



## Staff Report to the Zoning Administrator

Application Number: **121101**

**Applicant:** 121101

**Owner:** Dept PT CA 27015 Public Storage  
Inc.

**APN:** 032-092-02

**Agenda Date:** 8/3/12

**Agenda Item #:** 6

**Time:** After 9:00 a.m.

**Project Description:** Proposal to co-locate nine antennas camouflaged behind equipment enclosures on the rooftop of an existing commercial building containing a mini-storage use and an existing wireless carrier (Metro PCS). Project includes an equipment shelter within the interior of the third floor of the mini-storage building. Requires an amendment to Commercial Development Permit/Coastal Development Permit 05-0444.

**Location:** Property located at 3840 Portola Drive between 38<sup>th</sup> and 41<sup>st</sup> Avenue, on the south side of Portola Drive

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

**Permits Required:** Coastal Development Permit Amendment to 05-0444

**Technical Reviews:** None

### Staff Recommendation:

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- Approval of Application 121101, based on the attached findings and conditions.

### Exhibits

- |                                     |                                     |
|-------------------------------------|-------------------------------------|
| A. Project plans                    | F. Radio Frequency Report, prepared |
| B. Findings                         | by Hammett & Edison, Inc., dated    |
| C. Conditions                       | March 8, 2012                       |
| D. Categorical Exemption (CEQA      | G. Visual Simulations               |
| determination)                      |                                     |
| E. Assessor's, Location, Zoning and |                                     |
| General Plan Maps                   |                                     |

### Parcel Information

Parcel Size: .9 acre (approximately 39,000 square feet)  
Existing Land Use - Parcel: Commercial mini-storage use and wireless carrier

County of Santa Cruz Planning Department  
701 Ocean Street, 4<sup>th</sup> Floor, Santa Cruz CA 95060

Existing Land Use - Surrounding: North- C-2, medical office  
West- C-2, formerly Big Creek Lumber, now vacant  
East - C-2, restaurant  
South- RM-4, mobile home park

Project Access: Portola Drive  
Planning Area: Live Oak  
Land Use Designation: CC (Community Commercial)  
Zone District: C-2 (Community Commercial)  
Coastal Zone: ☒ Inside ☐ Outside  
Appealable to Calif. Coastal ☐ Yes ☒ No  
Comm.

### Environmental Information

Geologic Hazards: Not mapped/no physical evidence on site  
Soils: N/A  
Fire Hazard: Not a mapped constraint  
Slopes: N/A  
Env. Sen. Habitat: Not mapped/no physical evidence on site  
Grading: No grading proposed  
Tree Removal: N/A  
Scenic: Not a mapped resource  
Drainage: Existing drainage adequate  
Archeology: Not mapped/no physical evidence on site

### Services Information

Urban/Rural Services Line: ☒ Inside ☐ Outside  
Water Supply: Santa Cruz  
Sewage Disposal: Santa Cruz Sanitation  
Fire District: Central Fire Protection District  
Drainage District: Zone 5

### History

The property contains a commercial mini storage use approved in 1989 under Commercial Development/Coastal Development Permit 88-0251 and an existing wireless communication facility approved in 2006 under Permit Amendment 05-0444. The wireless facility was approved on the rooftop of the building and is located behind a rooftop equipment enclosure. This includes six flush-mounted antennas and one GPS antenna camouflaged behind a screen; an air conditioning unit and associated equipment screened behind a new wall; and associated equipment cabinets located indoors. The equipment enclosure area was designed to match the architectural design, materials and color of the building. The enclosure fully screens the antennas and equipment.

### Project Setting

The subject property is located on the south side of Portola Drive between 38<sup>th</sup> and 41<sup>st</sup> Avenue

within the Live Oak Planning area. The subject property contains two existing commercial mini-storage buildings, a one/two story building located along the front of the site adjacent to Portola Drive and a three story building located at the rear of the site. The building located at the rear of the site contains the existing rooftop enclosure.

Surrounding properties on the north, east, and west are zoned C-2, containing commercial uses and buildings. The property located to the south of the subject property is zoned RM-4 and contains a mobile home park.

### **Project Description**

Nine additional wireless antennas and one equipment cabinet are proposed on the rooftop of the three story building within two proposed equipment enclosures. Three antennas are proposed within one enclosure and six antennas are proposed within the other enclosure. Both enclosures adjoin the existing rooftop enclosure housing the existing antennas and equipment. An equipment enclosure is also proposed on the southeast portion of the building on the interior of the third floor of the mini-storage building.

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

The subject property is a parcel of approximately .9 acres in size, approximately 39,000 square feet, and located in the C-2 (Community Commercial) zone district. The proposed wireless communications facility is an allowed use within the zone district and is consistent with the site's (C-C) Community Commercial General Plan designation. The existing use of the property will continue to be one mini-storage facility that meets all current site standards for the zone district except for the rear yard setback for which a variance was granted to reduce the setback from the required 30 feet to 15 feet. The proposed rooftop enclosures are located a minimum of 60 feet from the adjacent residential property located to the south. This exceeds the minimum 30 feet required by the commercial site standards for commercial parcels adjoining residentially zoned property. The proposed improvements comply with the maximum 35 foot building height allowed within C-2 zoned properties.

### **Wireless Regulations**

Pursuant to County Code Section 13.10.661 (a), all new wireless communication facilities are required to obtain a commercial development permit and coastal permit if located within the Coastal Zone. The proposed permit is a combined Commercial Development Permit and a Coastal Development Permit amendment.

The existing site is not located in a prohibited or restricted wireless area as set forth in Sections 13.10.661(b) and 13.10.661(c). Thus, an alternative site analysis or alternative designs are not required.

Pursuant to County Code Section 13.10.661 (g), co-location of wireless communication facilities are generally encouraged if they do not create significant visual impacts. This section also prohibits the co-location of more than nine antennas and/or three equipment cabinets on any site unless the antennas and equipment can be camouflaged or made to be inconspicuous. The proposed facility antennas and equipment are proposed to be fully screened from view by the

proposed rooftop enclosures, which are designed to reflect the architectural design of the building and to incorporate the materials and colors of the building. The proposed enclosure appears as an integral part of the building. No significant visual impacts are anticipated by the proposed equipment enclosures and the wireless facility complies with the regulations of the wireless ordinance enumerated in County Code section 13.10.661 (g).

### **Radio Frequency (RF) Exposure**

County Code Section 13.10.661 (d) requires compliance with the Federal Communications Commission (FCC) rules, regulations and standards by requiring that facilities comply with the emissions standards set forth by the FCC. A non-ionizing electromagnetic radiation (NIER) report is attached as Exhibit F. The report notes that the maximum cumulative level at the ground will be 3.7% of the applicable radio frequency exposure levels established by the Federal Communications Commission (FCC). For the roof of the second floor of any nearby building, including residences at least 100 feet away, the maximum calculated cumulative exposure level is 9.2% of the public exposure limit. The antennas are not accessible to the general public due to their location on the rooftop.

Occupational standards, related to professionals servicing the facility, require that no access within 15 feet be permitted directly in front of the antennas while the base station is in operation. The project is conditioned to continue to require an automatic shut-off valve as originally conditioned. Warning signs located at the roof hatch door, antenna enclosure screens, and on the door of the equipment unit located within the storage unit are required to be posted so that they are readily visible to service professionals.

The proposed project is consistent with the FCC regulations as proposed and conditioned.

Section 47 USC 332(c)(7)(iv) of the Telecommunications Act of 1996 forbids jurisdictions from regulating the placement, construction, or modification of Wireless Communications Facilities based on the environmental effects of RF emissions if these emissions comply with FCC standards. The RF emissions of the proposed wireless communication facility comply with FCC standards.

### **Design Review**

The proposed antennas and equipment shelters comply with the requirements of the County Design Review Ordinance, in that the proposed antennas will be flush mounted to the enclosures and are hidden behind screens painted and textured to match the existing structure. The screens will appear integral to the existing structure, and the project will have virtually no visual impacts on surrounding residences to the south and the natural landscape. The parapet walls may be visible from the intersection of Portola Drive and 38<sup>th</sup> Ave. However, no other public vistas will be impacted.

The power and telecommunication lines will have no visual impact as they are proposed to run underground and within or on the existing buildings as noted on Exhibit A.

The equipment cabinets will have no visual impact as they will be located within the existing storage units. These equipment cabinets require cooling, and air-conditioning units are proposed

within the equipment room within the building. The project is conditioned to require compliance with the Uniform Building Code and the Central Fire Protection District's requirements with regard to occupancy classification design requirements and fire suppression requirements prior to issuance of the building permit.

The proposed antennas, equipment enclosures, and equipment room complies with the requirements of the County Design Review Ordinance, Chapter 13.11, in that the proposed antennas will be located completely behind two additional rooftop equipment enclosures designed to match the existing architectural character, materials, and colors of the building. or be located within existing storage units within the existing building. The proposed equipment will be located within the existing storage units located on the third floor of the building.

### **Local Coastal Program Consistency**

The proposed project is in conformance with the County's certified Local Coastal Program, in that the improvements will be located within rooftop equipment enclosures and within the building that are sited and designed to be visually compatible, in scale with, and integrated with the character of the existing rooftop enclosure and commercial building and surrounding neighborhood. Building materials and color match the existing building. While consideration was given to provision of a uniform enclosure for the rooftop for all the antennas and equipment, the additional impacts of the greater massing on the roof of the structure was determined to outweigh the impacts of the massing of few enclosures on the building. Developed parcels in the area contain commercial buildings and single family dwellings. Size and architectural styles vary widely in the area, and the design submitted is not inconsistent with the existing range of styles. The project site is not located between the shoreline and the first public road and is not identified as a priority acquisition site in the County's Local Coastal Program. Consequently, the proposed project will not interfere with public access to the beach, ocean, or other nearby body of water.

### **Environmental Review**

The California Environmental Quality Act (CEQA) provides exemptions for classes of projects which do not have a significant effect on the environment. Code section 15303, Class 3, "New Construction or Conversion of Small Structures" exempts both new, small facilities and conversions of existing small structures from one use to another. Small facilities are defined as including up to four commercial structures of up to 10,000 square feet each. A preliminary determination has been made that a categorical exemption from the California Environmental Quality Act may be granted and a notice of exemption has been attached as Exhibit D.

### **Conclusion**

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

### **Staff Recommendation**

- Certification that the proposal is exempt from further Environmental Review under the

California Environmental Quality Act.

- **APPROVAL** of Application Number **121101**, based on the attached findings and conditions.

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

**The County Code and General Plan, as well as hearing agendas and additional information are available online at: [www.co.santa-cruz.ca.us](http://www.co.santa-cruz.ca.us)**

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**Verizon** wireless

PORTOLA RD  
PSL # 249610  
3840 PORTOLA DR.  
SANTA CRUZ, CA 95062

**SHEET TITLE:**

**TITLE SHEET**

11

REV	DATE	DESCRIPTION	BY
0	06/27/2011	INIT. ZONING	DC
1	08/13/2011	REV. ZONING	WRC
2	11/04/2011	REV. 20% ZONING	WRC
3	03/15/2012	REV. 30% ZONING	JE
4	03/27/2012	100% ZONING	JE
5	07/23/2012	REV. 100% ZONING	JE
6	07/23/2012	REV. 100% ZONING	REV

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CONSTRUCTION ACTIVITIES IN  
MICHIGAN MUST BE AT  
LEAST TWO WEEKS  
IN ADVANCE OF DIGGING

SHEET	DESCRIPTION	REV
T-6	TITLE SHEET	0
D-6	SITE SURVEY	4
C-2	SITE LAYOUT	4
A-8	RTE PLAN	5
A-7	ENLARGED SITE PLAN	5
A-9	SCOUT LAKE EAST ELEVATIONS	6
B-3	NORTH & WEST ELEVATIONS	6
A-6	ENLARGED ANTENNA LAYOUT EXTREME	6
A-5	SWAPPING OVERALL WINDS IN DRUG COGS FLAM	6
A-7	ENLARGED EQUIPMENT LAYOUT & DETAILS	4
ZONING DRAWINGS - NOT FOR CONSTRUCTION		

**GENERAL CONTRACTOR NOTES**

**DO NOT SCALE DRAWINGS IF NOT FULL-SIZE (24x36)**

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING CONDITIONS AND CONDITIONS ON THE JOB SITE AND SHALL NOTIFY THE AGENT-IF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SAC WIRELESS SIGNATURE BLOCK		
DATE:	SIGNATURE	ORGANIZATION
		WIRELESS INDUSTRY
		PLANNERS
		CONTRIBUTORS
		LANDLORDS

[illegible]

# CODE COMPLIANCE

[illegible]

## DRIVING DIRECTIONS

SINCE 7 AM UTC TILL UR WALNUT CREEK CA 94089

- 1) GOV 660 SOUTH TOWARDS SAN JOSE
- 2) TAKE 370 WESTERN BLVD TOWARDS I80
- 3) CONTINUE ON CA 17 SOUTH
- 4) TAKE 1ST AVENUE NORTH TO 2ND AVE.
- 5) TURN RIGHT ON 2ND AVE.
- 6) GO EAST ON 41ST AVE. TURN RIGHT ON 24TH AVE.
- 7) TURN RIGHT ON GATC FORTICAUR. DISTRIBUTION WILL BE ON THE LEFT HAND SIDE

PROJECT DESCRIPTION	PROJECT LOCATION
<p>THE PROJECT IS A VERIZON WIRELESS UNMANNED TELECOMMUNICATIONS WIRELESS FACILITY, WILL CONSIST OF THE FOLLOWING:</p> <ul style="list-style-type: none"> <li>• A NEW 150,000-SQ-FT VERIZON WIRELESS FACILITY TO BE CONSTRUCTED TO LOCATE A TOTAL OF 21 ANTENNAS MOUNTED TO FIND NEW VERIZON WIRELESS SERVICE AREA.</li> <li>• A NEW 150,000-SQ-FT VERIZON WIRELESS EQUIPMENT SHELTER LOCATED ON A 1.660 ACRES OF LAND.</li> <li>• POWER AND TELECOM WOULD BE PURCHASED FROM UTILIZATION ON THE SAME PROPERTY.</li> </ul>	<p>VERIZON WIRELESS</p>

## PROJECT TEAM

<b>SITE ACQUISITION</b>	<b>SURVEYOR:</b>
BOG WHEELSEN, LLC 10000 WILSON BLVD., SUITE 200 PAINA, INDIANA, CA 92000 TEL: (951) 661-4999 FAX: (951) 661-4997 WWW.BOGWHEELSEN.COM	BARTING SURVEYING ENGINEERS 10000 WILSON BLVD., SUITE 200 PAINA, INDIANA, CA 92000 TEL: (951) 661-4999 FAX: (951) 661-4997
<b>PLANNING</b>	
BOG WHEELSEN, LLC 10000 WILSON BLVD., SUITE 200 PAINA, INDIANA, CA 92000 TEL: (951) 661-4999 FAX: (951) 661-4997	
<b>PLANNING</b>	
BOG WHEELSEN, LLC 10000 WILSON BLVD., SUITE 200 PAINA, INDIANA, CA 92000 TEL: (951) 661-4999 FAX: (951) 661-4997	
<b>ARCHITECT:</b>	
BOG WHEELSEN, LLC 10000 WILSON BLVD., SUITE 200 PAINA, INDIANA, CA 92000 TEL: (951) 661-4999 FAX: (951) 661-4997	
<b>UTILITY COORDINATOR:</b>	
BOG WHEELSEN, LLC 10000 WILSON BLVD., SUITE 200 PAINA, INDIANA, CA 92000 TEL: (951) 661-4999 FAX: (951) 661-4997	

VERIZON SIGNATURE BLOCK		
DESCRIPTION	SIGNATURE	DATE
NITE ADZCRIPTION		
CONSTRUCTION		
RACE		
PERFORMANCE		
TEL CO		
EMPLOYMENT		
PROJECT ADMINISTRATION		
WFO ADMINISTRATION		

















REV	DATE	DESCRIPTION	BY
0	08/23/01	ISSUE FOR PERMITS	EC
1	08/13/01	ISSUE FOR PERMITS	EC
2	11/04/01	REVISED PERMITS	EC
3	09/10/03	REVISED PERMITS	EC
4	08/11/03	REVISED PERMITS	EC
5	08/11/03	REVISED PERMITS	EC
6	08/11/03	REVISED PERMITS	EC
7	08/11/03	REVISED PERMITS	EC
8	08/11/03	REVISED PERMITS	EC
9	08/11/03	REVISED PERMITS	EC
10	08/11/03	REVISED PERMITS	EC

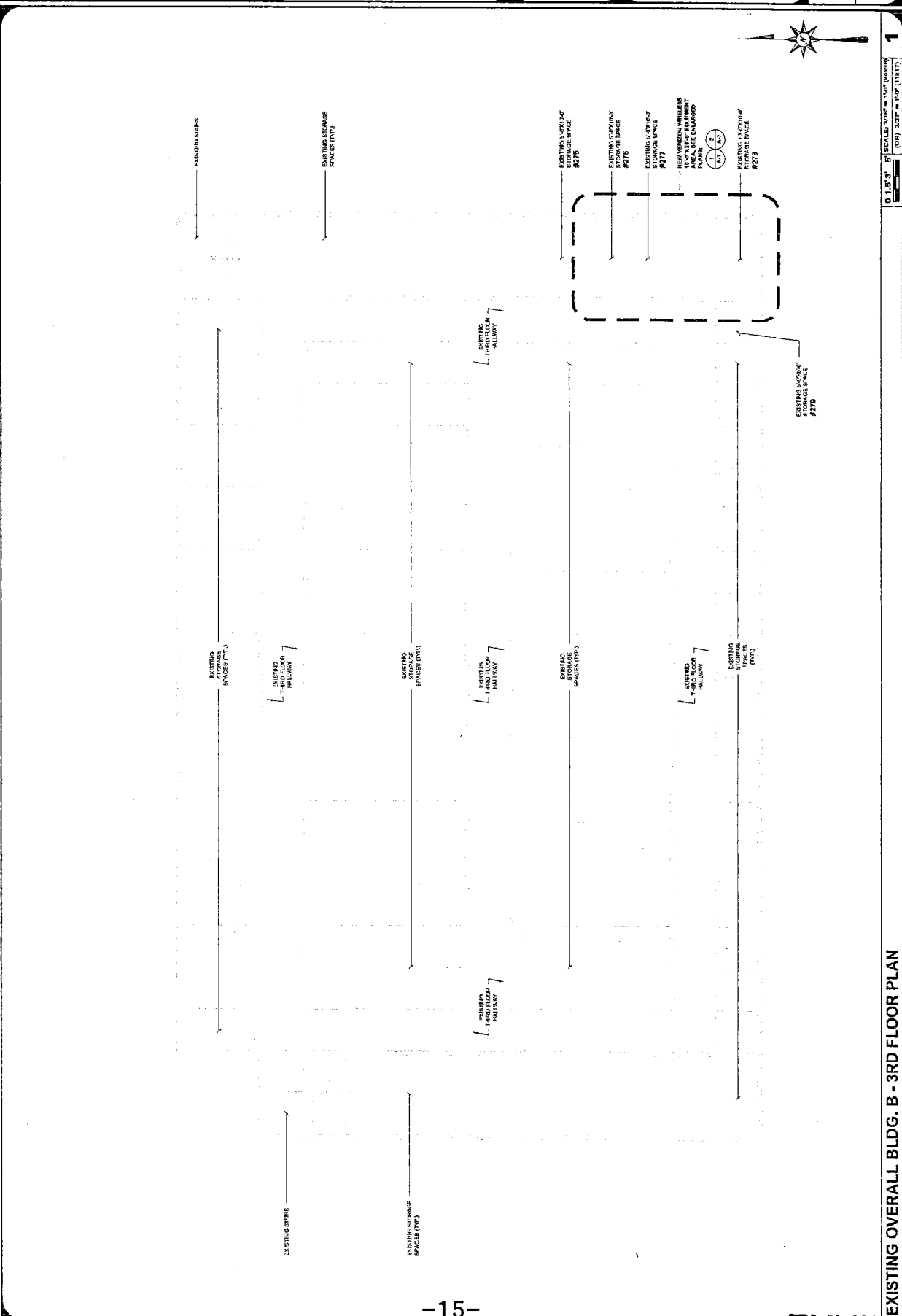
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SHEET TITLE  
EXISTING OVERALL BLDG.  
B - 3RD FLOOR PLAN

**A-6**







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

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

This finding can be made in that the proposed wireless communication antennas and equipment will be screened with textured and painted materials and color to match the existing building. The proposal will not significantly affect any designated visual resources, environmentally sensitive resources or any other significant County resource as its visual impact will be negligible as it appears as commercial rooftop enclosures common to many commercial buildings and it will be located in an area for which there are no known significant County resources. Although the project is located within the Coastal Zone, it is not located between the sea and the seaward side of the right-of-way of the first through public road parallel to the sea.

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

This finding can be made in that the proposed site is not located in a prohibited or restricted area as set forth in Sections 13.10.661(b) and 13.10.661(c). As such, no alternative site analysis or alternative designs are required. Wireless communication facilities are an allowed use with the C-2 (Community Commercial) zone district.

3. The subject property upon which the wireless communications facility is to be built is in compliance with all rules and regulations pertaining to zoning uses, subdivisions and any other applicable provisions of this title (County Code 13.10.660) and that all zoning violation abatement costs, if any, have been paid.

This finding can be made, in that the existing mini-storage is a permitted use under Discretionary Permits 83-18-PD, 83-53-CZ, 86-0134 and 88-0251. The existing wireless facility is permitted under permit 05-0444. This application does not propose any alterations to the existing mini-storage facility beyond the installation of the proposed wireless communication facility antennas and equipment as shown in Exhibit A. As noted, the improvements will be located on the rooftop or within the building in compliance with the minimum 30 foot setback from residentially zoned property. The facility is proposed to be fully screened from view by the proposed rooftop enclosures. Consideration was given to provision of a uniform rooftop enclosure for all antennas and rooftop equipment, but the additional structural massing of such a structure significantly outweighed the more limited structural massing proposed by two

additional enclosures. The smaller enclosures provide more limited impacts overall.

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

This finding can be made, in that the proposed antennas will be located within a rooftop equipment enclosure approximately 35 feet in height, which complies with the commercial height standard. As such, the proposal will not create a hazard for aircraft in flight.

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

This finding can be made, in that the maximum ambient radio frequency electromagnetic field exposure level anywhere on the ground will be 3.7% of the applicable radio frequency exposure levels established by the Federal Communications Commission (FCC). The maximum calculated cumulative level at the second-floor elevation of any nearby building would be 9.2% of the public exposure limit. Exposure levels may exceed the applicable occupational exposure limit on the roof to the subject building near the antennas. The antennas are not accessible to the public. However, to prevent occupational exposures to technical equipment specialists in excess of the Federal Communications Commission guidelines, no access within 15 feet directly in front of the Verizon antennas themselves may occur while the base station is in operation. The addition of warning signs and an automatic shut-off value are included as conditions of approval to ensure occupational safety.

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

The proposed wireless communication facility will not extend onto or impede access to a publicly used beach. The power and telecommunication lines servicing the facility are conditioned to be placed underground or within the existing buildings. In addition, the project is not located between the sea and the seaward side of the right-of-way of the first through public road parallel to the sea.

## **Coastal Development Permit Findings**

1. That the project is a use allowed in one of the basic zone districts, other than the Special Use (SU) district, listed in section 13.10.170(d) as consistent with the General Plan and Local Coastal Program LUP designation.

This finding can be made, in that the property is zoned C-2 (Community Commercial), a designation which allows commercial uses. The proposed wireless communications facility is an allowed use within the zone district, and is consistent with the site's (C-C) Community Commercial General Plan designation.

2. That the project does not conflict with any existing easement or development restrictions such as public access, utility, or open space easements.

This finding can be made, in that the proposal does not conflict with any existing easement or development restriction such as public access, utility, or open space easements.

3. That the project is consistent with the design criteria and special use standards and conditions of this chapter pursuant to section 13.20.130 et seq.

This finding can be made, in that the development is designed to have almost no visual impact on the neighborhood. Equipment enclosures, with materials and building colors matching the existing building, will screen the antennas. Additional wireless equipment is proposed within existing storage units and will result in no outward changes to the appearance of the building. The development site is not on a prominent ridge, beach, or bluff top.

4. That the project conforms with the public access, recreation, and visitor-serving policies, standards and maps of the General Plan and Local Coastal Program land use plan, specifically Chapter 2: figure 2.5 and Chapter 7, and, as to any development between and nearest public road and the sea or the shoreline of any body of water located within the coastal zone, such development is in conformity with the public access and public recreation policies of Chapter 3 of the Coastal Act commencing with section 30200.

This finding can be made, in that the project site is not located between the shoreline and the first public road. Consequently, the proposed wireless communications facility will not interfere with public access to the beach, ocean, or any nearby body of water. Further, the project site is not identified as a priority acquisition site in the County Local Coastal Program.

5. That the proposed development is in conformity with the certified local coastal program.

This finding can be made, in that the structure is sited and designed to be visually compatible, in scale with, and integrated with the character of the surrounding neighborhood. Additionally, commercial uses are allowed uses in the C-2 (Community Commercial) zone district of the area, as well as the General Plan and Local Coastal Program land use designation.

## **Development Permit Findings**

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

This finding can be made, in that the proposed wireless communication facility will comply with all FCC regulations and rooftop antenna and equipment enclosures, designed to match the existing building in color and materials, will screen the antennas so that the visual impacts to neighboring properties will be minimized. The proposed wireless communication facility will require a building and electrical permit to ensure structural safety and energy conservation. Building plans are required to comply with all uniform building code and fire district requirements. Security measures will be required to prevent people from accessing the antennas or equipment cabinets. This includes locked entry to the rooftop and an automatic shut off valve for occupational technicians and public safety personnel.

The proposed project will not result in inefficient or wasteful use of energy, in that the most recent and efficient technology available to provide wireless communication services will be required as a condition of this permit. Upgrades to more efficient and effective technologies will be required to occur as new technologies are developed.

The proposed wireless communications facility will not deprive adjacent properties or the neighborhood of light, air, or open space, in that the structure meets all current setbacks that ensure access to light, air, and open space in the neighborhood. This includes a minimum 30 foot setback between the proposed antennas and equipment and the adjoining residentially zoned mobile home park located to the south of the site.

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

This finding can be made, in that the proposed location of the wireless communications facility and the conditions under which it would be operated or maintained will be consistent with all pertinent County ordinances and the purpose of the C-2 (Community Commercial) zone district. The primary use of the property will continue to be one mini-storage facility that meets all current site standards for the zone district except for the rear yard setback for which a variance was granted to reduce the setback from the required 30 feet to 15 feet. The wireless communication facility will meet all current site standards, including the required 30 foot rear yard setback adjoining residentially zoned property.

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

This finding can be made, in that the proposed commercial use is consistent with the use and density requirements specified for the Community Commercial (C-C) land use designation in the County General Plan.

The proposed wireless communication facility is compatible with adjacent uses in that the wireless communications facility was subject to Design Review and its design is consistent with the design review standards, as specified in Policy 8.5.2 (Commercial Compatibility With Other Uses).

The proposed project complies with General Plan Policy 5.10.3 (Protection of Public Vistas), in that no views of the beach, ocean, or other significant vistas can be viewed past or across the subject property.

The proposed project will be in compliance with the General Plan Noise element, specifically Policy 6.9.1 (Land Use Compatibility Guidelines) and 6.9.4 (Commercial and Industrial Development) in that no additional noise generating equipment are proposed by the project beyond the existing air conditioning equipment. The previously approved project included an air conditioning that required acoustical study that confirmed the unit was in compliance with the General Plan noise element prior to construction. No additional changes are proposed with regard to the air conditioning unit as part of this project.

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

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

This finding can be made, in that adequate electrical service will be available to the facility, and no additional traffic will be generated beyond occasional trips for maintenance and inspection of the facility.

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

This finding can be made, in that the proposed wireless communication facility will be ancillary to the primary use of the property as a mini-storage facility, and the proposed antennas and equipment are proposed will be camouflaged behind a rooftop equipment enclosure that matches the color and materials of the building.

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

This finding can be made, in that the proposed wireless communication facility will be camouflaged as a rooftop equipment enclosure to minimize its visual impact to the surrounding properties. As required by the design review ordinance, the proposed rooftop enclosure will match the materials and color of the building and will appear as an integral part of the building, consistent with the appearance of any other commercial rooftop equipment enclosure. This proposal will not reduce or visually impact available open space in the surrounding area.

## Conditions of Approval

Exhibit A: Project plans, Sheet T-1, A-1, A-2, A-3, A-4, A-5, A-6, A-7, by SAC Wireless Engineering Group, Inc., dated 5/21/12.  
Project plans, Sheet C-1, C-2, by SAC Wireless Engineering Group, Inc., dated 3/26/12

- I. This permit authorizes the co-location nine antennas camouflaged behind equipment enclosures on the rooftop of an existing commercial building containing a mini-storage use and an existing wireless carrier (Metro PCS). Project includes an equipment shelter within the interior the third floor of the mini-storage building. Requires an amendment to Commercial Development Permit/Coastal Development Permit 05-0444.
  - A. Sign, date, and return to the Planning Department one copy of the approval to indicate acceptance and agreement with the conditions thereof.
  - B. Obtain a Building Permit from the Santa Cruz County Building Official.
  - C. The applicant shall obtain approval from the California Public Utilities Commission and the Federal Communications Commission to install and operate this facility.
  - D. The applicant shall obtain an easement from the property owner for all required Verizon Wireless utility easements, as noted on Exhibit A.
  - E. To ensure that the storage of hazardous materials on the site does not result in adverse environmental impacts, the applicant shall submit a Hazardous Materials Management Plan for review and approval by the County Department of Environmental Health Services.
- II. Prior to issuance of a Building Permit the applicant/owner shall:
  - A. Submit proof that these conditions have been recorded in the official records of the County of Santa Cruz (Office of the County Recorder).
  - B. Submit Final Architectural Plans for review and approval by the Planning Department. The final plans shall be in substantial compliance with the plans marked Exhibit "A" on file with the Planning Department. The final plans shall include the following additional information:
    1. Identify materials and finish paint color for Planning Department approval. The rooftop equipment enclosure must match the color and material of the existing building. Paint must be non-reflective.
    2. Details showing compliance with fire department and County Code requirements, including:
      - a. The provision of one-hour fire resistant interior walls, as required, for the storage units used to house the equipment cabinets.

- for the storage units used to house the equipment cabinets.
      - b. A rapid entry (KNOX) system, as required by the Fire Chief.
      - c. An on-site emergency power shut-off (e.g., "kill switch") to de-energize all RF-related circuitry/componentry at the site or some other method which is acceptable to the Fire Chief for de-energizing the facility.
    - 3. Show the location and wording of 12" x 12" signage notifying the public that a wireless communication facility is located on the property.
    - 4. All new electric and telecommunications lines shall be placed underground or be located within the existing buildings.
    - 5. Plans shall include radio frequency notification signage at the roof access hatch, at the interior building equipment enclosure, and on the view screen enclosures in front of the antennas, such that the signs would be readily visible from any angle of approach to persons who might need to work within that distance. Signage shall meet the FCC adopted guidelines.
  - C. Obtain an Environmental Health Clearance for this project from the County Department of Environmental Health Services.
  - D. Meet all requirements and pay any applicable plan check fee of the Central Fire Protection District.
  - E. Provide evidence that the equipment proposed to be located within the storage unit has a temperature governor / automatic shut-off acceptable to the fire agency, as required.
- III. All construction shall be performed according to the approved plans for the Building Permit. Prior to final building inspection, the applicant/owner must meet the following conditions:
- A. All site improvements shown on the final approved Building Permit plans shall be installed.
  - B. The roof-mounted antennas and equipment must be entirely screened from public view by the parapet wall enclosure.
  - C. All inspections required by the building permit shall be completed to the satisfaction of the County Building Official.
  - D. Pursuant to Sections 16.40.040 and 16.42.100 of the County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this development, any artifact or other evidence of an historic archaeological resource or a Native American cultural site is discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner if the discovery contains human remains, or the Planning

Director if the discovery contains no human remains. The procedures established in Sections 16.40.040 and 16.42.100 shall be observed.

#### IV. Operational Conditions

- A. Hazard Posting: The NIER hazard zone will be posted with bilingual NIER hazard warning signage that also indicates the facility operator and a 24-hour emergency contact authorized by the applicant to act on behalf of the applicant regarding an emergency situation. In addition, a 12" x 12" sign notifying the public that a wireless communication facility exists on site must be posted in an area readily visible by the public. A 12" x 12" sign notifying the public that a wireless communication facility exists in the storage unit located on the door of the third floor storage unit that is readily visible by the public.
- B. Access Control: The equipment cabinet area must be locked at all times except when authorized personnel are present. The antennas must not be accessible to the public.
- C. Equipment Modification: Any modification in the type of equipment shall be reviewed and acted on by the Planning Department staff. The County may deny or modify the conditions at this time, or the Planning Director may refer it for public hearing before the Zoning Administrator.
- D. Camouflage: The camouflage materials of the enclosure screening wall shall be permanently maintained and replacement materials and/or paint shall be applied as necessary to maintain the camouflage of the facility.
- E. NIER Report: Within 90 days of the commencement of normal operations, or within 90 days after any modification to power output of the facility, a report must be submitted documenting the non-ionizing electromagnetic radiation (NIER) emissions of the project in order to verify compliance with the FCC's NIER standards.
- F. Lighting: All site, building, security and landscape lighting shall be directed onto the lease site and away from adjacent properties. Light sources shall not be visible from adjacent properties. Building and security lighting shall be integrated into the building design and shall be operated with a manual on/off switch. The site shall be unlit except when authorized personnel are present at night.
- G. Future Technologies: If future technological advances would allow for reduced visual impacts resulting from the proposed telecommunication facility, the applicant agrees through accepting the terms of this permit to make those modifications which would allow for reduced visual impact of the proposed facility as part of the normal replacement schedule. If, in the future, the facility is no longer needed, the applicant agrees to abandon the facility and be responsible for the removal of all permanent structures and the restoration of the site as needed to re-establish the area consistent with the character of the surrounding vegetation.



- H. Future Studies: If, as a result of future scientific studies and alterations of industry-wide standards resulting from those studies, substantial evidence is presented to Santa Cruz County that radio frequency transmissions may pose a hazard to human health and/or safety, the Santa Cruz County Planning Department shall set a public hearing and in its sole discretion, may revoke or modify the conditions of this permit.
- I. Major Modification to Power Output: Any future major modification that would increase the power output of the wireless communication facility, as defined in Section 13.10.660(d), shall require the submission of an affidavit by a professional engineer registered in the State of California that the proposed facility improvements will not result in RF exposure levels to the public in excess of FCC's NIER exposure standard. In addition, within ninety (90) days of commencement of operation of the modified facility, the applicant shall conduct RF exposure level monitoring of the site, utilizing the Monitoring Protocol, and shall submit a report to the Planning Department documenting the results of said monitoring.
- J. Transfer of Ownership: In the event that the original permittee sells its interest in the wireless communication facility, the succeeding carrier shall assume all responsibilities concerning the project and shall be held responsible to the County for maintaining consistency with all project conditions of approval. A new contact name shall be provided by the succeeding carrier to the Planning Department within thirty days of transfer of interest of the facility.
- K. Noncompliance: In the event that future County inspections of the subject property disclose noncompliance with any Conditions of this approval or any violation of the County Code, the owner shall pay to the County the full cost of such County inspections, including any follow-up inspections and/or necessary enforcement actions, up to and including permit revocation.
- V. As a condition of this development approval, the holder of this development approval ("Development Approval Holder"), is required to defend, indemnify, and hold harmless the COUNTY, its officers, employees, and agents, from and against any claim (including attorneys' fees), against the COUNTY, its officers, employees, and agents to attack, set aside, void, or annul this development approval of the COUNTY or any subsequent amendment of this development approval which is requested by the Development Approval Holder.
  - A. COUNTY shall promptly notify the Development Approval Holder of any claim, action, or proceeding against which the COUNTY seeks to be defended, indemnified, or held harmless. COUNTY shall cooperate fully in such defense. If COUNTY fails to notify the Development Approval Holder within sixty (60) days of any such claim, action, or proceeding, or fails to cooperate fully in the defense thereof, the Development Approval Holder shall not thereafter be responsible to defend, indemnify, or hold harmless the COUNTY if such failure to notify or cooperate was significantly prejudicial to the Development Approval

Holder.

- B. Nothing contained herein shall prohibit the COUNTY from participating in the defense of any claim, action, or proceeding if both of the following occur:
  - 1. COUNTY bears its own attorney's fees and costs; and
  - 2. COUNTY defends the action in good faith.
- C. Settlement. The Development Approval Holder shall not be required to pay or perform any settlement unless such Development Approval Holder has approved the settlement. When representing the County, the Development Approval Holder shall not enter into any stipulation or settlement modifying or affecting the interpretation or validity of any of the terms or conditions of the development approval without the prior written consent of the County.
- D. Successors Bound. "Development Approval Holder" shall include the applicant and the successor'(s) in interest, transferee(s), and assign(s) of the applicant.

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

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

Approval Date: \_\_\_\_\_

Effective Date: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

\_\_\_\_\_  
Wanda Williams  
Deputy Zoning Administrator

\_\_\_\_\_  
Sheila McDaniel  
Project Planner

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

# CALIFORNIA ENVIRONMENTAL QUALITY ACT

## NOTICE OF EXEMPTION

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

Application Number: 121101

Assessor Parcel Number: 032-092-02

Project Location: P.O. Box 25025, Glendale, CA 91221

**Project Description: Proposal to co-locate nine antennas camouflaged behind equipment enclosures on the rooftop of an existing commercial building containing a mini-storage use and an existing wireless carrier (Metro PCS). Project includes an equipment shelter within the interior the third floor of the mini-storage building. Requires an amendment to Commercial Development Permit/Coastal Development Permit 05-0444.**

**Person or Agency Proposing Project: Rebekah Anderson**

**Contact Phone Number: (916) 205-3100**

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

Specify type:

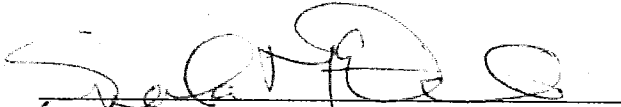
E. ☒ **Categorical Exemption**

Specify type: Class 1 - Existing Facilities (Section 15301)

F. **Reasons why the project is exempt:**

Existing rooftop wireless facility

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

  
Sheila McDaniel, Project Planner

Date: 7-12-12

**FOR TAX PURPOSES ONLY**

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**POR. RANCHO ARROYO DEL RODEO**  
N.E. 1/4 SEC. 21, T.11S., R.1W., M.D.B. & M.

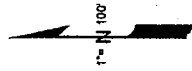
**Tax Area Code**  
96-103

**32-09**

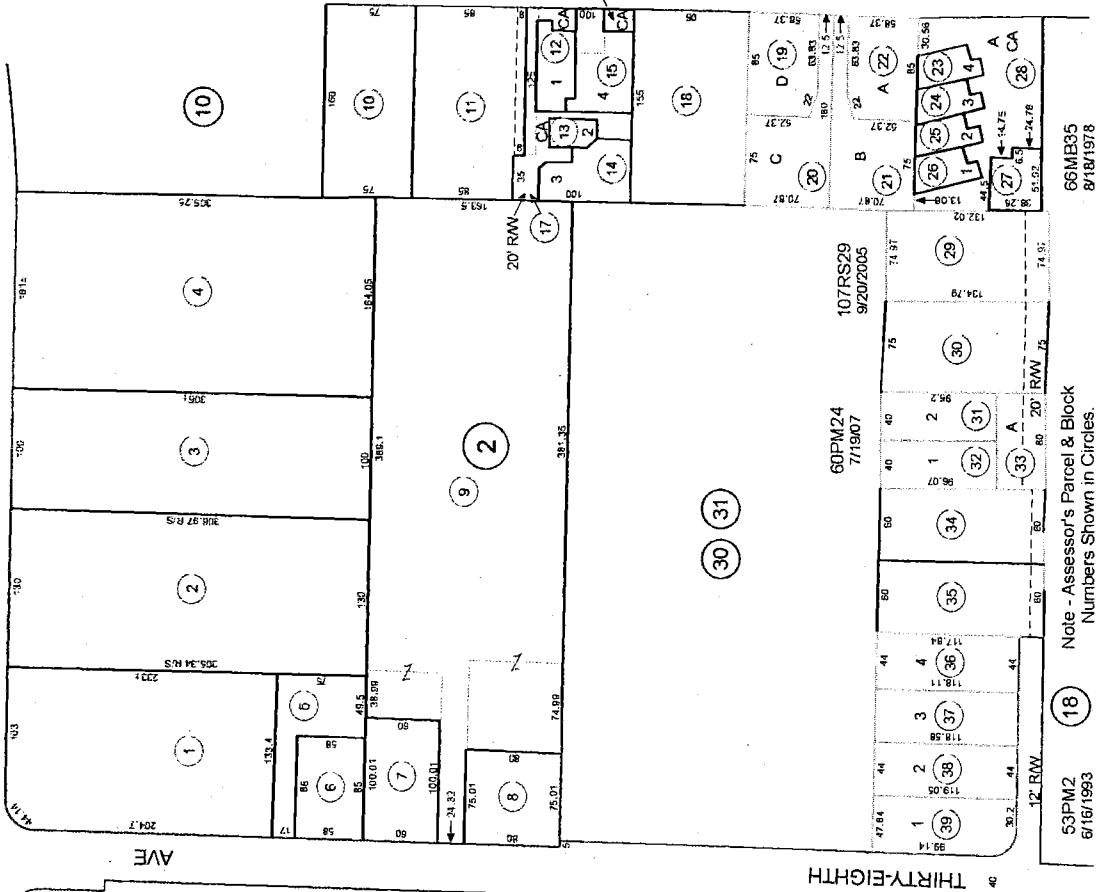
PORTOLA

DR

SEC. 21  
SEC. 22



70MB12  
2/25/1981



Bk. 33  
16

48PM24  
9/11/1987

COURT DR

OTTER'S LAIR  
TR. NO. 914  
68MB35 1/1980  
AMENDED MAP  
69MB40 9/10/80

56PM32  
2/23/2000

OPAL CLIFF

Assessor's Map No. 32-09  
County of Santa Cruz, Calif.  
Oct. 1998

66MB35  
8/18/1978

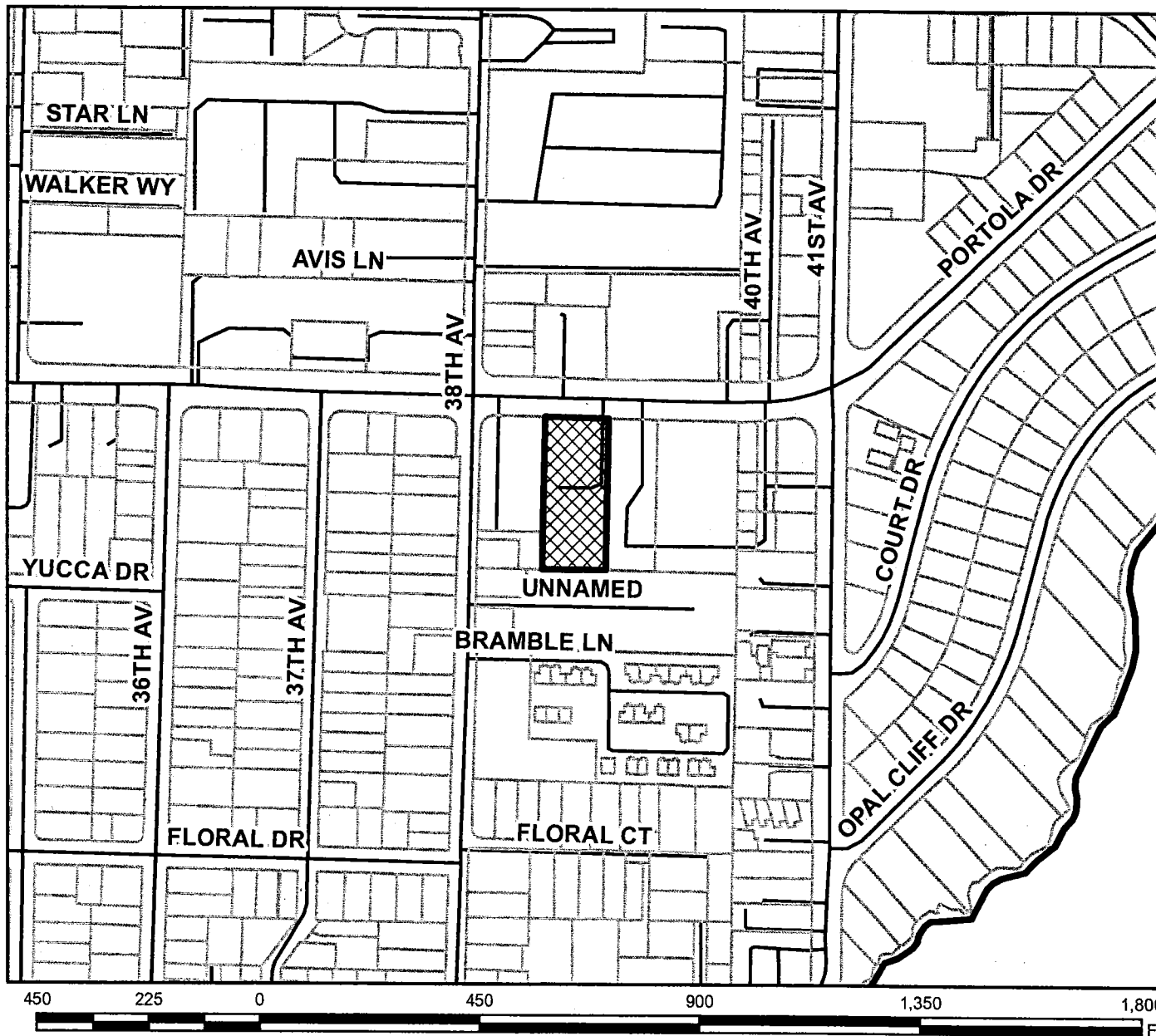
Note - Assessor's Parcel & Block  
Numbers Shown in Circles.

53PM2  
6/16/1993





Electronically Redrawn 10/27/98 NW  
Rev. 10/27/98 (Pct to pg. 30 & 31) NW  
Rev. 2/24/00 CB (56PM32, 1-93 to 97)  
Rev. 4/19/03 mmm (changed page refs.)  
Rev. 3/19/03 mmm (02-09) accepted to st)  
Rev. 8/20/07 R (107RS29)  
Rev. 8/20/07 CB (Reblocked Pg)  
Rev. 8/20/07 CB (60PM24, Sp 2-31 to 33)

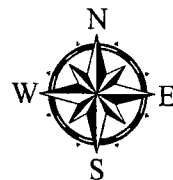


# Location Map



## LEGEND

-  APN: 032-092-02
-  Assessors Parcels
-  Streets
-  County Boundary

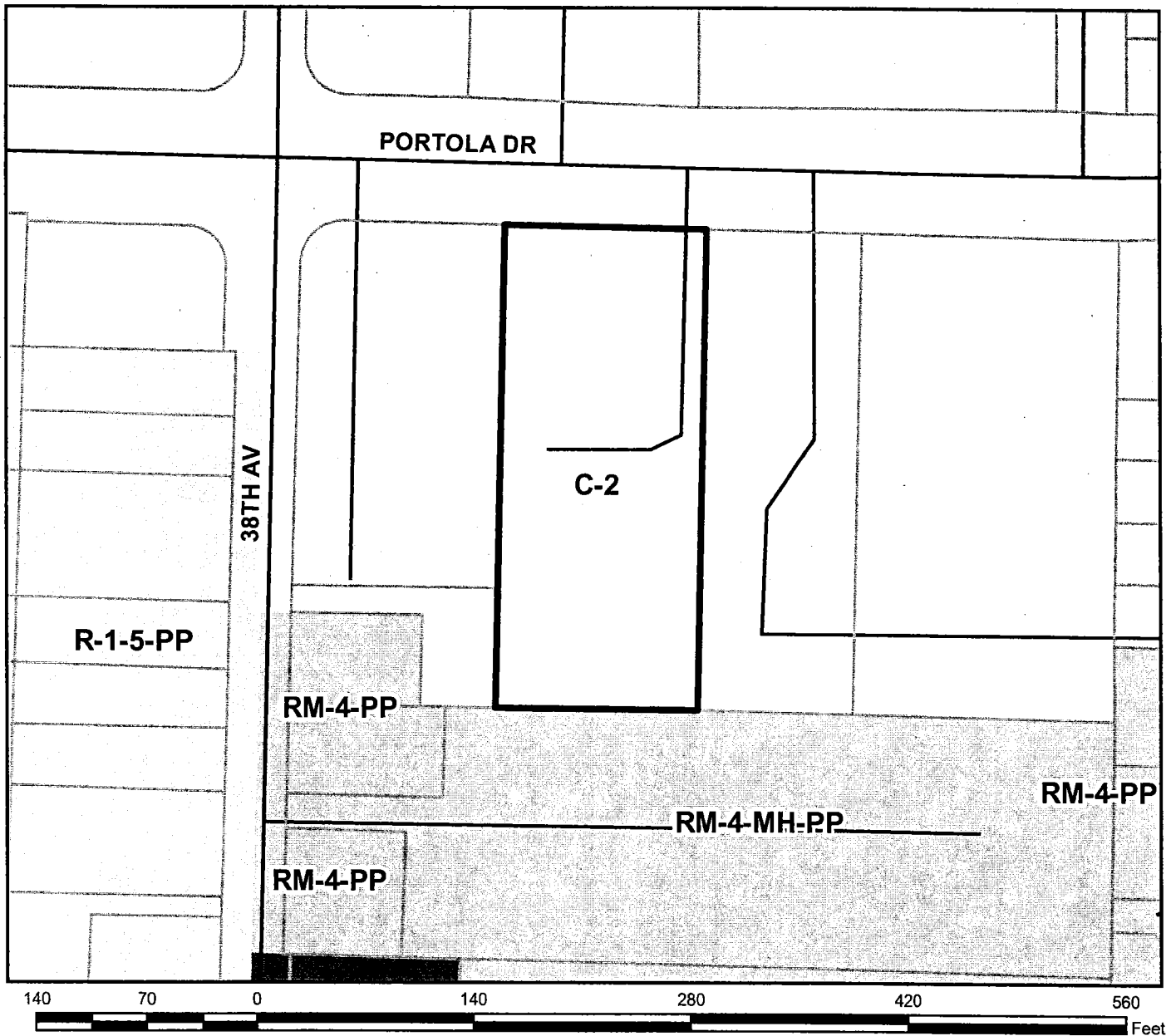


Map Created by  
County of Santa Cruz  
Planning Department  
July 2012

EXHIBIT E



# Zoning Map



## LEGEND



APN: 032-092-02



Assessors Parcels



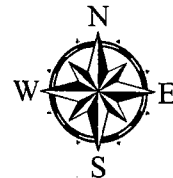
Streets

COMMERCIAL-COMMUNITY

RESIDENTIAL-SINGLE FAMILY



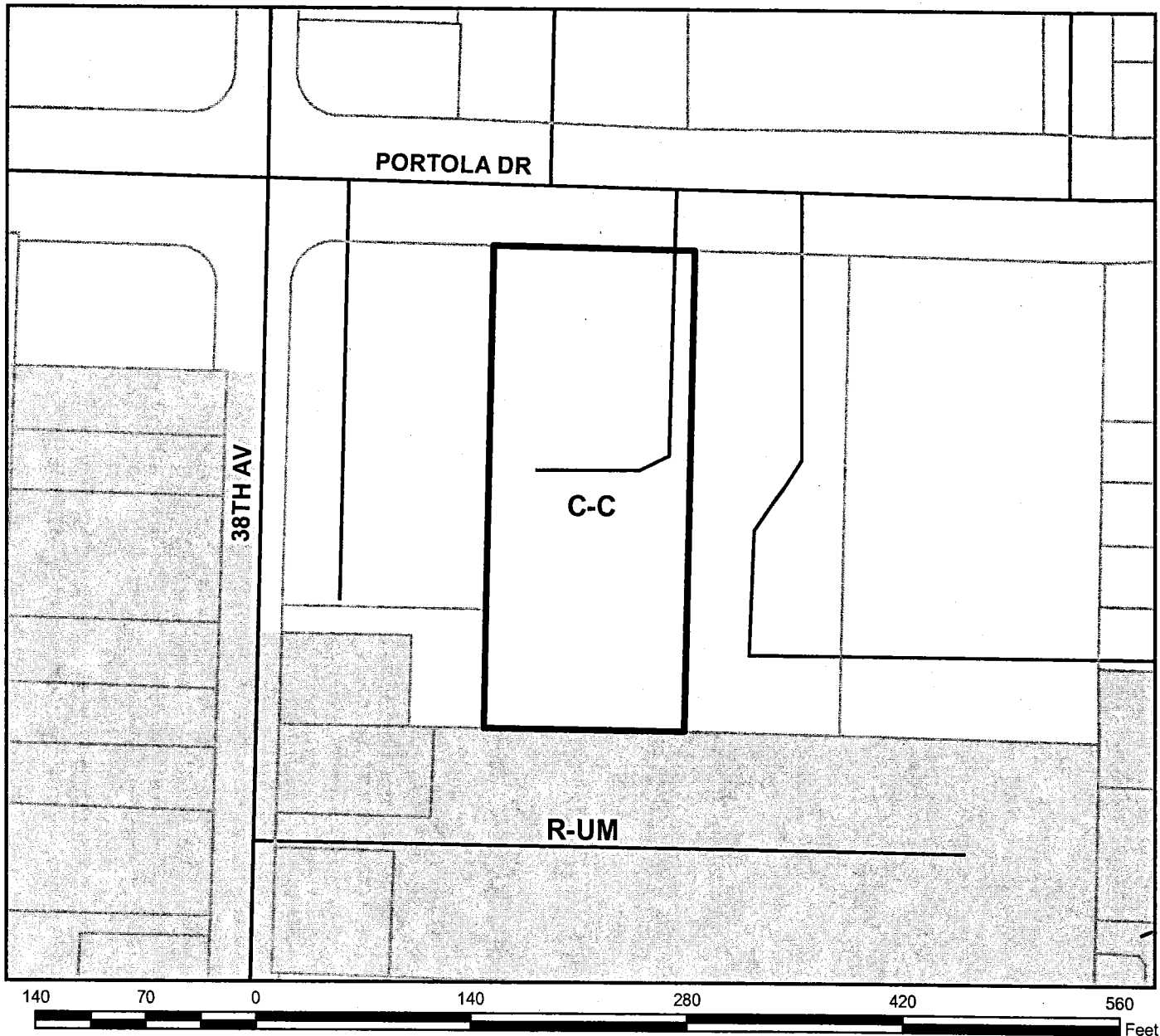
RESIDENTIAL-MULTI FAMILY



Map Created by  
County of Santa Cruz  
Planning Department  
July 2012



# General Plan Designation Map



## LEGEND



APN: 032-092-02



Assessors Parcels

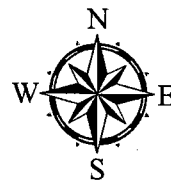


Streets

Commercial-Community



Residential - Urban Medium Density



Map Created by  
County of Santa Cruz  
Planning Department  
July 2012



**Project Support Statement**  
**Proposed Verizon Wireless Facility "Portola & 40th"**  
**3840 Portola Dr, Santa Cruz, CA 95062**



Introduction

Verizon Wireless proposes a new wireless co-location facility at 3840 Portola Dr in Santa Cruz County. This facility will enhance and expand the Verizon Wireless network in this community in order to improve communications service for its existing and prospective customers. This facility will serve the surrounding businesses, residents, and travelers along the nearby neighborhood streets.

Design / Co-location

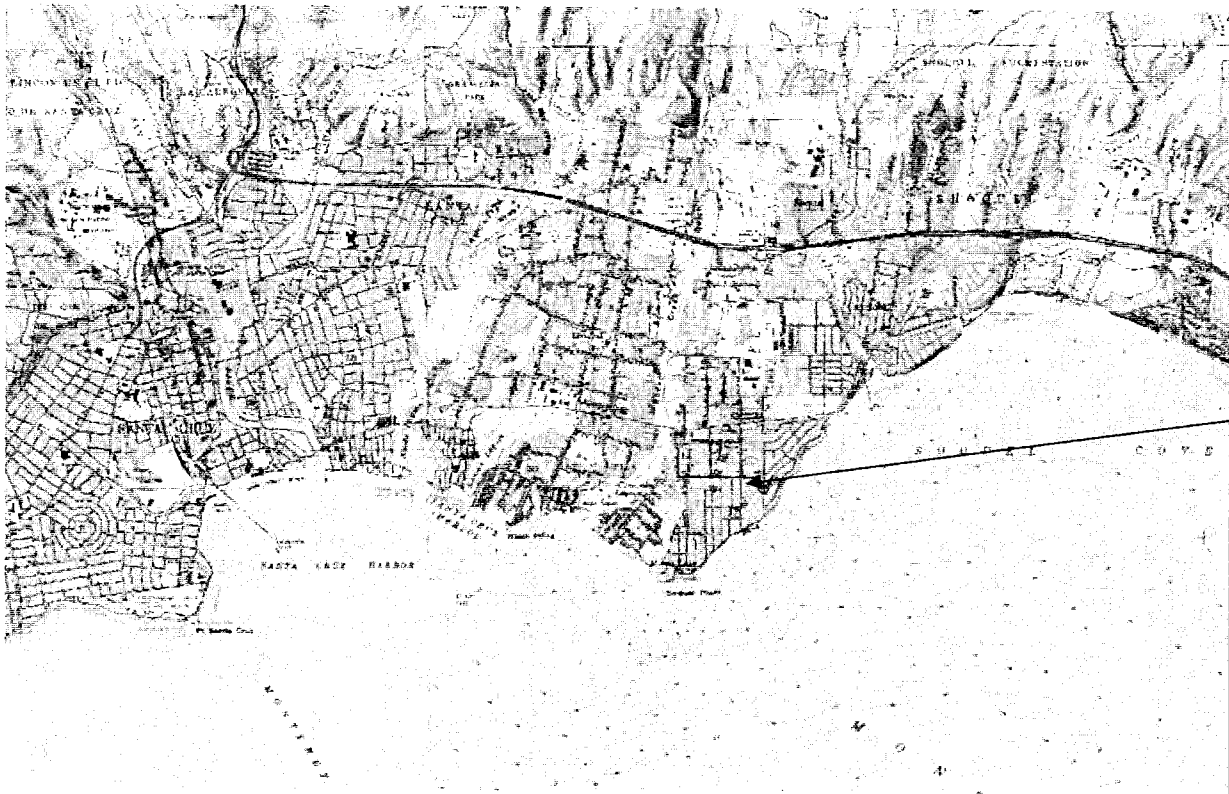
The proposed project is a co-location at an existing wireless facility, which will include new antennas on top of a roof with an enclosed screen, an equipment shelter within the existing building and power and telco connections to the facility. The co-location on the rooftop of a building is being proposed, rather than a new tower, in order to minimize visual impacts to the area.

## Public Safety

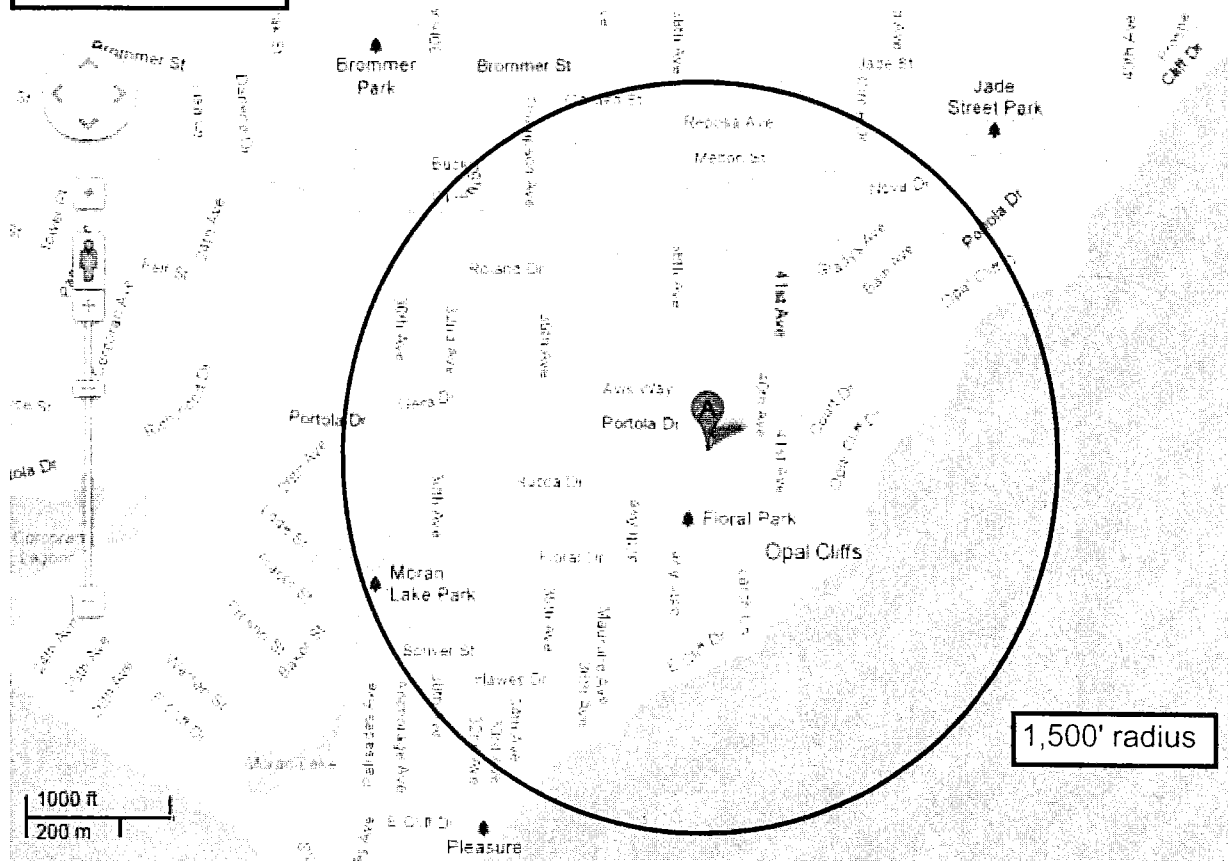
Wireless devices, such as cell phones, have become a common tool people use to contact public safety personnel and loved ones in the event of a crisis. Having increased wireless service in this area will benefit those in emergency situations to reach out for help.

## Documentation Required

1. Verizon Wireless (GTE Mobilnet of California Limited Partnership), SAC Wireless.
2. Rebekah Anderson, PO Box 2088, West Sacramento, CA 95691, 916-205-3100.
3. Owner: Public Storage Inc, PO Box 25025, Glendale, CA 91221. Agent: Rebekah Anderson for SAC Wireless/Verizon Wireless.
4. 3840 Portola Dr, Santa Cruz, CA 95062. APN: 032-092-02. 36.96275, -121.966667.
5. As a consultant, I have not submitted any other applications in Santa Cruz County for wireless facilities for Verizon Wireless.
6. This facility will enhance and expand the Verizon Wireless network in this community in order to improve communications service for its existing and prospective customers. This facility will serve the surrounding businesses, residents, and travelers along the nearby neighborhood streets.
7. Verizon Wireless complies with requirements of the CPUC.
8. Verizon Wireless complies with requirements of the FCC.
9. An EMF report is included in this application packet.
10. An EMF report is included in this application packet.
11. Photosimulations are included in this application packet.
12. Proximity and aerial maps are included in this application packet. Topo Map:



3840 Portola Dr



**Verizon Wireless • Proposed Base Station (Site No. 249610 “Portola Road & 40th”)  
3840 Portola Road • Santa Cruz, California**

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

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate the base station (Site No. 249610 “Portola Road & 40th”) proposed to be located at 3840 Portola Road in Santa Cruz, California, for compliance with appropriate guidelines limiting human exposure to radio frequency (“RF”) electromagnetic fields.

**Executive Summary**

Verizon proposes to install directional panel antennas above the roof of the commercial building located at 3840 Portola Road in Santa Cruz. The proposed operation will, together with the existing base station at the site, 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)	5,000–80,000 MHz	5.00 mW/cm <sup>2</sup>	1.00 mW/cm <sup>2</sup>
BRS (Broadband Radio)	2,600	5.00	1.00
AWS (Advanced Wireless)	2,100	5.00	1.00
PCS (Personal Communication)	1,950	5.00	1.00
Cellular	870	2.90	0.58
SMR (Specialized Mobile Radio)	855	2.85	0.57
700 MHz	700	2.40	0.48
[most restrictive frequency range]	30–300	1.00	0.20

**General Facility Requirements**

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

**Verizon Wireless • Proposed Base Station (Site No. 249610 "Portola Road & 40th")  
3840 Portola Road • Santa Cruz, California**

Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. Along with the low power of such facilities, 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 attached 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 zoning drawings by SAC Wireless LLC, dated November 4, 2011, it is proposed to install nine Andrew directional panel antennas – six Model LNX-6513DS-VTM and three Model HBXX-6516DS-VTM – within two view screen enclosures to be constructed above the roof of the two-story self-storage building located at 3840 Portola Road in Santa Cruz. The antennas would be mounted with no downtilt at an effective height of about 32½ feet above ground, 5½ feet above the roof, and would be oriented in identical groups of three toward 30°T, 210°T, and 290°T. The maximum effective radiated power in any direction would be 4,600 watts, representing simultaneous operation at 1,050 watts for PCS, 3,050 watts for cellular, and 500 watts for 700 MHz service.

Presently located on the same building are similar antennas for use by MetroPCS. For the limited purpose of this study, the transmitting facilities of that carrier are assumed to be as follows:

Operator	Service	Maximum ERP	Antenna Model	Downtilt	Height
MetroPCS	AWS	1,000 watts	Kathrein 742-213	2°	30 ft
	PCS	2,000			

**Study Results**

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation by itself is calculated to be 0.019 mW/cm<sup>2</sup>, which is 3.4% of the applicable public exposure

**Verizon Wireless • Proposed Base Station (Site No. 249610 “Portola Road & 40th”)  
3840 Portola Road • Santa Cruz, California**

limit. The maximum calculated cumulative level at ground, for the simultaneous operation of both carriers, is 3.7% of the public exposure limit. The maximum calculated cumulative level at the second-floor elevation of any nearby building\* would be 9.2% 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. Levels may exceed the applicable public exposure limit on the roof of the subject building, near the antennas. Figure 3 attached provides the specific data required under Santa Cruz County Code Section 13.10.659(g)(2)(ix) for reporting the analysis of RF exposure conditions.

**Recommended Mitigation Measures**

Due to their mounting locations, the Verizon antennas would not be accessible to the general public, 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, no access within 15 feet directly in front of the Verizon antennas themselves, such as might occur during maintenance work on the roof, should be allowed while the base station is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Posting explanatory warning signs† at the roof access hatch and on the view screen enclosures in front of the antennas, such that the signs would be readily visible from any angle of approach to persons who might need to work within that distance, would be sufficient to meet FCC-adopted guidelines. Similar measures should already be in place for the other carrier at the site; the applicable keep-back distance for that carrier has not been determined as part of this study.

**Conclusion**

Based on the information and analysis above, it is the undersigned’s professional opinion that operation of the base station proposed by Verizon Wireless at 3840 Portola Road in Santa Cruz, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations. Posting explanatory signs is recommended to establish compliance with occupational exposure limitations.

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\* Including the residences located at least 100 feet away, based on photographs from Google Maps.

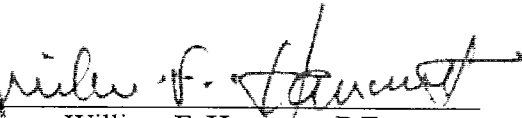
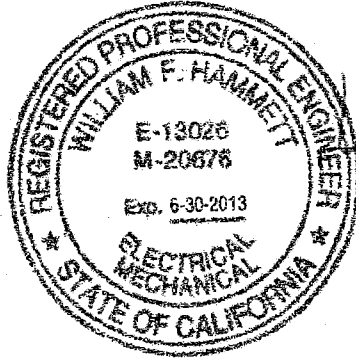
† Warning signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (e.g., a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or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



**Verizon Wireless • Proposed Base Station (Site No. 249610 "Portola Road & 40th")  
3840 Portola Road • Santa Cruz, California**

**Authorship**

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2013. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



William F. Hammett, P.E.

707/996-5200

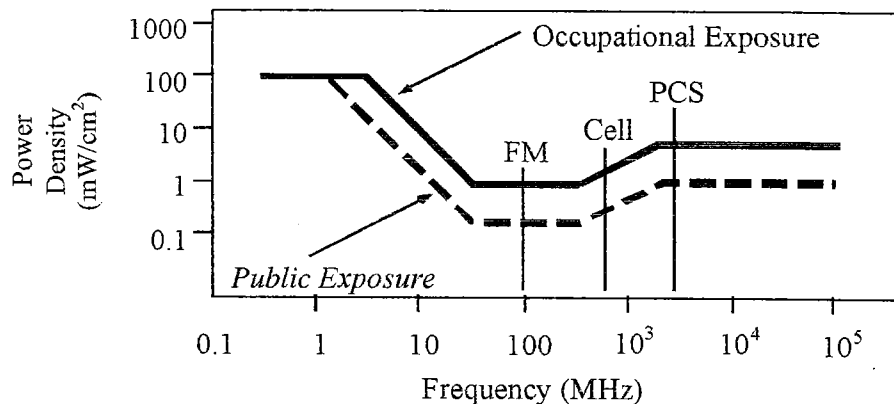
March 8, 2012

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



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



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FCC Guidelines  
Figure 1



## 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<sup>2</sup>,

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

where  $\theta_{BW}$  = half-power beamwidth of 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

$\eta$  = aperture efficiency (unitless, typically 0.5-0.8).

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

#### Far Field.

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

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

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

RFF = 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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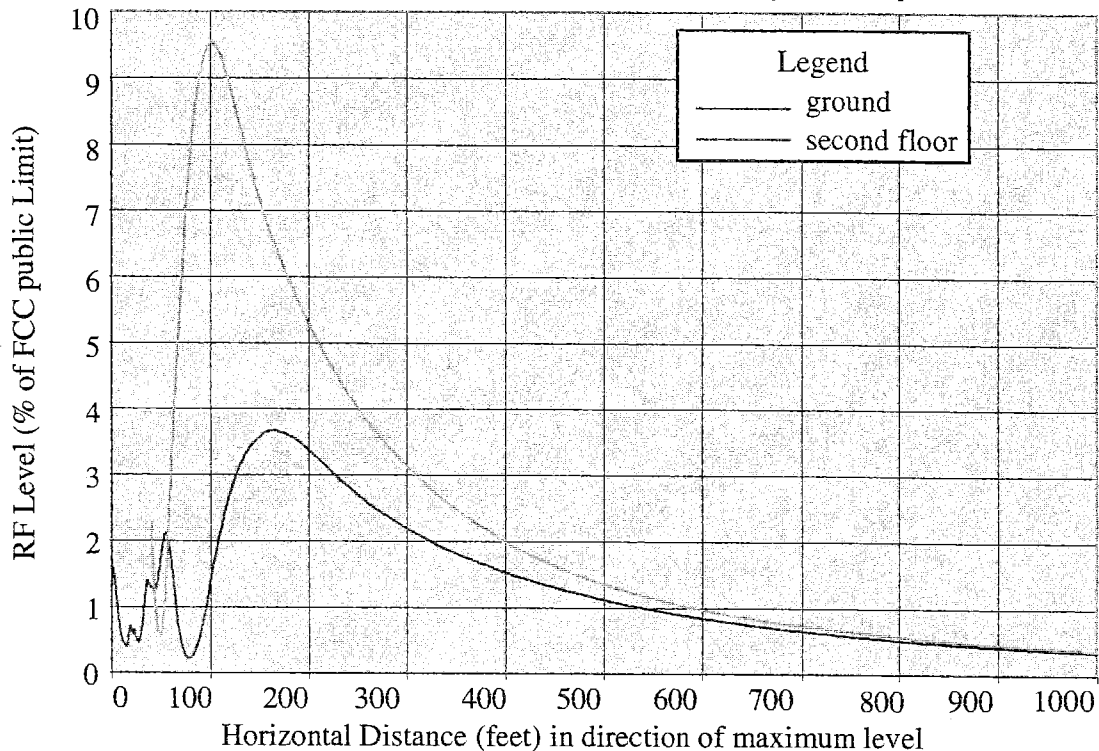
Methodology  
Figure 2

**Verizon Wireless • Proposed Base Station (Site No. 249610 "Portola Road & 40th")  
3840 Portola Drive • Santa Cruz, California**

**Compliance with Santa Cruz County Code §13.10.659(g)(2)(ix)**

"Compliance with the FCC's non-ionizing electromagnetic radiation (NIE) standards or other applicable standards shall be demonstrated for any new wireless communication facility through submission, at the time of application for the necessary permit or entitlement, of NIE calculations specifying NIE levels in the area surrounding the proposed facility. Calculations shall be made of expected NIE exposure levels during peak operation periods at a range of distances from fifty (50) to one thousand (1,000) feet, taking into account cumulative NIE exposure levels from the proposed source in combination with all other existing NIE transmission sources within a one-mile radius. This should also include a plan to ensure that the public would be kept at a safe distance from any NIE transmission source associated with the proposed wireless communication facility, consistent with the NIE standards of the FCC, or any potential future superceding standards."

**Calculated Cumulative NIE Exposure Levels during Peak Operation Periods**



RF level (% limit)							
Distance (feet)	50	100	200	300	500	750	1,000
<i>ground</i>	1.8%	1.4%	3.4%	2.2%	1.1%	0.58%	0.34%
<i>second floor</i>	0.65%	9.5%	5.3%	3.2%	1.4%	0.64%	0.36%

Calculated using formulas in FCC Office of Engineering Technology Bulletin No. 65 (1997), considering terrain variations within 1,000 feet of site.

Maximum effective radiated power (peak operation) - 4,600 watts

Effective Verizon Wireless antenna height above ground - 32½ feet

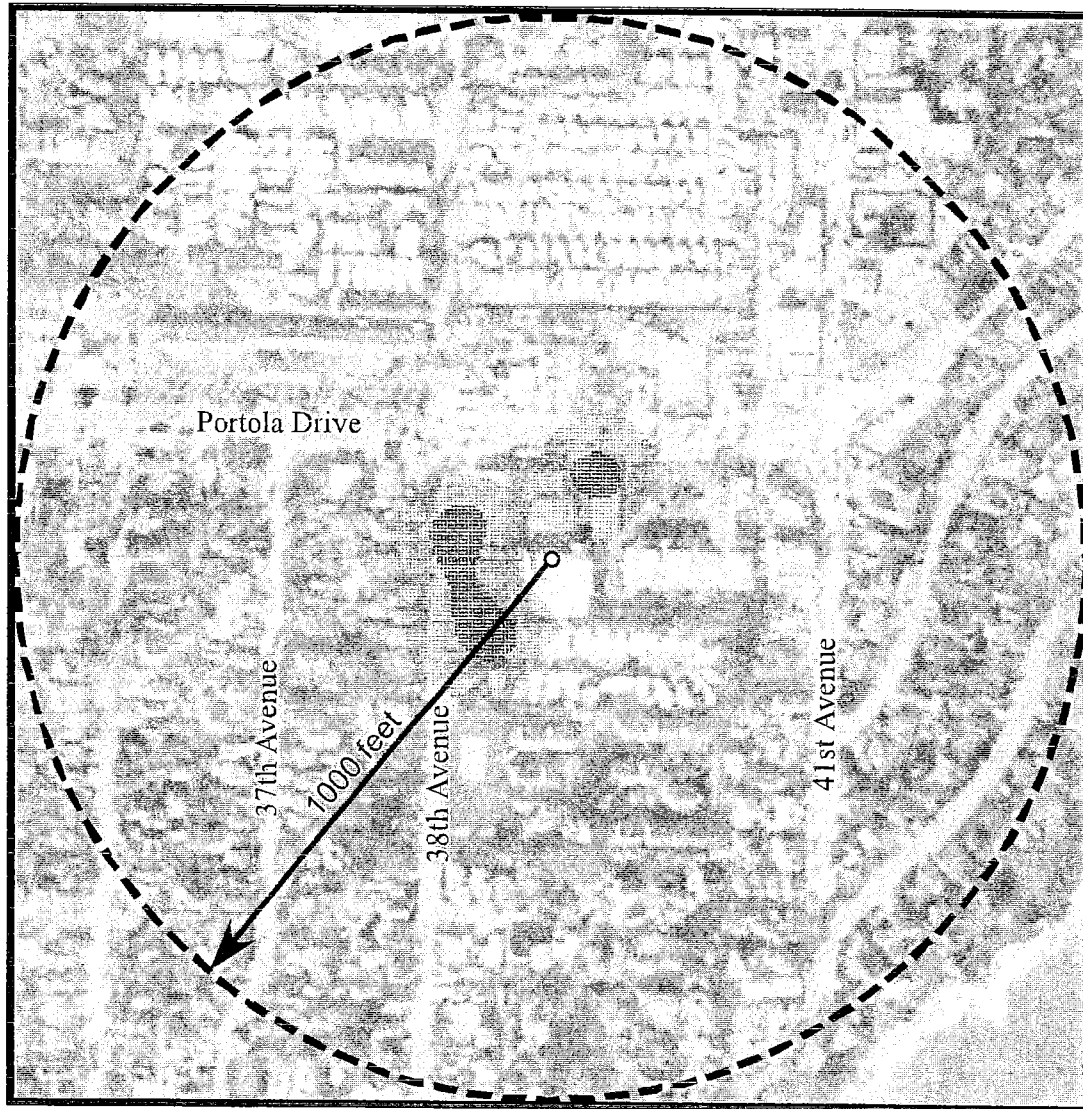
Other sources nearby - MetroPCS

Other sources within one mile - Radio Stations KSCO and KOMY; not close enough to affect compliance



Plan for restricting public access - Antennas are mounted above the roof of a building

Verizon Wireless • Proposed Base Station (Site No. 249610 "Portola Road & 40th")  
3840 Portola Drive • Santa Cruz, California

Calculated NIER Exposure Levels  
Within 1,000 Feet of Proposed Site



Aerial photo from Terraserver

Legend	
blank	- less than 3.0% of FCC public limit ( <i>i.e.</i> , more than 30 times below)
	- 3.0% and above near ground level (highest level is 3.7%)
	- 3.0% and above at second floor level (highest level is 9.6%)

Calculated using formulas in FCC Office of Engineering Technology Bulletin No. 65 (1997), considering terrain variations within 1,000 feet of site. See text for further information.



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A708  
Figure 3B

SD

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PORTOLA ROAD & 40TH  
PSL# 243610  
3840 PORTOLA ROAD  
SANTA CRUZ, CA 95062

verizon wireless

VICINITY MAP  
PHOTOSIMULATION VIEWPOINTS

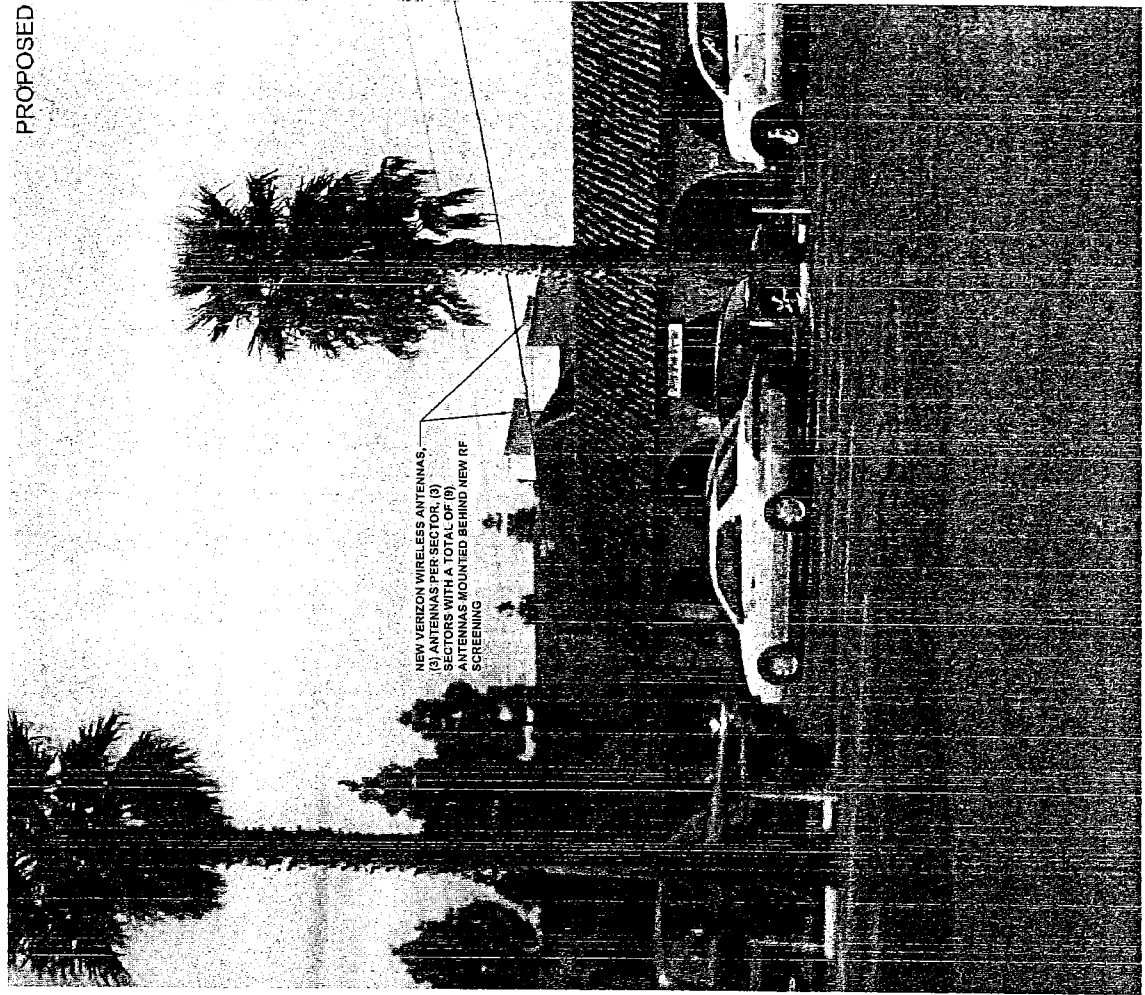
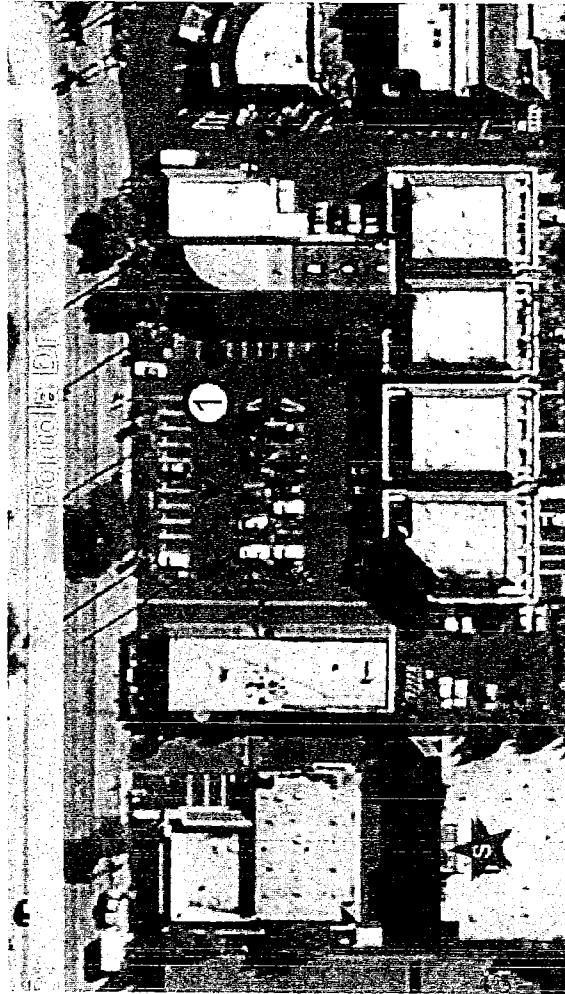


EXHIBIT c

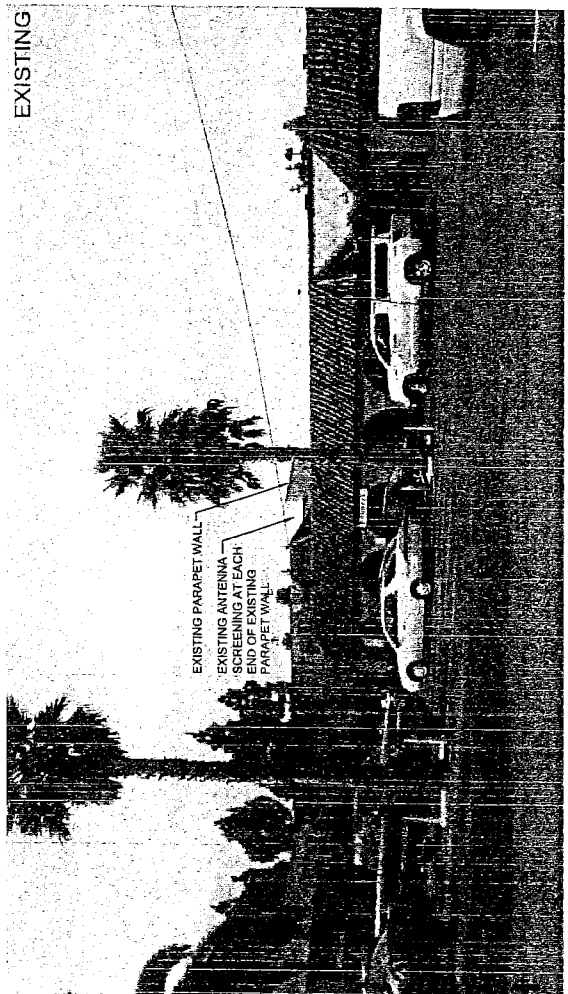
PORTOLA ROAD & 40TH  
PSL # 243610  
3840 PORTOLA ROAD  
SANTA CRUZ, CA 95062

verizonwireless

PHOTOSIMULATION VIEW 1



PROPOSED



EXISTING

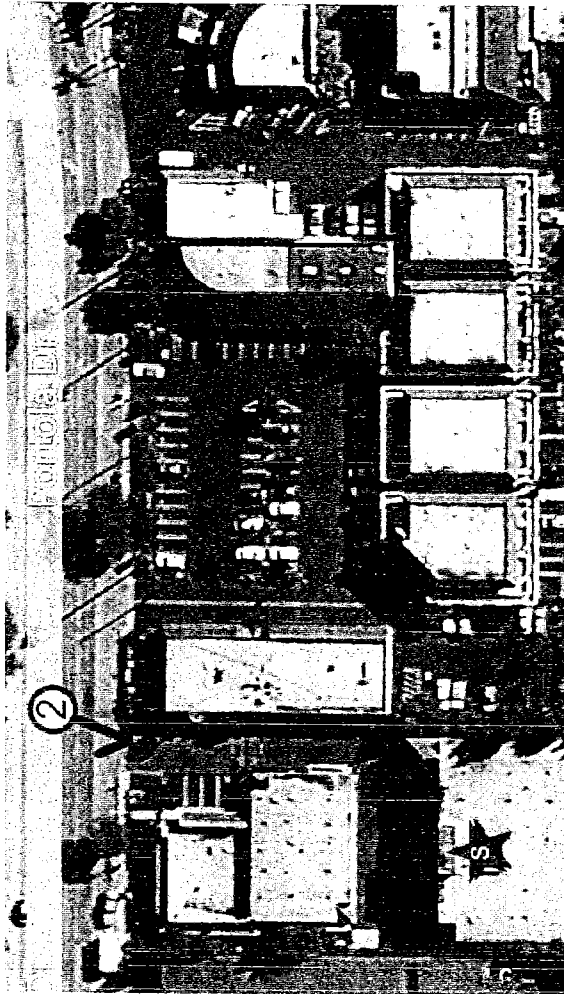




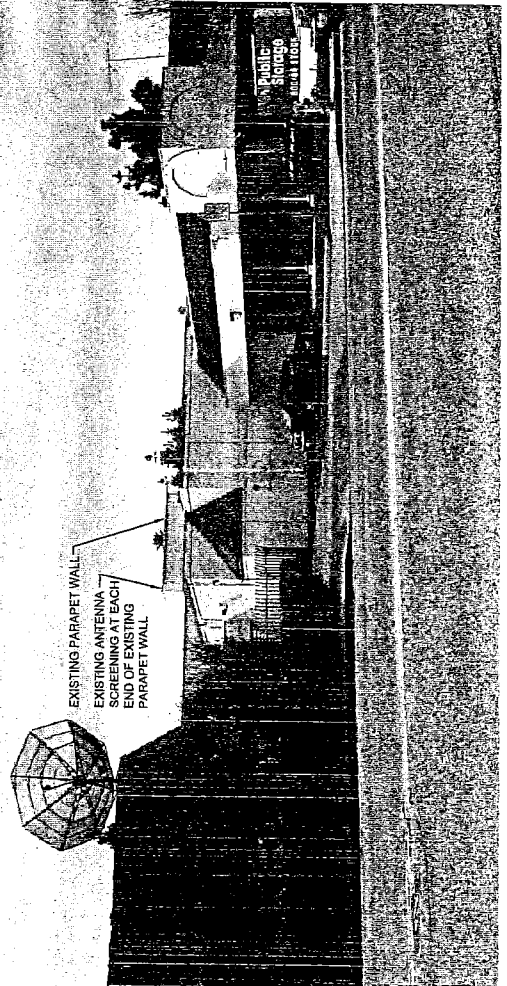
PORTOLA ROAD & 40TH  
PSL# 249610  
3840 PORTOLA ROAD  
SANTA CRUZ, CA 95062

**verizon** *wireless*

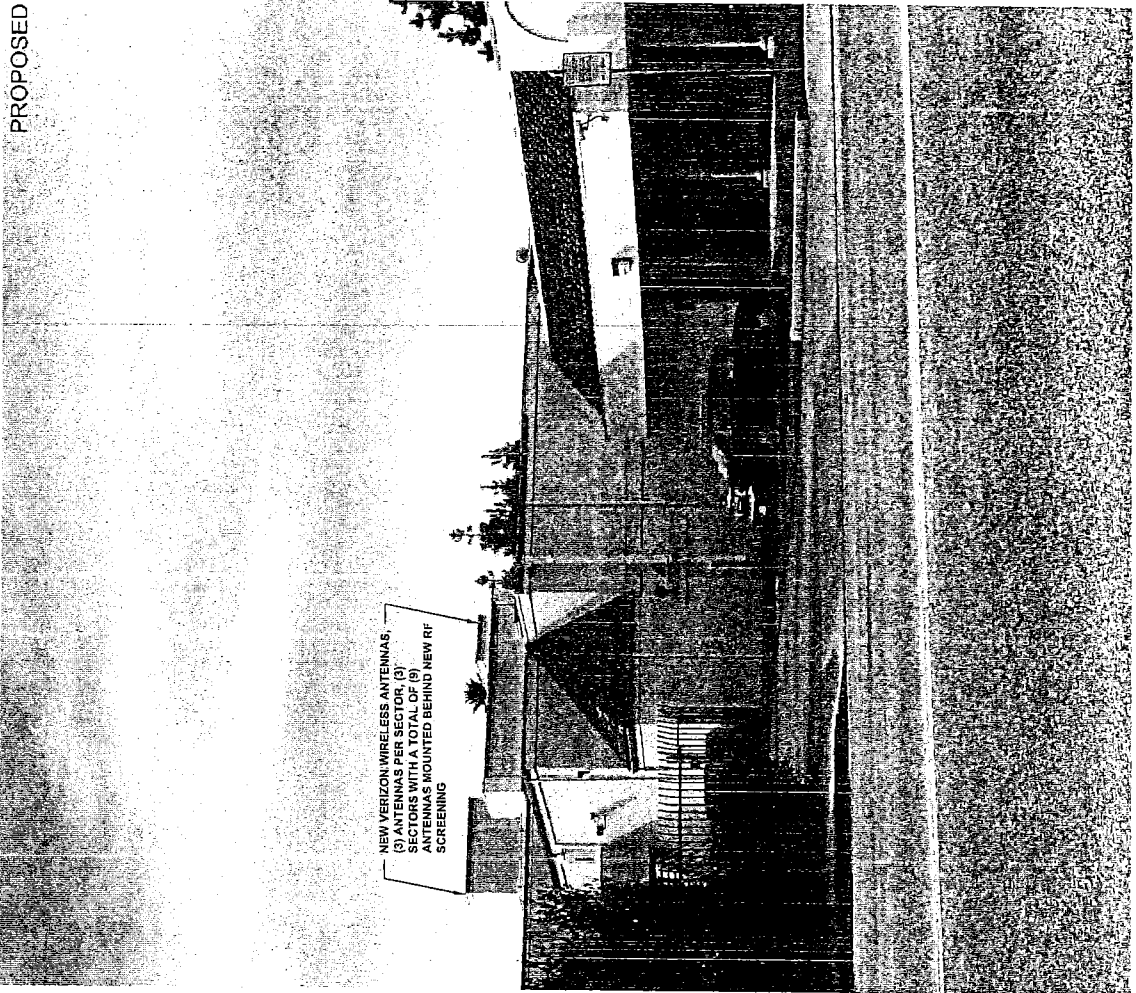
PHOTOSIMULATION VIEW 2



EXISTING



**SC**  
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PROPOSED