

## PLANNING COMMISSION

Agenda Item No.: G.1  
Date: February 8, 2011

**CASE NUMBER:** PHG 10-0032

**APPLICANT:** AT&T

**LOCATION:** On the southern side of Felicita Avenue, west of Redwood Street, addressed as 777 West Felicita Avenue.

**TYPE OF PROJECT:** Conditional Use Permit

**PROJECT DESCRIPTION:** A modification to a previously approved Conditional Use Permit (2005-89-CUP) to add six panel antennas within an existing cross tower at the Community Reformed Church. The existing six antenna panels located within the tower would be replaced with new antenna panels for a total of twelve antennas to be located within the structure. New equipment cabinets are proposed to be placed within an existing equipment building.

**STAFF RECOMMENDATION:** Approval

**GENERAL PLAN DESIGNATION/TIER:** Suburban; Kit Carson Neighborhood - Tier 1

**ZONING:** R-1-12 (Single-Family Residential, 12,000 SF min. lot size)

### BACKGROUND/SUMMARY OF ISSUES:

The Community Reformed Church has been located on the subject site since 1963 and a Conditional Use Permit and Variance (76-45-CU/V) was approved in 1976 for the installation of a 60-foot-high bell tower adjacent to the church. In 2005, the Planning Commission approved a Conditional Use Permit (Case No. 2005-89-CUP) to remove the existing bell tower and construct a new 60-foot-high cross tower to accommodate six Cingular wireless antenna panels within an enclosed portion of the structure. AT&T (formerly Cingular) has submitted a request to modify the previous CUP to install six additional panel antennas in the tower and replace the older antennas with new panel antennas. The additional antennas are requested to support AT&T's new 4G network.

**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.


Staff feels the issues are as follows:

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

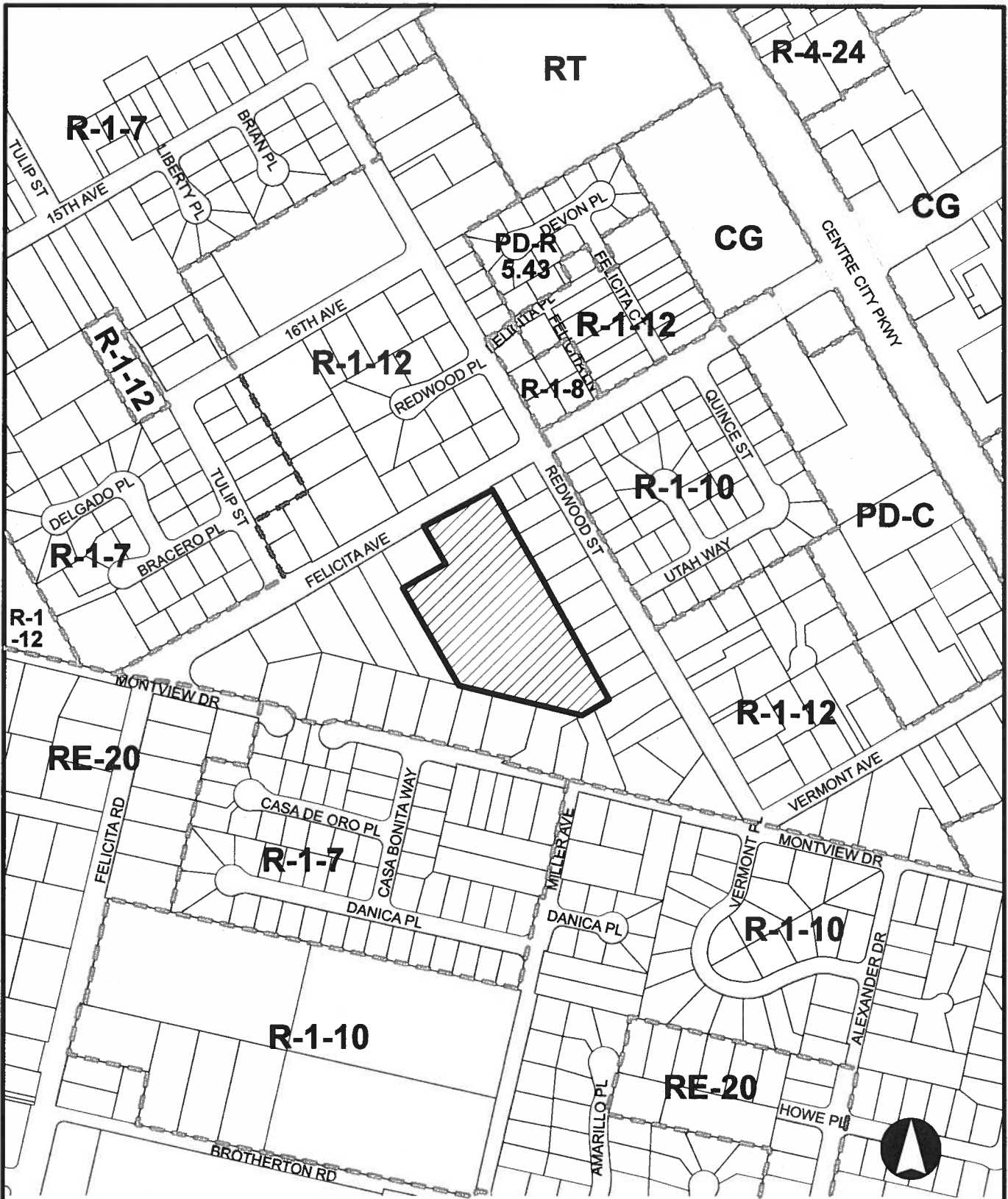
**REASONS FOR STAFF RECOMMENDATION:**

1. The proposed project would be consistent with the Communication Antennas Ordinance since the antenna panels would be located within an existing tower feature that was designed to accommodate wireless facilities, and the proposed equipment cabinets would be placed within an existing enclosure area. The facility would not result in any adverse visual impacts since the antenna panels would be located and completely screened within an existing structure rather than construction of an additional structure; the facility is located on a non-residential site in a residential zone and centrally located on the property; and would be in conformance with FCC emission standards.
2. Staff feels the proposed facility would not result in a potential health hazards to nearby residents since the Radio Frequency (RF) study prepared for the proposed project indicates the facility would be within maximum permissible exposure (MPE) limits and Federal Communication Commission (FCC) standards.

Respectfully submitted,



Jay Paul  
Associate Planner

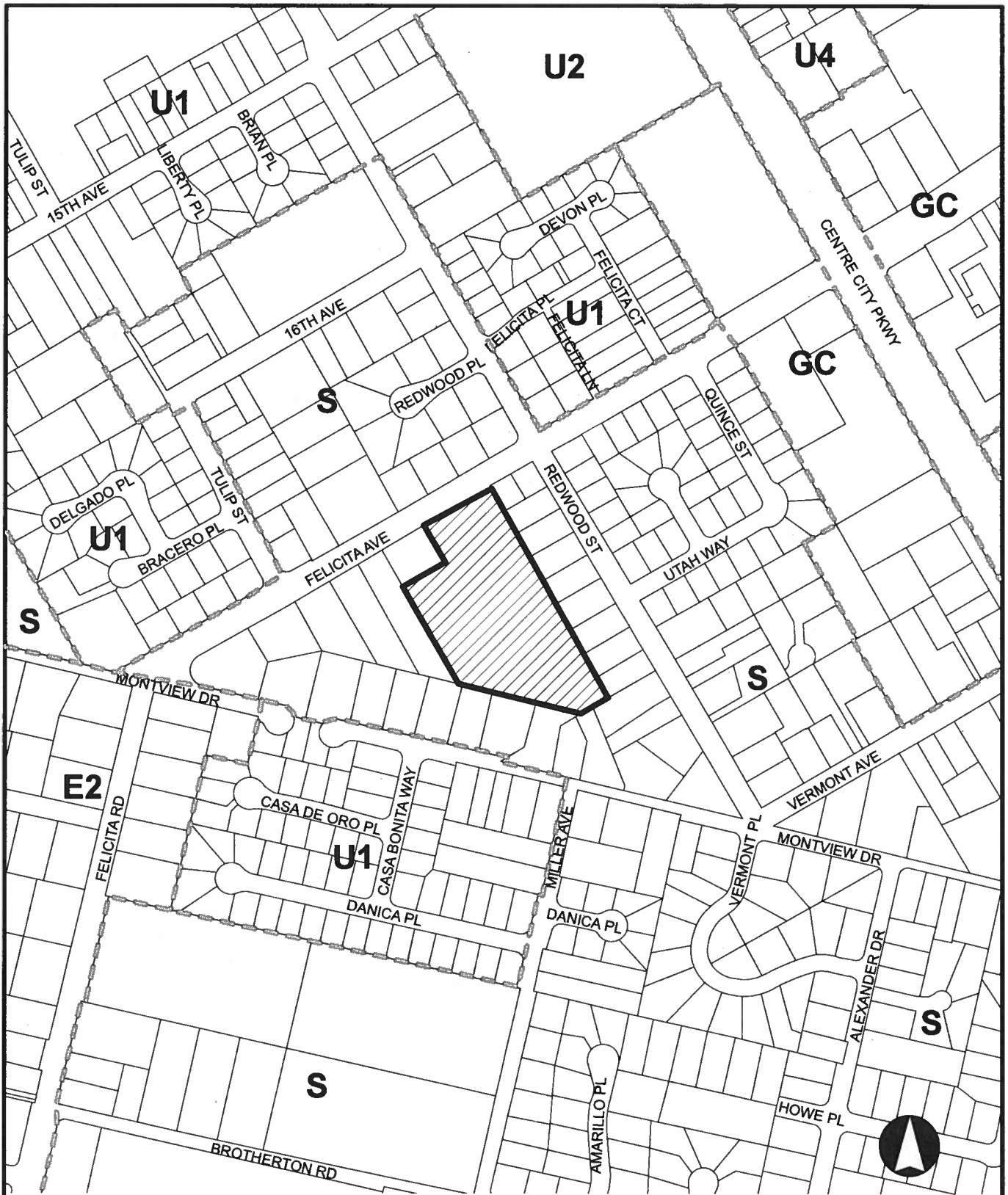


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**PROPOSED PROJECT  
PHG 10-0032**



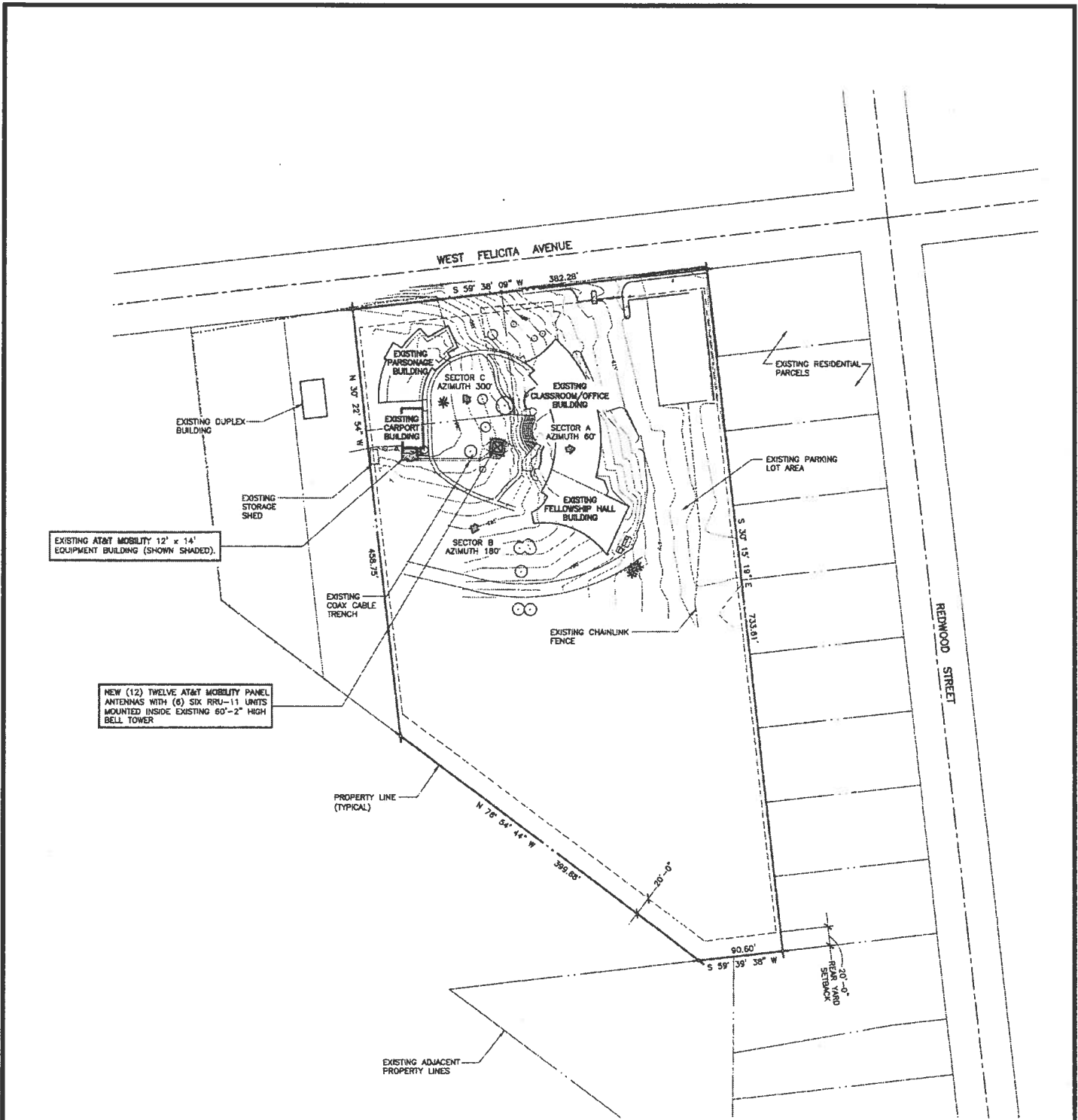
LOCATION/ZONING



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**PROPOSED PROJECT  
PHG 10-0032**



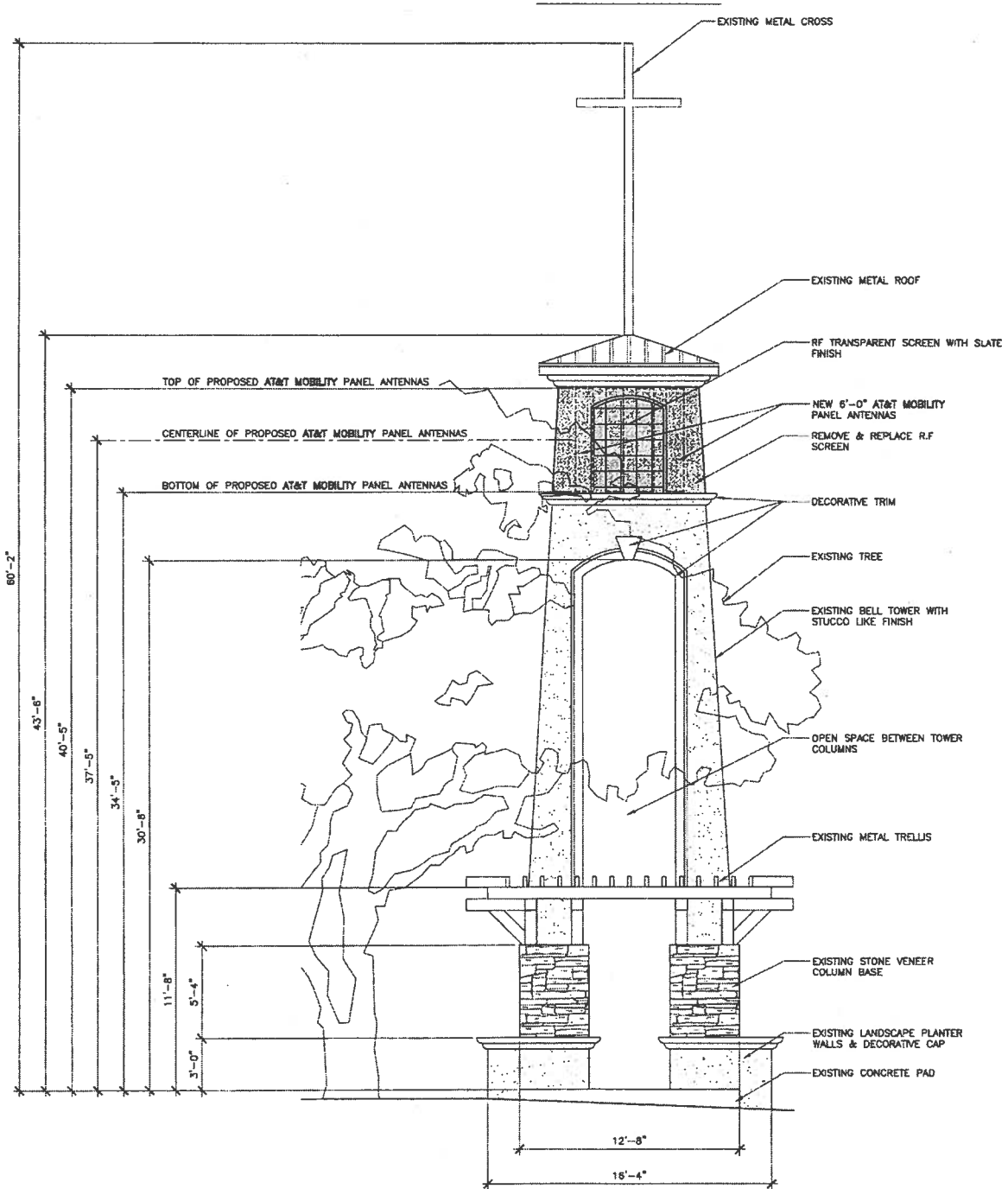


SITE PLAN 

**PROPOSED PROJECT  
PHG 10-0032**



SITE PLAN

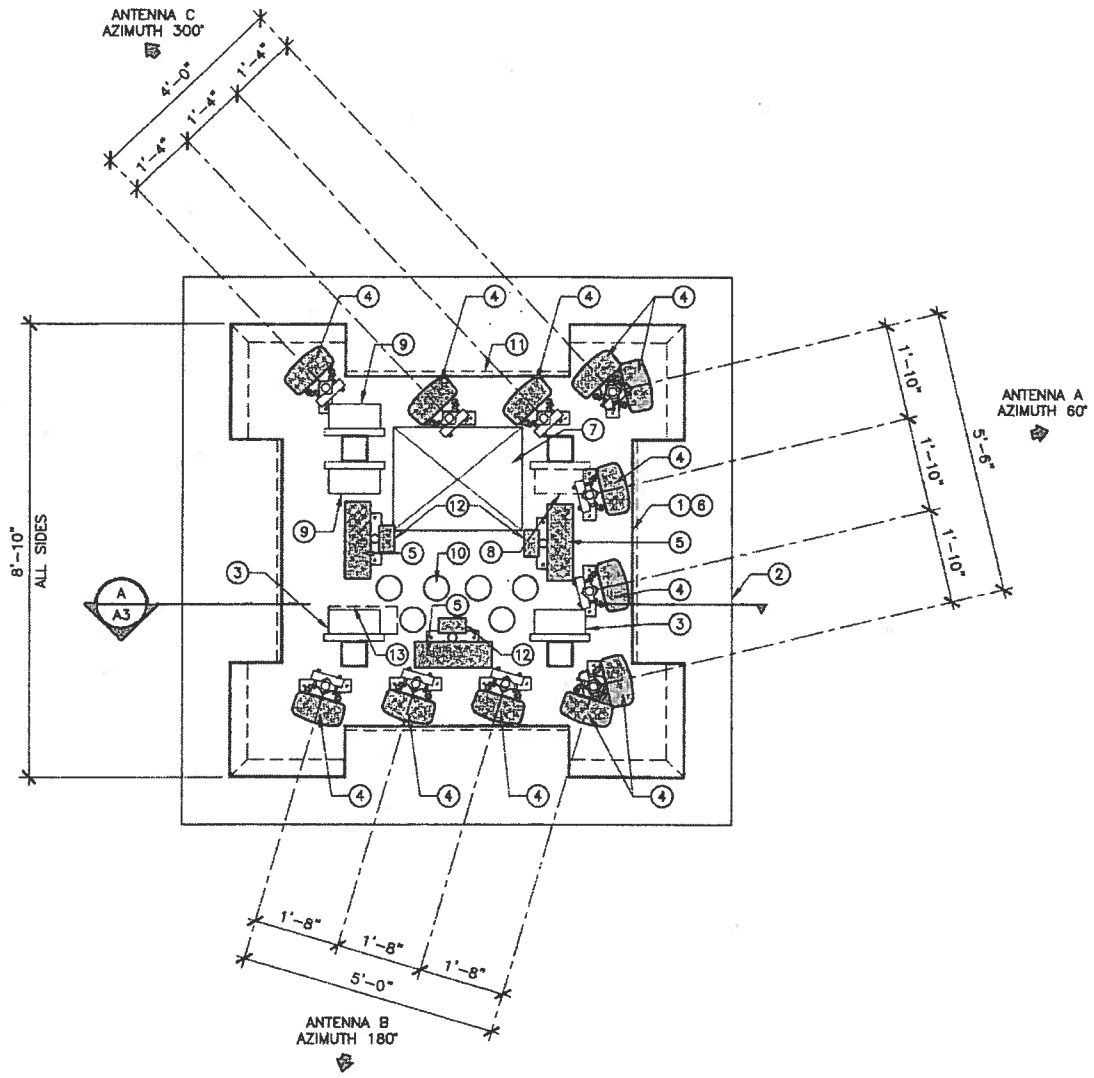


**BELL TOWER ELEVATION**

**PROPOSED PROJECT  
PHG 10-0032**



ELEVATIONS



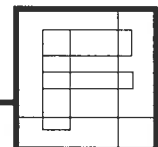
# ANTENNA PLAN



## ANTENNA PLAN NOTES:

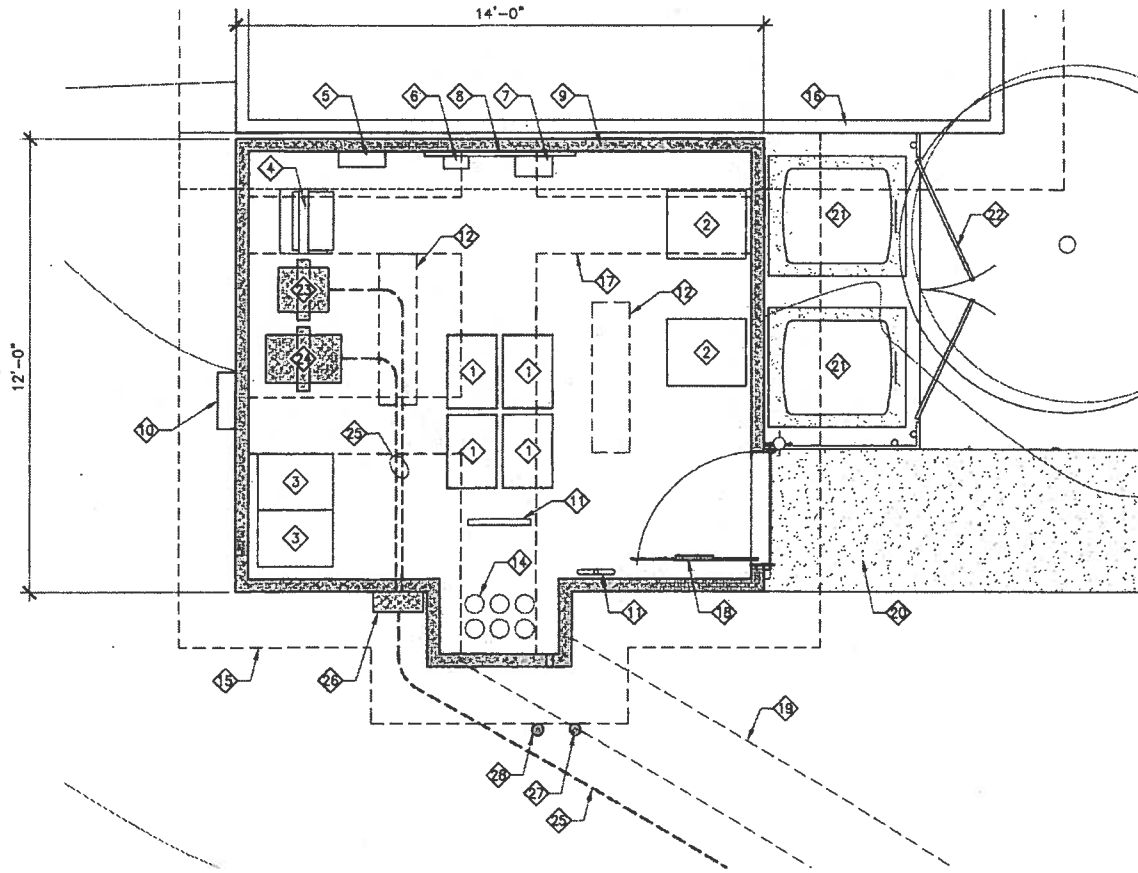
- ① EXISTING 60-2" HIGH BELL TOWER
- ② EXISTING DECORATIVE TRIM BELOW
- ③ EXISTING AT&T MOBILITY TMA UNITS MOUNTED TO TUBE STEEL TO REMAIN
- ④ NEW 6'-0" AT&T MOBILITY PANEL ANTENNAS (SHOWN SHADED)
- ⑤ NEW RRU-11 UNITS MOUNTED TO NEW 2" GALVANIZED PIPES (SHOWN SHADED)
- ⑥ REMOVE & REPLACE EXISTING R.F. TRANSPARENT SCREEN
- ⑦ EXISTING ACCESS HATCH
- ⑧ EXISTING TMA UNITS TO BE RELOCATED (SHOWN DASHED)
- ⑨ EXISTING RELOCATED TMA UNITS
- ⑩ EXISTING COAX CABLE SLEEVES
- ⑪ EXISTING SCREEN PANEL WITH SLATE FINISH
- ⑫ NEW DC-1 BOX (SHOWN SHADED)
- ⑬ NEW FC-12 DISTRIBUTION BOX ATTACHED TO UNDERSIDE OF THIS PLATFORM (SHOWN DASHED)

**PROPOSED PROJECT  
PHG 10-0032**



FLOOR PLAN

# INDOOR EQUIPMENT



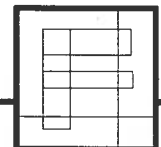
## EQUIPMENT AREA PLAN



### EQUIPMENT FLOOR PLAN KEYED NOTES:

- |  |   |
|--|---|
| ① EXISTING AT&T MOBILITY EQUIPMENT RACKS             | ⑤ EXISTING ROOF OVERHANG (SHOWN DASHED)                   |
| ② EXISTING AT&T MOBILITY BATTERY RACK                | ⑥ EXISTING BUILDING WALL                                  |
| ③ EXISTING AT&T MOBILITY FAN COIL UNITS              | ⑦ EXISTING OVERHEAD CABLE LADDER                          |
| ④ EXISTING AT&T MOBILITY DATA RACK                   | ⑧ EXISTING 3'-0" WIDE STEEL DOOR                          |
| ⑤ EXISTING AT&T MOBILITY ENVIRONMENTAL CONTROL PANEL | ⑨ EXISTING UNDERGROUND COAXIAL CABLE TRENCH               |
| ⑥ EXISTING AT&T MOBILITY SUB PANEL                   | ⑩ EXISTING CONCRETE SIDEWALK                              |
| ⑦ EXISTING AT&T MOBILITY FUSED DISCONNECT            | ⑪ EXISTING CONDENSOR UNITS ON A CONCRETE PAD              |
| ⑧ EXISTING AT&T MOBILITY TELCO BOARD                 | ⑫ EXISTING 6'-0" HIGH WOOD FENCE                          |
| ⑨ EXISTING 2X STUD WALL                              | ⑬ NEW AT&T MOBILITY 19" RADIO RACK 500# (SHOWN SHADED)    |
| ⑩ EXISTING AT&T MOBILITY LUG BOX                     | ⑭ NEW AT&T MOBILITY 23" BATTERY RACK 1600# (SHOWN SHADED) |
| ⑪ EXISTING AT&T MOBILITY MASTER GROUND BUS BAR       | ⑮ NEW 3 1/2" CONDUIT TO ANTENNAS                          |
| ⑫ EXISTING FLUORESCENT LIGHT FIXTURES                | ⑯ NEW JUNCTION BOX  |
| ⑬ EXISTING BROOM & DUSTPAN ON WALLHOOKS              | ⑰ EXISTING GPS ANTENNA                                    |
| ⑭ EXISTING COAXIAL CABLE CONDUIT SLEEVES             | ⑱ NEW GPS ANTENNA   |

**PROPOSED PROJECT  
PHG 10-0032**



FLOOR PLAN

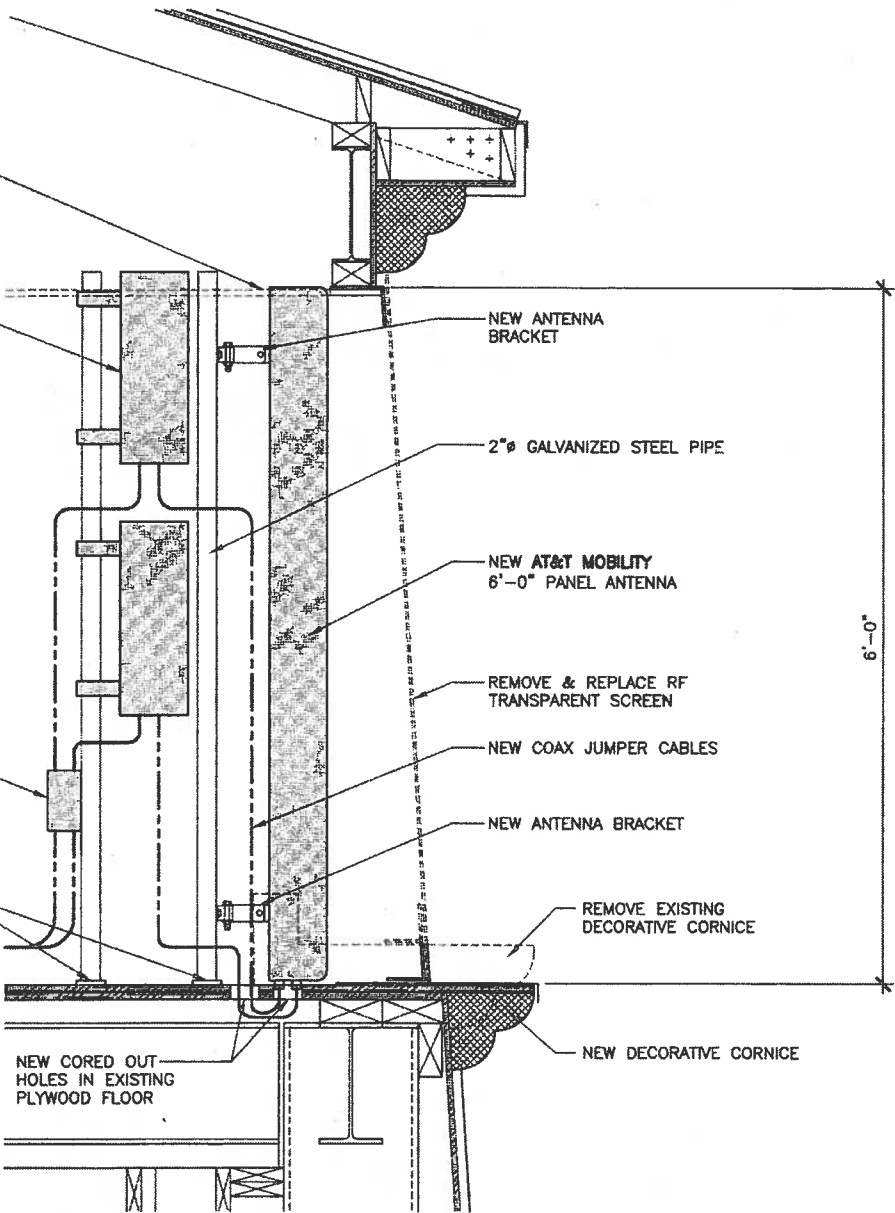


NEW CUT OUT IN GYPSUM BOARD

NEW (2) RRU-11 UNITS MOUNTED TO NEW 2"Ø GALVANIZED PIPES (SHOWN SHADED)

NEW DC-1 BOX (SHOWN SHADED)

NEW 3" X 12" PIPE MOUNTING PLATE



## ANTENNA SECTION A

**PROPOSED PROJECT  
PHG 10-0032**

SECTION

# ANALYSIS

## A. LAND USE COMPATIBILITY/SURROUNDING ZONING

NORTH - R-1-12 zoning (Single-Family Residential, 12,000 SF min. lot size) / Single-family residential homes are located north across Felicita Avenue, which is a Circulation Element Street (84' R-O-W).

SOUTH - R-1-12 zoning (Single-Family Residential, 12,000 SF min. lot size) / Single-family residential homes are located south of the Church site.

EAST - R-1-12 zoning (Single-Family Residential, 12,000 SF min. lot size) / Single-family residential homes are located east of the church site.

WEST - R-1-12 zoning (Single-Family Residential, 12,000 SF min. lot size) / Single-family residential homes are located west of the church site.

## 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.
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 requirements of the California Environmental Quality Act (CEQA) in conformance with Section 15301, "Existing Facilities" and a Notice 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 since the antennas would be secured within an existing building, and generally would not be accessible to the general public. The subject site does not contain any protected or sensitive habitat.
2. In staff's opinion, no significant issues remain unresolved through compliance with code requirements and the recommended conditions of approval. Staff feels the proposed facility would not result in a potential health hazards to nearby residents since the Radio Frequency (RF) study prepared for the proposed project indicates the facility would be within maximum permissible exposure (MPE) limits and Federal Communication Commission (FCC) standards. Public access to the cross tower and panel antennas is restricted and secured.
3. The project will have no impact on fish and wildlife resources as no sensitive or protected habitat occurs within the proposed development area or will be directly impacted/removed by the proposed development.

## D. GENERAL PLAN ANALYSIS:

General Plan - The requested Conditional Use Permit is consistent with the Suburban designation of the General Plan since communication facilities customarily are permitted when conditioned to observe the underlying zone requirements

and any related ordinance restrictions, wireless design requirements, and when compatible with surrounding properties. The project is in substantial compliance with any relevant General Plan criteria and underlying R-1-12 zone standards, as detailed in various sections of the staff report.

## **E. PROJECT ANALYSIS**

### **Appropriateness of the Proposed Design and Whether the Proposed Wireless Facility Would Be in Conformance with the Communication Antennas Ordinance**

AT&T is proposing to add six additional antennas into a 60-foot-high cross tower that was designed to accommodate wireless panels. The tower includes an enclosed structure that was designed to accommodate wireless antenna panels. The enclosed area is large enough to accommodate the additional panel antennas and no expansion of the structure is required. The existing slate panel features on the sides of the tower would be replaced with an RF screening material with a slate finish to match the existing elements. Decorative trim features around the enclosed portion of the tower would be replaced with new trim features to match. The existing six panel antennas would be replaced with new six-foot-high panel antennas.

Staff feels the proposed modification would be in conformance with the Wireless Facilities Guidelines since AT&T would incorporate the additional panel antennas into an existing wireless facility instead of installing a new structure; the appearance of the cross tower would remain the same; the new support equipment would be located within an existing building; and the facility would be in conformance with FCC emission standards. Design Review Board review is not required since this is a completely stealthy design located within an existing structure.

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

Operation of the facility would generate radio frequency energy emissions (RF). A radio frequency power density study was prepared for the project by Telnet, Inc., to determine whether the proposed communication facility complies with the FCC Radio Frequency Safety guidelines. The study assumes a worst case scenario at maximum capacity, and compares the figures to existing standards. The analysis indicated the anticipated MPE limits at ground level (areas of potential General Population Exposure to RF electromagnetic fields) from the proposed AT&T facility is approximately 4.2% of FCC exposure limits. The study contains recommendations regarding safety of anyone that is working on the antennas (Occupational/Controlled Exposure) or could come in contact with the panels (such as shut down procedures during repairs). Appropriate signage would be installed as required by AT&T safety policies and FCC requirements. A copy of the study has been attached with this report.

# SUPPLEMENT TO STAFF REPORT/DETAILS OF REQUEST

## A. PHYSICAL CHARACTERISTICS

The 4.89-acre site is developed with a church and school facility, along with paved parking areas within the southern and eastern areas of the property. The existing buildings (main sanctuary, parsonage, classrooms/office and fellowship hall) are centered around a landscaped open courtyard. An existing 60-foot-high bell tower/cross structure is located in the center of the courtyard. The tower feature currently accommodates an AT&T wireless facility. The project site fronts onto and takes access from Felicita Avenue, which is classified as a Local Collector Street on the City's Circulation Element. There are several mature trees and citrus trees located throughout the site. The site does not contain any native, sensitive or protected habitat.

## B. SUPPLEMENTAL DETAILS OF REQUEST

1. Property Size: 4.89-acres
2. Antenna Structure: 45' high existing tower, 60'-2" high at top of cross. The existing height of the structure would remain the same. The slate finished wall feature on the tower would be replaced with a new RF screening material with a slate finish to match the existing element. A new decorative cornice element would be added at bottom of screens to replace the existing trim.
3. Panels:  
Existing: 6 existing antenna panels located within tower to be replaced with new panel antennas  
Existing antennas: 4'-7" tall, 12" wide  
  
Proposed: 6 additional panel antennas for a total of 12 (3 sectors with 4 panels per sector).  
New antennas: 6' tall, 12" wide
4. Power Density: 4.2% of the FCC General Public Limit for Maximum Public Exposure (MPE) at ground level. The EME study contains recommendations for public and worker safety signage per AT&T policies to ensure appropriate safety measures are taken to mitigate any potential contact/exposure at the rooftop level.
5. Equipment: Two additional equipment racks to be installed in the existing AT&T equipment building. Installation of a GPS antenna.
6. Equipment Building: 175 SF  
Bell Tower: 169 SF
7. Hours of Operation  
Wireless Facility: 24 hours, unmanned

## C. CODE COMPLIANCE ANALYSIS

	<u>Existing</u>	<u>R-1-Zoning Requirements</u>
1. Setbacks		
Front:	155 feet to tower	15 feet
Side:	35 feet on west to equipment bldg. 125 feet on west to tower 233' feet on east to tower	5 feet and 10 feet
Rear:	295 feet to tower	20 feet

**EXHIBIT "A"**  
**FINDINGS OF FACT**  
**PHG 10-0032**

Conditional Use Permit

1. General Plan Residential Policy B2.1 (page II-17) states that residential neighborhoods shall be protected from the encroachment of incompatible activities which may have a negative impact on the residential living environment. Granting this Conditional Use Permit to allow a personal wireless communication facility on the subject property would not conflict with this policy and would be based on sound principles of land use since the use is in response to services required by the community and the facility would enhance communication services in the city without posing a health threat to the surrounding area. The proposed wireless antenna panels would be integrated into an existing telecommunication facility, which would avoid potential visual impacts in conformance with the Communication Antennas Ordinance. The ground equipment would be located within an existing equipment building. The proposed facility would not result in a substantial alteration of the present or planned land use since the project site is developed with a church and contains an existing wireless communication facility. The facility also would not result in a potential health hazard to nearby residents since the facility would be within MPE (maximum permissible exposure) limits as indicated in the radio frequency analysis prepared for the project by Telnet Inc (dated 12-22-2010). The proposed facility would be in compliance with the City's Wireless Facility Guidelines, as discussed in the Planning Commission staff report.
2. The proposed personal wireless communication facility would be located within the R-1-12 zone. Personal wireless communication facilities are permitted within this residential zone pursuant to approval of a Conditional Use Permit (CUP). The proposal would not cause deterioration of bordering land uses or create special problems in the area since the antenna panels would be incorporated into an existing wireless facility, and the location, number and size of the panels have been designed to integrate into the design and scale of the existing facility. The previous conditions related to the hours and noise level of the bells shall continue to apply. The proposed facility would be consistent with the Communication Antennas Ordinance because the facility would be located within an existing communication facility and considered a stealthy design since the panels would be screened by the existing architecture of the tower; the proposed equipment cabinet(s) would be placed within an existing building; the proposed facility is located on a non-residential site in a residential zone; would use an existing facility to mount the panels rather than construction of an additional structure; and would be in conformance with FCC emission standards.
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, 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. The nearest residential properties are located approximately 175 feet to the west of the existing cross tower, and more than 240 feet to the east. Anticipated traffic generated by the project generally would be limited to approximately one routine maintenance trip per month. The antennas would be in conformance with FCC requirements for RF emissions.
4. The proposal is exempt from the requirements of the California Environmental Quality Act (CEQA) in conformance with Section 15301, "Existing Facilities" and a Notice 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 since the antennas would be secured within an existing building, and generally would not be accessible to the general public. The antennas would be in conformance with FCC requirements for RF emissions. The subject site does not contain any protected or sensitive habitat.

## **EXHIBIT "B"**

### **CONDITIONS OF APPROVAL PHG 10-0032**

#### 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. Access for use of heavy fire fighting equipment as required by the Fire Chief shall be provided to the job site at the start of any construction and maintained until all construction is complete. Also, there shall be no stockpiling of combustible materials, and there shall be no foundation inspections given until on-site fire hydrants with adequate fire flow are in service to the satisfaction of the Fire Marshal. Appropriate access shall be provided 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. The developer shall be required to pay all development fees of the City then in effect at the time and in such amounts as may prevail when building permits are issued, including any applicable City Wide Facilities Fees.
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, to the satisfaction of the Planning Division. The new RF screens shall be consistent in design and color with the design of the existing slate features on the tower. The final design shall be clearly identified on the building plans, including exterior finish and texture.
7. All new utility runs shall be placed underground, to the satisfaction of the Planning Division and the Engineering Department, unless as specifically approved by this permit.
8. 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 appropriate 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.
9. 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.
10. All project generated noise shall conform to the City's Noise Ordinance (Ordinance 90-08).
11. If requested by the City of Escondido, AT&T, or any subsequent operator/lease holder of the facilities shall permit co-location 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, and the new facilities can be appropriately integrated into the design of the existing facility.
12. 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.

13. 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. Any required landscaping shall be permanently maintained in a flourishing manner. Any required irrigation shall be maintained in fully operational condition.
14. 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 Department.
15. Any permanent, temporary or stand-by emergency generators must be in conformance with the City's Ordinance and regulations regarding electric generating facilities.
16. 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 after review by the Design Review Board, as may be required.
17. Any proposed private security gates shall provide rapid reliable access by means of a key box to provide immediate access for firefighting purposes, as may be required by the Fire Department.
18. 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.
19. This Conditional Use Permit only is for the installation of AT&T equipment on the existing facility located on the site. The number of antennas approved by this Conditional Use Permit shall be used solely for AT&T and not transferred or subleased to any other carriers unless approved by the City. No other additional carriers shall be allowed to be placed on the existing wireless communication facility, unless a new Conditional Use Permit is approved by the City.
20. Approval of this Conditional Use Permit does not supercede any previous approval(s) or conditions on the site, unless specifically modified herein. All previous conditions for 76-45-CU/V, 81-148-CUP and 2005-89-CUP shall remain in effect, as determined by the Planning Division.
21. 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.
22. A copy of these Conditions of Approval shall be submitted with the submittal of the building plans indicating compliance with all of the Conditions and Details of Request and exhibits contained in the Planning Commission staff report.
23. None of the noise/operational limits for the carillon bells shall be modified by this CUP. All requirements shall be the same as previously approved.
24. 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.
25. 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). The applicant shall 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 check payable to the "San Diego County Clerk" in the amount of \$50.00. In accordance with California Environmental Quality Act (CEQA) section 15062, 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 specified 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 10-0032

**Project Location - Specific:** On the southern side of Felicita Avenue, west of Redwood Street, addressed as 777 West Felicita Avenue.

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

**Description of Project:** A modification to a previously approved Conditional Use Permit to add six panel antennas within an existing 60-foot-high cross tower at the Community Reformed Church. The existing six antenna panels located within the tower would be replaced with new antenna panels for a total of twelve antennas to be located within the structure. New equipment cabinets are proposed to be placed within an existing equipment building.

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

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

Name AT&T (Krystal Patterson, PlanCom, agent for AT&T) Telephone (760) 715-8703  
Address 5738 Pacific Center Blvd., San Diego, CA 92121


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

**Exempt Status:** Categorical Exemption. Section 15301 "Existing Facilities."

**Reasons why project is exempt:**

1. The project only involves a modification to a previously approved Conditional Use Permit (2005-89-CUP) to add six new panel antennas to an existing AT&T wireless communication facility (formerly Cingular). No physical expansion of the site or buildings is proposed.
2. The site is in an area where all public services and facilities are available to allow for the proposed use.
3. The site is within an area that currently is developed with a church facility and related structures/infrastructure. The proposed development/lease area is not in an area that is environmentally sensitive and the project would not have any direct impacts to any sensitive or protected resources since there are no resources located on the site.
4. 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.

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

Signature:   
Jay Paul, Associate Planner

December 27, 2010  
Date

Signed by Lead Agency

Date received for filing at OPR: N/A



# Electromagnetic Energy ("EME") Site Compliance Report



*Prepared for*



## Site Information

**US ID:** 87828  
**Site Name:** Community Reformed Church of Escondido  
**Address:** 777 West Felicita Ave  
Escondido, CA, 92025

Report Date: Dec 22, 2010

M-RFSC: Hector Manmanno



## TABLE OF CONTENT

<b>1</b>	<b>SUMMARY</b> .....	<b>3</b>
1.1	INTRODUCTION .....	3
1.2	STATEMENT OF COMPLIANCE .....	3
1.3	SAFETY RECOMMENDATIONS & SITE COMPLIANCE ACTIONS.....	4
1.3.1	LOCKOUT/TAGOUT PROCEDURES FOR ANTENNA, TRANSMISSION LINE AND POWER AMPLIFIER MAINTENANCE.....	4
1.3.2	LOCKOUT/TAGOUT PROCEDURE, LOCAL SHUTDOWN.....	5
1.3.3	LOCKOUT/TAGOUT PROCEDURE, REMOTE SHUTDOWN.....	5
1.4	SITE DRAWING .....	6
1.5	RF MODELING.....	7
<b>2</b>	<b>ANTENNA INVENTORY</b> .....	<b>11</b>
<b>3</b>	<b>MODELING SUMMARY AND ASSUMPTIONS</b> .....	<b>13</b>
3.1.1	GENERAL MODEL ASSUMPTIONS.....	13
3.1.2	USE OF GENERIC ANTENNAS .....	13
3.1.3	STATISTICAL SUMMARY .....	14
<b>4</b>	<b>ANALYSIS AND COMPUTATION</b> .....	<b>15</b>
4.1	ANALYSIS .....	15
<b>5</b>	<b>FCC LIMITS FOR MPE</b> .....	<b>16</b>
5.1	(A) LIMITS FOR OCCUPATIONAL/CONTROLLED EXPOSURE.....	16
5.2	(B) LIMITS FOR GENERAL POPULATION/UNCONTROLLED EXPOSURE .....	17
5.3	CONTROLLED AND UNCONTROLLED EXPOSURE LIMITS.....	17
<b>6</b>	<b>FCC STANDARD CERTIFICATION</b> .....	<b>18</b>
<b>7</b>	<b>GLOSSARY OF TERMS</b> .....	<b>19</b>



# 1 Summary

## 1.1 Introduction

AT&T has installed RF transmitting antennas at the following location (the "wireless telecommunications facility"):

**Street Address:** 777 West Felicita Ave, Escondido, CA, 92025

**US ID:** 87828

**Latitude / Longitude:** 33.100 / -117.078

Telnet, Inc performed an RF computational analysis of the RF environment surrounding the facilities installed by AT&T at this location. The facility is located on a church bell tower

AT&T is licensed by the Federal Communications Commission ("FCC") to provide wireless communications services. As required by the FCC, wireless system operators perform an assessment of the potential human exposure to radio frequency emissions emanating from transmitting antennas at the site.

Antenna specifications presented herein are based on direct evidence from information from the site manager or building manager, information from the licensees, educated estimates by the field technician or a combination of some or all of these sources.

## 1.2 Statement of Compliance

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards. Per AT&T's corporate policy, the FCC's general population limits are applicable to all rooftop sites which does not apply, regardless of the level of access control.



### 1.3 Safety Recommendations & Site Compliance Actions

Since AT&T contributes more than 5% of the MPE, should this site be non-compliant for any reason, all other operators who contribute greater than 5 % would all be liable to bring the site into compliance.

Areas that require that action in order to meet AT&T corporate policy are listed below. No action means the location is compliant with the company policy.

#### Site Access Locations

Information Sign 1 required (English)  
Information Sign 1 required (Spanish)

#### Alpha Sector Location

RF Caution Sign Required  
Information 2 Sign Required

#### Beta Sector Location

RF Caution Sign Required  
Information 2 Sign Required

#### Gamma Sector Location

RF Caution Sign Required  
Information 2 Sign Required

#### 1.3.1 Lockout/Tagout Procedures for Antenna, Transmission Line and Power Amplifier Maintenance

Whenever anyone is working on an antenna, transmission line, high power amplifier (HPA), or multi-channel power amplifier (MCPA), the transmitter (power amplifier) MUST be turned off. This can be accomplished either locally by flipping a circuit breaker(s) or remotely by command from the NMC/NOC.

The person initiating or requesting the transmitter shutdown is the ONLY person authorized to restore the transmitter to service. This person is responsible for making sure that ALL work has been completed, that ALL cables have been properly reconnected, and that EVERYONE is clear of the work area before the transmitter is reactivated. Generally, this person is considered to be the one actually performing the work. In the case of a contractor working at an active site, the FE/Technician may initiate the request on behalf of the contractor.



### 1.3.2 Lockout/Tagout Procedure, Local Shutdown

After securing permission to shut the transmitter down, the Field Engineer (FE)/Field Technician (FT) will turn off the circuit breaker and verify that the correct transmitter was deactivated. The FE/FT will then place a locking device(s) over the circuit breaker(s) to prevent accidental activation by an unauthorized person and place a TAG on, or in the immediate vicinity of, the circuit breaker(s). The tag should state "Do Not Operate." At the NMC/NOC the same note, including date and time and location, must be entered in the computer or a tag must be placed on the monitor frame in such a manner that the console operator will be made aware that the transmitter can not be activated without permission from the person who initiated the maintenance request.

The FE/FT will turn the key(s) over to the person performing the work. Upon completion of the work, this person performing the task will return the key(s). As a precautionary measure, prior to reactivating the transmitter, the FE/FT MUST verify, to the extent possible, that all connections have been made and that the work area is clear of personnel.

### 1.3.3 Lockout/Tagout Procedure, Remote Shutdown

After requesting the NMC/NOC to shut the transmitter down, the FE/FT will verify that the correct transmitter was deactivated. The FE/FT will then place a TAG on or in the immediate vicinity of transmitter. The tag should state "Do Not Operate." At the NMC/NOC the same note, including date/time, must be entered in the computer or a tag must be placed on the monitor frame in such a manner that the console operator will be made aware that the transmitter can not be activated unless the following conditions are met: 1) The tag has been removed by the person performing the work; and 2) Permission is provided by the person who initiated the maintenance request.

Upon completion of the work, the person performing the task will remove the tag and notify the FE/FT that the work is completed. As a precautionary measure, prior to requesting reactivation of the transmitter, the FE/FT MUST verify, to the extent possible, that all connections have been made and that the work area is clear of personnel.

Note: Even though normal procedures call for a remote shutdown, if it is possible to turn off the circuit breaker without causing a software reload or other similar problems the FE/FT should follow the local shut down procedure.



## 1.4 Site Drawing

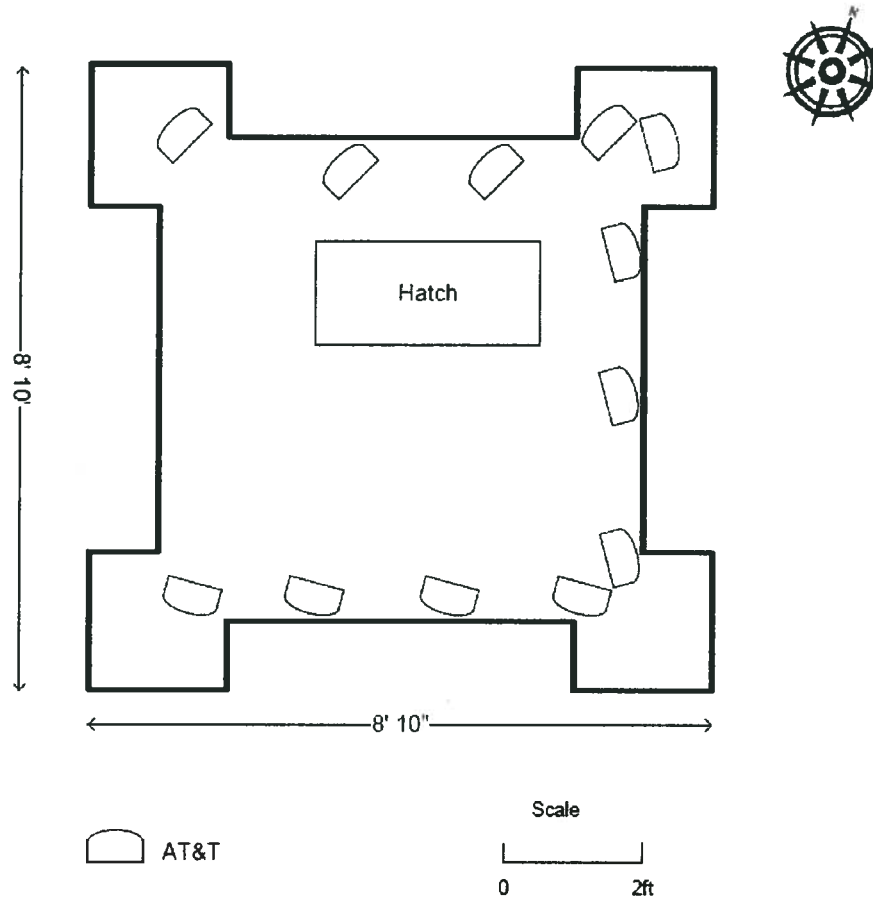
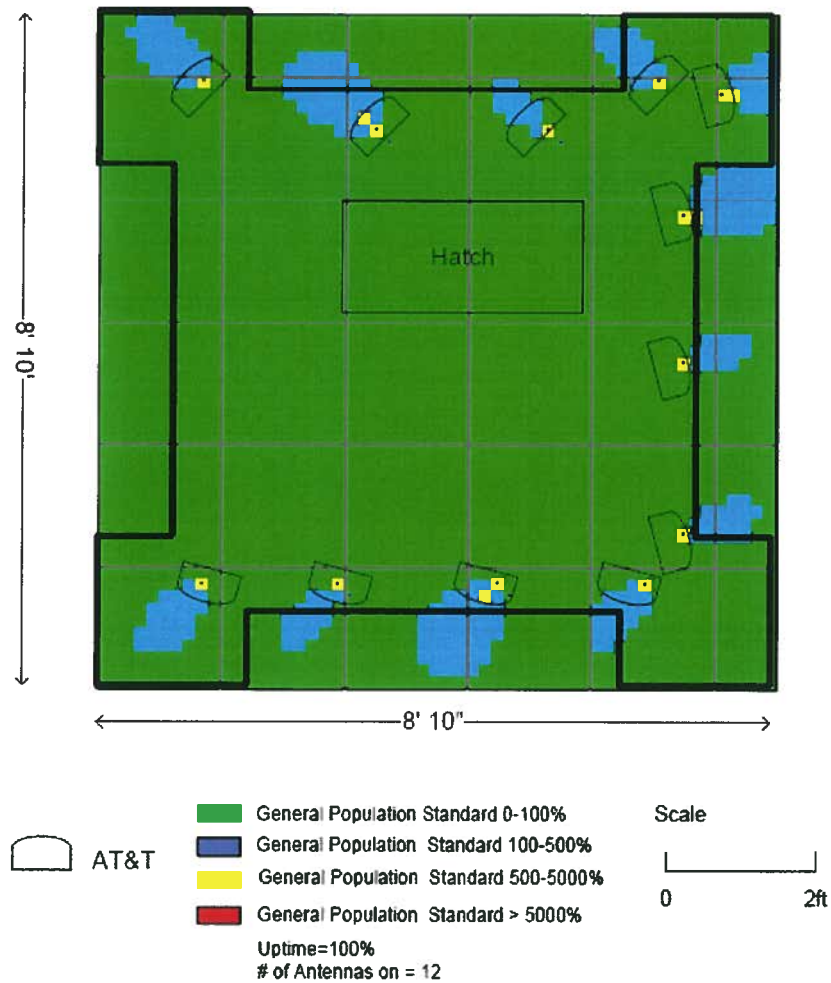


Figure 1

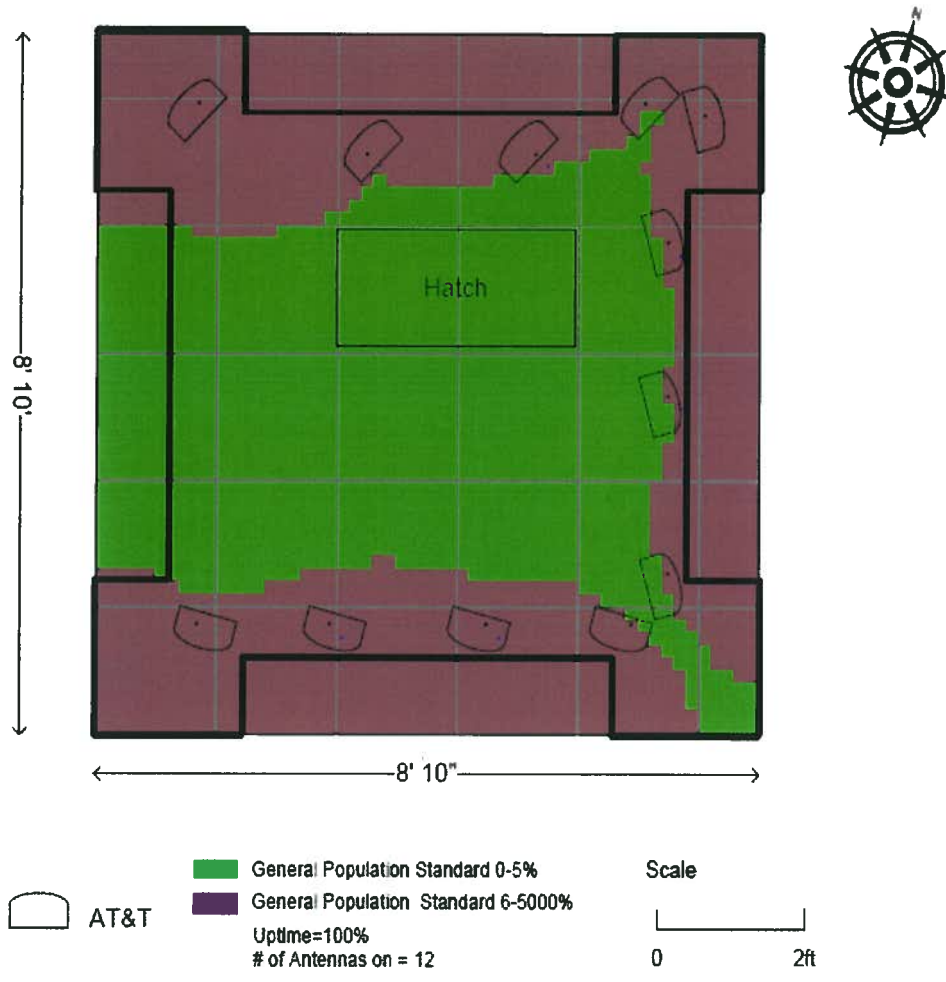


## 1.5 RF Modeling

The modeling calculations assume that the antennas are operating at 100% capacity; that all antenna channels are transmitting simultaneously and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be from the measurement conclusions.

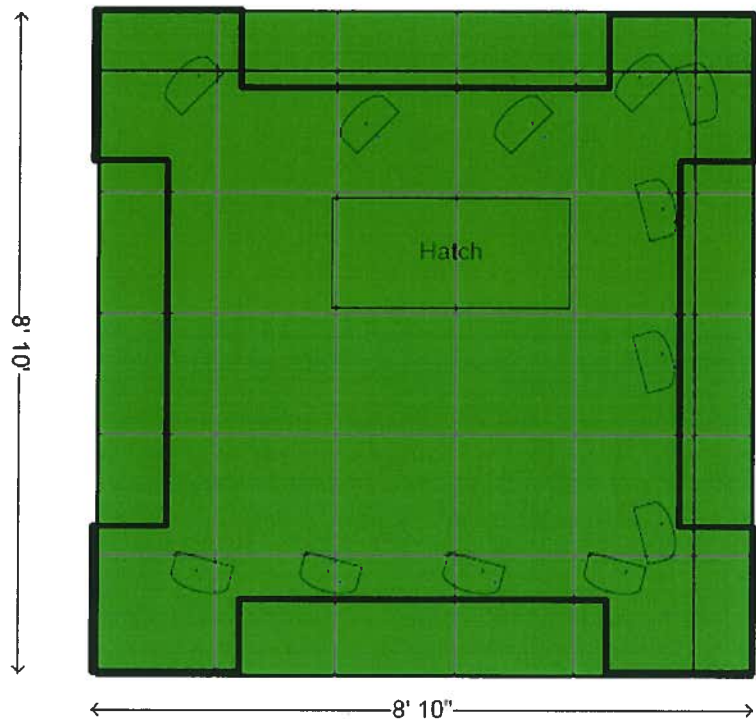


**Figure 2**  
Percent of FCC General Population Exposure Limit @ 33', including proposed LTE



**Figure 3**  
**5% FCC Gneral Population Exposure Limit, @ 33' including proposed LTE**





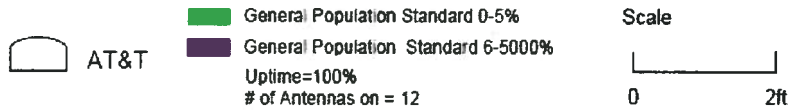
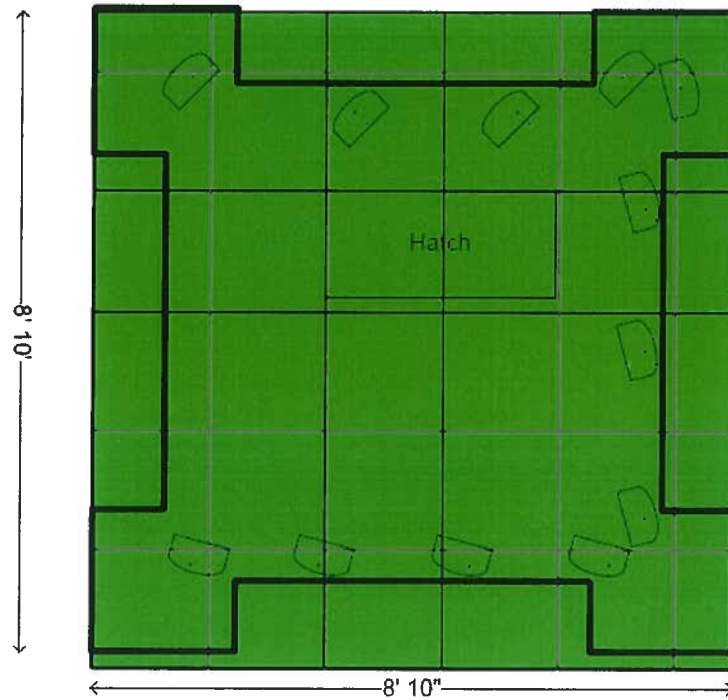
AT&T

	General Population Standard 0-100%
	General Population Standard 100-500%
	General Population Standard 500-5000%
	General Population Standard > 5000%

Uptime=100%  
# of Antennas on = 12

Scale  
0 2ft

**Figure 4**  
**Percent of FCC General Population Exposure Limit @ ground level , including proposed LTE**



**5% FCC Gneral Population Exposure Limit, @ ground level including proposed LTE**



## 2 Antenna Inventory

The Antenna Inventory shows all transmitting antennas on the site (see Table 1). This inventory was verified on site and was used by Telnet to perform software modeling of RF emissions . The inventory coincides with the site diagrams on this report, identifying each antennas location at the site.

For other carriers at the site, the use of "Generic" as an antenna model, or " Unknown" for an operator means the information with regard to the carrier, their FCC license and / or antenna information was not available nor could it be secured while on site. Equipment, antenna models and nominal transmit power were used for modeling, based on past experience with radio service providers.

Relevant administrative and compliance-related information about the antenna site rooftop area is summarized in the table below :

<b>Collocation Status</b>	Not Collocated
<b>Area Classification</b>	General Population



Antenna Number	Operator	Type	TX Freq (MHz)	ERP (Watts)	Gain (dBd)	Model	Azimuth (deg.)	Length (ft)	Horizontal Beamwidth (Deg.)	X	Y	Z
1	AT&T	Panel	716	250	13.1	Katherin 80010765	60	6	68	51	49	34.5
2	AT&T	Panel	850	500	12.1	Powerwave 7750	60	4.5	69	48	39	34.5
3	AT&T	Panel	1900	500	15.4	Katherin 80010765	60	4.5	69	48	39	34.5
4	AT&T	Panel	850	250	12.1	Powerwave 7750	60	4.5	63	48	27	34.5
5	AT&T	Panel	1900	250	15.4	Katherin 80010765	60	4.5	63	48	27	34.5
6	AT&T	Panel	716	250	13.1	Powerwave 7750	60	6	68	48	13	34.5
7	AT&T	Panel	716	250	13.1	Katherin 80010765	180	6	68	45	9	34.5
8	AT&T	Panel	850	500	12.1	Powerwave 7750	180	4.5	69	33	9	34.5
9	AT&T	Panel	1900	500	15.4	Katherin 80010765	180	4.5	69	33	9	34.5
10	AT&T	Panel	850	250	12.1	Powerwave 7750	180	4.5	63	20	9	34.5
11	AT&T	Panel	1900	250	15.4	Katherin 80010765	180	4.5	63	20	9	34.5
12	AT&T	Panel	716	250	13.1	Powerwave 7750	180	6	68	9	9	34.5
13	AT&T	Panel	716	250	13.1	Katherin 80010765	300	6	68	9	50	34.5
14	AT&T	Panel	850	500	12.1	Powerwave 7750	300	4.5	69	23	47	34.5
15	AT&T	Panel	1900	500	15.4	Katherin 80010765	300	4.5	69	23	47	34.5
16	AT&T	Panel	850	250	12.1	Powerwave 7750	300	4.5	63	37	47	34.5
17	AT&T	Panel	1900	250	15.4	Katherin 80010765	300	4.5	63	37	47	34.5
18	AT&T	Panel	716	250	13.1	Powerwave 7750	300	6	68	46	50	34.5

**Table 1  
Antenna Inventory**



## **3 Modeling Summary and Assumptions**

### **3.1.1 General Model Assumptions**

In this report, it is assumed that all antennas are operating at full power at all times. Software modeling was performed for all transmitting antennas located on the site. Telnet, Inc has further assumed a 100% duty cycle and maximum radiated power.

The site has been modeled with these assumptions to show the maximum RF energy density. Telnet Inc believes this to be a worst case analysis, based on best available data.

If at any time power density measurements were to be made, Telnet Inc believes the real time measurements would indicate levels below those shown in this report. By modeling in this way, we have conservatively shown exclusion areas (areas not to be entered without a personal RF monitor, carriers reducing power or performing real time measurements to show real time exposure levels).

### **3.1.2 Use of Generic Antennas**

For the purposes of this report, the use of 'Generic' as an antenna model, or 'Unknown' for a wireless carrier, means that the information about the carrier, their FCC license and/ or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Telnet will use our industry specific knowledge of equipment, antenna models and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, remodeling of the site is recommended. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.



3.1.3 Statistical Summary

Statistical Summary		
%MPE	SQ. FT	%SQ. FT.
	3025	100.00 % of total ROOF Area
0-100	2730	90.25 % of Selected Area
101-500	279	9.22 % of Selected Area
501-5000	16	0.53 % of Selected Area
> 5000	0	0.00 % of Selected Area
Roof Area 3025 sq. ft. Max %MPE 1031.0 % Min %MPE 0.5 % Using Near/Far Spatial Avg Model With FCC 1997 Public Standard		

Table 2 Percent of FCC General Population Exposure Limit, @ 33'

Statistical Summary		
%MPE	SQ. FT	%SQ. FT.
	3025	100.00 % of total ROOF Area
0-5	3025	100.00 % of Selected Area
6-500	0	0.00 % of Selected Area
501-5000	0	0.00 % of Selected Area
> 5000	0	0.00 % of Selected Area
Roof Area 3025 sq. ft. Max %MPE 4.2 % Min %MPE 0.0 % Using Near/Far Spatial Avg Model With FCC 1997 Public Standard		

Table 3 Percent of FCC General Population Exposure Limit, @ ground level



## 4 Analysis and Computation

Based on emission patterns of the antennas at this location most of the energy emitted is spread towards the horizon. This assumes the antennas have a zero downtilt. If a mechanical downtilt other than zero is applied to the antennas then the maximum energy emitted will need to be calculated using the information below.

The following formulas can be used for calculating the power density.

Power density is calculated by dividing the surface area of the sphere or the unit area normal to the direction of the propagation. This information is usually shown in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ), milliwatt per square centimeters ( $\text{mW}/\text{cm}^2$ ), or watts per square meter ( $\text{W}/\text{m}^2$ ).

### 4.1 Analysis

$$S = \frac{(P \times KFact)}{(2\pi R^2)}$$

where :

S = power density ( $\text{mW}/\text{cm}^2$ )

P = total power input to the antenna (mW)

K = antenna correction factor / numeric factor for antenna discrimination

R = straight line distance of the antenna from a 6 ft. human (cm)

h = distance between the roof level and the bottom of the antenna (cm) or the vertical distance from the tip of the antenna to the roof level where a 6 ft. human being is assumed standing directly from the antenna (also equal to R at 0)

MPE% = Calculated exposure level, as a percentage of the FCC MPE limit for continuous exposure of the general population



## 5 FCC Limits for MPE

The FCC guidelines for human exposure to RF electromagnetic fields were derived from the recommendations of two expert organizations, the National Council on Radiation Protection and Measurements ("NCRP") and the Institute of Electrical and Electronics Engineers ("IEEE"). The exposure guidelines are based on thresholds for known adverse effects and they incorporate appropriate margin of safety. The federal health and safety agencies such as: the Environmental Protection Agency ("EPA"), the Food and Drug Administration ("FDA"), the National Institute on Occupational Safety and Health ("NIOSH") and the Occupational Safety and Health Administration ("OSHA") have also been actively involved in monitoring and investigating issues related to RF exposure.

The FCC's MPE limits are based on exposure limits over a wide range of frequencies recommended by the NCRP and the exposure limits developed by the IEEE and adopted by the American National Standards Institute ("ANSI") to replace the 1982 ANSI guidelines. The limits for localized absorption are based on the recommendations of both the ANSI/IEEE and the NCRP. The potential hazard associated with the RF electromagnetic fields is discussed in OET Bulletin No. 56 "Questions and Answers about the Biological Effects and Potential Hazards of RF Electromagnetic Fields". This document can be obtained on the FCC website at <http://www.fcc.gov>.

Sections 7.1, 7.2 and 7.3 represent the FCC limits for both occupational and general population exposures to different radio frequencies:

### 5.1 (A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f <sup>2</sup> )*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6





## 5.2 (B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

\*Plane-wave equivalent power density

NOTE 1: **Occupational/controlled** limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2: **General population/uncontrolled** exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

## 5.3 Controlled and Uncontrolled Exposure Limits

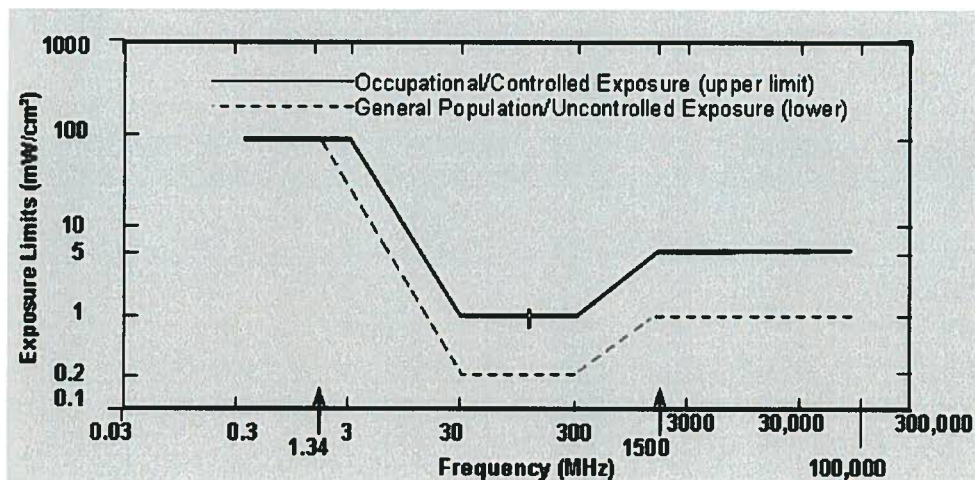


Figure 6



## 6 FCC Standard Certification

This report certifies that the site Community Reformed Church of Escondido – 87828 is in compliance with the FCC rules and regulations under FCC OET Bulletin 65. Signage is recommended at the site as presented in Section 1.3.

Prepared by:  
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RF Engineer  
Telnet Inc.

Date: 12/22/10

Reviewed by:  
Boris Lublinsky  
Project Manager, EMF Specialist  
Telnet Inc.

Date: 12/22/10



## 7 Glossary of Terms

1. *Electromagnetic Field (energy density)* – the electromagnetic energy contained in an infinitesimal volume divided by that volume.
2. *Exposure* – Exposure occurs whenever and wherever a person is subjected to electric, magnetic or electromagnetic fields other than those originating from physiological processes in the body and other natural phenomena.
3. *General Population / Uncontrolled Exposure* – applies to human exposure to RF fields when the general public is exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public always fall under this category when exposure is not employment-related.
4. *Maximum Permissible Exposure (MPE)* – the rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with an acceptable safety factor.
5. *Occupational / Controlled Exposure* – applies to human exposure to RF fields when persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/controlled limits.
6. *Power Density (S)* – Power per unit area normal to the direction of propagation, usually expressed in units of watts per square meter ( $W/m^2$ ) or, for convenience, units such as milliwatts per square centimeter ( $mW/cm^2$ ) or microwatts per square centimeter ( $\mu W/cm^2$ ).
7. *Ionization* – a process by which electrons are stripped from atoms and molecules. This process can produce molecular changes that can lead to damage in biological tissue, includes effect on DNA, the genetic material. This process requires interaction with high levels of electromagnetic energy.
8. *Non-Ionizing radiation* – a type of emission that is not great enough to cause ionization of atom and molecules. "RF and Microwave Emissions" are low-level energy which are not capable of ionization.