Staff Report to the Zoning Administrator

Application Number: 05-0353

Applicant: Karen McPhereson
Owner: Rodney Parsons
APN: 067-202-64

Agenda Date: March 3,2006
Agenda Item #: 5
Time: After 1:00 p.m.

Project Description: Proposal to install **6** panel antennas on an existing monopine, seven associated ground equipment cabinets, 2 GPS antennas, and one generator enclosed by a 6-foot tall redwood fence. Project requires an Amendemnt to Commercial Development Permits 96-0566, 99-0171, 02-0411, 05-0287, a biotic pre-site and a archaeological pre-site.

Location: Parcel is located off Sims Road on Firehouse Lane (155 Firehouse Lane) in the Carbonera planning area.

Supervisoral District: 1st District (District Supervisor: Janet K. Beautz)

Permits Required: Amendment to Commercial Development Permits 99-0171, 96-0566, 02-041 1, and 05-0287

Staff Recommendation:

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- Approval of Application 05-0353, based on the attached findings and conditions.

Exhibits

A.	Project plans	F.	Zoning and General Plan map
B.	Findings	G.	Photo-simulations
C.	Conditions	H.	Radio-Frequency exposure report
D.	Categorical Exemption (CEQA determination)	I.	Comments & Correspondence
E.	Assessor's parcel map		

Parcel Information

Parcel Size:	About 2 acres
Existing Land Use - Parcel:	One single-family dwelling, one existing monopine and monopole
Existing Land Use - Surrounding:	Single-family dwellings

Project Access:	La Madrona Drive
Planning Area:	Carbonera
Land Use Designation:	R-R (Rural Residential)
Zone District:	RA (Residential Agriculture)
Coastal Zone:	__ Inside __X__ Outside
Appealable to Calif. Coastal Comm.	__ Yes __X__ No

Environmental Information

Geologic Hazards:	Not mapped/no physical evidence on site
Soils:	Ben Lomand-Felton complex and Zayante coarse sand
Fire Hazard:	Not a mapped constraint
Slopes:	5%-50%
Env. Sen. Habitat:	Not mapped/no physical evidence on site
Grading:	No grading proposed
Tree Removal:	No trees proposed to be removed
Scenic:	Not a mapped resource
Drainage:	Existing drainage adequate
Archeology:	Not mapped/no physical evidence on site

Services Information

Urban/Rural Services Line:	__ Inside __X__ Outside
Water Supply:	Existing well
Sewage Disposal:	Existing septic system
Fire District:	Scott's Valley Fire Department
Drainage District:	No drainage district

History

Two Wireless Communications Facilities exist on site, a 60 foot tall monopole constructed in 1997 (approved under permit 96-0566) and an 90 foot tall monopine constructed in 2000 (approved under 99-0171). Subsequently, two additional providers installed antennas (co-located) on the monopine, under permits 02-0411 and 05-0287.

The current application to install a fourth set of antennas on *the* existing monopine was accepted by the County Planning Department on June 8, 2005, and deemed complete for further processing on January 17, 2006.

Analysis and Discussion

The proposed project involves the installation of six flat panel mounted antennas onto an existing 90-foot high monopole designed to look like a tree (referred to as a tree pole or monopine) and the construction of seven ground equipment cabinets within a new lease area screened by a new 6 foot high wood fence (or non-combustible material with the appearance of wood). The new antennas will be mounted about 62 feet high on *the* existing tower, below *the* three existing sets of antennas.

Co-location on a residentially zoned parcel

The subject property is zoned Residential Agriculture (RA) with a General Plan designation of Rural Residential (R-R). The zone district is a restricted zone. However, section 13.10.663(a)(2) of the Wireless Communications Facilities Ordinance encourages the co-location of antennas on existing towers located within residential zone districts if the additional antennas result in less visual impact than constructing a new separate tower in a nearby location. ***An*** alternative site analysis is not required as the project is for co-location on an existing facility.

Visual impact of the antennas and equipment cabinets

The antennas will be visible from La Madrona Drive and some locations on northbound Highway 17; a County designated Scenic Road. However, the existing "branches" of the tree pole and the existing vegetation along the La Madrona Drive and Highway 17 right-of-way significantly reduce visibility of the antennas from public view. The equipment cabinets and generator will be enclosed in a six-foot high redwood fence to shield visibility from La Madrona and adjacent properties (see Exhibit G, photo-simulations).

Generator

A backup generator will be installed to provide coverage in the event of a power outage, and will be located adjacent to the proposed equipment cabinets. Due to the proximity of the generator to residences, the backup generators shall only be operated during power outages and for testing and maintenance purposes, and noise attenuation measures shall be included to reduce noise levels at the facility to a maximum exterior noise level of sixty (60) Ldn at the property line and a maximum interior noise level of forty-five (45) Ldn within nearby residences (Conditions of Approval II.B.6, III.C, and IV.G.).

Radiofrequency (RF) exposure

RF exposure levels within 1,000 feet of the proposed antennas will be 1.4% of the maximum public exposure limit on the ground, while the simultaneous operation of all five facilities on site is calculated to be no more than 2.1% of the maximum public exposure limit set by the Federal Communications Commission.

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.

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

- **APPROVAL** of Application Number **05-0353,** based on the attached findings and conditions.

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.

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

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

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Application # 05-0353
APN: 067-202-64
Owner: Rodney Parsons

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 co-location will not result in a significant increase in visual impacts as the new antennas will be located below the existing (and recently approved) antennas on the monopine, and the antennas will not protrude beyond the existing "branches." Existing vegetation will shield visibility of the facility from Highway 17, a County designated scenic comdor. Finally, no evidence of biotic resources were discovered on site.

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 project is a co-location onto an existing facility, where the visual impacts of additional antennas will be less than the construction of a new tower/facility nearby as the site is shielded from Highway 17 by existing vegetation. Therefore, no environmentally superior sites exist in the vicinity.

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 residential and commercial use of the subject property is in compliance with the requirements of **the** zone district and General Plan designation, in which it is located. No zoning violation abatement fees are applicable to **the** subject property.

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

This finding *can* be made, in that the proposed antennas will **be** located on an existing monopine,

with no increase in height proposed.

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 RF levels at ground level due to the existing wireless communications facilities and the proposed operation **are** calculated to be 1.4% of the most restrictive applicable limit, and 2.1% of the applicable public limit on the second floor of nearby structures.

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 project site is not located within the coastal zone.

Development Permit Findings

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

This finding can be made, as the proposed co-location of six wireless communication antennas and associated equipment will be required to comply with all applicable building and electrical codes, and standards of the California Public Utilities Commission (PUC) and the Federal Communications Commission (FCC). The cumulative maximum ambient Radio Frequency (RF) levels for all five wireless communication facilities on site will not exceed 2.1% of the maximum public exposure levels on the ground.

Condition of Approval IV.E. requires that the most recent and efficient technology will be used and upgrades to more efficient and effective technologies will be required to occur as new technologies are developed.

The project will not be materially injurious to properties or improvements in the vicinity in that the new antennas will be located on an existing tree pole and will be camouflaged by existing "branches," minimizing their visual impact, and noise from the generator will be required to comply with limits set forth in the General Plan (Conditions of Approval II.B.6, III.C, and IV.G).

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 co-locations are permitted within the RA (Residential Agriculture) zone district where the visual impacts of adding new antennas are less than constructing a new facility on a non-restricted parcel nearby. The proposed co-location of six antennas and construction of associated equipment cabinets complies with all applicable provisions of the County's Wireless Communications Facility Ordinance (Sections 13.10.660 through 13.10.668), as the project is a co-location on an existing facility with minimal increase to visual impacts. Furthermore, the proposed equipment cabinets and generator will comply with all RA zone district setbacks.

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, as the proposed co-location will not adversely impact the light, solar opportunities, air, and /or open space available to other structures or properties since the existing tower meets all setbacks and site standards for the RA zone district as specified in Objective 8.1.3 of the General Plan.

The proposal is located on a site within the scenic corridor for Highway 17. Since all six proposed antennas will be mounted 62 feet high on a 90 foot high tree pole, and existing vegetation screens most of the tower from Highway 17, the visual impact of the proposed co-location will be negligible and will comply with Objective **5.10.3** of the General Plan (Protection of Public Vistas).

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, as the proposed co-location of six antennas on to an existing tree pole and the associated equipment cabinets will not overload utilities since no water or sewer service will be used, and adequate electricity is available to the site. Monthly inspections by maintenance personnel will not generate a significant amount of additional traffic.

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 antennas will be camouflaged by the existing "branches" of the tree pole and will be painted to match the existing antennas, and the proposed equipment cabinets will be screened by a wooden fence (or visual equivalent acceptable to the Scott's Valley Fire Department). The wireless antenna co-location will not increase the land use intensity or dwelling unit density of the neighborhood.

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

This finding can be made, in that the proposed wireless communication antennas and associated equipment cabinets will be screened from view of motorists on Highway 17 by existing trees and vegetation. Furthermore, the antennas will be lower than the existing antennas on the tree pole and will be partially camouflaged by the "branches" of the tree pole. The antennas will be painted to match the color of the existing antennas to further minimize their visual impact.

Conditions of Approval

Exhibit **A:** Project plans, six sheets, drawn by Omni Design Group, dated 1211105.

I. This permit authorizes the installation of six panel Wireless antennas at about 62 feet in height on an existing monopine, the installation of seven associated equipment cabinets, and an emergency backup generator. Prior to exercising any rights granted by this permit including, without limitation, any construction or site disturbance, the applicant/owner shall:

A. Sign, date, and return to the Planning Department one copy of the approval to indicate acceptance and agreement with the conditions thereof.

B. Obtain a Building Permit from the Santa Cruz County Building Official.

C. The applicant shall obtain approval from the California Public Utilities Commission and the Federal Communications Commission to install and operate this facility.

II. Prior to issuance of a Building Permit the applicant/owner shall:

A. Submit 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. Any changes from the approved Exhibit **"A"** for this development permit on the plans submitted for the Building Permit must be clearly called out and labeled by standard architectural methods to indicate such changes. Any changes that are not properly called out and labeled will not be authorized by any Building Permit that is issued for the proposed development. The final plans shall include the following additional information:

1. Identify finish and color of exterior materials of the antennas, the equipment cabinets/telco boxes, and feneing for Planning Department approval. Any color boards must be in **8.5" x** 11" format. Antenna color must match the color of existing antennas. If a material other than wood is used for the fence (due to Fire Department requirements), than the material shall retain the visual appearance of wood from the La Madrona Drive.

2. Grading and erosion control plans.

3. **A** drainage plan, showing that existing drainage patterns will be maintained and not adversely affect adjacent and/or downstream properties.

4. Details showing compliance with fire department requirements, including all requirements of the Urban Wildland Intermix Code, if applicable.

5. A lighting plan. All lighting must be manual and must not be visible from nearby residences or the road.

6. Plans shall include details of noise attenuation measures for the backup generator. Noise levels must not exceed a maximum exterior noise level of sixty (60) Ldn at the property line and a maximum interior noise level of forty-five **(45)** Ldn within nearby residences.

C. To guarantee that the camouflaged tower remains in good visual condition and to ensure the continued provision of mitigation of the visual impact of the wireless communications facility, the applicant shall submit a maintenance program prior to building permit issuance which includes a signed contract for maintenance with the company that provides for annual visual inspection and follow up repair, painting, and resurfacing as necessary.

D. Submit four copies of the approved Discretionary Permit with the Conditions of Approval attached. The Conditions of Approval shall be recorded prior to submittal, if applicable.

E. Meet all requirements of the County Department of Public Works, Drainage. Drainage fees will be assessed on the net increase in impervious area.

F. Obtain an Environmental Health Clearance for this project from the County Department of Environmental Health Services.

G. Meet all requirements and pay any applicable plan check fee of the Scott's Valley Fire Protection District.

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

A. All site improvements shown on the final approved Building Permit plans shall be installed.

B. All inspections required by the building permit shall be completed to the satisfaction of the County Building Official.

C. Submit a noise study to confirm noise levels from the backup generator will not exceed a maximum exterior noise level of sixty (60) Ldn at the property line and a maximum interior noise level of forty-five **(45)** Ldn within nearby residences. Additional noise attenuation measures may be necessary.

IV. Operational Conditions

A. In the event that future County inspections of the subject property disclose noncompliance with any Conditions of this approval or any violation of the County Code, the owner shall pay to the County the full cost of such County inspections, including any follow-up inspections and/or necessary enforcement actions, up to and including permit revocation.

B. 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.

C. The antennas, fences, and equipment cabinets shall be permanently maintained and replacement materials and/or paint shall be applied as necessary.

D. 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 or residences on the subject property. Light sources can be shielded by landscaping, structure, fixture design or other physical means. Building and security lighting shall be integrated into the building design.

E. 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.

F. If, as a result of future scientific studies and alteration of industry-wide standards resulting from these studies, substantial evidence is presented to Santa Cruz County that radio frequency transmissions may pose a hazard to human health and/or safety and existing Federal standards are modified, the Santa Cruz County Planning Department shall set a public hearing and in its sole discretion, may revoke or modify the condition of this permit.

G. The backup generator shall only be operated during power outages and for testing and maintenance purposes between 8 AM and 8 PM. Noise levels at the facility shall not exceed a maximum exterior noise level of sixty (60) Ldn at the property line and a maximum interior noise level of forty-five (45) Ldn within nearby residences.

EXHIBIT C

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, it 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 on the expiration date listed below unless you obtain the required permits and commence construction.

Approval Date: _____

Effective Date: _____

Expiration Date: _____

Don **Bussey**	David Keyon
Deputy Zoning Administrator	Project Planner

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: 05-0353
Assessor Parcel Number: 067-202-64
Project Location: 155 Firehouse Lane

Project Description: Install 6 panel antennas on an existing monopine

Person or Agency Proposing Project: Karen McPhereson

Contact Phone Number: (925) 200-6328

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 Proiect** 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. __X__ **Categorical Exemption**

Specify type: Class 1 : Minor addition to an existing structure

F. Reasons why the project is exempt:

Installation of new antennas and associated equipment cabinets on existing monopine

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

_____ Date:_____
David Keyon, Project Planner

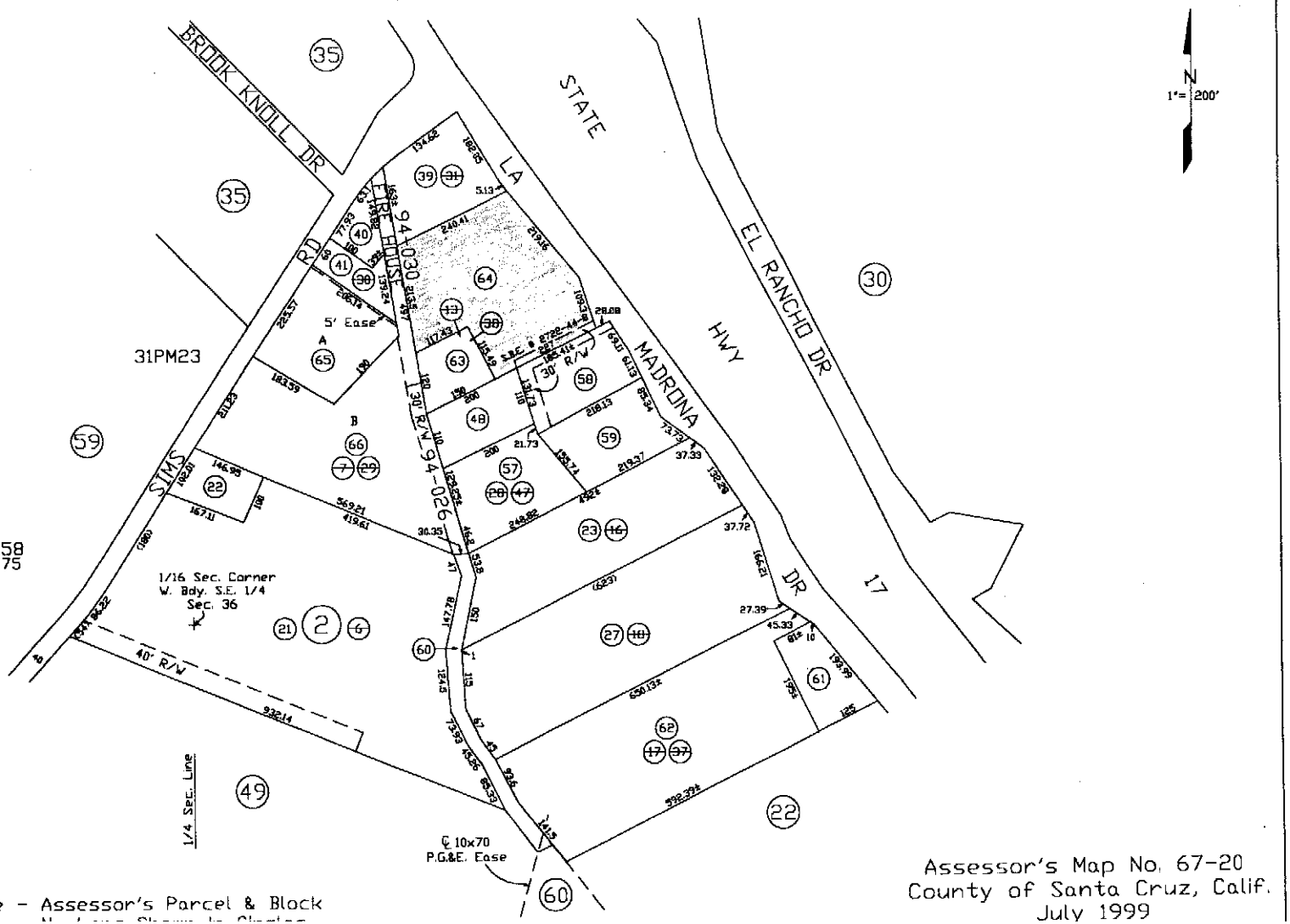
EXHIBIT D

FOR TAX PURPOSES ONLY

POR. CARBONERO RANCHO
POR. S. 1/2 SEC. 36, T.10S., R.2W., M.D.B. & M.

Tax Area Code
94-030 94-026

67-20



Assessor's Map No. 67-20
County of Santa Cruz, Calif.
July 1999

Note - Assessor's Parcel & Block

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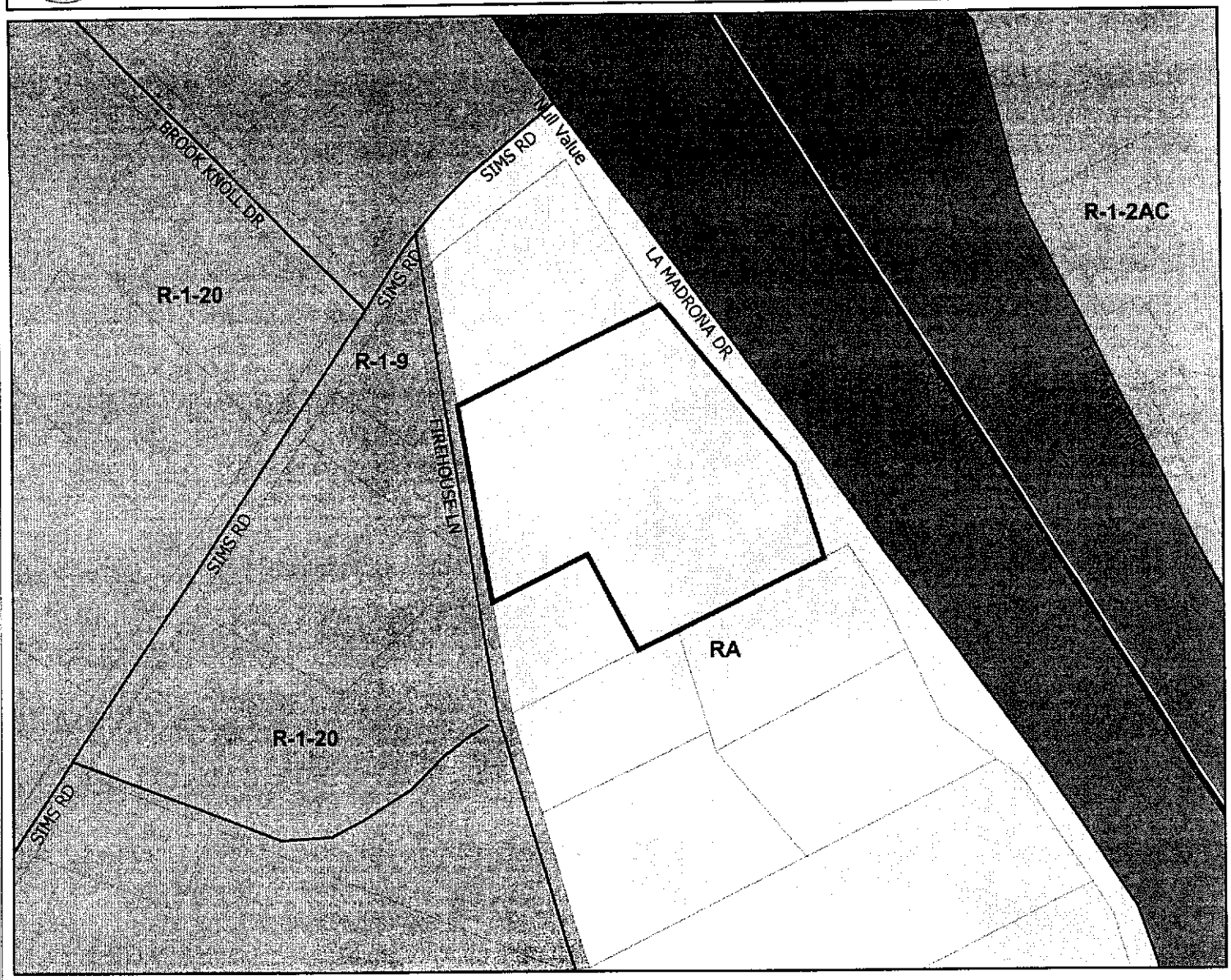
ctronically redrawn 7/23/99 KSA
v. 8/7/01 mm (changed page refs.)
v. 6/24/02 DD (added st. name and S.B.E. #)

EXHIBIT E

Zoning Map



0 155 310 620 930 1,240 Feet

Legend

- APN 067-202-64
- Streets
- Assessors Parcels
- State Highways
- AGRICULTURE RESIDENTIAL (RA)
- SPECIAL USE (SU)
- RESIDENTIAL-SINGLE FAMILY (R-1)

N
W E
S

Map Created by
County of Santa Cruz
Planning Department
June 2005

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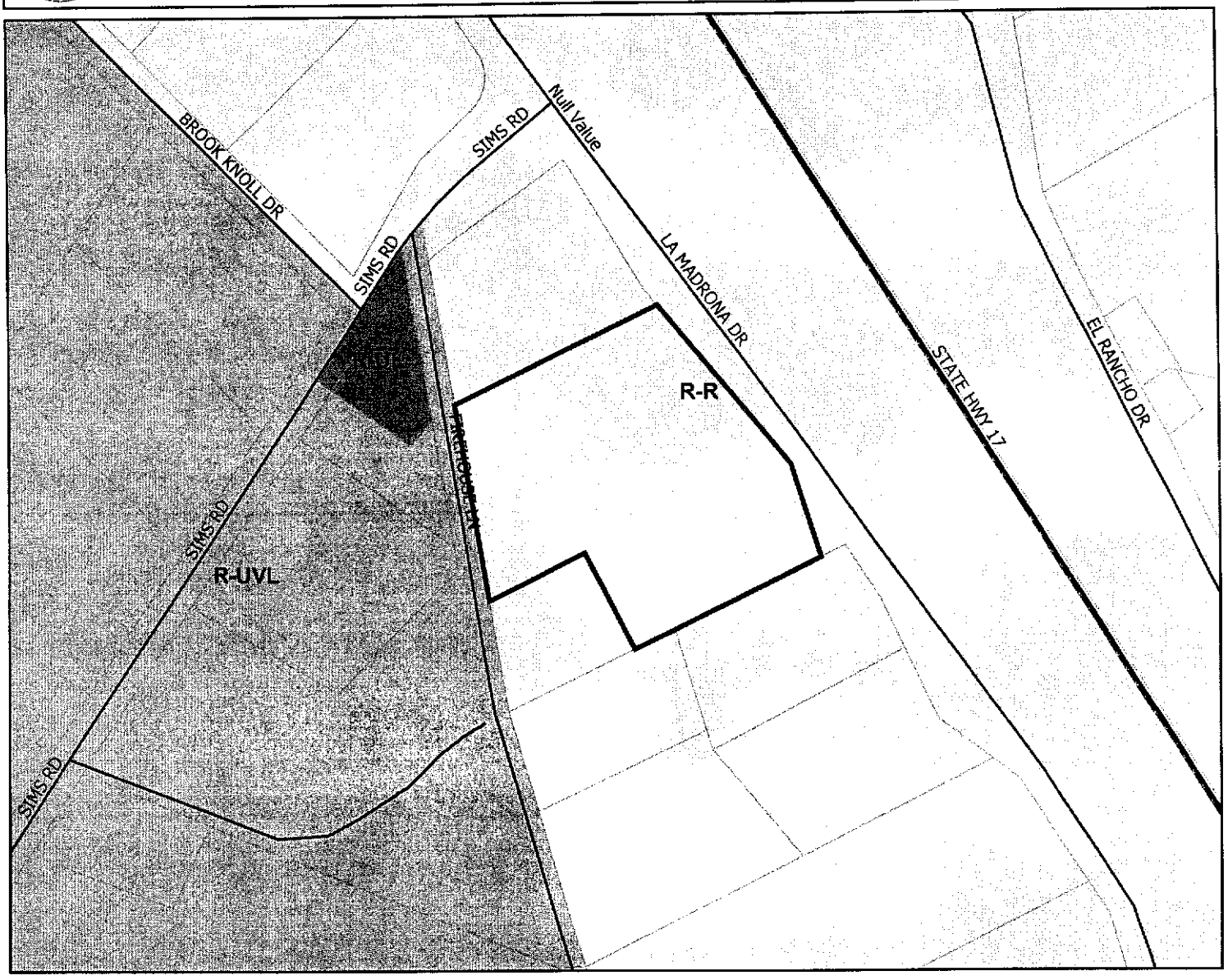
EXHIBIT F

General Plan Designation Map



Legend

- APN 067-202-64
- Streets
- Assessors Parcels
- State Highways
- Residential-Rural (R-R)
- Residential - Urban Very Low Density (R-UVL)
- Residential - Urban Low Density (R-UL)

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W E
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Map Created by
County of Santa Cruz
Planning Department
June 2005

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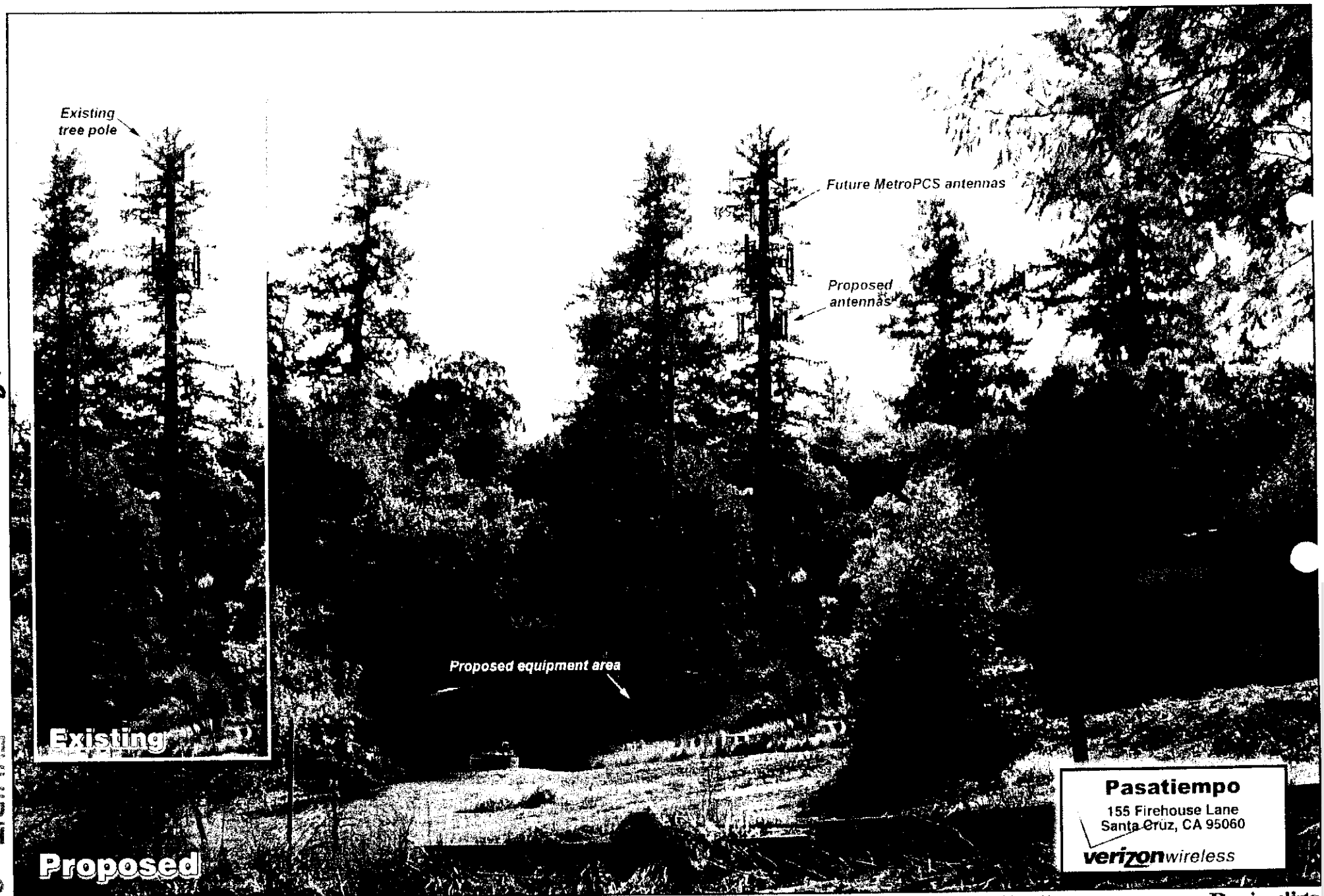
EXHIBIT F

Photosimulation of view looking south from La Madrona Drive.

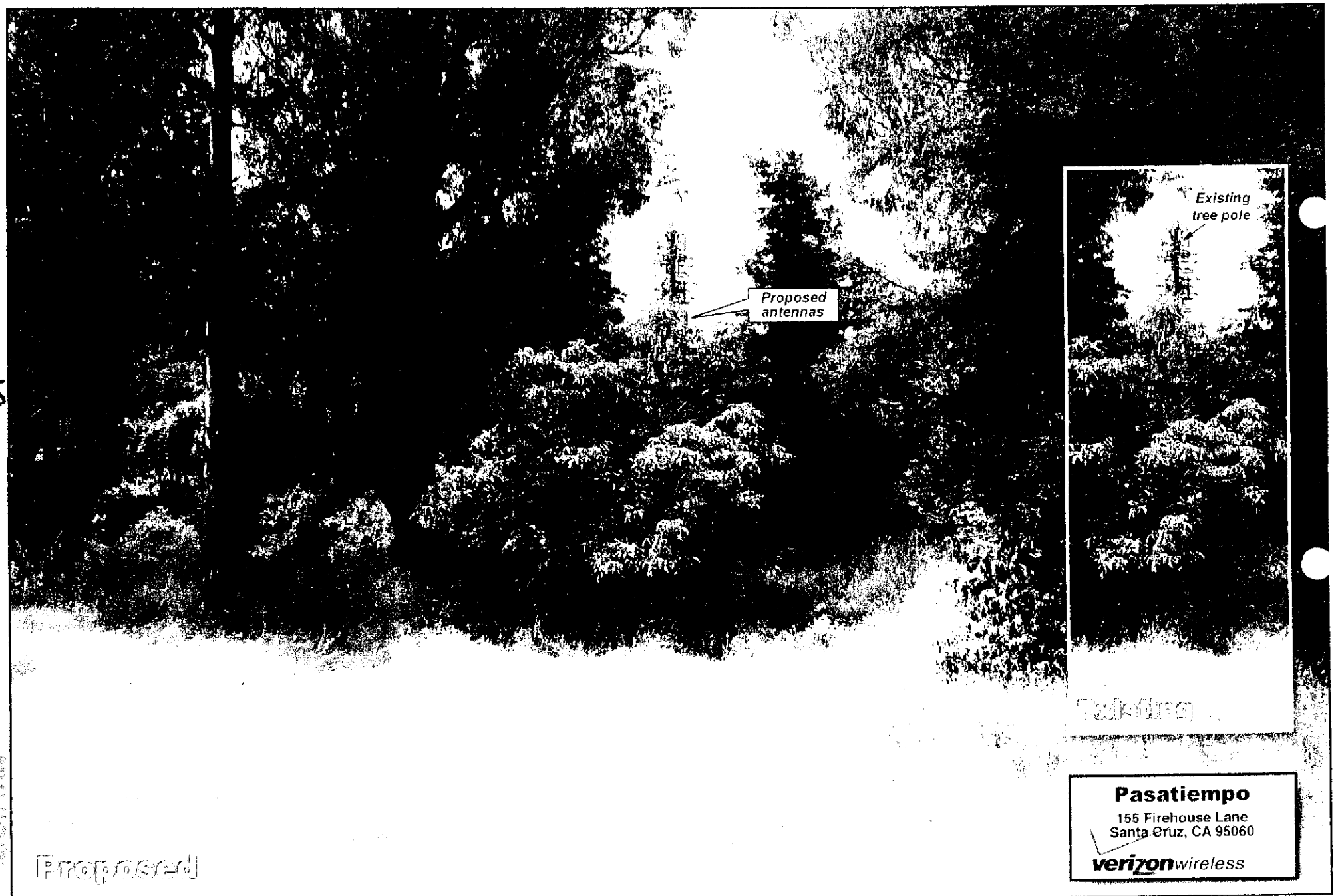


Previsualists

EXHIBIT C

18

Photosimulation of a glimpse of the site looking southwest from Northbound Hwy 17.



Pasatiempo
155 Firehouse Lane
Santa Cruz, CA 95060
verizonwireless

Previsualists

Photograph looking south from the southbound lanes of Hwy 17.

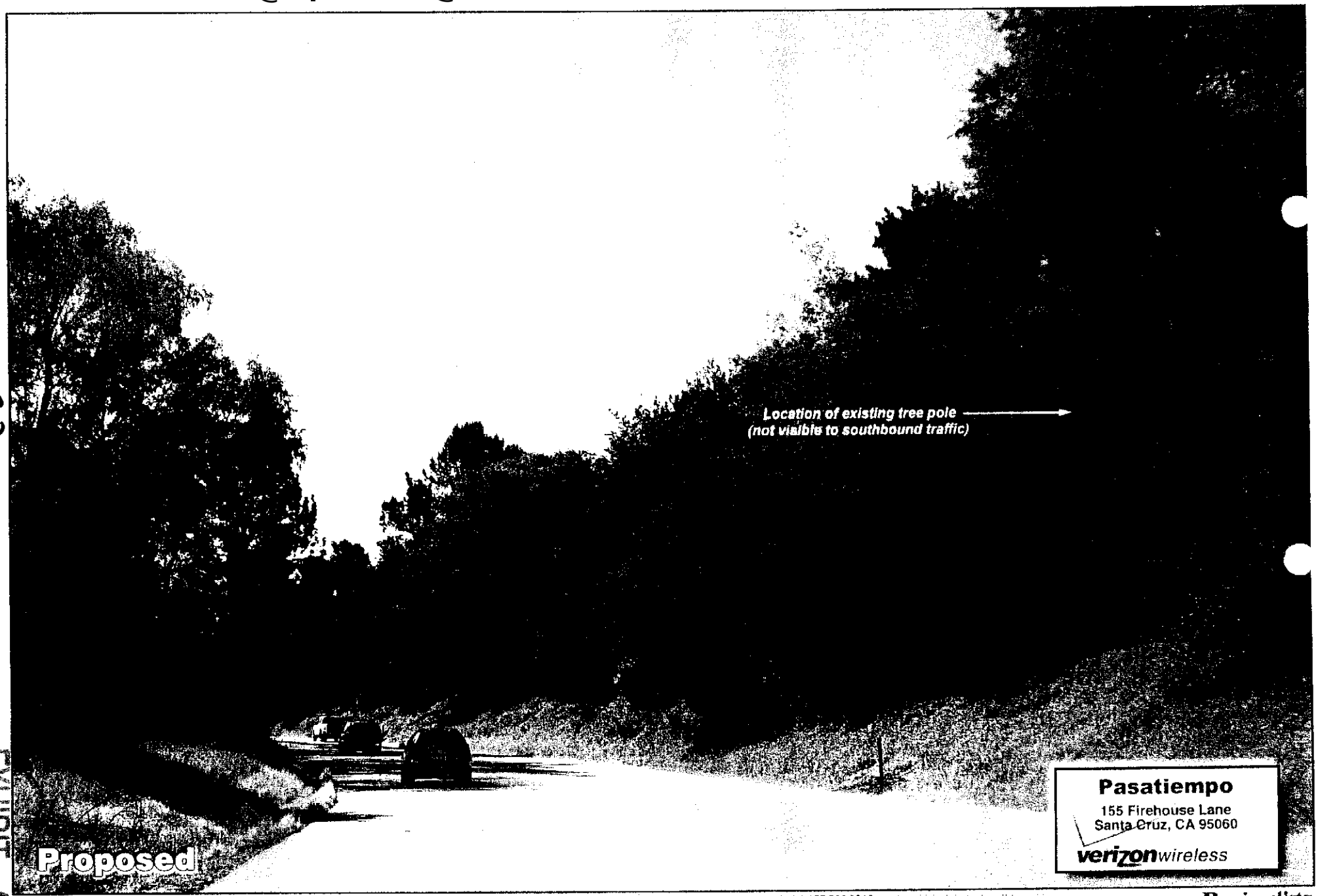


EXHIBIT G 20

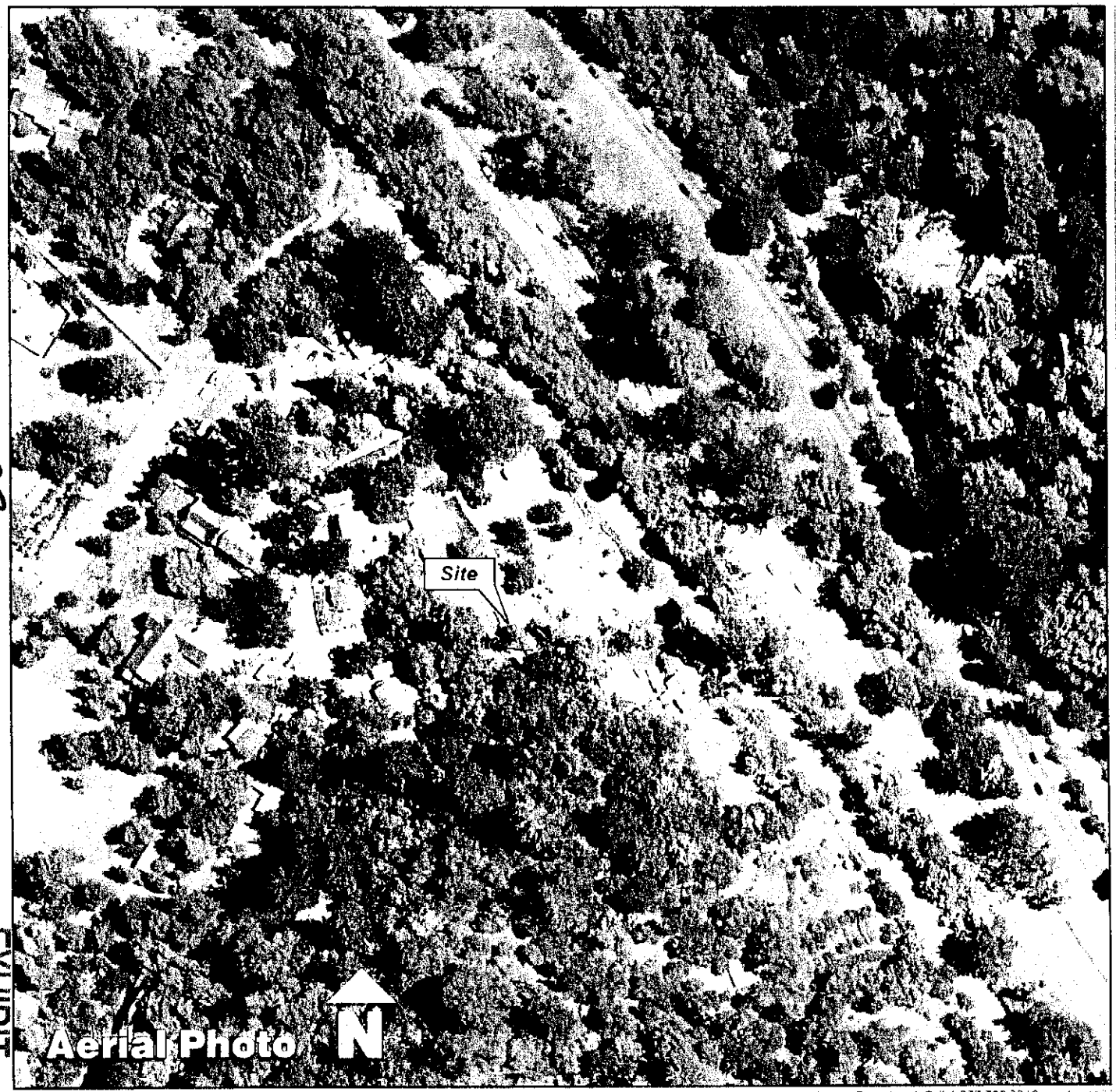
Previsualists

Photosimulation of view looking west from the access road.

Previsualists

EXHIBIT D

21



Site Location - The site was located by using the street address, plotted on MapQuest, found with posted address signs and confirmed by the presence of the existing tree pole and simulate pole on site.

Viewpoint Selection - The site is located on the west side of Hwy 17, among very tall and dense trees. It was difficult to see the tree pole from any notable distance, so the photographs were taken from La Madrona Rd and from the access road. These were the only clear shots that could be taken. In addition, a view from northbound Hwy 17 was provided, showing the tree pole in a fleeting gap in the trees. A motorist would generally not be looking over his/her left shoulder to see this tree pole, especially with the narrow lanes and curved roads. A photograph from southbound Hwy 17 shows that the pole is not visible from any point along the southbound travel lanes.

Scale - The proposed antennas will be mounted to an existing tree pole. The dimensions of the existing tree pole were provided by 100% Zoning Drawings, supplied by the project applicant and prepared by Omni Design Group. Rough measurements were taken in the field to confirm the drawings and it was concluded the drawings were

Equipment Information - The images were taken with a Canon 1Ds Mark II Professional Digital camera with a 1:1 conversion ratio using standard lenses. GPS equipment: Garmin Vista Distance measured with Bushnell 1000 digital laser range finder. Height scale achieved with Suunto clinometer or Topcon theodolite. All image manipulation is done using Adobe Photoshop on Macintosh G5 workstations.

Pasatiempo
155 Firehouse Lane
Santa Cruz, CA 95060
verizonwireless

EXHIBIT G

22

Previsualists

Verizon Wireless • Proposed Base Station (Site No. 158571 "Pasatiempo")
155 Firehouse Lane • 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. 158571) proposed to be located at 155 Firehouse Lane in Santa Cruz, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. In Docket 93-62, effective October 15, 1997, the FCC adopted the human exposure limits for field strength and power density recommended in 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 ('NCRF"'). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent Institute of Electrical and Electronics Engineers ("IEEE") Standard C95.1-1999, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes nearly identical exposure limits. **A** summary of the FCC's exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

The most restrictive limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Personal Wireless Service	Approx. Frequency	Occupational Limit	Public Limit
Personal Communication ("PCS")	1,950 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Cellular Telephone	870	2.90	*0.58*
Specialized Mobile Radio	855	2.85	0.57
[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 "cabinets") 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 about 1 inch thick. 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 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 Omni Design Group, Inc., dated May 25, 2005, it is proposed to mount three Antel Model BXA-80063/4CF directional cellular antennas and three Antel Model BXA-185060/8CF directional PCS antennas on an existing 94-foot steel pole, configured to resemble a pine tree, located at 155 Firehouse Lane in Santa Cruz. The antennas would be mounted at an effective height of about 62 feet above ground and would be oriented in pairs (one of each) toward 10°T, 150°T, 270°T. The maximum effective radiated power in any direction would be 3,465 watts, representing 1,260 watts for PCS and 2,205 watts for cellular services. Presently located (or proposed to be located) on the same pole or on a nearby pole are similar antennas for use by Sprint PCS, MetroPCS, Cingular Wireless, and T-Mobile, other wireless telecommunications carriers. For the purposes of this study, the transmitting facilities of those camers are assumed to be as follows:

Carrier	Antenna Model	Height	Maximum ERP
Sprint	EMS RR6518-00DP	87 ft	1,500 watts
Metro	EMS RR6518-00DPL2	80	1,890
Cingular	**ARC** PCS-DS-16-09007	72	565
T-Mobile	EMS RR6518-00DP	*58*	1,500

Study Results

For a person anywhere at ground, the maximum ambient RF exposure level due to the proposed Verizon operation by itself is calculated to be 0.0093 mW/cm^2, which is 1.4% of the applicable public limit. The maximum calculated cumulative level at ground for the simultaneous operation of all five

camers is 1.8% of the public exposure limit; the maximum calculated cumulative level at the second floor elevation of any nearby building* is 2.1% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels.

No Recommended Mitigation Measures

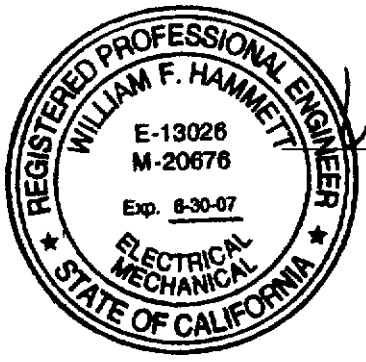
Since they are to be mounted on a tall pole, the Verizon antennas are not accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. It is presumed that the carriers will, as FCC licensees, take adequate steps to ensure that their employees or contractors comply with FCC occupational exposure guidelines whenever work is required near the antennas themselves.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that the base station proposed by Verizon Wireless at 155 Firehouse Lane 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.

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 30,2007. This work has been carried out by him or 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.

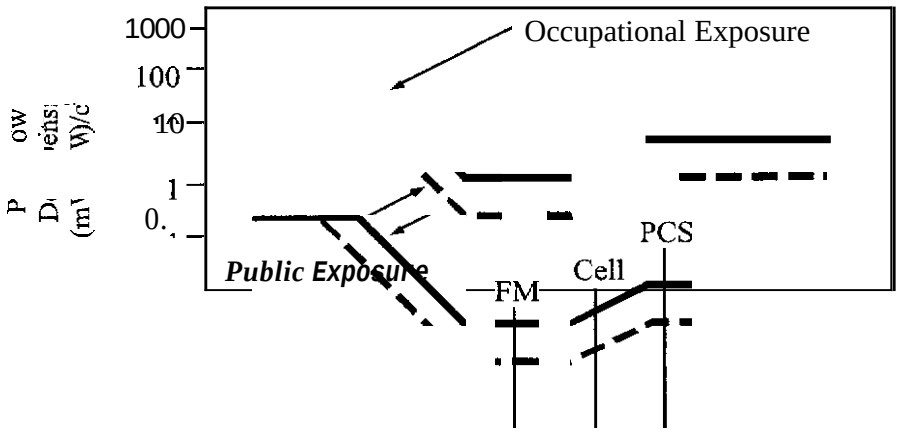


William F. Hammett, P.E.

July 29,2005

* Located immediately to the southeast, based on aerial photographs from Terraserver.

FCC Radio Frequency Protection Guide



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 cell sites. The near field zone is defined by the distance, D, from an antenna beyond which the manufacturer's published, far field antenna patterns will be fully formed; the near field may exist for increasing D until some or all of three conditions have been met:

$$1)\ D > \frac{2h^2}{\lambda} \qquad 2)\ D > 5h \qquad 3)\ D > 1.6\lambda$$

where h = aperture height of the antenna, in meters, and
λ = wavelength of the transmitted signal, in meters.

The FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives this formula for calculating power density in the near field zone about an individual RF source:

$$\text{power density}\quad S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}, \quad \text{in } mW/cm^2,$$

where θ_{BW} = half-power beamwidth of antenna, in degrees, and
P_{net} = net power input **to** the antenna, in watts.

The factor of 0.1 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates distances to FCC public and occupational limits.

Far Field.

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

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

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.

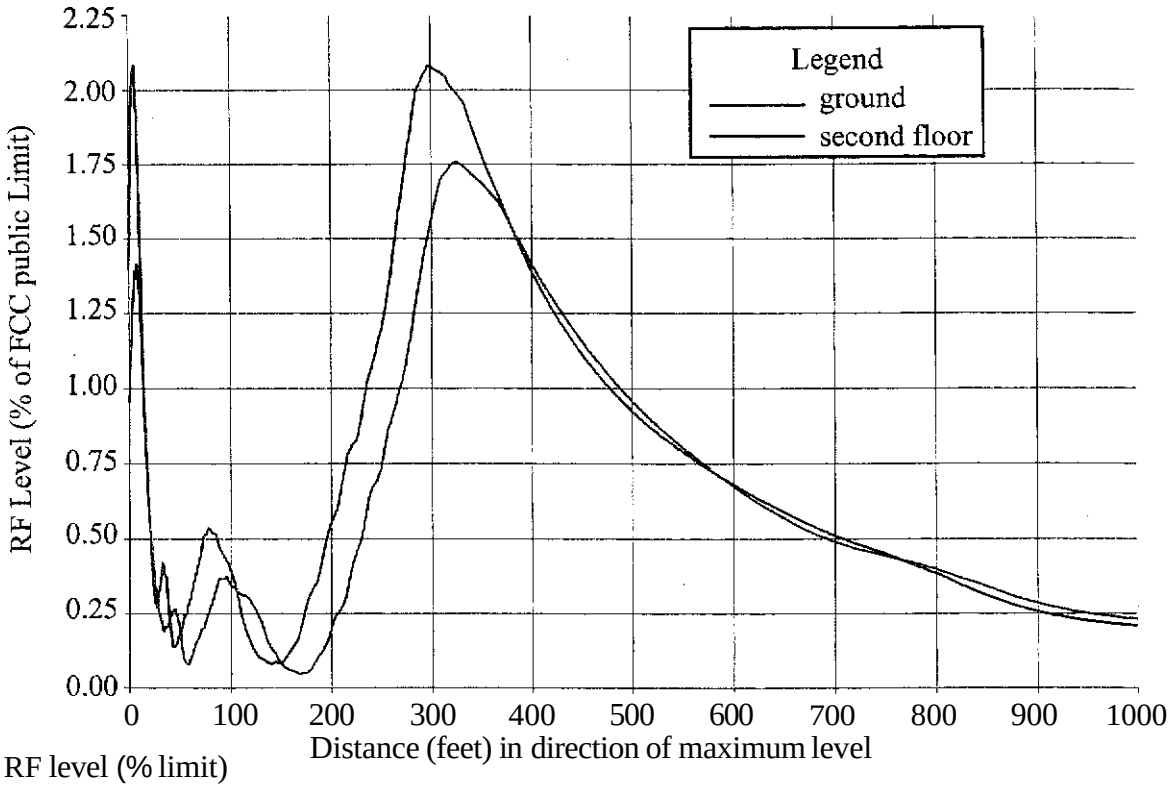
The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units 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.

Veriron Wireless • Proposed Base Station (Site No. 158571 "Pasatiempo")
155 Firehouse Lane • Santa Cruz, California

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

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

Calculated Cumulative NIER Exposure Levels during Peak Operation Periods



RF level (% limit)

Distance (feet)	50	100	200	300	500	750	1,000
ground	0.19%	0.35%	0.19%	1.6%	0.96%	0.44%	0.23%
second floor	0.18%	0.40%	0.55%	2.1%	0.93%	0.45%	0.21%

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) - 3,465 watts

Effective Verizon antenna height above ground - 62 feet

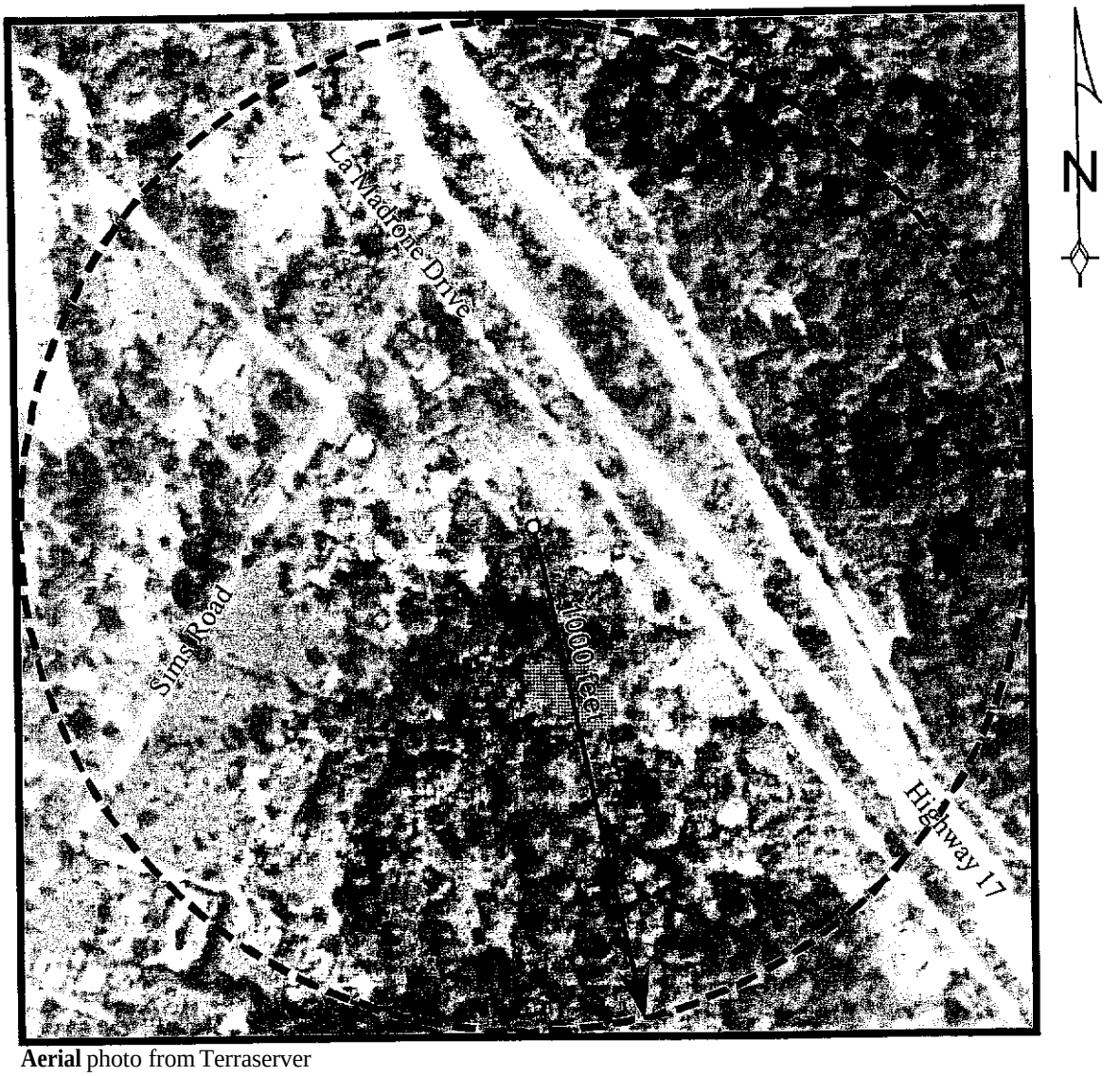
Other sources nearby - Sprint PCS, MetroPCS, Cingular Wireless, and T-Mobile

Other sources within one mile - No AM, FM, or TV broadcast stations
No two-way stations close enough to affect compliance

Plan for restricting public access - Antennas are mounted on a tall pole

Verizon Wireless • Proposed Base Station (Site No. 158571 "Pasatiempo")
155 Firehouse Lane • Santa Cruz, California

Calculated NIER Exposure Levels
Within 1,000 Feet of Proposed Site
for Simultaneous Operation of Verizon, Sprint, Metro, Cingular, and T-Mobile



Aerial photo from Terraserver

Legend
blank - less than 1.5% of FCC public limit (*i.e.*, more than 65 times below)
- 1.5% and above near ground level (highest level is 1.8%)
- 1.5% and above at 2nd floor level (highest level is 2.1%)

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.

HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

VW158571595
Figure 3B

EXHIBIT H