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**ATTACHMENT O**  
Site Safe RF Compliance Report  
(October 22, 2013)

**AGENDA ITEM NO. \_\_\_\_\_**

**Crown Castle  
Site ID – 824272  
Site Name – Golden Eagle  
Residence  
Site Compliance Report**

**2080 Golden Eagle Trail  
San Marcos, CA 92078**

Site visit date: October 9, 2013  
Site visit time: 10:45 AM  
Site survey by: Mohamed Frej

Latitude: N33-6-09.59  
Longitude: W117-10-35.37  
Structure Type: Other

Report generated date: October 22, 2013  
Report by: Jonas Sinacola  
Customer Contact: Jon Dohm

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**Crown Castle Will Be Compliant Based on FCC  
Rules and Regulations.**

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**Crown Castle  
824272 - Golden Eagle Residence  
Radio Frequency (RF) Site Compliance Report**



**2080 Golden Eagle Trail, San Marcos, CA 92078**

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## 1 Executive Summary

Crown Castle has contracted with Sitesafe, Inc. (Sitesafe), an independent Radio Frequency (RF) regulatory and engineering consulting firm, to determine whether the proposed communications site, 824272 - Golden Eagle Residence, located at 2080 Golden Eagle Trail, San Marcos, CA, is in compliance with Federal Communication Commission (FCC) Rules and Regulations for RF emissions.

Sitesafe's field personnel visited 824272 - Golden Eagle Residence on October 9, 2013. This report contains a detailed summary of the RF environment at the site including:

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

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

During our field visit, Sitesafe documented the presence and location of signs and barriers. This document specifically addresses compliance of Crown Castle'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.

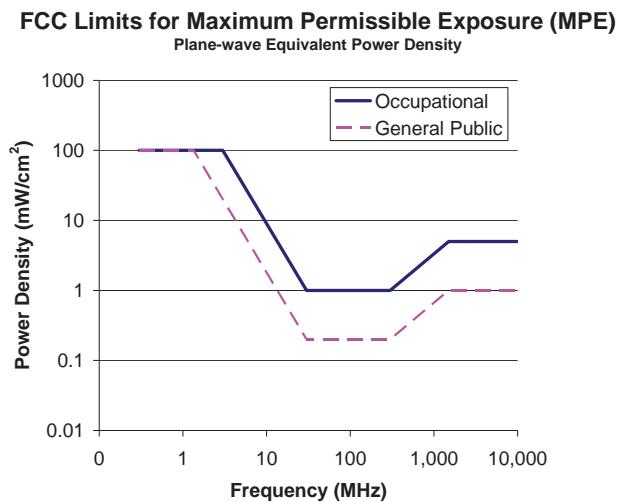
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* 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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f <sup>2</sup> )*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-	--	--	5	6
100,000				

### 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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-	--	--	1.0	30
100,000				

f = frequency in MHz

\*Plane-wave equivalent power density

## 2.2 OSHA Statement

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

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

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



### 3 Site Compliance

#### 3.1 Site Compliance Statement

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

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

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

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

#### 3.2 Actions for Site Compliance

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

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

## 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.

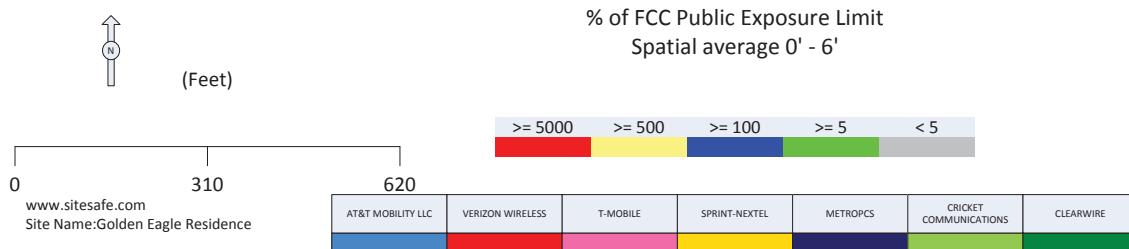
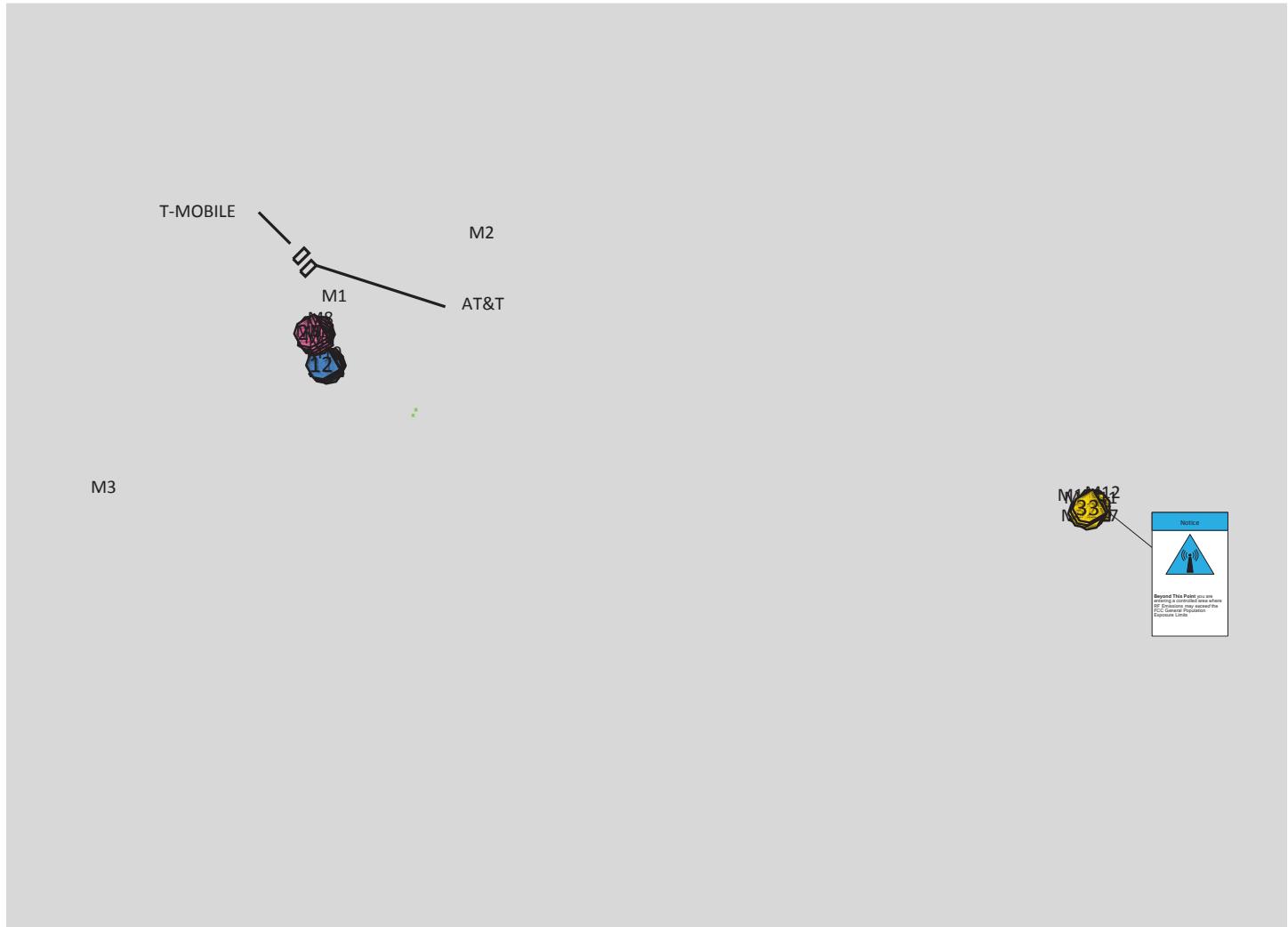
#### **Additional Information in the RF Emissions Diagrams Key**

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	<u>NE</u>	<u>NR</u>	Locked Door	<u>LE</u>	<u>LR</u>
Caution	<u>CE</u>	<u>CR</u>	Fencing	<u>RE</u>	<u>RR</u>
Warning	<u>WE</u>	<u>WR</u>	Rope Chain		
Info Sign	<u>IE</u>		Paint Stripes		
NOC Information	<u>INOCE</u>	<u>INOCR</u>			
10 Step Guideline	<u>10SE</u>	<u>10SR</u>			

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: Golden Eagle Residence Composite View



## 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 %	M10	<1 %	<1 %
M2	<1 %	<1 %	M11	<1 %	<1 %
M3	<1 %	<1 %	M12	<1 %	<1 %
M4	<1 %	<1 %	M13	<1 %	<1 %
M5	<1 %	<1 %	M14	<1 %	<1 %
M6	<1 %	<1 %	M15	<1 %	<1 %
M7	<1 %	<1 %	M16	<1 %	<1 %
M8	<1 %	<1 %	M17	<1 %	<1 %
M9	<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 October 9, 2013 at approximately 10:45 AM. The weather conditions were Overcast with a temperature of 65 degrees. At that time, a diagram of the site was verified, obtained or produced containing the locations of all visible antennas, RF signs and access points on site. These antennas were recorded and photographed. The antenna make(s)/model(s) and centerlines were verified where possible.

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

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

Site Access is restricted by two locked gates; local residential homes include dogs that may be in the area of the access point.

RF Advisory signage was posted at all site access points.



**Figure 1: Site Access**



## 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 824272 - Golden Eagle Residence. 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 (dBi)	Az (Deg)	Antenna Model	Ant Type	Length (ft)	Horizontal Half Power Beamwidth (Deg)		Location	
									X	Y	Z	
1	AT&T MOBILITY LLC (Proposed)	737	339	13.73	0	Kathrein-Scala 800-10766	Panel	8	68	1515.4'	2138.9'	26'
1	AT&T MOBILITY LLC (Proposed)	1900	490	16.37	0	Kathrein-Scala 800-10766	Panel	8	62	1515.4'	2138.9'	26'
2	AT&T MOBILITY LLC (Proposed)	850	389	14.55	0	Kathrein-Scala 800-10766	Panel	8	65	1518.3'	2138.9'	26'
2	AT&T MOBILITY LLC (Proposed)	1900	550	16.37	0	Kathrein-Scala 800-10766	Panel	8	62	1518.3'	2138.9'	26'
3	AT&T MOBILITY LLC (Proposed)	850	389	14.55	0	Kathrein-Scala 800-10766	Panel	8	65	1521.3'	2138.9'	26'
3	AT&T MOBILITY LLC (Proposed)	1900	550	16.37	0	Kathrein-Scala 800-10766	Panel	8	62	1521.3'	2138.9'	26'
4	AT&T MOBILITY LLC (Proposed)	737	339	13.73	0	Kathrein-Scala 800-10766	Panel	8	68	1524.9'	2138.9'	26'
4	AT&T MOBILITY LLC (Proposed)	1900	490	16.37	0	Kathrein-Scala 800-10766	Panel	8	62	1524.9'	2138.9'	26'
5	AT&T MOBILITY LLC (Proposed)	737	339	13.73	120	Kathrein-Scala 800-10766	Panel	8	68	1527.5'	2135'	26'
5	AT&T MOBILITY LLC (Proposed)	1900	490	16.37	120	Kathrein-Scala 800-10766	Panel	8	62	1527.5'	2135'	26'
6	AT&T MOBILITY LLC (Proposed)	850	389	14.55	120	Kathrein-Scala 800-10766	Panel	8	65	1525.7'	2132.3'	26'
6	AT&T MOBILITY LLC (Proposed)	1900	550	16.37	120	Kathrein-Scala 800-10766	Panel	8	62	1525.7'	2132.3'	26'
7	AT&T MOBILITY	850	389	14.55	120	Kathrein-Scala 800-10766	Panel	8	65	1523.7'	2130'	26'

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	X	Y	Z
	LLC (Proposed)													
7	AT&T MOBILITY LLC (Proposed)	1900	550	16.37	120	Kathrein-Scala 800-10766	Panel	8	62	1523.7'	2130'	26'		
8	AT&T MOBILITY LLC (Proposed)	737	339	13.73	120	Kathrein-Scala 800-10766	Panel	8	68	1522.2'	2127.3'	26'		
8	AT&T MOBILITY LLC (Proposed)	1900	490	16.37	120	Kathrein-Scala 800-10766	Panel	8	62	1522.2'	2127.3'	26'		
9	AT&T MOBILITY LLC (Proposed)	737	339	13.73	240	Kathrein-Scala 800-10766	Panel	8	68	1517.4'	2128'	26'		
9	AT&T MOBILITY LLC (Proposed)	1900	490	16.37	240	Kathrein-Scala 800-10766	Panel	8	62	1517.4'	2128'	26'		
10	AT&T MOBILITY LLC (Proposed)	850	389	14.55	240	Kathrein-Scala 800-10766	Panel	8	65	1514.7'	2130.7'	26'		
10	AT&T MOBILITY LLC (Proposed)	1900	550	16.37	240	Kathrein-Scala 800-10766	Panel	8	62	1514.7'	2130.7'	26'		
11	AT&T MOBILITY LLC (Proposed)	850	389	14.55	240	Kathrein-Scala 800-10766	Panel	8	65	1512.7'	2133.3'	26'		
11	AT&T MOBILITY LLC (Proposed)	1900	550	16.37	240	Kathrein-Scala 800-10766	Panel	8	62	1512.7'	2133.3'	26'		
12	AT&T MOBILITY LLC (Proposed)	737	339	13.73	240	Kathrein-Scala 800-10766	Panel	8	68	1510.7'	2135.3'	26'		
12	AT&T MOBILITY LLC (Proposed)	1900	490	16.37	240	Kathrein-Scala 800-10766	Panel	8	62	1510.7'	2135.3'	26'		
13	T-MOBILE	1900	516.5	15.37	0	Ericsson AIR 21	Panel	4.7	65	1498.5'	2196.5'	30'		
14	T-MOBILE (Proposed)	1900	516.5	15.37	0	Ericsson AIR 33	Panel	4.7	65	1493.5'	2196.5'	30'		
15	T-MOBILE	1900	516.5	15.37	0	Ericsson AIR 21	Panel	4.7	65	1502.5'	2196.5'	30'		
16	T-MOBILE (Proposed)	1900	516.5	15.37	0	Ericsson AIR 33	Panel	4.7	65	1506.5'	2196.5'	30'		

**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	T-MOBILE	1900	516.5	15.37	120	Ericsson AIR 21	Panel	4.7	65	1507.8'	2191.3'	30'
18	T-MOBILE(Proposed)	1900	516.5	15.37	120	Ericsson AIR 33	Panel	4.7	65	1505.5'	2187.1'	30'
19	T-MOBILE	1900	516.5	15.37	120	Ericsson AIR 21	Panel	4.7	65	1503.8'	2182.8'	30'
20	T-MOBILE(Proposed)	1900	516.5	15.37	120	Ericsson AIR 33	Panel	4.7	65	1502'	2179.3'	30'
21	T-MOBILE	1900	516.5	15.37	240	Ericsson AIR 21	Panel	4.7	65	1498.1'	2179.3'	30'
22	T-MOBILE(Proposed)	1900	516.5	15.37	240	Ericsson AIR 33	Panel	4.7	65	1494.8'	2183.1'	30'
23	T-MOBILE	1900	516.5	15.37	240	Ericsson AIR 21	Panel	4.7	65	1492.1'	2187.4'	30'
24	T-MOBILE(Proposed)	1900	516.5	15.37	240	Ericsson AIR 33	Panel	4.7	65	1489'	2192.6'	30'
25	SPRINT-NEXTEL	1900	698.3	15.43	0	Generic 4 Ft./65 Deg.	Panel	4.6	65	2906.6'	1883'	15'
26	SPRINT-NEXTEL	1900	698.3	15.43	0	Generic 4 Ft./65 Deg.	Panel	4.6	65	2910'	1880.6'	15'
27	SPRINT-NEXTEL	1900	698.3	15.43	0	Generic 4 Ft./65 Deg.	Panel	4.6	65	2913.4'	1877.4'	15'
28	SPRINT-NEXTEL	1900	698.3	15.43	120	Generic 4 Ft./65 Deg.	Panel	4.6	65	2907.4'	1870.4'	15'
29	SPRINT-NEXTEL	1900	698.3	15.43	120	Generic 4 Ft./65 Deg.	Panel	4.6	65	2903.6'	1866.8'	15'
30	SPRINT-NEXTEL	1900	698.3	15.43	120	Generic 4 Ft./65 Deg.	Panel	4.6	65	2899.5'	1863'	15'
31	SPRINT-NEXTEL	1900	698.3	15.43	240	Generic 4 Ft./65 Deg.	Panel	4.6	65	2891'	1866.8'	15'
32	SPRINT-NEXTEL	1900	698.3	15.43	240	Generic 4 Ft./65 Deg.	Panel	4.6	65	2895.2'	1870.8'	15'
33	SPRINT-NEXTEL	1900	698.3	15.43	240	Generic 4 Ft./65 Deg.	Panel	4.6	65	2899'	1875.6'	15'

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: Proposed AT&T Mobility, LLC location Antennas #1 through #12



Figure 3: Proposed AT&T Mobility, LLC Equipment Location



Figure 4: T-Mobile Alpha Sector Antennas #13 through #16 (#14, 15 Proposed)



Figure 5: T-Mobile Beta Sector Antennas #17 through #20 (#18, 19 Proposed)



Figure 6: T-Mobile Gamma Sector Antennas #21 through #24 (#22, 23 Proposed)



Figure 7: Sprint-Nextel Alpha Sector Antennas #25 through #27



Figure 8: Sprint-Nextel Beta Sector Antennas #28 through #30



Figure 9: Sprint-Nextel Gamma Sector Antennas #31 through #33



Figure 10: View from Measurement Location #1



Figure 11: View from Measurement Location #2



Figure 12: View from Measurement Location #3



## 7 Field Technician Certification

I, Mohamed Frej, state:

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

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

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

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

That I performed survey measurements of the RF environment at the site identified as 824272 - Golden Eagle Residence on October 9, 2013 at 10:45 AM in order to determine where there might be electromagnetic energy that is in excess of both the Controlled Environment and Uncontrolled Environment levels; and

That the survey measurements were performed with measurement equipment, model Narda NBM-550 2401-01B field intensity meter (serial number E-0538) and model Narda EA 5091 2402-07B field intensity probe, (serial number 01066) calibrated on 2/23/2013; and

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

By: Mohamed Frej



## 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 824272 - Golden Eagle Residence 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 Jonas Sinacola.

October 22, 2013



## 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 Crown Castle, 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](http://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 Crown Castle 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 everyone who has access to this site that beyond posted signs there may be levels in excess of the limits prescribed by the FCC. The signs below are examples of signs meeting FCC guidelines.



5. Ensure that the site door remains locked (or appropriately controlled) to deny access to the general public if deemed as policy by the building/site owner.
6. For a General Public environment the four color levels identified in this analysis can be interpreted in the following manner:
  - 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 strongly recommends the use of a Personal Protective Monitor (PPM). Wearing a PPM will properly forewarn the individual prior to entering an RF exposure area.

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

### **Additional Information**

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



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**ATTACHMENT P**  
Telecom Law Firm Review Memo  
(October 19, 2015)

**AGENDA ITEM NO. \_\_\_\_\_**

## WIRELESS PLANNING MEMORANDUM

**TO:** Sean del Solar  
**FROM:** Robert C. May  
**REVIEWER:** Jonathan L. Kramer  
**DATE:** October 19, 2015

**RE:** **P13-0059 (Crown Castle for T-Mobile West Tower LLC)**  
**RF Exposure Compliance Review**

The City of San Marcos (the “**City**”) requested a review of the Crown Castle for T-Mobile West Tower LLC (“**T-Mobile**”) proposal for to renew its conditional use permit for a monopole at 2080 Golden Eagle Trail. At the City’s request, this memorandum limits its analysis to planned compliance with federal radio frequency (“**RF**”) exposure regulations. As discussed below, the proposed modification will demonstrate planned compliance so long as T-Mobile complies with recommended mitigation measures.

### 1. Project Description

T-Mobile currently operates six panel antennas centered on approximately 22 feet above ground level. All changes to the Crown Castle monopole are aesthetic only and would not impact the antennas.

### 2. Planned Compliance with RF Exposure Regulations

State and local governments cannot regulate wireless facilities based on environmental effects from RF emissions when the emissions conform to the applicable FCC regulations.<sup>1</sup> The FCC completely occupies the field with respect to RF emissions regulation, and established comprehensive rules for maximum permissible exposure levels (the “**FCC Rules**”).<sup>2</sup> States and their instrumentalities may not establish their own RF exposure standards—whether more strict, more lenient or even the same. However, local officials may require applicants to demonstrate “planned compliance” with the FCC Rules.<sup>3</sup>

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<sup>1</sup> See 47 U.S.C. § 332(c)(7)(B)(iv).

<sup>2</sup> See 47 C.F.R. § 1.1307 *et seq.*; see also FCC Office of Engineering and Technology Bulletin 65.

<sup>3</sup> 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).

The FCC Rules regulate *exposure* rather than *emissions*. Wireless antennas operate at generally low power levels, and antenna operators typically need to take affirmative compliance steps to mitigate exposure risks when the emissions create exposures that exceed the limits in areas accessible to people.<sup>4</sup>

In contrast, the FCC “categorically excludes” facilities from routine compliance evaluation when the exposed areas are virtually inaccessible to humans (such as inaccessible air space). As a general rule, a transmitter qualifies for categorical exclusion when mounted (1) with its lowest portion above ten meters AGL and (2) on a structure solely or primarily built to support FCC-licensed or authorized antennas.<sup>5</sup> Categorical exclusions exempt the applicant from routine compliance demonstrations, but not compliance *per se*. In some circumstances, a categorically excluded site will require additional compliance demonstrations.

In this case, the FCC Rules do not categorically exclude the T-Mobile antennas because the lowest portion on the lowest antenna is 5.9 meters above ground. Accordingly, an additional analysis to demonstrate planned compliance with the FCC Rules is appropriate.

To demonstrate planned compliance, T-Mobile submitted a *Site Compliance Report* dated October 9, 2015 and performed by Site Safe, Inc. (the “**Site Safe Report**”). Site Safe based its report on observed on-site measurements. The Site Safe Report found that exposure in all areas at ground level did not exceed 5% of the FCC’s maximum permissible exposure for the general population, and concluded that the T-Mobile site complies with the FCC Rules.

The Site Safe Report also contains an antenna inventory with sufficient RF emissions data to allow an independent assessment under the general population standards and “worst-case” conditions.<sup>6</sup> Based on the power levels for the reported frequencies, the T-Mobile antennas would create a controlled access zone that extends approximately 3.5 feet from the antenna face to the horizon at approximately the centerline height. The Sprint antennas would create a controlled access zone that extends approximately 17.5 feet from the antenna face to the horizon at approximately the centerline height.

However, we recommend that the City find the antenna inventory in the Site Safe Report unreliable for compliance analysis purposes. The report both incorrectly describes the antenna centerline and reports uncharacteristically low power levels.

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<sup>4</sup> See generally Human Exposure to Radio Frequency Fields: Guidelines for Cellular and PCS Sites, *Consumer Guide*, FCC (Oct. 22, 2014), available at <https://www.fcc.gov/guides/human-exposure-rf-fields-guidelines-cellular-and-pcs-sites> (discussing in general terms how wireless sites transmit and how the FCC regulates the emissions).

<sup>5</sup> See 47 C.F.R. § 1.1307(b)(1).

<sup>6</sup> We note that the Site Safe Report included AT&T and T-Mobile antennas not currently installed and/or proposed in this application. This analysis excludes any such antennas as their emissions (even if accurate) do not affect the current compliance evaluation and would not be approved pursuant to this application.

The power levels described in the Site Safe Report raise the most concern. For example, the maximum ERP for transmitters on the 1900 MHz band at a T-Mobile monopole typically range between 1,300 and 4,000 watts. Although sometimes carriers reduce power levels to avoid interference, T-Mobile puts out approximately 1,400 watts ERP at the Twin Oaks monopole in San Marcos where the carriers are even more closely collocated than this site. Finally, the Site Safe Report itself disclaims its own analysis in a note on page 15 which states in relevant part: “ERP values provided by the client and used in the modeling may be greater than currently deployed.”

Normally, we would recommend that the City reject the entire report and require the applicant to either explain the abnormalities or perform an onsite test. However, in this case, the applicant also performed an onsite test and the antenna inventory information used for a predictive modeling can be ignored. Based on those onsite measurements, T-Mobile can demonstrate planned compliance with routine access restriction and signage protocols. The City should include the following conditions of approval:

1. Permittee shall keep all access gates to the site area closed and locked at all times except when active maintenance is performed on the site.
2. Permittee shall install, and at all times maintain in good condition, an “RF Guidelines” sign and “Network Operations Center Information” sign sign at or near each access gate to the site area. Signs required under this condition must be placed so that a person may clearly see the signs when the gate is in both the open and closed position.
3. Permittee shall install, and at all times maintain in good condition, an “RF Guidelines” sign and an “RF notice” sign on monopole at approximately 5 feet above ground level. Signs required under this condition must be placed so that a person may clearly see the signs as he or she approaches the monopole from the access gate(s).
4. Permittee shall ensure that all signage complies with FCC OET Bulletin No. 65 and/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 the FCC licensee’s network operations center, and such telephone number must be able to reach a live person who can exert transmitter power-down control over the site as required by the FCC.

[intentionally left blank]

### **3. Conclusion**

T-Mobile's site will demonstrate compliance with the FCC Rules so long as it complies with the recommended mitigation measures described in this memorandum. The City should include these mitigation measures as conditions of approval.

RM/jlk



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## ATTACHMENT Q

### Project Plans

**AGENDA ITEM NO. \_\_\_\_\_**



CROWN CASTLE

510 CASTILLO ST, SUITE 302

SANTA BARBARA, CA 93101

PLANS PREPARED BY:



NATIONAL

ENGINEERING &amp; CONSULTING INC

2100 ORCHARD, SUITE 101

SAN JOSE, CA 95112

PHONE: (408) 262-9227

FAX: (408) 262-9227

E-MAIL: [info@necieng.com](mailto:info@necieng.com)

REVISIONS

REV.	DATE	DESCRIPTION	PRINTS
1	09/05/13	ZONING DRAWINGS	JR
2	10/17/13	DRW REDINS	FO
3	01/13/14	CLIENT REVISIONS	NT
4	03/31/14	PLANNING REVISIONS	GC
5	07/14/14	REVISIONS	EC
6	11/06/14	LANDSCAPE REVISIONS	EV
7	04/10/15	LANDSCAPE REVISIONS	EV
8	04/17/15	REVISIONS	EC
9	05/27/15	REVISIONS	EC
10	09/15/15	LANDSCAPE REVISIONS	JR

## APPROVALS

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

## PROJECT DESCRIPTION

## SCOPE OF WORK:

- ANTENNAS WILL BE PAINTED NATURE COLOR AS DEEMED APPROPRIATE BY PLANNING
- ANTENNA IS TO REFLECT THE AS-BUILT CONDITIONS WITH SOME FACILITY LOCATED ON THE SUBJECT SITE IN ORDER TO OBTAIN A COP RENEWAL. NO NEW WIRELESS
- NEW ANTENNA DOCS. WILL BE INSTALLED ON THE FAUX TREE
- ADDITIONAL BRANCHES WILL BE ADDED TO "TOP COP"
- NEW LANDSCAPING, TREES, AND SHRUBS, WILL BE INSTALLED PURSUANT TO APPROVED
- ALL NEW BRANCHES WILL BE INSTALLED ON THE FAUX TREE MONOPOLE STRUCTURE

## DRAWING INDEX

SHEET NO.:	SHEET TITLE
1-1	TITLE SHEET
1-2	BRANCH RECEPTOR CHART AND REBRANCHING PLAN
A-1	SITE PLAN & ENLARGED SITE PLAN
A-2	EXISTING EQUIPMENT AND ANTENNA LAYOUT PLANS
A-3	ARCHITECTURAL ELEVATIONS
A-4	ARCHITECTURAL ELEVATIONS
L-1	DEMO LANDSCAPING PLAN, PROPOSED PLANTING & IRRIGATION PLANS
L-2	LANDSCAPING NOTES & SPECIFICATIONS
L-3	CITY STANDARDS LANDSCAPING DETAILS

## SITE INFORMATION

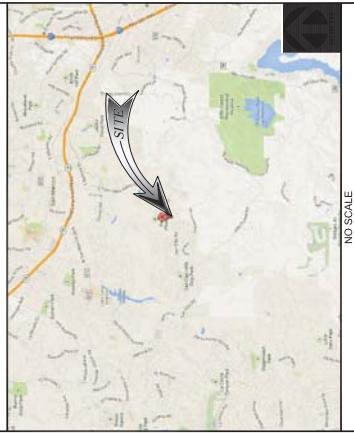
PROPERTY OWNER:	JEFFREY & ELAINE BRANDON
ADDRESS:	2080 GOLDEN EAGLE TRAIL SUITE 1 (619) 846-3202
APPLICANT REPRESENTATIVE:	JON DORR, ZONING MANAGER, CROWN CASTLE 510 CASTILLO STREET, SUITE 302 SANTA BARBARA, CA 93101
ADDRESS:	13° 06' 11.98" N 117° 10' 36.44" W
LATITUDE (NAD 83):	NAD 83
LONGITUDE (NAD 83):	NAD 83
CONSTRUCTION TYPE:	V-B
APN #:	679-040-01
ZONING JURISDICTION:	CITY OF SAN MARCOS
GROUND ELEVATION:	718.62' AMSL
POWER COMPANY:	SAN DIEGO GAS & ELECTRIC (800) 411-7343
TELE COMPANY:	AT&T (800) 222-0400
CONTACT:	UNMANNED TELECOMMUNICATIONS FACILITY T-MOBILE USA JOE THOMPSON (949) 350-5376
OCCUPANCY:	
(E) EQUIPMENT AREA:	
CARRIER:	

## DRIVING DIRECTIONS

FROM CROWN CASTLE OFFICE:

1. HEAD EAST ON CASTILLO ST TOWARD W HALEY ST
2. TURN LEFT TO MERGE ONTO HWY 101 S/HWY 101 S, FOLLOW SONS FOR HOLLYWOOD FWY (LOS ANGELES)
3. MERGE ONTO 1-5 S. TO 710 Fwy E.
4. MERGE ONTO 710 Fwy E.
5. MERGE ONTO CA 74 Fwy E.
6. MERGE ONTO CA 74 Fwy E.
7. TAKE THE TWIN OAKS VALLEY RD EXIT.
8. SWERVE LEFT ONTO SAN ELIO RD.
9. TURN LEFT ONTO SAN QUESADA RD.
10. TURN LEFT ONTO GOLDEN EAGLE TRAIL.
11. TURN LEFT ONTO GOLDEN EAGLE TRAIL.
12. SLIGHT LEFT ONTO GOLDEN EAGLE TRAIL.
- 2080 GOLDEN EAGLE TRAIL, SAN MARCOS, CA 92078

## VICINITY MAP



## CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PRESCRIBED AND INSTALLED IN ACCORDANCE WITH THE FOLLOWING CODES AS ADAPTED BY THE LOCAL GOVERNING AUTHORITY, INCLUDING, BUT NOT LIMITED TO, THE USES, EDITIONS OF THE FOLLOWING CODES:

- 1. 2010 CALIFORNIA ADMINISTRATIVE CODE (CACC) (2008 INTERNATIONAL PLUMBING CODE (IPLC) WITH CALIFORNIA AMENDMENTS)
- 2. 2010 CALIFORNIA BUILDING CODE (CABC) (2009 INTERNATIONAL BUILDING CODE (IBC) WITH CALIFORNIA AMENDMENTS)
- 3. 2010 CALIFORNIA ELECTRIC CODE (CEC) (2008 NATIONAL ELECTRIC CODE (NEC) WITH CALIFORNIA AMENDMENTS)
- 4. 2010 CALIFORNIA ENERGY CODE (CEC) (2008 INTERNATIONAL ENERGY CODE (IEC) WITH CALIFORNIA AMENDMENTS)
- 5. 2010 CALIFORNIA FAUCET AND APPLIANCE MANDATORY CODE (2008 INTERNATIONAL FAUCET AND APPLIANCE MANDATORY CODE WITH CALIFORNIA AMENDMENTS)
- 6. 2010 CALIFORNIA PLUMBING CODE (COPC) (2008 INTERNATIONAL PLUMBING CODE (IPLC) WITH CALIFORNIA AMENDMENTS)
- 7. CITY OF LOS ANGELES ELEVATOR RECOMMENDATIONS
- 8. 2010 CALIFORNIA SAFETY CODE (CSC) (2008 NATIONAL SAFETY CODE (NSC) WITH CALIFORNIA AMENDMENTS)
- 9. 2011 IUBC
- 10. LOCAL BUILDING CODE AND
- 11. CITY/COUNTY ORDINANCES

## GENERAL NOTES

**DIGITAL** DIAL TOLL FREE  
1-800-GOLDEN-EAGLE-TRAIL  
846-3202  
USA NORTH UNDERGROUND SERVICE SPRING, CALIFORNIA AND MEXICO

## SITE INFORMATION

PROPERTY OWNER:	JEFFREY & ELAINE BRANDON
ADDRESS:	2080 GOLDEN EAGLE TRAIL SUITE 1 (619) 846-3202
APPLICANT REPRESENTATIVE:	JON DORR, ZONING MANAGER, CROWN CASTLE 510 CASTILLO STREET, SUITE 302 SANTA BARBARA, CA 93101
ADDRESS:	13° 06' 11.98" N 117° 10' 36.44" W
LATITUDE (NAD 83):	NAD 83
LONGITUDE (NAD 83):	NAD 83
CONSTRUCTION TYPE:	V-B
APN #:	679-040-01
ZONING JURISDICTION:	CITY OF SAN MARCOS
GROUND ELEVATION:	718.62' AMSL
POWER COMPANY:	SAN DIEGO GAS & ELECTRIC (800) 411-7343
TELE COMPANY:	AT&T (800) 222-0400
CONTACT:	UNMANNED TELECOMMUNICATIONS FACILITY T-MOBILE USA JOE THOMPSON (949) 350-5376
OCCUPANCY:	
(E) EQUIPMENT AREA:	
CARRIER:	

## PROJECT TEAM

PROJECT MANAGER:	ENGINEERING: NATIONAL ENGINEERING & CONSULTING, INC.
CONSTRUCTION MANAGER:	510 CASTILLO STREET, SUITE 302 SANTA BARBARA, CA 93101
RF ENGINEER:	2100 ORCHARD, SUITE 101 SAN JOSE, CA 95112
ACQUISITION:	PHONE: (408) 262-9227 FAX: (408) 262-9227
PLANNING:	E-MAIL: <a href="mailto:info@necieng.com">info@necieng.com</a>
CONSULTING:	
POWER COMPANY:	
TELE COMPANY:	
CONTACT:	
CARRIER:	

## SITE INFORMATION:

## TITLE SHEET

## SHEET NUMBER:

## T-1

824272

## SHEET NUMBER:

## TITLE SHEET

GOLDEN EAGLE RESIDENCE

## SHEET NUMBER:

## T-1

## ZONING DRAWING

IF USING 11" X 17" PLT, DRAWINGS WILL NOT BE TO SCALE

## DO NOT SCALE DRAWINGS

THE SUBCONTRACTOR SHALL VERIFY ALL PLANS &amp; EXISTING DIMENSIONS &amp; CONDITIONS ON THE JOB SITE BEFORE PROCEEDING WITH THE WORK. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE SAME.



REVISIONS		DESCRIPTION		ITEMS	JR
PROJ.	DATE	ZONING	DRW	REVISIONS	JR
1	09/05/13	DRW	REVISIONS	ITEMS	JR
2	10/17/13	DRW	REVISIONS	ITEMS	JR
3	01/13/14	CLERK	REVISIONS	ITEMS	JR
4	03/31/14	PLANNING	REVISIONS	ITEMS	JR
5	07/14/14	REVISIONS		ITEMS	JR
6	11/06/14	LANDSCAPE	REVISIONS	ITEMS	JR
7	04/10/15	LANDSCAPE	REVISIONS	ITEMS	JR
8	04/17/15	REVISIONS		ITEMS	JR
9	05/27/15	REVISIONS		ITEMS	JR
10	09/15/15	LANDSCAPE	REVISIONS	ITEMS	JR

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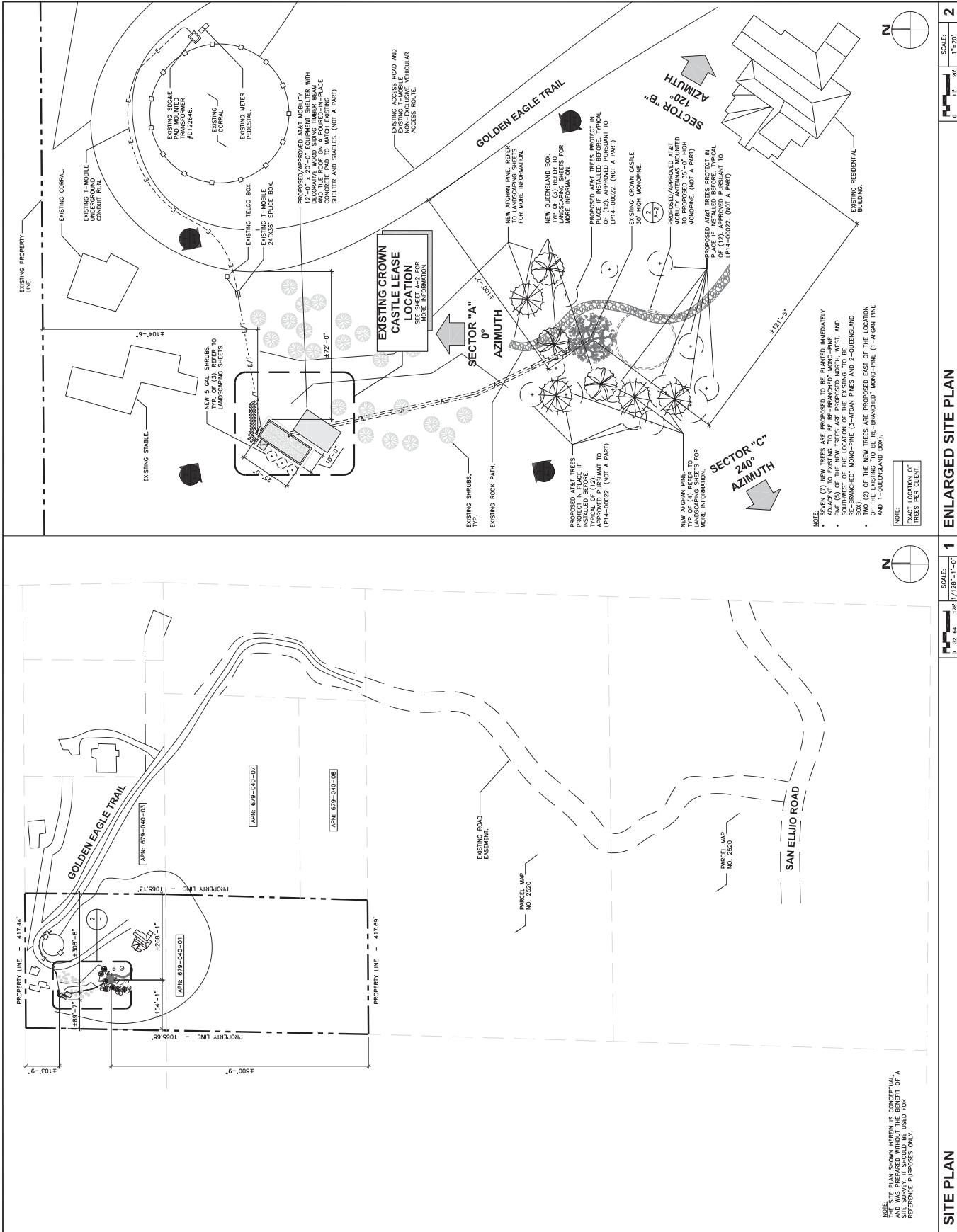
824272  
GO DEN FÄGEL BESIDENCE  
SITE INFORMATION:

100

SAN MARCOS, CA 92078  
SHEET TITLE: \_\_\_\_\_

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## REVISIONS

REV.	DATE	DESCRIPTION	INITIALS
1	09/05/13	ZONING DRAWINGS	JY
2	10/17/13	DEM REVISIONS	FO
3	01/13/14	CLIENT REVISIONS	NT
4	03/21/14	PLANNING REVISIONS	CG
5	07/14/14	REVISIONS	EC
6	11/06/14	LANDSCAPE REVISIONS	EVT
7	04/10/15	LANDSCAPE REVISIONS	EVT
8	04/17/15	REVISIONS	JY
9	05/27/15	REVISIONS	EC
10	09/15/15	LANDSCAPE REVISIONS	JY

LICENSURE:

SITE INFORMATION:

**824272****GOLDEN EAGLE RESIDENCE**  
2080 GOLDEN EAGLE TRAIL  
SAN MARCOS, CA 92073

SHEET TITLE:

ARCHITECTURAL  
ELEVATIONS  
SHEET NUMBER: 2**A-3**

## NORTHWEST ELEVATION

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

## SOUTHWEST ELEVATION

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

