ESCONDIDO
City of Choice

PLANNING COMMISSION

Agenda Item No.: G.2
Date: August 13, 2013

CASE NUMBER: PHG 13-0020

APPLICANT: AT&T

LOCATION: On the southwestern corner of 17th Street/Felicita Ave and Encino Drive, addressed as 1725 Encino Drive (APNs 237-020-46 and 237-030-58)

TYPE OF PROJECT: Modification to a Conditional Use Permit

PROJECT DESCRIPTION: A modification to a previously approved Conditional Use Permit (City File No. 2005-40-CUP) for AT&T to replace the six wireless communication antenna panels located on a 35-foot-high simulated tree with twelve new panel antennas.

STAFF RECOMMENDATION: Approval

GENERAL PLAN DESIGNATION/TIER: Estate II

ZONING: RE-20 (Residential Estate, 20,000 SF min. lot size)

BACKGROUND/SUMMARY OF ISSUES:

A Conditional Use Permit (City File No. 2004-24-CUP) was approved in 2004 for Verizon Wireless to install an approximately 35-foot-high simulated tree with six wireless communication panel antennas mounted onto the upper portion of the tree. The use permit was amended in 2005 to allow AT&T (formerly Cingular Wireless) to co-locate up to six panel antennas below the Verizon antennas. An amendment to the Conditional Use Permit was approved by the Planning Commission in 2011 (File No. PHG 11-0011) for AT&T to replace the six existing 4'-7" panel antennas on the faux broadleaf tree with twelve new 6'-4" panel antennas. The applicant submitted building plans to construct the facility, but never finalized the building permit and the amendment to the CUP subsequently expired. Therefore, a new Conditional Use Permit modification is necessary. The additional antennas are requested to support AT&T's 4G network. Any additional electrical data racks, equipment cabinets and other related equipment would be placed within the existing masonry equipment enclosure.

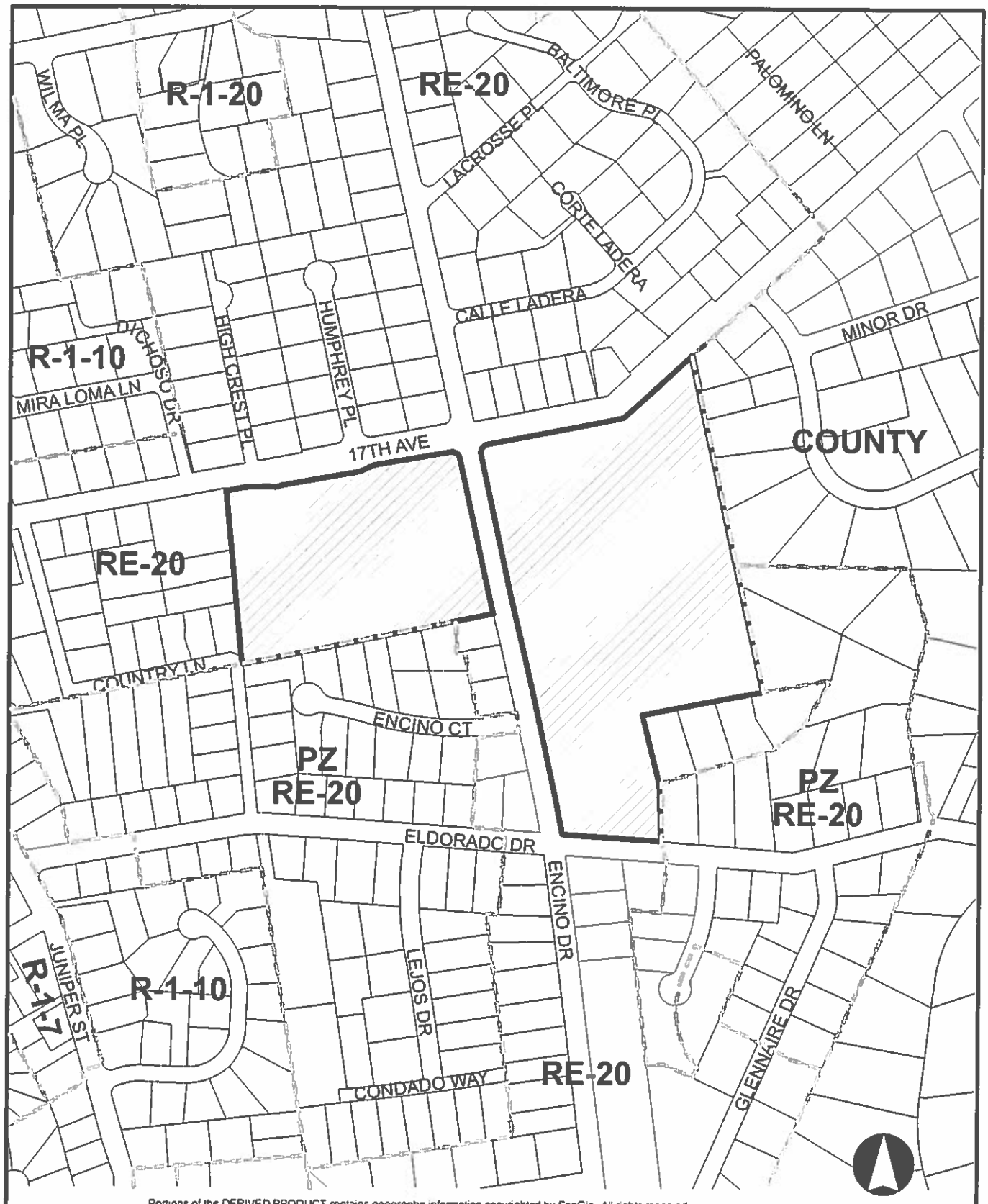
1 Whether the twelve new panel antennas can be appropriately integrated into the existing simulated tree.

REASONS FOR STAFF RECOMMENDATION:

1. The proposed project would be consistent with the Communication Antennas Ordinance since the antenna panels would be located onto an existing simulated tree that was designed to accommodate wireless facilities and is a stealthy design that blends in with the surrounding environment. The additional antennas would not create a visual impact due to its location within the center of a large parking lot that is buffered from adjacent residential development by extensive landscaping. The facility is in conformance with the height requirements for the residential zone and consistent with the height of other mature trees around the site. Additional support equipment would be placed within an existing building that is screened from public view and the facility would be in conformance with FCC emission standards.

Respectfully Submitted,

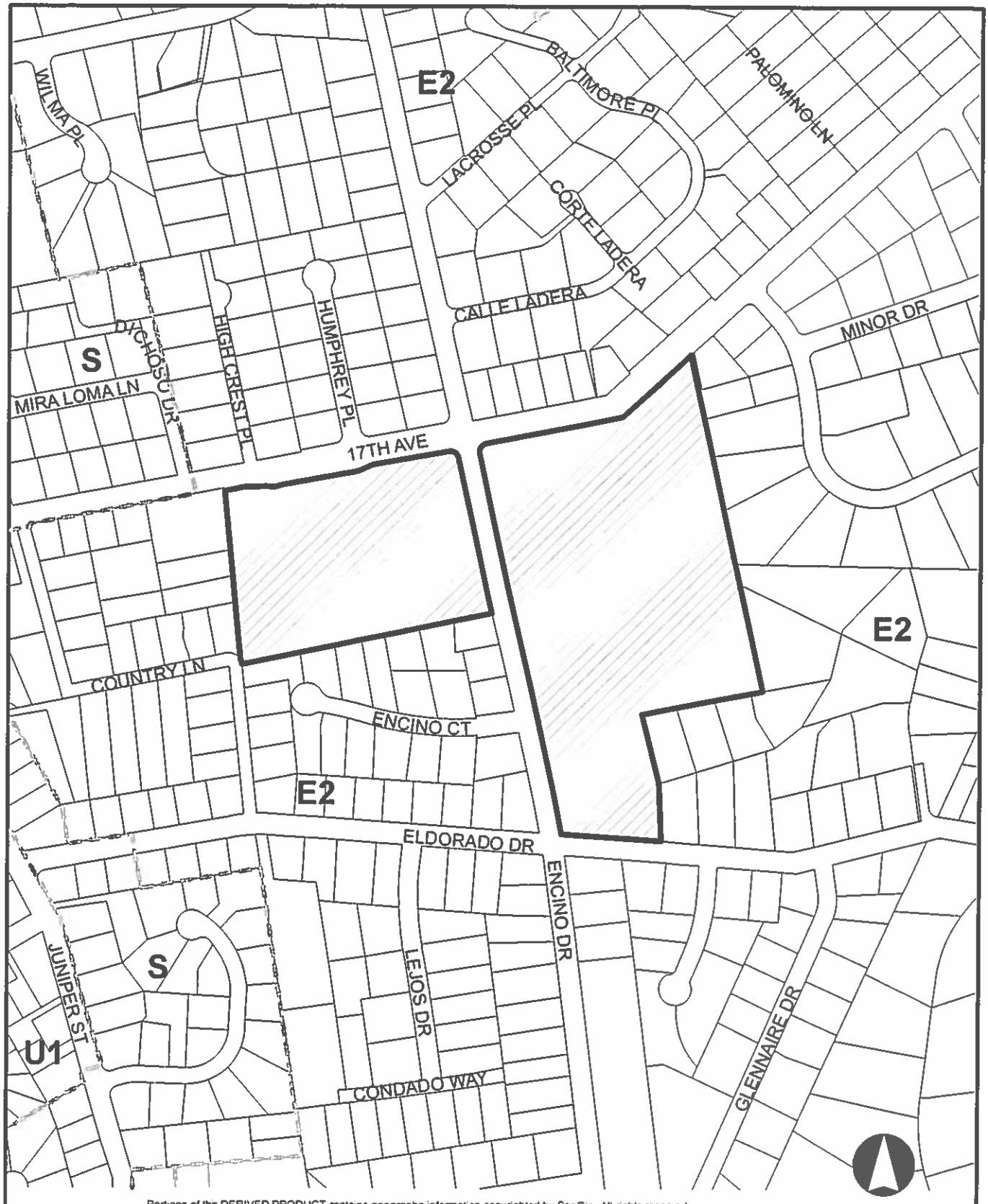
Jay Paul
Associate Planner



PROPOSED PROJECT
PHG 13-0020

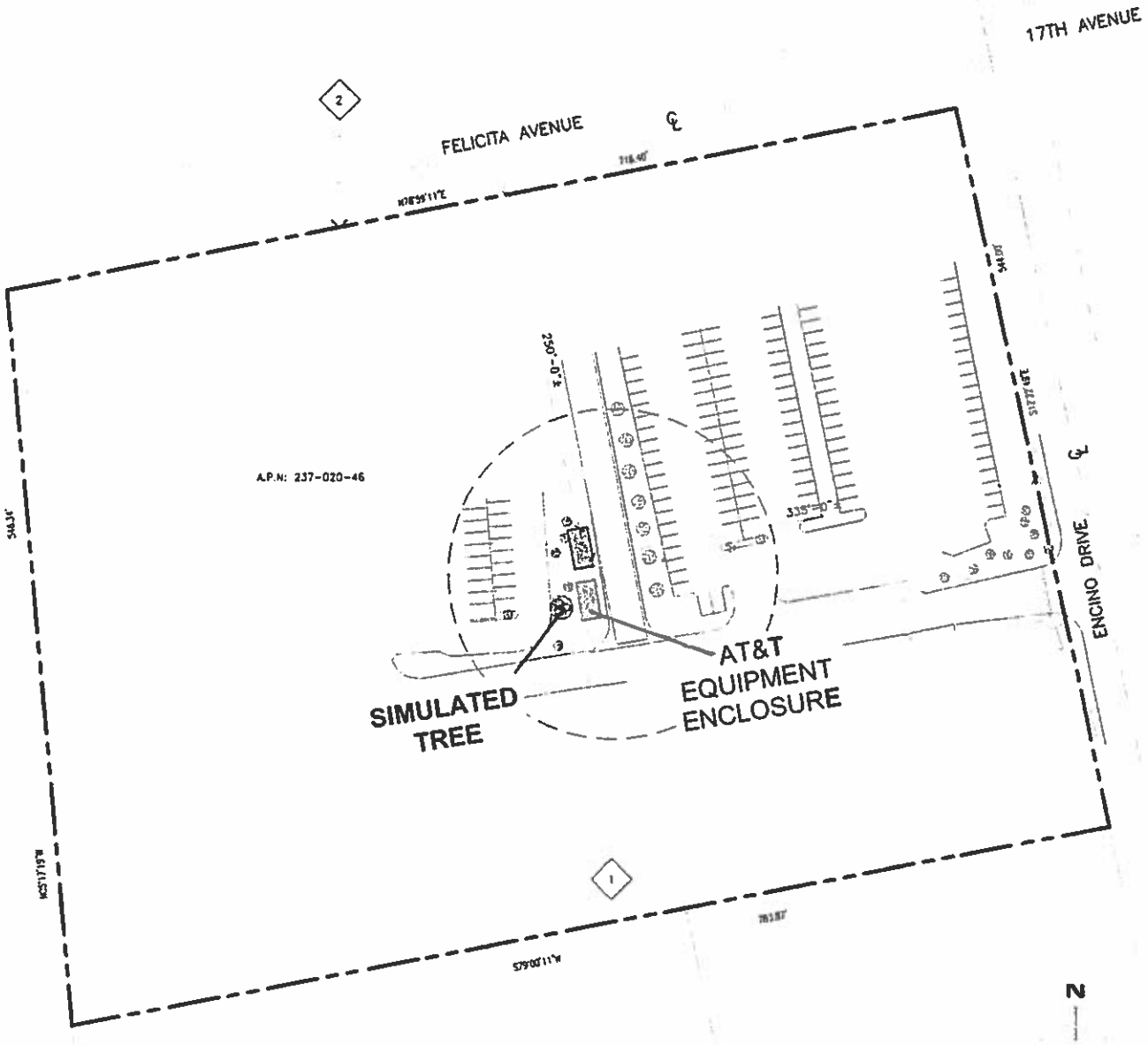
L

LOCATION/ZONING



PROPOSED PROJECT
PHG 13-0020

GP
GENERAL PLAN

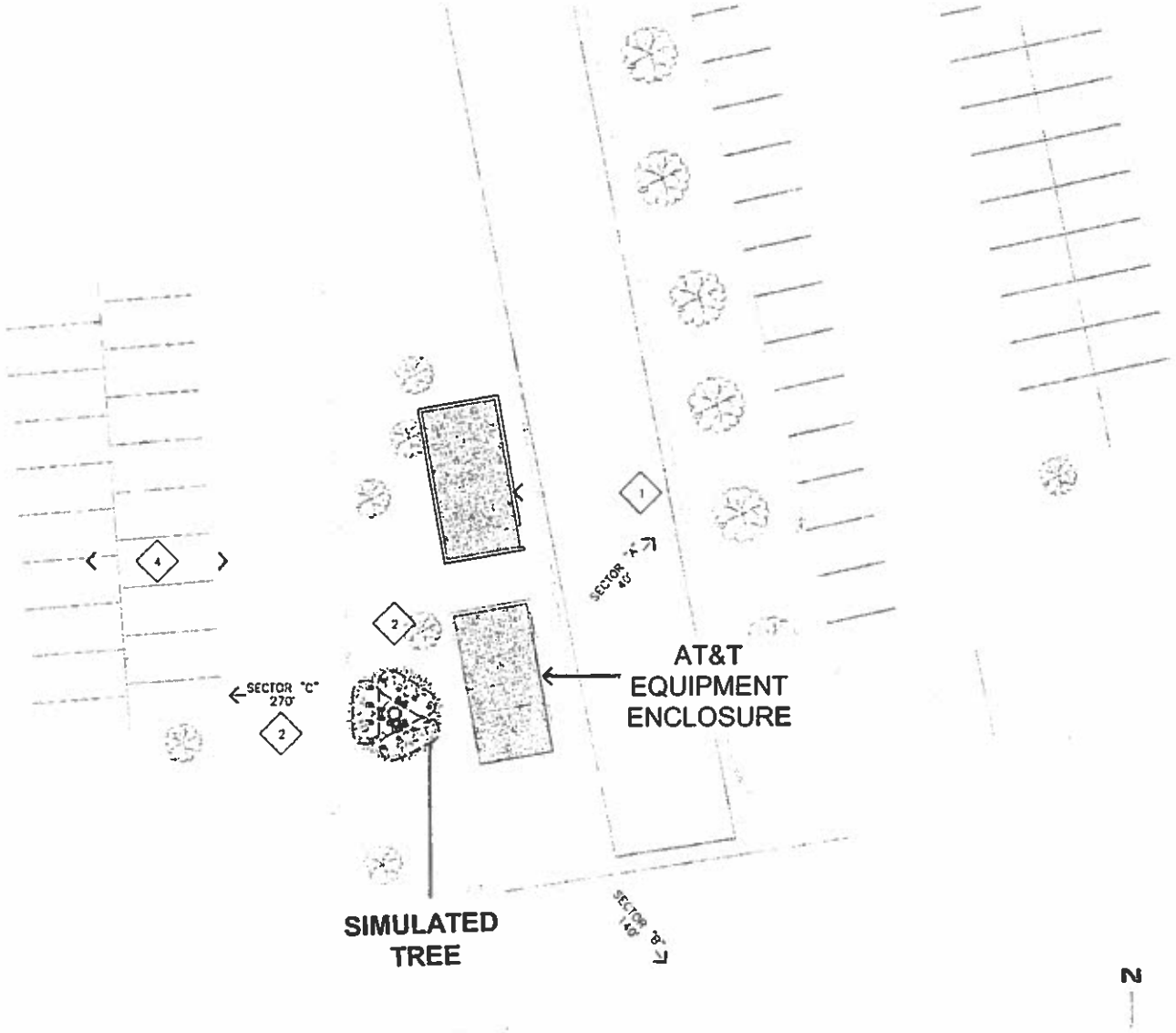


SITE PLAN

PROPOSED PROJECT
PHG 13-0020

S

SITE PLAN



ENLARGED SITE PLAN

PROPOSED PROJECT
PHG 13-0020

S

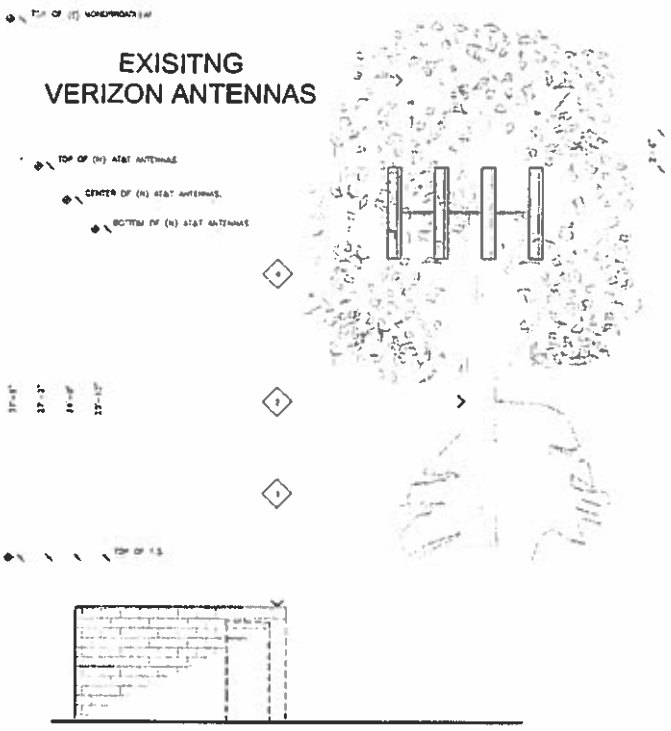
SITE PLAN

PROPOSED PROJECT
PHG 13-0020

ELEVATIONS

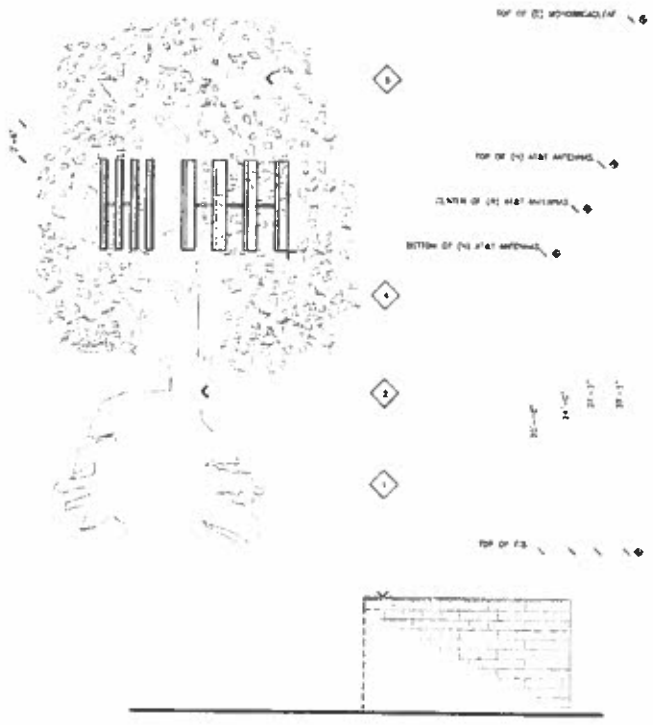
37'-5"

EXISITNG
VERIZON ANTENNAS



PROPOSED
AT&T ANTENNAS

NORTH ELEVATION



SOUTH ELEVATION

PROPOSED PROJECT
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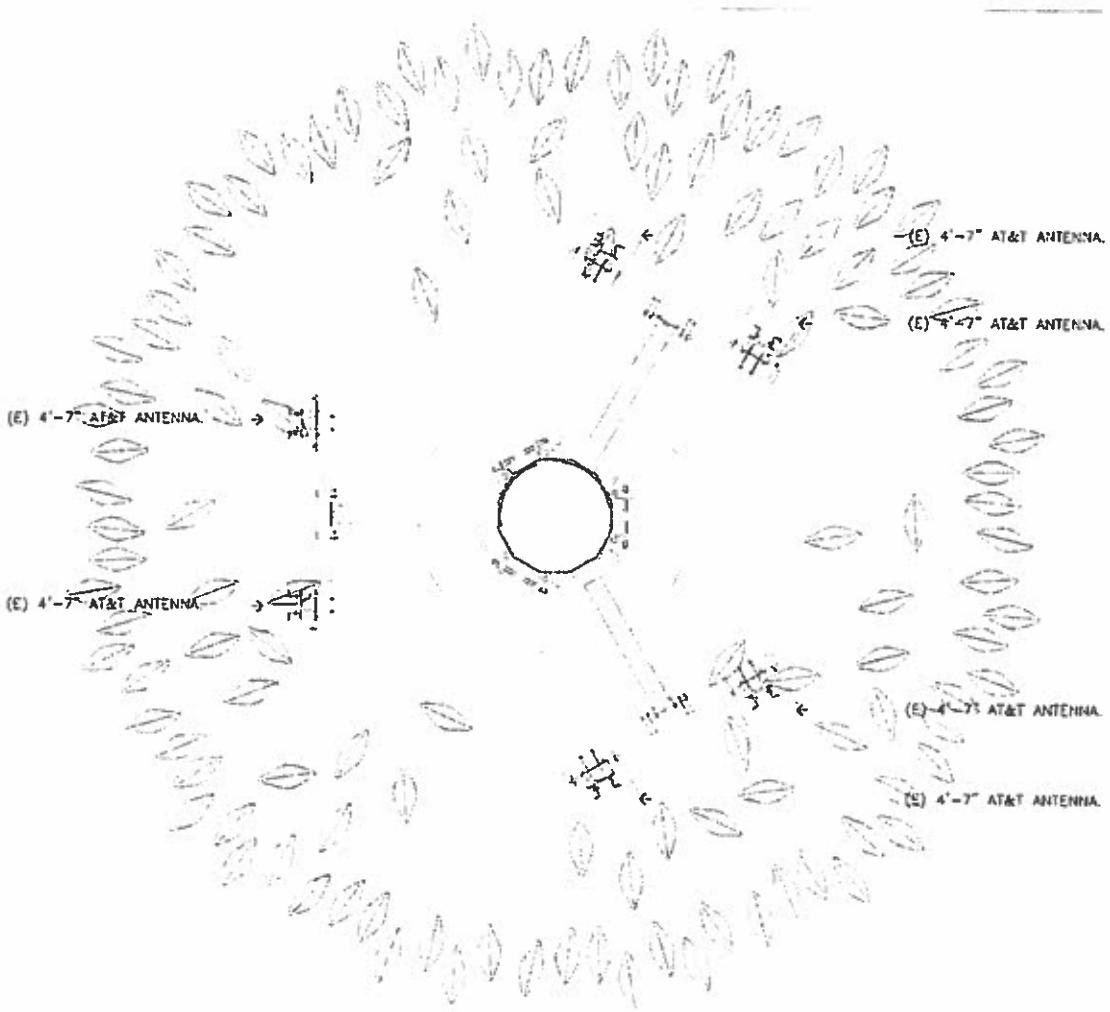
ELEVATIONS

ANTENNA PLAN

PROPOSED PROJECT
PHG 13-0020

PLAN



(E) ANTENNA PLAN

PROPOSED PROJECT
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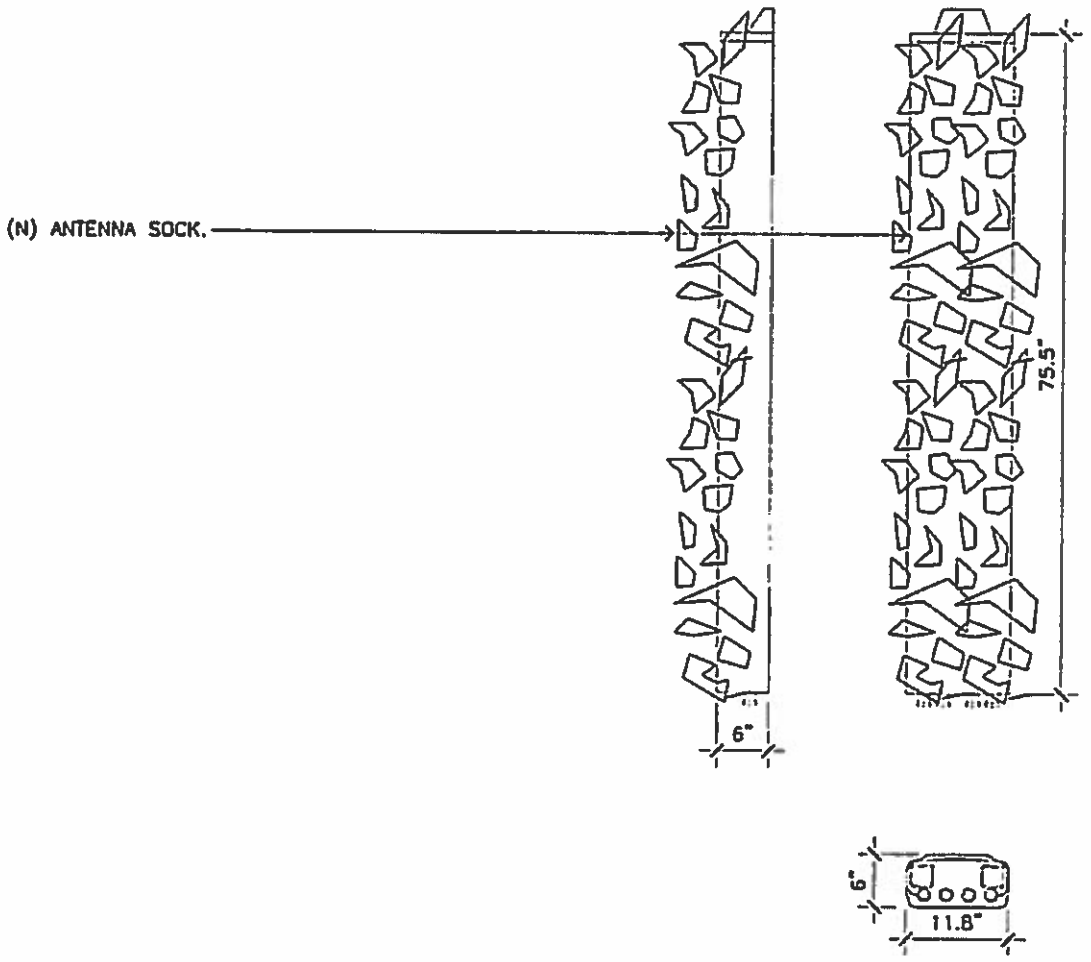
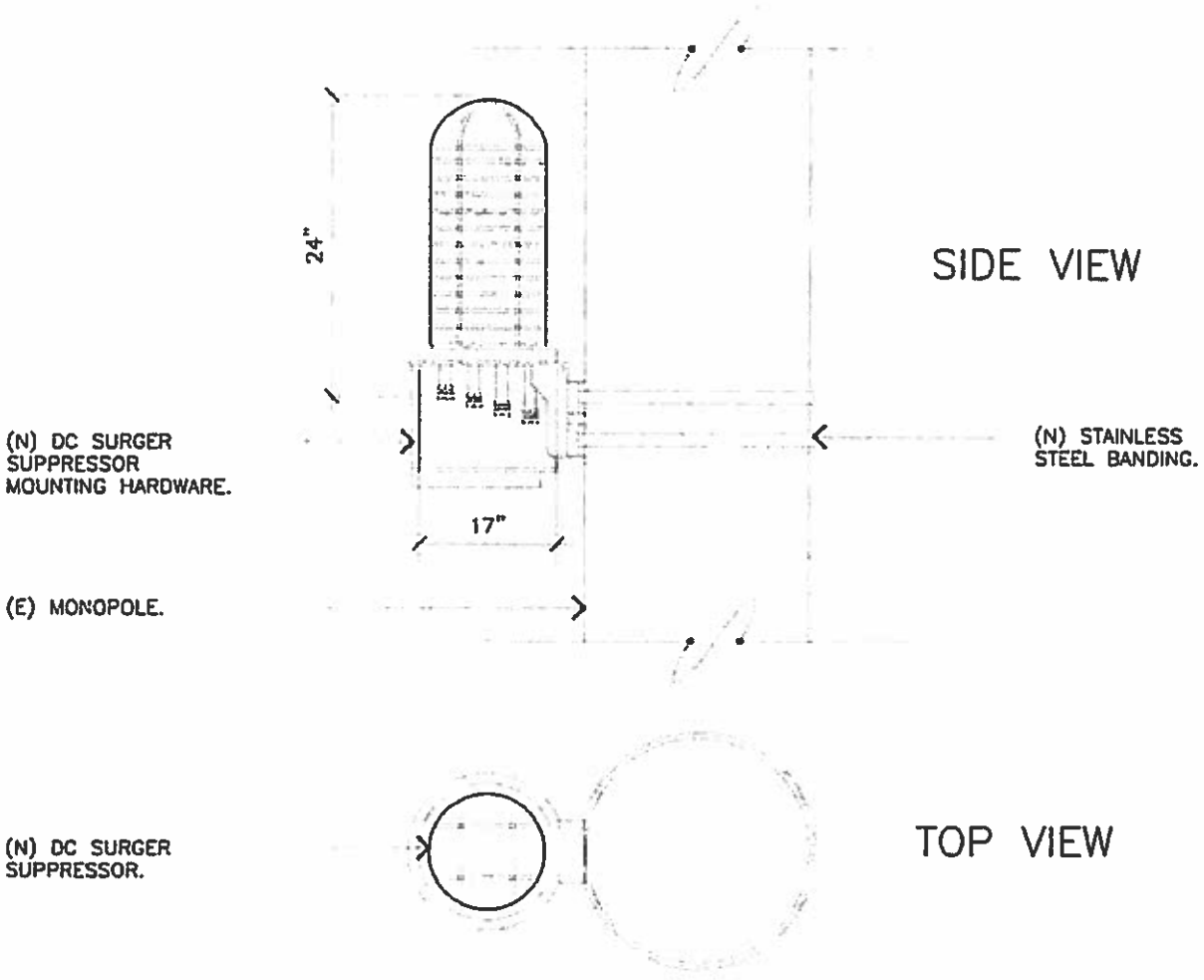
PLAN



(N) ANTENNA SPECIFICATION

PROPOSED PROJECT
PHG 13-0020

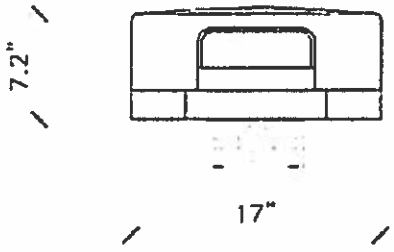
DETAILS



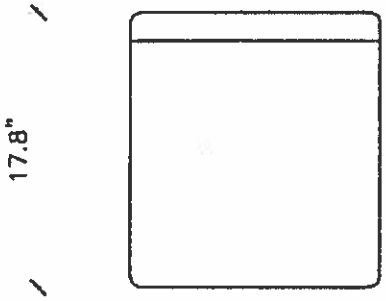
DC SURGE SUPPRESSOR

PROPOSED PROJECT
PHG 13-0020

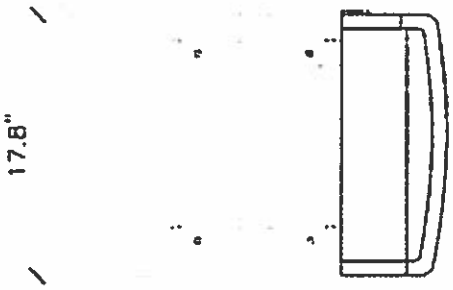
DETAILS



TOP VIEW



FRONT VIEW



SIDE VIEW

RRU CABINET

PROPOSED PROJECT
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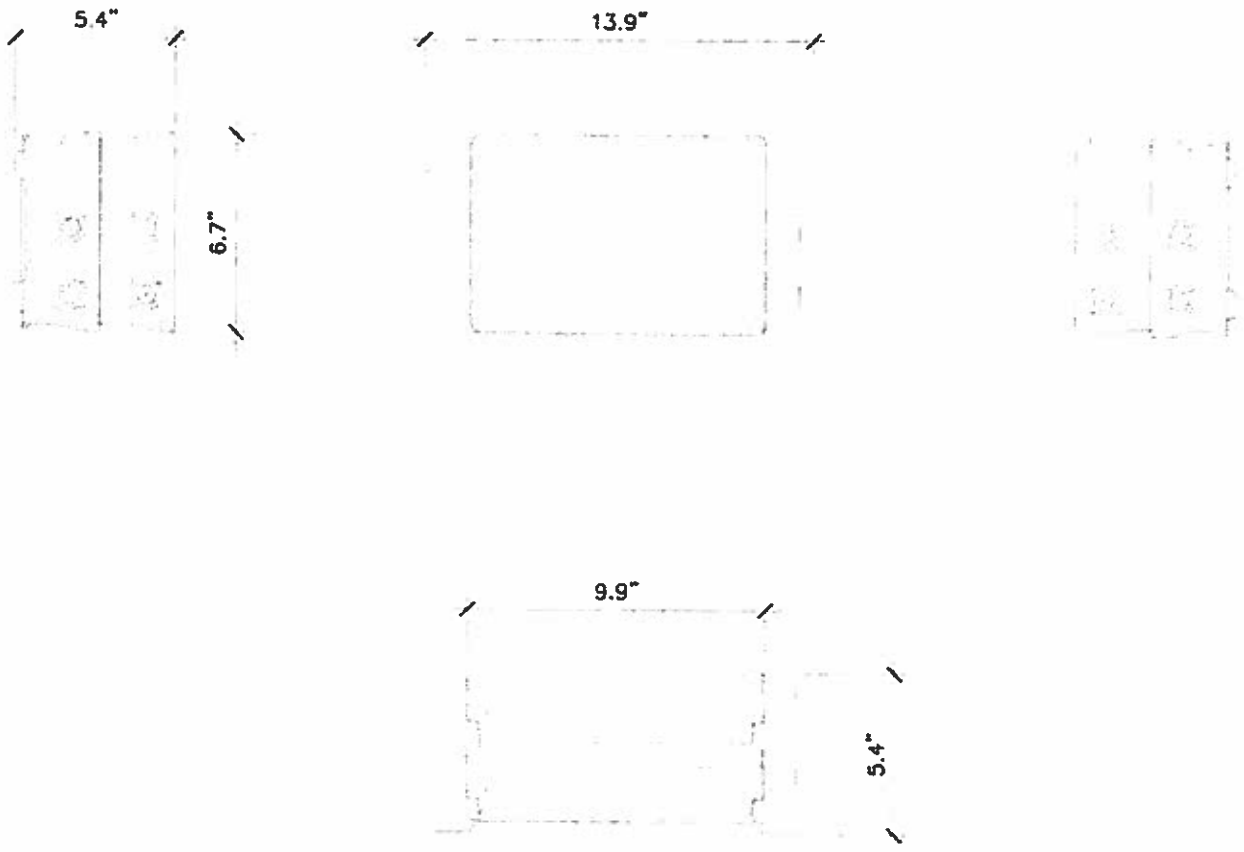
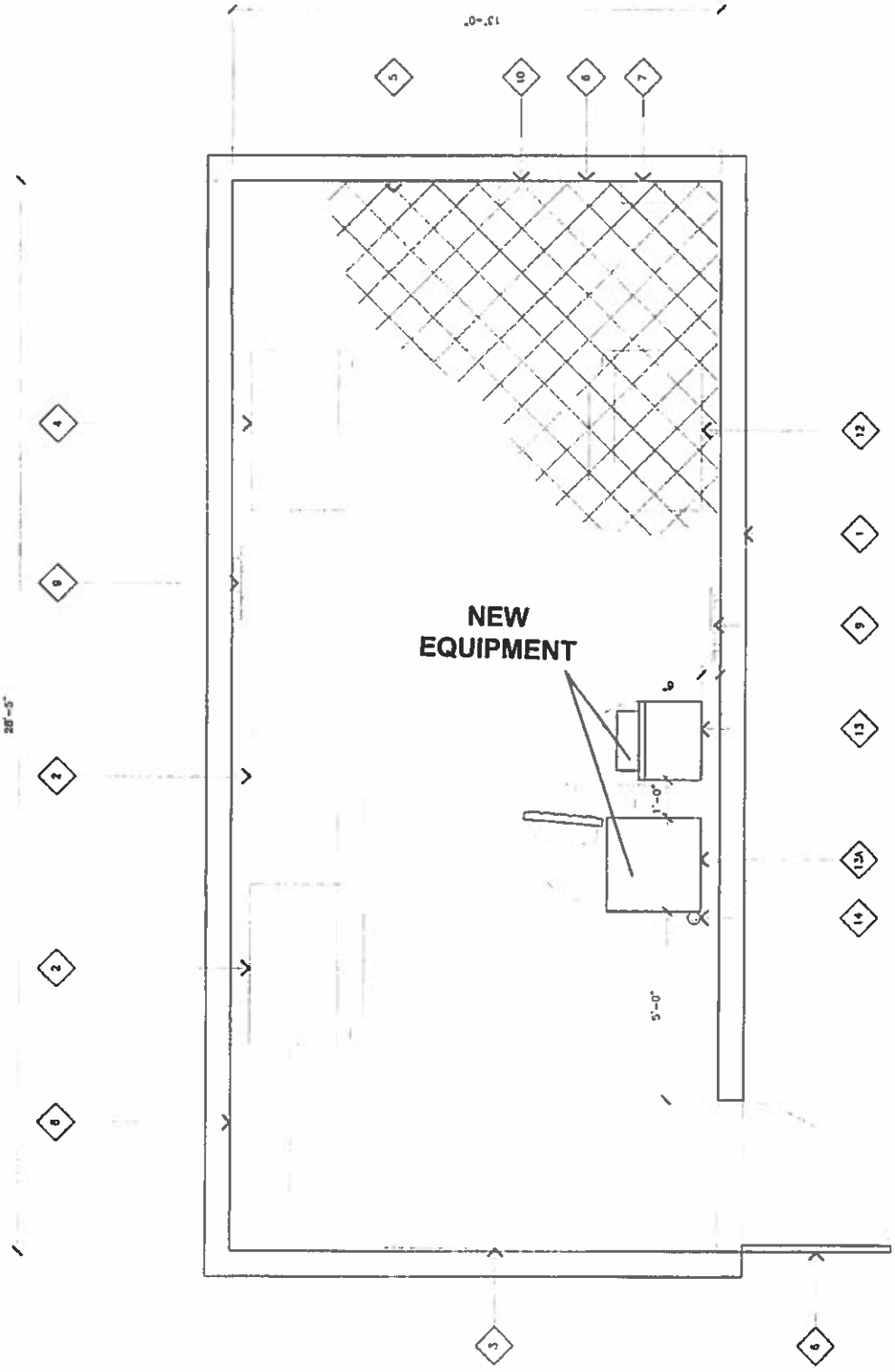
DETAILS



DUAL BAND TMA

PROPOSED PROJECT
PHG 13-0020

DETAILS



EQUIPMENT FLOOR PLAN

PROPOSED PROJECT
PHG 13-0020

FLOOR PLAN

ANALYSIS

A. LAND USE COMPATIBILITY/SURROUNDING ZONING

NORTH: RE-20 zoning (Residential Estate, 20,000 SF min. lot size) / Single-family homes are located north of the Emmanuel Faith parking lot across Felicita Avenue. The closest residential property is located approximately 360 feet north of the site. Perimeter and internal parking lot landscaping, which includes mature trees, generally obscures and/or buffers views into the site from Felicita Avenue and the homes along the northern side of Felicita Avenue. The homes to the north are situated at a higher elevation than Felicita Avenue and the parking lot, and look down onto and over the parking area.

SOUTH: PZ-RE-20 zoning (County property which has been pre-zoned to Residential Estate, 20,000 SF min. lot size) / Single-family homes are located south of the parking lot. The closest residential property is located approximately 235 feet to the south. Views into the parking area from the adjacent homes generally are obscured by the topography and/or dense perimeter and interior parking lot landscaping.

EAST: RE-20 zoning (Residential Estate, 20,000 SF min. lot size) / The Emmanuel Faith main church complex is located to the east across Encino Drive.

WEST: RE-20 zoning (Residential Estate, 20,000 SF min. lot size) / Single-family homes are located west of the parking lot. The closest residential property is located approximately 380 feet to the west. Perimeter landscaping generally obscures some of the views into and across the site.

B. ENVIRONMENTAL STATUS

The proposal is exempt from the requirements of the California Environmental Quality Act in conformance with CEQA Section 15301, "Existing Facilities," 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 due to the relatively small size of the facility and the proposed development would be located on an existing wireless communication facility. The subject area does not contain any sensitive vegetation, nor would the project encroach into native vegetation areas.

C. GENERAL PLAN ANALYSIS:

The requested Conditional Use Permit is consistent with the Estate II designation of the General Plan since wireless facilities are allowed when they are in conformance with the Communication Antennas Ordinance, underlying zoning requirements, and are compatible with the surrounding properties and built environment. The project is in substantial compliance with any relevant General Plan criteria and underlying RE-20 zone standards, and also is in conformance with the Wireless Service Facilities Guidelines as discussed in the analysis section below and project findings. General Plan Goal (17. Telecommunications, page III-50) encourages quality communication systems that enhance economic viability, government efficiency, and equitable access for all. The General Plan also contains specific policies (Policies 17.1 – 17.9) that encourage the City to work with service providers to enhance the delivery of public services; require compatible designs that are designed in a manner to minimize visual impacts on surrounding uses; and support innovation in the design and implementation of state-of-the art telecommunication technologies and facilities.

D. TELECOMMUNICATIONS ACT – 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). 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.

E. PROJECT ANALYSIS

Whether the Proposed Wireless Facility is in Conformance with the Communication Antennas Ordinance and Wireless Service Facilities Guidelines.

The existing approximately 35-foot-high wireless communication facility (37'-5" top of branches) was designed to resemble a broadleaf tree and is located within the center of a large 9.3-acre parking lot that provides overflow parking for Emmanuel Faith Church. The wireless facility originally was constructed by Verizon Wireless in 2004 to support six panel antennas mounted onto the upper portion of the tree. The use permit was amended in 2005 to allow Cingular Wireless (now AT&T) to co-locate an additional six panel antennas below the Verizon panel antennas and to construct a separate 457 SF equipment enclosure located adjacent to Verizon's equipment enclosure. AT&T is proposing to remove the existing six, 4'-7" panel antennas and replace them with twelve, 6'-4" panel antennas. Smaller remote radio units (RRUs), dual band amplifier units (TMAs) and surge protectors also would be mounted behind the panels or onto the support poles. These units would be painted green and/or brown to blend in with the tree. Additional radio cabinets would be installed within the existing masonry equipment enclosure.

The Conditional Use Permit request is a refilling of the same project that previously was approved by the Planning Commission and the Design Review Board in 2011, which subsequently expired. The nearest residences are located approximately 230 feet to the south and approximately 360 feet to the north across Felicita Avenue. The facility is located within the center of a larger parking lot and within a landscape area that provides the appropriate context for the simulated tree. Views of the facility from surrounding development generally are limited due to the existing perimeter landscaping and mature trees. As conditioned, staff feels the project would be consistent with the Communication Antennas Ordinance since it incorporates a stealthy design which would not result in any adverse visual impacts. The facility conforms to the height requirements of the underlying RE-20 zone and appropriate setbacks are provided from any adjacent residences. The project also would be in conformance with FCC emission standards.

Operation of the facility would generate electromagnetic emissions (RF radiation). A RF study was prepared for the project by Telenet, 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 proposed AT&T upgrade is predicted to contribute approximately 11.9% maximum permissible exposure (MPE) based on theoretical modeling. The maximum cumulative level for all facilities is calculated at approximately 17.9% of MPE (AT&T plus Verizon). The Telenet compliance determination is based on General Public MPE levels due to predicted MPE, RF signage placement, and the level of access to the antennas at the site. Appropriate signage is required to be posted at access areas to the antennas and equipment providing warning/safety notice since the facility would contribute more than 5% of the MPE for the site. A copy of the study has been attached to this report.

SUPPLEMENT TO STAFF REPORT/DETAILS OF REQUEST

A. PHYSICAL CHARACTERISTICS

The project site is the overflow parking lot for the Emmanuel Faith Community Church. The church is located to the east across Encino Drive. The parking lot is a multi-level area with no church-related structures. Access to the lot is provided by Encino Drive and Felicita Avenue. Vegetation on the site consists of ornamental landscaping related to the parking lot and existing wireless facilities. There is dense landscaping located around the perimeter of the lot, which includes a variety of mature trees. There is no native or sensitive vegetation located on the site.

B. SUPPLEMENTAL DETAILS OF REQUEST

1.	Property Size:	Approx. 9.08 acres (parking lot)
2.	Antenna Height:	35 feet to top of support pole (approx. 37'-5" top of branches) 35 feet top of Verizon panel antennas 27'-5" feet proposed for new AT&T panel antennas
3.	Antennas:	
	Existing:	6 panel antennas, approx. 4'-7" in height mounted in three arrays of two antennas.
	Proposed:	12 panel antennas, approx. 6'-4" in height mounted in three arrays with four panels per array.
4.	Radio Units and Surge Protectors:	12 Remote Radio Units (RRUs) 17.8" H x 17.8" W x 7.2" D 3 Surge Protectors 24 "tall x 17" circumferences 6 Dual Band Tower Mounted Amplifier Units (TMAs) 13.9" H x 6.7" W x 5.4" D mounted behind the panel antennas
5.	Equipment:	Equipment consists of data equipment cabinets, battery racks, wireless meter and telco enclosure-panel boards located within an eight-foot-high, 28'-5" x 15' masonry equipment enclosure. Additional outdoor LTE equipment cabinets would be placed within the exiting equipment enclosure.
6.	Hours of Operation Wireless Facility:	24 hours, unmanned
7.	Landscaping:	Existing shrubs planted in front of the enclosure. Existing irrigation extended to support the plantings.

Related Case Nos.

PHG11-0011	Modification to a Conditional Use Permit for AT&T (formerly Cingular Wireless) to replace the existing six 4'-7" panel antennas with twelve new 6'-4" panel antennas. The CUP was not utilized and expired.
2005-40-CUP	Conditional Use Permit for Cingular Wireless to co-locate up to six panel antennas on an existing Verizon 35-foot-high wireless facility designed to resemble a broadleaf tree.
2004-24-CUP	Conditional Use Permit for Verizon Wireless to construct a 35-foot-high wireless communication facility designed to resemble a broadleaf tree. Verizon maintains six panel antennas and a two-foot-diameter parabolic antenna mounted on the faux tree.

EXHIBIT "A"

FINDINGS OF FACT
PHG 13-0020

Conditional Use Permit

1. The General Plan land-use designation on the site is Estate II, which calls for the area to be developed with residential uses, but also allows some non-residential uses subject to a Conditional Use Permit. A Conditional Use Permit previously was approved by the City of Escondido to allow the development of a religious facility on the subject site. A Conditional Use Permit also previously was approved to allow the placement of a wireless communication facility within the parking area in accordance with the City's Zoning Code (Article 34-Communication Antennas). General Plan Goal (17. Telecommunications, page III-50) encourages quality communication systems that enhance economic viability, government efficiency, and equitable access for all. The General Plan also contains specific policies (Policies 17.1 – 17.9) that encourage the City to work with service providers to enhance the delivery of public services; require compatible designs that are designed in a manner to minimize visual impacts on surrounding uses; and support innovation in the design and implementation of state-of-the art telecommunication technologies and facilities. Granting this Conditional Use Permit to allow a personal wireless communication facility on the subject property would be in conformance with these Goals and Policies, 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 facility would incorporate a stealthy type of design in conformance with the Communication Antennas Ordinance, which would minimize potential visual impacts from adjacent views. The ground equipment would be located within an existing masonry enclosure area, which would eliminate any potential visual and noise impacts to adjacent residents. The proposed facility would not result in a substantial alteration of the present or planned land use since the project site is developed as a religious facility and the new antennas would be located within an existing simulated tree designed to accommodate a wireless 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. The proposed facility would be in compliance with the City's Wireless Facility Guidelines, as discussed in the Planning Commission staff report.

2. The proposal would not cause deterioration of bordering land uses or result in any adverse visual impacts since the facility incorporates a stealthy type of design that would fit into the context of the existing architecture, and the associated equipment would be appropriately screened from surrounding views. The height of the proposed panels would be in conformance with the maximum height requirements for principle and exempt structures located within the RE-20 zone.

3. The proposed personal wireless communication facility would not be hazardous to the health of nearby residents since the radio frequency (FR) analysis prepared for the project by Telenet concluded the maximum operation levels of radiation for the facility would be within the MPE (Maximum Permissible Exposure) limit established by FCC requirements.

4. The proposal is exempt from the requirements of the California Environmental Quality Act in conformance with CEQA Section 15301, "Existing Facilities," 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 due to the relatively small size of the facility and the proposed development is located in the center of a large parking lot. The project will have a de minimis impact on fish and wildlife resources as no sensitive or protected habitat occurs within the project area or will be impacted by the proposed development.

5. 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.

EXHIBIT "B"

CONDITIONS OF APPROVAL
PHG 13-0020

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. 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.

3. 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 Community Development.

4. All exterior lighting shall conform to the requirements of Article 1072, Outdoor Lighting (Ordinance No. 86-75).

5. All project generated noise shall conform to the City's Noise Ordinance (Ordinance 90-08).

6. All new utilities and utility runs shall be underground.

7. As proposed, the design, color and materials of the proposed facilities shall be in accordance with the Design Review Board recommendations, staff report, exhibits and the project's Details of Request, including the following to the satisfaction of the Planning Division:

    a. RF transparent type covers (socks) shall be installed on all the antenna panels with appropriate branch and leaves to match the color and design of tree. The socks shall incorporate an appropriate number of leaves to provide sufficient cover of the antennas, and shall be indicated on the building plans.

    b. The support poles, brackets and other support equipment shall be painted a dark olive drab green to blend in with the tree.

    c. Any missing leaves or other worn features of the faux tree shall be repaired. This shall be noted on the building plans.

    d. The applicant shall submit a final structural analysis of the tree to determine whether any of the branches could be extended beyond the new antennas, or added to provide the appropriate context for the new antennas/array. If certain branches could be extended or added, this should be noted in the analysis. If the branches could be extended, modified or new ones added, then the applicant shall submit a plan that indicates how they could be added/modified in order to maintain a realistic look tree.

8. All required landscaping shall be permanently maintained in a flourishing manner. All irrigation shall be maintained in fully operational condition. Any existing dead or missing landscaping shall be prior to final of the building permit for the project. The requirement shall be clearly noted on the plans.

9. As per Federal Communication Commission (FCC) guidelines and requirements, AT&T or any subsequent operator/lease holder of the wireless facility shall investigate any valid complaints related to interference with electronic equipment in the surrounding area as may be required by the FCC. If it has been determined AT&T is the cause of such interference, and if such interference is determined to be related to the signal emitted from the facilities approved by this use permit, AT&T or any subsequent operator/lease holder shall solve the problem in a timely manner. Additionally, any interference with public safety communications shall be corrected immediately, to the satisfaction of the City of Escondido.

10. 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.

11. In the event AT&T sells or leases its rights to a third party, AT&T shall submit current contact information to the Director of Community Development of such new owner in a timely manner to insure the City has the ability to interact with the new owner/leasee as to any use permit and compliance issues. Co-location of any new facilities not identified by this use permit shall require approval of the City of Escondido.

12. AT&T shall coordinate with the City of Escondido to select a qualified, independent third party consultant to conduct an actual power density measurement 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.

13. AT&T or any subsequent operator/lease holder of the wireless facility shall be responsible for all maintenance of the facility, including the antennas and supporting equipment to ensure the condition of the facility does not appear weathered.

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.

17. A sign conforming to 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 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.

18. The Conditional Use Permit shall be null and void if not utilized within twelve months of the effective date of approval.

19. 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.

20. 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.

21. 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: Deputy County Clerk
P.O. Box 121750
San Diego, CA 92112-1750

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

Project Title/Case No.: PHG 13-0020 (AT&T at Emmanuel Faith Church)

Project Location - Specific: On the southwestern corner of 17th Avenue/Felicita Ave and Encino Drive, addressed as 1725 Encino Drive (APNs 237-020-46 and 237-030-58). Overflow parking lot at Emmanuel Faith Church.

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

Description of Project: Modification to a previously approved Conditional Use Permit for AT&T to replace six existing 4'-7" panel antennas with twelve, new 6'-4"-high panel antennas mounted onto an approximately 35-foot-high simulated tree designed to accommodate wireless facilities. Assorted smaller radio and amplifier units also would be mounted behind the new panels. Any additional electrical data racks, equipment cabinets and other related equipment would be placed within the existing masonry equipment enclosure.

Name of Public Agency Approving Project: City of Escondido

Name of Person or Agency Carrying Out Project:

Name M&M Telecom representing AT&T Telephone (858) 205-9681

Address 6886 Mimosa Drive, Carlsbad, CA 92011

☒ 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 to replace wireless antenna panels with additional panels on an existing, approximately 35-foot-high AT&T wireless communication facility. Additional radio equipment would be placed within an existing masonry equipment enclosure adjacent to the wireless facility. No physical expansion of the site or adjacent equipment building 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 9.3-acre site is developed as a parking lot for Emmanuel Faith Church. 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.
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, as indicated in the RF study prepared for the project.

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

Signature: _____ July 29, 2013
Jay Paul, Associate Planner — Date

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

Electromagnetic Energy ("EME")
Measurement and Site Compliance Report

Prepared for

at&t

Site Information

US ID: 83275

Site Name: EMMANUEL FAITH CHURCH - PARKING LOT E

Address: 639 EAST FELICITA AVENUE, ESCONDIDO CA 92025

Survey Date: June 30, 2011

Report Date: July 01, 2011

Surveyed By: Arash Alizadeh

M-RFSC: Hector Manmano

PHG 13-0020

AT&T

US ID: 83275-Site Name: EMMANUEL FAITH CHURCH - PARKING LOT E
Electromagnetic Energy ("EME")
Measurement and Site Compliance Report

639 EAST FELICITA AVENUE, ESCONDIDO CA 92025

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1 Summary

1.1 Introduction

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

Street Address: 639 EAST FELICITA AVENUE, ESCONDIDO CA 92025

US ID: 83275

Latitude / Longitude: 33.10689/ -117.06308

Telnet, Inc performed an RF emission survey of the RF environment surrounding the facilities installed by AT&T at this location. The facility is located on a monotree.

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.

The physical survey verified antenna placement and technical specifications for accurate recommendations to determine compliance with FCC guidelines. Antenna specifications presented herein are based on direct evidence from an antenna or transmitter cabinet, 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

After evaluation of the total RF emission levels from all the operators and a thorough review of the site access procedures, signage and observable antenna locations, Telnet has determined that:

This site is compliant with FCC Policy.

AT&T contributes more than 5% of the maximum permissible exposure (MPE) based on theoretical modeling using the parameters supplied by the client.

The compliance determination is based on General Public MPE levels due to predicted and measured levels based on Spatial Averaging, RF signage placement, and the level of restricted access to the antennas at the site.

1.3 Safety Recommendations & Site Compliance Actions

This site is compliant with the FCC rules and regulations and further steps must be taken at this time. 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.

During the field visit, Telnet documented the presence and location of signs and barriers. 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

Mount a Green Information 1 Sign and a Yellow Caution Sign at the base of the monotree

Alpha Sector Location

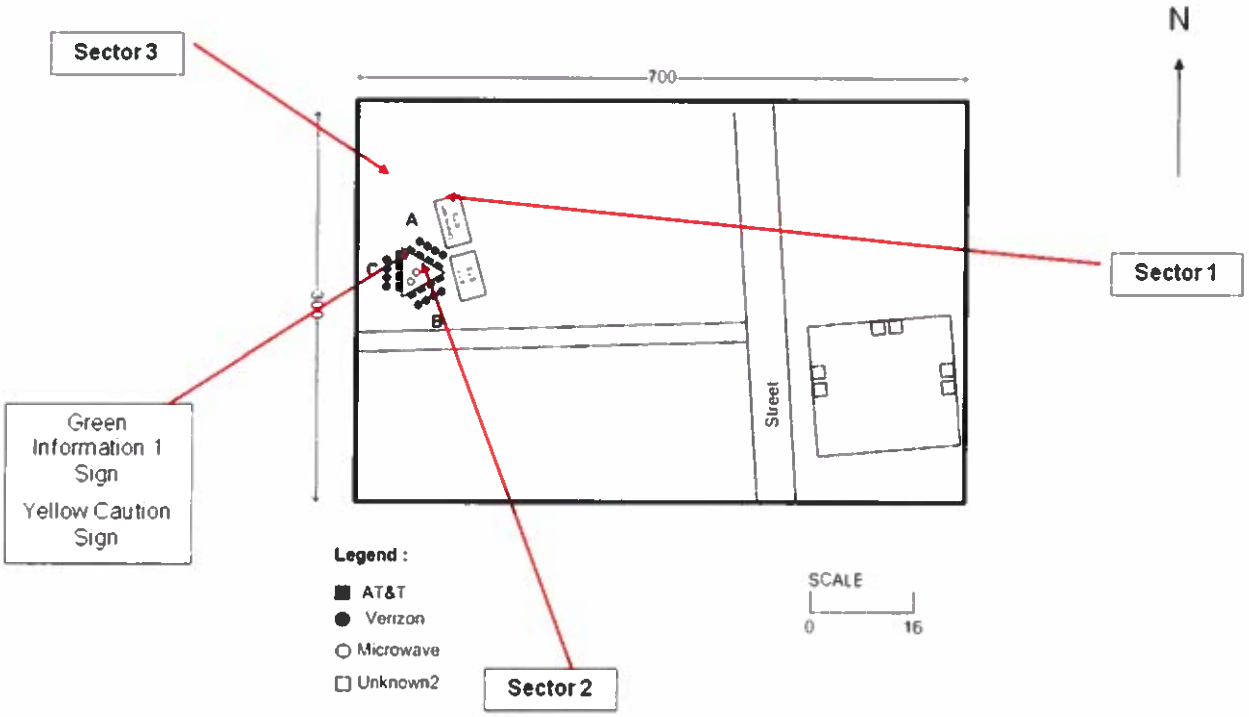
No Action required

Beta Sector Location

No Action required

Gamma Sector Location

No Action required



Signage Diagram

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 Measurements

The site survey crew has provided the sketch of the rooftop with a visual representation of the RF environment at the site and depict antenna locations and rooftop structures. Figure 3 depict the surveyed measurements in percentage of MPE limits for General Population standards. Percentages greater than 100% exceed the FCC MPE limits. Section 4.5 contains actual spatially averaged MPE measured at each reference point.

Additional Information in the Site Layout Diagram

The RF emissions diagram provides indications of RF Signage, barriers and locked doors.

RF Signage & Barrier Key					
RF Signage			Barriers		
Type	Existing Location	Recommended Location	Type	Existing Location	Recommended Location
Notice	NE	NR	Locked Door	LE	LR
Caution	CE	CR	Fencing	RE	RR
Warning	WE	WR	Rope Chain		
Information Sign 1	I1E	I1R	Paint Stripes		
Information Sign 2	I2E	I2R	Tape		
Information Sign 3	I3E	I3R			
Information Sign 4	I4E	I4R			

Table 1
RF Signage & Barrier Key

1.5 Roof Level Measurements

Figure 1 represents the actual readings at various points on the rooftop. These measurements depicts the energy levels that can be encountered by an individual at the site.

Maximum value for Occupational Standard based on Spatial Averaging: 0.31%

Maximum value for General Population Standard based on Spatial Averaging: 1.55%

Result Summary : AT&T is Compliant with FCC Policy based on General Public Maximum Permissible Exposure

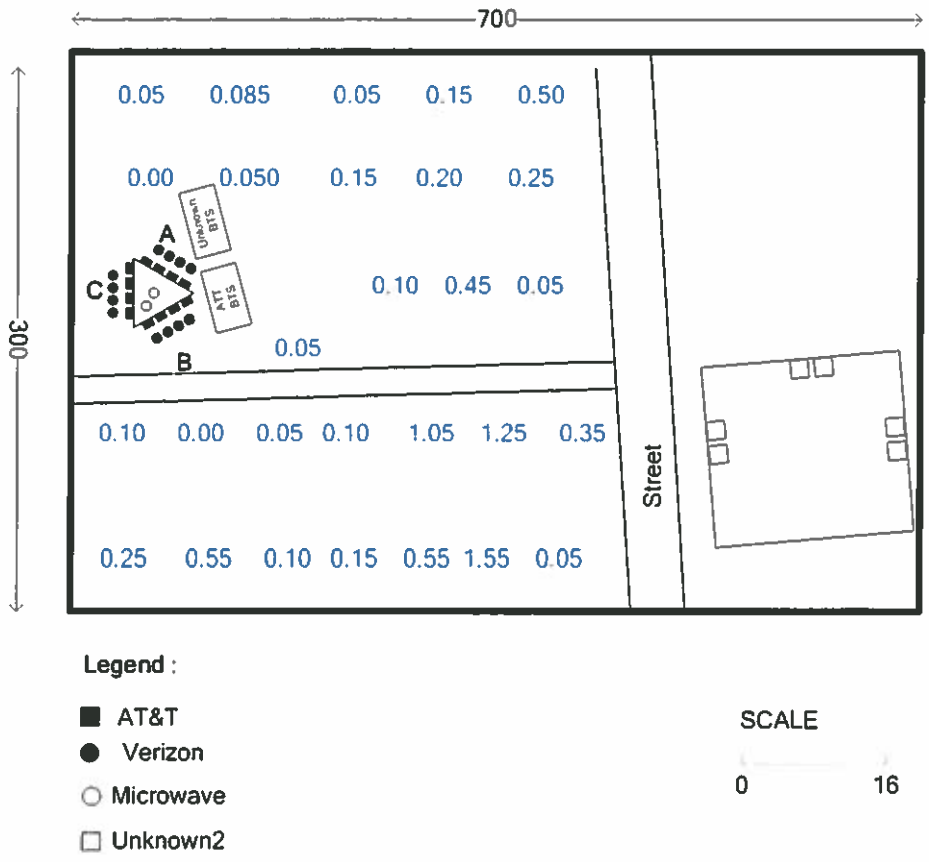


Figure 1
Numbers in Blue are the Percentage (%) of MPE Limits for General Population Standard

1.6 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.

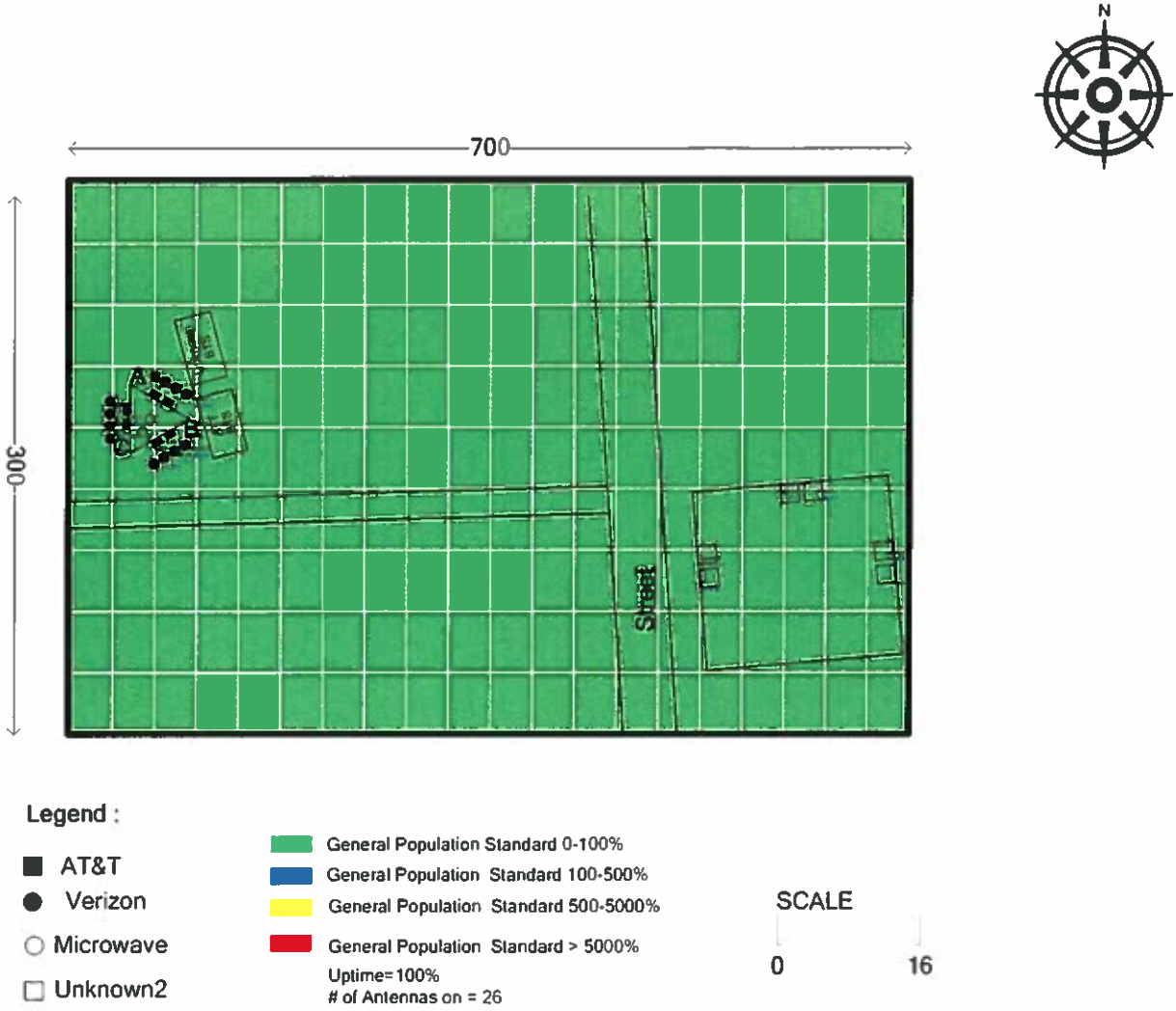


Figure 2
Percent of FCC General Population Exposure Limit, All Carriers

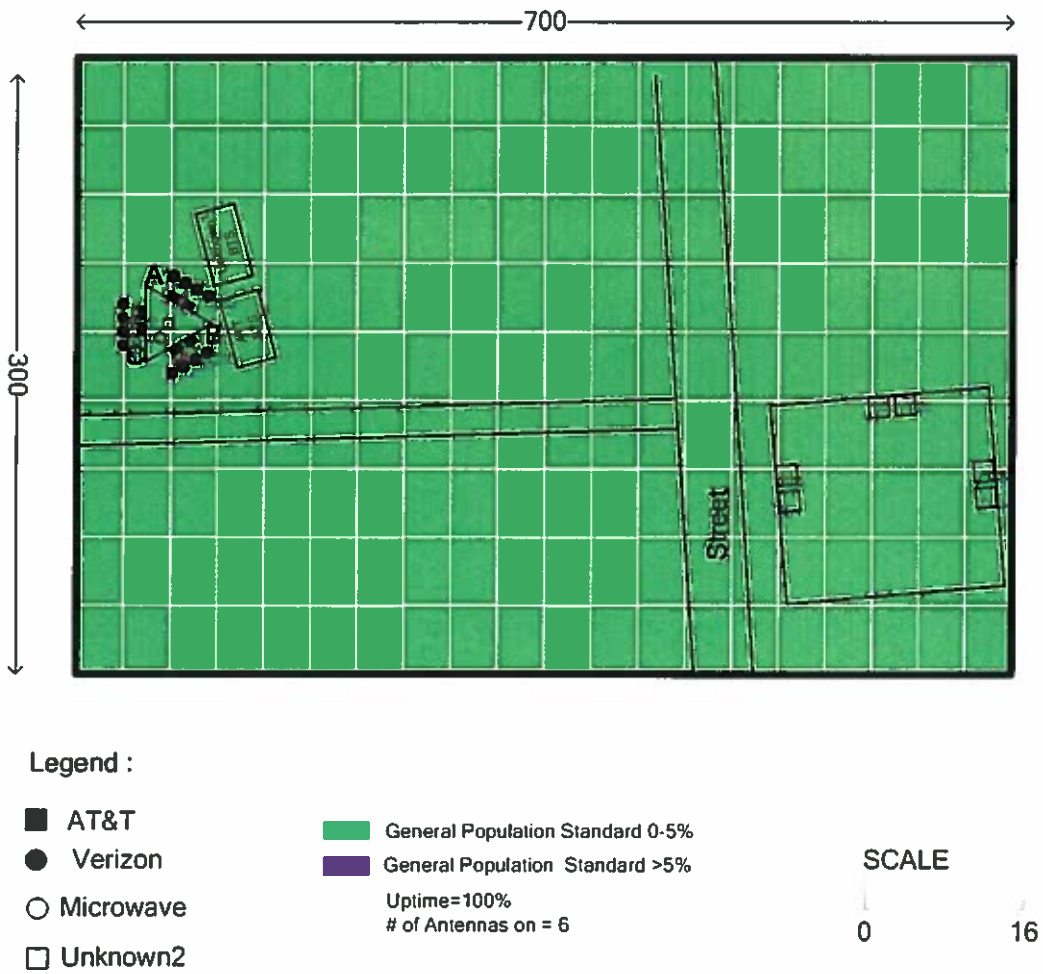


Figure 3
5% FCC Exposure Limit, AT&T Only

2 Site Configuration

A survey was performed on 06/30/2011 to determine the RF emission levels present at the site. Measurements were performed on the areas considered accessible to the occupational population. At this site, additional steps were taken to assess areas accessible to the general population. The results of the measurements were the combined energy levels of AT&T antennas. To measure the RF emissions within the vicinity, Telnet, inc, utilized NARDA E Field Probe Model EA5091, Frequency Range 300 KHz - 50 GHz with NARDA Electromagnetic Survey Meter Model NBM-550. Calibration was performed by Narda Safety Test Solutions on April 26, 2009 for a total interval of 24 month.

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

Rooftop Access	
Access Method	Open area
Access to Keys	N/A
Door Locked	N/A
Collocation Status	Colocated
Rooftop Area Classification	General Population
Weather Conditions	Sunny

2.1 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.

Antenna Number	Operator	Type	TX Freq (MHz)	ERP (Watts)	Gain (dBd)	Model	Azimuth (deg.)	Length (ft)	Horizontal Beam width (Deg.)	X	Y	Z
1-a-1	AT&T	Panel	850 GSM	499.69	12.5	Powerwave 7750	40	4.58	69	20.0	55.0	20.0
1-a-2	AT&T	Panel	1900 GSM	501.04	15.6	Powerwave 7750	40	4.58	65	20.0	55.0	20.0
1-a-3	AT&T	Panel	850 UMTS	499.69	12.5	Powerwave 7750	40	4.58	69	23.0	54.0	20.0
1-a-4	AT&T	Panel	1900 UMTS	501.04	15.6	Powerwave 7750	40	4.58	65	23.0	54.0	20.0
1-b-1	AT&T	Panel	850 GSM	499.69	12.5	Powerwave 7750	140	4.58	69	23.0	48.0	20.0
1-b-2	AT&T	Panel	1900 GSM	501.04	15.6	Powerwave 7750	140	4.58	65	23.0	48.0	20.0
1-b-3	AT&T	Panel	850 UMTS	499.69	12.5	Powerwave 7750	140	4.58	69	21.0	47.0	20.0
1-b-4	AT&T	Panel	1900 UMTS	501.04	15.6	Powerwave 7750	140	4.58	65	21.0	47.0	20.0
1-c-1	AT&T	Panel	850 GSM	499.69	12.5	Powerwave 7750	270	4.58	69	13.0	50.0	20.0
1-c-2	AT&T	Panel	1900 GSM	501.04	15.6	Powerwave 7750	270	4.58	65	13.0	50.0	20.0
1-c-3	AT&T	Panel	850 UMTS	499.69	12.5	Powerwave 7750	270	4.58	69	13.0	52.0	20.0
1-c-4	AT&T	Panel	1900 UMTS	501.04	15.6	Powerwave 7750	270	4.58	65	13.0	52.0	20.0
2-a-1	Verizon	Panel	1900	158	15	Unknown	40	5.0	65	20.0	58.0	31.0
2-a-2	Verizon	Panel	850	790	15	Unknown	40	5.0	65	20.0	58.0	31.0
2-a-3	Verizon	Panel	1900	158	15	Unknown	40	5.0	65	23.0	57.0	31.0
2-a-4	Verizon	Panel	850	790	15	Unknown	40	5.0	65	23.0	57.0	31.0
2-a-5	Verizon	Panel	1900	158	15	Unknown	40	5.0	65	26.0	56.0	31.0
2-a-6	Verizon	Panel	850	790	15	Unknown	40	5.0	65	26.0	56.0	31.0
2-a-7	Verizon	Panel	1900	158	15	Unknown	40	5.0	65	29.0	55.0	31.0
2-a-8	Verizon	Panel	850	790	15	Unknown	40	5.0	65	29.0	55.0	31.0
2-b-1	Verizon	Panel	1900	158	15	Unknown	140	5.0	65	29.0	47.0	31.0
2-b-2	Verizon	Panel	850	790	15	Unknown	140	5.0	65	29.0	47.0	31.0
2-b-3	Verizon	Panel	1900	158	15	Unknown	140	5.0	65	26.0	46.0	31.0
2-b-4	Verizon	Panel	850	790	15	Unknown	140	5.0	65	26.0	46.0	31.0
2-b-5	Verizon	Panel	1900	158	15	Unknown	140	5.0	65	23.0	45.0	31.0
2-b-6	Verizon	Panel	850	790	15	Unknown	140	5.0	65	23.0	45.0	31.0
2-b-7	Verizon	Panel	1900	158	15	Unknown	140	5.0	65	20.0	44.0	31.0
2-b-8	Verizon	Panel	850	790	15	Unknown	140	5.0	65	20.0	44.0	31.0
2-c-1	Verizon	Panel	1900	158	15	Unknown	270	5.0	65	10.0	48.0	31.0
2-c-2	Verizon	Panel	850	790	15	Unknown	270	5.0	65	10.0	48.0	31.0
2-c-3	Verizon	Panel	1900	158	15	Unknown	270	5.0	65	10.0	50.0	31.0
2-c-4	Verizon	Panel	850	790	15	Unknown	270	5.0	65	10.0	50.0	31.0
2-c-5	Verizon	Panel	1900	158	15	Unknown	270	5.0	65	10.0	52.0	31.0
2-c-6	Verizon	Panel	850	790	15	Unknown	270	5.0	65	10.0	52.0	31.0
2-c-7	Verizon	Panel	1900	158	15	Unknown	270	5.0	65	10.0	54.0	31.0
2-c-8	Verizon	Panel	850	790	15	Unknown	270	5.0	65	10.0	54.0	31.0
3-a-1	MW	Dish	5000	1267	32	Unknown	40	1.0	8	20.0	51.0	27.0
3-a-2	MW	Dish	5000	1267	32	Unknown	200	1.0	8	18.0	49.0	18.0

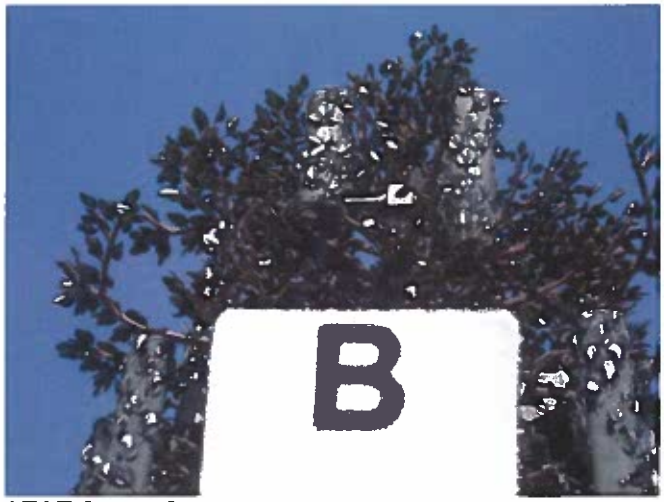
4-a-1	Unknown2	Panel	1900	316	15	Unknown	0	5.0	65	170.0	40.0	20.0
4-a-2	Unknown2	Panel	850	1581	15	Unknown	0	5.0	65	170.0	40.0	20.0
4-a-3	Unknown2	Panel	1900	316	15	Unknown	0	5.0	65	178.0	40.0	20.0
4-a-4	Unknown2	Panel	850	1581	15	Unknown	0	5.0	65	178.0	40.0	20.0
4-b-1	Unknown2	Panel	1900	316	15	Unknown	120	5.0	65	195.0	30.0	20.0
4-b-2	Unknown2	Panel	850	1581	15	Unknown	120	5.0	65	195.0	30.0	20.0
4-b-3	Unknown2	Panel	1900	316	15	Unknown	120	5.0	65	195.0	26.0	20.0
4-b-4	Unknown2	Panel	850	1581	15	Unknown	120	5.0	65	195.0	26.0	20.0
4-c-1	Unknown2	Panel	1900	316	15	Unknown	240	5.0	65	150.0	25.0	20.0
4-c-2	Unknown2	Panel	850	1581	15	Unknown	240	5.0	65	150.0	25.0	20.0
4-c-3	Unknown2	Panel	1900	316	15	Unknown	240	5.0	65	151.0	29.0	20.0
4-c-4	Unknown2	Panel	850	1581	15	Unknown	240	5.0	65	151.0	29.0	20.0

Table 2
Antenna Inventory

3 Photos of Rooftop and Antennas

3.1 AT&T Existing Sectors

AT&T Sector 1



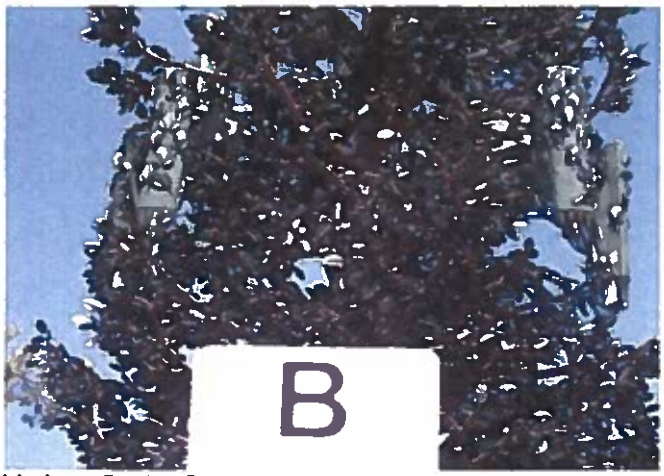
AT&T Sector 2

AT&T Sector 3

AT&T BTS

3.2 Colocated Carriers

Verizon Sector 1



Verizon Sector 2

Verizon Sector 3


Verizon BTS


Unknown 2 sectors

3.3 Signs and Access to the Site

Required RF signs include an information sign and all access locations were checked.

Pictures below show the tree:

Caution sign at monopole

Info sign at ATT BTS

Notice sign at ATT BTS

4 Modeling Summary and Assumptions

4.1.1 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).

4.1.2 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.

4.1.3 Statistical Summary

Statistical Summary		
%MPE	SQ. FT	%SQ. FT.
	18000	100.00 % of total ROOF Area
0-100	18000	100.00 % of Selected Area
101-500	0	0.00 % of Selected Area
501-5000	0	0.00 % of Selected Area
> 5000	0	0.00 % of Selected Area
Roof Area 18000 sq. ft.		
Max %MPE 17.9 %		
Min %MPE 0.1 %		
Using Near/Far Spatial Avg Model		
With FCC 1997 Public Standard		

Table 4 Percent of FCC General Population Exposure Limit, All carriers

Statistical Summary		
%MPE	SQ. FT	%SQ. FT.
	18000	100.00 % of total ROOF Area
0-5	17973	99.85 % of Selected Area
6-500	27	0.15 % of Selected Area
501-5000	0	0.00 % of Selected Area
> 5000	0	0.00 % of Selected Area
Roof Area 18000 sq. ft.		
Max %MPE 11.9 %		
Min %MPE 0.0 %		
Using Near/Far Spatial Avg Model		
With FCC 1997 Public Standard		

Table 5 Percent of FCC General Population Exposure Limit, AT&T Only

5 Survey Methodology

5.1 Sampling Description

The rooftop area of the site under evaluation was laid out in a grid of measurement points. Measurements were performed every 5-10' at various locations on the rooftop. The measurements were performed using industry-accepted techniques described in FCC Bulletin OET-65. At each measurement point identified where measurement was over 20%, a spatially averaged measurement is collected over the height of an average human body. The survey meter performs a time average measurement while the user slowly moves the probe over a distance range of 0 cm to 200 cm (about six feet) above the rooftop level. The results recorded at each measurement location include the average values over the spatial distance. The analysis included all emitters aggregated by carrier and height that were indicated to be present.

6 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 then 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 (uW/cm2), milliwatt per square centimeters (mW/cm2), or watts per square meter (W/m2).

6.1 Analysis

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

where

S = power density (mW/cm²)

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) o r 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

7 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:

7.1 (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^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

7.2 (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^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	$(180/f^2)$*	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.

7.3 Controlled and Uncontrolled Exposure Limits

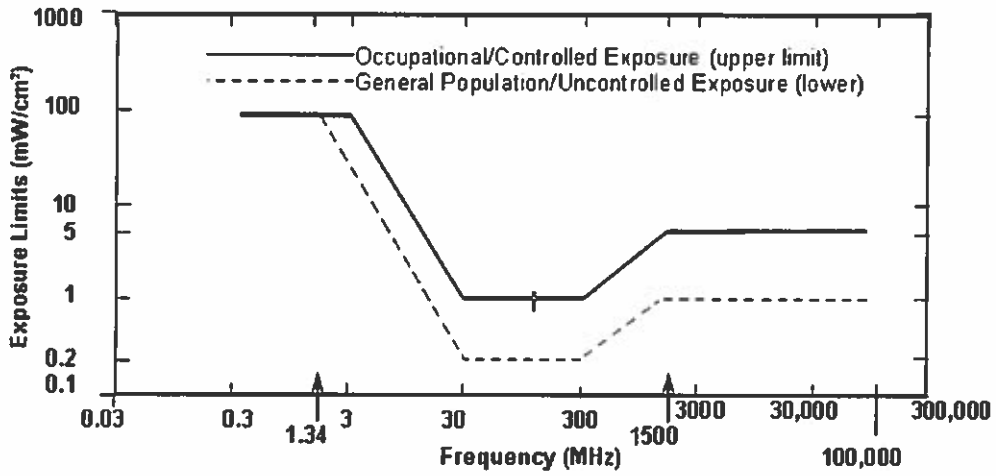


Figure 3

8 FCC Standard Certification

This report certifies that the site EMMANUEL FAITH CHURCH - PARKING LOT E – 83275 is in compliance with the FCC standard. The analysis and procedure used to provide the report is according to OET Bulletin 65 and other industry standards.

Prepared by:
Maryam Ovichi
RF Technician
Telnet Inc.

Date: 07/01/11

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

Date: 07/01/11

9 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.

10 Appendix

Narda Safety Test Solutions
435 Moreland Road Hauppauge NY 11788
Phone 631-231-1700 Fax 631-231-1711
E-mail nardaeast@L 3com com
www nardamicrowave com

narda
Safety Test Solutions
an L3 Communications Company

Calibration Certificate

Narda Safety Test Solutions hereby certifies that the referenced equipment has been calibrated by qualified personnel to Narda s approved procedures. The calibration was carried out within a certified quality management system conforming to ISO 9001 2000

The metrological confirmation system for test equipment complies with ISO 10012-1

Object	**Electric Field Probe EA5091**
Part Number (P/N)	**2402/07**
Serial Number (S/N)	**01006**
Manufacturer	Narda Safety Test Solutions
Date of Calibration	Tue 07/Jul/2009 13:10 41
Results of Calibration	Test Results within Specification
Confirmation interval (recommended)	24 Months
Ambient Conditions	(23 +/-3)°C (40...60)% rel. humidity
Calibration Procedure	ATE Software 990199 Ver. 1 49
Probe Definition File Set	P/N 990199-04 Ver. 1 06
Results Filed Under	EA5091_01006_07Jul2009 txt

Hauppauge NY

V. M.
Calibrated by

Quality Assurance

Narda Safety Test Solutions GmbH
Sandwiesenstrasse 7 D 72793 Pfullingen Germany
Phone +49 7121 9732-0 Fax +49 7121 9732 790

narda
Safety Test Solutions
an L3 Communications Company

Calibration Certificate

Narda Safety Test Solutions GmbH hereby certifies that the referenced equipment has been calibrated by qualified personnel to Narda's approved procedures. The calibration was carried out within a certified quality management system conforming to DIN EN ISO 9001 2000

The metrological confirmation system for test equipment complies with ISO 10012-1

Object	**Broadband Field Meter NBM-550**
Part Number (P/N)	**2401/01**
Serial Number (S/N)	**A-0125**
Manufacturer	Narda Safety Test Solutions GmbH
Customer	
Date of Calibration	2009-07-02
Results of Calibration	Test results within specifications
Confirmation interval (recommended)	24 months
Ambient conditions	(23 ± 3)°C (20 60) % rel. humidity
Calibration procedure	2401-8700-00A

Pfullingen 2009-07-02

Person in charge
M. Budan

Head of Laboratory
N. Mori

MANAGEMENT SYSTEM
DQS
Certified by DQS against DIN EN ISO 9001 2000 (Reg. No. 9879-QM)