



DATE: April 9, 2012

TO: Chairperson and Members of the Planning Commission

FROM: Development Services Department/Planning Division

SUBJECT: **CONSIDERATION OF A CONDITIONAL USE PERMIT (C-20-08) FOR THE CONSTRUCTION AND OPERATION OF A WIRELESS TELECOMMUNICATION FACILITY AT 2182 EL CAMINO REAL – NAUGHTON/VERIZON APPLICANT: AMERICAN TOWER CORPORATION**

RECOMMENDATION

Staff recommends that the Planning Commission by motion:

- (1) Adopt Planning Commission Resolution No. 2012-P18 approving Conditional Use Permit (C-20-08) with findings and conditions of approval attached herein.

PROJECT DESCRIPTION AND BACKGROUND

Site Review: Located at the northeast corner of El Camino Real and Via Las Rosas within the Mira Costa Neighborhood Planning Area, the project site is developed with a two-story office building and a wireless telecommunications (monopole) facility. The subject parcel is designated for Professional Commercial (PC) land uses and is zoned for Commercial Professional (CP) development. The property is surrounded by commercial uses to the north and west and adjoins a vacant commercial zoned parcel to the south and east. Two SDG&E electrical transmission towers, approximately 125 feet in height, are located within a utility corridor about 135 feet east of the existing monopole structure. The existing telecommunications facility has near-perspective visibility from El Camino Real, Via Las Rosas and several of the neighborhood commercial properties and distant visibility perspective from select residential properties within El Camino Villas and Henie Hills subdivision areas.

Prior approvals: On June 12, 1995 the Planning Commission considered and approved a wireless telecommunications facility (C-23-94, V-3-95) consisting of a 65 ft. cellular antenna tower with six 15 ft. tall “whip” antennas, 30 panel antennas, three 6-ft. diameter dish antennas and an equipment room within the office building at 2182 South El Camino Real for a 5 year term, based on the following determinations and findings:

- The neighboring 125-foot tall SDG&E transmission towers represented an established and significant visual presence to the area.
- In relation to the view of the existing transmission towers, the 65 foot tall telecommunications tower would effect insignificant and incremental impacts to distant views of the area.
- Near-perspective line of sight views of the facility from the surrounding streets and properties would be effectively mitigated by the adjacent Eucalyptus trees, distance from roadways, intervening structures, and difference in property elevation.

On December 18, 2000, the Planning Commission approved a revised conditional use permit for the wireless telecommunications facility for an additional 5 year term described as follows:

- A 65 ft. overall structure height;
- Two antenna arrays consisting of 15 panel antennas (30 total) each unit measuring 1 ft. wide by 2 ft. high;
- One 4-ft. diameter dish antenna at approximately the 50 ft. height;
- Support equipment contained within the existing on-site office building.

Prior approvals for the operation of the subject wireless communication facility expired on June 12, 2005.

Project Description: Verizon seeks approval of a conditional use permit to allow the continuing operation of the telecommunications facility, and modify its existing design as follows:

- Reduce the existing monopole structure height from 65 ft. to 60 ft.;
- Remove existing cross arm, supports and 30 wireless antennas and replace with 15 wireless panel antennas;
- Remove and replace the existing 6 ft. diameter wireless microwave dish antenna with a 4 ft. diameter microwave dish antenna;
- Replace the existing 5 ft. long monopole standoffs with 2.5 ft. long standoffs – pulling the antennas closer to the monopole;
- Install an enclosed emergency generator on a concrete pad within an 8 ft. high split face concrete block enclosure;
- Upgrade landscape and irrigation.

Free-standing telecommunications facilities are permitted on commercial zoned properties, contingent upon approval of a conditional use permit and compliance with standards and conditions articulated in Article 39 of the zoning ordinance.

ANALYSIS

The project is subject to the following Ordinances, City policies, and the State of California Government Code:

1. General Plan
2. Zoning Ordinance
3. State of California Government Code 65850
4. State of California Government Code 65964

1. General Plan conformance

The General Plan land use designation for the subject property is Professional Commercial. The proposed project is consistent with this designation and the goals and objectives of the City's General Plan as follows:

Land Use Element

Goal 2.726: Communication Systems

Objective: To provide for the efficient and aesthetic functioning of communication systems within the City.

Policies:

- A. The City shall encourage planning for the future communication system needs of individual land developments or uses and the City in general.
- B. Communication facilities shall be required to conform visually to surrounding land uses and/or natural features.
- C. The City shall require the consolidation and joint-use of communication facilities and structures whenever possible.

By means of a coverage gap analysis, the applicant has demonstrated that adequate signal coverage in the vicinity is contingent upon maintenance of the existing facilities. The proposed project would ensure continued signal coverage for Verizon subscribers in the area and thereby provide for the City's ongoing telecommunication needs.

Modifications to the existing telecommunication facility design (monopole structure height, antenna replacement, additional landscaping etc.) will markedly reduce any visual impact of the facility within its neighborhood context. Project conditions will ensure compatibility with surrounding land uses through design and proper maintenance.

The applicant's consent to allow, to the extent feasible, other communication providers to co-locate additional facilities on the existing monopole structure will also be secured by conditions of project approval.

2. Zoning Ordinance Compliance

The project is subject to Article 39, Wireless Communications Facility, Satellite Dish and Antenna Standards, of the City's Zoning Ordinance, which enumerates submittal requirements, required findings, standard conditions of operation and maintenance standards, locational and site standards, site development standards, facilities design standards, and conditions of approval for wireless telecommunications facilities.

Among the facilities design standards is the requirement to employ camouflage design techniques - *to the maximum extent reasonably possible* - to minimize visual impacts. The applicant proposes to revise the wireless telecommunications structure design and provide additional site landscaping upgrades to reduce existing visual impacts of the monopole and enhance the overall project's appearance.

Locational and siting standards establish an order of preference for properties on which wireless telecommunications facilities are proposed. The most preferred locations for such facilities are City-owned sites, followed by industrial and commercial sites. The least preferred locations for such facilities are those within residential districts. The subject wireless telecommunications facility project exists on a commercial zoned site surrounded by commercial uses, and in proximity to a power utility corridor. It is staff's position that, because the facility is more than 325 feet removed from the nearest residential uses, the project would be sufficiently separated from residential districts in the vicinity. Furthermore, the intervening utility corridor/transmission tower context would diminish, by association, any potential visual incompatibility factors related to the existing monopole structure's location and design.

Site development standards for wireless communications facilities include height limitations that specify that such facilities cannot be more than 10 feet taller than the height limit allowed in the underlying zoning district. The prescribed height limit for the Commercial Professional zone is 50 feet. Therefore the proposed 60 ft. tall wireless telecommunications facility will be in compliance the maximum allowable height for such facilities on the subject site.

The proposed facilities would be consistent with all other applicable development standards, including minimum setbacks from property lines.

3. State of California Government Code 65850

California State Government Code 65850.6(b) states that a city shall not unreasonably limit the duration of any permit for a communication facility. Limits of less than 10 years are presumed to be unreasonable absent public safety or substantial land use reasons. Since the subject wireless telecommunication facility has been in operation since the

expiration of the prior conditional use permit on June 12, 2005, it is recommended that approval of the modified facility be permitted for a 10-year period - as of the date of the prior conditional use permit expiration - and allowed to be extended for a maximum of three two-year terms by the City Planner, pursuant to section 3915 of the City of Oceanside zoning ordinance.

4. State of California Government Code 65964

California State Government Code 65964 requires the adoption of co-user communication facility requirements when approving a stand-alone communication facility application. Accordingly, a condition of approval has been established that requires the applicant to reasonably accommodate future co-user communication facilities. Proposed co-locations would be subject to the policies and standards of Article 39 of the Zoning Ordinance.

DISCUSSION

Issue: Land use compatibility with surrounding areas

The following table identifies land uses on adjacent properties:

LOCATION	GENERAL PLAN	ZONING	LAND USE
Subject Property	Professional Commercial (PC)	Commercial Professional (CP)	Office & Wireless Telecommunications Facility
North	Professional Commercial (PC)	Commercial Professional (CP)	Commercial
East	Community Commercial (CC)	Community Commercial (CC)	Vacant
South	Community Commercial (CC)	Community Commercial (CC)	Vacant
West	Professional Commercial (PC)	Commercial Professional (CP)	Commercial/ Office & Retail

It is staff's position that the proposed telecommunication facility would be compatible with surrounding land uses, both on and off-site. As illustrated in the above table, the surrounding area is predominantly commercial, with residential uses largely buffered by an existing utility corridor area. Furthermore, the health or safety of residents would not be compromised, as established in the radio frequency exposure report provided by the applicant and validated by third-party expert review.

ENVIRONMENTAL DETERMINATION

The proposed project has been reviewed pursuant to the California Environmental Quality Act (CEQA) and determined to be categorically exempt from CEQA per Class 2 Section 15302, as it involves the replacement of existing facilities with substantially the same purpose and capacity of the facilities replaced.

PUBLIC NOTIFICATION

Legal notice was published in the North County Times and notices were sent to property owners of record within a 300-foot radius of the subject property, individuals and/or organizations requesting notification, the applicant and other interested parties.

SUMMARY

The proposed Conditional Use Permit, as conditioned, is consistent with the requirements of the Zoning Ordinance and the land use policies of the General Plan. The project has been conditioned to meet or exceed all applicable development standards. As such, staff recommends that the Planning Commission approve the project based on the findings and subject to the conditions contained in the attached Resolution. Staff recommends that the Planning Commission:

- Adopt Planning Commission Resolution No. 2012-P18 approving Conditional Use Permit CUP-20-08 with findings and conditions of approval attached herein.

PREPARED BY:


Amy Fousekis
Principal Planner

SUBMITTED BY:


Jerry Hittleman
City Planner

JH/AF/fil

Attachments:

1. Site Plan and Elevations
2. Planning Commission Resolution No. 2011-P18
3. RF Study, generated November 30, 2011
4. Mestre Greve Associates report, dated December 21, 2011
5. Coverage gap exhibit(s)



PREPARED FOR
AESCANTOWER CORPORATION
 2201 DUPONT DRIVE, SUITE 340
 IRVINE, CA 92612

APPROVALS

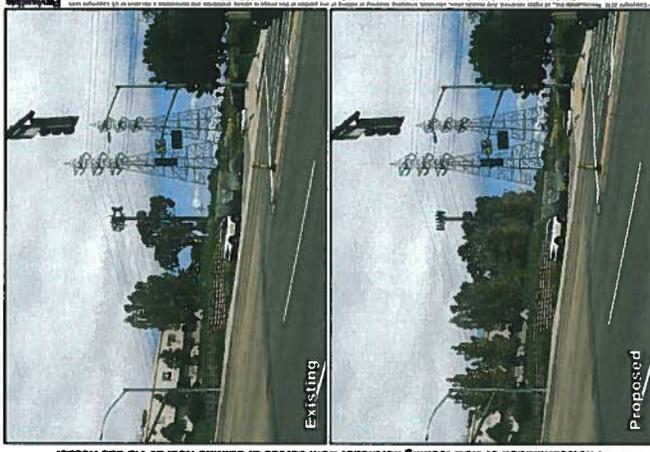
DATE	DATE

PROJECT NAME
NAUGHTON
 PROJECT NUMBER
ATC SITE: # 300828
 5185 EL CAMINO REAL
 OCCASION, CA 92025
 SAN DIEGO COUNTY

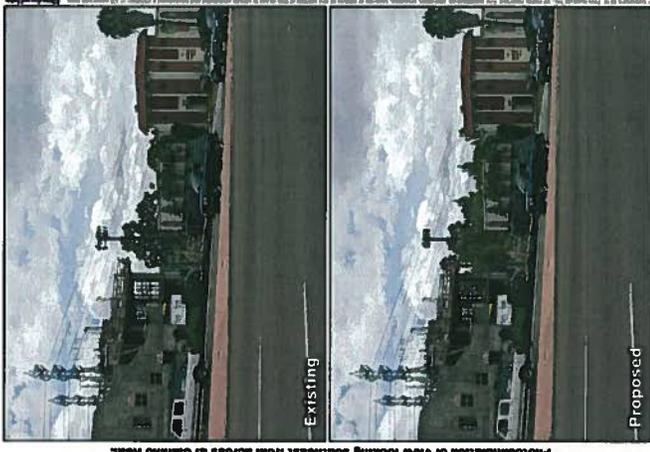
DRAWING DATES
 05/23/10 PLANNING SUBMITTAL (P)
 07/05/11 CITY COMMENTS (C)
 11/29/11 PLANNING RE-submittal (P)

SHEET TITLE
PHOTO SIMULATIONS

T-1.1



Photomontage of view looking northeast from across El Camino Real at Via Las Posas.
 DATE: 12.2010



Photomontage of view looking southeast from across El Camino Real.
 DATE: 12.2010

PREPARED FOR



2201 DUPONT DRIVE, SUITE 340
 IRVINE, CA 92614

APPROVALS

DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE

PROJECT NUMBER
ATC SITE: # 300828
 2182 EL CAMINO REAL
 OCEANSIDE, CA 92056
 SAN DIEGO COUNTY

DRAWING NOTES

11/12/07	PRELIM TO REVIEW (G)
04/03/08	PLANNING SUBMITTAL (H)
05/06/08	REVISED 2D (H)
06/05/08	REVISED 2D (H)
07/02/08	REVISED 2D (H)
07/02/08	CITY COMMENTS (H)
10/24/11	ENCLOSURE LAYOUT (H)
11/29/11	PLANNING RECOMMENDATION (G)

SHEET TITLE

SITE PLAN & ENLARGED SITE PLAN

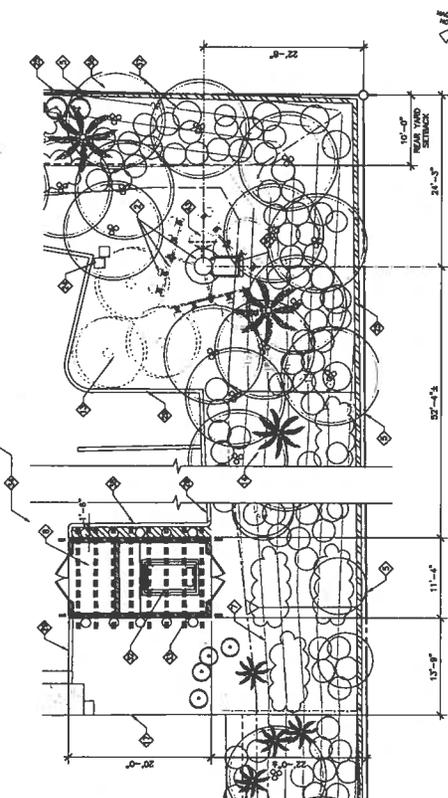
A-0

PROJECT: AmericanTower\071511\071511.dwg (07/15/2008)

SECTION NUMBER	DIRECTION	ANTENNA MODEL NUMBER	SECT. AREA (SQ. FT.)	SECT. PERIMETER (LINES)	SECT. PERIMETER (FEET)	SECT. PERIMETER (METERS)	SECT. PERIMETER (METERS)	SECT. PERIMETER (METERS)
ALPHA	SOUTH	APPROX. MODEL UN-2000A/02-F	8 (F)	47'-6" x 15'-6" x 15'-6"	119'-0"	11.73	11.73	11.73
ALPHA	EAST	APPROX. MODEL UN-2000A/02-F	8 (F)	47'-6" x 15'-6" x 15'-6"	119'-0"	11.73	11.73	11.73
ALPHA	WEST	APPROX. MODEL UN-2000A/02-F	8 (F)	47'-6" x 15'-6" x 15'-6"	119'-0"	11.73	11.73	11.73
ALPHA	NORTH	APPROX. MODEL UN-2000A/02-F	8 (F)	47'-6" x 15'-6" x 15'-6"	119'-0"	11.73	11.73	11.73
BETA	SOUTH	APPROX. MODEL UN-2000A/02-F	8 (F)	47'-6" x 15'-6" x 15'-6"	119'-0"	11.73	11.73	11.73
BETA	EAST	APPROX. MODEL UN-2000A/02-F	8 (F)	47'-6" x 15'-6" x 15'-6"	119'-0"	11.73	11.73	11.73
BETA	WEST	APPROX. MODEL UN-2000A/02-F	8 (F)	47'-6" x 15'-6" x 15'-6"	119'-0"	11.73	11.73	11.73
BETA	NORTH	APPROX. MODEL UN-2000A/02-F	8 (F)	47'-6" x 15'-6" x 15'-6"	119'-0"	11.73	11.73	11.73
GAMMA	SOUTH	APPROX. MODEL UN-2000A/02-F	8 (F)	47'-6" x 15'-6" x 15'-6"	119'-0"	11.73	11.73	11.73
GAMMA	EAST	APPROX. MODEL UN-2000A/02-F	8 (F)	47'-6" x 15'-6" x 15'-6"	119'-0"	11.73	11.73	11.73
GAMMA	WEST	APPROX. MODEL UN-2000A/02-F	8 (F)	47'-6" x 15'-6" x 15'-6"	119'-0"	11.73	11.73	11.73
GAMMA	NORTH	APPROX. MODEL UN-2000A/02-F	8 (F)	47'-6" x 15'-6" x 15'-6"	119'-0"	11.73	11.73	11.73

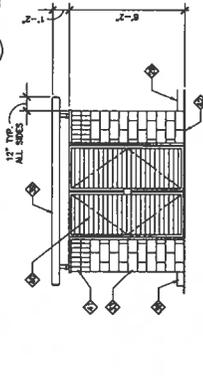
KEYED NOTES:

- EXISTING TELECOMMUNICATIONS EQUIPMENT ROOM ON FIRST FLOOR
- MODIFIED EXISTING MONUMENT TO 60'-0" HGT. REMOVE ALL EXISTING MONUMENT AND (1) INCREASING OVER ANTIENNA. SEE SHEETS A-1 & A-2 FOR EXTERIOR ELEVATIONS.
- EXISTING JOINT USE DRIVEWAY
- EXISTING PROPERTY LINE
- EXISTING A/C UNITS (TYPICAL OF 2)
- EXISTING CONCRETE BLOCK STORAGE ENCLOSURE
- EXISTING TILED PORCELAIN
- EXISTING STAIRS
- EXISTING CONCRETE BLOCK STORAGE ENCLOSURE ON A CONCRETE PAD WITH REINFORCING WALL
- EXISTING CONCRETE CURB, GUTTER AND SIDEWALK
- EXISTING TREES. SEE SHEET L-1 FOR CONCEPT LANDSCAPE PLAN.
- EXISTING PLUMB. SEE SHEET L-1 FOR CONCEPT LANDSCAPE PLAN
- EXISTING SPARK'S CURB
- PROPOSED, NEW ENCLOSED EMERGENCY GENERATOR WITH SERIAL DOUBLE 200 KW. SEE SHEET L-1 FOR CONCEPT LANDSCAPE PLAN.
- PROPOSED 8'-0" HIGH SPUI-FACE CONCRETE BLOCK SOUND WALL. ENCLOSED. COLOR: NATURAL.
- EXISTING PARKING AREA
- PROPOSED 8'-0" HIGH SPUI-FACE CONCRETE BLOCK SOUND WALL. ENCLOSED. COLOR: NATURAL.
- EXISTING PARKING AREA
- PROPOSED 8'-0" HIGH SPUI-FACE CONCRETE BLOCK SOUND WALL. ENCLOSED. COLOR: NATURAL.
- EXISTING LANDSCAPE SCHEDULING TREES. SEE SHEET L-1 CONCEPT LANDSCAPE PLAN
- REMOVE AND REPLACE EXISTING CONCRETE CURB
- PROPOSED 3'-2" x 8'-0" METAL GATES AND FRAME
- PROPOSED SCURED SPUI-FACE CONCRETE BLOCK COURSE & COP
- EXISTING DRIVE
- EXISTING DRIVE
- INSTALL 6'-0" DIAMETER MONUMENT (SEE ANTENNA)

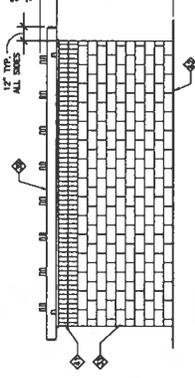


ENLARGED SITE PLAN
 SCALE: 1/8" = 1'-0"

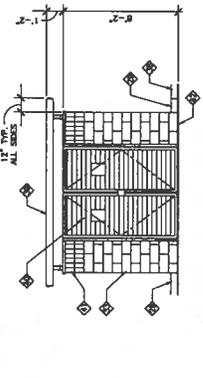
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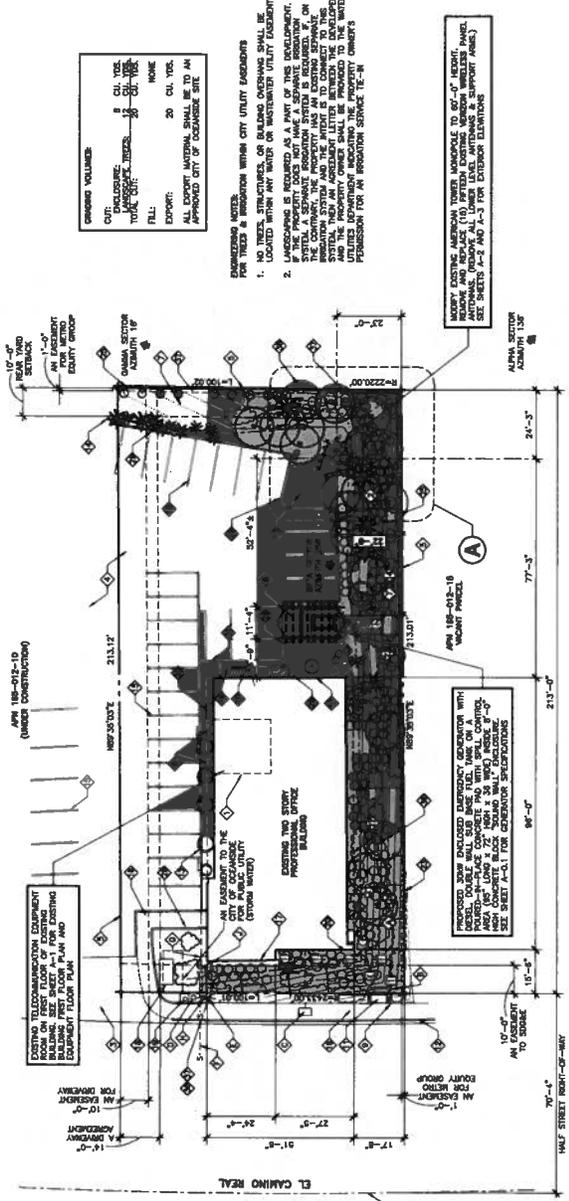
NORTH ELEVATION
 SCALE: 1/8" = 1'-0"



EAST & WEST ELEVATION
 SCALE: 1/8" = 1'-0"



SOUTH ELEVATION
 SCALE: 1/8" = 1'-0"



UTILITY NOTES:

- EXISTING UNDERGROUND ELECTRICAL FEED TO UNDERGROUND FULL SECTION
- EXISTING EXTERIOR CLEWOUT
- INSTALL LANDSCAPE IRRIGATION METER MAINLINE TO METAL REGULATION BACK FLOW DEVICE
- EXISTING WATER FEED TO BUILDING
- EXISTING EXTERIOR CLEWOUT
- INSTALL LANDSCAPE IRRIGATION METER MAINLINE TO METAL REGULATION BACK FLOW DEVICE
- EXISTING UNDERGROUND TIE-INS TO BUILDING
- EXISTING EXTERIOR CLEWOUT
- INSTALL LANDSCAPE IRRIGATION METER MAINLINE TO METAL REGULATION BACK FLOW DEVICE
- EXISTING WATER FEED TO BUILDING
- EXISTING EXTERIOR CLEWOUT
- INSTALL LANDSCAPE IRRIGATION METER MAINLINE TO METAL REGULATION BACK FLOW DEVICE

KEYED NOTES:

- PROPOSED NEW ENCLOSED EMERGENCY GENERATOR WITH SERIAL DOUBLE 200 KW. SEE SHEET L-1 FOR CONCEPT LANDSCAPE PLAN.
- REMOVE AND REPLACE EXISTING CONCRETE CURB WITH REINFORCING WALL. ENCLOSED. COLOR: NATURAL.
- PROPOSED 8'-0" HIGH SPUI-FACE CONCRETE BLOCK SOUND WALL. ENCLOSED. COLOR: NATURAL.
- EXISTING LANDSCAPE SCHEDULING TREES. SEE SHEET L-1 CONCEPT LANDSCAPE PLAN
- REMOVE AND REPLACE EXISTING CONCRETE CURB
- PROPOSED 3'-2" x 8'-0" METAL GATES AND FRAME
- PROPOSED SCURED SPUI-FACE CONCRETE BLOCK COURSE & COP
- EXISTING DRIVE
- EXISTING DRIVE
- INSTALL 6'-0" DIAMETER MONUMENT (SEE ANTENNA)

UTILITY NOTES

EXISTING UNDERGROUND ELECTRICAL FEED TO UNDERGROUND FULL SECTION

EXISTING EXTERIOR CLEWOUT

INSTALL LANDSCAPE IRRIGATION METER MAINLINE TO METAL REGULATION BACK FLOW DEVICE

EXISTING WATER FEED TO BUILDING

EXISTING EXTERIOR CLEWOUT

INSTALL LANDSCAPE IRRIGATION METER MAINLINE TO METAL REGULATION BACK FLOW DEVICE



AERCONTOWER CORPORATION
 2201 BURDET DRIVE, SUITE 340
 IRVINE, CA 92612

APPROVALS

DATE	DATE	DATE	DATE	DATE

PROJECT NAME
NAUGHTON

PROJECT NUMBER
ATC SITE: # 300628

2182 EL CAMINO REAL
 OCEANSIDE, CA 92056
 SAN DIEGO COUNTY

DRAWING DATES

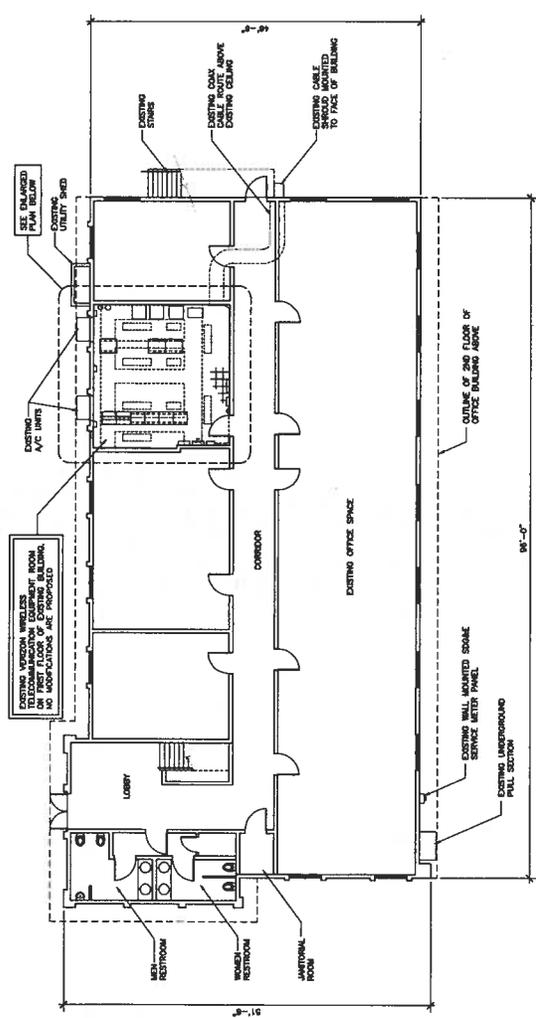
11/12/07	PRELIM 2D REVIEW (A)
04/02/08	PLANNING SUBMITTAL (A)
04/02/08	REVISED 2D (A)
04/02/08	REVISED 2D (A)
02/05/10	REVISED 2D (A)
02/05/10	REVISED 2D (A)
07/05/10	CITY COMMENTS (A)
07/05/10	PLANNING RESUBMITTAL (A)

SHEET TITLE
**EXISTING
 FIRST FLOOR PLAN**

PROJECTS:\naughton\p071518\A\071518.dwg

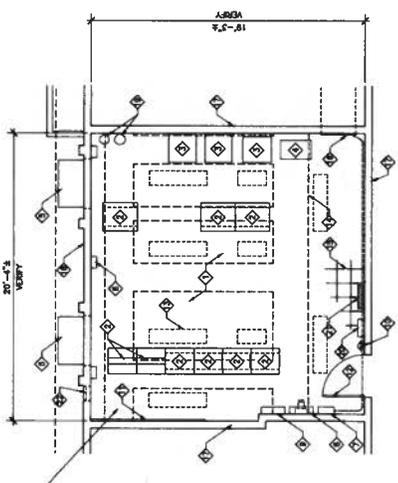
FIRE DEPARTMENT REQUIREMENTS:

1. NO ADDITIONAL LEAD ACID BATTERY UNITS ARE PROPOSED FOR THIS SITE.
2. STATIONARY STORAGE BATTERY SYSTEMS HAVING AN ELECTROLYTE CAPACITY OF MORE THAN 50 GALLONS FOR FLOORED LEAD ACID, NICKEL CADMIUM, NICKEL METAL HYDRIDE, OR OTHER BATTERY SYSTEMS, SHALL BE INSTALLED IN A SEPARATELY VENTILATED BATTERY ROOM OR NEAREST IMPORTANT BUILDING ON THE SAME PROPERTY.
3. IF QUANTITY OF ELECTROLYTE SOLUTION IS 10 GALLONS OR GREATER, VISIBLE WARNING IDENTIFICATION SIGNS AS SPECIFIED IN MPPA 704 SHALL BE PLACED IN THE BATTERY ROOM OR NEAREST IMPORTANT BUILDING ON THE SAME PROPERTY.
4. SOLI UNITS ARE REQUIRED TO HAVE A FINAL INSPECTION BY THE FIRE DEPARTMENT.
5. PROPOSED 50 GALLON DIESEL FUEL OIL TANK ON THE GENERATOR MUST BE INSTALLED IN A SEPARATELY VENTILATED BATTERY ROOM OR NEAREST IMPORTANT BUILDING ON THE SAME PROPERTY.
6. TANK MUST COMPLY WITH CALIFORNIA FIRE CODE CHAPTER 34 FOR CONSTRUCTION, VENTILATION, MAINTENANCE, OVERFILL, AND OVERFILL PREVENTION.
7. MUST BE SUBMITTED TO THE FIRE DEPARTMENT FOR REVIEW AND APPROVAL.



FIRST FLOOR PLAN

- EQUIPMENT FLOOR & FIRST FLOOR PLANS NOTES:**
- 1. EXISTING WIRELESS EQUIPMENT ROOM
 - 2. EXISTING WIRELESS NETWORK EQUIPMENT RACK
 - 3. EXISTING WIRELESS BATTERY ROOM
 - 4. EXISTING WIRELESS NETWORK RACK
 - 5. EXISTING WALL MOUNTED NETWORK MECHANICAL UNITS (TYPICAL OF 2)
 - 6. EXISTING MECHANICAL LIFT MAINTENANCE CONTROLLER
 - 7. EXISTING FUSED DISCONNECT SWITCH MOUNTED TO WALL
 - 8. EXISTING MANUAL TRANSFER SWITCH WITH GENERATOR
 - 9. EXISTING 200 AMP ELECTRICAL PANEL MOUNTED TO WALL
 - 10. EXISTING WALL MOUNTED CLASS "ABC" FIRE EXTINGUISHER
 - 11. EXISTING 4'-0" x 8'-0" WALL MOUNTED TELCO BOARD
 - 12. EXISTING 3'-0" WIDE DOOR AND FRAME & WIRELESS SHAWNEE
 - 13. EXISTING OVERHEAD CABLE LADDER @ 4'-7"-8" (SHOWN DASHED)
 - 14. EXISTING 12" x 12" x 1/2" VENT. FLOOR TILES WITH 4" COVER BASE
 - 15. EXISTING COAX CABLE PORT IN INTERIOR WALL
 - 16. EXISTING INTERIOR WALL TO REMAIN (TYPICAL)
 - 17. EXISTING FIRE SUPPRESSION SYSTEM TANKS
 - 18. EXISTING FIRE SUPPRESSION SYSTEM CONTROL PANEL AND ALARM
 - 19. EXISTING AUTOMATIC TRANSFER SWITCH MOUNTED TO WALL (SHOWN SHAVED)
 - 20. EXISTING ACCESS PANEL FOR GENERATOR CONNECTION



EQUIPMENT FLOOR PLAN

PREPARED FOR



AMERICANTOWER CORPORATION
 2201 BURNETT DRIVE, SUITE 340
 IRVINE, CA 92612

APPROVALS

DATE	DATE	DATE	DATE	DATE
OWNER APPROVAL				
CITY APPROVAL				
SITE ACQUISITION				
CONSTRUCTION				
ZONING				
E.P.				

PROJECT NAME

NAUGHTON

PROJECT NUMBER

ATC SITE: # 300628

2182 EL CAMINO REAL
 OCEANSIDE, CA 92056
 SAN DIEGO COUNTY

DRAWING DATES

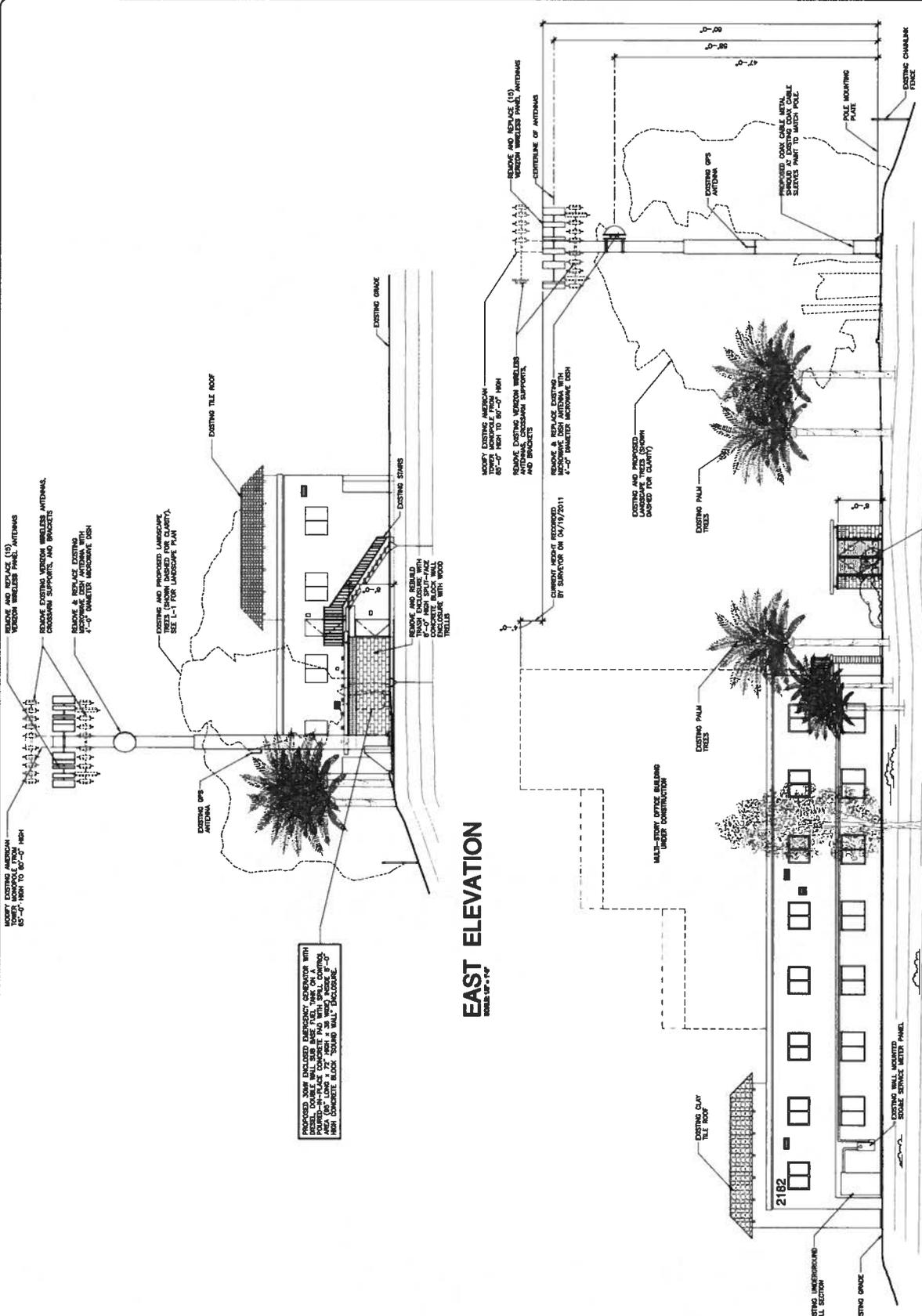
11/12/07	PRELIM TO REVIEW (A)
04/02/08	PLANNING SUBMITTAL (A)
04/02/08	REVISED TO (A)
04/02/08	REVISED TO (A)
03/25/10	REVISED TO (A)
07/06/11	CITY COMMENTS (A)
07/06/11	CITY COMMENTS (A)
11/29/11	PLANNING RESUBMITTAL (A)

SHEET TITLE

EXTERIOR ELEVATIONS

PROJECT: Naughton Tower 07/15/11 07/15/11 10-Long

A-3



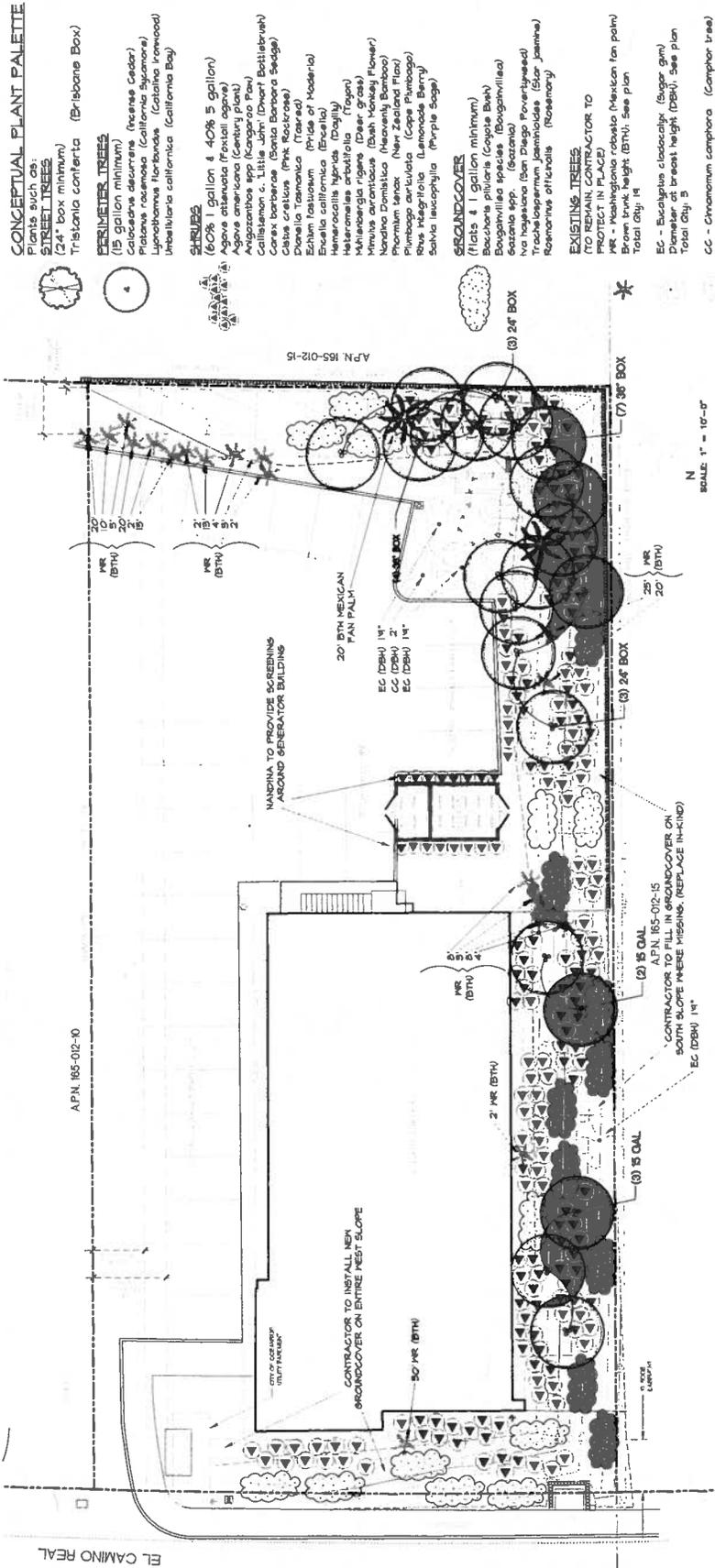
EAST ELEVATION
 SCALE: 1/8" = 1'-0"

SOUTH ELEVATION
 SCALE: 1/8" = 1'-0"

REMOVED WALL ENCLOSED ANTENNA SUPPORTS WITH PREPARED OAK CABLE METAL SERVICES PAINT TO MATCH POLE. CONCRETE WALL ENCLOSED WITH 4" DIA. CONCRETE BLOCK "SOUND WALL" ENCLOSURE.

REMOVED WALL ENCLOSED ANTENNA SUPPORTS WITH PREPARED OAK CABLE METAL SERVICES PAINT TO MATCH POLE. CONCRETE WALL ENCLOSED WITH 4" DIA. CONCRETE BLOCK "SOUND WALL" ENCLOSURE.

LANDSCAPE CONCEPT PLAN



- GENERAL NOTES:**
- This concept plan assumes that the existing mature and healthy trees will remain in place while the understorey shrubs and groundcover will be replaced.
 - All required landscape areas shall be maintained by the Telecommunication Company with the Telecommunication Company for acceptance of landscape maintenance. The Telecommunication Company shall submit to City a letter of acceptance for maintenance in perpetuity. The landscape areas shall be maintained per City of Oceanside requirements.
 - This project is required to have a separate water meter and approved backflow prevention device for the irrigation system. All costs and fees shall be the responsibility of the Telecommunication Company.
 - Landscaping shall be done at all utility, sewer, storm drain, and placement locations accordingly to meet City of Oceanside requirements.
 - All required landscape areas shall be maintained by the Telecommunication Company with the Telecommunication Company for acceptance of landscape maintenance. The Telecommunication Company shall submit to City a letter of acceptance for maintenance in perpetuity. The landscape areas shall be maintained per City of Oceanside requirements.
 - This project is required to have a separate water meter and approved backflow prevention device for the irrigation system. All costs and fees shall be the responsibility of the Telecommunication Company.

- IRRIGATION NOTES:**
- An existing irrigation system (including controller) was installed previously on the site and shall be utilized where possible. The existing irrigation shall be protected in place. If damaged by construction activities, repair/replace in kind or upgraded.
 - If the existing irrigation controller is not sufficient to allow for extra remote control valve stations, controller shall be upgraded in the number of stations, be provided with a water budget management setting and an interface with a rain sensor.
 - Low precipitation equipment shall provide sufficient water for plant growth with a minimum water loss due to water run-off. Irrigation systems shall use high quality automatic control valves, controllers, and other necessary irrigation equipment. All components shall be of non-corrosive materials. All drip systems shall be adequately filtered and regulated per the manufacturer's recommended design parameters. All irrigation components shall follow the City of Oceanside Guidelines and Water Conservation Ordinance.

- PLANTING NOTES:**
- Existing landscape/planting shall be protected in place. If damaged or destroyed by construction activities, replace with like kind and size.
 - Generally new planting within the project will be a drought tolerant combination of southern California natives and ornamental species. The selection of plant material is based on cultural, aesthetic, and maintenance considerations. All planting areas shall be prepared with appropriate soil amendments, fertilizers, and appropriate supplements based upon a soils report from an agricultural suitability soil sample taken from the site.
 - Groundcover or bark mulch shall fill in between the shrubs to shield the soil from the sun, evaporate, and run-off. All the flower and shrub beds shall be mulched to a 5" depth to help conserve water, lower the soil temperature and reduce weed growth. The shrubs shall be allowed to grow in the landscape. All landscape improvements shall follow the City of Oceanside Guidelines.
 - Root barriers shall be installed adjacent to all paving surfaces, where a paving surface is located within 6 feet of a trees trunk. Root barriers shall extend 5 feet in either direction from the centerline of the trunk, for a total distance of 10 feet. Root barriers shall be 2-4 inches in depth. Installing a root barrier around the tree's root ball is unacceptable.
 - No trees shall be located within any water or wastewater utility easement.

BOOTH SHARZ & ASSOCIATES
ARCHITECTURE & PLANNING
1000 W. BROADWAY, SUITE 1000
SAN ANTONIO, TEXAS 78207

PREPARED FOR
AMERICAN TOWER CORPORATION
2201 BIRNEY DRIVE, SUITE 340
IRVINE, CA 92612

APN PLANNING ASSOCIATES
LANDSCAPE ARCHITECTURE
2000 W. BROADWAY, SUITE 1000
SAN ANTONIO, TEXAS 78207
949-717-1317 FAX 949-717-1318

PROJECT NAME
NAUGHTON
PROJECT NUMBER
ATC SITE: #300628
3182 EL CAMINO REAL
OCEANSIDE, CA 92058
SAN DIEGO COUNTY

DRAWING DATES
11/12/07
04/03/08
PRELIM TO REVIEW (LO)
PLANNING SUBMITTAL (M)

SHEET TITLE
LANDSCAPE CONCEPT PLAN

PROJECT INFORMATION
PROJECT NO. 070815000
DATE: 07/08/08

REV 11-0-11

1 PLANNING COMMISSION
2 RESOLUTION NO. 2012-P18

3 A RESOLUTION OF THE PLANNING COMMISSION OF THE
4 CITY OF OCEANSIDE, CALIFORNIA APPROVING A
5 CONDITIONAL USE PERMIT ON CERTAIN REAL
6 PROPERTY IN THE CITY OF OCEANSIDE

7 APPLICATION NO: C-20-08
8 APPLICANT: American Tower Corporation
9 LOCATION: 2182 El Camino Real

10 THE PLANNING COMMISSION OF THE CITY OF OCEANSIDE, CALIFORNIA DOES
11 RESOLVE AS FOLLOWS:

12 WHEREAS, there was filed with this Commission a verified petition on the forms
13 prescribed by the Commission requesting a Conditional Use Permit under the provisions of
14 Articles 11 and 41 of the Zoning Ordinance of the City of Oceanside to permit the following:

15 improvements to a previously-approved wireless telecommunications monopole facility,
16 and installation of an enclosed emergency generator;
17 on certain real property described in the project description.

18 WHEREAS, the Planning Commission, after giving the required notice, did on the 9th day
19 of April, 2012 conduct a duly advertised public hearing as prescribed by law to consider said
20 application;

21 WHEREAS, pursuant to the California Environmental Quality Act of 1970, and State
22 Guidelines thereto; this project is categorically exempt from CEQA per Class 2 Section 15302
23 "Replacement and Reconstruction";

24 WHEREAS, there is hereby imposed on the subject development project certain fees,
25 dedications, reservations and other exactions pursuant to state law and city ordinance;

26 WHEREAS, pursuant to Gov't Code §66020(d)(1), NOTICE IS HEREBY GIVEN that the
27 project is subject to certain fees, dedications, reservations and other exactions;

28 WHEREAS, pursuant to Gov't Code §66020(d)(1), NOTICE IS FURTHER GIVEN that
29 the 90-day period to protest the imposition of any fee, dedication, reservation, or other exaction
described in this resolution begins on the effective date of this resolution and any such protest must
be in a manner that complies with Section 66020;

1 WHEREAS, pursuant to Oceanside Zoning Ordinance §4603, this resolution becomes
2 effective 10 days from its adoption in the absence of the filing of an appeal or call for review;

3 WHEREAS, studies and investigations made by this Commission and in its behalf reveal
4 the following facts:

5 FINDINGS:

6 For the Conditional Use Permit:

- 7 1. That the proposed improvements to the existing wireless telecommunication facility are
8 consistent with the objectives of the Zoning Ordinance and the purposes of the
9 Commercial Professional district in which the subject site is located. As per Oceanside
10 Zoning Ordinance Section 1110 telecommunication facilities, defined as major utilities,
11 are permitted within Commercial districts through approval of a Conditional Use Permit.
12 The proposed project would utilize an existing monopole structure, modified to create a
13 streamlined appearance and reduce the bulk of antennas. The emergency generator
14 enclosure will be constructed of quality materials and will be screened by landscaping.
- 15 2. That the proposed location of the conditional use and the proposed conditions under
16 which it would be operated or maintained will be consistent with the General Plan. The
17 proposed telecommunication facility will not be detrimental to the public health, safety
18 or welfare of persons residing or working in the vicinity; and will not be detrimental to
19 properties or improvements in the vicinity or to the general welfare of the City. The
20 proposed facility will comply with federal standards for maximum public exposure to
21 radio frequency emissions, as determined by a radio frequency emissions report prepared
22 by a licensed engineer and validated through third-party expert review. The proposed
23 facility will comply with all applicable building and safety standards intended to ensure
24 the structural integrity of the monopole and attendant structure. Electrical equipment
25 will be safely housed within locked cabinets, accessible only to qualified personnel.
26 Noise emitted by the proposed facility will be within parameters established by the
27 Oceanside Municipal Code.
- 28 3. The proposed conditional use will comply with the provisions of the Zoning Ordinance
29 and Commercial Professional District in which the property is located, including any
specific condition required for the proposed conditional use.

- 1 4. The placement and construction of the proposed telecommunication facility in the
2 proposed location is necessary for the provision of wireless services to City residents,
3 businesses, and their owners, customers, guests or other persons traveling in or about the
4 City, as determined by gap coverage analysis furnished by the applicant.
- 5 5. The proposal demonstrates a reasonable attempt to minimize stand-alone facilities, is
6 designed to protect the visual quality of the City, and will not have an undue adverse
7 impact on historic resources, scenic views, or other natural or man-made resources. The
8 proposed telecommunication facility will be sufficiently screened by landscaping and other
9 intervening structures to mitigate any off-site visual impacts.
- 10 6. The applicant has demonstrated that a significant gap in signal coverage exists, and that the
11 proposed facility constitutes the least intrusive means of closing the significant gap in
12 coverage.
- 13 7. The proposal meets all applicable requirements of Article 39 of the Oceanside Zoning
14 Ordinance.

15 NOW, THEREFORE, BE IT RESOLVED that the Planning Commission does hereby approve
16 Conditional Use Permit (C-20-08) subject to the following conditions:

17 **Building:**

- 18 1. Applicable Building Codes and Ordinances shall be based on the date of submittal for
19 Building Division plan check.
- 20 2. The granting of approval under this action shall in no way relieve the applicant/project
21 from compliance with all State and local building codes.

22 **Water:**

- 23 3. The developer will be responsible for developing all water and sewer utilities necessary
24 to develop the property. Any relocation of water and/or sewer utilities is the
25 responsibility of the developer and shall be done by an approved licensed contractor at
26 the developer's expense
- 27 4. No trees, structures or building overhang shall be located within any water or wastewater
28 utility easement.
- 29 5. If landscaping is required as part of this development and the property does not have a
separate irrigation system, then a separate irrigation meter and connection is required. If,

1 on the contrary, the property were to have an existing separate irrigation system and the
2 intent is to connect to this system, then an agreement letter between the developer and
3 the property owner shall be provided to the Water Utilities Department indicating the
4 property owner's permission for an irrigation service tie-in

5 **Planning:**

- 6 6. This Conditional Use Permit's original valid period shall lapse on June 12, 2015. The
7 permit may be extended for a maximum of three two-year terms to June 12, 2021, by the
8 City Planner upon the applicant proving by clear and convincing evidence that the facility
9 continues to comply with all the conditions of approval under which the permit was
10 originally approved.
- 11 7. This Conditional Use Permit approves only the telecommunication facility and associated
12 improvements as shown on the plans and exhibits presented to the Planning Commission
13 for review and approval. No deviation from these approved plans and exhibits shall occur
14 without Planning Division approval. Substantial deviations shall require a revision to the
15 Conditional Use Permit or a new Conditional Use Permit.
- 16 8. The telecommunication facility shall be erected, operated and maintained in compliance
17 with Article 39 of the Oceanside Zoning Ordinance.
- 18 9. Within thirty (30) calendar days following the installation of the telecommunication
19 facility, the applicant shall provide FCC documentation to the City Planner indicating that
20 the facility has been inspected and tested in compliance with FCC standards. Such
21 documentation shall include the make and model (or other identifying information) of the
22 equipment tested, the date and time of the inspection, the methodology used to make the
23 determination, the name and title of the person(s) conducting the tests, and a certification
24 that the equipment is properly installed and working within applicable FCC standards.
- 25 10. A measurement survey of RF levels in areas accessible by the General Public shall be
26 completed and submitted to the City within 30 days of the commencement of operation of
27 the replacement antennas. This submittal is subject to Article 39 of the Municipal Code
28 and Section 3025 of the Zoning Code. The measurements survey shall consist of spot
29 measurements around the site in the locations where the highest RF levels from the system
are expected up to 100 feet from the base of the antenna. If the measurements show RF

1 levels within 75% of the FCC General Population Exposure Limits five additional
2 measurements will be performed at those locations on five different days at different times
3 during expected peak usage periods. If measurements show RF levels exceeding the FCC
4 General Population Exposure Limits all transmitters will cease operation and the City shall
5 be notified immediately. The transmitters may not operate, except for testing, until cause
6 of the exceedance is determined and corrected.

7 11. Upon one year of operation of said facility an "Existing Conditions and Operations Report"
8 shall be prepared and submitted to the City Planner documenting the existing facilities and
9 current total RF emissions at the site to verify that the site/facility is operating as is
10 permitted and is within FCC regulations. This submittal is subject to Article 39 of the
11 Municipal Code and Section 3025 of the Zoning Code.

12 12. If compliance with condition of approval #9 above has been achieved, an "Existing
13 Conditions and Operations Report" shall be prepared and submitted to the City Planner on
14 an annual basis documenting the existing facilities and current total RF emissions at the
15 site to verify that the site/facility is operating as it was permitted and is within the current
16 FCC regulations. This submittal is subject to Article 39 of the Municipal Code and
17 Section 3025 of the Zoning Code.

18 13. Co-location of telecom facilities pursuant to Article 39 of the Oceanside Zoning Ordinance
19 shall be provided, to the extent feasible.

20 14. Any proposed new signs shall be in conformance with the Oceanside Sign Ordinance
21 Guidelines and shall be submitted to the Planning Division.

22 15. A covenant or other recordable document approved by the City Attorney shall be prepared
23 by the applicant and recorded prior to the issuance of building permits. The covenant shall
24 provide that the property is subject to this resolution, and shall generally list the conditions
25 of approval.

26 16. Prior to the issuance of building permits, compliance with the applicable provisions of the
27 City's anti-graffiti (Ordinance No. 93-19/Section 20.25 of the City Code) shall be reviewed
28 and approved by the Planning Division. These requirements, including the obligation to
29 remove or cover with matching paint all graffiti within 24 hours shall recorded in the form
of a covenant affecting the subject property.

- 1 17. The emergency generator shall be enclosed by a solid sound attenuation wall constructed of
2 masonry with no cracks or gaps, through or below the wall. Any seams or cracks must be
3 filled or caulked. Any door or gate(s) must be designed with overlapping closures on the
4 bottom and sides and meet the minimum specifications of the wall materials described
5 above. The gate(s) may be ¾ inch or better wood, solid sheet metal of at least 18-gauge
6 metal, or an exterior-grade solid core steel door with prefabricated door jambs. The
7 exterior wall finish and colors shall match that of the adjacent office building.
- 8 18. Repair or replace damaged portions of the existing perimeter chain link fence.
- 9 19. Prior to the transfer of ownership and/or operation of the site the owner shall provide a
10 written copy of the applications, staff report and resolutions for the project to the new
11 owner and or operator. This notification's provision shall run with the life of the project
12 and shall be recorded as a covenant on the property.
- 13 20. Failure to meet any conditions of approval for this development shall constitute a violation
14 of the Conditional Use Permit.
- 15 21. The applicant, permittee or any successor-in-interest shall defend, indemnify and hold
16 harmless the City of Oceanside, its agents, officers or employees from any claim, action or
17 proceeding against the City, its agents, officers, or employees to attack, set aside, void or
18 annul an approval of the City, concerning Conditional Use Permits C-20-08. The City
19 will promptly notify the applicant of any such claim, action or proceeding against the
20 city and will cooperate fully in the defense. If the City fails to promptly notify the
21 applicant of any such claim action or proceeding or fails to cooperate fully in the
22 defense, the applicant shall not, thereafter, be responsible to defend, indemnify or hold
23 harmless the City.
- 24 22. Unless expressly waived, all current zoning standards and City ordinances and policies in
25 effect at the time building permits are issued are required to be met by this project. The
26 approval of this project constitutes the applicant's agreement with all statements in the
27 Description and Justification, Management Plan and other materials and information
28 submitted with this application, unless specifically waived by an adopted condition of
29 approval.

1 23. This Conditional Use Permit shall be called for review by the Planning Commission if
2 complaints are filed and verified as valid by the Code Enforcement Office concerning the
3 violation of any of the approved conditions or assumptions made by the application.

4 **Landscaping:**

5 24. Landscape plans, shall meet the criteria of the City of Oceanside Landscape Guidelines and
6 Specifications for Landscape Development (latest revision), Water Conservation
7 Ordinance No. 91-15, Engineering criteria, City code and ordinances, including the
8 maintenance of such landscaping and shall be reviewed and approved by the City Engineer
9 prior to the issuance of building permits. Landscaping shall not be installed until bonds
10 have been posted, fees paid, and plans signed for final approval. A landscape pre-
11 construction meeting shall be conducted with the landscape architect of record, general
12 contractor, landscape contractor and the city public works inspector prior to the
13 commencement of the landscape improvements. The following landscaping requirements
14 shall be required prior to plan approval and certificate of occupancy:

- 15 a) Final landscape plans shall accurately show placement of all plant material such as
16 but not limited to trees, shrubs, and groundcovers.
- 17 b) Landscape Architect shall be aware of all utility, water, sewer, gas, and storm drain
18 lines and easements and place planting locations accordingly to meet City of
19 Oceanside requirements.
- 20 c) All required landscape areas shall be maintained by the telecommunication
21 company a minimum of 90-days. Thereafter, the telecommunication company
22 shall submit to city a letter of acceptance from owner stating that the landscape has
23 been accepted for maintenance in perpetuity. The landscape areas shall be
24 maintained per City of Oceanside requirements.
- 25 d) The required 90-day maintenance period shall not commence until the city has
26 officially approved the as-built landscape construction drawings.
- 27 e) Proposed landscape species shall be native or naturalized to fit the site and meet
28 climate changes indicative to their planting location. The selection of plant
29 material shall also be based on cultural, aesthetic, and maintenance considerations.

1 In addition proposed landscape species shall be low water users as well as meet all
2 Fire Department requirements.

- 3 f) All planting areas shall be prepared with appropriate soil amendments, fertilizers,
4 and appropriate supplements based upon a soils report from an agricultural
5 suitability soil sample taken from the site.
- 6 g) Ground covers or bark mulch shall fill in between the shrubs to shield the soil from
7 the sun, evapotranspiration and run-off. All the flower and shrub beds shall be
8 mulched to a 3" depth to help conserve water, lower the soil temperature and
9 reduce weed growth.
- 10 h) The shrubs shall be allowed to grow in their natural forms. All landscape
11 improvements shall follow the City of Oceanside Guidelines.
- 12 i) Root barriers shall be installed adjacent to all paving surfaces, where a paving
13 surface is located within 6 feet of a trees trunk on site (private) and within 10 feet
14 of a trees trunk in the right-of-way (public). Root barriers shall extend 5 feet in
15 each direction from the centerline of the trunk, for a total distance of 10 feet. Root
16 barriers shall be 24 inches in depth. Installing a root barrier around the tree's root
17 ball is unacceptable.
- 18 j) All fences, gates, walls, stone walls, retaining walls, and plantable walls shall
19 obtain Planning Division approval prior to 1st submittal of working drawings.
- 20 k) For the planting and placement of trees and their distances from hardscape and
21 other utilities/ structures the landscape plans shall follow the City of Oceanside's
22 (current) Tree Planting Distances and Spacing Standards.
- 23 l) An automatic irrigation system shall be installed to provide coverage for all
24 planting areas shown on the plan. Low precipitation equipment shall provide
25 sufficient water for plant growth with a minimum water loss due to water run-off.
- 26 m) Irrigation systems shall use high quality, automatic control valves, controllers and
27 other necessary irrigation equipment. All components shall be of non-corrosive
28 material. All drip systems shall be adequately filtered and regulated per the
29 manufacturer's recommended design parameters.

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- n) All irrigation improvements shall follow the City of Oceanside Guidelines and Water Conservation Ordinance.
 - o) The landscape plans shall match all plans affiliated with the project.
 - p) Landscape plans shall comply with Biological and/or Geotechnical reports, as required, shall match the grading and improvement plans, comply with SWMP Best Management Practices and meet the satisfaction of the City Engineer.
 - q) Existing landscaping and irrigation on and adjacent to the site shall be protected in place and supplemented or replaced in kind or upgraded to meet the satisfaction of the City Engineer.
25. All landscaping, fences, walls, etc. on the site, in medians within the public right-of-way and within any adjoining public parkways shall be permanently maintained by the owner, his assigns or any successors-in-interest in the property. The maintenance program shall include: a) normal care and irrigation of the landscaping b) repair and replacement of plant materials c) irrigation systems as necessary d) general cleanup of the landscaped and open areas e) parking lots and walkways, walls, fences, etc. Failure to maintain landscaping shall result in the City taking all appropriate enforcement actions including but not limited to citations. This maintenance program condition shall be recorded with a covenant as required by this resolution.

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26. In the event that the conceptual landscape plan (CLP) does not match the conditions of approval, the resolution of approval shall govern.

PASSED AND ADOPTED Resolution No. 2012-P18 on April 9, 2012 by the following vote, to wit:

AYES:

NAYS:

ABSENT:

ABSTAIN:

Tom Rosales, Chairperson
Oceanside Planning Commission

ATTEST:

Jerry Hittleman, Secretary

I, JERRY HITTLEMAN, Secretary of the Oceanside Planning Commission, hereby certify that this is a true and correct copy of Resolution No. 2011-P18.

Dated: April 9, 2011

Applicant accepts and agrees with all conditions of approval and acknowledges impact fees may be required as stated herein:

Date: _____

**American Tower Corporation
on behalf of Verizon Wireless
Site ID - 300628
Site Name – Naughton
Application # - C-20-08
Site Compliance Report**

**2182 South El Camino Real
Oceanside, CA 92054
San Diego County**

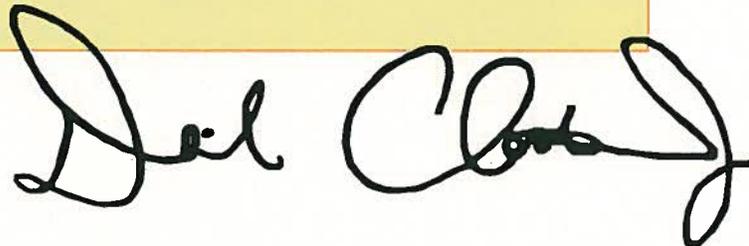
Site visit date: July 11, 2011
Site survey by: Mohamed Frej

Latitude: N33-11-15.00
Longitude: W117-19-36.84
Structure Type: Monopole

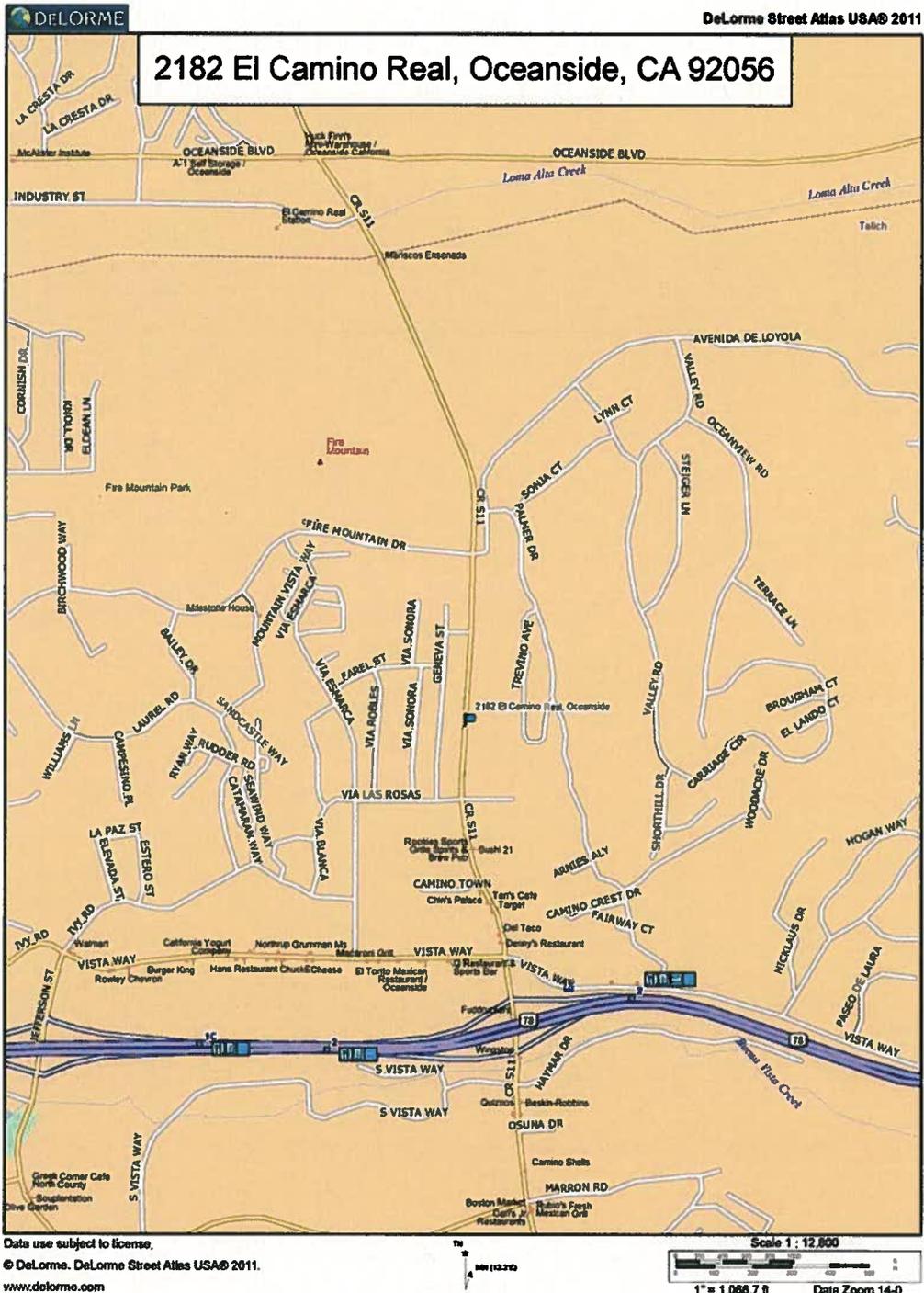
Report generated date: November 30, 2011
Report by: Kobi Thompson
Customer Contact: Jamie Hall

**Verizon Wireless will be Compliant based on
FCC Rules and Regulations.**

© 2011 Sitesafe, Inc. Arlington, VA



**David Charles Cotton, Jr.
Registered Professional Engineer (Electrical)
State of California, 18838, Expires 30-Jun-2013
Date: 2011-Nov-30**



Vicinity Map

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1 Executive Summary

American Tower Corporation has contracted with Sitesafe, Inc. (Sitesafe), an independent Radio Frequency (RF) regulatory and engineering consulting firm, to determine whether the proposed communications site, 300628 - Naughton, located at 2182 South El Camino Real, Oceanside, CA, is in compliance with Federal Communication Commission (FCC) Rules and Regulations for RF emissions.

Sitesafe's field personnel visited 300628 - Naughton on July 11, 2011. This report contains a detailed summary of the RF environment at the site including:

- site compliance determination;
- photographs of the site;
- diagram of the site;
- inventory of the make / model of all transmitting antennas found on the site (where possible);
- record of any Maximum Permissible Exposure ("MPE") measurements taken on the site, as applicable; and
- theoretical MPE based on modeling.

This report addresses exposure to radio frequency electromagnetic fields in accordance with the FCC Rules and Regulations for all individuals, classified in two groups, "Occupational or Controlled" and "General Public or Uncontrolled." This **site will be compliant** with the FCC rules and regulations, as described in OET Bulletin 65.

During our field visit, Sitesafe documented the presence and location of signs and barriers. This document specifically addresses compliance of Verizon Wireless' transmitting facilities independently and in relation to all collocated transmitting facilities, which together constitute the RF environment at the site.

If you have any questions regarding RF safety and regulatory compliance, please do not hesitate to contact Sitesafe's Customer Support Department at (703) 276-1100.

1.1 Project Description

Conditional Use Permit (CUP) filed by American Tower Corporation (ATC) to authorize the continued use of an existing monopole and antennas operated by Verizon Wireless. In conjunction with the pending CUP, ATC proposes to reduce the height of the existing 65 foot monopole to ensure that the top of the antennas do not exceed 60 feet. Additionally, the upper rack of antennas will be removed and 15 replacement panel antennas will be installed on the pole. Additionally, per the City's request, the existing microwave dish will be replaced with a dish that does not 4 feet in diameter.

2 Regulatory Basis

2.1 FCC Rules and Regulations

In 1996, the Federal Communication Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

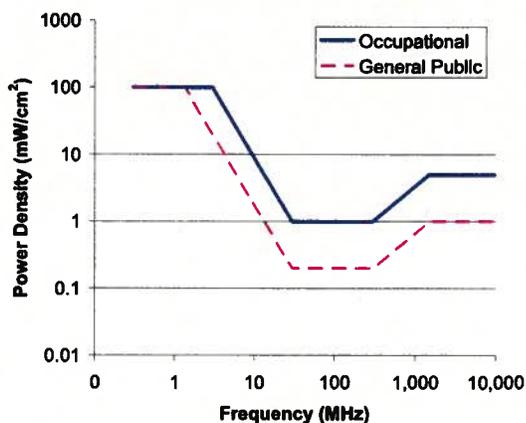
Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:

FCC Limits for Maximum Permissible Exposure (MPE)
Plane-wave Equivalent Power Density



Limits for Occupational/Controlled Exposure (MPE)

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

Limits for General Population/Uncontrolled Exposure (MPE)

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

f = frequency in MHz *Plane-wave equivalent power density

2.2 OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

- (a) Each employer –
 - (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
 - (2) shall comply with occupational safety and health standards promulgated under this Act.
- (b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lock Out Tag Out procedure aimed to control the unexpected energization or start up of machines when maintenance or service is being performed.

3 Site Compliance

3.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, and a thorough review of site access procedures, RF hazard signage and visible antenna locations, Sitesafe has determined that:

This **site will be compliant** with the FCC rules and regulations, as described in OET Bulletin 65.

Verizon Wireless is predicted to contribute **less than 5%** of the maximum permissible exposure (MPE) at the ground level based on theoretical modeling using parameters supplied by the client; therefore, Verizon Wireless has no responsibility for bringing the site into compliance with FCC guidelines. See Appendix C. A detailed explanation of the 5% rule can be found in the Definition section of Appendix B.

The compliance determination is based on General Public MPE levels due to theoretical modeling and/or physical measurements, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the Verizon Wireless' proposed deployment plan could result in the site being rendered non-compliant. Measurements have also been performed to validate the assumptions used in our theoretical modeling of this site.

Modeling is used for determining compliance and the percentage of MPE contribution. Measurements provide a view of MPE percentage levels at the site at the time of Sitesafe's visit and are used to validate modeling results.

3.2 Actions for Site Compliance

Based on common industry practice and our understanding of FCC and OSHA requirements, this section provides a statement of recommendations for site compliance. RF alert signage recommendations have been proposed based on existing measurements and theoretical analysis of MPE levels. Sitesafe has documented the locations of any RF signs and barriers that are required for compliance. Barriers can consist of locked doors, fencing, railing, rope, chain, paint striping or tape, combined with RF alert signage.

This site will be compliant with the FCC rules and regulations.

3.3 Methodology Reference

See appendix E of the report for detailed description of the methodologies and calculations (including formulas) used to generate the RF diagrams and tables presented in this report.

4 Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked Gate
- Restricted Ladder

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3 foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram: Section 6 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

5 Site Audit

5.1 Site Access Procedures

A site visit was conducted on July 11, 2011 at approximately 7:05 AM. The weather conditions were Overcast with a temperature of 70 degrees. At that time, a diagram of the site was verified, obtained or produced containing the locations of all visible antennas, RF signs and access points on site. These antennas were recorded and photographed. The antenna make(s)/model(s) and centerlines were verified where possible.

The following information was gathered regarding site access at the facility.

Site access was locked or restricted at the time of the site visit.

RF Advisory signage was posted at the tower access point.



Figure 1: Base of tower



Figure 2: Site with Parcel Boundaries

6 Non-ionizing Radiation (NIR) Analysis and Recommendation

6.1 NIR Analysis Results

When applying the General Public environment standards, the predicted energy density from the Verizon Wireless operation is no more than 4.14 % of the Maximum Permissible Exposure (MPE) limiting any accessible location on the ground. A presentation of this predicted analysis is attached in Section 7. Additionally, measurements were taken on the ground in the vicinity of the site. Measurements show the cumulative RF energy density from all carriers. Given that Verizon Wireless' predicted contribution is below 5% on the ground, Verizon Wireless meets the 5% exclusion from corrective action should it be necessary in the future.

6.2 Site Measurements Collected

This section provides a summary of the measurements collected at the site. Actual measurements locations at which these data points were collected are included in the RF Emission Diagram provided in Section 6.3 of this report. Measurements collected include both maximum and spatial average values. The spatial average measurement consists of a collection of at least ten (10) measurements within a ten (10) second time interval taken from zero (0) to six (6) feet. The purpose of this measurement technique is to identify the average power density over the dimensions of a typical human body.

The measurements below were obtained from accessible areas located at the site at the time of Sitesafe's visit. Because of the antenna configuration at this site, specific emissions could not be discerned from nearby facilities, and no attempt was made to determine power density levels from a specific transmitting antenna.

Highest Measurement of Occupational MPE Limit: <1 %.

Highest Measurement of General Public MPE Limit: <5 %.

Measurements Points	Spatial Average	Maximum	Measurements Points	Spatial Average	Maximum
M1	<1 %	<1 %	M6	<1 %	<1 %
M2	<1 %	<1 %	M7	<1 %	<1 %
M3	<1 %	<1 %	M8	<1 %	<1 %
M4	<1 %	<1 %	M9	<1 %	<1 %
M5	<1 %	<1 %	M10	<1 %	<1 %

RF meters and probes have been calibrated and used according to the manufacturer's specifications. Measurements provide a view of MPE percentage levels at the site at the time of Sitesafe's visit and are used to validate modeling results. Theoretical modeling is used for determining compliance and the percentage of MPE contribution.

A separate diagram has been included in section 6.3 of this document. Spatial average measurements are displayed in this diagram.



Figure 3: Verizon Wireless Proposed Alpha Sector Antennas #1 through #5



Figure 4: Verizon Wireless Proposed Beta Sector Antennas #6 through #10



Figure 5: Verizon Wireless Proposed Gamma Sector Antennas #11 through #15



Figure 6: Existing Verizon Wireless Panel antennas - to be removed

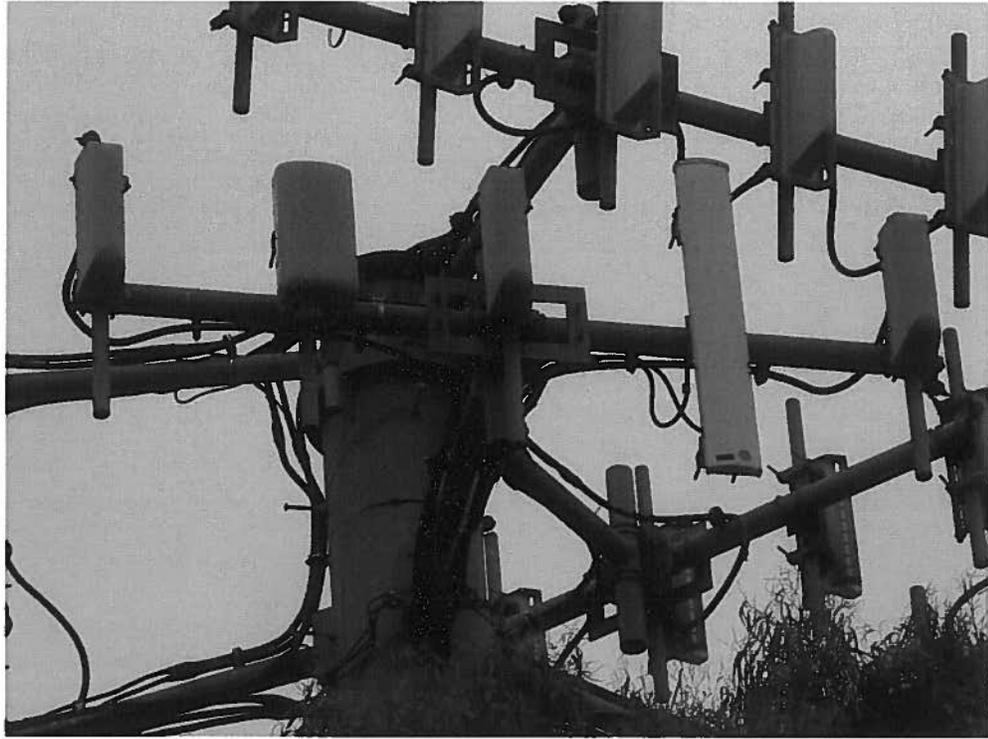


Figure 7: Existing Verizon Wireless Panel antennas - to be removed



Figure 8: Existing Verizon Wireless Panel antennas - to be removed



Figure 9: Existing Verizon Wireless Dish Antenna



Figure 10: Ground level overview



Figure 11: Tower overview

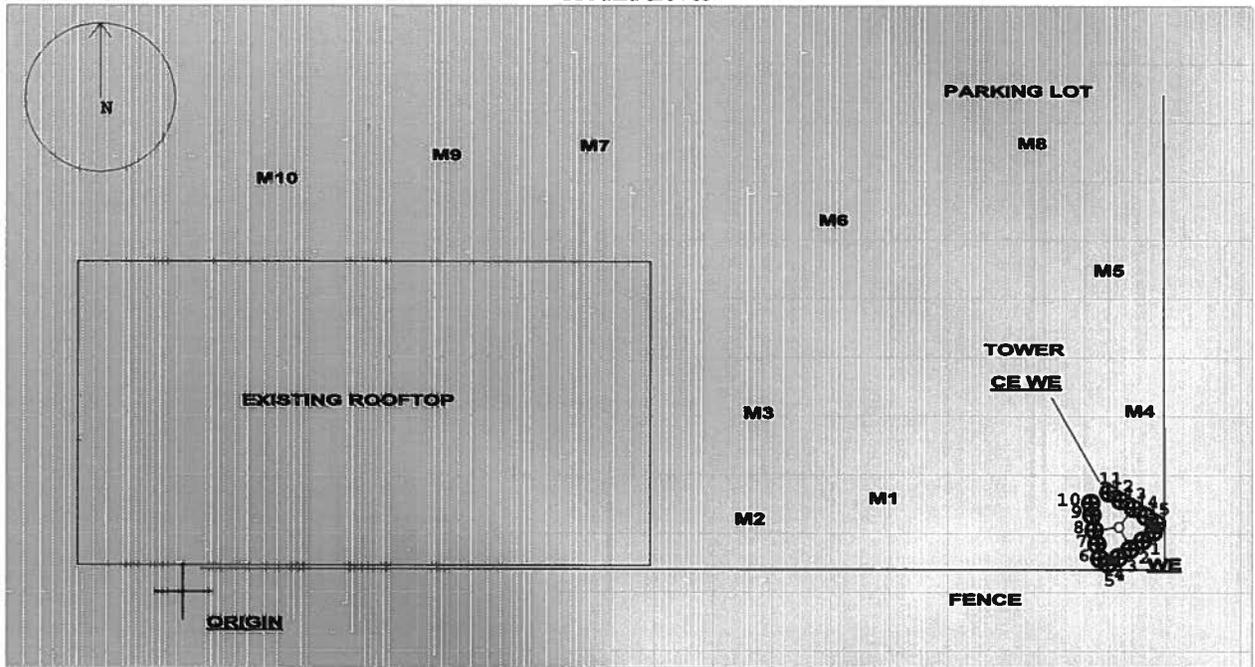


Figure 12: Tower overview

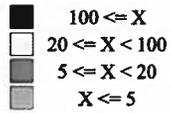
6.3 RF Emission Diagram

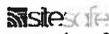
The diagram below displays RF spatial average measurement locations. Measurement values are referenced from the table above. Predicted Maximum Permissible Exposure levels calculations provided in tabular form in Section 7 below. See the engineering statement for more information on these calculations.

RF Emissions Diagram for: Naughton Ground Level

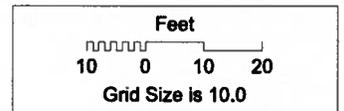


% of FCC Public Exposure Limit
Average from 0 feet above to 6 feet above origin

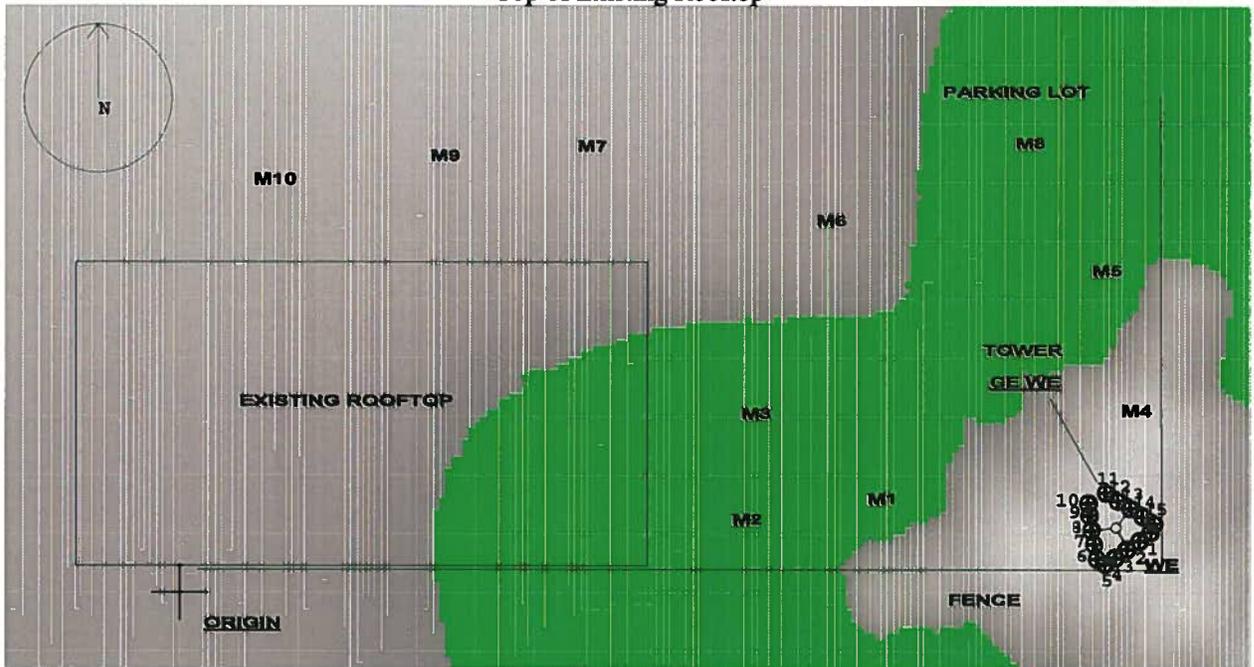



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 Site Name: Naughton

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 10/20/01



RF Emissions Diagram for: Naughton
Top of Existing Rooftop

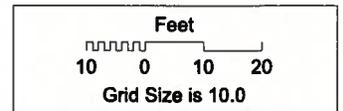


% of FCC Public Exposure Limit
Average from 27 feet above to 33 feet above origin

- $100 \leq X$
- $20 \leq X < 100$
- $5 \leq X < 20$
- $X \leq 5$

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Sitesafe ID# 73820
Site Name: Naughton

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Abbreviations used in the RF Emissions Diagrams

PH=##'	Penthouse at ## feet above main roof
M##	Measurement ## taken during a site visit

As discussed in Section 6, site measurement locations for spatial average measurements collected at the time of Sitesafe's visit have been added to the RF emissions diagram. While the theoretical modeling represents worst case MPE levels based on the assumption(s) detailed above, the measurement data is a snapshot of MPE levels at the time of our visit, and dependent on transmitter duty cycle, system implementation and emissions from other RF sources at nearby antenna sites.

Additional Information in the RF Emissions Diagrams Key

The RF Emission Diagram provides indications of RF signage and locked access points. The table below lists the abbreviations used to indicate locked access points and signs:

Table 2: RF Signage and Barrier Key					
RF Signage			Barriers		
Type	Existing Location	Recommended Location	Type	Existing Location	Recommended Location
Notice	NE	NR	Locked Door	LE	LR
Caution	CE	CR	Fencing	RE	RR
Warning	WE	WR	Rope Chain		
Info Sign	IE		Paint Stripes		

As discussed in Section 6, site measurements collected at the time of Sitesafe's visit have been added to the RF Emission diagrams. While the software modeling represents theoretical MPE levels based on the assumptions detailed above, the site measurement data is a snapshot of MPE levels, and dependent on transmitter duty cycle, system implementation and emissions from other RF sources at nearby antenna sites.

7 Predicted RF Energy Density Calculations

See appendix E of the report for detailed description of the methodologies and calculations (including formulas) used to generate the tables presented below.

Verizon Wireless Naughton Site Summary

Carrier	Area Maximum Percentage MPE
Verizon Wireless	4.137 %
Composite Site MPE:	4.137 %

Verizon Wireless Naughton Carrier Summary

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 10.48812 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 1.04881 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Antel	BXA-171063-8CF-2	58	16	3415	7.54809	0.754809	10.347652	1.034765
Antel	BXA-171063-8CF-2	58	136	3415	7.528881	0.752888	10.347651	1.034765
Antel	BXA-171063-8CF-2	58	256	3415	7.548095	0.75481	10.347651	1.034765

Verizon Wireless Naughton Carrier Summary

Frequency: 751 MHz
Maximum Permissible Exposure (MPE): 500.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 4.96474 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.99163 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Antel	BXA-70063-4CF-4	58	16	634	4.874325	0.973567	4.877939	0.974289
Antel	BXA-70063-4CF-4*	58	16	0	0	0	0	0
Antel	BXA-70063-4CF-4	58	136	634	4.874325	0.973567	4.877939	0.974289
Antel	BXA-70063-4CF-4*	58	136	0	0	0	0	0
Antel	BXA-70063-4CF-4	58	256	634	4.874325	0.973567	4.877939	0.974289
Antel	BXA-70063-4CF-4*	58	256	0	0	0	0	0

* Per Verizon Wireless RF datasheet, spare antennas are considered not operational and are modeled with 0W ERP.

**Verizon Wireless
Naughton
Carrier Summary**

Frequency: 850 MHz
Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 17.5474 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 3.0966 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Antel	LPA-80063-4CF-5	58	16	1141	8.651511	1.526737	8.654226	1.527216
Antel	LPA-80063-4CF-5	58	16	1141	8.651511	1.526737	8.654226	1.527216
Antel	LPA-80063-4CF-5	58	136	1141	8.651511	1.526737	8.654226	1.527216
Antel	LPA-80063-4CF-5	58	136	1141	8.651511	1.526737	8.654226	1.527216
Antel	LPA-80063-4CF-5	58	256	1141	8.651511	1.526737	8.654226	1.527216
Antel	LPA-80063-4CF-5	58	256	1141	8.651511	1.526737	8.654226	1.527216

Antel:BXA-171063-8CF-2 Antenna Worksheet (16 Sector)

Maximum Permissible Exposure (MPE):

1000

ERP (Watts):	3415	Height (feet):	58	Frequency (MHz):	1900	Downtilt (Degrees):	3.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-5.79	0.2636	8983.09	8983.07	0.001408	0.000141	710288
1.0	-3.90	0.4074	898.35	898.22	0.141098	0.014110	7087
2.0	-2.20	0.6026	449.25	448.97	0.564221	0.056422	1772
3.0	-1.10	0.7762	299.57	299.16	1.268853	0.126885	788
4.0	-0.40	0.9120	224.76	224.21	1.928224	0.192822	518
5.0	0.00	1.0000	179.89	179.21	2.410280	0.241028	414
6.0	-0.10	0.9772	149.99	149.17	2.892924	0.289292	345
7.0	-0.50	0.8913	128.65	127.69	3.376452	0.337645	296
8.0	-1.40	0.7244	112.65	111.56	3.861162	0.386116	258
9.0	-2.70	0.5370	100.22	98.99	4.347354	0.434735	230
10.0	-4.40	0.3631	90.29	88.92	4.835333	0.483533	206
12.0	-10.50	0.0891	75.41	73.76	5.817895	0.581789	171
14.0	-18.10	0.0155	64.81	62.88	6.811386	0.681139	146
16.0	-14.50	0.0355	56.88	54.68	7.548090	0.754809	132
18.0	-13.80	0.0417	50.74	48.25	2.319634	0.231963	431
20.0	-16.60	0.0219	45.84	43.08	2.833815	0.283382	352
22.0	-21.80	0.0066	41.85	38.81	3.381545	0.338155	295
24.0	-20.00	0.0100	38.55	35.21	3.068953	0.306895	325
26.0	-17.80	0.0166	35.77	32.15	1.862471	0.186247	536
28.0	-18.80	0.0132	33.40	29.49	2.129917	0.212992	469
30.0	-22.90	0.0051	31.36	27.16	2.408862	0.240886	415
32.0	-26.40	0.0023	29.59	25.09	2.583315	0.258331	387
34.0	-23.50	0.0045	28.04	23.24	1.697937	0.169794	588
36.0	-22.90	0.0051	26.67	21.58	1.090347	0.109035	917
38.0	-25.30	0.0030	25.47	20.07	1.184894	0.118489	843
40.0	-34.80	0.0003	24.39	18.68	1.282619	0.128262	779
42.0	-31.30	0.0007	23.43	17.41	1.193332	0.119333	837
44.0	-25.50	0.0028	22.57	16.24	1.090190	0.109019	917
46.0	-24.30	0.0037	21.80	15.14	1.172704	0.117270	852
48.0	-25.60	0.0028	21.10	14.12	1.231751	0.123175	811
50.0	-29.60	0.0011	20.47	13.16	1.301264	0.130126	768
52.0	-34.10	0.0004	19.90	12.25	1.264775	0.126478	790
54.0	-31.00	0.0008	19.38	11.39	0.714340	0.071434	1399
56.0	-28.50	0.0014	18.91	10.58	0.672430	0.067243	1487
58.0	-28.10	0.0015	18.49	9.80	0.698604	0.069860	1431
60.0	-30.10	0.0010	18.10	9.05	0.723352	0.072335	1382
62.0	-34.80	0.0003	17.76	8.34	0.738047	0.073805	1354
64.0	-40.00	0.0001	17.44	7.65	0.619712	0.061971	1613
66.0	-40.00	0.0001	17.16	6.98	0.324140	0.032414	3085
68.0	-34.50	0.0004	16.91	6.33	0.368645	0.036864	2712
70.0	-32.30	0.0006	16.68	5.71	0.455460	0.045546	2195
72.0	-31.50	0.0007	16.49	5.09	0.587641	0.058764	1701
74.0	-30.60	0.0009	16.31	4.50	0.674836	0.067484	1481
76.0	-29.50	0.0011	16.16	3.91	0.682843	0.068284	1464
78.0	-29.00	0.0013	16.03	3.33	0.670992	0.067099	1490
80.0	-29.80	0.0010	15.92	2.76	0.697407	0.069741	1433
82.0	-30.90	0.0008	15.83	2.20	0.702194	0.070219	1424
84.0	-31.30	0.0007	15.76	1.65	0.673563	0.067356	1484
86.0	-32.20	0.0006	15.72	1.10	0.516600	0.051660	1935
88.0	-33.80	0.0004	15.69	0.55	0.467377	0.046738	2139
90.0	-34.70	0.0003	15.68	0.00	0.400330	0.040033	2497

Antel:BXA-171063-8CF-2 Antenna Worksheet (136 Sector)

Maximum Permissible Exposure (MPE):			1000				
ERP (Watts):	3415	Height (feet):	58	Frequency (MHz):	1900	Downtilt (Degrees):	3.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-5.79	0.2636	8983.09	8983.07	0.001408	0.000141	710288
1.0	-3.90	0.4074	898.35	898.22	0.137886	0.013789	7252
2.0	-2.20	0.6026	449.25	448.97	0.564221	0.056422	1772
3.0	-1.10	0.7762	299.57	299.16	1.268853	0.126885	788
4.0	-0.40	0.9120	224.76	224.21	1.928224	0.192822	518
5.0	0.00	1.0000	179.89	179.21	2.410280	0.241028	414
6.0	-0.10	0.9772	149.99	149.17	2.892924	0.289292	345
7.0	-0.50	0.8913	128.65	127.69	3.376452	0.337645	296
8.0	-1.40	0.7244	112.65	111.56	3.861162	0.386116	258
9.0	-2.70	0.5370	100.22	98.99	4.347354	0.434735	230
10.0	-4.40	0.3631	90.29	88.92	4.835333	0.483533	206
12.0	-10.50	0.0891	75.41	73.76	5.817895	0.581789	171
14.0	-18.10	0.0155	64.81	62.88	6.811386	0.681139	146
16.0	-14.50	0.0355	56.88	54.68	7.528881	0.752888	132
18.0	-13.80	0.0417	50.74	48.25	2.319634	0.231963	431
20.0	-16.60	0.0219	45.84	43.08	2.826602	0.282660	353
22.0	-21.80	0.0066	41.85	38.81	3.394498	0.339450	294
24.0	-20.00	0.0100	38.55	35.21	3.080708	0.308071	324
26.0	-17.80	0.0166	35.77	32.15	1.855364	0.185536	538
28.0	-18.80	0.0132	33.40	29.49	2.121790	0.212179	471
30.0	-22.90	0.0051	31.36	27.16	2.408862	0.240886	415
32.0	-26.40	0.0023	29.59	25.09	2.576739	0.257674	388
34.0	-23.50	0.0045	28.04	23.24	1.697937	0.169794	588
36.0	-22.90	0.0051	26.67	21.58	1.090347	0.109035	917
38.0	-25.30	0.0030	25.47	20.07	1.189433	0.118943	840
40.0	-34.80	0.0003	24.39	18.68	1.282619	0.128262	779
42.0	-31.30	0.0007	23.43	17.41	1.185753	0.118575	843
44.0	-25.50	0.0028	22.57	16.24	1.090190	0.109019	917
46.0	-24.30	0.0037	21.80	15.14	1.172704	0.117270	852
48.0	-25.60	0.0028	21.10	14.12	1.231751	0.123175	811
50.0	-29.60	0.0011	20.47	13.16	1.301264	0.130126	768
52.0	-34.10	0.0004	19.90	12.25	1.253543	0.125354	797
54.0	-31.00	0.0008	19.38	11.39	0.714340	0.071434	1399
56.0	-28.50	0.0014	18.91	10.58	0.672430	0.067243	1487
58.0	-28.10	0.0015	18.49	9.80	0.692400	0.069240	1444
60.0	-30.10	0.0010	18.10	9.05	0.716015	0.071602	1396
62.0	-34.80	0.0003	17.76	8.34	0.747512	0.074751	1337
64.0	-40.00	0.0001	17.44	7.65	0.609530	0.060953	1640
66.0	-40.00	0.0001	17.16	6.98	0.317598	0.031760	3148
68.0	-34.50	0.0004	16.91	6.33	0.368645	0.036864	2712
70.0	-32.30	0.0006	16.68	5.71	0.455460	0.045546	2195
72.0	-31.50	0.0007	16.49	5.09	0.587641	0.058764	1701
74.0	-30.60	0.0009	16.31	4.50	0.662903	0.066290	1508
76.0	-29.50	0.0011	16.16	3.91	0.682843	0.068284	1464
78.0	-29.00	0.0013	16.03	3.33	0.688313	0.068831	1452
80.0	-29.80	0.0010	15.92	2.76	0.666135	0.066614	1501
82.0	-30.90	0.0008	15.83	2.20	0.669000	0.066900	1494
84.0	-31.30	0.0007	15.76	1.65	0.673563	0.067356	1484
86.0	-32.20	0.0006	15.72	1.10	0.516600	0.051660	1935
88.0	-33.80	0.0004	15.69	0.55	0.450420	0.045042	2220
90.0	-34.70	0.0003	15.68	0.00	0.410142	0.041014	2438

Antel:BXA-171063-8CF-2 Antenna Worksheet (256 Sector)

Maximum Permissible Exposure (MPE):			1000				
ERP (Watts):	3415	Height (feet):	58	Frequency (MHz):	1900	Downtilt (Degrees):	3.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-5.79	0.2636	8983.09	8983.07	0.001411	0.000141	708654
1.0	-3.90	0.4074	898.35	898.22	0.141098	0.014110	7087
2.0	-2.20	0.6026	449.25	448.97	0.564221	0.056422	1772
3.0	-1.10	0.7762	299.57	299.16	1.268853	0.126885	788
4.0	-0.40	0.9120	224.76	224.21	1.928224	0.192822	518
5.0	0.00	1.0000	179.89	179.21	2.410280	0.241028	414
6.0	-0.10	0.9772	149.99	149.17	2.892924	0.289292	345
7.0	-0.50	0.8913	128.65	127.69	3.376452	0.337645	296
8.0	-1.40	0.7244	112.65	111.56	3.861161	0.386116	258
9.0	-2.70	0.5370	100.22	98.99	4.347354	0.434735	230
10.0	-4.40	0.3631	90.29	88.92	4.835333	0.483533	206
12.0	-10.50	0.0891	75.41	73.76	5.817895	0.581789	171
14.0	-18.10	0.0155	64.81	62.88	6.811386	0.681139	146
16.0	-14.50	0.0355	56.88	54.68	7.548095	0.754809	132
18.0	-13.80	0.0417	50.74	48.25	2.319636	0.231964	431
20.0	-16.60	0.0219	45.84	43.08	2.833815	0.283382	352
22.0	-21.80	0.0066	41.85	38.81	3.394498	0.339450	294
24.0	-20.00	0.0100	38.55	35.21	3.068953	0.306895	325
26.0	-17.80	0.0166	35.77	32.15	1.855364	0.185536	538
28.0	-18.80	0.0132	33.40	29.49	2.129917	0.212992	469
30.0	-22.90	0.0051	31.36	27.16	2.408862	0.240886	415
32.0	-26.40	0.0023	29.59	25.09	2.583314	0.258331	387
34.0	-23.50	0.0045	28.04	23.24	1.702269	0.170227	587
36.0	-22.90	0.0051	26.67	21.58	1.086187	0.108619	920
38.0	-25.30	0.0030	25.47	20.07	1.189433	0.118943	840
40.0	-34.80	0.0003	24.39	18.68	1.289174	0.128917	775
42.0	-31.30	0.0007	23.43	17.41	1.185753	0.118575	843
44.0	-25.50	0.0028	22.57	16.24	1.098558	0.109856	910
46.0	-24.30	0.0037	21.80	15.14	1.160809	0.116081	861
48.0	-25.60	0.0028	21.10	14.12	1.231751	0.123175	811
50.0	-29.60	0.0011	20.47	13.16	1.312924	0.131292	761
52.0	-34.10	0.0004	19.90	12.25	1.264775	0.126478	790
54.0	-31.00	0.0008	19.38	11.39	0.720741	0.072074	1387
56.0	-28.50	0.0014	18.91	10.58	0.672430	0.067243	1487
58.0	-28.10	0.0015	18.49	9.80	0.692400	0.069240	1444
60.0	-30.10	0.0010	18.10	9.05	0.716015	0.071602	1396
62.0	-34.80	0.0003	17.76	8.34	0.738047	0.073805	1354
64.0	-40.00	0.0001	17.44	7.65	0.619712	0.061971	1613
66.0	-40.00	0.0001	17.16	6.98	0.317598	0.031760	3148
68.0	-34.50	0.0004	16.91	6.33	0.368645	0.036864	2712
70.0	-32.30	0.0006	16.68	5.71	0.455460	0.045546	2195
72.0	-31.50	0.0007	16.49	5.09	0.599746	0.059975	1667
74.0	-30.60	0.0009	16.31	4.50	0.662903	0.066290	1508
76.0	-29.50	0.0011	16.16	3.91	0.669061	0.066906	1494
78.0	-29.00	0.0013	16.03	3.33	0.688313	0.068831	1452
80.0	-29.80	0.0010	15.92	2.76	0.666135	0.066614	1501
82.0	-30.90	0.0008	15.83	2.20	0.702194	0.070219	1424
84.0	-31.30	0.0007	15.76	1.65	0.641722	0.064172	1558
86.0	-32.20	0.0006	15.72	1.10	0.516600	0.051660	1935
88.0	-33.80	0.0004	15.69	0.55	0.450420	0.045042	2220
90.0	-34.70	0.0003	15.68	0.00	0.400331	0.040033	2497

Antel:BXA-70063-4CF-4 Antenna Worksheet (16 Sector)

Maximum Permissible Exposure (MPE):

500.67

ERP (Watts): 634 Height (feet): 58 Frequency (MHz): 751 Downtilt (Degrees): 6.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-3.14	0.4853	8983.09	8983.07	0.000226	0.000045	2219845
1.0	-2.60	0.5495	898.35	898.22	0.023506	0.004695	21299
2.0	-2.00	0.6310	449.25	448.97	0.093994	0.018774	5326
3.0	-1.60	0.6918	299.57	299.16	0.211111	0.042166	2371
4.0	-1.10	0.7762	224.76	224.21	0.375520	0.075004	1333
5.0	-0.70	0.8511	179.89	179.21	0.586215	0.117087	854
6.0	-0.50	0.8913	149.99	149.17	0.843208	0.168417	593
7.0	-0.30	0.9333	128.65	127.69	1.277316	0.255123	391
8.0	-0.10	0.9772	112.65	111.56	1.340575	0.267758	373
9.0	0.00	1.0000	100.22	98.99	1.507992	0.301197	332
10.0	0.00	1.0000	90.29	88.92	1.675717	0.334697	298
12.0	-0.10	0.9772	75.41	73.76	2.012499	0.401964	248
14.0	-0.50	0.8913	64.81	62.88	2.351763	0.469726	212
16.0	-1.20	0.7586	56.88	54.68	2.694373	0.538157	185
18.0	-2.10	0.6166	50.74	48.25	3.041229	0.607436	164
20.0	-3.30	0.4677	45.84	43.08	3.393272	0.677751	147
22.0	-4.80	0.3311	41.85	38.81	3.751499	0.749301	133
24.0	-6.70	0.2138	38.55	35.21	4.116973	0.822298	121
26.0	-9.30	0.1175	35.77	32.15	4.490837	0.896971	111
28.0	-12.40	0.0575	33.40	29.49	4.874325	0.973567	102
30.0	-16.20	0.0240	31.36	27.16	3.845954	0.768166	130
32.0	-20.00	0.0100	29.59	25.09	2.351254	0.469625	212
34.0	-20.20	0.0095	28.04	23.24	1.252668	0.250200	399
36.0	-18.00	0.0158	26.67	21.58	1.108298	0.221364	451
38.0	-16.10	0.0245	25.47	20.07	1.384362	0.276504	361
40.0	-15.10	0.0309	24.39	18.68	1.504678	0.300535	332
42.0	-14.50	0.0355	23.43	17.41	1.617531	0.323075	309
44.0	-14.60	0.0347	22.57	16.24	1.742650	0.348066	287
46.0	-15.00	0.0316	21.80	15.14	1.851372	0.369781	270
48.0	-15.80	0.0263	21.10	14.12	1.977667	0.395007	253
50.0	-16.80	0.0209	20.47	13.16	1.958196	0.391118	255
52.0	-18.10	0.0155	19.90	12.25	1.799943	0.359509	278
54.0	-19.90	0.0102	19.38	11.39	1.559880	0.311561	320
56.0	-21.20	0.0076	18.91	10.58	1.249038	0.249475	400
58.0	-23.70	0.0043	18.49	9.80	0.937273	0.187205	534
60.0	-24.90	0.0032	18.10	9.05	0.615283	0.122893	813
62.0	-24.20	0.0038	17.76	8.34	0.548350	0.109524	913
64.0	-25.50	0.0028	17.44	7.65	0.405830	0.081058	1233
66.0	-25.80	0.0026	17.16	6.98	0.342409	0.068391	1462
68.0	-26.10	0.0025	16.91	6.33	0.276505	0.055227	1810
70.0	-25.30	0.0030	16.68	5.71	0.328348	0.065582	1524
72.0	-26.60	0.0022	16.49	5.09	0.333145	0.066540	1502
74.0	-24.80	0.0033	16.31	4.50	0.336253	0.067161	1488
76.0	-26.60	0.0022	16.16	3.91	0.339803	0.067870	1473
78.0	-26.70	0.0021	16.03	3.33	0.343824	0.068673	1456
80.0	-27.40	0.0018	15.92	2.76	0.227865	0.045512	2197
82.0	-27.80	0.0017	15.83	2.20	0.218809	0.043703	2288
84.0	-27.50	0.0018	15.76	1.65	0.204829	0.040911	2444
86.0	-27.10	0.0019	15.72	1.10	0.209189	0.041782	2393
88.0	-27.00	0.0020	15.69	0.55	0.226916	0.045323	2206
90.0	-26.90	0.0020	15.68	0.00	0.236010	0.047139	2121

Antel:BXA-70063-4CF-4 Antenna Worksheet (16 Sector) - Spare

Maximum Permissible Exposure (MPE):

500.67

ERP (Watts): 0 Height (feet): 58 Frequency (MHz): 751 Downtilt (Degrees): 6.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-3.14	0.4853	8983.09	8983.07	0.000000	0.000000	1
1.0	-2.60	0.5495	898.35	898.22	0.000000	0.000000	1
2.0	-2.00	0.6310	449.25	448.97	0.000000	0.000000	1
3.0	-1.60	0.6918	299.57	299.16	0.000000	0.000000	1
4.0	-1.10	0.7762	224.76	224.21	0.000000	0.000000	1
5.0	-0.70	0.8511	179.89	179.21	0.000000	0.000000	1
6.0	-0.50	0.8913	149.99	149.17	0.000000	0.000000	1
7.0	-0.30	0.9333	128.65	127.69	0.000000	0.000000	1
8.0	-0.10	0.9772	112.65	111.56	0.000000	0.000000	1
9.0	0.00	1.0000	100.22	98.99	0.000000	0.000000	1
10.0	0.00	1.0000	90.29	88.92	0.000000	0.000000	1
12.0	-0.10	0.9772	75.41	73.76	0.000000	0.000000	1
14.0	-0.50	0.8913	64.81	62.88	0.000000	0.000000	1
16.0	-1.20	0.7586	56.88	54.68	0.000000	0.000000	1
18.0	-2.10	0.6166	50.74	48.25	0.000000	0.000000	1
20.0	-3.30	0.4677	45.84	43.08	0.000000	0.000000	1
22.0	-4.80	0.3311	41.85	38.81	0.000000	0.000000	1
24.0	-6.70	0.2138	38.55	35.21	0.000000	0.000000	1
26.0	-9.30	0.1175	35.77	32.15	0.000000	0.000000	1
28.0	-12.40	0.0575	33.40	29.49	0.000000	0.000000	1
30.0	-16.20	0.0240	31.36	27.16	0.000000	0.000000	1
32.0	-20.00	0.0100	29.59	25.09	0.000000	0.000000	1
34.0	-20.20	0.0095	28.04	23.24	0.000000	0.000000	1
36.0	-18.00	0.0158	26.67	21.58	0.000000	0.000000	1
38.0	-16.10	0.0245	25.47	20.07	0.000000	0.000000	1
40.0	-15.10	0.0309	24.39	18.68	0.000000	0.000000	1
42.0	-14.50	0.0355	23.43	17.41	0.000000	0.000000	1
44.0	-14.60	0.0347	22.57	16.24	0.000000	0.000000	1
46.0	-15.00	0.0316	21.80	15.14	0.000000	0.000000	1
48.0	-15.80	0.0263	21.10	14.12	0.000000	0.000000	1
50.0	-16.80	0.0209	20.47	13.16	0.000000	0.000000	1
52.0	-18.10	0.0155	19.90	12.25	0.000000	0.000000	1
54.0	-19.90	0.0102	19.38	11.39	0.000000	0.000000	1
56.0	-21.20	0.0076	18.91	10.58	0.000000	0.000000	1
58.0	-23.70	0.0043	18.49	9.80	0.000000	0.000000	1
60.0	-24.90	0.0032	18.10	9.05	0.000000	0.000000	1
62.0	-24.20	0.0038	17.76	8.34	0.000000	0.000000	1
64.0	-25.50	0.0028	17.44	7.65	0.000000	0.000000	1
66.0	-25.80	0.0026	17.16	6.98	0.000000	0.000000	1
68.0	-26.10	0.0025	16.91	6.33	0.000000	0.000000	1
70.0	-25.30	0.0030	16.68	5.71	0.000000	0.000000	1
72.0	-26.60	0.0022	16.49	5.09	0.000000	0.000000	1
74.0	-24.80	0.0033	16.31	4.50	0.000000	0.000000	1
76.0	-26.60	0.0022	16.16	3.91	0.000000	0.000000	1
78.0	-26.70	0.0021	16.03	3.33	0.000000	0.000000	1
80.0	-27.40	0.0018	15.92	2.76	0.000000	0.000000	1
82.0	-27.80	0.0017	15.83	2.20	0.000000	0.000000	1
84.0	-27.50	0.0018	15.76	1.65	0.000000	0.000000	1
86.0	-27.10	0.0019	15.72	1.10	0.000000	0.000000	1
88.0	-27.00	0.0020	15.69	0.55	0.000000	0.000000	1
90.0	-26.90	0.0020	15.68	0.00	0.000000	0.000000	1

Antel:BXA-70063-4CF-4 Antenna Worksheet (136 Sector)

Maximum Permissible Exposure (MPE):

500.67

ERP (Watts): 634 Height (feet): 58 Frequency (MHz): 751 Downtilt (Degrees): 6.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-3.14	0.4853	8983.09	8983.07	0.000226	0.000045	2219846
1.0	-2.60	0.5495	898.35	898.22	0.023476	0.004689	21327
2.0	-2.00	0.6310	449.25	448.97	0.093874	0.018750	5333
3.0	-1.60	0.6918	299.57	299.16	0.211111	0.042166	2371
4.0	-1.10	0.7762	224.76	224.21	0.375520	0.075004	1333
5.0	-0.70	0.8511	179.89	179.21	0.586215	0.117087	854
6.0	-0.50	0.8913	149.99	149.17	0.843208	0.168417	593
7.0	-0.30	0.9333	128.65	127.69	1.277316	0.255123	391
8.0	-0.10	0.9772	112.65	111.56	1.340575	0.267758	373
9.0	0.00	1.0000	100.22	98.99	1.507992	0.301197	332
10.0	0.00	1.0000	90.29	88.92	1.675717	0.334697	298
12.0	-0.10	0.9772	75.41	73.76	2.012499	0.401964	248
14.0	-0.50	0.8913	64.81	62.88	2.351763	0.469726	212
16.0	-1.20	0.7586	56.88	54.68	2.694373	0.538157	185
18.0	-2.10	0.6166	50.74	48.25	3.041229	0.607436	164
20.0	-3.30	0.4677	45.84	43.08	3.393272	0.677751	147
22.0	-4.80	0.3311	41.85	38.81	3.751499	0.749301	133
24.0	-6.70	0.2138	38.55	35.21	4.116973	0.822298	121
26.0	-9.30	0.1175	35.77	32.15	4.490837	0.896971	111
28.0	-12.40	0.0575	33.40	29.49	4.874325	0.973567	102
30.0	-16.20	0.0240	31.36	27.16	3.845954	0.768167	130
32.0	-20.00	0.0100	29.59	25.09	2.354254	0.470224	212
34.0	-20.20	0.0095	28.04	23.24	1.252668	0.250200	399
36.0	-18.00	0.0158	26.67	21.58	1.108298	0.221364	451
38.0	-16.10	0.0245	25.47	20.07	1.379080	0.275449	363
40.0	-15.10	0.0309	24.39	18.68	1.504678	0.300535	332
42.0	-14.50	0.0355	23.43	17.41	1.623727	0.324313	308
44.0	-14.60	0.0347	22.57	16.24	1.742650	0.348066	287
46.0	-15.00	0.0316	21.80	15.14	1.851372	0.369781	270
48.0	-15.80	0.0263	21.10	14.12	1.977667	0.395007	253
50.0	-16.80	0.0209	20.47	13.16	1.958196	0.391118	255
52.0	-18.10	0.0155	19.90	12.25	1.809141	0.361346	276
54.0	-19.90	0.0102	19.38	11.39	1.559880	0.311561	320
56.0	-21.20	0.0076	18.91	10.58	1.249038	0.249475	400
58.0	-23.70	0.0043	18.49	9.80	0.942063	0.188162	531
60.0	-24.90	0.0032	18.10	9.05	0.618427	0.123521	809
62.0	-24.20	0.0038	17.76	8.34	0.546258	0.109106	916
64.0	-25.50	0.0028	17.44	7.65	0.406866	0.081265	1230
66.0	-25.80	0.0026	17.16	6.98	0.343283	0.068565	1458
68.0	-26.10	0.0025	16.91	6.33	0.276505	0.055227	1810
70.0	-25.30	0.0030	16.68	5.71	0.328348	0.065582	1524
72.0	-26.60	0.0022	16.49	5.09	0.333145	0.066540	1502
74.0	-24.80	0.0033	16.31	4.50	0.337971	0.067504	1481
76.0	-26.60	0.0022	16.16	3.91	0.339803	0.067870	1473
78.0	-26.70	0.0021	16.03	3.33	0.342076	0.068324	1463
80.0	-27.40	0.0018	15.92	2.76	0.229030	0.045745	2186
82.0	-27.80	0.0017	15.83	2.20	0.220207	0.043983	2273
84.0	-27.50	0.0018	15.76	1.65	0.204829	0.040911	2444
86.0	-27.10	0.0019	15.72	1.10	0.209189	0.041782	2393
88.0	-27.00	0.0020	15.69	0.55	0.227785	0.045496	2197
90.0	-26.90	0.0020	15.68	0.00	0.235110	0.046959	2129

Antel:BXA-70063-4CF-4 Antenna Worksheet (136 Sector) - Spare

Maximum Permissible Exposure (MPE):			500.67				
ERP (Watts):	0	Height (feet):	58	Frequency (MHz):	751	Downtilt (Degrees):	6.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-3.14	0.4853	8983.09	8983.07	0.000000	0.000000	1
1.0	-2.60	0.5495	898.35	898.22	0.000000	0.000000	1
2.0	-2.00	0.6310	449.25	448.97	0.000000	0.000000	1
3.0	-1.60	0.6918	299.57	299.16	0.000000	0.000000	1
4.0	-1.10	0.7762	224.76	224.21	0.000000	0.000000	1
5.0	-0.70	0.8511	179.89	179.21	0.000000	0.000000	1
6.0	-0.50	0.8913	149.99	149.17	0.000000	0.000000	1
7.0	-0.30	0.9333	128.65	127.69	0.000000	0.000000	1
8.0	-0.10	0.9772	112.65	111.56	0.000000	0.000000	1
9.0	0.00	1.0000	100.22	98.99	0.000000	0.000000	1
10.0	0.00	1.0000	90.29	88.92	0.000000	0.000000	1
12.0	-0.10	0.9772	75.41	73.76	0.000000	0.000000	1
14.0	-0.50	0.8913	64.81	62.88	0.000000	0.000000	1
16.0	-1.20	0.7586	56.88	54.68	0.000000	0.000000	1
18.0	-2.10	0.6166	50.74	48.25	0.000000	0.000000	1
20.0	-3.30	0.4677	45.84	43.08	0.000000	0.000000	1
22.0	-4.80	0.3311	41.85	38.81	0.000000	0.000000	1
24.0	-6.70	0.2138	38.55	35.21	0.000000	0.000000	1
26.0	-9.30	0.1175	35.77	32.15	0.000000	0.000000	1
28.0	-12.40	0.0575	33.40	29.49	0.000000	0.000000	1
30.0	-16.20	0.0240	31.36	27.16	0.000000	0.000000	1
32.0	-20.00	0.0100	29.59	25.09	0.000000	0.000000	1
34.0	-20.20	0.0095	28.04	23.24	0.000000	0.000000	1
36.0	-18.00	0.0158	26.67	21.58	0.000000	0.000000	1
38.0	-16.10	0.0245	25.47	20.07	0.000000	0.000000	1
40.0	-15.10	0.0309	24.39	18.68	0.000000	0.000000	1
42.0	-14.50	0.0355	23.43	17.41	0.000000	0.000000	1
44.0	-14.60	0.0347	22.57	16.24	0.000000	0.000000	1
46.0	-15.00	0.0316	21.80	15.14	0.000000	0.000000	1
48.0	-15.80	0.0263	21.10	14.12	0.000000	0.000000	1
50.0	-16.80	0.0209	20.47	13.16	0.000000	0.000000	1
52.0	-18.10	0.0155	19.90	12.25	0.000000	0.000000	1
54.0	-19.90	0.0102	19.38	11.39	0.000000	0.000000	1
56.0	-21.20	0.0076	18.91	10.58	0.000000	0.000000	1
58.0	-23.70	0.0043	18.49	9.80	0.000000	0.000000	1
60.0	-24.90	0.0032	18.10	9.05	0.000000	0.000000	1
62.0	-24.20	0.0038	17.76	8.34	0.000000	0.000000	1
64.0	-25.50	0.0028	17.44	7.65	0.000000	0.000000	1
66.0	-25.80	0.0026	17.16	6.98	0.000000	0.000000	1
68.0	-26.10	0.0025	16.91	6.33	0.000000	0.000000	1
70.0	-25.30	0.0030	16.68	5.71	0.000000	0.000000	1
72.0	-26.60	0.0022	16.49	5.09	0.000000	0.000000	1
74.0	-24.80	0.0033	16.31	4.50	0.000000	0.000000	1
76.0	-26.60	0.0022	16.16	3.91	0.000000	0.000000	1
78.0	-26.70	0.0021	16.03	3.33	0.000000	0.000000	1
80.0	-27.40	0.0018	15.92	2.76	0.000000	0.000000	1
82.0	-27.80	0.0017	15.83	2.20	0.000000	0.000000	1
84.0	-27.50	0.0018	15.76	1.65	0.000000	0.000000	1
86.0	-27.10	0.0019	15.72	1.10	0.000000	0.000000	1
88.0	-27.00	0.0020	15.69	0.55	0.000000	0.000000	1
90.0	-26.90	0.0020	15.68	0.00	0.000000	0.000000	1

Antel:BXA-70063-4CF-4 Antenna Worksheet (256 Sector)

Maximum Permissible Exposure (MPE):

500.67

ERP (Watts): 634 Height (feet): 58 Frequency (MHz): 751 Downtilt (Degrees): 6.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-3.14	0.4853	8983.09	8983.07	0.000226	0.000045	2217018
1.0	-2.60	0.5495	898.35	898.22	0.023506	0.004695	21299
2.0	-2.00	0.6310	449.25	448.97	0.093874	0.018750	5333
3.0	-1.60	0.6918	299.57	299.16	0.211380	0.042220	2368
4.0	-1.10	0.7762	224.76	224.21	0.375520	0.075004	1333
5.0	-0.70	0.8511	179.89	179.21	0.586215	0.117087	854
6.0	-0.50	0.8913	149.99	149.17	0.843208	0.168417	593
7.0	-0.30	0.9333	128.65	127.69	1.277316	0.255123	391
8.0	-0.10	0.9772	112.65	111.56	1.340575	0.267758	373
9.0	0.00	1.0000	100.22	98.99	1.507992	0.301197	332
10.0	0.00	1.0000	90.29	88.92	1.675717	0.334697	298
12.0	-0.10	0.9772	75.41	73.76	2.012499	0.401964	248
14.0	-0.50	0.8913	64.81	62.88	2.351763	0.469726	212
16.0	-1.20	0.7586	56.88	54.68	2.694373	0.538157	185
18.0	-2.10	0.6166	50.74	48.25	3.041229	0.607436	164
20.0	-3.30	0.4677	45.84	43.08	3.393272	0.677751	147
22.0	-4.80	0.3311	41.85	38.81	3.751499	0.749301	133
24.0	-6.70	0.2138	38.55	35.21	4.116973	0.822298	121
26.0	-9.30	0.1175	35.77	32.15	4.490837	0.896971	111
28.0	-12.40	0.0575	33.40	29.49	4.874325	0.973567	102
30.0	-16.20	0.0240	31.36	27.16	3.845954	0.768166	130
32.0	-20.00	0.0100	29.59	25.09	2.351256	0.469625	212
34.0	-20.20	0.0095	28.04	23.24	1.249480	0.249563	400
36.0	-18.00	0.0158	26.67	21.58	1.111126	0.221929	450
38.0	-16.10	0.0245	25.47	20.07	1.379080	0.275449	363
40.0	-15.10	0.0309	24.39	18.68	1.498936	0.299388	334
42.0	-14.50	0.0355	23.43	17.41	1.623727	0.324313	308
44.0	-14.60	0.0347	22.57	16.24	1.736001	0.346738	288
46.0	-15.00	0.0316	21.80	15.14	1.860833	0.371671	269
48.0	-15.80	0.0263	21.10	14.12	1.977667	0.395007	253
50.0	-16.80	0.0209	20.47	13.16	1.948239	0.389129	256
52.0	-18.10	0.0155	19.90	12.25	1.799943	0.359509	278
54.0	-19.90	0.0102	19.38	11.39	1.551949	0.309977	322
56.0	-21.20	0.0076	18.91	10.58	1.249038	0.249475	400
58.0	-23.70	0.0043	18.49	9.80	0.942063	0.188162	531
60.0	-24.90	0.0032	18.10	9.05	0.618427	0.123521	809
62.0	-24.20	0.0038	17.76	8.34	0.548350	0.109524	913
64.0	-25.50	0.0028	17.44	7.65	0.405830	0.081058	1233
66.0	-25.80	0.0026	17.16	6.98	0.343283	0.068565	1458
68.0	-26.10	0.0025	16.91	6.33	0.276505	0.055227	1810
70.0	-25.30	0.0030	16.68	5.71	0.328348	0.065582	1524
72.0	-26.60	0.0022	16.49	5.09	0.332297	0.066371	1506
74.0	-24.80	0.0033	16.31	4.50	0.337971	0.067504	1481
76.0	-26.60	0.0022	16.16	3.91	0.341104	0.068130	1467
78.0	-26.70	0.0021	16.03	3.33	0.342076	0.068324	1463
80.0	-27.40	0.0018	15.92	2.76	0.229030	0.045745	2186
82.0	-27.80	0.0017	15.83	2.20	0.218809	0.043703	2288
84.0	-27.50	0.0018	15.76	1.65	0.206138	0.041173	2428
86.0	-27.10	0.0019	15.72	1.10	0.209189	0.041782	2393
88.0	-27.00	0.0020	15.69	0.55	0.227785	0.045496	2197
90.0	-26.90	0.0020	15.68	0.00	0.236011	0.047139	2121

Antel:BXA-70063-4CF-4 Antenna Worksheet (256 Sector) - Spare

Maximum Permissible Exposure (MPE):

500.67

ERP (Watts): 0 Height (feet): 58 Frequency (MHz): 751 Downtilt (Degrees): 6.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-3.14	0.4853	8983.09	8983.07	0.000000	0.000000	1
1.0	-2.60	0.5495	898.35	898.22	0.000000	0.000000	1
2.0	-2.00	0.6310	449.25	448.97	0.000000	0.000000	1
3.0	-1.60	0.6918	299.57	299.16	0.000000	0.000000	1
4.0	-1.10	0.7762	224.76	224.21	0.000000	0.000000	1
5.0	-0.70	0.8511	179.89	179.21	0.000000	0.000000	1
6.0	-0.50	0.8913	149.99	149.17	0.000000	0.000000	1
7.0	-0.30	0.9333	128.65	127.69	0.000000	0.000000	1
8.0	-0.10	0.9772	112.65	111.56	0.000000	0.000000	1
9.0	0.00	1.0000	100.22	98.99	0.000000	0.000000	1
10.0	0.00	1.0000	90.29	88.92	0.000000	0.000000	1
12.0	-0.10	0.9772	75.41	73.76	0.000000	0.000000	1
14.0	-0.50	0.8913	64.81	62.88	0.000000	0.000000	1
16.0	-1.20	0.7586	56.88	54.68	0.000000	0.000000	1
18.0	-2.10	0.6166	50.74	48.25	0.000000	0.000000	1
20.0	-3.30	0.4677	45.84	43.08	0.000000	0.000000	1
22.0	-4.80	0.3311	41.85	38.81	0.000000	0.000000	1
24.0	-6.70	0.2138	38.55	35.21	0.000000	0.000000	1
26.0	-9.30	0.1175	35.77	32.15	0.000000	0.000000	1
28.0	-12.40	0.0575	33.40	29.49	0.000000	0.000000	1
30.0	-16.20	0.0240	31.36	27.16	0.000000	0.000000	1
32.0	-20.00	0.0100	29.59	25.09	0.000000	0.000000	1
34.0	-20.20	0.0095	28.04	23.24	0.000000	0.000000	1
36.0	-18.00	0.0158	26.67	21.58	0.000000	0.000000	1
38.0	-16.10	0.0245	25.47	20.07	0.000000	0.000000	1
40.0	-15.10	0.0309	24.39	18.68	0.000000	0.000000	1
42.0	-14.50	0.0355	23.43	17.41	0.000000	0.000000	1
44.0	-14.60	0.0347	22.57	16.24	0.000000	0.000000	1
46.0	-15.00	0.0316	21.80	15.14	0.000000	0.000000	1
48.0	-15.80	0.0263	21.10	14.12	0.000000	0.000000	1
50.0	-16.80	0.0209	20.47	13.16	0.000000	0.000000	1
52.0	-18.10	0.0155	19.90	12.25	0.000000	0.000000	1
54.0	-19.90	0.0102	19.38	11.39	0.000000	0.000000	1
56.0	-21.20	0.0076	18.91	10.58	0.000000	0.000000	1
58.0	-23.70	0.0043	18.49	9.80	0.000000	0.000000	1
60.0	-24.90	0.0032	18.10	9.05	0.000000	0.000000	1
62.0	-24.20	0.0038	17.76	8.34	0.000000	0.000000	1
64.0	-25.50	0.0028	17.44	7.65	0.000000	0.000000	1
66.0	-25.80	0.0026	17.16	6.98	0.000000	0.000000	1
68.0	-26.10	0.0025	16.91	6.33	0.000000	0.000000	1
70.0	-25.30	0.0030	16.68	5.71	0.000000	0.000000	1
72.0	-26.60	0.0022	16.49	5.09	0.000000	0.000000	1
74.0	-24.80	0.0033	16.31	4.50	0.000000	0.000000	1
76.0	-26.60	0.0022	16.16	3.91	0.000000	0.000000	1
78.0	-26.70	0.0021	16.03	3.33	0.000000	0.000000	1
80.0	-27.40	0.0018	15.92	2.76	0.000000	0.000000	1
82.0	-27.80	0.0017	15.83	2.20	0.000000	0.000000	1
84.0	-27.50	0.0018	15.76	1.65	0.000000	0.000000	1
86.0	-27.10	0.0019	15.72	1.10	0.000000	0.000000	1
88.0	-27.00	0.0020	15.69	0.55	0.000000	0.000000	1
90.0	-26.90	0.0020	15.68	0.00	0.000000	0.000000	1

Antel:LPA-80063-4CF-5 Antenna Worksheet (16 Sector)

Maximum Permissible Exposure (MPE):

566.67

ERP (Watts): 1141 Height (feet): 58 Frequency (MHz): 850 Downtilt (Degrees): 5.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-6.99	0.2000	8983.09	8983.07	0.000333	0.000059	1704255
1.0	-6.00	0.2512	898.35	898.22	0.033247	0.005867	17044
2.0	-4.00	0.3981	449.25	448.97	0.133118	0.023491	4256
3.0	-3.20	0.4786	299.57	299.16	0.299366	0.052829	1892
4.0	-2.50	0.5623	224.76	224.21	0.531832	0.093853	1065
5.0	-1.60	0.6918	179.89	179.21	0.831291	0.146698	681
6.0	-1.30	0.7413	149.99	149.17	1.195729	0.211011	473
7.0	-0.70	0.8511	128.65	127.69	2.246782	0.396491	252
8.0	-0.40	0.9120	112.65	111.56	2.567749	0.453132	220
9.0	-0.20	0.9550	100.22	98.99	2.889305	0.509877	196
10.0	0.00	1.0000	90.29	88.92	3.211646	0.566761	176
12.0	0.00	1.0000	75.41	73.76	3.859490	0.681086	146
14.0	-0.40	0.9120	64.81	62.88	4.512913	0.796396	125
16.0	-1.00	0.7943	56.88	54.68	5.173604	0.912989	109
18.0	-2.60	0.5495	50.74	48.25	5.843327	1.031175	96
20.0	-4.30	0.3715	45.84	43.08	6.523935	1.151283	86
22.0	-6.60	0.2188	41.85	38.81	7.217400	1.273659	78
24.0	-9.60	0.1096	38.55	35.21	7.925834	1.398677	71
26.0	-13.80	0.0417	35.77	32.15	8.651511	1.526737	65
28.0	-19.50	0.0112	33.40	29.49	5.995328	1.057999	94
30.0	-26.60	0.0022	31.36	27.16	3.176541	0.560566	178
32.0	-25.00	0.0032	29.59	25.09	1.257272	0.221871	450
34.0	-22.10	0.0062	28.04	23.24	0.442561	0.078099	1280
36.0	-21.60	0.0069	26.67	21.58	0.487514	0.086032	1162
38.0	-22.40	0.0058	25.47	20.07	0.532557	0.093981	1064
40.0	-25.00	0.0032	24.39	18.68	0.578751	0.102133	979
42.0	-27.70	0.0017	23.43	17.41	0.585109	0.103255	968
44.0	-29.30	0.0012	22.57	16.24	0.406379	0.071714	1394
46.0	-28.60	0.0014	21.80	15.14	0.258109	0.045549	2195
48.0	-27.40	0.0018	21.10	14.12	0.261917	0.046221	2163
50.0	-26.50	0.0022	20.47	13.16	0.276689	0.048828	2048
52.0	-26.70	0.0021	19.90	12.25	0.291450	0.051432	1944
54.0	-27.40	0.0018	19.38	11.39	0.305013	0.053826	1857
56.0	-28.50	0.0014	18.91	10.58	0.305676	0.053943	1853
58.0	-29.30	0.0012	18.49	9.80	0.284916	0.050279	1988
60.0	-30.30	0.0009	18.10	9.05	0.242647	0.042820	2335
62.0	-29.80	0.0010	17.76	8.34	0.244417	0.043132	2318
64.0	-29.30	0.0012	17.44	7.65	0.252422	0.044545	2244
66.0	-28.20	0.0015	17.16	6.98	0.270066	0.047659	2098
68.0	-28.20	0.0015	16.91	6.33	0.287742	0.050778	1969
70.0	-28.00	0.0016	16.68	5.71	0.292346	0.051590	1938
72.0	-27.80	0.0017	16.49	5.09	0.297346	0.052473	1905
74.0	-29.50	0.0011	16.31	4.50	0.303941	0.053637	1864
76.0	-29.70	0.0011	16.16	3.91	0.307905	0.054336	1840
78.0	-32.30	0.0006	16.03	3.33	0.262493	0.046322	2158
80.0	-34.00	0.0004	15.92	2.76	0.210712	0.037184	2689
82.0	-38.80	0.0001	15.83	2.20	0.163418	0.028838	3467
84.0	-46.60	0.0000	15.76	1.65	0.091130	0.016082	6218
86.0	-44.80	0.0000	15.72	1.10	0.084982	0.014997	6668
88.0	-38.20	0.0002	15.69	0.55	0.125125	0.022081	4528
90.0	-33.80	0.0004	15.68	0.00	0.179630	0.031699	3154

Antel:LPA-80063-4CF-5 Antenna Worksheet (16 Sector)

Maximum Permissible Exposure (MPE):

566.67

ERP (Watts): 1141 Height (feet): 58 Frequency (MHz): 850 Downtilt (Degrees): 5.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-6.99	0.2000	8983.09	8983.07	0.000333	0.000059	1704255
1.0	-6.00	0.2512	898.35	898.22	0.033247	0.005867	17044
2.0	-4.00	0.3981	449.25	448.97	0.133118	0.023491	4256
3.0	-3.20	0.4786	299.57	299.16	0.299366	0.052829	1892
4.0	-2.50	0.5623	224.76	224.21	0.531832	0.093853	1065
5.0	-1.60	0.6918	179.89	179.21	0.831291	0.146698	681
6.0	-1.30	0.7413	149.99	149.17	1.195729	0.211011	473
7.0	-0.70	0.8511	128.65	127.69	2.246782	0.396491	252
8.0	-0.40	0.9120	112.65	111.56	2.567749	0.453132	220
9.0	-0.20	0.9550	100.22	98.99	2.889305	0.509877	196
10.0	0.00	1.0000	90.29	88.92	3.211646	0.566761	176
12.0	0.00	1.0000	75.41	73.76	3.859490	0.681086	146
14.0	-0.40	0.9120	64.81	62.88	4.512913	0.796396	125
16.0	-1.00	0.7943	56.88	54.68	5.173604	0.912989	109
18.0	-2.60	0.5495	50.74	48.25	5.843327	1.031175	96
20.0	-4.30	0.3715	45.84	43.08	6.523935	1.151283	86
22.0	-6.60	0.2188	41.85	38.81	7.217400	1.273659	78
24.0	-9.60	0.1096	38.55	35.21	7.925834	1.398677	71
26.0	-13.80	0.0417	35.77	32.15	8.651511	1.526737	65
28.0	-19.50	0.0112	33.40	29.49	5.995328	1.057999	94
30.0	-26.60	0.0022	31.36	27.16	3.176541	0.560566	178
32.0	-25.00	0.0032	29.59	25.09	1.257272	0.221871	450
34.0	-22.10	0.0062	28.04	23.24	0.442561	0.078099	1280
36.0	-21.60	0.0069	26.67	21.58	0.487514	0.086032	1162
38.0	-22.40	0.0058	25.47	20.07	0.532557	0.093981	1064
40.0	-25.00	0.0032	24.39	18.68	0.578751	0.102133	979
42.0	-27.70	0.0017	23.43	17.41	0.585109	0.103255	968
44.0	-29.30	0.0012	22.57	16.24	0.406379	0.071714	1394
46.0	-28.60	0.0014	21.80	15.14	0.258109	0.045549	2195
48.0	-27.40	0.0018	21.10	14.12	0.261917	0.046221	2163
50.0	-26.50	0.0022	20.47	13.16	0.276689	0.048828	2048
52.0	-26.70	0.0021	19.90	12.25	0.291450	0.051432	1944
54.0	-27.40	0.0018	19.38	11.39	0.305013	0.053826	1857
56.0	-28.50	0.0014	18.91	10.58	0.305676	0.053943	1853
58.0	-29.30	0.0012	18.49	9.80	0.284916	0.050279	1988
60.0	-30.30	0.0009	18.10	9.05	0.242647	0.042820	2335
62.0	-29.80	0.0010	17.76	8.34	0.244417	0.043132	2318
64.0	-29.30	0.0012	17.44	7.65	0.252422	0.044545	2244
66.0	-28.20	0.0015	17.16	6.98	0.270066	0.047659	2098
68.0	-28.20	0.0015	16.91	6.33	0.287742	0.050778	1969
70.0	-28.00	0.0016	16.68	5.71	0.292346	0.051590	1938
72.0	-27.80	0.0017	16.49	5.09	0.297346	0.052473	1905
74.0	-29.50	0.0011	16.31	4.50	0.303941	0.053637	1864
76.0	-29.70	0.0011	16.16	3.91	0.307905	0.054336	1840
78.0	-32.30	0.0006	16.03	3.33	0.262493	0.046322	2158
80.0	-34.00	0.0004	15.92	2.76	0.210712	0.037184	2689
82.0	-38.80	0.0001	15.83	2.20	0.163418	0.028838	3467
84.0	-46.60	0.0000	15.76	1.65	0.091130	0.016082	6218
86.0	-44.80	0.0000	15.72	1.10	0.084982	0.014997	6668
88.0	-38.20	0.0002	15.69	0.55	0.125125	0.022081	4528
90.0	-33.80	0.0004	15.68	0.00	0.179630	0.031699	3154

Antel:LPA-80063-4CF-5 Antenna Worksheet (136 Sector)

Maximum Permissible Exposure (MPE):

566.67

ERP (Watts): 1141 Height (feet): 58 Frequency (MHz): 850 Downtilt (Degrees): 5.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-6.99	0.2000	8983.09	8983.07	0.000333	0.000059	1704256
1.0	-6.00	0.2512	898.35	898.22	0.033247	0.005867	17044
2.0	-4.00	0.3981	449.25	448.97	0.133118	0.023491	4256
3.0	-3.20	0.4786	299.57	299.16	0.299366	0.052829	1892
4.0	-2.50	0.5623	224.76	224.21	0.531832	0.093853	1065
5.0	-1.60	0.6918	179.89	179.21	0.831291	0.146698	681
6.0	-1.30	0.7413	149.99	149.17	1.195729	0.211011	473
7.0	-0.70	0.8511	128.65	127.69	1.625378	0.286831	348
8.0	-0.40	0.9120	112.65	111.56	2.567749	0.453132	220
9.0	-0.20	0.9550	100.22	98.99	2.889305	0.509877	196
10.0	0.00	1.0000	90.29	88.92	3.211646	0.566761	176
12.0	0.00	1.0000	75.41	73.76	3.859490	0.681086	146
14.0	-0.40	0.9120	64.81	62.88	4.512913	0.796396	125
16.0	-1.00	0.7943	56.88	54.68	5.173604	0.912989	109
18.0	-2.60	0.5495	50.74	48.25	5.843327	1.031175	96
20.0	-4.30	0.3715	45.84	43.08	6.523935	1.151283	86
22.0	-6.60	0.2188	41.85	38.81	7.217401	1.273659	78
24.0	-9.60	0.1096	38.55	35.21	7.925834	1.398677	71
26.0	-13.80	0.0417	35.77	32.15	8.651511	1.526737	65
28.0	-19.50	0.0112	33.40	29.49	5.987693	1.056652	94
30.0	-26.60	0.0022	31.36	27.16	3.176541	0.560566	178
32.0	-25.00	0.0032	29.59	25.09	1.255672	0.221589	451
34.0	-22.10	0.0062	28.04	23.24	0.442561	0.078099	1280
36.0	-21.60	0.0069	26.67	21.58	0.487514	0.086032	1162
38.0	-22.40	0.0058	25.47	20.07	0.533236	0.094100	1062
40.0	-25.00	0.0032	24.39	18.68	0.578751	0.102133	979
42.0	-27.70	0.0017	23.43	17.41	0.584364	0.103123	969
44.0	-29.30	0.0012	22.57	16.24	0.406379	0.071714	1394
46.0	-28.60	0.0014	21.80	15.14	0.258109	0.045549	2195
48.0	-27.40	0.0018	21.10	14.12	0.261917	0.046221	2163
50.0	-26.50	0.0022	20.47	13.16	0.276689	0.048828	2048
52.0	-26.70	0.0021	19.90	12.25	0.291079	0.051367	1946
54.0	-27.40	0.0018	19.38	11.39	0.305013	0.053826	1857
56.0	-28.50	0.0014	18.91	10.58	0.305676	0.053943	1853
58.0	-29.30	0.0012	18.49	9.80	0.284191	0.050151	1993
60.0	-30.30	0.0009	18.10	9.05	0.242338	0.042766	2338
62.0	-29.80	0.0010	17.76	8.34	0.245040	0.043242	2312
64.0	-29.30	0.0012	17.44	7.65	0.251459	0.044375	2253
66.0	-28.20	0.0015	17.16	6.98	0.269379	0.047537	2103
68.0	-28.20	0.0015	16.91	6.33	0.287742	0.050778	1969
70.0	-28.00	0.0016	16.68	5.71	0.292346	0.051590	1938
72.0	-27.80	0.0017	16.49	5.09	0.297346	0.052473	1905
74.0	-29.50	0.0011	16.31	4.50	0.301242	0.053160	1881
76.0	-29.70	0.0011	16.16	3.91	0.307905	0.054336	1840
78.0	-32.30	0.0006	16.03	3.33	0.266538	0.047036	2126
80.0	-34.00	0.0004	15.92	2.76	0.208043	0.036714	2723
82.0	-38.80	0.0001	15.83	2.20	0.160528	0.028328	3530
84.0	-46.60	0.0000	15.76	1.65	0.091130	0.016082	6218
86.0	-44.80	0.0000	15.72	1.10	0.084982	0.014997	6668
88.0	-38.20	0.0002	15.69	0.55	0.122600	0.021635	4622
90.0	-33.80	0.0004	15.68	0.00	0.183565	0.032394	3087

Antel:LPA-80063-4CF-5 Antenna Worksheet (136 Sector)

Maximum Permissible Exposure (MPE):

566.67

ERP (Watts): 1141 Height (feet): 58 Frequency (MHz): 850 Downtilt (Degrees): 5.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-6.99	0.2000	8983.09	8983.07	0.000333	0.000059	1704256
1.0	-6.00	0.2512	898.35	898.22	0.033247	0.005867	17044
2.0	-4.00	0.3981	449.25	448.97	0.133118	0.023491	4256
3.0	-3.20	0.4786	299.57	299.16	0.299366	0.052829	1892
4.0	-2.50	0.5623	224.76	224.21	0.531832	0.093853	1065
5.0	-1.60	0.6918	179.89	179.21	0.831291	0.146698	681
6.0	-1.30	0.7413	149.99	149.17	1.195729	0.211011	473
7.0	-0.70	0.8511	128.65	127.69	1.625378	0.286831	348
8.0	-0.40	0.9120	112.65	111.56	2.567749	0.453132	220
9.0	-0.20	0.9550	100.22	98.99	2.889305	0.509877	196
10.0	0.00	1.0000	90.29	88.92	3.211646	0.566761	176
12.0	0.00	1.0000	75.41	73.76	3.859490	0.681086	146
14.0	-0.40	0.9120	64.81	62.88	4.512913	0.796396	125
16.0	-1.00	0.7943	56.88	54.68	5.173604	0.912989	109
18.0	-2.60	0.5495	50.74	48.25	5.843327	1.031175	96
20.0	-4.30	0.3715	45.84	43.08	6.523935	1.151283	86
22.0	-6.60	0.2188	41.85	38.81	7.217401	1.273659	78
24.0	-9.60	0.1096	38.55	35.21	7.925834	1.398677	71
26.0	-13.80	0.0417	35.77	32.15	8.651511	1.526737	65
28.0	-19.50	0.0112	33.40	29.49	5.987693	1.056652	94
30.0	-26.60	0.0022	31.36	27.16	3.176541	0.560566	178
32.0	-25.00	0.0032	29.59	25.09	1.255672	0.221589	451
34.0	-22.10	0.0062	28.04	23.24	0.442561	0.078099	1280
36.0	-21.60	0.0069	26.67	21.58	0.487514	0.086032	1162
38.0	-22.40	0.0058	25.47	20.07	0.533236	0.094100	1062
40.0	-25.00	0.0032	24.39	18.68	0.578751	0.102133	979
42.0	-27.70	0.0017	23.43	17.41	0.584364	0.103123	969
44.0	-29.30	0.0012	22.57	16.24	0.406379	0.071714	1394
46.0	-28.60	0.0014	21.80	15.14	0.258109	0.045549	2195
48.0	-27.40	0.0018	21.10	14.12	0.261917	0.046221	2163
50.0	-26.50	0.0022	20.47	13.16	0.276689	0.048828	2048
52.0	-26.70	0.0021	19.90	12.25	0.291079	0.051367	1946
54.0	-27.40	0.0018	19.38	11.39	0.305013	0.053826	1857
56.0	-28.50	0.0014	18.91	10.58	0.305676	0.053943	1853
58.0	-29.30	0.0012	18.49	9.80	0.284191	0.050151	1993
60.0	-30.30	0.0009	18.10	9.05	0.242338	0.042766	2338
62.0	-29.80	0.0010	17.76	8.34	0.245040	0.043242	2312
64.0	-29.30	0.0012	17.44	7.65	0.251459	0.044375	2253
66.0	-28.20	0.0015	17.16	6.98	0.269379	0.047537	2103
68.0	-28.20	0.0015	16.91	6.33	0.287742	0.050778	1969
70.0	-28.00	0.0016	16.68	5.71	0.292346	0.051590	1938
72.0	-27.80	0.0017	16.49	5.09	0.297346	0.052473	1905
74.0	-29.50	0.0011	16.31	4.50	0.301242	0.053160	1881
76.0	-29.70	0.0011	16.16	3.91	0.307905	0.054336	1840
78.0	-32.30	0.0006	16.03	3.33	0.266538	0.047036	2126
80.0	-34.00	0.0004	15.92	2.76	0.208043	0.036714	2723
82.0	-38.80	0.0001	15.83	2.20	0.160528	0.028328	3530
84.0	-46.60	0.0000	15.76	1.65	0.091130	0.016082	6218
86.0	-44.80	0.0000	15.72	1.10	0.084982	0.014997	6668
88.0	-38.20	0.0002	15.69	0.55	0.122600	0.021635	4622
90.0	-33.80	0.0004	15.68	0.00	0.183565	0.032394	3087

Antel:LPA-80063-4CF-5 Antenna Worksheet (256 Sector)

Maximum Permissible Exposure (MPE):

566.67

ERP (Watts): 1141 Height (feet): 58 Frequency (MHz): 850 Downtilt (Degrees): 5.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-6.99	0.2000	8983.09	8983.07	0.000333	0.000059	1704255
1.0	-6.00	0.2512	898.35	898.22	0.033247	0.005867	17044
2.0	-4.00	0.3981	449.25	448.97	0.133118	0.023491	4256
3.0	-3.20	0.4786	299.57	299.16	0.299366	0.052829	1892
4.0	-2.50	0.5623	224.76	224.21	0.531832	0.093853	1065
5.0	-1.60	0.6918	179.89	179.21	0.830233	0.146512	682
6.0	-1.30	0.7413	149.99	149.17	1.195729	0.211011	473
7.0	-0.70	0.8511	128.65	127.69	1.625378	0.286831	348
8.0	-0.40	0.9120	112.65	111.56	2.567749	0.453132	220
9.0	-0.20	0.9550	100.22	98.99	2.889305	0.509877	196
10.0	0.00	1.0000	90.29	88.92	3.211646	0.566761	176
12.0	0.00	1.0000	75.41	73.76	3.859490	0.681086	146
14.0	-0.40	0.9120	64.81	62.88	4.512913	0.796396	125
16.0	-1.00	0.7943	56.88	54.68	5.173604	0.912989	109
18.0	-2.60	0.5495	50.74	48.25	5.843327	1.031175	96
20.0	-4.30	0.3715	45.84	43.08	6.523935	1.151283	86
22.0	-6.60	0.2188	41.85	38.81	7.217400	1.273659	78
24.0	-9.60	0.1096	38.55	35.21	7.925834	1.398677	71
26.0	-13.80	0.0417	35.77	32.15	8.651511	1.526737	65
28.0	-19.50	0.0112	33.40	29.49	5.995327	1.057999	94
30.0	-26.60	0.0022	31.36	27.16	3.176541	0.560566	178
32.0	-25.00	0.0032	29.59	25.09	1.257273	0.221872	450
34.0	-22.10	0.0062	28.04	23.24	0.443126	0.078199	1278
36.0	-21.60	0.0069	26.67	21.58	0.486893	0.085922	1163
38.0	-22.40	0.0058	25.47	20.07	0.533236	0.094100	1062
40.0	-25.00	0.0032	24.39	18.68	0.578751	0.102133	979
42.0	-27.70	0.0017	23.43	17.41	0.584364	0.103123	969
44.0	-29.30	0.0012	22.57	16.24	0.406897	0.071805	1392
46.0	-28.60	0.0014	21.80	15.14	0.257781	0.045491	2198
48.0	-27.40	0.0018	21.10	14.12	0.261917	0.046221	2163
50.0	-26.50	0.0022	20.47	13.16	0.277042	0.048890	2045
52.0	-26.70	0.0021	19.90	12.25	0.291450	0.051432	1944
54.0	-27.40	0.0018	19.38	11.39	0.305791	0.053963	1853
56.0	-28.50	0.0014	18.91	10.58	0.305676	0.053943	1853
58.0	-29.30	0.0012	18.49	9.80	0.284191	0.050151	1993
60.0	-30.30	0.0009	18.10	9.05	0.242338	0.042766	2338
62.0	-29.80	0.0010	17.76	8.34	0.244417	0.043132	2318
64.0	-29.30	0.0012	17.44	7.65	0.252422	0.044545	2244
66.0	-28.20	0.0015	17.16	6.98	0.269379	0.047537	2103
68.0	-28.20	0.0015	16.91	6.33	0.287742	0.050778	1969
70.0	-28.00	0.0016	16.68	5.71	0.292346	0.051590	1938
72.0	-27.80	0.0017	16.49	5.09	0.300010	0.052943	1888
74.0	-29.50	0.0011	16.31	4.50	0.301242	0.053160	1881
76.0	-29.70	0.0011	16.16	3.91	0.304394	0.053717	1861
78.0	-32.30	0.0006	16.03	3.33	0.266538	0.047036	2126
80.0	-34.00	0.0004	15.92	2.76	0.208043	0.036714	2723
82.0	-38.80	0.0001	15.83	2.20	0.163418	0.028838	3467
84.0	-46.60	0.0000	15.76	1.65	0.089177	0.015737	6354
86.0	-44.80	0.0000	15.72	1.10	0.084982	0.014997	6668
88.0	-38.20	0.0002	15.69	0.55	0.122600	0.021635	4622
90.0	-33.80	0.0004	15.68	0.00	0.179632	0.031700	3154

Antel:LPA-80063-4CF-5 Antenna Worksheet (256 Sector)

Maximum Permissible Exposure (MPE):

566.67

ERP (Watts): 1141

Height (feet): 58

Frequency (MHz): 850

Downtilt (Degrees): 5.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-6.99	0.2000	8983.09	8983.07	0.000333	0.000059	1704255
1.0	-6.00	0.2512	898.35	898.22	0.033247	0.005867	17044
2.0	-4.00	0.3981	449.25	448.97	0.133118	0.023491	4256
3.0	-3.20	0.4786	299.57	299.16	0.299366	0.052829	1892
4.0	-2.50	0.5623	224.76	224.21	0.531832	0.093853	1065
5.0	-1.60	0.6918	179.89	179.21	0.830233	0.146512	682
6.0	-1.30	0.7413	149.99	149.17	1.195729	0.211011	473
7.0	-0.70	0.8511	128.65	127.69	1.625378	0.286831	348
8.0	-0.40	0.9120	112.65	111.56	2.567749	0.453132	220
9.0	-0.20	0.9550	100.22	98.99	2.889305	0.509877	196
10.0	0.00	1.0000	90.29	88.92	3.211646	0.566761	176
12.0	0.00	1.0000	75.41	73.76	3.859490	0.681086	146
14.0	-0.40	0.9120	64.81	62.88	4.512913	0.796396	125
16.0	-1.00	0.7943	56.88	54.68	5.173604	0.912989	109
18.0	-2.60	0.5495	50.74	48.25	5.843327	1.031175	96
20.0	-4.30	0.3715	45.84	43.08	6.523935	1.151283	86
22.0	-6.60	0.2188	41.85	38.81	7.217400	1.273659	78
24.0	-9.60	0.1096	38.55	35.21	7.925834	1.398677	71
26.0	-13.80	0.0417	35.77	32.15	8.651511	1.526737	65
28.0	-19.50	0.0112	33.40	29.49	5.995327	1.057999	94
30.0	-26.60	0.0022	31.36	27.16	3.176541	0.560566	178
32.0	-25.00	0.0032	29.59	25.09	1.257273	0.221872	450
34.0	-22.10	0.0062	28.04	23.24	0.443126	0.078199	1278
36.0	-21.60	0.0069	26.67	21.58	0.486893	0.085922	1163
38.0	-22.40	0.0058	25.47	20.07	0.533236	0.094100	1062
40.0	-25.00	0.0032	24.39	18.68	0.578751	0.102133	979
42.0	-27.70	0.0017	23.43	17.41	0.584364	0.103123	969
44.0	-29.30	0.0012	22.57	16.24	0.406897	0.071805	1392
46.0	-28.60	0.0014	21.80	15.14	0.257781	0.045491	2198
48.0	-27.40	0.0018	21.10	14.12	0.261917	0.046221	2163
50.0	-26.50	0.0022	20.47	13.16	0.277042	0.048890	2045
52.0	-26.70	0.0021	19.90	12.25	0.291450	0.051432	1944
54.0	-27.40	0.0018	19.38	11.39	0.305791	0.053963	1853
56.0	-28.50	0.0014	18.91	10.58	0.305676	0.053943	1853
58.0	-29.30	0.0012	18.49	9.80	0.284191	0.050151	1993
60.0	-30.30	0.0009	18.10	9.05	0.242338	0.042766	2338
62.0	-29.80	0.0010	17.76	8.34	0.244417	0.043132	2318
64.0	-29.30	0.0012	17.44	7.65	0.252422	0.044545	2244
66.0	-28.20	0.0015	17.16	6.98	0.269379	0.047537	2103
68.0	-28.20	0.0015	16.91	6.33	0.287742	0.050778	1969
70.0	-28.00	0.0016	16.68	5.71	0.292346	0.051590	1938
72.0	-27.80	0.0017	16.49	5.09	0.300010	0.052943	1888
74.0	-29.50	0.0011	16.31	4.50	0.301242	0.053160	1881
76.0	-29.70	0.0011	16.16	3.91	0.304394	0.053717	1861
78.0	-32.30	0.0006	16.03	3.33	0.266538	0.047036	2126
80.0	-34.00	0.0004	15.92	2.76	0.208043	0.036714	2723
82.0	-38.80	0.0001	15.83	2.20	0.163418	0.028838	3467
84.0	-46.60	0.0000	15.76	1.65	0.089177	0.015737	6354
86.0	-44.80	0.0000	15.72	1.10	0.084982	0.014997	6668
88.0	-38.20	0.0002	15.69	0.55	0.122600	0.021635	4622
90.0	-33.80	0.0004	15.68	0.00	0.179632	0.031700	3154

Site Name: **78/EI Camino Real**

Site ID	LTE	CDMA	PCS
Switch #		0508	2
Equipment Type		48	50
		Myro	1900 Myro

RF Engineer:
Telephone:
EMR Compliant Date:
Work Req#:

Revision	Requestor	Priority	Req. Date	Comp. Date
NEW REQUEST				
LAST REQUEST				

LTE	Antenna Type	Ant. Gain (dB)	Horizon. BW (°)	Tilt (Mech/Elec)	AZ (°TN)	Rad. Ctr (ft)	PH
Alpha	BXA-700634CF 4	13	63	0(4)	136	64	
Beta	BXA-700634CF 4	13	63	0(4)	266	64	
Gamma	BXA-700634CF 4	13	63	0(4)	16	64	

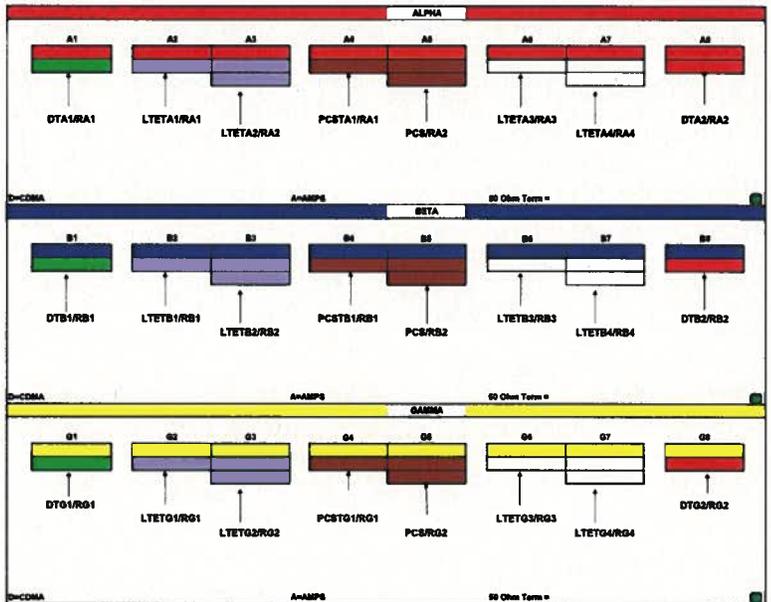
CDMA	Antenna Type	Ant. Gain (dB)	Horizon. BW (°)	Tilt (Mech/Elec)	AZ (°TN)	Rad. Ctr (ft)	PH
Alpha	LPA-800634CF 5	13	63	5(5)	136	64	340
Beta	LPA-800634CF 5	13	63	5(5)	266	64	344
Gamma	LPA-800634CF 5	13	63	5(5)	0	64	348

PCS	Antenna Type	Ant. Gain (dB)	Horizon. BW (°)	Tilt (Mech/Elec)	AZ (°TN)	Rad. Ctr (ft)	PH
Alpha	BXA-171063/BCF 2	16	63	3(2)	136	64	
Beta	BXA-171063/BCF 2	16	63	3(2)	266	64	
Gamma	BXA-171063/BCF 2	16	63	3(2)	0	64	

	Alpha	Beta	Gamma
Cable Length	180	180	180
Cable Type			
Cables loss per 100' (dB)	1.23	1.23	1.23
Total Cable Loss (dB)	2.214	2.214	2.214
Attenuators			
Splices (2-wire, 3-wire)			
CDMA Carriers	96		
AMBS (ft)	3		
Lat/Long	200		
Latitude	33°11'16"		
Longitude	-117°19'37"		
Monopole/Slidg.			
Address	2182 El Camino Real, Oceanside, CA 92064		

Color Code

Alpha	Green
Beta	Blue
Gamma	Yellow
1st/2nd/3rd	Green
4th/5th/6th	Blue
SPARE	Red
LTE	White
PCS	Black



CHANGES Implement antenna configuration as shown on the table to the left and diagram on top. This is due to a CUP renewal requirement.

Alpha:

Beta:

Gamma:

NOTES:

8 Field Technician Certification

I, Mohamed Frej, state:

That I am an employee of Sitesafe, Inc., in Arlington, Virginia, which provides RF compliance services to clients in the wireless communications industry; and

That I have successfully completed RF Safety Awareness training, am aware of the hazards and, therefore, can be exposed to RF fields classified for "Occupational" exposure;

That I am familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio-frequency Radiation; and

That I have been trained in the proper use of measurement equipment, and have successfully completed Sitesafe training in policy, procedure and proper site measurement and modeling; and

That I performed survey measurements of the RF environment at the site identified as 300628 - Naughton on July 11, 2011 at 7:05 AM in order to determine where there might be electromagnetic energy that is in excess of both the Controlled Environment and Uncontrolled Environment levels; and

That the survey measurements were performed with measurement equipment, model Narda 8718B-10 field intensity meter (serial number 01425) and model A8722D field intensity probe, (serial number 02012) calibrated on 2/14/2011; and

That I have prepared this Site Compliance Report and believe it to be true and accurate to the best of my knowledge and based on data gathered.

By: Mohamed Frej

9 Engineer Certification

The engineering indicated on the cover of this report hereby certifies and affirm that:

That I am registered as a Professional Engineer in the jurisdiction indicated; and

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

That I am an employee of Sitesafe, Inc. in Arlington, 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 the technical information serving as the basis for this report was supplied by Verizon Wireless (See attached Site Summary and Carrier documents), and that Verizon Wireless's installations involve communications equipment, antennas and associated technical equipment at a location referred to as the "300628 - Naughton" ("the site"); and

That Verizon Wireless proposes to operate at the site with transmit antennas listed in the carrier summary and with a maximum effective radiated power as specified by Verizon Wireless and shown on the worksheet, and that worst-case 100% duty cycle have been assumed; and

That in addition to the emitters specified in the worksheet, there is an additional collocated point-to-point microwave facility on this structure and, this antenna used is highly directional oriented at angles at or just below the horizontal and, that the energy present at ground level is typically so low as to be considered insignificant and has not been included in this analysis; and

That this analysis has been performed with the assumption that the ground 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); 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 rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," defined as situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and (2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); 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 licensees of Verizon Wireless's operating frequency as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed Verizon Wireless operation is no more than 4.14 % of the maximum in any accessible area on the ground and

That it is understood per FCC Guidelines and OET Bulletin 65 Appendix A, that regardless of the existent radio-frequency environment, only those licenses whose contributions exceed five percent of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 4.137% of the maximum in any accessible area up to two meters above the ground per OET Bulletin 65; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET Bulletin 65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier and frequency range indicated; 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 energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307 and that Verizon Wireless' proposed operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals, and approved contractor personnel trained in radio-frequency safety; and that the instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower, or in the immediate proximity of the antennas.

November 30, 2011

Appendix A – Statement of Limiting Conditions

Sitesafe field personnel visited the site and collected data with regard to the RF environment. Sitesafe will not be responsible for matters of a legal nature that affect the site or property. The property was visited under the premise that it is under responsible ownership and management and our client has the legal right to conduct business at this facility.

Due to the complexity of some wireless sites, Sitesafe performed this visit and created this report utilizing best industry practices and due diligence. Sitesafe cannot be held accountable or responsible for anomalies or discrepancies due to actual site conditions (i.e., mislabeling of antennas or equipment, inaccessible cable runs, inaccessible antennas or equipment, etc.) or information or data supplied by Verizon Wireless, the site manager, or their affiliates, subcontractors or assigns.

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, observed during the survey of the subject property or that Sitesafe became aware of during the normal research involved in performing this survey. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data provided by a second party and physical data collected by Sitesafe, the physical data will be used.

Appendix B – Assumptions and Definitions

General Model Assumptions

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

The site has been modeled with these assumptions to show the maximum RF energy density. Sitesafe believes this to be a *worst-case* analysis, based on best available data. Areas modeled to predict emissions greater than 100% of the applicable MPE level may not actually occur, but are shown as a *worst-case* prediction that could be realized real time. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Thus, at any time, if power density measurements were made, we believe the real-time measurements would indicate levels below those depicted in the RF emission diagram(s) in this report. By modeling in this way, Sitesafe has conservatively shown exclusion areas – areas that should not be entered without the use of a personal monitor, carriers reducing power, or performing real-time measurements to indicate real-time exposure levels.

Use of Generic Antennas

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

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.

Gain (of an antenna) – The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antennas as compared to an omni directional antenna.

General Population/Uncontrolled Environment – Defined by the FCC, as an area where RFR exposure may occur to persons who are **unaware** of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of “Generic” as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are **aware** of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of Radio Frequency radiation on Humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Radiation – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy an average sized human body will absorb while present in an electromagnetic field of energy.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix C – Rules & Regulations

Explanation of Applicable Rules and Regulations

The FCC has set forth guidelines in OET Bulletin 65 for human exposure to radio frequency electromagnetic fields. Specific regulations regarding this topic are listed in Part 1, Subpart I, of Title 47 in the Code of Federal Regulations. Currently, there are two different levels of MPE - General Public MPE and Occupational MPE. An individual classified as Occupational can be defined as an individual who has received appropriate RF training and meets the conditions outlined below. General Public is defined as anyone who does not meet the conditions of being Occupational. FCC and OSHA Rules and Regulations define compliance in terms of total exposure to total RF energy, regardless of location of or proximity to the sources of energy.

It is the responsibility of all licensees to ensure these guidelines are maintained at all times. It is the ongoing responsibility of all licensees composing the site to maintain ongoing compliance with FCC rules and regulations. Individual licensees that contribute less than 5% MPE to any total area out of compliance are not responsible for corrective actions.

OSHA has adopted and enforces the FCC's exposure guidelines. A building owner or site manager can use this report as part of an overall RF Health and Safety Policy. It is important for building owners/site managers to identify areas in excess of the General Population MPE and ensure that only persons qualified as Occupational are granted access to those areas.

Occupational Environment Explained

The FCC definition of Occupational exposure limits apply to persons who:

- are exposed to RF energy as a consequence of their employment;
- have been made aware of the possibility of exposure; and
- can exercise control over their exposure.

OSHA guidelines go further to state that persons must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.

In order to consider this site an Occupational Environment, the site must be controlled to prevent access by any individuals classified as the General Public. Compliance is also maintained when any non-occupational individuals (the General Public) are prevented from accessing areas indicated as Red or Yellow in the attached RF Emissions diagram. In addition, a person must be aware of the RF environment into which they are entering. This can be accomplished by an RF Safety Awareness class, and by appropriate written documentation such as this Site Compliance Report.

All Verizon Wireless employees who require access to this site must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.

Appendix D – General Safety Recommendations

The following are *general recommendations* appropriate for any site with accessible areas in excess of 100% General Public MPE. These recommendations are not specific to this site. These are safety recommendations appropriate for typical site management, building management, and other tenant operations.

1. All individuals needing access to the main site (or the area indicated to be in excess of General Public MPE) should wear a personal RF Exposure monitor, successfully complete proper RF Safety Awareness training, and have and be trained in the use of appropriate personal protective equipment.
2. All individuals needing access to the main site should be instructed to read and obey all posted placards and signs.
3. The site should be routinely inspected and this or similar report updated with the addition of any antennas or upon any changes to the RF environment including:
 - adding new antennas that may have been located on the site
 - removing of any existing antennas
 - changes in the radiating power or number of RF emitters
4. Post the appropriate **NOTICE**, **CAUTION**, or **WARNING** sign at the main site access point(s) and other locations as required. Note: Please refer to RF Exposure Diagrams in Section 6, to inform everyone who has access to this site that beyond posted signs there may be levels in excess of the limits prescribed by the FCC. The signs below are examples of signs meeting FCC guidelines.



5. Ensure that the site door remains locked (or appropriately controlled) to deny access to the general public if deemed as policy by the building/site owner.
6. For a General Public environment the four color levels identified in this analysis can be interpreted in the following manner:
 - Areas indicated as Gray are at 5% of the General Public MPE limits or below. This level is safe for a worker to be in at any time.
 - Green represents areas predicted to be between 5% and 20% of the General Public MPE limits. This level is safe for a worker to be in at any time.

- Yellow represents areas predicted to be between 20% and 100% of the General Public MPE limits. This level is safe for a worker to be in at any time.
- Red areas indicated predicted levels greater than 100% of the General Public MPE limits. This level is not safe for the General Public to be in.

7. For an Occupational environment the four color levels identified in this analysis can be interpreted in the following manner:

- Areas indicated as Gray are at 5% of the Occupational MPE limits or below. This level is safe for a worker to be in at any time.
- Green represents areas predicted to be between 5% and 20% of the Occupational MPE limits. This level is safe for a worker to be in at any time.
- Yellow represents areas predicted to be between 20% and 100% of the Occupational MPE limits. Only individuals that have been properly trained in RF Health and Safety should be allowed to work in this area. This is not an area that is suitable for the General Public to be in.
- Red areas indicated predicted levels greater than 100% of the Occupational MPE limits. This level is not safe for the Occupational worker to be in for prolonged periods of time. Special procedures must be adhered to such as lock out tag out procedures to minimize the workers exposure to EME.

8. Use of a Personal Protective Monitor: When working around antennas, Sitesafe strongly recommends the use of a Personal Protective Monitor (PPM). Wearing a PPM will properly forewarn the individual prior to entering an RF exposure area.

Keep a copy of this report available for all persons who must access the site. They should read this report and be aware of the potential hazards with regards to RF and MPE limits.

Additional Information

Additional RF information is available by visiting both www.Sitesafe.com and www.fcc.gov/oet/rfsafety. OSHA has additional information available at: <http://www.osha-slc.gov/SLTC/radiofrequencyradiation>.

Appendix E – Methodology Reference

**RF EMISSIONS
COMPLIANCE REPORT**

Methodology Reference

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Introduction

Sitesafe's RF Compliance Reports address exposure to radio frequency electromagnetic fields, in accordance with the Federal Communications Commission (FCC) Rules and Regulations for all individuals, classified in two groups, "Occupational" and "General Public." All computer modeling and analytical methods have been performed in accordance with the FCC's Office of Engineering and Technology Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997.

This document provides an overview of the calculations and methodology used by Sitesafe to generate non-ionizing energy radiation (NIER) reports. For specific information on the regulations associated with RF exposure, the reader is directed to FCC Rules found in Title 47 of the Code of Federal Regulations, Rule Section 1.1310, and the OET 65 document referenced above.

Radio Frequency Exposure Limits

The FCC has established maximum permissible exposure (MPE) limits for (1) occupational workers that have control over their RF exposure, and (2) the general public that does not have control over its exposure. Sitesafe's NIER report uses the general population or uncontrolled limits when evaluating RF exposure in the immediate vicinity of the base of a communications structure. Table 1 below is extracted from OET 65 and provides the MPE by frequency band for both the occupational and general population environments. Figure 1 provides this information graphically.

The general population/uncontrolled exposure limits are more stringent (more conservative) than occupational/controlled exposure limits. As detailed below, the exposure limits are calculated or measured at the "point of interest" where humans would be situated, in this case, two meters above ground level.

Table 1: LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

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

(B) Limits for General Population/Uncontrolled Exposure

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

f = frequency in MHz

*Plane-wave equivalent power density

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

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

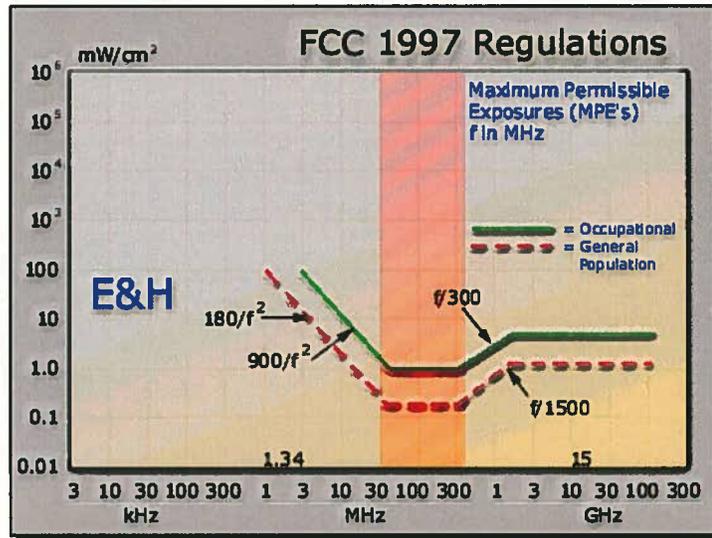


Figure 1: FCC MPE Limits

Point of Interest

OET 65 addresses RF exposure and safety to humans, and it is therefore imperative that predictive methods account for the attributes of the human body. The FCC defines the “point of interest” for RF exposure as two meters above ground level, as two meters is the approximate height of the average human. See Figure 2 below, extracted from OET 65. The Sitesafe NIER reports calculate exposure at two meters above ground in accordance with OET 65.

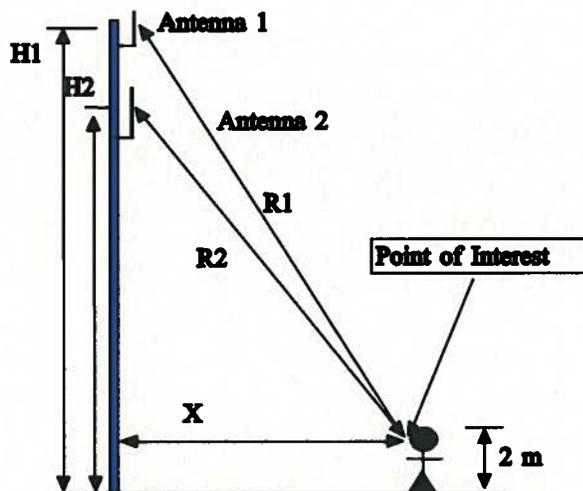


Figure 2: The FCC's Point of Interest

The R is calculated using the antenna height above ground, and the depression angle (θ) to the point of interest below the antenna using the formula:

$$R = (\text{Antenna Height above Ground} - 2 \text{ meters}) / \sin (\theta)$$

The X value is not used in the calculation of power density and is included in the output to provide a reference to reader to determine the horizontal distance from the base of the structure. X is calculated by:

$$X = (\text{Antenna Height above Ground} - 2 \text{ meters}) * \tan (\theta)$$

Information Supplied by the Client

Sitesafe produces the NIER report by taking client information and using this information to provide calculations that determine the percentage of the MPE for each antenna. We then combine the results to create a site summary indicating the composite MPE for the antenna site to establish compliance with FCC guidelines. The information supplied by the client includes the height to the center of the antenna above ground level, the antenna make and model number, the bearing of the antenna and the power transmitted by the antenna.

Often, the client must provide information for one or more other carriers' antennas on the structure. If this information is not complete, Sitesafe will make reasonably conservative estimates based on the identity of the carrier(s), the type of antennas installed, data from other sources such as the FCC, and Sitesafe experience. If Sitesafe cannot make a reasonable estimate of the carriers' antenna system, these antennas will be excluded from the analysis. The engineering statement in that case will list as much information about the excluded antenna(s) as possible, including approximate height and bearing, antenna make and model (if known) and other characteristics, such as apparent frequency band, etc., and detail on why the antenna was excluded. Receive-only antennas may be included in the report, with a transmitted power of zero.

Antenna Data Format

The antenna manufacturer and model number for each antenna at the site is provided by the client. Sitesafe requires the antenna "pattern" data in order to calculate the power density at two meters above ground. The critical data is the relative gain in the horizontal and vertical plane. Manufacturers provide this data in a variety of electronic formats so that the values may be imported into software packages. One such format was developed by MSI for use with their PLANET propagation and system design software¹. The format of the text file provides for several lines of descriptive text, followed by the relative gain for every degree in the horizontal and vertical planes.

¹ MSI was acquired by Marconi, who continues to support and upgrade the product. Marconi no longer offers a detailed explanation of the format on their web site. A description found on another software provider's web site is included as an appendix.

Sitesafe's database of antenna data also includes generic antenna patterns for various quarter wave omni-directional antennas, panel antennas and microwave dishes. The report output will list these antennas and provide the relative gain in the vertical plane for all calculations.

Formulas for Calculating Power Density

OET 65 provides the formulas that are used to calculate power density at two meters above ground, the point of interest, allowing for comparison with the MPE to determine the percentage of MPE and thereby the compliance status of the antenna site. The bases for these calculations are the equations provided below:

$$S = \frac{PG}{4\pi R^2} \quad \text{(FCC Equation 3)}$$

where: S = power density (in appropriate units, e.g., mW/cm²)
P = power input to the antenna (in appropriate units, e.g., mW)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

$$S = \frac{EIRP}{4\pi R^2} \quad \text{(FCC Equation 4)}$$

where: EIRP = equivalent (or effective) isotropically radiated power

Sitesafe's calculations use the EPA ground reflection model, listed as reference number 11 in OET 65. The EPA developed this methodology to depict ground reflections and power density levels from high power broadcast facilities, taking into account ground reflections. This results in the power density equation 7 in the OET document:

$$S = \frac{2.56 EIRP}{4\pi R^2} \quad \text{(FCC Equation 7)}$$

If ERP is used in Equation 7, the relation becomes:

$$S = \frac{0.64 EIRP}{\pi R^2} = \frac{(0.64)(1.64) ERP}{\pi R^2} = \frac{1.05 ERP}{\pi R^2} \quad \text{(FCC Equation 8)}$$

OET 65 reminds us that it is sometimes convenient to use units of microwatts per centimeter squared ($\mu\text{W}/\text{cm}^2$) instead of mW/cm^2 in describing power density. The following simpler form of Equation (8) can be derived if power density, S , is to be expressed in units of W/cm^2 :

$$S = \frac{33.4 \text{ ERP}}{R^2} \quad \text{(FCC Equation 9)}$$

Our on-axis calculations also consider the vertical radiation pattern of the antenna and the relative gain in reference to the pattern maximum at angles below the horizon. OET 65 addresses this issue in equation 10 with the power converted to Watts ERP and distance to Meters:

$$S = \frac{33.4 (F^2) \text{ ERP}}{R^2} \quad \text{(FCC Equation 10)}$$

where: S = power density in $\mu\text{W}/\text{cm}^2$
 F = relative field factor (relative numeric gain)
 ERP = power in watts
 R = distance in meters

Sitesafe clients provide the transmitted power levels in watts ERP, so the conversion to EIRP inherent in FCC Equation 10 is appropriate. If watts EIRP are provided, as is common for microwave dishes, the EIRP is converted to ERP prior to the calculations.

FCC Equation 10 is the basis for the calculations performed in Sitesafe's proprietary modeling package. Sitesafe's model, however, generates a more realistic value that still is conservative for worst-case analysis. This process can be replicated easily by individuals interested in verifying Sitesafe calculations, the results of which constitute the inputs to the second process.

The second process consists of a geometrical analysis to characterize composite power density of multiple antennas at each site. The geometrical analysis combines the three-dimensional shape of the power density fields generated by each antenna to calculate a composite power density at a defined point of interest for the full population of antennas at the site. The calculations used to implement this process are iterative and therefore lengthy. Replication of this second process by interested parties, therefore, would require a computer running Sitesafe's proprietary software or equivalent algorithms. All calculations implemented by Sitesafe's software are fully compliant with FCC procedures, which are not overly prescriptive regarding the procedure for combining individual antenna contributions to composite power density.

The simplest procedure is to add all contributions, assuming that all antennas are operating at full power, and that all exert their calculated impact at the same defined point of interest. Sitesafe's model, however, generates a more realistic value that still is conservative for worst-case analysis.

Report Format Summary

In Sitesafe's NIER report there are four major sections: an Engineering Statement, a Site Summary, several Carrier Summaries and several Antenna Summaries. The data in the Carrier Summaries is derived from the Antenna Summaries as the Site Summary is derived from the Carrier Summaries. All the input data is contained in the Antenna Summaries.

Engineering Statement

The engineering statement provides the general assumptions used in the calculations outside those already incorporated into OET 65. These include the assumption that the earth surrounding the tower is flat, that transmitters are operated at 100% duty cycle, and that general population/uncontrolled MPE levels are used. The engineering statement also provides the percentage of general population MPE and the stamp of the professional engineer reviewing the report.

Site Summary

This section of the NIER reports offers the absolute value of the FCC MPE for the site, and the percentage of the FCC MPE consumed by the full population of antennas at the site. The Site Summary will list each carrier contributing RF impacts to the site. The absolute RF power density contribution of each carrier, by frequency or frequency band, is provided in the carrier summaries that follow. This presentation allows the reader to quickly assess the impact of each carrier under consideration and the reader is referred to the Carrier Summary and Antenna Summary for more detailed information, including the predicted power densities and maximum allowable power densities for each carrier. The header to the Carrier Summary and Antenna Summary pages provides the client name and the site identification information².

Specific items in this section are:

Carrier: Transmit antenna licensee.

Area Percentage of MPE: This analysis is defined in more detail below and considers the contributions of RF radiation from all transmit antennas at the site, in all directions (360 degrees) surrounding the site to a location two meters above ground level. The value represented is the worst-case (maximum) MPE predicted. If the carrier operates facilities in more than one frequency band, more than one listing will appear for that carrier in this section.

² While the adding of percentages, as provided here, may not be appropriate in other areas of mathematics, this data is presented in accordance with those detailed in OET 65. See the section of OET 65 titled *Multiple-Transmitter Sites and Complex Environments*.

Carrier Summaries

This analysis considers the contributions of RF radiation from specific carrier's transmit antennas at the site, in all directions (360 degrees) surrounding the site, to locations two meters above ground level. Data provided in this section is frequency band specific; therefore, if the carrier is transmitting in multiple frequency bands—such as cellular and PCS—multiple carrier summaries will be provided. Data included here are:

Frequency (MHz): Transmit frequency used in the analysis. This may be the specific frequency provided by the carrier or the frequency in the band used by the carrier that corresponds to the highest MPE level; in most cases, this is the lowest frequency in the band. This is an input parameter.

Maximum Permissible Exposure (MPE): This is the MPE for the frequency in question, which users can verify based on Table 1.

Maximum Power Density at Ground Level ($\mu\text{W}/\text{cm}^2$): This value is the maximum cumulative power density at two meters above ground caused by all antennas used by the carrier at the site in the frequency band under consideration, regardless of the transmit azimuth. This value assumes that stray downward signals originating from multiple antennas that may be pointing in different directions may overlap at two meters above ground level. This value, therefore, is greater than either the on-axis or area energy levels reported below because the analysis considers all antennas and areas around the site, not just along the azimuth of transmission for each antenna sector.

Highest Percentage of Maximum Permissible Exposure: The percentage is calculated by dividing the Maximum Power Density at Ground Level by the Maximum Permissible Exposure for the band in question.

Antenna Make: Antenna manufacturer.

Antenna Model: Antenna Model number.

Height (feet): Antenna centerline or height above ground level to the center of the antenna.

Orientation (degrees true North): Azimuth to which the transmit antenna is aligned.

ERP (Watts): The Effective Radiated Power (ERP) for each antenna is provided by the client. As discussed above, the ERP provided by the client is converted to EIRP prior to the calculation by using FCC Equation 10. $\text{ERP} = 1.64 \text{ EIRP}$, per OET 65, page 20.

Max Power Density ($\mu\text{W}/\text{cm}^2$): These values are the worst case maximum predicted power density for the carrier identified for the antenna in question. This represents the power per unit area normal to the direction of propagation, expressed in units of microwatts per square

centimeter ($\mu\text{W}/\text{cm}^2$). There are two cases provided, on-axis and area, defined below. The maximum power density and the percent of MPE are also provided.

On-Axis: Calculations performed along the azimuth of the transmit antenna for only the specific antenna in question. The relative antenna gain and vertical antenna pattern are used in the calculations in a manner described in the FCC's recommendations. The horizontal pattern of the antenna is not used in the calculation.

Area: These values take into account both the horizontal and vertical antenna pattern. For the purposes of this analysis, the vertical and horizontal antenna patterns provided by the manufacturer are combined in order to calculate energy levels in both the horizontal and vertical planes. Creating a three-dimensional representation of the antenna pattern can potentially place minor lobes and nulls such that some areas at ground level directly below the site are predicted at higher levels than the on-axis value discussed above. The values reported can be considered worst case for each antenna and are developed with conservative renderings of the antenna pattern.

Individual Antenna Summaries

Maximum Permissible Exposure (MPE): This is the MPE for the antenna, at the frequency in question, as provided in Table 1.

ERP (Watts): The Effective Radiated Power (ERP) for each antenna is provided by the client. As discussed above, the ERP provided by the client is converted to EIRP prior to the calculation by using FCC Equation 10. $\text{ERP} = 1.64 \text{ EIRP}$, per OET 65, page 20. (Input)

Height (feet): Antenna centerline or height above ground level to the center of the antenna. (Input)

Frequency (MHz): The transmit frequency used in all calculations. (Input)

Downtilt (degrees): Mechanical downtilt factor employed within the transmit antenna, if any. (Input)

Depression Angle (degrees): the angle from the transmit antenna to two feet above the ground along the axis of transmission. (Input)

Relative dB, Relative Gain: the relative gain (loss), expressed in relative field strength squared (to simplify calculation)³ and in decibels (dB) from the maximum gain of the antenna due to the depression angle, taken from the antenna’s vertical pattern. The value is provided from the manufacturer in dB and converted to the square of the relative field strength using the formula:

$$(\text{Relative Field Strength})^2 = 10^{(\text{dB Value}/10)}$$

Slant Distance (meters): This is the “*R*” in FCC Equation 10 and is the distance from the transmit antenna to the intersection of a point two meters above the ground. This distance assumes a flat terrain condition. *R* is calculated using the antenna height above ground, and the depression angle (θ) to the point of interest below the antenna using the formula:

$$R = (\text{Antenna Height above Ground} - 2 \text{ meters}) / \sin(\theta)$$

Distance from Structure (meters): The distance along the ground from the base of the transmit structure to the intersection point two meters above (assumed flat) ground level caused by the Depression Angle and the Height of the antenna. This value is not used in the calculations; it is merely provided as reference to determine the exact location under the tower of the point of interest.

Power Density ($\mu\text{W}/\text{cm}^2$): The predicted power density for the carrier identified, at the depression angle listed, expressed in microwatts per centimeter squared. Calculation methodology is provided below.

Percent of MPE: The power density compared to the MPE standard for the frequency in question.

Times above or below MPE: The percentage of MPE listed above converted to a relative value. For example, 0.1% of the MPE is the equivalent to 10 times below the MPE value.

Calculation of Power Density

The power density results presented in the NIR report are based on formulas provided in the FCC guidance document, OET 65. As discussed above, FCC Equation 10 is the basis for the analysis:

$$S = \frac{33.4 (F^2) ERP}{R^2} \quad (\text{FCC Equation 10})$$

The data used in the calculations are provided by the client, set by the FCC or calculated as shown below in the format used to display the data:

³ See FCC Equation 10 above, which uses the square of the relative gain.

Carrier Name
Site Name
Antenna Make/Model: Antenna Worksheet (Bearing Supplied by Client)

Maximum Permissible Exposure (MPE): Set by FCC
ERP (Watts): Supplied by Client, ERP in Eq.10 **Height (feet):** Supplied by Client **Frequency (MHz):** Supplied by Client **Downtilt (Degrees):** 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	Supplied by MFG	F^2 in Eq.10	R in Eq. 10	Info Only	Calculated (S in Eq. 10)	Calculated	Calculated

An example of the table above with data included is provided below:

Sample Client
Sample Site
Andrew:DBXLH-9090C-R2M Antenna Worksheet (60 Sector)

Maximum Permissible Exposure (MPE): 1000

ERP (Watts): 150 **Height (feet):** 137 **Frequency (MHz):** 1930 **Downtilt (Degrees):** 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Times Below MPE
0.1	-0.03	0.9931	43386.72	43386.70	0.000003	0.000000	376354121
1.0	-0.30	0.9333	4338.42	4338.23	0.000266	0.000027	3763098
2.0	-1.70	0.6761	2168.82	2168.46	0.001063	0.000106	940438

The following calculations are repeated for a variety of depression angles in the direction of the antenna's orientation.

1. For each depression angle listed, the distance to two meters above the ground is calculated and is labeled the slant distance. This is the value for R in the formula above.
2. The power density is calculated using the FCC Equation 10 listed above, the slant distance, the ERP and the relative gain (with a correction factor discussed below).
3. The percentage of MPE is calculated by dividing the power density by the MPE for the frequency in question.

This output allows the reader to identify power density values of interest and determine the horizontal distance from the structure along the axis of transmission to determine the exact location of predicted value.

Area Based Calculations

The NIER report provides what Sitesafe refers to as an *area based* calculation for each antenna. The calculation considers all the area underneath the antenna, not just along the main beam axis. The resulting calculated power density will always equal or exceed the value calculated for the on-axis power density along the main beam of the antenna.

Sitesafe's proprietary modeling software creates a horizontal grid at ground level underneath the structure and the power density for each antenna is determined in each cell of the grid. FCC Equation 10 is modified to include the relative gain in the horizontal plane as well as the vertical plane:

$$S = \frac{33.4 (F_{calc}^2) ERP}{R^2} \quad \text{(Sitesafe Equation 1)}$$

where: S = power density in $\mu\text{W}/\text{cm}^2$
F_{calc} = relative plane field factor (relative numeric gain) derived from the vertical and horizontal patterns
ERP = power in watts
R = distance in meters

For each cell beneath the antenna, the depression angle in the vertical plane and the horizontal offset angle from the main beam in the horizontal plane are computed and the corresponding relative field factor is inserted into Sitesafe Equation 1. The power density for the antenna is stored in a database for that cell.

This methodology allows Sitesafe to combine power density values from multiple antennas for given carrier and frequency band to determine the maximum power density on the ground (at the two meter point of interest). This value is reported as the **Maximum Power Density at Ground Level** in the Carrier Summary section of the NIER report. This process is accomplished in the following manner:

1. The area beneath the tower is analyzed for each antenna, for each specific carrier or licensee, assigned the calculated power density for that antenna to each "cell." The maximum value for this antenna is noted in the carrier summary as the maximum "area" power density for that antenna.
2. The process continues for the other antennas attributed to the carrier and the power density for subsequent antennas are noted and assigned to the same grid system.
3. The power densities in each cell are summed for all the antennas attributed to the carrier for the frequency range of interest, resulting in the total power density in each cell attributed to that carrier for that frequency band.
4. The maximum total power density for each carrier is reported and compared to the FCC MPE to arrive at a percentage MPE consumed by this carrier.

5. The process is repeated for each carrier or operator on the tower.
6. The percentage of MPE values are then added together, in accordance with OET 65 methodology, to arrive at a total percentage MPE for the tower.

To the reader, it may be counterintuitive that areas on the ground have a higher predicted power density than areas along the main beam. This occurs because of the F_{calc} factor in Sitesafe Equation 1. F_{calc} is derived by interpolating between the horizontal and vertical pattern data supplied by the manufacture. This interpolation utilizes the symmetry of the antenna around an axis—vertical in the case of an omni-directional antenna, and along the main beam in a directional antenna. It is possible to have a relatively high F_{calc} because of antenna pattern side lobes, where the R distance is relatively small. The combination of these two factors will often make the area based predicted power density greater than the on-axis value.

While the Sitesafe NIER report provides the data to replicate the on-axis calculation because there are a limited number of data items, reproducing the calculations for each cell is not possible due to the number of data points. As detailed above, power density in each cell, however, is calculated based upon an additive model. Sitesafe adheres to the FCC procedure of “additivity” of individual antenna RF power density contributions, while using geometric analysis to map those contributions to multiple “cells” more realistically than would be the case for an assumed single, larger area calculation.

Antenna Pattern Correction Factors

Interpolation—Sitesafe’s proprietary software imports antenna radiation patterns using the data format specified for MSI’s Planet propagation software⁴. These text files specify the relative gain of the antenna pattern in the horizontal and vertical planes. Most manufacturers provide a data element for each degree in both planes, providing 360 values for the horizontal and vertical patterns. If the manufacturer elects to provide less data, providing a data element for every five degrees for example, the Sitesafe software uses an interpolation function to provide 360 data points for each pattern. This mathematical process is used when the antenna pattern is imported into the antenna pattern database.

Relative Gain Correction—Another feature of the Sitesafe software adjusts for sharp fluctuations in antenna bearing and downtilt, and reduces the effect of “deep nulls” in antenna patterns, essentially “smoothing” out the antenna pattern. The smoothing process involves the “cells” previously described. Power density is estimated in each cell. Deep nulls appear in the model as cells with precipitously reduced power density compared with neighboring cells. In such cases, the software assumes conservatively that the cells within the deep nulls actually are impacted by a fraction of the power density in neighboring cells. This process is conservative because it elevates the assumed power density in the deep null cells, but power density is not

⁴ MSI was acquired by Marconi, who continues to support and upgrade the product. Marconi no longer offers a detailed explanation of the format on their web site. A description found on another software provider’s web site is included as an appendix.

subtracted from the neighboring cells that were used to estimate the power density in the deep null cells.

Where multiple transmitters are involved, the cells may be impacted by multiple sources. In those cases, the multiple source contributions to each cell are treated additively. This adherence to FCC's additivity procedure was described in more detail earlier in this document.

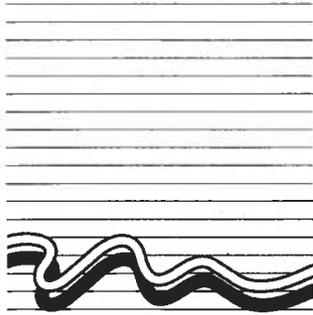
Quantitatively speaking, Sitesafe's proprietary software accomplishes the smoothing procedure by using the maximum relative gain within a range of the bearings being evaluated—by default, five (5) degrees. The software then uses the maximum relative gain of each antenna pattern within plus or minus five degrees of the bearings and elevation under consideration. As described above, this produces a more conservative result for the depression angle under consideration, while exerting no impact on the relative gain used for other depression angles.

As an example, if the MPE is being calculated at 15 degrees bearing in the horizontal plane, and at a 10 degree depression angle in the vertical plane, the software will use the maximum relative gain in the range of 10 to 20 degrees in the horizontal plane (15 +/- 5) and the maximum relative gain in the range of 5 to 15 degrees in the vertical plane (10 +/- 5). This method provides more conservative results by eliminating extremely sharp nulls in the antenna pattern. When this feature is disabled, the calculations on the *Antenna Summary* pages report the relative gain values provided by the manufacturer for each depression angle in the vertical plane.

Summary

This document was prepared to support Sitesafe's NIER report and allow the reader to review the information in these documents and understand how the results were obtained. Further discussion and information on this process is available by contacting the undersigned at (703) 276-1100.

Matthew J Butcher, PE
July 20, 2011



Mestre Greve Associates
Division of Landrum & Brown

December 21, 2011

Ms. Amy Fousekis
Planner
City of Oceanside Planning Department
300 North Coast Highway
Oceanside, CA 92054

SUBJECT: CUP: C-20-08, Naughton, 2182 South El Camino Real- Peer Review of 2nd Submitted RF Emissions Report (L&B Report #520001-1300)

Dear Ms. Fousekis:

The purpose of this letter is to provide our technical review and comments on the above referenced project regarding the revised RF Emissions Report referenced below. The purpose of the review is to determine if the proposed telecommunication facility will meet City of Oceanside and Federal Communication Commission (FCC) minimum standard requirements for operation. Specifically, City of Oceanside Municipal Code Article 39 requires that documentation of the proposed facility complies with all applicable FCC rules, regulations and standards, be submitted with the conditional use application for the project (Section 3906 I), and that no wireless communication facility may, by itself or in conjunction with other Wireless Communication Facilities, generate radio frequency emissions in excess of the standards for permissible human exposure, as provided by applicable federal regulations including 47 CFR §1.1307 et seq (Section 3909 G). The specific federal radiofrequency radiation exposure limits are presented in 47 CFR §1.1310 with additional guidance presented in FCC Office of Engineering and Technology (OET) Bulletin 65.

We recommend that the submitted revised RF Emissions Report be deemed complete. The modeling results presented in the RF Emissions Report show that RF levels in areas accessible by the general public will not exceed the FCC's General Public RF Exposure Limits. Small areas of the rooftop (i.e., within 1-2 feet of the antennas) are shown to exceed the FCC Occupational RF Exposure Limits, but, access to this area is controlled via a locked roof hatch and the required signage is present to adequately warn persons of the risk per FCC requirements.

A listing of the materials reviewed as part of this analysis is presented along with an overview of the project and report below. Presented at the end of this letter is a list of suggested Conditions of Approval to ensure compliance throughout the operational life of the proposed facility.

Materials Reviewed:

RF Emissions Report:

“American Tower Corporation on Behalf of Verizon Wireless Site ID – 300628, Site Name – Naughton, Application # - C-20-08, Site Compliance Report” by Sitesafe, dated November 30, 2011.

Description and Justification:
Revised 11.30.11

Plans:

“American Tower Corporation, 2182 El Camino Real, Oceanside, CA 92056, ATC Site #300628” by Booth and Suarez, last revision dated November 2255, 2011

Report Overview:

The Description and Justification describes the project as the removal of all existing antennas mounted on an existing monopole near the southeast corner of the property located at 2182 South El Camino Real and placing fifteen new antennas in three sectors of five antennas each. The centers of the antennas will be 60 feet above ground level. The project plans contain a table showing the models and other information about the antennas but the operating frequency and power for each antenna is not specified.

The RF Emissions Report assesses conditions with three sectors of five antennas each oriented to the east-northeast (16° from north) with 3° of down tilt (i.e., the antennas are pointed 3° below horizontal), to the southeast (136° from north) with 6° of down tilt, and west-southwest (256° from north) with 5° of down tilt. The antennas will be mounted at a height of 60 feet above ground level. Each sector is shown to consist of one Antel BXA-171063-8CF2 transmitting at 3,415 Watts effective radiated power (ERP) at 1,900 MHz, two Antel LPA-80063-4CF-5 antennas transmitting 1,141 Watts ERP at 850 MHz, and two Antel BXA-70063-4CF-4 antennas with one transmitting 634 Watts ERP at 751 MHz and the second labeled “Proposed Spare” transmitting 0 Watts ERP at 751 Hz.

RF field measurements were performed at 10 locations at ground level within the property. These measurements showed that the RF levels did not exceed 1% of the FCC Occupational exposure. This is equivalent to the levels not exceeding 5% of the FCC General Public exposure limits.

Three RF diagrams are presented in the report. The first shows ground level RF levels in a plan view. This diagram shows RF levels will be less than 5% of the FCC General Public Exposure Limits in this area. The second diagram shows a plan view RF levels at the elevation of the rooftop of the nearby building. This diagram shows that portions of the rooftop will be exposed to RF levels between 5% and 20% of the FCC General Public Exposure Limit while the majority of the rooftop will be exposed to levels less than 5% of the limit. The third diagram presents a vertical cross section of the RF Emissions. This diagram confirms that ground elevation RF levels will not exceed 5% of the FCC Public Exposure Limit.

The RF report also contains tables of RF Levels for each antenna at a specified distance on-axis with the antenna. The total RF exposure level from each antenna is provided along with the estimate of the maximum ground level concentration of 4.7% of the FCC General Public Limit.

The RF report states that the measured RF levels were added to the modeled RF levels. This methodology will provide an absolute worst-case estimate of the RF levels as the existing antennas on the monopole are proposed to be removed.

Conclusion:

The modeling results presented in the RF Emissions Report show that RF levels in areas accessible by the general public will not exceed the FCC's General Public RF Exposure Limits.

Recommended Conditions of Approval:

1. A measurement survey of RF levels in areas accessible by the General Public shall be completed and submitted to the City within 30 days of the commencement of operation of the replacement antennas. This submittal is subject to Article 39 of the Municipal Code and Section 3025 of the Zoning Code.

The measurements survey shall consist of spot measurements around the site in the locations where the highest RF Levels from the system are expected up to 100 feet from the base of the antenna. If the measurements show RF Levels within 75% of the FCC General Population Exposure Limits five additional measurements will be performed at those locations on five different days at different times during expected peak usage periods. If measurements show RF Levels exceeding the FCC General Population Exposure Limits all transmitters will cease operation and the City shall be notified immediately. The transmitters may not operate, except for testing, until cause of the exceedance is determined and corrected.

2. Upon 1 year of operation of said facility an "Existing Conditions and Operations Report" shall be prepared and submitted to the City Planner documenting the existing facilities and current total RF emissions at the site to verify that the site/facility is operating as it was permitted and is within FCC Regulations. This submittal is subject to Article 39 of the Municipal Code and Section 3025 of the Zoning Code.
3. If compliance with Condition of Approval #1 has been achieved, an "Existing Conditions and Operations Report" shall be prepared and submitted to the City Planner on an annual basis documenting the existing facilities and current total RF emissions at the site to verify that the site/facility is operating as it was permitted and is within the current FCC Regulations. This submittal is subject to Article 39 of the Municipal Code and Section 3025 of the Zoning Code.

If you have any questions or need any other information, please do not hesitate to call.

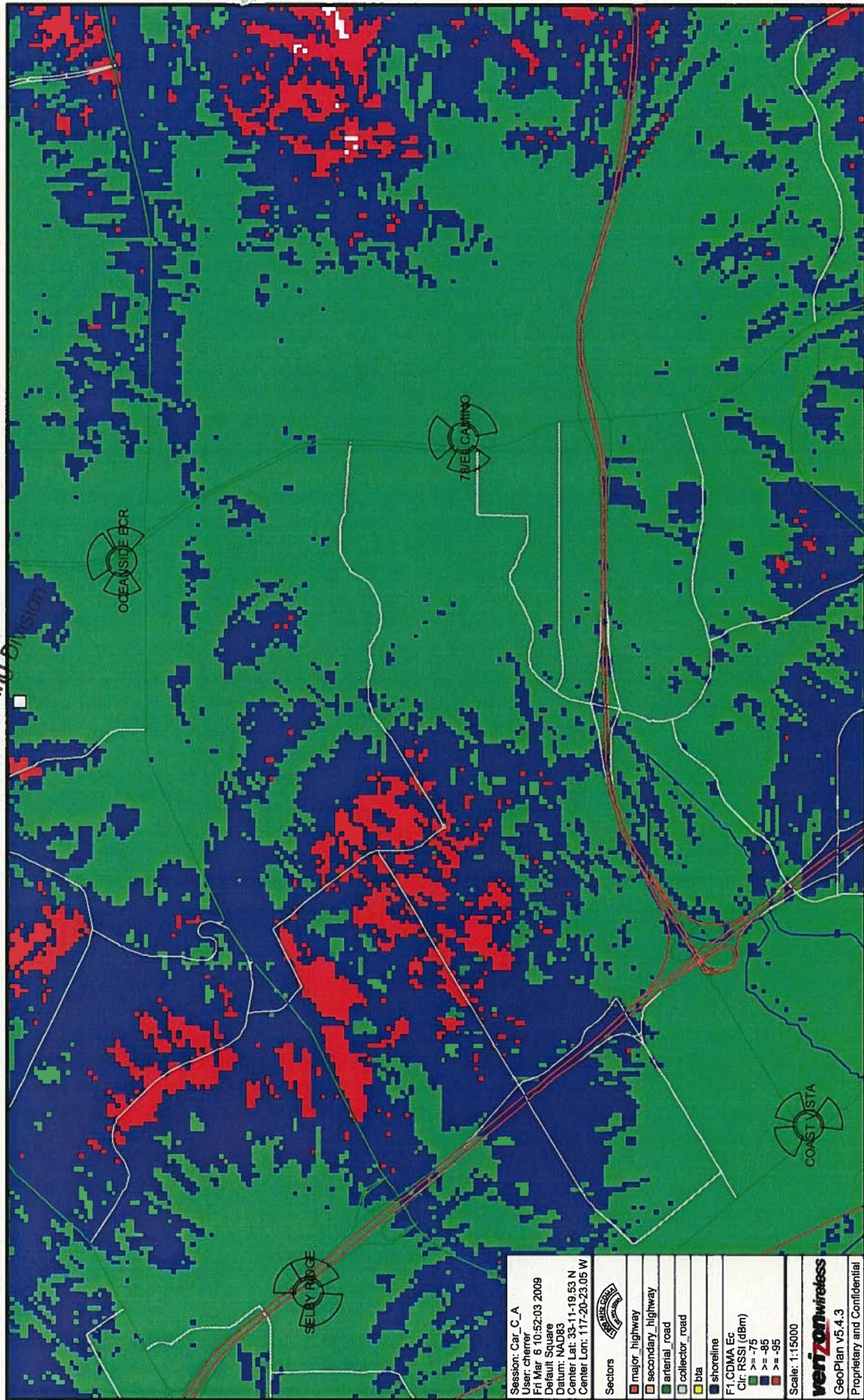
Sincerely,
Mestre Greve Associates
Division of Landrum and Brown



Matthew B. Jones, P.E.
Project Manager

existing @ 65 FT

Received
MAR 17 2009
Planning Division



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User: channer
Fri Mar 6 10:52:03 2009
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Center Lon: 117-20-23.05 W

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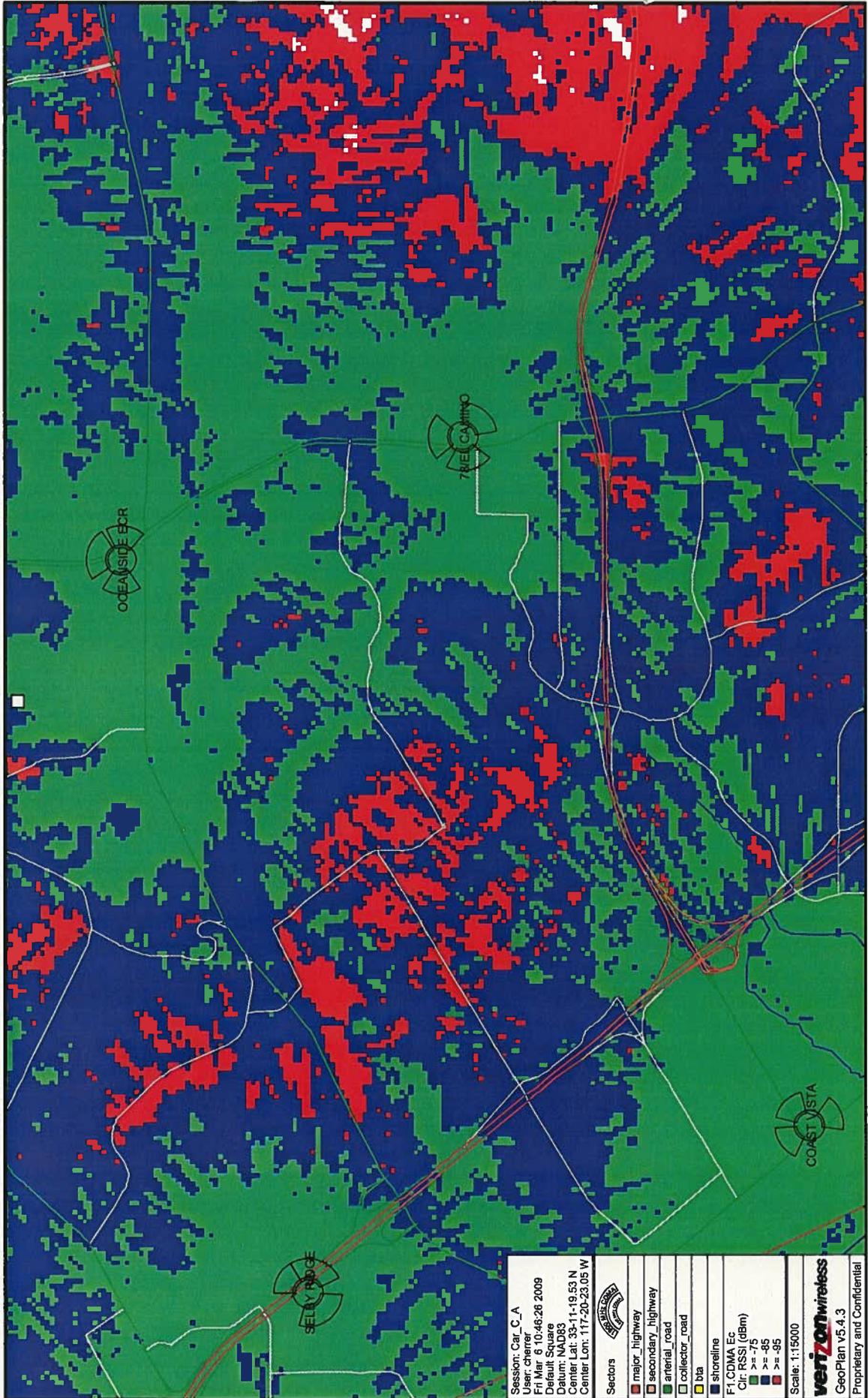
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verizonwireless
GeoPlan v5.4.3
Proprietary and Confidential

Received
MAR 17 2009
Planning Division

Model at 35 FT



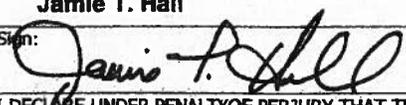
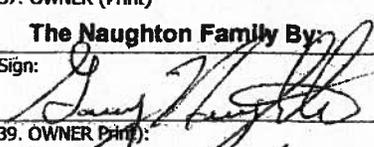
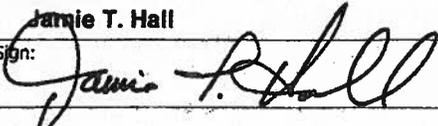
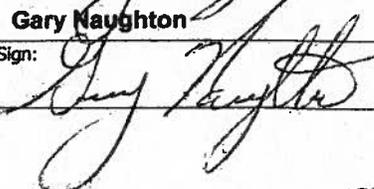
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Sectors
major_highway
secondary_highway
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collector_road
bva
shoreline

F1, CDMA Ec
CIR: RSSI (dbm)
-75
-85
-95

Scale: 1:15000

verizonwireless
GeoPlan v5.4.3
Proprietary and Confidential

Application For Planning Commission Hearing				STAFF USE ONLY	
Planning Department (760) 435-3520 Oceanside Civic Center 300 North Coast Highway Oceanside, California 92054-2885 Please Print or Type All Information				ACCEPTED	BY
				4/15/08	SN
PART I - APPLICANT INFORMATION				HEARING	
1. APPLICANT American Tower Corporation		2. STATUS Sub-Lessee		GPA	
3. ADDRESS 10 Presidential Way, Woburn MA 01801		4. PHONE/FAX (562) 830-9903 P (562) 394-1940 F		MASTER/SP.PLAN	
5. APPLICANT'S REPRESENTATIVE (or person to be contacted for information during processing) Jamie T. Hall - Channel Law Group, LLP				ZONE CH.	
6. ADDRESS 207 E. Broadway, Suite 201, Long Beach CA 90802		7. PHONE/FAX (310) 982-1760 - ph (562) 394-1940 fax		TENT. MAP	
				PAR. MAP	
				DEV. PL.	
				C.U.P. C-20-08	
				VARIANCE	
				COASTAL	
				O.H.P.A.C.	
PART II - PROPERTY DESCRIPTION					
8. LOCATION 2182 El Camino Real, Oceanside, CA 92056				9. SIZE 0.49 acres	
10. GENERAL PLAN	11. ZONING CP	12. LAND USE Office Suites		13. ASSESSOR'S PARCEL NUMBER 165-012-11	
PART III - PROJECT DESCRIPTION					
14. GENERAL PROJECT DESCRIPTION To renew Conditional Use Permit C-23-04 for a communications facility consisting of a 65 - ft. cellular antenna tower, <input type="checkbox"/> cellular antennas, and an indoor equipment room; and to add an emergency generator for the wireless telecommunications facility. The number of antennas existing on the pole will be reduced to 15.					
15. PROPOSED GENERAL PLAN N/A	16. PROPOSED ZONING N/A	17. PROPOSED LAND USE Communications	18. NO. UNITS N/A	19. DENSITY N/A	
20. BUILDING SIZE N/A	21. PARKING SPACES N/A	22. % LANDSCAPE N/A	23. % LOT COVERAGE		
PART IV - ATTACHMENTS					
ALL APPLICATIONS			DEV. PLANS, C.U.P.s & TENT. MAPS		
<input checked="" type="checkbox"/> 24. DESCRIPTION/JUSTIFICATION	<input checked="" type="checkbox"/> 25. LEGAL DESCRIPTION		<input checked="" type="checkbox"/> 30. FLOOR PLANS AND ELEVATIONS		
<input checked="" type="checkbox"/> 26. 300-FT. RADIUS MAP	<input checked="" type="checkbox"/> 27. PROPERTY OWNERS' LIST		31. CONSTRUCTION SCHEDULE		
<input checked="" type="checkbox"/> 28. ENVIRONMENTAL ASSESSMENT	<input checked="" type="checkbox"/> 29. PLOT PLANS		32. OTHER		
PART V - SIGNATURES					
THE APPLICANT OR HIS/HER REPRESENTATIVE MUST BE PRESENT AT THE HEARING. FAILURE TO BE PRESENT MAY RESULT IN DENIAL OF THE APPLICATION.			SIGNATURES OF ALL OWNERS OF THE SUBJECT PROPERTY ARE NECESSARY BEFORE THE APPLICATION CAN BE ACCEPTED. IN THE CASE OF PARTNERSHIPS OR CORPORATIONS, THE GENERAL PARTNER OR CORPORATION OFFICER SO AUTHORIZED MAY SIGN. (ATTACH ADDITIONAL PAGES AS NECESSARY).		
33. APPLICANT OR REPRESENTATIVE (Print): Jamie T. Hall		34. DATE 4/11/08	37. OWNER (Print) The Naughton Family By		38. DATE 3-25-08
Sign: 		Sign: 			
I DECLARE UNDER PENALTY OF PERJURY THAT THE ABOVE INFORMATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.					
35. APPLICANT (Print): Jamie T. Hall		36. DATE 4/11/08	39. OWNER (Print): Gary Naughton		40. DATE 3-25-08
Sign: 		Sign: 			

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Planning Department

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Planning Department

DESCRIPTION AND JUSTIFICATION

Revised 11.30.11

Conditional Use Permit Findings

Pursuant to Section 4105 of the Oceanside Zoning Ordinance, the following evidence is submitted as proof in support of the following statements for conditional use permits:

(a) That the proposed location of the use is in accordance with the objectives of this ordinance and the purposes of the district in which the site is located.

Article 39 of the Oceanside Zoning Ordinance specifies that a communications facilities use may be installed and operated within any zoning district subject to applicable categorical standards and processes. The Facility as proposed complies with the objectives of the Zoning Ordinance and will not have a negative impact on the environment or development or future communications facility land uses or other land uses. The existing 125 foot SDG&E transmission towers, which are located approximately 135 feet east of the existing Facility, frame the visual landscape of the area. Viewed in relation to the existing towers, the design of the existing Facility (a monopole) is an insignificant and/or incremental impact to the area. The Planning Commission on two occasions has made such a determination. In 1995, for example, the Planning Commission made the following findings: "1. The view of the proposed antenna tower includes a view of the larger and taller utility transmission towers. As such, the view of the antenna tower represents an incremental impact which is consistent with the objectives of the Zoning Ordinance. 2. The siting of a communications antenna tower adjacent to existing transmission towers is consistent with the General Plan Land Use Element policies and will not be a detrimental [to] the public health, safety, and welfare of persons residing or working in the area." Resolution No. 95-P29, p. 1.

Moreover, the proposed project also satisfies all development standards of the CP District and Article 39 of the Zoning Ordinance. The overall height of the tower will be reduced from 65 feet to 60 feet and 15 antennas (an entire rack of antennas) will be removed from the tower. Further, the 15 replacement antennas will be pulled closer to the pole by reducing the standoffs attached to the pole from 5 feet to 2.5 feet. The existing microwave antennas will also be replaced with a smaller antenna that does not exceed 4 feet in diameter. This will give the pole a more streamlined appearance and reduce the bulk of the antennas. Additional landscaping (including new native or naturalized trees) will be added along the base of the tower to provide additional visual mitigation for the facility. Landscaping is also proposed along the southern portion of the property and in the front of the property to improve the overall parcel appearance. Additionally, a paint treatment will be applied to both the existing cabling and antennas to mitigate the visual impact of this equipment.

(b) That the proposed location of the conditional use and the proposed conditions under which it would be operated or maintained will be consistent with the General Plan; will not be detrimental to the public health, safety or welfare of persons residing or working in or adjacent to the neighborhood of such use; and will not be detrimental to properties or improvements in the vicinity or to the general welfare of the City.

Safety of telecommunications facilities is ensured by the Federal Communications Commission, who regulates wireless antenna radio signals. In 1996, the FCC adopted wireless antenna guidelines that set safe human exposure limits for radio-frequency energy that must not be exceeded and compliance with these standards ensures public safety.

The existing communications facility, originally authorized pursuant to C-23-94, includes an existing 65" high monopole, antennas, and related wireless equipment. The subject wireless facility is located North of Highway 78 along El Camino Real. Mature eucalyptus trees are located at the base of the tower. The existing transmission lines and intervening land use elements (including multi-story buildings) offer significant visual screening of the facility to the traveling public and provide an effective visual background as viewed from within the CP District. Indeed, substantial evidence in the record supports this finding. The Staff Report conducted for this project in 2001 characterized the basis for the Planning Commission's 1995 approval as follows:

- "The neighboring 125-foot tall SDG&E transmission towers represented an established and significant visual presence to the area.
- In relation to the view of the existing transmission towers, the 65-foot tall communications tower would effect insignificant and incremental impacts to distant views of the area.
- Near-perspective line-of-sight views of the facility from the surrounding streets and properties would be effectively mitigated by the adjacent Eucalyptus trees, distance from roadways, intervening structures, and difference in property elevation." Staff Report for C-23-94 Revision dated December 18, 2000, p. 2.

Almost identical findings were made by the Planning Commission in 2001. See Resolution 2001-P81, p. 2. Finally, both staff and the Planning Commission concluded in 2001 that landscaping could be utilized as an effective means to mitigate perceived visual impacts. See Staff Report (stating that the "the existing mitigation and supplemental tree mitigation are a valid basis upon which to extend the term of the facility operation.")

ATC has proposed a number of additional improvements to the tower consistent with the existence of the adjacent transmission lines. These improvements include: (1) reducing the tower height, (2) halving the total number of antennas on the pole and reducing the diameter of the microwave antenna, (3) pulling the antennas closer to the tower and reducing the standoffs from 5 feet to 2.5 feet, (4) utilizing a paint treatment, and (5) installation of significant landscaping both at the base of the pole and the overall property. As the proposed project employs effective screening mechanisms, it does not represent a detriment to properties or

improvements in the vicinity, or the general welfare of the city. The proposed facility therefore satisfies the General Plan Land Use Objective 2.726. As documented by the Visual Impact Analysis conducted by the applicant, the proposed improvements visually conform to the surrounding land uses.

(c) That the proposed condition use will comply with the provisions of this ordinance, including any specific condition required for the proposed conditional use in the district in which it will be located.

The Facility is a conditionally approved use in the CP District. The use is a compatible land use within this area, which consists of other utility facilities and a variety of commercial buildings. See above for more detailed rationale and support for this proposed finding.

LEGAL DESCRIPTION

The Property is located in the City of OCEANSIDE, County of SAN DIEGO and is described as follows:

PARCEL A:

The Southerly 100.00 feet of the Northerly 1000.00 feet (measured at right of way) of the following described parcel of land;

That portion of the Northwest Quarter of the Southwest Quarter (excepting the North 5 acres thereof) and the Southwest Quarter of the Southwest Quarter in Section 29, Township 11 South, Range 4 West, San Bernardino Base and Meridian, in the City of Oceanside, County of San Diego, State of California, according to United States Government Survey approved April 5, 1881, lying between the center line of County Road Survey No. 626, as said road is described in Deed to the County of San Diego, recorded June 17, 1942 in Book 1368, Page 77 of Official Records, and a line which is parallel with and 280.00 feet Easterly measured radially and at right angles to said center line.

Said land is now known as Parcel 2 of Parcel Map No. 1034.

PARCEL B:

An Easement and Right of Way for driveway purposes and appurtenances thereto over, along and across the Southerly 10.00 feet of the Northerly 900.00 feet (measured at right angles) of the following described parcel of land:

That portion of the Northwest Quarter of the Southwest Quarter (excepting the North 5 acres thereof) and the Southwest Quarter of the Southwest quarter in Section 29, Township 11 South, Range 4 West, San Bernardino Base and Meridian, in the City of Oceanside, County of San Diego, State of California, according to United States Government Survey approved April 5, 1881, lying between the center line of County Road Survey No. 626, as said road is described in Deed to the County of San Diego, recorded June 17, 1942 in Book 1368, Page 77 of Official Records, and a line which is parallel with and 280.00 feet Easterly measured radially and at right angles to said center line.



NOTICE OF EXEMPTION

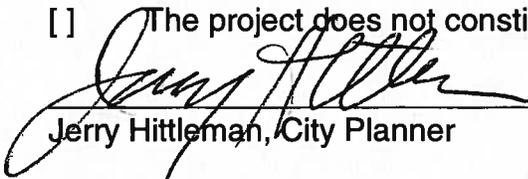
City of Oceanside, California

Post Date:
Removal:
(180 days)

1. **APPLICANT:** American Tower Corporation/ Jamie Hall - Channel Law Group
2. **ADDRESS:** 207 E. Broadway, Suite 201, Long Beach, CA 90802
3. **PHONE NUMBER:** (310) 982-1760
4. **LEAD AGENCY:** City of Oceanside
5. **PROJECT MGR.:** Amy Fousekis, Principal Planner
6. **PROJECT TITLE:** C-20-08 American Tower/ Naughton @ 2181 El Camino Real
7. **DESCRIPTION:** A Conditional Use Permit to allow improvements to previously-approved wireless telecommunications facilities at 2182 El Camino Real

ADMINISTRATIVE DETERMINATION: Planning Division staff has reviewed this project in accordance with the City of Oceanside's Environmental Review Guidelines and the California Environmental Quality Act (CEQA), 1970. Based on that review, the Planning Division finds that the proposed project is generally for replacement of existing structures where the new structures will be located on the same site as the structures replaced and will have substantially the same purpose and capacity as the structures replaced. Therefore, the Environmental Coordinator has determined that further environmental evaluation is not required because:

- Per Article 19, the project is categorically exempt, in accordance with Section 15302, Class 2(c), replacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity.
- "The activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA" (Section 15061(b)(3)); or,
- The project is statutorily exempt, Section ____, [name of section] (Section xxxxx); or,
- The project does not constitute a "project" as defined by CEQA (Section 15378).


Jerry Hittleman, City Planner

Date: 4/3/12

cc:

Project file Counter file Library
County Clerk \$50.00 Admin. Fee

Posting: