

## PLANNING COMMISSION

Agenda Item No.: G.1  
Date: August 23, 2011

**CASE NUMBER:** PHG 10-0029  
**APPLICANT:** AT&T  
**LOCATION:** 350 W. 9<sup>th</sup> Avenue (APN 233-371-16)  
**TYPE OF PROJECT:** Conditional Use Permit

**PROJECT DESCRIPTION:** A Conditional Use Permit for AT&T to remodel an existing clock tower and install twelve wireless panel antennas within the modified structure.

**STAFF RECOMMENDATION:** Approval

**GENERAL PLAN DESIGNATION/TIER:** General Commercial/Central Neighborhood Tier 1

**ZONING:** CG (General Commercial and South Escondido Boulevard Overlay Area 'A')

### BACKGROUND/SUMMARY OF ISSUES:

AT&T has submitted a request to install up to twelve wireless communication panel antennas within an existing 35-foot-high clock tower located within a two-story commercial office building. In order to support the antenna panels, the clock tower is proposed to be modified and increased in height to 40 feet. Support radio and electrical equipment would be located within a designed area inside the existing office building. The additional antennas are requested to support AT&T's new 4G network. Wireless Communication facilities typically are permitted with a Plot Plan within the commercial zones, but the subject site is located within the South Escondido Boulevard Planning Area, and a CUP is required for all wireless communication facilities.

**LEGAL REQUIREMENTS:** In 1996, the U.S. Congress added a section to the Communications Act of 1934 to promote the expansion of personal wireless communications service, adding section 332(c)(7). This section preserves local zoning authority over the "placement, construction, and modification" of wireless facilities, while imposing certain federal requirements. Specifically, Section 332(c)(7) requires that state or local government decisions regarding wireless service facilities must not: 1) unreasonably discriminate between one cellular provider and another; or 2) prohibit or have the effect of prohibiting the provision of personal wireless services; or 3) be founded on "the environmental effects of radio frequency (RF) emissions *to the extent that such facilities comply* with the FCC's regulations" (emphasis added).

In summary, once the Commission is satisfied the project's RF emissions are within the federal thresholds, then the review must be based on otherwise applicable local zoning criteria. A denial of a proposed facility must not run afoul of the federal restrictions set forth as 1), 2) and 3) above.

1. Whether the design of the proposed facility is appropriate for the site and consistent with the Wireless Facility Guidelines.

### REASONS FOR STAFF RECOMMENDATION:

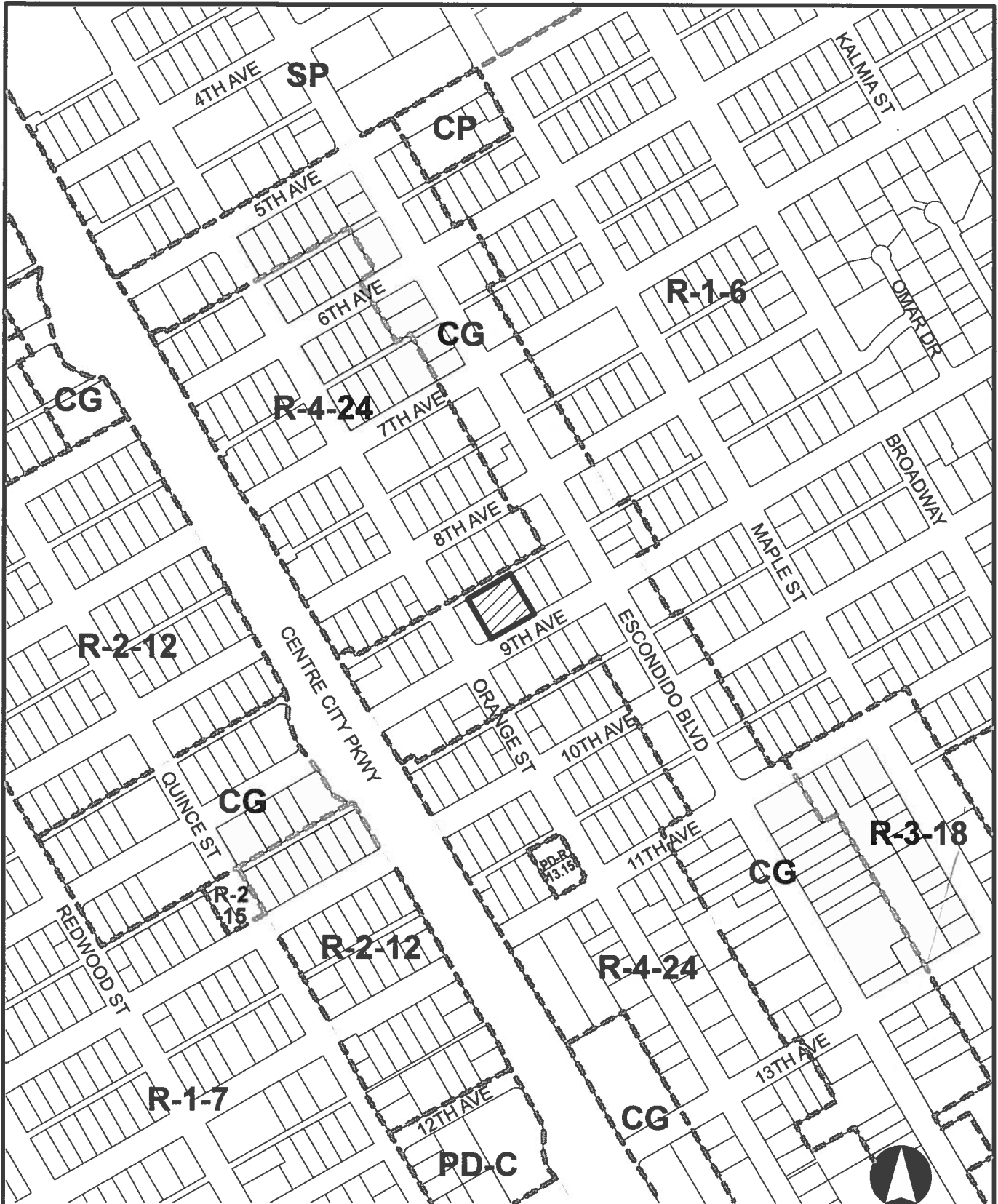
1. The proposed project would be consistent with the Communication Antennas Ordinance since the antenna panels would be located within an existing architectural feature that would be modified to accommodate wireless facilities and would be compatible with the existing office building and surrounding neighborhood; the site is within a commercial zone of sufficient size to support the facility without negatively impacting adjacent properties; and the facility would be in conformance with FCC emission standards.

2. Staff feels the proposed facility would not result in a potential health hazards on site and to nearby residents since the Radio Frequency (RF) study prepared for the proposed project indicates the facility would be compliant with maximum permissible exposure (MPE) limits and Federal Communication Commission (FCC) guidelines.

Respectfully submitted,



Jay Paul  
Associate Planner

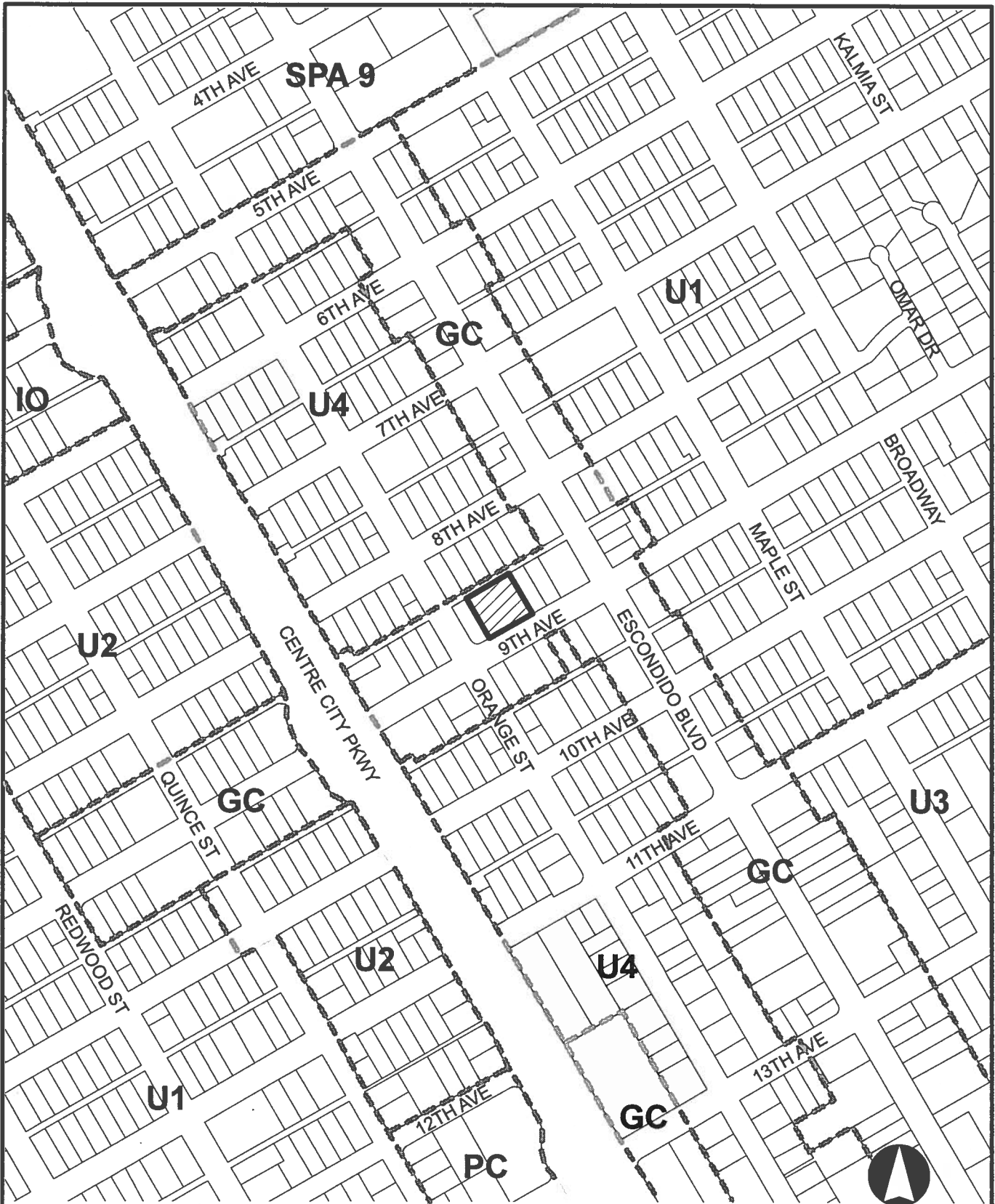


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**PROPOSED PROJECT  
PHG 10-0029**



LOCATION/ZONING



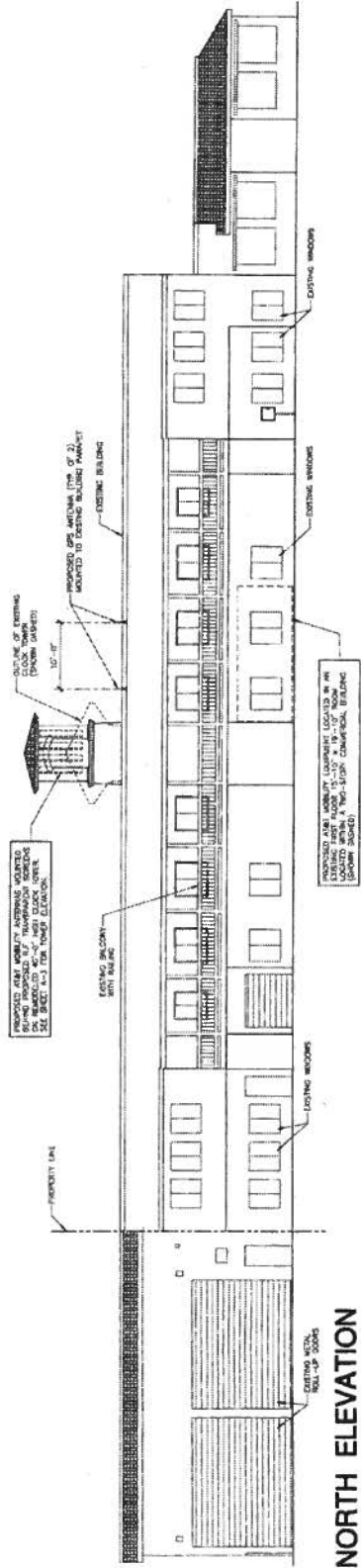
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**PROPOSED PROJECT  
PHG 10-0029**

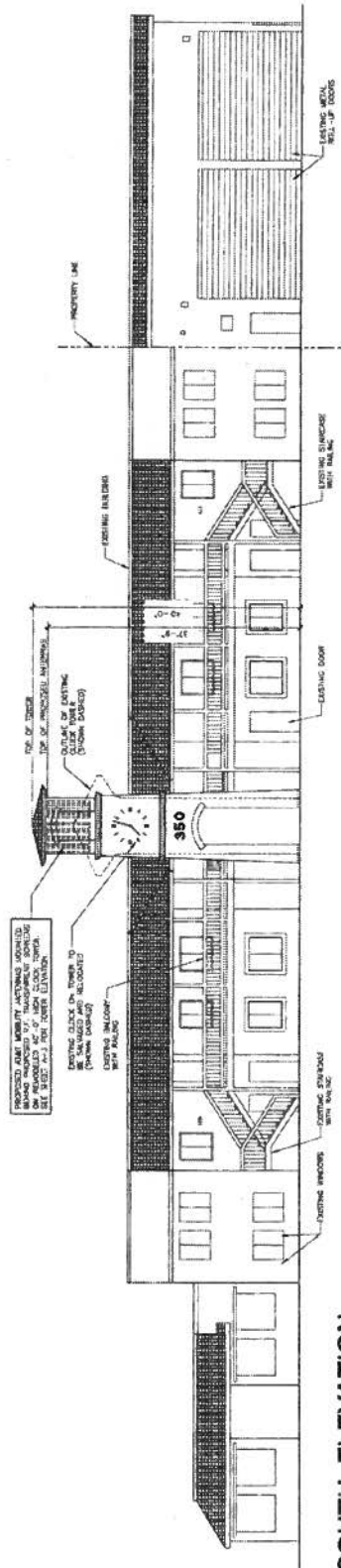








**NORTH ELEVATION**



**SOUTH ELEVATION**

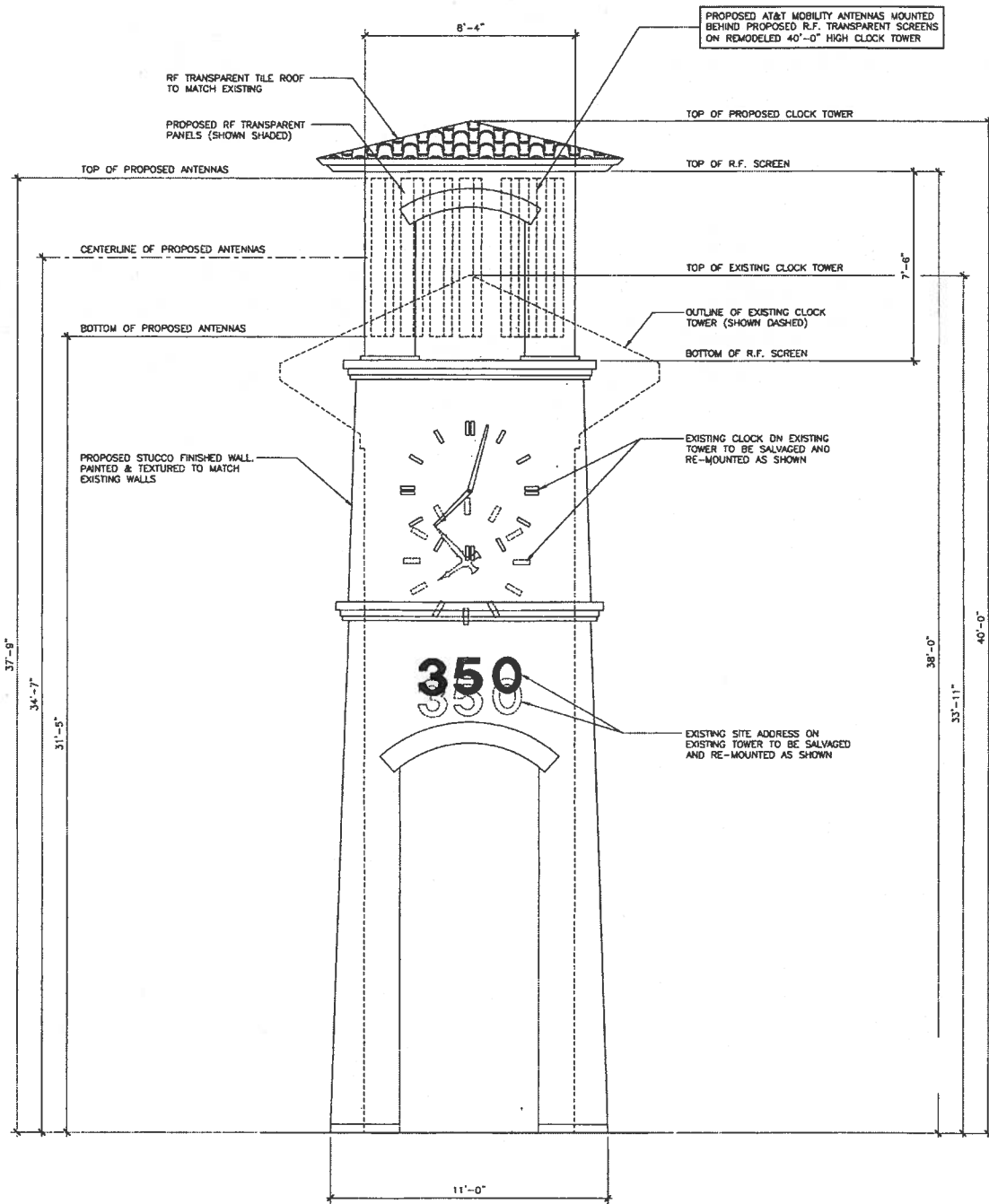
**PROPOSED PROJECT  
PHG 10-0029**



**ELEVATIONS**





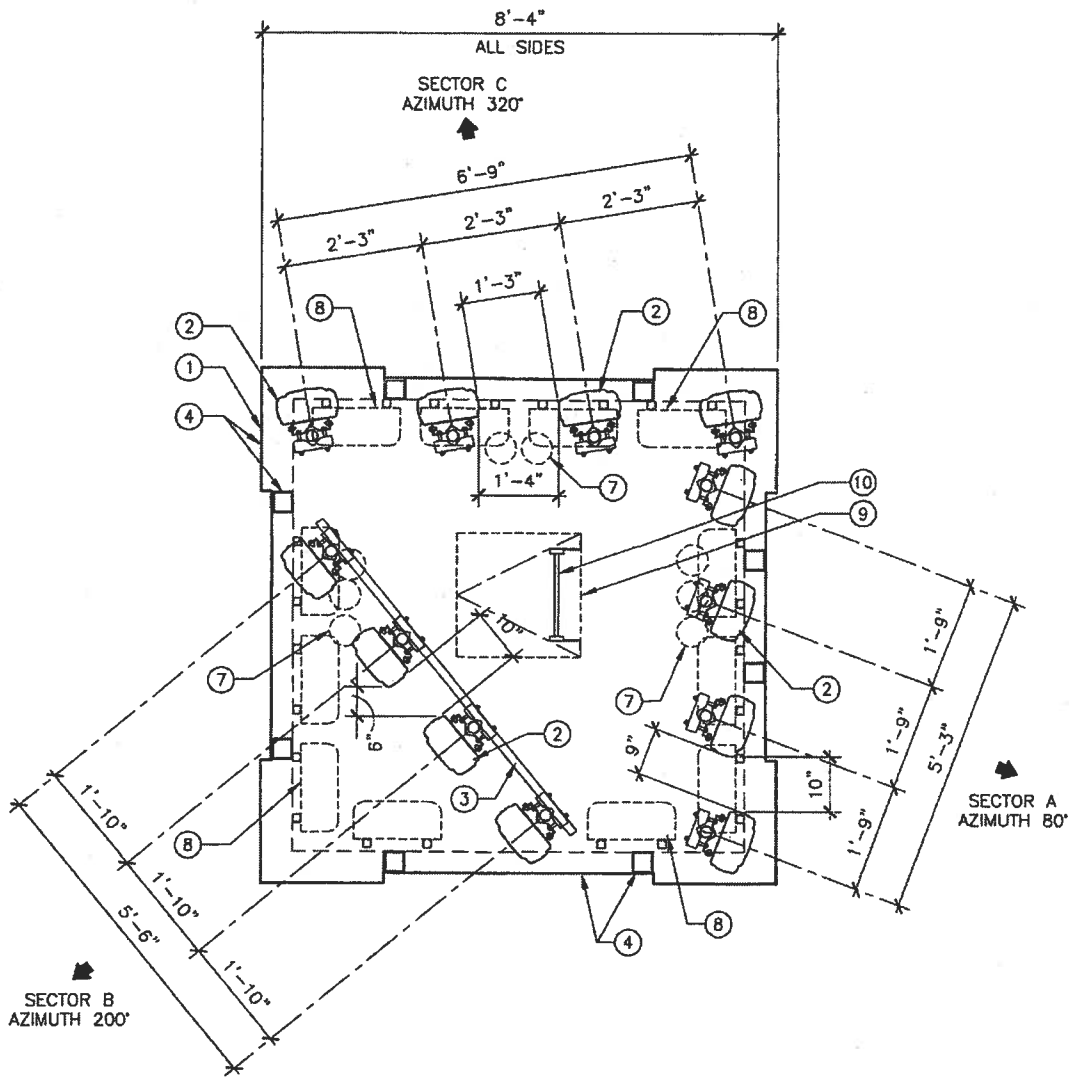


**TOWER ELEVATION**

**PROPOSED PROJECT  
PHG 10-0029**



**ELEVATIONS**

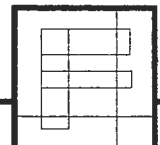


# ANTENNA PLAN

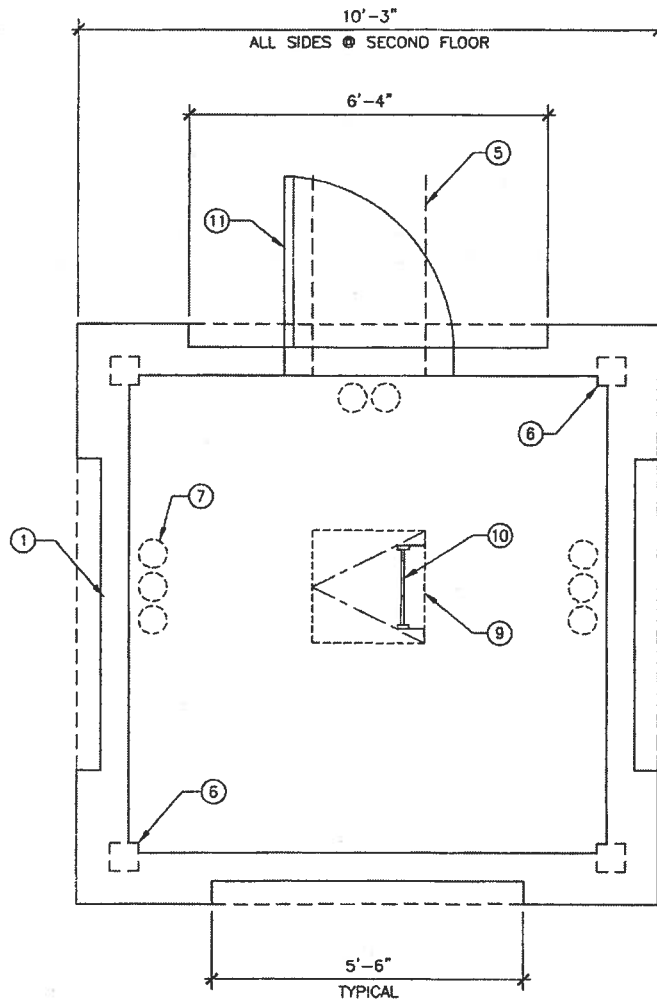


MAGNETIC NORTH

**PROPOSED PROJECT  
PHG 10-0029**

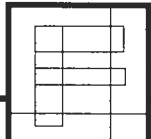


FLOOR PLAN

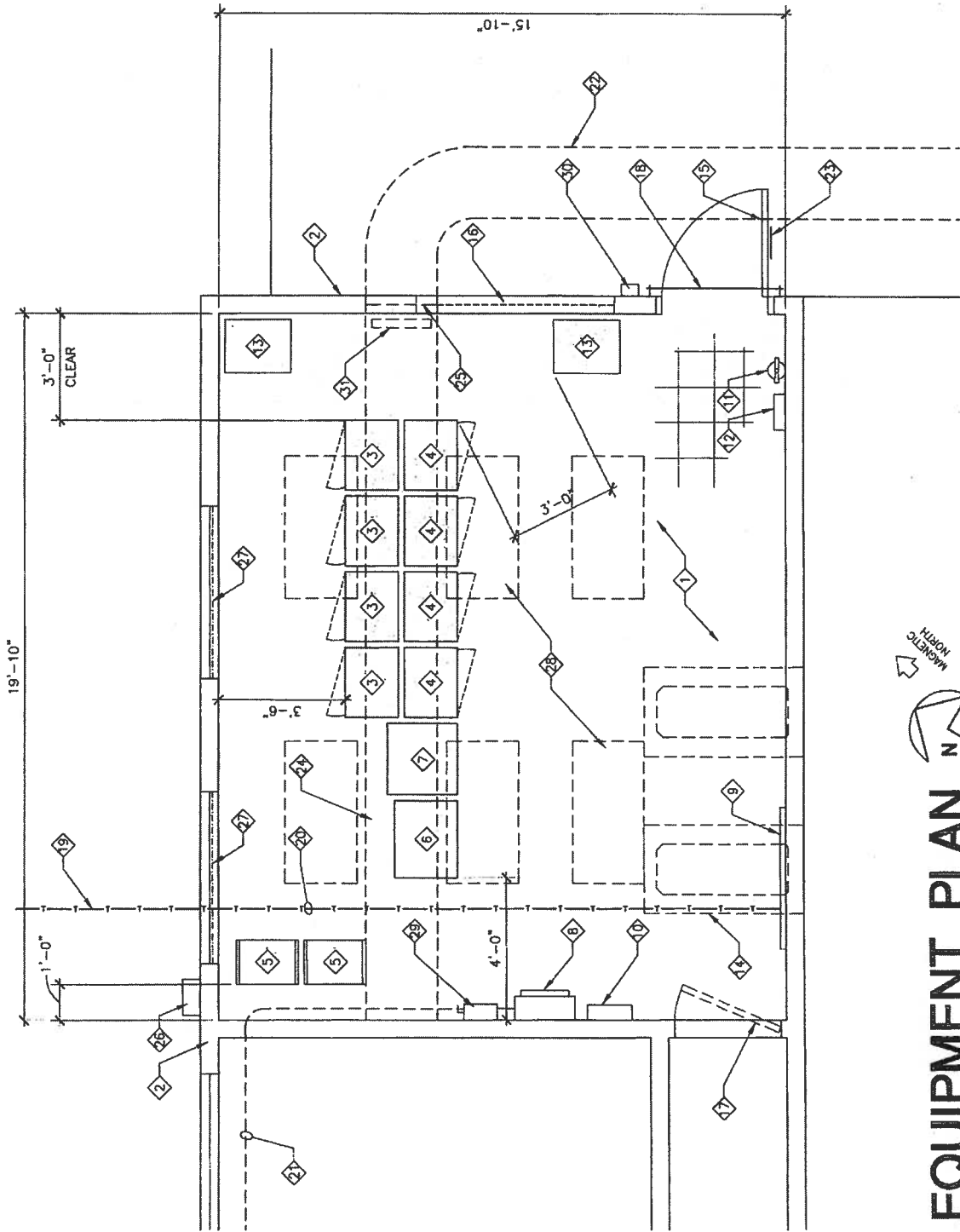


**2ND FLOOR PLAN** 

**PROPOSED PROJECT  
PHG 10-0029**

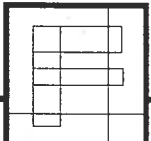


FLOOR PLAN



**EQUIPMENT PLAN**

**PROPOSED PROJECT  
PHG 10-0029**



FLOOR PLAN

# ANALYSIS

## A. LAND USE COMPATIBILITY/SURROUNDING ZONING

NORTH - R-4-24 zoning (Multi-Family Residential, up to 24 du/ac) / A mix of multi-family residential development is located north of the commercial office building. A 20-foot-wide alley separates the commercial property from the adjacent residences. The upper portion of the clock tower would be visible from the adjacent residences along 8<sup>th</sup> Ave. The proposed clock tower would be located on the southern side of the two-story office building, which would provide a physical separation between the two zones.

SOUTH - CG zoning (General Commercial) / A two-story office building and some non-conforming single-family residential structures are located south of the subject site across 9<sup>th</sup> Avenue.

EAST - CG zoning (General Commercial) / Retail commercial is located immediately to the east.

WEST - CG zoning (General Commercial) / Non-conforming single-family residential homes are located west of the site across Orange Avenue.

## B. AVAILABILITY OF PUBLIC SERVICES

1. Effect on Police Service - The Police Department expressed no concern regarding the proposed project and their ability to provide service to the site.
2. Effect on Fire Service - The Fire Department indicated that adequate services can be provided to the site and the proposed project would not impact levels of service.
3. Traffic – The Engineering Department indicated the project would not have any impacts to existing traffic or circulation within the area. Anticipated vehicle trips to the site would be infrequent (generally one or two a month) for routine maintenance.
4. Utilities – The Engineering Department indicated the project would not result in a significant impact to public services or utilities.
5. Drainage – The Engineering Department determined the project would not materially degrade the levels of service of the existing drainage facilities.

## C. ENVIRONMENTAL STATUS

1. The proposal is exempt from the California Environmental Quality Act (CEQA) in accordance with CEQA Section 15303, "New Small Facilities or Structures," and a Statement of Exemption was prepared for the proposed project. In staff's opinion, the request does not have the potential for causing a significant effect on the environment.
2. In staff's opinion, no significant issues remain unresolved through compliance with code requirements and the recommended conditions of approval.

## D. GENERAL PLAN ANALYSIS:

General Plan – The project site is located within the City of Escondido Commercial land-use designation with an underlying zoning of General Commercial. The requested Conditional Use Permit is consistent with the commercial land-use designation of the General Plan since communication facilities are encouraged to be located within commercial and industrial zones, and are permitted when conditioned to observe the underlying zone requirements and any related ordinance restrictions; are in conformance with the wireless design requirements; and when compatible with surrounding properties. The site currently is developed with a two-story office building and the proposed modified clock tower would be in substantial compliance with any relevant General Plan criteria and CG zone standards for setbacks and height, and also is in conformance with the Personal Wireless Service Facilities Guidelines for location and design.

## **E. PROJECT ANALYSIS**

### **Appropriateness of the Proposed Design and Conformance with the Communication Antennas Ordinance**

AT&T is proposing to remodel the existing 35-foot-high clock tower located within a two-story office complex in order to accommodate up to twelve, 6.3'-foot-high panel antennas within the upper portion of the tower. In order to accommodate the antennas and provide the height needed to provide appropriate coverage, the tower is proposed to be increased five feet in height. In order for the taller tower to appear in scale with the existing office building, the structure would be redesigned which includes eliminating the existing tiled roof structure and replacing it with a less prominent tiled roof element; the base of the tower would be widened with the tower tapering inward towards as the height increases; and arched stucco type features and horizontal banding would be incorporated into the upper and lower portions of the tower. The existing clock would be reinstalled on the southern face of the tower, along with the building numbers. The supporting electrical equipment would be installed within a dedicated area within the office building. The Design Review Board recommended approval of the project design on July 28, 2011 (vote 6-0) after reviewing and rejecting several earlier design options.

Staff feels the proposed modification would be in conformance with the Wireless Facilities Guidelines since the proposed antenna panels would be located within an existing architectural feature that would be modified to accommodate the antenna panels and the modified design would be compatible with the existing office building and surrounding neighborhood; the site is within a commercial zone of sufficient size to support the facility without negatively impacting adjacent properties; and the facility would be in conformance with FCC emission standards.

### **Conformance with FCC Emission Requirements**

Operation of the facility would generate electromagnetic emissions (RF radiation). A RF study was prepared for the project by Dr. Jerrold Bushberg, Health and Medical Physics Consulting, to determine whether the proposed communication facility complies with the FCC Rules and Regulations for RF emissions for "General Public" classifications. The study concluded the project site would be compliant with FCC rules and regulations. The maximum public RF exposure from this AT&T facility was calculated to be less than 3.5% of the FCC public safety standards. Appropriate signage is required to be posted at access areas to the antennas and equipment providing warning/safety notice. A copy of the study has been attached with this report.

# SUPPLEMENT TO STAFF REPORT/DETAILS OF REQUEST

## **A. PHYSICAL CHARACTERISTICS**

The 1.5-acre property is developed with a two-story commercial office building, paved parking and ornamental landscaping. The property fronts onto and takes access from 9<sup>th</sup> Avenue on the south, and Orange Street on the west. A 20-foot-wide public alley is located along the northern boundary of the site. There is not native vegetation or sensitive habitat located on or near the site. The topography of the site is relatively flat.

## **B. SUPPLEMENTAL DETAILS OF REQUEST**

1. Property Size: 1.5 acres
2. Height:
  - Existing: 35 feet to top of clock tower
  - Proposed: 40 feet to top of modified clock tower

The South Escondido Design Guidelines limits structures to 35 feet in height. The zoning code allows specific architectural elements and structures to exceed the height limits, which includes spires, towers and other similar projections.
3. Antennas: (12), 6.3-foot-tall (75.5") antennas mounted in a triangular array within the interior clock tower
4. Power Density: AT&T is predicted to contribute less than 3.5% of the maximum permissible exposure (MPE) based on theoretical modeling.
5. Equipment: Support equipment to be located inside the building within an approx. The condenser units to be located on the roof of the building. Electrical meters to be located within existing electrical equipment area.
6. Hours of Operation  
Wireless Facility: 24 hours, unmanned

**EXHIBIT "A"**  
**FINDINGS OF FACT**  
**PHG 10-0029**

Conditional Use Permit

1. The proposed personal wireless communication facility would be located within a commercial zone and also within the South Escondido Boulevard Planning Area. Personal wireless communication facilities are permitted within this zone and area plan pursuant to approval of a Conditional Use Permit (CUP). The Wireless Facility Guidelines encourages these types of facilities to locate within commercial and industrial zones, and to be incorporated into existing or new architectural features when feasible that would be compatible with the existing built environment. The proposed facility would not result in a substantial alteration of the present or planned land use since the proposed wireless communication facility is proposed to be located within an existing clock tower located on the site that would be modified to accommodate the new antennas. The design of the tower would be in scale and character with the existing two-story office building and surrounding commercial and residential development. The proposal would not cause deterioration of bordering land uses since the facility is considered a stealthy design and would not create any adverse visual, noise or compatibility impacts with adjacent uses. The height of the structure would be in conformance with the maximum height requirements of the underlying zone. The Design Review Board recommended approval of the project on July 28, 2011.
2. The proposed personal wireless communication facility would not be hazardous to the health of nearby residents since the radio frequency (RF) analysis prepared for the project concluded the maximum operation levels of radiation for the facility would be within the MPE (Maximum Permissible Exposure) limit established by FCC requirements.
3. The proposed Conditional Use Permit has been considered in relationship to its effect on the community, and the request would be in compliance with the General Plan Policies and the Wireless Facility Guidelines, as discussed in the Planning Commission staff report dated August 23, 2011, and would not result in a negative impact to the adjacent neighborhood for the reasons stated above and detailed in the Planning Commission staff report and radio frequency analysis.



## EXHIBIT "B"

### CONDITIONS OF APPROVAL PHG 10-0029

#### General

1. All construction shall comply with all applicable requirements of the Escondido Zoning Code and requirements of the Planning Department, Director of Building, and the Fire Chief.
2. Appropriate access shall be provided and maintained to the project site, to the satisfaction of the Fire Department.
3. The legal description attached to the application has been provided by the applicant and neither the City of Escondido nor any of its employees assume responsibility for the accuracy of said legal description.
4. Prior to or concurrent with the issuance of building permits, the appropriate development fees and Citywide Facility fees shall be paid in accordance with the prevailing fee schedule in effect at the time of building permit issuance, to the satisfaction of the Director of Planning and Building. All requirements of the Public Partnership Program, Ordinance No. 86-70 shall be satisfied prior to building permit issuance. The ordinance requires that a public art fee be added at the time of the building permit issuance for the purpose of participating in the City Public Art Program
5. All exterior lighting shall conform to the requirements of Article 1072, Outdoor Lighting (Ordinance No. 86-75).
6. As proposed, the design, color and materials of the proposed facilities shall be in accordance with the staff report, exhibits, and the project's Details of Request. The proposed rooftop condenser units must incorporate appropriate screening. This shall be demonstrated on the final building plans how the existing roof parapets and location of the units on the roof would provide appropriate screening from surrounding views. Otherwise, other screening methods will need to be incorporated into the design, to the satisfaction of the Planning Division. The units also should be painted to blend in with the building colors.
7. All proposed signage associated with the project must comply with the City of Escondido Sign Ordinance (Ord. 92-47) and the exhibits included in the staff report(s), to the satisfaction of the Planning Division. Appropriate signs providing notice, caution or warning, and other necessary markings, shall be placed at the main site access point(s) and other locations, as may be required, in order to alert the general public, maintenance or other workers approaching the antennas to the presence of RF transmissions and to take precautions to avoid exposures in excess of FCC limits. The requirement for the appropriate signage/notice shall be indicated on the building plans.
8. AT&T or any subsequent operator/lease holder of the wireless facility agrees to investigate any complaints related to possible interference with electronic equipment in the surrounding area to determine the cause of the interference. Any interference shall be resolved in a timely manner to the satisfaction of the Director of Community Development. If the facility is determined to be the cause of the electronic interference, AT&T shall solve the problem in a timely manner to the satisfaction of the complainant and the Director of Community Development. In addition, any interference with public safety communications shall be corrected immediately, to the satisfaction of the City of Escondido.
9. All project generated noise shall conform to the City's Noise Ordinance (Ordinance 90-08).
10. If requested by the City of Escondido, AT&T or any subsequent operator/lease holder of the facilities shall permit collocation of other wireless providers on its facility (subject to City of Escondido Approval) if it can be demonstrated that there would be no adverse effect on the existing facilities/operations.
11. AT&T shall select an independent third party consultant to conduct actual power density measurements of the facility within 90 days after installation and under full operation of the facility. The results of the study shall be submitted to the Director of Community Development so that the theoretical power density study can be compared to the actual output to ensure compliance with FCC requirements
12. AT&T or any subsequent operator/lease holder of the wireless facility shall be responsible for all on-going maintenance of the facility, including the antennas and supporting equipment to ensure the condition of the facility does not appear weathered.

13. All communication facilities on the site shall be promptly removed upon non use of the facilities, to the satisfaction of the Planning Division and Building Division.
14. All new utilities and utility runs shall be placed underground, to the satisfaction of the Planning Division and the Engineering Department, unless as specifically approved by this permit.
15. No additional antennas or expansion of this facility shall be permitted without a modification of the Conditional Use Permit and a public hearing before the Planning Commission. Minor changes within the approved size and design parameters may be permitted by the Director of Community Development, which might require review by the Design Review Board.
16. The Conditional Use Permit shall be null and void if not utilized within twelve months of the effective date of approval, as determined by the Planning Division.
17. This Conditional Use Permit only is for the installation of an AT&T facility located on the site. The number of antennas allowed shall be used solely for AT&T, and not transferred or subleased to any other carriers unless approved by the City. No other carriers shall be allowed to be placed on the facility, unless a new Conditional Use Permit is approved by the City.
18. All communication facilities on the site shall be promptly removed upon non use of the facilities, to the satisfaction of the Planning Division and Building Division.
19. The property owner is responsible for ensuring the entire property is maintained, and free of any litter, trash, debris and graffiti.
20. This item may be referred back to the Planning Commission upon recommendation of the Director of Community Development for review and possible revocation or modification of the Conditional Use Permit upon receipt of nuisance complaints regarding the facility or non-compliance with the Conditions of Approval.
21. An inspection by the Planning Division will be required prior to operation of the project. Everything should be installed prior to calling for an inspection, although preliminary inspections may be requested. Contact the project planner at (760) 839-4671 to arrange a final inspection.
22. The City of Escondido hereby notifies the applicant that the County Clerk's office requires a documentary handling fee of \$50.00 in order to file a Notice of Exemption for the project (environmental determination for the project). In order to file the Notice of Exemption with the County Clerk, in conformance with the California Environmental Quality Act (CEQA) Section 15062, the applicant should remit to the City of Escondido Planning Division, within two working days of the final approval of the project (the final approval being the hearing date of the Planning Commission or City Council, if applicable), a certified check payable to the "County Clerk" in the amount of \$50.00. The filing of a Notice of Exemption and the posting with the County Clerk starts a 35 day statute of limitations period on legal challenges to the agency's decision that the project is exempt from CEQA. Failure to submit the required fee within the specific time noted above will result in the Notice of Exemption not being filed with the County Clerk, and a 180 day statute of limitations will apply.



CITY OF ESCONDIDO  
 PLANNING DIVISION  
 201 NORTH BROADWAY  
 ESCONDIDO, CA 92025-2798  
 (760) 839-4671

**Notice of Exemption**

To: San Diego County Recorder's Office  
 Attn: Linda Kesian  
 P.O. Box 121750  
 San Diego, CA 92112-1750

From: City of Escondido  
 201 North Broadway  
 Escondido, CA 92025

**Project Title/Case No.:** PHG 10-0029 (AT&T 9<sup>th</sup> Avenue)

**Project Location - Specific:** 350 W. 9<sup>th</sup> Avenue (APN 233-371-16)

**Project Location - City:** Escondido, **Project Location - County:** San Diego

**Description of Project:** A Conditional Use Permit for AT&T to remodel an existing 35-foot-high clock tower and install twelve wireless panel antennas within the modified structure. In order to support the antenna panels, the clock tower is proposed to be modified and increased in height to 40 feet. Support radio and electrical equipment would be located within a designed area inside the existing office building.

**Name of Public Agency Approving Project:** City of Escondido

**Name of Person or Agency Carrying Out Project:**

Name Plancom, Inc. representing AT&T Telephone (760) 715-8703

Address 302 State Place, Escondido, CA 92029

Private entity  School district  Local public agency  State agency  Other special district

**Exempt Status:** Categorical Exemption. Section 15303, "New Small Facilities or Structures."

**Reasons why project is exempt:**

1. The facility would be consistent with the Wireless Facility Guidelines since the antenna panels would be integrated into an modified clock tower located on the site. The proposed facility would not result in any noise or visual impacts to existing residences or adjacent properties, or displace any required parking.
2. The site is within an area that currently is developed with commercial/office structure and an existing clock tower. The size of the proposed facility is relatively small and no significant expansion to the existing building(s) is proposed. No grading or removal of native vegetation is proposed or required.
3. The proposed facility would not be hazardous to the health of nearby residents or the general public since the facility would be within maximum permissible exposure (MPE) limits and Federal Communication Commission (FCC) standards.
4. All service and access to the proposed wireless facility are available and would be in conformance with local standards.

**Lead Agency Contact Person:** Jay Paul, Planning Division Area Code/Telephone/Extension (760) 839-4537

Signature:  August 8, 2011  
 Jay Paul, Associate Planner Date

Signed by Lead Agency Date received for filing at OPR: N/A  
 Signed by Applicant

**JERROLD T. BUSHBERG Ph.D., DABMP, DABSNM**  
**◆HEALTH AND MEDICAL PHYSICS CONSULTING◆**

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7784 Oak Bay Circle Sacramento, CA 95831  
(800) 760-8414—jbushberg@hampc.com

Darrell W. Daugherty  
PlanCom Inc.  
302 State Place  
Escondido, California 92029-1362

October 20, 2010

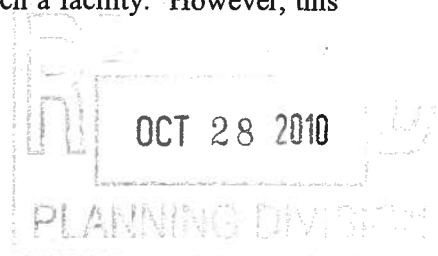
### **Introduction**

At your request, I have reviewed the technical specifications and calculated the maximum radiofrequency, (RF), power density from the proposed AT&T wireless telecommunications site, (referenced as NS-0501), to be located at the 350 W. Ninth Avenue, Escondido, California as depicted in attachment one.

This proposed AT&T telecommunication site will utilize directional transmit panel antennae configured in three (3) sectors. The antennae are planned to be mounted on a clock tower extension, with their centers at least 37.1 feet above grade directed at 200 (sector A), 80 (sector B) and 320 (sector C) degrees true north. The antennas specified are Kathrien model #800-100766 for all sectors. Technical specifications of these antennae are provided in attachment two. The sectorized antennas are designed to transmit with an effective radiated power (ERP) of up to 2,660 watts per sector within a bandwidth between approximately 869 and 891 MHz (Cellular frequencies) and with an ERP of up to 1,088 watts per sector within a bandwidth between approximately 1,865 and 1,980 MHz (PCS frequencies).

### **Calculation Methodology, Results & Recommendations**

Calculations were made in accordance with the recommendations contained in the Federal Communications Commission, Office of Engineering and Technology Bulletin 65 (edition 97-01, page 24, equation 10) entitled "Evaluating Compliance with FCC-Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields." Several assumptions were made in order to provide the most conservative or "worse case" projections of power densities. Calculations were made assuming that all channels were operating simultaneously at their maximum design effective radiated power. Attenuation (weakening) of the signal that would result from surrounding foliage or buildings was ignored. Buildings can reduce the signal strength by a factor of 10 (i.e., 10 dB) or more depending upon the construction material. The ground or other surfaces were considered to be perfect reflectors (which they are not) and the RF energy was assumed to overlap and interact constructively at all locations (which they would not) thereby resulting in the calculation of the maximum potential exposure. It was also assumed that the stadium bleachers were always occupied. In fact, the accumulations of all these very conservative assumptions will significantly overestimate the actual exposures that would typically be expected from such a facility. However, this method is a prudent approach that errs on the side of safety.



DHG 10-0079

The maximum public RF exposure from this AT&T facility was calculated to be less than 3.5 % of the FCC public safety standard. This total exposure is comprised of  $16.6 \mu\text{W}/\text{cm}^2$  at cellular frequencies and less than  $6.4 \mu\text{W}/\text{cm}^2$  at PCS frequencies). Ground level exposure as a function of distance from the wireless facility are shown in appendix A. A sign conforming to the American National Standards Institute (ANSI) C95.2 color, symbol and content, and other markings as appropriate, should be placed close to the antennas with appropriate contact information in order to alert maintenance or other workers approaching the antenna to the presence of RF transmissions and to take precautions to avoid exposures in excess of FCC limits.

### **RF Safety Standards**

The two most widely recognized standards for protection against RF field exposure are those published by the American National Standards Institute (ANSI) C95.1 and the National Council on Radiation Protection and Measurement (NCRP) report #86.

The NCRP is a private, congressionally chartered institution with the charge to provide expert analysis of a variety of issues (especially health and safety recommendations) on radiations of all forms. The scientific analyses of the NCRP are held in high esteem in the scientific and regulatory community both nationally and internationally. In fact, the vast majority of the radiological health regulations currently in existence can trace their origin, in some way, to the recommendations of the NCRP.

All RF exposure standards are frequency-specific, in recognition of the differential absorption of RF energy as a function of frequency. The most restrictive exposure levels in the standards are associated with those frequencies that are most readily absorbed in humans. Maximum absorption occurs at approximately 80 MHz in adults. The NCRP maximum allowable continuous occupational exposure at this frequency is  $1,000 \mu\text{W}/\text{cm}^2$ . This compares to  $2,933 \mu\text{W}/\text{cm}^2$  at cellular frequencies and  $5,000 \mu\text{W}/\text{cm}^2$  at PCS frequencies that are absorbed much less efficiently than exposures in the VHF TV band.

The traditional NCRP philosophy of providing a higher standard of protection for members of the general population compared to occupationally exposed individuals, prompted a two-tiered safety standard by which levels of allowable exposure were substantially reduced for "uncontrolled " (e.g., public) and continuous exposures. This measure was taken to account for the fact that workers in an industrial environment are typically exposed no more than eight hours a day while members of the general population in proximity to a source of RF radiation may be exposed continuously. This additional protection factor also provides a greater margin of safety for children, the infirmed, aged, or others who might be more sensitive to RF exposure. After several years of evaluating the national and international scientific and biomedical literature, the members of the NCRP scientific committee selected 931 publications in the peer-reviewed scientific literature on which to base their recommendations. The current NCRP recommendations limit continuous public exposure at cellular frequencies (e.g., ~ 820MHz ) to  $550 \mu\text{W}/\text{cm}^2$  and to  $1,000 \mu\text{W}/\text{cm}^2$  at PCS frequencies (~1,900 MHz).

The 1992 ANSI standard was developed by Scientific Coordinating Committee 28 (SCC 28) under the auspices of the Institute of Electrical and Electronic Engineers (IEEE). This standard, entitled "IEEE Standards for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz" (IEEE C95.1-1991), was issued in April 1992 and subsequently adopted by ANSI. A

revision of this standard (C95.1-2005) was completed in October 2005 by SCC 39 the IEEE International Committee on Electromagnetic Safety. Their recommendations are similar to the NCRP recommendation for the maximum permissible exposure (MPE) to the public PCS frequencies (950  $\mu\text{W}/\text{cm}^2$  for continuous exposure at 1,900 MHz) and incorporates the convention of providing for a greater margin of safety for public as compared with occupational exposure. Higher whole body exposures are allowed for brief periods provided that no 30 minute time-weighted average exposure exceeds these aforementioned limits.

On August 9, 1996, the Federal Communications Commission (FCC) established a RF exposure standard that is a hybrid of the current ANSI and NCRP standards. The maximum permissible exposure values used to assess environmental exposures are those of the NCRP (i.e., maximum public continuous exposure at cellular and PCS frequencies of 550  $\mu\text{W}/\text{cm}^2$  and 1,000  $\mu\text{W}/\text{cm}^2$  respectively). The FCC issued these standards in order to address its responsibilities under the National Environmental Policy Act (NEPA) to consider whether its actions will "significantly affect the quality of the human environment." In as far as there was no other standard issued by a federal agency such as the Environmental Protection Agency (EPA), the FCC utilized their rulemaking procedure to consider which standards should be adopted. The FCC received thousands of pages of comments over a three-year review period from a variety of sources including the public, academia, federal health and safety agencies (e.g., EPA & FDA) and the telecommunications industry. The FCC gave special consideration to the recommendations by the federal health agencies because of their special responsibility for protecting the public health and safety. In fact, the maximum permissible exposure (MPE) values in the FCC standard are those recommended by EPA and FDA. The FCC standard incorporates various elements of the 1992 ANSI and NCRP standards which were chosen because they are widely accepted and technically supportable.

There are a variety of other exposure guidelines and standards set by other national and international organizations and governments, most of which are similar to the current ANSI/IEEE or NCRP standard, figure one.

The FCC standards "Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation" (Report and Order FCC 96-326) adopted the ANSI/IEEE definitions for controlled and uncontrolled environments. In order to use the higher exposure levels associated with a controlled environment, RF exposures must be occupationally related (e.g., wireless company RF technicians) and they must be aware of and have sufficient knowledge to control their exposure. All other environmental areas are considered uncontrolled (e.g., public) for which the stricter (i.e., lower) environmental exposure limits apply. All carriers were required to be in compliance with the new FCC RF exposure standards for new telecommunications facilities by October 15, 1997. These standards applied retroactively for existing telecommunications facilities on September 1, 2000.

The task for the physical, biological, and medical scientists that evaluate health implications of the RF data base has been to identify those RF field conditions that can produce harmful biological effects. No panel of experts can guarantee safe levels of exposure because safety is a null concept, and negatives are not susceptible to proof. What a dispassionate scientific assessment can offer is the presumption of safety when RF-field conditions do not give rise to a demonstrable harmful effect.

## Summary & Conclusions

This proposed wireless facility as specified above will be in full compliance with FCC RF public safety standards. Wireless PCS and Cellular transmitters, by design and operation, are low-power devices. Even under maximal exposure conditions in which all the channels from all antennas are operating at full power (2,660 and 1,088 watts ERP per sector for cellular and PCS frequencies respectively), the maximum exposure from this facility will not result in power densities in excess of  $25.0 \mu\text{W}/\text{cm}^2$  at any publically accessible location. This maximum exposure is less than 3.5% of, (i.e., 28 times lower than), the FCC public exposure standards for these frequencies. A chart of the electromagnetic spectrum and a comparison of RF power densities from various common sources is presented in figures two and three respectively in order to place exposures from wireless telecommunications systems in perspective.

It is important to realize that the FCC maximum allowable exposures are not set at a threshold between safety and known hazard but rather at 50 times below a level that the majority of the scientific community believes may pose a health risk to human populations. Thus the previously mentioned maximum exposure at any publicly accessible location inside or surrounding the building represent a "safety margin" from this threshold of potentially adverse health effects of more than 1,420 times.

Given the low levels of radiofrequency fields that would be generated from this facility, and given the evidence on biological effects in a large data base, there is no scientific basis to conclude that harmful effects will attend the utilization of the proposed wireless telecommunications facility. This conclusion is supported by a large numbers of scientists that have participated in standard-setting activities in the United States who are overwhelmingly agreed that RF radiation exposure below the FCC exposure limits has no demonstrably harmful effects on humans.

These findings are based on my professional evaluation of the scientific issues related to the health and safety of non-ionizing electromagnetic radiation and my analysis of the technical specification as provided by AT&T. The opinions expressed herein are based on my professional judgement and are not intended to necessarily represent the views of any other organization or institution. Please contact me if you require any additional information.

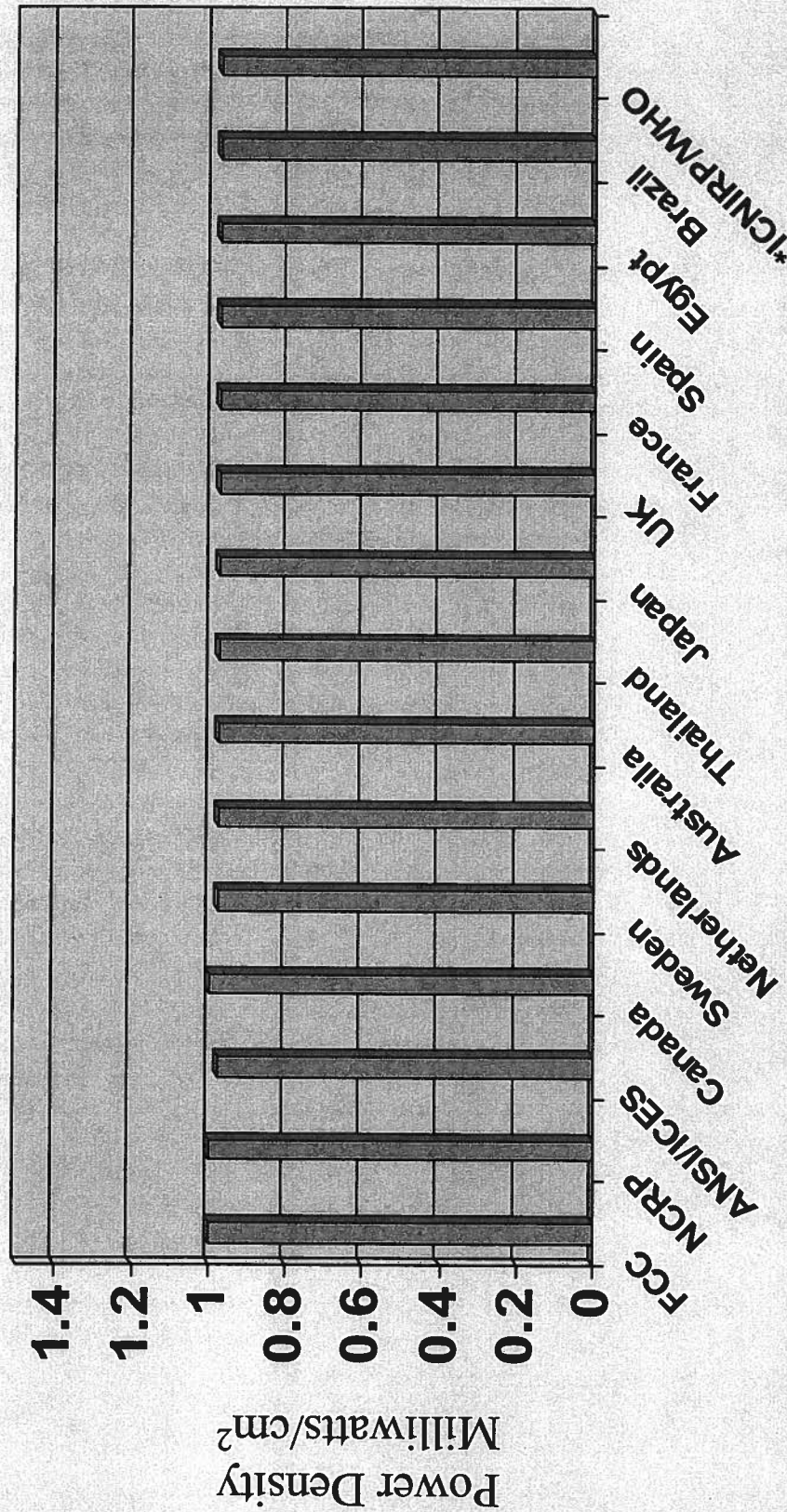
Sincerely,



Jerrold T. Bushberg Ph.D., DABMP, DABSNM  
Diplomate, American Board of Medical Physics (DABMP)  
Diplomate, American Board of Science in Nuclear Medicine (DABSNM)

Enclosures: Figures 1-3; Attachments 1, 2; Appendix A, and Statement of Experience.

# National and International Public RF Exposure Standards (PCS @ 1,950 MHz)



\*International Commission on Non-Ionizing Radiation Protection (ICNIRP) Public Safety Exposure Standard. ICNIRP standard recommended by the World Health Organization (WHO). Members of the ICNIRP Scientific Committee were from:

- Australia • Finland • Sweden
- Italy • Sweden
- France • Japan
- Germany • United Kingdom
- Hungary • United States

Figure 1





# Typical Exposure from Various Radio Frequency / Microwave Sources

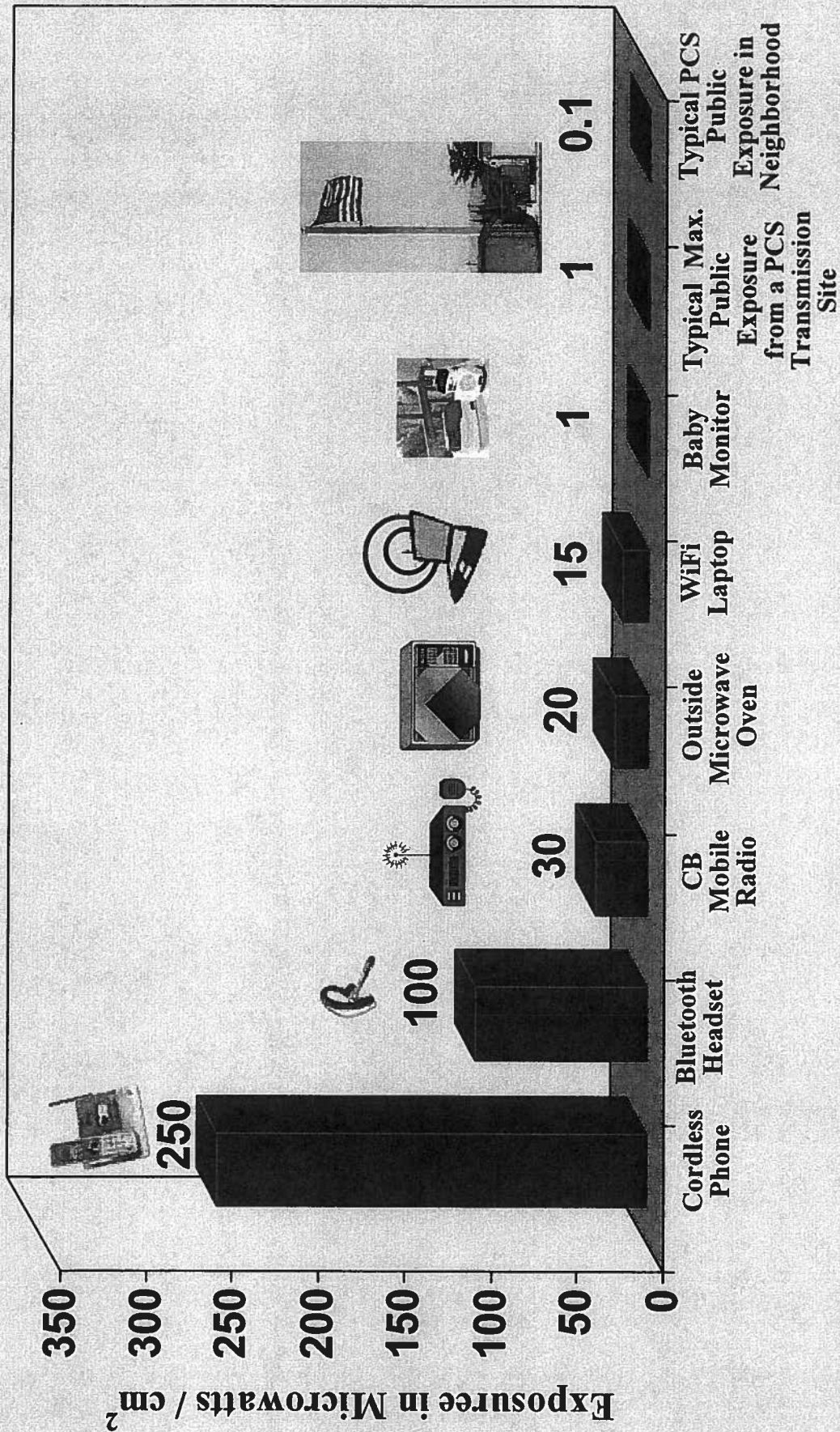


Figure 3

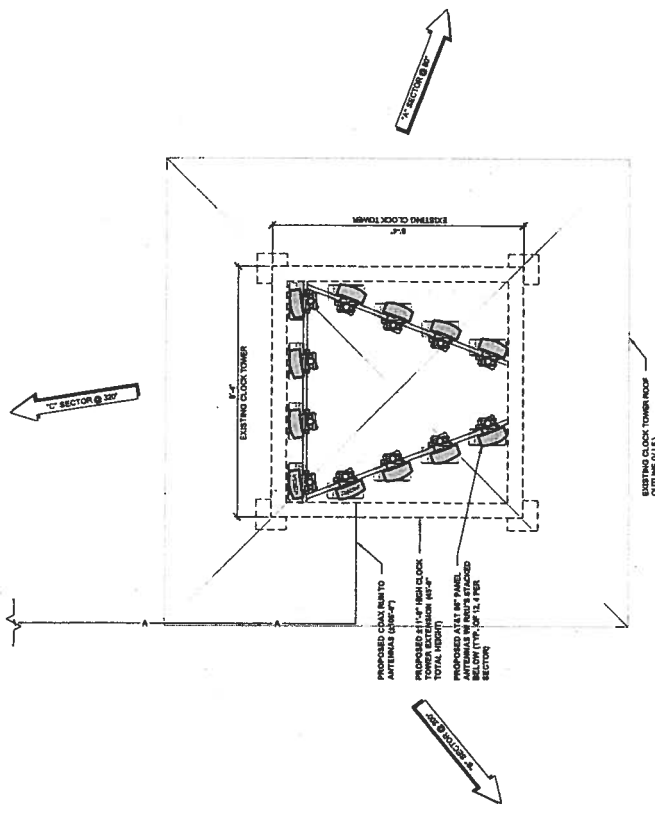
# **Attachment 1**

## **Site Specifications**









**ANTENNA & CABLE SCHEDULE**

SECTOR	ANTENNA MODEL	ANTENNA HEIGHT AGL	COAX LENGTH	COAX SIZE
SECTOR A	30P	31'-2"	86'-2"	7/8" B
SECTOR B	30P	31'-2"	86'-2"	7/8" B
SECTOR C	33P	31'-2"	86'-2"	7/8" B

**ANTENNA LAYOUT**

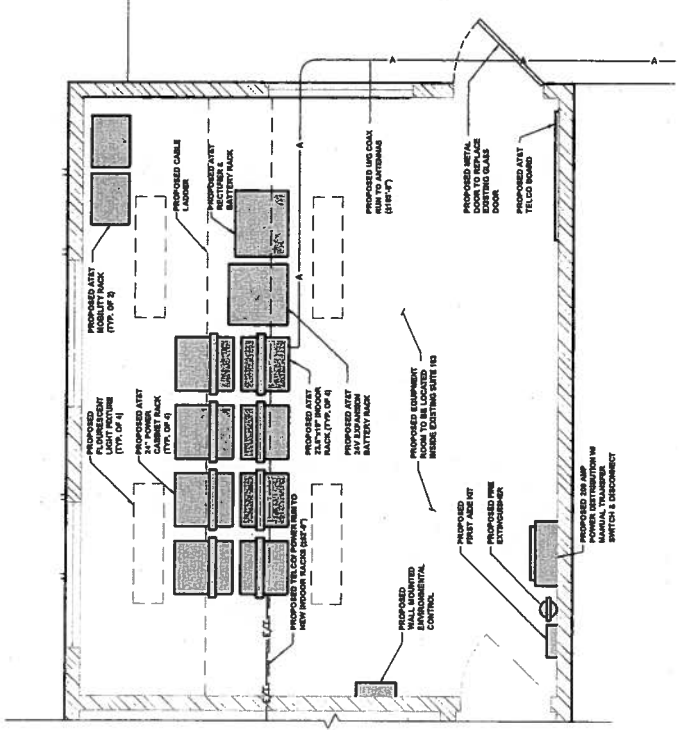
11300 SORRENTO VALLEY ROAD  
SUITE 210  
SAN DIEGO, CA 92121  
www.sdcw.com



5738 PACIFIC CENTER BOULEVARD  
SAN DIEGO, CA 92121

**SD0501**  
**NINTH AVE. OFFICE BLDG.**  
350 W. NINTH AVE.  
ESCONDIDO, CA 92025

**EQUIPMENT ROOM PLAN IN SUITE 103**



SCALE: 1/8" = 1'-0" (AS SHOWN)  
SCALE: 1/4" = 1'-0" (11x17)

**EQUIPMENT ENCLOSURE & ANTENNA PLAN**

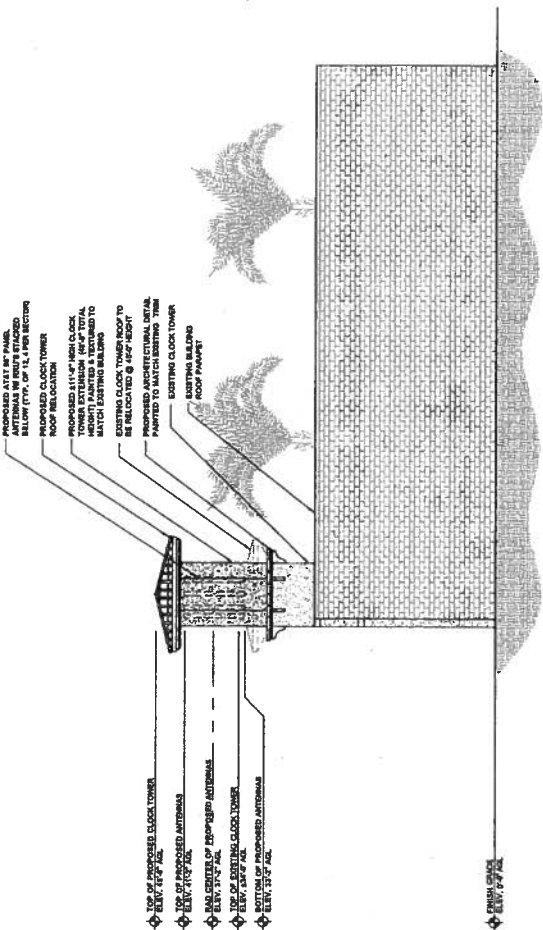
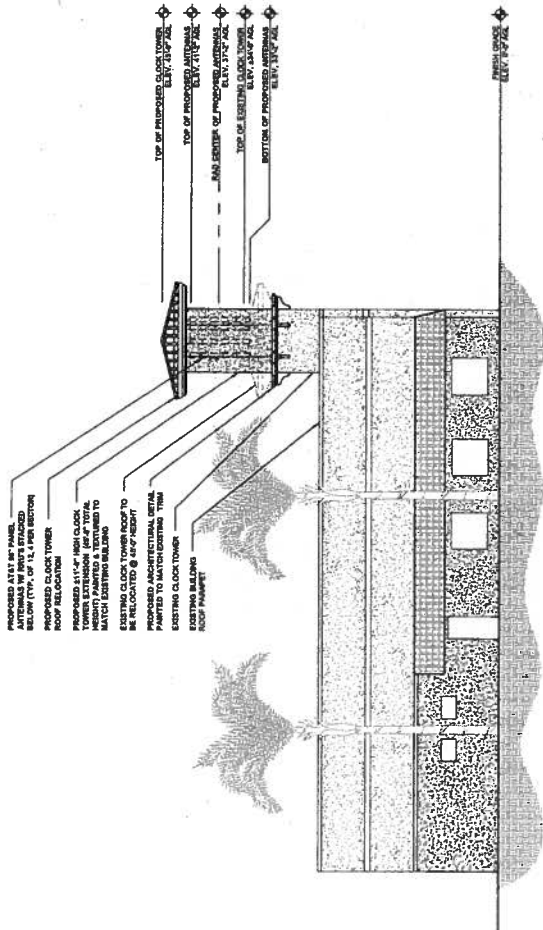
SHEET TITLE: \_\_\_\_\_  
SCALE: \_\_\_\_\_ AS NOTED  
SHEET NUMBER: A-2

REV.	DATE	DESCRIPTION	BY	CHK	APPD
1	10/11/10	ISSUE FOR PERMITS	MM	MM	MM
2	09/21/10	ISSUE FOR PERMITS	MM	MM	MM









**WEST ELEVATION** **1** **EAST ELEVATION** **2**

SCALE: 1/8" = 1'-0" (24X8) (COR. 1/16" = 1'-0" (11X17))

SCALE: 1/8" = 1'-0" (24X8) (COR. 1/16" = 1'-0" (11X17))

**SD0501**  
**NINTH AVE. OFFICE BLDG.**  
 350 W. NINTH AVE.  
 ESCONDIDO, CA 92025

5738 PACIFIC CENTER BOULEVARD  
 SAN DIEGO, CA 92121

**at&t**

11500 SORRENTO VALLEY ROAD  
 SAN DIEGO, CA 92121  
 www.at&t.com

**WIRELESS**

WEST & EAST ELEVATIONS

SCALE: AS NOTED

SHEET NUMBER: A-4

REV	DATE	DESCRIPTION	BY	CHK	APP
1	05/17/08	100% DRAWING	AM	AM	
2	07/11/08	50% DRAWING	AM	AM	



# **Attachment 2**

## **Antenna Specifications**

Kathrein's X-polarized antennas are designed for use in digital polarization diversity systems.

- X-polarized (+45° and -45°).
- UV resistant fiberglass radomes.
- Wideband vector dipole technology.
- DC Grounded metallic parts for impulse suppression.
- RET motor housed inside the radome and field replaceable.

### General specifications:

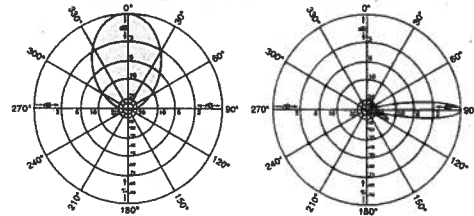
Frequency range	698–894 MHz // 1710–2170 MHz
Impedance	50 ohms
VSWR	<1.5:1
Intermodulation (2x20w)	IM3:< -150 dBc
Polarization	+45° and -45°
Connector	4 x 7-16 DIN female (long neck)
Isolation	intrasystem >30 dB // intersystem >40 dB

See reverse for order information.

### IRT specifications:

Logical interface ex factory <sup>1)</sup>	AISG 1.1
Protocols	AISG 1.1 and 3GPP/AISG 2.0 compliant
Hardware interface <sup>2)</sup>	2 x 8pin connector acc. IEC 60130-9; according to AISG: – IRTin (male): Control / Daisy chain in – IRTout (female): Daisy chain out
Power supply	10–30 V
Power Consumption	<1 W (standby); <8.5 W (motor activated)
Adjustment time (full range)	40 seconds
Adjustment cycles	>50,000
Certification	FCC 15.107 Class B Computing Devices

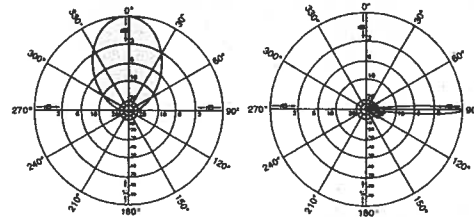
### 698–894 MHz



Horizontal pattern  
±45°- polarization

Vertical pattern  
±45°- polarization  
0°–10° electrical downtilt

### 1710–2170 MHz



Horizontal pattern  
±45°- polarization

Vertical pattern  
±45°- polarization  
0°–10° electrical downtilt



<sup>1)</sup> The protocol of the logical interface can be switched from AISG 1.1 to 3GPP/AISG 2.0 and vice versa with a vendor specific command.

**Please note:** If the Primary of the RETsystem doesn't support the standard of the 'logical interface ex factory', the RCU must be switched to the appropriate standard of the Primary before installation. Please contact Kathrein for further information.

<sup>2)</sup> The tightening torque for fixing the connector must be 0.5 – 1.0 Nm ('hand-tightened'). The connector should be tightened by hand only!

Specifications:	698–806 MHz	824–894 MHz	1710–1755 MHz	1850–1990 MHz	2110–2170 MHz
Gain	16.4 dBi	17 dBi	18 dBi	18.5 dBi	18 dBi
Front-to-back ratio	>30 dB (co-polar) 34 dB (average)	>30 dB (co-polar) 34 dB (average)	>27 dB (co-polar) 34 dB (average)	>27 dB (co-polar) 34 dB (average)	>27 dB (co-polar) 34 dB (average)
Maximum input power per input	500 watts (at 50°C)	500 watts (at 50°C)	300 watts (at 50°C)	300 watts (at 50°C)	300 watts (at 50°C)
+45° and -45° polarization horizontal beamwidth	68° (half-power)	65° (half-power)	63° (half-power)	62° (half-power)	63° (half-power)
+45° and -45° polarization vertical beamwidth	9.5° (half-power)	8.5° (half-power)	5.8° (half-power)	5.8° (half-power)	5.8° (half-power)
Electrical downtilt continuously adjustable	0°–10°	0°–10°	0°–10°	0°–10°	0°–10°
Min sidelobe suppression for first sidelobe above main beam average	0° 5° 10° T 16 16 16 dB 18 20 18 dB	0° 5° 10° T 18 18 16 dB 20 20 20 dB	0° 5° 10° T 18 18 18 dB 20 22 20 dB	0° 5° 10° T 18 18 17 dB 20 22 20 dB	0° 5° 10° T 18 18 18 dB 20 22 20 dB
Cross polar ratio					
Main direction	0°	25 dB (typical)	20 dB (typical)	25 dB (typical)	30 dB (typical)
Sector	±60°	>10 dB, 15 dB (avg)	>10 dB, 12 dB (avg)	>8 dB, 15 dB (avg)	>10 dB, 15 dB (avg)
					>8 dB, 15 dB (avg)



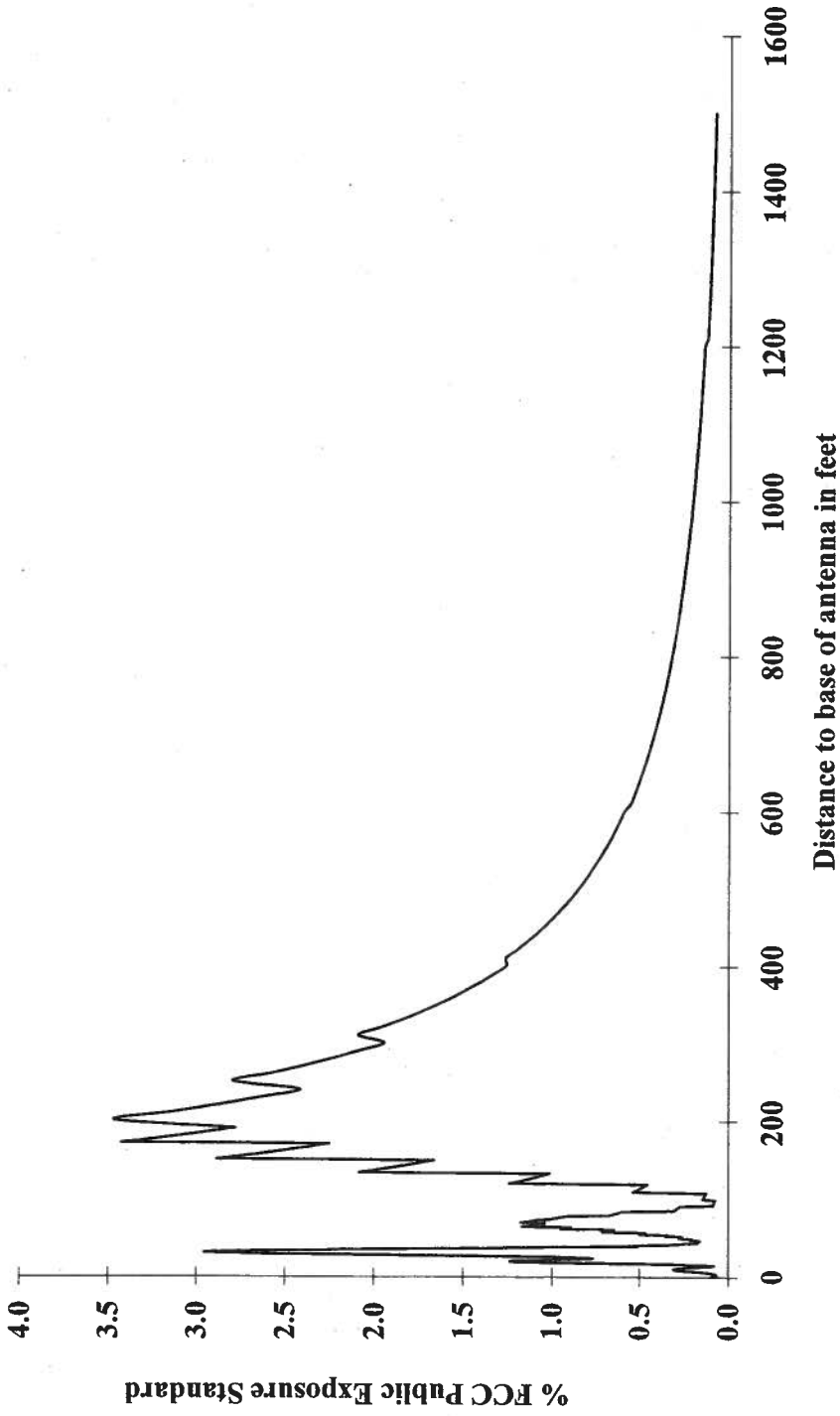
11225-FRO/c  
936.A2713/a



# **Appendix A**

**Kathrien Model # 800-10766**  
**Public Exposure Analysis**  
**Antenna RF Center 37.1 ft AGL**  
**ERP 2,660 Watts (Cellular)**  
**ERP 1,088 Watts (PCS)**

**AT&T RF Exposure at Ground Level  
Antenna Center 16 feet AGL**



## STATEMENT OF EXPERIENCE

**Jerrold Talmadge Bushberg, Ph.D., DABMP, DABSNM**

(800) 760-8414 jrbushberg@hampc.com

Dr. Jerrold Bushberg has performed health and safety analysis for RF & ELF transmissions systems since 1978 and is an expert in both health physics and medical physics. The scientific discipline of Health Physics is devoted to radiation protection, which, among other things, involves providing analysis of radiation exposure conditions, biological effects research, regulations and standards as well as recommendations regarding the use and safety of ionizing and non-ionizing radiation. In addition, Dr. Bushberg has extensive experience and lectures on several related topics including medical physics, radiation protection, (ionizing and non-ionizing), radiation biology, the science of risk assessment and effective risk communication in the public sector.

Dr. Bushberg's doctoral dissertation at Purdue University was on various aspects of the biological effects of microwave radiation. He has maintained a strong professional involvement in this subject and has served as consultant or appeared as an expert witness on this subject to a wide variety of organizations/institutions including, local governments, school districts, city planning departments, telecommunications companies, the California Public Utilities Commission, national news organizations, and the U.S. Congress. In addition, his consultation services have included detailed computer based modeling of RF exposures as well as on-site safety inspections and RF & ELF environmental field measurements of numerous transmission facilities in order to determine their compliance with FCC and other safety regulations. The consultation services provided by Dr. Bushberg are based on his professional judgement as an independent scientist, however they are not intended to necessarily represent the views of any other organization.

Dr. Bushberg is a member of the main scientific body of International Committee on Electromagnetic Safety (ICES) which reviews and evaluates the scientific literature on the biological effects of non-ionizing electromagnetic radiation and establishes exposure standards. He also serves on the ICES Risk Assessment Working Group that is responsible for evaluating and characterizing the risks of non-ionizing electromagnetic radiation. Dr. Bushberg was appointed and is serving as a member of the main scientific council of the National Council on Radiation Protection and Measurement's (NCRP). He is also a Scientific Vice-President of the NCRP, a member of the NCRP Board of Directors and chairs its committee on Radiation Protection in Medicine. In addition, Dr. Bushberg is a member of NCRP's scientific advisory committee on Non-ionizing Radiation Safety. The NCRP is the nation's preeminent scientific radiation protection organization, chartered by Congress to evaluate and provide expert consultation on a wide variety of radiological health issues. The current FCC RF exposure safety standards are based in large part on the recommendations of the NCRP. Dr. Bushberg was elected to the International Engineering in Medicine and Biology Society Committee on Man and Radiation (COMAR) which has as its primary area of responsibility the examination and interpreting the biological effects of non-ionizing electromagnetic energy and presenting its findings in an authoritative and professional manner. Dr. Bushberg is also a member of a six person U.S. expert delegation to the international scientific community on Scientific and Technical Issues for Mobile Communication Systems established by the Federal Communications Commission.

Dr. Bushberg is a full member of the Bioelectromagnetics Society, the Health Physics Society and the Radiation Research Society. Dr. Bushberg received both a Masters of Science and Ph.D. from the Department of Bionucleonics at Purdue University. Dr. Bushberg is certified by several national professional boards with specific sub-specialty certification in radiation protection and medical physics. Prior to coming to California, Dr. Bushberg was on the faculty of Yale University School of Medicine.