

## PLANNING COMMISSION

Agenda Item No.: G.2  
Date: May 24, 2011

**CASE NUMBER:** PHG 11-0012

**APPLICANT:** AT&T

**LOCATION:** The approximately 8.71-acre property is located on the eastern side of Bear Valley Parkway, south of Boyle Ave, addressed as 1725 Bear Valley Parkway (APN 234-030-34).

**TYPE OF PROJECT:** Conditional Use Permit

**PROJECT DESCRIPTION:** A modification to a Conditional Use Permit (City File No. 2006-18-CUP) for an existing AT&T wireless communication facility located within a clock tower at the Westminster Seminary. The proposal involves the removal of six existing panel antennas within the clock tower, and installing twelve new panel antennas and related equipment. The existing tower would be increased approximately two feet in height (from 35 feet to 37 feet) to accommodate the new antennas. An existing masonry block equipment enclosure also would be modified to accommodate additional support equipment.

**STAFF RECOMMENDATION:** Approval

**GENERAL PLAN DESIGNATION/TIER:** Estate II, East Valley Neighborhood, Tier 2B

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

### BACKGROUND/SUMMARY OF ISSUES:

Westminster Theological Seminary has been located at their 8.71-acre site since the early 1980s, and the facility consists of a chapel, library/administration building, education building, and paved parking and various open space areas. A Conditional Use Permit previously was approved in 2006 for AT&T (formerly Cingular Wireless) to construct a new, 35-foot-high clock tower in order to accommodate six panel antennas inside the upper portion of the structure. AT&T has submitted a request to modify the previous CUP to remove the existing panel antennas in the tower and replace them with twelve new panel antennas. The additional antennas are requested to support AT&T's new 4G network. The new antennas are taller than the older antennas (6'-4" tall vs. 4' tall) which necessitates increasing the height of the upper portion of the structure approximately two feet in order to accommodate the taller antennas. An existing 316 SF equipment enclosure area also would be enlarged approximately 114 SF to accommodate additional equipment cabinets. A new decorative trellis structure would be installed over the enclosure area.

There are two other wireless communication facilities located on the Seminary site. T-Mobile antennas are mounted onto a 50-foot-high flagpole located within the central courtyard, and a Verizon facility is located on the roof of the administration building.

**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.

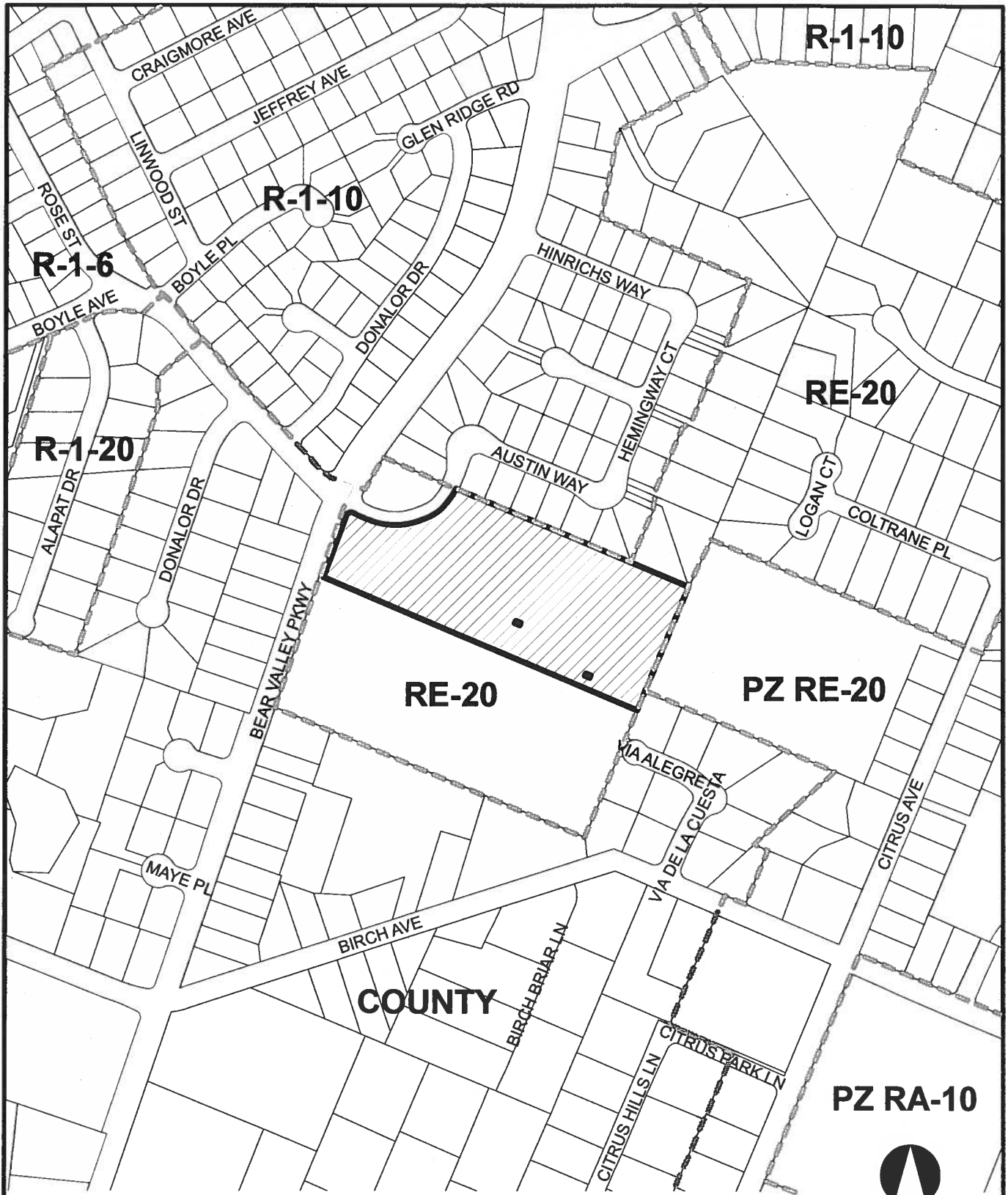
**REASONS FOR STAFF RECOMMENDATION:**

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 a screened 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

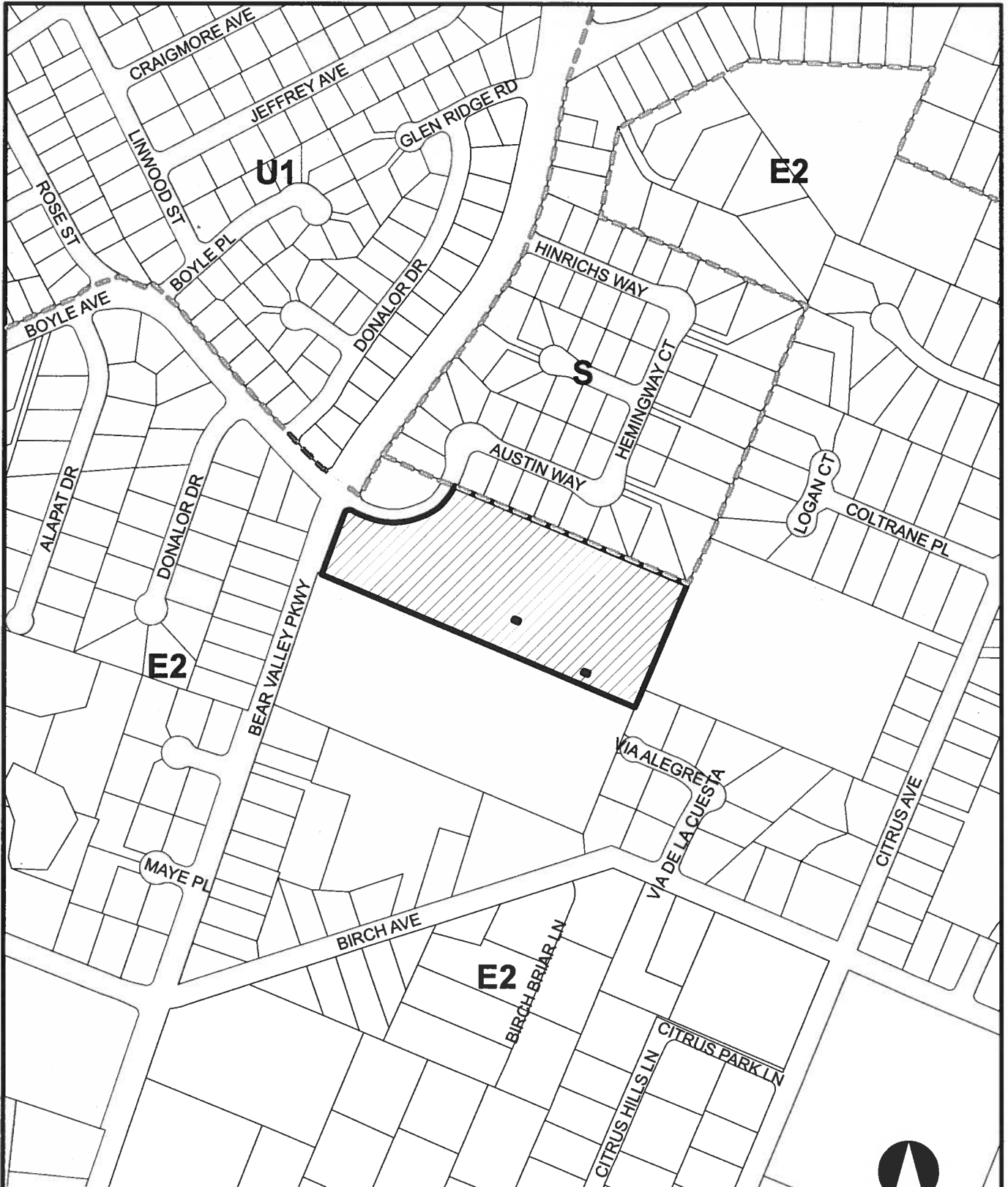


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**PROPOSED PROJECT  
PHG 11-0012**



LOCATION/ZONING

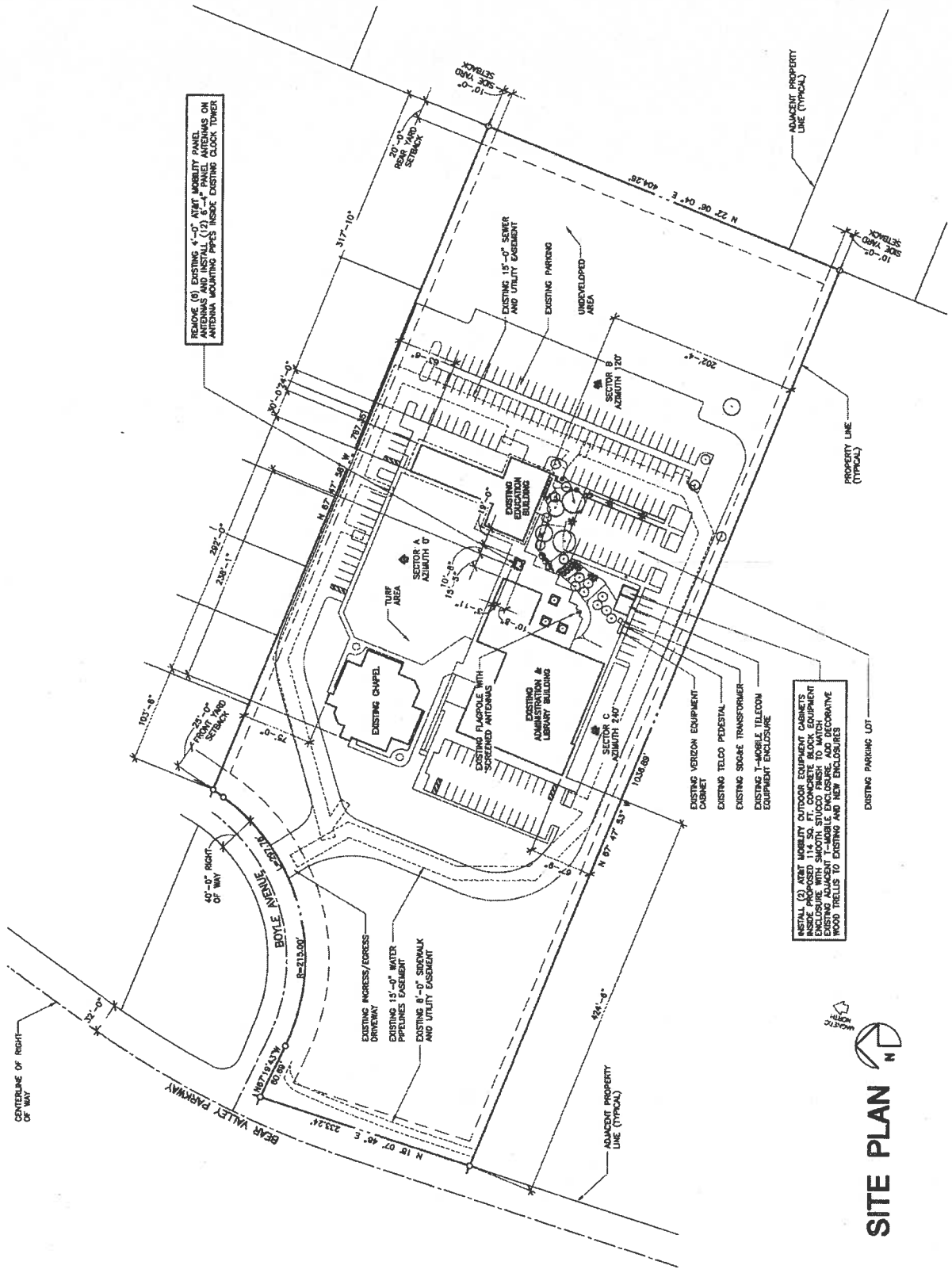


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**PROPOSED PROJECT  
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GENERAL PLAN



REMOVE (1) EXISTING 15'-0" NEW MOBILITY PAVES ANTENNAS AND INSTALL (2) 5'-0" PAVES ANTENNAS ON ANTENNA MOUNTING PIPES INSIDE EXISTING CLOCK TOWER

INSTALL (2) NEW MOBILITY OUTDOOR EQUIPMENT CABINETS INSIDE PROPOSED 114 SQ. FT. CONCRETE BLOCK EQUIPMENT ENCLOSURE WITH SMOOTH STUCCO FINISH TO MATCH EXISTING ENCLOSURE. ADD (2) WOOD TRELLIS TO EXISTING WOOD TRELLIS TO EXISTING AND NEW ENCLOSURES

**SITE PLAN**

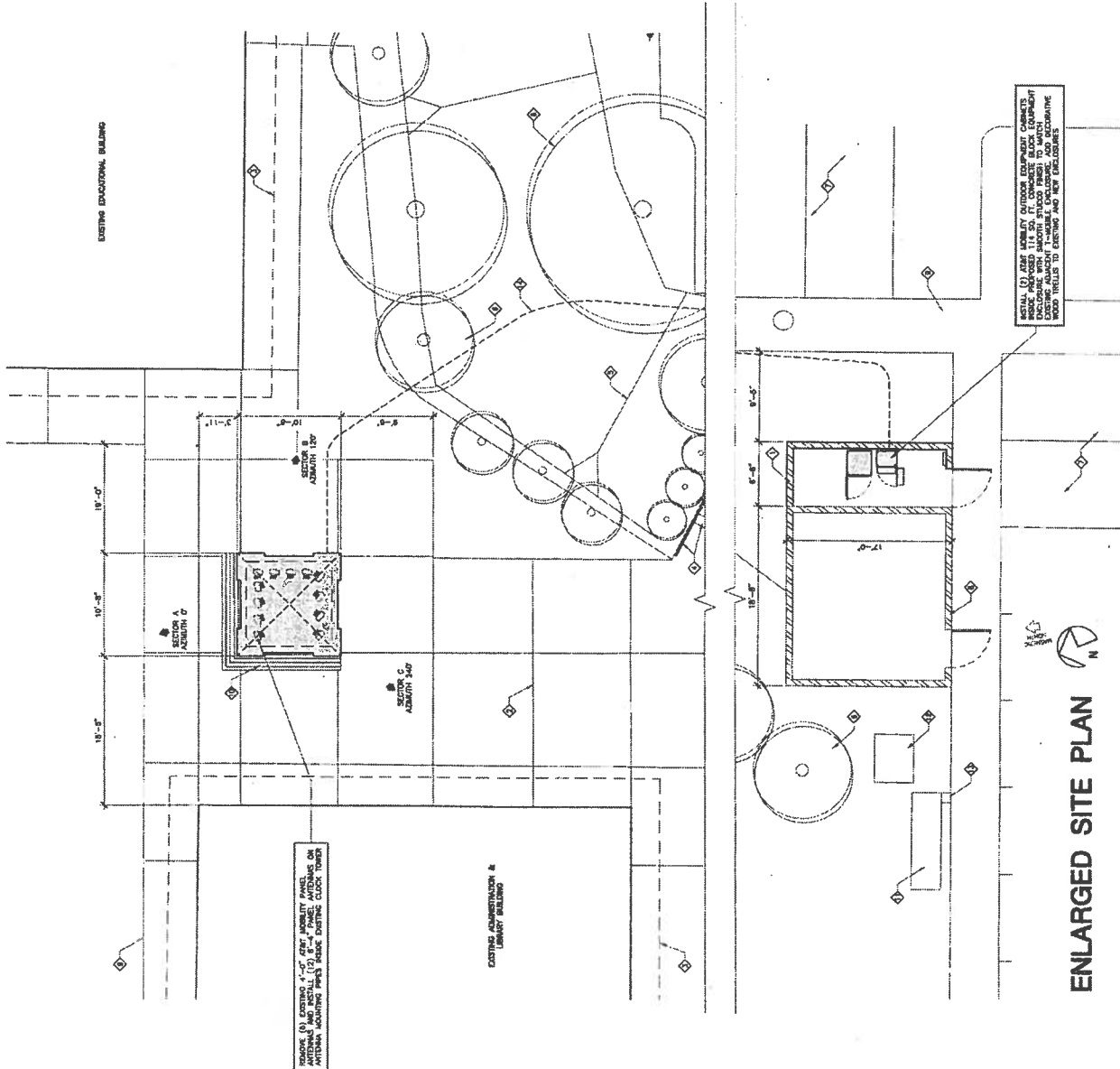
# PROPOSED PROJECT PHG 11-0012



SITE PLAN

**KEYED NOTES:**

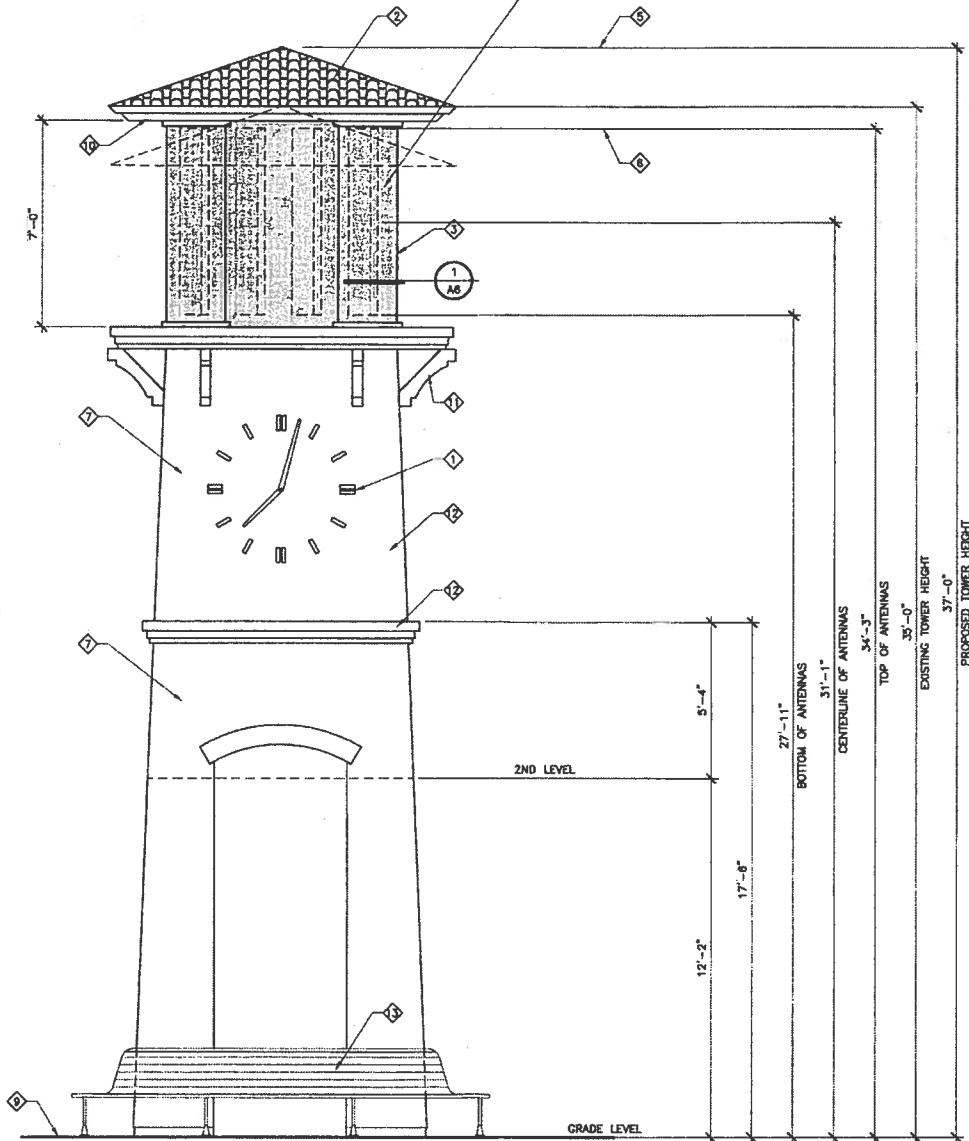
- ① PROPOSED CONCRETE BLOCK EQUIPMENT ENCLOSURE.
- ② EXISTING CONCRETE BLOCK EQUIPMENT ENCLOSURE.
- ③ EXISTING CONTROL CABINET (TYPICAL)
- ④ EXISTING BUILDING ROOF OVERHANG
- ⑤ EXISTING STAIRS AND GUARDRAIL
- ⑥ EXISTING SLURPED SUBGRADE
- ⑦ EXISTING LANDSCAPE SPRINKLERS & TREES (TYPICAL)
- ⑧ EXISTING PAVING LOT
- ⑨ EXISTING CONCRETE BLOCK T-WHOLE EQUIPMENT ENCLOSURE
- ⑩ EXISTING CONCRETE SIDEWALK
- ⑪ EXISTING BRICKS
- ⑫ EXISTING VENTRIEN EQUIPMENT CABINET
- ⑬ EXISTING SOCLE TRANSFORMER
- ⑭ EXISTING TILED FLOORED
- ⑮ EXISTING EXISTING PAVED SURFACE IS TO BE PAVED & THEIR CURB AND GUTTER NOT TO BE REMOVED. EXISTING PAVED SURFACE IS TO BE REPAIRED BEHIND THE SOURCE OF CONSTRUCTION



**PROPOSED PROJECT  
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REMOVE (6) EXISTING 4'-0" AT&T MOBILITY PANEL ANTENNAS AND INSTALL (12) 6'-4" PANEL ANTENNAS ON ANTENNA MOUNTING PIPES INSIDE EXISTING CLOCK TOWER



**KEYED NOTES**

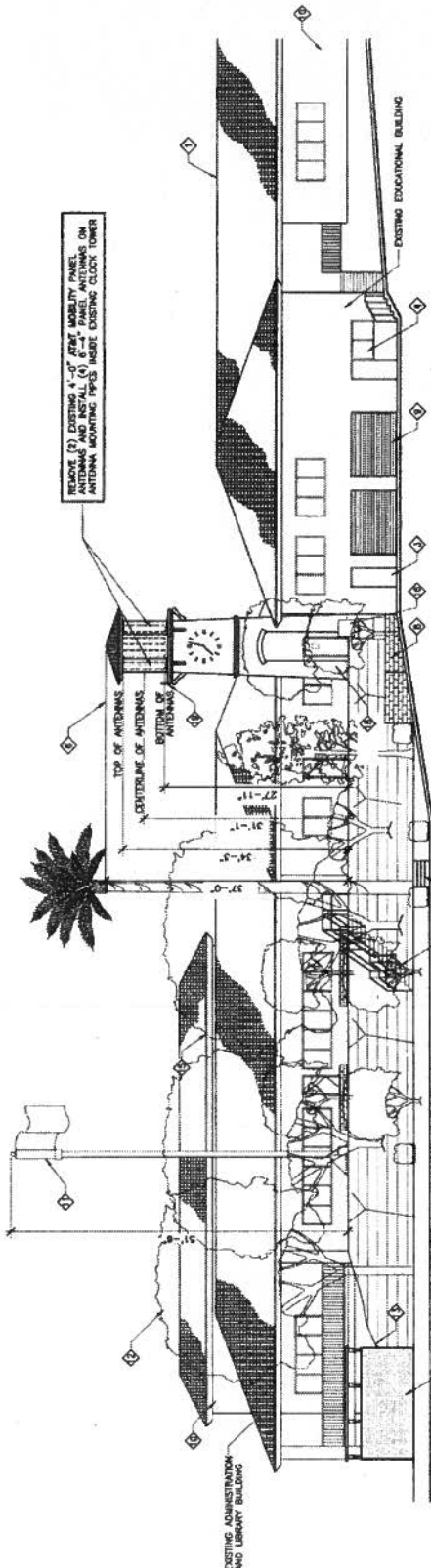
- 1 EXISTING CLOCK
- 2 EXISTING TILE ROOF
- 3 PROPOSED RF TRANSPARENT PANELS (SHOWN SHADED)
- 4 PROPOSED 3'-0" X 7'-0" STEEL DOOR AND FRAME WITH AT&T MOBILITY SIGNAGE
- 5 TOP OF PROPOSED CLOCK TOWER EXTENSION
- 6 TOP OF PROPOSED AT&T MOBILITY ANTENNAS
- 7 EXISTING STUCCO FINISHED EXTERIOR WALLS
- 8 EXISTING ROOF TILE
- 9 EXISTING GRADE
- 10 EXISTING WOOD FASCIA AND TRIM
- 11 EXISTING DECORATIVE WOOD CORBEL
- 12 EXISTING DECORATIVE TRIM WITH STUCCO FINISH
- 13 EXISTING BENCHES

**TYPICAL CLOCK TOWER ELEVATION**

**PROPOSED PROJECT  
PHG 11-0012**

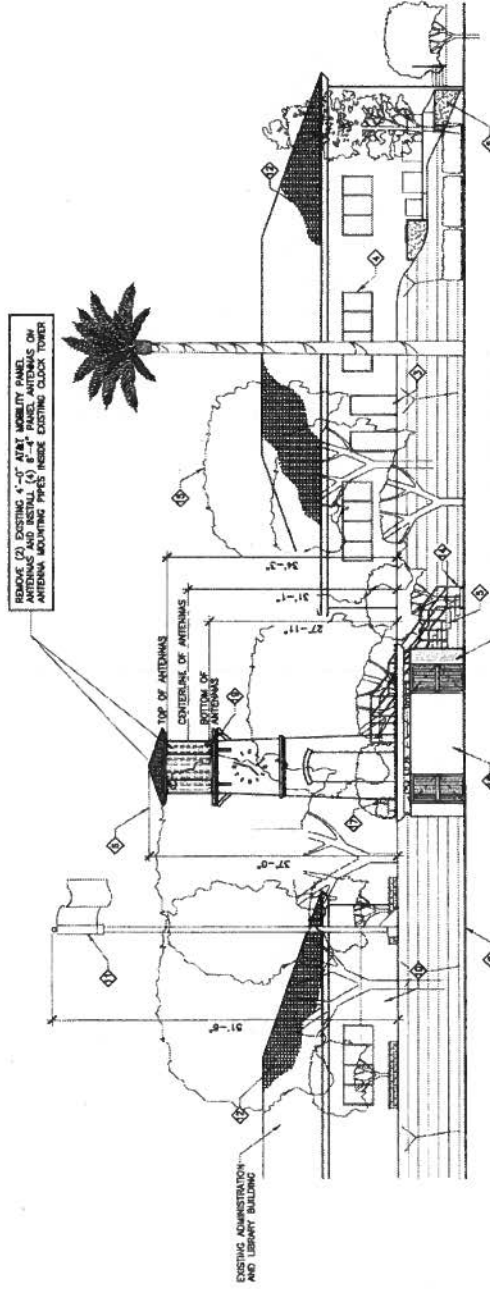


ELEVATIONS



INSTALL (2) NEW MOBILITY OUTDOOR EQUIPMENT CABINETS INSIDE PROPOSED 114 SQ. FT. CONCRETE BLOCK EQUIPMENT ENCLOSURE WITH SMOOTH STUCCO FINISH TO MATCH EXISTING ENCLOSURE. ADD NEW 4\"/>

**EAST ELEVATION**



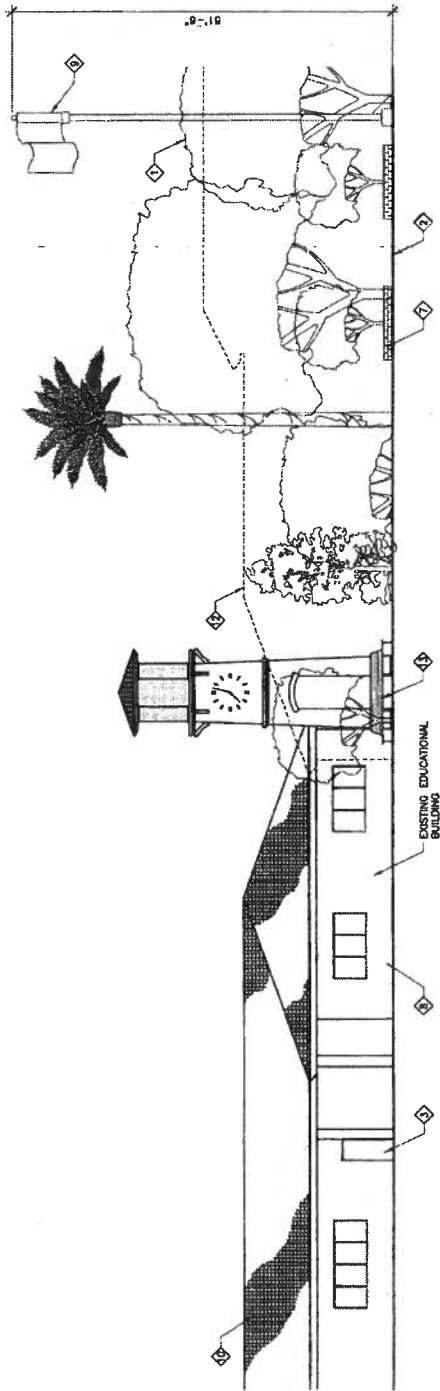
INSTALL (2) NEW MOBILITY OUTDOOR EQUIPMENT CABINETS INSIDE PROPOSED 114 SQ. FT. CONCRETE BLOCK EQUIPMENT ENCLOSURE WITH SMOOTH STUCCO FINISH TO MATCH EXISTING ENCLOSURE. ADD NEW 4\"/>

**SOUTH ELEVATION**

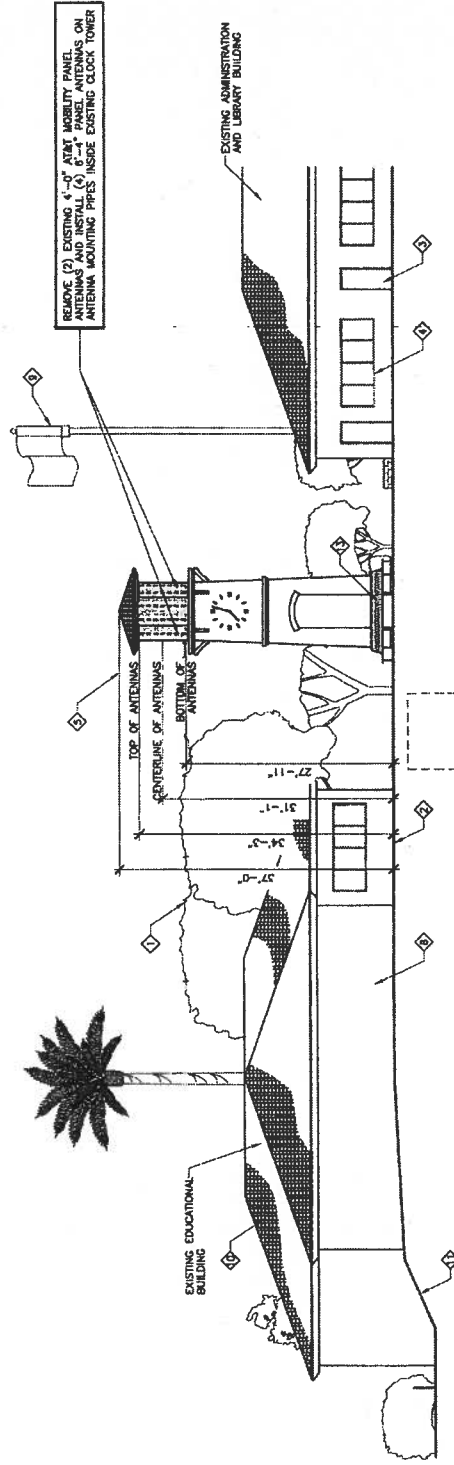
**PROPOSED PROJECT  
PHG 11-0012**







WEST ELEVATION



NORTH ELEVATION

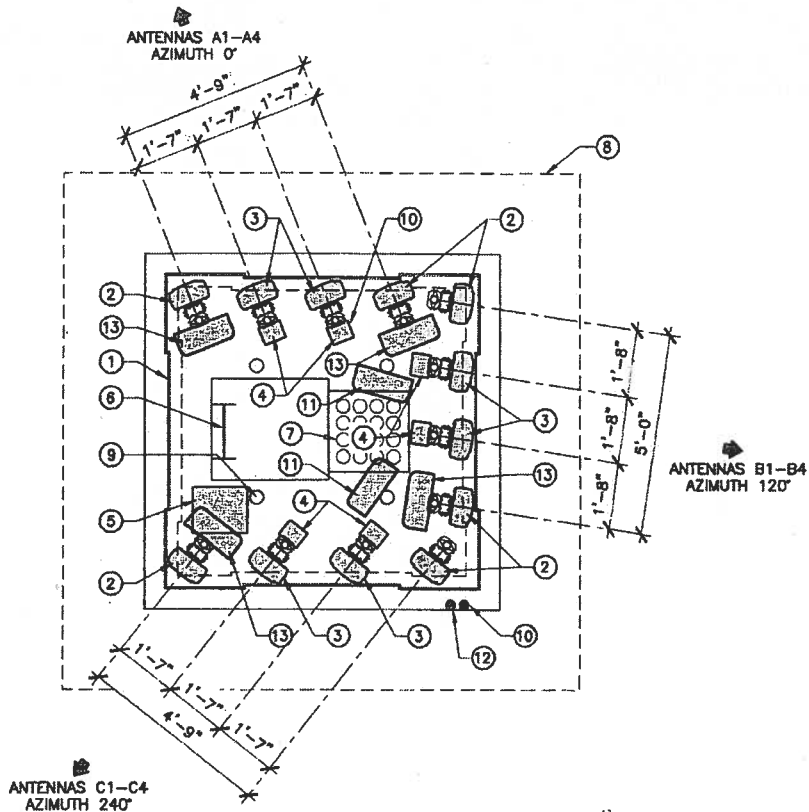
REMOVE (2) EXISTING 4'-0" AT&T MOBILITY PANEL ANTENNAS AND INSTALL (5) NEW AT&T MOBILITY ANTENNAS ON ANTENNA MOUNTING PIPES INSIDE EXISTING CLOCK TOWER

INSTALL (2) AT&T MOBILITY OUTDOOR EQUIPMENT CABINETS AND (2) AT&T MOBILITY EQUIPMENT ENCLOSURES WITH SHADY STUCCO FINISH TO MATCH EXISTING ADJACENT 1-MOBILE ENCLOSURE AND DECORATIVE WOOD TRILLUS TO EXISTING AND NEW ENCLOSURES. EXISTING AND NEW ENCLOSURES AND CABINETS TO BE SHOWN DASHED IN THIS VIEW FOR CLARITY.

PROPOSED PROJECT  
PHG 11-0012



ELEVATIONS



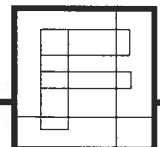
# ANTENNA PLAN



## ANTENNA PLAN KEYED NOTES:

- ① EXISTING RF TRANSPARENT SCREEN AND FRAMING
- ② REMOVE EXISTING 4'-0" AT&T MOBILITY PANEL ANTENNA AND INSTALL 6'-4" PANEL ANTENNA ON EXISTING ANTENNA MOUNTING PIPE (SHOWN SHADED)
- ③ PROPOSED 6'-4" AT&T MOBILITY PANEL ANTENNA MOUNTED TO EXISTING ANTENNA MOUNTING PIPE (SHOWN SHADED)
- ④ PROPOSED (2) TMA UNITS (SHOWN SHADED) PIPE MOUNTED BEHIND PROPOSED ANTENNA (TOTAL OF 12)
- ⑤ PROPOSED DISTRIBUTION BOX (SHOWN SHADED)
- ⑥ EXISTING ACCESS LADDER
- ⑦ EXISTING COAXIAL CABLE PORT
- ⑧ EXISTING TOWER ROOF OVERHANG ABOVE (SHOWN DASHED)
- ⑨ EXISTING STEEL COLUMN (TYPICAL OF 4)
- ⑩ PROPOSED GPS ANTENNA MOUNTED TO EAVE OF CLOCK TOWER
- ⑪ PROPOSED (2) RRUS-11 UNITS (SHOWN SHADED) MOUNTED TO EXISTING STEEL COLUMN (TOTAL OF 4)
- ⑫ EXISTING GPS ANTENNA
- ⑬ PROPOSED (2) RRUS-11 UNITS (SHOWN SHADED) PIPE MOUNTED BEHIND PROPOSED ANTENNA (TOTAL OF 8)

**PROPOSED PROJECT  
PHG 11-0012**

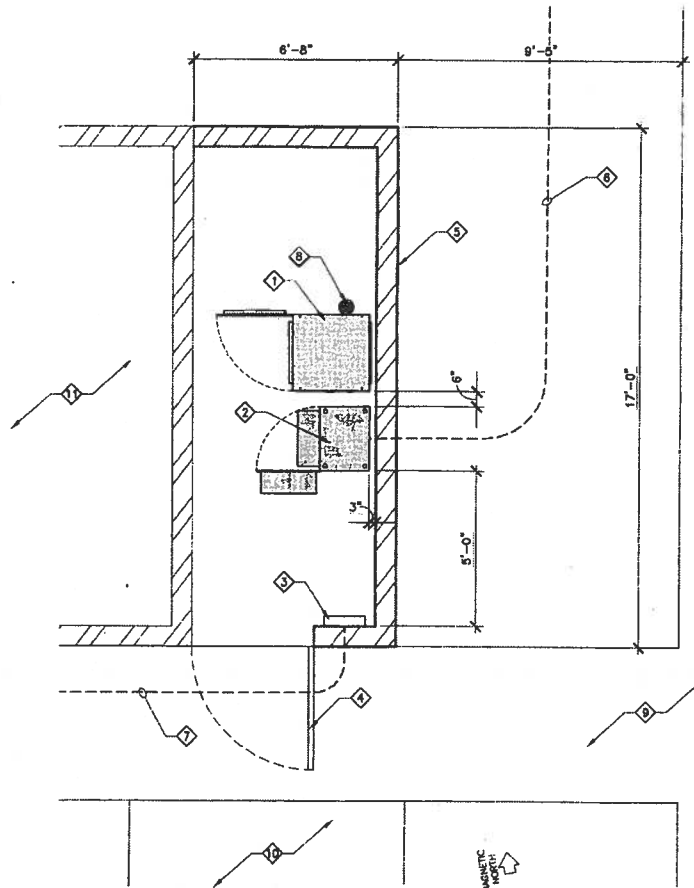


FLOOR PLAN

**EQUIPMENT PLAN KEYED NOTES:**

- ① PROPOSED AT&T MOBILITY POWER CABINET
- ② PROPOSED AT&T MOBILITY RADIO CABINET
- ③ PROPOSED ELECTRIC DISTRIBUTION PANEL
- ④ PROPOSED 4'-0" WIDE GALVANIZED CORRUGATED METAL ENTRY GATE WITH AT&T MOBILITY SIGNAGE
- ⑤ PROPOSED 8'-0" HIGH CONCRETE BLOCK ENCLOSURE WITH SMOOTH STUCCO FINISH TO MATCH ADJACENT T-MOBILE EQUIPMENT ENCLOSURE. ADD DECORATIVE WOOD TRELLIS TO EXISTING AND NEW ENCLOSURES
- ⑥ PROPOSED 3"Ø CONDUIT FOR DC POWER & FIBER CABLE IN NEW TRENCH. PATCH AND REPAIR EXISTING FINISHED SURFACE IN-KIND WHERE DAMAGED DURING THE COURSE OF CONSTRUCTION
- ⑦ PROPOSED POWER CONDUIT IN NEW TRENCH TO EXISTING AT&T MOBILITY ELECTRIC METER. PATCH AND REPAIR EXISTING FINISHED SURFACE IN-KIND WHERE DAMAGED DURING THE COURSE OF CONSTRUCTION
- ⑧ PROPOSED AT&T MOBILITY GPS ANTENNA MOUNTED TO EQUIPMENT CABINET
- ⑨ EXISTING CONCRETE SIDEWALK
- ⑩ EXISTING ASPHALT PAVED PARKING AREA
- ⑪ EXISTING T-MOBILE CONCRETE BLOCK EQUIPMENT ENCLOSURE

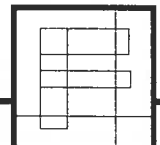
**OUTDOOR EQUIPMENT**



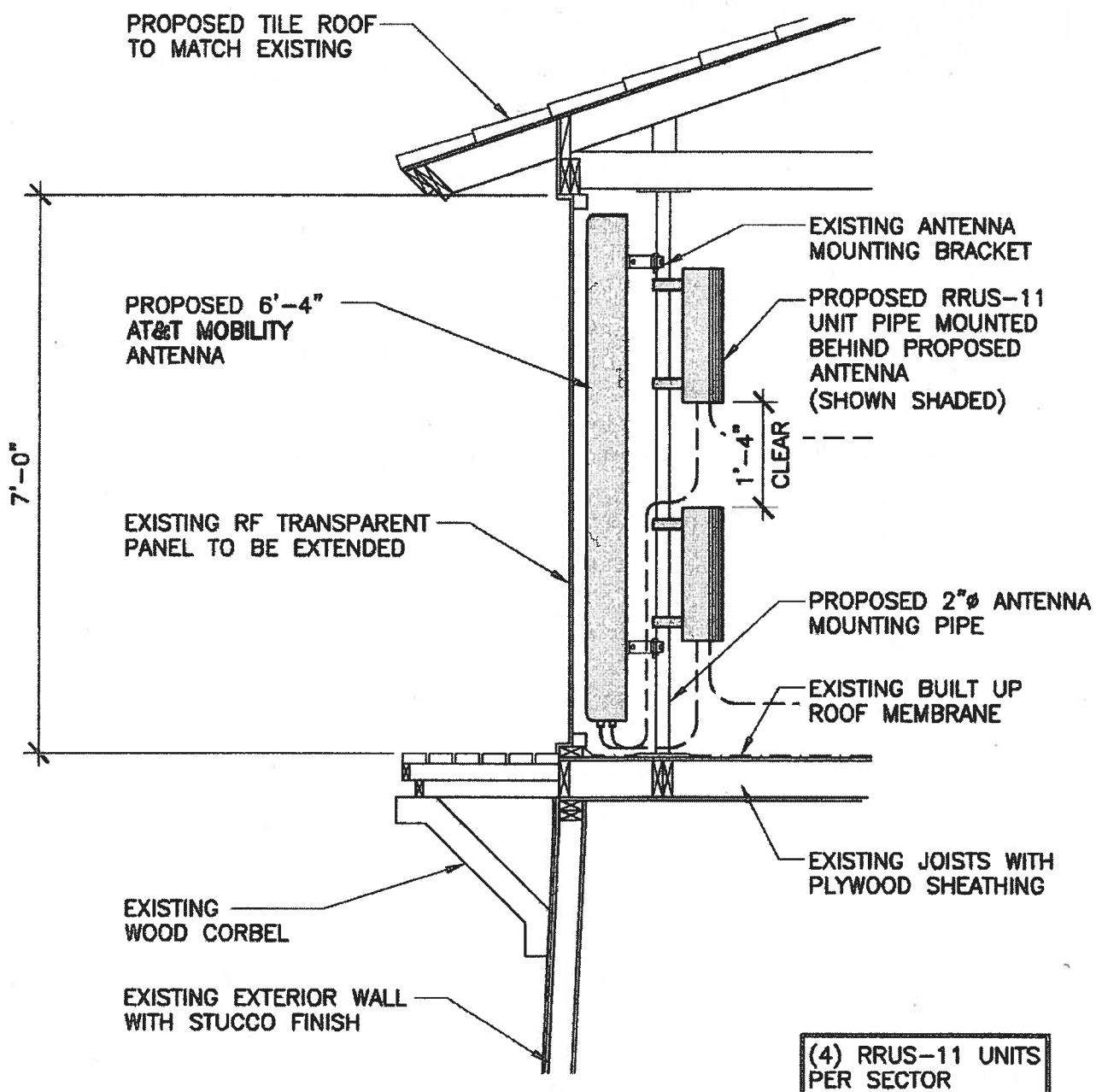
**EQUIPMENT PLAN**



**PROPOSED PROJECT  
PHG 11-0012**



FLOOR PLAN



**TYPICAL ANTENNA MOUNT**

**PROPOSED PROJECT  
PHG 11-0012**

SECTION

## ANALYSIS

### A. LAND USE COMPATIBILITY/SURROUNDING ZONING

- NORTH: R-1-10 zoning (Single-Family Residential, 10,000 SF min. lot size) / Single-family homes on lots ranging in size from 10,000 SF to 20,000 SF are located immediately north of the project area at a higher elevation (approx. 15 feet higher).
- SOUTH: RE-20 zoning (Residential Estate, 20,000 SF min. lot size) / A vacant 9.59-acre parcel is located immediately south of the project site. A 17-lot, single-family residential subdivision was approved on the southern parcel (Case Nos. TR 919, 2005-25-PZ/GE and 2005-05-AN), but the subdivision map has not yet been recorded.
- EAST: PZ-RE-20 zoning (Prezone, Residential Estate, 20,000 SF min. lot size) / An 8.5-acre parcel is located to the east within the County of San Diego's jurisdiction and contains a City of Escondido Prezoning designation to allow for future single-family residential development.
- WEST: County Zoning (Residential Estate, 20,000 SF min. lot size) / Single-family residential homes are located west of the project site across Bear Valley Parkway, which is classified as a Major Road (102' ultimate right-of-way).

### 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 California Environmental Quality Act (CEQA) in accordance with CEQA Section 15301, "Existing Facilities." 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 General Plan land-use designation the site is Estate II, which allows for single-family development. The proposed CUP modification would be consistent with the General Plan designation because a wireless facility is permitted in a residential zone subject to a Conditional Use Permit when it is designed and operated in conformance with the Communication Antennas Ordinance and underlying zoning. The proposed project is in substantial compliance with any relevant General Plan criteria and underlying RE-20 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 modify an existing 35-foot-high clock tower that was originally designed to accommodate wireless panels. The existing six panel antennas would be replaced with twelve new panel antennas and related electrical equipment. The upper portion of the tower would need to be increased two feet in height to accommodate the taller antennas. The height limit for primary structures within the underlying RE zone is 35 feet, but the Zoning Code allows architectural features to exceed the height limits, including church steeples, towers, flagpoles or other similar structures, provided that no portion of the structure in excess of the height limit shall be used for habitable floor space. Only the roof element and decorative cornice features would extend above 35 feet, and the top of the panel antennas are proposed to be mounted at 35 feet in height. The Design Review Board approved the proposed modification on April 28, 2011, and did not raise any concerns regarding the revised tower design.

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 clock tower would remain the same; the new support equipment would be located within a screened and secured enclosure area; and the facility would be in conformance with FCC emission standards.

##### **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 Telnor, 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 all the carriers are not projected to exceed 9.9% 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 8.71-acre site fronts on Bear Valley Parkway and Boyle Avenue. Driveway access is provided from Boyle Avenue, with an internal driveway circling the site. The front and rear portions of the site generally are undeveloped. The central portion of the site has been developed with a religious seminary, including paved parking, ornamental landscaping and three buildings. The education building, chapel and administration buildings are developed around a central courtyard, which contains landscaped and paved areas.

## B. SUPPLEMENTAL DETAILS OF REQUEST

1. Property Size: 8.71-acres
2. Clock Tower:
  - Existing: 35' top of pitched roof on tower (33' top of antenna panels)
  - Proposed: 47' to top of pitched roof on tower (35' top of antenna panels)
  - Dimensions: 10' x 10' at base
3. Number of Antennas
  - Existing: 6 (4-foot-tall)
  - Proposed: 12 (6'-4" tall)
4. Power Density: 9.9% of the FCC General Public Limit for Maximum Public Exposure (MPE) at ground level.
5. Equipment: Most of the equipment is located within the base of the clock tower. Two additional equipment racks are proposed to be installed adjacent to an existing 316 SF, T-Mobile equipment enclosure. The enclosure is proposed to be expanded 147 SF (6'-8" x 17') and to match the existing enclosure design. A decorative wooden trellis structure would be incorporated into the design of the existing and expanded structure.
6. Equipment Enclosure
  - Existing: Solid masonry block with stucco exterior. 316 SF (18'-8" x 17')
  - Expansion: 147 SF (6'-8" x 17')
7. Hours of Operation
  - Wireless Facility: 24 hours, unmanned

## C. CODE COMPLIANCE ANALYSIS

	<u>Existing</u>	<u>RE Zoning Requirements</u>
1. Setbacks		
Front:	275 feet	25 feet
Side:	125 feet (to north)	10 feet
Rear:	276 feet	20 feet
2. Building Height	<u>Proposed</u> 37' top of clock tower roof ridgeline	<u>RE Zoning Requirements</u> 35' (Non-habitable architectural features and select structures allowed to exceed height limit, such as towers, steeples, flagpoles, etc.)

**EXHIBIT "A"**  
**FINDINGS OF FACT**  
**PHG 11-0012**

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 (clock tower) which would avoid potential visual impacts in conformance with the Communication Antennas Ordinance. The ground equipment would be located within an existing equipment building and enclosure. 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 seminary and contains two other wireless communication facilities. 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 5-06-2011). 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 RE-20 zone. Personal wireless communication facilities are permitted within this residential estate 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 existing facility.

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 a screened enclosure area; 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 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 structure, 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 11-0012

#### General

1. All construction shall comply with all applicable requirements of the Escondido Zoning Code and requirements of the Planning Division, Building Official, 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.
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 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 2006-18-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. 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.
24. 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 11-0012

**Project Location - Specific:** The approximately 8.71-acre property is located on the eastern side of Bear Valley Parkway, south of Boyle Ave, addressed as 1725 Bear Valley Parkway (APN 234-030-34).

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

**Description of Project:** A modification to a Conditional Use Permit for an existing AT&T wireless communication facility located within a clock tower at the Westminster Seminary. The proposal involves the removal of six existing panel antennas within the clock tower, and installing twelve new panel antennas and related equipment. The existing tower would be increased approximately two feet in height (from 35 feet to 37 feet) to accommodate the new antennas. An existing masonry block equipment enclosure also would be expanded approx. 114 SF to accommodate additional support equipment.

**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 minor modification to a previously approved Conditional Use Permit (2006-18-CUP) to replace six existing wireless panel antennas with twelve new panel antennas. Only minor modification to the clock tower and existing equipment enclosure is required to accommodate the proposed facility.
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 seminary 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:  May 9, 2011  
 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*



## Site Information

US ID: 50604  
Site Name: WESTMINSTER THEOLOGICAL  
SEMINARY  
Address: 1725 BEAR VALLEY PARKWAY,  
ESCONDIDO CA, 92027

Survey Date: May 04, 2011  
Surveyed By: Abraham Buenviaje  
M-RFSC: Hector Manmano

Report Date: May 06, 2011

PHG 11-0012



*AT&T*

US ID: 50604-Site Name: WESTMINSTER THEOLOGICAL SEMINARY  
**Electromagnetic Energy (“EME”)  
Measurement and Site Compliance Report**



1725 BEAR VALLEY PARKWAY, ESCONDIDO CA, 92027



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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:** 1725 BEAR VALLEY PARKWAY, ESCONDIDO CA, 92027

**US ID:** 50604

**Latitude / Longitude:** 33.12144/ -117.04583

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 Clock 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.

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 less 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

No Action required

#### Alpha Sector Location

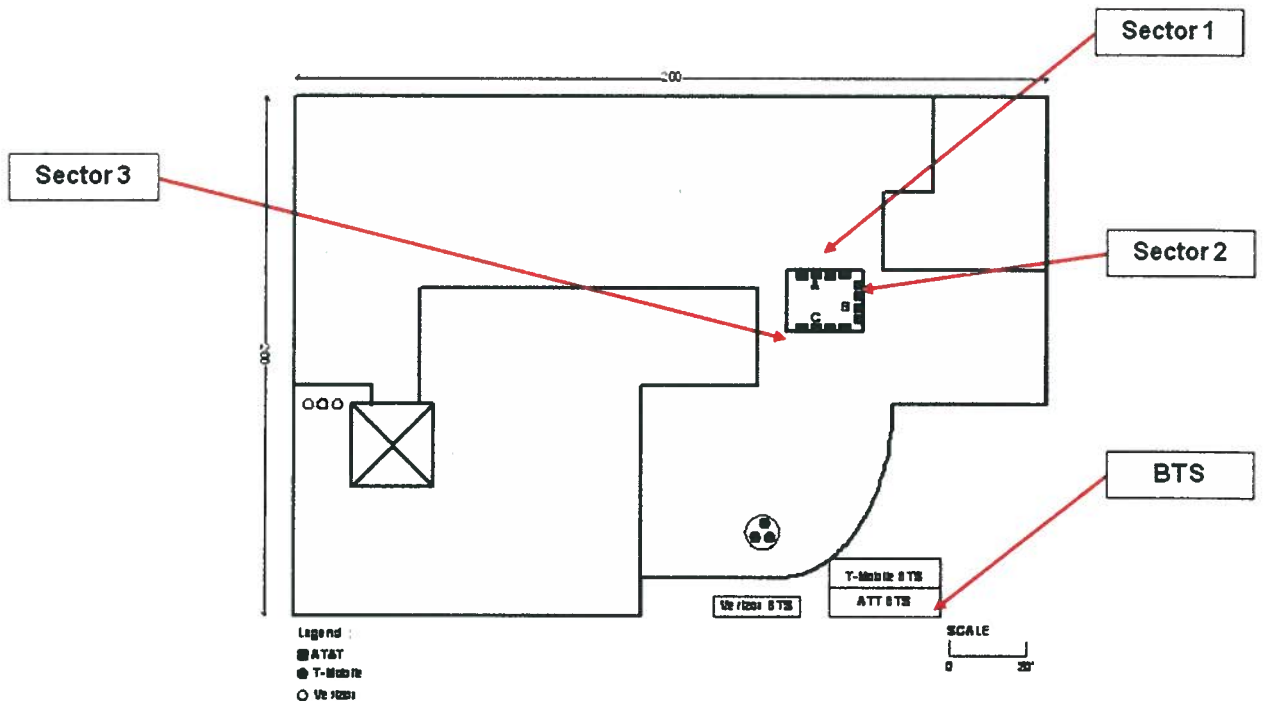
No Action required

#### 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**

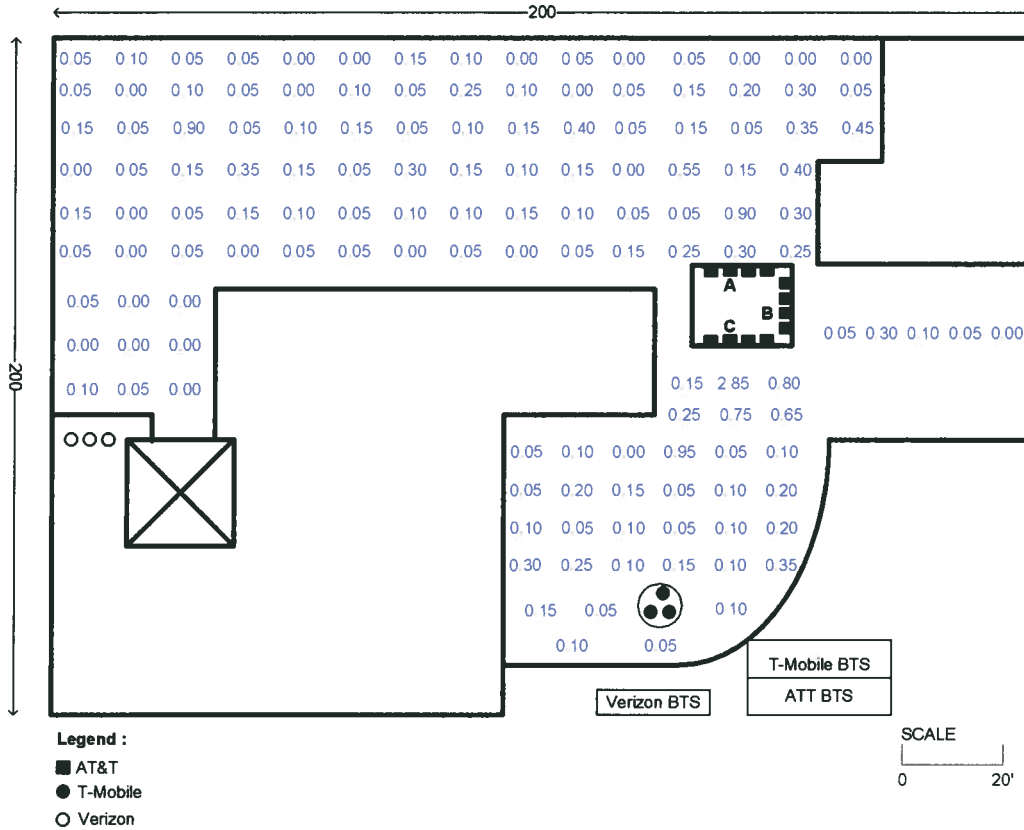
## 1.5 Roof Level Measurements

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: 0.57%**

**Maximum value for General Population Standard based on Spatial Averaging: 2.85%**

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

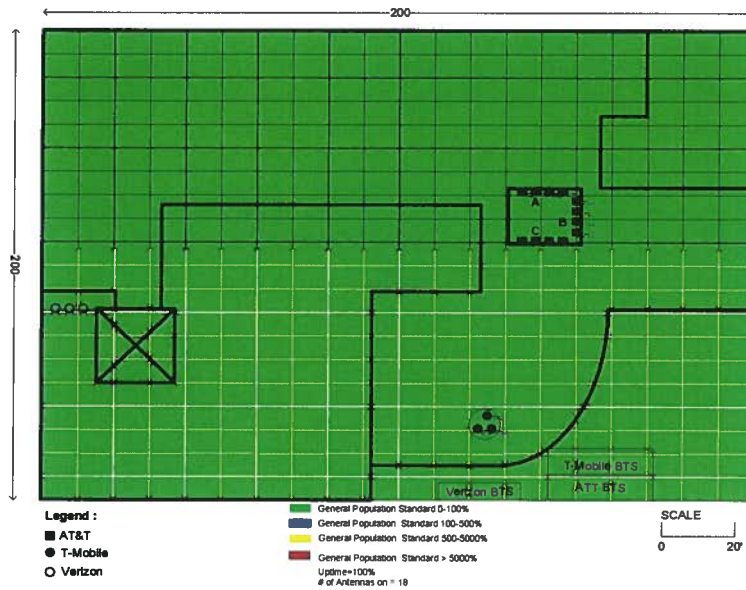




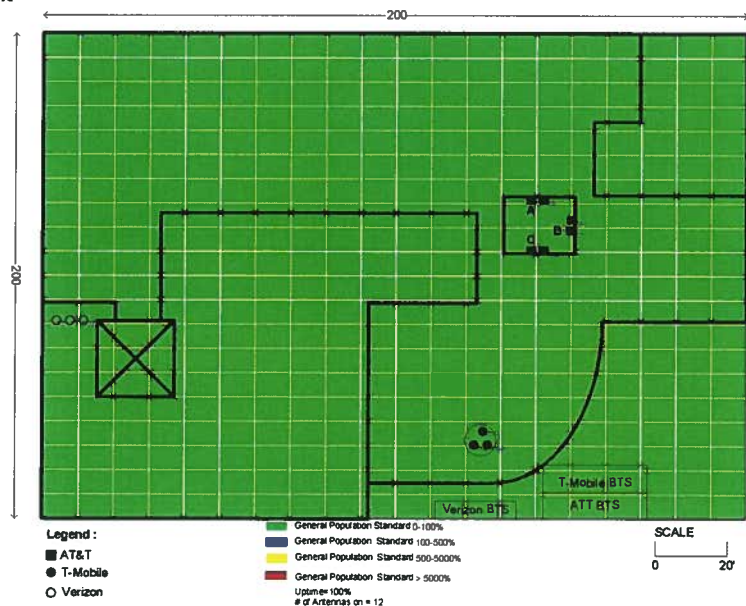
## 1.6 RF Modeling

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.

### Proposed



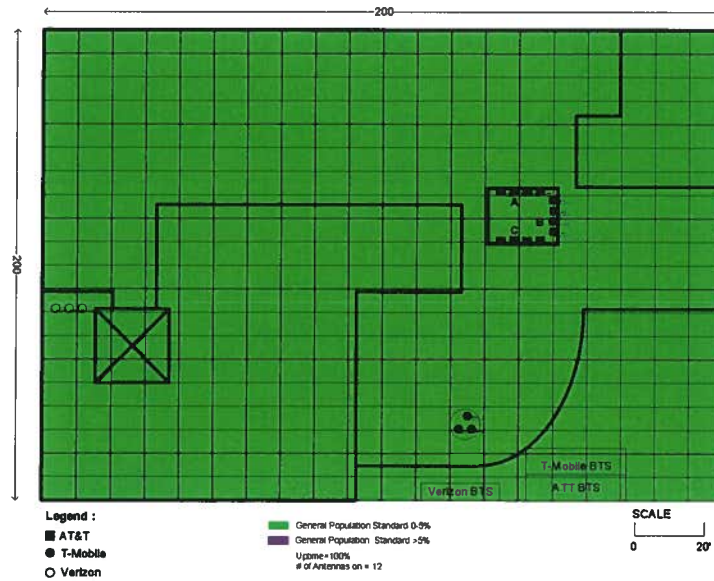
### Current



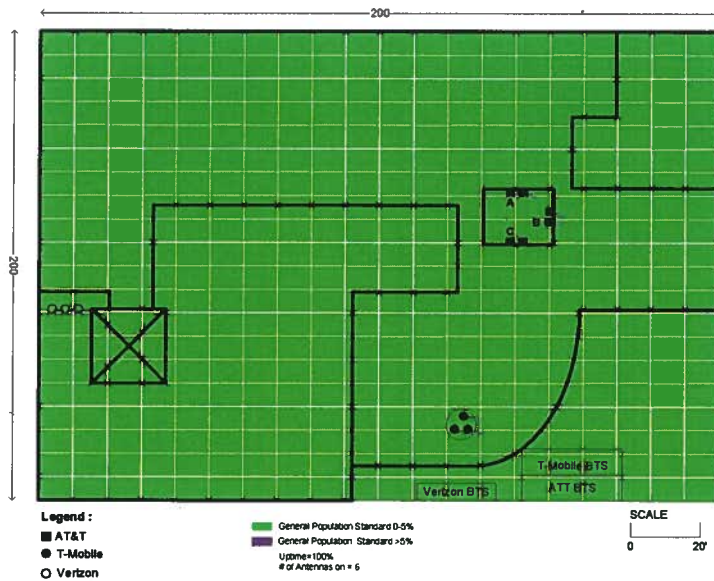
**Figure 2**  
Percent of FCC General Population Exposure Limit, All carriers including proposed LTE



Proposed



Current



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



## 2 Site Configuration

A survey was performed on 05/04/2011 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 July 07, 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 :

<b>Rooftop Access</b>	
Access Method	Stairs to roof
Access to Keys	Yes
Door Locked	Yes
<b>Collocation Status</b>	Collocated
<b>Rooftop Area Classification</b>	General Population
<b>Weather Conditions</b>	Sunny / Clear

### 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)	Radio Count	Horizontal Beamwidth (Deg.)	X	Y	Z
1-a-1	AT&T	Panel	700	250	13.15	Kathrein 80010765	0	6.3	1	68	134.0	131.0	27.9
1-a-2	AT&T	Panel	700	250	13.15	Kathrein 80010765	0	6.3	1	68	134.0	131.0	27.9
1-a-3	AT&T	Panel	850	500	13.65	Kathrein 80010765	0	6.3	4	65	139.0	131.0	27.9
1-a-4	AT&T	Panel	1900	500	16.35	Kathrein 80010765	0	6.3	4	62	139.0	131.0	27.9
1-a-5	AT&T	Panel	850	500	13.65	Kathrein 80010765	0	6.3	2	65	142.0	131.0	27.9
1-a-6	AT&T	Panel	1900	500	16.35	Kathrein 80010765	0	6.3	2	62	142.0	131.0	27.9
1-a-7	AT&T	Panel	700	0	13.15	Kathrein 80010765	0	6.3	0	68	147.0	131.0	27.9
1-a-8	AT&T	Panel	700	0	13.15	Kathrein 80010765	0	6.3	0	68	147.0	131.0	27.9
1-b-1	AT&T	Panel	700	250	13.15	Kathrein 80010765	120	6.3	1	68	150.0	128.0	27.9
1-b-2	AT&T	Panel	700	250	13.15	Kathrein 80010765	120	6.3	1	68	150.0	128.0	27.9
1-b-3	AT&T	Panel	850	500	13.65	Kathrein 80010765	120	6.3	4	65	150.0	123.0	27.9
1-b-4	AT&T	Panel	1900	500	16.35	Kathrein 80010765	120	6.3	4	62	150.0	123.0	27.9
1-b-5	AT&T	Panel	850	500	13.65	Kathrein 80010765	120	6.3	2	65	150.0	119.0	27.9
1-b-6	AT&T	Panel	1900	500	16.35	Kathrein 80010765	120	6.3	2	62	150.0	119.0	27.9
1-b-7	AT&T	Panel	700	0	13.15	Kathrein 80010765	120	6.3	0	68	150.0	114.0	27.9
1-b-8	AT&T	Panel	700	0	13.15	Kathrein 80010765	120	6.3	0	68	150.0	114.0	27.9
1-c-1	AT&T	Panel	700	250	13.15	Kathrein 80010765	240	6.3	1	68	147.0	110.0	27.9
1-c-2	AT&T	Panel	700	250	13.15	Kathrein 80010765	240	6.3	1	68	147.0	110.0	27.9
1-c-3	AT&T	Panel	850	500	13.65	Kathrein 80010765	240	6.3	4	65	142.0	110.0	27.9
1-c-4	AT&T	Panel	1900	500	16.35	Kathrein 80010765	240	6.3	4	62	142.0	110.0	27.9
1-c-5	AT&T	Panel	850	500	13.65	Kathrein 80010765	240	6.3	2	65	139.0	110.0	27.9
1-c-6	AT&T	Panel	1900	500	16.35	Kathrein 80010765	240	6.3	2	62	139.0	110.0	27.9
1-c-7	AT&T	Panel	700	0	13.15	Kathrein 80010765	240	6.3	0	68	134.0	110.0	27.9
1-c-8	AT&T	Panel	700	0	13.15	Kathrein 80010765	240	6.3	0	68	134.0	110.0	27.9
2-a-1	T-Mobile	Panel	1900	632	15	Unknown	0	5.0	--	65	125.0	36.0	45.0
2-a-2	T-Mobile	Panel	850	3162	15	Unknown	0	5.0	--	65	125.0	36.0	45.0
2-b-1	T-Mobile	Panel	1900	632	15	Unknown	120	5.0	--	65	126.0	30.0	45.0
2-b-2	T-Mobile	Panel	850	3162	15	Unknown	120	5.0	--	65	126.0	30.0	45.0
2-c-1	T-Mobile	Panel	1900	632	15	Unknown	240	5.0	--	65	122.0	30.0	45.0
2-c-2	T-Mobile	Panel	850	3162	15	Unknown	240	5.0	--	65	122.0	30.0	45.0
3-a-1	Verizon	Panel	850	3162	15	Unknown	--	5.0	--	omni	4.0	81.0	25.0
3-a-2	Verizon	Panel	850	3162	15	Unknown	--	5.0	--	omni	8.0	81.0	25.0
3-a-3	Verizon	Panel	850	3162	15	Unknown	--	5.0	--	omni	11.0	81.0	25.0

**Table 2  
Antenna Inventory (proposed)  
RFDS Version: LTE\_V2010\_4.0**





Antenna Number	Operator	Type	TX Freq (MHz)	ERP (Watts)	Gain (dBd)	Model	Azimuth (deg.)	Length (ft)	Radio Count	Horizontal Beam width (Deg.)	X	Y	Z
1-a-1	AT&T	Panel	850	500	11	EMS mb48rr80vdpalq_r12	0	4.3	4	80	139.0	131.0	27.9
1-a-2	AT&T	Panel	1900	500	13.9	EMS mb48rr80vdpalq_r12	0	4.3	4	80	139.0	131.0	27.9
1-a-3	AT&T	Panel	850	500	11	EMS mb48rr80vdpalq_r12	0	4.3	2	80	142.0	131.0	27.9
1-a-4	AT&T	Panel	1900	500	13.9	EMS mb48rr80vdpalq_r12	0	4.3	2	80	142.0	131.0	27.9
1-b-1	AT&T	Panel	850	500	11	EMS mb48rr80vdpalq_r12	120	4.3	4	80	150.0	123.0	27.9
1-b-2	AT&T	Panel	1900	500	13.9	EMS mb48rr80vdpalq_r12	120	4.3	4	80	150.0	123.0	27.9
1-b-3	AT&T	Panel	850	500	11	EMS mb48rr80vdpalq_r12	120	4.3	2	80	150.0	119.0	27.9
1-b-4	AT&T	Panel	1900	500	13.9	EMS mb48rr80vdpalq_r12	120	4.3	2	80	150.0	119.0	27.9
1-c-1	AT&T	Panel	850	500	11	EMS mb48rr80vdpalq_r12	240	4.3	4	80	142.0	110.0	27.9
1-c-2	AT&T	Panel	1900	500	13.9	EMS mb48rr80vdpalq_r12	240	4.3	4	80	142.0	110.0	27.9
1-c-3	AT&T	Panel	850	500	11	EMS mb48rr80vdpalq_r12	240	4.3	2	80	139.0	110.0	27.9
1-c-4	AT&T	Panel	1900	500	13.9	EMS mb48rr80vdpalq_r12	240	4.3	2	80	139.0	110.0	27.9
2-a-1	T-Mobile	Panel	1900	632	15	Unknown	0	5.0	--	65	125.0	36.0	45.0
2-a-2	T-Mobile	Panel	850	3162	15	Unknown	0	5.0	--	65	125.0	36.0	45.0
2-b-1	T-Mobile	Panel	1900	632	15	Unknown	120	5.0	--	65	126.0	30.0	45.0
2-b-2	T-Mobile	Panel	850	3162	15	Unknown	120	5.0	--	65	126.0	30.0	45.0
2-c-1	T-Mobile	Panel	1900	632	15	Unknown	240	5.0	--	65	122.0	30.0	45.0
2-c-2	T-Mobile	Panel	850	3162	15	Unknown	240	5.0	--	65	122.0	30.0	45.0
3-a-1	Verizon	Panel	850	3162	15	Unknown	Omni	5.0	--	Omni	4.0	81.0	25.0
3-a-2	Verizon	Panel	850	3162	15	Unknown	Omni	5.0	--	Omni	8.0	81.0	25.0
3-a-3	Verizon	Panel	850	3162	15	Unknown	Omni	5.0	--	Omni	11.0	81.0	25.0

**Table 3**  
**Antenna Inventory (current)**  
**RFDS Version: LTE\_V2010\_4.0**

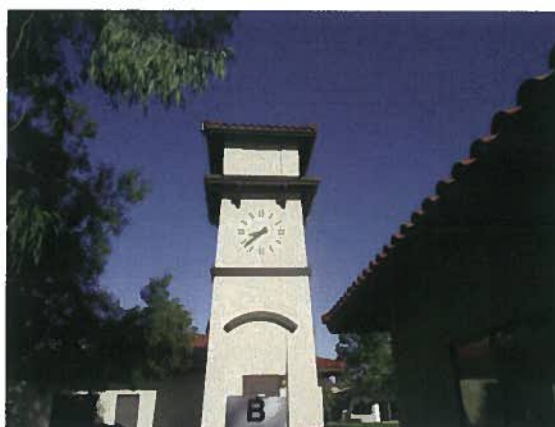


### 3 Photos of Rooftop and Antennas

#### 3.1 AT&T Existing Sectors



AT&T Sector 1



AT&T Sector 2



AT&T Sector 3



AT&T BTS

### 3.2 Co Located Carriers



T-Mobile Sector 1



T-Mobile Sector 2



T-Mobile Sector 3



Verizon Omni



Verizon BTS



T-Mobile BTS



### 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 roof access door and the stairs leading to it.



ATT Tower Door



Notice and Info Sign at ATT and T-Mobile BTS



Info1 Sign at Tower Door



Info Sign at T-Mobile Pole



Site Entrance



Stairs



Stairs to ATT site



Stairs 1



Stairs 2



Stairs 3



## **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

Proposed

Statistical Summary		
%MPE	SQ. FT	%SQ. FT.
	40000	100.00 % of total ROOF Area
0-100	40000	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
<p>Roof Area 40000 sq. ft.            Max %MPE 6.6 %            Min %MPE 0.0 %            Using Near/Far Spatial Avg Model            With FCC 1997 Public Standard</p>		

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

Statistical Summary		
%MPE	SQ. FT	%SQ. FT.
	40000	100.00 % of total ROOF Area
0-5	40000	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
<p>Roof Area 40000 sq. ft.            Max %MPE 6.6 %            Min %MPE 0.0 %            Using Near/Far Spatial Avg Model            With FCC 1997 Public Standard</p>		

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



Current

Statistical Summary		
%MPE	SQ. FT	%SQ. FT.
	40000	100.00 % of total ROOF Area
0-100	40000	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
<p><b>Roof Area 40000 sq. ft.</b>  <b>Max %MPE 9.9 %</b>  <b>Min %MPE 0.0 %</b>  <b>Using Near/Far Spatial Avg Model</b>  <b>With FCC 1997 Public Standard</b></p>		

**Table 6**  
**Percent of FCC General Population Exposure Limit, All carriers**

Statistical Summary		
%MPE	SQ. FT	%SQ. FT.
	40000	100.00 % of total ROOF Area
0-5	39987	99.97 % of Selected Area
6 - 500	13	0.03 % of Selected Area
501 - 5000	0	0.00 % of Selected Area
> 5000	0	0.00 % of Selected Area
<p><b>Roof Area 40000 sq. ft.</b>  <b>Max %MPE 9.9 %</b>  <b>Min %MPE 0.0 %</b>  <b>Using Near/Far Spatial Avg Model</b>  <b>With FCC 1997 Public Standard</b></p>		

**Table 7**  
**Percent of FCC General Population Exposure Limit, AT&T proposed**





## 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 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 ( $\text{W}/\text{m}^2$ ).

### 6.1 Analysis

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

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



## 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 <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



## 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 <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.

## 7.3 Controlled and Uncontrolled Exposure Limits

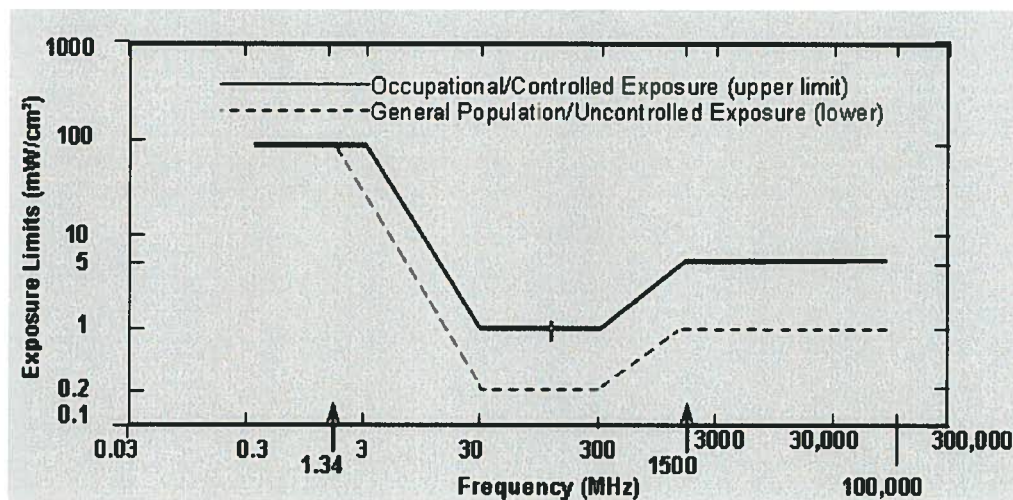


Figure 3



## 8 FCC Standard Certification

This report certifies that the site WESTMINSTER THEOLOGICAL SEMINARY– 50604 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:  
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RF Technician  
Telnet Inc.

Date: 05/06/11

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

Date: 05/06/11



## 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



## 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

This certificate may only be published in full, unless permission for the publication of an approved extract has been obtained in writing from the Director of Quality Assurance.

Certificate No 01006\_07Jul2009.txt

Date of issue 07/Jul/2009

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



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

Pfullingen, 2009-07-02

*M. Budim*  
 Person in charge  
 M. Budim

*N. Moll*  
 Head of Laboratory  
 N. Moll

This certificate may only be published in full, unless permission for the publication of an approved extract has been obtained in writing from the Managing Director

MANAGEMENT  
SYSTEM



Certified by DQS against  
 DIN EN ISO 9001:2000  
 (Reg.-No. 99379-QM)

Certificate No. NBM-550-A-0125-090702-83

Date of issue 2009-07-02

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