

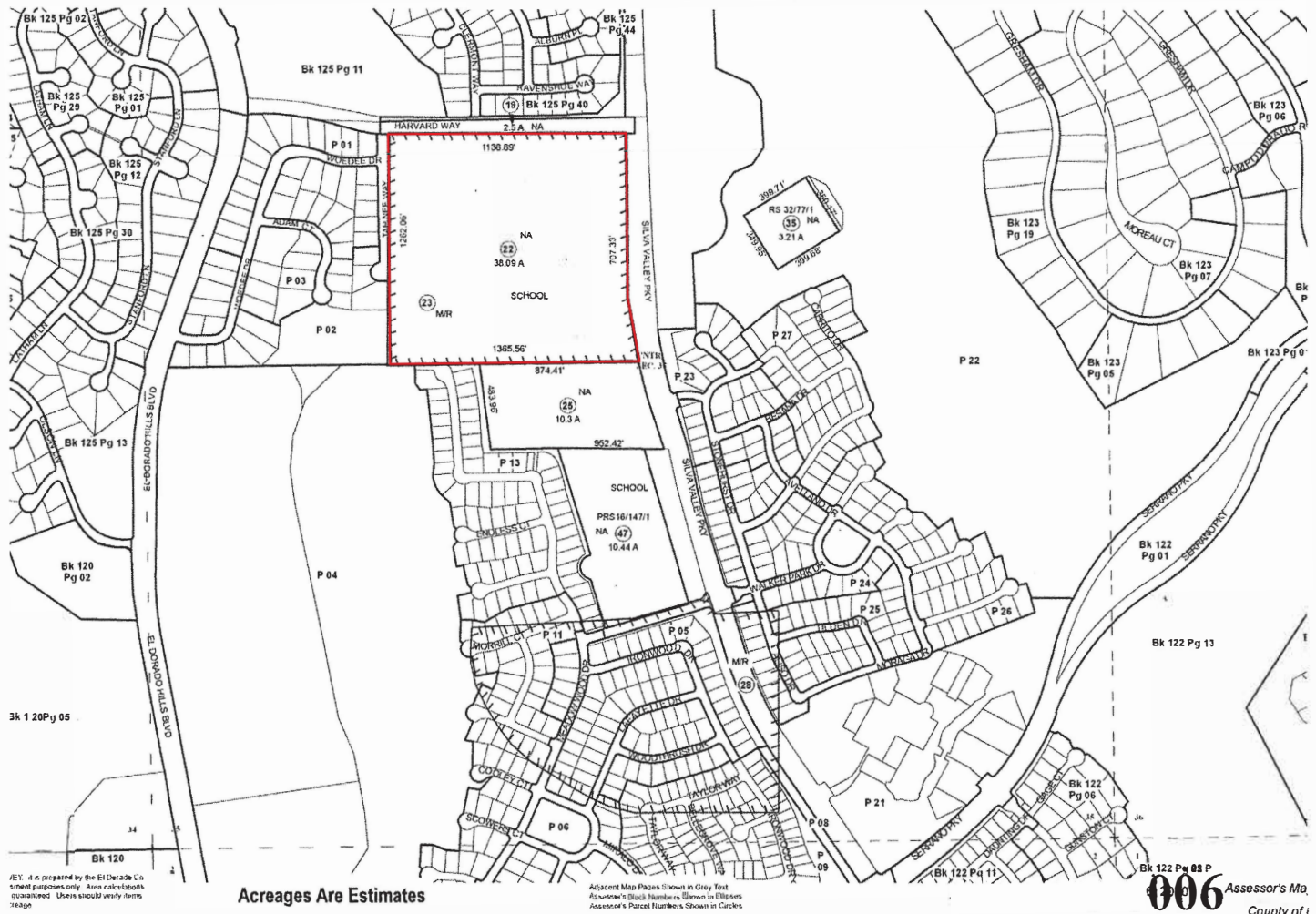


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

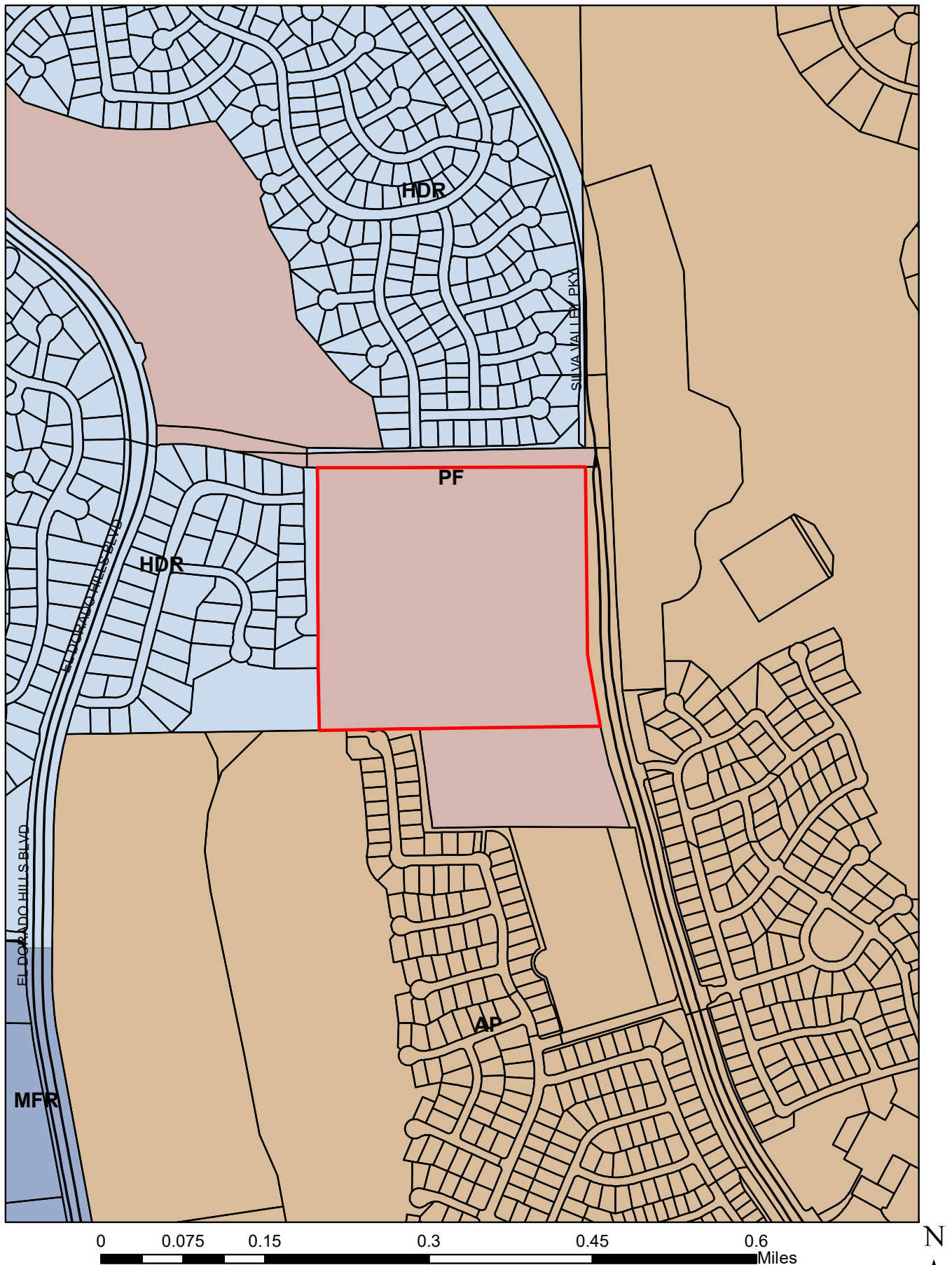
0 0.1 0.2 0.4 0.6 0.8 Miles

CUP20-0006 Exhibit A: Location/Vicinity Map

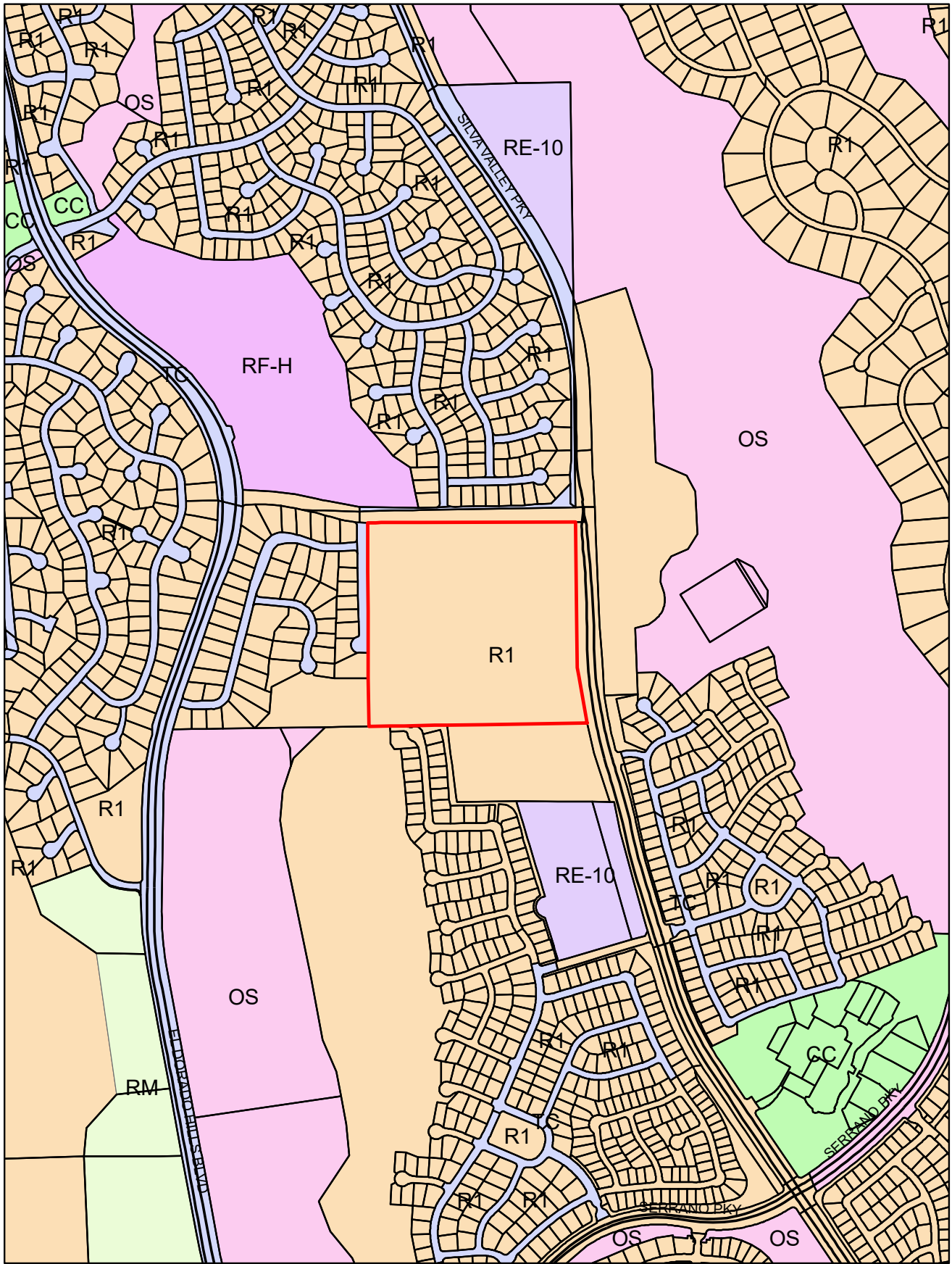
POR. SECS. 26 & 35, T.10N., R.8E., M.D.M.



CUP20-0006 Exhibit B: Assessor's Parcel Map



CUP20-0006 Exhibit C: General Plan Land Use Designation Map



CUP20-0006 Exhibit D: Zoning Map



CUP20-0006 Exhibit E: Aerial Map

VERIZON WIRELESS EQUIPMENT BENCHES:		VERIZON WIRELESS NEAL BSTATE	
SIGNATURE	DATE	SIGNATURE	DATE
VERIZON WIRELESS CONSTRUCTION:		VERIZON WIRELESS RF ENGINEER:	
SIGNATURE	DATE	SIGNATURE	DATE
PROPERTY OWNER:		EPIC WIRELESS GROUP - LEASING	
SIGNATURE	DATE	SIGNATURE	DATE
EPIC WIRELESS GROUP - CONSTRUCTION:		EPIC WIRELESS GROUP - ZONING	
SIGNATURE	DATE	SIGNATURE	DATE

verizon

SERRANO
1120 HARVARD WAY, EL DORADO HILLS, CA 95762
LOCATION NUMBER: 239662

SERRANO
DSA APPLICATION#: 01-XXXXX
DSA FILE#: -

PROJECT DESCRIPTION

A (P) VERIZON WIRELESS UNMANNED TELECOMMUNICATION FACILITY CONSISTING OF:

- REMOVING (2) (3) LIGHT POLES
- INSTALLING (3) (3) LIGHT POLES
- INSTALLING (3) (3) VERIZON WIRELESS ANTENNAS
- INSTALLING (3) (3) RADIO UNITS & ANTENNAS
- INSTALLING (3) (3) SPACE SUPPLEMENTAL (3) B EQUIPMENT & (3) B ANTENNAS
- INSTALLING (3) VERIZON WIRELESS 14'-0"X12'-0" (330 SQ FT) EQUIPMENT LEASE AREA
- INSTALLING (3) VERIZON WIRELESS 14'-0"X12'-0" (175 SQ FT) TOWER LEASE AREA
- INSTALLING (3) (3) ANTENNAS
- INSTALLING (3) (3) HYBRID CABLES

PROJECT INFORMATION

SITE NAME:	SERRANO	SITE #:	239662
COUNTY:	EL DORADO	JURISDICTION:	EL DORADO COUNTY/PSA
APN:	121-150-022	POWER:	FIGURE
SITE ADDRESS:	1120 HARVARD WAY EL DORADO HILLS, CA 95762	FILE#:	ASAT
CURRENT ZONING:	09		
CONSTRUCTION TYPE:	A-B		
OCCUPANCY TYPE:	U (UNMANNED COMMUNICATIONS FACILITY)		
PROPERTY OWNER:	EL DORADO COUNTY UNION HIGH SCHOOL DISTRICT 4675 WISCONSIN PLAZA ROAD PLACERVILLE, CA 95667 ATTN: DAN AUGUST (530) 822-0140		
APPLICANT:	VERIZON WIRELESS 255 PARKSHORE DRIVE FOLSOM, CA 95630		
SITE ACQUISITION COMPANY:	EPIC WIRELESS GROUP 655 COLUMBUS DRIVE, SUITE 100 FOLSOM, CA 95630		
LEASING CONTACT:	ATTN: REBECCA CARBONE (916) 350-4507 REBECCA.CARBONE@EPICWIRELESS.NET		
ZONING CONTACT:	ATTN: REBECCA CARBONE (916) 350-4507 REBECCA.CARBONE@EPICWIRELESS.NET		
CONSTRUCTION CONTACT:	ATTN: BRETT EWING (916) 844-1234 BRETT.ewing@verizonwireless.net		

VICINITY MAP

DRIVING DIRECTIONS

FROM: 255 PARKSHORE DRIVE, FOLSOM, CA 95630
TO: 1120 HARVARD WAY, EL DORADO HILLS, CA 95762

1. HEAD NORTHEAST ON PARKSHORE DR TOWARD WALKER CR
2. TURN LEFT INTO PLAZA DR
3. TURN RIGHT TO STAY ON PLAZA DR
4. TURN LEFT AT THE 1ST CROSS STREET ONTO BLUE RAVINE RD
5. TURN RIGHT ONTO PRINCE CITY RD
6. USE THE RIGHT LANE TO MERGE ONTO US-99 E VIA THE RAMP TO S LANE TAPES
7. TAKE EXIT 200 TOWARD EL DORADO HILLS BLVD
8. MERGE ONTO LANSHIRE RD
9. CONTINUE ONTO EL DORADO HILLS BLVD
10. TURN RIGHT ONTO HARVARD WAY

END AT: 1120 HARVARD WAY, EL DORADO HILLS, CA 95762
ESTIMATED TIME: 16 MINUTES ESTIMATED DISTANCE: 9.0 MILES

CODE COMPLIANCE

ALL WORK & MATERIALS SHALL BE PERFORMED & 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 MORE NOT CONFORMING TO THESE CODES.

2018 CALIFORNIA ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.
2018 CALIFORNIA BUILDING CODE (CBC), PART 2, VOLUMES 1-2, TITLE 24 C.C.R.
(2018 INTERNATIONAL BUILDING CODE AND 2018 CALIFORNIA AMENDMENTS)
2018 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R.
(2014 NATIONAL ELECTRICAL CODE AND 2018 CALIFORNIA AMENDMENTS)
2018 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R.
(2015 UNIFORM MECHANICAL CODE AND 2018 CALIFORNIA AMENDMENTS)
2018 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R.
(2015 UNIFORM PLUMBING CODE AND 2018 CALIFORNIA AMENDMENTS)
2018 CALIFORNIA FIRE CODE (CFC), PART 6, TITLE 24 C.C.R.
(2015 INTERNATIONAL FIRE CODE AND 2018 CALIFORNIA AMENDMENTS)
2018 CALIFORNIA GREEN BUILDING STANDARDS CODE, PART 11, TITLE 24 C.C.R.
2018 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R.
ANSI/ISA-9A-2012-G

ALONG WITH ANY OTHER APPLICABLE LOCAL & STATE LAWS AND REGULATIONS

DISABLED ACCESS REQUIREMENTS

THIS FACILITY IS UNMANNED & NOT FOR HUMAN HABITATION. DISABLED ACCESS & REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH CALIFORNIA STATE BUILDING CODE, TITLE 24 PART 2, SECTION 108-203.5

SHEET INDEX

SHEET	DESCRIPTION	REV
T-1	TITLE SHEET	-
C-1	TOPOGRAPHIC SURVEY	-
C-2	TOPOGRAPHIC SURVEY	-
A-1	OVERALL SITE PLAN	-
A-2	SITE PLAN	-
A-3	EQUIPMENT PLAN & DETAILS	-
A-4	ANTENNA PLAN & DETAILS	-
A-5	ELEVATIONS	-
A-6	ELEVATIONS	-
A-7	ELEVATIONS	-

PRELIMINARY:
NOT FOR CONSTRUCTION

KEVIN R. JOHNSON
54489

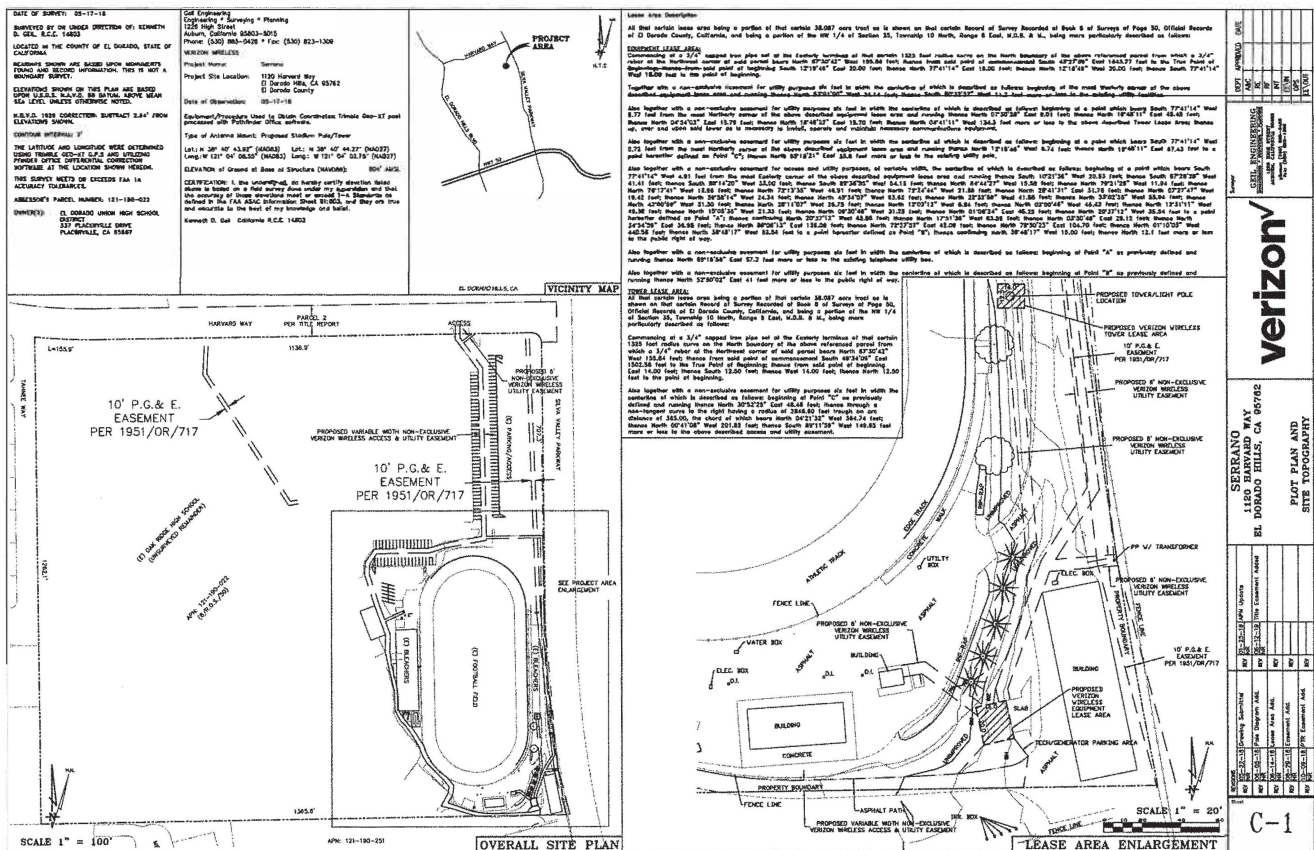
ISSUE STATUS

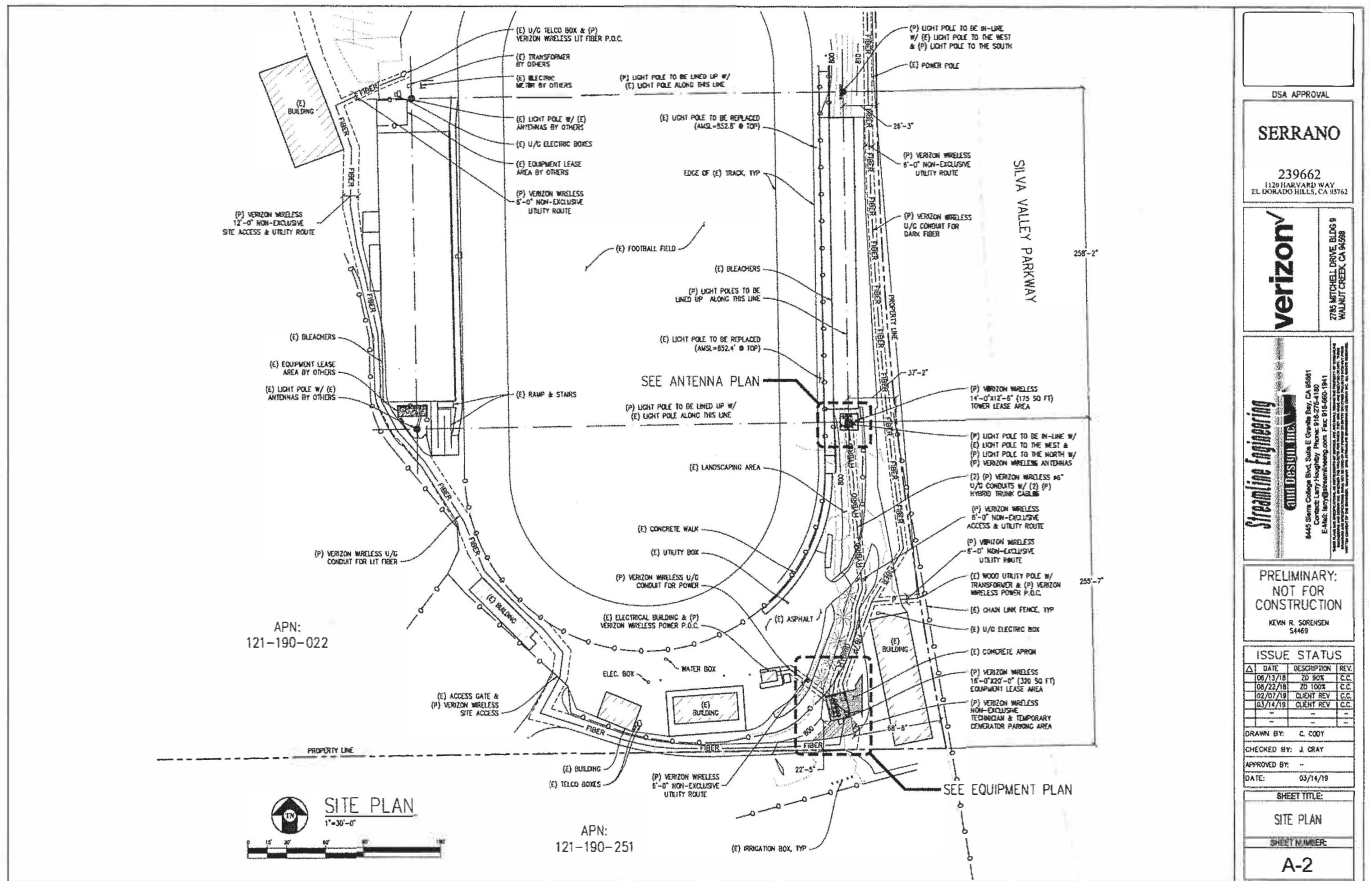
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08/17/19	08/17/19	08/17/19	08/17/19
08/17/19	08/17/19	08/17/19	08/17/19
08/17/19	08/17/19	08/17/19	08/17/19

DRAWN BY: C. COBY
CHECKED BY: A. GRAY
APPROVED BY: -
DATE: 03/14/19

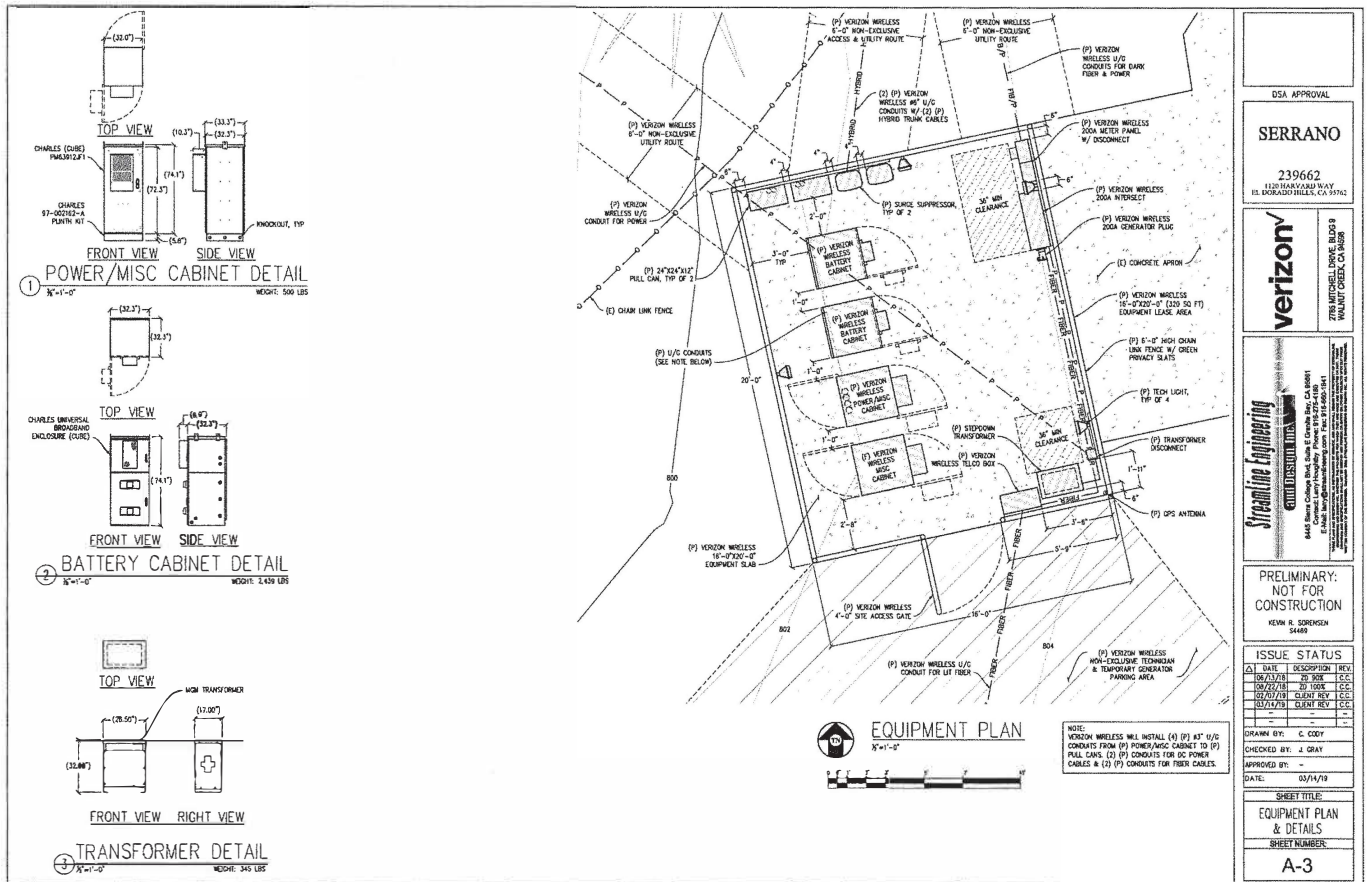
SHEET TITLE:
TITLE
SHEET NUMBER:
T-1

CUP20-0006 Exhibit F: Project Plans

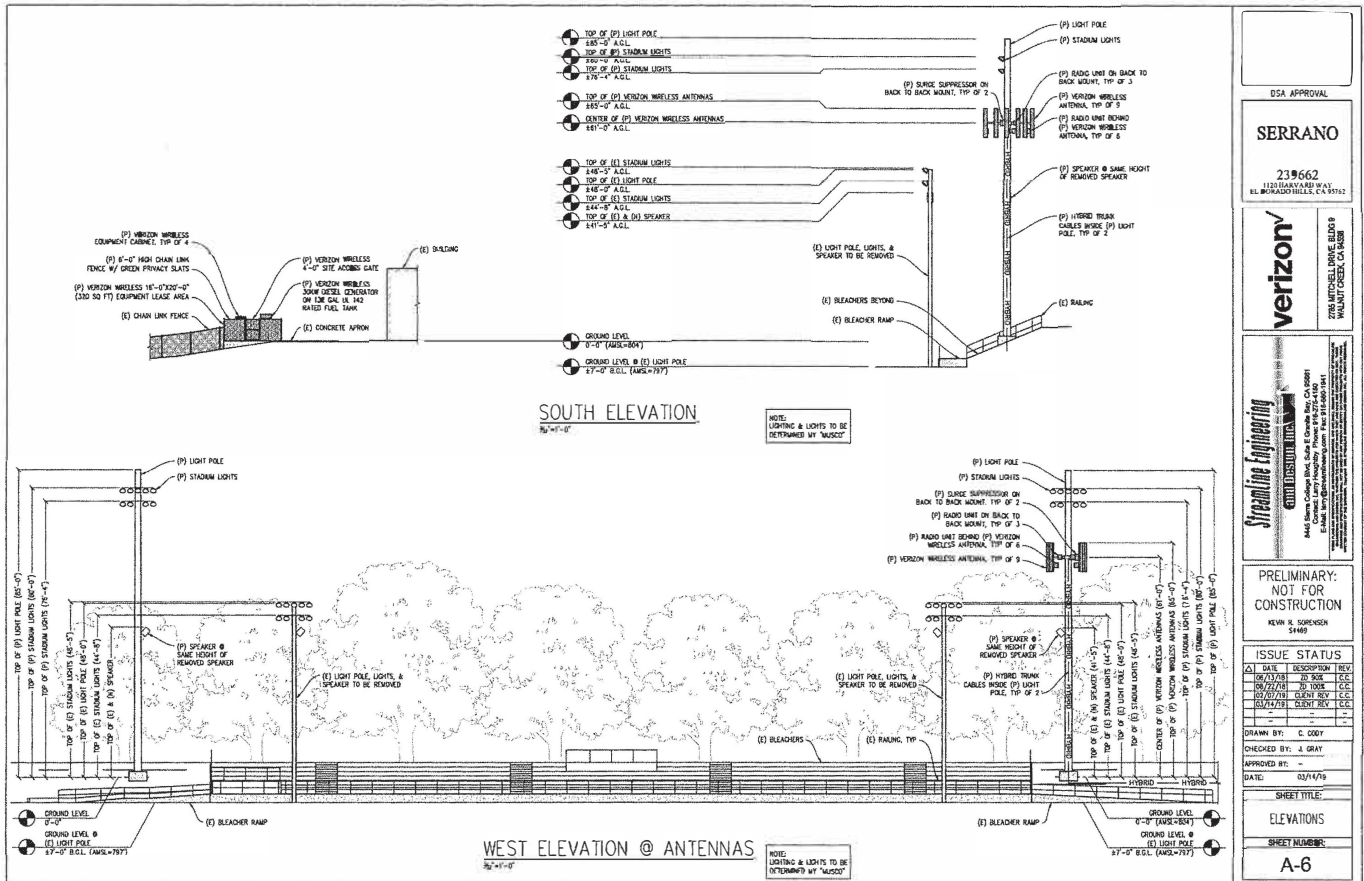




CUP20-0006 Exhibit F: Project Plans



CUP20-0006 Exhibit F: Project Plans



DSA APPROVAL

SERRANO

219662
 110 VILASAVARU WAY
 EL MURADO HILLS, CA 91712

verizon

210 MITCHELL DRIVE, SUITE 200
 WILMINGTON, CA 94095

Streamline Engineering
 4000 DOWNEY BLVD
 DOWNEY, CA 90241
 310-635-1111
 Email: info@streamlineeng.com Web: www.streamlineeng.com

PRELIMINARY:
 NOT FOR
 CONSTRUCTION

KEVIN R. SORRESEN
 51469

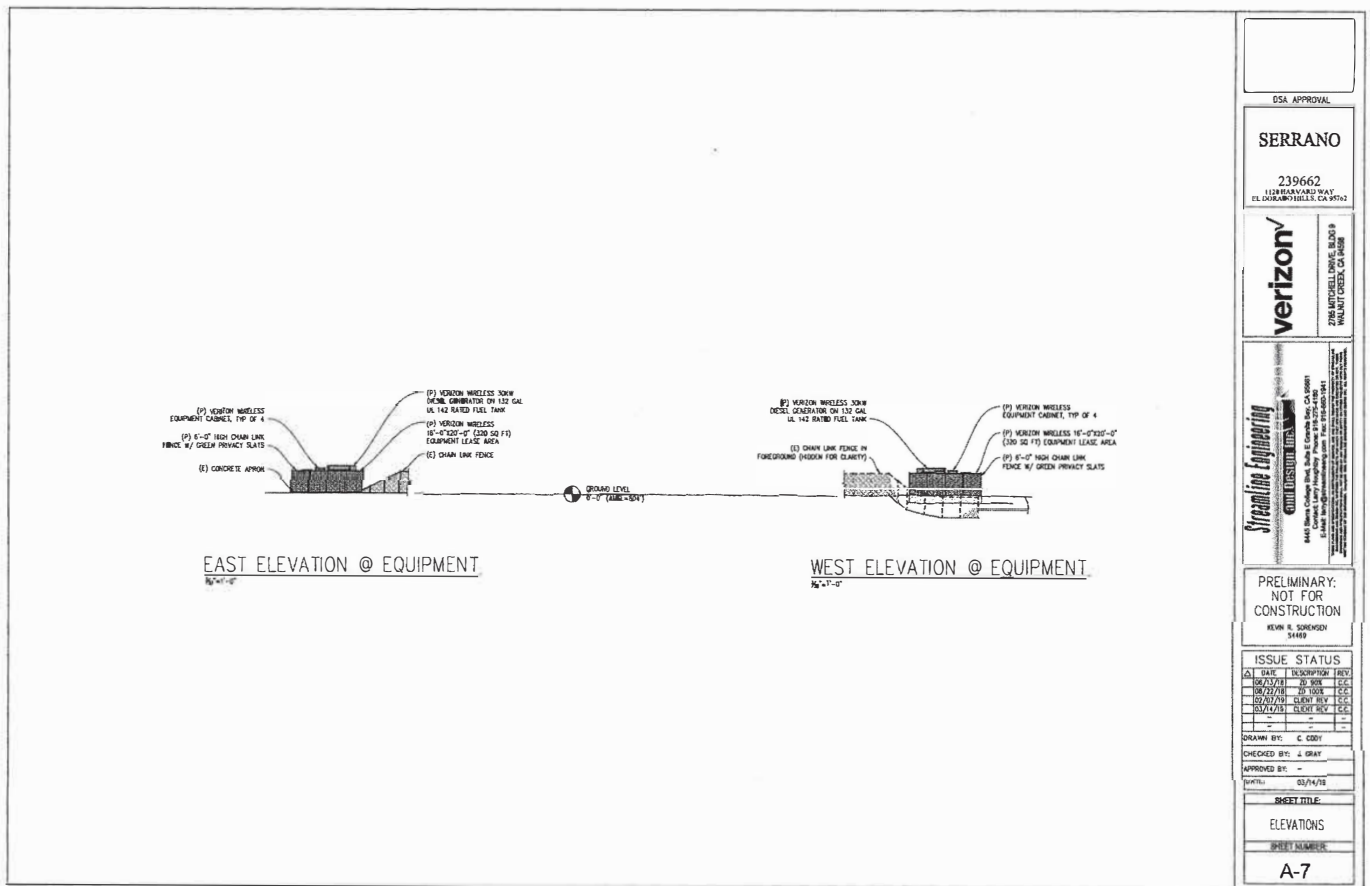
ISSUE STATUS			
DATE	DESCRIPTION	REV	BY
06/23/18	2D SET	CC	CC
06/27/18	3D MODEL	CC	CC
07/27/18	CLIENT REV	CC	CC
07/27/18	CLIENT REV	CC	CC

DRAWN BY: C. COOY
 CHECKED BY: J. GRAY
 APPROVED BY: -
 DATE: 03/14/19

SHEET TITLE:
 ELEVATIONS

SHEET NUMBER:
 A-6

CUP20-0006 Exhibit F: Project Plans



CSA APPROVAL

SERRANO

239662
 11288 BAYVIEW WAY
 EL DORADO HILLS, CA 95762

verizon

2755 MITCHELL DRIVE, SUITE 100
 WALNUT CREEK, CA 94598

Streamline Engineering
 1000 DISNEY DRIVE
 1000 DISNEY DRIVE, SUITE 100
 EL DORADO HILLS, CA 95762
 (916) 924-1111
 FAX (916) 924-1111
 E-MAIL: info@streamlineeng.com
 WWW: www.streamlineeng.com

PRELIMINARY:
 NOT FOR
 CONSTRUCTION
 KEVIN R. SCHREIBER
 54469

ISSUE STATUS		
A	DATE	DESCRIPTION (REV)
1	06/23/18	2D WORK (CC)
2	08/23/18	3D WORK (CC)
3	07/27/19	CLIENT REV (CC)
4	07/27/19	CLIENT REV (CC)

DRAWN BY: C. CROFT

CHECKED BY: A. GRAY

APPROVED BY: -

DATE: 03/14/18

SHEET TITLE

ELEVATIONS

SHEET NUMBER

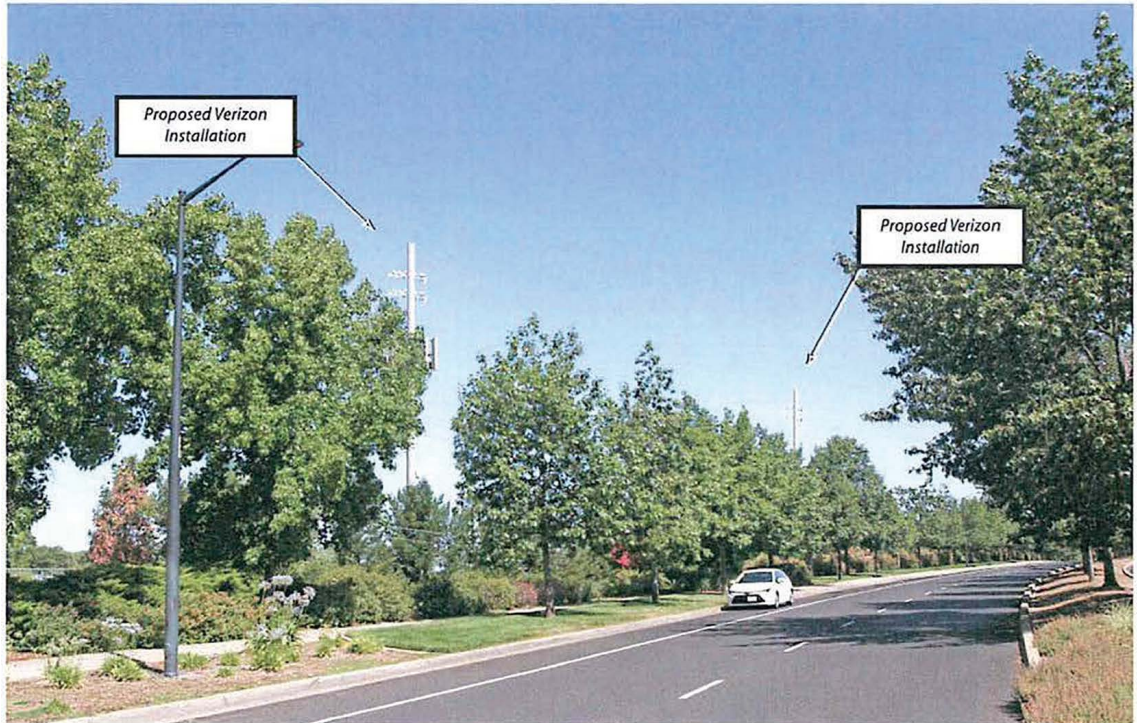
A-7

CUP20-0006 Exhibit F: Project Plans

Alternative Site Analysis

Verizon Wireless Telecommunications Facility “Serrano”
1120 Harvard Way
El Dorado Hills, CA 95762
121-190-022

Summary of Site Evaluations and Technical Evidence Conducted by Epic
Wireless Group, LLC.



I. Executive Summary

In 2017 Epic Wireless Group was contracted to identify a wireless site location and design to serve a significant gap in wireless coverage identified by Verizon Wireless in a heavily residential area of El Dorado Hills, California centered around Silva Valley Pkwy and Harvard Way. After conducting a thorough research and evaluation of existing buildings and structures in the area that would accommodate a collocation, Verizon Wireless, determined that collocating on the existing light standards would adequately meet the coverage and capacity goals. Epic Wireless investigated a total of five (5) potential sites and concluded that the presently proposed light standard collocation located at the Oak Ridge HS Football field would be the least intrusive site as there are already multiple carriers located on light standards on the field. The other four (4) alternative site locations were investigated by Epic Wireless and/or Verizon's Radiofrequency Engineer and determined not to be viable for the reasons described below.

II. Coverage Objective

Area resident requests, customer complaints, and Verizon Wireless RF Engineers have confirmed a significant wireless gap in this area of El Dorado Hills, CA from east of Silva Valley Pkwy to El Dorado Hills Blvd and north of Harvard Way and down over half a mile south of Serrano Pkwy. The coverage maps indicate a lack in coverage denoted as yellow and grey coloring. This area of El Dorado Hills consists mostly of residential parcels. It is Verizon Wireless's goal to provide exceptional coverage to all of its current and future customers by filling existing significant gaps in coverage as identified in this section of El Dorado Hills. The number of residents, business owners, schools and travelers that would benefit from this proposal each day are numbered in the thousands.

III. Methodology

In identifying the least intrusive site location and design, Verizon Wireless looks to the local municipal code, ordinances, and general plans to identify the values significant to the local community for placement of wireless facilities. In addition, each proposed site must meet minimum requirements of a site located within the designated search area, a willing landlord, feasible construction, road access, available telephone and electrical utilities as well as compliance with local zoning requirements. In completing its Alternative Site Analysis, Epic Wireless first looked to El Dorado County's wireless use regulations in Section 130.40.130 which establishes standards for the placement of antennae. The subject property is located within El Dorado County's planning jurisdiction. This parcel is zoned Single Family Residential (R1), new wireless facilities are an allowed use in this zoning district with Commission approval of a Conditional Use Permit. Epic Wireless evaluated site locations per the below siting preferences as stated in §130.40.130. D:

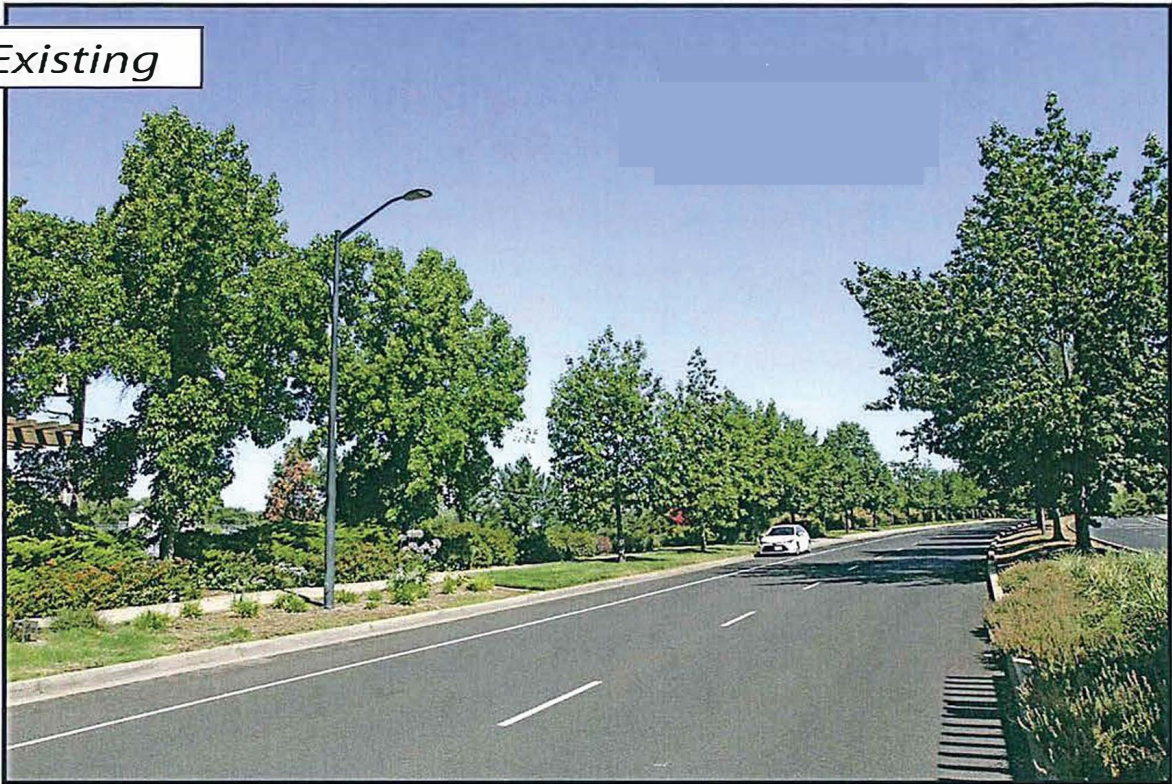
1. Screening. All facilities shall be screened with vegetation or landscaping. Where screening with vegetation is not feasible, the facilities shall be disguised to blend with the surrounding area. The facility shall be painted or constructed with stealth technology to blend with the prevalent architecture, natural features, or vegetation of the site.
2. Setbacks. Compliance with the applicable zone setbacks is required. Setback waivers shall be considered to allow flexibility in siting the facility in a location that best reduces the visual impact on the surrounding area and roads, subject to Zoning Administrator approval of a Minor Use Permit in compliance with Section 130.52.020 (Minor Use Permits) in Article 5 (Planning Permit Processing) of this Title.
3. Maintenance. All improvements associated with the communication facility, such as equipment shelters, towers, antennas, fencing, and landscaping shall be properly maintained at all times. Design, color, and textural requirements under the approved conditions shall be maintained to ensure a consistent appearance over time.

Epic Wireless first looks for viable existing telecommunications towers offering collocation opportunities within the designated search area, including PG&E transmission towers, water tanks, and tall building rooftops and stadium lighting, within the designated search area. Below is a list of alternative sites evaluated and the reasons they did not work.

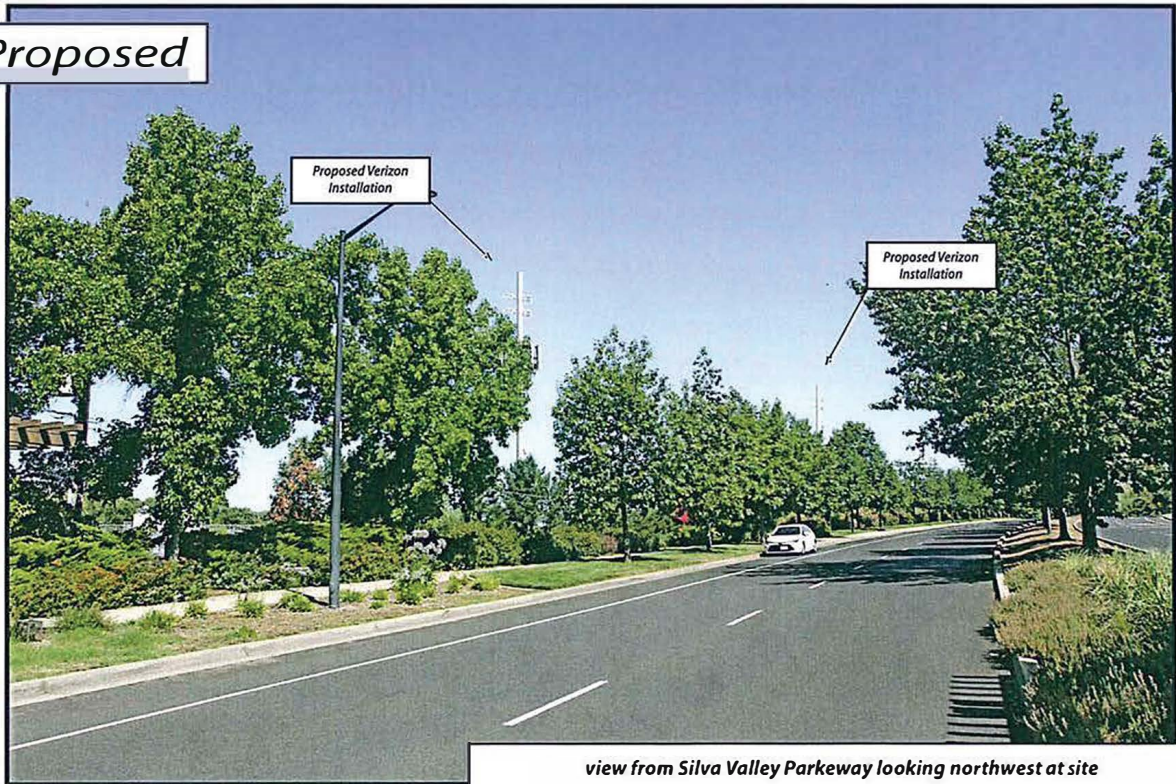
IV. Conclusion

The identified site location and design of the proposed facility represents a thorough and responsible investigation of alternative site locations. Verizon Wireless, with the help of Epic Wireless and Verizon Wireless RF Engineers, has determined the proposed site to be the least intrusive means to service the identified significant gap in coverage. This facility is believed to have the least impacts to the community while meeting the networks coverage needs.

Existing



Proposed



view from Silva Valley Parkway looking northwest at site

AdvanceSim
Photo Simulation Solutions
Contact: (925) 202-5507

verizon

239662 Serrano
1120 Harvard Way, El Dorado Hills, CA
Photocams Produced on 8-6-20

Existing



Proposed



view from Silva Valley Parkway looking southwest at site

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

verizon

239662 Serrano
1120 Harvard Way, El Dorado Hills, CA
Photosims Produced on 8-6-2019

Existing



Proposed



view from Harvard Way looking south at site

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

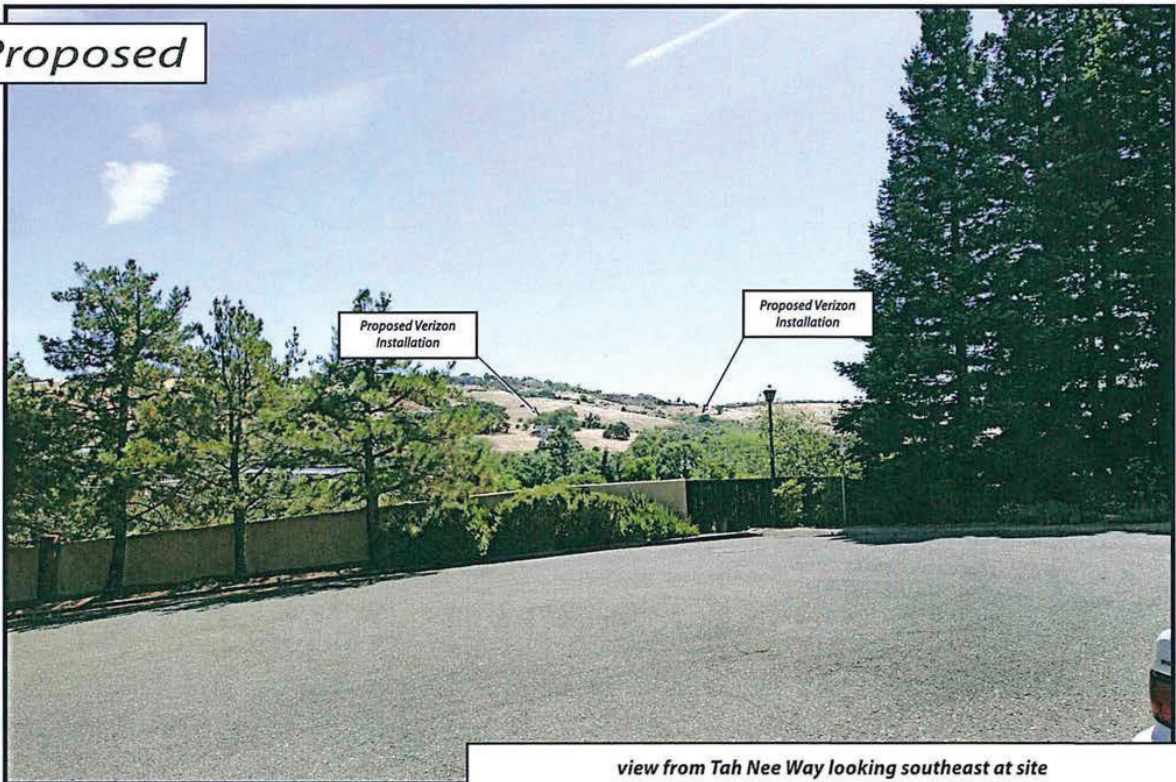
verizon

239662 Serrano
1120 Harvard Way, El Dorado Hills, CA
Photosims Produced on 8-6-2019

Existing



Proposed

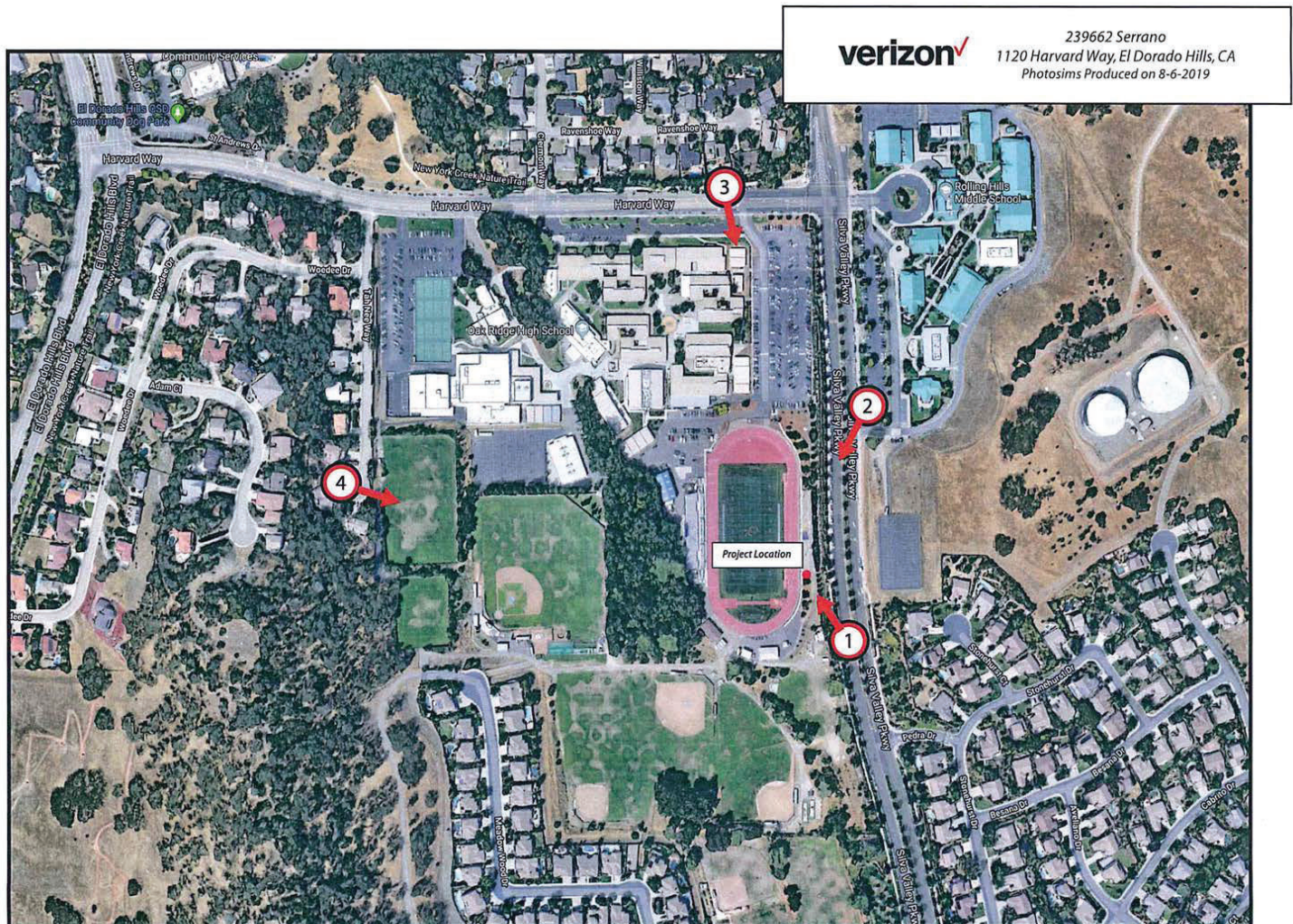


view from Tah Nee Way looking southeast at site

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-3507

verizon✓

239662 Serrano
1120 Harvard Way, El Dorado Hills, CA
Photosims Produced on 8-6-2019



AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

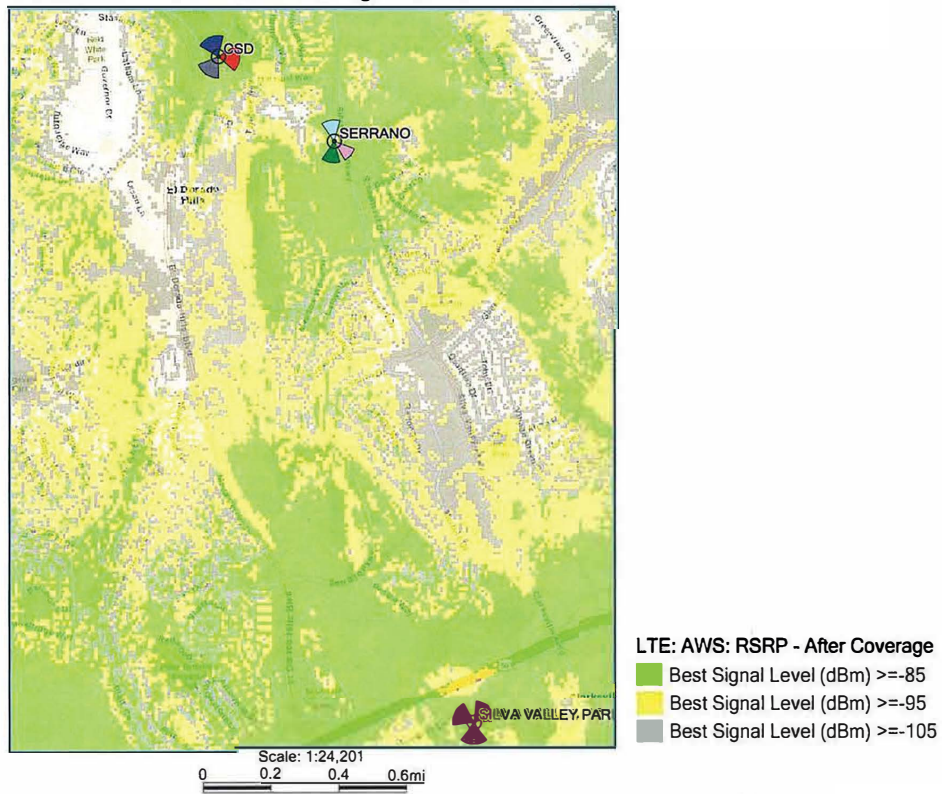
Shot Point Map

CUP20-0006 Exhibit G: Alternative Site Analysis

SERRANO COVERAGE MAPS

verizon

After Coverage

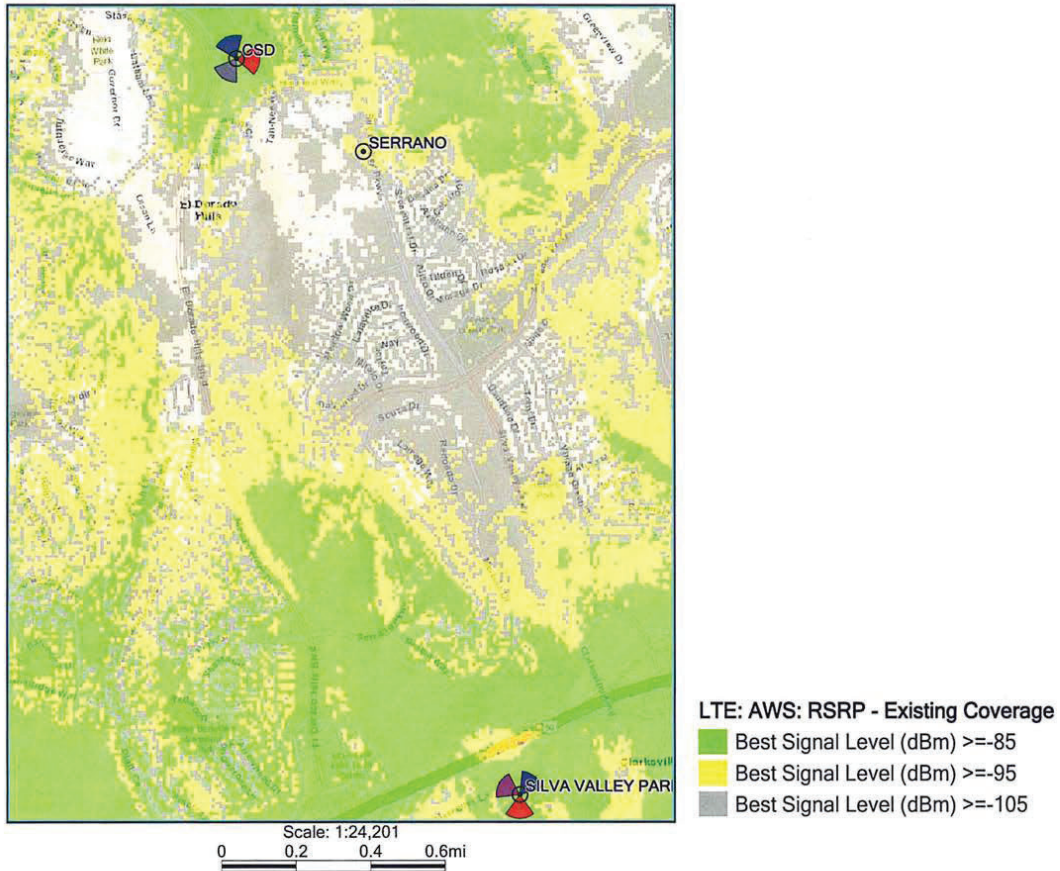


CUP20-0006 Exhibit G: Alternative Site Analysis

SERRANO COVERAGE MAPS

verizon

Before Coverage

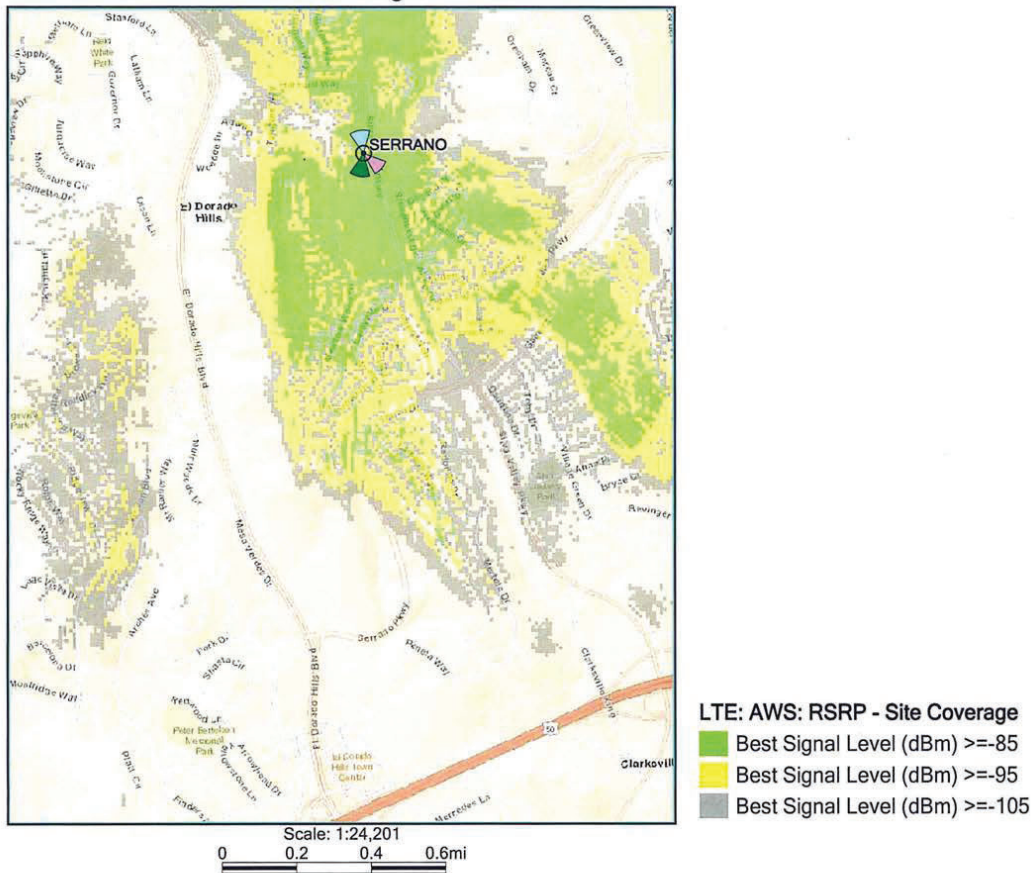


CUP20-0006 Exhibit G: Alternative Site Analysis

SERRANO COVERAGE MAPS



Site Coverage





YOUR RF SAFETY PARTNER

RADIO FREQUENCY ELECTROMAGNETIC FIELDS EXPOSURE REPORT

Prepared for Verizon

c/o Epic Wireless Group LLC

Site Name: Serrano
Site Type: Ball-field Light

Located at:

1120 Harvard Way
El Dorado Hills, CA 95762
Latitude: 38.6790 / Longitude: -121.0686

Report Date: 2/5/2019
Report By: Christopher Stollar, P.E.

Based on FCC Rules and Regulations, Verizon will be compliant provided recommendation(s) are implemented.

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1.0 EXECUTIVE SUMMARY

Dtech Communications, LLC ("Dtech") has been retained by Epic Wireless Group LLC., contractors to Verizon, to determine whether its wireless communications facility complies with the Federal Communications Commission ("FCC") Radio Frequency ("RF") Safety Guidelines. This report contains a computer-simulated with an on-site visit analysis of the Electromagnetic Fields ("EMF") exposure resulting from the facility. The analysis also includes assessment of existing wireless carriers on site, where information is provided. The table below summarizes the results at a glance:

Table 1: EMF Summary

Verizon	Summary
Access Type	Man-Lift/Ladder
Access to antennas locked	NA
RF Sign(s) @ access point(s)	Caution (Recommended)
RF Sign(s) @ antennas	None
Barrier(s) @ sectors	NA
Max EMF level for Verizon on Ground	1.0% General Population
Max cumulative EMF level for facility on Ground	1.0% General Population
Min Clearance Distance from Face of Verizon's Antennas	52 Feet

2.0 SITE DESCRIPTION

The wireless telecommunication facility is located on the ground. The facility consists of 3 wireless carrier(s) or operator(s): Verizon, T-Mobile and Sprint. The antennas are typically grouped into sectors pointing in different directions to achieve the desired areas of coverage. Verizon's antennas will be mounted on a ball-field light standard and connected to the equipment via coaxial cables.'

2.1 Site Map



2.2 Site Photographs



Verizon Proposed Location



Verizon Proposed Location



Verizon Proposed Location



Verizon Proposed Location



T-Mobile All Sectors



Sprint All Sectors

2.3 Antenna Inventory

Technical specifications in the table below are provided by our clients and/or gathered from physical field surveys where applicable and/or possible. Conservative estimates are used where information is not provided or available.

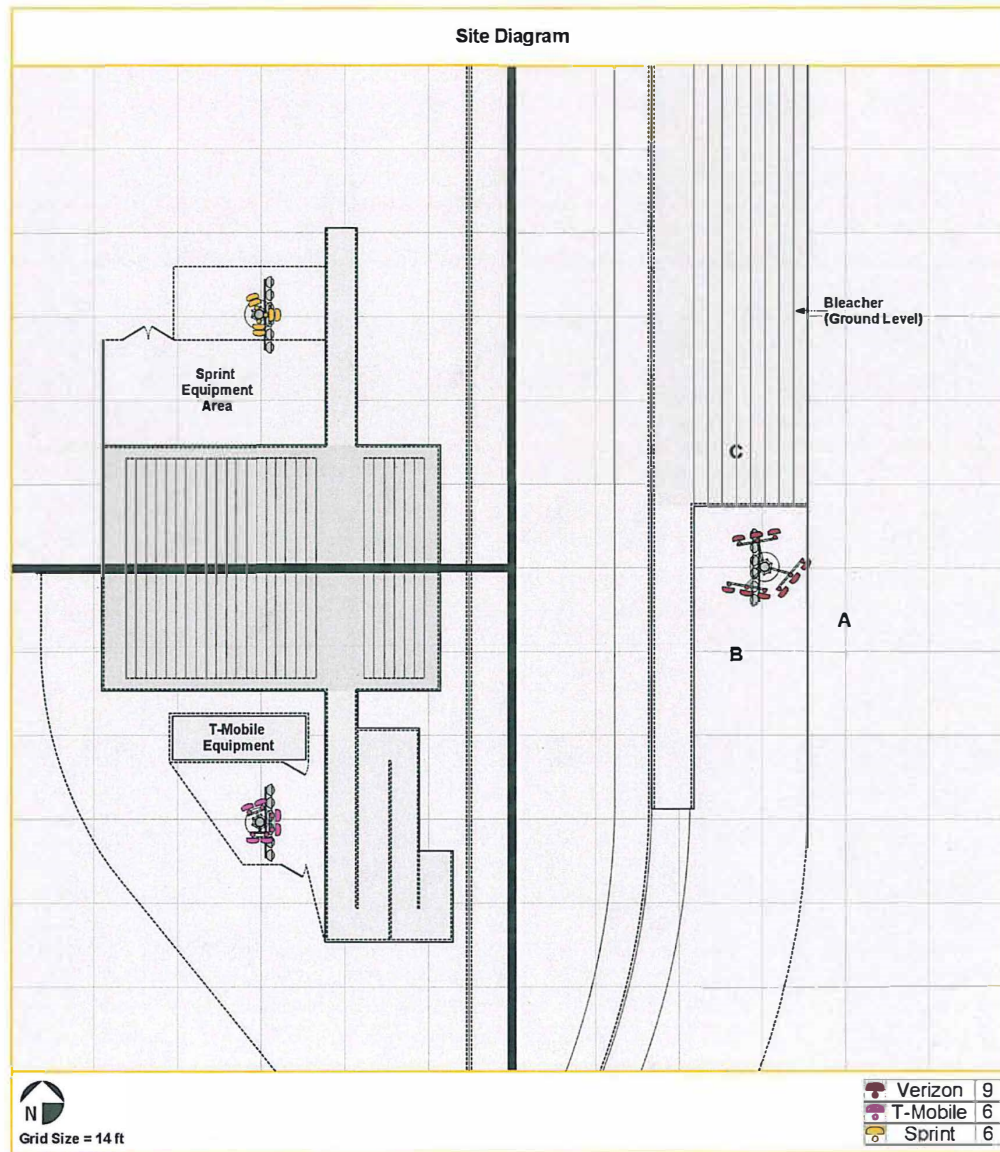
Table 2: Site Technical Specifications

Antenna ID	Operator	Antenna Mfg	Antenna Model	Type	Frequency (MHz)	Orientation (°T)	Horizontal BWidth (°)	Antenna Aperture (ft)	Antenna Gain (dBd)	Total Input Power (Watts)	Total ERP (Watts)	Bottom Tip Height Above Ground (Z) (ft)	Bottom Tip Height Ant Level (Z) (ft)
A1	Verizon	Commscope	NHH-45C-R2B	Panel	746	130	48	8.0	15.4	142	4932	57.0	0.0
A1	Verizon	Commscope	NHH-45C-R2B	Panel	880	130	43	8.0	16.2	142	5902	57.0	0.0
A1	Verizon	Commscope	NHH-45C-R2B	Panel	2120	130	42	8.0	17.7	283	16756	57.0	0.0
A2	Verizon	Commscope	NHH-45C-R2B	Panel	746	130	48	8.0	15.4	142	4932	57.0	0.0
A2	Verizon	Commscope	NHH-45C-R2B	Panel	880	130	43	8.0	16.2	142	5902	57.0	0.0
A2	Verizon	Commscope	NHH-45C-R2B	Panel	1965	130	38	8.0	17.4	283	15459	57.0	0.0
A3	Verizon	Commscope	NHH-45C-R2B	Panel	2120	130	42	8.0	17.7	283	16756	57.0	0.0
B1	Verizon	Commscope	NHH-45C-R2B	Panel	746	190	48	8.0	15.4	142	4932	57.0	0.0
B1	Verizon	Commscope	NHH-45C-R2B	Panel	880	190	43	8.0	16.2	142	5902	57.0	0.0
B1	Verizon	Commscope	NHH-45C-R2B	Panel	2120	190	42	8.0	17.7	283	16756	57.0	0.0
B2	Verizon	Commscope	NHH-45C-R2B	Panel	746	190	48	8.0	15.4	142	4932	57.0	0.0
B2	Verizon	Commscope	NHH-45C-R2B	Panel	880	190	43	8.0	16.2	142	5902	57.0	0.0
B2	Verizon	Commscope	NHH-45C-R2B	Panel	1965	190	38	8.0	17.4	283	15459	57.0	0.0
B3	Verizon	Commscope	NHH-45C-R2B	Panel	2120	190	42	8.0	17.7	283	16756	57.0	0.0
C1	Verizon	Commscope	NHH-45C-R2B	Panel	746	350	48	8.0	15.4	142	4932	57.0	0.0
C1	Verizon	Commscope	NHH-45C-R2B	Panel	880	350	43	8.0	16.2	142	5902	57.0	0.0
C1	Verizon	Commscope	NHH-45C-R2B	Panel	2120	350	42	8.0	17.7	283	16756	57.0	0.0
C2	Verizon	Commscope	NHH-45C-R2B	Panel	746	350	48	8.0	15.4	142	4932	57.0	0.0
C2	Verizon	Commscope	NHH-45C-R2B	Panel	880	350	43	8.0	16.2	142	5902	57.0	0.0
C2	Verizon	Commscope	NHH-45C-R2B	Panel	1965	350	38	8.0	17.4	283	15459	57.0	0.0
C3	Verizon	Commscope	NHH-45C-R2B	Panel	2120	350	42	8.0	17.7	283	16756	57.0	0.0
A1	T-Mobile	Ericsson	AIR 21	Panel	1900	90	62	4.5	15.5	-	2083	44.7	NA
A1	T-Mobile	Ericsson	AIR 21	Panel	2100	90	61	4.5	15.7	-	1936	44.7	NA
A2	T-Mobile	Commscope	LNK-6514DS-VTM	Panel	700	90	65	6.1	13.8	-	1702	44.0	NA
B1	T-Mobile	Ericsson	AIR 21	Panel	1900	180	62	4.5	15.5	-	2083	44.7	NA
B1	T-Mobile	Ericsson	AIR 21	Panel	2100	180	61	4.5	15.7	-	1936	44.7	NA
B2	T-Mobile	Commscope	LNK-6514DS-VTM	Panel	700	180	65	6.1	13.8	-	1702	44.0	NA
C1	T-Mobile	Ericsson	AIR 21	Panel	1900	340	62	4.5	15.5	-	2083	44.7	NA
C1	T-Mobile	Ericsson	AIR 21	Panel	2100	340	61	4.5	15.7	-	1936	44.7	NA
C2	T-Mobile	Commscope	LNK-6514DS-VTM	Panel	700	340	65	6.1	13.8	-	1702	44.0	NA
A1	Sprint	Unknown	Unknown	Panel	1900	90	66	6.0	15.8	-	1500	44.0	NA
A2	Sprint	Unknown	Unknown	Panel	2500	90	60	6.0	14.5	-	1500	36.0	NA
B1	Sprint	Unknown	Unknown	Panel	1900	180	66	6.0	15.8	-	1500	44.0	NA
B2	Sprint	Unknown	Unknown	Panel	2500	180	60	6.0	14.5	-	1500	36.0	NA
C1	Sprint	Unknown	Unknown	Panel	1900	340	66	6.0	15.8	-	1500	44.0	NA
C2	Sprint	Unknown	Unknown	Panel	2500	340	60	6.0	14.5	-	1500	36.0	NA

3.0 ANALYSIS

3.1 Site Diagram

Figure 1: Site Diagram - Plan (bird's eye) view



3.2 Emission Predictions

Figure 2: Plan (bird's eye) view map of results compared to FCC's General Population MPE (Maximum Permissible Exposure) Limits. Gray represents areas where exposure levels are calculated to be at or below 5%; Green- between 5% & 100% (below MPE limits); blue, yellow & red – greater than 100% (exceeds MPE limits). Individuals can safely occupy areas in gray and green for indefinite amount of time; whereas areas in blue, yellow & red must be restricted to RF trained personnel who has been made fully aware of potential for exposure, has control and knows how to reduce their exposure with the use of personal protection equipment or has the ability to power down the transmitters.

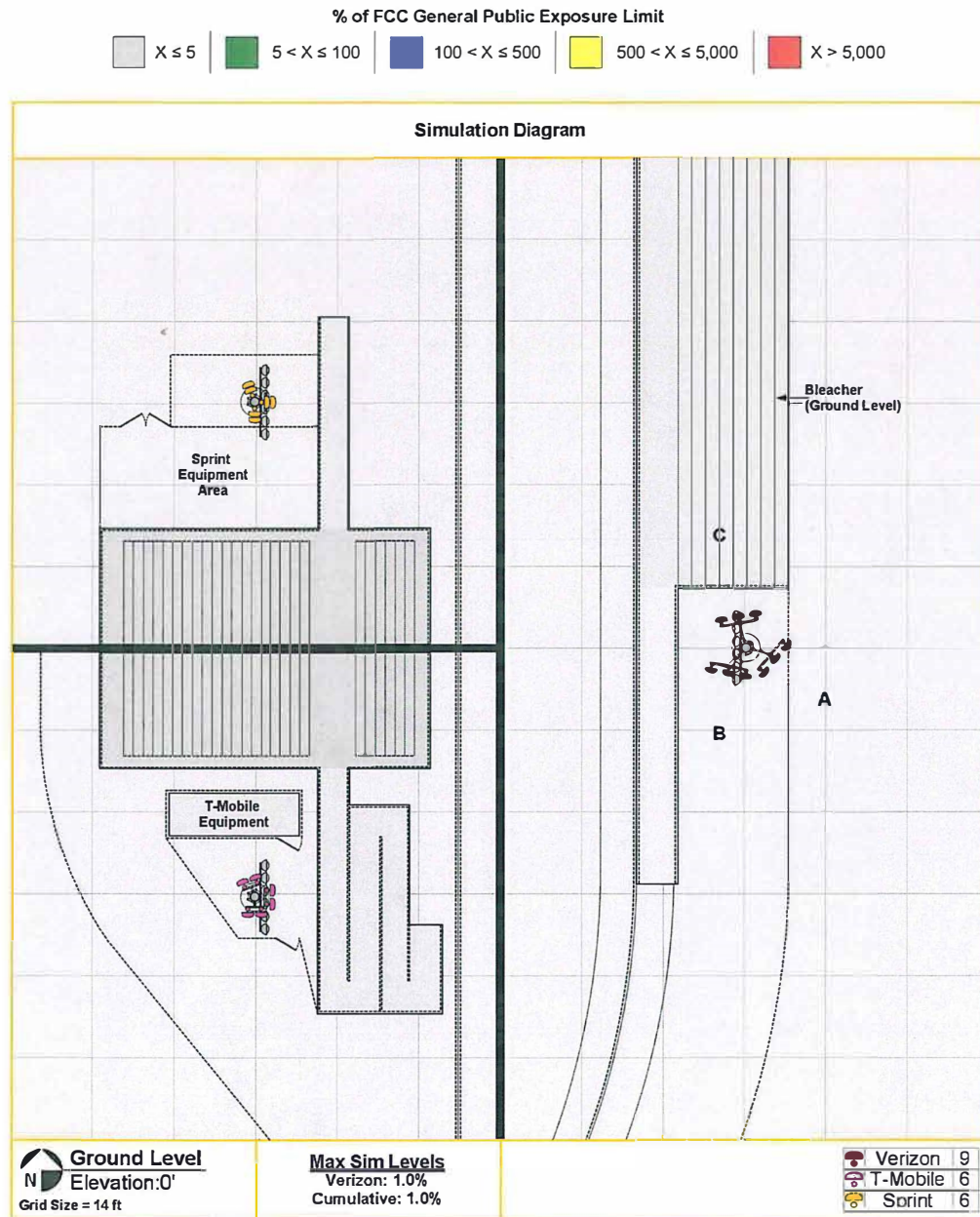
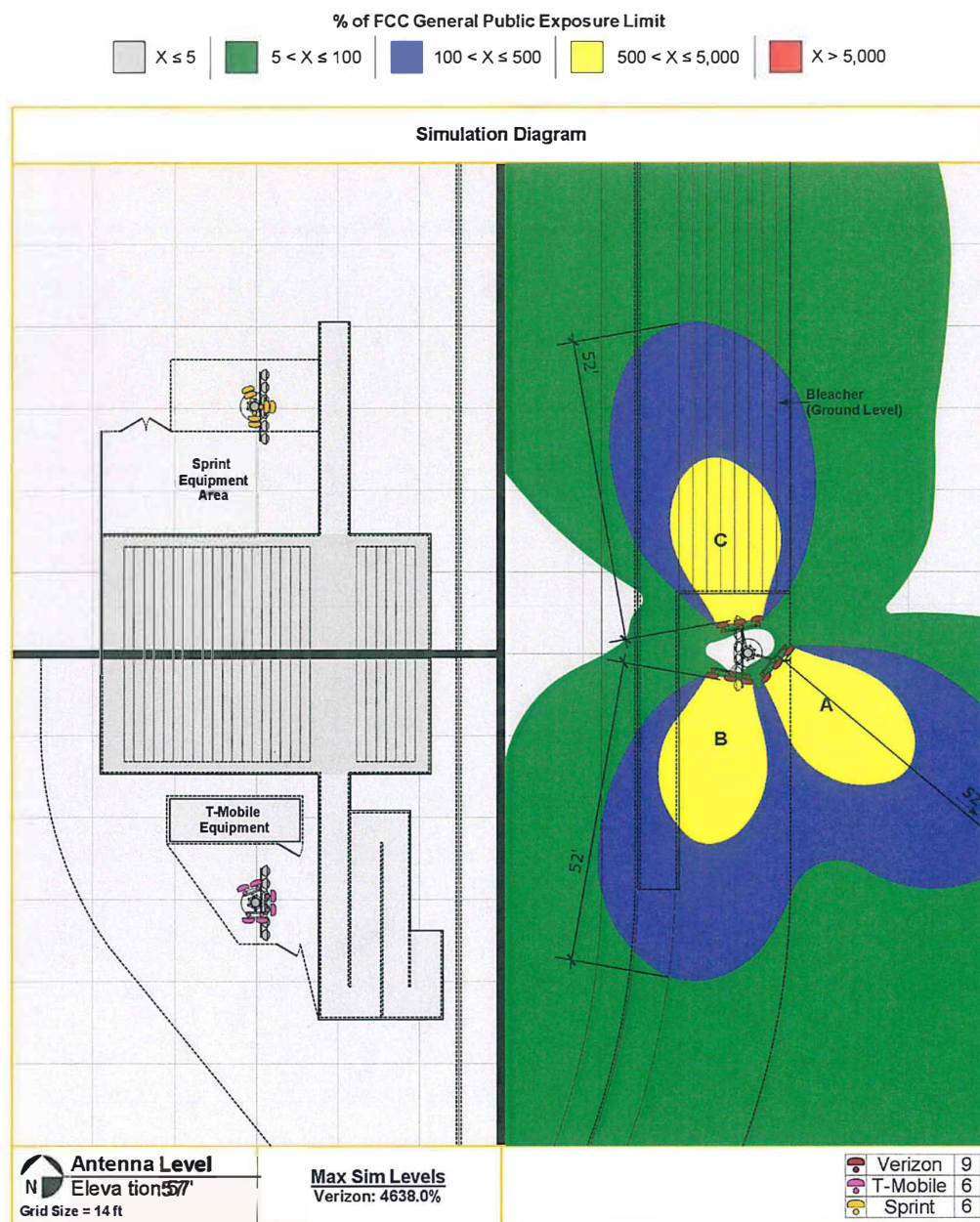


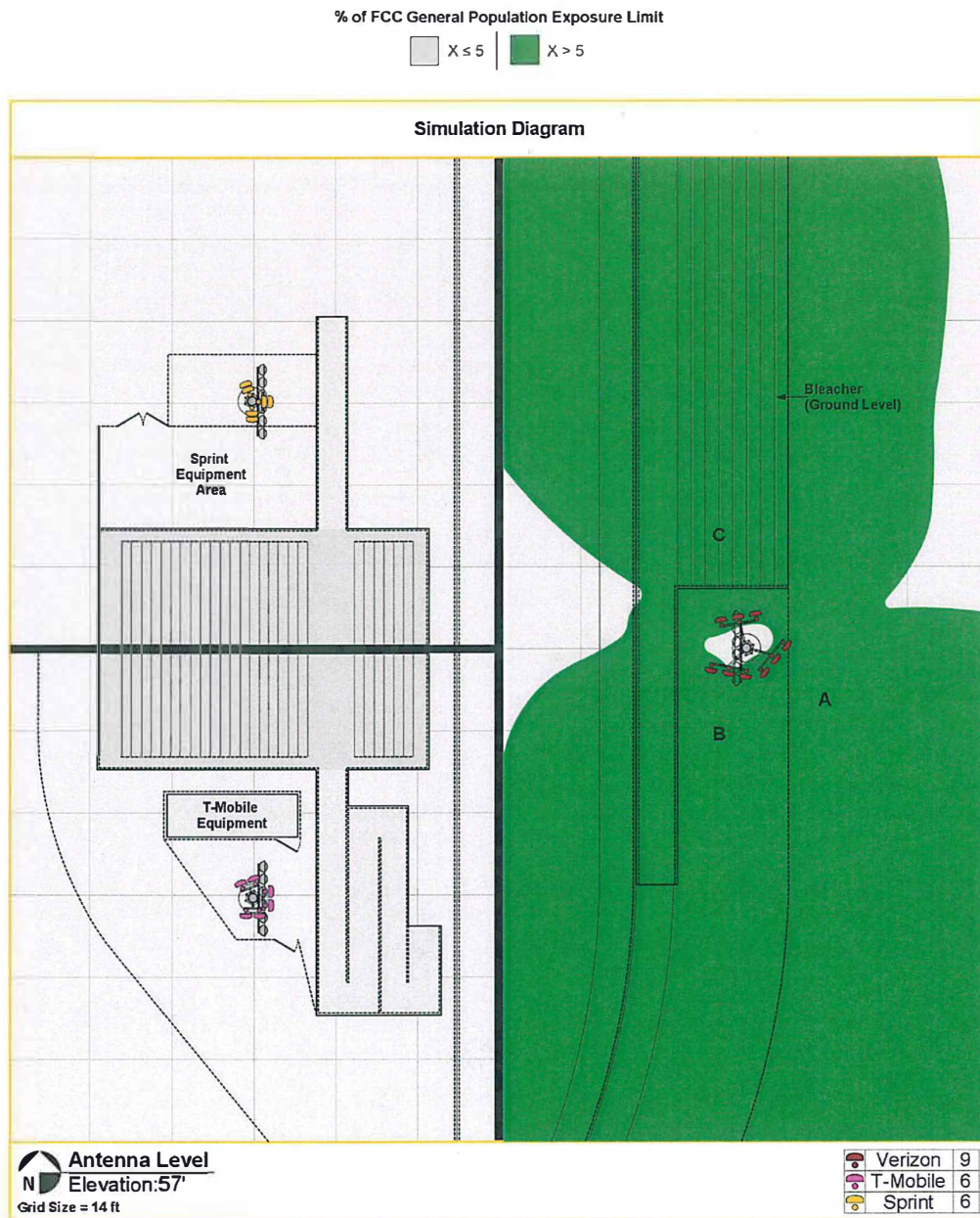
Figure 3: Plan (bird's eye) view map of results compared to FCC's General Population MPE (Maximum Permissible Exposure) Limits. Gray represents areas where exposure levels are calculated to be at or below 5%; Green- between 5% & 100% (below MPE limits); blue, yellow & red – greater than 100% (exceeds MPE limits). Individuals can safely occupy areas in gray and green for indefinite amount of time; whereas areas in blue, yellow & red must be restricted to RF trained personnel who has been made fully aware of potential for exposure, has control and knows how to reduce their exposure with the use of personal protection equipment or has the ability to power down the transmitters.



3.3 Five Percent Contributions

Mitigation measures are a shared responsibility for carriers whose RF emission levels exceed five percent of the FCC's exposure limits in areas of non-compliance.

Figure 4: Plan (bird's eye) view map of results compared to FCC's General Population MPE (Maximum Permissible Exposure) Limits. Gray represents areas where exposure levels are calculated to be at or below 5%; Green – greater than 5%.



4.0 CONCLUSION

4.1 Results

For a person standing on the ground, calculations for Verizon's site including contributions from existing carriers resulted in exposure levels below the FCC's most stringent General Population MPE Limits (see figure 2).

At antenna elevation, the highest calculated exposure level is above the FCC's General Population MPE Limits near the Verizon antennas (see figure 3). The overexposed (yellow and blue) areas extend 52-feet from the front face of the Verizon antennas. From the provided drawings, there are no other buildings or surrounding structures within 52-feet of the Verizon antennas. Beyond 52-feet, exposure levels are predicted to be below the FCC's most stringent General Population MPE Limits.

The antennas are mounted on a tall pole and therefore not accessible by the general public. It is presumed that Verizon employees and contractors are aware of the transmitting antennas and will take appropriate precautions when working near them. However, there may be situations where workers i.e. light standard personnel, etc. may find themselves directly in front of the antennas. Individuals working near/in front of antennas must receive appropriate RF safety training¹ and be made aware of the HotZones (areas where RF exposure may potentially exceed FCC safety limits). In addition, contact information should be made available in the event work is required within the HotZones.

4.2 Recommendation(s)

For the facility to be classified as an Occupational/Controlled environment, the following action(s) are recommended in accordance with the FCC's and Verizon's RF Safety Guidelines² (see figure 5):

- 1) Install CAUTION Sign(s) on the pole where they will be clearly visible to workers. Signage should be placed at least 9-feet below the antennas, where RF emissions may start to exceed the General Population Limits.

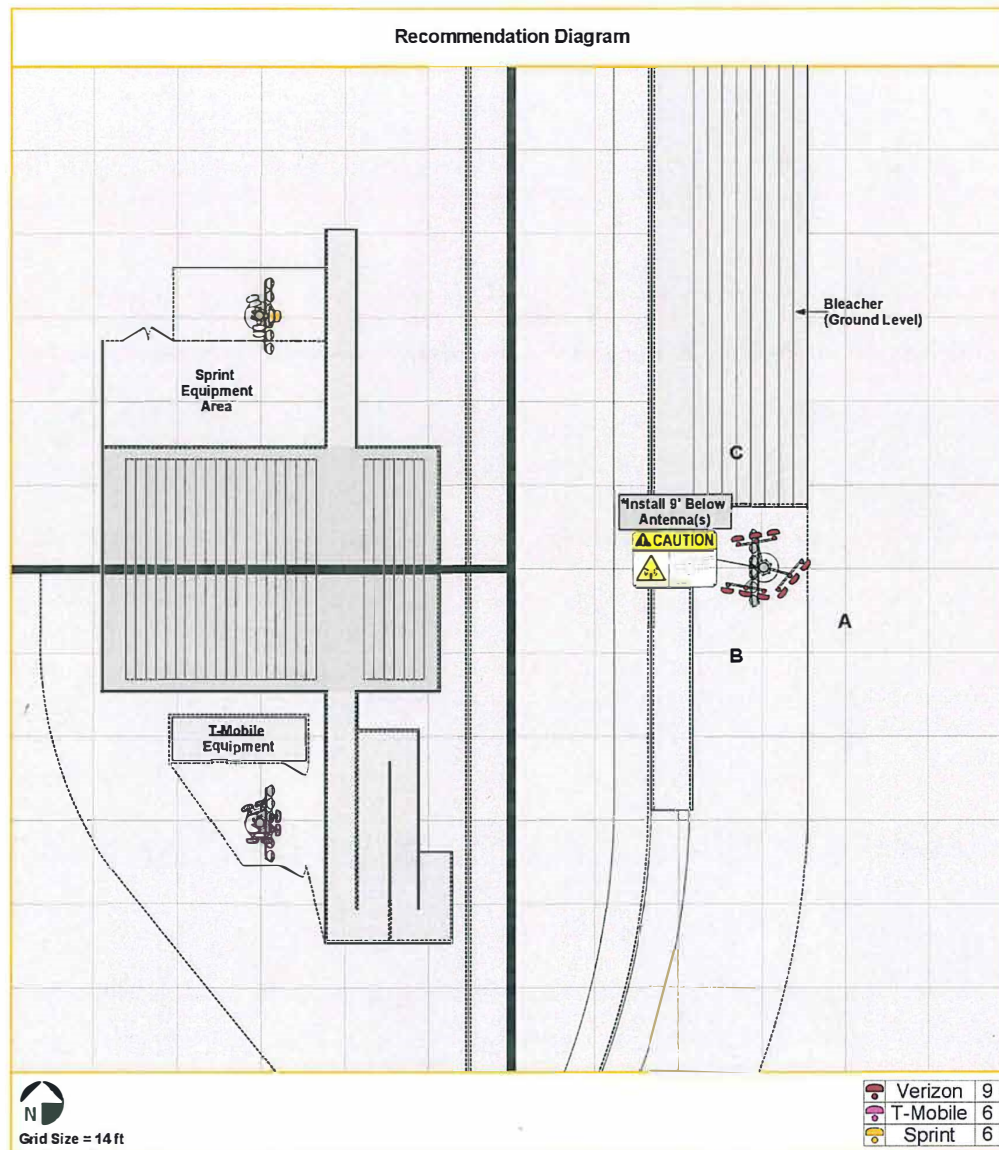
Compliance actions, if necessary, for the other carrier(s) at this site have not been determined as part of this study since estimates were used for their site specifications.

¹ See Appendix for Dtech's RF Safety training program - AntennaView®

² Verizon Radio Frequency Compliance (RFC) Signage & Demarcation Policy – June 2014



Figure 5: Recommendation(s)



4.3 Statement of Compliance

Based on the above results, analysis and recommendation(s), it is the undersigned's professional opinion that Verizon's site including contributions from existing carriers will be compliant with the FCC's RF Safety Guidelines provided recommendation(s) are implemented.

4.4 Engineer Certification

This report has been prepared by or under the direction of the following Registered Professional Engineer: Darang Tech, holding California registration number 16000. I have reviewed this report and believe it to be both true and accurate to the best of my knowledge.


Darang Tech, P.E.



Appendix A: Background

Dtech uses the FCC's guidelines described in detail in Office of Engineering & Technology, Bulletin No. 65 ("OET-65") "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields". The table below summarizes the current Maximum Permissible Exposure ("MPE") safety limits classified into two groups: General population and Occupational.

Table 3: FCC MPE Limits (from OET-65)

Frequency (Mhz)	General Population/ Uncontrolled MPE (mW/cm ²)	Averaging Time (minutes)	Occupational/ Controlled MPE (mW/cm ²)	Averaging Time (minutes)
30 - 300	0.2	30	1.0	6
300 - 1500	Frequency (Mhz)/1500 (0.2 - 1.0)	30	Frequency (Mhz)/300 (1.0 - 5.0)	6
1500 - 100,000	1.0	30	5.0	6

General population/uncontrolled limits apply in situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment, and may not be fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public always fall under this category when exposure is not employment-related.

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment, and those persons have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

It is important to understand that the FCC guidelines specify *exposure* limits not *emission* limits. For a transmitting facility to be out of compliance with the FCC's RF safety guidelines an area or areas where levels exceed the MPE limits must, first of all, be in some way *accessible* to the public or to workers. When accessibility to an area where excessive levels is appropriately restricted, the facility or operation can certify that it complies with the FCC requirements.

Appendix B: Measurement and/or Computer Simulation Methods

Spatial averaging measurement technique is used. An area between 2 and 6 feet, approximately the size of an average human, is scanned in single passes from top to bottom in multiple planes. When possible, measurements were made at very close proximity to the antennas and inside the main beam where most of the energy is emitted. The spatial averaged values were recorded.

Dtech uses an industry standard power density prediction computer Model³ to assess the worse-case, cumulative EMF impact of the surrounding areas of the subject site. The Model does not take into account losses due to buildings. Its methodologies are conservative enough to account for typical down-tilts deployed in wireless communications. In addition, the analysis is performed at 100% duty cycle-all transmitters are active at all times and transmitting at maximum power. For purposes of a cumulative study, nearby transmitters are included where possible. The result is a surrounding area map color-coded to percentages of the applicable FCC's MPE Limits. A result higher than 100% exceeds the Limits.

Appendix C: Limitations

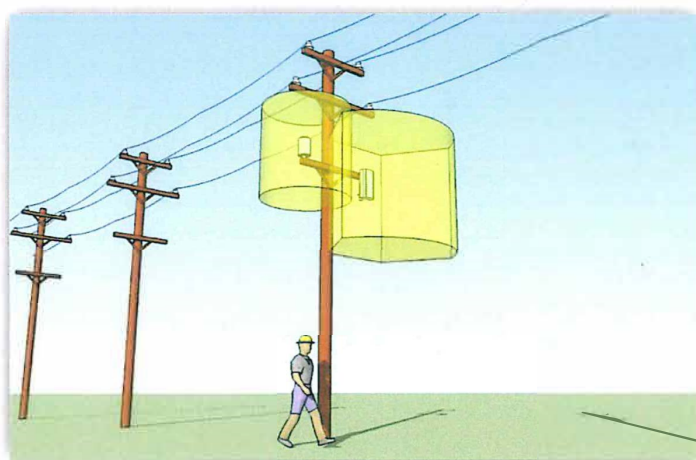
The conclusions in this document rendered by Dtech are based solely upon the information collected during the site survey and/or furnished by our Client which Dtech believes is accurate and correct. Dtech, however, has no responsibility should such Client provided information prove to be inaccurate or incorrect. Third party specification estimates used for cumulative computer simulation purposes, where applicable, are based on common industry practices and our best interpretation of available information. Data, results and conclusions in this document are valid as of its date. However, as mobile technologies continuously change, these data, results and conclusions may also be at variance with such future changes. Dtech has no responsibility to update its survey or report to account for such future technology changes. This document was prepared for the use of our Client only and cannot be utilized by any third party for any purpose without Dtech's written consent. Dtech shall have no liability for any unauthorized use of this document and any such unauthorized user shall defend, indemnify and hold Dtech and its owners, directors, officers and employees harmless from and against any liability, claim, demand, loss or expense (including reasonable attorney's fees) arising from such unauthorized use.

³ Dtech uses Roofmaster(tm) 2015 Version 15.7.2.18 per Verizon's direction.

Appendix D: AntennaView®

Dtech Communications offers a unique, online tool (AntennaView®) to train, identify and inform individuals of site-specific HotZones – areas that may potentially exceed the FCC's Safety Limits. AntennaView® is an online, interactive training tool that will educate nontechnical people in about ten minutes. It is a site-specific, RF safety training program that requires the end user to sign an online agreement thereby limiting the liability to the landlord and carriers. Some of the advantages include:

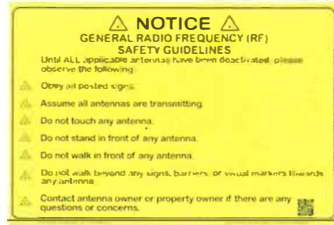
- Virtual walk-through in 3-D with corresponding photographs
- Site-specific, interactive, simple to understand
- Delivers pertinent information i.e. HotZones (areas that may potentially exceed FCC safety limits), site owners and contact numbers.
- User online agreement = accountability



We invite you to take a quick tour at www.AntennaView.com and see how easy to understand and informative AntennaView® is.

Under Article 47 CFR § 1.1307(b), the FCC & OSHA mandates wireless operators/facility owners to have an RF survey completed including a safety plan and training to ensure that their tenants, employees and contractors who work in or around RF sites are aware of the potential risks posed by RF radiation. Most cell sites are located on building rooftops where HVAC contractors, window washers, painters, etc. routinely work and generally do not know what antennas even look like. Dtech Communications can help with ongoing FCC/OSHA compliance and provide practical training that is easy to understand by anyone regardless of their technical background.

Appendix E: Verizon's RF Advisory Signs



GUIDELINES Sign



NOC INFORMATION Sign



NOTICE Sign



CAUTION Sign

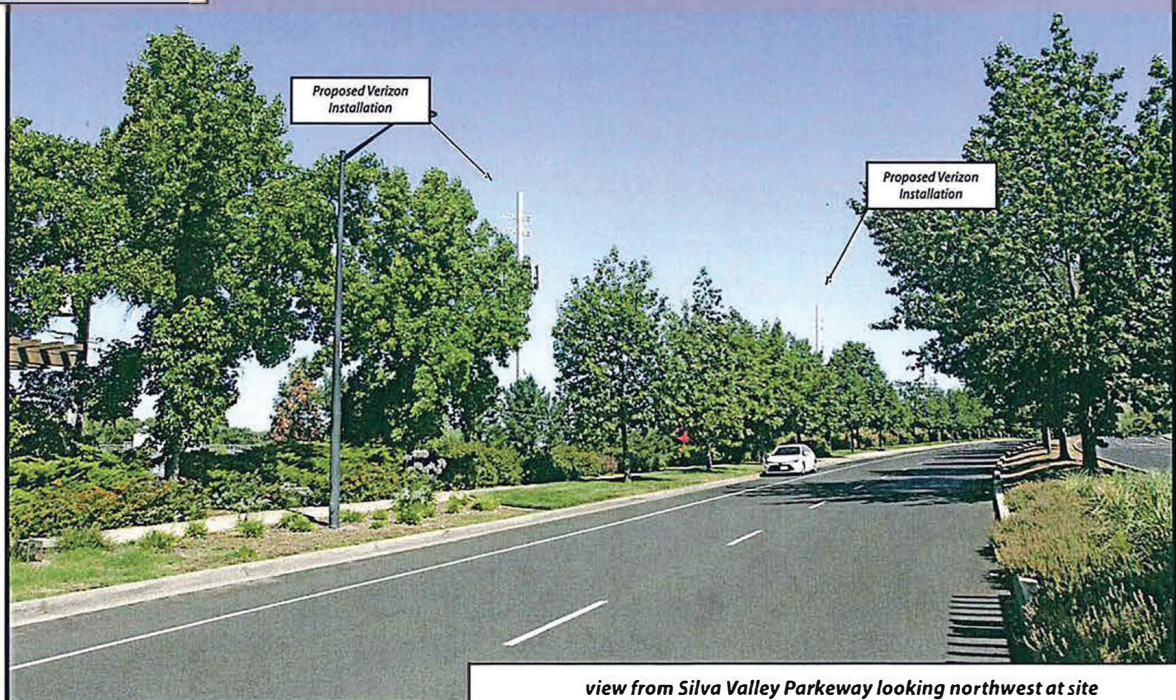


WARNING Sign

Existing



Proposed



view from Silva Valley Parkway looking northwest at site

Advance **Sim** 
Photo Simulation Solutions
Contact (925) 202-5507

verizon 

239662 Serrano
1120 Harvard Way, El Dorado Hills, CA
Photos simulated on 8-6-20

Existing



Proposed



AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8597

view from Silva Valley Parkway looking southwest at site

verizon

239662 Serrano
1120 Harvard Way, El Dorado Hills, CA
Photosims Produced on 8-6-2019

Existing



Proposed



AdvanceSim
Photo Simulation Solutions
Contact: (925) 292-8507

view from Harvard Way looking south at site

verizon

239662 Serrano
1120 Harvard Way, El Dorado Hills, CA
Photosims Produced on 8-6-2019

Existing



Proposed



view from Tah Nee Way looking southeast at site

AdvanceSim
Photo Simulation Solutions
Contact (925) 292-6597

verizon

239662 Serrano
1120 Harvard Way, El Dorado Hills, CA
Photosims Produced on 8-6-2019



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