City of Piedmont
CALIFORNIA

MEMORANDUM

DATE: June 12, 2017

TO: Planning Commission

FROM: Pierce Macdonald-Powell, Senior Planner

SUBJECT: STAFF REPORT FOR proposed wireless communication facilities (WCF) at 428 El Cerrito Avenue, 355 Jerome Avenue, and 1159 Winsor Avenue

AGENDA ITEM NUMBER 4b

Project Applications:
PHS06 near 428 El Cerrito Avenue – Project #6, requires WCF permit and variance
PHS07 near 355 Jerome Avenue – Project #7, requires WCF permit and variance
PHS08 near 1159 Winsor Avenue – Project #8, requires WCF permit and variance

APPLICATIONS SUMMARY:

Wireless Communication Facilities (WCF) Permit Applications and Variances #16-0385

Applicants: Crown Castle NG West LLC / Beacon Development
Project Locations: 358 Hillside Avenue and Sites Generally Surrounding Piedmont Park

Crown Castle NG West LLC and Beacon Development request Planning Commission review and recommendation regarding proposed wireless communication facilities antenna installations at nine sites generally surrounding Piedmont Park. This report addresses three proposed wireless communication installations that would be located on utility poles in the public right-of-way in Zone A (single-family residential zone). The other six proposed installations are addressed in two other separate reports. Each of the proposed new installations would have one to three antennas attached to the top of an utility pole and would have an underground vault beneath the sidewalk for communication equipment. Each of the three projects requires consideration of a wireless communication facilities permit application and consideration of applications for variances from City of Piedmont development standards for wireless communication facilities related to height limits and obstructions in the right-of-way.

This report is structured to provide:

- the context of the three project applications;
- the Park Commission review;
- the regulatory background for wireless communication facilities;
- each project's compliance with City of Piedmont regulations;
- the findings that must be made when taking action on the project applications; and
- recommended conditions of approval should the Planning Commission choose to make recommendations of approval of the projects.

A description of each project's compliance with City of Piedmont regulations begins on page 7 of

this report.

The three sites discussed in this report are part of a larger group of applications for a total of nine sites. The larger group of applications are wireless communication facilities permit applications and variance applications for a proposed Distributed Antenna System (DAS) intended to improve data coverage and capacity to the immediate area (within approximately 1/3 mile) of each installation. In the City of Piedmont, the Planning Commission must review plans for proposed wireless communication facilities pursuant to the City's development standards and criteria, and make a recommendation to the City Council, which is the deciding body for the proposed applications.

Pursuant to Division 17.46 of the Piedmont Municipal Code, wireless communication facilities applications, variances, and site agreement (lease) must be reviewed for the proposed DAS installation. The process to review a wireless communication facilities permit application combines the review of the installation design, the proposed changes to the existing site conditions, and the proposed use of the public right-of-way. The City Council is the deciding authority for wireless communication facilities applications and variance applications after a public hearing and recommendations from the Planning Commission and Park Commission. The proposal does not require a design review permit pursuant to Division 17.66 of the Piedmont Municipal Code.

PARK COMMISSION REVIEW:

On June 7, 2017, the Park Commission reviewed the proposal for the sites near 428 El Cerrito Avenue, 355 Jerome Avenue, and 1159 Winsor Avenue, as well as other sites near street trees, at a noticed public hearing. Pursuant to Section 25.5 of the Piedmont Municipal Code, the Park Commission has the following powers and duties: "The park commission shall have the following powers and duties: (a) To consider and make recommendations to the Council on matters affecting the beautification, planting, litter control, development, uses, acquisition and disposal and maintenance of all parks, park improvements, park memorials, street trees, parking strips (i.e., the portion of the street right-of-way between the sidewalk and curb) and other planted areas owned or controlled by the City. In addition, (b) To consider and make recommendations to the Council concerning proposed solutions to those additional matters which appropriately may be referred to the commission by the Council; or which, relating to the beautification of the matters referred to in subsection (a) hereof, may be investigated by the commission on its own motion." The staff report for the Park Commission meeting is provided online as Attachment G to this report. The Park Commission's recommendation will be provided to the Planning Commission for its consideration on June 12, 2017.

REGULATORY BACKGROUND:

Wireless communication facilities are considered a public utility and are subject to the federal Telecommunications Act (1996) and the authority of the California Public Utilities Commission (CPUC). In general, wireless communication facilities within the public right-of-way may be allowed as a conditional use in all zoning districts within the City, including zone A and zone B, pursuant to divisions 17.20 to 17.28 of the Piedmont City Code. Wireless communication facilities in the right-of-way are not subject to typical zoning requirements related to towers and buildings in zone A and zone B, such as floor area ratio, lot coverage, or landscape coverage. Wireless communication antennas and equipment in the public right-of-way, located on street lights, utility poles, and in underground vaults, are subject to the Piedmont Municipal Code Division 17.46 (Wireless Communication Facilities), Chapter 3 (Trees), Section 5.4.20 (Noise), and Chapter 18 (Streets and Sidewalks).

Wireless communication technology and regulations have changed and evolved since Piedmont's first installations on City Hall in the late 1990s. Today, there are existing wireless communication facility antennas in Piedmont located at: the median across from 1658 Lower Grand Avenue (AT&T), Piedmont Community Church (T-Mobile), the Piedmont Corporation Yard (T-Mobile), the roof of City Hall (AT&T and Sprint), and the PG&E transmission tower at Sandringham Road and Estates Drive (AT&T and T-Mobile). There is also a DAS installation near the City's border with Oakland in the median across from 4471 Moraga Avenue in Oakland.

In addition to regulations under the Piedmont Municipal Code, the following federal and state regulations are applicable in the review of the wireless communication facilities permit applications filed by Crown Castle NG West LLC.

Limits of City Ownership of the Public Right-of-Way

- The public right-of-way is land owned by the City and dedicated for public use. The unconditional acceptance of the dedication of land as public right-of-way imbues this land with "public interest" under the law (Curtin's California Land Use and Planning Law, 22nd Edition, page 110). Public interest, as defined by case law, is associated with public utilities, interstate commerce, an obligation to serve the public, equitable rates and fees, and federal and state jurisdiction. Crown Castle is a registered competitive local exchange carrier (CLEC) and Crown Castle has a certificate of public convenience and necessity issued by the California Public Utilities Commission. For these reasons, Crown Castle is a "utility company" for the purposes of the use of the public right-of-way.
    - **Takeaway:** Crown Castle NG West LLC has the right to propose antenna installations in the public right-of-way because it is a utility company.

- While the City of Piedmont "owns" the fee interest in the right-of-way, the State of California controls the rules related to the right-of-way. In Pacific Telegraph & Telephone Co. v. San Francisco (1961, Cal App 1st District) 197 Cal App 2d 133, an action to determine if a state statute provided a statewide franchise for telephone lines, the court rejected evidence of city ownership of the street. The court concluded that ownership was irrelevant as the case did not involve adjudicating real property rights. The question was simply whether the company had a statewide franchise to install facilities in the right-of-way. The Court noted that the State exercises broad preemptive powers in this area. In addition, the court in the Pacific case held it was not in error to reject any testimony or evidence relating to the City's fee interests, since the action was not brought for purposes of obtaining title to the property. Thus, a fight over the rights of a telecom franchisee, the fee interest was held to be irrelevant. While this case was not a case involving wireless service, the City believes that the result would be the same (see discussion of sub-section 7901, next point).
    - **Takeaway:** The fact that the City is the owner of the public right-of-way does not provide the City with any additional rights.

- Regarding utility poles and lines, the State of California has the right to grant franchises to use the rights-of-way within or owned by a city, which the State has done for gas, electric, telephone and cable. Pursuant to Public Utilities Code, Division 4. Laws Relating to Utility Corporations and Their Employees [7503 - 8286], and Chapter 3. Telegraph or Telephone Corporations [7901 - 7912], telephone companies including cellular service companies and licensed neutral host carriers, such as Crown Castle NG West LLC, have a right to construct within the sidewalk and planter strip areas within the public right-of-way so long as the

construction does not "incommode" the public use of the sidewalk (e.g. flow of pedestrian traffic, disabled access, parking, exiting a parked car, exiting a driveway, etc.). Sub-section 7901 of the Public Utilities Code reads, as follows:

> "7901. Telegraph or telephone corporations may construct lines of telegraph or telephone lines along and upon any public road or highway, along or across any of the waters or lands within this State, and may erect poles, posts, piers, or abutments for supporting the insulators, wires, and other necessary fixtures of their lines, in such manner and at such points as not to incommode the public use of the road or highway or interrupt the navigation of the waters."

With a telephone franchise under section 7901, the telephone company has the right to the use of the right-of-way. Cellular and telecommunications companies may obtain franchises under section 7901. Section 7901 allows use of the right-of-way in such manner and at such points as not to incommode the public use of the road. Section 7901.1 gives the city the right to exercise reasonable control as to the time, place and manner in which the roads… are accessed. This control must be applied to all entities in an equivalent manner.

- **Takeaway:** The City may control the time, place, and manner in which the public right-of-way is accessed by a utility company like Crown Castle, so long as the control is applied to all entities fairly.

- Regarding street lights, under current law, the City of Piedmont as the owner of the street light can decide whether it wishes to allow others to use the street light. So, if the City decides to rent space on the street light, then the City can charge what it desires and the other party is willing to pay. However, as to the telephone/cell/telecom companies, since they have an independent right to be in the right-of-way, they can always erect their own pole or use electric/telephone poles. There is a pending bill before the State Legislature (SB 649) to remove a city's authority related to small cell antennas on City facilities such as street lights, traffic lights, and other city-owned facilities in the right-of-way.
  - **Takeaway:** The City owns the street lights and acts as a landlord regarding the use of the street lights. However, there is a bill before the State legislature (SB 649) that would severely limit the City's rights related to the installation of wireless communication facilities on City-owned facilities in the right-of-way.

- As to telephone and electric poles, they are generally subject to the joint pole authority rules regardless of who owns them. These rules regulate rent and other obligations. Joint pole authority rules or other California Public Utilities Commission rules regulate which different utilities may locate on joint poles. The City retains only reasonable zoning/aesthetic regulations, as set forth above.
  - **Takeaway:** The City of Piedmont does not own the utility poles. The City's authority over the utility poles is its Municipal Code regulations, discussed below.

Zoning and the Public Right-of-Way

- The Piedmont Municipal Code has specific regulations and development standards for wireless communication facilities pursuant to Division 17.46, which are separate and distinct from the zoning regulations for buildings in zone A and zone B in Chapter 17.

- Street lights are not subject to city zoning regulations. The Piedmont Municipal Code has specific standards for roadway construction pursuant to Chapter 18, which are separate and

distinct from the zoning regulations in Chapter 17.

- **Takeaway:** The City Council has the authority pursuant to Chapter 18 to review work in the public right-of-way, including the design of street lights and other City-owned features.

- Electrical utility poles and utility lines are not subject to local zoning regulations. California Government Code section 53091(e) states "Zoning ordinances of a county or city shall not apply to … the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code [transmission lines of electrical energy, including poles and other accessory structures], or electrical substations in an electrical transmission system that receives electricity at less than 100,000 volts..." The City of Piedmont zoning ordinance does not make provisions for the location or construction of transmission lines. The location of utilities and authorization for work within the public right-of-way are subject to the review and approval of the Public Works Director pursuant to section 17.06.050.C of the City Code and Chapter 18 of the City Code, Streets and Sidewalks.
  - **Takeaway:** The City does not regulate the design of utility poles or overhead transmission wires. General Plan policies encourage the creation of underground utility districts.

Federal Telecommunications Act of 1996

- The federal Telecommunications Act of 1996 specifically identifies public rights-of-way as appropriate locations for wireless communications facilities. Section 704, Facilities Siting; Radio Frequency Emission Standards, states that the government, "shall prescribe procedures by which Federal departments and agencies may make available on a fair, reasonable, and nondiscriminatory basis, property, rights-of-way, and easements under their control for the placement of new telecommunications services that are dependent, in whole or in part, upon the utilization of Federal spectrum rights for the transmission or reception of such services. These procedures may establish a presumption that requests for the use of property, rights-of-way, and easements by duly authorized providers should be granted absent unavoidable direct conflict with the department or agency's mission, or the current or planned use of the property, rights-of-way, and easements in question. Reasonable fees may be charged to providers of such telecommunications services for use of property, rights-of-way, and easements."
  - **Takeaway:** The federal Telecommunications Act of 1996 anticipated proposals for antenna installations in the federal public right-of-way, while recognizing that there could be conflicts with the current or planned use of the right-of-way. The Telecommunications Act established the federal government's exclusive jurisdiction to determine the safe emissions standards for public exposure to radio frequency and electromagnetic field radiation.

Street Trees and the Public Right-of-Way

- Article IV of Chapter 3, Trees, of the City Code provides the regulations applicable to City trees. Pursuant to section 3.14, City Approval Required, the vegetation on public property is owned by the City of Piedmont. No person other than a City employee or other contractual agent of the City may plant, prune, treat, or remove vegetation on public property. A property owner may request that the City plant, prune, treat or remove a tree in a parking strip or other City right-of-way as provided in this Article IV.

- Section 3.18 of the City Code specifically governs the removal of trees located within parking

strips in the public right-of-way. Section 3.18.1, City Approval Required, states that no person shall remove a tree in a parking strip or other city right-of-way without the prior approval of the Park Commission after a hearing on the request as provided in this Section 3.18. This prohibition includes but is not limited to the proposed removal of a tree for sidewalk repairs or for the clearing of sanitary sewer and storm drain easements. A tree on public property may be removed without Park Commission approval only after a tree is declared an imminent hazard to public safety by the City Administrator or Public Works Director. The Park Commission responsibilities are outlined in section 25.5 of the City Code.

- **Takeaway:** The City of Piedmont has a long history of maintaining and investing in its street trees. Installations that may impact street trees must be reviewed by the Park Commission, which makes a recommendation to City Council regarding the impact of the proposed projects on street trees and the curbside planting strip.

Shot-Clock for Wireless Communication Facilities and Collocation

- Federal Communications Commission (FCC) Wireless Facility Rules Implementing Section 6409(a) and California's AB 57 restrict the City's ability to regulate collocation of wireless communications facilities and also require the City to take action on the application within a reasonable time limit established by the FCC. The City can review wireless communication facilities for location, placement and design when it is the first deployment of a wireless installation but cannot regulate by discretionary review certain future collocations and modifications of wireless telecommunications facilities that may occur after the first deployment on a utility pole. In general, the reasonable time limit for action on an application for new antenna deployment is 150 days. After 150 days an application can be "deemed approved." The reasonable time limit for action on an application for collocation can be as little as 60 days. City staff have 30 days to review an initial submittal of an application and then 10 days to review re-submittals of the application.
  - **Takeaway:** The time limit for the City's decision on the applications for new antenna deployment filed by Crown Castle NG West LLC is 150 days. After 150 days an application can be "deemed approved." (The time limit deadline of 150 days applies whether or not an application is complete for the purposes of the Permit Streamlining Act.)

Charter Cities

- Charter cities, like Piedmont, are not exempted from federal Telecommunications Act requirements or the State of California's AB 57.

Reasonable Zoning Regulations and Reasonable Aesthetic Requirements

- Under Public Utilities Code section 7901.1, the City of Piedmont has the right to provide for reasonable zoning regulations in the right-of-way and can exercise reasonable aesthetic requirements. Examples of the types of control that can be exercised by the City include zoning and aesthetic requirements applied by the City of Rancho Palos Verdes to antennas proposed by Sprint. The City's requirements were upheld by the courts (see Sprint v. Rancho Palos Verdes (2009, 9th Circuit) 583 Fed3d 716). Local regulations can include rules to control the proliferation of antennas, limit visual clutter, protect unobstructed sight lines, reduce obstruction of scenic views, maintain pedestrian use of sidewalks, promote harmonious development, and achieve consistency with local design guidelines.
  - **Takeaway:** According to case law, the City of Piedmont can apply reasonable zoning

regulations and reasonable aesthetic regulations to proposals for wireless communication facilities, such as rules to control the proliferation of antennas, limit visual clutter, protect unobstructed sight lines, reduce obstruction of scenic views, maintain pedestrian use of sidewalks, promote harmonious development, and achieve consistency with local design guidelines. See City Code Division 17.46.

COMPLIANCE WITH CITY CODE:

Wireless communication facilities, located on street lights and in underground vaults, are subject to the Piedmont Municipal Code, including the following regulations Division 17.46 (Wireless Communication Facilities), Chapter 3 (Trees), Section 5.4.11 (Noise), and Chapter 18 (Streets and Sidewalks) of the City Code. A summary table of the nine project sites and project descriptions to be reviewed by the Planning Commission is provided as Attachment A to this staff report. Public comments received about the Park Commission and Planning Commission review are included as Attachment F. The applicants' coverage report is provided as Attachment H and the proposed plans are provided as Attachment I. The applications' compliance with Division 17.46, Section 5.4.11, and Chapter 18, are provided below for each of the three sites within this agenda item. Compliance with sections of the Code related to street trees and planting strips are provided in the staff report prepared for the June 7, 2017 Park Commission meeting, included online as Attachment G. The Park Commission's recommendation to the City Council will be provided to the Planning Commission separately from this report.

Site PHS06 (Project #6) near 428 El Cerrito Avenue

Piedmont Municipal Code Section 17.46.040, Location

Location within the City – Project #6 near 428 El Cerrito Avenue
The applicants propose to construct one new antenna and an underground vault in the public right-of-way near 428 El Cerrito Avenue, a location within Zone A, which is established for single-family residential use. Conditional uses allowed in Zone A include a wireless communication facility, subject to a wireless communication facility permit under Division 17.46. The proposed antenna would be installed atop a new, taller utility pole to replace an existing utility pole in the same location. The location preference in the City Code (section 17.46.040) is, in order of preference, (i) on publicly-owned property outside of the public right of way, in Zone B within the city, (ii) on publicly-owned facilities in any other zone outside of the public right of way, or (iii) public rights-of-way. The proposed site is within the public right-of-way, the third preference. ***Complies.***

Collocation Preference – Project #6 near 428 El Cerrito Avenue
Collocation means the location of two or more wireless communication facilities on a single support structure. The proposed communications equipment (e.g., cabinets, fans) would be located in a proposed underground vault beneath the sidewalk to conceal the equipment. The applicants do not propose to collocate the new antenna with existing wireless antenna(s). The location preference in the City Code (section 17.46.040) is to locate on or in an existing structure in which the wireless communication facility can be concealed, to collocate on an existing wireless communication facility, or to locate on a new structure that can be incorporated in an inconspicuous or compatible manner

with the surrounding area. Collocation limits the proliferation of new antennas and associated visual clutter. ***Possibly complies because the communications equipment is proposed to be located in an underground vault. However, the antenna would not be collocated or completely concealed, such as behind a parapet or within an architectural feature, but may be considered to be inconspicuous.***

Site Agreement – Project #6 near 428 El Cerrito Avenue
The utility poles are not owned by the City and therefore are not subject to a site agreement with the City. ***Not applicable. Utility poles are not City property.***

Piedmont Municipal Code Section 17.46.070 Development Standards

Collocation – Project #6 near 428 El Cerrito Avenue
Collocation means the location of two or more wireless communication facilities on a single support structure. The proposed new wireless antenna on a replacement utility pole near 428 El Cerrito Avenue would be installed where there are no antennas installed today. The collocation preference in the City Code (section 17.46.070.A.1) requires new wireless communication facilities to be "collocated" with existing facilities and with other planned new facilities whenever feasible. A new wireless tower must be designed and constructed to accommodate future collocation(s) unless the city determines that collocation would be infeasible because of physical or design issues specific to the site. Collocation limits the proliferation of new antennas and associated visual clutter. According to the applicant, collocation for the proposed antenna would be infeasible due to the design of the system. ***Complies, depending upon a determination of infeasibility.***

Height Limit – Project #6 near 428 El Cerrito Avenue
The proposed wireless communication facility near 428 El Cerrito Avenue would be 49 feet 8 inches tall. The height limit for wireless communication facilities in the City Code (section 17.46.070.A.2) is 35 feet, measured from the ground to the highest point of the wireless communication facility, unless the zoning district in which the wireless communication facility is located expressly provides a higher height limit. The height limit in zone A does not allow structures greater than an average maximum height of 35 feet. ***Does not comply. Requires a variance from the maximum height limit.***

Screening – Project #6 near 428 El Cerrito Avenue
The proposed antenna would be located at the top of a utility pole and communication equipment would be within a vault beneath the sidewalk. The screening requirement for wireless communication facilities in the City Code (section 17.46.070.A.2) states that roof mounted equipment and antennas must be located to minimize visibility. ***Not applicable because the proposed antenna is not roof-mounted.***

Concealment or Camouflage – Project #6 near 428 El Cerrito Avenue
The project plans state that antenna equipment is proposed to be painted to match the utility pole color scheme and that the communication equipment would be concealed within an underground vault. Section 17.46.070.A.3 of the City Code states that wireless communication facilities must be designed to minimize visual impacts. When feasible, the facilities must be concealed or camouflaged. The facilities must have a non-reflective finish and be painted or otherwise treated to minimize visibility and the obstruction of views. The facilities may not bear signs, other than certification, warning, emergency contacts, or other signage required by law or expressly required by the city. ***Possibly complies because the vault would conceal some equipment. However, although painted to match the utility pole, the antenna proposed for the site near 428 El Cerrito Avenue is 4 feet 8 inches in length, which may unnecessarily add to its visibility. A smaller antenna (2 feet tall) would be typical***

of DAS installations and less conspicuous in the streetscape. Should it wish to make findings for approval, the Planning Commission may consider a requirement for a smaller antenna.

Public Health, Peace and Safety – Project #6 near 428 El Cerrito Avenue

The applicants have filed a radio frequency radiation exposure report prepared by Hammett & Edison Consulting Engineers for the installation near 428 El Cerrito Avenue that concluded that the exposure to radiation from the proposed antenna would be 1.2% of the safe exposure limits established by the Federal Communications Commission (FCC). The requirement to maintain public health, peace and safety for wireless communication facilities in the City Code (section 17.46.070.A.4) states that a wireless communication facility may not adversely affect the public health, peace and safety. ***Possibly complies. The report states that the antenna has a maximum effective radiated power of 2,277 watts in the design direction, which is consistent with the manufacturer's specifications for the proposed Commscope antenna. The manufacturer's specifications state that the antenna has a maximum power of 350 watts per port and that each antenna has six ports, before antenna gain (antenna gain is an antenna's efficiency in changing electrical power to signal strength). Questions have been posed from members of the public regarding the applicants' coverage maps which show improved signal strength in the opposite direction of the antenna. Should the Commission wish to make findings to approve the project, staff recommends a condition of approval that prior to the issuance of an encroachment permit, the applicants submit a RF radiation exposure report that is consistent with the proposed equipment and site conditions, and that this report be peer reviewed.***

Physical Safety in the Right-of-Way – Project #6 near 428 El Cerrito Avenue

Field measurements at the site revealed that the existing utility pole near 428 El Cerrito Avenue is located 12 inches to the front of curb along a narrow sidewalk, near the intersection with Jerome Avenue. Proposed plans indicate that the new antenna would be located in the same location as the existing pole and that the proposed new electricity meter would be set at 5 feet 5 inches as measured to the ground. The requirement to maintain the public right-of-way for wireless communication facilities in the City Code (section 17.46.070.A.5) states that a wireless communication facility located in the public right-of-way may not cause: (i) physical or visual obstruction, or safety hazard, to pedestrians, cyclists, or motorists; or (ii) inconvenience to the public's use of the right-of-way. Equipment, walls, and landscaping located above grade must be at least 18 inches from the front of the curb and not interfere with the public's use of the right-of-way. The proposed antenna, power and communication risers, and electricity meter would be closer to the face of curb than the 18-inch setback required by the development standards and the height of the proposed new electricity meter, installed at a height of 5 feet 5 inched from grade, would create a safety hazard to pedestrians. The cabling for the antenna is proposed to be installed in power and communication risers on the sides of the utility pole. This additional equipment on the sides of the utility pole could create sightline obstructions as the street turns the corner. The Public Works Department requires a minimum height of 7 feet to the bottom edge of any electricity meter in the public right-of-way to meet the American with Disabilities Act (ADA) requirements and PG&E standards. ***Does not comply***. ***Requires a variance. Staff notes that the plan view ("top view") on sheet SP-2 is not drawn to scale to confirm the distance of the antennas to the front of curb. In addition, the applicants have not provided the design of the cover of the underground vault and how it will be made slip resistant.***

Compliance with Federal and State Law – Project #6 near 428 El Cerrito Avenue

The requirement to comply with federal and state statutes for wireless communication facilities applications in the City Code (section 17.46.070.A.6) requires each wireless communication facilites application to comply with federal and state statutes governing local agencies' land use authority regarding the siting of wireless communication facilities, including without limitation 47 USC

sections 253, 332(c)(7), 47 USC section 1455 (also known as section 6409 of the 2012 Middle Class Tax Relief and Jobs Act), California Government Code sections 50030, 65850.6 and 65964, and California Public Utilities Code sections 7901 and 7901.1. Each reference to a federal and state statute is to the statute as it may be as amended from time-to-time and to the extent the statute remains in effect. ***If the project near 428 El Cerrito Avenue is found to comply with the Division 17.46 of the Piedmont Municipal Code, then the project complies with the regulations cited above.***

Piedmont Municipal Code Chapter 18 Streets and Sidewalks Ordinance

Utility Pole Replacement – Project #6 near 428 El Cerrito Avenue
The applicants request City Council approval to place an antenna on a new, taller utility pole to replace an existing utility pole and to construct an underground vault beneath the sidewalk near 428 El Cerrito Avenue. Section 18.8 of the Streets and Sidewalks Ordinance of the Piedmont City Code provides City regulations for the construction of utility poles in the public right-of-way. This section reads, "No person shall erect or cause to be erected upon or in any public street, lane, alley, sidewalk, sidewalk area, or other public place within the City, any telegraph, telephone or electric light pole, or any pole for the suspension of electric telegraph, telephone, electric light or electric power wires or cables, without first having secured therefor the express permission of the Council." ***Seeking approval from Council.***

Sidewalk Obstruction – Project #6 near 428 El Cerrito Avenue
The applicants propose to install an electricity meter located 5 feet 5 inches above the surface of the sidewalk on the utility pole. Section 18.22 of the Streets and Sidewalks Ordinance of the Piedmont Municipal Code states that it is illegal to obstruct a sidewalk or roadway, as follows, "It shall be unlawful for any person to place or cause to be placed anywhere upon any sidewalk or roadway, anything which shall obstruct, restrict or prevent the use of any portion of such sidewalk or roadway; provided, that this section shall not apply to the articles or things listed in section 18.16." Electricity meters are not included in the list of things permitted to obstruct the sidewalk. At 5 feet 5 inches from grade, the new electricity meter would not be installed at a minimum height of 7 feet so that it does not obstruct the sidewalk. ***Does not comply. Variances are not available for Chapter 18 of the Municipal Code. Should it wish to make findings for approval, the Planning Commission may consider a requirement that the electricity meter be installed a minimum height of 7 feet to 8 feet above grade.***

PHS07 (Project #7) near 355 Jerome Avenue
Please note that the proposed plans include typographical errors that show the address as "335 Jerome Avenue."

Piedmont Municipal Code Section 17.46.040 Location

Location within the City – Project #7 near 355 Jerome Avenue
The applicants propose to construct three new antennas on top of a new, taller utility pole to replace an existing utility pole and an underground equipment vault in the public right-of-way beneath the adjacent sidewalk, near 355 Jerome Avenue in Zone A, which is established for single-family residential use. The location preference in the City Code (section 17.46.040) is, in order of preference, (i) on publicly-owned property outside of the public right of way, in Zone B within the city, (ii) on

publicly-owned facilities in any other zone outside of the public right of way, or (iii) public rights-of-way. The proposed site is within the public right-of-way, the third preference. ***Complies.***

Collocation Preference – Project #7 near 355 Jerome Avenue
The proposed three new wireless antennas on a new, taller utility pole near 355 Jerome Avenue would be installed where there are no antennas installed today. The applicants do not propose to collocate with existing wireless antennas. *Collocation* means the location of two or more wireless communication facilities on a single support structure. Collocation limits the proliferation of new antennas and associated visual clutter. Communication equipment is proposed to be located in an underground vault. The location preference in the City Code (section 17.46.040) is to locate on or in an existing structure in which the wireless communication facility can be concealed, to collocate on an existing wireless communication facility, or to locate on a new structure that can be incorporated in an inconspicuous or compatible manner with the surrounding area. ***Possibly complies because the communication equipment would be located in an underground vault. However, the antennas would not be collocated or completely concealed, such as behind a parapet or within an architectural feature, but may be considered to be inconspicuous.***

Site Agreement – Project #7 near 355 Jerome Avenue
The utility poles are not owned by the City and therefore are not subject to a site agreement with the City. ***Not applicable. Utility poles are not City property.***

Piedmont Municipal Code Section 17.46.070 Development Standards

Collocation – Project #7 near 355 Jerome Avenue
The proposed new wireless antenna near 355 Jerome Avenue would be located on a new, taller replacement utility pole where there are no antennas installed today. The collocation preference in the City Code (section 17.46.070.A.1) requires new wireless communication facilities to be "collocated" with existing facilities and with other planned new facilities whenever feasible. *Collocation* means the location of two or more wireless communication facilities on a single support structure. Collocation limits the proliferation of new antennas and associated visual clutter. A new wireless tower must be designed and constructed to accommodate future collocation(s) unless the city determines that collocation would be infeasible because of physical or design issues specific to the site. According to the applicant, collocation for the proposed antennas would be infeasible due to the design of the system. ***Complies, depending upon a determination of infeasibility.***

Height Limit – Project #7 near 355 Jerome Avenue
The proposed wireless communication facility near 355 Jerome Avenue would be 53 feet 2 inches tall. The height limit for wireless communication facilities in the City Code (section 17.46.070.A.2) is 35 feet, measured from the ground to the highest point of the wireless communication facility, unless the zoning district in which the wireless communication facility is located expressly provides a higher height limit. The height limit in Zone A does not allow structures greater than an average maximum height of 35 feet. ***Does not comply. Requires a variance.***

Screening – Project #7 near 355 Jerome Avenue
The proposed antennas would be located on a utility pole and communication equipment would be within a vault beneath the sidewalk. The screening requirement for wireless communication facilities in the City Code (section 17.46.070.A.2) states that roof mounted equipment and antennas must be located to minimize visibility. ***Not applicable because the proposed antennas are not roof-mounted.***

Concealment or Camouflage – Project #7 near 355 Jerome Avenue
Section 17.46.070.A.3 of the Municipal Code states wireless communication facilities must be designed to minimize visual impacts. When feasible, the facilities must be concealed or camouflaged. The facilities must have a non-reflective finish and be painted or otherwise treated to minimize visibility and the obstruction of views. The facilities may not bear signs, other than certification, warning, emergency contacts, or other signage required by law or expressly required by the city. ***Possibly complies because the plans for 355 Jerome Avenue state that antenna equipment will be painted to match the utility pole color scheme and because the communication equipment is proposed within an underground vault. However, the antenna proposed for the site near 355 Jerome Avenue is 4 feet 8 inches in length, not screened in the landscape, and would be highly visible which may have a substantial impact on scenic views. Furthermore the cabling for the antennas would run along the side of the utility pole adding to the potential view obstruction. A smaller antenna (2 feet tall) would be typical of DAS installations and less conspicuous in the streetscape. Should it wish to make findings for approval, the Planning Commission may consider a requirement for a smaller antenna.***

Public Health, Peace and Safety – Project #7 near 355 Jerome Avenue
The applicants have filed a radio frequency radiation exposure report prepared by Hammett & Edison Consulting Engineers for the installation near 355 Jerome Avenue that concluded that the exposure to radiation from the three proposed antennas would be .37% of the safe exposure limits established by the Federal Communications Commission (FCC). The requirement to maintain public health, peace and safety for wireless communication facilities in the City Code (section 17.46.070.A.4) states that a wireless communication facility may not adversely affect the public health, peace and safety. ***Possibly complies. However, the exposure report prepared by Hammett & Edison has incomplete information in the background section of the report (page 2). The report states that the antennas have maximum effective radiated power of 720 watts in any direction, total. The manufacturer's specifications for the Commscope antennas state that the antennas have maximum power of 350 watts per port and each antenna has six ports, before antenna gain (antenna gain is an antenna's efficiency in changing electrical power to signal strength). The proposed antennas' maximum effective radiated power could be greater than 6,300 watts with antenna gain (three times 2,100 watts for each antenna) if operated at maximum power. Should the Commission wish to make findings to approve the project, staff recommends a condition of approval that prior to the issuance of an encroachment permit, the applicants submit a RF radiation exposure report that is consistent with the proposed equipment and site conditions, and that this report be peer reviewed.***

Physical Safety in the Right-of-Way – Project #7 near 355 Jerome Avenue
Field measurements taken by staff indicate that the existing utility pole near 355 Jerome Avenue is located less than 18 inches to the front of curb. Plans show the proposed new replacement utility with the same setback to the curb and shifted two feet to the northwest of the existing location. Staff infers from the plans that the antennas, power and communication risers, and electricity meter would be closer than 18 inches to the front of curb. As proposed, a new electricity meter would be installed on the utility pole at 5 feet as measured to the ground, which is near eye level for many adults. The requirement to maintain the public right-of-way for wireless communication facilities in the City Code (section 17.46.070.A.5) states that a wireless communication facility located in the public right-of-way may not cause: (i) physical or visual obstruction, or safety hazard, to pedestrians, cyclists, or motorists; or (ii) inconvenience to the public's use of the right-of-way. Equipment, walls, and landscaping located above grade must be at least 18 inches from the front of the curb and not interfere with the public's use of the right-of-way. The Public Works Department requires a minimum height of 7 feet to the bottom edge of any electricity meter in the public right-of-way to meet the American

with Disabilities Act (ADA) requirements and PG&E standards. ***Does not comply. Requires a variance. The antennas would create a pedestrian safety hazard due to the placement of the electricity meters near eye level and within the required 18-inch setback. Furthermore, the plan view ("top view") on sheet SP-2 is not drawn to scale to confirm the distance of the antennas to the front of curb. In addition, the applicants have not provided the design of the cover of the underground vault and how it will be made slip resistant.***

Compliance with Federal and State Law – Project #7 near 355 Jerome Avenue
The requirement to comply with federal and state statutes for wireless communication facilities applications in the City Code (section 17.46.070.A.6) require each wireless communication facility application to comply with federal and state statutes governing local agencies' land use authority regarding the siting of wireless communication facilities, including without limitation 47 USC sections 253, 332(c)(7), 47 USC section 1455 (also known as section 6409 of the 2012 Middle Class Tax Relief and Jobs Act), California Government Code sections 50030, 65850.6 and 65964, and California Public Utilities Code sections 7901 and 7901.1. Each reference to a federal and state statute is to the statute as it may be as amended from time-to-time and to the extent the statute remains in effect. ***If the project near 355 Jerome Avenue is found to comply with the Division 17.46 of the Piedmont Municipal Code, then the project complies with the regulations cited above.***

Piedmont Municipal Code Chapter 18 Streets and Sidewalks Ordinance

Utility Pole Replacement – Project #7 near 355 Jerome Avenue
The proposed wireless communication facility near 355 Jerome Avenue would install a new replacement utility pole in the public right-of-way. Section 18.8 of the Streets and Sidewalks Ordinance of the Piedmont City Code provides City regulations for the construction of utility poles in the public right-of-way. This section reads, "No person shall erect or cause to be erected upon or in any public street, lane, alley, sidewalk, sidewalk area, or other public place within the City, any telegraph, telephone or electric light pole, or any pole for the suspension of electric telegraph, telephone, electric light or electric power wires or cables, without first having secured therefor the express permission of the Council." ***Seeking City Council approval.***

Sidewalk Obstruction – Project #7 near 355 Jerome Avenue
The applicants propose to install an electricity meter located 5 feet above the surface of the sidewalk on the replacement utility pole. Section 18.22 of the Streets and Sidewalks Ordinance of the Piedmont Municipal Code states that it is illegal to obstruct a sidewalk or roadway, as follows, "It shall be unlawful for any person to place or cause to be placed anywhere upon any sidewalk or roadway, anything which shall obstruct, restrict or prevent the use of any portion of such sidewalk or roadway; provided, that this section shall not apply to the articles or things listed in section 18.16." Electricity meters are not included in the list of things permitted to obstruct the sidewalk. The proposed new electricity meter would obstruct the sidewalk for pedestrians. The Public Works Department requires a minimum height of 7 feet to the bottom edge of any electricity meter in the public right-of-way to meet the American with Disabilities Act (ADA) requirements and PG&E standards. ***Does not comply. See discussion for sidewalk obstruction and section 18.22, above, for the project near 428 El Cerrito Avenue. Variances are not available for non-compliance with Chapter 18.***

PHS08 (Project #8) near 1159 Winsor Avenue

Piedmont Municipal Code Section 17.46.040 Location

Location within the City - Project #8 near 1159 Winsor Avenue
The applicants propose to construct an underground vault beneath the sidewalk and two new antennas on a new, taller utility pole to replace an existing utility pole in the public right-of-way near 1159 Winsor Avenue. The location preference in the City Code (section 17.46.040) is, in order of preference, (i) on publicly-owned property outside of the public right of way, in Zone B within the city, (ii) on publicly-owned facilities in any other zone outside of the public right of way, or (iii) public rights-of-way. The proposed site is within the public right-of-way, the third preference. ***Complies.***

Collocation Preference - Project #8 near 1159 Winsor Avenue
The proposed two new wireless antennas near 1159 Winsor Avenue would be installed where there are no antennas installed today. Communication equipment would be located in a proposed underground vault beneath the sidewalk. The applicants do not propose to collocate with existing wireless antennas. *Collocation* means the location of two or more wireless communication facilities on a single support structure. Collocation limits the proliferation of new antennas and associated visual clutter. The location preference in the City Code (section 17.46.040) is to locate on or in an existing structure in which the wireless communication facility can be concealed, to collocate on an existing wireless communication facility, or to locate on a new structure that can be incorporated in an inconspicuous or compatible manner with the surrounding area. ***Possibly complies because the communications equipment would be located in an underground vault. However, the antennas would not be collocated or completely concealed, such as behind a parapet or within an architectural feature, but may be considered to be inconspicuous.***

Site Agreement - Project #8 near 1159 Winsor Avenue
The utility poles are not owned by the City and therefore are not subject to a site agreement with the City. ***Not applicable. Utility poles are not City property.***

Piedmont Municipal Code Section 17.46.070 Development Standards

Collocation - Project #8 near 1159 Winsor Avenue
The proposed new antennas near 1159 Winsor Avenue would be installed where there are no existing antennas today. The applicants do not propose to collocate the new wireless communication facilities. The collocation preference in the City Code (section 17.46.070.A.1) requires new wireless communication facilities to be "collocated" with existing facilities and with other planned new facilities whenever feasible. *Collocation* means the location of two or more wireless communication facilities on a single support structure. Collocation limits the proliferation of new antennas and associated visual clutter. A new wireless tower must be designed and constructed to accommodate future collocation(s) unless the city determines that collocation would be infeasible because of physical or design issues specific to the site. According to the applicant, collocation for the proposed antennas would be infeasible due to the design of the system. ***Complies, depending upon a determination of infeasibility.***

Height Limit - Project #8 near 1159 Winsor Avenue
The proposed wireless communication facility near 1159 Winsor Avenue would be 38 feet 6 inches tall. The height limit for wireless communication facilities in the City Code (section 17.46.070.A.2) is 35 feet, measured from the ground to the highest point of the wireless communication facility, unless the zoning district in which the wireless communication facility is located expressly provides a higher height limit. The height limit in Zone A does not allow structures greater than an average maximum height of 35 feet. ***Does not comply. Requires a variance.***

Screening - Project #8 near 1159 Winsor Avenue
The proposed wireless communication facility would install two antennas on a new replacement utility pole and install communication equipment within a vault beneath the sidewalk. The screening requirement for wireless communication facilities in the City Code (section 17.46.070.A.2) states that roof mounted equipment and antennas must be located to minimize visibility. ***Not applicable because the proposed antennas are not roof-mounted.***

Concealment or Camouflage - Project #8 near 1159 Winsor Avenue
Section 17.46.070.A.3 of the Municipal Code states wireless communication facilities must be designed to minimize visual impacts. When feasible, the facilities must be concealed or camouflaged. The facilities must have a non-reflective finish and be painted or otherwise treated to minimize visibility and the obstruction of views. The facilities may not bear signs, other than certification, warning, emergency contacts, or other signage required by law or expressly required by the city. ***Possibly complies because the plans state that antenna equipment will be painted to match the street light color scheme and because the communication equipment is proposed within an underground vault. However, the antenna proposed for the site near 1159 Winsor Avenue is 4 feet 8 inches in length, not screened in the landscape, and would be highly visible which may have a substantial impact on scenic views. Furthermore the cabling for the antennas would run along the side of the utility pole adding to the potential view obstruction. A smaller antenna (2 feet tall) would be typical of DAS installations and less conspicuous in the streetscape. Should it wish to make findings for approval, the Planning Commission may consider a requirement for a smaller antenna.***

Public Health, Peace and Safety - Project #8 near 1159 Winsor Avenue
The applicants have filed a radio frequency radiation exposure report prepared by Hammett & Edison Consulting Engineers for the installation near 1159 Winsor Avenue that concluded that the exposure to radiation from the two proposed antennas would be 1.9% of the safe exposure limits established by the Federal Communications Commission (FCC). The requirement to maintain public health, peace and safety for wireless communication facilities in the City Code (section 17.46.070.A.4) states that a wireless communication facility may not adversely affect the public health, peace and safety. ***Possibly complies. However, the exposure report prepared by Hammett & Edison has incomplete information in the background section of the report (page 2). The exposure report states that the antennas have maximum effective radiated power of 1,141 watts in any direction, total. The manufacturer's specifications for the Commscope antennas state that the antennas have maximum power of 350 watts per port and each antenna has six ports, before antenna gain (antenna gain is an antenna's efficiency in changing electrical power to signal strength). The proposed antennas' maximum effective radiated power could be greater than 4,200 watts with antenna gain (two times 2,100 watts for each antenna) if operated at maximum power. Should the Commission wish to make findings to approve the project, staff recommends a condition of approval that prior to the issuance of an encroachment permit, the applicants submit a RF radiation exposure report that is consistent with the proposed equipment and site conditions, and that this report be peer reviewed.***

Physical Safety in the Public Right-of-Way - Project #8 near 1159 Winsor Avenue
Project plans show the proposed new replacement utility pole with the same nonconforming setback, and shifted 2 feet 6 inches to east, of the existing location. Field measurements taken by staff indicate that the existing utility pole near 1159 Winsor Avenue is located less than 18 inches to the front of curb along a narrow sidewalk. Staff infers from the plans and field measurements that the antennas, power and communication risers, and electricity meter would also be located less than 18 inches to the front of curb, in plan view. The proposed new electricity meter would be installed on the replacement utility pole at 5 feet 6 inches as measured to the ground, which is near eye level for many adults. The requirement to maintain the public right-of-way for wireless communication facilities in the City Code (section 17.46.070.A.5) states that a wireless communication facility located in the public right-of-way may not cause: (i) physical or visual obstruction, or safety hazard, to pedestrians, cyclists, or motorists; or (ii) inconvenience to the public's use of the right-of-way. Equipment, walls, and landscaping located above grade must be at least 18 inches from the front of the curb and not interfere with the public's use of the right-of-way. The Public Works Department requires a minimum height of 7 feet to the bottom edge of any electricity meter in the public right-of-way to meet the American with Disabilities Act (ADA) requirements and PG&E standards. ***Does not comply. Requires a variance. Antennas and equipment would be located closer than 18 inches to the front of curb and the electricity meters would create a pedestrian safety hazard in this narrow cul-de-sac location. Furthermore, the plan view ("top view") on sheet SP-2 is not drawn to scale to confirm the distance of the antennas to the front of curb. In addition, the applicants have not provided the design of the cover of the underground vault and how it will be made slip resistant.***

Compliance with Federal and State Law - Project #8 near 1159 Winsor Avenue
The requirement to comply with federal and state statutes for wireless communication facilities applications in the City Code (section 17.46.070.A.6) require each wireless communication facility application to comply with federal and state statutes governing local agencies' land use authority regarding the siting of wireless communication facilities, including without limitation 47 USC sections 253, 332(c)(7), 47 USC section 1455 (also known as section 6409 of the 2012 Middle Class Tax Relief and Jobs Act), California Government Code sections 50030, 65850.6 and 65964, and California Public Utilities Code sections 7901 and 7901.1. Each reference to a federal and state statute is to the statute as it may be as amended from time-to-time and to the extent the statute remains in effect. ***If the project near 1159 Winsor Avenue is found to comply with the Division 17.46 of the Piedmont Municipal Code, then the project complies with the regulations cited above.***

Piedmont Municipal Code Chapter 18 Streets and Sidewalks Ordinance

Utility Pole Replacement - Project #8 near 1159 Winsor Avenue
The proposed two antennas, replacement utility pole, and underground vault would be located in the public right-of-way near 1159 Winsor Avenue. Section 18.8 of the Streets and Sidewalks Ordinance of the Piedmont City Code provides City regulations for the construction of utility poles in the public right-of-way. This section reads, "No person shall erect or cause to be erected upon or in any public street, lane, alley, sidewalk, sidewalk area, or other public place within the City, any telegraph, telephone or electric light pole, or any pole for the suspension of electric telegraph, telephone, electric light or electric power wires or cables, without first having secured therefor the express permission of the Council." ***Seeking City Council approval.***

Sidewalk Obstruction - Project #8 near 1159 Winsor Avenue
The applicants propose to install an electricity meter located 5 feet 6 inches above the surface of the sidewalk on the utility pole. Section 18.22 of the Streets and Sidewalks Ordinance of the Piedmont Municipal Code states that it is illegal to obstruct a sidewalk or roadway, as follows, "It shall be unlawful for any person to place or cause to be placed anywhere upon any sidewalk or roadway, anything which shall obstruct, restrict or prevent the use of any portion of such sidewalk or roadway; provided, that this section shall not apply to the articles or things listed in section 18.16." Electricity meters are not included in the list of things permitted to obstruct the sidewalk. The Public Works Department requires a minimum height of 7 feet to the bottom edge of any electricity meter in the public right-of-way to meet the American with Disabilities Act (ADA) requirements and PG&E standards. The new electricity meter would obstruct the sidewalk for pedestrians. ***Does not comply. See discussion for sidewalk obstruction and section 18.22, above, for the project near 428 El Cerrito Avenue. Variances are not available for non-compliance with Chapter 18.***

NOISE ORDINANCE:

Compliance with Section 5.4.11 of the Piedmont City Code - Noise

City staff has requested acoustical studies and manufacturer's specifications for noise related to the proposed equipment for all of the installations requested by the applicants, including the three sites near 428 El Cerrito Avenue, 355 Jerome Avenue, and 1159 Winsor Avenue, that are being addressed in this report. The applicants have not provided an acoustical study or noise specifications for the proposed equipment, including the proposed sump pumps and air fans in the underground vaults. Section 5.4.11 of the Piedmont City Code regulates mechanically generated noise sources. It states, "Machines and other devices located on the exterior of structures which generate sounds perceptible outside the perimeters of the lot on which the machine or other device is located shall be installed with such sound transmission control measures to adequately minimize or eliminate the transmission of the sound to a level not to exceed 50 decibels, A-weighted, beyond property perimeters. This section is directed to and includes, but is not limited to, pool and spa filter systems, air conditioning units, and exterior mounted blowers for exhaust systems." The proposed underground vault is a device which could generate noise due to the equipment inside of it, and the vault is an enclosure but not a "structure." Staff is recommending a condition of approval that: prior to issuance of an encroachment permit for the approved scope of work, the applicants shall prepare and submit an acoustic study for the specific equipment to be installed including manufacturers' specifications and tested noise levels that indicates that noise levels from the proposed equipment will not exceed 50 decibels at the nearest property line. Prior to completion of the project, the applicant shall provide a copy of an acoustical report prepared in the field by an acoustical engineer which demonstrates that noise levels at the nearest property line are 50 dBA or less per occurrence or incident. If noise exceeds 50 dBA at the nearest property line per occurrence or incident, then the applicant or contractor shall install measures to reduce the noise, such as quieter equipment, additional insulation, mufflers, etc., as required by the Building Official. ***Complies, as conditioned.***

VARIANCES:

Variances from the 35-foot height limit for wireless communication facilities (Piedmont City Code section 17.46.070.A.2) are required for the proposed new antennas located near 428 El Cerrito Avenue, 355 Jerome Avenue, and 1159 Winsor Avenue. Variances are also required for safety hazards and obstructions (Piedmont City Code section 17.46.070.A.5) in the public right-of-way for

these projects. The Public Works Department requires a minimum height of 7 feet to the bottom edge of any electricity meter in the public right-of-way to meet the American with Disabilities Act (ADA) requirements and PG&E standards.

According to section 17.70.040 of the Piedmont City Code, variances from these regulations shall not be granted except when the particular land to be improved varies in some unique physical way from other land in the same zone and, because of these physical differences, applying the regulations of Chapter 17 would effectively prohibit the use of the property in a manner similar to the use of other properties in the same zone. "Unreasonable hardship" for purposes of this subsection refers to the unusual physical characteristics of the underlying land and existing improvements on the land which prohibit development of the land in a manner consistent with land conforming to City standards. This standard of hardship relates to the property, not the personal or economic circumstances of the applicant. No variance shall be granted for reasons which are personal to the applicant and unrelated to the uniqueness of the property.

VARIANCE FINDINGS:

Nonconforming Height – Project #6, 428 El Cerrito Avenue

The new antenna proposed on a new replacement utility pole near 428 El Cerrito Avenue is proposed to have a height of 49 feet 8 inches. The maximum height limit is 35 feet (pursuant to section 17.46.070.A.2). To approve the nonconforming height variance requested by this application for the proposed installation near 428 El Cerrito Avenue, the City Council must consider the Planning Commission recommendations and make specific findings of fact to support all of the following conclusions. The applicants' proposed findings for the variance application for nonconforming height is indicated in **bold**. The applicants have provided a diagram of the site to accompany the variance application (included in Attachment B).

(a) The property and existing improvements present unusual physical circumstances of the property (including but not limited to size, shape, topography, location and surroundings), so that strictly applying the terms of this chapter would keep the property from being used in the same manner as other conforming properties in the zone: **GO 95 and the CPUC regulates the placement of microcellular antennas in relation to the separation between the various utility companies and their lines on wood poles. Due to the terrain in this area we are using 4ft antennas as it provides much better signal control compared to 2ft antennas. Looking at the pole, we need 6 feet of separation between the secondary power (24' 8") and the top of the antenna. Also from the bottom of the antenna to the future Crown Castle fiber (22') we need 2 feet of separation. In total, we need 12 feet of separation between the secondary power and the future crown castle fiber in order to place the antennas. On this pole, we only have 2'-8" of clearance. Therefore, we placed the antennas on top of the pole. Placing the antennas below the communication zone not only would decrease the coverage as it will be affected by surrounding foliage and the building structures, but it would also bring them closer to the pedestrians creating more concern and in these cases, fall outside what is permitable. The current design of placing the antennas at the top of the pole, allows Crown Castle to adhere to both the State utility regulations as well as achieving the purpose of increased cell/data coverage needed by its customer.**

(b) The project is compatible with the immediately surrounding neighborhood and the public welfare: **Please see response above.**

(c) Accomplishing the improvement without a variance would cause unreasonable hardship in planning, design, or construction: **Please see response above.**

Nonconforming Height – Project #7, 355 Jerome Avenue

The new antennas proposed on a utility pole near 355 Jerome Avenue are proposed to have a height of 53 feet 2 inches. The maximum height limit is 35 feet (pursuant to section 17.46.070.A.2). To approve the nonconforming height variance requested by this application for the proposed installation near 355 Jerome Avenue, the City Council must make specific findings of fact to support all of the following conclusions. The applicants' proposed findings for the variance application for nonconforming height is indicated in **bold**. The applicants have provided a diagram of the site to accompany the variance application (included in Attachment B).

(a) The property and existing improvements present unusual physical circumstances of the property (including but not limited to size, shape, topography, location and surroundings), so that strictly applying the terms of this chapter would keep the property from being used in the same manner as other conforming properties in the zone: **GO 95 and the CPUC regulates the placement of microcellular antennas in relation to the separation between the various utility companies and their lines on wood poles. Due to the terrain in this area we are using 4ft antennas as it provides much better signal control compared to 2ft antennas. Looking at the pole, we need 6 feet of separation between the secondary power (30'-9") and the top of the antenna. Also from the bottom of the antenna to the future Crown Castle fiber (25'-0") we need 2 feet of separation. In total, we need 12 feet of separation between the secondary power and the future crown castle fiber in order to place the antennas. On this pole, we only have 5'-9" of clearance. Therefore, we placed the antennas on top of the pole. Placing the antennas below the communication zone not only would decrease the coverage as it will be affected by surrounding foliage and the building structures, but it would also bring them closer to the pedestrians creating more concern and in these cases, fall outside what is permitable. The current design of placing the antennas at the top of the pole, allows Crown Castle to adhere to both the State utility regulations as well as achieving the purpose of increased cell/data coverage needed by its customer.**

(b) The project is compatible with the immediately surrounding neighborhood and the public welfare: **Please see response above.**

(c) Accomplishing the improvement without a variance would cause unreasonable hardship in planning, design, or construction: **Please see response above.**

Nonconforming Height – Project #8, 1159 Winsor Avenue

The new antennas proposed on a utility pole near 1159 Winsor Avenue are proposed to have a height of 38 feet 6 inches. The maximum height limit is 35 feet (pursuant to section 17.46.070.A.2). To approve the nonconforming height variance requested by this application for proposed installation near 1159 Winsor Avenue, the City Council must make specific findings of fact to support all of the following conclusions. The applicants' proposed findings for the variance application for

nonconforming height is indicated in **bold**. The applicants have provided a diagram of the site to accompany the variance application (included in Attachment B).

(a) The property and existing improvements present unusual physical circumstances of the property (including but not limited to size, shape, topography, location and surroundings), so that strictly applying the terms of this chapter would keep the property from being used in the same manner as other conforming properties in the zone: **GO 95 and the CPUC regulates the placement of microcellular antennas in relation to the separation between the various utility companies and their lines on wood poles. Due to the terrain in this area we are using 4ft antennas as it provides much better signal control compared to 2ft antennas. Looking at the pole, we need 6 feet of separation between the secondary power (24'-8") and the top of the antenna. Also from the bottom of the antenna to the future Crown Castle fiber (22'-0") we need 2 feet of separation. In total, we need 12 feet of separation between the secondary power and the future crown castle fiber in order to place the antennas. On this pole, we only have 2'-8" of clearance. Therefore, we placed the antennas on top of the pole. Placing the antennas below the communication zone not only would decrease the coverage as it will be affected by surrounding foliage and the building structures, but it would also bring them closer to the pedestrians creating more concern and in these cases, fall outside what is permitable. The current design of placing the antennas at the top of the pole, allows Crown Castle to adhere to both the State utility regulations as well as achieving the purpose of increased cell/data coverage needed by its customer.**

(b) The project is compatible with the immediately surrounding neighborhood and the public welfare: **Please see response above.**

(c) Accomplishing the improvement without a variance would cause unreasonable hardship in planning, design, or construction: **Please see response above.**

Nonconforming Safety Hazards and Obstructions in the Right-of-Way – All Three Projects

The application seeks variances from the development standards regarding safety and obstructions in the right-of-way (section 17.46.070.A.5) for the three proposed sites, as follows:

- Project #6, 428 El Cerrito Avenue – equipment located within 18 inches of curb face and with a pedestrian clearance height of 5 feet 5 inches.
- Project #7, 355 Jerome Avenue – equipment located within 18 inches of curb face and with a pedestrian clearance height of 5 feet.
- Project #8, 1159 Winsor Avenue – equipment located within 18 inches of curb face and with a pedestrian clearance height of 5 feet 6 inches.

To approve the safety hazards variance(s) requested by these applications for installations at the 428 El Cerrito Avenue, 355 Jerome Avenue, and 1159 Winsor Avenue locations, the Planning Commission must recommend, and the City Council must make, specific findings of fact to support all of the following conclusions for each of the applications. The applicants' proposed findings for all three variance applications for safety hazards and obstructions in the public right-of-way are indicated in **bold**.

(a) The property and existing improvements present unusual physical circumstances of the property (including but not limited to size, shape, topography, location and surroundings), so that strictly applying the terms of this chapter would keep the property from being used in the same manner

as other conforming properties in the zone: **Meter will be relocated to 7' above the sidewalk: Section 5.4.1 (PG&E Green Book) B. Pole -Mounted Communication Service and Meter Equipment Applicants must ensure that communication service and meter equipment installed on PG&E or joint poles is placed so the bottom of the enclosure is a minimum of 7 feet to a maximum of 8 feet from the finished grade. If it is not possible to meet the height requirements, install a meter pedestal. Ask your PG&E project coordinator for Numbered Document 027911, "Installation Details for Service to Pole-Mounted Communication Equipment," for specific requirements. - In short, the only other option could be to add a meter pedestal to the sidewalk, which would be a great impact based on our review of the locations, and the City is asking we place all equipment below ground (see below for 'meter vaulting'). Variance issue – Meter within 18" of sidewalk curb face - The meter is chosen by PG&E based on the loading requirement, and they are unable to utilize a "bulb" type, and we are unable to place the meter inside the vault. PG&E will not place inside the vault due to reliability issues with the grid system, hazards to the public and unsafe worker conditions. Therefore, we are unable to place the meter in another location than where we have proposed it. In discussions with Planning Staff, we discussed reviewing relocating the new poles outside of the 18" zone, but the risk with this is impacting any ADA sidewalk requirements.**

(b) The project is compatible with the immediately surrounding neighborhood and the public welfare: **Please see response above.**

(c) Accomplishing the improvement without a variance would cause unreasonable hardship in planning, design, or construction: **Please see response above.**

PLANNING COMMISSION ACTION:

Provided below are the findings that the Planning Commission can use in making its recommendation to the City Council. Staff recommends that the Commission take action on each of the proposed sites separately from the other sites. To take action on the requested variance applications, the Planning Commission must recommend and the City Council must make findings pursuant to Piedmont Municipal Code section 17.70.040. In addition, pursuant to Piedmont Municipal Code section 17.46.080.D, the Piedmont City Council must make findings when taking action on a proposed wireless communication facilities permit application.

In making its recommendation to the City Council, the Planning Commission should make specific findings of fact for each of the project sites to support all of the following conclusions for each of the three project sites. In addition, should the Planning Commission be able to make findings recommending approval of one or more of the projects based upon possible modifications or changes to that project, then the Planning Commission may make findings conditioned upon new or modified conditions of approval. These possible new or modified conditions of approval may be voted upon by the Planning Commission as part of a motion to recommend approval.

The Planning Commission is not required to make findings for denial if the Planning Commission moves to recommend approval of one or all of the proposed projects. Likewise, the Planning Commission is not required to make findings for approval if the Planning Commission moves to recommends denial of one or all of the proposed projects. A project must meet all of the required findings to be approved.

1) Staff recommends that the Planning Commission make the following CEQA findings **for each of the proposed wireless communication facilities, individually (Project #6 near 428 El Cerrito Avenue, Project #7 near 355 Jerome Avenue, and Project #8 near 1159 Winsor Avenue):**

   The Planning Commission recommends that the project at (please state the address) can be deemed categorically exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15303 of the CEQA Guidelines, Construction or Conversion of Small Structures, subsection (d) ***Water main, sewage, electrical, gas, and other utility extensions, including street improvements, of reasonable length to serve such construction*** because the proposed wireless communication facilities are small utility structures located in a developed setting.

2) Staff recommends that the Planning Commission make the following height variance findings **for the proposed wireless communication facilities at 428 El Cerrito Avenue, 355 Jerome Avenue, and 1159 Winsor Avenue, individually**:

   The Planning Commission recommends that findings to approve a variance for nonconforming height for the proposed wireless communication facility at (please state the project address) can (cannot) be made pursuant to Section 17.70.040 of the Piedmont City Code, in that:

   a. The property and existing improvements present (do not present) unusual physical circumstances of the property (including but not limited to size, shape, topography, location and surroundings), so that strictly applying the terms of this chapter would (would not) keep the property from being used in the same manner as other conforming properties in the zone because _____.

   b. The project is (is not) compatible with the immediately surrounding neighborhood and the public welfare because _____.

   c. Accomplishing the improvement without a variance would (would not) cause unreasonable hardship in planning, design, or construction because _____.

3) Staff recommends that the Planning Commission make the following safety hazard variance findings **for each of the three proposed wireless communication facility installations, individually (Project #6 near 428 El Cerrito Avenue, Project #7 near 355 Jerome Avenue, and Project #8 near 1159 Winsor Avenue)**:

   The Planning Commission recommends that findings to approve a variance for safety hazards and nonconforming obstructions in the public right-of-way for the proposed wireless communication facility at (please state the project address) can (cannot) be made pursuant to Section 17.70.040 of the Piedmont City Code, in that:

   a. The property and existing improvements present (do not present) unusual physical circumstances of the property (including but not limited to size, shape, topography, location and surroundings), so that strictly applying the terms of this chapter would (would not) keep the property from being used in the same manner as other conforming properties in the zone because _____.

   b. The project is (is not) compatible with the immediately surrounding neighborhood and

the public welfare because _____.

c. Accomplishing the improvement without a variance would (would not) cause unreasonable hardship in planning, design, or construction because _____.

4) Staff recommends that the Planning Commission make the following wireless communication facilities permit findings **for each of the three proposed project sites, individually, based on the specific conditions of each site and specific designs of each installation** (**Project #6 near 428 El Cerrito Avenue, Project #7 near 355 Jerome Avenue, and Project #8 near 1159 Winsor Avenue**).

The Planning Commission recommends that as conditioned, the proposed WCF at (please state the project address) will (will not) comply with Division 17.46 of the Piedmont Municipal Code in that:

a. The proposed antenna and vault facilities are (are not) necessary to close a significant gap in the operator's service coverage or capacity because _____.

b. The applicant has (has not) evaluated and met the priority for location standards of section 17.46.040.A because _____.

c. The proposal satisfies (does not satisfy) each of the applicable development standards in section 17.46.070 because _____.

d. The proposed design is (is not) consistent with the Piedmont Design Guidelines because _____.

e. The proposed facility has been (has not been) located and designed for collocation to the greatest extent reasonably feasible, and the applicant has (has not) submitted a statement of its willingness to allow other wireless service providers to collocate on the proposed facility because _____.

f. Collocation in the future is (is not) feasible at the proposed installation because of physical or design issues and conditions specific to the site and design of the concealment of the equipment because _____.

Compliance with the Piedmont General Plan is a requirement of the Piedmont Design Guidelines. The Piedmont General Plan includes policies and actions intended to preserve the residential character of the community. The City of Piedmont General Plan includes goals and policies related to wireless communication facilities, public spaces, civic center, street trees, undergrounding of utilities, and public sidewalks. Piedmont Design Guidelines and General Plan goals, policies, programs, and actions are listed in detail in Exhibit E to this staff report.

CONDITIONS OF APPROVAL FOR CONSIDERATION:

Should the Commission wish to make the required findings to recommend approval of the variance applications and wireless communication facilities permit applications, then the Commission might consider recommending the following conditions of approval for each of the project applications:

1. **Bond.** Prior to issuance of an encroachment permit for the proposed work within the public right-of-way, the applicants or contractor shall provide a bond equal to the combined value of the trees within the public right-of-way ($20,900, total) which shall be released after 5 years after construction has finished if all of the street trees within 25 feet of the construction remain

in good health and good condition.

2. **Contract engineer.** Prior to issuance of an encroachment permit for proposed work in the public right-of-way, the applicant shall file a deposit of $15,000 for each installation site to be used by the City to cover the costs associated with contract engineer to monitor construction and excavation within the right-of-way. The applicants are responsible for the full cost of the contract engineer.

3. **Contract arborist.** Prior to issuance of an encroachment permit for proposed work in the public right-of-way, the applicant shall file a deposit of $15,000 for each installation site to be used by the City to cover the costs associated with a City contract arborist to monitor tree pruning associated with the proposed construction and excavation in the public right-of-way. The applicants are responsible for the full cost of the contract arborist.

4. **Patch and repair.** The applicant shall patch and repair City sidewalks and other improvements in the public right-of-way, such as curbs or walls, to match the color, texture, materials, and scoring pattern of the existing improvements, including custom integral concrete color in accordance with City of Piedmont standard plans and as directed by the Director of Public Works.

5. **Alternative vault design and location - utilities**. Prior to issuance of an encroachment permit, applicants or contractor shall provide detailed utility plans with existing utilities locations and shall pot-hole for utilities as required by the Director of Public Works. If an approved location is found to be unsuitable due to conflicts with underground utilities then the applicant shall relocate the underground vault to a location in the parking lane of the street immediately adjacent to the approved location. Street-rated underground vault and construction shall be used for all street locations subject to review and approval of the City Engineer. If the street location is also unsuitable due to conflicts with tree roots, utilities, or other physical condition(s), then the project shall be subject to new application(s) and fees and shall be scheduled for review by the Planning Commission and City Council.

6. **Alternative vault design and location - tree roots**. Prior to issuance of an encroachment permit for installation of the antennas and equipment, the applicants or contractor shall perform test excavation of the area of the vault excavation by hand and/or with an air spade to identify major roots (2 inches in diameter or greater) within the area of excavation, as required by the Public Works Director. If an approved location is found to be unsuitable due to conflicts with major tree roots then the applicant shall relocate the underground vault to a location in the parking lane of the street immediately adjacent to the approved location. Street-rated underground vault and construction shall be used for all street locations subject to review and approval of the City Engineer. If the street location is also unsuitable due to conflicts with tree roots, utilities, or other physical condition(s), then the project shall be subject to new application(s) and fees and shall be scheduled for review by the Planning Commission and City Council.

7. **Contractor's general liability insurance.** To ensure that the contractor doing work in the City will be responsible for damages caused by the work to City property or to neighboring property, the applicants shall require all contractors performing work on the Project to maintain General Liability Insurance for protection from claims for damages because of bodily injury, including death, and claims for damages, other than to the contractor's work itself, to property which may arise out of or result from the contractor's operations. Such insurance shall be written for not less than $1,000,000 per occurrence. The insurance shall

include an endorsement requiring 10 days prior notice to the City if the insurance is to be cancelled or changed, and the applicants shall immediately arrange for substitute insurance coverage. If the contractor's insurance carrier states in writing that it is unable to provide the required endorsement, then the applicants shall be responsible for providing the City with the required notice if the insurance is to be cancelled or changed. The applicants' failure to provide such notice shall constitute grounds for revocation of the City's wireless communication facilities permit. If the applicants do not have a general contractor, the applicants shall maintain property insurance and coverage for contractors, which is substantially equivalent to the contractor's requirement of this section.

8. **Noise study and field testing of equipment noise.** The applicant shall prepare an acoustical study for the specific equipment to be installed including manufacturers' specifications and field tested noise levels prior to issuance of an encroachment permit for the approved scope of work. Prior to completion of the project, the applicant shall provide a copy of an acoustical report prepared in the field by an acoustical engineer which demonstrates that noise levels are 50 dBA or less per occurrence or incident. If noise exceeds 50 dBA per occurrence or incident, then the applicant or contractor shall install measures to reduce the noise, such as additional insulation, mufflers, etc., as required by the Building Official.

9. **Minimum setback for new street lights.** The installation of new street lights must meet all City of Piedmont standards as required by the City Engineer. The new street lights is conditioned to be located a minimum of 18 inches as measured to the front of curb, or farther, to provide a minimum of 18 inches from the antennas to the front of curb, in plan view.

10. **Radio frequency radiation testing.** Prior to issuance of an encroachment permit, the applicant shall provide a revised radio frequency radiation exposure report which specifies the maximum radiation potential of the equipment, including full utilization of the equipment and cumulative radiation levels. Prior to completion of the project and the release of any bond or deposit, the applicant shall provide to the Planning Department the results of radio frequency and electromagnetic radiation testing conducted at each of the sites and prepared by a qualified electrical engineer. Should results of the testing reveal inconsistencies with the application and the provided radio frequency radiation exposure report, then the applicant shall alter the design of the antenna and communication equipment to bring the project's radio frequency and electromagnetic radiation levels to those specified in the application and reports, with the altered design receiving verification of compliance through further field tests. Should the applicant or owner of the WCF equipment be unable to comply with this condition of approval, the facility must be disconnected from power until the applicant has obtained approval from the City Council for a new radio frequency and electromagnetic radiation level. The radio frequency and electromagnetic field radiation exposure report shall be peer reviewed at the expense of the applicant or owner of the WCF equipment.

11. **Future modifications.** Future modifications of the approved installation that extend beyond the approved project site, increase excavation beyond the approved project site, or that remove or subvert the concealment design of the approved antennas and equipment, including the underground vaults and shielding of the antennas, shall constitute a new application and shall require new application forms and fees. Applications that extend beyond the approved project site, increase excavation beyond the approved project site, or that remove or subvert the concealment design of the approved antennas and equipment shall not be eligible for Planning Director review under Rule 6409 processing.

12. **Construction Management Plan.** The applicant or contractor shall develop a comprehensive Construction Management Plan. The Construction Management Plan shall address noise, vibrations, traffic control, parking, debris removal, dust control, sanitary facilities, site safety security and other potential construction impacts, as well as other details involving the means and methods of completing the Project, including the construction route and the days and hours permitted for heavy excavation. Outside construction involving high levels of noise, including excavation, hammering, and pile driving, shall be limited to Monday through Saturday, from 8:30 a.m. to 4:30 p.m. Construction personnel shall be instructed not to park in front of driveways to private residences. The plan shall specify the sequencing of pruning, demolition, and construction activities. The City Building Official may require modifications and amendments to the Construction Management Plan throughout the course of the Project and until the Final Inspection.

13. **Construction Site Control of Stormwater**. The California Regional Water Quality Control Board requires all projects that disturb the site to comply with Provision C.6 of the San Francisco Bay Regional Stormwater NPDES Permit in order to prevent construction site discharges of pollutants and other regulated materials during construction. Prior to the issuance of a building permit, the Applicant shall submit a construction stormwater management plan prepared by a licensed Civil Engineer to achieve timely an defective compliance with Provision C.6. Permit Provision C.6.c.ii provides sources for site specific, and seasonally- and phase-appropriate, effective Best Management Practices (BMPs) that must be incorporated into the stormwater management plan. Copies of the Municipal Regional Stormwater Permit are available from the Piedmont Public Works Department and on-line at cleanwaterprogram.org.

14. **Continual Street Access for Emergency Vehicles.** The Construction Management Plan shall specifically address methods of providing continual street access for emergency vehicles at all times, which shall be subject to review and approval by the Fire Chief.

15. **Haul routes.** All equipment and vehicle haul routes shall be provided to the City for review and approval. To the extent possible, haul routes shall attempt to minimize or eliminate use of minor residential roadways. Street and pavement conditions shall be observed and documented by the City on all haul routes prior to commencement of construction. Damage or observable and unusual wear and tear to haul routes on city roadways as specified by the City shall be repaired at the Property Owner's expense after Final Inspection.

16. **Site Safety Security**. The City and the public have an interest in not having an unfinished project blighting the neighborhood, restricting access, and undermining property values. These public interests are primarily safety and aesthetics, and diminishment of property values. Prior to the issuance of an encroachment permit for the approved project, Crown Castle NG West LLC shall provide to the City a specific cash deposit, letter of credit, bank guarantee, or other similar financial vehicle ("Site Safety Security") in the amount of $100,000 for each site to ensure the Project site is not left in a dangerous or unfinished state, and if any funds are remaining, to complete repairs in the public right-of-way. City shall release such security to Crown Castle NG West LLC at the time it complete the final inspection and certification of compliance with all conditions of approval.

    a. The Site Safety Security shall be in an amount to include three components:
        i. safety, which means the cost to make the site and structure safe and accessible if construction should cease mid-way through the Project;

ii. aesthetics, which means an amount to install and maintain hardscape paving and landscaping all around the Project; and
iii. staff and consultant time to evaluate and implement this condition.

b. If, as the Project proceeds, the expected cost of these components increases beyond the original estimate in the opinion of the Director of Public Works, the City may require Crown Castle NG West LLC to increase the amount of the Site Safety Security by the additional amount. Crown Castle NG West LLC shall provide City with written evidence of compliance within 15 working days after receiving written notice of the additional required amount. The City shall retain, at Crown Castle NG West LLC's expense, an independent estimator to verify the total expected costs to complete the Project and any subsequent revisions.

c. The form and amount of the Site Safety Security is subject to the approval of the Director of Public Works. Payment to City under the Site Safety Security shall be made payable upon demand by the City and prior to the issuance of the Building Permit, conditioned solely on the Director of Public Works' certification on information and belief that all or any specified part of such Performance Security is due to the City.

d. The Site Safety Security shall not be released until the Project has an approved Final Inspection by the Building Official. However, if sufficient work has been completed according to the benchmarks and construction values as established under the Construction Completion Schedule, the Site Safety Security may be reduced to the extent the Director of Public Works in his sole discretion determines is appropriate.

17. **City Facilities Security.** The applicant ("Crown Castle NG West LLC) shall provide a specific cash deposit, letter of credit, bank guarantee, or other similar financial vehicle ("City Facilities Security") in the amount of $100,000 per site as established by the Director of Public Works. This financial vehicle serves as an initial sum to cover the cost of any potential damage to City property or facilities in any way caused by Crown Castle NG West LLC's contractors or subcontractors, or any of their agents, employees or assigns, and related in any way to the Project. The Crown Castle NG West LLC is responsible for the full cost of repair as determined by the City Engineer prior to final inspections. The form and terms of such City Facilities Security shall be determined by the Director of Public Works after consultation with the Property Owner. The Director may take into account any of the following factors: the cost of construction; past experience and costs; the amount of excavation; the number of truck trips; the physical size of the proposed project; the logistics of construction; the geotechnical circumstances at the site; and City right-of-way and repaving costs.

a. To provide clear baseline information to assist in determining whether damage to the City's facilities has been caused by Crown Castle NG West LLC or others working for or on behalf of Crown Castle NG West LLC, the City will document such facilities (including, without limitation, streets and facilities along the approved construction route as specified in the Construction Management Plan, to establish the baseline condition of the streets and facilities. The City shall further re-document the streets as deemed appropriate after the Project commences until the Director of Public Works determines that further documentation is no longer

warranted. As part of the documentation, the City may water down the streets to better emphasize any cracks or damage in the surface. Crown Castle NG West LLC is responsible for the full cost of the documentation and repair work as determined by the City Engineer, and shall reimburse the City for those costs prior to the scheduling of final inspection.

b. When the City Facilities Security is in a form other than cash deposit with the City, the proceeds from the City Facilities Security shall be made payable to the City upon demand, conditioned solely on the Director of Public Works' certification on information and belief that all or any specified part of the proceeds are due to the City.

18. **Neighboring Property Damage Security**. The Applicant shall provide adequate and appropriate insurance or bonds, as approved by the Director of Public Works and City Attorney against damage to neighboring properties by any construction, excavation, and related work in any way involving the project, such insurance or bonds to be in the amount of $1,000,000.00 for each installation site and with any conditions established by the Director of Public Works after consultation with the Applicant (Crown Castle NG West LLC). If the Director of Public Works determines that obtaining any particular insurance would be extremely difficult for Applicant due to its lack of availability even at an increased cost, the Director of Public Works may authorize an alternative method of providing equal protection to neighboring properties, including but not limited to partial coverage by Umbrella Insurance if that appears appropriate. Such insurance or any alternative method shall allow for claims to be made for up to one year after the final inspection of the Applicant's project. Any and all such insurance or any alternative method shall specifically indicate that it covers damages to neighboring private properties, and if such insurance is meant to also cover other potential damages, such as personal injuries or damages to other than the above named properties, any such further coverage shall be in addition to the $1,000,000 earmarked for neighboring properties.

19. **Height Verification**. Prior to completion of the project and release of any bonds or security deposits, the applicant shall provide the Building Official written verification by a licensed land surveyor stating that the height of the new utility pole and the bottom and top edges of the antennas match the indicated heights in the approved plans. If the heights exceed those approved by the City Council, then the applicant or contractor shall reduce the height of the utility pole(s) and antenna(s) until they comply.

CITY COUNCIL ACTION REQUIRED:

The City Council is the final deciding authority for the proposed wireless communication facilities permit applications, variance applications, and site agreement. The Planning Commission shall make a recommendation to the City Council regarding the proposed applications' compliance with Municipal Code regulations and General Plan goals, policies, programs, and actions. The City Council shall take the Planning Commission's and Park Commission's recommendations under consideration, pursuant to section 17.46.080 of the City of Piedmont Municipal Code. The City Council's decision is final.

Attachments:

Attachment A	Pages 30-34	Project Details Summary Chart
Attachment B	Pages 35-171	Project Applications and Reports, including Arborist Report and Radio Frequency Radiation Exposure Reports
Attachment C	Pages 172-174	Photographic Simulations
Attachment D	Pages 175-181	Hortscience Arborist Report and Peer Review
Attachment E	Separate, in Report 4a	Design Guidelines and General Plan Policies
Attachment F	Separate in Report 4a	Public Comment 1) received by June 1, 2017; and 2) received by June 5, 2017
Attachment G	Separate, online	Park Commission Staff Report June 7, 2017, can be found at: http://www.ci.piedmont.ca.us/publicworks/docs/crowncastle/2017-06-07_park_report.pdf
Attachment H	Separate, in Report for 4a and online	Coverage Report filed by the applicants can be found at: http://www.ci.piedmont.ca.us/publicworks/docs/crowncastle/coveragemap.pdf
Attachment I	Separate, hard copy and online	Project Plans and Specifications can be found at: http://www.ci.piedmont.ca.us/publicworks/planning.shtml#CCDAS

Site Number	Location/Zone	Cross Street	Type	(E) Height/ Light	(P) Height/ Light	Project Description	Items for Consideration
PHS01	340-370 Highland Ave **Zone B**	Highland Ave	(E) light pole	31 feet 8 inches Light at 31 feet 8 inches	35 feet 2 inches Light at 31 feet 10 inches	Proposed application would install extension and three antennas to an existing City street light in the same location with maximum height of 35 feet 2 inches. Applicants propose to install three Commscope antennas, model Andrew SBNHH-1D65A (56 inches tall and 12 inches wide). Each antenna has six ports and can receive 350 watts of input power per each port (total maximum input power of 2,100 watts, each antenna). Applicants propose an underground vault for equipment related to antennas. In the vault would be one remote radio (model RRUS-12 B4) and one remote radio (model RRUS-12 B13). Both radios have maximum output power of 2 x 60W (subject to license handling). Each radio can provide service to one to eight wireless service carriers (subject to license handling). Proposed remote radios provide broad frequency capacity and include the following bandwidth ranges: 746 to 756 MHz downlink; 777 to 7787 MHz uplink; 2,110 to 2,155 MHz downlink; 1,710 to 1755 MHz uplink; B13 LTE; and B4 for WCDMA and LTE. Other vault equipment includes a sump pump, two exhaust fans, and a disconnect box.	No variance for height greater than 35 feet because site is Zone B. No variance required for setback to face-of-curb or power meter, which is 8 feet above ground level. No conflicts with driveways or sightlines as there would be no brackets and pole would conceal cabling inside. Potential view impact as proposed antennas would be located between residences at higher elevation and Piedmont Park. Following items may require additional study: • Hazard signs • Appearance of antenna or antennas with “tilt” • Noise of remote radio units, sump pumps, and exhaust fans • Noise of vault cover and surface of vault cover (Steel? Cement? Fiberglass?) • Scenic views
PHS02	505 Blair Ave **Zone A**	Highland Ave	(E) utility pole with new 7-foot “bayonet” extension	34 feet No light	45 feet 8 inches No light	Proposed applications would install three antennas on a 7-foot-tall bayonet extension with a maximum height of 45 feet 8 inches to an existing utility pole in the same location. Applicants propose to install three Commscope antennas, model Andrew SBNHH-1D65A (56 inches tall and 12 inches wide). Each antenna has six ports and can receive 350 watts of input power per each port (total maximum input power of 2,100 watts, each antenna). Applicants propose an underground vault for equipment related to antennas. In the vault would be one remote radio (model RRUS-12B4) and one remote radio (model RRUS-12 B13). Both radios have maximum output power of 2 x 60W (subject to license handling). Each radio can provide service to one to eight wireless service carriers (subject to license handling). Proposed remote radios provide broad frequency capacity and include the following bandwidth ranges: 746 to 756 MHz downlink; 777 to 7787 MHz uplink; 2,110 to 2,155 MHz downlink; 1,710 to 1755 MHz uplink; B13 LTE; and B4 for WCDMA and LTE. Other vault equipment includes a sump pump, two exhaust fans, and a disconnect box.	Site is narrow and constrained by sloping topography, narrow right-of-way, guy wire, and private fence. Neighboring property’s Mission Revival style home and porch. No tree issues. Potential view impact as proposed antennas would be between residences at higher elevation and Highland Avenue. Variance for height greater than 35 feet. Power meter is 5 feet above ground level which is a pedestrian hazard. Antenna is closer to curb than existing pole and does not provide 18 inches of separation to front-of-curb. Pole is within 3 feet of driveway curb cut for 505 Blair Ave. Sight line obstruction. Conditioned is worsened by stand-off brackets, risers, and power meter. Following items may require additional study: • Hazard signs • Appearance of antenna or antennas with “tilt” • Noise of remote radio units, sump pumps, and exhaust fans • Noise of vault cover • Surface of vault cover (e.g. Steel plate? Cement? Fiberglass?) • Appearance of stand-off brackets and risers/chases – plans seem to show that stand-off bracket/risers stop short of the antenna • Distance to the face-of-curb (11 inches from existing pole to f.o.c.) • Proximity of driveway and curb cut • Footings of private fence adjacent to excavation • Scenic views

Site Number	Location/Zone	Cross Street	Type	(E) Height/ Light	(P) Height/ Light	Project Description	Items for Consideration
PHS03	799 Magnolia Ave **Zone B**	Bonita Ave	(N) light pole to replace existing	Light at 31 feet 7 inches	34 feet and 8 inches Light at 31 feet and 10 inches	Proposed application would install two new antennas with maximum height of 34 feet 8 inches on a new street light to replace existing street light in the same location. Applicants propose to install two Commscope antennas, model Andrew SBNHH-1D65A (56 inches tall and 12 inches wide). Each antenna has six ports and can receive 350 watts of input power per each port (total maximum input power of 2,100 watts, each antenna). Applicants propose an underground vault for equipment related to antennas. In the vault would be one remote radio (model RRUS-12B4) and one remote radio (model RRUS-12 B13). Both radios have maximum output power of 2 x 60W (subject to license handling). Each radio can provide service to one to eight wireless service carriers (subject to license handling). Proposed remote radios provide broad frequency capacity and include the following bandwidth ranges: 746 to 756 MHz downlink; 777 to 7787 MHz uplink; 2,110 to 2,155 MHz downlink; 1,710 to 1755 MHz uplink; B13 LTE; and B4 for WCDMA and LTE. Other vault equipment includes a sump pump, two exhaust fans, and a disconnect box.	No variance for height required. However a variance is required for power meter which is at 6 feet above ground level, which is a hazard for pedestrians. Site is adjacent to crosswalk and main entrance to Piedmont High School. Sidewalk is wide and provides a 2-foot-wide planter strip between the sidewalk and the curb. Area is adjacent to an old low retaining wall and low hedge in Dress Best For Less parking area. One 18-inch DBH Liquidambar tree is located within 15 feet of the excavation for the proposed underground vault. The project arborist recommends tree protection measures. The City contract arborist reviewed the project arborist report and conducted a site visit. The City contract arborist concluded that the tree's health is good and that construction impacts related to the installation of the streetlight, excavation for the underground vault, and clearance pruning would be within the tolerances of the tree. The City contract arborist recommended tree protection measures in addition to those recommended by the project arborist. Following items may require additional study: • Hazard signs • Appearance of antenna or antennas with "tilt" • Noise of remote radio units, sump pumps, and exhaust fans • Noise of vault cover • Surface of vault cover (e.g. Steel? Cement? Fiberglass?) • Potential obstruction to pedestrian travel
PHS04	358 Hillside Ave **Zone B**	Magnolia Ave	(N) light pole to replace existing	Light at 23 feet and 11 inches	28 feet 8 inches Light at 17 feet 2 Inches	Proposed application would install two antennas with maximum height of 28 feet 8 inches on a new street light to replace existing street light in the same location. Applicants propose to install two Commscope antennas, model Andrew SBNHH-1D65A (56 inches tall and 12 inches wide). Each antenna has six ports and can receive 350 watts of input power per each port (total maximum input power of 2,100 watts, each antenna). Applicants propose an underground vault for equipment related to antennas. In the vault would be one remote radio (model RRUS-12B4) and one remote radio (model RRUS-12 B13). Both radios have maximum output power of 2 x 60W (subject to license handling). Each radio can provide service to one to eight wireless service carriers (subject to license handling). Proposed remote radios provide broad frequency capacity and include the following bandwidth ranges: 746 to 756 MHz downlink; 777 to 7787 MHz uplink; 2,110 to 2,155 MHz downlink; 1,710 to 1755 MHz uplink; B13 LTE; and B4 for WCDMA and LTE. Other vault equipment includes a sump pump, two exhaust fans, and a disconnect box.	No variance required for height or distance to face of curb. However, variance required for power meter at 6 feet above ground level which is a pedestrian hazard. Site is constricted by a step in the sidewalk and perimeter wall, which is owned by the City and which is covered in vegetation. Excavation for underground vault could undermine footing of wall. Sidewalk work may require re-engineering of entire 34-foot-long segment of sidewalk (approximate) to correct stepped condition. There is a 7-inch DBH London Plane tree within 18 feet of the proposed underground vault. Project arborist recommended tree protection measures for work near the London Plane tree. City staff did not request independent review of the work because the proposed vault is 18 feet or more from the tree. Protection measures recommended by the City contract arborist may be applied to the site as a condition of approval. Following items may require additional study: • Hazard signs • Appearance of antenna or antennas with "tilt" • Noise of remote radio units, sump pumps, and exhaust fans • Noise of vault cover and surface of vault cover (Steel? Cement? Fiberglass?)

Site Number	Location/Zone	Cross Street	Type	(E) Height/ Light	(P) Height/ Light	Project Description	Items for Consideration
PHS05	303 Hillside Ave **Zone A**	Oakland Ave	(N) utility pole #11011865 to replace existing	45 feet No street light	52 feet 10 inches (55-foot Class III Pole – per lumber specs: 12.5 inches dia., 39 inch circumference – with 7 feet 6 inches of pole beneath the ground) No street light	Applications would install three antennas with maximum height of 52 feet 10 inches on a new utility pole to replace an existing utility pole in the same location. Applicants propose to install three, 56-inch tall Commscope antennas model Andrew SBNHH-1D65A (56 inches tall and 12 inches wide). Each antenna has six ports and can receive 350 watts of input power per each port (total maximum input power of 2,100 watts, each antenna). Applicants propose an underground vault for equipment related to antennas. In the vault would be one remote radio (model RRUS-12B4) and one remote radio (model RRUS-12 B13). Both radios have maximum output power of 2 x 60W (subject to license handling). Each radio can provide service to one to eight wireless service carriers (subject to license handling). Proposed remote radios provide broad frequency capacity and include the following bandwidth ranges: 746 to 756 MHz downlink; 777 to 7787 MHz uplink; 2,110 to 2,155 MHz downlink; 1,710 to 1755 MHz uplink; B13 LTE; and B4 for WCDMA and LTE. Other vault equipment includes a sump pump, two exhaust fans, and a disconnect box.	Variance required for height greater than 35 feet. Utility pole is closer than 18 inches to front of curb. Variance required for power meter which is 5 feet above ground level and a pedestrian hazard. Utility pole within 6 feet of driveway curb cut and potential sightline obstruction to motorists. Utility pole is an existing condition but stand-off brackets, risers, sign, and power meter will worsen this condition. Large Tudor-style residence at 300 Hillside Avenue and potential significant view obstruction. Project arborist recommends protection measures to manage potential construction impacts and to protect the health of a 13-inch DBH Magnolia tree, two other small trees, and a low juniper hedge on the property at 303 Hillside Avenue. These trees and shrub are expected to tolerate the proposed construction. The trees are not Piedmont street trees. The City Arborist did not review potential impacts to the trees at 303 Hillside Avenue. Following items may require additional study: • Hazard signs • Appearance of antenna or antennas with “tilt” • Noise of remote radio units, sump pumps, and exhaust fans • Noise of vault cover and surface of vault cover (Steel? Cement? Fiberglass?) • Appearance of stand-off brackets and risers/chases • Proximity of driveway and curb cut • Scenic views • Internal consistency with plans • Footings for private wall adjacent to excavation • Lumber specifications for new utility pole (Class III)
PHS06	428 El Cerrito Ave **Zone A**	Jerome Ave	(N) utility pole #110118128 to replace existing	39 feet 7 inches No street light	49 feet 8 inches (50-foot class II utility pole and 7 feet of pole is beneath the ground) No street light	Application would install one antenna with a maximum height of 49 feet 8 inches on a new utility pole to replace an existing utility pole in the same location. Applicants propose to install one Commscope antenna, model Andrew SBNHH-1D65A (56 inches tall and 12 inches wide). The antenna has six ports and can receive 350 watts of input power per each port (total maximum input power of 2,100 watts). Applicants propose an underground vault for equipment related to the antenna. In the vault would be one remote radio (model RRUS-12B4) and one remote radio (model RRUS-12 B13). Both radios have maximum output power of 2 x 60W (subject to license handling). Each radio can provide service to one to eight wireless service carriers (subject to license handling). Proposed remote radios provide broad frequency capacity and include the following bandwidth ranges: 746 to 756 MHz downlink; 777 to 7787 MHz uplink; 2,110 to 2,155 MHz downlink; 1,710 to 1755 MHz uplink; B13 LTE; and B4 for WCDMA and LTE. Other vault equipment includes a sump pump, two exhaust fans, and a disconnect box.	Site is very narrow and constrained. Sloping topography and fire hydrant. Private stucco and cement wall. Street trees are located on this block but no street trees are provided on Jerome Avenue as sidewalk turns at corner (unusual for Piedmont). Main pedestrian route to high school. Potential significant view impact. Variance required for height greater than 35 feet. Setback to front of curb is less than 18 inches. Variance required for power meter which is 5 feet 5 inches above ground level which is a pedestrian hazard. Street trees on the El Cerrito side screen existing utilities, add privacy, and create shade on narrow street. Existing 9-inch DBH Tristaniopsis laurina (Water Gum) tree on El Cerrito would not tolerate proposed construction and would have to be removed per City Arborist. Project arborist recommends widening planter to offset construction impacts. Widened planter would remove 18 inches of part of the 5-foot 2-inch sidewalk, making remaining sidewalk 3 feet 8 inches, which is not ADA compliant (because it would be less than 4 feet wide). Alternative locations for tree and tree well are constrained by the driveway curb cut to 419 El Cerrito Avenue to the north west. Following items may require additional study: • Hazard signs • Appearance of antenna or antennas with “tilt” • Noise of remote radio units, sump pumps, and exhaust fans. • Noise of vault cover and surface of vault cover (Steel? Cement? Fiberglass?) • Appearance of stand-off brackets and risers/chases • Distance to the face-of-curb and proximity of driveway and curb cut • Scenic views • Footings for private wall adjacent to excavation • Lumber specifications for new utility pole (Class II) • LP-1, SP-1, and SP-2 mislabel street tree which is a Tristaniopsis laurina

Site Number	Location/Zone	Cross Street	Type	(E) Height/ Light	(P) Height/ Light	Project Description	Items for Consideration
PHS07	355 Jerome Ave **Zone A**	Keefer Court and Hill Lane	(N) utility pole #110110146 to replace existing	45 feet Light at 21 feet 10 Inches	53 feet 2 inches tall. Pole is 47 feet 6 inches tall. (55-foot pole, Class H3, and 7 feet 6 inches of pole below ground level) (12.5 inches dia., 39 inch circ.). Street light at 21 feet 10 inches.	Proposed application would install three antennas on a new utility pole to replace an existing utility pole in a new location approximately 2 feet to the northwest of the existing location. Existing utility pole would be removed. Applicants propose to install three Commscope antennas, model Andrew SBNHH-1D65A (56 inches tall and 12 inches wide). Each antenna has six ports and can receive 350 watts of input power per each port (total maximum input power of 2,100 watts, each antenna). Applicants propose an underground vault for equipment related to antennas. In the vault would be one remote radio (model RRUS-12B4) and one remote radio (model RRUS-12 B13). Both radios have maximum output power of 2 x 60W (subject to license handling). Each radio can provide service to one to eight wireless service carriers (subject to license handling). Proposed remote radios provide broad frequency capacity and include the following bandwidth ranges: 746 to 756 MHz downlink; 777 to 7787 MHz uplink; 2,110 to 2,155 MHz downlink; 1,710 to 1755 MHz uplink; B13 LTE; and B4 for WCDMA and LTE. Other vault equipment includes a sump pump, two exhaust fans, and a disconnect box.	Variance required for height greater than 35 feet. Variance required for antenna closer than 18 inches to face of curb. Photo simulation shows antenna extending over the street. Power meter is 5 feet from ground level and a hazard to pedestrians. Potential significant view impact. Potential damage to 13-inch DBH London Plane tree, as well as a second London Plane tree 21 feet to the northwest of the existing utility pole. Both trees are Piedmont street trees and in good condition. Project arborist recommends removing existing pole by cutting at ground level and constructing new pole in a new location. Applicants show new location 2 feet to the northwest of existing location. Vault would be in a central location between the two trees. City contract arborist notes that the canopy of the 13-inch DBH London Plane would need to be pruned on the north to provide clearance for construction. City contract arborist concludes that installation of the new pole and vault at the new locations would be within the tolerances of both trees if careful construction methods were used. The City arborist report provides additional protection guidelines. Following items may require additional study: • Hazard signs • Appearance of antenna or antennas with “tilt” • Noise of remote radio units, sump pumps, and exhaust fans. • Noise of vault cover and surface of vault cover (Steel? Cement? Fiberglass?) • Appearance of stand-off brackets and risers/chases • Distance to the face-of-curb • Scenic views • Internal consistency with plans • Lumber specifications for new utility pole (Class H3)
PHS08	1159 Winsor Ave **Zone A**	Park View Ave	(N) utility pole #110113803 to replace existing	30 feet 1 inch Light at 25 feet 2 Inches	38 feet 6 inches (45-foot pole, no extension, and 6 feet 6 inches of pole beneath ground level). Class III Pole (12.5 Inches dia.) with new power meter, risers, stand-off brackets, and sign Light at 25 feet 2 inches.	Proposed application would install two antennas with maximum height of 38 feet 6 inches on a new utility pole to replace an existing utility pole in a new locations approximately 2 feet 6 inches to the east of the existing location. Existing utility pole would be removed. Applicants propose to install two Commscope antennas model Andrew SBNHH-1D65A (56 inches tall and 12 inches wide). Each antenna has six ports and can receive 350 watts of input power per each port (total maximum input power of 2,100 watts, each antenna). Applicants propose an underground vault for equipment related to antennas. In the vault would be one remote radio (model RRUS-12B4) and one remote radio (model RRUS-12 B13). Both radios have maximum output power of 2 x 60W (subject to license handling). Each radio can provide service to one to eight wireless service carriers (subject to license handling). Proposed remote radios provide broad frequency capacity and include the following bandwidth ranges: 746 to 756 MHz downlink; 777 to 7787 MHz uplink; 2,110 to 2,155 MHz downlink; 1,710 to 1755 MHz uplink; B13 LTE; and B4 for WCDMA and LTE. Other vault equipment includes a sump pump, two exhaust fans, and a disconnect box.	Narrow and constrained street with limited turnaround space. Access to school property. Photo sim shows antenna extending over the street on proposed 4-foot cross arm at top of pole. Proposed vault is very near City sewer and storm drain inlet. Existing anchor to be used for guy wires. Construction and pole “tip up” will require access onto School District property or there would be damage to magnolias and oaks for clearance pruning. Variance required to exceed 35 feet height. Variance required to construct antennas over the street (not the required 18 inches from antenna to face-of-curb) and power meter to be constructed at 5 feet 6 inches, pedestrian hazard. Potential damage to 26-inch DBH Canary Island Date Palm tree and 5-inch Horse Chestnut tree. Both trees are Piedmont street trees and in good condition. Project arborist recommends removing existing pole by cutting at ground level so as to not disturb roots near base of Palm tree and constructing new pole in a new location. Applicants show new location 2 feet 6 inches to the east of existing location. Vault would be in a central location between the two trees. City contract arborist notes that it is likely that “additional clearance pruning of trees on or adjacent to the street will occur.” The City arborist report provides additional tree protection guidelines. Following items may require additional study: • Hazard signs • Appearance of antenna or antennas with “tilt” • Noise of remote radio units, sump pumps, and exhaust fans. • Noise of vault cover and surface of vault cover (Steel? Cement? Fiberglass?) • Appearance of stand-off brackets and risers/chases • Distance to the face-of-curb, access and construction • Scenic views • Internal consistency with plans • Lumber specifications for new utility pole (Class III)

Site Number	Location/Zone	Cross Street	Type	(E) Height/ Light	(P) Height/ Light	Project Description	Items for Consideration
PHS09	314 Wildwood at Piedmont Park **Zone B**	Prospect Rd	(N) new antennas and new street light	None	35 feet 1 inch Light at approximately 31 feet 6 inches (not specified on plan)	Proposed application would install two antennas with maximum height of 35 feet 1 inch on a new steel street light in the location of an existing school parking sign. Applicants propose to install two Commscope antennas, model Andrew SBNHH-1D65A (56 inches tall and 12 inches wide). Each antenna has six ports and can receive 350 watts of input power per each port (total maximum input power of 2,100 watts, each antenna). Applicants propose an underground vault for equipment related to antennas. In the vault would be one remote radio (model RRUS-12B4) and one remote radio (model RRUS-12 B13). Both radios have maximum output power of 2 x 60W (subject to license handling). Each radio can provide service to one to eight wireless service carriers (subject to license handling). Proposed remote radios provide broad frequency capacity and include the following bandwidth ranges: 746 to 756 MHz downlink; 777 to 7787 MHz uplink; 2,110 to 2,155 MHz downlink; 1,710 to 1755 MHz uplink; B13 LTE; and B4 for WCDMA and LTE. Other vault equipment includes a sump pump, two exhaust fans, and a disconnect box.	No variance for height greater than 35 feet because Zone B. No variance for distance to face of curb. Power meter at 8 feet above ground level. Vault would be located in 3-foot-wide parkway/planting strip which is currently paved. No potential conflicts with adjacent trees. Potential significant view impact as location is between residences with upper level balconies and Piedmont Park. Following items may require additional study: • Hazard signs • Appearance of antenna or antennas with “tilt” • Noise of remote radio units, sump pumps, and exhaust fans • Noise of vault cover and surface of vault cover (Steel? Cement? Fiberglass?) • Scenic views • Internal consistency with plans

CITY OF PIEDMONT
120 VISTA AVENUE
PIEDMONT, CA 94611
TEL: (510) 420-3050
FAX: (510) 658-3167

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DEPOSIT PAID _____
DATE FILED _____
NUMBER _____
PLANNER _____
(For staff use only)

APPLICATION FOR: WIRELESS COMMUNICATIONS FACILITIES (WCF)

Purpose: *The purpose of the application is to provide a mechanism for an applicant to supply necessary information to the City of Piedmont so that it can review the proposed project for conformance with all applicable regulations and guidelines. The purpose of Chapter 17.46, Wireless Communications Facilities, is to provide a comprehensive set of standards for the development and installation of wireless communication facilities. The regulations are designed to protect and promote public safety and community welfare, property values, and the character and aesthetic quality of the city, while at the same time not unduly restricting the development of wireless communication facilities, and not unreasonably discriminating among wireless communication service providers of functionally equivalent services, including retail and other commercial providers of wireless communication services. This division applies to applications for approval of the installation of new or modified wireless communication facilities, including applications previously received by the city but not yet approved, disapproved or conditionally approved by a final city decision.*

Fees:

X	$2,710	Initial Deposit (the total fee will be equal to the cost to process)
	$5,425	Initial Deposit if 3rd party review is required pursuant to 17G.3.1(i) (the total fee will be equal to the cost to process)
	$815	One variance
X	$405	Each additional variance
$2,710	**TOTAL**	

Project Address: PIEDMONT HIGH SCHOOL 06 - ACROSS 428 EL CERRITO AVE (ZONE A)

2 sets of plans must be submitted with this application for an initial staff review for completeness.
8 additional sets of plans may be requested by City Staff if this application is to be heard by the Planning Commission and/or the City Council.

Application Fees
The cost to process the application will determine the final application fees. You will be charged for any amount not covered by the initial deposit. If the cost to process the application is less than the initial deposit, you will receive a partial refund of your deposit.

Please indicate what steps you have taken to discuss this project with City staff prior to submittal: Beacon Development has met with Kevin Jackson and Pierce Macdonald-Powell on a number of occasions to discuss this project. Also conducted at least 3 site meetings.

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Detailed Description of Proposed Project: ***Please attach additional pages, as needed.***
See attached detailed project description.

I. Applicant Information:

Name of Commercial Wireless Provider: Crown Castle NG West LLC
Contact Person at Company: Sharon James
Company Address: 695 River Oaks Parkway
City San Jose **State** CA **Zip** 95134
Office phone #: (408) 468-5553 **Mobile Phone #:** (408) 426-6629
Fax #: _____ **Email Address:** _____

Project Applicant (e.g. the wireless provider's agent):
Company Name: Beacon Development, LLC
Contact Person at Company: Bob Gundermann & Jason Osborne
Company Address: 3 Rovina Lane
City Petaluma **State** CA **Zip** 94952
Office phone #: (925) 899-1999 **Mobile Phone #:** (415) 559-2121
Fax #: (415) 358-5766 **Email Address:** jason@beacondev.net
Agent's Prof. License #: n/a **Expiration Date:** _____
Piedmont Business License # of Agent: Will obtain **Expiration Date:** _____
(Please contact the City Clerk at 510-420-3040 for Piedmont Business License information.)

Property Owner Information:
Property Owner Name: City of Piedmont
Mailing Address: 120 Vista Avenue
City Piedmont **State** CA **Zip** 95611
Office phone #: (510) 420-3039 **Mobile Phone #:** _____
Fax #: (510) 658-3167 **Email Address:** kjackson@ci.piedmont.ca.us

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My signature below signifies that I:

- have read and provided all applicable information per this Application for Wireless Communications Facilities, including the information listed in the Submittal Checklist.
- have reviewed the legal description on the property deed and indicated all recorded easements and deed restrictions on the submitted site plan (*Please provide a description here of the easements and restrictions that were indicated on the property deed of the subject property*) _____
- believe the information provided in this application is accurate to the best of my knowledge.
- am aware that my initial deposits of $2,360 or $4,720 (exclusive of variance fees) may not cover the cost to process this pre-application and that additional deposits may be required. I agree to provide additional deposits if they are required. I am aware that the City will deduct the costs to cover the processing of this application from the deposit(s), and that any unused money remaining after action has been taken on the project, will be returned to me.
- am aware that City staff, Planning Commissioners, and/or City Council Members will be on the property to view proposed construction. (Please note any special instructions regarding access to the property such as gates, alarms, etc.) _____
- understand that if this application is approved, a building permit (issued within one year from the approval date) is required for construction and that no construction may commence prior to the issuance of the building permit. No changes may be made without City approval, and changes may require a new application.

SIGNATURE OF PROPERTY OWNER:

Pursuant to RUA between City of Piedmont and Crown Castle NG West LLC

Print Name Signature Date

SIGNATURE OF WIRELESS SERVICE PROVIDER'S AUTHORIZED REPRESENTATIVE:

Shawn Jones 5/19/17

Print Name Signature Date

AGENT AUTHORIZATION: This authorization must be signed by the property owner if the applicant is not the property owner. This authorization also permits City staff to contact the Wireless Service Provider and it agent if necessary.

I authorize Jason Osborne to act as my agent in the processing of all matters pertaining to this application.

SIGNATURE OF PROPERTY OWNER _____ date 5/19/17

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II. Land Use Information:

A. Land Use Zone:

Please circle the land use zone of the proposed project: (A) B C D E

If the project is located in a zone other than Zone B, other than publicly-owned facilities in other zones, or other than the public right-of-way, please submit a written statement explaining the attempts made to locate in Zone B, on publicly-owned facilities in other zones, and in the public right-of-way, and the supporting materials outlined in the Documentation Checklist (Section VIII. of this application).

B. New Facility Project:

1. Is the proposed project located on a property used for residential purposes? ☐ Yes ■ No

2. Does the project include the siting or construction of a new WCF facility? ■ Yes ☐ No

3. Does the project consist of communications equipment located completely inside a structure, not visible from the outside, whose purpose is solely to provide wireless communications within the same structure, including Wi-Fi hotspots and access points, with no alteration to the exterior of the structure? ☐ Yes ☐ No

C. Existing Facility Project:

1. Is the project at an existing WCF facility? ☐ Yes ■ No
2. Is the project for maintenance and repair (in which the model, type, mechanical, and electrical specifications, size and number of existing antennas, feed lines and ground-mounted equipment remains the same; OR is the project an upgrade project in which any equipment is added and/or replaced? ☐ Maintenance & Repair ☐ Upgrade
3. If the project is an "Upgrade" to an existing facility, please identify any of the following descriptions that apply:

a.	Replacement of antenna(s):	☐ Yes ☐ No	number_____
b.	Addition of antenna(s):	☐ Yes ☐ No	number_____
c.	Replacement of feed line(s):	☐ Yes ☐ No	number_____
d.	Addition of feed line(s):	☐ Yes ☐ No	number_____
e.	Replacement of ground mounted equipment:	☐ Yes ☐ No	number_____
f.	Addition of ground mounted equipment:	☐ Yes ☐ No	number_____
g.	Changes to access, parking, or landscaping:	☐ Yes ☐ No	
h.	Increase in the height of freestanding tower:	☐ Yes ☐ No	
i.	Replacement of wireless tower or foundation:	☐ Yes ☐ No	
j.	Changes to conceal or camouflage exterior:	☐ Yes ☐ No	

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k. Other (describe): _____

4. If the project is an "upgrade" to an existing facility, please describe how the project camouflages, conceals and/or screens the modified equipment so as to mitigate any adverse impact on aesthetics and views. N/A

5. If the project is an "upgrade" to an existing facility, please describe any proposed changes to the physical size of the exposed surface area of all existing components of the tower or base station (including but not limited to the height, circumference, width of the wireless tower or base station, etc.) or any increase by more than 10% from the existing dimensions of any structure(s) required to support the wireless tower or base station (such as guy wires, brackets, beams, etc.). N/A

D. Facilities located within the Public Right-of-Way:

1. Is the provider is a telephone corporation? ☒ Yes ☐ No
   → If yes, please provide certification as outlined in Section IX of this application.
2. Do you have an environmental review document certified by the CPUC? ☒ Yes ☐ No
   → If yes, please provide a copy of the document as outlined in Section IX of this application.
3. Is the facility proposed to be sited on a City pole (streetlight standard)? ☒ Yes ☐ No
   → If yes, please provide a list of the pole(s) as outlined in Section IX of this application.
4. Is the facility proposed to be sited on a third party's utility pole? ☐ Yes ☒ No
   → If yes, please provide written authorization from the appropriate utility company.

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E. Height:

What is the maximum height (measured from lowest adjacent grade) of the new or replacement antenna, pole and/or equipment? 47 feet 4 inches

(Please be aware of the maximum building height from grade for each zone in which the wireless communication facility is located, including existing structures or facilities to which the antennae are proposed to be mounted.)

F. California Environmental Quality Act (CEQA):

Do you believe the project is exempt from CEQA? ☒ Yes ☐ No

1. If yes, please cite the statutory or categorical exemption in Articles 18 and 19 of the CEQA Guidelines, Title 14 of the California Code Regulations and explain how the project meets this exemption: Section 15301(b)

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III. Building and Structural Information:

A. Loading:

Are additional gravity and wind loads likely to result from components of the project, such as additional arrays, or bigger, heavier antennas or mounting arms not accounted for in the original design? ■ Yes ☐ No

1. If yes, please describe the new loads and the equipment causing them. Adding two antennas. New structurals will be provided at time of BP. submittal.

B. Excavation, trenching and grade modifications:

Does the proposed project include any excavation, trenching and/or grade modifications?

■ Yes ☐ No

1. If yes, please describe: See attached detailed project description

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IV. Applicant's Wireless Communications Facilities Findings:

The following information is required from all applicants.

Please describe how the proposed project meets the following summarized Wireless Communications Facilities Development Standards outlined in Section 17.46.070 of the City's Municipal Code.

a) **New wireless communications facilities must be collocated with existing facilities and with other planned new facilities whenever feasible..** Please note that §17.46.070.A.1 states "A new wireless tower must be designed and constructed to accommodate future collocation(s) unless the city determines that collocation would be infeasible because of physical or design issues specific to the site." (*Indicate whether the proposed facility will be collocated with another facility. If it will not, comment on the feasibility of collocation and indicate what measures have been taken to attempt to collocate the facility with another facility. Additionally, indicate the aesthetic benefits and drawbacks of the proposed facility.*):
Placing new wireless communication facilities on existing utility structures

b) **No wireless communication facility may exceed 35 feet in height, measured from the ground to the highest point of the wireless communication facility, unless the zoning district in which the wireless communication facility is located expressly provides a higher height limit. Ground mounted wireless communication equipment, base station, antenna, pole, or tower must be the minimum functional height, unless a variance is granted. Roof mounted equipment and antennas must be located to minimize visibility.** (*Indicate the height of any ground mounted equipment, antennas, poles or towers and explain why the proposed heights are required.*):
Ground equipment will be placed in underground vault. No visual impact. Antennas placed at 32'-10" RAD center.

c) **Wireless communication facility(ies) must be designed to minimize visual impacts. When feasible, the facility(ies) must be concealed or camouflaged. The facility(ies) must have a non-reflective finish and be painted or otherwise treated to minimize visibility and the obstruction of views. The facility(ies) may not bear signs, other than certification, warning, emergency contacts, or other signage required by law or expressly required by the City.** (*Describe the materials and finishes of the equipment, antennas, poles, and towers and indicate how these materials and finishes will be non-reflective and will minimize any visual impacts.*): Equipment will be painted to match pole.

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A wireless communication receiving and transmission facility may not adversely affect the public health, peace and safety. (*Indicate any measures proposed to address the public health, peace and safety.*): _____

e) **A wireless communication facility located in the public rightof-way may not cause: (i) physical or visual obstruction, or safety hazard, to pedestrians, cyclists, or motorists; or (ii) inconvenience to the public's use of the right-of-way. Equipment, walls, and landscaping located above grade must be at least 18 inches from the front of the curb and not interfere with the public's use of the right-of-way.** See attached EMF study
Ground equipment will be vaulted and equipment on pole painted to match.

f) **Each wireless communication facility must comply with federal and state statutes governing local agencies' land use authority regarding the siting of wireless communication facilities, including without limitation 47 USC sections 253, 332(c)(7), 47 USC section 1455 (also known as section 6409 of the 2012 Middle Class Tax Relief and Jobs Act), California Government Code sections 50030, 65850.6 and 65964, and California Public Utilities Code sections 7901 and 7901.1. Each reference to a federal and state statutes is to the statute as it may be as amended from time-to-time and to the extent the statute remains in effect.** _____

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V. Applicant's Wireless Communications Facilities Priority for Location Findings:

The following information is required from all projects located in Zones A, C, D & E, projects not located in or on publicly-owned facilities, or projects in locations other than the public right-of-way.

Please describe how the proposed project meets the following summarized Wireless Communications Facilities Development Standards outlined in Section 17.46.040 of the City's Municipal Code.

a) The facility is necessary to close a significant gap in the operator's service coverage or capacity. *Please comment:* Yes per RF propagation maps.

b) The proposal satisfies each of the applicable development standards in section 17.46.070 above. *Please comment:* Yes

c) The applicant has evaluated and met the priority for location standards of section 17.46.040 A above., including the evaluation of a possible alternative site(s) in Zone D that is not used for residential purposes; evaluation of a possible alternative site(s) in non-residential property in Zone A, C or E; evaluation of a possible alternative site(s) on or in an existing structure where the wireless communications facility can be concealed; evaluation of a possible alternative site(s) where collocation with other wireless communications facility is possible; and evaluation of a possible alternative site(s) where the wireless communications structure can be located on or in a new structure that can be incorporated in an inconspicuous or compatible manner with the surrounding area. *Please comment:* There are no viable options in Zone B to cover Zone A because of the topography of Piedmont. Therefore, we chose to place our equipment on existing public utility infrastructure.

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d) The proposed design is consistent with City of Piedmont Design Guidelines. *Please comment:* Yes. We are placing our equipment on existing public utility infrastructure.

e) The proposed facility has been located and designed for collocation to the greatest extent reasonably feasible, and the applicant has submitted a statement of its willingness to allow other wireless service providers to collocate on the proposed facility. *Please comment:* Yes. No issue colocation.

The development standards in 17.46.070 shall be fully considered. *Please make sure you have completed the Findings in Section IV of this application form.*

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VI. Applicant's Variance Findings:

The following information is required from all projects that require a variance.

In order for the Planning Commission to approve an application for a variance, required findings must be made. Please describe how the proposed project meets the variance criteria of Section 17.70 of the City's Municipal Code.

a) **The property and existing improvements present unusual physical circumstances of the property (including but not limited to size, shape, topography, location and surroundings), so that strictly applying the terms of this chapter would keep the property from being used in the same manner as other conforming properties in the zone;** *Describe specific, unique problems with the property, such as location, surroundings, mature trees, natural obstacles or formations, and explain why the improvements cannot be made in conformity with codes and regulations:* Please see attached supplemental variance application material.

b) **The project is compatible with the immediately surrounding neighborhood and the public welfare; and** *Explain why, without the variance, the property cannot be used in the same manner as others in the same zone, and explain how the variance will not give the property an advantage over others in the same zone.:* Please see attached supplemental variance application material.

c) **Accomplishing the improvement without a variance would cause unreasonable hardship in planning, design, or construction.** *Unreasonable hardship" for purposes of this subsection refers to the unusual physical characteristics of the underlying lot and existing improvements on the lot which prohibit development of the lot in a manner consistent with lots conforming to City standards. "Unreasonable hardship" shall not refer to any conditions personal to the applicant. Please describe the hardship(s) inherit to this property:* Please see attached supplemental variance application material.

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CROWN CASTLE

3 Rovina Lane
Petaluma, CA 94952

T 415-559-2121
F 415-358-5766
jason@beacondev.net

May 18, 2017

Pierce Macdonald-Powell
Senior Planner

RE: Variance Application Information for Crown Castle DAS Expansion PHS06 across 428 El Cerrito Ave.

Mr. Macdonald-Powell:

GO 95 and the CPUC regulates the placement of microcellular antennas in relation to the separation between the various utility companies and their lines on wood poles. Due to the terrain in this area we are using 4ft antennas as it provides much better signal control compared to 2ft antennas. Looking at the pole, we need 6 feet of separation between the secondary power (31'-5") and the top of the antenna. Also from the bottom of the antenna to the future Crown Castle fiber (24'-7") we need 2 feet of separation. In total, we need 12 feet of separation between the secondary power and the future crown castle fiber in order to place the antennas. On this pole, we only have 6'-10" of clearance. Therefore, we placed the antennas on top of the pole. Placing the antennas below the communication zone not only would decrease the coverage as it will be affected by surrounding foliage and the building structures, but it would also bring them closer to the pedestrians creating more concern and in these cases, fall outside what is permitable.

The current design of placing the antennas at the top of the pole, allows Crown Castle to adhere to both the State utility regulations as well as achieving the purpose of increased cell/data coverage needed by its customer.

Regards,

Jason Osborne
Beacon Development, LLC
jason@beacondev.net
(415) 559-2121
(415) 358-5766 fax

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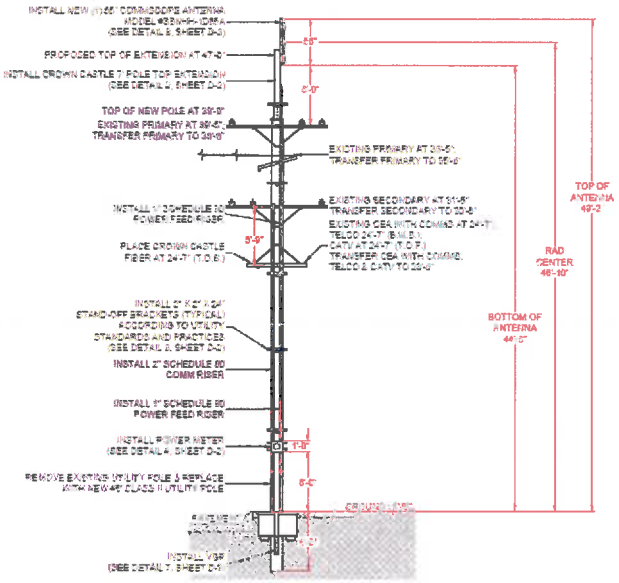

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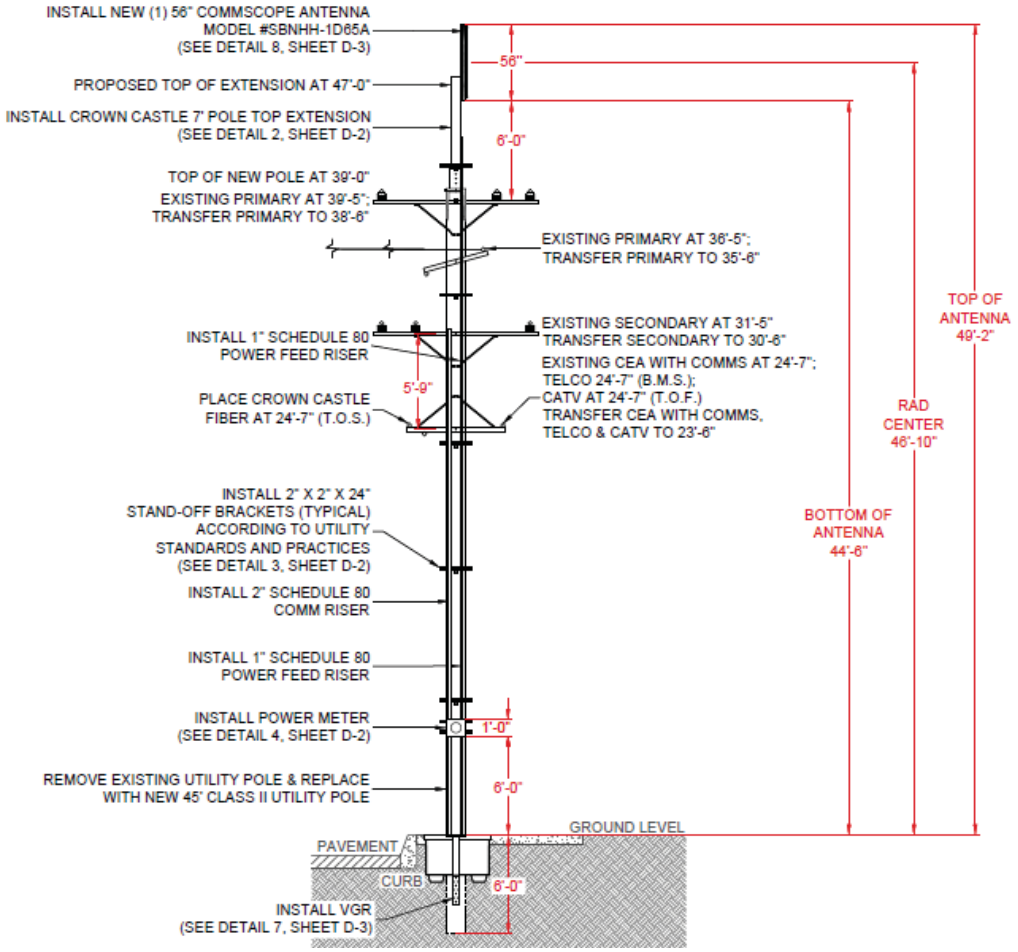
CA-PHS06m

Rad Center (46’ 10”)

GO 95 and the CPUC regulates the placement of microcellular antennas in relation to the separation between the various utility companies and their lines on wood poles. Due to the terrain in this area we are using 4ft antennas as it provides much better signal control compared to 2ft antennas. Looking at the pole, we need 6 feet separation between the secondary power (31’ 5”) and the top of the antenna. Also from the bottom of the antenna to the future crown castle fiber (24’ 7”) we need 2 feet separation. In total we need 12 feet separation between the secondary power and the future crown castle fiber in order to place the antenna which we don’t have. We only have 6’ 10” clearance on this pole, therefore we placed the antenna on top of the pole. Placing the antenna below the communication zone not only would decrease the coverage as it will be affected by surrounding foliage and the building structures, but it would also bring them closer to the pedestrians.



VI. Applicant's Variance Findings:

The following information is required from all projects that require a variance.

In order for the Planning Commission to approve an application for a variance, required findings must be made. Please describe how the proposed project meets the variance criteria of Section 17.70 of the City's Municipal Code.

a) **The property and existing improvements present unusual physical circumstances of the property (including but not limited to size, shape, topography, location and surroundings), so that strictly applying the terms of this chapter would keep the property from being used in the same manner as other conforming properties in the zone;** *Describe specific, unique problems with the property, such as location, surroundings, mature trees, natural obstacles or formations, and explain why the improvements cannot be made in conformity with codes and regulations:* Please see attached supplemental variance application material.

b) **The project is compatible with the immediately surrounding neighborhood and the public welfare; and** *Explain why, without the variance, the property cannot be used in the same manner as others in the same zone, and explain how the variance will not give the property an advantage over others in the same zone.:* Please see attached supplemental variance application material.

c) **Accomplishing the improvement without a variance would cause unreasonable hardship in planning, design, or construction.** *Unreasonable hardship" for purposes of this subsection refers to the unusual physical characteristics of the underlying lot and existing improvements on the lot which prohibit development of the lot in a manner consistent with lots conforming to City standards. "Unreasonable hardship" shall not refer to any conditions personal to the applicant. Please describe the hardship(s) inherit to this property:* Please see attached supplemental variance application material.

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CROWN CASTLE

3 Rovina Lane
Petaluma, CA 94952

T 415-559-2121
F 415-358-5766
jason@beacondev.net

May 26th, 2017

Pierce Macdonald-Powell
Senior Planner

RE: Variance Application Information for Crown Castle DAS Expansion PHS06 across 428 El Cerrito Ave.

Ms. Macdonald-Powell:

- Variance Issue – Meter will be relocated to 7' above the sidewalk:

Section 5.4.1 (PG&E Green Book)

B. Pole-Mounted Communication Service and Meter Equipment Applicants must ensure that communication service and meter equipment installed on PG&E or joint poles is placed so the bottom of the enclosure is a minimum of 7 feet to a maximum of 8 feet from the finished grade. If it is not possible to meet the height requirements, install a meter pedestal. Ask your PG&E project coordinator for Numbered Document 027911,"Installation Details for Service to Pole-Mounted Communication Equipment," for specific requirements.

- In short, the only other option could be to add a meter pedestal to the sidewalk, which would be a great impact based on our review of the locations, and the City is asking we place all equipment below ground (see below for 'meter vaulting').

- Variance issue – Meter within 18" of sidewalk curb face

The meter is chosen by PG&E based on the loading requirement, and they are unable to utilize a "bulb" type, and we are unable to place the meter inside the vault. PG&E will not place inside the vault due to reliability issues with the grid system, hazards to the public and unsafe worker conditions. Therefore, we are unable to place the meter in another location than where we have proposed it.

In discussions with Planning Staff, we discussed reviewing relocating the new poles outside of the 18" zone, but the risk with this is impacting any ADA sidewalk requirements.

Regards,

Jason Osborne

Jason Osborne
Beacon Development, LLC
jason@beacondev.net
(415) 559-2121
(415) 358-5766 fax

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VII. Notice Instructions:

Required for all projects that will be heard by the Planning Commission and/or City Council (e.g., non-exempt projects, projects without proposed collocation, and projects referred to the Planning Commission by the Planning Director).

1. Complete the attached Notice and make one photocopy for each adjacent neighbor.

2. Hand deliver or mail one copy of the Notice to each adjacent neighbor at least 30 days before the initial hearing. Adjacent neighbors often include one neighbor on each side, three across the street, and three in the rear. You may address the notices to "Property Owner", if you do not know the names of your adjacent neighbors.

3. Complete the attached Affidavit of Service and return it along with one copy of the Notice to the Department of Public Works at least 30 days before the hearing. Please note the Affidavit of Service is not required to be notarized.

4. Please call the Department of Public Works at (510) 420-3050, if you have any questions or would like help in determining the addresses or names of your adjacent neighbors.

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NOTICE OF AN APPLICATION FOR
WIRELESS COMMUNICATIONS FACILITY

Dear Neighbor:

I/ We have submitted an application for consideration by the Piedmont Planning Commission which seeks City approval of an application to (description of project) PIEDMONT HIGH SCHOOL 06 - ACROSS 428 EL CERRITO AVE

The purpose of this form is to notify you of my application. My application will be considered by the Planning Commission on or after (date) _____.

This notice will be followed by a notice from the City confirming the date of the hearing and inviting you to comment on the application. The Planning Commission regularly meets at 5:00 p.m. on the second Monday of every month in the Council Chambers at City Hall, 120 Vista Avenue. Please contact the Department of Public Works at 420-3050, if you have any questions regarding this application.

Signed,

Signature

Date 5/19/17

Jason Osborne
Name of Applicant

ACROSS 428 EL CERRITO AVE
Address of Project

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AFFIDAVIT OF SERVICE BY **APPLICANT/ AGENT**

(To be attached to a copy of the Notice and returned to the Department of Public Works.)

_____ being sworn, says that he or she is over 18 years of age
affiant (applicant/agent) name

and a resident of _____
County, Country

That affiant's **residence address** is _____.

That affiant served a copy of the attached notice of an application for variance and/or Planning Commission design review by placing said copy in an envelope addressed to:

which envelope was then sealed and postage fully prepaid thereon, and thereafter was on _____
date
deposited in the United States mail or delivered personally by hand.

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

Executed on _____ at _____, California.
date address

Signed _____
Affiant's signature

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VIII. Drawing and Document Elements Checklist:

Wireless Communications Facility (WCF) Application

A vital part of the WCF Application is to have adequate plan set information in order to properly review the proposed wireless telecommunications facility in conformance with Chapter 17.46 of the Municipal Code and all other relevant guidelines and regulations. Unless otherwise indicated, you must provide all of the following information. Two (2) sets of drawings (24" x 36" in size) must be submitted with the WCF Application. All drawings must be accurately scaled and dimensioned. One copy of non-drawing documents must be submitted with the WCF Application.

Should your application be deemed complete and placed on the agenda for a Commission or Council hearing, **8 additional sets of plans** will be requested by City Staff.

Existing Site Plan (preferred scale 1/8") should include:

- ■ Scale, north arrow, and dimensions;
- ■ Property lines, easements, streets, pavement striping, sidewalks, curbs, curb ramps, and rights-of-way;
- ■ Location of existing structures, hardscape areas, fences, retaining walls, trees, hedges and other significant site features;
- ■ Roof plans should be shown for all structures (rather than floor plans). Roof plans should include all edges and ridges, the roof slope, overhangs, skylights, chimneys, vents, and other equipment or antennas;
- ■ Setback dimensions measured from the property lines to the closest point of Structure(s) (§17.2.71-73), including eaves and other architectural projections.

Proposed Site Plan (preferred scale 1/8") should include:

- ■ Scale, north arrow, and dimensions;
- ■ Property lines, easements, streets, pavement striping, sidewalks, curbs, curb ramps, and rights-of-way;
- ■ Location of existing and proposed structures, hardscape areas, fences, retaining walls, trees, hedges and other significant site features;
- ■ Roof plans should be shown for all structures (rather than floor plans). Roof plans should include all edges and ridges, the roof slope, overhangs, skylights, chimneys, vents, and other equipment or antennas;
- ■ Footprints (outline) and identification of structures on adjacent properties within 20 feet of the property line or more than 100 feet from the proposed construction. Indicate the dimensions between the closest point of any adjacent structure and the proposed construction;
- ■ Setback dimensions measured from the property lines to the closest point of proposed ground-mounted equipment, antenna, and Structure(s) (§17.2.71-73) including eaves and other architectural projections.

Existing Elevations (or Photographs should no existing building exist) (preferred scale 1/4") should include:

- ■ Scale, dimensions, and drawing label indicating the cardinal direction (or indicated plan direction) the depicted wall is facing;
- ■ All elevations of each structure on which modifications are proposed;
- ☐ Show buildings, other structures, WCF equipment, fences, retaining walls, and any other relevant feature;
- ☐ Indication of building materials for walls, roofs, windows, doors, decorative features, and WCF equipment and antennas;
- ■ Indication of the height of buildings, structures and WCF equipment. Heights are measured to the highest point of the feature from both the lowest adjacent grade and highest adjacent grade. Adjacent grade is where grade meets the footprint of the building or structure;
- ■ Photographs showing existing conditions may be submitted as supplemental information or in place of elevations when no existing structures or buildings exist on site.

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Proposed Elevations (preferred scale 1/4") should include:

- ■ Scale, dimensions, and drawing label indicating the cardinal direction (or indicated plan direction) the depicted wall is facing;
- ■ All elevations of each structure on which modifications are proposed;
- ☐ Show buildings, other structures, WCF equipment, fences, retaining walls, required signage, and any other relevant feature;
- ■ Indication of proposed building materials for walls, roofs, windows, doors, decorative features, and WCF equipment and antennas;
- ■ Indication of the proposed height of new buildings, structures and WCF equipment. Heights are measured to the highest point of the feature from both the lowest adjacent grade and highest adjacent grade. Adjacent grade is where grade meets the footprint of the building or structure;
- ☐ Photographs or photo simulations showing proposed conditions may be submitted as supplemental information.

Equipment Details (preferred scale at least 1/2") should include:

- ■ Scale, dimensions, and drawing label;
- ■ Include details of antenna and other proposed wireless communications equipment.

Landscape plans (preferred scale 1/8") should include:

- ☐ Scale, north arrow and dimensions;
- ☐ Include property lines, footprints of all structures and all hardscape areas;
- ☐ Show planting areas and provide a plant list including the size and species;
- ☐ Arborist report for work within the driplines of existing trees;
- ☐ Provide information on irrigation.

Photo Simulations (optional):

- ■ In addition to proposed elevations, photo simulations may be submitted to demonstrate the aesthetics and impacts of a proposed wireless communications facility.

Story Poles, per City of Piedmont story pole policy.

Graphic Calculations (1 set only):
Please submit plans which graphically illustrate the required calculations. Calculations are expressed as percentages. Separate graphic calculations are to be submitted, as follows:

- ☐ **Existing and Proposed Structure Coverage** equals the number of square feet of structures covering the lot divided by the number of square feet in the lot. (Equipment, antennas, poles, and towers are included in this calculation,) For a complete definition of structure coverage, please see Piedmont City Code §17.2.71-73.
- ☐ **Existing and Proposed Hardscape Surface Coverage** equals the number of square feet of structures plus the number of square feet of all hardscape, all divided by the number of square feet in the lot. For a complete definition of Hardscape Surface, please see Piedmont City Code §17.2.35.

Documentation for sites outside of Zone B, publicly-owned facilities in other zones, or the public right-of-way:

- ☐ **Map and Written Description** showing and describing the exact area in Piedmont which applicant contends cannot receive coverage from a site in Zone B or a site outside of City, showing the boundaries of the area clearly on a map and setting forth the exact street addresses of each Piedmont home not within the area receiving coverage – Piedmont City Code §17G.4.2(a).
- ☐ **Copies of Detailed Technical Reports or Tests** which clearly prove that each home within the area fails to receive coverage from Zone B or from any other Zone within Piedmont, or from specific locations outside of Piedmont – Piedmont City Code §17G.4.2(b).
- ☐ **Copies of Detailed Technical Reports or Tests** which prove that each home within the area does receive coverage from the alternate site proposed by applicant – Piedmont City Code §17G.4.2(c).

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- ☐ **List of All Possible Site Locations within Zone B** and all possible site locations outside of the city from which applicant has conducted tests to determine if coverage is feasible, including copies of all reports or test results from each such possible site – Piedmont City Code §17G.4.2(d).
- ☐ **Exact Information on All Possible Site Locations Outside of Zone B within the City** from which applicant has conducted tests to determine if coverage is feasible, including copies of all reports or test results from each such possible site – Piedmont City Code §17G.4.2(e).
- ☐ **Exact Information on the Alternate Site** proposed by the applicant, including the exact location of the site as shown on a map and by street address, a copy of an executed Lease or PCS Site Agreement for the site, a detailed report on all costs and expenses in constructing and completing such site for use, including a verifiable bid for the work on such site, and an exact schematic drawing – Piedmont City Code §17G.4.2(f).

Documentation for Wireless Communication Facilities located within the Public Right-of-Way (ROW):

- ☐ Certification that the provider is a telephone corporation.
- ☐ Any environmental review document(s) certified by the California Public Utilities Commission for siting the proposed facilities in the City's ROW.
- ☐ For projects in which the facility is proposed to be sited on a City pole (e.g., streetlight standard), please provide a list of said poles including identification by location and badge/ID number.
- ☐ For projects in which the facility is proposed to be sited on a third party's utility pole (e.g., PG&E pole), please provide a list of said poles including identification by location and badge/ID number AND written authorization from the appropriate utility company.
- ☐ Site plans that illustrate the boundaries of the ROW and the location of infrastructure in the ROW, including without limitation sidewalks, curbs, gutters, driveways, landscaping, other existing communications equipment, utility poles, light poles, fire hydrants, bus stops, bike lanes, traffic signals and above and below ground utility equipment vaults, etc.
- ☐ Analysis demonstrating the impacts to sightlines for drivers, bicyclists, and pedestrians.

If you believe that any of the above requirements do not pertain to your project, please call the Department of Public Works at (510) 420-3050 and make an appointment to meet with a planner.

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Crown Castle
695 River Oaks Parkway
San Jose, CA 95134

April 7, 2017

City of Piedmont
120 Vista Avenue
Piedmont, CA 94611
Phn: (510) 420-3050
Fax: (510) 658-3167

RE: Detailed Description of Proposed Crown Castle DAS Expansion Project Across 428 El Cerrito Ave.

PLN2005

To Pierce Macdonald-Powell,

This project involves the following installations:

- REMOVE EXISTING UTILITY POLE & REPLACE WITH NEW 50' CLASS II UTILITY POLE.
- INSTALL NEW 2" X 2" X 24" STAND-OFF BRACKETS (TYPICAL) ACCORDING TO UTILITY STANDARDS AND PRACTICES.
- INSTALL NEW 1" SCHEDULE 80 POWER FEED RISER.
- INSTALL NEW 2" SCHEDULE 80 COMM RISER.
- INSTALL NEW (1) COMMSCOPE SBNHH-1D85A 56" PANEL ANTENNA WITH ELECTRICAL TILT ON NEW ANTENNA MOUNT.
- CROWN CASTLE FIBER AT 24' 7" (T.O.S.).
- INSTALL NEW (1) POWER METER ON STANDOFF BRACKET.
- INSTALL NEW VGR.
- INSTALL NEW 4' X 6' CROWN CASTLE VAULT WITH (2) RRUS-12 RADIOS AND (1) DISCONNECT BOX INSIDE. VAULT TO HAVE NON-SLIP VAULT COVER.
- TRANSFER PRIMARY TO 38'-6".
- TRANSFER PRIMARY TO 35'-6".
- TRANSFER SECONDARY TO 30'-6".
- TRANSFER COMM ARM TO 24' 6".

The equipment on the pole will be painted to match the wood and will be compatible with other poles in the area. The installation will not adversely affect abutting and surrounding neighborhoods and will have no effect on traffic.

Statement of Operations

The proposed facility will use existing electrical and telephone services, which are readily available to the site. No nuisances will be generated by the proposed facility, nor will the facility injure the public health, safety, morals or general welfare of the community. The technology does not interfere with any other forms of communication devices whether public or private.

Upon completion of construction, finetuning of the facility may be necessary, meaning the site will be adjusted once or twice a month by a service technician for routine maintenance. No additional parking spaces are needed at the project site for maintenance activities. The site is entirely selfmonitored and connects directly to a central office where sophisticated computers alert personnel to any equipment malfunction or breach of security.

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Because the facility will be un-staffed, there will be no regular hours of operation and no impact to existing traffic patterns. Existing public roads will provide access to the technician who arrives infrequently to service the site. No on-site water or sanitation services will be required as a part of this proposal.

1. Street use permit shall be obtained by contractor prior to commencing work.
2. All work to be conduced in the right of way.
3. All disturbed landscaping shall be repiaced to similar existing conditions.
4. Any sidewalk closure shall be coordinated with the city and proper signing will be placed.
5. No materials or equipment shall be stored on private property or block access to private property.
6. Cleanup of site will be completed each evening and the site will be returned to existing conditions at the completion of construction.

Alternative Site Analysis

Please find supplemental material discussing alternative any applicable alternative locations or designs on the attached document, which have been reviewed within our RF Propagation package.

Zoning Analysis

The site of the proposed facility is located in a public right-of-way. The site of the proposed facility is located in a public right-of-way. This particular location falls within *Zone A*, and is not preferred by the City. As a follow up to material noted in our application, it is impossible to cover "Zone A" from "Zone B", due to the topography of the area, or without placing a number of highly visible "macro" sites (large monopoles or monopines) surrounding the area which would "send in" a signal, but these would be highly visible and not provide the service intended. It is also important to mention, we are a 'telephone corporation' (Section D, section D.1, D.3 when applicable). Please also refer to Section VI (a)(b) wherein we are utilizing existing utility infrastructure which is design specifically of a "minimum functional height", while placing a Macro site in Zone B would require a much larger (taller) structure with an antenna array consistent with a typical macro site seen throughout the Bay Area. These "small cell" facilities as designed are only intended to cover a small area, and this design presented to the City of Piedmont and its residents presents the least visual impact possible. The sites (also referred to as nodes) are strategically placed throughout the City to enhance cellular coverage, but moving them, or placing them in different "zones" we would jeopardize the overall network.

New Node and Installation of a New Pole

Crown Castle NG West LLC ("Crown Castle") is submitting the accompanying complete application to install its telecommunications network facilities in accordance with your code, ordinances and regulations. Please be advised the Federal Communications Commission (FCC) has adopted Rules and Regulations that impact how you must process this application. **In addition, state law also limits your regulation of Crown Castle's access to the public rights of way.**

Crown Castle's Deployment

Crown Castle provides telecommunications services to wireless carriers. It does so via telecommunications networks installed in the public rights of way that integrate elements including fiber optic cables as well as personal wireless services facilities, such as antennas and related equipment.

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These networks are sometimes referred to as distributed antenna systems ("DAS") or Small Cell networks.

Pursuant to the California Public Utility Commission, Crown Castle has been granted a certificate of public convenience and necessity ("CPCN"). As a result, Crown Castle must be granted access to the public rights of way in the same manner and on the same terms applicable to other certificated telecommunications providers and utilities.

Federal Regulations Applicable to This Application

Federal law and the FCC's rules implementing the law require that this permit application be processed to a final decision by this jurisdiction without undue delay. Specifically, because this application proposes to install new equipment on a new pole in the public rights of way, this application must be acted on within one hundred fifty (150) days from its submission, today.[1]

Moreover, pursuant to FCC regulations, this application is deemed complete 30 days after today, unless you provide written notice to Crown Castle.[2] If you contend that the application is incomplete, within the next 30 days you must provide written notice specifying any items you claim are missing to make the application complete.[3] For each item alleged to be missing, you must specify the code provision, ordinance, application instruction, or otherwise publically-stated procedure that requires the submission of the information.[4]

Among other Federal and State Rights, we note that California Public Utilities Code § 7901 grants a statewide franchise to telephone corporations to place telephone equipment in the public rights- of-way and that use of the rights-of-way by telephone corporations is a matter of statewide concern that is not subject to local regulation except for limited regulation of the time, place, and manner of such use. In addition, the Telecommunications Act limits the authority of local jurisdictions by, among other restrictions, requiring approval within a reasonable period of time. In submitting this application, Crown Castle expressly reserves all of its Federal and State Rights, including, without limitation, its rights under federal and state law to challenge the requirement for a discretionary permit for its proposed installation in the public right-of-way. Neither the act of submitting the application nor anything contained therein shall be construed as a waiver of any such rights.

Please send all written requests for additional information regarding this application to:

Jason Osborne
Beacon Development, LLC
3 Rovina Lane, Petaluma, CA 94952

---

1 In re Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review, Declaratory Ruling, 24 FCC Rcd. 13994 ¶¶ 32, 45-46 (2009) ("FCC Shot Clock Order"); In the matter of Acceleration of Broadband Deployment By Improving Wireless Facilities Siting Policies, Report and Order, FCC 14-153, WT Docket No. 13-238, ¶ 272 (FCC Oct. 21, 2014) ("Wireless Infrastructure Order") (clarifying that DAS nodes that involve installation of new poles trigger the 150 day shot clock).
2 Wireless Infrastructure Order at ¶¶ 257, 259.
3 Wireless Infrastructure Order at ¶¶ 259-260.
4 Id.

The Foundation for a Wireless World.
CrownCastle.com

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(415) 559-2121
jason@beacondev.net

Sincerely,

Sharon James

The Foundation for a Wireless World.
CrownCastle.com

Verizon Wireless • Piedmont, California
Proposed DAS Node • ID# 258040 "Piedmont High School"

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate a distributed antenna system ("DAS") node (ID# 258040 "Piedmont High School") proposed to be located in Piedmont, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

Verizon proposes to install a directional panel antenna on a utility pole sited in the public right-of-way in Piedmont. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

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

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

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

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Verizon Wireless • Piedmont, California
Proposed DAS Node • ID# 258040 "Piedmont High School"

General Facility Requirements

Wireless nodes typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to a central "hub" (which in turn are connected to the traditional wired telephone lines), and the passive antenna(s) that send the wireless signals created by the radios out to be received by individual subscriber units. The radios are often located on the same pole as the antennas 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"). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

Site and Facility Description

Based upon information provided by Verizon, including drawings by Coastal Communications, dated June 13, 2016, it is proposed to install one CommScope Model SBNHH-1D65A directional antenna on a utility pole sited in the public right-of-way across from 428 El Cerrito Avenue in Piedmont, near Piedmont High School. The antenna would employ 2° downtilt,* would be mounted at an effective height of about 44'9" above ground, and would be oriented as shown in Table 1. The maximum effective radiated power in any direction would be 2,277 watts, representing simultaneous operation at 1,607 watts for AWS and 670 watts for 700 MHz service. There are reported no other wireless telecommunications base stations at the site or nearby.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation is calculated to be 0.0077 mW/cm^2, which is 1.2% of the applicable public exposure limit.

* Assumed for the purposes of this study.

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Proposed DAS Node • ID# 258040 "Piedmont High School"

The maximum calculated level at the top-floor elevation of any nearby building† is 0.47% 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.

Node Number	Approximate Address	Antenna Orientation	Effective Height	Calculated Exposure at Ground Power Density vs. FCC Limit	
CA-PHS06m N37.822072, W122.236118	Across 428 El Cerrito Avenue	140°T	44'9"	0.0077 mW/cm^2	1.2%

Table 1. CommScope Model SBNHH-1D65A, with two 2x40W RRUS-12 (700 MHz, AWS)

Recommended Mitigation Measures

Due to its mounting location and height, the Verizon antenna would not be accessible to unauthorized persons, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training, to include review of personal monitor use and lockout/tagout procedures, be provided to all authorized personnel who have access to the antenna or the pole. No access within 7½ feet directly in front of the antenna itself, such as might occur during certain maintenance activities, should be allowed while the node is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. It is recommended that explanatory signs‡ be posted at the antenna and/or on the pole below the antenna, readily visible from any angle of approach to persons who might need to work within that distance.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of this DAS node proposed by Verizon Wireless in Piedmont, 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 nodes. Training authorized personnel and posting explanatory signs are recommended to establish compliance with occupational exposure limits.

---

† Including the three-story residence located at least 55 feet away from Node CA-PHS06m, based on photographs from Google Maps.

‡ Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required. Signage may also need to comply with the requirements of PUC GO95.

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Proposed DAS Node • ID# 258040 "Piedmont High School"

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration No. E-18063, which expires 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.

Rajat Mathur, P.E.
707/996-5200

December 2, 2016

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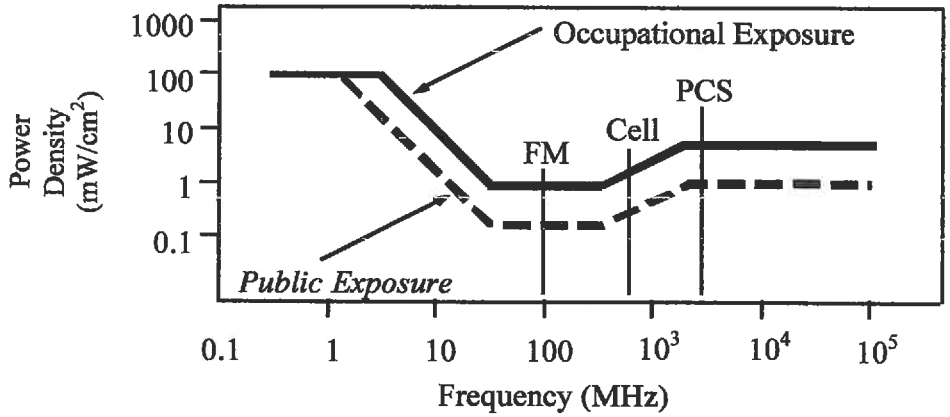
FCC Radio Frequency Protection Guide

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

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

Frequency	Electromagnetic Fields (f is frequency of emission in MHz)					
Applicable Range (MHz)	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm^2)	
0.3 – 1.34	614	*614*	1.63	*1.63*	100	*100*
1.34 – 3.0	614	*823.8/f*	1.63	*2.19/f*	100	*180/f^2*
3.0 – 30	1842/ f	*823.8/f*	4.89/ f	*2.19/f*	900/ f^2	*180/f^2*
30 – 300	61.4	*27.5*	0.163	*0.0729*	1.0	*0.2*
300 – 1,500	$3.54\sqrt{f}$	*$1.59\sqrt{f}$*	$\sqrt{f}/106$	*$\sqrt{f}/238$*	f/300	*f/1500*
1,500 – 100,000	137	*61.4*	0.364	*0.163*	5.0	*1.0*



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

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

Near Field.

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

For a panel or whip antenna, power density $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$, in mW/cm^2,

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

where θ_{BW} = half-power beamwidth of the antenna, in degrees, and
P_{net} = net power input to the antenna, in watts,
D = distance from antenna, in meters,
h = aperture height of the antenna, in meters, and
η = aperture efficiency (unitless, typically 0.5-0.8).

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

Far Field.

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

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

where ERP = total ERP (all polarizations), in kilowatts,
RFF = relative field factor at the direction to the actual point of calculation, and
D = distance from the center of radiation to the point of calculation, in meters.

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

ABACUS
CONSULTING ARBORISTS

Nicole@Abacus-Tree.com (530) 889-0603 Phone www.Abacus-Tree.com

February 1, 2017

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Bob Gunderman
Beacon Development, LLC
1757 Greenwood Road
Pleasanton, CA 94566

Re: Cell Vault at 428 El Cerrito Avenue, Piedmont, CA

Dear Mr. Gunderman:
Pursuant to your request, an evaluation of the trees at the development site and within 25' of the development area which could be impacted by the proposed development. The location is northwest corner of Jerome Avenue and El Cerrito Avenue, in Piedmont, California. See Appendix A – Site Map.

There is one (1) tree within 25' of the proposed development area that will be impacted by the development. The tree is an 8" DBH[1] Water Gum Tree, *Tristania laurina*, located less than 2' from the sidewalk replacement area and 4' from the proposed vault location.

The following recommendations could provide adequate protection for the tree during construction provided no large structural roots must be pruned. In the event large structural roots must be pruned to accommodate the vault location, a qualified ISA certified arborist should be onsite to determine the structural damage and likelihood of failure.

1. The existing growing space for this tree, a 29" x 16" opening in the sidewalk, is insufficient. The sidewalk should be removed on all sides to a minimum distance of 30" to the north west (uphill); 30" to the south east (downhill) x 18" by saw cutting only the depth of the concrete and removing the pieces by hand. This area should not be recovered with concrete to compensate for the likely loss of root surface due to the vault location;
2. One (1) day prior to removal of the concrete sidewalk, the current root space shall be irrigated to maximum soil saturation to a depth of 16". This may require application of water more than once to achieve saturation depth. The goal is to have the water saturate the soil underneath the concrete sidewalk that is to be removed.
3. Any roots encountered during trenching and/or digging shall not be 'pulled' by equipment, but shall be cut clean by hand provided they are less than 2" diameter;

[1] DBH: Diameter at Breast High is normally measured at 4'6" (above the average ground height for "Urban Forestry"), but if that varies then the location where it is measured is noted here. A Swedish caliper [1] was used to measure the DBH for trees less than 26" in diameter and a steel diameter tape[1] for trees greater than 26"Ø.

4. Any roots encountered greater than 2" shall be inspected and cut by a qualified ISA certified arborist;
5. Soil contamination shall be avoided. Limestone gravel shall not be used for any portion of the project. All other gravel shall be acceptable if it is washed prior to use;
6. Concrete wash out shall be contained and removed from the site (No wash out of any kind is to be dumped into the decomposed granite rooting space of the tree).
7. After installation of the vault, the soil should again be saturated to a depth of 16".

If you need any additional clarification, please feel free to contact me.

Thank you,

Nicole Harrison,
ISA Certified Arborist #WC-6500AM, TRAQ

Attachments:
Appendix A – Site Map
Appendix B – Site Photos
Appendix C – Disclosure

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Appendix A – Site Map

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Appendix B – Site Photos

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Appendix C - Disclosure

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Nicole@Abacus-Tree.com (530) 889-0603 Phone www.Abacus-Tree.com

Disclosure, Assumptions and Disclaimer

1) I, Nicole Harrison, *ISA Certified Arborist #WE-6500AM,* of **"ABACUS"**, did personally inspect the site and investigated the tree(s) as mentioned in this report and I performed all aspects of this report unless noted otherwise in the report.
2) We have neither financial interest in the tree work that may or may not be done, nor financial interest in the property where the tree(s) is (are) located unless noted within the report.
3) All opinions and recommendations expressed herein this report are ours solely. We have used our specialized education, knowledge, training and experience to examine the tree(s) and to make our opinions and recommendations to enhance the beauty, health and longevity, with an attempt to reduce the risk of who and/or what is near these trees. We cannot guarantee or warranty that a tree will not be healthy or safe under all circumstances, nor for a specific period of time or that problems may not arise in the future.
4) This report with its opinions and recommendations are limited to the tree(s) inspected.
5) We attempt to be cognizant of the whole scope of a project, but many matters are beyond the scope of our professional consulting arborist services such as: exact property boundaries, property ownership, site lines, easements, codes, covenants & restrictions (CC&Rs), disputed between neighbors, and other issues.
6) We rely on the information disclosed to us and assume the information to be complete, true, and accurate.
7) The inspection is limited to visual examination of accessible items of the tree(s), from the ground unless otherwise noted, without excavation, probing, boring, or dissection, unless noted otherwise. Only information covered in this report was examined, and reflects the condition of those inspected items at that specific time.
8) Clients may choose to accept or disregard these opinions and recommendations of the arborist or to seek additional advice.
9) This report is copyrighted. Any modification or partial use shall nullify the whole report. Do not copy without written permission. This report is for the client and the client's assignees.
10) Sketches, diagrams, graphs, drawings, and photographs within this report are intended as visual aids and are not necessarily to scale, and should not be construed as engineering or architectural detail, reports or surveys.
11) We shall not attend or give a deposition and/or attend court by reason of this report unless fees are contracted for in advance, according to our standard fee schedule, adjusted yearly, for such services as described.

Signed: _____

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120 VISTA AVENUE
PIEDMONT, CA 94611
TEL: (510) 420-3050
FAX: (510) 658-3167

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DATE FILED _____
NUMBER _____
PLANNER _____
(For staff use only)

APPLICATION FOR: WIRELESS COMMUNICATIONS FACILITIES (WCF)

Purpose: *The purpose of the application is to provide a mechanism for an applicant to supply necessary information to the City of Piedmont so that it can review the proposed project for conformance with all applicable regulations and guidelines. The purpose of Chapter 17.46, Wireless Communications Facilities, is to provide a comprehensive set of standards for the development and installation of wireless communication facilities. The regulations are designed to protect and promote public safety and community welfare, property values, and the character and aesthetic quality of the city, while at the same time not unduly restricting the development of wireless communication facilities, and not unreasonably discriminating among wireless communication service providers of functionally equivalent services, including retail and other commercial providers of wireless communication services. This division applies to applications for approval of the installation of new or modified wireless communication facilities, including applications previously received by the city but not yet approved, disapproved or conditionally approved by a final city decision.*

Fees:

X	$2,710	Initial Deposit (the total fee will be equal to the cost to process)
_____	$5,425	Initial Deposit if 3rd party review is required pursuant to 17G.3.1(i) (the total fee will be equal to the cost to process)
_____	$815	One variance
X	$405	Each additional variance
$2,710	**TOTAL**	

Project Address: PIEDMONT HIGH SCHOOL 07 - 335 Jerome Ave (ZONE A)

2 sets of plans must be submitted with this application for an initial staff review for completeness.
8 additional sets of plans may be requested by City Staff if this application is to be heard by the Planning Commission and/or the City Council.

Application Fees
The cost to process the application will determine the final application fees. You will be charged for any amount not covered by the initial deposit. If the cost to process the application is less than the initial deposit, you will receive a partial refund of your deposit.

Please indicate what steps you have taken to discuss this project with City staff prior to submittal: Beacon Development has met with Kevin Jackson and Pierce Macdonald-Powell on a number of occasions to discuss this project. Also conducted at least 3 site meetings.

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Detailed Description of Proposed Project: ***Please attach additional pages, as needed.***
See attached detailed project description.

I. Applicant Information:

Name of Commercial Wireless Provider: Crown Castle NG West LLC
Contact Person at Company: Sharon James
Company Address: 695 River Oaks Parkway
City San Jose **State** CA **Zip** 95134
Office phone #: (408) 468-5553 **Mobile Phone #:** (408) 426-6629
Fax #: _____ **Email Address:** _____

Project Applicant (e.g. the wireless provider's agent):
Company Name: Beacon Development, LLC
Contact Person at Company: Bob Gundermann & Jason Osborne
Company Address: 3 Rovina Lane
City Petaluma **State** CA **Zip** 94952
Office phone #: (925) 899-1999 **Mobile Phone #:** (415) 559-2121
Fax #: (415) 358-5766 **Email Address:** jason@beacondev.net
Agent's Prof. License #: n/a **Expiration Date:** _____
Piedmont Business License # of Agent: Will obtain **Expiration Date:** _____
(Please contact the City Clerk at 510-420-3040 for Piedmont Business License information.)

Property Owner Information:
Property Owner Name: City of Piedmont
Mailing Address: 120 Vista Avenue
City Piedmont **State** CA **Zip** 95611
Office phone #: (510) 420-3039 **Mobile Phone #:** _____
Fax #: (510) 658-3167 **Email Address:** kjackson@ci.piedmont.ca.us

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My signature below signifies that I:

- have read and provided all applicable information per this Application for Wireless Communications Facilities, including the information listed in the Submittal Checklist.
- have reviewed the legal description on the property deed and indicated all recorded easements and deed restrictions on the submitted site plan (*Please provide a description here of the easements and restrictions that were indicated on the property deed of the subject property*) _____
- believe the information provided in this application is accurate to the best of my knowledge.
- am aware that my initial deposits of $2,360 or $4,720 (exclusive of variance fees) may not cover the cost to process this pre-application and that additional deposits may be required. I agree to provide additional deposits if they are required. I am aware that the City will deduct the costs to cover the processing of this application from the deposit(s), and that any unused money remaining after action has been taken on the project, will be returned to me.
- am aware that City staff, Planning Commissioners, and/or City Council Members will be on the property to view proposed construction. (Please note any special instructions regarding access to the property such as gates, alarms, etc.) _____
- understand that if this application is approved, a building permit (issued within one year from the approval date) is required for construction and that no construction may commence prior to the issuance of the building permit. No changes may be made without City approval, and changes may require a new application.

SIGNATURE OF PROPERTY OWNER:

Pursuant to RUA between City of Piedmont and Crown Castle NG West LLC

Print Name Signature Date

SIGNATURE OF WIRELESS SERVICE PROVIDER'S AUTHORIZED REPRESENTATIVE:

Sharon James 5/19/17

Print Name Signature Date

AGENT AUTHORIZATION: This authorization must be signed by the property owner if the applicant is not the property owner. This authorization also permits City staff to contact the Wireless Service Provider and it agent if necessary.

I authorize Jason Osborne to act as my agent in the processing of all matters pertaining to this application.

SIGNATURE OF PROPERTY OWNER _____ date 5/19/17

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II. Land Use Information:

A. Land Use Zone:

Please circle the land use zone of the proposed project: (A) B C D E

If the project is located in a zone other than Zone B, other than publicly-owned facilities in other zones, or other than the public right-of-way, please submit a written statement explaining the attempts made to locate in Zone B, on publicly-owned facilities in other zones, and in the public right-of-way, and the supporting materials outlined in the Documentation Checklist (Section VIII. of this application).

B. New Facility Project:

1. Is the proposed project located on a property used for residential purposes? ☐ Yes ■ No

2. Does the project include the siting or construction of a new WCF facility? ■ Yes ☐ No

3. Does the project consist of communications equipment located completely inside a structure, not visible from the outside, whose purpose is solely to provide wireless communications within the same structure, including Wi-Fi hotspots and access points, with no alteration to the exterior of the structure? ☐ Yes ☐ No

C. Existing Facility Project:

1. Is the project at an existing WCF facility? ☐ Yes ■ No
2. Is the project for maintenance and repair (in which the model, type, mechanical, and electrical specifications, size and number of existing antennas, feed lines and ground-mounted equipment remains the same; OR is the project an upgrade project in which any equipment is added and/or replaced? ☐ Maintenance & Repair ☐ Upgrade
3. If the project is an "Upgrade" to an existing facility, please identify any of the following descriptions that apply:

a.	Replacement of antenna(s):	☐ Yes ☐ No	number_____
b.	Addition of antenna(s):	☐ Yes ☐ No	number_____
c.	Replacement of feed line(s):	☐ Yes ☐ No	number_____
d.	Addition of feed line(s):	☐ Yes ☐ No	number_____
e.	Replacement of ground mounted equipment:	☐ Yes ☐ No	number_____
f.	Addition of ground mounted equipment:	☐ Yes ☐ No	number_____
g.	Changes to access, parking, or landscaping:	☐ Yes ☐ No	
h.	Increase in the height of freestanding tower:	☐ Yes ☐ No	
i.	Replacement of wireless tower or foundation:	☐ Yes ☐ No	
j.	Changes to conceal or camouflage exterior:	☐ Yes ☐ No	

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k. Other (describe): _____

4. If the project is an "upgrade" to an existing facility, please describe how the project camouflages, conceals and/or screens the modified equipment so as to mitigate any adverse impact on aesthetics and views. N/A

5. If the project is an "upgrade" to an existing facility, please describe any proposed changes to the physical size of the exposed surface area of all existing components of the tower or base station (including but not limited to the height, circumference, width of the wireless tower or base station, etc.) or any increase by more than 10% from the existing dimensions of any structure(s) required to support the wireless tower or base station (such as guy wires, brackets, beams, etc.). N/A

D. Facilities located within the Public Right-of-Way:

1. Is the provider is a telephone corporation? ☒ Yes ☐ No
   → If yes, please provide certification as outlined in Section IX of this application.
2. Do you have an environmental review document certified by the CPUC? ☒ Yes ☐ No
   → If yes, please provide a copy of the document as outlined in Section IX of this application.
3. Is the facility proposed to be sited on a City pole (streetlight standard)? ☒ Yes ☐ No
   → If yes, please provide a list of the pole(s) as outlined in Section IX of this application.
4. Is the facility proposed to be sited on a third party's utility pole? ☐ Yes ☒ No
   → If yes, please provide written authorization from the appropriate utility company.

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E. Height:

What is the maximum height (measured from lowest adjacent grade) of the new or replacement antenna, pole and/or equipment? 55 feet 0 inches

(Please be aware of the maximum building height from grade for each zone in which the wireless communication facility is located, including existing structures or facilities to which the antennae are proposed to be mounted.)

F. California Environmental Quality Act (CEQA):

Do you believe the project is exempt from CEQA? ☒ Yes ☐ No

1. If yes, please cite the statutory or categorical exemption in Articles 18 and 19 of the CEQA Guidelines, Title 14 of the California Code Regulations and explain how the project meets this exemption: Section 15301(b)

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III. Building and Structural Information:

A. Loading:

Are additional gravity and wind loads likely to result from components of the project, such as additional arrays, or bigger, heavier antennas or mounting arms not accounted for in the original design? ■ Yes ☐ No

1. If yes, please describe the new loads and the equipment causing them. Adding two antennas. New structurals will be provided at time of BP. submittal.

B. Excavation, trenching and grade modifications:

Does the proposed project include any excavation, trenching and/or grade modifications?

■ Yes ☐ No

1. If yes, please describe: See attached detailed project description

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IV. Applicant's Wireless Communications Facilities Findings:

The following information is required from all applicants.

Please describe how the proposed project meets the following summarized Wireless Communications Facilities Development Standards outlined in Section 17.46.070 of the City's Municipal Code.

a) **New wireless communications facilities must be collocated with existing facilities and with other planned new facilities whenever feasible..** Please note that §17.46.070.A.1 states "A new wireless tower must be designed and constructed to accommodate future collocation(s) unless the city determines that collocation would be infeasible because of physical or design issues specific to the site." (*Indicate whether the proposed facility will be collocated with another facility. If it will not, comment on the feasibility of collocation and indicate what measures have been taken to attempt to collocate the facility with another facility. Additionally, indicate the aesthetic benefits and drawbacks of the proposed facility.*):
Placing new wireless communication facilities on existing utility structures

b) **No wireless communication facility may exceed 35 feet in height, measured from the ground to the highest point of the wireless communication facility, unless the zoning district in which the wireless communication facility is located expressly provides a higher height limit. Ground mounted wireless communication equipment, base station, antenna, pole, or tower must be the minimum functional height, unless a variance is granted. Roof mounted equipment and antennas must be located to minimize visibility.** (*Indicate the height of any ground mounted equipment, antennas, poles or towers and explain why the proposed heights are required.*):
Ground equipment will be placed in underground vault. No visual impact. Antennas placed at 32'-10" RAD center.

c) **Wireless communication facility(ies) must be designed to minimize visual impacts. When feasible, the facility(ies) must be concealed or camouflaged. The facility(ies) must have a non-reflective finish and be painted or otherwise treated to minimize visibility and the obstruction of views. The facility(ies) may not bear signs, other than certification, warning, emergency contacts, or other signage required by law or expressly required by the City.** (*Describe the materials and finishes of the equipment, antennas, poles, and towers and indicate how these materials and finishes will be non-reflective and will minimize any visual impacts.*): Equipment will be painted to match pole.

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A wireless communication receiving and transmission facility may not adversely affect the public health, peace and safety. (*Indicate any measures proposed to address the public health, peace and safety.*): _____

e) **A wireless communication facility located in the public rightof-way may not cause: (i) physical or visual obstruction, or safety hazard, to pedestrians, cyclists, or motorists; or (ii) inconvenience to the public's use of the right-of-way. Equipment, walls, and landscaping located above grade must be at least 18 inches from the front of the curb and not interfere with the public's use of the right-of-way.** See attached EMF study
Ground equipment will be vaulted and equipment on pole painted to match.

f) **Each wireless communication facility must comply with federal and state statutes governing local agencies' land use authority regarding the siting of wireless communication facilities, including without limitation 47 USC sections 253, 332(c)(7), 47 USC section 1455 (also known as section 6409 of the 2012 Middle Class Tax Relief and Jobs Act), California Government Code sections 50030, 65850.6 and 65964, and California Public Utilities Code sections 7901 and 7901.1. Each reference to a federal and state statutes is to the statute as it may be as amended from time-to-time and to the extent the statute remains in effect.** _____

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V. Applicant's Wireless Communications Facilities Priority for Location Findings:

The following information is required from all projects located in Zones A, C, D & E, projects not located in or on publicly-owned facilities, or projects in locations other than the public right-of-way.

Please describe how the proposed project meets the following summarized Wireless Communications Facilities Development Standards outlined in Section 17.46.040 of the City's Municipal Code.

a) The facility is necessary to close a significant gap in the operator's service coverage or capacity. *Please comment:* Yes per RF propagation maps.

b) The proposal satisfies each of the applicable development standards in section 17.46.070 above. *Please comment:* Yes

c) The applicant has evaluated and met the priority for location standards of section 17.46.040 A above., including the evaluation of a possible alternative site(s) in Zone D that is not used for residential purposes; evaluation of a possible alternative site(s) in non-residential property in Zone A, C or E; evaluation of a possible alternative site(s) on or in an existing structure where the wireless communications facility can be concealed; evaluation of a possible alternative site(s) where collocation with other wireless communications facility is possible; and evaluation of a possible alternative site(s) where the wireless communications structure can be located on or in a new structure that can be incorporated in an inconspicuous or compatible manner with the surrounding area. *Please comment:* There are no viable options in Zone B to cover Zone A because of the topography of Piedmont. Therefore, we chose to place our equipment on existing public utility infrastructure.

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d) The proposed design is consistent with City of Piedmont Design Guidelines. *Please comment:* Yes. We are placing our equipment on existing public utility infrastructure.

e) The proposed facility has been located and designed for collocation to the greatest extent reasonably feasible, and the applicant has submitted a statement of its willingness to allow other wireless service providers to collocate on the proposed facility. *Please comment:* Yes. No issue colocation.

The development standards in 17.46.070 shall be fully considered. *Please make sure you have completed the Findings in Section IV of this application form.*

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VI. Applicant's Variance Findings:

The following information is required from all projects that require a variance.

In order for the Planning Commission to approve an application for a variance, required findings must be made. Please describe how the proposed project meets the variance criteria of Section 17.70 of the City's Municipal Code.

a) **The property and existing improvements present unusual physical circumstances of the property (including but not limited to size, shape, topography, location and surroundings), so that strictly applying the terms of this chapter would keep the property from being used in the same manner as other conforming properties in the zone;** *Describe specific, unique problems with the property, such as location, surroundings, mature trees, natural obstacles or formations, and explain why the improvements cannot be made in conformity with codes and regulations:* Please see attached supplemental variance application material.

b) **The project is compatible with the immediately surrounding neighborhood and the public welfare; and** *Explain why, without the variance, the property cannot be used in the same manner as others in the same zone, and explain how the variance will not give the property an advantage over others in the same zone.:* Please see attached supplemental variance application material.

c) **Accomplishing the improvement without a variance would cause unreasonable hardship in planning, design, or construction.** *Unreasonable hardship" for purposes of this subsection refers to the unusual physical characteristics of the underlying lot and existing improvements on the lot which prohibit development of the lot in a manner consistent with lots conforming to City standards. "Unreasonable hardship" shall not refer to any conditions personal to the applicant. Please describe the hardship(s) inherit to this property:* Please see attached supplemental variance application material.

CROWN CASTLE

3 Rovina Lane
Petaluma, CA 94952

T 415-559-2121
F 415-358-5766
jason@beacondev.net

May 18, 2017

Pierce Macdonald-Powell
Senior Planner

RE: Variance Application Information for Crown Castle DAS Expansion PHS07 @335 Jerome Ave.

Mr. Macdonald-Powell:

GO 95 and the CPUC regulates the placement of microcellular antennas in relation to the separation between the various utility companies and their lines on wood poles. Due to the terrain in this area we are using 4ft antennas as it provides much better signal control compared to 2ft antennas. Looking at the pole, we need 6 feet of separation between the secondary power (30'-9") and the top of the antenna. Also from the bottom of the antenna to the future CrownCastle fiber (25'-0") we need 2 feet of separation. In total, we need 12 feet of separation between the secondary power and the future crown castle fiber in order to place the antennas. On this pole, we only have 5'-9" of clearance. Therefore, we placed the antennas on top of the pole. Placing the antennas below the communication zone not only would decrease the coverage as it will be affected by surrounding foliage and the building structures, but it would also bring them closer to the pedestrianscreating more concern and in these cases, fall outside what is permitable.

The current design of placing the antennas at the top of the pole, allows Crown Castle to adhere to both the State utility regulations as well as achieving the purpose of increased cell/data coverage needed by its customer.

Regards,

Jason Osborne
Beacon Development, LLC
jason@beacondev.net
(415) 559-2121
(415) 358-5766 fax

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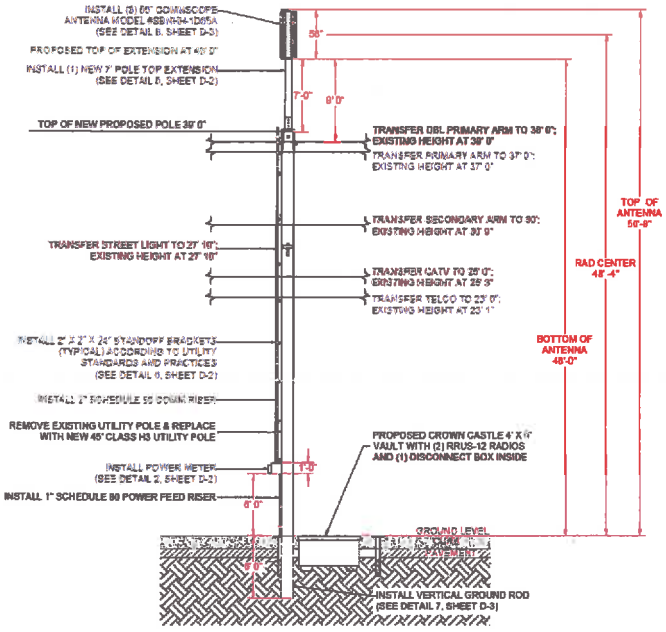

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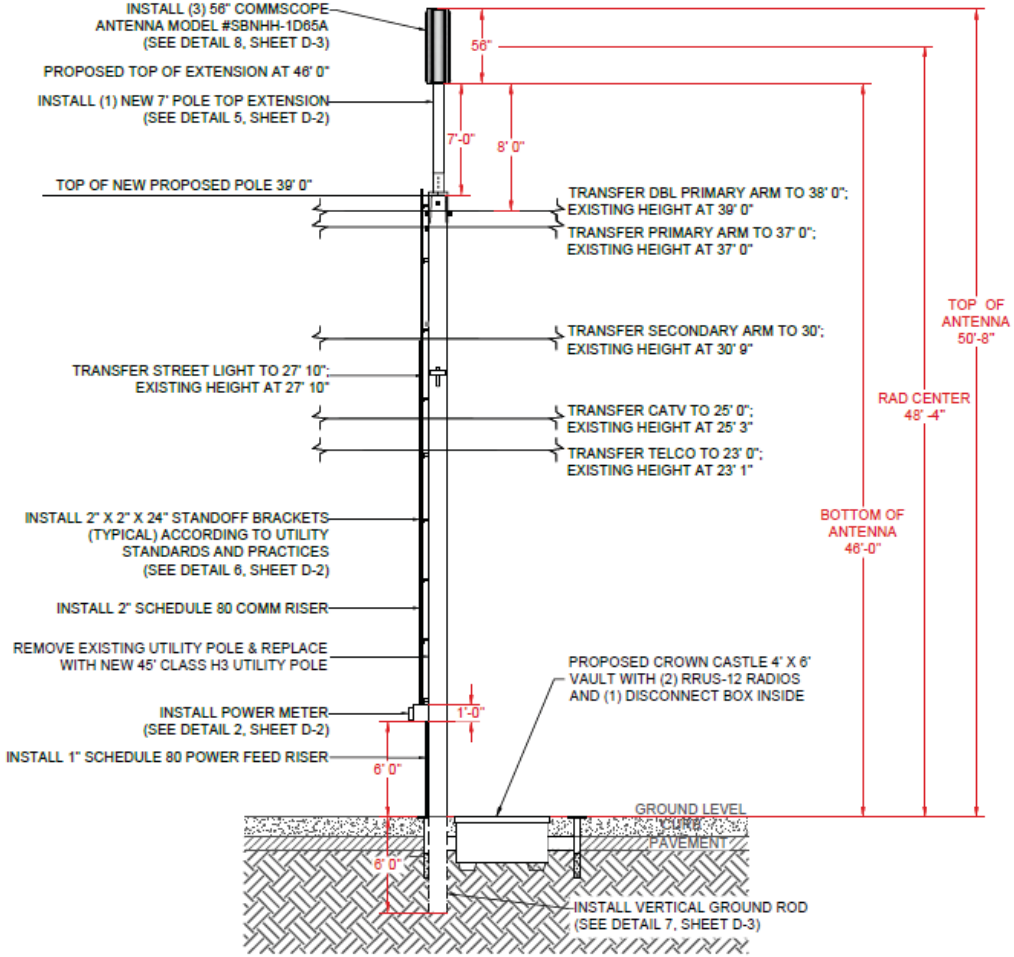
CA-PHS07m2

Rad Center (48’ 4”)

GO 95 and the CPUC regulates the placement of microcellular antennas in relation to the separation between the various utility companies and their lines on wood poles. Due to the terrain in this area we are using 4ft antennas as it provides much better signal control compared to 2ft antennas. Looking at the pole, we need 6 feet separation between the secondary power (30’ 9”) and the top of the antenna. Also from the bottom of the antenna to CATV (25’ 0”) we need 2 feet separation. In addition there’s a street light on the communication zone. In total we need 12 feet separation between the secondary power and CATV in order to place the antennas which we don’t have. We only have 5’ 9” clearance on this pole, therefore we placed the antennas on top of the pole. Placing the antennas below the communication zone not only would decrease the coverage as it will be affected by surrounding foliage and the building structures, but it would also bring them closer to the pedestrians.



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3 Rovina Lane
Petaluma, CA 94952

T 415-559-2121
F 415-358-5756
jason@beacondev.net

May 26th, 2017

Pierce Macdonald-Powell
Senior Planner

RE: Variance Application Information for Crown Castle DAS Expansion PHS07 @ 335 Jerome Ave.

Ms. Macdonald-Powell:

- Variance Issue – Meter will be relocated to 7' above the sidewalk:

Section 5.4.1 (PG&E Green Book)

B. Pole-Mounted Communication Service and Meter Equipment Applicants must ensure that communication service and meter equipment installed on PG&E or joint poles is placed so the bottom of the enclosure is a minimum of 7 feet to a maximum of 8 feet from the finished grade. If it is not possible to meet the height requirements, install a meter pedestal. Ask your PG&E project coordinator for Numbered Document 027911,"Installation Details for Service to Pole-Mounted Communication Equipment," for specific requirements.

- In short, the only other option could be to add a meter pedestal to the sidewalk, which would be a great impact based on our review of the locations, and the City is asking we place all equipment below ground (see below for 'meter vaulting').

- Variance issue – Meter within 18" of sidewalk curb face

The meter is chosen by PG&E based on the loading requirement, and they are unable to utilize a "bulb" type, and we are unable to place the meter inside the vault. PG&E will not place inside the vault due to reliability issues with the grid system, hazards to the public and unsafe worker conditions. Therefore, we are unable to place the meter in another location than where we have proposed it.

In discussions with Planning Staff, we discussed reviewing relocating the new poles outside of the 18" zone, but the risk with this is impacting any ADA sidewalk requirements.

Regards,

Jason Osborne

Jason Osborne
Beacon Development, LLC
jason@beacondev.net
(415) 559-2121
(415) 358-5766 fax

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VI. Applicant's Variance Findings:

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In order for the Planning Commission to approve an application for a variance, required findings must be made. Please describe how the proposed project meets the variance criteria of Section 17.70 of the City's Municipal Code.

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CROWN CASTLE

3 Rovina Lane
Petaluma, CA 94952

T 415-559-2121
F 415-358-5766
jason@beacondev.net

May 26th, 2017

Pierce Macdonald-Powell
Senior Planner

RE: Variance Application Information for Crown Castle DAS Expansion PHS07 @ 355 Jerome Ave.

Ms. Macdonald-Powell:

- Variance Issue – Meter will be relocated to 7' above the sidewalk:

Section 5.4.1 (PG&E Green Book)

B. Pole-Mounted Communication Service and Meter Equipment Applicants must ensure that communication service and meter equipment installed on PG&E or joint poles is placed so the bottom of the enclosure is a minimum of 7 feet to a maximum of 8 feet from the finished grade. If it is not possible to meet the height requirements, install a meter pedestal. Ask your PG&E project coordinator for Numbered Document 027911,"Installation Details for Service to Pole-Mounted Communication Equipment," for specific requirements.

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Regards,

Jason Osborne

Jason Osborne
Beacon Development, LLC
jason@beacondev.net
(415) 559-2121
(415) 358-5766 fax

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VII. Notice Instructions:

Required for all projects that will be heard by the Planning Commission and/or City Council (e.g., non-exempt projects, projects without proposed collocation, and projects referred to the Planning Commission by the Planning Director).

1. Complete the attached Notice and make one photocopy for each adjacent neighbor.

2. Hand deliver or mail one copy of the Notice to each adjacent neighbor at least 30 days before the initial hearing. Adjacent neighbors often include one neighbor on each side, three across the street, and three in the rear. You may address the notices to "Property Owner", if you do not know the names of your adjacent neighbors.

3. Complete the attached Affidavit of Service and return it along with one copy of the Notice to the Department of Public Works at least 30 days before the hearing. Please note the Affidavit of Service is not required to be notarized.

4. Please call the Department of Public Works at (510) 420-3050, if you have any questions or would like help in determining the addresses or names of your adjacent neighbors.

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NOTICE OF AN APPLICATION FOR
WIRELESS COMMUNICATIONS FACILITY

Dear Neighbor:

I/ We have submitted an application for consideration by the Piedmont Planning Commission which seeks City approval of an application to (description of project) _____

PIEDMONT HIGH SCHOOL 07 - 335 Jerome Ave

The purpose of this form is to notify you of my application. My application will be considered by the Planning Commission on or after (date) _____.

This notice will be followed by a notice from the City confirming the date of the hearing and inviting you to comment on the application. The Planning Commission regularly meets at 5:00 p.m. on the second Monday of every month in the Council Chambers at City Hall, 120 Vista Avenue. Please contact the Department of Public Works at 420-3050, if you have any questions regarding this application.

Signed,

Signature _____ Date 5/19/17

Jason Osborne
Name of Applicant

335 Jerome Ave
Address of Project

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AFFIDAVIT OF SERVICE BY **APPLICANT/ AGENT**

(To be attached to a copy of the Notice and returned to the Department of Public Works.)

_____ being sworn, says that he or she is over 18 years of age
affiant (applicant/agent) name

and a resident of _____
County, Country

That affiant's **residence address** is _____.

That affiant served a copy of the attached notice of an application for variance and/or Planning Commission design review by placing said copy in an envelope addressed to:

which envelope was then sealed and postage fully prepaid thereon, and thereafter was on _____
date
deposited in the United States mail or delivered personally by hand.

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

Executed on _____ at _____, California.
date address

Signed _____
Affiant's signature

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VIII. Drawing and Document Elements Checklist:

Wireless Communications Facility (WCF) Application

A vital part of the WCF Application is to have adequate plan set information in order to properly review the proposed wireless telecommunications facility in conformance with Chapter 17.46 of the Municipal Code and all other relevant guidelines and regulations. Unless otherwise indicated, you must provide all of the following information. Two (2) sets of drawings (24" x 36" in size) must be submitted with the WCF Application. All drawings must be accurately scaled and dimensioned. One copy of non-drawing documents must be submitted with the WCF Application.

Should your application be deemed complete and placed on the agenda for a Commission or Council hearing, **8 additional sets of plans** will be requested by City Staff.

Existing Site Plan (preferred scale 1/8") should include:

- ■ Scale, north arrow, and dimensions;
- ■ Property lines, easements, streets, pavement striping, sidewalks, curbs, curb ramps, and rights-of-way;
- ■ Location of existing structures, hardscape areas, fences, retaining walls, trees, hedges and other significant site features;
- ■ Roof plans should be shown for all structures (rather than floor plans). Roof plans should include all edges and ridges, the roof slope, overhangs, skylights, chimneys, vents, and other equipment or antennas;
- ■ Setback dimensions measured from the property lines to the closest point of Structure(s) (§17.2.71-73), including eaves and other architectural projections.

Proposed Site Plan (preferred scale 1/8") should include:

- ■ Scale, north arrow, and dimensions;
- ■ Property lines, easements, streets, pavement striping, sidewalks, curbs, curb ramps, and rights-of-way;
- ■ Location of existing and proposed structures, hardscape areas, fences, retaining walls, trees, hedges and other significant site features;
- ■ Roof plans should be shown for all structures (rather than floor plans). Roof plans should include all edges and ridges, the roof slope, overhangs, skylights, chimneys, vents, and other equipment or antennas;
- ■ Footprints (outline) and identification of structures on adjacent properties within 20 feet of the property line or more than 100 feet from the proposed construction. Indicate the dimensions between the closest point of any adjacent structure and the proposed construction;
- ■ Setback dimensions measured from the property lines to the closest point of proposed ground-mounted equipment, antenna, and Structure(s) (§17.2.71-73) including eaves and other architectural projections.

Existing Elevations (or Photographs should no existing building exist) (preferred scale 1/4") should include:

- ■ Scale, dimensions, and drawing label indicating the cardinal direction (or indicated plan direction) the depicted wall is facing;
- ■ All elevations of each structure on which modifications are proposed;
- ☐ Show buildings, other structures, WCF equipment, fences, retaining walls, and any other relevant feature;
- ☐ Indication of building materials for walls, roofs, windows, doors, decorative features, and WCF equipment and antennas;
- ■ Indication of the height of buildings, structures and WCF equipment. Heights are measured to the highest point of the feature from both the lowest adjacent grade and highest adjacent grade. Adjacent grade is where grade meets the footprint of the building or structure;
- ■ Photographs showing existing conditions may be submitted as supplemental information or in place of elevations when no existing structures or buildings exist on site.

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Proposed Elevations (preferred scale 1/4") should include:

- ■ Scale, dimensions, and drawing label indicating the cardinal direction (or indicated plan direction) the depicted wall is facing;
- ■ All elevations of each structure on which modifications are proposed;
- ☐ Show buildings, other structures, WCF equipment, fences, retaining walls, required signage, and any other relevant feature;
- ■ Indication of proposed building materials for walls, roofs, windows, doors, decorative features, and WCF equipment and antennas;
- ■ Indication of the proposed height of new buildings, structures and WCF equipment. Heights are measured to the highest point of the feature from both the lowest adjacent grade and highest adjacent grade. Adjacent grade is where grade meets the footprint of the building or structure;
- ☐ Photographs or photo simulations showing proposed conditions may be submitted as supplemental information.

Equipment Details (preferred scale at least 1/2") should include:

- ■ Scale, dimensions, and drawing label;
- ■ Include details of antenna and other proposed wireless communications equipment.

Landscape plans (preferred scale 1/8") should include:

- ☐ Scale, north arrow and dimensions;
- ☐ Include property lines, footprints of all structures and all hardscape areas;
- ☐ Show planting areas and provide a plant list including the size and species;
- ☐ Arborist report for work within the driplines of existing trees;
- ☐ Provide information on irrigation.

Photo Simulations (optional):

- ■ In addition to proposed elevations, photo simulations may be submitted to demonstrate the aesthetics and impacts of a proposed wireless communications facility.

Story Poles, per City of Piedmont story pole policy.

Graphic Calculations (1 set only):
Please submit plans which graphically illustrate the required calculations. Calculations are expressed as percentages. Separate graphic calculations are to be submitted, as follows:

- ☐ **Existing and Proposed Structure Coverage** equals the number of square feet of structures covering the lot divided by the number of square feet in the lot. (Equipment, antennas, poles, and towers are included in this calculation,) For a complete definition of structure coverage, please see Piedmont City Code §17.2.71-73.
- ☐ **Existing and Proposed Hardscape Surface Coverage** equals the number of square feet of structures plus the number of square feet of all hardscape, all divided by the number of square feet in the lot. For a complete definition of Hardscape Surface, please see Piedmont City Code §17.2.35.

Documentation for sites outside of Zone B, publicly-owned facilities in other zones, or the public right-of-way:

- ☐ **Map and Written Description** showing and describing the exact area in Piedmont which applicant contends cannot receive coverage from a site in Zone B or a site outside of City, showing the boundaries of the area clearly on a map and setting forth the exact street addresses of each Piedmont home not within the area receiving coverage – Piedmont City Code §17G.4.2(a).
- ☐ **Copies of Detailed Technical Reports or Tests** which clearly prove that each home within the area fails to receive coverage from Zone B or from any other Zone within Piedmont, or from specific locations outside of Piedmont – Piedmont City Code §17G.4.2(b).
- ☐ **Copies of Detailed Technical Reports or Tests** which prove that each home within the area does receive coverage from the alternate site proposed by applicant – Piedmont City Code §17G.4.2(c).

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- ☐ **List of All Possible Site Locations within Zone B** and all possible site locations outside of the city from which applicant has conducted tests to determine if coverage is feasible, including copies of all reports or test results from each such possible site – Piedmont City Code §17G.4.2(d).
- ☐ **Exact Information on All Possible Site Locations Outside of Zone B within the City** from which applicant has conducted tests to determine if coverage is feasible, including copies of all reports or test results from each such possible site – Piedmont City Code §17G.4.2(e).
- ☐ **Exact Information on the Alternate Site** proposed by the applicant, including the exact location of the site as shown on a map and by street address, a copy of an executed Lease or PCS Site Agreement for the site, a detailed report on all costs and expenses in constructing and completing such site for use, including a verifiable bid for the work on such site, and an exact schematic drawing – Piedmont City Code §17G.4.2(f).

Documentation for Wireless Communication Facilities located within the Public Right-of-Way (ROW):

- ☐ Certification that the provider is a telephone corporation.
- ☐ Any environmental review document(s) certified by the California Public Utilities Commission for siting the proposed facilities in the City's ROW.
- ☐ For projects in which the facility is proposed to be sited on a City pole (e.g., streetlight standard), please provide a list of said poles including identification by location and badge/ID number.
- ☐ For projects in which the facility is proposed to be sited on a third party's utility pole (e.g., PG&E pole), please provide a list of said poles including identification by location and badge/ID number AND written authorization from the appropriate utility company.
- ☐ Site plans that illustrate the boundaries of the ROW and the location of infrastructure in the ROW, including without limitation sidewalks, curbs, gutters, driveways, landscaping, other existing communications equipment, utility poles, light poles, fire hydrants, bus stops, bike lanes, traffic signals and above and below ground utility equipment vaults, etc.
- ☐ Analysis demonstrating the impacts to sightlines for drivers, bicyclists, and pedestrians.

If you believe that any of the above requirements do not pertain to your project, please call the Department of Public Works at (510) 420-3050 and make an appointment to meet with a planner.

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Crown Castle
695 River Oaks Parkway
San Jose, CA 95134

April 7, 2017

City of Piedmont
120 Vista Avenue
Piedmont, CA 94611
Phn: (510) 420-3050
Fax: (510) 658-3167

RE: Detailed Description of Proposed Crown Castle DAS Expansion Project @ 335 Jerome Ave.

PHS07B

To Pierce Macdonald-Powell,

This project involves the installation of the following:

- REPLACE EXISTING 45' 0" UTILITY POLE WITH NEW 55' 0" CLASS H3 UTILITY POLE.
- TRANSFER TELCO TO 23' 0"; EXISTING HEIGHT AT 23' 1".
- TRANSFER CATV TO 25' 0"; EXISTING HEIGHT AT 25' 3".
- TRANSFER STREETLIGHT TO 21' 10"; EXISTING HEIGHT AT 21' 10".
- TRANSFER SECONDARY ARM TO 30' 0"; EXISTING HEIGHT AT 30' 9".
- TRANSFER PRIMARY ARM TO 37' 0"; EXISTING HEIGHT AT 37' 0".
- TRANSFER DBL PRIMARY ARM TO 38' 0"; EXISTING HEIGHT AT 39' 0".
- INSTALL NEW 2" X 2" X 24" STANDOFF BRACKET (TYPICAL) ACCORDING TO UTILITY STANDARDS AND PRACTICES
- POLE TOP EXTENSION ON EXISTING UTILITY POLE.
- INSTALL NEW (3) COMMSCOPE SBNHH-1D65A 56" PANEL ANTENNAS WITH ELECTRICAL TILT.
- INSTALL NEW 1" SCHEDULE 80 POWER FEED RISER.
- INSTALL NEW 2" SCHEDULE 80 COMM RISER.
- INSTALL NEW POWER RISER.
- INSTALL NEW VERTICAL GROUND ROD.
- INSTALL NEW 4' X 6' CROWN CASTLE VAULT WITH (2) RRUS-12 RADIOS AND (1) DISCONNECT BOX INSIDE.
- INSTALL NEW VGR.

The equipment on the pole will be painted to match the wood and will be compatible with other poles in the area. The installation will not adversely affect abutting and surrounding neighborhoods and will have no effect on traffic.

Statement of Operations

The proposed facility will use existing electrical and telephone services, which are readily available to the site. No nuisances will be generated by the proposed facility, nor will the facility injure the public health, safety, morals or general welfare of the community. The technology does not interfere with any other forms of communication devices whether public or private.

Upon completion of construction, finetuning of the facility may be necessary, meaning the site will be adjusted once or twice a month by a service technician for routine maintenance. No additional parking spaces are needed at the project site for maintenance activities. The site is entirely selfmonitored and connects directly to a central office where sophisticated computers alert personnel to any equipment malfunction or breach of security.

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Because the facility will be un-staffed, there will be no regular hours of operation and no impact to existing traffic patterns. Existing public roads will provide access to the technician who arrives infrequently to service the site. No on-site water or sanitation services will be required as a part of this proposal.

1. Street use permit shall be obtained by contractor prior to commencing work.
2. All work to be conduced in the right of way.
3. All disturbed landscaping shall be replaced to similar existing conditions.
4. Any sidewalk closure shall be coordinated with the city and proper signing will be placed.
5. No materials or equipment shall be stored on private property or block access to private property.
6. Cleanup of site will be completed each evening and the site will be returned to existing conditions at the completion of construction.

Alternative Site Analysis

Please find supplemental material discussing alternative any applicable alternative locations or designs on the attached document, which have been reviewed within our RF Propagation package.

Zoning Analysis

The site of the proposed facility is located in a public right-of-way. This particular location falls within *Zone A*, and is not preferred by the City. As a follow up to material noted in our application, it is impossible to cover "Zone A" from "Zone B", due to the topography of the area, or without placing a number of highly visible "macro" sites (large monopoles or monopines) surrounding the area which would "send in" a signal, but these would be highly visible and not provide the service intended. It is also important to mention, we are a 'telephone corporation' (Section D, section D.1, D.3 when applicable). Please also refer to Section VI (a)(b) wherein we are utilizing existing utility infrastructure which is design specifically of a "minimum functional height", while placing a Macro site in Zone B would require a much larger (taller) structure with an antenna array consistent with a typical macro site seen throughout the Bay Area. These "small cell" facilities as designed are only intended to cover a small area, and this design presented to the City of Piedmont and its residents presents the least visual impact possible. The sites (also referred to as nodes) are strategically placed throughout the City to enhance cellular coverage, but moving them, or placing them in different "zones" we would jeopardize the overall network.

New Node and Installation of a New Pole

Crown Castle NG West LLC ("Crown Castle") is submitting the accompanying complete application to install its telecommunications network facilities in accordance with your code, ordinances and regulations. Please be advised the Federal Communications Commission (FCC) has adopted Rules and Regulations that impact how you must process this application.
In addition, state law also limits your regulation of Crown Castle's access to the public rights of way.

Crown Castle's Deployment

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Crown Castle provides telecommunications services to wireless carriers. It does so via telecommunications networks installed in the public rights of way that integrate elements including fiber optic cables as well as personal wireless services facilities, such as antennas and related equipment. These networks are sometimes referred to as distributed antenna systems ("DAS") or Small Cell networks.

Pursuant to the California Public Utility Commission, Crown Castle has been granted a certificate of public convenience and necessity ("CPCN"). As a result, Crown Castle must be granted access to the public rights of way in the same manner and on the same terms applicable to other certificated telecommunications providers and utilities.

Federal Regulations Applicable to This Application

Federal law and the FCC's rules implementing the law require that this permit application be processed to a final decision by this jurisdiction without undue delay. Specifically, because this application proposes to install new equipment on a new pole in the public rights of way, this application must be acted on within one hundred fifty (150) days from its submission, today.[1]

Moreover, pursuant to FCC regulations, this application is deemed complete 30 days after today, unless you provide written notice to Crown Castle.[2] If you contend that the application is incomplete, within the next 30 days you must provide written notice specifying any items you claim are missing to make the application complete.[3] For each item alleged to be missing, you must specify the code provision, ordinance, application instruction, or otherwise publically-stated procedure that requires the submission of the information.[4]

Among other Federal and State Rights, we note that California Public Utilities Code § 7901 grants a statewide franchise to telephone corporations to place telephone equipment in the public rights- of-way and that use of the rights-of-way by telephone corporations is a matter of statewide concern that is not subject to local regulation except for limited regulation of the time, place, and manner of such use. In addition, the Telecommunications Act limits the authority of local jurisdictions by, among other restrictions, requiring approval within a reasonable period of time. In submitting this application, Crown Castle expressly reserves all of its Federal and State Rights, including, without limitation, its rights under federal and state law to challenge the requirement for a discretionary permit for its proposed installation in the public right-of-way. Neither the act of submitting the application nor anything contained therein shall be construed as a waiver of any such rights.

Please send all written requests for additional information regarding this application to:

---

1 In re Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review, Declaratory Ruling, 24 FCC Rcd. 13994 ¶¶ 32, 45-46 (2009) ("FCC Shot Clock Order"); In the matter of Acceleration of Broadband Deployment By Improving Wireless Facilities Siting Policies, Report and Order, FCC 14-153, WT Docket No. 13-238, ¶ 272 (FCC Oct. 21, 2014) ("Wireless Infrastructure Order") (clarifying that DAS nodes that involve installation of new poles trigger the 150 day shot clock).
2 Wireless Infrastructure Order at ¶¶ 257, 259.
3 Wireless Infrastructure Order at ¶¶ 259-260.
4 Id.

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Jason Osborne
Beacon Development, LLC
3 Rovina Lane, Petaluma, CA 94952
(415) 559-2121
jason@beacondev.net

Sincerely,

Sharon James

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The Foundation for a Wireless World.
CrownCastle.com

Verizon Wireless • Piedmont, California
Proposed DAS Node • ID# 258040 "Piedmont High School"

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate distributed antenna system ("DAS") nodes (ID# 258040 "Piedmont High School") proposed to be located near Piedmont High School in Piedmont, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

Verizon proposes to install directional panel antennas on four poles sited in the public right-of-way in Piedmont. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

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

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

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

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Verizon Wireless • Piedmont, California
Proposed DAS Node • ID# 258040 "Piedmont High School"

General Facility Requirements

Wireless nodes typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to a central "hub" (which in turn are connected to the traditional wired telephone lines), and the passive antenna(s) that send the wireless signals created by the radios out to be received by individual subscriber units. The radios are often located on the same pole as the antennas 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"). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

Site and Facility Description

Based upon information provided by Verizon, it is proposed to install twelve CommScope Model SBNHH-1D65A directional panel antennas in groups of three on four existing poles sited in the public-right-of-way in Piedmont, near Piedmont High School. The antennas would employ 2° downtilt,* would be mounted at effective heights of at least 32 feet above ground, and would be oriented as shown in Table 1. The maximum effective radiated power in any direction would be 720 watts, representing simultaneous operation at 508 watts for AWS and 212 watts for 700 MHz service. There are reported no other wireless telecommunications base stations at the site or nearby.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation is calculated to be 0.0065 mW/cm^2, which is 0.89% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building† is 1.6% of the

* Assumed for the purposes of this study.
† Located at least 20 feet away, based on photographs from Google Maps.

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. The maximum calculated levels at ground for all of the nodes are given in Table 1:

Node Number	Approximate Address	Antenna Orientations	Effective Height	Calculated Exposure at Ground Power Density	vs. FCC Limit
CA-PHS01m N37.824534, W122.230771	Across 342-370 Highland Ave	50/170/290°T	32'3"	0.0050 mW/cm^2	0.82%
CA-PHS02m2 N37.827629, W122.233138	505 Blair Ave	70/190/310°T	41'10"	0.0065 mW/cm^2	0.89%
CA-PHS05m2 N37.825059, W122.235603	303 Hillside Ave	50/170/290°T	46'6"	0.0028 mW/cm^2	0.46%
CA-PHS07m2 N37.822518, W122.238674	355 Jerome Ave	110/230/350°T	46'4"	0.0022 mW/cm^2	0.37%

Table 1. CommScope Model SBNHH-1D65A, with two 2x40W RRUS-12 (700 MHz, AWS)

Recommended Mitigation Measures

Due to their mounting locations and heights, the Verizon antennas would not be accessible to unauthorized persons, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training, to include review of personal monitor use and lockout/tagout procedures, be provided to all authorized personnel who have access to the antennas. No access within 2½ feet directly in front of the antennas themselves, such as might occur during certain maintenance activities, should be allowed while the node is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. It is recommended that explanatory signs‡ be posted at the antennas and/or on the poles below the antennas, readily visible from any angle of approach to persons who might need to work within that distance.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the DAS nodes proposed by Verizon Wireless in Piedmont, 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

‡ Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required. Signage may also need to comply with the requirements of PUC GO95.

base stations. Training authorized personnel and posting explanatory signs are recommended to establish compliance with occupational exposure limits.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration No. E-18063, which expires 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.

Rajat Mathur, P.E.
707/996-5200

December 2, 2016

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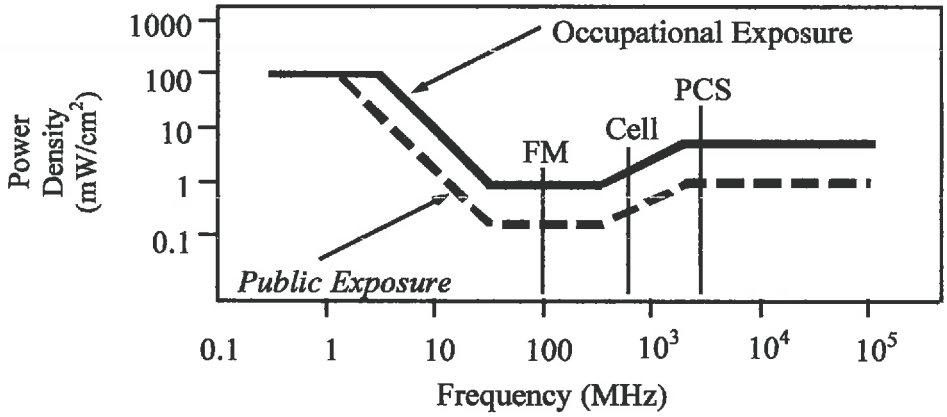
FCC Radio Frequency Protection Guide

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

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

Frequency	Electromagnetic Fields (f is frequency of emission in MHz)					
Applicable Range (MHz)	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm^2)	
0.3 – 1.34	614	*614*	1.63	*1.63*	100	*100*
1.34 – 3.0	614	*823.8/f*	1.63	*2.19/f*	100	*180/f^2*
3.0 – 30	1842/ f	*823.8/f*	4.89/ f	*2.19/f*	900/ f^2	*180/f^2*
30 – 300	61.4	*27.5*	0.163	*0.0729*	1.0	*0.2*
300 – 1,500	$3.54\sqrt{f}$	*$1.59\sqrt{f}$*	$\sqrt{f}/106$	*$\sqrt{f}/238$*	f/300	*f/1500*
1,500 – 100,000	137	*61.4*	0.364	*0.163*	5.0	*1.0*



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

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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/cm^2,

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

where θ_{BW} = half-power beamwidth of the antenna, in degrees, and
P_{net} = net power input to the antenna, in watts,
D = distance from antenna, in meters,
h = aperture height of the antenna, in meters, and
η = aperture efficiency (unitless, typically 0.5-0.8).

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

Far Field.

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

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

where ERP = total ERP (all polarizations), in kilowatts,
RFF = relative field factor at the direction to the actual point of calculation, and
D = distance from the center of radiation to the point of calculation, in meters.

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

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ABACUS
CONSULTING ARBORISTS

Nicole@Abacus-Tree.com (530) 889-0603 Phone www.Abacus-Tree.com

February 1, 2017

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Bob Gunderman
Beacon Development, LLC
1757 Greenwood Road
Pleasanton, CA 94566

Re: Cell Vault and Sidewalk Replacement at 355 Jerome Avenue, Piedmont, CA

Dear Mr. Gunderman:
Pursuant to your request, an evaluation of the trees at the development site and within 25' of the development area which could be impacted by the proposed development was conducted. The location is 355 Jerome Avenue along the south east side of the property, in Piedmont, California. See Appendix A – Site Map.

There are two (2) tree's within 25' of the proposed development area that could potentially be impacted by the development. Tree #1 is a 12" DBH[1] London Plane Tree, *Platanus acerifolia*, with an 18' canopy radius. It is located 18' northwest of the proposed replacement of the sidewalk and vault. Tree #2 is a 13" DBH London Plane Tree, *Platanus acerifolia*, with an 17' canopy radius. It is located 7' southeast of the proposed vault. In addition, this tree could be impacted by the removal and replacement of the existing power pole.

London Plane trees, as a species, form large diameter surface roots which damage infrastructure. There are areas of the sidewalk which have been previously replace and/or ground to accommodate the lifting from the existing roots. It is highly likely that roots will be found during construction at this location and a qualified arborist will be needed on site.

The following recommendations will provide adequate protection for the trees during construction:

1. Clearance pruning may be required for the new pole. All pruning shall be by a qualified ISA certified arborist. No cuts into live wood shall be greater than 2" diameter. No structural limbs shall be removed. The canopy extension of both trees can be effectively reduce even with these restrictions;

[1]Diameter at Breast High is normally measured at 4'6" (above the average ground height for "Urban Forestry"), but if that varies then the location where it is measured is noted here. A Swedish caliper [1] was used to measure the DBH for trees less than 26" in diameter and a steel diameter tape[1] for trees greater than 26"Ø.

2. The removal of the sidewalk shall be by saw cutting only the depth of the sidewalk and hand removal of the pieces. The process needs to be carefully monitored to prevent destruction of any roots in contact with the underside of the sidewalk;
3. Any roots encountered less than 2" in diameter during removal of the sidewalk or trenching shall not be 'pulled' by equipment, but shall be cut clean by hand;
4. Root shaving[2] shall not be performed on any roots;
5. Roots encountered greater than 2" shall be inspected by a qualified ISA certified arborist. Substantial roots will be required to be bridged rather than cut which may require the sidewalk to be raised. A root protection system will be designed onsite by a qualified ISA certified arborist during development in the event substantial roots are found;
6. The sidewalk area, once the existing sidewalk is removed, shall be protected from foot traffic and vehicles until the sidewalk is replaced;
7. Any exposed roots shall be protected from the sun and air during the development period with canvas or burlap. The canvas or burlap shall be moistened daily;
8. Soil contamination shall be avoided. Limestone gravel shall not be used for any portion of the project. All other gravel shall be acceptable if it is washed prior to use;
9. Large diameter gravel (greater than 0.75") shall be placed on the soil surface and under the new concrete to create an airspace between the concrete and soil to aid in the prevention of root growth directly underneath the new sidewalk;
10. Consider permeable concrete for the new sidewalk;
11. Concrete wash out shall be contained and removed from the site (No wash out of any kind is to be dumped into the rooting space of the trees);
12. The existing pole should be removed by cutting at ground level so as not to disturb the roots of the tree. In the event the pole base needs to be removed from the ground, a qualified ISA certified arborist should be onsite to aid in preservation of any roots encountered during removal;
13. Soil repair and replacement at the existing pole location shall be under the supervision of a qualified ISA certified arborist.

If you need any additional clarification, please feel free to contact me.

Thank you,

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Nicole Harrison,
ISA Certified Arborist #WC-6500AM, TRAQ

Attachments:
Appendix A – Site Map

[2] Root Shaving removes part of a root with a longitudinal cut removing the upper half of the root. This type of pruning causes callous development on the root which in turn causes additional diameter growth on the root.

Appendix B – Site Photos
Appendix C – Disclosure

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Appendix A – Site Map

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Appendix B – Site Photos

Tree #1

Proposed vault location

Tree #2

Photo's by Nicole Harrison, January 26, 2017

Tree #2 shown as 3' from existing pole to be removed

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Appendix C - Disclosure

ABACUS
CONSULTING ARBORISTS

Nicole@Abacus-Tree.com (530) 889-0603 Phone www.Abacus-Tree.com

Disclosure, Assumptions and Disclaimer

1) I, Nicole Harrison, *ISA Certified Arborist #WE-6500AM,* of **"ABACUS"**, did personally inspect the site and investigated the tree(s) as mentioned in this report and I performed all aspects of this report unless noted otherwise in the report.
2) We have neither financial interest in the tree work that may or may not be done, nor financial interest in the property where the tree(s) is (are) located unless noted within the report.
3) All opinions and recommendations expressed herein this report are ours solely. We have used our specialized education, knowledge, training and experience to examine the tree(s) and to make our opinions and recommendations to enhance the beauty, health and longevity, with an attempt to reduce the risk of who and/or what is near these trees. We cannot guarantee or warranty that a tree will not be healthy or safe under all circumstances, nor for a specific period of time or that problems may not arise in the future.
4) This report with its opinions and recommendations are limited to the tree(s) inspected.
5) We attempt to be cognizant of the whole scope of a project, but many matters are beyond the scope of our professional consulting arborist services such as: exact property boundaries, property ownership, site lines, easements, codes, covenants & restrictions (CC&Rs), disputed between neighbors, and other issues.
6) We rely on the information disclosed to us and assume the information to be complete, true, and accurate.
7) The inspection is limited to visual examination of accessible items of the tree(s), from the ground unless otherwise noted, without excavation, probing, boring, or dissection, unless noted otherwise. Only information covered in this report was examined, and reflects the condition of those inspected items at that specific time.
8) Clients may choose to accept or disregard these opinions and recommendations of the arborist or to seek additional advice.
9) This report is copyrighted. Any modification or partial use shall nullify the whole report. Do not copy without written permission. This report is for the client and the client's assignees.
10) Sketches, diagrams, graphs, drawings, and photographs within this report are intended as visual aids and are not necessarily to scale, and should not be construed as engineering or architectural detail, reports or surveys.
11) We shall not attend or give a deposition and/or attend court by reason of this report unless fees are contracted for in advance, according to our standard fee schedule, adjusted yearly, for such services as described.

Signed: _____

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CITY OF PIEDMONT
120 VISTA AVENUE
PIEDMONT, CA 94611
TEL: (510) 420-3050
FAX: (510) 658-3167

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DEPOSIT PAID _____
DATE FILED _____
NUMBER _____
PLANNER _____
(For staff use only)

APPLICATION FOR: WIRELESS COMMUNICATIONS FACILITIES (WCF)

Purpose: *The purpose of the application is to provide a mechanism for an applicant to supply necessary information to the City of Piedmont so that it can review the proposed project for conformance with all applicable regulations and guidelines. The purpose of Chapter 17.46, Wireless Communications Facilities, is to provide a comprehensive set of standards for the development and installation of wireless communication facilities. The regulations are designed to protect and promote public safety and community welfare, property values, and the character and aesthetic quality of the city, while at the same time not unduly restricting the development of wireless communication facilities, and not unreasonably discriminating among wireless communication service providers of functionally equivalent services, including retail and other commercial providers of wireless communication services. This division applies to applications for approval of the installation of new or modified wireless communication facilities, including applications previously received by the city but not yet approved, disapproved or conditionally approved by a final city decision.*

Fees:

X	$2,710	Initial Deposit (the total fee will be equal to the cost to process)
_____	$5,425	Initial Deposit if 3rd party review is required pursuant to 17G.3.1(i) (the total fee will be equal to the cost to process)
_____	$815	One variance
X	$405	Each additional variance
$2,710	**TOTAL**	

Project Address: PIEDMONT HIGH SCHOOL 08 - 1159 Winsor Ave (ZONE A)

2 sets of plans must be submitted with this application for an initial staff review for completeness.
8 additional sets of plans may be requested by City Staff if this application is to be heard by the Planning Commission and/or the City Council.

Application Fees
The cost to process the application will determine the final application fees. You will be charged for any amount not covered by the initial deposit. If the cost to process the application is less than the initial deposit, you will receive a partial refund of your deposit.

Please indicate what steps you have taken to discuss this project with City staff prior to submittal: Beacon Development has met with Kevin Jackson and Pierce Macdonald-Powell on a number of occasions to discuss this project. Also conducted at least 3 site meetings.

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Detailed Description of Proposed Project: ***Please attach additional pages, as needed.***
See attached detailed project description.

I. Applicant Information:

Name of Commercial Wireless Provider: Crown Castle NG West LLC
Contact Person at Company: Sharon James
Company Address: 695 River Oaks Parkway
City San Jose **State** CA **Zip** 95134
Office phone #: (408) 468-5553 **Mobile Phone #:** (408) 426-6629
Fax #: _____ **Email Address:** _____

Project Applicant (e.g. the wireless provider's agent):
Company Name: Beacon Development, LLC
Contact Person at Company: Bob Gundermann & Jason Osborne
Company Address: 3 Rovina Lane
City Petaluma **State** CA **Zip** 94952
Office phone #: (925) 899-1999 **Mobile Phone #:** (415) 559-2121
Fax #: (415) 358-5766 **Email Address:** jason@beacondev.net
Agent's Prof. License #: n/a **Expiration Date:** _____
Piedmont Business License # of Agent: Will obtain **Expiration Date:** _____
(Please contact the City Clerk at 510-420-3040 for Piedmont Business License information.)

Property Owner Information:
Property Owner Name: City of Piedmont
Mailing Address: 120 Vista Avenue
City Piedmont **State** CA **Zip** 95611
Office phone #: (510) 420-3039 **Mobile Phone #:** _____
Fax #: (510) 658-3167 **Email Address:** kjackson@ci.piedmont.ca.us

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My signature below signifies that I:

- have read and provided all applicable information per this Application for Wireless Communications Facilities, including the information listed in the Submittal Checklist.
- have reviewed the legal description on the property deed and indicated all recorded easements and deed restrictions on the submitted site plan (*Please provide a description here of the easements and restrictions that were indicated on the property deed of the subject property*) _____
- believe the information provided in this application is accurate to the best of my knowledge.
- am aware that my initial deposits of $2,360 or $4,720 (exclusive of variance fees) may not cover the cost to process this pre-application and that additional deposits may be required. I agree to provide additional deposits if they are required. I am aware that the City will deduct the costs to cover the processing of this application from the deposit(s), and that any unused money remaining after action has been taken on the project, will be returned to me.
- am aware that City staff, Planning Commissioners, and/or City Council Members will be on the property to view proposed construction. (Please note any special instructions regarding access to the property such as gates, alarms, etc.) _____
- understand that if this application is approved, a building permit (issued within one year from the approval date) is required for construction and that no construction may commence prior to the issuance of the building permit. No changes may be made without City approval, and changes may require a new application.

SIGNATURE OF PROPERTY OWNER:

Pursuant to RUA between City of Piedmont and Crown Castle NG West LLC

Print Name Signature Date

SIGNATURE OF WIRELESS SERVICE PROVIDER'S AUTHORIZED REPRESENTATIVE:

Shawn James 5/17/17

Print Name Signature Date

AGENT AUTHORIZATION: This authorization must be signed by the property owner if the applicant is not the property owner. This authorization also permits City staff to contact the Wireless Service Provider and it agent if necessary.

I authorize Jason Osborne to act as my agent in the processing of all matters pertaining to this application.

SIGNATURE OF PROPERTY OWNER _____ date 5/19/17

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II. Land Use Information:

A. Land Use Zone:

Please circle the land use zone of the proposed project: (A) B C D E

If the project is located in a zone other than Zone B, other than publicly-owned facilities in other zones, or other than the public right-of-way, please submit a written statement explaining the attempts made to locate in Zone B, on publicly-owned facilities in other zones, and in the public right-of-way, and the supporting materials outlined in the Documentation Checklist (Section VIII. of this application).

B. New Facility Project:

1. Is the proposed project located on a property used for residential purposes? ☐ Yes ■ No

2. Does the project include the siting or construction of a new WCF facility? ■ Yes ☐ No

3. Does the project consist of communications equipment located completely inside a structure, not visible from the outside, whose purpose is solely to provide wireless communications within the same structure, including Wi-Fi hotspots and access points, with no alteration to the exterior of the structure? ☐ Yes ☐ No

C. Existing Facility Project:

1. Is the project at an existing WCF facility? ☐ Yes ■ No
2. Is the project for maintenance and repair (in which the model, type, mechanical, and electrical specifications, size and number of existing antennas, feed lines and ground-mounted equipment remains the same; OR is the project an upgrade project in which any equipment is added and/or replaced? ☐ Maintenance & Repair ☐ Upgrade
3. If the project is an "Upgrade" to an existing facility, please identify any of the following descriptions that apply:

a.	Replacement of antenna(s):	☐ Yes ☐ No	number_____
b.	Addition of antenna(s):	☐ Yes ☐ No	number_____
c.	Replacement of feed line(s):	☐ Yes ☐ No	number_____
d.	Addition of feed line(s):	☐ Yes ☐ No	number_____
e.	Replacement of ground mounted equipment:	☐ Yes ☐ No	number_____
f.	Addition of ground mounted equipment:	☐ Yes ☐ No	number_____
g.	Changes to access, parking, or landscaping:	☐ Yes ☐ No	
h.	Increase in the height of freestanding tower:	☐ Yes ☐ No	
i.	Replacement of wireless tower or foundation:	☐ Yes ☐ No	
j.	Changes to conceal or camouflage exterior:	☐ Yes ☐ No	

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k. Other (describe): _____

4. If the project is an "upgrade" to an existing facility, please describe how the project camouflages, conceals and/or screens the modified equipment so as to mitigate any adverse impact on aesthetics and views. N/A

5. If the project is an "upgrade" to an existing facility, please describe any proposed changes to the physical size of the exposed surface area of all existing components of the tower or base station (including but not limited to the height, circumference, width of the wireless tower or base station, etc.) or any increase by more than 10% from the existing dimensions of any structure(s) required to support the wireless tower or base station (such as guy wires, brackets, beams, etc.). N/A

D. Facilities located within the Public Right-of-Way:

1. Is the provider is a telephone corporation? ☒ Yes ☐ No
   → If yes, please provide certification as outlined in Section IX of this application.
2. Do you have an environmental review document certified by the CPUC? ☒ Yes ☐ No
   → If yes, please provide a copy of the document as outlined in Section IX of this application.
3. Is the facility proposed to be sited on a City pole (streetlight standard)? ☒ Yes ☐ No
   → If yes, please provide a list of the pole(s) as outlined in Section IX of this application.
4. Is the facility proposed to be sited on a third party's utility pole? ☐ Yes ☒ No
   → If yes, please provide written authorization from the appropriate utility company.

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E. Height:

What is the maximum height (measured from lowest adjacent grade) of the new or replacement antenna, pole and/or equipment? 45 feet 0 inches

(Please be aware of the maximum building height from grade for each zone in which the wireless communication facility is located, including existing structures or facilities to which the antennae are proposed to be mounted.)

F. California Environmental Quality Act (CEQA):

Do you believe the project is exempt from CEQA? ☑ Yes ☐ No

1. If yes, please cite the statutory or categorical exemption in Articles 18 and 19 of the CEQA Guidelines, Title 14 of the California Code Regulations and explain how the project meets this exemption: Section 15301(b)

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III. Building and Structural Information:

A. Loading:

Are additional gravity and wind loads likely to result from components of the project, such as additional arrays, or bigger, heavier antennas or mounting arms not accounted for in the original design? ■ Yes ☐ No

1. If yes, please describe the new loads and the equipment causing them. Adding two antennas. New structurals will be provided at time of BP. submittal.

B. Excavation, trenching and grade modifications:

Does the proposed project include any excavation, trenching and/or grade modifications?

■ Yes ☐ No

1. If yes, please describe: See attached detailed project description

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IV. Applicant's Wireless Communications Facilities Findings:

The following information is required from all applicants.

Please describe how the proposed project meets the following summarized Wireless Communications Facilities Development Standards outlined in Section 17.46.070 of the City's Municipal Code.

a) **New wireless communications facilities must be collocated with existing facilities and with other planned new facilities whenever feasible..** Please note that §17.46.070.A.1 states "A new wireless tower must be designed and constructed to accommodate future collocation(s) unless the city determines that collocation would be infeasible because of physical or design issues specific to the site." (*Indicate whether the proposed facility will be collocated with another facility. If it will not, comment on the feasibility of collocation and indicate what measures have been taken to attempt to collocate the facility with another facility. Additionally, indicate the aesthetic benefits and drawbacks of the proposed facility.*):
Placing new wireless communication facilities on existing utility structures

b) **No wireless communication facility may exceed 35 feet in height, measured from the ground to the highest point of the wireless communication facility, unless the zoning district in which the wireless communication facility is located expressly provides a higher height limit. Ground mounted wireless communication equipment, base station, antenna, pole, or tower must be the minimum functional height, unless a variance is granted. Roof mounted equipment and antennas must be located to minimize visibility.** (*Indicate the height of any ground mounted equipment, antennas, poles or towers and explain why the proposed heights are required.*):
Ground equipment will be placed in underground vault. No visual impact. Antennas placed at 32'-10" RAD center.

c) **Wireless communication facility(ies) must be designed to minimize visual impacts. When feasible, the facility(ies) must be concealed or camouflaged. The facility(ies) must have a non-reflective finish and be painted or otherwise treated to minimize visibility and the obstruction of views. The facility(ies) may not bear signs, other than certification, warning, emergency contacts, or other signage required by law or expressly required by the City.** (*Describe the materials and finishes of the equipment, antennas, poles, and towers and indicate how these materials and finishes will be non-reflective and will minimize any visual impacts.*): Equipment will be painted to match pole.

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A wireless communication receiving and transmission facility may not adversely affect the public health, peace and safety. (*Indicate any measures proposed to address the public health, peace and safety.*): _____

e) **A wireless communication facility located in the public rightof-way may not cause: (i) physical or visual obstruction, or safety hazard, to pedestrians, cyclists, or motorists; or (ii) inconvenience to the public's use of the right-of-way. Equipment, walls, and landscaping located above grade must be at least 18 inches from the front of the curb and not interfere with the public's use of the right-of-way.** See attached EMF study
Ground equipment will be vaulted and equipment on pole painted to match.

f) **Each wireless communication facility must comply with federal and state statutes governing local agencies' land use authority regarding the siting of wireless communication facilities, including without limitation 47 USC sections 253, 332(c)(7), 47 USC section 1455 (also known as section 6409 of the 2012 Middle Class Tax Relief and Jobs Act), California Government Code sections 50030, 65850.6 and 65964, and California Public Utilities Code sections 7901 and 7901.1. Each reference to a federal and state statutes is to the statute as it may be as amended from time-to-time and to the extent the statute remains in effect.** _____

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V. Applicant's Wireless Communications Facilities Priority for Location Findings:

The following information is required from all projects located in Zones A, C, D & E, projects not located in or on publicly-owned facilities, or projects in locations other than the public right-of-way.

Please describe how the proposed project meets the following summarized Wireless Communications Facilities Development Standards outlined in Section 17.46.040 of the City's Municipal Code.

a) The facility is necessary to close a significant gap in the operator's service coverage or capacity. *Please comment:* Yes per RF propagation maps.

b) The proposal satisfies each of the applicable development standards in section 17.46.070 above. *Please comment:* Yes

c) The applicant has evaluated and met the priority for location standards of section 17.46.040 A above., including the evaluation of a possible alternative site(s) in Zone D that is not used for residential purposes; evaluation of a possible alternative site(s) in non-residential property in Zone A, C or E; evaluation of a possible alternative site(s) on or in an existing structure where the wireless communications facility can be concealed; evaluation of a possible alternative site(s) where collocation with other wireless communications facility is possible; and evaluation of a possible alternative site(s) where the wireless communications structure can be located on or in a new structure that can be incorporated in an inconspicuous or compatible manner with the surrounding area. *Please comment:* There are no viable options in Zone B to cover Zone A because of the topography of Piedmont. Therefore, we chose to place our equipment on existing public utility infrastructure.

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d) The proposed design is consistent with City of Piedmont Design Guidelines. *Please comment:* Yes. We are placing our equipment on existing public utility infrastructure.

e) The proposed facility has been located and designed for collocation to the greatest extent reasonably feasible, and the applicant has submitted a statement of its willingness to allow other wireless service providers to collocate on the proposed facility. *Please comment:* Yes. No issue colocation.

The development standards in 17.46.070 shall be fully considered. *Please make sure you have completed the Findings in Section IV of this application form.*

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VI. Applicant's Variance Findings:

The following information is required from all projects that require a variance.

In order for the Planning Commission to approve an application for a variance, required findings must be made. Please describe how the proposed project meets the variance criteria of Section 17.70 of the City's Municipal Code.

a) **The property and existing improvements present unusual physical circumstances of the property (including but not limited to size, shape, topography, location and surroundings), so that strictly applying the terms of this chapter would keep the property from being used in the same manner as other conforming properties in the zone;** *Describe specific, unique problems with the property, such as location, surroundings, mature trees, natural obstacles or formations, and explain why the improvements cannot be made in conformity with codes and regulations:* Please see attached supplemental variance application material.

b) **The project is compatible with the immediately surrounding neighborhood and the public welfare; and** *Explain why, without the variance, the property cannot be used in the same manner as others in the same zone, and explain how the variance will not give the property an advantage over others in the same zone.:* Please see attached supplemental variance application material.

c) **Accomplishing the improvement without a variance would cause unreasonable hardship in planning, design, or construction.** *Unreasonable hardship" for purposes of this subsection refers to the unusual physical characteristics of the underlying lot and existing improvements on the lot which prohibit development of the lot in a manner consistent with lots conforming to City standards. "Unreasonable hardship" shall not refer to any conditions personal to the applicant. Please describe the hardship(s) inherit to this property:* Please see attached supplemental variance application material.

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CROWN CASTLE

3 Rovina Lane
Petaluma, CA 94952

T 415-559-2121
F 415-358-5766
jason@beacondev.net

May 18, 2017

Pierce Macdonald-Powell
Senior Planner

RE: Variance Application Information for Crown Castle DAS Expansion PHS08 @ 1159 Winsor Ave.

Mr. Macdonald-Powell:

GO 95 and the CPUC regulates the placement of microcellular antennas in relation to the separation between the various utility companies and their lines on wood poles. Due to the terrain in this area we are using 4ft antennas as it provides much better signal control compared to 2ft antennas. Looking at the pole, we need 6 feet of separation between the secondary power (24'-8") and the top of the antenna. Also from the bottom of the antenna to the future Crown Castle fiber (22'-0") we need 2 feet of separation. In total, we need 12 feet of separation between the secondary power and the future crown castle fiber in order to place the antennas. On this pole, we only have 2'-8" of clearance. Therefore, we placed the antennas on top of the pole. Placing the antennas below the communication zone not only would decrease the coverage as it will be affected by surrounding foliage and the building structures, but it would also bring them closer to the pedestrians creating more concern and in these cases, fall outside what is permitable.

The current design of placing the antennas at the top of the pole, allows Crown Castle to adhere to both the State utility regulations as well as achieving the purpose of increased cell/data coverage needed by its customer.

Regards,

Jason Osborne
Beacon Development, LLC
jason@beacondev.net
(415) 559-2121
(415) 358-5766 fax

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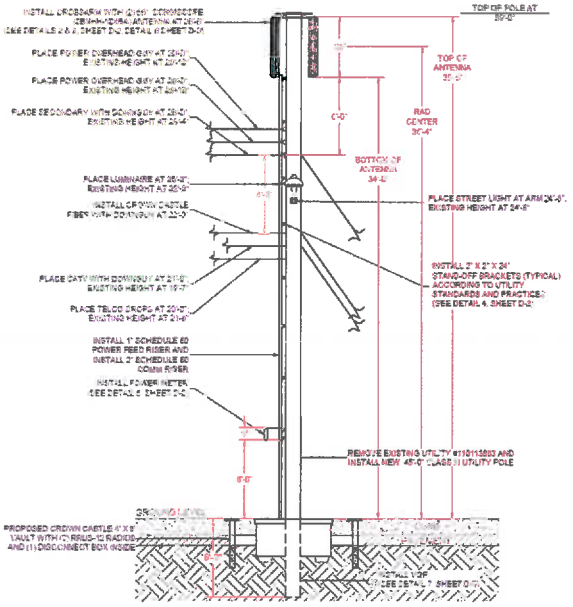

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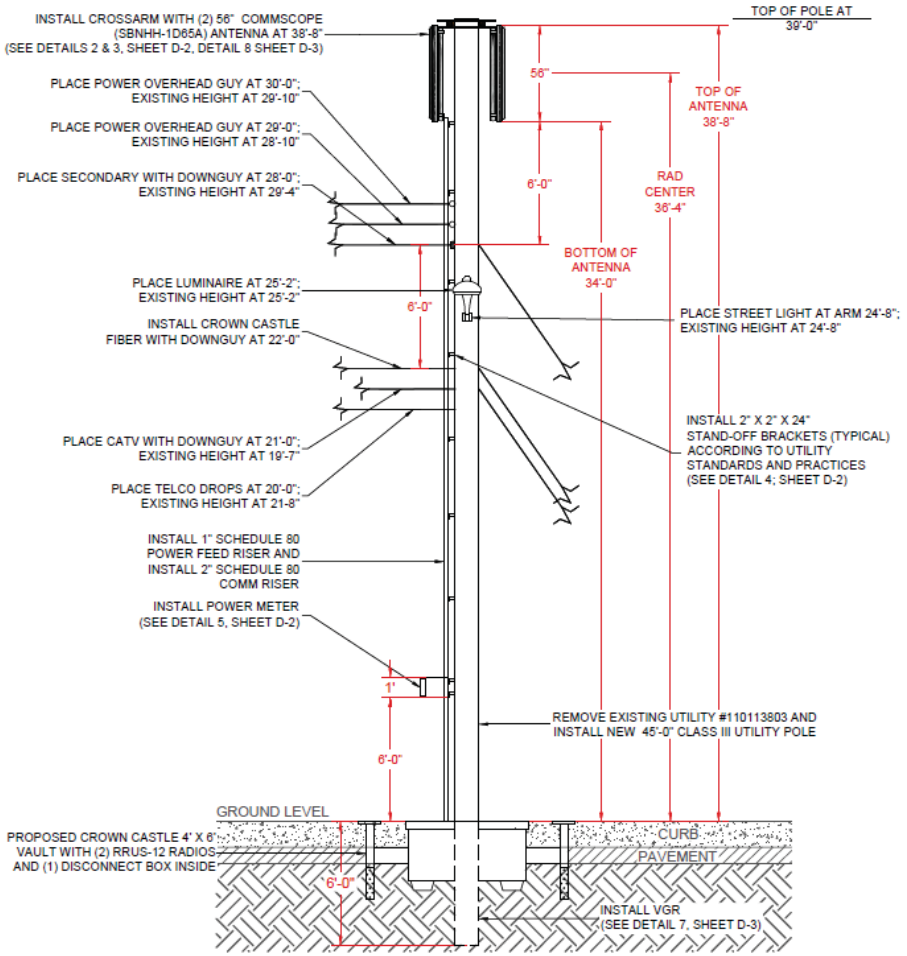
CA-PHS08m

Rad Center (36’ 4”)

GO 95 and the CPUC regulates the placement of microcellular antennas in relation to the separation between the various utility companies and their lines on wood poles. Due to the terrain in this area we are using 4ft antennas as it provides much better signal control compared to 2ft antennas. Looking at the pole, we need 2 feet separation between street light (24’ 8”) and the top of the antenna. Also from the bottom of the antenna to the future crown castle fiber (22’ 0”) we need 2 feet separation. In total we need 8 feet separation between the street light and the future crown castle fiber in order to place the antennas which we don’t have. We only have 2’ 8” clearance on this pole, therefore we placed the antennas on top of the pole. Placing the antennas below the communication zone not only would decrease the coverage as it will be affected by surrounding foliage and the building structures, but it would also bring them closer to the pedestrians.



VI. Applicant's Variance Findings:

The following information is required from all projects that require a variance.

In order for the Planning Commission to approve an application for a variance, required findings must be made. Please describe how the proposed project meets the variance criteria of Section 17.70 of the City's Municipal Code.

a) **The property and existing improvements present unusual physical circumstances of the property (including but not limited to size, shape, topography, location and surroundings), so that strictly applying the terms of this chapter would keep the property from being used in the same manner as other conforming properties in the zone;** *Describe specific, unique problems with the property, such as location, surroundings, mature trees, natural obstacles or formations, and explain why the improvements cannot be made in conformity with codes and regulations:* Please see attached supplemental variance application material.

b) **The project is compatible with the immediately surrounding neighborhood and the public welfare; and** *Explain why, without the variance, the property cannot be used in the same manner as others in the same zone, and explain how the variance will not give the property an advantage over others in the same zone.:* Please see attached supplemental variance application material.

c) **Accomplishing the improvement without a variance would cause unreasonable hardship in planning, design, or construction.** *Unreasonable hardship" for purposes of this subsection refers to the unusual physical characteristics of the underlying lot and existing improvements on the lot which prohibit development of the lot in a manner consistent with lots conforming to City standards. "Unreasonable hardship" shall not refer to any conditions personal to the applicant. Please describe the hardship(s) inherit to this property:* Please see attached supplemental variance application material.

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3 Rovina Lane
Petaluma, CA 94952

T 415-559-2121
F 415-358-5766
jason@beacondev.net

May 26th, 2017

Pierce Macdonald-Powell
Senior Planner

RE: Variance Application Information for Crown Castle DAS Expansion PHS08 @ 1159 Winsor Ave.

Ms. Macdonald-Powell:

- Variance Issue – Meter will be relocated to 7' above the sidewalk:

Section 5.4.1 (PG&E Green Book)

B. Pole-Mounted Communication Service and Meter Equipment Applicants must ensure that communication service and meter equipment installed on PG&E or joint poles is placed so the bottom of the enclosure is a minimum of 7 feet to a maximum of 8 feet from the finished grade. If it is not possible to meet the height requirements, install a meter pedestal. Ask your PG&E project coordinator for Numbered Document 027911,"Installation Details for Service to Pole-Mounted Communication Equipment," for specific requirements.

- In short, the only other option could be to add a meter pedestal to the sidewalk, which would be a great impact based on our review of the locations, and the City is asking we place all equipment below ground (see below for 'meter vaulting').

- Variance issue – Meter within 18" of sidewalk curb face

The meter is chosen by PG&E based on the loading requirement, and they are unable to utilize a "bulb" type, and we are unable to place the meter inside the vault. PG&E will not place inside the vault due to reliability issues with the grid system, hazards to the public and unsafe worker conditions. Therefore, we are unable to place the meter in another location than where we have proposed it. In discussions with Planning Staff, we discussed reviewing relocating the new poles outside of the 18" zone, but the risk with this is impacting any ADA sidewalk requirements.

- Antennas encroaching over the 18" curb face

The antennas are placed on the pole to adhere to GO95 requirements, wherein we need to maintain a 24" distance to the existing utility pole. The antennas cannot be moved to another location due to the fact our antennas must face a certain azimuth to ensure we properly cover the area. Please note, there is a huge palm tree which impedes moving the antennas as well.

Regards,

Jason Osborne

Jason Osborne
Beacon Development, LLC
jason@beacondev.net
(415) 559-2121

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VII. Notice Instructions:

Required for all projects that will be heard by the Planning Commission and/or City Council (e.g., non-exempt projects, projects without proposed collocation, and projects referred to the Planning Commission by the Planning Director).

1. Complete the attached Notice and make one photocopy for each adjacent neighbor.

2. Hand deliver or mail one copy of the Notice to each adjacent neighbor at least 30 days before the initial hearing. Adjacent neighbors often include one neighbor on each side, three across the street, and three in the rear. You may address the notices to "Property Owner", if you do not know the names of your adjacent neighbors.

3. Complete the attached Affidavit of Service and return it along with one copy of the Notice to the Department of Public Works at least 30 days before the hearing. Please note the Affidavit of Service is not required to be notarized.

4. Please call the Department of Public Works at (510) 420-3050, if you have any questions or would like help in determining the addresses or names of your adjacent neighbors.

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NOTICE OF AN APPLICATION FOR
WIRELESS COMMUNICATIONS FACILITY

Dear Neighbor:

I/ We have submitted an application for consideration by the Piedmont Planning Commission which seeks City approval of an application to (description of project) _____

PIEDMONT HIGH SCHOOL 08 - 1159 Winsor Ave

The purpose of this form is to notify you of my application. My application will be considered by the Planning Commission on or after (date) _____.

This notice will be followed by a notice from the City confirming the date of the hearing and inviting you to comment on the application. The Planning Commission regularly meets at 5:00 p.m. on the second Monday of every month in the Council Chambers at City Hall, 120 Vista Avenue. Please contact the Department of Public Works at 420-3050, if you have any questions regarding this application.

Signed,

Signature _____ Date 5/19/17

Jason Osborne
Name of Applicant

1159 Winsor Ave
Address of Project

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AFFIDAVIT OF SERVICE BY **APPLICANT/ AGENT**

(To be attached to a copy of the Notice and returned to the Department of Public Works.)

_____ being sworn, says that he or she is over 18 years of age
affiant (applicant/agent) name

and a resident of _____
County, Country

That affiant's **residence address** is _____.

That affiant served a copy of the attached notice of an application for variance and/or Planning Commission design review by placing said copy in an envelope addressed to:

which envelope was then sealed and postage fully prepaid thereon, and thereafter was on _____
date
deposited in the United States mail or delivered personally by hand.

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

Executed on _____ at _____, California.
date address

Signed _____
Affiant's signature

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VIII. Drawing and Document Elements Checklist:

Wireless Communications Facility (WCF) Application

A vital part of the WCF Application is to have adequate plan set information in order to properly review the proposed wireless telecommunications facility in conformance with Chapter 17.46 of the Municipal Code and all other relevant guidelines and regulations. Unless otherwise indicated, you must provide all of the following information. Two (2) sets of drawings (24" x 36" in size) must be submitted with the WCF Application. All drawings must be accurately scaled and dimensioned. One copy of non-drawing documents must be submitted with the WCF Application.

Should your application be deemed complete and placed on the agenda for a Commission or Council hearing, **8 additional sets of plans** will be requested by City Staff.

Existing Site Plan (preferred scale 1/8") should include:

- ■ Scale, north arrow, and dimensions;
- ■ Property lines, easements, streets, pavement striping, sidewalks, curbs, curb ramps, and rights-of-way;
- ■ Location of existing structures, hardscape areas, fences, retaining walls, trees, hedges and other significant site features;
- ■ Roof plans should be shown for all structures (rather than floor plans). Roof plans should include all edges and ridges, the roof slope, overhangs, skylights, chimneys, vents, and other equipment or antennas;
- ■ Setback dimensions measured from the property lines to the closest point of Structure(s) (§17.2.71-73), including eaves and other architectural projections.

Proposed Site Plan (preferred scale 1/8") should include:

- ■ Scale, north arrow, and dimensions;
- ■ Property lines, easements, streets, pavement striping, sidewalks, curbs, curb ramps, and rights-of-way;
- ■ Location of existing and proposed structures, hardscape areas, fences, retaining walls, trees, hedges and other significant site features;
- ■ Roof plans should be shown for all structures (rather than floor plans). Roof plans should include all edges and ridges, the roof slope, overhangs, skylights, chimneys, vents, and other equipment or antennas;
- ■ Footprints (outline) and identification of structures on adjacent properties within 20 feet of the property line or more than 100 feet from the proposed construction. Indicate the dimensions between the closest point of any adjacent structure and the proposed construction;
- ■ Setback dimensions measured from the property lines to the closest point of proposed ground-mounted equipment, antenna, and Structure(s) (§17.2.71-73) including eaves and other architectural projections.

Existing Elevations (or Photographs should no existing building exist) (preferred scale 1/4") should include:

- ■ Scale, dimensions, and drawing label indicating the cardinal direction (or indicated plan direction) the depicted wall is facing;
- ■ All elevations of each structure on which modifications are proposed;
- ☐ Show buildings, other structures, WCF equipment, fences, retaining walls, and any other relevant feature;
- ☐ Indication of building materials for walls, roofs, windows, doors, decorative features, and WCF equipment and antennas;
- ■ Indication of the height of buildings, structures and WCF equipment. Heights are measured to the highest point of the feature from both the lowest adjacent grade and highest adjacent grade. Adjacent grade is where grade meets the footprint of the building or structure;
- ■ Photographs showing existing conditions may be submitted as supplemental information or in place of elevations when no existing structures or buildings exist on site.

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Proposed Elevations (preferred scale 1/4") should include:

- ■ Scale, dimensions, and drawing label indicating the cardinal direction (or indicated plan direction) the depicted wall is facing;
- ■ All elevations of each structure on which modifications are proposed;
- ☐ Show buildings, other structures, WCF equipment, fences, retaining walls, required signage, and any other relevant feature;
- ■ Indication of proposed building materials for walls, roofs, windows, doors, decorative features, and WCF equipment and antennas;
- ■ Indication of the proposed height of new buildings, structures and WCF equipment. Heights are measured to the highest point of the feature from both the lowest adjacent grade and highest adjacent grade. Adjacent grade is where grade meets the footprint of the building or structure;
- ☐ Photographs or photo simulations showing proposed conditions may be submitted as supplemental information.

Equipment Details (preferred scale at least 1/2") should include:

- ■ Scale, dimensions, and drawing label;
- ■ Include details of antenna and other proposed wireless communications equipment.

Landscape plans (preferred scale 1/8") should include:

- ☐ Scale, north arrow and dimensions;
- ☐ Include property lines, footprints of all structures and all hardscape areas;
- ☐ Show planting areas and provide a plant list including the size and species;
- ☐ Arborist report for work within the driplines of existing trees;
- ☐ Provide information on irrigation.

Photo Simulations (optional):

- ■ In addition to proposed elevations, photo simulations may be submitted to demonstrate the aesthetics and impacts of a proposed wireless communications facility.

Story Poles, per City of Piedmont story pole policy.

Graphic Calculations (1 set only):
Please submit plans which graphically illustrate the required calculations. Calculations are expressed as percentages. Separate graphic calculations are to be submitted, as follows:

- ☐ **Existing and Proposed Structure Coverage** equals the number of square feet of structures covering the lot divided by the number of square feet in the lot. (Equipment, antennas, poles, and towers are included in this calculation,) For a complete definition of structure coverage, please see Piedmont City Code §17.2.71-73.
- ☐ **Existing and Proposed Hardscape Surface Coverage** equals the number of square feet of structures plus the number of square feet of all hardscape, all divided by the number of square feet in the lot. For a complete definition of Hardscape Surface, please see Piedmont City Code §17.2.35.

Documentation for sites outside of Zone B, publicly-owned facilities in other zones, or the public right-of-way:

- ☐ **Map and Written Description** showing and describing the exact area in Piedmont which applicant contends cannot receive coverage from a site in Zone B or a site outside of City, showing the boundaries of the area clearly on a map and setting forth the exact street addresses of each Piedmont home not within the area receiving coverage – Piedmont City Code §17G.4.2(a).
- ☐ **Copies of Detailed Technical Reports or Tests** which clearly prove that each home within the area fails to receive coverage from Zone B or from any other Zone within Piedmont, or from specific locations outside of Piedmont – Piedmont City Code §17G.4.2(b).
- ☐ **Copies of Detailed Technical Reports or Tests** which prove that each home within the area does receive coverage from the alternate site proposed by applicant – Piedmont City Code §17G.4.2(c).

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- ☐ **List of All Possible Site Locations within Zone B** and all possible site locations outside of the city from which applicant has conducted tests to determine if coverage is feasible, including copies of all reports or test results from each such possible site – Piedmont City Code §17G.4.2(d).
- ☐ **Exact Information on All Possible Site Locations Outside of Zone B within the City** from which applicant has conducted tests to determine if coverage is feasible, including copies of all reports or test results from each such possible site – Piedmont City Code §17G.4.2(e).
- ☐ **Exact Information on the Alternate Site** proposed by the applicant, including the exact location of the site as shown on a map and by street address, a copy of an executed Lease or PCS Site Agreement for the site, a detailed report on all costs and expenses in constructing and completing such site for use, including a verifiable bid for the work on such site, and an exact schematic drawing – Piedmont City Code §17G.4.2(f).

Documentation for Wireless Communication Facilities located within the Public Right-of-Way (ROW):

- ■ Certification that the provider is a telephone corporation.
- ■ Any environmental review document(s) certified by the California Public Utilities Commission for siting the proposed facilities in the City's ROW.
- ■ For projects in which the facility is proposed to be sited on a City pole (e.g., streetlight standard), please provide a list of said poles including identification by location and badge/ID number.
- ■ For projects in which the facility is proposed to be sited on a third party's utility pole (e.g., PG&E pole), please provide a list of said poles including identification by location and badge/ID number AND written authorization from the appropriate utility company.
- ■ Site plans that illustrate the boundaries of the ROW and the location of infrastructure in the ROW, including without limitation sidewalks, curbs, gutters, driveways, landscaping, other existing communications equipment, utility poles, light poles, fire hydrants, bus stops, bike lanes, traffic signals and above and below ground utility equipment vaults, etc.
- ■ Analysis demonstrating the impacts to sightlines for drivers, bicyclists, and pedestrians.

If you believe that any of the above requirements do not pertain to your project, please call the Department of Public Works at (510) 420-3050 and make an appointment to meet with a planner.

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Crown Castle
695 River Oaks Parkway
San Jose, CA 95134

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April 7, 2017

City of Piedmont
120 Vista Avenue
Piedmont, CA 94611
Phn: (510) 420-3050
Fax: (510) 658-3167

RE: Detailed Description of Proposed Crown Castle DAS Expansion Project @ 1159 Winsor Ave. PN508

To Pierce Macdonald-Powell,

This project involves the installation of the following:

- REMOVE EXISTING UTILITY POLE #110113803 AND INSTALL NEW 45'-0" CLASS III UTILITY POLE.
- INSTALL NEW 2" X 2" X 24" STAND-OFF BRACKETS (TYPICAL) ACCORDING TO UTILITY STANDARDS AND PRACTICES.
- INSTALL POWER METER.
- INSTALL NEW DOUBLE CEA WITH (2) COMMSCOPE SBNHH-1D65A 56" PANEL ANTENNAS WITH ELECTRICAL TILT.
- INSTALL VGR.
- INSTALL NEW 1" SCHEDULE 80 POWER FEED RISER.
- INSTALL NEW 2" SCHEDULE 80 COMM RISER.
- TRANSFER TELCO DROPS TO 19'-6".
- TRANSFER CATV WITH DOWNGUY TO 20'-6"
- CROWN CASTLE FIBER WITH DOWN GUY TO 21'-6".
- TRANSFER LUMINAIRE TO 25'-2".
- TRANSFER STREET LIGHT ARM TO 24'-8".
- TRANSFER SECONDARY WITH DOWN GUY TO 27'-6".
- TRANSFER POWER OVERHEAD GUY TO 29'-0".
- TRANSFER POWER OVERHEAD GUY TO 30'-0".
- INSTALL NEW 4' X 6' CROWN CASTLE VAULT WITH (2) RRUS-12 RADIOS INSIDE.

The equipment on the pole will be painted to match the wood and will be compatible with other poles in the area. The installation will not adversely affect abutting and surrounding neighborhoods and will have no effect on traffic.

Statement of Operations

The proposed facility will use existing electrical and telephone services, which are readily available to the site. No nuisances will be generated by the proposed facility, nor will the facility injure the public health, safety, morals or general welfare of the community. The technology does not interfere with any other forms of communication devices whether public or private.

Upon completion of construction, finetuning of the facility may be necessary, meaning the site will be adjusted once or twice a month by a service technician for routine maintenance. No additional parking spaces are needed at the project site for maintenance activities. The site is entirely selfmonitored and connects directly to a central office where sophisticated computers alert personnel to any equipment malfunction or breach of security.

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Because the facility will be un-staffed, there will be no regular hours of operation and no impact to existing traffic patterns. Existing public roads will provide access to the technician who arrives infrequently to service the site. No on-site water or sanitation services will be required as a part of this proposal.

1. Street use permit shall be obtained by contractor prior to commencing work.
2. All work to be conduced in the right of way.
3. All disturbed landscaping shall be replaced to similar existing conditions.
4. Any sidewalk closure shall be coordinated with the city and proper signing will be placed.
5. No materials or equipment shall be stored on private property or block access to private property.
6. Cleanup of site will be completed each evening and the site will be returned to existing conditions at the completion of construction.

Alternative Site Analysis

Please find supplemental material discussing alternative any applicable alternative locations or designs on the attached document, which have been reviewed within our RF Propagation package.

Zoning Analysis

The site of the proposed facility is located in a public right-of-way. This particular location falls within *Zone A*, and is not preferred by the City. As a follow up to material noted in our application, it is impossible to cover "Zone A" from "Zone B", due to the topography of the area, or without placing a number of highly visible "macro" sites (large monopoles or monopines) surrounding the area which would "send in" a signal, but these would be highly visible and not provide the service intended. It is also important to mention, we are a 'telephone corporation' (Section D, section D.1, D.3 when applicable). Please also refer to Section VI (a)(b) wherein we are utilizing existing utility infrastructure which is design specifically of a "minimum functional height", while placing a Macro site in Zone B would require a much larger (taller) structure with an antenna array consistent with a typical macro site seen throughout the Bay Area. These "small cell" facilities as designed are only intended to cover a small area, and this design presented to the City of Piedmont and its residents presents the least visual impact possible. The sites (also referred to as nodes) are strategically placed throughout the City to enhance cellular coverage, but moving them, or placing them in different "zones" we would jeopardize the overall network.

New Node and Installation of a New Pole

Crown Castle NG West LLC ("Crown Castle") is submitting the accompanying complete application to install its telecommunications network facilities in accordance with your code, ordinances and regulations. Please be advised the Federal Communications Commission (FCC) has adopted Rules and Regulations that impact how you must process this application.
In addition, state law also limits your regulation of Crown Castle's access to the public rights of way.

Crown Castle's Deployment

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Crown Castle provides telecommunications services to wireless carriers. It does so via telecommunications networks installed in the public rights of way that integrate elements including fiber optic cables as well as personal wireless services facilities, such as antennas and related equipment. These networks are sometimes referred to as distributed antenna systems ("DAS") or Small Cell networks.

Pursuant to the California Public Utility Commission, Crown Castle has been granted a certificate of public convenience and necessity ("CPCN"). As a result, Crown Castle must be granted access to the public rights of way in the same manner and on the same terms applicable to other certificated telecommunications providers and utilities.

Federal Regulations Applicable to This Application

Federal law and the FCC's rules implementing the law require that this permit application be processed to a final decision by this jurisdiction without undue delay. Specifically, because this application proposes to install new equipment on a new pole in the public rights of way, this application must be acted on within one hundred fifty (150) days from its submission, today.[1]

Moreover, pursuant to FCC regulations, this application is deemed complete 30 days after today, unless you provide written notice to Crown Castle.[2] If you contend that the application is incomplete, within the next 30 days you must provide written notice specifying any items you claim are missing to make the application complete.[3] For each item alleged to be missing, you must specify the code provision, ordinance, application instruction, or otherwise publically-stated procedure that requires the submission of the information.[4]

Among other Federal and State Rights, we note that California Public Utilities Code § 7901 grants a statewide franchise to telephone corporations to place telephone equipment in the public rights- of-way and that use of the rights-of-way by telephone corporations is a matter of statewide concern that is not subject to local regulation except for limited regulation of the time, place, and manner of such use. In addition, the Telecommunications Act limits the authority of local jurisdictions by, among other restrictions, requiring approval within a reasonable period of time. In submitting this application, Crown Castle expressly reserves all of its Federal and State Rights, including, without limitation, its rights under federal and state law to challenge the requirement for a discretionary permit for its proposed installation in the public right-of-way. Neither the act of submitting the application nor anything contained therein shall be construed as a waiver of any such rights.

Please send all written requests for additional information regarding this application to:

---

1 In re Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review, Declaratory Ruling, 24 FCC Rcd. 13994 ¶¶ 32, 45-46 (2009) ("FCC Shot Clock Order"); In the matter of Acceleration of Broadband Deployment By Improving Wireless Facilities Siting Policies, Report and Order, FCC 14-153, WT Docket No. 13-238, ¶ 272 (FCC Oct. 21, 2014) ("Wireless Infrastructure Order") (clarifying that DAS nodes that involve installation of new poles trigger the 150 day shot clock).
2 Wireless Infrastructure Order at ¶¶ 257, 259.
3 Wireless Infrastructure Order at ¶¶ 259-260.
4 id.

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2 Wireless Infrastructure Order at ¶¶ 257, 259.
3 Wireless Infrastructure Order at ¶¶ 259-260.
4 Id.

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Jason Osborne
Beacon Development, LLC
3 Rovina Lane, Petaluma, CA 94952
(415) 559-2121
jason@beacondev.net

Sincerely,

Sharon James

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Verizon Wireless • Piedmont, California
Proposed DAS Nodes • ID# 258040 "Piedmont High School"

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate distributed antenna system ("DAS") nodes (ID# 258040 "Piedmont High School") proposed to be located near Piedmont High School in Piedmont, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

Verizon proposes to install directional panel antennas on four poles sited in the public right-of-way in Piedmont. The proposed operations will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

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

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

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

General Facility Requirements

Wireless nodes typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to a central "hub" (which in turn are connected to the traditional

wired telephone lines), and the passive antenna(s) that send the wireless signals created by the radios out to be received by individual subscriber units. The radios are often located on the same pole as the antennas 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"). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

Site and Facility Description

Based upon information provided by Verizon, it is proposed to install eight CommScope Model SBNHH-1D65A directional panel antennas in pairs on four poles sited in the public right-of-way in Piedmont, near Piedmont High School. The antennas would employ 2° downtilt,* would be mounted at effective heights of at least 26 feet above ground, and would be oriented as shown in Table 1. The maximum effective radiated power in any direction would be 1,141 watts, representing simultaneous operation at 805 watts for AWS and 336 watts for 700 MHz service. There are reported no other wireless telecommunications base stations at the site or nearby.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation is calculated to be 0.019 mW/cm^2, which is 2.7% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building† is 1.6% 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. The maximum calculated levels at ground for all of the nodes are given in Table 1:

* Assumed for the purposes of this study.
† Located at least 35 feet away, based on photographs from Google Maps.

Verizon Wireless • Piedmont, California
Proposed DAS Nodes • ID# 258040 "Piedmont High School"

Node Number	Approximate Address	Antenna Orientations	Effective Height	Calculated Exposure at Ground Power Density vs. FCC Limit	
CA-PHS03 N37.823568, W122.233254	799 Magnolia Avenue	90/190°T	32'3.5"	0.012 mW/cm^2	1.6%
CA-PHS04 N37.822997, W122.234129	Magnolia Avenue	105/220°T	26'3.5"	0.014 mW/cm^2	2.3%
CA-PHS08m N37.820328, W122.236256	1159 Winsor Avenue	160/280°T	36'3"	0.014 mW/cm^2	1.9%
CA-PHS09m1 N37.820145, W122.234044	Across 314 Wildwood Ave	100/220°T	27'7.5"	0.019 mW/cm^2	2.7%

Table 1. CommScope Model SBNHH-1D65A, with two 2x40W RRUS-12 (700 MHz, AWS)

Recommended Mitigation Measures

Due to their mounting locations and heights, the Verizon antennas would not be accessible to unauthorized persons, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training, to include review of personal monitor use and lockout/tagout procedures, be provided to all authorized personnel who have access to the antennas or the poles. No access within 4 feet directly in front of the antennas themselves, such as might occur during certain maintenance activities, should be allowed while the pertinent node is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. It is recommended that explanatory signs‡ be posted at the antennas and/or on the poles below the antennas, readily visible from any angle of approach to persons who might need to work within that distance.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the DAS nodes proposed by Verizon Wireless in Piedmont, 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 nodes. Training authorized personnel and posting explanatory signs are recommended to establish compliance with occupational exposure limits.

‡ Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required. Signage may also need to comply with the requirements of PUC GO95.

Verizon Wireless • Piedmont, California
Proposed DAS Nodes • ID# 258040 "Piedmont High School"

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration No. E-18063, which expires 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.

Rajat Mathur, P.E.
707/996-5200

December 2, 2016

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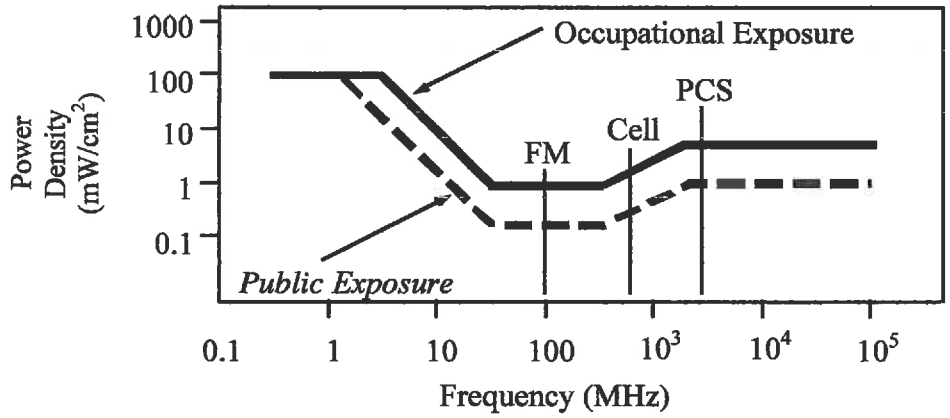
FCC Radio Frequency Protection Guide

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

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

Frequency	Electromagnetic Fields (f is frequency of emission in MHz)					
Applicable Range (MHz)	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm^2)	
0.3 – 1.34	614	*614*	1.63	*1.63*	100	*100*
1.34 – 3.0	614	*823.8/f*	1.63	*2.19/f*	100	*180/f^2*
3.0 – 30	1842/ f	*823.8/f*	4.89/ f	*2.19/f*	900/ f^2	*180/f^2*
30 – 300	61.4	*27.5*	0.163	*0.0729*	1.0	*0.2*
300 – 1,500	$3.54\sqrt{f}$	*$1.59\sqrt{f}$*	$\sqrt{f}/106$	*$\sqrt{f}/238$*	f/300	*f/1500*
1,500 – 100,000	137	*61.4*	0.364	*0.163*	5.0	*1.0*



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

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

Near Field.

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

For a panel or whip antenna, power density $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$, in mW/cm^2,

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

where θ_{BW} = half-power beamwidth of the antenna, in degrees, and
P_{net} = net power input to the antenna, in watts,
D = distance from antenna, in meters,
h = aperture height of the antenna, in meters, and
η = aperture efficiency (unitless, typically 0.5-0.8).

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

Far Field.

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

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

where ERP = total ERP (all polarizations), in kilowatts,
RFF = relative field factor at the direction to the actual point of calculation, and
D = distance from the center of radiation to the point of calculation, in meters.

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

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ABACUS
CONSULTING ARBORISTS

Nicole@Abacus-Tree.com (530) 889-0603 Phone www.Abacus-Tree.com

February 1, 2017

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Bob Gunderman
Beacon Development, LLC
1757 Greenwood Road
Pleasanton, CA 94566

Re: Cell Vault and Sidewalk Replacement at 1159 Windsor Avenue, Piedmont, CA

Dear Mr. Gunderman:

Pursuant to your request, an evaluation of the trees at the development site and within 25' of the development area which could be impacted by the proposed development was conducted. The location is 1159 Winsor Avenue along the south east side of the property, in Piedmont, California. See Appendix A – Site Map.

There are two (2) tree's within 25' of the proposed development area that could potentially be impacted by the development. Tree #1 is a 26" DBH[1] Canary Island Date Palm, *Phoenix canariensis*, with an 36" base. This tree is growing over the concrete sidewalk and the sidewalk appears to have been replaced in the past. It is located ±6' west of the proposed replacement of the sidewalk and vault. The root system of the palm is unlikely to be disturbed by the proposed development. Tree #2 is a 5" DBH Horse Chestnut Tree, *Aesculus hippocastanum*. It is located next to the existing tie-down and has surface roots surrounding the base of the tiedown. It is southeast of the proposed vault.

The following recommendations will provide adequate protection for the trees during construction:

1. Clearance pruning may be required for the new pole. All pruning shall be by a qualified ISA certified arborist;
2. The removal of the sidewalk shall be by saw cutting only the depth of the sidewalk and hand removal of the pieces within 5' of tree #2 and the tiedown;
3. Any roots encountered less than 2" in diameter during removal of the sidewalk or trenching shall not be 'pulled' by equipment, but shall be cut clean by hand;

[1]Diameter at Breast High is normally measured at 4'6" (above the average ground height for "Urban Forestry"), but if that varies then the location where it is measured is noted here. A Swedish caliper [1] was used to measure the DBH for trees less than 26" in diameter and a steel diameter tape[1] for trees greater than 26"Ø.

4. Root shaving[2] shall not be performed on any roots;
5. Roots encountered greater than 2" shall be inspected by a qualified ISA certified arborist;
6. Soil contamination shall be avoided. Limestone gravel shall not be used for any portion of the project. All other gravel shall be acceptable if it is washed prior to use;
7. Concrete wash out shall be contained and removed from the site (No wash out of any kind is to be dumped into the rooting space of the trees);
8. The existing pole should be removed by cutting at ground level so as not to disturb the roots of the tree. In the event the pole base needs to be removed from the ground, a qualified ISA certified arborist should be onsite to aid in preservation of any roots encountered during removal;
9. The existing tie-down should be removed by cutting at ground level so as not to disturb the roots of the tree. In the event the tie-down base needs to be removed from the ground, a qualified ISA certified arborist should be onsite to aid in preservation of any roots encountered during removal
10. Soil repair and replacement at the existing tie-down location shall be under the supervision of a qualified ISA certified arborist.

If you need any additional clarification, please feel free to contact me.

Thank you,

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Nicole Harrison,
ISA Certified Arborist #WC-6500AM, TRAQ

Attachments:
Appendix A – Site Map
Appendix B – Site Photos
Appendix C – Disclosure

[2] Root Shaving removes part of a root with a longitudinal cut removing the upper half of the root. This type of pruning causes callous development on the root which in turn causes additional diameter growth on the root.

Appendix A – Site Map

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Appendix B – Site Photos

Photo by Google Street View

Photo by Nicole Harrison, January 26, 2017

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Appendix C - Disclosure

ABACUS
CONSULTING ARBORISTS

Nicole@Abacus-Tree.com (530) 889-0603 Phone www.Abacus-Tree.com

Disclosure, Assumptions and Disclaimer

1) I, Nicole Harrison, *ISA Certified Arborist #WE-6500AM,* of **"ABACUS"**, did personally inspect the site and investigated the tree(s) as mentioned in this report and I performed all aspects of this report unless noted otherwise in the report.
2) We have neither financial interest in the tree work that may or may not be done, nor financial interest in the property where the tree(s) is (are) located unless noted within the report.
3) All opinions and recommendations expressed herein this report are ours solely. We have used our specialized education, knowledge, training and experience to examine the tree(s) and to make our opinions and recommendations to enhance the beauty, health and longevity, with an attempt to reduce the risk of who and/or what is near these trees. We cannot guarantee or warranty that a tree will not be healthy or safe under all circumstances, nor for a specific period of time or that problems may not arise in the future.
4) This report with its opinions and recommendations are limited to the tree(s) inspected.
5) We attempt to be cognizant of the whole scope of a project, but many matters are beyond the scope of our professional consulting arborist services such as: exact property boundaries, property ownership, site lines, easements, codes, covenants & restrictions (CC&Rs), disputed between neighbors, and other issues.
6) We rely on the information disclosed to us and assume the information to be complete, true, and accurate.
7) The inspection is limited to visual examination of accessible items of the tree(s), from the ground unless otherwise noted, without excavation, probing, boring, or dissection, unless noted otherwise. Only information covered in this report was examined, and reflects the condition of those inspected items at that specific time.
8) Clients may choose to accept or disregard these opinions and recommendations of the arborist or to seek additional advice.
9) This report is copyrighted. Any modification or partial use shall nullify the whole report. Do not copy without written permission. This report is for the client and the client's assignees.
10) Sketches, diagrams, graphs, drawings, and photographs within this report are intended as visual aids and are not necessarily to scale, and should not be construed as engineering or architectural detail, reports or surveys.
11) We shall not attend or give a deposition and/or attend court by reason of this report unless fees are contracted for in advance, according to our standard fee schedule, adjusted yearly, for such services as described.

Signed: _____

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120 VISTA AVENUE
PIEDMONT, CA 94611
TEL: (510) 420-3050
FAX: (510) 658-3167

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DEPOSIT PAID _____
DATE FILED _____
NUMBER 16-0385
PLANNER PMP
(For staff use only)

APPLICATION FOR: WIRELESS COMMUNICATIONS FACILITIES (WCF)

Purpose: *The purpose of the application is to provide a mechanism for an applicant to supply necessary information to the City of Piedmont so that it can review the proposed project for conformance with all applicable regulations and guidelines.*

Fees:

X	$2,710	Initial Deposit (the total fee will be equal to the cost to process)
_____	$5,425	Initial Deposit if 3rd party review is required pursuant to 17G.3.1(i) (the total fee will be equal to the cost to process)
_____	$815	One variance
_____	$405	Each additional variance
_____	**TOTAL**	

Project Address: PIEDMONT HIGH SCHOOL 08 - 1159 WINSOR AVE

2 sets of plans must be submitted with this application for an initial staff review for completeness.
8 additional sets of plans may be requested by City Staff if this application is to be heard by the Planning Commission and/or the City Council.

Application Fees
The cost to process the application will determine the final application fees. You will be charged for any amount not covered by the initial deposit. If the cost to process the application is less than the initial deposit, you will receive a partial refund of your deposit.

Please indicate what steps you have taken to discuss this project with City staff prior to submittal: Beacon Development has met with Kevin Jackson and Pierce Macdonald-Powell on a number of occasions to discuss this project. Also conducted at least 3 site meetings.

Detailed Description of Proposed Project: See attached detailed project description.

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I. Applicant Information:

Name of Commercial Wireless Provider: Crown Castle NG West LLC

Contact Person at Company: Sharon James

Company Address: 695 River Oaks Parkway

City San Jose **State** CA **Zip** 95134

Office phone #: (408) 468-5553 **Mobile Phone #:** (408) 426-6629

Fax #: _____ **Email Address:** _____

Project Applicant (e.g. the wireless provider's agent):

Company Name: Beacon Development, LLC

Contact Person at Company: Bob Gundermann & Jason Osborne

Company Address: 3 Rovina Lane

City Petaluma **State** CA **Zip** 94952

Office phone #: (925) 899-1999 **Mobile Phone #:** (415) 559-2121

Fax #: (415) 358-5766 **Email Address:** jason@beacondev.net

Agent's Prof. License #: n/a **Expiration Date:** _____

Piedmont Business License # of Agent: Will obtain **Expiration Date:** _____
(Please contact the City Clerk at 510-420-3040 for Piedmont Business License information.)

Property Owner Information:

Property Owner Name: City of Piedmont

Mailing Address: 120 Vista Avenue

City Piedmont **State** CA **Zip** 94611

Office phone #: (510) 420-3039 **Mobile Phone #:** _____

Fax #: (510) 658-3167 **Email Address:** kjackson@ci.piedmont.ca.us

My signature below signifies that I:

- have read and provided all applicable information per this Application for Wireless Communications Facilities, including the information listed in the Submittal Checklist.
- have reviewed the legal description on the property deed and indicated all recorded easements and deed restrictions on the submitted site plan (*Please provide a description here of the easements and restrictions that were indicated on the property deed of the subject property*) _____
- believe the information provided in this application is accurate to the best of my knowledge.

- am aware that my initial deposits of $2,360 or $4,720 (exclusive of variance fees) may not cover the cost to process this pre-application and that additional deposits may be required. I agree to provide additional deposits if they are required. I am aware that the City will deduct the costs to cover the processing of this application from the deposit(s), and that any unused money remaining after action has been taken on the project, will be returned to me.
- am aware that City staff, Planning Commissioners, and/or City Council Members will be on the property to view proposed construction. (Please note any special instructions regarding access to the property such as gates, alarms, etc.) _____

_____

- understand that if this application is approved, a building permit (issued within one year from the approval date) is required for construction and that no construction may commence prior to the issuance of the building permit. No changes may be made without City approval, and changes may require a new application.

SIGNATURE OF PROPERTY OWNER:

Pursuant to RUA between City of Piedmont and Crown Castle NG West LLC

Print Name Signature Date

SIGNATURE OF WIRELESS SERVICE PROVIDER'S AUTHORIZED REPRESENTATIVE:

Jason Osborne Jason F Osborne 4/7/17

Print Name Signature Date

AGENT AUTHORIZATION: This authorization must be signed by the property owner if the applicant is not the property owner. This authorization also permits City staff to contact the Wireless Service Provider and it agent if necessary.

I authorize Jason Osborne to act as my agent in the processing of all matters pertaining to this application.

SIGNATURE OF PROPERTY OWNER Per RUA date 4/7/17

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II. Land Use Information:

A. Land Use Zone:

Please circle the land use zone of the proposed project: A (B) C D E

1. If the project is located in a zone other than Zone B, please submit a written statement explaining the attempts made to locate in Zone B and the supporting materials outlined in the Documentation Checklist for Sites outside of Zone B (Section IX of this application).

B. New Facility Project:

Does the project include the siting or construction of a new WCF facility? ■ Yes ☐ No

C. Existing Facility Project:

1. Is the project at an existing WCF facility? ☐ Yes ■ No
2. Is the project for maintenance and repair (in which the model, type, mechanical, and electrical specifications, size and number of existing antennas, feed lines and ground-mounted equipment remains the same; OR is the project an upgrade project in which any equipment is added and/or replaced? ☐ Maintenance & Repair ☐ Upgrade
3. If the project is an "Upgrade" to an existing facility, please identify any of the following descriptions that apply:
   a. Replacement of antenna(s): ☐ Yes ☐ No number_____
   b. Addition of antenna(s): ☐ Yes ☐ No number_____
   c. Replacement of feed line(s): ☐ Yes ☐ No number_____
   d. Addition of feed line(s): ☐ Yes ☐ No number_____
   e. Replacement of ground mounted equipment: ☐ Yes ☐ No number_____
   f. Addition of ground mounted equipment: ☐ Yes ☐ No number_____
   g. Other (describe): _____
4. If the project is an "Upgrade" to an existing facility, please describe how the project camouflages, conceals and/or screens the modified equipment so as to mitigate any adverse impact on aesthetics and views. n/a

D. Facilities located within the Public Right-of-Way:

1. Is the provider is a telephone corporation? ■ Yes ☐ No
   → If yes, please provide certification as outlined in Section IX of this application.
2. Do you have an environmental review document certified by the CPUC? ■ Yes ☐ No
   → If yes, please provide a copy of the document as outlined in Section IX of this application.
3. Is the facility proposed to be sited on a City pole (streetlight standard)? ■ Yes ☐ No
   → If yes, please provide a list of the pole(s) as outlined in Section IX of this application.
4. Is the facility proposed to be sited on a third party's utility pole? ☐ Yes ■ No
   → If yes, please provide written authorization from the appropriate utility company.

E. Height:

What is the maximum height (measured from lowest adjacent grade) of the new or replacement antenna, pole and/or equipment? 35 feet 10 inches

(Please be aware that there is a maximum building height of 35 feet from grade, including existing structures or facilities to which the antennae are proposed to be mounted.)

F. California Environmental Quality Act (CEQA):

Do you believe the project is exempt from CEQA? ■ Yes ☐ No

1. If yes, please cite the statutory or categorical exemption in Articles 18 and 19 of the CEQA Guidelines, Title 14 of the California Code Regulations and explain how the project meets this exemption: Section 15301(b)

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III. Building and Structural Information:

A. Loading:

Are additional gravity and wind loads likely to result from components of the project, such as additional arrays, or bigger, heavier antennas or mounting arms not accounted for in the original design? ■ Yes ☐ No

1. If yes, please describe the new loads and the equipment causing them. _____

B. Excavation, trenching and grade modifications:

Does the proposed project include any excavation, trenching and/or grade modifications?

■ Yes ☐ No

1. If yes, please describe: See attached detailed project description

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IV. Applicant's Wireless Communications Facilities Findings:

The following information is required from all applicants.

Please describe how the proposed project meets the following summarized Wireless Communications Facilities Development Standards outlined in Section 17G.3.1 of the City's Municipal Code.

a) **New wireless communications facilities shall be collocated with existing facilities and with other planned new facilities whenever feasible and aesthetically desirable, where the collocation is found to minimize the overall visual impact.** Please note that §17G.3.1.a.i states "In order to facilitate collocation, all service providers shall cooperate in the siting of equipment and antennas to accommodate a reasonable number of operators at a given site where found to be feasible and aesthetically desirable." (*Indicate whether the proposed facility will be collocated with another facility. If it will not, comment on the feasibility of collocation and indicate what measures have been taken to attempt to collocate the facility with another facility. Additionally, indicate the aesthetic benefits and drawbacks of the proposed facility.*): Placing new wireless communication facilities on existing utility structures

b) **All ground mounted wireless communication equipment, antennas, poles, or towers shall be of a minimum functional height.** (*Indicate the height of any ground mounted equipment, antennas, poles or towers and explain why the proposed heights are required.*): Ground equipment will be placed in underground vault. No visual impact. Antennas placed at 32'-10" RAD center.

c) **All equipment, antennas, poles, or towers shall have a non-reflective finish and shall be painted or otherwise treated to minimize visual impacts.** (*Describe the materials and finishes of the equipment, antennas, poles, and towers and indicate how these materials and finishes will be non-reflective and will minimize any visual impacts.*): Equipment will be painted to match pole.

d) **All ground mounted equipment, antennas, poles, or towers shall be sited to be screened, by existing development, topography, or vegetation, to the extent feasible.** (*Describe how the proposed ground mounted equipment, antennas, poles, or towers are screened by existing development, topography, or vegetation. Describe any new vegetation proposed to screen the project.*): Ground equipment will be vaulted and equipment on pole painted to match.

e) **Roof mounted equipment and antennas shall be located as far away as feasible and aesthetically desirable from the edge of the building. Antennas attached to a building shall be painted or otherwise treated to match the exterior of the building or the antenna's background color.** (*Indicate the distance from the edge of the roof to all proposed roof mounted equipment and antennas. Comment on the feasibility of locating the equipment farther from the edge of the roof. Indicate whether the proposed antennas will be painted, and what they will be painted to match.*): n/a

f) **Where feasible, the location of wireless communication facilities shall be encouraged to be located on publicly owned or controlled property or right-of-way.** (*Indicate whether the proposed facility is on publicly owned or controlled property or right-of-way.*): Crown Castle NG West LLC is using publicly or JPA owned poles in publicly owned ROW.

g) **All equipment associated with a wireless communication facility shall be removed within 30 days of the discontinuation of the use and the site shall be restored to its original preconstruction condition. For facilities to be located on public property, this removal requirement shall be included with the terms of the lease.** (*Whether on public or private land, indicate whether the 30-day removal requirement is to be included with the terms of the lease.*): Agreed

h) **A wireless communication receiving and transmission facility shall not adversely affect the public health, peace and safety.** (*Indicate any measures proposed to address the public health, peace and safety.*): See attached EMF study

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V. Applicant's Wireless Communications Facilities Findings:

The following information is required from all projects located in Zones A, C, D & E.

Please describe how the proposed project meets the following summarized Wireless Communications Facilities Development Standards outlined in Section 17G.4.6 of the City's Municipal Code.

a) **The applicant shall prove beyond a reasonable doubt that no site within Zone B and no site outside of the City can provide adequate wireless communications coverage to the area within the City which is in question.** *Please comment:*

As discussed with Crown Castle RF on 4/5/17, the proposed small node systems are very low power, and designed specifically to cover a small area, therefore they are not used as typical "macro" cell sites. Based on the design, these sites are designed to minimize visual impact which a macro site would cause. The construction of a new "macro" facility would not be able to provide the same coverage in either Zone A, or Zone B due to the topography of Piedmont. Please see the attached RF propagation maps for coverage areas.

b) **The applicant shall further prove beyond a reasonable doubt that the site outside of Zone B being applied for is either the best site to provide wireless communications coverage for the Piedmont homes in question or that it is one of several equally good sites outside of Zone B, the location of such other sites to be clearly identified.** *Please comment:*

As discussed with Crown Castle RF on 4/5/17, the proposed small node systems are very low power, and designed specifically to cover a small area, therefore they are not used as typical "macro" cell sites. Based on the design, these sites are designed to minimize visual impact which a macro site would cause. The construction of a new "macro" facility would not be able to provide the same coverage in either Zone A, or Zone B due to the topography of Piedmont. Please see the attached RF propagation maps for coverage areas.

c) **Cost shall not in itself be considered in the recommendation. However, consideration may be given to whether a specific location will be substantially uneconomic for the applicant over a period of years, including consideration of all possible costs of construction, leasing or developing the proposed site as compared to the enhancement in revenues, economic benefits and coverage that such site will provide both within the City and outside the City limits.** *Please comment:*

Crown Castle did not take into account cost issues with this proposed design, we designed these low powered facilities to minimize visual impact while allowing us to provide cellular coverage in an area which is deficient.

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d) **The development standards in 17G.3 shall be fully considered.** *Please make sure you have completed the Findings in Section IV of this application form.*

e) **If the site is to be located in Zone A, strong preference shall be given to a site that is not a single family residence, particularly a higher structure already in existence which would provide appropriate wireless coverage for the area in the City which cannot otherwise be served as set forth in Section 17G.4.1(a).** *Please comment:* The topography of Piedmont does not allow for Crown Castle to build a "catch all" facility in Zone B to cover Zone A, proposed antenna designs did not delineate between zones, as the topography prevents coverage of Zone A, from a Zone B location. If the area was flat, it would be feasible.

f) **The proposed site and the facilities to be installed by the applicant should be in close conformance with the design review provisions of Chapter 17 of the City Code as is reasonably possible.** *Please comment:* None

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VI. Applicant's Wireless Communications Facilities Findings:

The following information is required from all projects located in Zone B.

For Wireless Communications Facilities proposed to be located in Zone B and requiring design review, please describe how the proposed project meets the design criteria of the City's Residential Design Review Guidelines as well as Section 17.20.9.b of the City's Municipal Code.

i) **The exterior design elements are aesthetically pleasing as a whole and harmonious with existing and proposed neighborhood development. These elements include but are not limited to: height, bulk, area openings, breaks in the façade, line and pitch of the roof, materials, arrangements of structures on the parcel, and concealment of mechanical and electrical equipment. The distance between the proposed upper level addition/expansion or new multi-level structure and adjacent residences is reasonable and appropriate due to the existing topography and neighborhood development pattern. Upper level setbacks greater than the setbacks required for the lower level have been considered and are/are not necessary to reduce losses of ambient and reflected light.** *Please comment:* All proposed facilities are located on existing poles (except for PHS09). No new structures (except for PHS09). Minimal visual impact.

ii) **The proposed upper level addition/expansion or new multi-level structure/expansion has been designed in a way that reasonably minimizes view and light impacts on neighboring properties (as defined in Section 17.2.77), including consideration of the location of the new construction, lowering the height of the addition, expansions within the existing building envelope (with or without excavation), lower level excavation for new multi-level structures, and/or changing the roof slope or ridge direction.** *Please comment:* All proposed facilities are located on existing poles (except for PHS09). No new structures (except for PHS09). Minimal visual impact.

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iii) **The size and height of the addition is commensurate with the size of the lot (excluding the portions of the lot that cannot reasonably be built on), and is in keeping with the existing neighborhood development pattern.** *Please comment:* Using existing utility infrastructure

iv) **The safety of residents, pedestrians, and vehicle occupants and the free flow of vehicular traffic are not adversely affected, considering the circulation pattern, parking layout and points of ingress and egress. In accordance with Sections 17.16.1 and 17.22.1, the existing or proposed on-site parking is/or is not appropriate to the size of the new upper level or new multi-level structure or addition, and additional parking is/is not required to prevent unreasonable short and/or long term parking impacts on the neighborhood.** *Please comment:* Unmanned facility. No impact on parking.

It is the intent of subsection 17.20.9 (b) to ensure the careful evaluation of every upper level and/or multi-level structure application in terms of its very site-specific conditions and neighboring context. It is intended to guide the review of these applications and lead to fair and consistent decisions. Upper level expansions and new multi-level structures have the potential to create adverse impacts on adjacent residences, and it is the intent of this subsection to require affirmative findings that the project will not have a significant impact on adjacent residences and the general neighborhood using several different standards of review.

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VII. Applicant's Variance Findings:

The following information is required from all projects that require a variance.

In order for the Planning Commission to approve an application for a Variance, required findings must be made. Please describe how the proposed project meets the variance criteria of Section 17.21 of the City's Municipal Code.

a) **The underlying lot and existing improvements present unusual physical circumstances including but not limited to size, shape, topography, location and surroundings), so that strictly applying the terms of this chapter would keep the property from being used in the same manner as other properties in the zone which conform to the zoning requirements.** *Describe specific, unique problems with the property, such as location, surroundings, mature trees, natural obstacles or formations, and explain why the improvements cannot be made in conformity with codes and regulations:* n/a

b) **The variance is compatible with the immediately surrounding neighborhood and the public welfare.** *Explain why, without the variance, the property cannot be used in the same manner as others in the same zone, and explain how the variance will not give the property an advantage over others in the same zone.:* n/a

c) **Accomplishing the improvement without a variance would cause unreasonable hardship in planning, design, or construction.** *Unreasonable hardship" for purposes of this subsection refers to the unusual physical characteristics of the underlying lot and existing improvements on the lot which prohibit development of the lot in a manner consistent with lots conforming to City standards. "Unreasonable hardship" shall not refer to any conditions personal to the applicant. Please describe the hardship(s) inherit to this property:* n/a

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VIII. Notice Instructions:

Required for all projects that will be heard by the Planning Commission and/or City Council. (e.g. Projects located in Zones A, C, D & E; Applications that seek a Variance.)

1. Complete the attached Notice and make one photocopy for each adjacent neighbor.

2. Hand deliver or mail one copy of the Notice to each adjacent neighbor at least 30 days before the initial hearing. Adjacent neighbors often include one neighbor on each side, three across the street, and three in the rear. You may address the notices to "Property Owner", if you do not know the names of your adjacent neighbors.

3. Complete the attached Affidavit of Service and return it along with one copy of the Notice to the Department of Public Works at least 30 days before the hearing. Please note the Affidavit of Service is not required to be notarized.

4. Please call the Department of Public Works at (510) 420-3050, if you have any questions or would like help in determining the addresses or names of your adjacent neighbors.

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NOTICE OF AN APPLICATION FOR WIRELESS COMMUNICATIONS FACILITY

Dear Neighbor:

I/ We have submitted an application for consideration by the Piedmont Planning Commission which seeks City approval of an application to (description of project) _____

PIEDMONT HIGH SCHOOL 08 - 1159 WINSOR AVE

The purpose of this form is to notify you of my application. My application will be considered by the Planning Commission on or after (date) _____.

This notice will be followed by a notice from the City confirming the date of the hearing and inviting you to comment on the application. The Planning Commission regularly meets at 5:00 p.m. on the second Monday of every month in the Council Chambers at City Hall, 120 Vista Avenue. Please contact the Department of Public Works at 420-3050, if you have any questions regarding this application.

Signed,

Jason F Osborne
Signature

4/7/17
Date

Jason Osborne
Name of Applicant

1159 WINSOR AVE
Address of Project

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AFFIDAVIT OF SERVICE BY **APPLICANT/ AGENT**

(To be attached to a copy of the Notice and returned to the Department of Public Works.)

_____ being sworn, says that he or she is over 18 years of age
affiant (applicant/agent) name

and a resident of _____
County, Country

That affiant's **residence address** is _____.

That affiant served a copy of the attached notice of an application for variance and/or Planning Commission design review by placing said copy in an envelope addressed to:

which envelope was then sealed and postage fully prepaid thereon, and thereafter was on _____
date
deposited in the United States mail or delivered personally by hand.

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

Executed on _____ at _____, California.
date address

Signed _____
Affiant's signature

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IX. Drawing and Document Elements Checklist:

For Wireless Communications Facility (WCF) Application

A vital part of the WCF Application is to have adequate plan set information in order to properly review the proposed wireless telecommunications facility in conformance with Chapter 17G of the Municipal Code and all other relevant guidelines and regulations. Unless otherwise indicated, you must provide all of the following information. Two (2) sets of drawings (24" x 36" in size) must be submitted with the WCF Application. All drawings must be accurately scaled and dimensioned. One copy of non-drawing documents must be submitted with the WCF Application.

Should your application be deemed complete and placed on the agenda for a Commission or Council hearing, **8 additional sets of plans** will be requested by City Staff.

Existing Site Plan (preferred scale 1/8") should include:

- ■ Scale, north arrow, and dimensions;
- ■ Property lines, easements, streets and rights-of-way;
- ■ Location of existing structures, hardscape areas, fences, retaining walls, trees, hedges and other significant site features;
- ■ Roof plans should be shown for all structures (rather than floor plans). Roof plans should include all edges and ridges, the roof slope, overhangs, skylights, chimneys, vents, and other equipment or antennas;
- ■ Setback dimensions measured from the property lines to the closest point of Structure(s) (§17.2.71-73), including eaves and other architectural projections.

Proposed Site Plan (preferred scale 1/8") should include:

- ■ Scale, north arrow, and dimensions;
- ■ Property lines, easements, streets and rights-of-way;
- ■ Location of existing and proposed structures, hardscape areas, fences, retaining walls, trees, hedges and other significant site features;
- ■ Roof plans should be shown for all structures (rather than floor plans). Roof plans should include all edges and ridges, the roof slope, overhangs, skylights, chimneys, vents, and other equipment or antennas;
- ■ Footprints (outline) and identification of structures on adjacent properties within 20 feet of the property line or more than 100 feet from the proposed construction. Indicate the dimensions between the closest point of any adjacent structure and the proposed construction;
- ■ Setback dimensions measured from the property lines to the closest point of proposed ground-mounted equipment, antenna, and Structure(s) (§17.2.71-73) including eaves and other architectural projections.

Existing Elevations (or Photographs should no existing building exist) (preferred scale 1/4") should include:

- ■ Scale, dimensions, and drawing label indicating the cardinal direction (or indicated plan direction) the depicted wall is facing;
- ■ All elevations of each structure on which modifications are proposed;
- ☐ Show buildings, other structures, WCF equipment, fences, retaining walls, and any other relevant feature;
- ☐ Indication of building materials for walls, roofs, windows, doors, decorative features, and WCF equipment and antennas;
- ■ Indication of the height of buildings, structures and WCF equipment. Heights are measured to the highest point of the feature from both the lowest adjacent grade and highest adjacent grade. Adjacent grade is where grade meets the footprint of the building or structure;
- ■ Photographs showing existing conditions may be submitted as supplemental information or in place of elevations when no existing structures or buildings exist on site.

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Proposed Elevations (preferred scale 1/4") should include:

- ■ Scale, dimensions, and drawing label indicating the cardinal direction (or indicated plan direction) the depicted wall is facing;
- ■ All elevations of each structure on which modifications are proposed;
- ☐ Show buildings, other structures, WCF equipment, fences, retaining walls, and any other relevant feature;
- ■ Indication of proposed building materials for walls, roofs, windows, doors, decorative features, and WCF equipment and antennas;
- ■ Indication of the proposed height of new buildings, structures and WCF equipment. Heights are measured to the highest point of the feature from both the lowest adjacent grade and highest adjacent grade. Adjacent grade is where grade meets the footprint of the building or structure;
- ☐ Photographs or photo simulations showing proposed conditions may be submitted as supplemental information.

Equipment Details (preferred scale at least 1/2") should include:

- ■ Scale, dimensions, and drawing label;
- ■ Include details of antenna and other proposed wireless communications equipment.

Landscape plans (preferred scale 1/8") should include:

- ☐ Scale, north arrow and dimensions;
- ☐ Include property lines, footprints of all structures and all hardscape areas;
- ☐ Show planting areas and provide a plant list including the size and species;
- ☐ Provide information on irrigation.

Photo Simulations (optional):

- ■ In addition to proposed elevations, photo simulations may be submitted to demonstrate the aesthetics and impacts of a proposed wireless communications facility.

Graphic Calculations (1 set only):

Please submit plans which graphically illustrate the required calculations. Calculations are expressed as percentages. Separate graphic calculations are to be submitted, as follows:

- ☐ **Existing and Proposed Structure Coverage** equals the number of square feet of structures covering the lot divided by the number of square feet in the lot. (Equipment, antennas, poles, and towers are included in this calculation,) For a complete definition of structure coverage, please see Piedmont City Code §17.2.71-73.
- ☐ **Existing and Proposed Hardscape Surface Coverage** equals the number of square feet of structures plus the number of square feet of all hardscape, all divided by the number of square feet in the lot. For a complete definition of Hardscape Surface, please see Piedmont City Code §17.2.35.

Documentation for sites outside of Zone B

- ☐ **Map and Written Description** showing and describing the exact area in Piedmont which applicant contends cannot receive coverage from a site in Zone B or a site outside of City, showing the boundaries of the area clearly on a map and setting forth the exact street addresses of each Piedmont home not within the area receiving coverage – Piedmont City Code §17G.4.2(a).
- ☐ **Copies of Detailed Technical Reports or Tests** which clearly prove that each home within the area fails to receive coverage from Zone B or from any other Zone within Piedmont, or from specific locations outside of Piedmont – Piedmont City Code §17G.4.2(b).
- ☐ **Copies of Detailed Technical Reports or Tests** which prove that each home within the area does receive coverage from the alternate site proposed by applicant – Piedmont City Code §17G.4.2(c).
- ☐ **List of All Possible Site Locations within Zone B** and all possible site locations outside of the city from which applicant has conducted tests to determine if coverage is feasible, including copies of all reports or test results from each such possible site – Piedmont City Code §17G.4.2(d).
- ☐ **Exact Information on All Possible Site Locations Outside of Zone B within the City** from which applicant has conducted tests to determine if coverage is feasible, including copies of all reports or test results from each such possible site – Piedmont City Code §17G.4.2(e).

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- ☐ **Exact Information on the Alternate Site** proposed by the applicant, including the exact location of the site as shown on a map and by street address, a copy of an executed Lease or PCS Site Agreement for the site, a detailed report on all costs and expenses in constructing and completing such site for use, including a verifiable bid for the work on such site, and an exact schematic drawing – Piedmont City Code §17G.4.2(f).

Documentation for Wireless Communication Facilities located within the Public Right-of-Way (ROW):

- ■ Certification that the provider is a telephone corporation.
- ■ Any environmental review document(s) certified by the California Public Utilities Commission for siting the proposed facilities in the City's ROW.
- ■ For projects in which the facility is proposed to be sited on a City pole (e.g., streetlight standard), please provide a list of said poles including identification by location and badge/ID number.
- ■ For projects in which the facility is proposed to be sited on a third party's utility pole (e.g., PG&E pole), please provide a list of said poles including identification by location and badge/ID number AND written authorization from the appropriate utility company.
- ■ Site plans that illustrate the boundaries of the ROW and the location of infrastructure in the ROW, including without limitation sidewalks, curbs, gutters, driveways, landscaping, other existing communications equipment, utility poles, light poles, fire hydrants, bus stops, bike lanes, traffic signals and above and below ground utility equipment vaults, etc.
- ■ Analysis demonstrating the impacts to sightlines for drivers, bicyclists, and pedestrians.

If you believe that any of the above requirements do not pertain to your project, please call the Department of Public Works at (510) 420-3050 and make an appointment to meet with a planner.

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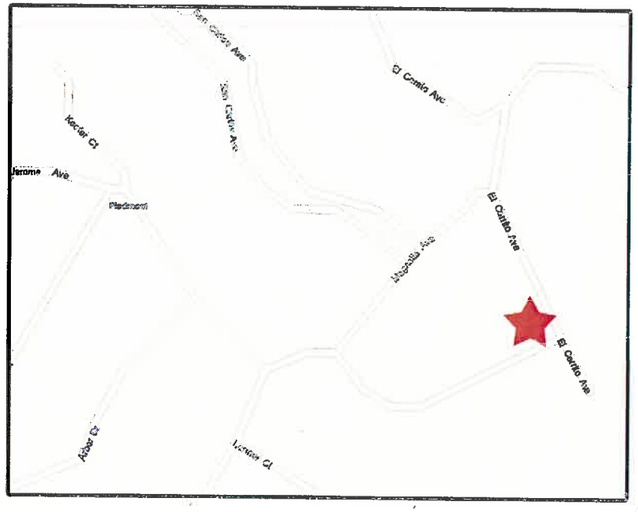
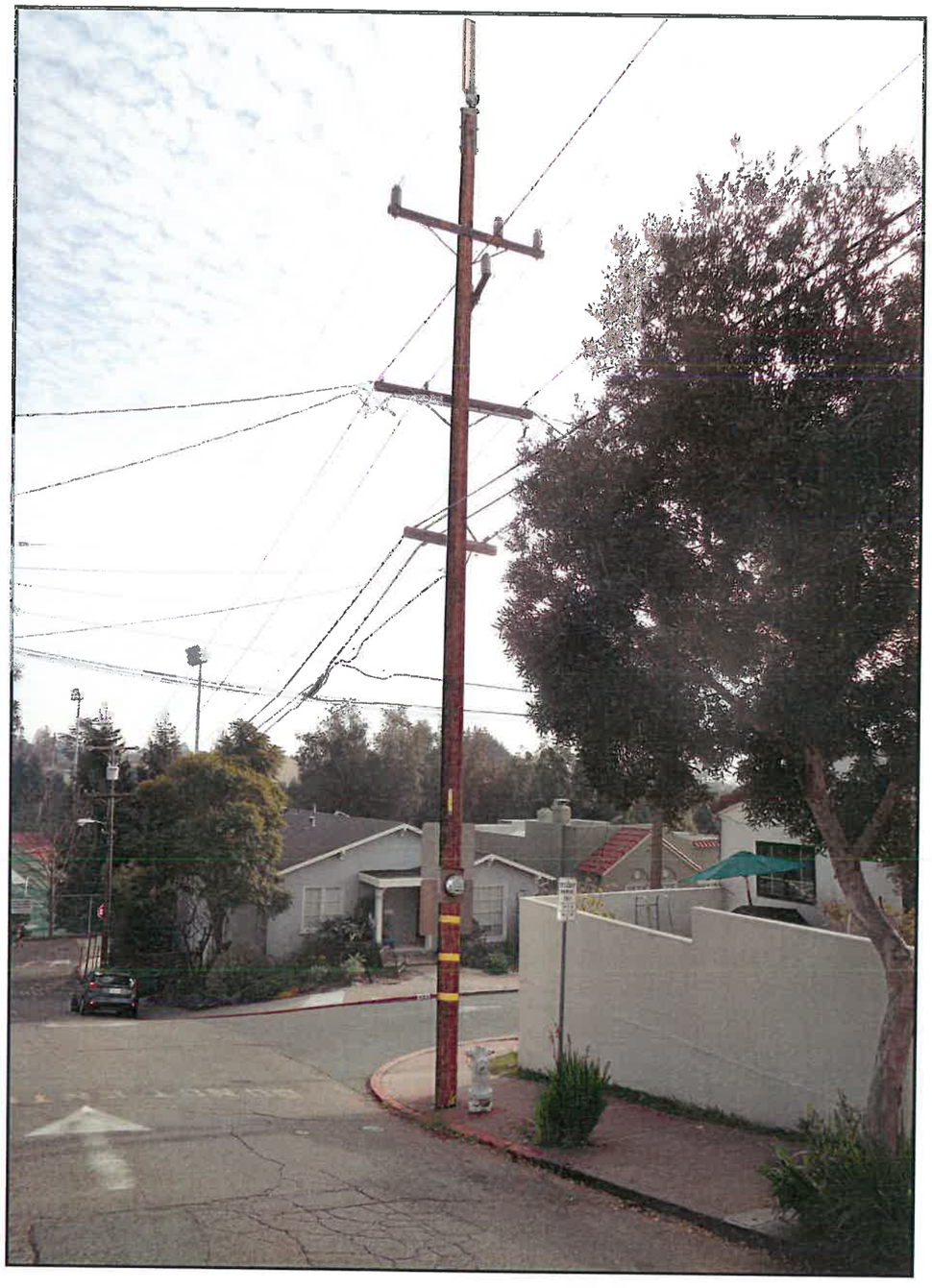
Existing Site



Vicinity Map

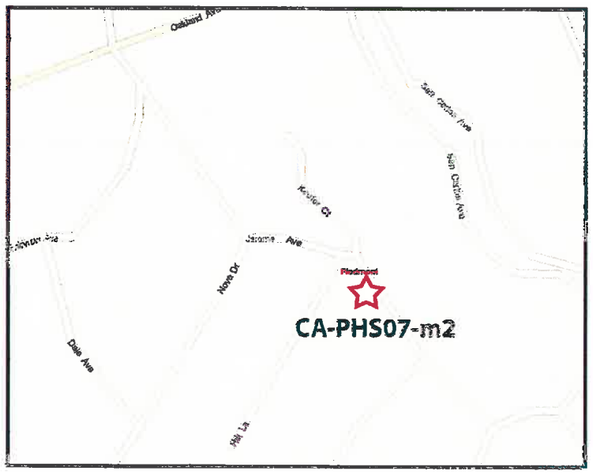


Proposed Site PHSO6 - 428 EL CERRITO AVE

RECEIVED
APR 07 2017
PUBLIC WORKS
CITY OF PIEDMONT

CROWN CASTLE

Existing Site



Vicinity Map

Proposed Site CA-PHS07-m2

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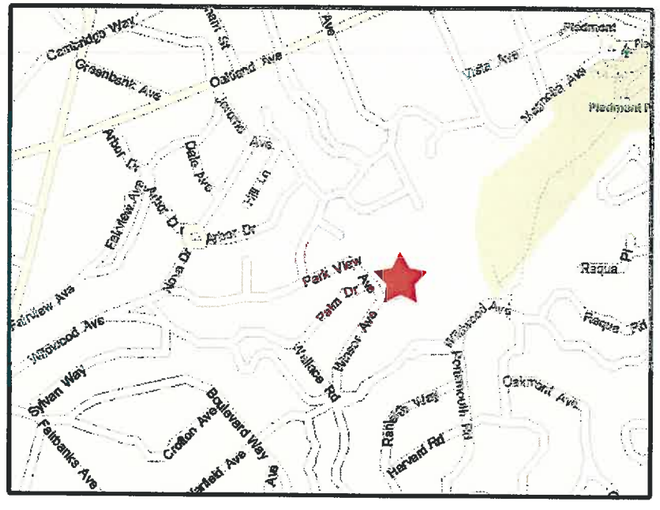
CITY OF PIEDMONT

Existing Site



Vicinity Map

Proposed Site PS08-1159 WINDSOR AVE

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HORTICULTURE | ARBORICULTURE | URBAN FORESTRY

June 1 2017

Ms. Pierce Macdonald-Powell
City of Piedmont
120 Vista Avenue
Piedmont CA 94611

Subject: Tree assessment
Crown Castle Wireless Telecommunications

Dear Ms. Macdonald-Powell:

Crown Castle NG West LLC, a wireless telecommunications company, is planning to install nine (9) new telecommunications facilities at various sites in Piedmont. Four (4) of the sites are in close proximity to City street trees. Based on that preliminary assessment, the City of Piedmont requested that I review project plans and associated reports for the four sites, then meet with you in the field to discuss potential impacts to street trees. We met on May 15 and examined the four sites. This letter summarizes my observations and assessment.

To assist in my assessment, you provided plans as well as reports prepared by Crown Castle's arborist.

Overview
The proposed new antenna installations would either use existing city street lights or power poles, or install new ones. An underground vault would be installed adjacent to each light and pole. Excavation for the vault would be approximately 7 feet long by 5 feet wide by 4 feet deep. In addition, however, each vault has two exhaust vents, located on either end of the 7 foot side. Vents are separated from the vault by an undetermined distance. Both vents and the conduit connecting them to the vault will require additional excavation. Although the vaults are noted as being 6 feet by 4 feet, they are depicted on plan sheets as being a total of 10 feet by 6 feet.

In some cases, a new pole will be installed. This will replace an existing wood pole which would be removed.

Potential impacts to City street trees are associated with 1) excavation for the vault and 2) installation of a new light or pole. Excavation for the vault may sever roots. Equipment working in close proximity to trees may damage trunks and require pruning of tree crowns to provide clearance. New poles must be lifted from a horizontal to vertical position which may also damage tree trunks and require remedial pruning if branches are damaged.

HortScience has over 25 years of experience assisting the City of Piedmont with maintenance of street trees and other City-owned trees. The Community of Piedmont has a long history of investment in its street trees, which is evident today in its tree-lined streets and the symmetry, maturity, and consistency of its street trees. This is a defining feature of the City and distinguishes it from neighboring cities.

1159 Winsor Avenue (CA-PHS08)

At this site, a new underground vault and pole would be installed between two trees (Photo 1, following page). One is a Canary Island date palm (*Phoenix canariensis*); the other is a red horsechestnut (*Aesculus carnea*). Both are located in the 18-inch wide planting strip between curb and sidewalk. The trees are approximately 21 feet apart.

The Canary Island date palm is mature in development with approximately 22 feet of clear (brown) trunk and an overall height of 30 feet. The base of the trunk has overgrown the adjacent pavement. Numerous utility wires are adjacent to the crown including low voltage electrical conductors. Overall tree condition is good.

Photo 1. Winsor Avenue. Canary Island date palm is on the left. Red horsechestnut on the right. Red line is the approximate location of the new pole. Note guy wire near the horsechestnut.

The red horsechestnut is semi-mature in development with a trunk diameter of 5 inches. Overall condition is good. The canopy is somewhat one-sided to the west due to competition with nearby oak trees.

The existing utility pole is located approximately 5 feet 6 inches from the palm. The pole is supported by a guy wire that enters the ground, approximately 3 feet 6 inches from the horsechestnut.

As proposed, the existing pole will be replaced by the new 45-foot-tall pole, midway between the trees. The new pole will be installed in the 18-inch planting strip. The new underground vault would be placed within the existing 5-foot sidewalk. Excavation of the vault and associated vents is constrained by the presence of the existing pole, guy wire and two trees. Construction of the proposed installation would require pruning on the west side of the canopy of the red horsechestnut to provide clearance for materials and equipment.

Several aspects of installation are not clearly defined in the proposed plans. The base of the existing wood pole would be left in place, but the sequence of removing the pole and guy wire, then excavating the new vault and its installation is unclear. I don't know if the new pole will require a guy wire. It is likely that additional clearance pruning of trees on or adjacent to the street will occur. It is also likely that roots greater than 2 inches in diameter will be encountered in the area of excavation near the horsechestnut.

In summary, impacts to the date palm and horsechestnut from the proposed project should be within the tolerance of both trees because the existing trees are in good condition and because the project design centers the new pole and vault mid-way between the trees.

Potential impacts to nearby street trees include damage during construction in the right-of-way related to the limited street width and limited access. This part of Winsor Avenue is a shallow cul-de-sac, leading to a Piedmont Unified School District driveway. The key to successful preservation will be obtaining access for construction from the School District to use the driveway during construction, as well as protecting tree trunks from damage by equipment (see **Tree Protection Guidelines**).

799 Magnolia Avenue (CA-PHS03)

At this site, the existing light pole will be replaced with a new pole. The associated underground vault will be installed in the existing sidewalk behind the pole.

Photo 2. Looking across Magnolia Ave. at project site.

An 18-inch-diameter mature sweetgum (*Liquidambar styraciflua)* is located 21 feet west of the existing pole (Photo 2). Tree health is good while structural condition is fair. As is typical of many sweetgums, several scaffold limbs arise at 18 feet. These lean and bow away from the central leader. The tree has previously been root-pruned on the curb side.

The proposed street light would be located in the same location as the existing which is at the edge of the dripline of the sweetgum. The proposed underground vault would be located within 15 feet of the sweetgum, within the dripline of the tree.

Impacts from installation of the vault will include pruning the canopy to provide clearance and root severance to install the vault. I expect impacts to be within the tolerance of the tree because the tree condition is good, the new vault would be 15 feet from the trunk of the sweetgum, and significant roots (greater than 2 inches in diameter) are not expected to be found in the area of excavation.

428 El Cerrito Avenue (CA-PHS06)

The project area is on the west side of El Cerrito Avenue near the intersection with Jerome Avenue. As proposed, the existing utility pole will be replaced. The proposed new vault would extend from the pole to within 2 feet from the existing water gum (*Tristaniopsis laurina*) tree (Photo 3).

Photo 3. Looking west across El Cerrito. The new pole will be replaced in the same location.

The 9-inch-diameter water gum is located in a 12-inch by 12-inch pavement cutout. The adjacent sidewalk panel is displaced. The canopy is full and dense and the tree is mature and established. The main trunk is sinuous in form, bowed to the south towards the existing pole.

Impacts to the water gum tree would be severe. Excavation for the proposed vault would damage major roots. Installation of the vault would also require pruning a significant part of the canopy on the south side for construction clearance. The result will be an asymmetric form with almost all of the foliage on the north side of the tree and a severely compromised root zone.

In my view, the water gum tree would not survive the impacts from construction of the proposed design. Furthermore, it cannot be replaced in its current location. Moving the tree to the north even 2 feet would place it within 5 feet of a driveway, creating a possible sightline issue. A new tree would have to be installed farther north (or elsewhere in the City) due to the proposed new vault and the limited space in the right-of-way. See **Estimate of Value**, below, for information regarding the reproduction value of the tree, as well as its value in the streetscape along El Cerrito Avenue.

355 Jerome Avenue (CA-PHS07)

An existing power pole is located 5 feet from a 13-inch diameter London plane (*Platanus* x *hispanica*) at this location (Photo 4). The new pole would replace this one and will be 7 feet from the tree. A second London plane (12-inch-diameter) is located 21 feet to the north of the existing pole.

Photo 4. A 13-inch diameter London plane is located 5 feet south of the existing pole. A 12-inch diamter London plane is to the north (right side of photo). Red line is approximate location of the new pole.

Both trees are located below existing energized conductors and have been pruned to provide clearance to them. Overall condition is good for both trees, which are mature and well-established. Both have multiple branches that arise at 10 feet to 12 feet. Proposed construction and excavation would occur within the driplines of both trees.

The existing pole would be replaced by a new 60-foot pole, midway between the trees. Final height of the antenna will be just over 53 feet with 7 feet of the pole installed in the ground. The proposed new pole and associated vault would be placed within the existing 5-foot sidewalk. As depicted on sheet LP-01, the vault plus fans would be 10 feet by 6 feet. Proposed construction would require clearance pruning of the canopy of the 13-inch diameter London plane.

It is not clear in the plans how the proposed new pole is to be installed and whether doing so will require additional pruning for clearance.

In summary, impacts to the two London planes should be within the tolerance of both trees because the condition of the trees is good and major roots (roots greater than 2 inches in diameter) are not expected to be found in the area of excavation. The keys to successful preservation are 1) protecting tree trunks from damage by equipment (see **Tree Protection Guidelines**) and 2) minimizing root severance.

Estimate of Value

The City of Piedmont requested that an estimate of tree value be established for each of the trees within the four project areas. I employed the standard methods found in ***Guide for Plant Appraisal***, 9th edition (published in 2000 by the International Society of Arboriculture, Savoy IL). In addition, I referred to ***Species Classification and Group Assignment*** (2004), a publication of the Western Chapter of the International Society of Arboriculture. These two documents outline the trunk formula method which estimates a depreciated reproduction cost.

The value of landscape trees, such as street trees, is based upon four factors: size, species, condition and location. Size is measured as trunk diameter, normally 54 inches above grade. The species factor considers the adaptability and appropriateness of the plant in the East Bay area. The ***Species Classification and Group Assignment*** table lists recommended species ratings and evaluations. Condition reflects the health and structural integrity of the individual tree. The location factor considers the site, placement and contribution of the tree in its surrounding landscape. All of the trees examined are City street trees, providing shade, privacy, aesthetic, and screening benefits to both the adjacent properties and the City.

Based on my assessment, the estimated values of the subject trees are as follows:

Location	Species	Trunk Diameter (in.)	Estimated Reproduction Cost
1159 Winsor	Canary Island date palm	22' clear trunk	$10,800
1159 Winsor	Red horsechestnut	5	$650
799 Magnolia	Sweetgum	18	$4,150
El Cerrito	Water gum	9	$1,400
355 Jerome	London plane	13	$2,100
355 Jerome	London plane	12	$1,800
Total			**$20,900**

Tree Protection Guidelines

1. The demolition contractor shall meet with the City's Landscape Superintendent before beginning work to discuss work procedures and tree protection.
2. Fence trees to be retained prior to demolition, grubbing or grading. Fences may not be relocated or removed without permission of the City's Landscape Superintendent. Fencing shall be installed at the edge of the existing planting space or 2 feet back from the edge of excavation, whichever is larger.

   The **TREE PROTECTION ZONE** shall be defined by the limit of protective fencing (Photo at right).

   For the Canary Island date palm, stack and secure hay bales around the trunk to a height of 8 feet as an alternative to fencing.

3. Damage to tree(s) or unauthorized removal is subject to replacement or fine equal to the estimated value of the tree.
4. No materials, equipment, vehicles, spoil, waste or wash-out water may be deposited, stored, or parked within the **TREE PROTECTION ZONE**.

5. Demolition of existing improvement such as pavement shall use appropriate size equipment to perform the task and protect the tree from damage. Equipment shall be sited outside the **TREE PROTECTION ZONE.** Pull spoil and debris away from the trees. If necessary, tie back branches and wrap trunks with protective materials to protect from injury as directed by the City's Landscape Superintendent.
6. Excavation shall not tear or rip tree roots 2 inches or greater in diameter. As the operator encounters tree roots, excavation should stop while the root is exposed by hand and cut cleanly at the edge of excavation.
7. Demolition personnel shall not prune trees to provide clearance. If pruning is needed, a qualified arborist shall perform the task at the direction of the City's Landscape Superintendent. All pruning shall be completed by a Certified Arborist or Tree Worker and adhere to the latest editions of the ANSI Z133 and A300 Standards.

Summary

I evaluated the possible impact to City street trees of installing proposed new wireless telecommunications facilities at four sites in Piedmont. Each site would have an underground vault and above-grade pole installed. Impacts will primarily involve root severance and crown pruning. Impacts to trees vary with the proximity of the proposed improvements (vaults, proposed poles and lights, etc.) to the tree roots and canopies. In the case of the water gum on El Cerrito, proposed construction and excavation impacts would be beyond the tolerance of the tree.

Impacts to trees at the remaining three sites should be within their tolerance, providing that the recommended **Tree Protection Guidelines** are followed. It is possible that trees may be injured due to unanticipated impacts from construction.

It is not clear in the proposed project plans how the new poles, which are taller than existing, will be installed or what impacts, such as clearance pruning, could be anticipated to City street trees from construction materials and equipment.

Sincerely,

James R. Clark, Ph.D.
Vice President