



# CITY OF SUNNYVALE REPORT ZONING ADMINISTRATOR HEARING

March 16, 2011

**File Number:** 2010-7918

**Permit Type:** Use Permit

**Location:** 704 Daffodil Ct. (near Gail Ave.) (APN: 211-07-002)

**Applicant/Owner:** AT&T / City of Sunnyvale

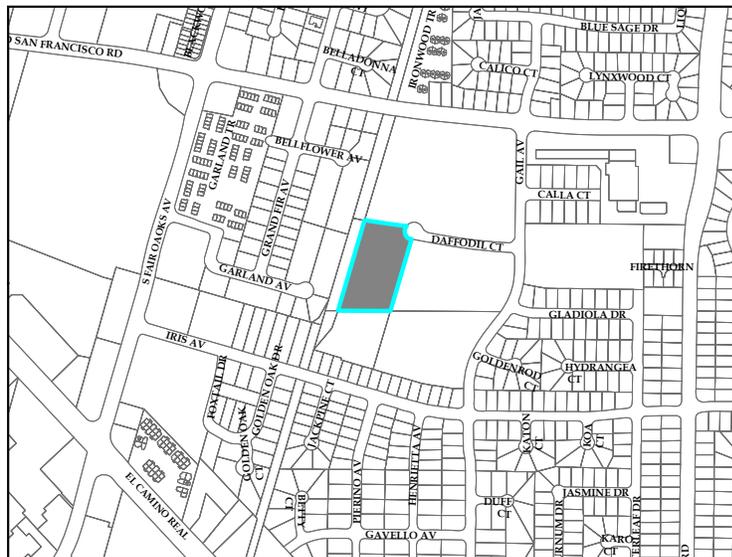
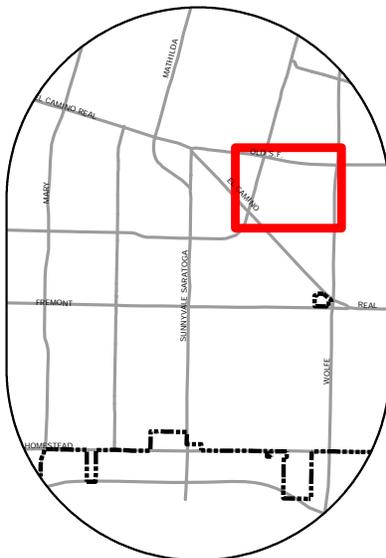
**Staff Contact:** Ryan Kuchenig, Associate Planner, (408) 730-7431

**Project Description:** To allow modifications to an existing telecommunications facility (AT&T) at Braly Park including the installation of three new panel antennas and associated equipment on a PG&E tower. An additional cabinet is to be placed within the existing fenced enclosure underneath the tower.

**Reason for Permit:** A Use Permit is required for the modification to an existing facility that would enable additional antennas.

**Issues:** Aesthetics

**Recommendation:** Approve with Conditions including modifications that reduce the bulk of the facility and better conceal the proposed equipment.



500

Feet

**PROJECT DESCRIPTION**

	<b>Existing</b>	<b>Proposed</b>
General Plan:	Park	Same
Zoning District:	Public Facility (PF)	Same
Lot Size	3.1 acres	Same
Height of Antennas on Transmission Tower	46' and 52'	Same

**Zoning Administrator Hearing:** A Zoning Administrator Hearing was held on February 16, 2011. Discussion at the hearing related to the purpose and visual impact of the proposed facility modifications. The Hearing Officer took the item under advisement and ultimately made a decision to continue the project to the next hearing to explore options for redesign. The project was continued again from the March 2, 2011 Zoning Administrator hearing.

At this time, the application has not been modified; therefore, staff has modified the original recommendation to include a Condition of Approval BP-1 d., which requires modifications to the facility design to reduce the bulk of the new antennas and equipment. Such measures shall include improved concealment of the RRH units and surge suppressors. A final design will be subject to review and approval by staff prior to approval of a Building permit.

**Previous Planning Projects related to Subject Application:** The site was originally approved for a telecommunications facility in 2000. In May of 2010, a proposal was approved to allow the replacement of the six previously approved antennas for the facility. The replacement antennas were slightly larger than the existing antennas. The facility was also modified with replacement antennas in 2006 through a Miscellaneous Plan Permit application. A telecommunications facility is located on a separate nearby PG&E tower in Braly Park to the southeast.

**Use Description & Site Layout:** The proposed use is to allow three panel antenna and a GPS antenna on an existing telecommunications facility positioned on a PG&E transmission tower at Braly Park. Additional supporting equipment would be positioned on each of the three antenna sectors. More detail of the new equipment is provided in the applicant's description in Attachment C. The existing antennas will be reconfigured so that the new antennas can be located at the same height on the tower. There is also a telecommunications facility located on a nearby PG&E transmission tower to the southeast. The proposed telecommunications antennas, operated by AT&T, would be positioned on three sectors at two vertical sections of the tower (46' and 52' above the ground). Additional ground equipment that supports the antennas would be located in an existing fenced shelter directly underneath the tower.

The property has frontage along Daffodil Court to the north; however, the tower may be more visible along Iris Avenue which is south of the park. A row of single-family homes separate the park from Iris Avenue. An access road connecting the two streets lies along the west side of the park adjacent to the tower.

**Design:** The additional antennas are approximately the same size (4' long) as the existing antennas but in order to accommodate them, the equipment will project further out than the current installation. Existing and proposed elevations are shown on page 7 (A-5) of Attachment B. Photosimulations are also included in Attachment D. As conditioned, the antennas are to be positioned as close as possible to the tower and painted to match (C.O.A #BP-1).

**Public Contact:** 318 notices were sent to surrounding property owners and residents adjacent to subject site in addition to standard noticing practice. No letters were received.

**Environmental Determination:** A Categorical Exemption Class 1 (minor additions to existing facilities) relieves this project from CEQA provisions.

## **FINDINGS**

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In order to approve the Use Permit the following findings must be made:

1. The proposed use attains the objectives and purposes of the General Plan of the City of Sunnyvale.

### **Land Use and Transportation Sub-Element**

**Policy Statement N1.3** - Promote an attractive and functional commercial environment.

**Policy Statement N1.5** - Establish and monitor standards for community appearance and property maintenance.

### **Telecommunications Policy**

**Council Policy Manual: Telecommunications** - The City of Sunnyvale's Council Policy Manual (CPM) is a compendium of policies established by City Council resolution or motion which provide guidelines for current or future City action. Such policies, when implemented, assist in achieving General Plan goals.

**Policy Statement 1.A.5** - Support retention of local zoning authority for cellular towers, satellite dish antennas, and other telecommunications equipment, facilities and structures.

**Policy Statement 2** - Promote universal access to telecommunications services for all Sunnyvale residents

The Wireless Telecommunications Policy promotes retention of local zoning authority when reviewing telecommunications facilities. The zoning code requires that the location of telecommunication facilities be designed with sensitivity to the surrounding areas. The proposed facility is compliant with all wireless telecommunication development standards:

- *The project, in addition to existing facilities on-site, meets all FCC RF emissions standards.*
- *The facility will be painted to match the tower.*
- *Associated equipment is screened and located within an existing shelter under the tower.*

Staff was able to make the findings as the design meets the guidelines described above.

2. The proposed use ensures that the general appearance of proposed structures, or the uses to be made of the property to which the application refers, will not impair the orderly development of, or the existing uses being made of, adjacent properties.

Staff finds that the additional antennas will have limited aesthetic impact to the surrounding area. Recommended Conditions of Approval ensure adequate signage and current information is maintained.

**ALTERNATIVES:**

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1. Approve the Use Permit with recommended Conditions in Attachment A.
2. Approve the Use Permit with modifications.
3. Deny the Use Permit.

**RECOMMENDATION**

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Alternative 1: Approve the Use Permit with recommended Conditions in Attachment A.

Reviewed by:



Steve Lynch  
Senior Planner

Prepared By: Ryan Kuchenig, Associate Planner

Attachments:

- A. Standard Requirements and Recommended Conditions of Approval
- B. Site and Architectural Plans
- C. Project Description from the Applicant
- D. Photosimulations
- E. RF Emissions Study

**RECOMMENDED  
CONDITIONS OF APPROVAL AND  
STANDARD DEVELOPMENT REQUIREMENTS  
March 16, 2011**

**Planning Application 2010-7918**

704 Daffodil

**Use Permit** to allow modifications to an existing telecommunications facility (AT&T) at Braly Park including the installation of three new panel antennas and associated equipment on a PG&E tower.

The following Conditions of Approval [COA] and Standard Development Requirements [SDR] apply to the project referenced above. The COAs are specific conditions applicable to the proposed project. The SDRs are items which are codified or adopted by resolution and have been included for ease of reference, they may not be appealed or changed. The COAs and SDRs are grouped under specific headings that relate to the timing of required compliance. Additional language within a condition may further define the timing of required compliance. Applicable mitigation measures are noted with "Mitigation Measure" and placed in the applicable phase of the project.

In addition to complying with all applicable City, County, State and Federal Statutes, Codes, Ordinances, Resolutions and Regulations, Permittee expressly accepts and agrees to comply with the following Conditions of Approval and Standard Development Requirements of this Permit:

**GC: THE FOLLOWING GENERAL CONDITIONS OF APPROVAL AND STANDARD DEVELOPMENT REQUIREMENTS SHALL APPLY TO THE APPROVED PROJECT.**

GC-1. CONFORMANCE WITH APPROVED PLANNING APPLICATION:

All building permit drawings and subsequent construction and operation shall substantially conform with the approved planning application, including: drawings/plans, materials samples, building colors, and other items submitted as part of the approved application. Any proposed amendments to the approved plans or Conditions of Approval are subject to review and approval by the City. The Director of Community Development shall determine whether revisions are considered major or minor. Minor changes are subject to review and approval by the Director of Community Development. Major changes are subject to review at a public hearing. [COA] [PLANNING]

GC-2 COMPLY WITH APPLICABLE REGULATIONS:

The facility must comply with any and all applicable regulations and standards promulgated or imposed by any state or federal agency, including but not limited to the Federal Communications Commission and Federal Aviation Agency.[SDR] [PLANNING]

GC-3 PERMIT EXPIRATION:

The permit shall be null and void two years from the date of approval by the final review authority at a public hearing if the approval is not exercised, unless a written request for an extension is received prior to expiration date and is approved by the Director of Community Development. [SDR] (PLANNING)

GC-4 TESTING WITHIN 15 DAYS:

The applicant shall test any wireless telecommunications site installed in the City of Sunnyvale within 15 days of operating the facility. The test shall confirm that any Emergency 911 wireless call made through the wireless telecommunications site shall provide Enhanced 911 capability (including phase 2 information when available from the caller's device) and direct the call to the City of Sunnyvale Department of Public Safety dispatcher, ensuring phase 2 information is transferred. If the call is to be directed elsewhere pursuant to State and Federal law the applicant shall ensure that the Enhanced 911 information transfers to that dispatch center. This capability shall be routinely tested to ensure compliance as long as the approved wireless telecommunications site is in service. [SDR] [PLANNING]

GC-5 HOLD HARMLESS:

The wireless telecommunications facility provider shall defend, indemnify, and hold harmless the city or any of its boards, commissions, agents, officers, and employees from any claim, action or proceeding against the city, its boards, commission, agents, officers, or employees to attack, set aside, void, or annul, the approval of the project when such claim or action is brought within the time period provided for in applicable state and/or local statutes. The city shall promptly notify the provider(s) of any such claim, action or proceeding. The city shall have the option of coordinating in the defense. Nothing contained in this stipulation shall prohibit the city from participating in a defense of any claim, action, or proceeding if the city bears its own attorney's fees and costs, and the city defends the action in good faith. [SDR] [PLANNING]

GC-6 LIABILITY:

Facility lessors shall be strictly liable for any and all sudden and accidental pollution and gradual pollution resulting from their use

within the city. This liability shall include cleanup, intentional injury or damage to persons or property. Additionally, lessors shall be responsible for any sanctions, fines, or other monetary costs imposed as a result of the release of pollutants from their operations. Pollutants include any solid, liquid, gaseous or thermal irritant or contaminant, including smoke, vapor, soot, fumes, acids, alkalis, chemicals, and waste. Waste includes materials to be recycled, reconditioned or reclaimed. [SDR] [PLANNING]

GC-7 NO THREAT TO PUBLIC HEALTH:

The facility shall not be sited or operated in such a manner that it poses, either by itself or in combination with other such facilities, a potential threat to public health. To that end, the subject facility and the combination of on-site facilities shall not produce at any time power densities in any inhabited area that exceed the FCC's Maximum Permissible Exposure (MPE) limits for electric and magnetic field strength and power density for transmitters or any more restrictive standard subsequently adopted or promulgated by the federal government. [SDR] [PLANNING]

**BP: THE FOLLOWING CONDITIONS SHALL BE ADDRESSED ON THE CONSTRUCTION PLANS SUBMITTED FOR ANY DEMOLITION PERMIT, BUILDING PERMIT, GRADING PERMIT, AND/OR ENCROACHMENT PERMIT AND SHALL BE MET PRIOR TO THE ISSUANCE OF SAID PERMIT(S).**

BP-1 PROJECT DESIGN:

The project plans shall demonstrate compliance with the following design elements:

- a. The panel antennas and equipment shall be painted to match the existing tower and antennas;
- b. Antennas shall be located as close to the tower as possible as shown in the approved plans and photosimulations;
- c. All associated ground equipment shall be located within the existing equipment shelter adjacent to the building.
- d. Modifications shall be made to reduce the bulk of the new antennas and equipment. Such measures shall include concealment of the RRH units and surge suppressors behind the panel antennas. [COA] [PLANNING]

BP-2 CONDITIONS OF APPROVAL:

Final plans shall include all Conditions of Approval included as part of the approved application starting on sheet 2 of the plans. [COA] [PLANNING]

BP-3 BLUEPRINT FOR A CLEAN BAY:

The building permit plans shall include a "Blueprint for a Clean Bay" on one full sized sheet of the plans. [SDR] [PLANNING]

**PF: THE FOLLOWING CONDITIONS SHALL BE ADDRESSED ON THE CONSTRUCTION PLANS AND/OR SHALL BE MET PRIOR TO RELEASE OF UTILITIES OR ISSUANCE OF A CERTIFICATE OF OCCUPANCY.**

PF-1 RF EMISSIONS STUDIES:

The applicant shall submit to the Director of Community Development at least two reports of field measurements for Radio Frequency Emissions showing: 1.) The ambient level of RF emissions before construction of the facility and 2.) The actual level of emissions after the facility is in place and operating at or near full capacity. [COA] [PLANNING]

**AT: THE FOLLOWING CONDITIONS SHALL BE COMPLIED WITH AT ALL TIMES THAT THE USE PERMITTED BY THIS PLANNING APPLICATION OCCUPIES THE PREMISES.**

AT-1 CERTIFICATION:

Before January 31 of each even numbered year following the issuance of any authorizing establishment of a wireless telecommunication facility, an authorized representative for each wireless carrier providing service in the City of Sunnyvale shall provide written certification to the City executed under penalty of perjury that (i) each facility is being operated in accordance with the approved local and federal permits and includes test results that confirm the facility meets city noise requirements and federal RF emissions standards; (ii) each facility complies with the then-current general and design standards and is in compliance with the approved plans; (iii) whether the facility is currently being used by the owner or operator; and (iv) the basic contact and site information supplied by the owner or operator is current.. [SDR] [PLANNING]

AT-2 10 YEAR RENEWAL:

Every owner or operator of a wireless telecommunications facility shall renew the facility permit at least every ten (10) years from the date of initial approval. If a permit or other entitlement for use is not renewed, it shall automatically become null and void without notice or hearing ten (10) years after it is issued, or upon cessation of use for more than a year and a day, whichever comes first. Unless a new use

permit or entitlement of use is issued, within one hundred twenty (120) days after a permit becomes null and void all improvements, including foundations and appurtenant ground wires, shall be removed from the property and the site restored to its original pre-installation condition within one hundred eighty (180) days of nonrenewal or abandonment. [SDR] [PLANNING]

AT-3 MINIMIZE NOISE:

The facility shall be operated in such a manner so as to minimize any possible disruption caused by noise. Backup generators shall only be operated during periods of power outages, and shall not be tested on weekends or holidays, or between the hours of 10:00 p.m. and 7:00 a.m. on weekday nights. At no time shall equipment noise from any source exceed an exterior noise level of 60 dB at the property line. [SDR] [PLANNING]

AT-4 RF EMISSIONS:

Certification must be provided that the proposed facility will at all times comply with all applicable health requirements and standards pertaining to RF emissions. [SDR] [PLANNING]

AT-5 MAINTAIN CURRENT INFORMATION:

The owner or operator shall maintain, at all times, a sign mounted on the outside fence showing the operator name, site number and emergency contact telephone number. The owner or operator of the facility shall also submit and maintain current at all times basic contact and site information on a form to be supplied by the city. The applicant shall notify city of any changes to the information submitted within thirty (30) days of any change, including change of the name or legal status of the owner or operator. This information shall include, but is not limited to the following:

- a. Identity, including name, address and telephone number, and legal status of the owner of the facility including official identification numbers and FCC certification, and if different from the owner, the identity and legal status of the person or entity responsible for operating the facility.
- b. Name, address and telephone number of a local contact person for emergencies.
- c. Type of service provided. [SDR] [PLANNING]

AT-6 GOOD REPAIR:

All facilities and related equipment, including lighting, fences and fence slats, shields, cabinets, and poles, shall be maintained in good repair, free from trash, debris, litter and graffiti and other forms of

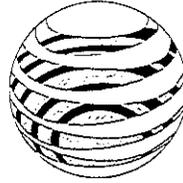
vandalism, and any damage from any cause shall be repaired as soon as reasonably possible so as to minimize occurrences of dangerous conditions or visual blight. Graffiti shall be removed from any facility or equipment as soon as practicable, and in no instance more than forty-eight (48) hours from the time of notification by the city. [SDR] [PLANNING]

AT-7 RESPONSIBILITY TO MAINTAIN:

The owner or operator of the facility shall routinely and regularly inspect each site to ensure compliance with the standards set forth in the Telecommunications Ordinance. [SDR] [PLANNING]

AT-8 NO INTERFERENCE WITH CITY COMMUNICATION SYSTEMS:

The facility operator shall be strictly liable for interference caused by the facility with city communication systems. The operator shall be responsible for all labor and equipment costs for determining the source of the interference, all costs associated with eliminating the interference, (including but not limited to filtering, installing cavities, installing directional antennas, powering down systems, and engineering analysis), and all costs arising from third party claims against the city attributable to the interference. [SDR] [PLANNING]



at&t  
Your world. Delivered.

# EL CAMINO AND WOLF

CCL00780/CNU0780/SF0780/CNU3443/FA# 10093969

704 DAFFODIL COURT  
SUNNYVALE, CA 94085

**PROPRIETARY INFORMATION**

THE INFORMATION CONTAINED IN THIS SET OF CONSTRUCTION DOCUMENTS IS PROPRIETARY IN NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO CARRIER SERVICES IS STRICTLY PROHIBITED.



**PTS**  
PACIFIC TELECOM SERVICES, LLC

**PROJECT INFORMATION**

**PROJECT DESCRIPTION:**

AT&T PROPOSES THE ADDITION OF (3) LTE ANTENNAS, (1) POF SECTOR, (2) RRH UNITS PER NEW ANTENNA, (2) NETS PER NEW ANTENNA AND A GPS ANTENNA (E-COMPATIBLE EXISTING ANTENNA) TO ACCOMMODATE NEW LTE & RELATED EQUIPMENT TO BE LOCATED @ ANTENNA LEVEL. INSTALL (RRH & RRH UNIT) LTE EQUIPMENT INSIDE EXISTING SANITARY CABINET INSIDE EXISTING EQUIPMENT AREA @ GROUND LEVEL.

**APPLICANT:**

AT&T  
4430 ROSEWOOD DRIVE  
FLOOR 3, FLOOR 6  
PLEASANTON, CA 94566

**PROPERTY OWNER:**

CITY OF SUNNYVALE  
434 OLIVE AVE  
SUNNYVALE, CA 94086

**TOWER OWNER:**

PG&E  
CONTACT: ASH RAGHE  
PH: (415) 504-9679

**CODE INFORMATION:**

ZONING CLASSIFICATION: TRD  
CONSTRUCTION TYPE: III  
OCCUPANCY: S-2  
JURISDICTION: CITY OF SUNNY VALE  
CURRENT USE: TELECOMMUNICATIONS FACILITY  
PROPOSED USE: TELECOMMUNICATIONS FACILITY

**TEAM LEAD:**

ERICSSON, INC.  
6160 STONEBRIDGE MALL ROAD  
SUITE 400  
PLEASANTON, CA 94588  
CONTACT: NICOLE SMITH  
EMAIL: NICOLE.SMITH@ERICSSON.COM  
PH: N/A

**SITE LOCATION: (BASED ON NAD 83):**

UNITS: 31.361442  
LONGITUDE: -122.020901  
TOP OF STRUCTURE AGL: 130  
BASE OF STRUCTURE AMSL: 60'-0"

**SITE ACQUISITION MANAGER:**

ERICSSON, INC.  
6160 STONEBRIDGE MALL ROAD, SUITE 400  
PLEASANTON, CA 94588  
CONTACT: NICOLE SMITH  
EMAIL: NICOLE.SMITH@ERICSSON.COM  
PH: N/A

**SITE ACQUISITION:**

REALCOM  
3025 HOPKINS ROAD, SUITE 182  
PLEASANTON, CA 94588  
CONTACT: CHRISTIAN HILL  
PH: (707) 342-2066

**POLE/TOWER INFORMATION:**

TOWER SIZE: 4206x15x  
LINE NAME & VOLTAGE: WESTINGHOUSE TAP, 60KV

**PERMITTING:**

REALCOM  
3025 HOPKINS ROAD, SUITE 182  
PLEASANTON, CA 94588  
CONTACT: CHRISTIAN HILL  
PH: (707) 342-2066

**CONSTRUCTION MANAGER:**

ERICSSON, INC.  
6160 STONEBRIDGE MALL ROAD  
SUITE 400  
PLEASANTON, CA 94588  
CONTACT: URSAN NUNJALEY  
PH: (707) 363-3355

**GENERAL INFORMATION:**

1. PARKING REQUIREMENTS ARE UNCHANGED  
2. TRAFFIC IS UNALTERED

**PROJECT TEAM**

**PROJECT ARCHITECT:**

THOMAS HOLLAND, AIA  
PACIFIC TELECOM SERVICES, LLC  
3025 HOPKINS ROAD, SUITE 182  
PLEASANTON, CA 94588  
CONTACT: IMA #090  
PH: (510) 776-2068  
EMAIL: MIP090@PTSM.COM

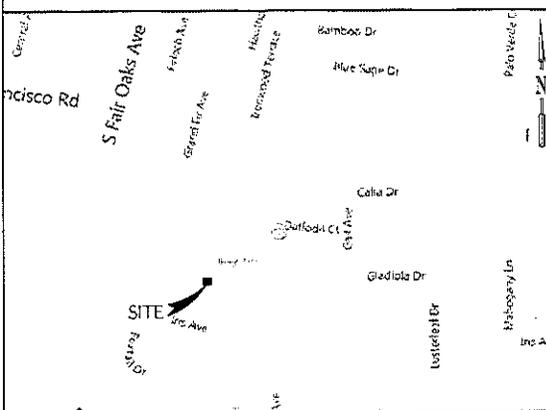
**PROJECT CONSULTANT:**

ERICSSON, INC.  
6160 STONEBRIDGE MALL ROAD  
SUITE 400  
PLEASANTON, CA 94588

**PROJECT CONSULTANT:**

REALCOM ASSOCIATES, LLC  
3025 HOPKINS ROAD, SUITE 182  
PLEASANTON, CA 94588  
CONTACT: PAVUNA MANANDEVA  
PHONE: (510) 576-3991  
EMAIL: PMANANDEVA@REALCOMASSOCIATES.COM

**VICINITY MAP**



**DRIVING DIRECTIONS**

START FROM REGIONAL OFFICE:  
DEPART ROSEWOOD ON TOWARD OLD SANTA RITA RD  
TURN LEFT ONTO SANTA RITA RD  
TAKE RAMP RIGHT FOR I-580 WEST / ANTIPOH H BREED FRY TOWARD OAKLAND  
AT EXIT 446, TAKE RAMP RIGHT FOR I-580 SOUTH / SINGLEM FRY TOWARD SAN JOSE  
AT EXIT 12, TAKE RAMP RIGHT FOR SR-282 WEST / MISSION BLVD TOWARD WARM SPRINGS DISTRICT  
TAKE RAMP LEFT FOR I-580 SOUTH / HWY2 FRY TOWARD SAN JOSE  
TAKE RAMP RIGHT FOR SR-217 WEST / MOUNTAIN VIEW AVENUE AND TOWARD WIN VIEW  
TAKE RAMP RIGHT AND FOLLOW SIGNS FOR N LAWRENCE EXPY /  
CR-82 SOUTH'S IMPROV HIGHWAYS ON THE LEFT IN  
TURN RIGHT ONTO REDD AVE  
ROAD NAME CHANGED TO OLD SAN FRANCISCO RD  
TURN LEFT ONTO GAIL AVE  
TURN RIGHT ONTO DAFFODIL CT  
ARRIVE AT 704 DAFFODIL CT, SUNNYVALE, CA 94085-8017 ON THE LEFT THE LAST INTERSECTION IS GAIL AVE

APPROVAL	DATE	SIGNATURE	APPROVAL	DATE	SIGNATURE
RF ENGINEER:			LANDLORD:		
RF MANAGER:			SITE ACQUISITION:		
OPPS MANAGER:			ZONING AGENT:		
CONSTR MANAGER:			PROJECT MANAGER:		
NSM MANAGER:			CONSTR MANAGER:		
TRANSPORT:					
EQUIP ENGINEER:					
COMPLIANCE:					

REVIEWERS SHALL CLEARLY PLACE INITIALS ADJACENT TO EACH REDLINE NOTE AS DRAWINGS ARE BEING REVIEWED

**DRAWING INDEX**

SHEET	DESCRIPTION
T-1	TITLE SHEET
G-1	GENERAL NOTES
A-1	SITE PLAN
A-2	ENLARGED SITE PLAN
A-3	EXISTING & PROPOSED ENLARGED EQUIPMENT PLAN
A-4	EXISTING & PROPOSED ENLARGED ANTENNAS PLAN
A-5	EXISTING & PROPOSED SOUTHWEST ELEVATION
RF-1	RF DETAILS
E-1	SCHEMATIC GROUNDING PLAN
E-2	GROUNDING DETAILS

**CODE COMPLIANCE**

2007 BUILDING STANDARDS ADMINISTRATION CODE  
- PART 1, TITLE 24, C.C.R.  
2007 CALIFORNIA ELECTRICAL CODE (CEC)  
- PART 2, TITLE 24, C.C.R.  
2006 INTERNATIONAL BUILDING CODE (IBC)  
- VOLUMES 1-3 & CALIFORNIA AMENDMENTS  
2007 CALIFORNIA ELECTRICAL CODE (CEC)  
- PART 3, TITLE 24, C.C.R.  
2005 NATIONAL ELECTRICAL CODE (NEC)  
- INCLUDING 2007 CALIFORNIA AMENDMENTS  
2007 CALIFORNIA MECHANICAL CODE (CMC)  
- PART 4, TITLE 24, C.C.R.  
2006 INTERNATIONAL MECHANICAL CODE (IMC)  
- INCLUDING 2007 CALIFORNIA AMENDMENTS  
2007 CALIFORNIA PLUMBING CODE (CPC)  
- PART 5, TITLE 24, C.C.R.  
2006 INTERNATIONAL PLUMBING CODE (IPC)  
- INCLUDING 2007 CALIFORNIA AMENDMENTS  
2007 CALIFORNIA ENERGY CODE (CEC)  
- PART 6, TITLE 24, C.C.R.  
2004 ASME A17.1 SAFETY CODE  
- FOR ELEVATORS AND ESCALATORS  
2007 CALIFORNIA FIRE CODE (CFC)  
- PART 7, TITLE 24, C.C.R.  
2006 INTERNATIONAL FIRE CODE (IFC)  
- INCLUDING 2007 CALIFORNIA AMENDMENTS  
2007 CALIFORNIA REFERENCED STANDARDS  
- PART 12, TITLE 24, C.C.R.  
- TITLE 19, C.C.R.  
PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS  
ANSI/ASTM A22-0 STANDARDS FOR BROADCAST  
STRUCTURES, LOCAL CODES AND ORDINANCES  
  
IN THE EVENT OF A CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.

**ABBREVIATIONS**

A/C	AIR CONDITIONING	HRZ	HORIZONTAL	PLYWD	PLYWOOD
AGL	ABOVE GROUND LEVEL	HR	HOUR	PROJ	PROJECT
APPROX	APPROXIMATELY	HT	HEIGHT	PROP	PROPERTY
BLK	BUILDING	HVAC	HEATING VENTILATION AIR CONDITIONING	REQD	REQUIRED
BLK	BLOCKING	RM	ROOM	REQD	REQUIRED
CLC	CULING	SH	SHEET	SH	SHEET
CLR	CLIP	ID	INSIDE DIAMETER	SM	SIMILAR
CONC	CONCRETE	IN	INFORMATION	SPCC	SQUARE FOOT
CONF	CONSTRUCTION	INT	INSULATION	STL	STAINLESS STEEL
CONT	CONTINUOUS	INT	INTERIOR	STL	STRUCTURAL STEEL
ORL	DOUBLE DIAMETER	INT	INTERNATIONAL BUILDING CODE	STRUC	STRUCTURAL
DIA	DIAMETER	ISC	INTERNATIONAL BUILDING CODE	SUSP	SUSPENDED
DN	DOWN	LOG	LOGS	THRU	THROUGH
DET	DETAIL	MAX	MAXIMUM	TNG	TYPED
DET	DETAIL	MCH	MECHANICAL	TR	TYPICAL
DWG	DRAWING	MFL	MECHANICAL	UNO	UNLESS NOTED OTHERWISE
EA	EACH	MFR	MANUFACTURE	VERT	VERTICAL
ELEV	ELEVATION	MGR	MANAGER	VERT	VERTICAL
ELEC	ELECTRICAL	MIN	MINIMUM	VERI	VERIFY IN FIELD
EQP	EQUIPMENT	MIS	MISCELLANEOUS	W/	WITH
EXT	EXTERIOR	NS	NOT IN CONTRACT	W/O	WITHOUT
FIN	FINISH	NTS	NOT TO SCALE	WP	WATER PROOF
FLOOR	FLOOR	OC	ON CENTER		
FLX	FLOOR	OD	OUTSIDE DIMENSION		
FT	FOOT				
G	GABLE				
GALV	GALVANIZED				
GENL	GENERAL CONTRACTOR				
GRND	GROUND				
GYP	GYPSON WALL BOARD				

THE INFORMATION CONTAINED IN THIS SET OF CONSTRUCTION DOCUMENTS IS PROPRIETARY IN NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO CARRIER SERVICES IS STRICTLY PROHIBITED.

EL CAMINO AND WOLF

CCL00780/CNU0780/SF0780/CNU3443  
704 DAFFODIL COURT  
SUNNYVALE, CA 94085

ATTACHMENT  
Page 1 of 10

**GENERAL NOTES:**

1. THE CONTRACTOR SHALL NOTIFY TOWER NETWORK CARRIER OF ANY ERRORS, OMISSIONS, OR DISCREPANCIES AS THEY MAY BE DISCOVERED IN PLANS, DOCUMENTS, NOTICES, OR SPECIFICATIONS PRIOR TO STARTING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, DISCREPANCIES OR CONFLICTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY ERROR, OMISSION, OR DISCREPANCY AFTER THE STARTING OF CONSTRUCTION WHICH HAS NOT BEEN BROUGHT TO THE ATTENTION OF TOWER NETWORK CARRIER CONSTRUCTION PROJECT MANAGER AND SHALL INCUR ANY EXPENSES TO CORRECT THE SITUATION. THE AGENT OF TOWER NETWORK CARRIER SHALL FIRST BE APPROVED BY TOWER NETWORK CARRIER CONSTRUCTION PROJECT MANAGER.
2. PRIOR TO THE SUBMISSION OF BIDDOR, CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. CONTRACTORS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OF THE CONSTRUCTION WORKS HAVE BEEN ADVISED THIS PROJECT SHALL VISIT THE CONSTRUCTION SITE WITH THE CONSTRUCTION/CONTRACT DOCUMENTS TO VERIFY FIELD CONDITIONS AND CONFIRM THAT THE PROJECT WILL BE ACCOMMODATED AS SHOWN. PRIOR TO PROCEEDING WITH CONSTRUCTION ANY ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER ORALLY AND IN WRITING.
3. FOR COLLOCATION SITES CONTACT TOWER DESIGN REPRESENTATIVE FOR PARTICIPATION IN BID PAKE.
4. DRAWINGS ARE NOT TO BE SCALED. WRITTEN DIMENSIONS TAKE PRECEDENCE. THIS SET OF DOCUMENTS IS INTENDED TO BE USED FOR QUANTITATIVE PURPOSES ONLY UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR, AND ANY REQUIREMENTS DEEMED NECESSARY TO COMPLETE THE WORK AS DESCRIBED IN THE DRAWINGS AND OWNER'S PROJECT MANUAL.
5. THE ARCHITECTS/ENGINEERS HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. CONTRACTORS ARE NOT TO BE DEEMED TO HAVE GUARANTEED THAT UNLESS OTHERWISE NOTED IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL NOT EXCEED THE CONTRACT PRICE. CONTRACTORS SHALL VERIFY AND IMPROVE IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS. THE OWNER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE ARCHITECT/ENGINEER OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO SUBMISSION OF CONTRACTOR'S PROPOSAL. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED OTHERWISE.
6. DRAWINGS ARE NOT TO BE SCALED UNDER ANY CIRCUMSTANCE. TOWER NETWORK CARRIER IS NOT RESPONSIBLE FOR ANY ERRORS RESULTING FROM THIS PRACTICE. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALES SHOWN ON PLANS.
7. OWNER, CONTRACTOR, AND TOWER NETWORK CARRIER CONSTRUCTION PROJECT MANAGER SHALL JOINTLY VERIFY ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION.
8. THE GENERAL CONTRACTOR SHALL RECEIVE WRITING AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
9. THE CONTRACTOR SHALL PERFORM WORK DURING OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
10. THE CONTRACTOR SHALL PROVIDE TOWER NETWORK CARRIER PROPER INSURANCE CERTIFICATES NAMING TOWER NETWORK CARRIER AS ADDITIONAL INSURED AND TOWER NETWORK CARRIER PROXY OF LICENSED AND FC & HO INSURANCE.
11. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, TECHNIQUES, PROCEDURES, AND PROTECTIVE MEASURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
12. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/PROVIDER'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHEN LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
13. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.
14. GENERAL CONTRACTOR SHALL PROVIDE, AT THE PROJECT SITE, A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS AND ADDENDA OR CLARIFICATIONS FOR USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT. THIS SET IS A VALID CONTRACT DOCUMENT ONLY IF THE TITLE SHEET IS STAMPED FOR CONSTRUCTION AND EACH SUCCESSIVE SHEET BEARS THE ARCHITECT'S SIGNED MET STAMP.
15. A COPY OF GOVERNING AGENCY APPROVED PLANS SHALL BE KEPT IN A PLACE SPECIFIED BY THE GOVERNING AGENCY, AND BY LAW, SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES. THE PLANS ARE NOT TO BE USED BY THE WORKMAN. ALL CONSTRUCTION SETS SHALL REFLECT THE SAME INFORMATION AS GOVERNING AGENCY APPROVED PLANS. THE CONTRACTOR SHALL ALSO MAINTAIN ONE SET OF PLANS, IN GOOD CONDITION, COMPLETE WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES UNDER THE DIRECT CONTROL OF THE SUPERINTENDENT. THE CONTRACTOR SHALL SUPPLY TOWER NETWORK CARRIER CONSTRUCTION PROJECT MANAGER WITH A COPY OF ALL REVISIONS, ADDENDA, AND/OR CHANGE ORDERS AT THE CONCLUSION OF THE WORK AS A PART OF THE AS-BUILT DRAWING RECORDS.
16. THE STRUCTURAL COMPONENTS OF ADJACENT CONSTRUCTION OR FACILITIES ARE NOT TO BE ALTERED BY THIS CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.
17. THE CONTRACTOR SHALL STUDY THE STRUCTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING PLANS AND CROSS CHECK THEIR DETAILS, NOTES, DIMENSIONS, AND ALL REQUIREMENTS PRIOR TO THE START OF ANY WORK.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE SECURITY OF THE PROJECT AND SITE WHILE THE WORK IS IN PROGRESS UNTIL THE JOB IS COMPLETE.
19. THE CONTRACTOR HAS THE RESPONSIBILITY OF LOCATING ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THE PLANS AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR, OR SUBCONTRACTOR AS SPECIFIED IN THE AGREEMENT BETWEEN SUBCONTRACTOR AND CONTRACTOR, SHALL BEAR THE EXPENSES OF REPAIR AND/OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGE BY OPERATIONS IN CONJUNCTION WITH THE EXECUTION OF THE WORK.
20. THE REFERENCES ON THE DRAWINGS ARE FOR CONVENIENCE ONLY AND SHALL NOT LIMIT THE APPLICATION OF ANY DRAWING OR DETAIL.
21. ALL DIMENSIONS ON THE PLANS ARE TO FACE OF STUD (F.O.S.) UNLESS NOTED OTHERWISE (U.N.O.).

22. ALL EXISTING CONSTRUCTION, EQUIPMENT, AND FINISHES NOTED TO BE REMOVED SHALL BE REMOVED FROM THE SITE WITH THE FOLLOWING EXCEPTIONS:
  - A. A PROHIBIT NOTED TO BE RELOCATED TO THE OWNER.
  - B. A PROHIBIT NOTED TO BE REMOVED BY THE OWNER.
23. THE GOVERNING AGENCIES, CODE AUTHORITIES, AND BUILDING INSPECTORS SHALL PROVIDE THE MINIMUM STANDARDS FOR CONSTRUCTION PRODUCTS, MATERIALS, AND FINISHES USED THROUGHOUT THE PROJECT. TRADE STANDARDS AND/OR MANUFACTURER'S SPECIFICATIONS MEETING OR EXCEEDING DESIGN REQUIREMENTS, SHALL BE USED FOR INSTALLATION.
24. WHEN REQUIRED STORAGE OF MATERIALS OCCURS, THEY SHALL BE EVENLY DISTRIBUTED OVER HOUGH TRACED FLOORS OR ROOFS SO AS NOT TO EXCEED THE DESIGNED LIVE LOADS FOR THE STRUCTURE. TEMPORARY SHORING AND/OR BRACING IS TO BE PROVIDED WHERE THE STRUCTURE HAS NOT ATTAINED THE DESIGN STRENGTH FOR THE CONDITIONS IMPOSED.
25. PRIOR TO THE POURING OF ANY NEW SLAB OVER AN EXISTING SLAB THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL OPENINGS, CHASES, AND EQUIPMENT WHICH ARE TO BE IMPLEMENTED INTO THE NEW WORK. ALL ITEMS DESIGNATED TO BE ABANDONED SHALL BE NOTED AND DISPOSED WITH THE OWNER AND TOWER NETWORK CARRIER CONSTRUCTION PROJECT MANAGER AS PART OF THE AS-BUILT DRAWING PACKAGE.
26. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH ULL LISTED OR FIRE RESISTANT APPROVED MATERIALS IF APPLICABLE TO THIS FACILITY AND OR PROJECT SITE.
27. BUILDING INSPECTORS AND/OR OTHER BUILDING OFFICIALS ARE TO BE NOTIFIED PRIOR TO ANY CHASING, CONSTRUCTION, AND ANY OTHER PROJECT EFFORT AS MANDATED BY THE GOVERNING AGENCY.
28. CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-ABC WITH 7.5 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
29. THE PROJECT, WHEN COMPLETED, SHALL COMPLY WITH LOCAL SECURITY CODES AND TITLE-24 ENERGY CONSERVATION REQUIREMENTS. (TITLE-24 WHEN APPLICABLE).
30. ALL GLASS AND GLAZING IS TO COMPLY WITH CHAPTER 54 OF THE U.S. CONSUMER SAFETY COMMISSION - SAFETY STANDARDS FOR ARCHITECTURAL GLAZING MATERIALS (45 FR 1426, CFR PART 1203) AND LOCAL SECURITY REQUIREMENTS.
31. CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBS, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE IMPROVEMENTS.
32. CONTRACTOR SHALL KEEP GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSAL OF ALL OIL, DEBRIS, AND RUBBER. CONTRACTOR SHALL REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OR PREMISES. SITES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DIRT, OR SPOILS OF ANY NATURE.
33. NEW CONSTRUCTION ADDED TO EXISTING CONSTRUCTION SHALL MATCH IN FORM, TEXTURE, FINISH, AND IN MATERIALS EXCEPT AS NOTED IN THE PLANS AND SPECIFICATIONS.
34. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACING, BLOCKING, AND/OR SLEEVES REQUIRED FOR THE INSTALLATION OF FIXTURES, MECHANICAL EQUIPMENT, OR PLUMBING, HEATING, AND FINISH ITEMS TO INSURE A PROPER AND COMPLETE JOB.
35. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A PROJECT LEVEL, STRAIGHT AND TRUE ACCORDING TO THE PLANS. THE CONTRACTOR SHALL SQUARE THE LINES AND THE INTERSECTIONS OF THE LINES. THE ENGINEER SHOWN ON THE PLANS PRIOR TO THE START OF ANY CONSTRUCTION. TOWER NETWORK CARRIER SHALL BE NOTIFIED OF ANY ERRORS, OMISSIONS, OR DISCREPANCIES PRIOR TO ANY CONSTRUCTION.
36. THE CONTRACTOR IS TO PROVIDE PROTECTION FOR ADJACENT IMPROVEMENTS FROM PHYSICAL HARM, NOISE, DUST, DIRT, AND FIRE AS REQUIRED BY THE GOVERNING AGENCIES.
37. WHERE SPECIFIED, MATERIALS TESTING SHALL BE TO THE LATEST STANDARDS AND/OR METHODS AVAILABLE AS REQUIRED BY THE GOVERNING AGENCY RESPONSIBLE FOR RECORDING THE RESULTS.
38. THE CONTRACTOR IS RESPONSIBLE FOR THE STORAGE OF ALL MATERIALS AND SHALL NOT DO SO ON PUBLIC PROPERTY WITHOUT A PERMIT TO DO SO FROM THE GOVERNING AGENCY FOR THIS PURPOSE.
39. GENERAL NOTES AND STANDARD DETAILS ARE THE MINIMUM REQUIREMENTS TO BE USED IN CONDITIONS WHICH ARE NOT SPECIFICALLY SHOWN OTHERWISE.
40. TRADES INVOLVED IN THE PROJECT SHALL BE RESPONSIBLE FOR THEIR OWN CUTTING, FITTING, PUNCHING, ETC. SO AS TO BE RECEIVED PROPERLY BY THE WORK OF OTHER TRADES.
41. ALL DEBRIS AND REFUSE IS TO BE REMOVED FROM THE PROJECT PREMISES AND SHALL BE LEFT IN A CLEAN (BROOM FINISH) CONDITION AT ALL TIMES BY EACH TRADE AS THEY PROGRESS THROUGH THE COURSE OF THE WORK.
42. TOWER NETWORK CARRIER DOES NOT WARRANT ANY PRODUCTS, FIXTURES, AND/OR EQUIPMENT MAINTAINED BY A TRADE OR MANUFACTURER WARRANTY OR WARRANTY THAT MAY BE IN EFFECT TO DO SO THROUGH THE COMPANY OR MANUFACTURER PROVIDING THE PRODUCT, FIXTURE, AND/OR EQUIPMENT ONLY UNLESS SPECIFIC RESPONSIBILITY IS ALSO PROVIDED BY THE CONTRACTOR/SUBCONTRACTOR IN WRITTEN FORM.
43. CAUTION: CALL BEFORE YOU DIG. BURIED UTILITIES EXIST IN THE AREA AND UTILITY INFORMATION CANNOT BE OBTAINED BY CONTACTING THE ONE-CALL UTILITY LOCATE SERVICE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. 1-800-922-8200.
44. CONTRACTOR TO REPLACE AND/OR RELOCATE ANY EXISTING UNDERGROUND UTILITIES DISCOVERED DURING PUNCHING AND GENERAL CONSTRUCTION.
45. CONTRACTOR TO LOCATE ALL UTILITIES PRIOR TO PLACEMENT OF WORKABLE FOOTING AND OTHER STRUCTURES TO BE PLACED IN GROUND. SEE GENERAL NOTE #6 ON THIS SHEET.
46. SEE CIVIL DRAWINGS FOR ADDITIONAL SITE INFORMATION.
47. CONTRACTOR TO DOCUMENT ALL WORK PERFORMED WITH PHOTOGRAPHS AND SUBMIT TO TOWER NETWORK CARRIER ALONG WITH REDLINED CONSTRUCTION SET.
48. CONTRACTOR TO DOCUMENT ALL CHANGES MADE IN THE FIELD BY MARKING UP (RELOCATING) THE APPROVED CONSTRUCTION SET AND SUBMITTING THE REDLINED SET TO TOWER NETWORK CARRIER UPON COMPLETION.

**TOWER/POLE NOTES:**

1. VERIFICATION THAT THE EXISTING TOWER/POLE CAN SUPPORT THE PROPOSED ANTENNA LOADING IS TO BE DONE BY OTHERS.
2. PROVIDE SUPPORTS FOR THE ANTENNA COAX CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS. ANTENNA COAX CABLES ARE TO BE SUPPORTED AND RESTRAINED AT THE POINTS SUITABLE TO THE MANUFACTURER'S REQUIREMENTS.

**SYMBOLS:**

- GRID REFERENCE
- DETAIL REFERENCE
- ELEVATION REFERENCE
- SECTION REFERENCE
- CENTERLINE
- PROPERTY/LEASE LINE
- MATCH LINE
- WORK POINT
- GROUND CONDUCTION
- TELEPHONE CONDUIT
- ELECTRICAL CONDUIT
- COAXIAL CABLE
- OVERHEAD SERVICE CONDUCTIONS
- GROUT OR PLASTER
- (C) BRICK
- (C) MASONRY
- CONCRETE
- EARTH
- GRAVEL
- PLYWOOD
- SAND
- WOOD CONTINUOUS
- WOOD BLOCKING
- STEEL
- EXISTING
- NEW ANTENNA
- EXISTING ANTENNA
- GROUND ROD
- GROUND BUS BAR
- MECHANICAL DOME CONN.
- GADWELD
- GROUND ACCESS WELL
- ELECTRIC BOX
- TELEPHONE BOX
- LIGHT POLE
- FND. MONUMENT
- SHOT ELEVATION
- SET POINT
- NEWSPON



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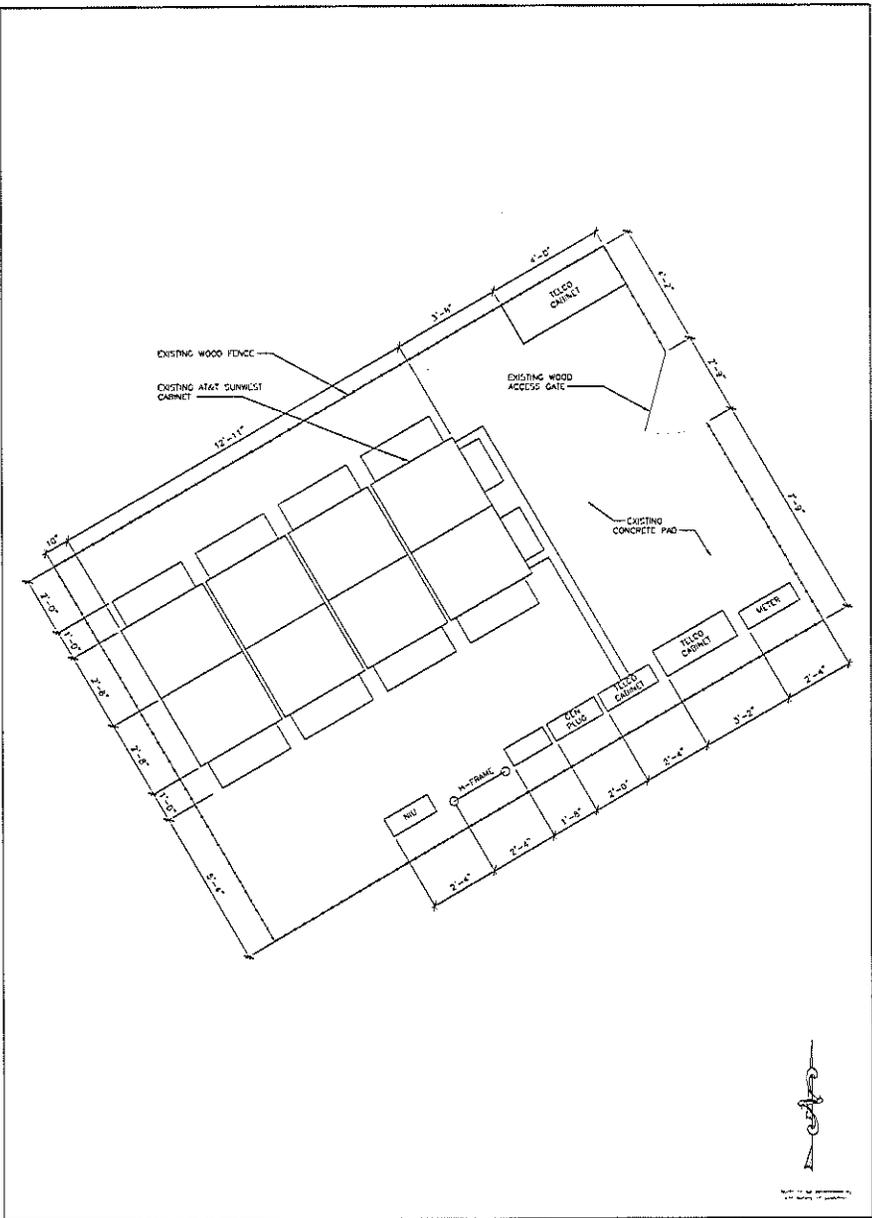
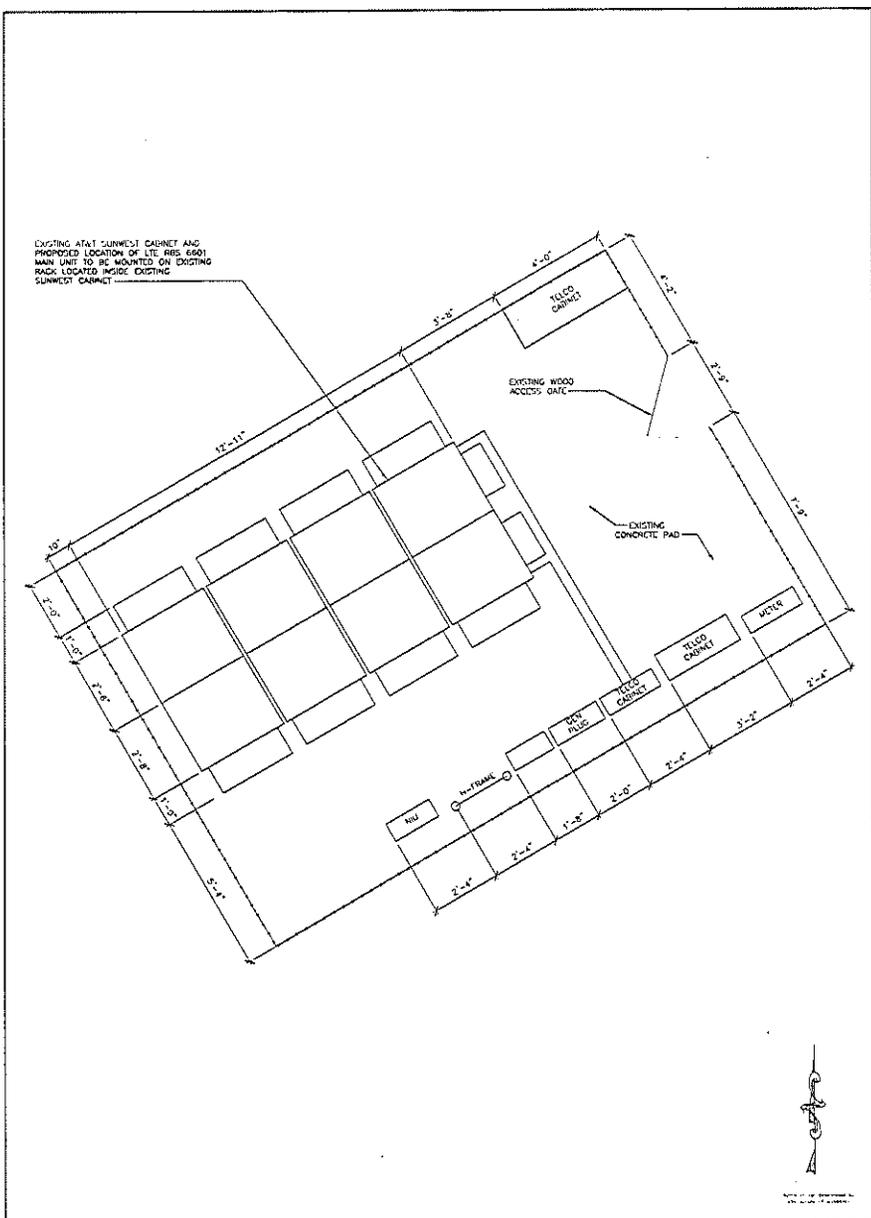




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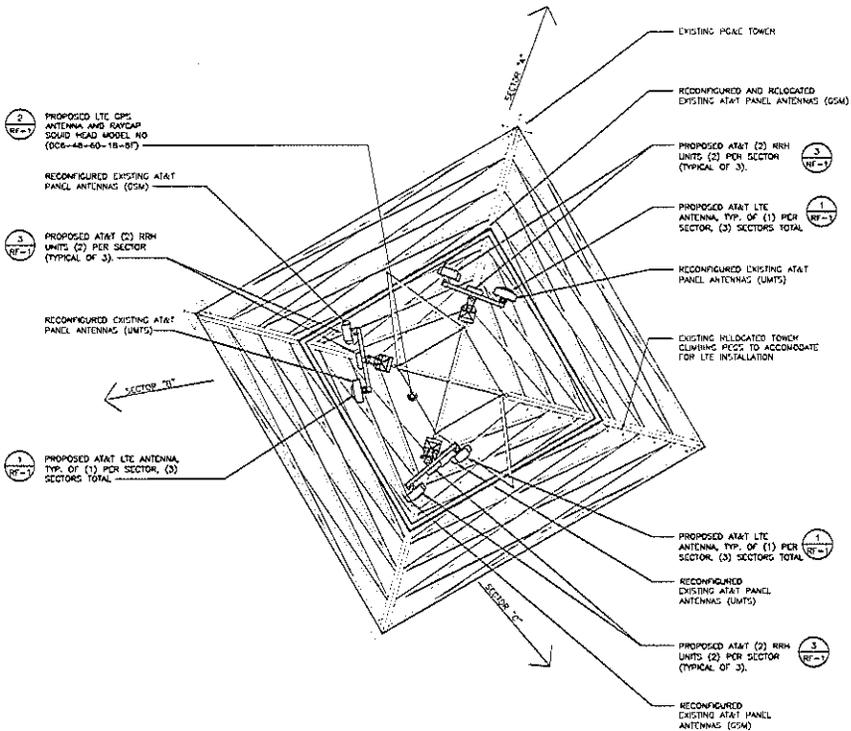


24"x36" SCALE: 1/2" = 1'-0"  
11"x17" SCALE: 1/4" = 1'-0"  
PROPOSED ENLARGED EQUIPMENT PLAN | 2

24"x36" SCALE: 1/2" = 1'-0"  
11"x17" SCALE: 1/4" = 1'-0"  
EXISTING ENLARGED EQUIPMENT PLAN | 1

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NOTE:  
 ALL NEW LTE ANTENNAS,  
 EQUIPMENT CABINETS, AND  
 MOUNTING HARDWARE TO BE  
 PAINTED TO MATCH EXISTING.



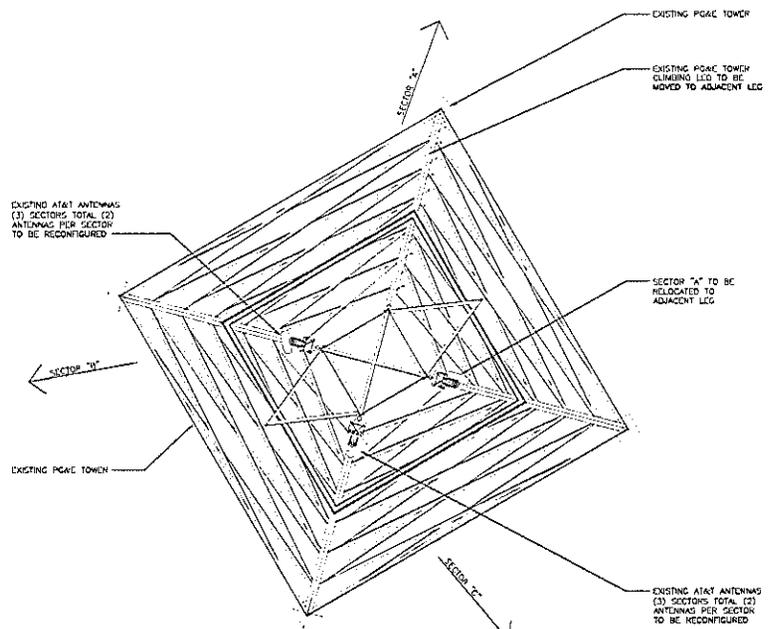
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24'-36" SCALE: 1/4" = 1'-0"  
 11'-17" SCALE: 1/8" = 1'-0"

PROPOSED ANTENNA PLAN 2

24'-36" SCALE: 1/4" = 1'-0"  
 11'-17" SCALE: 1/8" = 1'-0"

EXISTING ANTENNA PLAN 1



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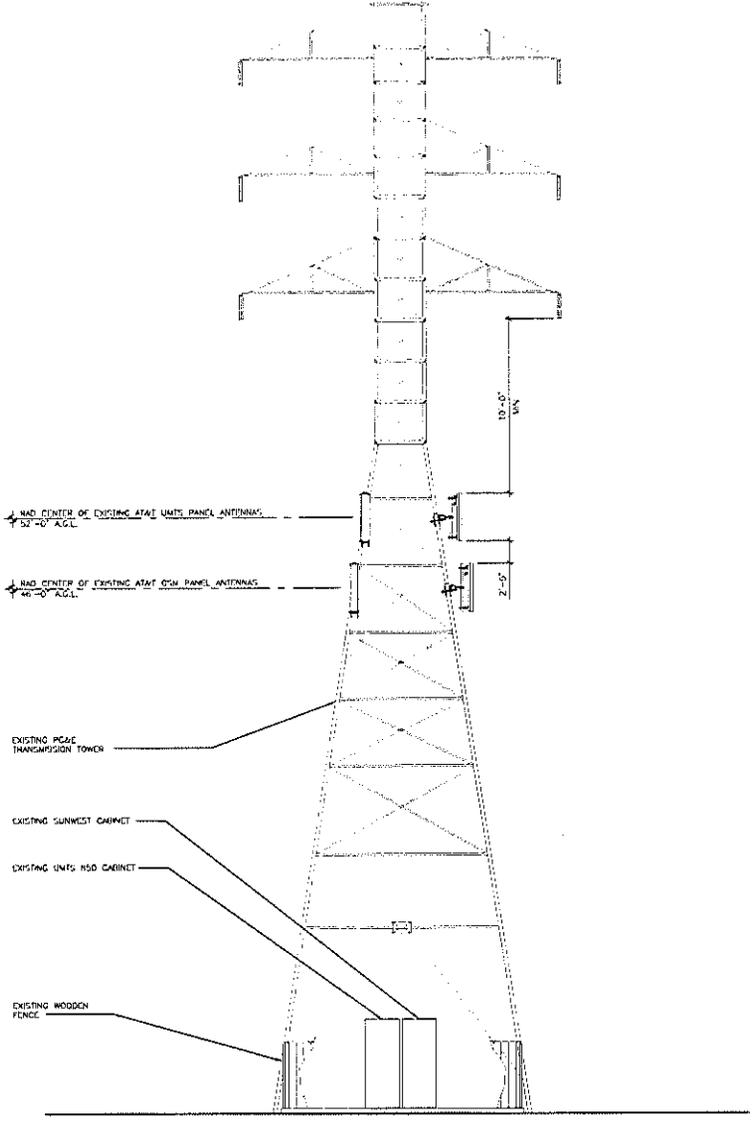
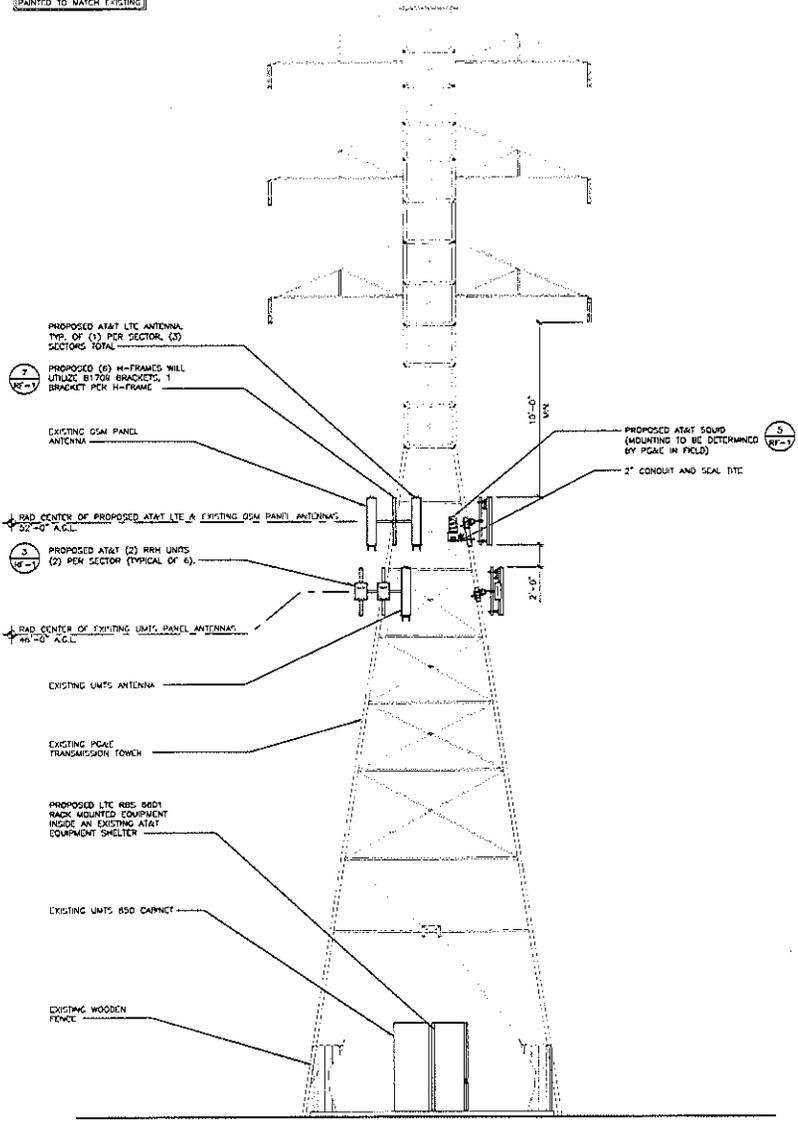
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NOTE:  
ALL NEW LTE ANTENNAS,  
EQUIPMENT CABINETS AND  
MOUNTING HARDWARE TO BE  
PAINTED TO MATCH EXISTING



24'-30" SCALE 3/16" = 1'-0"  
11'-12" SCALE 3/32" = 1'-0"

PROPOSED SOUTHWEST ELEVATION 2

24'-36" SCALE 3/16" = 1'-0"  
11'-12" SCALE 3/32" = 1'-0"

EXISTING SOUTHWEST ELEVATION 1

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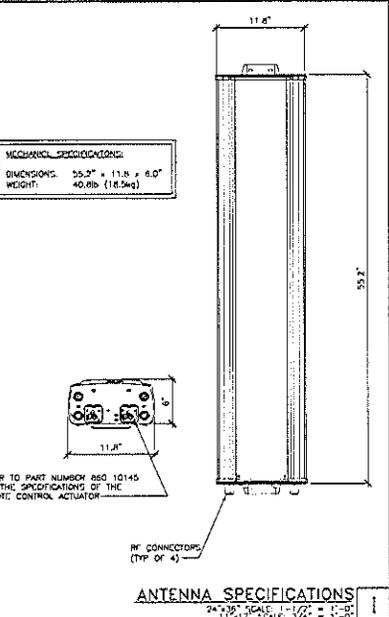
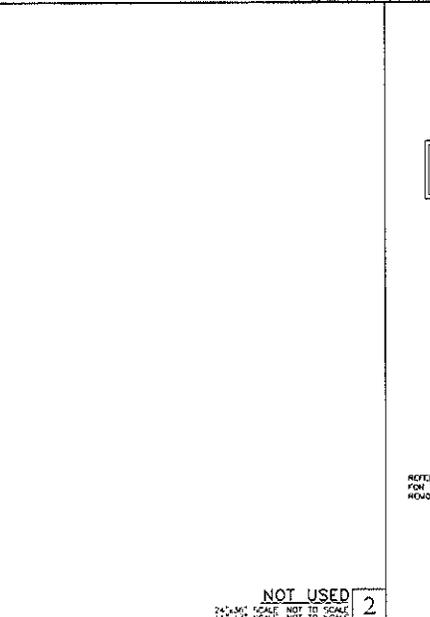
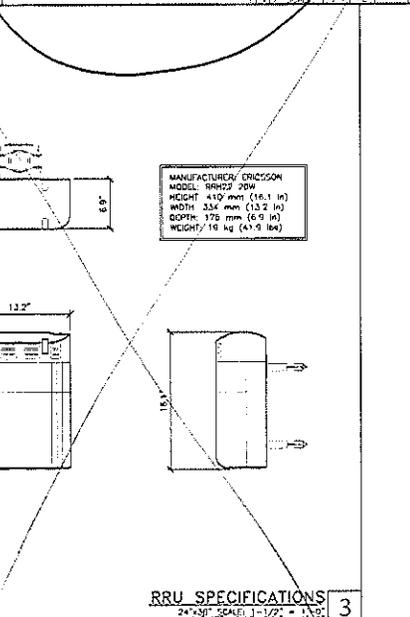
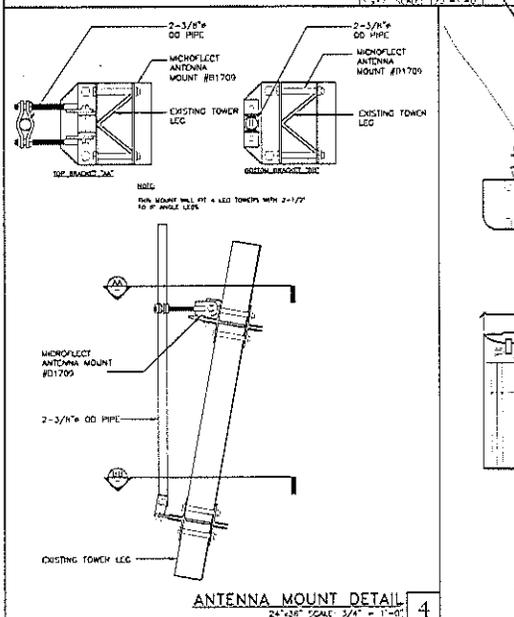
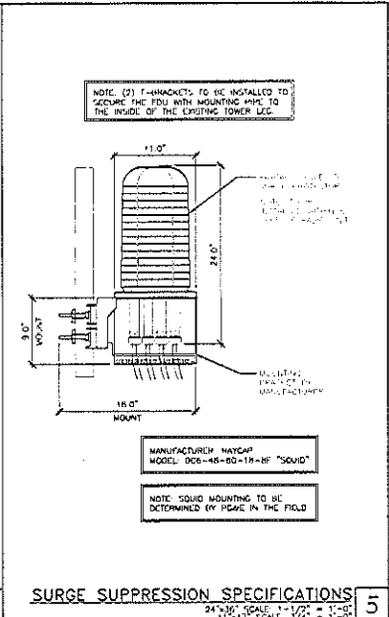
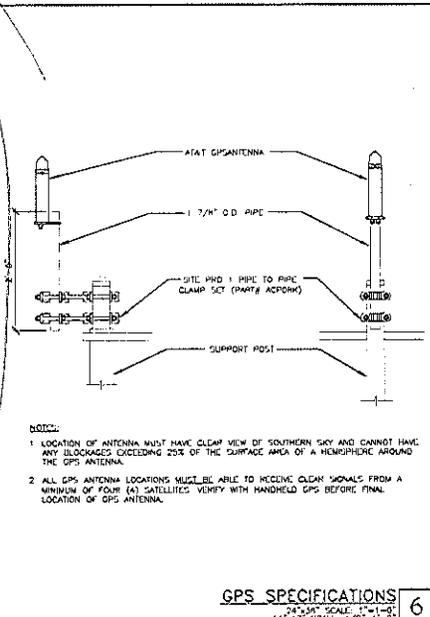
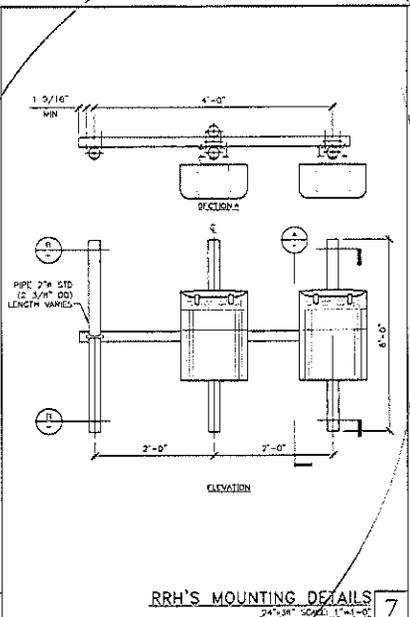
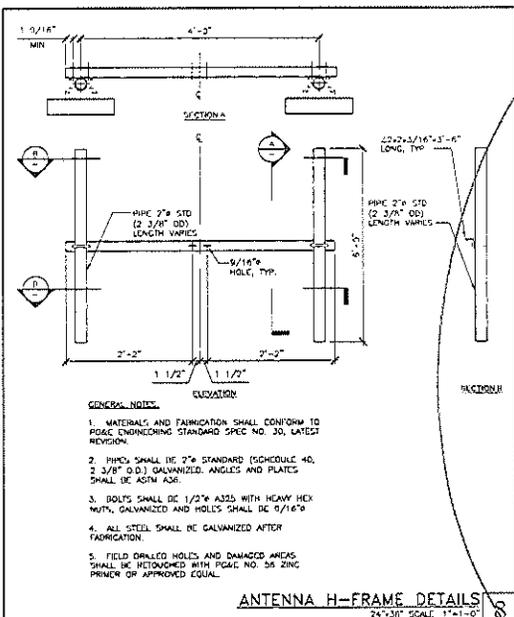


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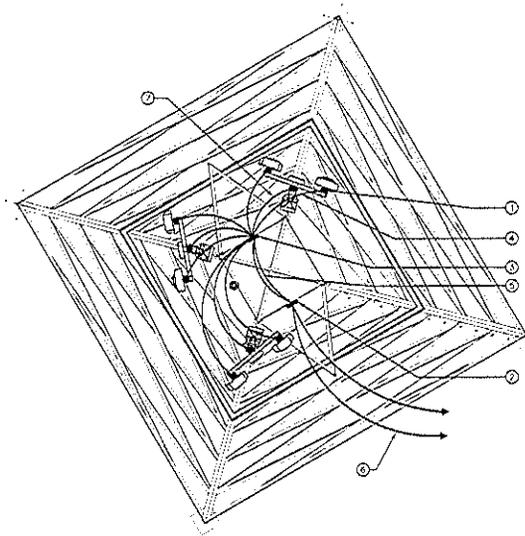
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- GROUNDING ROD NOTES:**
- ① CAD WELD (TYP) SEE DETAIL 2/E-2
  - ② EXISTING ANTENNA GROUND BUS BAR NEAR ANTENNA MOUNT WITH COAX GROUND KIT SEE DETAIL 6/E-2 FOR GROUND BUS CONSTRUCTION SEE DETAIL 7/L-2 FOR GROUND WIRE CONNECTIONS, AND SEE DETAIL 5/E-2 FOR COAX GROUNDING.
  - ③ EXISTING TOWER GROUND BUS BAR AT BASE OF TOWER SEE DETAIL 6/E-2 FOR GROUND BUS CONSTRUCTION, SEE DETAIL 7/L-2 FOR GROUND WIRE CONNECTIONS, AND SEE DETAIL 5/E-2 FOR COAX GROUNDING.
  - ④ #2 AWG ANTENNA MOUNT GROUND TO ANTENNA GROUND BUS BAR (TYP OF 3) SEE DETAIL 4/E-2
  - ⑤ #2 AWG EXISTING GROUND FROM ANTENNA GROUND BUS BAR TO TOWER GROUND BUS BAR (TYP OF (2) PLACES) SEE DETAIL 7/L-2.
  - ⑥ #2 AWG GROUNDING LEADS TO BE TIED INTO EXISTING PGC TOWER MAIN GROUND BAR OR GROUND GRID
  - ⑦ #2 AWG EXISTING GROUND FROM RRN'S GROUND BUS BAR TO TOWER GROUND BUS BAR (TYP OF (2) PLACES) SEE DETAIL 7/E-2.

**GROUNDING NOTES & LEGEND**

- GENERAL GROUNDING NOTES:**
1. ALL DETAILS ARE SHOWN IN GENERAL TERMS ACTUAL INSTALLATION AND CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
  2. GROUND ALL ANTENNA BRACKETS, FRAMES, CABLE RUNS, AND OTHER METALLIC COMPONENTS USING GROUND WIRES AND CONDUIT TO SURFACE MOUNTED BUS BARS. FOLLOW ANTENNA AND ITS MANUFACTURERS PRACTICES FOR GROUNDING REQUIREMENTS. GROUND COAX SHIELD AT BOTH ENDS AND EXIT FROM TOWER OR POLE USING NMP'S PRACTICES.
  3. ALL GROUND CONNECTIONS SHALL BE CADWELD. ALL WIRES SHALL BE COPPER THIN/THIN. ALL GROUND WIRE SHALL BE GREEN INSULATED WIRE ABOVE GROUND.
  4. CONTRACTOR TO VERIFY AND TEST GROUND TO SOURCE, GROUNDING AND OTHER OPERATIONAL TESTING WILL BE WITNESSED BY AT&T WIRELESS, LLC REPRESENTATIVE.
  5. REFER TO DIVISION 16 GENERAL ELECTRICAL, GENERAL ELECTRICAL PROVISION AND COMPLY WITH ALL REQUIREMENTS OF GROUNDING STANDARDS.
  6. ELECTRICAL CONTRACTOR TO PROVIDE DETAILED DESIGN OF GROUNDING SYSTEM AND RECEIVE APPROVAL OF DESIGN BY AUTHORIZED AT&T MOBILITY REPRESENTATIVE. PRIOR TO INSTALLATION OF GROUNDING SYSTEM PHOTO DOCUMENT ALL CADWELDS AND GROUND WIRE.
  7. NOTIFY CONSTRUCTION MANAGER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.

**GROUNDING ROD NOTES:**

- (WHEN APPLICABLE)**
- ELECTRICAL CONTRACTOR SHALL ORDER GROUND RESISTANCE TESTING ONCE THE GROUND SYSTEM HAS BEEN INSTALLED. A QUALIFIED INDIVIDUAL, UTILIZING THE FALL OF POTENTIAL METHOD, SHOULD PERFORM THE TEST. THE REPORT WILL SHOW THE LOCATION OF THE TEST AND CONTAIN NO LESS THAN 9 TEST POINTS ALONG THE TESTING LINE, CRAPPED OUT TO SHOW THE PLATEAU.
- 2 POINT GROUND TEST OR 3 POINT GDS TESTS WILL NOT BE ACCEPTED AS ALTERNATIVES TO THE ABOVE MENTIONED GROUND TESTS. TEST SHALL BE PERFORMED WHILE THE COUNTERPOISE IS ISOLATED FROM THE A/C SYSTEM GRIDS AND EXISTING COMMUNICATIONS FACILITY.

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
⊗	COPPER GROUND ROD	⊠	TEST WELL
—	CADWELD CONNECTION	—	GROUND BAR
●	SIDE SPlice CADWELD	—	GROUND BAR
⚡	FIELD VERIFY & TIE INTO EXISTING GROUNDING SYSTEM		

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 11'-00" SCALE: 1/8" = 1'-0"

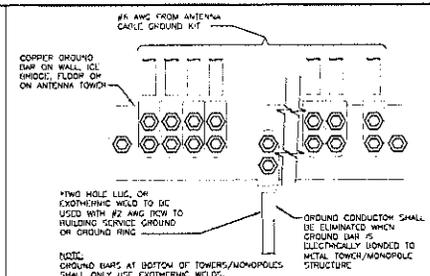
**SCHEMATIC GROUNDING PLAN**

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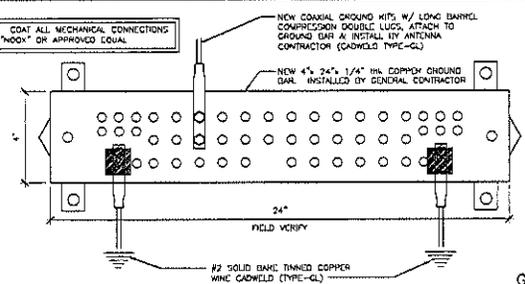
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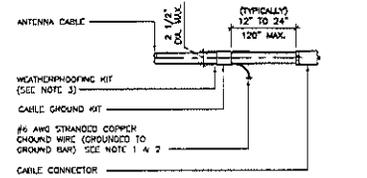
NOT USED 24"x36" SCALE; NOT TO SCALE 11"x17" SCALE; NOT TO SCALE

GROUND WIRE INSTALLATION 7



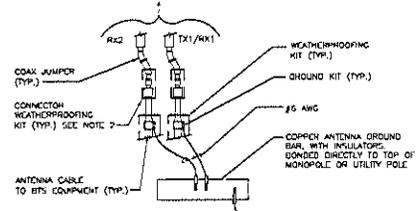
NOT USED 24"x36" SCALE; NOT TO SCALE 11"x17" SCALE; NOT TO SCALE

GROUND BAR 6



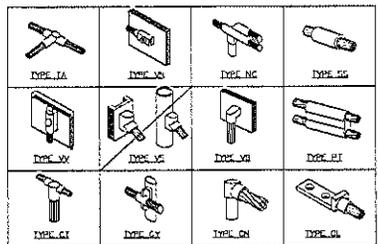
NOTES:  
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.  
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.  
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

CABLE GROUND KIT CONNECTION 5

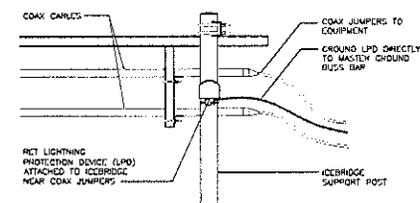


NOTES:  
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.  
WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

GROUND CABLE CONNECTION 4



CADWELD GROUNDING CONNECTIONS 2



LPD GROUND CONNECTION 1

NOT USED 24"x36" SCALE; NOT TO SCALE 11"x17" SCALE; NOT TO SCALE

Project Name

El Camino and Wolf (CNU0780)

Project Description

AT&T proposes the addition of (3) LTE antennas, (1) per sector, (2) RRH units per new antenna, (2) RETs per new antenna and a GPS antenna. Re-configure existing antennas to accommodate new LTE and related equipment to be located at antenna level. Install (RBS 6601 main unit) LTE equipment inside Sunwest cabinet inside existing equipment area at ground level.

Contact Person

On behalf of the Applicant please contact:

Christian Hill  
RealCom Associates  
3825 Hopyard Road, Suite 182  
Pleasanton, CA 94588

Phone: 707-342-2096  
Email: chillrealcom@gmail.com

\* Technology Description provided on page 2

## Description of Technology

The AT&T system wide LTE modification is being implemented due to the increased demands that wireless service end users and consumers have placed on existing networks. Because the increased usage of Smart Phones and increasing amount of data that wireless service end users and consumers are pulling from the network, this additional technology will help augment the existing system and provide sufficient infrastructure for future growth.

LTE is a set of enhancements to the Universal Mobile Telecommunications System (UMTS), an existing technology currently being used. LTE enhancements will provide increased data coverage to meet current and future demand as end users increase the amount of information they receive on their mobile devices. In the United States, Metro PCS, Verizon and AT&T are leading the way on this next generation of wireless consumer enhancements.

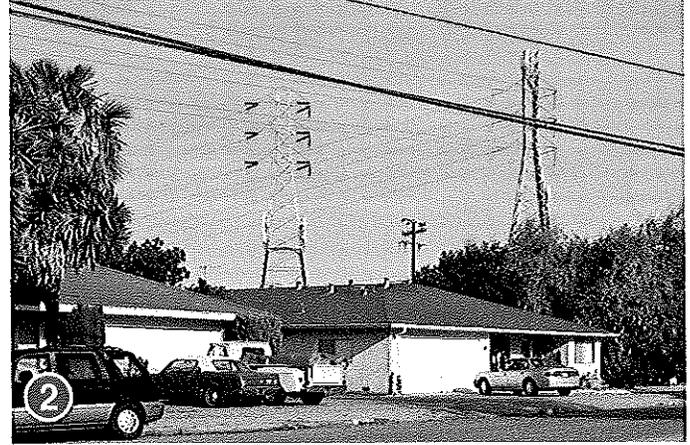
While it is commonly seen as a mobile telephone or common carrier development, LTE is also endorsed by public safety agencies in the US (as per National Public Safety Telecommunications Council, attached document) as the preferred technology for the new 700 MHz public-safety radio band.

Christian Hill

Cell 707 342-2096

Fax 925 588-7665

chillrealcom@gmail.com



El Camino and Wolfe Site # CNU0780

Aerial Map

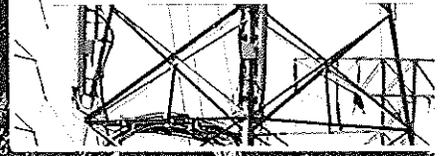
12/16/10

704 Dafodil Court  
Sunnyvale, CA 94085

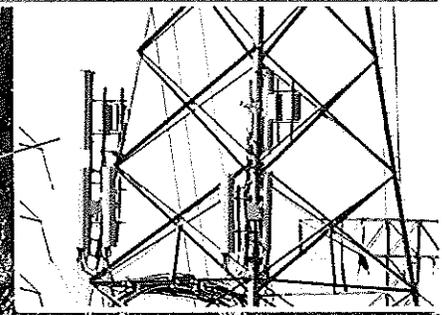
Applied Imagination 510 914-0500



**Existing**



proposed antennas



**Proposed**



El Camino and Wolf

Site # CNU0780

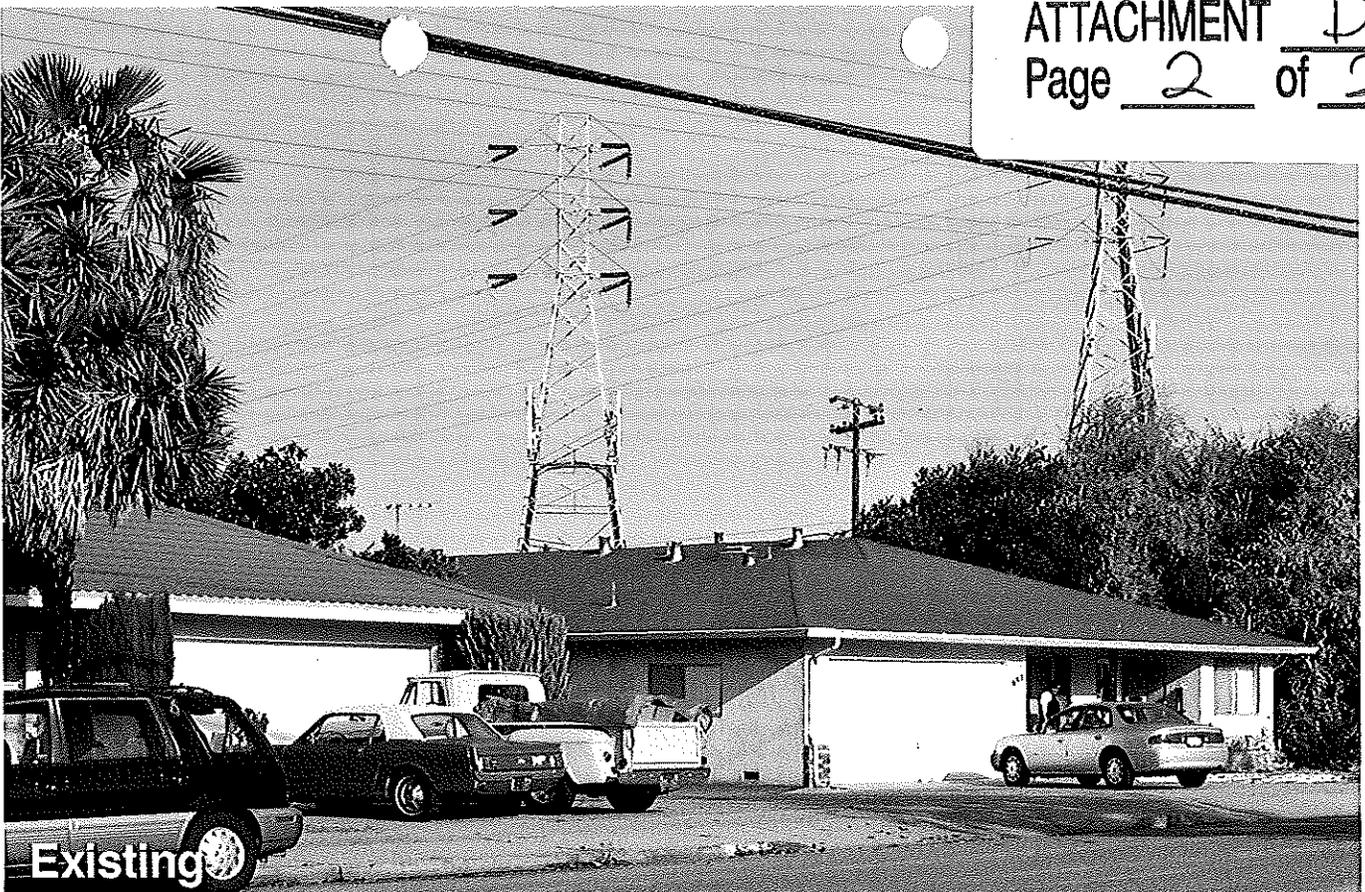
Looking West from Gall Avenue

View #1

12/16/10

704 Dafodil Court  
Sunnyvale, CA 94085

Applied Imagination 510 914-0500



Existing



proposed antennas

Proposed



El Camino and Wolf Site # CNU0780

Looking Northeast from Iris Avenue

12/16/10

704 Dafodil Court  
Sunnyvale, CA 94085

View #2

Applied Imagination 510 914-0500

## **RF EMISSIONS COMPLIANCE REPORT**

**Geist Engineering and Environmental Group  
on behalf of AT&T**

**Site: CNU0780 El Camino and Wolf  
704 Daffodil Street  
Sunnyvale, CA 94085**

**December 22, 2010**

### **Report Status:**

**Geist Engineering and Environmental Group  
on behalf of AT&T Is under 5% Threshold**

**Prepared By:**

**Waterford Consultants, LLC**

Engineering Statement  
Electromagnetic Energy Analysis  
Geist Engineering and Environmental Group on behalf of AT&T

Upon penalty of perjury, I, Richard P. Biby, state:

That I am registered as a Professional Engineer in the Commonwealth of Virginia; and

That I have extensive professional experience in the wireless communications engineering industry;  
and

That I am a principal of Waterford Consultants, LLC located in Round Hill, Virginia; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields and that I have been engaged in the analysis of Human Exposure to Radiofrequency Electromagnetic Fields for over 10 years; and

That I have examined the technical information supplied by Geist Engineering and Environmental Group on behalf of AT&T and other (if present) wireless carriers as supplied by either the carriers, the site management company, the owning or managing the company, the company's site acquisitions company, carrier's attorneys or other qualified suppliers of data, and that Geist Engineering and Environmental Group on behalf of AT&T's proposed installation involve analog and / or digital wireless communications equipment, antennas and related technical equipment at a location referred to as the "CNU0780 El Camino and Wolf" ("the site"); and

That Geist Engineering and Environmental Group on behalf of AT&T proposes to operate at the site with directional transmit antennas and maximum effective radiated power as documented in the attached worksheets, and that worst-case 100% duty cycle have been assumed; and

That this analysis has been performed with the assumption that the land immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio-frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules), thus Geist Engineering and Environmental Group on behalf of AT&T is presenting this analysis, however, this site is categorically excluded from routine engineering analysis as the height of the transmit antennas is above 10 meters; and

That such consideration of possible exposure of humans to radio-frequency radiation must utilize the standards set by the FCC, which is the Federal Agency having jurisdiction over communications facilities, and that the FCC has presented analysis techniques and guidelines, in its document Office of Science and Technology, Bulletin 65 ("OET65"), a copy of which is available to the public free of charge at [www.fcc.gov/oet/rfsafety](http://www.fcc.gov/oet/rfsafety), and that the analysis presented herein complies with OET65; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," defined as situations in which persons may not be aware of the presence of electromagnetic energy (the "general public") and (2) "controlled environments", which defines situations in which persons are aware of their potential for exposure (industry personnel), and have received appropriate safety training; and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for this operating frequency is shown on the attached computation worksheet; and

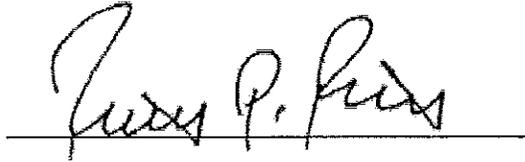
That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 1.30165% of the maximum in any area on the ground; and

That access to the tower will be restricted to communications industry professionals, and approved contractor personnel trained in radio-frequency safety; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding Radio Frequency Safety.

In summary, it is stated here that the proposed operation at the site would not result in exposure of the Public to excessive levels of Radio Frequency Electromagnetic Energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307 and that Geist Engineering and Environmental Group on behalf of AT&T proposed operation is completely compliant.

Finally, it is stated that the instant analysis does not address exposure levels within the secured area of the site, on the tower, or in the immediate proximity of the antennas. Therefore, this analysis is only appropriate to be used a proof of compliance with the FCC rules and regulations with non-occupational persons, who do not have access to portions of the support structure above ground level.



Richard P. Biby  
Registered Professional Engineer  
Commonwealth of Virginia Reg. No. 0402-026132  
December 22, 2010

Richard P. Biby

Digitally signed by Richard P. Biby  
DN: cn=Richard P. Biby, o=Waterford Consultants,  
LLC, ou, email=rich@waterfordconsultants.com, c=US  
Date: 2010.12.22 08:42:35 -05'00'

**Geist Engineering and Environmental Group on behalf of AT&T  
CNU0780 El Camino and Wolf  
Site Summary**

<b>Carrier Name</b>	<b>Area Maximum Percentage MPE</b>
AT&T LTE	0.32494894%
AT&T AWS	0.02858262%
AT&T UMTS 1	0.25663971%
AT&T UMTS 3	0.25663971%
AT&T UMTS 2	0.03749472%
AT&T UMTS 4	0.03749472%
AT&T GSM 2	0.03062684%
AT&T GSM 1	0.32922605%
<b>Composite Site MPE</b>	<b>1.30165331%</b>

Frequency: 700 (MHz)  
 MPE 466.6666666  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 1.5164284  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.32494894 %

Make / Model	Height(ft)	Orient <sup>o</sup>	DT <sup>o</sup>	ERP(W)	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW DBXNH-6565A-VTM_04DT_0725	52	10	0	500	1.5164284	0.32494894
ANDREW DBXNH-6565A-VTM_04DT_0725	52	260	0	500	1.5164284	0.32494894
ANDREW DBXNH-6565A-VTM_04DT_0725	52	150	0	500	1.5164284	0.32494894

AT&T AWS  
 CNU0780 El Camino and Wolf  
 Summary

Frequency: 2100 (MHz)  
 MPE 1000  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.28582619  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.02858262 %

Make / Model	Height(ft)	Orient°	DT°	EIRP(W)	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW DBXNH-6565A-VTM_04DT_2130	52	10	0	500	0.28582619	0.02858262
ANDREW DBXNH-6565A-VTM_04DT_2130	52	150	0	500	0.28582619	0.02858262
ANDREW DBXNH-6565A-VTM_04DT_2130	52	260	0	500	0.28582619	0.02858262

Frequency: 850 (MHz)  
MPE 566.6666666  $\mu\text{W}/\text{cm}^2$   
Maximum power density at ground level: 1.45429168  $\mu\text{W}/\text{cm}^2$   
Highest percentage of Maximum Permissible Exposure: 0.25663971 %

Make / Model	Height(ft)	Orient°	DT°	ERP(W)	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW TBXLHB-6565A-VTM_04DT_0850.pln	47	20	0	500	1.45429168	0.25663971
ANDREW TBXLHB-6565A-VTM_04DT_0850.pln	47	260	0	500	1.45429168	0.25663971
ANDREW TBXLHB-6565A-VTM_04DT_0850.pln	47	140	0	500	1.45429168	0.25663971

AT&T UMTS 3  
 CNU0780 El Camino and Wolf  
 Summary

Frequency: 850 (MHz)  
 MPE 566.6666666  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 1.45429168  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.25663971 %

Make / Model	Height(ft)	Orient°	DT°	ERP(W)	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW TBXLHB-6565A-VTM_04DT_0850.pln	47	140	0	500	1.45429168	0.25663971
ANDREW TBXLHB-6565A-VTM_04DT_0850.pln	47	20	0	500	1.45429168	0.25663971
ANDREW TBXLHB-6565A-VTM_04DT_0850.pln	47	260	0	500	1.45429168	0.25663971

AT&T UMTS 2  
 CNU0780 El Camino and Wolf  
 Summary

Frequency: 1900 (MHz)  
 MPE 1000  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.37494716  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.03749472 %

Make / Model	Height(ft)	Orient <sup>o</sup>	DT <sup>o</sup>	EIRP(W)	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW TBXLHB-6565A-VTM_04DT_1920.pln	47	20	0	500	0.37494716	0.03749472
ANDREW TBXLHB-6565A-VTM_02DT_1920.pln	47	260	0	500	0.29619755	0.02961976
ANDREW TBXLHB-6565A-VTM_02DT_1920.pln	47	140	0	500	0.29619755	0.02961976

AT&T UMTS 4  
 CNU0780 El Camino and Wolf  
 Summary

Frequency: 1900 (MHz)  
 MPE 1000  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.37494716  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.03749472 %

Make / Model	Height(ft)	Orient <sup>o</sup>	DT <sup>o</sup>	EIRP(W)	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW TBXLHB-6565A-VTM_04DT_1920.pln	47	20	0	500	0.37494716	0.03749472
ANDREW TBXLHB-6565A-VTM_04DT_1920.pln	47	260	0	500	0.37494716	0.03749472
ANDREW TBXLHB-6565A-VTM_04DT_1920.pln	47	140	0	500	0.37494716	0.03749472

AT&T GSM 2  
 CNU0780 El Camino and Wolf  
 Summary

Frequency: 1900 (MHz)  
 MPE 1000  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.30626836  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.03062684 %

Make / Model	Height(ft)	Orient°	DT°	EiRP(W)	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW TBXLHB-6565A-VTM_04DT_1920.pln	52	20	0	500	0.30626836	0.03062684
ANDREW TBXLHB-6565A-VTM_02DT_1920.pln	52	260	0	500	0.24204962	0.02420496
ANDREW TBXLHB-6565A-VTM_02DT_1920.pln	52	140	0	500	0.24204962	0.02420496

AT&T GSM 1  
 CNU0780 El Camino and Wolf  
 Summary

Frequency: 850 (MHz)  
 MPE 566.6666666  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 1.86561429  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.32922605 %

Make / Model	Height(ft)	Orient°	DT°	ERP(W)	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW TBXLHB-6565A-VTM_08DT_0850.pln	52	20	0	500	1.86561429	0.32922605
ANDREW TBXLHB-6565A-VTM_04DT_0850.pln	52	260	0	500	1.18801605	0.20964989
ANDREW TBXLHB-6565A-VTM_04DT_0850.pln	52	140	0	500	1.18801605	0.20964989

Maximum Permissible Exposure  
 (MPE): 466.6666666  $\mu\text{W}/\text{cm}^2$

ERP (Watts)	500		Height (feet)	52		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP In direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	0.26	0.942	470.94	907.2	907.3	0.01910840	0.00409466
5	0.04	0.991	495.42	181.0	181.7	0.50130525	0.10742255
10	1.22	0.755	377.55	89.8	91.2	1.51642840	0.32494894
20	9.18	0.121	60.39	43.5	46.3	0.94132747	0.20171303
30	24.74	0.003	1.68	27.4	31.7	0.05589484	0.01197746
35	19.50	0.011	5.61	22.6	27.6	0.24597511	0.05270895
40	18.76	0.013	6.65	18.9	24.6	0.36627099	0.07848664
45	20.76	0.008	4.20	15.8	22.4	0.27965912	0.05992695
50	25.32	0.003	1.47	13.3	20.7	0.11483845	0.02460824
55	32.64	0.001	0.27	11.1	19.3	0.02435843	0.00521966
60	51.89	0.000	0.00	9.1	18.3	0.00029986	0.00006426
65	35.40	0.000	0.14	7.4	17.5	0.01575880	0.00337689
70	30.08	0.001	0.49	5.8	16.8	0.05776013	0.01237717
71	29.52	0.001	0.56	5.4	16.8	0.06648750	0.01424732
72	29.04	0.001	0.62	5.1	16.6	0.07511980	0.01609710
73	28.65	0.001	0.68	4.8	16.6	0.08312439	0.01781237
74	28.31	0.001	0.74	4.5	16.5	0.09086898	0.01947192
75	28.03	0.002	0.79	4.2	16.4	0.09785055	0.02096798
76	27.82	0.002	0.83	4.0	16.3	0.10358246	0.02219624
77	27.64	0.002	0.86	3.7	16.2	0.10890376	0.02333652
78	27.49	0.002	0.89	3.4	16.2	0.11353519	0.02432897
79	27.41	0.002	0.91	3.1	16.1	0.11656377	0.02497795
80	27.33	0.002	0.92	2.8	16.1	0.11942116	0.02559025
81	27.27	0.002	0.94	2.5	16.0	0.12185706	0.02611223
82	27.25	0.002	0.94	2.2	16.0	0.12305533	0.02636900
83	27.23	0.002	0.95	1.9	16.0	0.12419847	0.02661396
84	27.21	0.002	0.95	1.7	15.9	0.12526002	0.02684143
85	27.21	0.002	0.95	1.4	15.9	0.12557533	0.02690900
86	27.27	0.002	0.94	1.1	15.9	0.12432655	0.02664140
87	27.32	0.002	0.93	0.8	15.9	0.12308917	0.02637625
88	27.36	0.002	0.92	0.6	15.8	0.12226869	0.02620043
89	27.45	0.002	0.90	0.3	15.8	0.11973946	0.02565845
90	27.50	0.002	0.89	0.0	15.8	0.11849128	0.02539099

Maximum Permissible Exposure  
 (MPE): 466.6666666  $\mu\text{W}/\text{cm}^2$

ERP (Watts)	500		Height (feet)	52		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	0.26	0.942	470.94	907.2	907.3	0.01910840	0.00409466
5	0.04	0.991	495.42	181.0	181.7	0.50130525	0.10742255
10	1.22	0.755	377.55	89.8	91.2	1.51642840	0.32494894
20	9.18	0.121	60.39	43.5	46.3	0.94132747	0.20171303
30	24.74	0.003	1.68	27.4	31.7	0.05589484	0.01197746
35	19.50	0.011	5.61	22.6	27.6	0.24597511	0.05270895
40	18.76	0.013	6.65	18.9	24.6	0.36627099	0.07848664
45	20.76	0.008	4.20	15.8	22.4	0.27965912	0.05992695
50	25.32	0.003	1.47	13.3	20.7	0.11483845	0.02460824
55	32.64	0.001	0.27	11.1	19.3	0.02435843	0.00521966
60	51.89	0.000	0.00	9.1	18.3	0.00029986	0.00006426
65	35.40	0.000	0.14	7.4	17.5	0.01575880	0.00337689
70	30.08	0.001	0.49	5.8	16.8	0.05776013	0.01237717
71	29.52	0.001	0.56	5.4	16.8	0.06648750	0.01424732
72	29.04	0.001	0.62	5.1	16.6	0.07511980	0.01609710
73	28.65	0.001	0.68	4.8	16.6	0.08312439	0.01781237
74	28.31	0.001	0.74	4.5	16.5	0.09086898	0.01947192
75	28.03	0.002	0.79	4.2	16.4	0.09785055	0.02096798
76	27.82	0.002	0.83	4.0	16.3	0.10358246	0.02219624
77	27.64	0.002	0.86	3.7	16.2	0.10890376	0.02333652
78	27.49	0.002	0.89	3.4	16.2	0.11353519	0.02432897
79	27.41	0.002	0.91	3.1	16.1	0.11656377	0.02497795
80	27.33	0.002	0.92	2.8	16.1	0.11942116	0.02559025
81	27.27	0.002	0.94	2.5	16.0	0.12185706	0.02611223
82	27.25	0.002	0.94	2.2	16.0	0.12305533	0.02636900
83	27.23	0.002	0.95	1.9	16.0	0.12419847	0.02661396
84	27.21	0.002	0.95	1.7	15.9	0.12526002	0.02684143
85	27.21	0.002	0.95	1.4	15.9	0.12557533	0.02690900
86	27.27	0.002	0.94	1.1	15.9	0.12432655	0.02664140
87	27.32	0.002	0.93	0.8	15.9	0.12308917	0.02637625
88	27.36	0.002	0.92	0.6	15.8	0.12226869	0.02620043
89	27.45	0.002	0.90	0.3	15.8	0.11973946	0.02565845
90	27.50	0.002	0.89	0.0	15.8	0.11849128	0.02539099

Maximum Permissible Exposure  
 (MPE): 466.6666666  $\mu\text{W}/\text{cm}^2$

ERP (Watts)	500		Height (feet)	52		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	0.26	0.942	470.94	907.2	907.3	0.01910840	0.00409466
5	0.04	0.991	495.42	181.0	181.7	0.50130525	0.10742255
10	1.22	0.755	377.55	89.8	91.2	1.51642840	0.32494894
20	9.18	0.121	60.39	43.5	46.3	0.94132747	0.20171303
30	24.74	0.003	1.68	27.4	31.7	0.05589484	0.01197746
35	19.50	0.011	5.61	22.6	27.6	0.24597511	0.05270895
40	18.76	0.013	6.65	18.9	24.6	0.36627099	0.07848664
45	20.76	0.008	4.20	15.8	22.4	0.27965912	0.05992695
50	25.32	0.003	1.47	13.3	20.7	0.11483845	0.02460824
55	32.64	0.001	0.27	11.1	19.3	0.02435843	0.00521966
60	51.89	0.000	0.00	9.1	18.3	0.00029986	0.00006426
65	35.40	0.000	0.14	7.4	17.5	0.01575880	0.00337689
70	30.08	0.001	0.49	5.8	16.8	0.05776013	0.01237717
71	29.52	0.001	0.56	5.4	16.8	0.06648750	0.01424732
72	29.04	0.001	0.62	5.1	16.6	0.07511980	0.01609710
73	28.65	0.001	0.68	4.8	16.6	0.08312439	0.01781237
74	28.31	0.001	0.74	4.5	16.5	0.09086898	0.01947192
75	28.03	0.002	0.79	4.2	16.4	0.09785055	0.02096798
76	27.82	0.002	0.83	4.0	16.3	0.10358246	0.02219624
77	27.64	0.002	0.86	3.7	16.2	0.10890376	0.02333652
78	27.49	0.002	0.89	3.4	16.2	0.11353519	0.02432897
79	27.41	0.002	0.91	3.1	16.1	0.11656377	0.02497795
80	27.33	0.002	0.92	2.8	16.1	0.11942116	0.02559025
81	27.27	0.002	0.94	2.5	16.0	0.12185706	0.02611223
82	27.25	0.002	0.94	2.2	16.0	0.12305533	0.02636900
83	27.23	0.002	0.95	1.9	16.0	0.12419847	0.02661396
84	27.21	0.002	0.95	1.7	15.9	0.12526002	0.02684143
85	27.21	0.002	0.95	1.4	15.9	0.12557533	0.02690900
86	27.27	0.002	0.94	1.1	15.9	0.12432655	0.02664140
87	27.32	0.002	0.93	0.8	15.9	0.12308917	0.02637625
88	27.36	0.002	0.92	0.6	15.8	0.12226869	0.02620043
89	27.45	0.002	0.90	0.3	15.8	0.11973946	0.02565845
90	27.50	0.002	0.89	0.0	15.8	0.11849128	0.02539099

Maximum Permissible Exposure  
 (MPE): 1000 µW/cm<sup>2</sup>

ERP (Watts)	500		Height (feet)	52		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density (µW/cm <sup>2</sup> )	Percent of MPE
1	2.41	0.574	175.38	907.2	907.3	0.00711580	0.00071158
5	0.34	0.925	282.47	181.0	181.7	0.28582619	0.02858262
10	13.15	0.048	14.79	89.8	91.2	0.05940456	0.00594046
20	21.20	0.008	2.32	43.5	46.3	0.03612059	0.00361206
30	21.88	0.006	1.98	27.4	31.7	0.06597770	0.00659777
35	19.24	0.012	3.64	22.6	27.6	0.15954488	0.01595449
40	20.95	0.008	2.45	18.9	24.6	0.13513673	0.01351367
45	21.45	0.007	2.19	15.8	22.4	0.14574103	0.01457410
50	36.22	0.000	0.07	13.3	20.7	0.00570733	0.00057073
55	27.92	0.002	0.49	11.1	19.3	0.04407133	0.00440713
60	30.93	0.001	0.25	9.1	18.3	0.02463982	0.00246398
65	29.13	0.001	0.37	7.4	17.5	0.04085091	0.00408509
70	30.77	0.001	0.26	5.8	16.8	0.03011345	0.00301135
71	30.92	0.001	0.25	5.4	16.8	0.02941950	0.00294195
72	30.99	0.001	0.24	5.1	16.6	0.02929550	0.00292955
73	31.15	0.001	0.23	4.8	16.6	0.02853587	0.00285359
74	31.55	0.001	0.21	4.5	16.5	0.02632856	0.00263286
75	32.19	0.001	0.18	4.2	16.4	0.02294010	0.00229401
76	33.14	0.000	0.15	4.0	16.3	0.01857880	0.00185788
77	34.31	0.000	0.11	3.7	16.2	0.01433453	0.00143345
78	35.60	0.000	0.08	3.4	16.2	0.01070423	0.00107042
79	36.79	0.000	0.06	3.1	16.1	0.00819585	0.00081958
80	37.60	0.000	0.05	2.8	16.1	0.00686584	0.00068658
81	37.93	0.000	0.05	2.5	16.0	0.00639257	0.00063926
82	37.96	0.000	0.05	2.2	16.0	0.00638468	0.00063847
83	37.87	0.000	0.05	1.9	16.0	0.00653706	0.00065371
84	37.83	0.000	0.05	1.7	15.9	0.00664223	0.00066422
85	37.93	0.000	0.05	1.4	15.9	0.00649753	0.00064975
86	38.15	0.000	0.05	1.1	15.9	0.00619803	0.00061980
87	38.52	0.000	0.04	0.8	15.9	0.00571912	0.00057191
88	39.14	0.000	0.04	0.6	15.8	0.00496096	0.00049610
89	40.07	0.000	0.03	0.3	15.8	0.00398503	0.00039850
90	41.32	0.000	0.02	0.0	15.8	0.00301291	0.00030129

Maximum Permissible Exposure  
 (MPE): 1000  $\mu\text{W}/\text{cm}^2$

ERP (Watts)	500		Height (feet)	52		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	2.41	0.574	175.38	907.2	907.3	0.00711580	0.00071158
5	0.34	0.925	282.47	181.0	181.7	0.28582619	0.02858262
10	13.15	0.048	14.79	89.8	91.2	0.05940456	0.00594046
20	21.20	0.008	2.32	43.5	46.3	0.03612059	0.00361206
30	21.88	0.006	1.98	27.4	31.7	0.06597770	0.00659777
35	19.24	0.012	3.64	22.6	27.6	0.15954488	0.01595449
40	20.95	0.008	2.45	18.9	24.6	0.13513673	0.01351367
45	21.45	0.007	2.19	15.8	22.4	0.14574103	0.01457410
50	36.22	0.000	0.07	13.3	20.7	0.00570733	0.00057073
55	27.92	0.002	0.49	11.1	19.3	0.04407133	0.00440713
60	30.93	0.001	0.25	9.1	18.3	0.02463982	0.00246398
65	29.13	0.001	0.37	7.4	17.5	0.04085091	0.00408509
70	30.77	0.001	0.26	5.8	16.8	0.03011345	0.00301135
71	30.92	0.001	0.25	5.4	16.8	0.02941950	0.00294195
72	30.99	0.001	0.24	5.1	16.6	0.02929550	0.00292955
73	31.15	0.001	0.23	4.8	16.6	0.02853587	0.00285359
74	31.55	0.001	0.21	4.5	16.5	0.02632856	0.00263286
75	32.19	0.001	0.18	4.2	16.4	0.02294010	0.00229401
76	33.14	0.000	0.15	4.0	16.3	0.01857880	0.00185788
77	34.31	0.000	0.11	3.7	16.2	0.01433453	0.00143345
78	35.60	0.000	0.08	3.4	16.2	0.01070423	0.00107042
79	36.79	0.000	0.06	3.1	16.1	0.00819585	0.00081958
80	37.60	0.000	0.05	2.8	16.1	0.00686584	0.00068658
81	37.93	0.000	0.05	2.5	16.0	0.00639257	0.00063926
82	37.96	0.000	0.05	2.2	16.0	0.00638468	0.00063847
83	37.87	0.000	0.05	1.9	16.0	0.00653706	0.00065371
84	37.83	0.000	0.05	1.7	15.9	0.00664223	0.00066422
85	37.93	0.000	0.05	1.4	15.9	0.00649753	0.00064975
86	38.15	0.000	0.05	1.1	15.9	0.00619803	0.00061980
87	38.52	0.000	0.04	0.8	15.9	0.00571912	0.00057191
88	39.14	0.000	0.04	0.6	15.8	0.00496096	0.00049610
89	40.07	0.000	0.03	0.3	15.8	0.00398503	0.00039850
90	41.32	0.000	0.02	0.0	15.8	0.00301291	0.00030129

Maximum Permissible Exposure  
 (MPE): 1000  $\mu\text{W}/\text{cm}^2$

ERP (Watts)	500		Height (feet)	52		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	2.41	0.574	175.38	907.2	907.3	0.00711580	0.00071158
5	0.34	0.925	282.47	181.0	181.7	0.28582619	0.02858262
10	13.15	0.048	14.79	89.8	91.2	0.05940456	0.00594046
20	21.20	0.008	2.32	43.5	46.3	0.03612059	0.00361206
30	21.88	0.006	1.98	27.4	31.7	0.06597770	0.00659777
35	19.24	0.012	3.64	22.6	27.6	0.15954488	0.01595449
40	20.95	0.008	2.45	18.9	24.6	0.13513673	0.01351367
45	21.45	0.007	2.19	15.8	22.4	0.14574103	0.01457410
50	36.22	0.000	0.07	13.3	20.7	0.00570733	0.00057073
55	27.92	0.002	0.49	11.1	19.3	0.04407133	0.00440713
60	30.93	0.001	0.25	9.1	18.3	0.02463982	0.00246398
65	29.13	0.001	0.37	7.4	17.5	0.04085091	0.00408509
70	30.77	0.001	0.26	5.8	16.8	0.03011345	0.00301135
71	30.92	0.001	0.25	5.4	16.8	0.02941950	0.00294195
72	30.99	0.001	0.24	5.1	16.6	0.02929550	0.00292955
73	31.15	0.001	0.23	4.8	16.6	0.02853587	0.00285359
74	31.55	0.001	0.21	4.5	16.5	0.02632856	0.00263286
75	32.19	0.001	0.18	4.2	16.4	0.02294010	0.00229401
76	33.14	0.000	0.15	4.0	16.3	0.01857880	0.00185788
77	34.31	0.000	0.11	3.7	16.2	0.01433453	0.00143345
78	35.60	0.000	0.08	3.4	16.2	0.01070423	0.00107042
79	36.79	0.000	0.06	3.1	16.1	0.00819585	0.00081958
80	37.60	0.000	0.05	2.8	16.1	0.00686584	0.00068658
81	37.93	0.000	0.05	2.5	16.0	0.00639257	0.00063926
82	37.96	0.000	0.05	2.2	16.0	0.00638468	0.00063847
83	37.87	0.000	0.05	1.9	16.0	0.00653706	0.00065371
84	37.83	0.000	0.05	1.7	15.9	0.00664223	0.00066422
85	37.93	0.000	0.05	1.4	15.9	0.00649753	0.00064975
86	38.15	0.000	0.05	1.1	15.9	0.00619803	0.00061980
87	38.52	0.000	0.04	0.8	15.9	0.00571912	0.00057191
88	39.14	0.000	0.04	0.6	15.8	0.00496096	0.00049610
89	40.07	0.000	0.03	0.3	15.8	0.00398503	0.00039850
90	41.32	0.000	0.02	0.0	15.8	0.00301291	0.00030129

Maximum Permissible Exposure  
 (MPE): 566.6666666  $\mu\text{W}/\text{cm}^2$

ERP (Watts)		500	Height (feet)	47		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	0.21	0.953	476.40	819.9	820.0	0.02366172	0.00417560
5	0.12	0.973	486.37	163.6	164.2	0.60251806	0.10632672
10	2.28	0.592	295.78	81.2	82.4	1.45429168	0.25663971
20	22.87	0.005	2.58	39.3	41.8	0.04926283	0.00869344
30	16.88	0.021	10.26	24.8	28.6	0.41820115	0.07380020
35	23.08	0.005	2.46	20.4	25.0	0.13198983	0.02329232
40	21.39	0.007	3.63	17.1	22.3	0.24449640	0.04314642
45	17.64	0.017	8.61	14.3	20.2	0.70194548	0.12387273
50	16.89	0.020	10.23	12.0	18.7	0.97938456	0.17283257
55	18.82	0.013	6.56	10.0	17.5	0.71801033	0.12670771
60	22.87	0.005	2.58	8.3	16.5	0.31599675	0.05576413
65	26.57	0.002	1.10	6.7	15.8	0.14755934	0.02603988
70	26.75	0.002	1.06	5.2	15.2	0.15213045	0.02684655
71	26.53	0.002	1.11	4.9	15.1	0.16195866	0.02858094
72	26.31	0.002	1.17	4.6	15.0	0.17245417	0.03043309
73	26.63	0.002	1.09	4.4	15.0	0.16193197	0.02857623
74	26.15	0.002	1.21	4.1	14.9	0.18280870	0.03226036
75	25.92	0.003	1.28	3.8	14.8	0.19457648	0.03433703
76	25.80	0.003	1.32	3.6	14.8	0.20187762	0.03562546
77	25.80	0.003	1.32	3.3	14.7	0.20353009	0.03591707
78	26.16	0.002	1.21	3.0	14.6	0.18889593	0.03333458
79	25.88	0.003	1.29	2.8	14.6	0.20284190	0.03579563
80	25.75	0.003	1.33	2.5	14.5	0.21048935	0.03714518
81	25.58	0.003	1.38	2.3	14.5	0.22008420	0.03883839
82	25.60	0.003	1.38	2.0	14.4	0.22026460	0.03887022
83	26.25	0.002	1.19	1.8	14.4	0.19042217	0.03360391
84	26.61	0.002	1.09	1.5	14.4	0.17605510	0.03106855
85	26.96	0.002	1.01	1.2	14.4	0.16287799	0.02874317
86	26.85	0.002	1.03	1.0	14.4	0.16746834	0.02955324
87	27.22	0.002	0.95	0.8	14.3	0.15427353	0.02722474
88	28.10	0.002	0.77	0.5	14.3	0.12614843	0.02226149
89	28.21	0.002	0.76	0.2	14.3	0.12314425	0.02173134
90	28.28	0.001	0.74	0.0	14.3	0.12118699	0.02138594

Maximum Permissible Exposure  
 (MPE): 566.6666666  $\mu\text{W}/\text{cm}^2$

ERP (Watts)	500		Height (feet)	47		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	0.21	0.953	476.40	819.9	820.0	0.02366172	0.00417560
5	0.12	0.973	486.37	163.6	164.2	0.60251806	0.10632672
10	2.28	0.592	295.78	81.2	82.4	1.45429168	0.25663971
20	22.87	0.005	2.58	39.3	41.8	0.04926283	0.00869344
30	16.88	0.021	10.26	24.8	28.6	0.41820115	0.07380020
35	23.08	0.005	2.46	20.4	25.0	0.13198983	0.02329232
40	21.39	0.007	3.63	17.1	22.3	0.24449640	0.04314642
45	17.64	0.017	8.61	14.3	20.2	0.70194548	0.12387273
50	16.89	0.020	10.23	12.0	18.7	0.97938456	0.17283257
55	18.82	0.013	6.56	10.0	17.5	0.71801033	0.12670771
60	22.87	0.005	2.58	8.3	16.5	0.31599675	0.05576413
65	26.57	0.002	1.10	6.7	15.8	0.14755934	0.02603988
70	26.75	0.002	1.06	5.2	15.2	0.15213045	0.02684655
71	26.53	0.002	1.11	4.9	15.1	0.16195866	0.02858094
72	26.31	0.002	1.17	4.6	15.0	0.17245417	0.03043309
73	26.63	0.002	1.09	4.4	15.0	0.16193197	0.02857623
74	26.15	0.002	1.21	4.1	14.9	0.18280870	0.03226036
75	25.92	0.003	1.28	3.8	14.8	0.19457648	0.03433703
76	25.80	0.003	1.32	3.6	14.8	0.20187762	0.03562546
77	25.80	0.003	1.32	3.3	14.7	0.20353009	0.03591707
78	26.16	0.002	1.21	3.0	14.6	0.18889593	0.03333458
79	25.88	0.003	1.29	2.8	14.6	0.20284190	0.03579563
80	25.75	0.003	1.33	2.5	14.5	0.21048935	0.03714518
81	25.58	0.003	1.38	2.3	14.5	0.22008420	0.03883839
82	25.60	0.003	1.38	2.0	14.4	0.22026460	0.03887022
83	26.25	0.002	1.19	1.8	14.4	0.19042217	0.03360391
84	26.61	0.002	1.09	1.5	14.4	0.17605510	0.03106855
85	26.96	0.002	1.01	1.2	14.4	0.16287799	0.02874317
86	26.85	0.002	1.03	1.0	14.4	0.16746834	0.02955324
87	27.22	0.002	0.95	0.8	14.3	0.15427353	0.02722474
88	28.10	0.002	0.77	0.5	14.3	0.12614843	0.02226149
89	28.21	0.002	0.76	0.2	14.3	0.12314425	0.02173134
90	28.28	0.001	0.74	0.0	14.3	0.12118699	0.02138594

AT&T UMTS 1  
 CNU0780 El Camino and Wolf  
 ANDREW - TBXLHB-6565A-VTM\_04DT\_0850.pln 140° Sector

## Maximum Permissible Exposure

(MPE):

566.666666  $\mu\text{W}/\text{cm}^2$ 

ERP (Watts)	500		Height (feet)	47		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP In direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	0.21	0.953	476.40	819.9	820.0	0.02366172	0.00417560
5	0.12	0.973	486.37	163.6	164.2	0.60251806	0.10632672
10	2.28	0.592	295.78	81.2	82.4	1.45429168	0.25663971
20	22.87	0.005	2.58	39.3	41.8	0.04926283	0.00869344
30	16.88	0.021	10.26	24.8	28.6	0.41820115	0.07380020
35	23.08	0.005	2.46	20.4	25.0	0.13198983	0.02329232
40	21.39	0.007	3.63	17.1	22.3	0.24449640	0.04314642
45	17.64	0.017	8.61	14.3	20.2	0.70194548	0.12387273
50	16.89	0.020	10.23	12.0	18.7	0.97938456	0.17283257
55	18.82	0.013	6.56	10.0	17.5	0.71801033	0.12670771
60	22.87	0.005	2.58	8.3	16.5	0.31599675	0.05576413
65	26.57	0.002	1.10	6.7	15.8	0.14755934	0.02603988
70	26.75	0.002	1.06	5.2	15.2	0.15213045	0.02684655
71	26.53	0.002	1.11	4.9	15.1	0.16195866	0.02858094
72	26.31	0.002	1.17	4.6	15.0	0.17245417	0.03043309
73	26.63	0.002	1.09	4.4	15.0	0.16193197	0.02857623
74	26.15	0.002	1.21	4.1	14.9	0.18280870	0.03226036
75	25.92	0.003	1.28	3.8	14.8	0.19457648	0.03433703
76	25.80	0.003	1.32	3.6	14.8	0.20187762	0.03562546
77	25.80	0.003	1.32	3.3	14.7	0.20353009	0.03591707
78	26.16	0.002	1.21	3.0	14.6	0.18889593	0.03333458
79	25.88	0.003	1.29	2.8	14.6	0.20284190	0.03579563
80	25.75	0.003	1.33	2.5	14.5	0.21048935	0.03714518
81	25.58	0.003	1.38	2.3	14.5	0.22008420	0.03883839
82	25.60	0.003	1.38	2.0	14.4	0.22026460	0.03887022
83	26.25	0.002	1.19	1.8	14.4	0.19042217	0.03360391
84	26.61	0.002	1.09	1.5	14.4	0.17605510	0.03106855
85	26.96	0.002	1.01	1.2	14.4	0.16287799	0.02874317
86	26.85	0.002	1.03	1.0	14.4	0.16746834	0.02955324
87	27.22	0.002	0.95	0.8	14.3	0.15427353	0.02722474
88	28.10	0.002	0.77	0.5	14.3	0.12614843	0.02226149
89	28.21	0.002	0.76	0.2	14.3	0.12314425	0.02173134
90	28.28	0.001	0.74	0.0	14.3	0.12118699	0.02138594

Maximum Permissible Exposure  
 (MPE): 566.6666666  $\mu\text{W}/\text{cm}^2$

ERP (Watts)	500		Height (feet)	47		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	0.21	0.953	476.40	819.9	820.0	0.02366172	0.00417560
5	0.12	0.973	486.37	163.6	164.2	0.60251806	0.10632672
10	2.28	0.592	295.78	81.2	82.4	1.45429168	0.25663971
20	22.87	0.005	2.58	39.3	41.8	0.04926283	0.00869344
30	16.88	0.021	10.26	24.8	28.6	0.41820115	0.07380020
35	23.08	0.005	2.46	20.4	25.0	0.13198983	0.02329232
40	21.39	0.007	3.63	17.1	22.3	0.24449640	0.04314642
45	17.64	0.017	8.61	14.3	20.2	0.70194548	0.12387273
50	16.89	0.020	10.23	12.0	18.7	0.97938456	0.17283257
55	18.82	0.013	6.56	10.0	17.5	0.71801033	0.12670771
60	22.87	0.005	2.58	8.3	16.5	0.31599675	0.05576413
65	26.57	0.002	1.10	6.7	15.8	0.14755934	0.02603988
70	26.75	0.002	1.06	5.2	15.2	0.15213045	0.02684655
71	26.53	0.002	1.11	4.9	15.1	0.16195866	0.02858094
72	26.31	0.002	1.17	4.6	15.0	0.17245417	0.03043309
73	26.63	0.002	1.09	4.4	15.0	0.16193197	0.02857623
74	26.15	0.002	1.21	4.1	14.9	0.18280870	0.03226036
75	25.92	0.003	1.28	3.8	14.8	0.19457648	0.03433703
76	25.80	0.003	1.32	3.6	14.8	0.20187762	0.03562546
77	25.80	0.003	1.32	3.3	14.7	0.20353009	0.03591707
78	26.16	0.002	1.21	3.0	14.6	0.18889593	0.03333458
79	25.88	0.003	1.29	2.8	14.6	0.20284190	0.03579563
80	25.75	0.003	1.33	2.5	14.5	0.21048935	0.03714518
81	25.58	0.003	1.38	2.3	14.5	0.22008420	0.03883839
82	25.60	0.003	1.38	2.0	14.4	0.22026460	0.03887022
83	26.25	0.002	1.19	1.8	14.4	0.19042217	0.03360391
84	26.61	0.002	1.09	1.5	14.4	0.17605510	0.03106855
85	26.96	0.002	1.01	1.2	14.4	0.16287799	0.02874317
86	26.85	0.002	1.03	1.0	14.4	0.16746834	0.02955324
87	27.22	0.002	0.95	0.8	14.3	0.15427353	0.02722474
88	28.10	0.002	0.77	0.5	14.3	0.12614843	0.02226149
89	28.21	0.002	0.76	0.2	14.3	0.12314425	0.02173134
90	28.28	0.001	0.74	0.0	14.3	0.12118699	0.02138594

Maximum Permissible Exposure

(MPE):

566.666666  $\mu\text{W}/\text{cm}^2$

ERP (Watts)	500		Height (feet)	47		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	0.21	0.953	476.40	819.9	820.0	0.02366172	0.00417560
5	0.12	0.973	486.37	163.6	164.2	0.60251806	0.10632672
10	2.28	0.592	295.78	81.2	82.4	1.45429168	0.25663971
20	22.87	0.005	2.58	39.3	41.8	0.04926283	0.00869344
30	16.88	0.021	10.26	24.8	28.6	0.41820115	0.07380020
35	23.08	0.005	2.46	20.4	25.0	0.13198983	0.02329232
40	21.39	0.007	3.63	17.1	22.3	0.24449640	0.04314642
45	17.64	0.017	8.61	14.3	20.2	0.70194548	0.12387273
50	16.89	0.020	10.23	12.0	18.7	0.97938456	0.17283257
55	18.82	0.013	6.56	10.0	17.5	0.71801033	0.12670771
60	22.87	0.005	2.58	8.3	16.5	0.31599675	0.05576413
65	26.57	0.002	1.10	6.7	15.8	0.14755934	0.02603988
70	26.75	0.002	1.06	5.2	15.2	0.15213045	0.02684655
71	26.53	0.002	1.11	4.9	15.1	0.16195866	0.02858094
72	26.31	0.002	1.17	4.6	15.0	0.17245417	0.03043309
73	26.63	0.002	1.09	4.4	15.0	0.16193197	0.02857623
74	26.15	0.002	1.21	4.1	14.9	0.18280870	0.03226036
75	25.92	0.003	1.28	3.8	14.8	0.19457648	0.03433703
76	25.80	0.003	1.32	3.6	14.8	0.20187762	0.03562546
77	25.80	0.003	1.32	3.3	14.7	0.20353009	0.03591707
78	26.16	0.002	1.21	3.0	14.6	0.18889593	0.03333458
79	25.88	0.003	1.29	2.8	14.6	0.20284190	0.03579563
80	25.75	0.003	1.33	2.5	14.5	0.21048935	0.03714518
81	25.58	0.003	1.38	2.3	14.5	0.22008420	0.03883839
82	25.60	0.003	1.38	2.0	14.4	0.22026460	0.03887022
83	26.25	0.002	1.19	1.8	14.4	0.19042217	0.03360391
84	26.61	0.002	1.09	1.5	14.4	0.17605510	0.03106855
85	26.96	0.002	1.01	1.2	14.4	0.16287799	0.02874317
86	26.85	0.002	1.03	1.0	14.4	0.16746834	0.02955324
87	27.22	0.002	0.95	0.8	14.3	0.15427353	0.02722474
88	28.10	0.002	0.77	0.5	14.3	0.12614843	0.02226149
89	28.21	0.002	0.76	0.2	14.3	0.12314425	0.02173134
90	28.28	0.001	0.74	0.0	14.3	0.12118699	0.02138594

Maximum Permissible Exposure  
 (MPE): 566.666666  $\mu\text{W}/\text{cm}^2$

ERP (Watts)	500		Height (feet)	47		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	0.21	0.953	476.40	819.9	820.0	0.02366172	0.00417560
5	0.12	0.973	486.37	163.6	164.2	0.60251806	0.10632672
10	2.28	0.592	295.78	81.2	82.4	1.45429168	0.25663971
20	22.87	0.005	2.58	39.3	41.8	0.04926283	0.00869344
30	16.88	0.021	10.26	24.8	28.6	0.41820115	0.07380020
35	23.08	0.005	2.46	20.4	25.0	0.13198983	0.02329232
40	21.39	0.007	3.63	17.1	22.3	0.24449640	0.04314642
45	17.64	0.017	8.61	14.3	20.2	0.70194548	0.12387273
50	16.89	0.020	10.23	12.0	18.7	0.97938456	0.17283257
55	18.82	0.013	6.56	10.0	17.5	0.71801033	0.12670771
60	22.87	0.005	2.58	8.3	16.5	0.31599675	0.05576413
65	26.57	0.002	1.10	6.7	15.8	0.14755934	0.02603988
70	26.75	0.002	1.06	5.2	15.2	0.15213045	0.02684655
71	26.53	0.002	1.11	4.9	15.1	0.16195866	0.02858094
72	26.31	0.002	1.17	4.6	15.0	0.17245417	0.03043309
73	26.63	0.002	1.09	4.4	15.0	0.16193197	0.02857623
74	26.15	0.002	1.21	4.1	14.9	0.18280870	0.03226036
75	25.92	0.003	1.28	3.8	14.8	0.19457648	0.03433703
76	25.80	0.003	1.32	3.6	14.8	0.20187762	0.03562546
77	25.80	0.003	1.32	3.3	14.7	0.20353009	0.03591707
78	26.16	0.002	1.21	3.0	14.6	0.18889593	0.03333458
79	25.88	0.003	1.29	2.8	14.6	0.20284190	0.03579563
80	25.75	0.003	1.33	2.5	14.5	0.21048935	0.03714518
81	25.58	0.003	1.38	2.3	14.5	0.22008420	0.03883839
82	25.60	0.003	1.38	2.0	14.4	0.22026460	0.03887022
83	26.25	0.002	1.19	1.8	14.4	0.19042217	0.03360391
84	26.61	0.002	1.09	1.5	14.4	0.17605510	0.03106855
85	26.96	0.002	1.01	1.2	14.4	0.16287799	0.02874317
86	26.85	0.002	1.03	1.0	14.4	0.16746834	0.02955324
87	27.22	0.002	0.95	0.8	14.3	0.15427353	0.02722474
88	28.10	0.002	0.77	0.5	14.3	0.12614843	0.02226149
89	28.21	0.002	0.76	0.2	14.3	0.12314425	0.02173134
90	28.28	0.001	0.74	0.0	14.3	0.12118699	0.02138594

Maximum Permissible Exposure  
 (MPE): 1000  $\mu\text{W}/\text{cm}^2$

ERP (Watts)	500		Height (feet)	47		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	3.34	0.463	141.57	819.9	820.0	0.00703147	0.00070315
5	0.04	0.991	302.67	163.6	164.2	0.37494716	0.03749472
10	10.99	0.080	24.32	81.2	82.4	0.11957805	0.01195781
20	24.37	0.004	1.12	39.3	41.8	0.02130783	0.00213078
30	23.57	0.004	1.34	24.8	28.6	0.05474393	0.00547439
35	25.59	0.003	0.84	20.4	25.0	0.04525240	0.00452524
40	20.75	0.008	2.57	17.1	22.3	0.17309257	0.01730926
45	40.00	0.000	0.03	14.3	20.2	0.00249055	0.00024906
50	26.85	0.002	0.63	12.0	18.7	0.06037855	0.00603785
55	38.65	0.000	0.04	10.0	17.5	0.00454642	0.00045464
60	30.51	0.001	0.27	8.3	16.5	0.03323518	0.00332352
65	37.59	0.000	0.05	6.7	15.8	0.00712035	0.00071203
70	34.76	0.000	0.10	5.2	15.2	0.01469139	0.00146914
71	33.18	0.000	0.15	4.9	15.1	0.02140966	0.00214097
72	32.42	0.001	0.18	4.6	15.0	0.02581059	0.00258106
73	31.89	0.001	0.20	4.4	15.0	0.02945622	0.00294562
74	31.60	0.001	0.21	4.1	14.9	0.03184440	0.00318444
75	32.14	0.001	0.19	3.8	14.8	0.02838319	0.00283832
76	31.53	0.001	0.21	3.6	14.8	0.03296762	0.00329676
77	31.56	0.001	0.21	3.3	14.7	0.03300108	0.00330011
78	31.54	0.001	0.21	3.0	14.6	0.03341533	0.00334153
79	32.14	0.001	0.19	2.8	14.6	0.02932530	0.00293253
80	32.19	0.001	0.18	2.5	14.5	0.02918919	0.00291892
81	32.89	0.001	0.16	2.3	14.5	0.02497714	0.00249771
82	34.05	0.000	0.12	2.0	14.4	0.01925205	0.00192520
83	34.46	0.000	0.11	1.8	14.4	0.01756584	0.00175658
84	35.41	0.000	0.09	1.5	14.4	0.01419016	0.00141902
85	36.77	0.000	0.06	1.2	14.4	0.01037581	0.00103758
86	37.73	0.000	0.05	1.0	14.4	0.00837335	0.00083734
87	39.17	0.000	0.04	0.8	14.3	0.00601187	0.00060119
88	40.00	0.000	0.03	0.5	14.3	0.00497543	0.00049754
89	40.00	0.000	0.03	0.2	14.3	0.00498238	0.00049824
90	40.00	0.000	0.03	0.0	14.3	0.00498238	0.00049824

AT&T UMTS 2  
 CNU0780 El Camino and Wolf  
 ANDREW - TBXLHB-6565A-VTM\_02DT\_1920.pln 260° Sector

Maximum Permissible Exposure  
 (MPE): 1000  $\mu\text{W}/\text{cm}^2$

ERP (Watts)	500		Height (feet)	47		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	0.26	0.942	287.72	819.9	820.0	0.01429047	0.00142905
5	2.61	0.548	167.48	163.6	164.2	0.20747705	0.02074771
10	17.46	0.018	5.48	81.2	82.4	0.02695523	0.00269552
20	20.87	0.008	2.50	39.3	41.8	0.04770366	0.00477037
30	19.16	0.012	3.71	24.8	28.6	0.15114058	0.01511406
35	17.43	0.018	5.52	20.4	25.0	0.29619755	0.02961976
40	22.29	0.006	1.80	17.1	22.3	0.12141577	0.01214158
45	26.20	0.002	0.73	14.3	20.2	0.05974830	0.00597483
50	21.49	0.007	2.17	12.0	18.7	0.20747998	0.02074800
55	22.13	0.006	1.87	10.0	17.5	0.20472257	0.02047226
60	31.92	0.001	0.20	8.3	16.5	0.02403849	0.00240385
65	26.51	0.002	0.68	6.7	15.8	0.09141874	0.00914187
70	24.06	0.004	1.20	5.2	15.2	0.17268986	0.01726899
71	24.13	0.004	1.18	4.9	15.1	0.17198941	0.01719894
72	24.27	0.004	1.14	4.6	15.0	0.16851209	0.01685121
73	24.48	0.004	1.09	4.4	15.0	0.16230514	0.01623051
74	24.82	0.003	1.01	4.1	14.9	0.15167505	0.01516751
75	25.46	0.003	0.87	3.8	14.8	0.13211421	0.01321142
76	25.88	0.003	0.79	3.6	14.8	0.12108450	0.01210845
77	26.56	0.002	0.67	3.3	14.7	0.10439311	0.01043931
78	27.37	0.002	0.56	3.0	14.6	0.08732793	0.00873279
79	28.00	0.002	0.48	2.8	14.6	0.07607300	0.00760730
80	29.23	0.001	0.36	2.5	14.5	0.05770181	0.00577018
81	29.49	0.001	0.34	2.3	14.5	0.05466786	0.00546679
82	30.73	0.001	0.26	2.0	14.4	0.04128928	0.00412893
83	30.67	0.001	0.26	1.8	14.4	0.04205006	0.00420501
84	32.09	0.001	0.19	1.5	14.4	0.03044971	0.00304497
85	33.14	0.000	0.15	1.2	14.4	0.02396319	0.00239632
86	34.52	0.000	0.11	1.0	14.4	0.01748990	0.00174899
87	35.89	0.000	0.08	0.8	14.3	0.01281869	0.00128187
88	35.97	0.000	0.08	0.5	14.3	0.01258783	0.00125878
89	39.09	0.000	0.04	0.2	14.3	0.00612833	0.00061283
90	39.19	0.000	0.04	0.0	14.3	0.00602868	0.00060287

Maximum Permissible Exposure  
 (MPE): 1000 μW/cm<sup>2</sup>

ERP (Watts)	500		Height (feet)	47		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density (μW/cm <sup>2</sup> )	Percent of MPE
1	0.26	0.942	287.72	819.9	820.0	0.01429047	0.00142905
5	2.61	0.548	167.48	163.6	164.2	0.20747705	0.02074771
10	17.46	0.018	5.48	81.2	82.4	0.02695523	0.00269552
20	20.87	0.008	2.50	39.3	41.8	0.04770366	0.00477037
30	19.16	0.012	3.71	24.8	28.6	0.15114058	0.01511406
35	17.43	0.018	5.52	20.4	25.0	0.29619755	0.02961976
40	22.29	0.006	1.80	17.1	22.3	0.12141577	0.01214158
45	26.20	0.002	0.73	14.3	20.2	0.05974830	0.00597483
50	21.49	0.007	2.17	12.0	18.7	0.20747998	0.02074800
55	22.13	0.006	1.87	10.0	17.5	0.20472257	0.02047226
60	31.92	0.001	0.20	8.3	16.5	0.02403849	0.00240385
65	26.51	0.002	0.68	6.7	15.8	0.09141874	0.00914187
70	24.06	0.004	1.20	5.2	15.2	0.17268986	0.01726899
71	24.13	0.004	1.18	4.9	15.1	0.17198941	0.01719894
72	24.27	0.004	1.14	4.6	15.0	0.16851209	0.01685121
73	24.48	0.004	1.09	4.4	15.0	0.16230514	0.01623051
74	24.82	0.003	1.01	4.1	14.9	0.15167505	0.01516751
75	25.46	0.003	0.87	3.8	14.8	0.13211421	0.01321142
76	25.88	0.003	0.79	3.6	14.8	0.12108450	0.01210845
77	26.56	0.002	0.67	3.3	14.7	0.10439311	0.01043931
78	27.37	0.002	0.56	3.0	14.6	0.08732793	0.00873279
79	28.00	0.002	0.48	2.8	14.6	0.07607300	0.00760730
80	29.23	0.001	0.36	2.5	14.5	0.05770181	0.00577018
81	29.49	0.001	0.34	2.3	14.5	0.05466786	0.00546679
82	30.73	0.001	0.26	2.0	14.4	0.04128928	0.00412893
83	30.67	0.001	0.26	1.8	14.4	0.04205006	0.00420501
84	32.09	0.001	0.19	1.5	14.4	0.03044971	0.00304497
85	33.14	0.000	0.15	1.2	14.4	0.02396319	0.00239632
86	34.52	0.000	0.11	1.0	14.4	0.01748990	0.00174899
87	35.89	0.000	0.08	0.8	14.3	0.01281869	0.00128187
88	35.97	0.000	0.08	0.5	14.3	0.01258783	0.00125878
89	39.09	0.000	0.04	0.2	14.3	0.00612833	0.00061283
90	39.19	0.000	0.04	0.0	14.3	0.00602868	0.00060287

Maximum Permissible Exposure  
 (MPE): 1000 µW/cm<sup>2</sup>

ERP (Watts)	500		Height (feet)	47		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density (µW/cm <sup>2</sup> )	Percent of MPE
1	3.34	0.463	141.57	819.9	820.0	0.00703147	0.00070315
5	0.04	0.991	302.67	163.6	164.2	0.37494716	0.03749472
10	10.99	0.080	24.32	81.2	82.4	0.11957805	0.01195781
20	24.37	0.004	1.12	39.3	41.8	0.02130783	0.00213078
30	23.57	0.004	1.34	24.8	28.6	0.05474393	0.00547439
35	25.59	0.003	0.84	20.4	25.0	0.04525240	0.00452524
40	20.75	0.008	2.57	17.1	22.3	0.17309257	0.01730926
45	40.00	0.000	0.03	14.3	20.2	0.00249055	0.00024906
50	26.85	0.002	0.63	12.0	18.7	0.06037855	0.00603785
55	38.65	0.000	0.04	10.0	17.5	0.00454642	0.00045464
60	30.51	0.001	0.27	8.3	16.5	0.03323518	0.00332352
65	37.59	0.000	0.05	6.7	15.8	0.00712035	0.00071203
70	34.76	0.000	0.10	5.2	15.2	0.01469139	0.00146914
71	33.18	0.000	0.15	4.9	15.1	0.02140966	0.00214097
72	32.42	0.001	0.18	4.6	15.0	0.02581059	0.00258106
73	31.89	0.001	0.20	4.4	15.0	0.02945622	0.00294562
74	31.60	0.001	0.21	4.1	14.9	0.03184440	0.00318444
75	32.14	0.001	0.19	3.8	14.8	0.02838319	0.00283832
76	31.53	0.001	0.21	3.6	14.8	0.03296762	0.00329676
77	31.56	0.001	0.21	3.3	14.7	0.03300108	0.00330011
78	31.54	0.001	0.21	3.0	14.6	0.03341533	0.00334153
79	32.14	0.001	0.19	2.8	14.6	0.02932530	0.00293253
80	32.19	0.001	0.18	2.5	14.5	0.02918919	0.00291892
81	32.89	0.001	0.16	2.3	14.5	0.02497714	0.00249771
82	34.05	0.000	0.12	2.0	14.4	0.01925205	0.00192520
83	34.46	0.000	0.11	1.8	14.4	0.01756584	0.00175658
84	35.41	0.000	0.09	1.5	14.4	0.01419016	0.00141902
85	36.77	0.000	0.06	1.2	14.4	0.01037581	0.00103758
86	37.73	0.000	0.05	1.0	14.4	0.00837335	0.00083734
87	39.17	0.000	0.04	0.8	14.3	0.00601187	0.00060119
88	40.00	0.000	0.03	0.5	14.3	0.00497543	0.00049754
89	40.00	0.000	0.03	0.2	14.3	0.00498238	0.00049824
90	40.00	0.000	0.03	0.0	14.3	0.00498238	0.00049824

Maximum Permissible Exposure  
 (MPE): 1000  $\mu\text{W}/\text{cm}^2$

ERP (Watts)		500		Height (feet)	47	Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	3.34	0.463	141.57	819.9	820.0	0.00703147	0.00070315
5	0.04	0.991	302.67	163.6	164.2	0.37494716	0.03749472
10	10.99	0.080	24.32	81.2	82.4	0.11957805	0.01195781
20	24.37	0.004	1.12	39.3	41.8	0.02130783	0.00213078
30	23.57	0.004	1.34	24.8	28.6	0.05474393	0.00547439
35	25.59	0.003	0.84	20.4	25.0	0.04525240	0.00452524
40	20.75	0.008	2.57	17.1	22.3	0.17309257	0.01730926
45	40.00	0.000	0.03	14.3	20.2	0.00249055	0.00024906
50	26.85	0.002	0.63	12.0	18.7	0.06037855	0.00603785
55	38.65	0.000	0.04	10.0	17.5	0.00454642	0.00045464
60	30.51	0.001	0.27	8.3	16.5	0.03323518	0.00332352
65	37.59	0.000	0.05	6.7	15.8	0.00712035	0.00071203
70	34.76	0.000	0.10	5.2	15.2	0.01469139	0.00146914
71	33.18	0.000	0.15	4.9	15.1	0.02140966	0.00214097
72	32.42	0.001	0.18	4.6	15.0	0.02581059	0.00258106
73	31.89	0.001	0.20	4.4	15.0	0.02945622	0.00294562
74	31.60	0.001	0.21	4.1	14.9	0.03184440	0.00318444
75	32.14	0.001	0.19	3.8	14.8	0.02838319	0.00283832
76	31.53	0.001	0.21	3.6	14.8	0.03296762	0.00329676
77	31.56	0.001	0.21	3.3	14.7	0.03300108	0.00330011
78	31.54	0.001	0.21	3.0	14.6	0.03341533	0.00334153
79	32.14	0.001	0.19	2.8	14.6	0.02932530	0.00293253
80	32.19	0.001	0.18	2.5	14.5	0.02918919	0.00291892
81	32.89	0.001	0.16	2.3	14.5	0.02497714	0.00249771
82	34.05	0.000	0.12	2.0	14.4	0.01925205	0.00192520
83	34.46	0.000	0.11	1.8	14.4	0.01756584	0.00175658
84	35.41	0.000	0.09	1.5	14.4	0.01419016	0.00141902
85	36.77	0.000	0.06	1.2	14.4	0.01037581	0.00103758
86	37.73	0.000	0.05	1.0	14.4	0.00837335	0.00083734
87	39.17	0.000	0.04	0.8	14.3	0.00601187	0.00060119
88	40.00	0.000	0.03	0.5	14.3	0.00497543	0.00049754
89	40.00	0.000	0.03	0.2	14.3	0.00498238	0.00049824
90	40.00	0.000	0.03	0.0	14.3	0.00498238	0.00049824

Maximum Permissible Exposure  
 (MPE): 1000 μW/cm<sup>2</sup>

ERP (Watts)		500	Height (feet)	47	Downtilt (Degrees)	0	
Depression Angle	Relative dB	Relative Gain	ERP In direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density (μW/cm <sup>2</sup> )	Percent of MPE
1	3.34	0.463	141.57	819.9	820.0	0.00703147	0.00070315
5	0.04	0.991	302.67	163.6	164.2	0.37494716	0.03749472
10	10.99	0.080	24.32	81.2	82.4	0.11957805	0.01195781
20	24.37	0.004	1.12	39.3	41.8	0.02130783	0.00213078
30	23.57	0.004	1.34	24.8	28.6	0.05474393	0.00547439
35	25.59	0.003	0.84	20.4	25.0	0.04525240	0.00452524
40	20.75	0.008	2.57	17.1	22.3	0.17309257	0.01730926
45	40.00	0.000	0.03	14.3	20.2	0.00249055	0.00024906
50	26.85	0.002	0.63	12.0	18.7	0.06037855	0.00603785
55	38.65	0.000	0.04	10.0	17.5	0.00454642	0.00045464
60	30.51	0.001	0.27	8.3	16.5	0.03323518	0.00332352
65	37.59	0.000	0.05	6.7	15.8	0.00712035	0.00071203
70	34.76	0.000	0.10	5.2	15.2	0.01469139	0.00146914
71	33.18	0.000	0.15	4.9	15.1	0.02140966	0.00214097
72	32.42	0.001	0.18	4.6	15.0	0.02581059	0.00258106
73	31.89	0.001	0.20	4.4	15.0	0.02945622	0.00294562
74	31.60	0.001	0.21	4.1	14.9	0.03184440	0.00318444
75	32.14	0.001	0.19	3.8	14.8	0.02838319	0.00283832
76	31.53	0.001	0.21	3.6	14.8	0.03296762	0.00329676
77	31.56	0.001	0.21	3.3	14.7	0.03300108	0.00330011
78	31.54	0.001	0.21	3.0	14.6	0.03341533	0.00334153
79	32.14	0.001	0.19	2.8	14.6	0.02932530	0.00293253
80	32.19	0.001	0.18	2.5	14.5	0.02918919	0.00291892
81	32.89	0.001	0.16	2.3	14.5	0.02497714	0.00249771
82	34.05	0.000	0.12	2.0	14.4	0.01925205	0.00192520
83	34.46	0.000	0.11	1.8	14.4	0.01756584	0.00175658
84	35.41	0.000	0.09	1.5	14.4	0.01419016	0.00141902
85	36.77	0.000	0.06	1.2	14.4	0.01037581	0.00103758
86	37.73	0.000	0.05	1.0	14.4	0.00837335	0.00083734
87	39.17	0.000	0.04	0.8	14.3	0.00601187	0.00060119
88	40.00	0.000	0.03	0.5	14.3	0.00497543	0.00049754
89	40.00	0.000	0.03	0.2	14.3	0.00498238	0.00049824
90	40.00	0.000	0.03	0.0	14.3	0.00498238	0.00049824

Maximum Permissible Exposure  
 (MPE): 1000  $\mu\text{W}/\text{cm}^2$

ERP (Watts)		500		Height (feet)		52		Downtilt (Degrees)		0	
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE				
1	3.34	0.463	141.57	907.2	907.3	0.00574413	0.00057441				
5	0.04	0.991	302.67	181.0	181.7	0.30626836	0.03062684				
10	10.99	0.080	24.32	89.8	91.2	0.09768374	0.00976837				
20	24.37	0.004	1.12	43.5	46.3	0.01740797	0.00174080				
30	23.57	0.004	1.34	27.4	31.7	0.04470737	0.00447074				
35	25.59	0.003	0.84	22.6	27.6	0.03697980	0.00369798				
40	20.75	0.008	2.57	18.9	24.6	0.14151094	0.01415109				
45	40.00	0.000	0.03	15.8	22.4	0.00203520	0.00020352				
50	26.85	0.002	0.63	13.3	20.7	0.04931232	0.00493123				
55	38.65	0.000	0.04	11.1	19.3	0.00371357	0.00037136				
60	30.51	0.001	0.27	9.1	18.3	0.02714349	0.00271435				
65	37.59	0.000	0.05	7.4	17.5	0.00581674	0.00058167				
70	34.76	0.000	0.10	5.8	16.8	0.01200226	0.00120023				
71	33.18	0.000	0.15	5.4	16.8	0.01749169	0.00174917				
72	32.42	0.001	0.18	5.1	16.6	0.02108834	0.00210883				
73	31.89	0.001	0.20	4.8	16.6	0.02407132	0.00240713				
74	31.60	0.001	0.21	4.5	16.5	0.02602767	0.00260277				
75	32.14	0.001	0.19	4.2	16.4	0.02320597	0.00232060				
76	31.53	0.001	0.21	4.0	16.3	0.02692969	0.00269297				
77	31.56	0.001	0.21	3.7	16.2	0.02696901	0.00269690				
78	31.54	0.001	0.21	3.4	16.2	0.02728605	0.00272860				
79	32.14	0.001	0.19	3.1	16.1	0.02396011	0.00239601				
80	32.19	0.001	0.18	2.8	16.1	0.02383314	0.00238331				
81	32.89	0.001	0.16	2.5	16.0	0.02040856	0.00204086				
82	34.05	0.000	0.12	2.2	16.0	0.01572228	0.00157223				
83	34.46	0.000	0.11	1.9	16.0	0.01435747	0.00143575				
84	35.41	0.000	0.09	1.7	15.9	0.01159372	0.00115937				
85	36.77	0.000	0.06	1.4	15.9	0.00847503	0.00084750				
86	37.73	0.000	0.05	1.1	15.9	0.00684619	0.00068462				
87	39.17	0.000	0.04	0.8	15.9	0.00490790	0.00049079				
88	40.00	0.000	0.03	0.6	15.8	0.00406636	0.00040664				
89	40.00	0.000	0.03	0.3	15.8	0.00406636	0.00040664				
90	40.00	0.000	0.03	0.0	15.8	0.00407150	0.00040715				

Maximum Permissible Exposure  
 (MPE): 1000 µW/cm<sup>2</sup>

ERP (Watts)	500		Height (feet)	52		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density (µW/cm <sup>2</sup> )	Percent of MPE
1	0.26	0.942	287.72	907.2	907.3	0.01167412	0.00116741
5	2.61	0.548	167.48	181.0	181.7	0.16947363	0.01694736
10	17.46	0.018	5.48	89.8	91.2	0.02201982	0.00220198
20	20.87	0.008	2.50	43.5	46.3	0.03897272	0.00389727
30	19.16	0.012	3.71	27.4	31.7	0.12343099	0.01234310
35	17.43	0.018	5.52	22.6	27.6	0.24204962	0.02420496
40	22.29	0.006	1.80	18.9	24.6	0.09926285	0.00992628
45	26.20	0.002	0.73	15.8	22.4	0.04882457	0.00488246
50	21.49	0.007	2.17	13.3	20.7	0.16945290	0.01694529
55	22.13	0.006	1.87	11.1	19.3	0.16721985	0.01672198
60	31.92	0.001	0.20	9.1	18.3	0.01963247	0.00196325
65	26.51	0.002	0.68	7.4	17.5	0.07468162	0.00746816
70	24.06	0.004	1.20	5.8	16.8	0.14108045	0.01410804
71	24.13	0.004	1.18	5.4	16.8	0.14051537	0.01405154
72	24.27	0.004	1.14	5.1	16.6	0.13768150	0.01376815
73	24.48	0.004	1.09	4.8	16.6	0.13263411	0.01326341
74	24.82	0.003	1.01	4.5	16.5	0.12396993	0.01239699
75	25.46	0.003	0.87	4.2	16.4	0.10801598	0.01080160
76	25.88	0.003	0.79	4.0	16.3	0.09890819	0.00989082
77	26.56	0.002	0.67	3.7	16.2	0.08531172	0.00853117
78	27.37	0.002	0.56	3.4	16.2	0.07130962	0.00713096
79	28.00	0.002	0.48	3.1	16.1	0.06215512	0.00621551
80	29.23	0.001	0.36	2.8	16.1	0.04711385	0.00471138
81	29.49	0.001	0.34	2.5	16.0	0.04466855	0.00446685
82	30.73	0.001	0.26	2.2	16.0	0.03371911	0.00337191
83	30.67	0.001	0.26	1.9	16.0	0.03436970	0.00343697
84	32.09	0.001	0.19	1.7	15.9	0.02487818	0.00248782
85	33.14	0.000	0.15	1.4	15.9	0.01957329	0.00195733
86	34.52	0.000	0.11	1.1	15.9	0.01430004	0.00143000
87	35.89	0.000	0.08	0.8	15.9	0.01046477	0.00104648
88	35.97	0.000	0.08	0.6	15.8	0.01028789	0.00102879
89	39.09	0.000	0.04	0.3	15.8	0.00500162	0.00050016
90	39.19	0.000	0.04	0.0	15.8	0.00492652	0.00049265

Maximum Permissible Exposure  
 (MPE): 1000 µW/cm<sup>2</sup>

ERP (Watts)		Height (feet)			Downtilt (Degrees)		0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density (µW/cm <sup>2</sup> )	Percent of MPE
1	0.26	0.942	287.72	907.2	907.3	0.01167412	0.00116741
5	2.61	0.548	167.48	181.0	181.7	0.16947363	0.01694736
10	17.46	0.018	5.48	89.8	91.2	0.02201982	0.00220198
20	20.87	0.008	2.50	43.5	46.3	0.03897272	0.00389727
30	19.16	0.012	3.71	27.4	31.7	0.12343099	0.01234310
35	17.43	0.018	5.52	22.6	27.6	0.24204962	0.02420496
40	22.29	0.006	1.80	18.9	24.6	0.09926285	0.00992628
45	26.20	0.002	0.73	15.8	22.4	0.04882457	0.00488246
50	21.49	0.007	2.17	13.3	20.7	0.16945290	0.01694529
55	22.13	0.006	1.87	11.1	19.3	0.16721985	0.01672198
60	31.92	0.001	0.20	9.1	18.3	0.01963247	0.00196325
65	26.51	0.002	0.68	7.4	17.5	0.07468162	0.00746816
70	24.06	0.004	1.20	5.8	16.8	0.14108045	0.01410804
71	24.13	0.004	1.18	5.4	16.8	0.14051537	0.01405154
72	24.27	0.004	1.14	5.1	16.6	0.13768150	0.01376815
73	24.48	0.004	1.09	4.8	16.6	0.13263411	0.01326341
74	24.82	0.003	1.01	4.5	16.5	0.12396993	0.01239699
75	25.46	0.003	0.87	4.2	16.4	0.10801598	0.01080160
76	25.88	0.003	0.79	4.0	16.3	0.09890819	0.00989082
77	26.56	0.002	0.67	3.7	16.2	0.08531172	0.00853117
78	27.37	0.002	0.56	3.4	16.2	0.07130962	0.00713096
79	28.00	0.002	0.48	3.1	16.1	0.06215512	0.00621551
80	29.23	0.001	0.36	2.8	16.1	0.04711385	0.00471138
81	29.49	0.001	0.34	2.5	16.0	0.04466855	0.00446685
82	30.73	0.001	0.26	2.2	16.0	0.03371911	0.00337191
83	30.67	0.001	0.26	1.9	16.0	0.03436970	0.00343697
84	32.09	0.001	0.19	1.7	15.9	0.02487818	0.00248782
85	33.14	0.000	0.15	1.4	15.9	0.01957329	0.00195733
86	34.52	0.000	0.11	1.1	15.9	0.01430004	0.00143000
87	35.89	0.000	0.08	0.8	15.9	0.01046477	0.00104648
88	35.97	0.000	0.08	0.6	15.8	0.01028789	0.00102879
89	39.09	0.000	0.04	0.3	15.8	0.00500162	0.00050016
90	39.19	0.000	0.04	0.0	15.8	0.00492652	0.00049265

Maximum Permissible Exposure  
 (MPE): 566.6666666  $\mu\text{W}/\text{cm}^2$

ERP (Watts)	500		Height (feet)	52		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	1.98	0.634	316.94	907.2	907.3	0.01285951	0.00226933
5	0.25	0.944	472.03	181.0	181.7	0.47764176	0.08428972
10	0.32	0.929	464.48	89.8	91.2	1.86561429	0.32922605
20	8.49	0.142	70.79	43.5	46.3	1.10342025	0.19472122
30	21.99	0.006	3.16	27.4	31.7	0.10529608	0.01858166
35	19.52	0.011	5.58	22.6	27.6	0.24485704	0.04321007
40	26.63	0.002	1.09	18.9	24.6	0.05982013	0.01055649
45	30.17	0.001	0.48	15.8	22.4	0.03204670	0.00565530
50	22.74	0.005	2.66	13.3	20.7	0.20798345	0.03670296
55	21.22	0.008	3.78	11.1	19.3	0.33748714	0.05955655
60	21.12	0.008	3.86	9.1	18.3	0.38616686	0.06814709
65	22.72	0.005	2.67	7.4	17.5	0.29252273	0.05162166
70	26.25	0.002	1.19	5.8	16.8	0.13945954	0.02461051
71	27.04	0.002	0.99	5.4	16.8	0.11767752	0.02076662
72	27.97	0.002	0.80	5.1	16.6	0.09614371	0.01696654
73	29.14	0.001	0.61	4.8	16.6	0.07423343	0.01310002
74	30.19	0.001	0.48	4.5	16.5	0.05891708	0.01039713
75	31.50	0.001	0.35	4.2	16.4	0.04401410	0.00776719
76	32.46	0.001	0.28	4.0	16.3	0.03561431	0.00628488
77	33.93	0.000	0.20	3.7	16.2	0.02561325	0.00451999
78	34.98	0.000	0.16	3.4	16.2	0.02026049	0.00357538
79	36.06	0.000	0.12	3.1	16.1	0.01591840	0.00280913
80	37.27	0.000	0.09	2.8	16.1	0.01207775	0.00213137
81	38.23	0.000	0.08	2.5	16.0	0.00974856	0.00172033
82	38.85	0.000	0.06	2.2	16.0	0.00849108	0.00149843
83	40.00	0.000	0.05	1.9	16.0	0.00656440	0.00115842
84	40.00	0.000	0.05	1.7	15.9	0.00658916	0.00116279
85	40.00	0.000	0.05	1.4	15.9	0.00660575	0.00116572
86	40.00	0.000	0.05	1.1	15.9	0.00663075	0.00117013
87	40.00	0.000	0.05	0.8	15.9	0.00663911	0.00117161
88	40.00	0.000	0.05	0.6	15.8	0.00665589	0.00117457
89	40.00	0.000	0.05	0.3	15.8	0.00665589	0.00117457
90	40.00	0.000	0.05	0.0	15.8	0.00666430	0.00117605

Maximum Permissible Exposure

(MPE): 566.6666666  $\mu\text{W}/\text{cm}^2$

ERP (Watts)	500		Height (feet)	52		Downtilt (Degrees)	0
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	0.21	0.953	476.40	907.2	907.3	0.01932966	0.00341112
5	0.12	0.973	486.37	181.0	181.7	0.49215526	0.08685093
10	2.28	0.592	295.78	89.8	91.2	1.18801605	0.20964989
20	22.87	0.005	2.58	43.5	46.3	0.04024652	0.00710233
30	16.88	0.021	10.26	27.4	31.7	0.34152960	0.06026993
35	23.08	0.005	2.46	22.6	27.6	0.10786074	0.01903425
40	21.39	0.007	3.63	18.9	24.6	0.19988679	0.03527414
45	17.64	0.017	8.61	15.8	22.4	0.57360933	0.10122518
50	16.89	0.020	10.23	13.3	20.7	0.79988222	0.14115569
55	18.82	0.013	6.56	11.1	19.3	0.58647945	0.10349637
60	22.87	0.005	2.58	9.1	18.3	0.25807761	0.04554311
65	26.57	0.002	1.10	7.4	17.5	0.12054388	0.02127245
70	26.75	0.002	1.06	5.8	16.8	0.12428427	0.02193252
71	26.53	0.002	1.11	5.4	16.8	0.13232025	0.02335063
72	26.31	0.002	1.17	5.1	16.6	0.14090234	0.02486512
73	26.63	0.002	1.09	4.8	16.6	0.13232915	0.02335220
74	26.15	0.002	1.21	4.5	16.5	0.14941667	0.02636765
75	25.92	0.003	1.28	4.2	16.4	0.15908486	0.02807380
76	25.80	0.003	1.32	4.0	16.3	0.16490427	0.02910075
77	25.80	0.003	1.32	3.7	16.2	0.16632805	0.02935201
78	26.16	0.002	1.21	3.4	16.2	0.15424730	0.02722011
79	25.88	0.003	1.29	3.1	16.1	0.16573109	0.02924666
80	25.75	0.003	1.33	2.8	16.1	0.17186572	0.03032924
81	25.58	0.003	1.38	2.5	16.0	0.17982853	0.03173445
82	25.60	0.003	1.38	2.2	16.0	0.17988025	0.03174357
83	26.25	0.002	1.19	1.9	16.0	0.15564195	0.02746623
84	26.61	0.002	1.09	1.7	15.9	0.14384146	0.02538379
85	26.96	0.002	1.01	1.4	15.9	0.13303983	0.02347762
86	26.85	0.002	1.03	1.1	15.9	0.13692498	0.02416323
87	27.22	0.002	0.95	0.8	15.9	0.12594399	0.02222541
88	28.10	0.002	0.77	0.6	15.8	0.10309973	0.01819407
89	28.21	0.002	0.76	0.3	15.8	0.10050393	0.01773599
90	28.28	0.001	0.74	0.0	15.8	0.09903152	0.01747615

Maximum Permissible Exposure  
 (MPE): 566.6666666  $\mu\text{W}/\text{cm}^2$

ERP (Watts)		500	Height (feet)	52	Downtilt (Degrees)	0	
Depression Angle	Relative dB	Relative Gain	ERP in direction	Dist From Structure(m)	Dist From Antenna(m)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
1	0.21	0.953	476.40	907.2	907.3	0.01932966	0.00341112
5	0.12	0.973	486.37	181.0	181.7	0.49215526	0.08685093
10	2.28	0.592	295.78	89.8	91.2	1.18801605	0.20964989
20	22.87	0.005	2.58	43.5	46.3	0.04024652	0.00710233
30	16.88	0.021	10.26	27.4	31.7	0.34152960	0.06026993
35	23.08	0.005	2.46	22.6	27.6	0.10786074	0.01903425
40	21.39	0.007	3.63	18.9	24.6	0.19988679	0.03527414
45	17.64	0.017	8.61	15.8	22.4	0.57360933	0.10122518
50	16.89	0.020	10.23	13.3	20.7	0.79988222	0.14115569
55	18.82	0.013	6.56	11.1	19.3	0.58647945	0.10349637
60	22.87	0.005	2.58	9.1	18.3	0.25807761	0.04554311
65	26.57	0.002	1.10	7.4	17.5	0.12054388	0.02127245
70	26.75	0.002	1.06	5.8	16.8	0.12428427	0.02193252
71	26.53	0.002	1.11	5.4	16.8	0.13232025	0.02335063
72	26.31	0.002	1.17	5.1	16.6	0.14090234	0.02486512
73	26.63	0.002	1.09	4.8	16.6	0.13232915	0.02335220
74	26.15	0.002	1.21	4.5	16.5	0.14941667	0.02636765
75	25.92	0.003	1.28	4.2	16.4	0.15908486	0.02807380
76	25.80	0.003	1.32	4.0	16.3	0.16490427	0.02910075
77	25.80	0.003	1.32	3.7	16.2	0.16632805	0.02935201
78	26.16	0.002	1.21	3.4	16.2	0.15424730	0.02722011
79	25.88	0.003	1.29	3.1	16.1	0.16573109	0.02924666
80	25.75	0.003	1.33	2.8	16.1	0.17186572	0.03032924
81	25.58	0.003	1.38	2.5	16.0	0.17982853	0.03173445
82	25.60	0.003	1.38	2.2	16.0	0.17988025	0.03174357
83	26.25	0.002	1.19	1.9	16.0	0.15564195	0.02746623
84	26.61	0.002	1.09	1.7	15.9	0.14384146	0.02538379
85	26.96	0.002	1.01	1.4	15.9	0.13303983	0.02347762
86	26.85	0.002	1.03	1.1	15.9	0.13692498	0.02416323
87	27.22	0.002	0.95	0.8	15.9	0.12594399	0.02222541
88	28.10	0.002	0.77	0.6	15.8	0.10309973	0.01819407
89	28.21	0.002	0.76	0.3	15.8	0.10050393	0.01773599
90	28.28	0.001	0.74	0.0	15.8	0.09903152	0.01747615