# AGENDA REPORT

| | |
|---|---|
| **MEETING DATE:** | **July 6, 2015** |
| **SUBJECT:** | **Crown Castle – Conditional Use Permit (CUP) Renewal**<br>**1425 N. Twin Oaks Valley Road**<br>**APN: 182-160-12-00** |
| **CASE:** | **P14-0039 (CUP 14-014)** |

**Recommendation**

Conditionally approve the continued operation and rehabilitation of an existing wireless telecommunication facility (WTF) through a Conditional Use Permit, exempt from CEQA, pursuant to Section 15301 of the California Code of Regulations.

**Introduction**

In 2007, the City approved a Conditional Use Permit (CUP 06-700) and Specific Plan Modification (SP 88-01(06M) to allow the installation and operation of a thirty-five (35) foot tall wireless telecommunication facility disguised as a faux tree with an underground equipment enclosure located on the Twin Oaks Golf Course. On June 4, 2012, the Conditional Use Permit (CUP 06-700) expired.

**Discussion**

The current General Plan land use and Zoning designations of the property are Specific Plan Area (SPA) and the Twin Oaks Valley Ranch (TOVR) Specific Plan, respectively. The project site is bounded on the west by N. Twin Oaks Valley Road, on north by Turnberry Drive, on the east by Concord & Wentworth Place, and on the south by Lancashire Place. The site of the WTF is between the driving range and the ninth ($9^{th}$) hole fairway, just north of the existing clubhouse. The golf course, as well as the adjacent residential areas to the north, east and south of the project site are all a part of the Twin Oaks Valley Ranch Specific Plan. The residential area to the west of the project site (across N. Twin Oaks Valley Road) is zoned Estate (R-1-20). The approximately 105 acre site of the Twin Oaks Golf Course contains four (4) other wireless telecommunication facilities all in a line extending approximately 130 feet to the southwest of the project site. In addition to the wireless telecommunication facilities onsite, the Twin Oaks Valley Golf Course operates a clubhouse, restaurant, bar and banquet facility all located to the south of the project site. The TOVR Specific Plan allows for the installation of wireless telecommunication facilities on the golf course provided that a Conditional Use Permit is approved and that all sites operate in conformance with Federal Communications Commission guidelines for Radio Frequency (RF) safety standards.

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As the result of Code Enforcement Activity, the City issued a Notice of Violation (NOV) to Crown Castle (the current owner of the WTF) on November 26, 2013 for operating the facility with an expired permit. On July 25, 2014, Crown Castle submitted this application for a Conditional Use Permit to continue the operation of the facility at the site. During site inspections with the applicant, two (2) of the three (3) live trees that were required to be planted at the time of the installation of the facility were no longer present. In addition, the faux tree camouflaging materials were observed in an acceptable condition, but near the end of their functional life. As a result of the site conditions observed by staff, the project has been conditioned to install two (2) thirty-six (36) inch box Deodar Cedar (i.e. Cedrus Deodara) trees within 90 days of the approval of the CUP, and to replace the faux tree camouflage ("rebranching") system within three (3) years of the approval of this permit. The project has also been conditioned, in conformance with section 20.465.080 of the San Marcos Municipal Code (SMMC), to submit an annual compliance report, which will provide a summary on the facility's compliance with all provisions of the Conditional Use Permit.

Section 704 of the Telecommunication Act of 1996 states that "No State or local government or instrumentality thereof may regulate the placement, construction, or modification of personal wireless service facilities on the basis of the environmental effects of radio frequency (RF) emissions to the extent that such facilities comply with the [Federal Communication] Commission's regulations concerning such emissions." The City therefore cannot deny the project based upon perceived health impacts from RF emissions, to the extent the applicant proves the facility is categorically excluded, or complies with Federal Communications Commission (FCC) guidelines. To this end, the FCC has developed exposure guidelines which are the implementing regulations for Section 704. The FCC guidelines require evaluation to determine whether transmitters of facilities comply with the FCC radio frequency (RF) guidelines and incorporate Maximum Permissible Exposure (MPE) limits. MPE limits are defined in terms of power density, electric field strength, and magnetic field strength to which a person may be exposed without harmful effect. The standards established in the FCC RF guidelines constitute exposure limits and are relevant only to facilities that are accessible to workers or members of the public. Consistent with FCC regulations, the City required documentation (a Radio Frequency "RF" Report) from the applicant to confirm the wireless telecommunication facility is operating within the FCC's RF guidelines for MPE limits. The report, provided as attachment "F," demonstrates that the facility is in conformance with FCC guidelines. In addition, the report was independently reviewed by the City's telecommunication technology consultant who also determined that the proposed continued operation of the facility is in compliance with FCC regulations (the review, titled "Wireless Planning Memorandum" has been provided as attachment "G").

During the processing of the permit, a small number of calls were received from the pubic in response to the notice of application that was circulated. Most inquires by residents were informational in nature with, no opinion on the project expressed. One resident raised concerns relating to noise generated at the golf course, as well as expressing a general dissatisfaction with the number of wireless telecommunication facilities in the City. Based on the resident's compliant, staff did investigate the noise issue and determined that is was unrelated to the operation of the project authorized by this permit, rather it was related to the

wedding/conference center functions of the golf course. Staff is continuing to monitor the noise issues at the site and will be working with the operator of the golf course accordingly.

With the approval of CUP 06-700, a Negative Declaration (ND 07-752) was prepared, circulated and adopted on July 24, 2007. Since the requested renewal and restoration proposes no significant expansion or modification of the project site as originally examined in ND 07-752, staff has determined that the continued operation of the facility proposed by the project remains within the scope of the previously adopted Negative Declaration, and the restoration activities at the site are categorically exempt (EX 15-018).

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**Attachment(s)**

Adopting Resolution

- A- Vicinity Map
- B- Aerial Photo
- C- Site Photos
- D- Requested Entitlement
- E- Site & Project Characteristics
- F- RF/EME Report
- G- Wireless Planning Memorandum
- H- Project Plans

**Prepared by:**

Sean del Solar, Assistant Planner

**Reviewed by:**

Karen Brindley, Principal Planner

**Approved by:**

Matt Little, Development Services Director / City Engineer

**AGENDA ITEM NO. _____**

RESOLUTION PC 15-4475

A RESOLUTION OF THE CITY OF SAN MARCOS PLANNING COMMISSION APPROVING A CONDITIONAL USE PERMIT FOR THE REHABILITATION AND CONTINUED OPERATION OF AN EXISTING THIRTY-FIVE (35) FOOT TALL WIRELESS TELECOMMUNICATION FACILITY ON THE TWIN OAKS VALLEY RANCH GOLF COURSE IN THE SPA ZONE

CUP 14-014
(Project No. P14-0039)
Crown Castle

WHEREAS, on July 25, 2014, an application was received from Black and Veatch on behalf of Crown Castle requesting a Conditional Use Permit to allow for the continued operation of a thirty-five (35) foot tall faux tree wireless telecommunication facility with an underground equipment enclosure at 1425 N. Twin Oaks Valley Road, in the Twin Oaks Valley Ranch Specific Plan Area (SPA) Zone of the Twin Oaks Valley Neighborhood with a General Plan Land Use Designation of Specific Plan, more particularly described as:

> A portion of Parcel A of Map No. 16247 in the City of San Marcos, County of San Diego, State of California, filed in the Office of the County Recorder of San Diego County on October 4, 1990, as Instrument No. 90-544825 of official records.
> Assessor's Parcel Number: 182-160-12-00

WHEREAS, the City previously considered and adopted a Negative Declaration (ND 07-752) in accordance with the California Environmental Quality Act (CEQA) and approved Conditional Use Permit (CUP) 06-700 with the adoption of Resolution No. 2007-6918 on July 24, 2007, for the installation and operation of a wireless telecommunication facility; and

WHEREAS, during the previous term of CUP 06-700, ownership of the wireless telecommunication facility was transferred from T-Mobile, USA to Crown Castle; and

WHEREAS, Conditional Use Permit (CUP 06-700) expired on June 4, 2012; and

WHEREAS, application P14-0014 was received on July 25, 2014 from Crown Castle requesting a Conditional Use Permit (CUP 14-014) to allow the continued operation of the wireless telecommunication facility; and

WHEREAS, the Development Services Department did study and recommend approval of the requested use; and

WHEREAS, an in-lieu fee was paid for special taxes associated with Community Facility District (CFD) 98-01IA#1: Police, and 2001-01: Fire and Paramedic; and

WHEREAS, the City of San Marcos did find the project proposing continued operation and rehabilitation of the existing facility to be Categorically Exempt pursuant to Section 15301 Class 1 of CEQA (EX 15-018), in that this is an existing facility with minor alterations; and

WHEREAS, the Planning Commission held a hearing on July 6, 2015 which was duly advertised and held in the manner prescribed by law; and

WHEREAS, the City of San Marcos' decision is based upon the following findings and determinations:

1. The granting of the Conditional Use Permit, with staff conditions, is consistent with the policies and intent of the adopted General Plan, in that the continued operation and restoration of a wireless telecommunication facility provides a needed communication service within the City of San Marcos (LU-17).

2. The granting of the Conditional Use Permit, as conditioned, will not be detrimental to the public health, safety, or welfare, or the surrounding land uses in the area in that the proposed wireless antenna facility is located on a developed site and that operational standards for the facility have been conditioned to comply with FCC standards and California PUC requirements; and noise impacts are attenuated by the underground location of the equipment enclosure. In addition, visual impacts of the proposal have been minimized because the monopole was designed to resemble a tree and will blend in with the existing faux tree wireless telecommunication facilities already onsite and that the rehabilitation of the facility (i.e. rebranch of the facility and planting of replacement "natural trees") will continue to conceal the panel antennas with faux branches and leaves.

3. The land use allowed in conjunction with the Conditional Use Permit is compatible with the existing and future land uses of the Twin Oaks Valley Ranch Specific Plan, and the general area in which the use is located.

NOW, THEREFORE, the City of San Marcos resolves as follows:

A. The foregoing recitals are true and correct.

B. The Conditional Use Permit is approved per the submitted site plan, elevations, and visual simulation for a 35'-0" tall faux tree monopole with twelve (12) panel antennas serving one telecommunication provider (T-Mobile, USA) and an underground equipment enclosure, except as modified herein, and shall not be expanded unless a modification to this permit is approved.

C. Reliance on the Conditional Use Permit for the continued operation of the facility shall be subject to the following operational standards:

    1. Within thirty (30) days of approval, or by July 1, 2015, the applicant shall submit an application for a Landscape Permit from the Planning Division for the installation of two (2) Cedrus Deodara trees, a minimum of 20'-0" in height and

in thirty-six (36) inch sized boxes. The plans submitted with the Landscape Permit application shall be prepared by a landscape professional and are subject to the following requirements:

a. Final landscape and irrigation plans shall be subject to the provisions of the City of San Marcos Water Efficiency Landscape Ordinance, Chapter 20.330 of the San Marcos Municipal Code.

b. This project is subject to the payment of a landscape permit and inspection fee. The landscape permit and inspection fee shall be four and one-half percent (4.5%) of the estimate for the completion of all landscaping shown on approved plans.

c. The irrigation system shall include an automatic rain sensor switch, master valve, stainless steel enclosure for the backflow device, and stainless steel controller cabinet. The landscape plan shall list the quantities of each plant type, including a legend indicating what each symbol represents; height and spread of trees (in accordance with City Minimum Tree Standards, City Council Resolution 2001-5747); and method of installation and irrigation.

d. All landscaping proposed on approved landscape plans must be installed by the applicant within sixty (60) days of approval.

e. Upon completion of installation, all landscaping/irrigation shall be inspected and approved by the Planning Division. The applicant/ developer shall be responsible to contact the Planning Division for landscaping inspections.

2. Occurring concurrently with the installation of the landscaping specified above, the installation of a "Blue Notice Sign," as specified in the Safe Site Compliance Report prepared by Tony DeMattia and dated June 6, 2015 shall be installed at the base of the wireless telecommunication facility.

3. Within three (3) years of approval, or by July 6, 2018, the existing wireless telecommunication facility camouflaging materials consisting of faux tree branches and leaves must be replaced (i.e. "rebranching"). If it is the determination of the City that the facility's condition has deteriorated more rapidly than anticipated and/or the camouflaging materials no longer provide the required concealment of the facility, the City may require that rebranching be conducted before July 6, 2018. The rebranching of the facility shall require the issuance and approval of a Building Permit. The rebranching of the facility shall also include the installation of additional faux branches (with faux leaves, natural colors and three (3) dimensional textures) and must enhance the current appearance of the canopy of the faux tree. At a minimum, three (3) faux branches per linear vertical foot (not including the faux-tree "topper" above the tower) shall be installed to create a realistic and natural faux tree canopy.

4. Failure to install the "Blue Notice Sign," plant the two (2) additional trees, and/or complete the rebranching of the facility as specified above, shall be considered noncompliance with this Conditional Use Permit and grounds for administrative actions and penalties, up to and including the modification and/or revocation of this permit in conformance with Chapter 20.545 of the San Marcos Municipal Code (SMMC).

5. The permittee shall install and at all times maintain, in good condition both the faux-bark cladding over the entire vertical tower structure, and the faux-broadleaf "socks" over all tower-mounted equipment, including but not limited to the antennas and any related transceiver and/or amplifiers.

6. All aboveground facilities, landscaping, and related equipment must be maintained in good condition, in a state free of litter, debris, graffiti and/or any form of vandalism.

7. Damaged equipment and/or damaged, dead or decaying landscaping must be replaced within 30 days of notification by the City or discovery by operator. Replacement of landscaping that provides facility screening must be in conformance with the approved landscape plan (i.e., material must be consistent with the approved size (including height), type, and screening capability at the time of planting as the material being replaced.

8. Routine maintenance may only be conducted during the hours of 8:00 AM and 5:00 PM Pacific Time weekdays, not including holidays. Emergency repairs and maintenance shall be conducted only in the cases of power outages and equipment failure or malfunction.

9. Graffiti must be removed within seventy-two (72) hours of notice from neighbors and/or the City.

10. The facility must display, in a permanent and legible form, the site operator's name, a local or toll free telephone number answered 24 hours every day of the year, and site identification number.

11. The applicant, operator, or owner must, at its own cost and expense, submit an annual Conditional Use Permit compliance report. Said report must include documentation of the status of compliance with all conditions of approval and must include date stamped photographs of existing conditions of the wireless telecommunications facility and any associated screening requirements.

12. The wireless telecommunications facility must comply with all applicable current and future FCC regulations without further action by the City. It is the responsibility of the applicant to contact the City acknowledging any changes in regulations that would affect the wireless telecommunications facility.

13. The project shall comply with all applicable provisions of Chapter 14.15 S.M.M.C. and other regional standards for the protection of stormwater quality.

14. The applicant is responsible for compliance with all relevant portions of the City of San Marcos Municipal Code.

15. Use of the site shall be conducted so as not to become obnoxious by reason of noise, odor, refuse or maintenance of grounds and in such a manner as will not detrimentally affect adjoining properties and uses.

D. If the applicant and/or operator of the facility intends on abandoning and/or discontinuing the use of the wireless telecommunications facility, notification must be provided to the City of such intentions no less than sixty (60) days prior to the final day of use. Removal of the wireless telecommunications facility must comply with all provisions of Section 20.465.090 of the San Marcos Municipal Code (SMMC).

E. Any future modifications, alterations, expansions or other changes to the facility shall be evaluated by the City to determine the applicable permits required to allow the project (i.e. CUP modification, Wireless Telecommunication Facility Building Permit (WTFB), Building Permit, etc.) pursuant to all Federal, State and local laws, including all relevant provisions of this Conditional Use Permit.

F. Prior to the issuance of a Wireless Telecommunication Facility Building Permit (WTFB), the following conditions shall be complied with:

1. A sheet containing a copy of each page of this Conditional Use Permit must be provided in the project plan set submitted for review.

2. Building plans must also identify the location of all landscaping in the vicinity of the site and indicate that they will be protected in place during construction and replaced if damaged.

3. For any project proposing the collocation of additional antenna facilities for the purposes of allowing another carrier other than T-Mobile, USA to provide services from the facility, a separate in-lieu fee of no less than $2,000 (For CFD 98-01IA1 (Police) the in-lieu fee is $1,000.00, for CFD 2001-01 (Fire & Paramedic), the in-lieu fee is $1,000.00) shall be submitted to the City to mitigate impacts to City services.

4. Remodeled structures and/or tenant improvements shall be designed to conform to the latest design standards adopted by the State of California in the California Building Code, Part 2, Title 24, California Code of Regulations.

5. Plans submitted for the issuance of a Building Permit shall also comply with the latest adopted standards of the National Fire Protection Association, and/or the City of San Marcos Fire Code Ordinance.

6. Building plans and instruments of service submitted with a Building Permit application shall be signed and sealed by a California licensed design professional as required by the State Business and Professions Code.

7. The City of San Marcos is located in Seismic Design Category "D." Buildings and structures shall be designed to adequately transmit the dynamic lateral forces in accordance with the requirements of the latest adopted California Building Code.

8. Where applicable, the proposed development shall comply with the latest Federal Law, Americans with Disabilities Act, and State Law, California Code of Regulations, Title 24, for accessibility standards for the disabled.

9. The storage, use or handling of hazardous, toxic or flammable materials shall be clearly indicated on all floor plans submitted for a building permit. Materials shall be identified in accordance with Health and Safety Code Section 25101.

10. Tenants are required to obtain written permission from the building owner, or owner's agent, prior to obtaining a building permit from the city. Per San Marcos Municipal Code Chapter 17.08.030 Section 105.10, the tenant must obtain written permission from the building or property owner that the applicant is authorized to proceed with the proposed construction.

G. During the construction phase, the following conditions shall be complied with:

1. Dust and dust producing materials shall be controlled within the maximum acceptable concentrations for silica and silicates in accordance with the California Code of Regulations, Title 8, Section 5155. Water and dust palliative shall be used to prevent excessive dust during blasting, construction and grading operations. Projects are required to comply with the Air Pollution Control District's standards for mitigating fugitive dust during all phases of construction.

2. All construction operations authorized by building permits, including the delivery, setup and use of equipment shall be conducted on premises during the hours of 7:00 AM to 6:00 PM on Monday through Friday, and on Saturday between 8:00 AM and 5:00 PM. No work shall be conducted on Sundays or Holidays observed by the City of San Marcos. Failure to comply will result in the issuance of STOP WORK NOTICES, REVOCATION OF PERMITS and the issuance of citations and fines as appropriate. Citations for hours of work violations require a mandatory court appearance in North County Superior Court.

3. During construction the owner/developer/contractor shall implement and maintain the storm water pollution prevention measures as required on the approved plans. Violations of the City's Storm Water Management Ordinance will result in Stop Work Orders, Notices of Violation and citations with fines. Work on the project may be delayed until the City determines that the project is in compliance with the storm water requirements.

H. Prior to a final inspection or issuance of a Certificate of Occupancy ("C of O"), the following conditions shall be complied with:

1. The proposed development shall satisfy the conditions of approval prior to the occupancy. The owner/developer/contractor shall obtain approval from all City departments and other agencies before requesting a final inspection or Certificate of Occupancy ("C of O") from the Development Services Department.

I. This Conditional Use Permit shall become null and void if not acted upon within twelve (12) months of the adoption of this resolution, or the approved use ceases to operate at the subject property for a period more than twelve (12) months.

J. The Planning Division may, but is not obligated to, inspect the premises annually to ensure compliance with all conditions of the use permit approval. If the Planning Division determines that compliance is not being achieved after a cure period, then a public hearing shall be scheduled for possible use permit modification and/or revocation.

O. This Conditional Use Permit shall have a term of ten (10) years and shall expire on July 6, 2025. A request for permit extension shall be applied for by the permittee no later than one-hundred twenty (120) days prior to the expiration date.

K. To the extent permitted by law, the Developer shall defend and hold the City of San Marcos ("City"), its agents and employees harmless from liability from: (i) any and all actions, claims, damages, injuries, challenges and/or costs of liabilities arising from the City's approval of any and all entitlements or permits arising from the project as defined in the conditions of approval, or issuance of grading or building permits; (ii) any damages, liability and/or claim of any kind for any injury to or death of any person, or damage or injury of any kind to property which may arise from or be related to the direct or indirect operations of the Developer or its contractors, subcontractors, agents, employees or other persons acting on Developer's behalf which relate to the project; and (iii) any and all damages, liability and/or claims of any kind arising from operation of the project. Developer further agrees that such indemnification and hold harmless shall include all defense-related fees and costs associated with the defense of City by counsel selected by the City. This indemnification shall not terminate upon expiration of the conditions of approval or completion of the project, but shall survive in perpetuity.

PASSED AND ADOPTED by the Planning Commission of the City of San Marcos, State of California, at a regular meeting thereof, this 6th day of July 2015, by the following roll call vote:

AYES: COMMISSIONERS:

NOES: COMMISSIONERS:

ABSENT: COMMISSIONERS:

APPROVED:

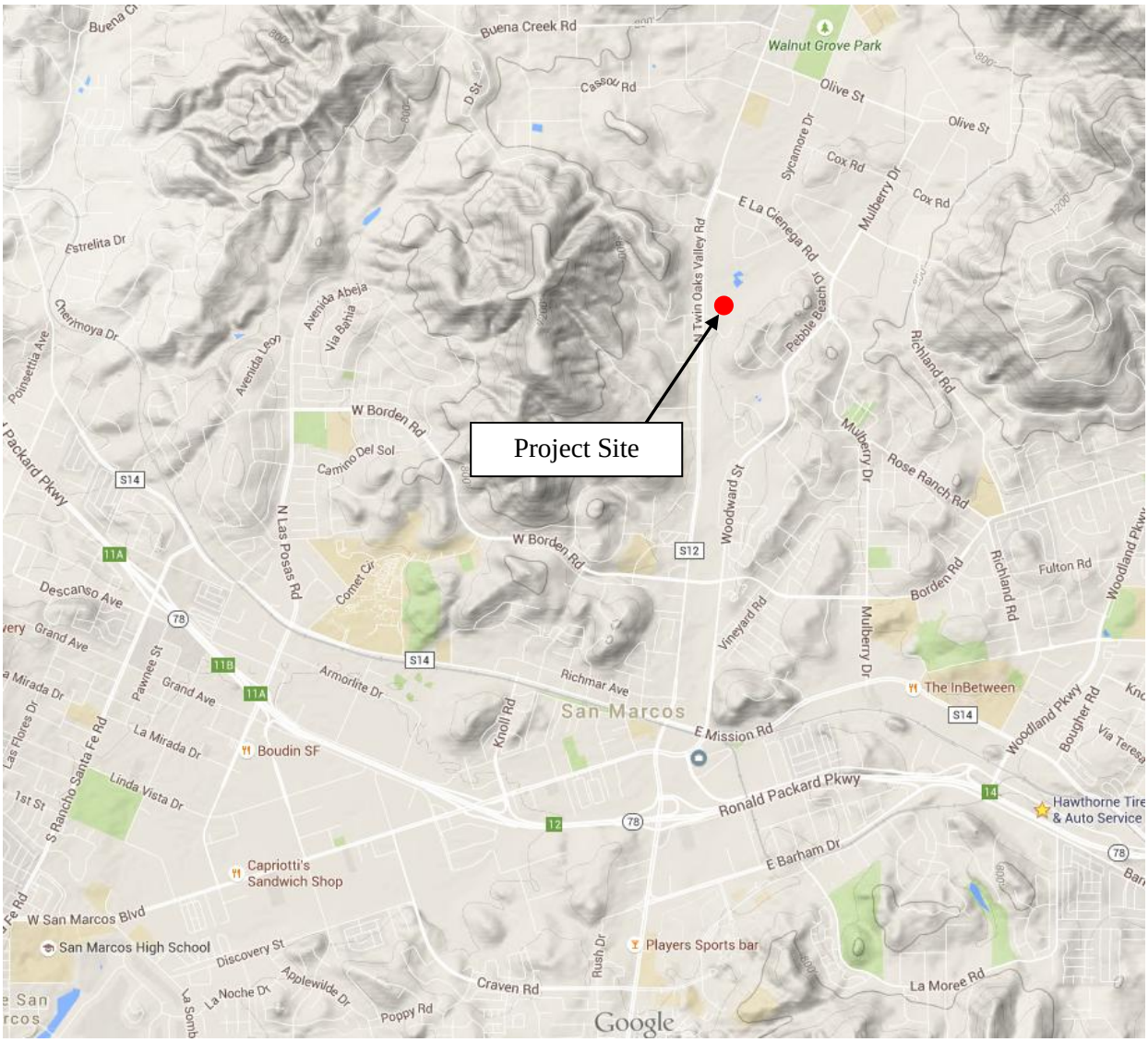
_____
Eric Flodine, Chairman
SAN MARCOS CITY PLANNING COMMISSION

ATTEST:

_____
Lisa Kiss, Office Specialist III
SAN MARCOS CITY PLANNING DIVISION

ATTACHMENT A

Vicinity Map




**AGENDA ITEM NO. _____**

ATTACHMENT B

Aerial Photo


**AGENDA ITEM NO. _____**

# ATTACHMENT C

Requested Entitlements

- Conditional Use Permit to allow the rehabilitation and continued operation of an existing thirty-five (35) foot tall wireless telecommunication facility on the Twin Oaks Valley Ranch Golf Course in the SPA zone (Twin Oaks Valley Ranch Specific Plan).

**AGENDA ITEM NO. _____**

# ATTACHMENT D

Site & Project Characteristics

| Property | Existing Land use | Zoning | General Plan Designation |
|---|---|---|---|
| Subject | Golf Course | SPA | SPA, TOVR |
| North | Vacant | OS | OS |
| South | Vacant | Commercial | Commercial |
| East | Residential | R-1-20 | Rural Residential (1-2 du/ac) |
| West | Residential | R-1-20 | Rural Residential (1-2 du/ac) |

| | | |
|---|---|---|
| Flood Hazard Zone | ____yes | __X__no |
| Sewers | __X__yes | ____no |
| Septic | ____yes | __X__no |
| Water | __X__yes | ___ no |
| Gen. Plan Conformance | __X*_yes | ___ no |
| Land Use Compatibility | __X*_yes | ___ no |

*With approval of a Conditional Use Permit

Development Standards of the Twin Oaks Valley Ranch SPA Zone:

| Setbacks | Required | Existing WTF structure |
|---|---|---|
| Front | 18 ft. | ≈ 700 ft. |
| Rear | 5 ft. | ≈ 675 ft. |
| Side | 10 ft. | ≈ 550 ft. |
| Height | 35 ft. | 35’-0” ft. |

**AGENDA ITEM NO. _____**

ATTACHMENT E

Site Photos

Photo of existing Wireless Telecommunication Facility

**AGENDA ITEM NO. _____**

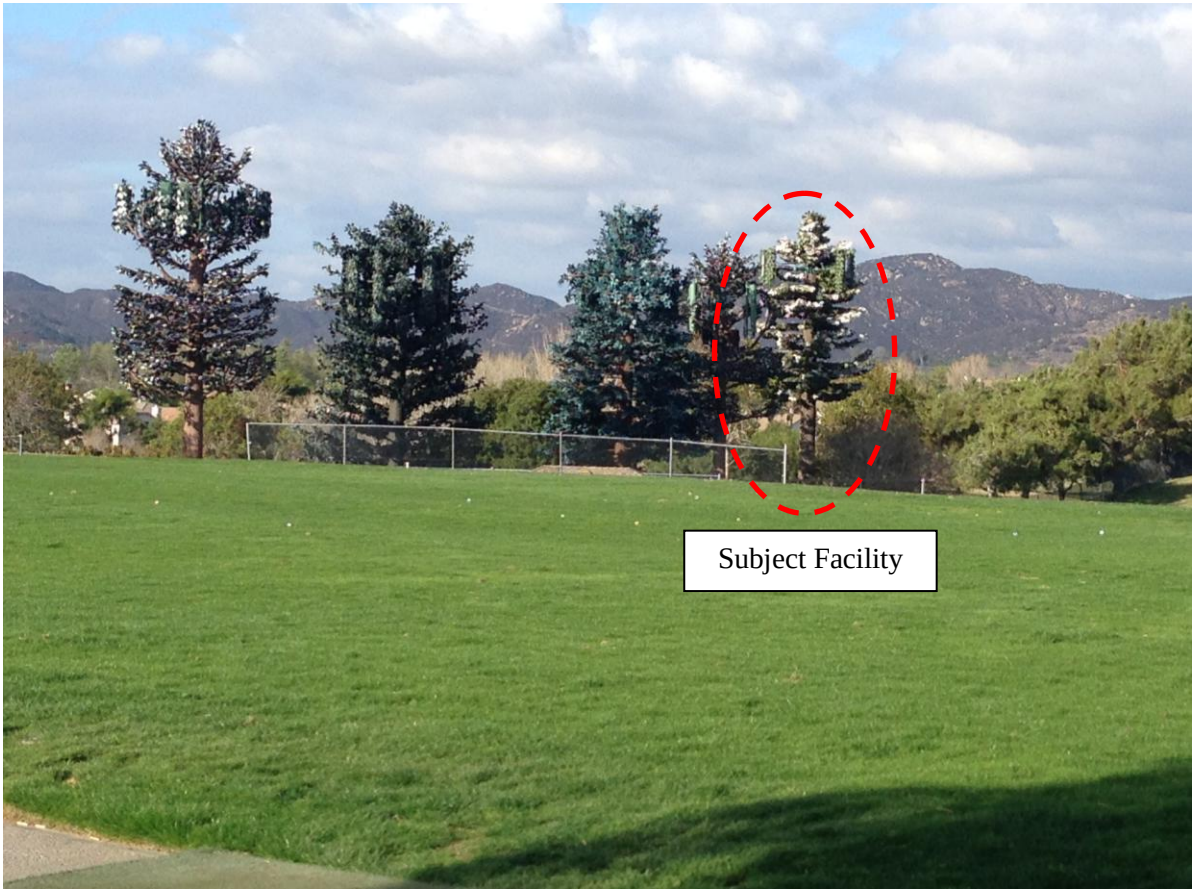



Photo of all wireless telecommunication facilities onsite (as seen from the tee-off area of the driving range), the project proposes to continue the operation of the facility to the right.

**AGENDA ITEM NO. _____**

ATTACHMENT F

RF/EME Report

**AGENDA ITEM NO. _____**

SITESAFE
RF COMPLIANCE EXPERTS
A BUSINESS OF FDH VELOCITEL

200 North Glebe Road, Suite 1000, Arlington, VA 22203-3728
703.276.1100 ● 703.276.1169 fax
info@sitesafe.com ● www.sitesafe.com

# Crown Castle on behalf of CUP Renewal
# Site ID – 828607
# Site Name – Twin Oaks GC
# Site Compliance Report

## 1441 North Twin Oaks Valley Road
## San Marcos, CA 92069

Site visit date: May 28, 2015
Site visit time: 1:30 PM
Site survey by: Robert Davis

Latitude: N33-10-00.20
Longitude: W117-9-27.60
Structure Type: Monotree

Report generated date: June 6, 2015
Report by: Tony DeMattia
Customer Contact: Jon Dohm

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## CUP Renewal is Compliant Based on FCC Rules and Regulations.

# CUP Renewal
# 828607 - Twin Oaks GC
# Radio Frequency (RF) Site Compliance Report

**1441 North Twin Oaks Valley Road, San Marcos, CA 92069**

**200 N. Glebe Road õ Suite 1000 õ Arlington, VA 22203-3728**
**703.276.1100 õ info@sitesafe.com**

# Table of Contents

# 1 Executive Summary

Crown Castle on behalf of CUP Renewal has contracted with Sitesafe, Inc. (Sitesafe), an independent Radio Frequency (RF) regulatory and engineering consulting firm, to determine whether the communications site, 828607 - Twin Oaks GC, located at 1441 North Twin Oaks Valley Road, San Marcos, CA, is in compliance with Federal Communication Commission (FCC) Rules and Regulations for RF emissions.

Sitesafe's field personnel visited 828607 - Twin Oaks GC on May 28, 2015. 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 is 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 CUP Renewal's 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.

# 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.

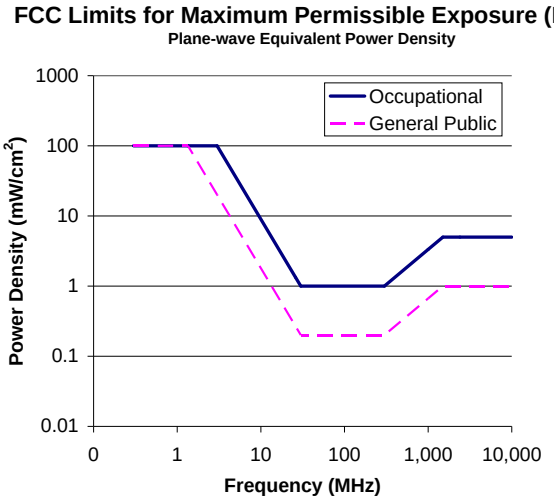
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* 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:




**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 is compliant** with the FCC rules and regulations, as described in OET Bulletin 65.

The compliance determination is based on General Public MPE levels due to theoretical modeling and/or physical measurements, RF signage placement, and the level of restricted access to the antennas at the site. 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 is compliant with the FCC rules and regulations.

Sitesafe recommends the placement of a Blue Notice sign at the base of the T-Mobile Monotree as a pre-caution only for personnel that have to work on the tree for maintenance.

# 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 door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

**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 5 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 Analysis

## 5.1 RF Emissions Diagram

The RF diagram(s) below display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix B.

The key at the bottom of each diagram indicates if percentages displayed are referenced to FCC General Population Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Gray represents areas predicted to be at 5% of the MPE limits, or below.
- Green represents areas predicted to be between 5% and 100% of the MPE limits.
- Blue represents areas predicted to be between 100% and 500% of the MPE limits.
- Yellow represents areas predicted to be between 500% and 5000% of the MPE limits.
- Red areas indicated predicted levels greater than 5000% of the MPE limits.

General Population diagrams are specified when an area is accessible to the public; i.e. personnel that do not meet Occupational or RF Safety trained criteria, could gain access.

If trained occupational personnel require access to areas that are delineated as **Blue** or above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

The key at the bottom also indicates the level or height of the modeling with respect to the main level. The origin is typically referenced to the main rooftop level, or ground level for a structure without access to the antenna level. For example:

Average from 0 feet above to 6 feet above origin

and

Average from 20 feet above to 26 feet above origin

The first indicates modeling at the main rooftop (or ground) level averaged over 6 feet. The second indicates modeling at a higher level (possibly a penthouse level) of 20 feet averaged over 6 feet.

**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 5, 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**

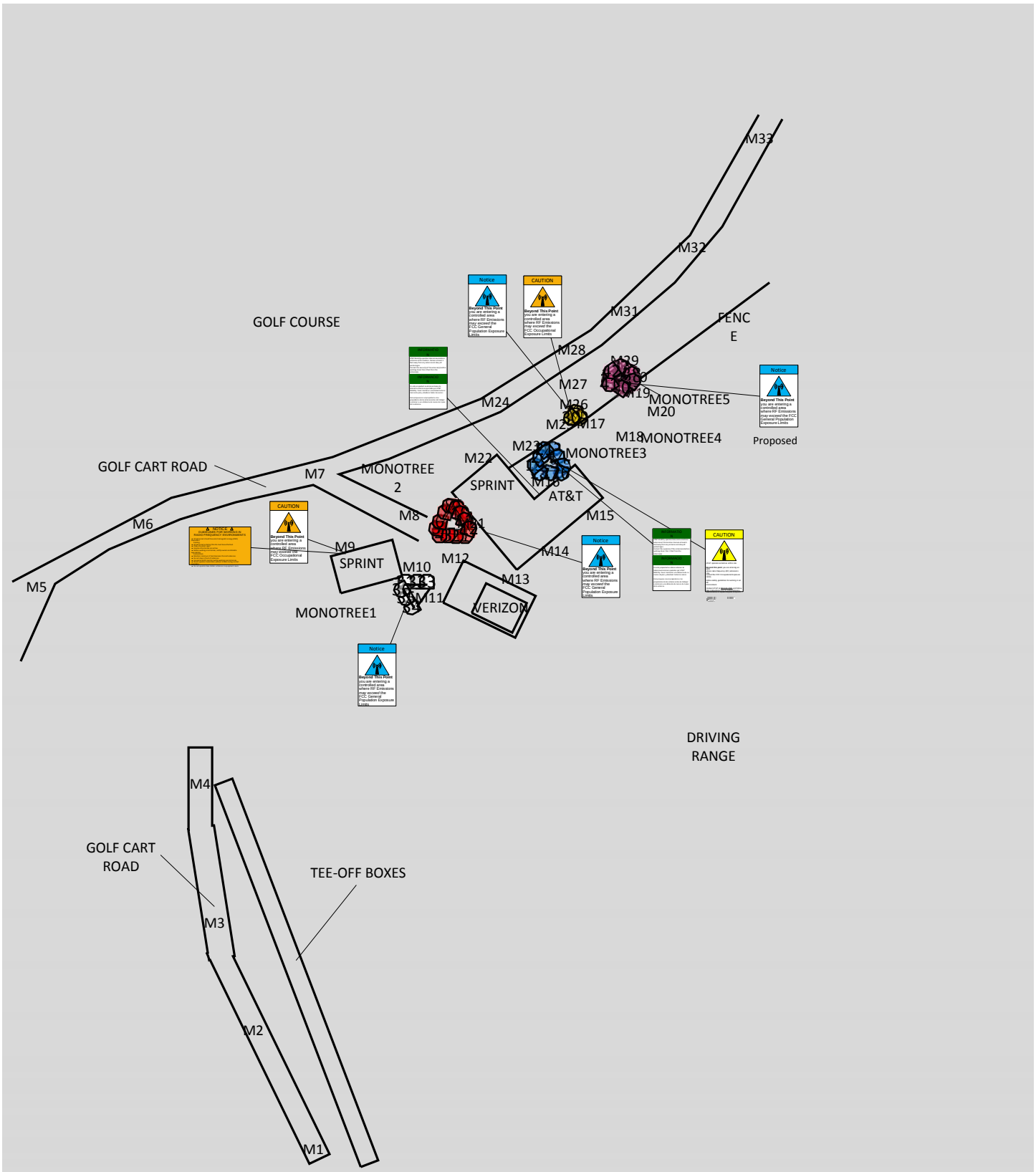
The RF Emission Diagram provides indications of RF signage, barriers and locked doors. The table below lists the abbreviations used to indicate locked doors, signs and barriers:

**Table 1: 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 | | |
| NOC Information | **INOCE** | **INOCR** | | | |
| 10 Step Guideline | **10SE** | **10SR** | | | |

As discussed in Section 5, 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.

# RF Emissions Simulation For: Twin Oaks GC
## Composite View




(Feet)

0 30 60

www.sitesafe.com

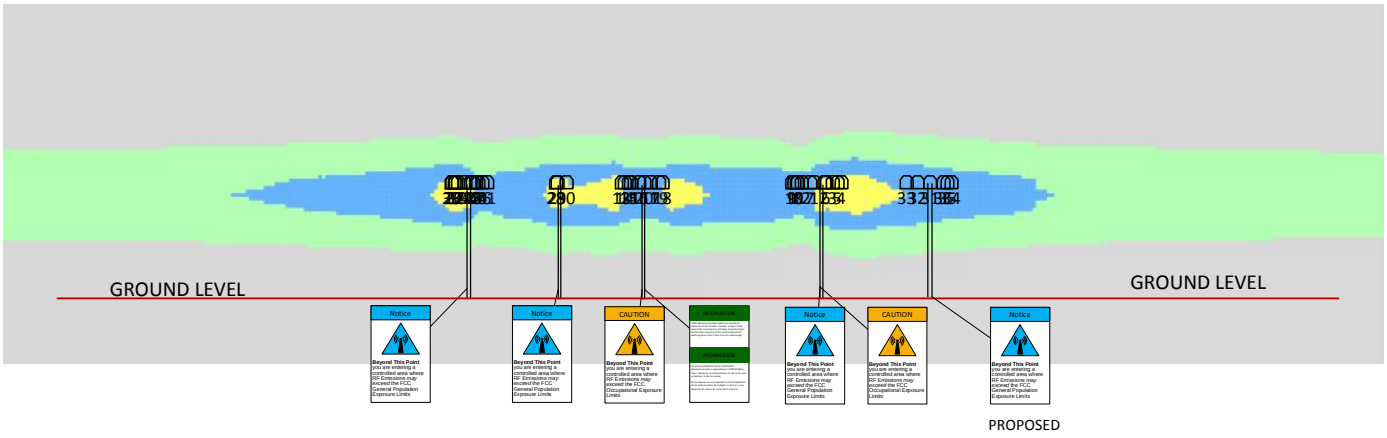
Site Name:Twin Oaks GC

| >= 5000 | >= 500 | >= 100 | >= 5 | < 5 |
|---|---|---|---|---|

| AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | METROPCS | CRICKET COMMUNICATIONS | CLEARWIRE | SPRINT |
|---|---|---|---|---|---|---|


SitesafeTC Version: 1.0.0.0
6/6/2015 10:47:01 AM

# RF Emissions Simulation For: Twin Oaks GC
## Side Elevation




% of FCC Public Exposure Limit
Spatial average 0' - 6'

>= 5000 | >= 500 | >= 100 | >= 5 | < 5

| AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | METROPCS | CRICKET COMMUNICATIONS | CLEARWIRE | SPRINT |
|---|---|---|---|---|---|---|

(Feet)
0 27.5 55
www.sitesafe.com
Site Name:Twin Oaks GC

## 5.2 Site Measurements

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 of this report. Two types of measurements were collected at each measurement location: maximum (peak) and spatial average. The spatial average measurement consists of a collection of ten (10) measurements within a ten (10) second time interval taken from zero (0) to six (6) feet in height. The purpose of this measurement technique is to identify the average power density over the dimensions of a typical human body.

Table 2 below contains all the measurements collected from accessible areas located at the site at the time of Sitesafe's visit. Whenever possible, measurements are taken in front of the antenna in the transmitting direction. However, 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 Measured Occupational Level: <1%

This value is equal to:

Highest General Public Level: <5%.

**Table 2: Spatial Average and Maximum Occupational Measurements**

| Measurements Points | Spatial Average | Maximum | Measurements Points | Spatial Average | Maximum |
|---|---|---|---|---|---|
| M1 | <1 % | <1 % | M18 | <1 % | <1 % |
| M2 | <1 % | <1 % | M19 | <1 % | <1 % |
| M3 | <1 % | <1 % | M20 | <1 % | <1 % |
| M4 | <1 % | <1 % | M21 | <1 % | <1 % |
| M5 | <1 % | <1 % | M22 | <1 % | <1 % |
| M6 | <1 % | <1 % | M23 | <1 % | <1 % |
| M7 | <1 % | <1 % | M24 | <1 % | <1 % |
| M8 | <1 % | <1 % | M25 | <1 % | <1 % |
| M9 | <1 % | <1 % | M26 | <1 % | <1 % |
| M10 | <1 % | <1 % | M27 | <1 % | <1 % |
| M11 | <1 % | <1 % | M28 | <1 % | <1 % |
| M12 | <1 % | <1 % | M29 | <1 % | <1 % |
| M13 | <1 % | <1 % | M30 | <1 % | <1 % |
| M14 | <1 % | <1 % | M31 | <1 % | <1 % |
| M15 | <1 % | <1 % | M32 | <1 % | <1 % |
| M16 | <1 % | <1 % | M33 | <1 % | <1 % |
| M17 | <1 % | <1 % | | | |

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

An RF Emission diagram has been included in section 5 of this document. All measurement locations are identified in this diagram. The locations of measurements in the RF Emission diagram can be cross referenced with Table 2 (above) to determine the actual spatial average and maximum measurement value per location.

# 6 Site Audit

## 6.1 Site Access Procedures

A site visit was conducted on May 28, 2015 at approximately 1:30 PM. The weather conditions were Sunny with a temperature of 71 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 unlocked/unrestricted at the time of the site visit. We checked in at the pro shop to access the site. They said it would be alright if I walked around the monotrees and tee-off row. RF signage is posted at or neat the base of 4 of the 5 monotrees.


**Figure 1: Sire Access Monotree #1 through #5**

## 6.2 Antenna Inventory

The Antenna Inventory shows all transmitting antennas at the site. This inventory was verified on site, and was utilized by Sitesafe to perform theoretical modeling of RF emissions. The inventory coincides with the site diagrams in this report, identifying each antenna's location at 828607 - Twin Oaks GC. The antenna information collected includes the following information:

- Licensee or wireless operator name
- Frequency or frequency band
- Transmitter power – Effective Radiated Power ("ERP"), or Equivalent Isotropic Radiated Power ("EIRP") in Watts
- Antenna manufacturer make, model, and gain

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

The following antenna inventory and representative photographs, on this and the following page, were obtained or verified during the site visit and were utilized to create the site model diagrams:

| Table 3: Antenna Inventory | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant # | Operated By | TX Freq (MHz) | ERP (Watts) | Antenna Gain (dBd) | Az (Deg) | Antenna Model | Ant Type | Length (ft) | Horizontal Half Power Beamwidth (Deg) | Location | | |
| | | | | | | | | | | X | Y | Z |
| 1 | VERIZON WIRELESS | 751 | 1863 | 12.91 | 180 | Andrew SBNH-1D6565B | Panel | 6.1 | 70 | 237.8' | 365.4' | 32' |
| 2 | VERIZON WIRELESS | 2100 | 3550 | 15.71 | 180 | Andrew SBNH-1D6565B | Panel | 6.1 | 65 | 233.8' | 365.4' | 32' |
| 3 | VERIZON WIRELESS | 1900 | 3850 | 16.11 | 180 | Andrew SBNH-1D6565B | Panel | 6.1 | 57 | 230.3' | 365.7' | 32' |
| 4 | VERIZON WIRELESS | 850 | 2341 | 13.11 | 180 | Andrew SBNH-1D6565B | Panel | 6.1 | 67 | 226.8' | 365.7' | 32' |
| 4 | VERIZON WIRELESS | 1900 | 3122 | 16.11 | 180 | Andrew SBNH-1D6565B | Panel | 6.1 | 57 | 226.8' | 365.7' | 32' |
| 5 | VERIZON WIRELESS | 751 | 1863 | 12.91 | 280 | Andrew SBNH-1D6565B | Panel | 6.1 | 70 | 225.4' | 368.7' | 32' |
| 6 | VERIZON WIRELESS | 2100 | 3550 | 15.71 | 280 | Andrew SBNH-1D6565B | Panel | 6.1 | 65 | 226.9' | 371.6' | 32' |
| 7 | VERIZON WIRELESS | 1900 | 3850 | 16.11 | 280 | Andrew SBNH-1D6565B | Panel | 6.1 | 57 | 229.2' | 375.7' | 32' |
| 8 | VERIZON WIRELESS | 850 | 2341 | 13.11 | 280 | Andrew SBNH-1D6565B | Panel | 6.1 | 67 | 231.2' | 378.4' | 32' |
| 8 | VERIZON WIRELESS | 1900 | 3122 | 16.11 | 280 | Andrew SBNH-1D6565B | Panel | 6.1 | 57 | 231.2' | 378.4' | 32' |
| 9 | VERIZON WIRELESS | 751 | 1863 | 12.91 | 20 | Andrew SBNH-1D6565B | Panel | 6.1 | 70 | 234.1' | 377.7' | 32' |
| 10 | VERIZON WIRELESS | 2100 | 3550 | 15.71 | 20 | Andrew SBNH-1D6565B | Panel | 6.1 | 65 | 235.8' | 375.2' | 32' |
| 11 | VERIZON WIRELESS | 1900 | 3850 | 16.11 | 20 | Andrew SBNH-1D6565B | Panel | 6.1 | 57 | 237.6' | 372.4' | 32' |
| 12 | VERIZON WIRELESS | 850 | 2341 | 13.11 | 20 | Andrew SBNH-1D6565B | Panel | 6.1 | 67 | 239.5' | 368.6' | 32' |
| 12 | VERIZON WIRELESS | 1900 | 3122 | 16.11 | 20 | Andrew SBNH-1D6565B | Panel | 6.1 | 57 | 239.5' | 368.6' | 32' |
| 13 | AT&T MOBILITY LLC | 850 | 635.4 | 12.01 | 80 | Powerwave 7780 | Panel | 4.6 | 71 | 275.6' | 402.7' | 32' |
| 13 | AT&T MOBILITY LLC | 1900 | 713 | 12.51 | 80 | Powerwave 7780 | Panel | 4.6 | 64 | 275.6' | 402.7' | 32' |
| 14 | AT&T MOBILITY LLC | 737 | 1119.8 | 12.71 | 80 | Powerwave P65-16-XLH-RR | Panel | 6 | 66 | 277.6' | 399.6' | 32' |
| 15 | AT&T MOBILITY LLC | 850 | 635.4 | 12.01 | 80 | Powerwave 7780 | Panel | 4.6 | 71 | 279.8' | 395.8' | 32' |
| 15 | AT&T MOBILITY LLC | 1900 | 713 | 12.51 | 80 | Powerwave 7780 | Panel | 4.6 | 64 | 279.8' | 395.8' | 32' |
| 16 | AT&T MOBILITY LLC | 850 | 635.4 | 12.01 | 200 | Powerwave 7780 | Panel | 4.6 | 71 | 279' | 392.6' | 32' |
| 16 | AT&T MOBILITY LLC | 1900 | 713 | 12.51 | 200 | Powerwave 7780 | Panel | 4.6 | 64 | 279' | 392.6' | 32' |

| Table 3: Antenna Inventory | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant # | Operated By | TX Freq (MHz) | ERP (Watts) | Antenna Gain (dBd) | Az (Deg) | Antenna Model | Ant Type | Length (ft) | Horizontal Half Power Beamwidth (Deg) | Location | | |
| | | | | | | | | | | X | Y | Z |
| 17 | AT&T MOBILITY LLC | 737 | 1119.8 | 12.71 | 200 | Powerwave P65-16-XLH-RR | Panel | 6 | 66 | 274.4' | 392.6' | 32' |
| 18 | AT&T MOBILITY LLC | 850 | 635.4 | 12.01 | 200 | Powerwave 7780 | Panel | 4.6 | 71 | 269.8' | 392.6' | 32' |
| 18 | AT&T MOBILITY LLC | 1900 | 713 | 12.51 | 200 | Powerwave 7780 | Panel | 4.6 | 64 | 269.8' | 392.6' | 32' |
| 19 | AT&T MOBILITY LLC | 850 | 635.4 | 12.01 | 320 | Powerwave 7780 | Panel | 4.6 | 71 | 267.8' | 396' | 32' |
| 19 | AT&T MOBILITY LLC | 1900 | 713 | 12.51 | 320 | Powerwave 7780 | Panel | 4.6 | 64 | 267.8' | 396' | 32' |
| 20 | AT&T MOBILITY LLC | 737 | 1119.8 | 12.71 | 320 | Powerwave P65-16-XLH-RR | Panel | 6 | 66 | 270.2' | 399.4' | 32' |
| 21 | AT&T MOBILITY LLC | 850 | 635.4 | 12.01 | 320 | Powerwave 7780 | Panel | 4.6 | 71 | 272' | 402.7' | 32' |
| 21 | AT&T MOBILITY LLC | 1900 | 713 | 12.51 | 320 | Powerwave 7780 | Panel | 4.6 | 64 | 272' | 402.7' | 32' |
| 22 | T-MOBILE | 2100 | 2066.1 | 15.37 | 335 | Ericsson AIR 21 B2A B4P | Panel | 4.7 | 65 | 306.4' | 437.2' | 32' |
| 23 | T-MOBILE | 1900 | 2066.1 | 15.37 | 335 | Ericsson AIR 21 B2A B4P | Panel | 4.7 | 65 | 308.3' | 436.2' | 32' |
| 24 | T-MOBILE | 1900 | 2066.1 | 15.37 | 35 | Ericsson AIR 21 B2A B4P | Panel | 4.7 | 65 | 308.5' | 431.3' | 32' |
| 25 | T-MOBILE | 1900 | 2066.1 | 15.37 | 35 | Ericsson AIR 21 B2A B4P | Panel | 4.7 | 65 | 306.5' | 430.1' | 32' |
| 26 | T-MOBILE | 1900 | 2066.1 | 15.37 | 235 | Ericsson AIR 21 B2A B4P | Panel | 4.7 | 65 | 300.3' | 432.6' | 32' |
| 27 | T-MOBILE | 1900 | 2066.1 | 15.37 | 235 | Ericsson AIR 21 B2A B4P | Panel | 4.7 | 65 | 300.8' | 434.6' | 32' |
| 28 | SPRINT | 862 | 869.1 | 13.37 | 15 | RFS APXVSPP18-C-A20 | Panel | 6 | 65 | 285.2' | 418.8' | 32' |
| 28 | SPRINT | 1900 | 1694.6 | 16.27 | 15 | RFS APXVSPP18-C-A20 | Panel | 6 | 65 | 285.2' | 418.8' | 32' |
| 29 | SPRINT | 862 | 869.1 | 13.37 | 140 | RFS APXVSPP18-C-A20 | Panel | 6 | 65 | 287' | 416.4' | 32' |
| 29 | SPRINT | 1900 | 1694.6 | 16.27 | 140 | RFS APXVSPP18-C-A20 | Panel | 6 | 65 | 287' | 416.4' | 32' |
| 30 | SPRINT | 862 | 869.1 | 13.37 | 230 | RFS APXVSPP18-C-A20 | Panel | 6 | 65 | 283.6' | 416.4' | 32' |
| 30 | SPRINT | 1900 | 1694.6 | 16.27 | 230 | RFS APXVSPP18-C-A20 | Panel | 6 | 65 | 283.6' | 416.4' | 32' |
| 31 | SPRINT (DECOMMISSIONED) | 862 | 0 | 12.01 | 0 | EMS FR65-12-00DAL2 | Panel | 4 | 65 | 212.2' | 345.8' | 32' |
| 32 | SPRINT (DECOMMISSIONED) | 862 | 0 | 12.01 | 0 | EMS FR65-12-00DAL2 | Panel | 4 | 65 | 217.1' | 345.8' | 32' |
| 33 | SPRINT (DECOMMISSIONED) | 862 | 0 | 12.01 | 0 | EMS FR65-12-00DAL2 | Panel | 4 | 65 | 221.4' | 345.8' | 32' |

| Table 3: Antenna Inventory | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant # | Operated By | TX Freq (MHz) | ERP (Watts) | Antenna Gain (dBd) | Az (Deg) | Antenna Model | Ant Type | Length (ft) | Horizontal Half Power Beamwidth (Deg) | Location | | |
| | | | | | | | | | | X | Y | Z |
| 34 | SPRINT (DECOMMISSIONED) | 862 | 0 | 12.01 | 240 | EMS FR65-12-00DAL2 | Panel | 4 | 65 | 214.8' | 334.8' | 32' |
| 35 | SPRINT (DECOMMISSIONED) | 862 | 0 | 12.01 | 240 | EMS FR65-12-00DAL2 | Panel | 4 | 65 | 212.4' | 338.8' | 32' |
| 36 | SPRINT (DECOMMISSIONED) | 862 | 0 | 12.01 | 240 | EMS FR65-12-00DAL2 | Panel | 4 | 65 | 210.4' | 342.3' | 32' |
| 37 | T-MOBILE (PROPOSED) | 1900 | 1377.4 | 15.37 | 335 | Ericsson AIR 21 B2A B4P | Panel | 4.7 | 65 | 304.7' | 438.4' | 32' |
| 38 | T-MOBILE (PROPOSED) | 1900 | 1377.4 | 15.37 | 335 | Ericsson AIR 21 B2A B4P | Panel | 4.7 | 65 | 309.6' | 435.2' | 32' |
| 39 | T-MOBILE (PROPOSED) | 1900 | 1377.4 | 15.37 | 35 | Ericsson AIR 21 B2A B4P | Panel | 4.7 | 65 | 310' | 432.2' | 32' |
| 40 | T-MOBILE (PROPOSED) | 1900 | 1377.4 | 15.37 | 35 | Ericsson AIR 21 B2A B4P | Panel | 4.7 | 65 | 305.2' | 429.3' | 32' |
| 41 | T-MOBILE (PROPOSED) | 1900 | 1377.4 | 15.37 | 235 | Ericsson AIR 21 B2A B4P | Panel | 4.7 | 65 | 300' | 430.9' | 32' |
| 42 | T-MOBILE (PROPOSED) | 1900 | 1377.4 | 15.37 | 235 | Ericsson AIR 21 B2A B4P | Panel | 4.7 | 65 | 300.9' | 436.4' | 32' |

NOTE: X, Y and Z indicate relative position of the antenna to the origin location on the site, displayed in the model results diagram. Specifically, the Z reference indicates antenna height above the main site level unless otherwise indicated. ERP values provided by the client and used in the modeling may be greater than are currently deployed. For other carriers at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to carrier, their FCC license and/or antenna information was not available nor could it be secured while on site. Equipment, antenna models and nominal transmit power were used for modeling, based on past experience with radio service providers.

## 6.3 Site Pictures

**Figure 2: Verizon Wireless Alpha Sector Antennas #1 through #4**

**Figure 3: Verizon Wireless Beta Sector Antennas #5 through #8**

**Figure 4: Verizon Wireless Gamma Sector Antennas #9 through #12**

**Figure 5: Verizon Wireless Equipment**

**Figure 6: AT&T Mobility LLC Antennas #13 through #15**

**Figure 7: AT&T Mobility LLC Antennas #16 through #18**

**Figure 8: AT&T Mobility LLC Antennas #19 through #21**

**Figure 9: AT&T Mobility LLC Equipment**

**Figure 10: T-Mobile Antennas #22 and #23**

**Figure 11: T-Mobile Antennas #24 and #25**

**Figure 12: T-Mobile Antennas #26 and #27**

**Figure 13: Sprint Antenna #28**

**Figure 14: Sprint Antenna #29**

**Figure 15: Sprint Antenna #30**

**Figure 16: Sprint Decommission iDEN Antennas #31 through #33**

**Figure 17: Sprint Decommission iDEN Antennas #34 through #36**


**Figure 18: Sprint Equipment Shelter**


**Figure 19: Sprint Equipment Shelter**

**Figure 20: Monopole #1 Overview**

**Figure 21: Monopole #2 Overview**

**Figure 22: Monopole #3 Overview**

**Figure 23: Monopole #4 Overview**

**Figure 24: Monopole #5 Overview**

# 7 Field Technician Certification

I, Robert Davis, 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 828607 - Twin Oaks GC on May 28, 2015 at 1:30 PM 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 NBM-550 2401-01B field intensity meter (serial number F-0231) and model EA-5091 2402-07B field intensity probe, (serial number 1184) calibrated on 4/21/2015; 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: Robert Davis

# 8 Engineer Certification

The professional engineer whose seal appears on the cover of this document hereby certifies and affirms that:

I am registered as a Professional Engineer in the jurisdiction indicated in the professional engineering stamp on the cover of this document; and

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

That I am thoroughly 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 survey measurements of the site environment of the site identified as 828607 - Twin Oaks GC have been performed 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 I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Tony DeMattia.

June 6, 2015

## 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 CUP Renewal, 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 CUP Renewal 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 5, to inform <u>everyone</u> 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:

- Gray represents area at below 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 100% of the General Public MPE limits. This level is safe for a worker to be in at any time.

- Blue represents areas predicted to be between 100% and 500% 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 500% and 5000% of the General Public MPE limits. This level is safe for a worker to be in.
- Red areas indicated predicted levels greater than 5000% 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 strong 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.

ATTACHMENT G

Wireless Planning Memorandum

**AGENDA ITEM NO. _____**

TELECOM LAW FIRM PC

**ROBERT C. MAY III, ESQ.**
TRIPP@TELECOMLAWFIRM.COM
LA JOLLA OFFICE

# WIRELESS PLANNING MEMORANDUM

**TO:** Sean del Solar

**FROM:** Robert C. May

**REVIEWER:** Jonathan L. Kramer

**DATE:** June 9, 2015

**RE:** **P14-0039 (CCTMO, LLC for T-Mobile)**

**Request to Renew a Conditional Use Permit for a Faux-Tree Wireless Site at the Twin Oaks Valley Golf Course**

The City of San Marcos (the "**City**") requested a review of the CCTMO, LLC ("**Crown Castle**") request to renew its conditional use permit (CUP 14-014) to operate a T-Mobile wireless site concealed as faux deciduous tree at the Twin Oaks Valley Golf Course located at 1441 North Twin Oaks Valley Road. Verizon, AT&T and Sprint also operate wireless sites on adjacent faux-trees near the Crown Castle tower.

## 1. Project Description

Crown Castle currently operates a wireless site at the Golf Course that generally involves a 35-foot above ground level ("**AGL**") tower with six panel antennas center-mounted at approximately 32 feet AGL and an adjacent underground equipment vault.[1] The tower includes faux tree branches, faux tree bark and antenna "socks" with faux leafs to conceal the equipment. Although Crown Castle does not propose to change any equipment, it does propose to plant two new cedrus deodara trees around the equipment vault to further conceal the equipment.

## 2. Section 6409(a) Analysis

As a threshold matter, the City must determine whether federal law mandates approval for this permit application. Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012 requires that State and local governments "may not deny, and shall approve" an "eligible facilities request" so long as the proposal does not result in a "substant[ial] change."[2] On October 17, 2014, the Federal Communications Commission (the "**FCC**") adopted rules to interpret and

[1] The description in this memorandum based on the project plans dated February 9, 2015 and submitted with the application. The 35-foot height does not include the faux-branch "topper" that extends approximately four feet above the overall tower height.

[2] *See* Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, 126 Stat. 156. (Feb. 22, 2012) (codified as 47 U.S.C. § 1455(a)).

implement Section 6409(a), which became effective on April 9, 2014.[3] The applicant bears the burden to prove that its proposal qualifies.

Section 6409(a)(2) defines an "eligible facilities request" as a request to collocate, remove or replace transmission equipment on an existing wireless tower or base station.[4] This definition necessarily excludes permit requests for new facilities. Thus, no matter how large or small, the statute does not mandate approval for a permit to construct an entirely new wireless site.

Here, Section 6409(a) does not mandate permit approval because Crown Castle did not submit an eligible facilities request. An application to renew an expired conditional use permit is essentially the same as an application for a new site.[5] Even if the CUP did not expire, the additional trees as concealment do not qualify as "transmission equipment" to be modified or collocated. Accordingly, the City can conclude that Section 6409(a) does not mandate permit approval on this basis alone and without any "substantial change" analysis.

This conclusion does not necessarily mean the City may deny the permit. Rather, the City simply possesses its normal land-use discretion subject to other State and federal regulations.

**3. Concealment Comments**

The overall design follows generally sound concealment techniques in that it includes concealment elements such as faux-bark, faux-leaf socks and landscape features to blend the site into its natural setting. However, the City should consider updated conditions of approval to maintain and improve the existing concealment.

To ensure that Crown Castle maintains the existing concealment and proposed trees in good condition, the City should include the following conditions of approval:

1. Permittee shall install and at all times maintain in good condition at least three (3) faux branches per vertical foot (not including the faux-tree "topper" above the tower).

2. Permittee shall install and at all times maintain in good condition faux-bark cladding over the entire vertical tower structure.

3. Permittee shall install and at all times maintain in good condition faux-broadleaf "socks" over all tower-mounted equipment, including but not limited to the antennas and any related transceiver and/or amplifiers.

---

[3] *See In the Matter of Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies*, Report and Order, 29 FCC Rcd. 12864 (Oct. 17, 2014) (codified as 47 C.F.R. §§ 1.40001, *et seq.*).
[4] *See* 47 U.S.C. § 1455(a)(2).
[5] *See, e.g.*, American Tower Corp. v. City of San Diego, 763 F.3d 1035, 1050 (9th Cir. 2014).

4. Permittee shall promptly repair or replace any concealment elements, including but not limited to the faux branches, bark, socks and landscape features that fall into a state of disrepair or exceed their normal useful life.

**4. Planned RF Compliance Evaluation**

State and local governments cannot regulate wireless sites based on the environmental effects from radiofrequency ("**RF**") emissions to the extent that such emissions comply with applicable FCC regulations.[6] The FCC occupies the field with respect to RF emissions regulation with comprehensive rules for maximum permissible exposure (the "**FCC Rules**").[7] State and local governments cannot establish their own RF standards—whether more strict, more lenient or even the same. However, State and local governments may require an applicant to demonstrate "planned compliance" with the FCC Rules.[8]

The FCC "categorically excludes" wireless facilities from routine RF exposure analysis when virtually inaccessible to the general public. A site qualifies for the categorical exclusion when its antennas are mounted (1) to structure solely or primarily built to support wireless antennas and (2) more than 10 meters above ground level.[9] The FCC Rules presume that these sites will not expose the general public to emissions that exceed the maximum permissible exposure level.

Here, Crown Castle proposes to continue to use its existing a mono broad leaf which is a structure solely and primarily built to support wireless antennas however the proposed antennas are being placed under 10 meters AGL, therefore, the FCC Rules do not categorically exclude this facility. Accordingly, an additional analysis is needed to determine whether the proposed site demonstrates planned compliance with the FCC Rules.

Crown Castle submitted a *Site Compliance Report* dated June 6, 2015, prepared by SiteSafe, Inc. (the "**Site Safe Report**"), which concludes that the proposed Crown Castle wireless facility demonstrates compliance with the FCC Rules.

The Site Safe Report contains sufficient RF emissions information for all four carriers at this location for an independent planned compliance analysis. Based on the transmitter frequencies and power levels disclosed in the report, the T-Mobile transmitters create a "controlled access zone" that extends approximately 24 feet from the face of the antennas at approximately the emissions centerline (or 32 feet AGL). The Verizon transmitters create a controlled access zone that extends approximately 50.5 feet from the face of the antennas at approximately the emissions centerline (or 32 feet AGL). The AT&T transmitters create a controlled access zone that

[6] *See* 47 U.S.C. § 332(c)(7)(B)(iv).
[7] *See* 47 C.F.R. § 1.1307 *et seq.*; *see also* FCC Office of Engineering and Technology Bulletin 65.
[8] *See* In re Procedures for Reviewing Requests for Relief from State and Local Regulations Pursuant to Section 332(c)(7)(B)(iv) of the Communications Act of 1934, *Report and Order*, 15 FCC Rcd. 22821, 22828–22829 (Nov. 13, 2000) (declining to adopt rules that limit demonstrations of compliance).
[9] *See* 47 C.F.R. § 1.1307(b)(1).

extends approximately 28 feet from the face of the antennas at approximately the emissions centerline (or 32 feet AGL). Finally, the Sprint transmitters create a controlled access zone that extends approximately 21.5 feet from the face of the antennas at approximately the emissions centerline (or 32 feet AGL).

The controlled access zone extends horizontally from the antennas with very little emissions that stray in any other direction, including towards ground level. Although cumulative emissions from the adjacent transmitters at each site may increase the emissions levels where they intersect, those areas are contained within the inaccessible air space at approximately 32 feet above the accessible areas at ground level. As the Site Safe Report demonstrates, no areas at ground level will exceed the FCC maximum permissible exposure levels for continuous exposure to the general population.

The fact that a site creates a controlled access zone does not necessarily mean that it violates the FCC Rules. Rather, a controlled access zone means that the carrier must affirmatively restrict public access to that area so that members of the general population (including trespassers) cannot unknowingly enter and be exposed to radio emissions in excess of those allowed by the FCC.

In this case, T-Mobile can demonstrate compliance with access restrictions and signage measures because, as discussed above, no areas at ground level will exceed the limits in the FCC Rules. Accordingly, the City should include the following conditions of approval:

1. Permittee shall install and at all times maintain in good condition a "Network Operations Center Information" sign at the access point(s) to the equipment vault. Permittee shall install the signs required under this condition so that a person may clearly see and understand the sign as he or she approaches the equipment vault hatch;

2. Permittee shall install and at all times maintain in good condition an "RF Notice" and "Network Operations Center Information" sign on the base of the tower. Permittee shall install the signs required under this condition so that a person may clearly see and understand the sign as he or she approaches the tower; and

3. Permittee shall ensure that all signage complies with FCC OET Bulletin 65 or ANSI C95.2 for color, symbol, and content conventions. All such signage shall at all times provide a working local or toll-free telephone number to its network operations center, and such telephone number shall be able to reach a live person who can exert transmitter power-down control over this site as required by the FCC.

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## 5. Conclusion

Subject to the recommended conditions in this memorandum, the City should advance this permit application to the next stage in the review process.

RM/jlk

ATTACHMENT H

Project Plans

**AGENDA ITEM NO. _____**

## CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES:

1. 2013 CALIFORNIA ADMINISTRATIVE CODE
2. 2013 CALIFORNIA BUILDING CODE (CBC) (2013 INTERNATIONAL BUILDING CODE WITH CALIFORNIA AMENDMENTS)
3. 2012 CALIFORNIA ELECTRICAL CODE (CEC) (2012 NATIONAL ELECTRICAL CODE WITH CALIFORNIA AMENDMENTS)
4. 2012 CALIFORNIA ENERGY CODE
5. 2012 CALIFORNIA MECHANICAL CODE (CMC) (2012 INTERNATIONAL MECHANICAL CODE WITH CALIFORNIA AMENDMENTS)
6. 2013 CALIFORNIA PLUMBING CODE (CPC) (2008 INTERNATIONAL PLUMBING CODE WITH CALIFORNIA AMENDMENTS)
7. ANSI/TIA-222-G LIFE SAFETY CODE NFPA-101
8. LOCAL BUILDING CODE AND AMENDMENTS
9. CITY/COUNTY ORDINANCES

## GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

DIGALERT

DIAL TOLL FREE
811
AT LEAST TWO
WORKING DAYS
BEFORE YOU DIG

USA NORTH UNDERGROUND SERVICE ALERT SERVING CENTRAL/NORTHERN CALIFORNIA AND NEVADA

## SITE INFORMATION

| | |
|---|---|
| PROPERTY OWNER: | REGENCY LA JOLLA L.P. |
| ADDRESS: | A CALIFORNIA LIMITED PARTNERSHIP<br>533 COAST BOULEVARD<br>LA JOLLA, CA 92037<br>CONTACT: PAUL REED<br>PHONE: (760)591-3240 |
| APPLICANT: | CCTMO, LLC (AKA, CROWN CASTLE) |
| ADDRESS: | 510 CASTILLO STREET, SUITE 302<br>SANTA BARBARA, CA 93101 |
| APPLICANT REPRESENTATIVE: | JON DOHM, ZONING MANAGER, CROWN CASTLE |
| ADDRESS: | 222 EAST CARRILLO STREET, SUITE 107<br>SANTA BARBARA, CA 93101 |
| LATITUDE (NAD 83): | 33° 170' 400.2" N |
| LONGITUDE (NAD 83): | 117° 09' 27.6" W |
| LONGITUDE/LATITUDE TYPE: | NAD 83 |
| APN #: | 182-160-12 & 181-160-22 |
| ZONING JURISDICTION: | CITY OF SAN MARCOS |
| AREA OF CONSTRUCTION: | ±16,200 SQ. FT. |
| OCCUPANCY TYPE: | B |
| CONSTRUCTION TYPE: | V-N |
| LAND USE: | GOLF COURSE |
| HEIGHT OF CONSTRUCTION: | 35'-0" H. MONO/BROADLEAF TREE |
| OCCUPANCY: | UNMANNED TELECOMMUNICATIONS FACILITY |
| CARRIER: | T-MOBILE USA<br>JOE THOMPSON (949) 350-5376 |

# CROWN CASTLE

# SITE NAME:
# TWIN OAKS GOLF COURSE
# SITE NUMBER:
# 828607

## PROJECT TYPE:
## CONDITIONAL USE PERMIT (RENEWAL)

## PROJECT ADDRESS:
## 1441 N. TWIN OAKS VALLEY ROAD
## SAN MARCOS, CA 92069

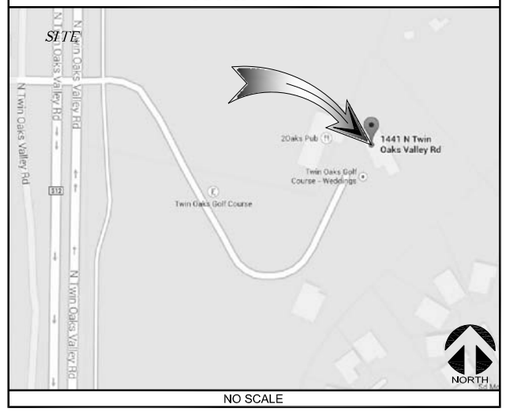
## PROJECT TEAM

**PROJECT MANAGER:**
CROWN CASTLE
510 CASTILLO STREET, SUITE 302
SANTA BARBARA, CA 93101
CONTACT: JON DOHM AICP
PHONE: (805) 957-1629

**PERMITTING:**
CROWN CASTLE
510 CASTILLO STREET, SUITE 302
SANTA BARBARA, CA 93101
CONTACT: JON DOHM AICP
PHONE: (805) 957-1629

**ENGINEERING:**
NATIONAL ENGINEERING & CONSULTING, INC.
27 ORCHARD
LAKE FOREST, CA 92630
PHONE: (949) 716-9990
FAX: (949) 716-9997

## VICINITY MAP




NO SCALE

## DRIVING DIRECTIONS

FROM CROWN CASTLE OFFICE:

1. HEAD SOUTHEAST ON CASTILLO ST TOWARD W HALEY ST.
2. TURN LEFT TO MERGE ONTO US-101 S.
3. MERGE ONTO US-101 S.
4. TAKE THE EXIT ONTO I-405 S./SAN DIEGO FWY.
5. TAKE THE EXIT ONTO CA-73 S. TOWARD SAN DIEGO (PARTIAL TOLL ROADS)
6. TAKE THE EXIT ONTO I-5 S.
7. TAKE THE VISTA WAY/CA-78 EXIT.
8. MERGE ONTO CA-78 E.
9. TAKE THE TWIN OAKS VALLEY RD. EXIT.
10. TURN LEFT ONTO N. TWIN OAKS VALLEY RD.
11. TURN RIGHT.
    DESTINATION WILL BE ON THE RIGHT
    1441 N. TWIN OAKS VALLEY RD. SAN MARCOS, CA 92069

## APPROVALS

| APPROVAL | SIGNATURE | DATE |
|---|---|---|
| PROJECT MANAGER | | |
| CONSTRUCTION MANAGER | | |
| RF ENGINEER | | |
| SITE ACQUISITION | | |
| PLANNING CONSULTANT | | |
| PROPERTY OWNER | | |
| CROWN CASTLE REPRESENTATIVE | | |

## PROJECT DESCRIPTION

THE PURPOSE OF THESE DRAWINGS IS TO REFLECT THE AS-BUILT CONDITIONS OF THE SUBJECT SITE IN ORDER TO OBTAIN A CUP RENEWAL. NO NEW WORK IS PROPOSED.

PROPOSED (2) 25 GAL. CEDRUS DEODARA TREES.

## DRAWING INDEX

| SHEET NO: | SHEET TITLE |
|---|---|
| T-1 | TITLE SHEET |
| A-1 | SITE PLAN |
| A-2 | ENLARGED SITE PLAN |
| A-3 | EQUIPMENT AND ANTENNA LAYOUT PLANS |
| A-4 | ARCHITECTURAL ELEVATIONS |
| A-5 | ARCHITECTURAL ELEVATIONS |

## ZONING DRAWING

IF USING 11"X17" PLOT, DRAWINGS WILL NOT BE TO SCALE

## DO NOT SCALE DRAWINGS

SUBCONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

PLANS PREPARED FOR:

CROWN CASTLE
510 CASTILLO ST., SUITE 302
SANTA BARBARA, CA 93101

PLANS PREPARED BY:

NATIONAL ENGINEERING & CONSULTING, INC
27 ORCHARD, LAKE FOREST, CA 92630
PHONE: (949) 716-9990 | FAX: (949) 716-9997

REVISIONS

| REV. | DATE | DESCRIPTION | INITIALS |
|---|---|---|---|
| 1 | 03/17/14 | 90% ZONING | YD |
| 2 | 05/07/14 | CLIENT REVISIONS | SA |
| 3 | 10/13/14 | 100% ZONING | AZ |
| 4 | 02/09/15 | CLIENT REVISION | NT |

LICENSURE:

SITE INFORMATION:

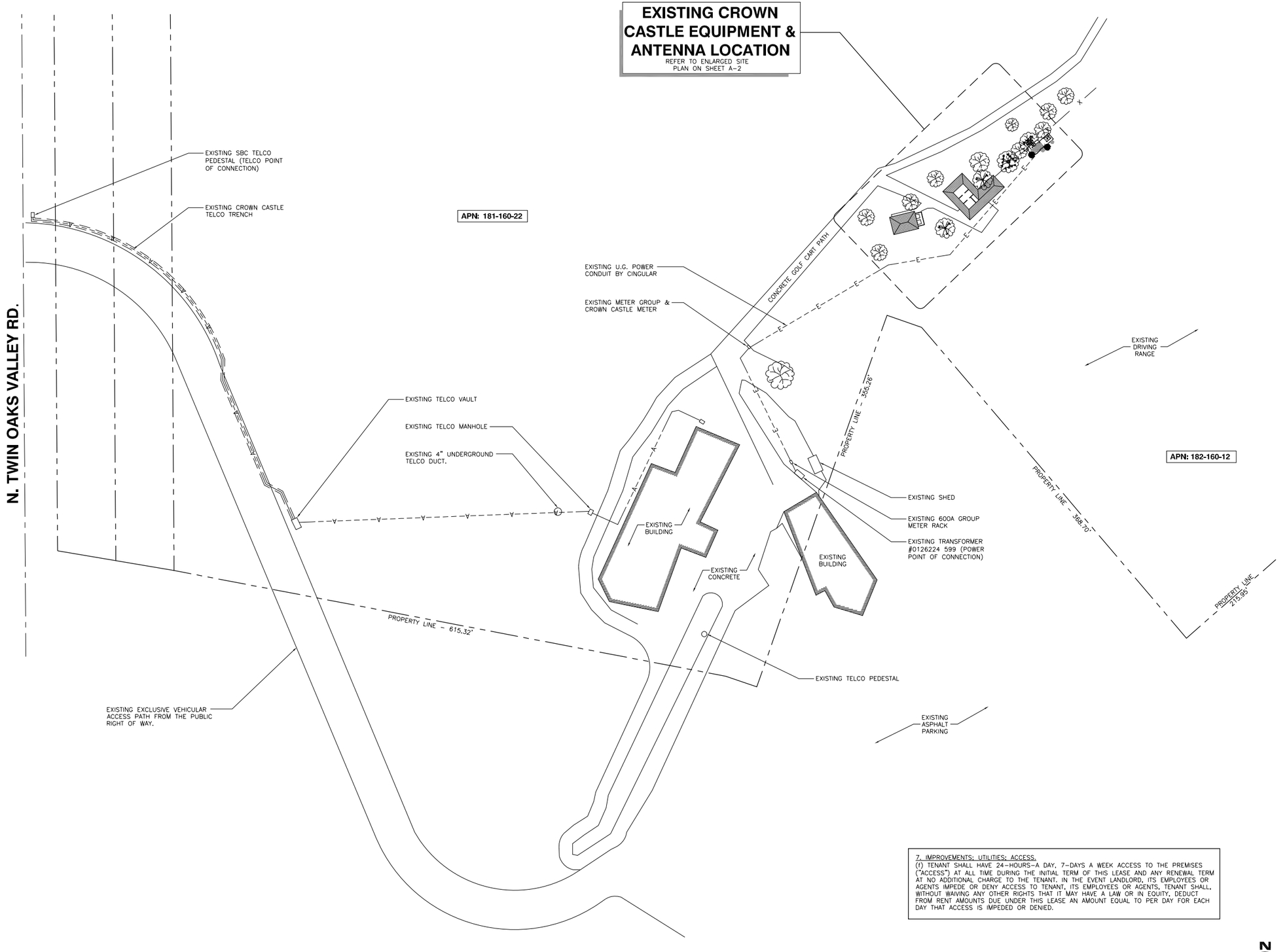
828607
TWIN OAKS
GOLF COURSE
1441 N. TWIN OAKS VALLEY ROAD
SAN MARCOS, CA 92069

SHEET TITLE:

TITLE SHEET

SHEET NUMBER:

T-1




**SITE PLAN**

SCALE: 1"=40' (0, 20', 40')

1

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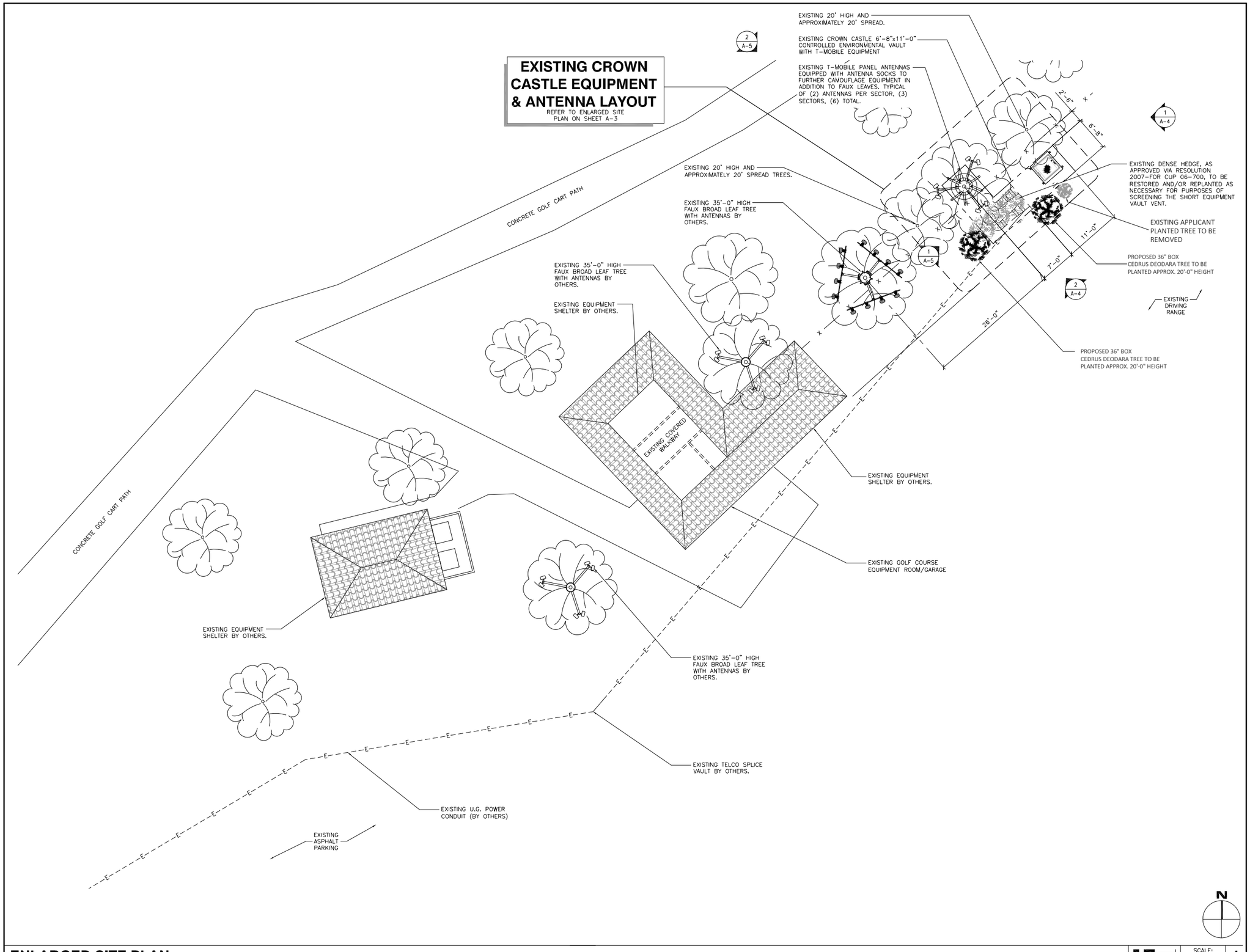
1441 N. TWIN OAKS VALLEY ROAD
SAN MARCOS, CA 92069

SHEET TITLE:

**SITE PLAN**

SHEET NUMBER:

**A-1**




## ENLARGED SITE PLAN

0 4' 8' SCALE: 1/8"=1'-0" 1

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LICENSURE:

SITE INFORMATION:

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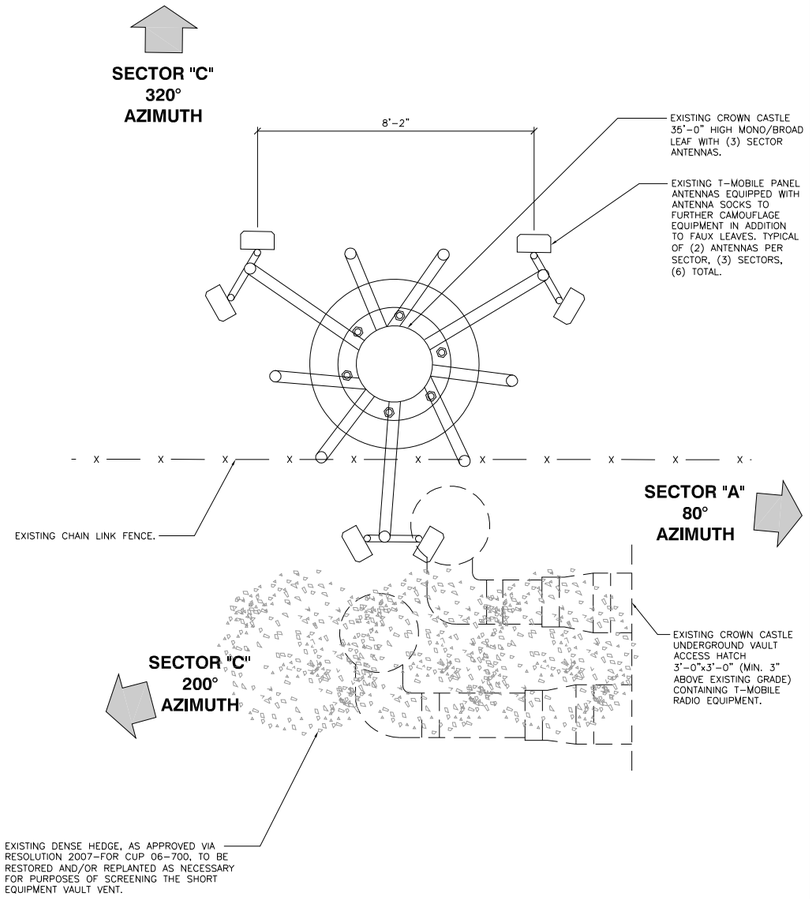
SAN MARCOS, CA 92069

SHEET TITLE:

**ENLARGED SITE PLAN**

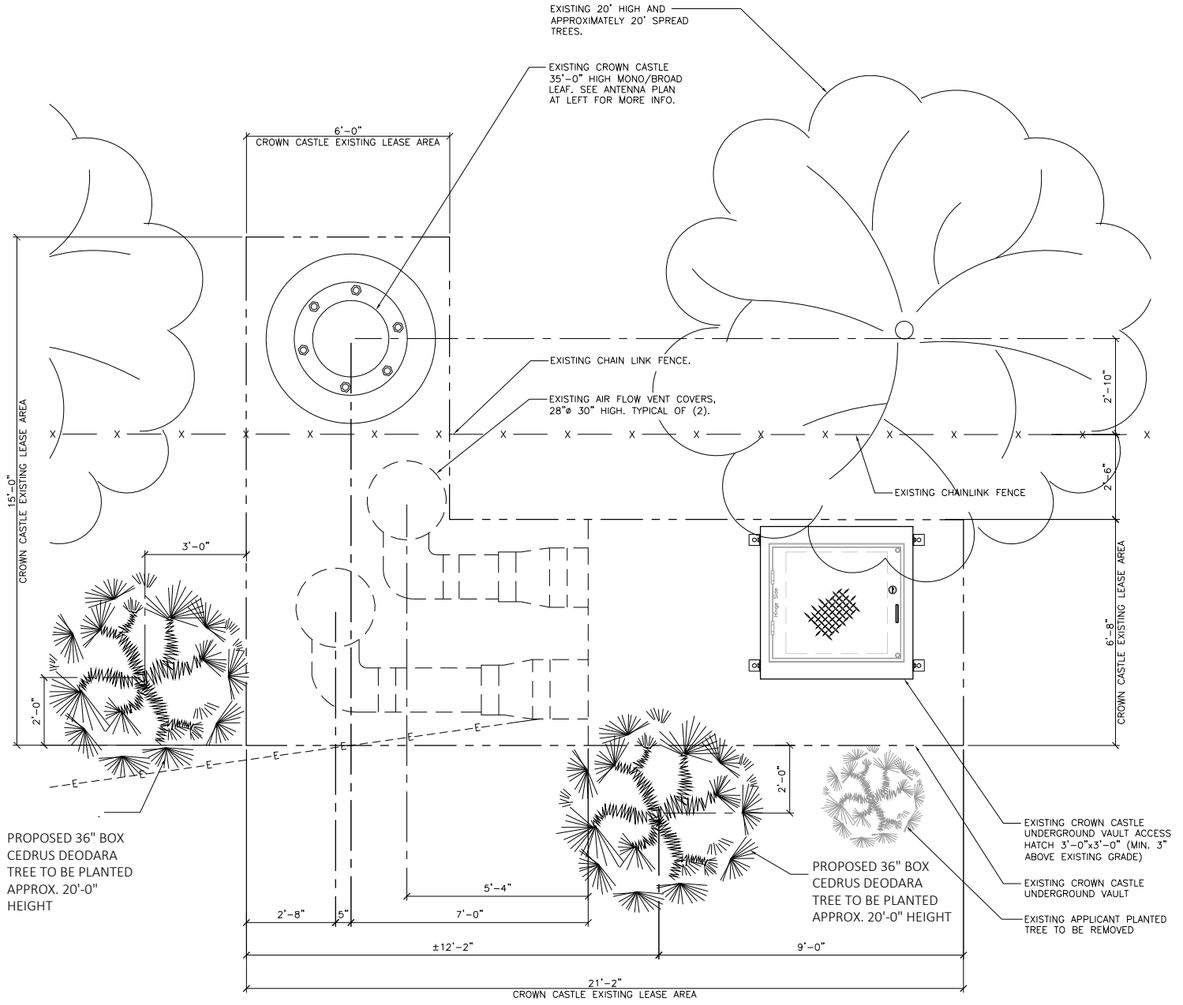
SHEET NUMBER:

**A-2**




## EXISTING ANTENNA LAYOUT PLAN

SCALE: 1/2"=1'-0" | 1




## EXISTING EQUIPMENT LAYOUT PLAN

SCALE: 1/2"=1'-0" | 2

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LICENSURE:

SITE INFORMATION:

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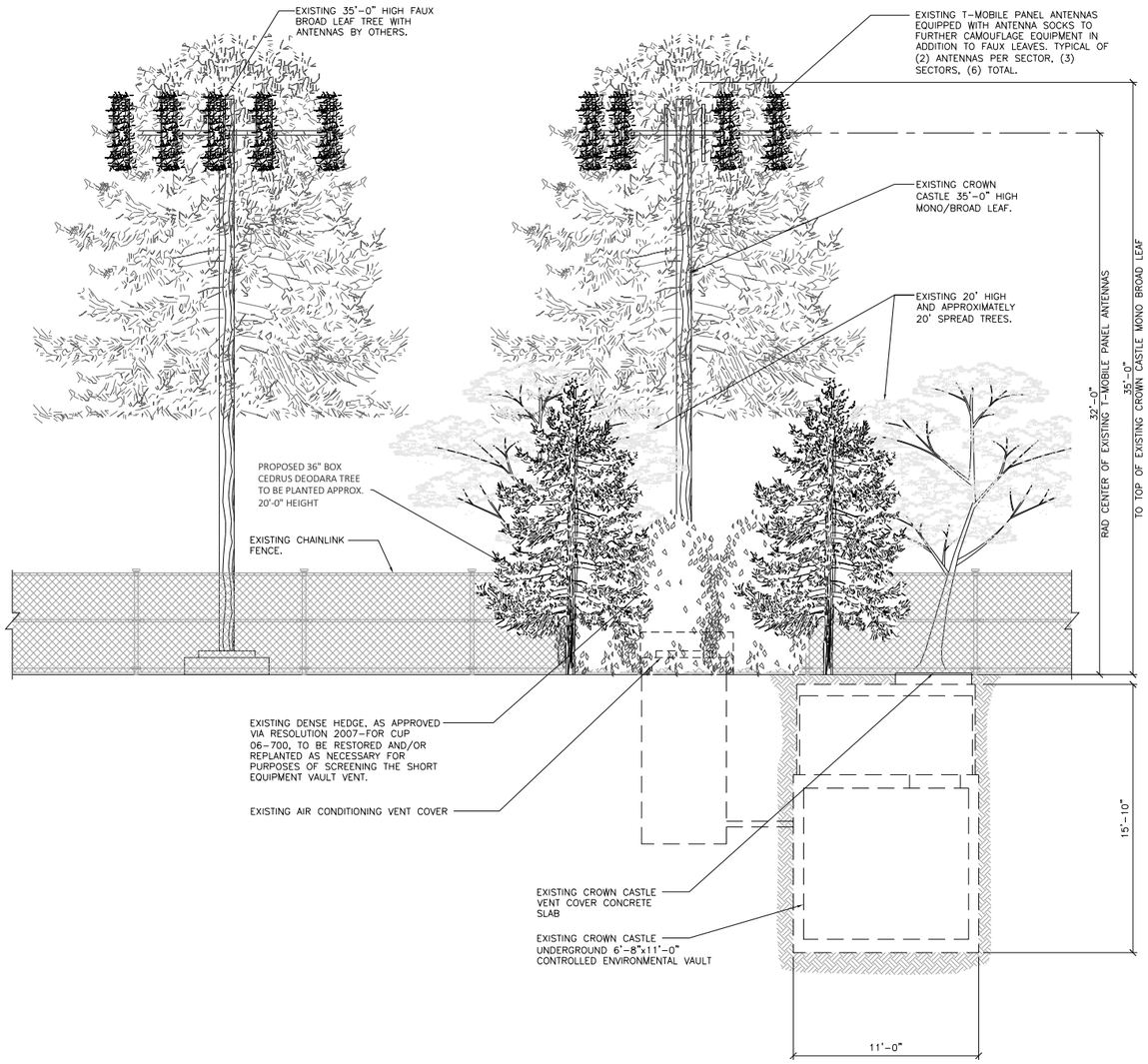
SAN MARCOS, CA 92069

SHEET TITLE:

**PROPOSED EQUIPMENT & ANTENNA LAYOUT PLANS**

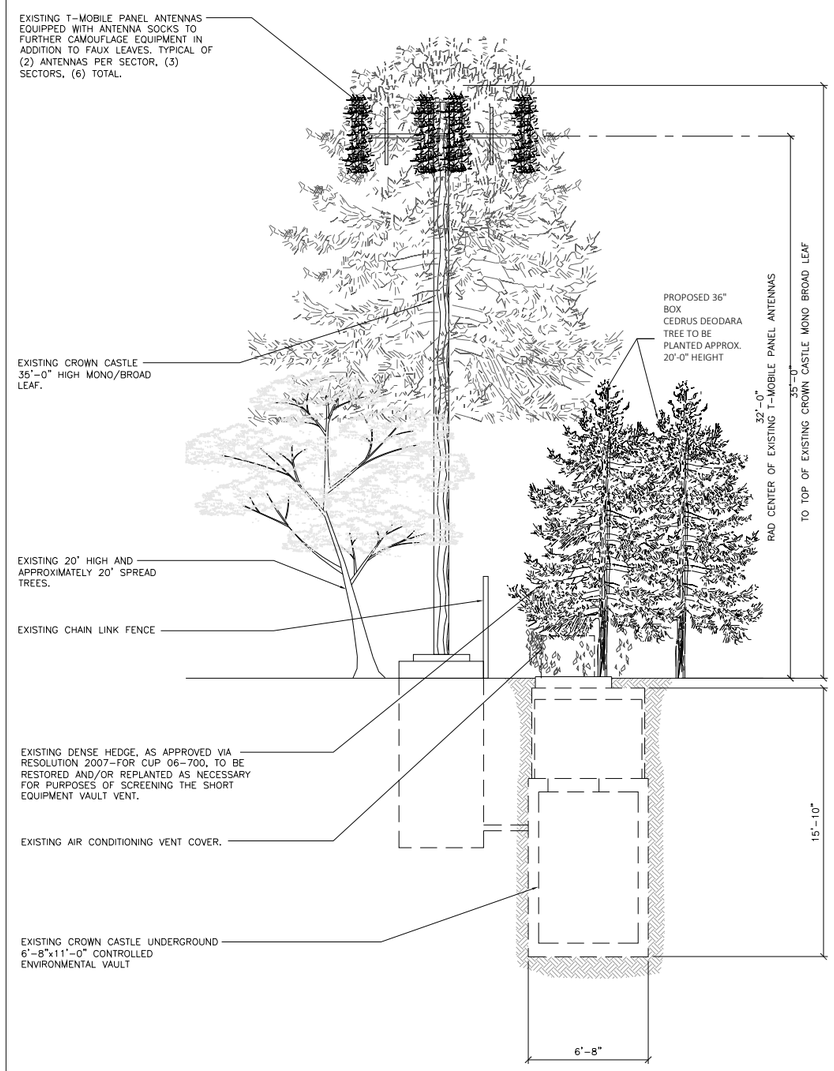
SHEET NUMBER:

**A-3**




**EXISTING EAST ELEVATION**

SCALE: 0 2' 4' 1/4"=1'-0" 1




**EXISTING SOUTH ELEVATION**

SCALE: 0 2' 4' 1/4"=1'-0" 2

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LICENSURE:

SITE INFORMATION:

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TWIN OAKS GOLF COURSE
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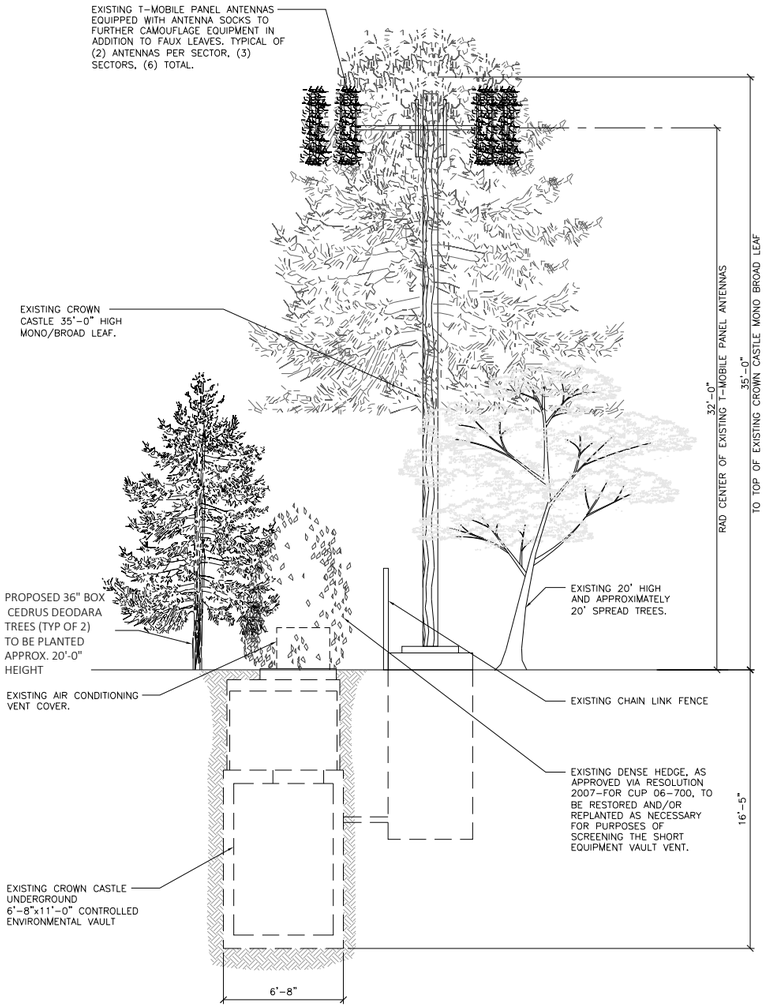
SAN MARCOS, CA 92069

SHEET TITLE:

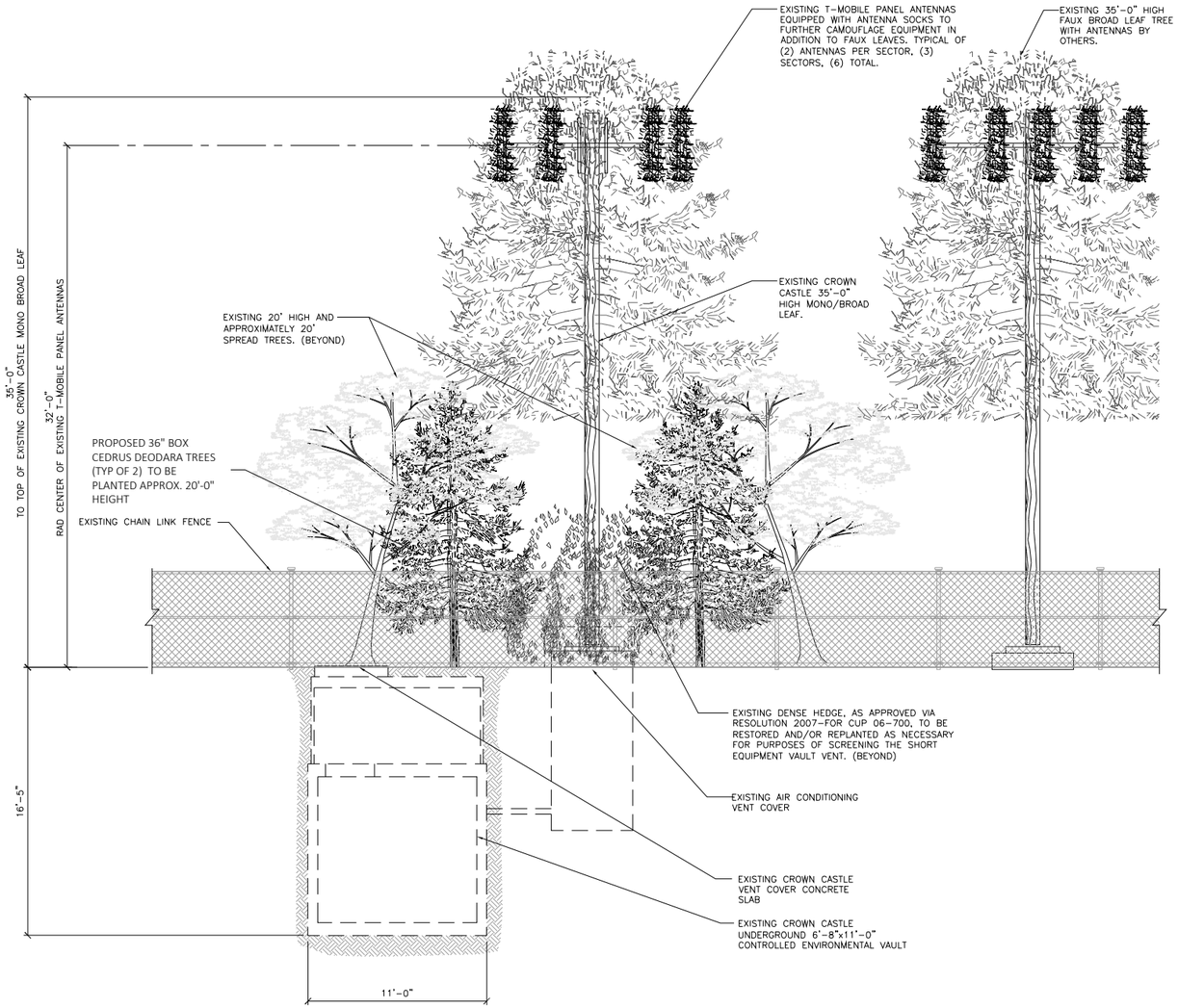
**ARCHITECTURAL ELEVATIONS**

SHEET NUMBER:

**A-4**




**EXISTING NORTH ELEVATION** — SCALE: 1/4"=1'-0" — 1




**EXISTING WEST ELEVATION** — SCALE: 1/4"=1'-0" — 2

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LICENSURE:

SITE INFORMATION:

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SHEET TITLE:

**ARCHITECTURAL ELEVATIONS**

SHEET NUMBER:

**A-5**