

# Staff Report to the Zoning Administrator

Application Number: 05-0642

Applicant: Evan Shepherd - Peacock Assoc. Owner: Soquel Drive LLC **APN:** 041-221-41 Agenda Date: 4/7/06 Agenda Item #: **4** Time: After 11:00 a.m

Project Description: Proposal to construct a new telecommunications facility, consisting of six antennas and associated equipment located behind a roof mounted screening wall on an existing commercial building.

Location: Property located on the north side of Soquel Drive (9565 Soquel Drive) approximately 400 feet east of the Rio Del Mar exit from Highway 1.

Supervisoral District: 2nd District (District Supervisor: Ellen Pine)

Permits Required: Commercial Development Permit

Staff Recommendation:

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- Approval of Application 05-0642, based on the attached findings and conditions.

### Exhibits

- A. Project plans
- B. Findings
- C. Conditions
- D. Categorical Exemption (CEQA determination)
- E. Assessor's parcel map
- F. Zoningmap
- G. Visual Simulations
- H. RF Report
- I. Comments & Correspondence

### Parcel Information

Parcel Size:	1 acre
Existing Land Use - Parcel:	Commercial building
Existing Land Use - Surrounding:	Commercial & residential development, Highway One
Project Access:	Soquel Drive
Planning Area:	Aptos
Land Use Designation:	C-0 (Professional and Administrative Offices)

County of Santa Cruz Planning Department 701 Ocean Street, 4th Floor, Santa Cruz CA 95060

Zone District:	PA (Professional and Administrative Office			
Coastal Zone:	Inside <u>X</u> Outside			

### **Environmental Information**

Geologic Hazards:	NIA
Soils:	NIA
Fire Hazard:	Not a mapped constraint
Slopes:	NIA
Env. Sen. Habitat:	NIA
Grading:	No grading proposed
Tree Removal:	No trees proposed to be removed
Scenic:	Highway One scenic corridor
Drainage:	Existing drainage adequate
Archeology:	NIA

### **Services Information**

X Inside Outside
NIA
NIA
Aptos/La Selva Fire Protection District
Zone 6 Flood Control District

### History

The existing commercial office building was authorized by Commercial Development Permits 87-0406, 88-0875, 89-0162, 90-0128, 92-0458, 93-0114, 96-0117, 00-0236, and 02-0470. Although originally approved as a two building office complex, the approvals were amended to result in one commercial office building.

### **Project Setting**

The project site is located between Soquel Drive and Monroe Avenue approximately 400 feet east of Rio Del Mar Boulevard. The Highway One Scenic Comdor is located immediately across Soquel Drive with commercial development to the west, a junior high school to the north, and residential development to the east.

### Zoning & General Plan Consistency

The subject property is an approximately 1 acre parcel, located in the PA (Professional and Administrative Offices) zone district, a designation which allows commercial uses. The proposed wireless communication facility is an allowed use within the zone district. The existing commercial office building is consistent with the site's (C-0) Professional and Administrative Offices General Plan designation.

### Wireless Communication Facility

The project site is located within an allowed zone district for wireless communication facilities (per County Code sections 13.10.661(b) & (c)). Structure mounted wireless communications facilities are allowed within the PA (Professional & Administrative Offices) zone district if they are designed in a manner that is the least visually obtrusive and that **is** compatible with the existing commercial development.

The proposed wireless communication facility will consist of the placement of antennas behind a new **3** feet tall screening wall which will be built along the perimeter of the existing building's rooftop. An approximately 120 square foot equipment platform will be constructed on the roof to support the wireless communication facility. All of the proposed equipment will be adequately screened from view by the proposed screening wall. Visual simulations have been submitted and the proposed screening wall will be compatible with the architectural character of the existing commercial building.

### Highway One Scenic Corridor

The project site is located within the Highway One scenic corridor. The site of the proposed wireless communications facilities is adequately screened from the Highway One scenic comdor by the use of camouflage techniques. The proposed wireless communication facility will be located on the roof of the existing commercial building and will be camouflaged by the proposed screening wall. The proposed new antennas and screening wall will not result in a visual impact to the scenic resource.

### 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**

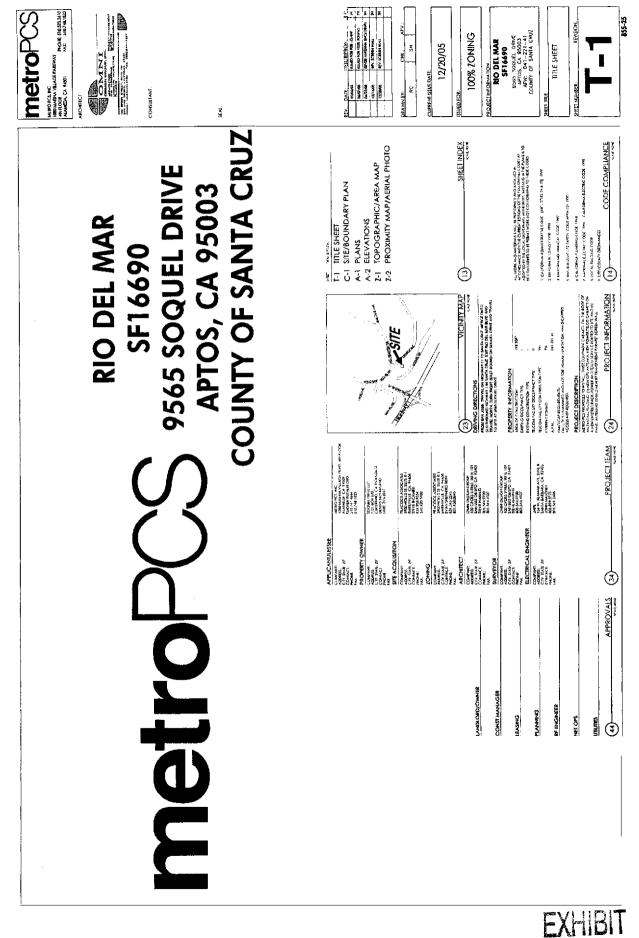
- **APPROVAL** of Application Number **05-0642**, based on the attached findings and conditions.
- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.

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: <a href="http://www.co.santa-cruz.ca.us">www.co.santa-cruz.ca.us</a>

Application # 05-0642 APN: 041-221-41 Owner Soquel Drive LLC

Report Prepared **By:** Randall Adams Santa Cruz County Planning Department 701 Ocean Street, 4th Floor Santa Cruz CA 95060 Phone Number: (831) 454-3218 E-mail: <u>randall.adams@co.santa-cruz.ca.us</u>



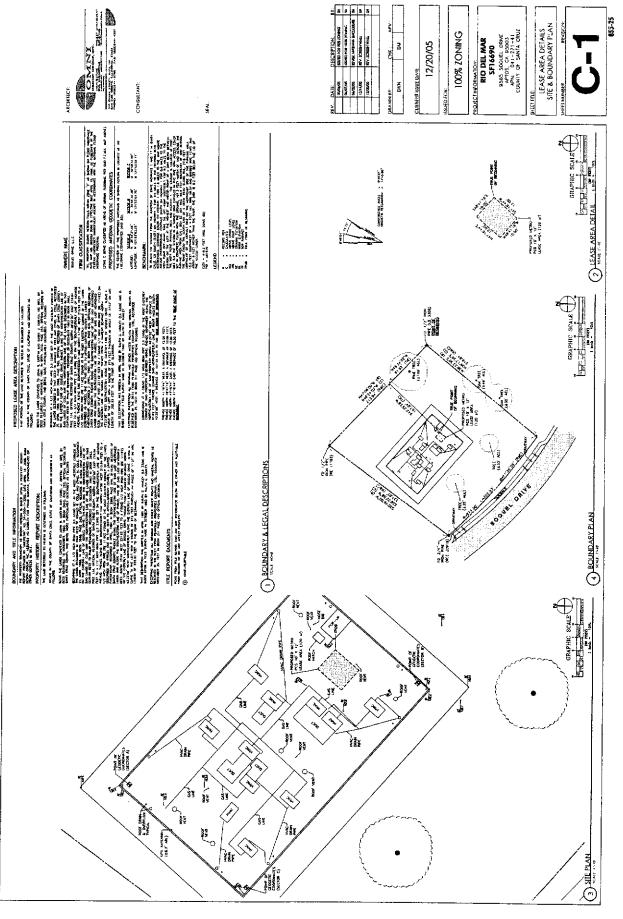


EXHIBIT A

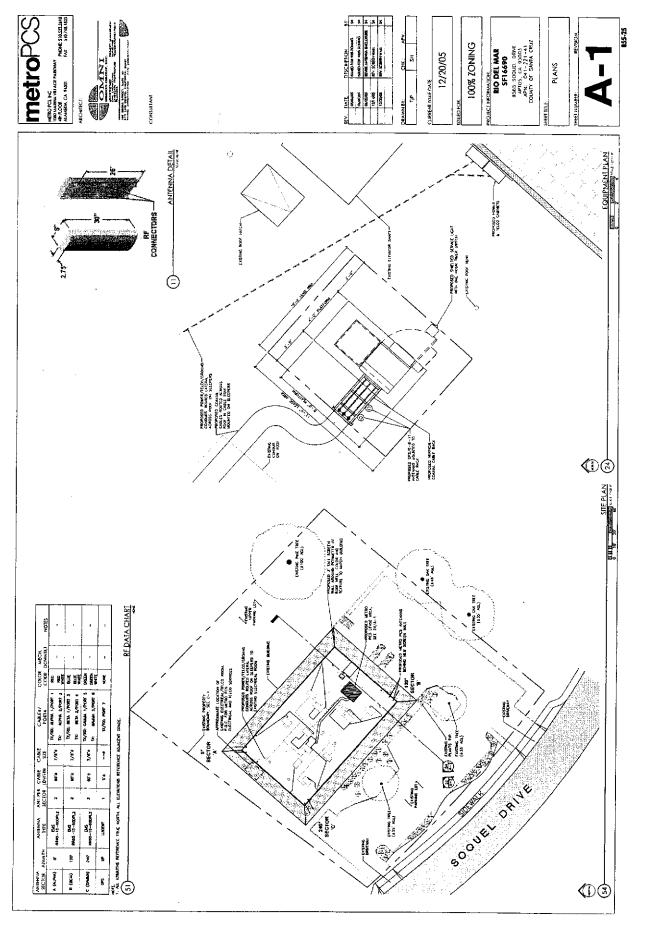
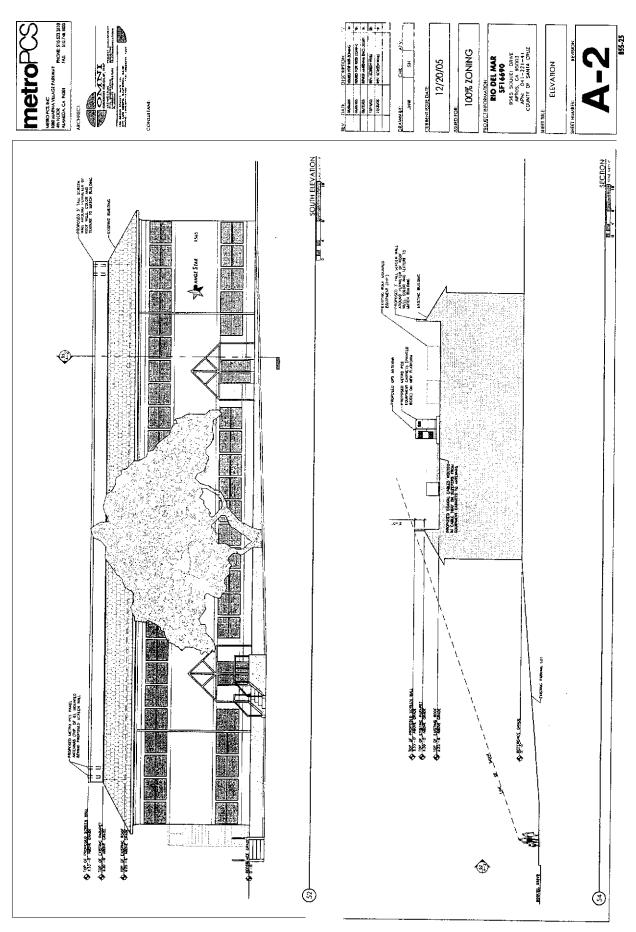
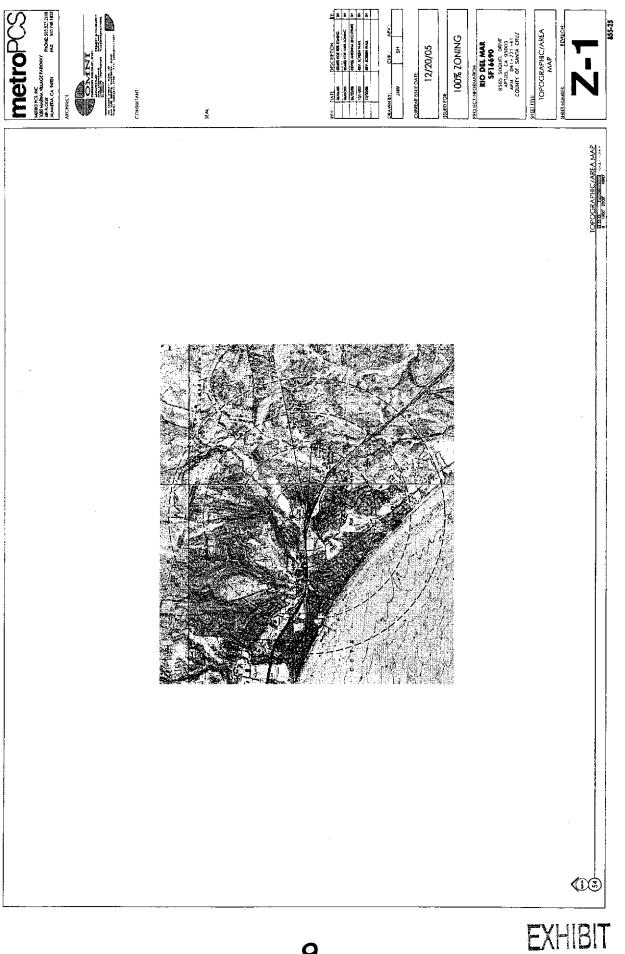


EXHIBIT A



8

EXHIBIT



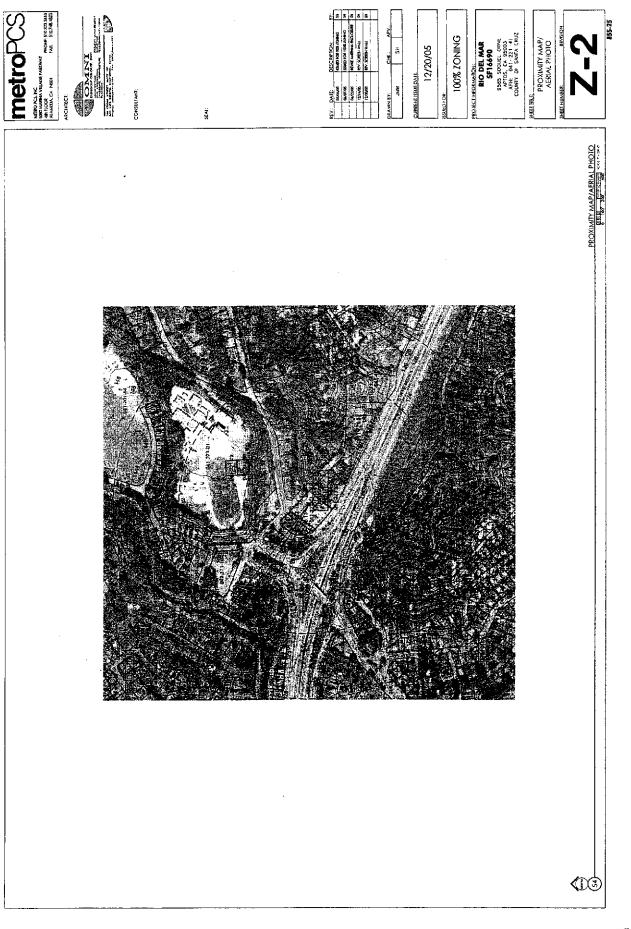


EXHIBIT A '

### 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 facility will be located on an existing commercial building that behind a new screening wall. The subject property for the proposed project is located within the Highway One scenic comdor. The use of a screening wall above the existing commercial building will result in no visual impact to the scenic corridor as a result of this project. 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, as the property is on the inland side of the scenic corridor with no significant public vista available beyond the subject property. The existing public views from the scenic highway will remain relatively unchanged as a result of this project.

An alternative sites analysis was not required for the proposed project, due to the fact the proposed wireless communication facility will be located within an allowed zone district (per sections 13.10.661(b) & (c) of the County Code). Furthermore, the creation of an additional site for a wireless communication facility in the immediate area may result in additional impacts to the scenic and natural resources that are located in the project vicinity. The currently proposed site and design are the least visually and environmentally intrusive with the incorporation of a screening wall which is architecturally compatible with the existing commercial building.

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 presence of the existing commercial building on the project site, with the associated road and utilities infrastructure, as well as the existing negligible visual impact to the Highway One scenic comdor, result in the determination that the currently proposed project site is the environmentally superior site for this project. The creation of an additional wireless communications facility along the Highway One scenic comdor may result in more visually intrusive project and possibly cause additional impact to the natural resources in the surrounding areas.

An alternative sites analysis was not required for the proposed project, due to the fact the proposed wireless communication facility will be located within **an** allowed zone district (per

sections 13.10.661(b) & (c) of the County Code). Furthermore, the creation of an additional site for a wireless communication facility in the immediate area may result in additional impacts to the scenic and natural resources that are located in the project vicinity. The currently proposed site and design are the least visually and environmentally intrusive with the incorporation of a screening wall which is architecturallycompatible with the existing commercial building.

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 commercial office building is in compliance with the PA (Professional and Administrative Offices) zone district and Professional and Administrative Offices (C-0) General Plan designation, in which it is located. The existing and proposed uses, as designed, are compatible with the zone district and General Plan designation.

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

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

This finding can be made, in that the proposed wireless communications facility will be located on an existing commercial office building, which will be approximately 33 feet in height, and this elevation is too low to interfere with an aircraft in flight.

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

This finding can be made, in that the maximum ambient RF levels at ground level resulting from the proposed wireless communications facility, are calculated to be 1.3 percent of the most restrictive applicable limit. The maximum ambient RF levels at any nearby two story structure resulting from the proposed wireless communications facility are calculated to be 3.4 percent of the most restrictive applicable limit.

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.

Not Applicable

EXHIBIT B

### **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 maximum ambient RF levels at ground level resulting from the proposed wireless communications facility, are calculated to be 1.3 percent of the most restrictive applicable limit. The maximum ambient RF levels at any nearby two story structure resulting from the proposed wireless communications facility are calculated to be 3.4 percent of the most restrictive applicable limit.

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 project will not be materially injurious to properties or improvements in the vicinity in that the project will be on an existing commercial office building behind an architecturally compatible screening wall, resulting in a minimal visual impact.

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 wireless communication facility will be located within an allowed zone district for the construction of new wireless communications facilities. The project site is located within the PA (Professional and Administrative Offices) zone district which is not a prohibited or restricted zone district (per sections 13.10.661(b) & (c) of the County Code).

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

This finding can be made, in that the proposed wireless communication facility will be built in the least visually and environmentally intrusive manner due to the location on top of an existing commercial office building.

The subject property for the proposed project is located within the Highway One scenic comdor. The use of a screening wall above the existing commercial building will result in no visual impact to the scenic comdor as a result of this project. 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, as the property is on the inland side of the scenic corridor with no significant public vista available beyond the subject property. The existing public views **from** the scenic highway will remain relatively unchanged as

13

a result of this project.

The existing commercial office building is consistent with the uses specified for the Professional and Administrative Offices (C-0) land use designation in the County General Plan.

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

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

This finding can be made, in that the project will not require the use of public services such as water or sewer, but will require electric power and telephone connections. The facility will require inspection by maintenance personnel at least once per month and this will not result in increasing traffic to unacceptable levels in the vicinity.

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 facility will be co-located on top of an existing commercial office building and will be compatible with the existing commercial development on the subject property.

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 facility will be co-located on top of an existing commercial office building and will include a new screening wall that is architecturally compatible with the existing building to reduce potential visual impacts to the surrounding neighborhood.

### Conditions of Approval

- Exhibit A: Project Plans entitled "MetroPCS, Rio Del Mar, SF16690", prepared by OMNI Design Group, Inc., **5** sheets, dated *516105* with revisions through 12/20/05.
- I. This permit authorizes the construction of a(n) wireless communication facility and a 3 foot high screening wall on top of an existing office building as depicted on the approved Exhibit "A" for this permit. Prior to exercising any rights granted by this permit including, without limitation, any construction or site disturbance, the applicantiowner 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. Obtain an Encroachment Permit from the Department of Public Works for all offsite work performed in the County road right-of-way, if required.
  - D. 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. The applicant shall obtain approval from the California Public Utilities Commission and the Federal Communications Commission to install and operate this facility.
- III. Prior to issuance of a Building Permit the applicantiowner 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 the proposed screening wall for Planning Department approval.
    - 2. All antennas and telecommunications equipment shall be located behind the screening wall and be no higher in elevation than the top of the



screening wall on top of the commercial building.

- **3.** All new electric and telecommunications lines shall be placed underground.
- 4. Details showing compliance with fire department requirements, including all requirements of the Urban Wildland Intermix Code, if applicable.
- C. 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.
- D. Meet all requirements and pay any applicable plan check fee of the Aptos/La Selva Fire Protection District.
- IV. 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. 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.
- V. Operational Conditions
  - A. <u>NIER Report</u>: A report documenting Non-Ionizing Electromagnetic Radiation at the facility site shall be submitted within ninety (90) days after the commencement of normal operations, or within ninety (90) days after any major modification to power output of the facility.
  - **B.** <u>Additional Facilities</u>: A Planning Department review that includes a public hearing shall be required for any future co-location at this wireless communications facility.
  - C. <u>Equipment Modifications</u>: **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. <u>Camouflage</u>: The camouflage materials, and the 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. <u>Noise</u>: All noise generated from the approved use shall be contained on the property.
- F. <u>Lighting</u>: All site, building, security and landscape lighting shall be directed away from the scenic comdor and adjacent properties. Light sources shall not be visible from adjacent properties. 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.
- G. <u>Future Technologies</u>: 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. <u>Future Studies</u>: 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. <u>Noncompliance</u>: 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.
- VI. 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.

**EXHIBIT C** 

- 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'sfees and costs; and
  - 2. COUNTY defends the action in good faith.
- C. <u>Settlement</u>. 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. <u>Successors Bound</u>. "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	Randall Adams
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: 05-0642 Assessor Parcel Number: 041-221-41 Project Location: 9565 Soquel Drive

# Project Description: Proposal to construct a wireless communication facility on an existing commercial building.

Person or Agency Proposing Project: Evan Shepherd (Peacock Associates)

### Contact Phone Number: (831) 345-2245

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

Specify type:

### E. <u>X</u> <u>Categorical Exemption</u>

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

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

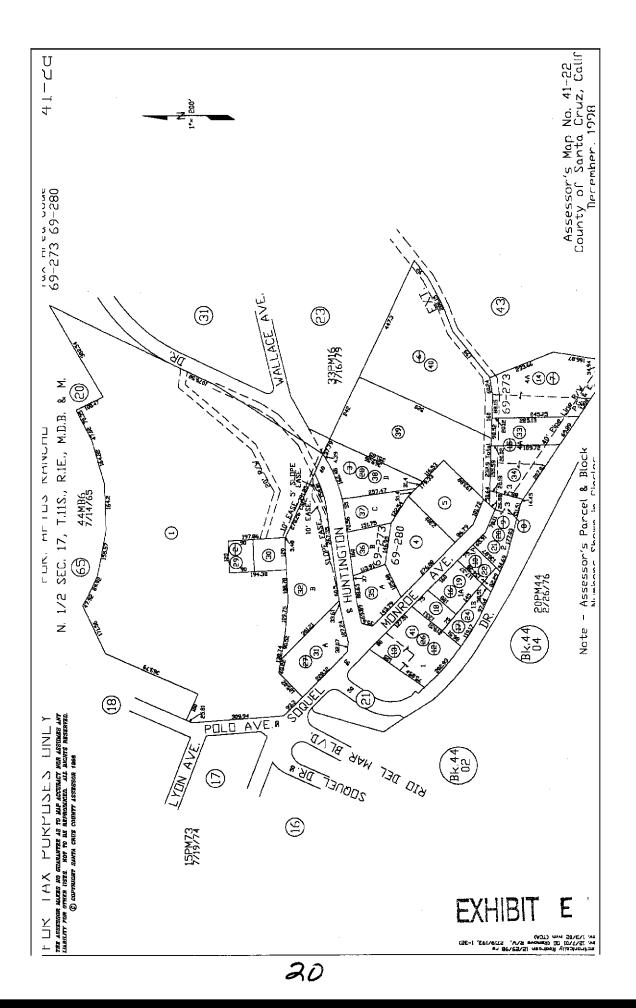
15260 to 15285).

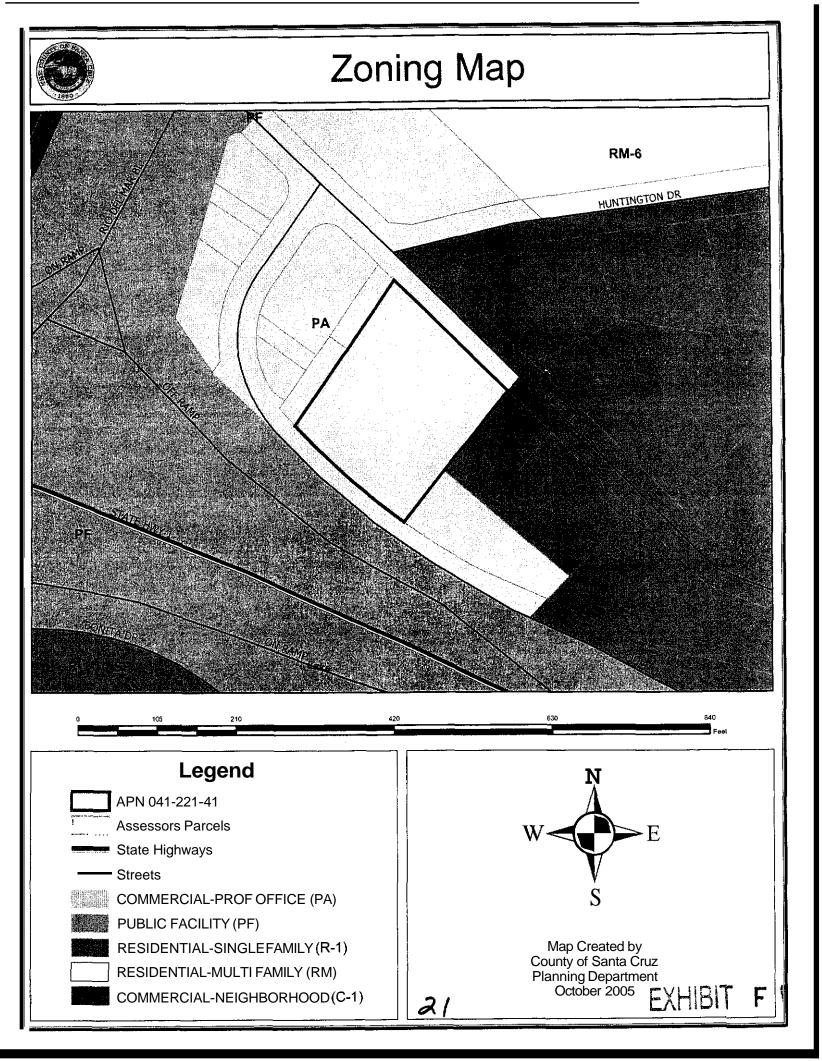
Proposal to construct a structure mounted wireless communication facility on a commercial building in an area designated for commercial uses.

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

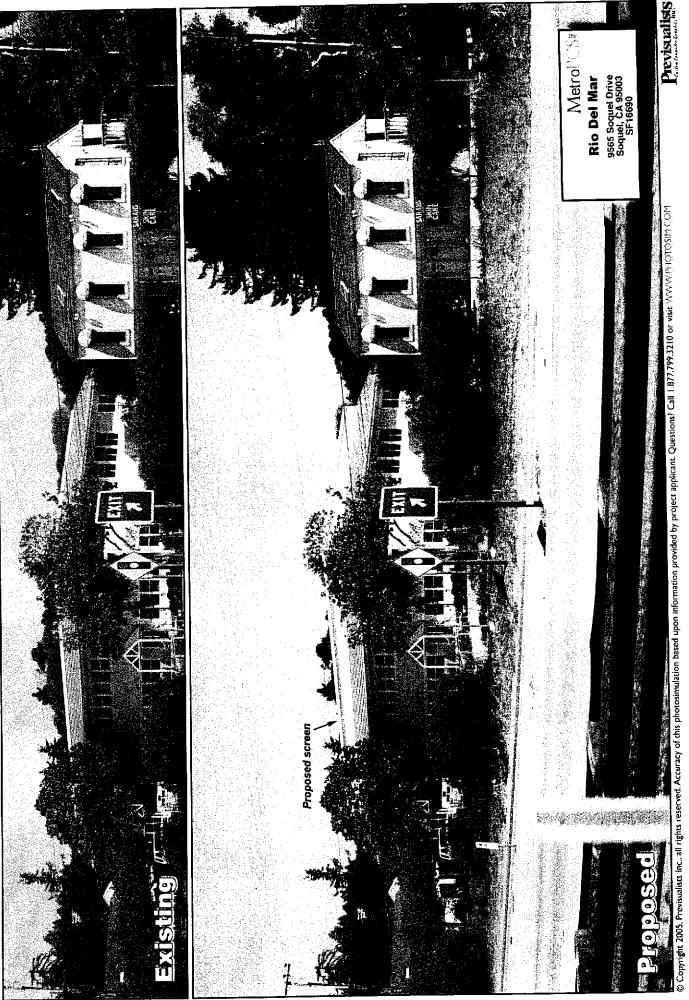
Date:\_\_\_\_\_

Randall Adams, Project Planner





# Photosimulation of view looking northwest from Hwy 1.



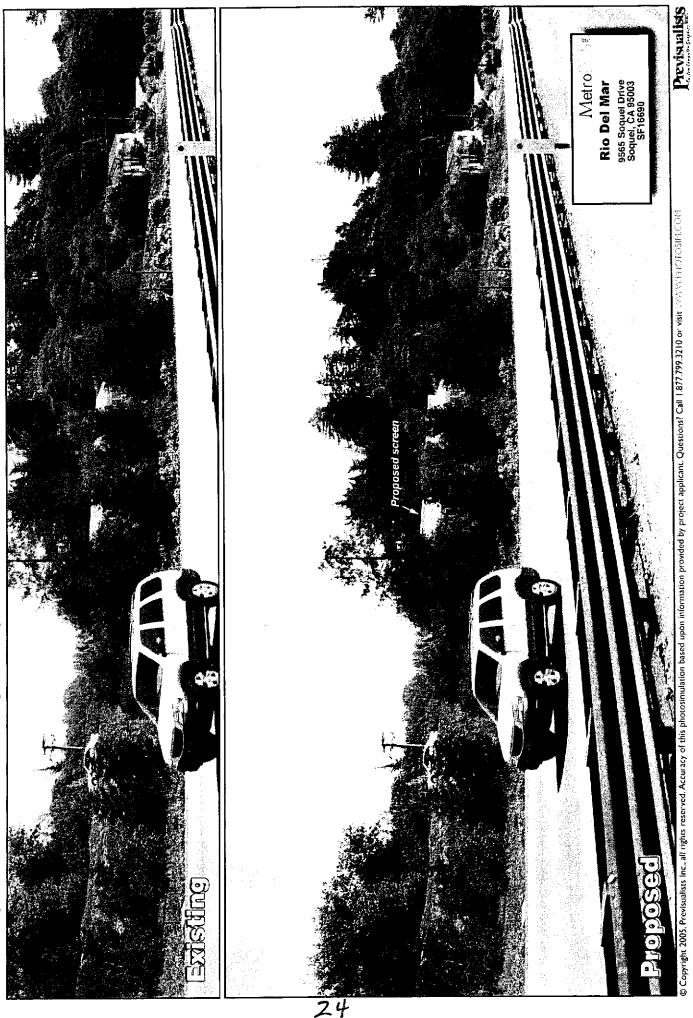
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# Photosimulation of view looking east from southbound Hwy 1.

(Earlier views were blocked by the overpass. This is the first glimpse of the building from the southbound lanes.)



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

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of MetroPCS, a personal wireless telecommunications carrier, to evaluate the base station (Site No. SF16690A) proposed to be located at 9565 Soquel Drive in Aptos, 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 ("NCRP"). 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. Freauency	Occupational Limit	Public Limit
Personal Communication ("PCS")	1,950 MHz	$5.00\mathrm{mW/cm^2}$	$1.00 \text{ mW/cm}^2$
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

25



EXHIBIT

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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 Metro, including zoning drawings by Omni Design Group, Inc., dated December 14, 2005, it is proposed to mount six EMS Model RR6515-00DPL directional panel PCS antennas behind a new 3-foot parapet extension above the roof of the two-story building located at 9565 Soquel Drive in Aptos. The antennas would be mounted at an effective height of about 32 feet above ground, 6<sup>1</sup>/2 feet above the roof, and would be oriented in pairs at 120° spacing, to provide service in all directions. The maximum effective radiated power in any direction would be 1,890 watts, representing six channels operating simultaneously at 315 watts each. There are reported no other wireless telecommunications base stations installed nearby.

### **Study Results**

For a person anywhere at ground, the maximum ambient RF exposure level due to the proposed Metro operation is calculated to be  $0.011 \text{ mW/cm}^2$ , which is 1.3% of the applicable public exposure limit. Areas on the sloped section of the roof of the subject building may exceed the public limit. The maximum calculated level at the second-floor elevation of any nearby building is 3.4% 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. 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**

Since they are to be mounted on the roof of the building, the Metro antennas are not accessible to the general public, and so no mitigation measures *are* necessary to comply with the FCC public exposure



HAMMETT & EDISON, INC. CONSULTING ENGINEERS SAN FRANCISCO

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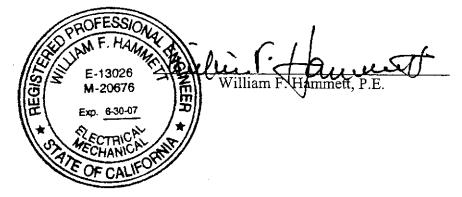
guidelines. To prevent occupational exposures in excess of the FCC guidelines, no access within 5 feet in front of the Metro antennas themselves, such as might occur during building maintenance activities, should be allowed while the site is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Posting explanatory warning signs' at roof access locations and on the parapet 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.

### Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that the base station proposed by MetroPCS at 9565 Soquel Drive in Aptos, 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 of explanatory signs is recommended to establish compliance with occupational exposure limitations.

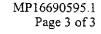
### Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-I3026 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.



January 6, 2006





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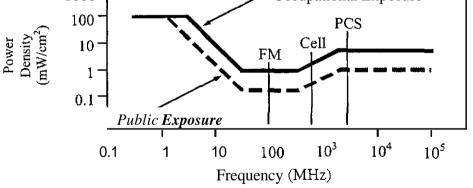
Warning signs should comply with ANSI C95.2 color, symbol, and content conventions. In addition, contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required.

### 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, which are nearly identical to the more recent Institute of Electrical and Electronics Engineers Standard C95.1-1999, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, **3**  $_{\rm kHz}$  to 300 GHz." These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

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

Frequency	Electromagnetic Fields (f is freauency of emission in MHz)				<u>MHz)</u>	
Applicable		etric	Mag		Equivalen	
Range		trength		trength	Power	
(MHz)	{V/	/m)	(A)	/m)	(mW	(cm)
0.3- 1.34	614	614	1.63	1.63	100	100
1.34-3.0	614	823.8/f	1.63	2.19/f	100	180/ f²
3.0- 30	18421 f	823.8/f	4.891 f	2.19/£	900/ f <sup>2</sup>	180/ f <sup>2</sup>
30- 300	61.4	27.5	0.163	0.0729	1.0	0.2
300- <b>1,500</b>	3.54 <b>√</b> f	1.59√f	<b>√</b> f/106	<b>√</b> f/238	f/300	<i>f/1500</i>
1,500-100,000	137	61.4	0.364	0.163	5.0	Ι.Ο
1000			<ul> <li>Occupat</li> </ul>	ional Expo	sure	
100		$\sim$		PCS		



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



### **RFR.CALC<sup>™</sup>** Calculation Methodology

### Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

### Near Field.

Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications 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) 
$$D > \frac{2h^2}{\lambda}$$
 2)  $D > 5h$  3)  $D > 1.6\lambda$ 

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

 $\lambda$  = 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:

power density 
$$S = \frac{180}{\theta nw} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$$
, in mW/cm<sup>2</sup>,

where  $\theta_{BW}$  = 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:

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

29

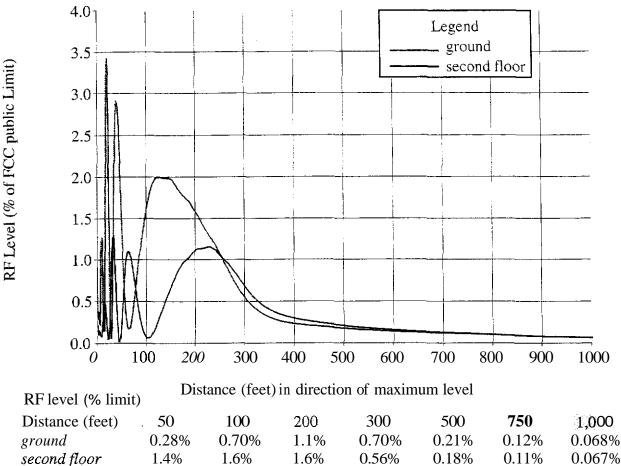


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### Compliance with Santa Cruz County Code §13.10.659(g)(2)(ix)

"Compliance with the FCC's non-ionizing electromagnetic radiation (NIER) standards or other applicable standards shall be demonstrated for any r reless communication facility through submission, at the time of application for times y part is creditive ment, of NIER calculations specifying NIER levels in the area surrounding the proposed facility Calculations if it is to pected NIER exposure levels during peak operation periods at range of distances from fifty (50) to one thousand (1,000) feet, taking into account cumulative NIER exposure levels from he proposed scattor is combination with all other existing NIER transmission sources within a one-mile radius. This should 1 include a plan to ensure that the public would be kept at a safe distance from any NIER transmission source associated with the 1 include superceding standards.



### Calculated Cumulative NIER Exposure Levels during Peak Operation Periods

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

Maximum effective radiated power (peak operation) - 1,890 watts

Effective Metro antenna height above ground - 32 feet

Other sources nearby - None

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 above the roof of a two-story building

30

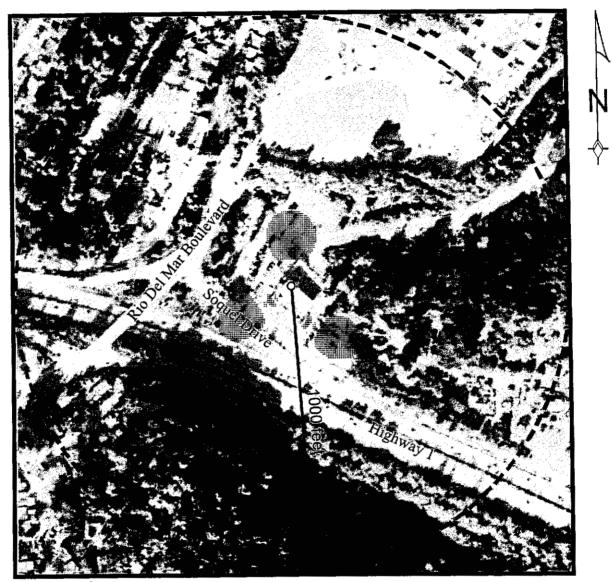
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EXHIBIT

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



Aerial photo from Terraserver

Legend

blank - less than 1% of FCC public limit (*i.e.*, more than 100 times below)

- 1% and above at 2nd floor level (highest level is 3.4%)

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

31

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### CO'NTY OF SANTA RUZ DISCRETIONARY APPLICATION COMMENTS

Project Planner: Randal1 Adams Application No.: 05-0642 APN: 041-221-41 Date: January 19, 2006 Time: 13:32:44 Page: 1

Aptos-La Selva Beach Fire Prot Dist Completeness C

LATEST COMMENTS HAVE NOT YET BEEN SENT TO PLANNER FOR THIS AGENCY

DEPARTMENT NAME: Aptos/La Selva Fire Dept. APPROVED

Aptos-La Selva Beach Fire Prot Dist Miscellaneous

LATEST COMMENTS HAVE NOT YET BEEN SENT TO PLANNER FOR THIS AGENCY

NO COMMENT

EXHIBIT I

### COUNTY OF SANTA CRUZ

### MEMORANDUM

### Application No: 05-0642

- Date: January 5,2006
- To: Randall Adams, Project Planner
- From: Lawrence Kasparowitz Urban Designer
- Re: Design Reviewfor a telecommunications facility at commercial building at 9565 Soquel Drive, Aptos

### **GENERAL PLAN / ZONING CODE ISSUES**

### **Design** Review Authority

- 13.11.040 Projects requiring design review
  - (e) All commercial remodels or new commercial construction.

The new parapet is compatible with the existing building and will screen the antennae and equipment cabinet.

# EXHIBIT