welfare. Installation of the facility will enhance the existing wireless network in the area for the public and emergency services.

Regarding the Resource Management-Coastal Zone Permit, Find:

6. That the project conforms to the Development Standards and Development Review Criteria contained in Chapter 36 and Chapter 36A.2 of the San Mateo County Zoning Regulations. As conditioned, the project is consistent with the Zoning Development Standards, Environmental Quality, Site Design, and Cultural Resources Criteria, among others, as discussed in this report.

Regarding the Grading Permit, Find:

- 7. The granting of the permit will not have a significant adverse effect on the environment. As conditioned, proposed grading will be minimal and not adversely impact sensitive habitats.
- 8. That the project conforms to the criteria of this chapter [Grading Ordinance Section 9280], including the standards referenced in Section 9296 and that the project is consistent with the General Plan. The project is conditioned to require and erosion and sediment control plan, no grading in the wet season, and will minimize topography alterations in conformance with the Grading Ordinance and General Plan.

RECOMMENDED CONDITIONS OF APPROVAL

Current Planning Section

Modified Conditions of Previous Approval:

- 1. This Use Permit Renewal and Amendment shall be for the project described in this report and approved September 20, 2018. The applicant shall file for a renewal of this permit six months prior to expiration with the county Planning Department by submitting the applicable application forms and paying the applicable fees six (6) months prior to expiration, if continuation of this use is desired. Minor modifications to the project may be approved by the Community Development Director if they are consistent with the intent of, and in substantial conformance with, this approval. Any significant modifications or expansions to the existing use will require an application and issuance of a use permit amendment.
- The applicant shall receive and maintain approval from the Federal Communications Commission (FCC) for the operation of the project at this site. Upon receipt of this approval, the applicant shall supply the Current Planning Section with proof of approval. If this approval is ever revoked, the applicant shall

inform the Planning Department of the revocation within 30 days of notice of revocation.

- 3. Any significant changes in use or intensity of use shall require an amendment to the use permit and coastal development permit. Amendment to these permits shall require compliance with all application, fee payment, and public hearing requirements, prior to construction.
- 4. An erosion and sediment control plan shall be submitted as part of the building permit plans for review and approval prior to the issuance of a building permit. The applicant shall implement the approved erosion and sediment control plan prior to the beginning of any construction activities, and shall maintain erosion and sediment control measures throughout the duration of project construction. Erosion control measure deficiencies, as they occur, shall be immediately corrected. The goal is to prevent sediment and other pollutants from leaving the project site and to protect all exposed earth surfaces from erosive forces. Said plan shall adhere to the San Mateo Countywide Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines," including:
 - a. Stabilizing any denuded areas and maintaining erosion control measures continuously between October 1 and April 30. Stabilizing shall include both proactive measures, such as the placement of hay bales or coir netting, and passive measures, such as revegetating disturbed areas with plants propagated from seed collected in the immediate area.
 - b. Storing, handling, and disposing of construction materials and wastes properly, so as to prevent their contact with stormwater.
 - c. Controlling and preventing the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, and non-stormwater discharges, to storm drains and watercourses.
 - d. Using sediment controls or filtration to remove sediment when dewatering the site and obtaining all necessary permits.
 - e. Avoiding cleaning, fueling, or maintaining vehicles on-site, except in a designated area where wash water is contained and treated.
 - f. Delineating with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses.
 - g. Protecting adjacent properties, buildings, and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.

- h. Performing earth-moving or ground disturbing activities only during dry weather.
- i. Limiting and timing application of pesticides and fertilizers to prevent polluted runoff.
- j. Limiting construction access routes and stabilizing designated access points.
- k. Avoiding tracking dirt or other materials off-site; cleaning off-site paved areas and sidewalks using dry sweeping methods.
- I. The contractor shall train and provide instructions to all employees and subcontractors regarding the construction Best Management Practices.

Retained Conditions of Previous Approval.

- 5. Should the use of the subject property change to include residential use, the facility shall be re-evaluated for compatibility with residential uses.
- 6. Any significant changes in use shall require an amendment to the use permit and coastal development permit. Amendment to these permits shall require compliance with all application, fee payment, and public hearing requirements, prior to construction.
- 7. Any new cabling to the poles and equipment area shall be installed underground.
- 8. The equipment area for this facility shall be fenced and secured at all times.
- 9. This use permit shall be valid for ten years following the date of final approval. The applicant shall file for a renewal of this permit six months prior to expiration with the County Planning and Building Department, if continuation of this use is desired.
- 10. Prior to final inspection for the building permit, the applicant shall paint and maintain the antennas a medium gray color.
- 11. At the time of use permit renewal, if staff has determined, based on a field inspection, that the color of the antennas is no longer in compliance with the approved color of non-reflective gray, the applicant shall repaint the structure and/or antennas.
- 12. No materials used for installation shall be reflective or painted a reflective color.

- 13. The applicant shall obtain a building permit and install the antennas and miscellaneous power/communication lines in accordance with the approved plans and conditions of approval.
- 14. Night time lighting of the equipment area at the base of the poles is prohibited.

Additional New Planning Conditions of Approval

Staff recommends the following conditions of approval as standard conditions associated with wireless telecommunication facility projects.

- 15. The applicant shall not enter into a contract with the landowner or lessee that reserves for one company exclusive use of structures on this site for telecommunication facilities.
- 16. A building permit is required for this project.
- 17. This installation shall be removed in its entirety at that time when this technology becomes obsolete or this facility is no longer needed. Applicant shall notify the Planning Department within 30 days if it ceases to use the facility.
- Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property shall be limited to the hours from 7:00 a.m. to 6:00 p.m., weekdays and 9:00 a.m. to 5:00 p.m., Saturdays. Said activities are prohibited on Sundays, Thanksgiving, and Christmas (San Mateo Ordinance Code Section 4.88.360).
- 19. The Grading Permit shall be valid for one (1) year from the date of final approval in which time a valid building permit shall be issued and a completed inspection (to the satisfaction of the Building Inspection Section) shall have occurred within 180 days of its issuance. Any extension of these permits shall require submittal of a written request for permit extension and payment of applicable extension fees sixty (60) days prior to the expiration date.
- 20. No grading activities shall commence until the applicant has been issued a grading permit "Hard Card," which will only be issued concurrently with the associated building permit.
- 21. The provision of the San Mateo County Grading Ordinance shall govern all grading on and adjacent to this site. Per San Mateo County Ordinance Section 9296.5, all equipment used in the grading operations shall meet spark arrester and firefighting tool requirements, as specified in the California Public Resources Code.
- 22. The engineer who prepared the approved grading plan shall be responsible for the inspection and certification of the grading as required by Section 9297.2 of the

Grading Ordinance. The engineer's responsibilities shall include those relating to non-compliance detailed in Section 9297.4 of the Grading Ordinance.

- 23. For the final approval of the grading permit, the property owner shall ensure the performance of the following activities within thirty (30) days of the completion of grading at the project site:
 - a. The engineer shall submit written certification that all grading has been completed in conformance with the approved plans, conditions of approval, and the Grading Regulations, to the Department of Public Works and the Planning and Building Department's Geotechnical Engineer.
 - b. The geotechnical consultant shall observe and approve all applicable work during construction and sign Section II of the Geotechnical Consultant Approval form, for submittal to the Planning and Building Department's Geotechnical Engineer and Planning Department.
- 24. No grading shall be allowed during the winter season (October 1 to April 30) or during any rain event to avoid potential soil erosion unless prior written request by the applicant is submitted to the Community Development Director in the form of a completed Application for an Exception to the Winter Grading Moratorium, at least two (2) weeks prior to the projected commencement of grading activities, stating the date when grading will begin, for consideration, and approval is granted by the Community Development Director.
- 25. No grading activities shall commence until the property owner has been issued a grading permit (issued as the "hard card" with all necessary information filled out and signatures obtained) by the Current Planning Section.
- 26. Prior to building permit issuance, the applicant shall incorporate a note on the first page of the construction plans that, should cultural resources be encountered during site grading or other site work, such work shall immediately be halted in the area of discovery and the project sponsor shall immediately notify the Community Development Director of the discovery. The applicant shall be required to retain the services of a qualified archaeologist for the purpose of recording, protecting, or curating the discovery as appropriate. The cost of the qualified archaeologist and of any recording, protecting, or curating shall be borne solely by the project sponsor. The archaeologist shall be required to submit to the Community Development Director for review and approval a report of the findings and methods of curation or protection of the resources. No further grading or site work within the area of discovery shall be allowed until the preceding has occurred.

Disposition of Native American remains shall comply with CEQA Guidelines Section 15064.5(e). The note on the plans shall be subject to review and approval by the Planning Department.

- 27. In the event that cultural, paleontological, or archaeological resources be encountered during site grading or other site work, such work shall immediately be halted in the area of discovery and the project sponsor shall immediately notify the Community Development Director of the discovery. The applicant shall be required to retain the services of a qualified archaeologist for the purpose of recording, protecting, or curating the discovery as appropriate. The cost of the qualified archaeologist and of any recording, protecting, or curating shall be borne solely by the project sponsor. The archaeologist shall be required to submit to the Community Development Director for review and approval a report of the findings and methods of curation or protection of the resources. No further grading or site work within the area of discovery shall be allowed until the preceding has occurred. Disposition of Native American remains shall comply with CEQA Guidelines Section 15064.5(e).
- 28. The applicant shall comply with the provisions of the County grading permit, including implementation of standard erosion control measures that employ best management practices (BMPs).
- 29. In order to reduce impacts to migratory birds, mitigation measures such as limiting the tower placement within minimally sensitive areas, avoiding placement near wetlands and larger water bodies, limiting tower height to less than 199 feet, and eliminating the need for guy wires or FAA obstruction lighting. Additionally, if associated buildings require security or operational lighting, minimize light trespass using motion sensors and down-shielding with minimum intensity light should be implemented.
- 30. Installation of a qualified biologist approved exclusion fencing system, appropriate for San Francisco garter snake and California red-legged frog around the perimeter of all project impact areas throughout the duration of all construction activities for the proposed project under the supervision of a qualified biologist shall be utilized. All construction activities need to be under the direct supervision of a qualified biological monitor. Should a listed species be identified within the project site, all work will stop and the organism be allowed to leave on its own volition.
- 31. Prior to the issuance of the building permit, the applicant shall submit a dust control plan for review and approval by the Planning Department. The plan, at a minimum shall include the following measures:
 - a. Water all construction and grading areas at least twice daily.
 - b. Cover all trucks hauling soil, sand, and other loose material or require all trucks to maintain at least 2 feet of freeboard.
 - c. Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).

- 32. Per San Mateo county Ordinance Section 9296, all equipment used in grading operations shall meet spark arrester and firefighting tool requirements, as specified in the California Public Resources Code.
- 33. To reduce the impact of construction activities on neighboring properties, comply with the following:
 - a. All debris shall be contained on-site; a dumpster or trash bin shall be provided on-site during construction to prevent debris from blowing onto adjacent properties. The applicant shall monitor the site to ensure that trash is picked up and appropriately disposed of daily.
 - b. The applicant shall remove all construction equipment from the site upon completion of the use and/or need of each piece of equipment which shall include but not be limited to tractors, backhoes, cement mixers, etc.
 - c. The applicant shall ensure that no construction-related vehicles shall impede through traffic along the right-of-way on Lake Merced Boulevard. All construction vehicles shall be parked on-site outside the public right-of-way or in locations which do not impede safe access on Lake Merced Boulevard. There shall be no storage of construction vehicles in the public right-of-way.

Building Inspection Section

34. The building permit submittal package shall be based on the 2016 set of California Building Standards as well as the County of San Mateo Building Regulations.

Department of Public Works

- 35. No proposed construction work within the County property until a right to enter has been obtained from CSA11, including review of the plans, have been met. Applicant shall contact a Department of Public Works Inspector 48 hours prior to commencing work on county property.
- 36. For work within county property: "As-Built" plans of all construction required by these conditions shall be prepared and signed by the applicant's Engineer upon completion of all work and submitted to the Department of Public Works, prior to the final approval of the Department of Public Works or building permit. The "As-Built" plans shall be accompanied by a written certification from the Engineer that all private facilities have been completed in conformance with the approved plans.

Geotechnical Section

37. <u>The applicant shall comply with all geotechnical requirements at the building permit stage.</u>

Cal-Fire

- 38. Fire Department access shall be to within 150 feet of all exterior portions of the facility and all portions of the exterior walls of the first story of the buildings as measured by an approved access route around the exterior of the building or facility. Access shall be a minimum of 20 feet wide, all weather capability, and able to support a fire apparatus weighing 75,000 lbs. Where a fire hydrant is located in the access, a minimum of 26 feet is required for a minimum of 20 feet on each side of the hydrant. This access shall be provided from a publicly maintained road to the property. Grades over 15% shall be paved and no grade shall be over 20%. When gravel roads are used, it shall be class 2 base or equivalent compacted to 95 percent. Gravel road access shall be certified by an engineer as to the material thickness, compaction, all weather capability, and weight it will support.
- 39. All buildings that have a street address shall have the number of that address on the building, mailbox, or other type of sign at the driveway entrance in such a manner that the number is easily and clearly visible from either direction of travel from the street. New residential buildings shall have internally illuminated address numbers contrasting with the background so as to be seen from the public way fronting the building. Residential address numbers shall be at least 6 feet above the finished surface of the driveway. An address sign shall be placed at each break of the road where deemed applicable by the San Mateo County Fire Department. Numerals shall be contrasting in color to their background and shall be no less than 4 inches in height, and have a minimum 1/2-inch stroke. Remote signage shall be a 6" x 18" green reflective metal sign.
- 40. Contact the Fire Marshal's Office to schedule a Final Inspection prior to occupancy and Final Inspection by a Building Inspector. Allow for a minimum 72-hour notice to the Fire Department at 650/573-3846.
- 41. Portable fire extinguishers with a minimum rating of 2A-10BC are required to be placed throughout your project. Contact a licensed/certified fire extinguisher company for proper placement of the required extinguishers. Documentation is required on building plans at the building permit application stage. Proper installation is required prior to Fire's final approval of the building permit.
- 42. Because of limited access into your property, the authority having jurisdiction is requiring the installation of a Knox Box, Knox Key Switch, or Knox Padlock to allow rapid response of emergency vehicles onto your property in case of a fire or

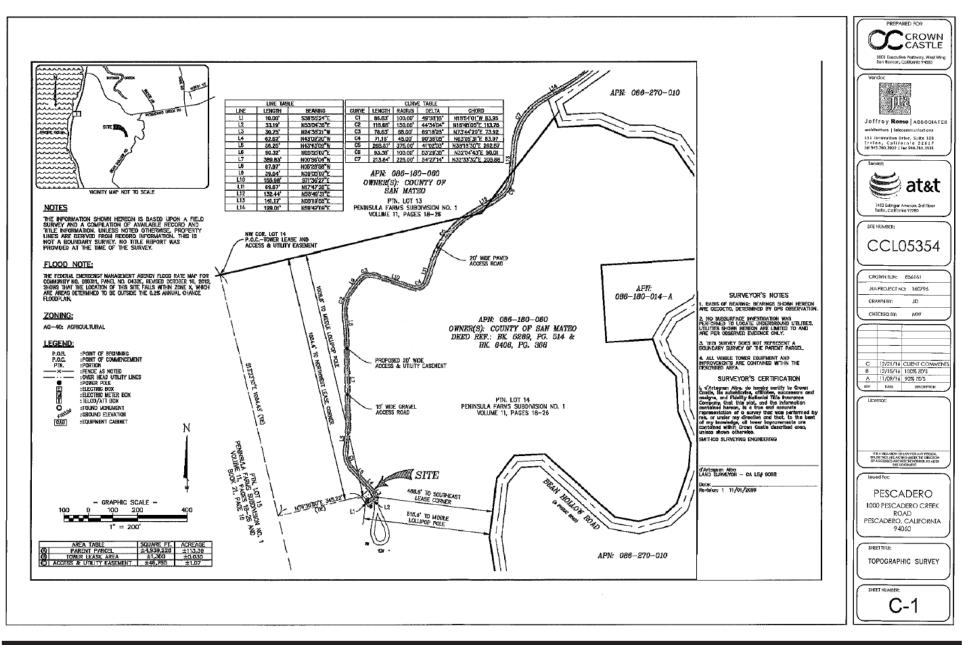
medical emergency. For an application or further information please contact the San Mateo County Fire Marshal's Office at 650/573-3846.

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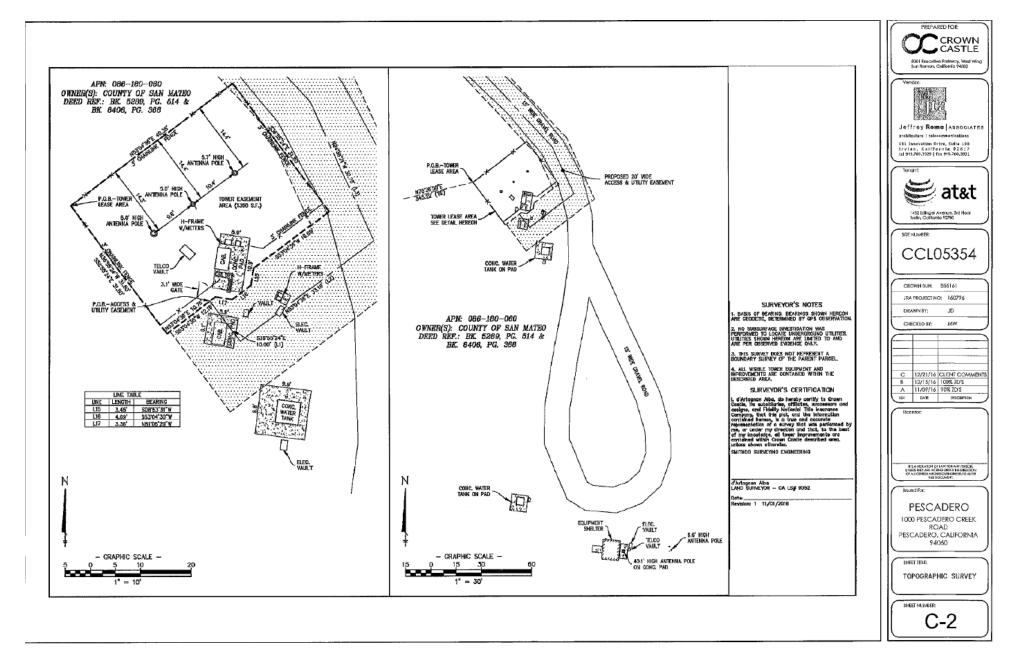
Owner/Applicant:

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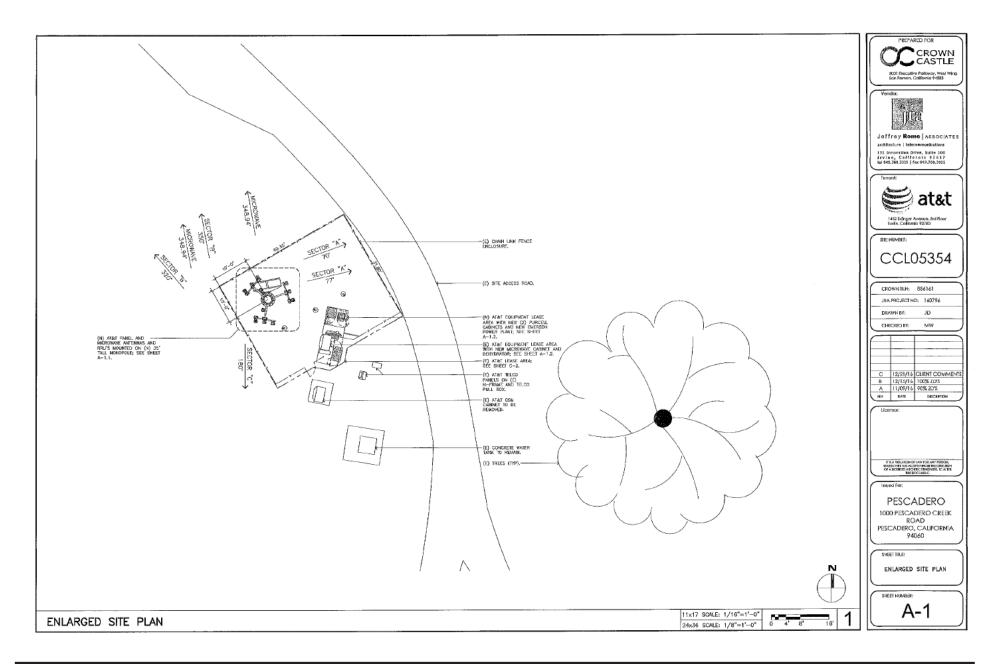
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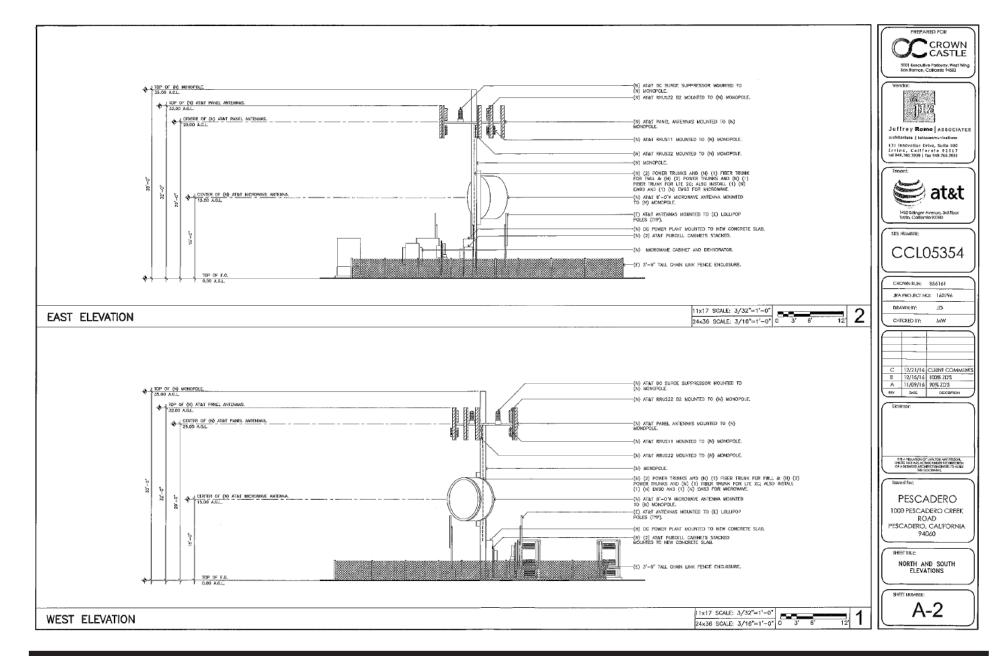
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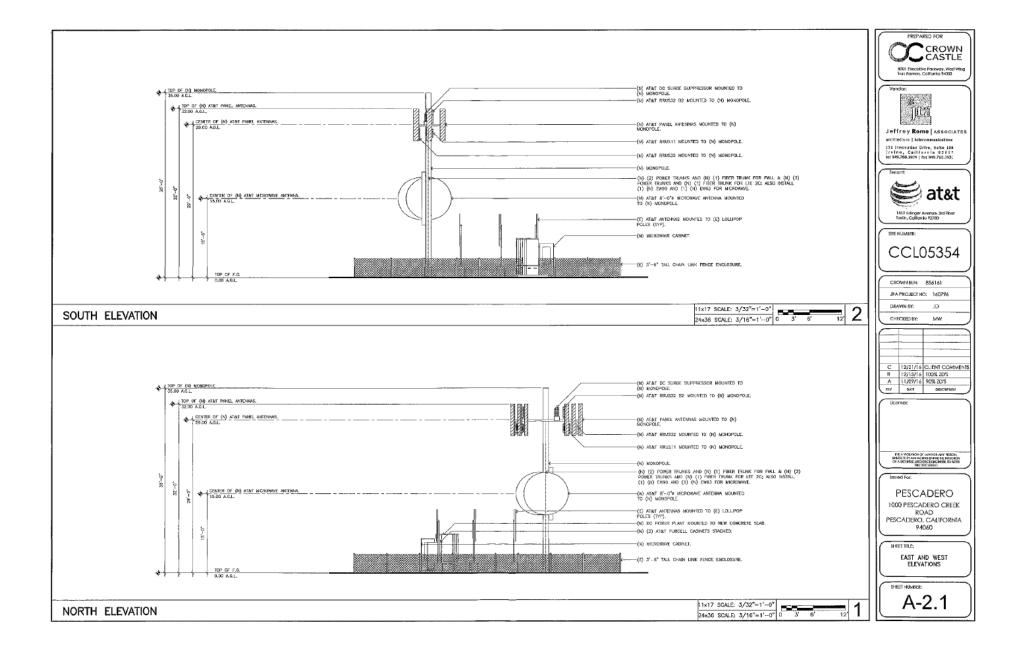
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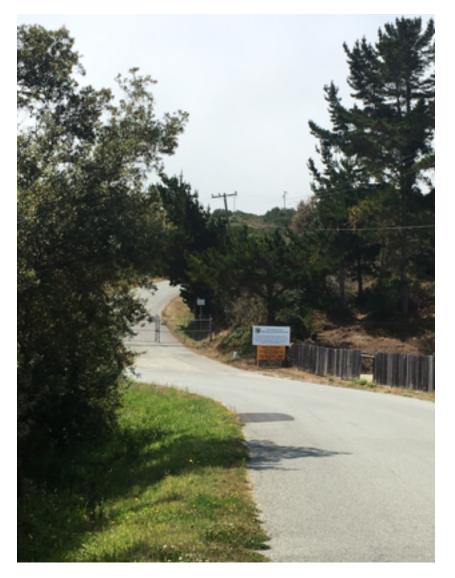
Owner/Applicant:

Attachment:



Owner/Applicant:

Attachment:



Beginning of Bean Hollow Road (at the intersection of Pescadero Creek Rd.)

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant:

Attachment:



Owner/Applicant:

Attachment:



Owner/Applicant:

Attachment:

Crown Castle USA, Inc. • Proposed Base Station (Site No. CCL05354) 1000 Pescadero Creek Road • Pescadero, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained by Crown Castle USA, Inc., a wireless telecommunications facility provider, to evaluate its facility (Site No. CCL05354) proposed to be located at 1000 Pescadero Creek Road in Pescadero, 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 a tall pole to be sited at 1000 Pescadero Creek Road in Pescadero. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

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

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

General Facility Requirements

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



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Crown Castle USA, Inc. • Proposed Base Station (Site No. CCL05354) 1000 Pescadero Creek Road • Pescadero, California

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

Computer Modeling Method

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

Site and Facility Description

Based upon information provided by Crown Castle, including zoning drawings by Jeffrey Rome Associates Inc., dated November 9, 2016, it is proposed to erect a 35-foot pole at the wireless telecommunications facility on top of the hill on the west side of Bean Hollow Road, about 1700 feet east of Reservoir Road and 2000 feet south of Pescadero Creek Road in unincorporated San Mateo County, west of Pescadero. AT&T Mobility proposes to install nine directional panel antennas on the pole – six Andrew Model SBNHH-1D65B antennas and three Quintel Model QS6656-3 antennas – replacing its existing three antennas on shorter poles at the site. The antennas would employ up to 2° downtilt, would be mounted at an effective height of about 29 feet above ground, and would be oriented in groups of three toward northeast, south, and northwest. The maximum effective radiated power in any direction would be 9,890 watts, representing simultaneous operation at 2,680 watts for WCS, 5,300 watts for PCS, 970 watts for cellular, and 940 watts for 700 MHz service. Also proposed to be mounted about 15 feet above ground on the pole is a 8-foot microwave "dish" antenna, for interconnection of this site with others in the AT&T network.

There is another pole at the site, about 220 feet south of the proposed pole, on which are mounted "whip" antennas, presumed to be in low-power, intermittent service, as well as a microwave antenna in point-to-point service.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Crown Castle operation, including the contribution of the microwave antenna, is calculated to be 0.094 mW/cm²,



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Crown Castle USA, Inc. • Proposed Base Station (Site No. CCL05354) 1000 Pescadero Creek Road • Pescadero, California

which is 9.6% of the applicable public exposure limit. The maximum calculated level at any building offsite^{*} is 0.14% of the public exposure limit. The maximum calculated level at the second-floor elevation of any nearby residence[†] is 0.018% 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 locations and height, the proposed antennas would not be accessible to unauthorized persons, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. It is presumed that Crown Castle and AT&T 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 AT&T Mobility base station proposed at the Crown Castle USA, Inc. telecommunications facility at 1000 Pescadero Creek Road in Pescadero, 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.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2017. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

William F 20676 707/996-5200 6-30-2017

December 9, 2016

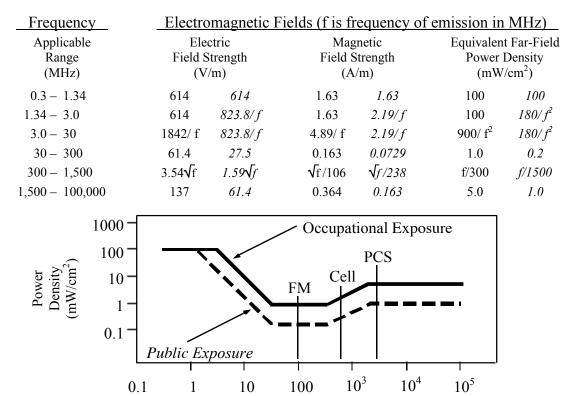
- * Located at least 690 feet away, based on photographs from Google Maps.
- † Located about a half-mile away, based on photographs from Google Maps.



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 (MHz)

Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required to obtain more accurate projections.



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RFR.CALC[™] Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

Near Field.

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

For a panel or whip antenna, power density
$$S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$$
, in mW/cm²,

and for an aperture antenna, maximum power density $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$, in mW/cm²,

where θ_{BW} = half-power beamwidth of the antenna, in degrees, and

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

D = distance from antenna, in meters,

h = aperture height of the antenna, in meters, and

 η = aperture efficiency (unitless, typically 0.5-0.8).

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

Far Field.

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

power density
$$S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}$$
, in mW/cm²,

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

RFF = relative field factor at the direction to the actual point of calculation, and

D = distance from the center of radiation to the point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 ($1.6 \times 1.6 = 2.56$). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radiation sources. The program also allows for the description of uneven terrain in the vicinity, to obtain more accurate projections.



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Methodology Figure 2