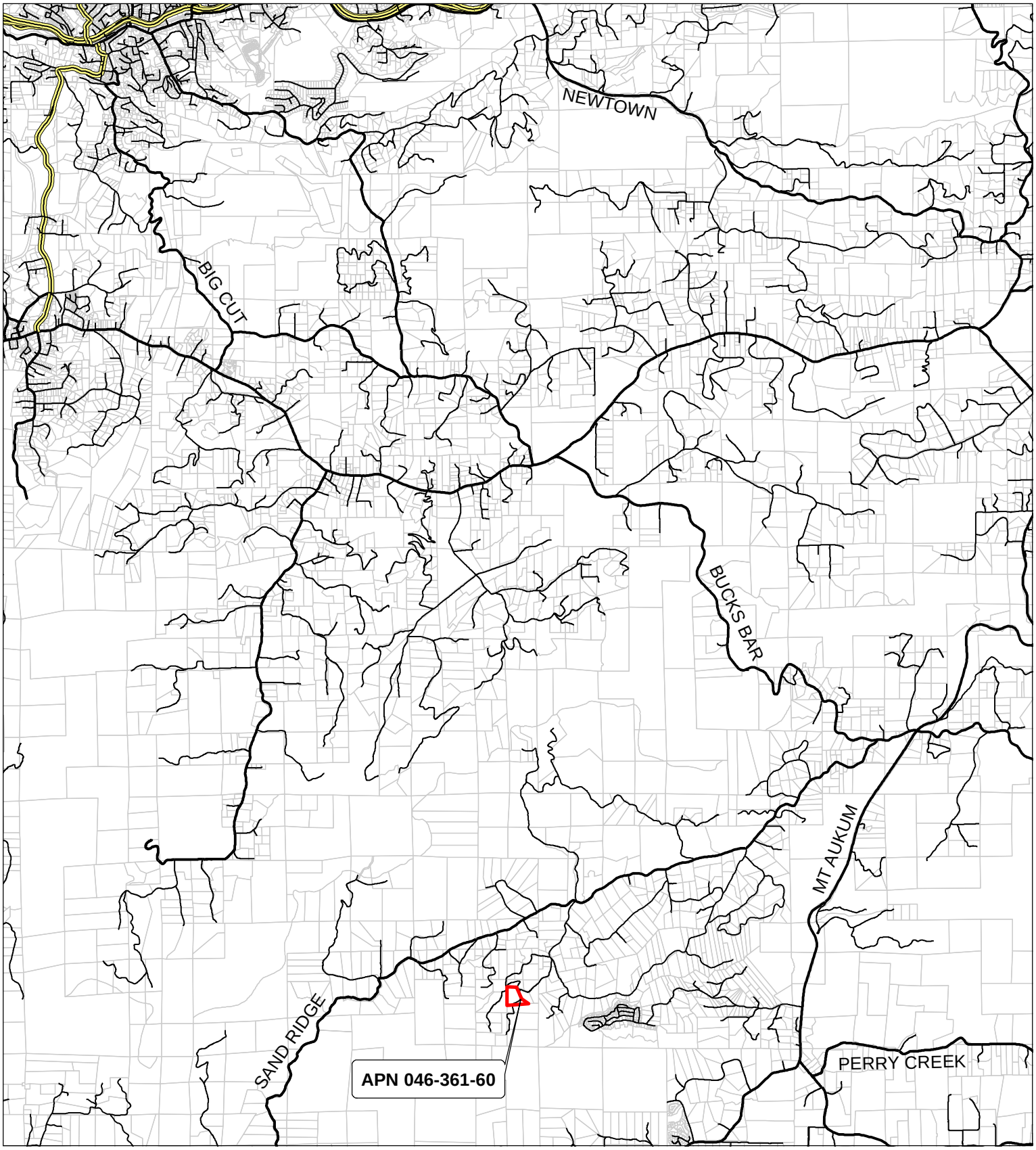



**Location Map**

Site

0 0.5 1 2 Miles

Outingdale Verizon Monopine
Special Use Permit
S15-0013

Exhibit A

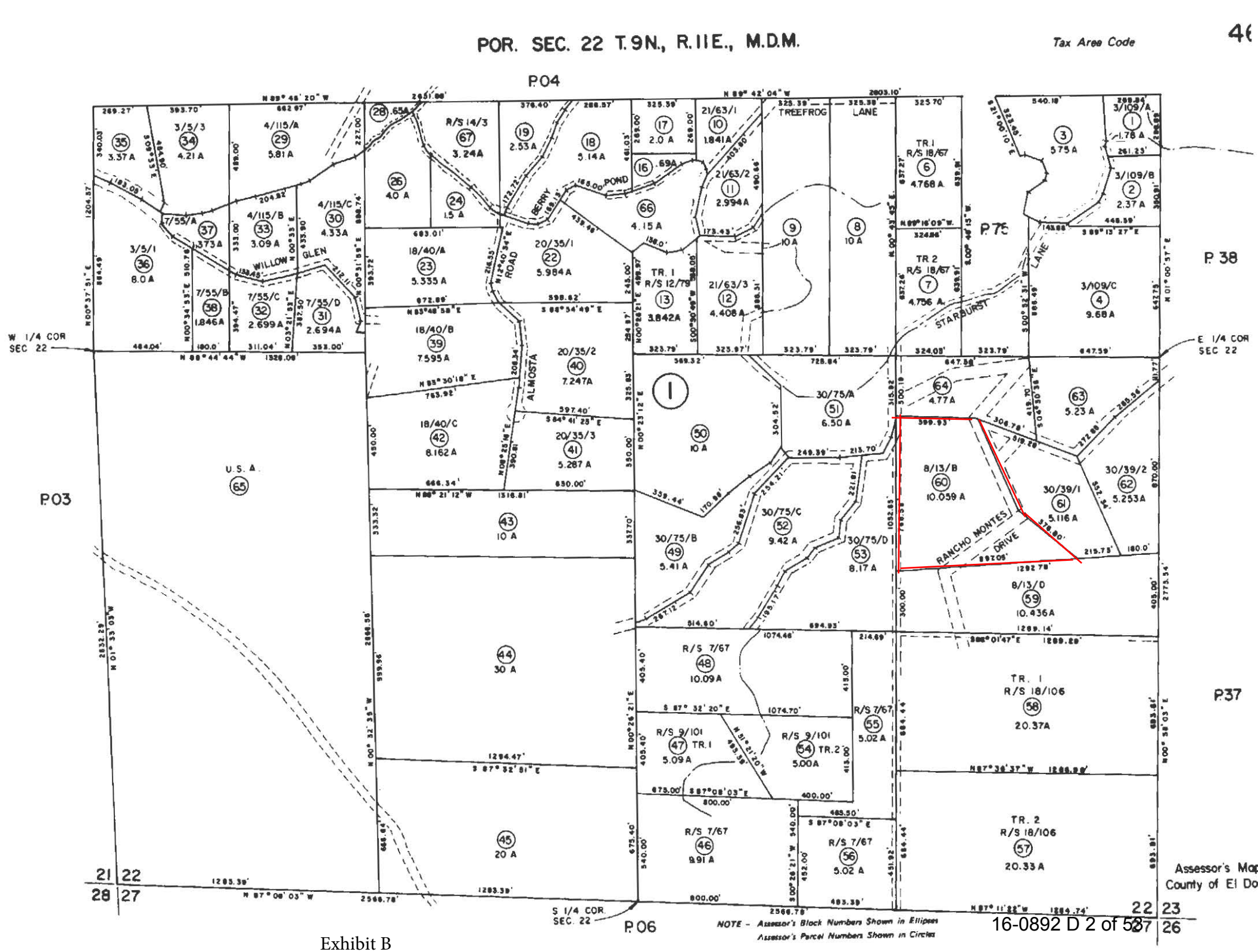
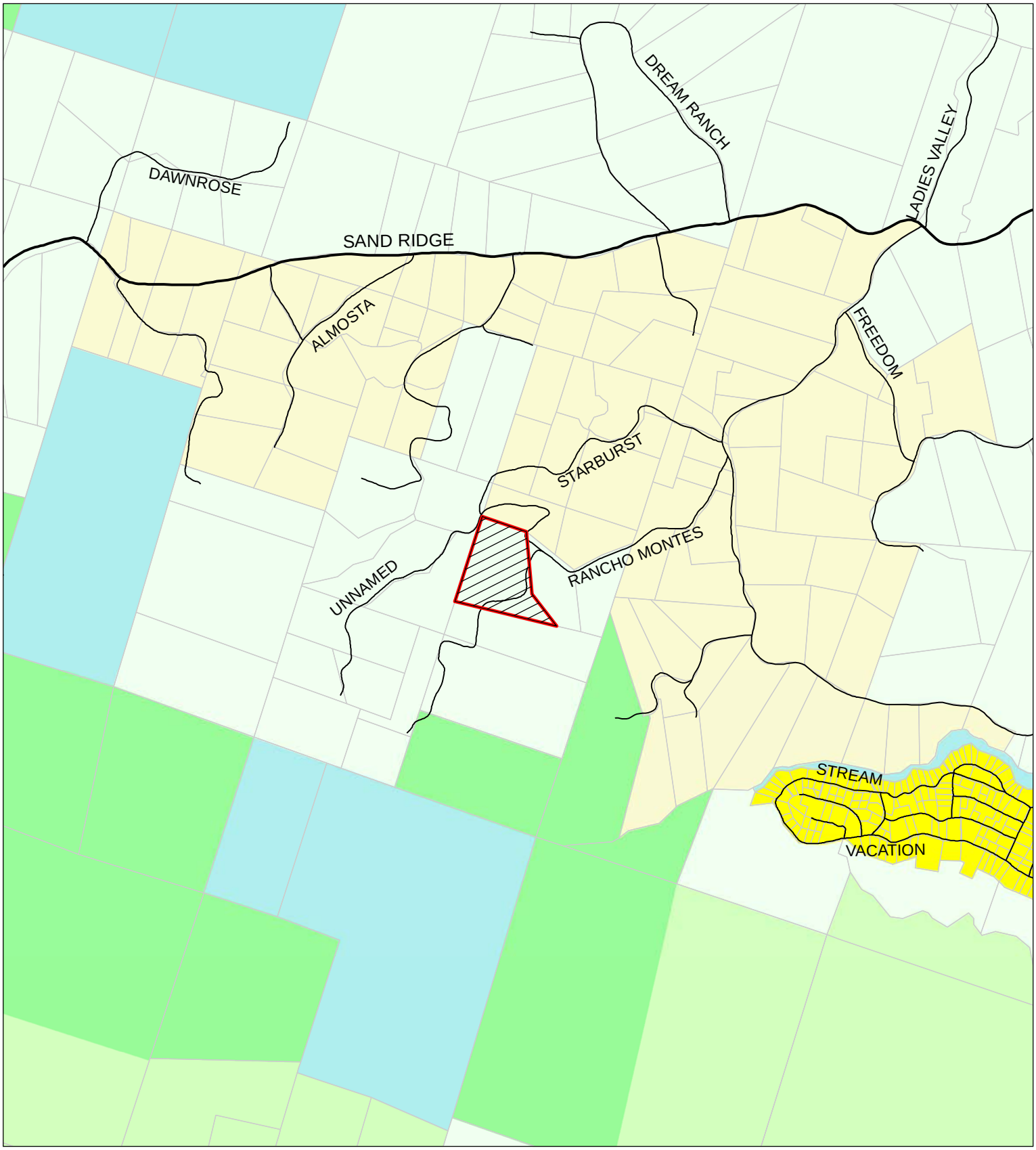

POR. SEC. 22 T.9N., R.11E., M.D.M.
Tax Area Code
P.04
P.03
P.06
P.75
P.38
P37
W 1/4 COR SEC 22
E 1/4 COR SEC 22
S 1/4 COR. SEC. 22
U.S.A.
WILLOW GLEN
ALMOSTA
BERRY
POND
ROAD
TREEFROG
LANE
STARBURST
RANCHO MONTES
DRIVE
TR. 1 R/S 18/67
TR. 2 R/S 18/67
TR. 1 R/S 12/79
TR. 1 R/S 18/106
TR. 2 R/S 18/106
NOTE - Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles
21 22 28 27
22 23 27 26
Assessor's Map
County of El Do



Exhibit B



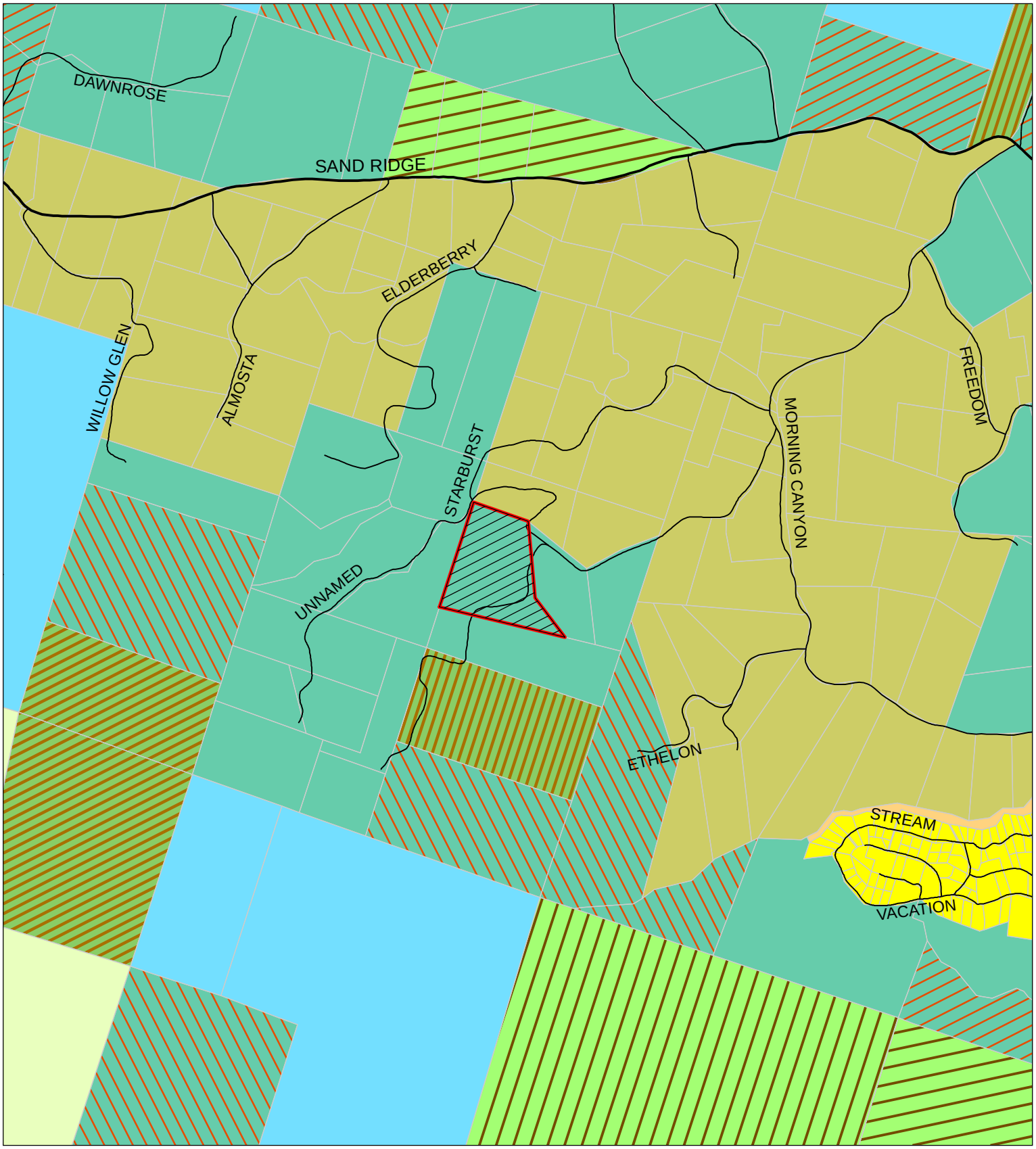

**Land Use Map**

Outingdale Verizon Monopine
Special Use Permit
S15-0013

- Site
- Agricultural Lands
- High Density Residential
- Low Density Residential
- Natural Resources
- Open Space
- Rural Residential

0 500 1,000 Feet

Exhibit C




**Zoning Map**

Outingdale Verizon
Monopine
Special Use Permit
S15-0013

- Site
- AG-40 = Agricultural Grazing 40 Acres
- LA-20 = Limited Agriculture 20 Acres
- LA-40 = Limited Agriculture 40 Acres
- PA-20 = Planned Agriculture 20 Acres
- PA-40 = Planned Agriculture 40 Acres
- OS = Open Space
- R1 = Residential Single Unit
- RE-5 = Residential Estate 5 Acres
- RL-10 = Rural Land 10 Acres
- RL-20 = Rural Land 20 Acres
- RL-40 = Rural Land 40 Acres
- RF-L = Recreational Facility Low

0 300 600 Feet

Exhibit D

15 JUL 22 PM 4:23

RECEIVED
PLANNING DEPARTMENT

verizonwireless

# OUTINGDALE
# PSL # 295537

4260 RANCHO MONTES DRIVE
PLACERVILLE, CA 95667

811 Know what's below. Call before you dig.

## PROJECT TEAM

**SITE ACQUISITION**

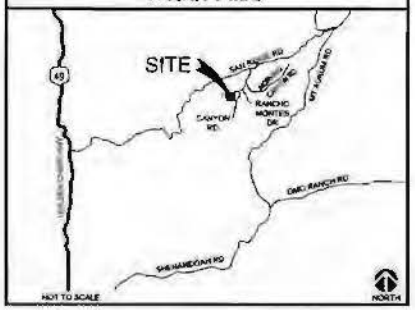
**PLANNER**

**ARCHITECT:**

**SURVEYOR:**

**UTILITY COORDINATOR:**

## VICINITY MAP




## DRIVING DIRECTIONS

FROM: 2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94598

TO: 4260 RANCHO MONTES DRIVE
PLACERVILLE, CA 95667

1. HEAD NORTHEAST ON MITCHELL DR TOWARD OAK GROVE RD AND TURN LEFT
2. TURN LEFT ONTO TREAT BLVD
3. TURN RIGHT ONTO BISWAS AVE
4. TAKE THE INTERSTATE 680 N RAMP ON THE LEFT AND MERGE
5. TAKE THE EXIT TOWARD I-80 SACRAMENTO AND MERGE ONTO I-80 E
6. KEEP LEFT AT THE FORK TO CONTINUE ON I-80
7. CONTINUE ONTO US-50 E
8. TAKE THE MISSOURI FLAT RD EXIT AND TURN RIGHT
9. TURN LEFT ONTO PLEASANT VALLEY RD
10. TURN RIGHT ONTO RAND ROSIE RD
11. TURN LEFT ONTO MORNING CANYON RD
12. TURN RIGHT ONTO RANCHO MONTES DR
13. RANCHO MONTES DR TURNS SLIGHTLY RIGHT AND BECOMES CENTER REACH RD
14. ARRIVE AT 4260 RANCHO MONTES DR, PLACERVILLE, CA 95667

## PROJECT DESCRIPTION

THIS PROJECT IS A VERIZON WIRELESS UNMANNED TELECOMMUNICATION WIRELESS FACILITY. IT WILL CONSIST OF THE FOLLOWING:

- NEW VERIZON WIRELESS 30'-0" x 30'-0" LEASE AREA
- NEW VERIZON WIRELESS OUTDOOR EQUIPMENT ON NEW 8'-0" X 14'-0" CONCRETE PAD
- (3) NEW VERIZON WIRELESS GPS ANTENNA
- (3) NEW VERIZON WIRELESS 30kW GENERAC STANDBY GENERATOR W/ 132 GALLON DIESEL TANK (UL 142) ON NEW 8'-0" X 12'-0" CONCRETE PAD
- (3) NEW VERIZON WIRELESS ELECTRICAL METER ON FUSED DISCONNECT ON NEW H-FRAME
- (3) NEW VERIZON WIRELESS 150'-0" TALL MONOPINE
- (12) NEW VERIZON WIRELESS 8' TALL PANEL ANTENNAS
- (3) NEW VERIZON WIRELESS RRH MICROWAVE ANTENNAS
- (12) NEW VERIZON WIRELESS RRUS12 + A2
- (4) NEW VERIZON WIRELESS RAYCAPS
- NEW VERIZON WIRELESS 6'-0" TALL CHAIN LINK FENCE W/ BARBED WIRE

## PROJECT SUMMARY

**APPLICANT/LESSEE**

verizon
2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94598
OFFICE: (925) 279-6609

**ASSESSOR'S PARCEL NUMBER**
046-361-60-10

**APPLICANT'S REPRESENTATIVE**

SAC WIRELESS, LLC
1851 HERITAGE LANE
SUITE 152
SACRAMENTO, CA 95815
CONTACT: RYAN BEAUMONT
TELEPHONE: (925) 974-7240
RYAN.BEAUMONT@SACW.COM

**PROPERTY OWNER**

OWNER:
ADDRESS:
CONTACT:
TELEPHONE:

**PROPERTY INFORMATION**

SITE NAME: OUTINGDALE
SITE NUMBER: 295537
SITE ADDRESS: 4260 RANCHO MONTES DRIVE
PLACERVILLE, CA 95667
JURISDICTION: EL DORADO COUNTY

**CONSTRUCTION INFORMATION**

AREA OF CONSTRUCTION:
OCCUPANCY:
TYPE OF CONSTRUCTION:
CURRENT ZONING:
ACCESSIBILITY REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. ACCESSIBILITY NOT REQUIRED.

## GENERAL CONTRACTOR NOTES

DO NOT SCALE DRAWINGS IF NOT FULL SIZE (24 X 36)

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR THE SAME.

## CODE COMPLIANCE

- 2013 CALIFORNIA ENERGY CODE
- 2013 CALIFORNIA BUILDING CODE
- 2013 CALIFORNIA ELECTRICAL CODE
- 2013 CALIFORNIA FIRE CODE
- 2013 CALIFORNIA GREEN BUILDING CODE
- 2013 CALIFORNIA MECHANICAL CODE
- 2013 CALIFORNIA PLUMBING CODE

| SHEET | DESCRIPTION | REV |
|---|---|---|
| T-1 | TITLE SHEET | 3 |
| C-1 | TOPOGRAPHIC SURVEY | 1 |
| A-1 | SITE PLAN & ENLARGED SITE PLAN | 4 |
| A-2 | EQUIPMENT & ANTENNA LAYOUT | 3 |
| A-3 | NORTH & EAST ELEVATIONS | 3 |
| A-4 | SOUTH & WEST ELEVATIONS | 3 |
| A-5 | EQUIPMENT ELEVATIONS | 1 |

ZONING DRAWINGS

## VERIZON WIRELESS SIGNATURE BLOCK

| DISCIPLINE | SIGNATURE | DATE |
|---|---|---|
| SITE ACQUISITION | | |
| CONSTRUCTION | | |
| RADIO | | |
| MICROWAVE | | |
| FIELD | | |
| EQUIPMENT | | |
| PROJECT ADMINISTRATOR | | |
| RE ADMINISTRATOR | | |

## SAC WIRELESS SIGNATURE BLOCK

| DISCIPLINE | SIGNATURE | DATE |
|---|---|---|
| SITE ACQUISITION | | |
| PLANNER | | |
| CONSTRUCTION | | |
| LANDLORD | | |

## ISSUE STATUS

| REV. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 0 | 04/13/15 | 90% ZONING | PA |
| 1 | 05/06/15 | 100% ZONING | PA |
| 2 | 05/22/15 | 100% ZONING | MG |
| 3 | 07/14/15 | 100% ZONING | MG |

SAC WIRELESS
5465 AVENIDA ENCINAS
CARLSBAD, CA 92008
760.795.5200

PROPRIETARY INFORMATION

THE INFORMATION CONTAINED IN THIS SET OF DRAWINGS IS PROPRIETARY & CONFIDENTIAL TO VERIZON WIRELESS

ANY USE OR DISCLOSURE OTHER THAN AS IT RELATES TO VERIZON WIRELESS IS STRICTLY PROHIBITED

verizonwireless
2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94598

OUTINGDALE
PSL # 295537
4260 RANCHO MONTES DRIVE
PLACERVILLE, CA 95667

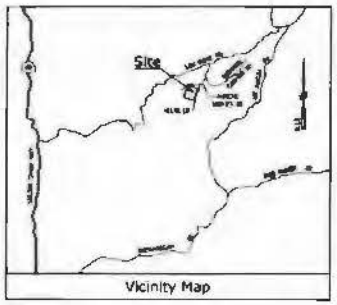
SHEET TITLE
TITLE SHEET

T-1

Exhibit E-1

S-15-0013

S-08-12-15-0013




Title Report

Legal Description

Assessor's Parcel No.

Easements

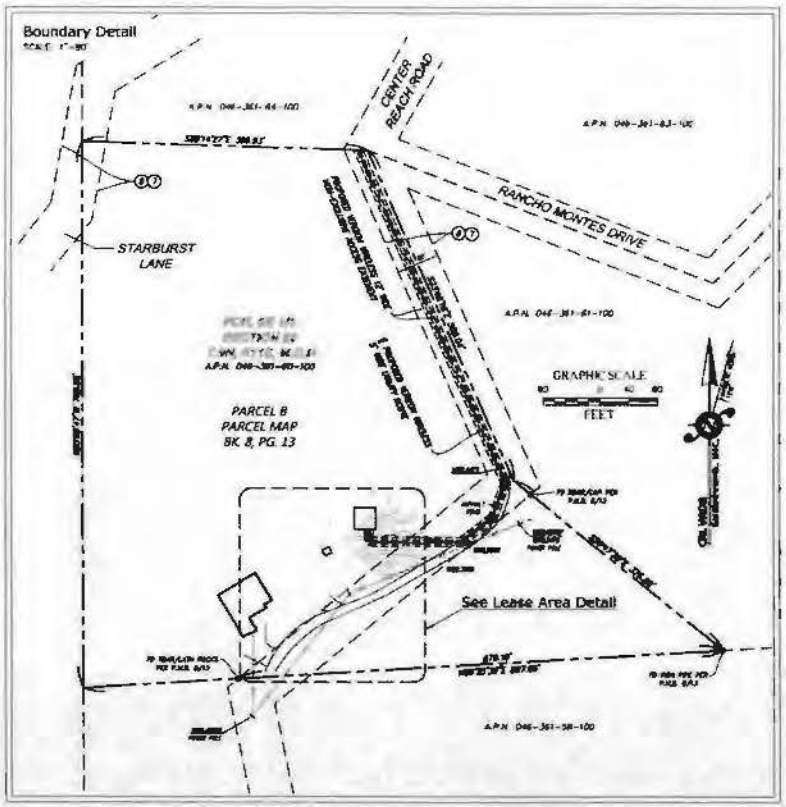
Access & Utility Easement/Lease Area

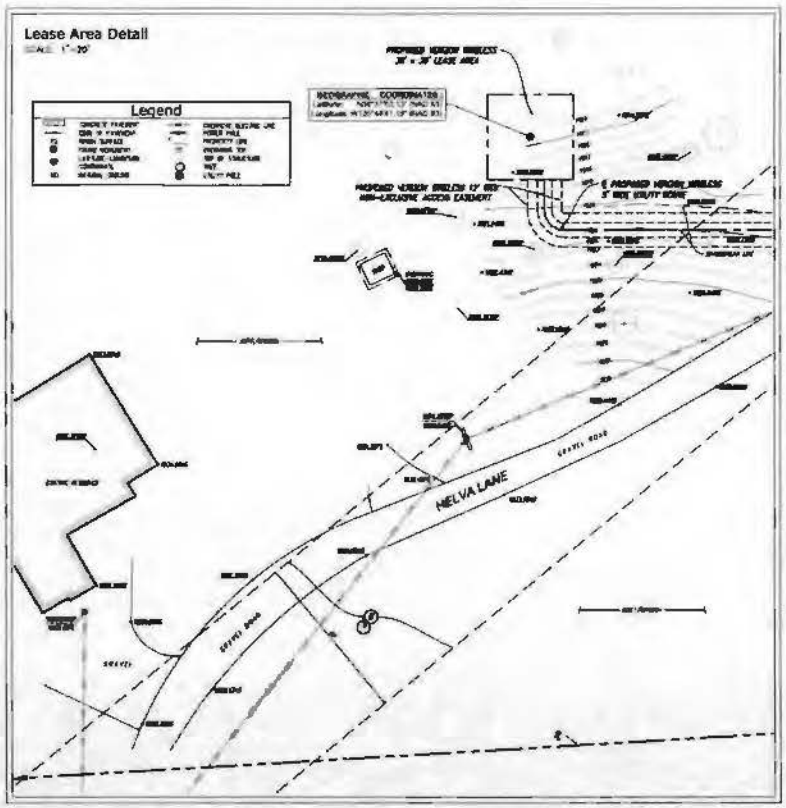
Geographic Coordinates at Proposed Monopole

Basis of Bearings

Bench Mark

Date of Survey




verizon

A&E:
SAC WIRELESS
5665 AVENIDA ENCINAS
CARLSBAD, CA 92008
WWW.SACW.COM

| | |
|---|---|
| PROJECT NO: | 15178 |
| DRAWN BY: | AV |
| CHECKED BY: | RG |

| REV | DATE | DESCRIPTION |
|---|---|---|
| 1 | 4/13/15 | TITLE REPORT & FINAL |
| | 5/26/15 | SUBMITTAL |

CALVADA SURVEYING, INC.

OUTINGDALE
4260 RANCHO MONTES DR.
PLACERVILLE, CA 95667
EL DORADO COUNTY

SHEET TITLE
TOPOGRAPHIC SURVEY

SHEET NUMBER
C-1

Exhibit E-2

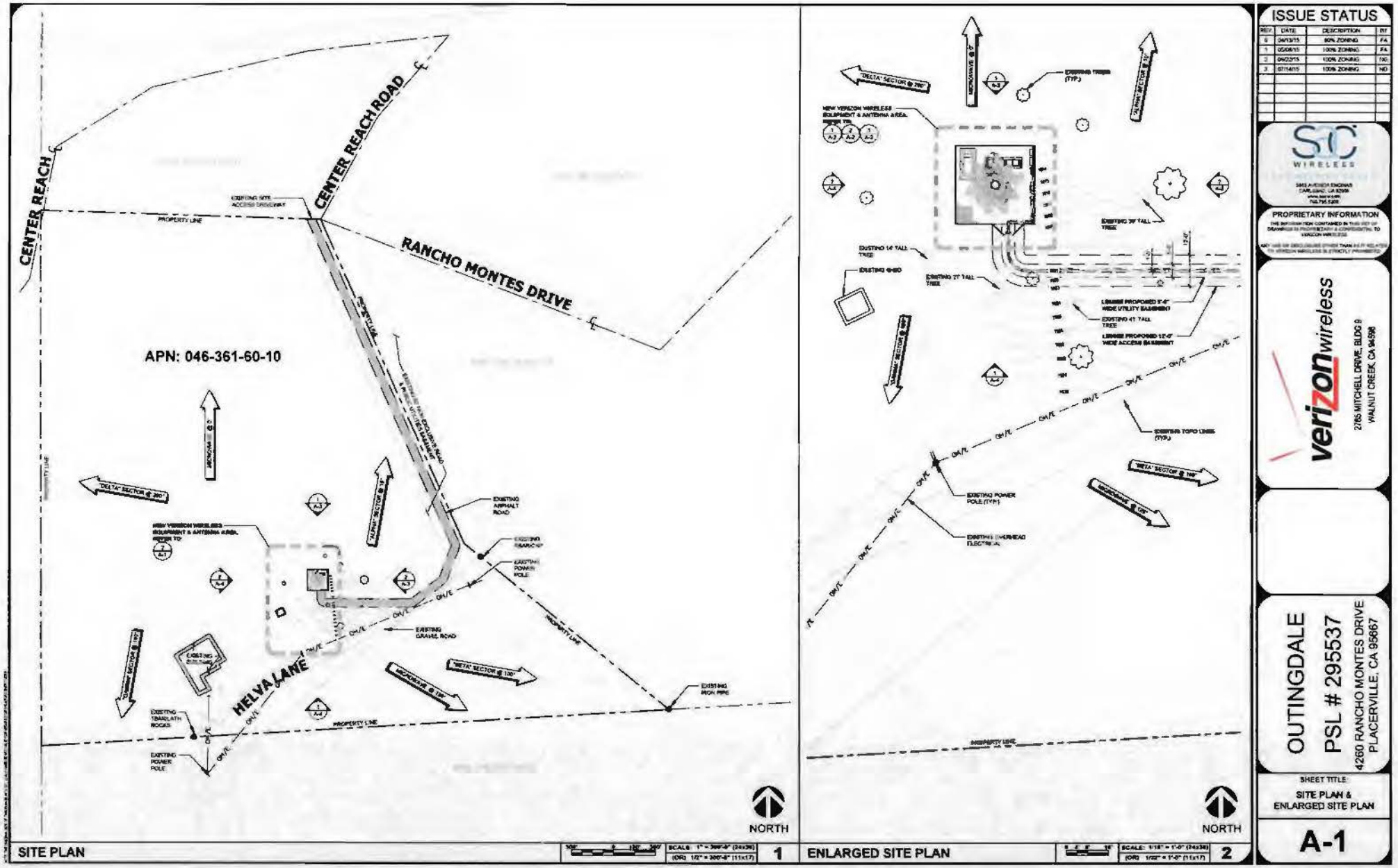
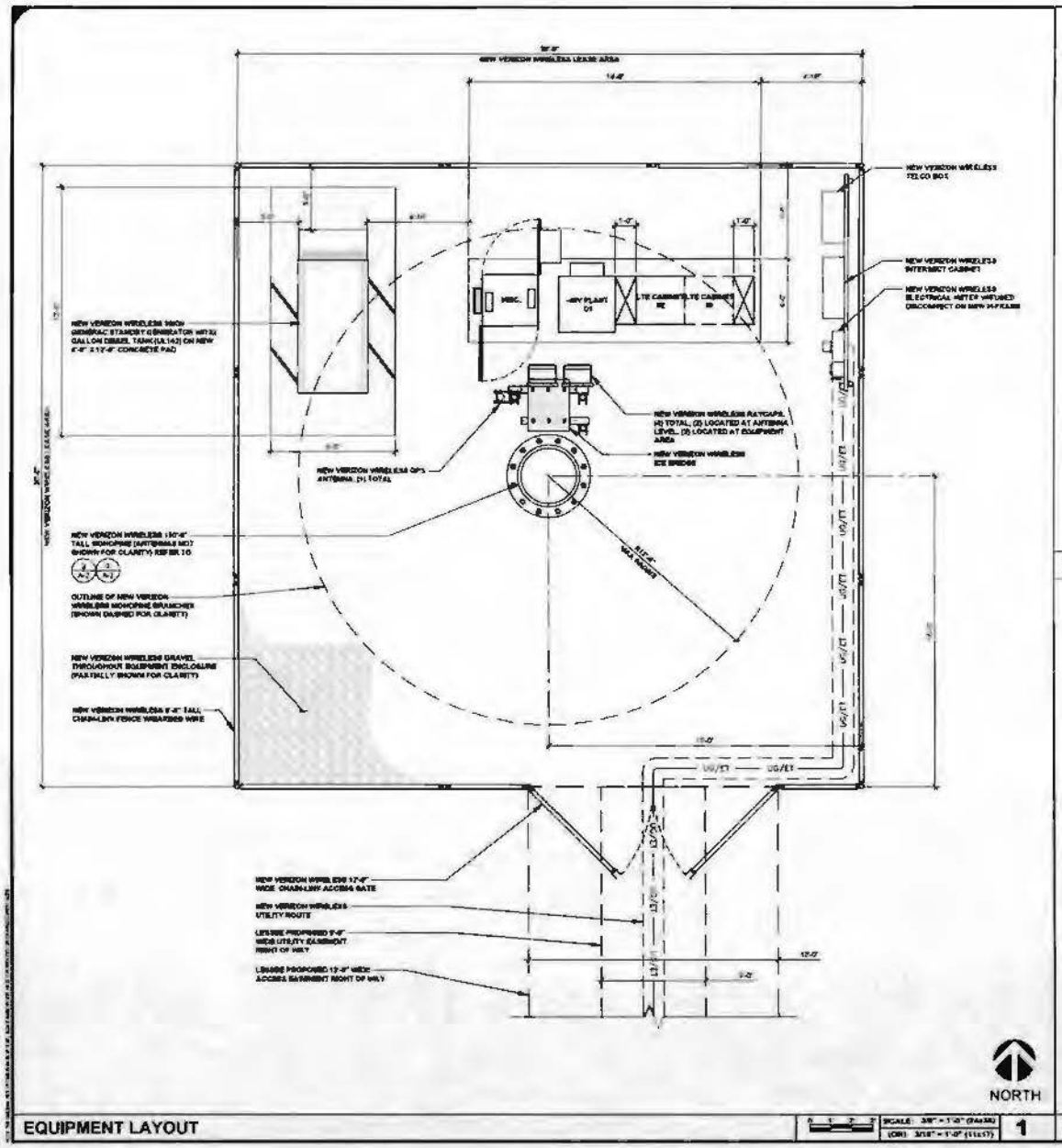
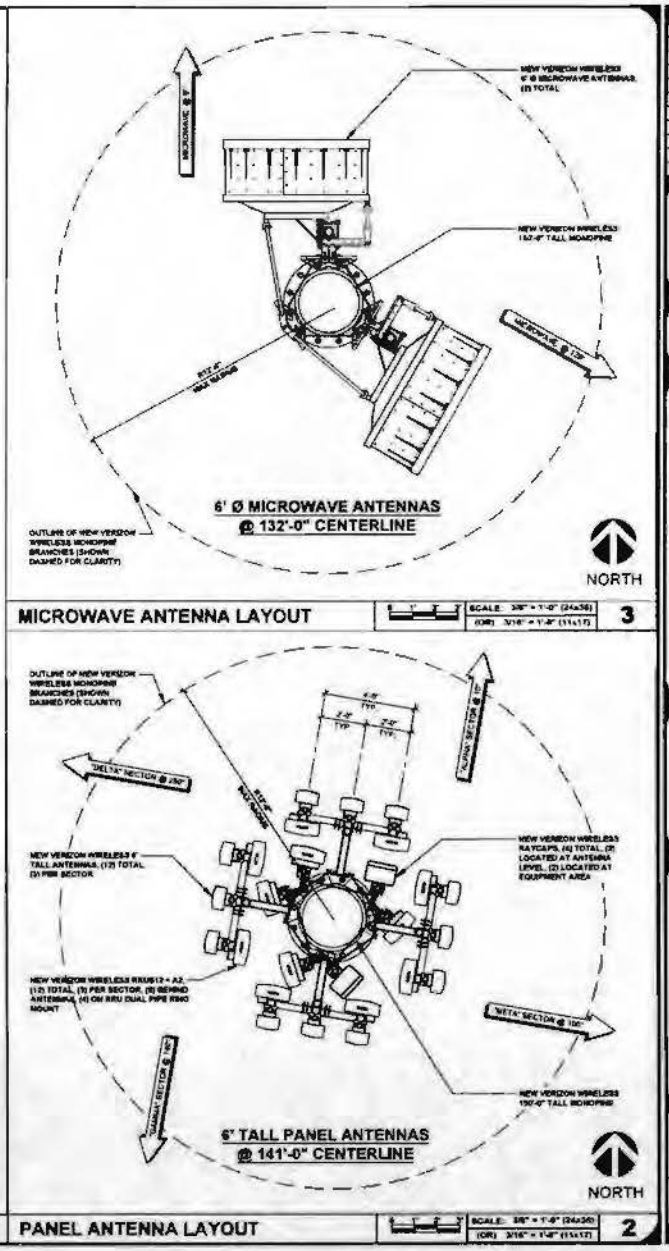

CENTER REACH
CENTER REACH ROAD
RANCHO MONTES DRIVE
APN: 046-361-60-10
HELVA LANE
EXISTING ASPHALT ROAD
EXISTING GRAVEL ROAD
EXISTING IRON PIPE
PROPERTY LINE
NORTH
SITE PLAN
1
ENLARGED SITE PLAN
2
ISSUE STATUS
PROPRIETARY INFORMATION
verizonwireless
2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94598
OUTINGDALE
PSL # 295537
4260 RANCHO MONTES DRIVE
PLACERVILLE, CA 95667
SHEET TITLE:
SITE PLAN &
ENLARGED SITE PLAN
A-1

Exhibit E-3




EQUIPMENT LAYOUT




MICROWAVE ANTENNA LAYOUT 3

PANEL ANTENNA LAYOUT 2

ISSUE STATUS

| REV. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 0 | 04/13/15 | 90% ZONING | FA |
| 1 | 05/06/15 | 100% ZONING | FA |
| 2 | 05/20/15 | 100% ZONING | NG |
| 3 | 07/14/15 | 100% ZONING | NG |

PROPRIETARY INFORMATION

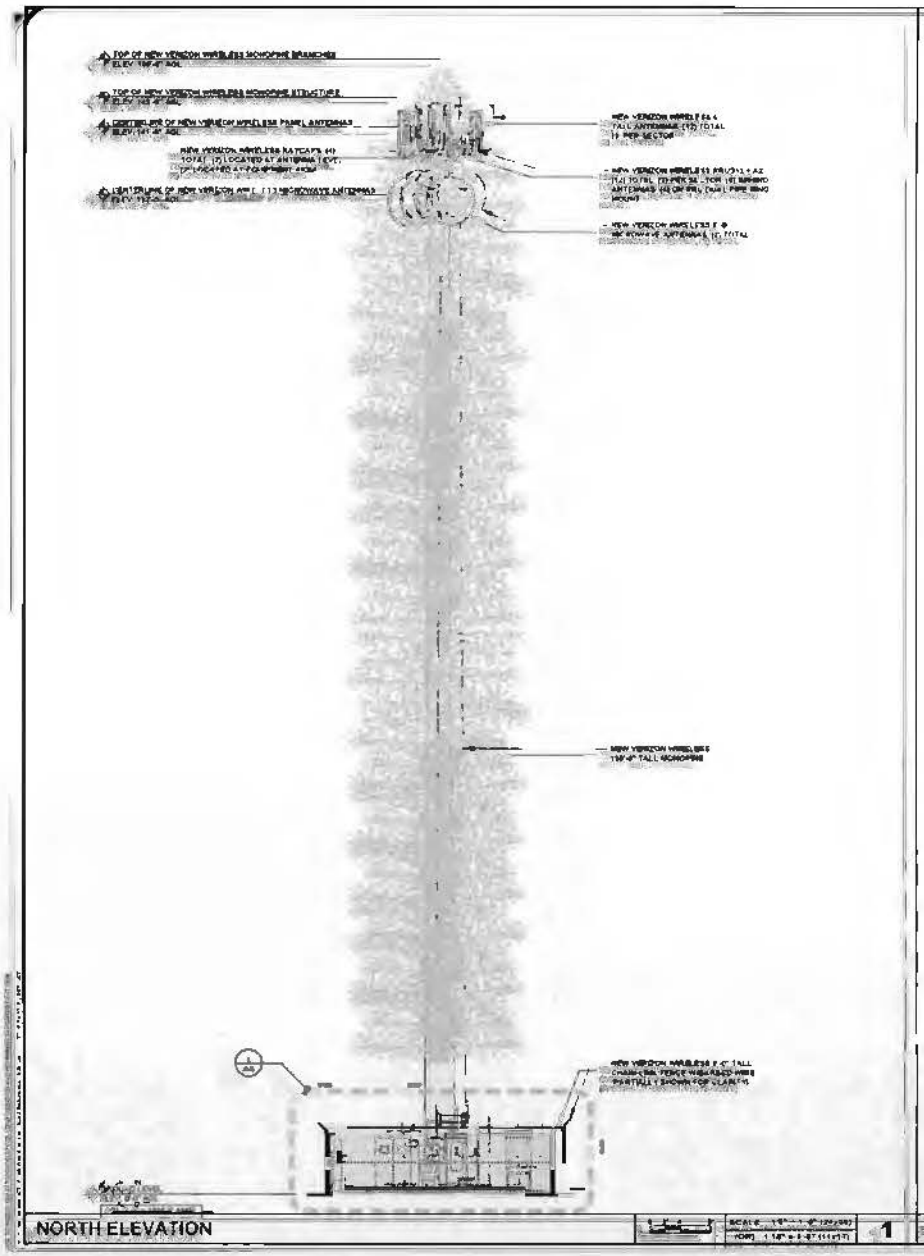
verizonwireless
2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94598

OUTINGDALE
PSL # 295537
4260 RANCHO MONTES DRIVE
PLACERVILLE, CA 95667

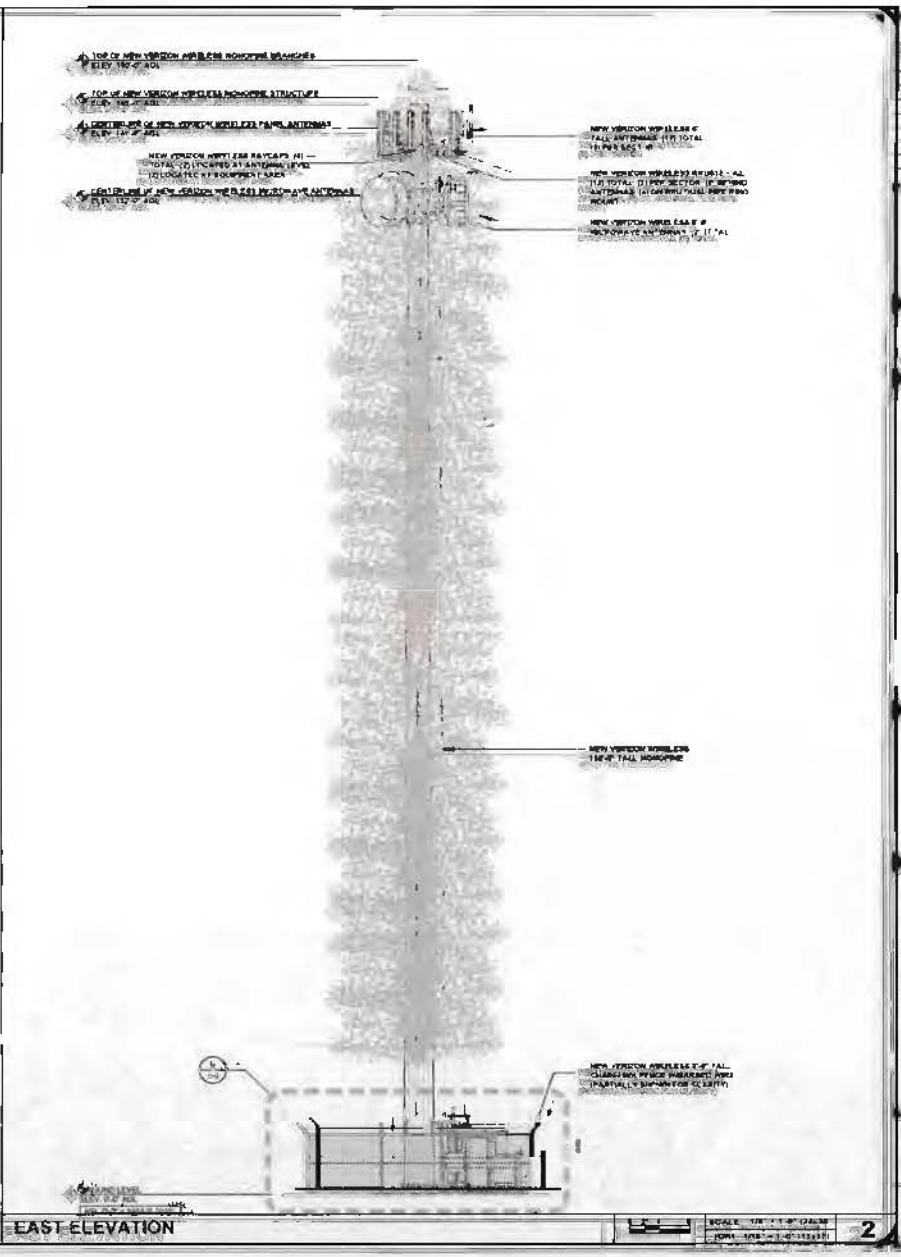
SHEET TITLE
EQUIPMENT & ANTENNA LAYOUTS

A-2

Exhibit E-4



NORTH ELEVATION 1



EAST ELEVATION 2

ISSUE STATUS

SC WIRELESS

PROPRIETARY INFORMATION

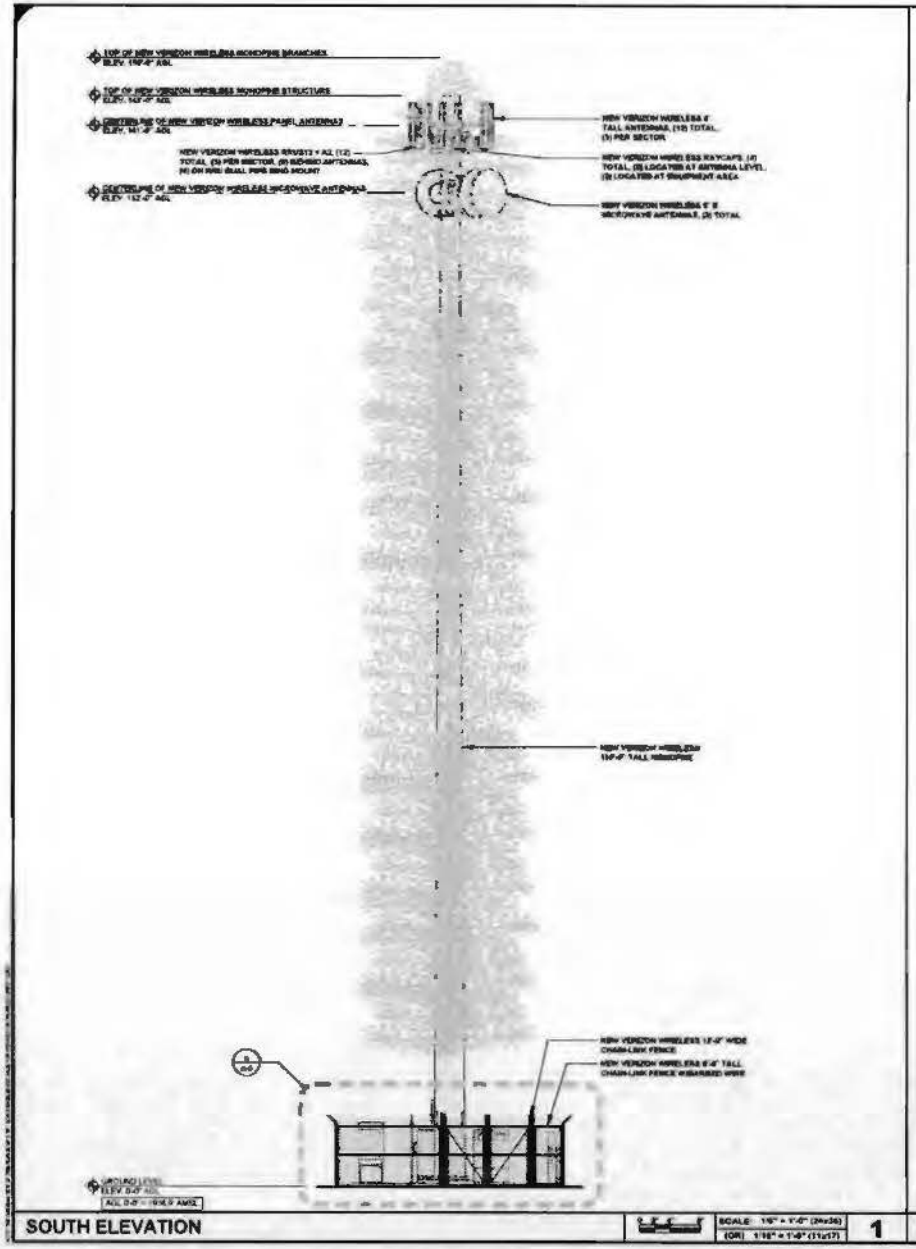
verizonwireless

2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94598

OUTINGDALE
PSL # 295537
4260 RANCHO MONTES DRIVE
PLACERVILLE, CA 95667

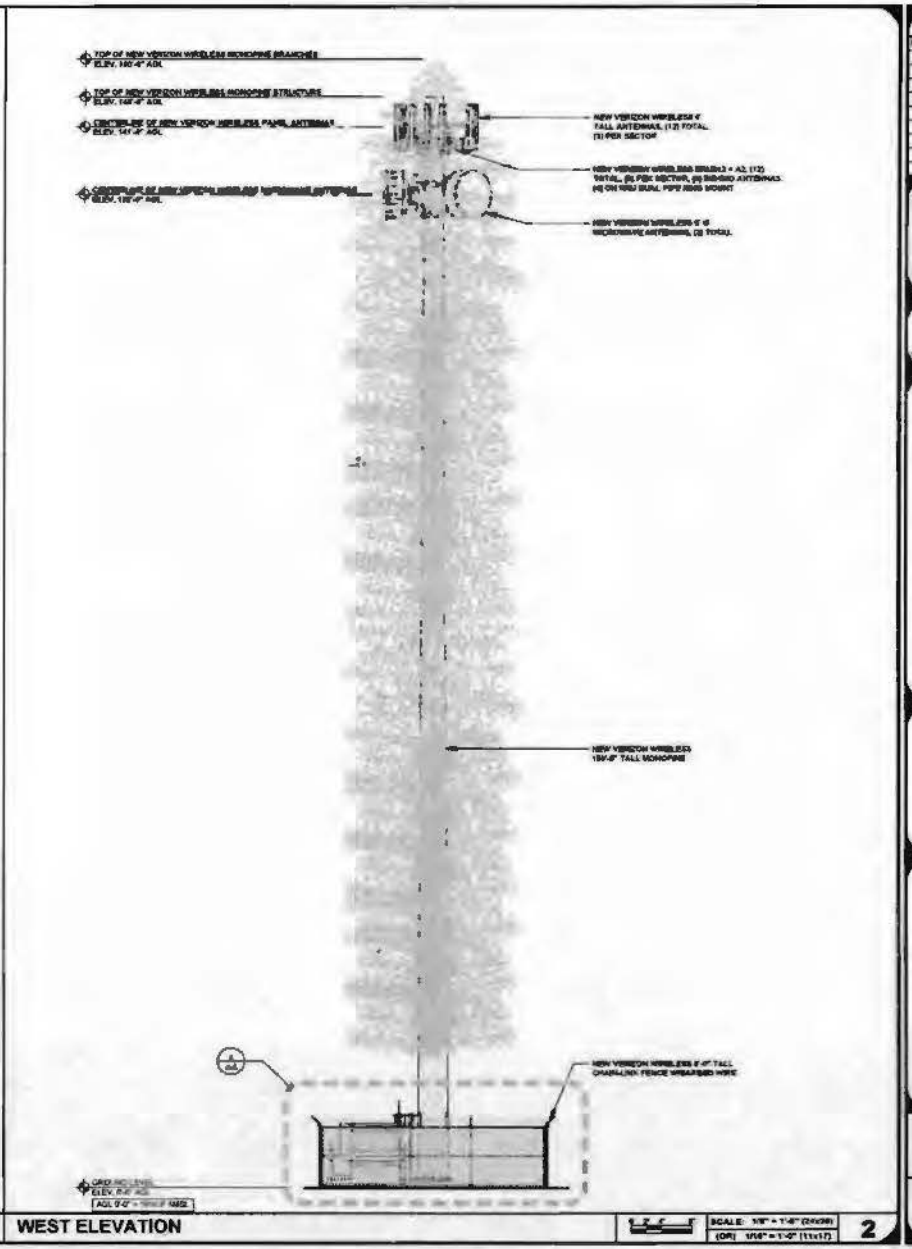
SHEET TITLE
NORTH & EAST ELEVATIONS

A-3



SOUTH ELEVATION

1



WEST ELEVATION

2

ISSUE STATUS

| REV. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 5 | 04/13/15 | 90% ZONING | PA |
| 4 | 05/08/15 | 100% ZONING | PA |
| 3 | 06/22/15 | 100% ZONING | MG |
| 2 | 07/14/15 | 100% ZONING | MG |
| 1 | | | |

SC WIRELESS

PROPRIETARY INFORMATION

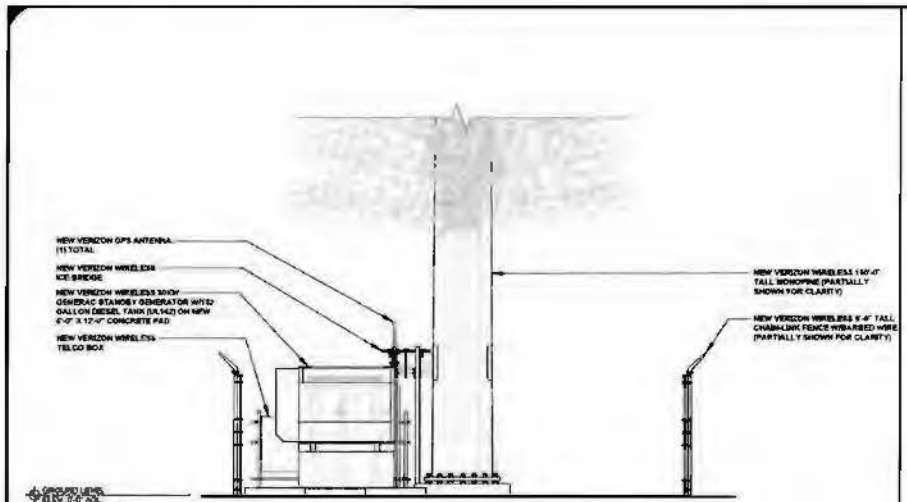
verizonwireless

2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94598

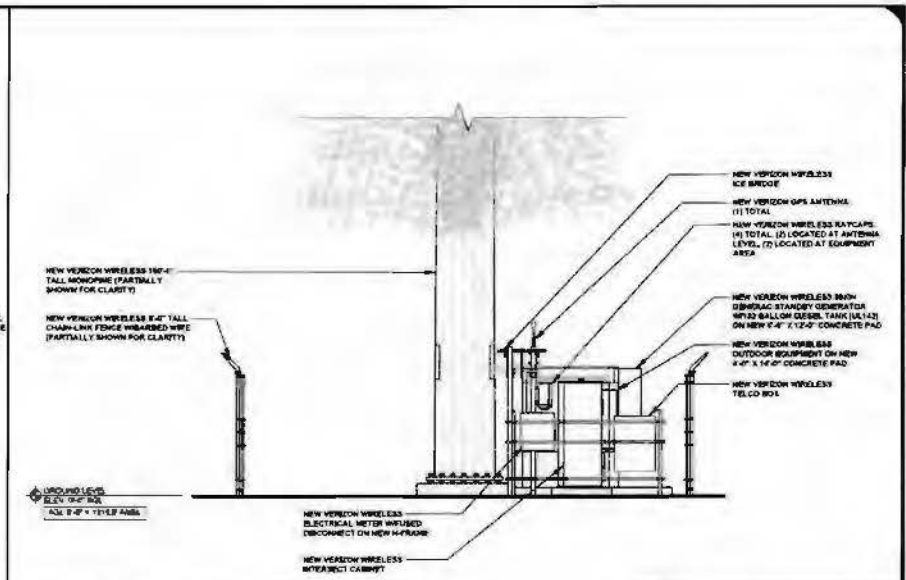
OUTINGDALE
PSL # 295537
4260 RANCHO MONTES DRIVE
PLACERVILLE, CA 95667

SHEET TITLE:
SOUTH & WEST ELEVATIONS

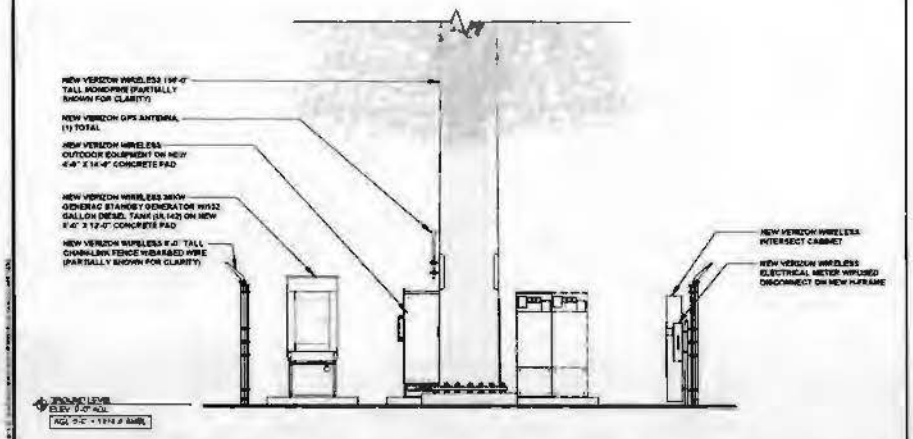
A-4



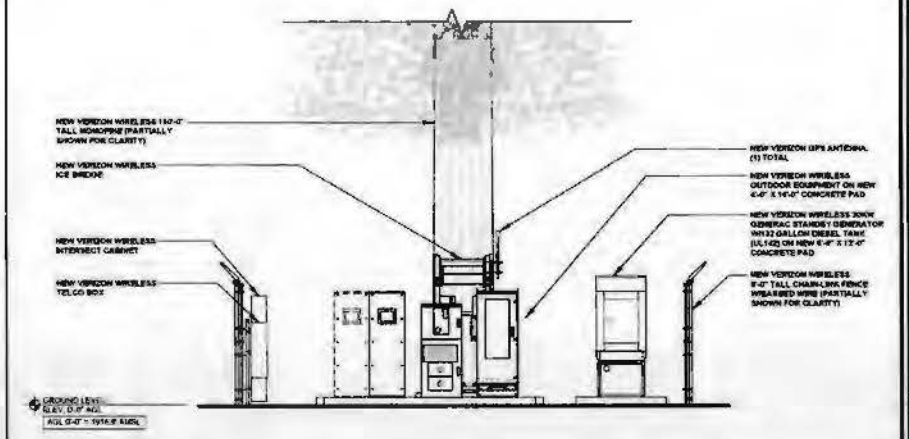

WEST EQUIPMENT ELEVATION — SCALE 1/4" = 1'-0" (24x36) (OR) 1/8" = 1'-0" (11x17) — 4




EAST EQUIPMENT ELEVATION — SCALE 1/4" = 1'-0" (24x36) (OR) 1/8" = 1'-0" (11x17) — 2




SOUTH EQUIPMENT ELEVATION — SCALE 1/4" = 1'-0" (24x36) (OR) 1/8" = 1'-0" (11x17) — 3




NORTH EQUIPMENT ELEVATION — SCALE 1/4" = 1'-0" (24x36) (OR) 1/8" = 1'-0" (11x17) — 1

ISSUE STATUS

| REV. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 0 | 04/13/15 | 90% ZONING | FA |
| 1 | 05/05/15 | 100% ZONING | FA |
| 2 | 06/22/15 | 100% ZONING | NG |
| 3 | 07/14/15 | 100% ZONING | MC |

SAC WIRELESS
5485 AVENIDA ENCINAS
CARLSBAD, CA 92008
(760) 795-5780

PROPRIETARY INFORMATION
THE INFORMATION CONTAINED IN THIS SET OF DRAWINGS IS PROPRIETARY & CONFIDENTIAL TO VERIZON WIRELESS.
ANY USE OR DISCLOSURE OTHER THAN AS IT RELATES TO VERIZON WIRELESS IS STRICTLY PROHIBITED.

verizonwireless
2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94598

OUTINGDALE
PSL # 295537
4260 RANCHO MONTES DRIVE
PLACERVILLE, CA 95667

SHEET TITLE
EQUIPMENT ELEVATIONS

A-5

# VICINITY MAP
## PHOTOSIMULATION VIEWPOINTS

verizonwireless

15 JUL 22 PM 4:22
RECEIVED
[illegible] DEPARTMENT

**OUTINGDALE**
**PSL # 295537**
4260 RANCHO MONTES DRIVE
PLACERVILLE, CA 95667

SAC WIRELESS ENGINEERING GROUP
5665 AVENIDA ENCINAS, SUITE 142B
CARLSBAD, CA 92008
OFFICE: (760) 795-5200


**DISCLAIMER:**

THIS PHOTOSIMULATION IS INTENDED AS A GRAPHICAL REPRESENTATION OF EXISTING AND PROPOSED SITE CONDITIONS BASED ON THE PROJECT / DRAWING PLANS. IT IS NOT INTENDED FOR CONSTRUCTION. ACTUAL, FINAL CONSTRUCTION MAY VARY

# PHOTOSIMULATION
# VIEW 1

verizonwireless

**OUTINGDALE**
**PSL # 295537**
4260 RANCHO MONTES DRIVE
PLACERVILLE, CA 95667

SC
WIRELESS
ENGINEERING GROUP
5665 AVENIDA ENCINAS, SUITE 142B
CARLSBAD, CA 92008
OFFICE: (760) 795-5200

## NEW

NOTE:

NEW VERIZON WIRELESS OUTDOOR CABINETS ON CONCRETE PAD, GENERATOR, (2) RAYCAPS, (1) GPS ANTENNA, METER, TELCO & INTERSECT CABINETS ON NEW H-FRAME, AND 150'-0" HIGH MONOPINE WITHIN NEW 30'-0" X 30'-0", 8'-0" TALL CHAIN LINK FENCE ENCLOSURE (LEASE AREA)

NEW VERIZON WIRELESS 150'-0" HIGH MONOPINE WHICH CONSISTS OF:
- 6' TALL ANTENNAS W/ RRUS12 + A2 (12) TOTAL, (4) PER SECTOR
- 6'Ø MICROWAVE ANTENNAS (2) TOTAL
- RAYCAPS (2) TOTAL

NOTE:
ITEMS LISTED ABOVE ARE MOUNTED NEAR THE TOP OF NEW MONOPINE AND ARE NOT SHOWN IN CURRENT VIEW

## EXISTING

NEW VERIZON WIRELESS EQUIPMENT AREA (SEE NOTE)

On Behalf of


# DESCRIPTION AND ANALYSIS OF THE SEARCH RING, POTENTIAL CO-LOCATIONS, ALTERNATIVE LOCATIONS AND OTHER CONSIDERATIONS RELATING TO A NEW WIRELESS TELECOMMUNICATION FACILITY PURSUANT TO §17.14.210 and §17.22.500 OF THE EL DORADO COUNTY CODE

Verizon Wireless Communications Facility

Verizon Site Name "OUTINGDALE"

Verizon Location Number: 295537

"HJERPE FAMILTY TRUST"

4260 Rancho Montes Drive

Placerville, CA 95628

# PROJECT NARRATIVE

## SEARCH AREA


Verizon Wireless is proposing to build and maintain an unmanned wireless telecommunication facility (cell-site), consisting of a 30'x 30' square foot enclosed compound (lease area), which will include a 150' foot monopine, 4 outdoor cabinets, and a 30 KW standby diesel generator. This facility will be located at 4260 Rancho Montes Drive, Placerville, within El Dorado County's planning jurisdiction, in an Residential estate zone. This area is north of the Cosumnes River and consists of pine tree covered hills characterized by large residential rural estates. The surrounding terrain is rolling and rocky, with limited clearings and and flat ground.

The subject property, on which the telecommunication facility will be located, is a 10 acre parcel which is primarily vacant except for a residence owned by the Hjerpe's. This wireless facility will be built in the northwestern corner of the parcel, just off of Helva Lane. The site will be approximately 200 feet from the Hjerpe's residence, approximately 450 feet from a residence to the northeast, 300 feet from a residence to the south, and 105 feet from Helva Lane. The surrounding parcels are rural residential estates. The heavy pine tree cover will camouflage the tower from the view of any of the surrounding residences. There is heavy pine tree cover and this tree will not obstruct any views. Maintenance workers will use an access route directly off of Helva Lane. Maintenance consumes no more than several hours per month unless a system failure requires additional time.

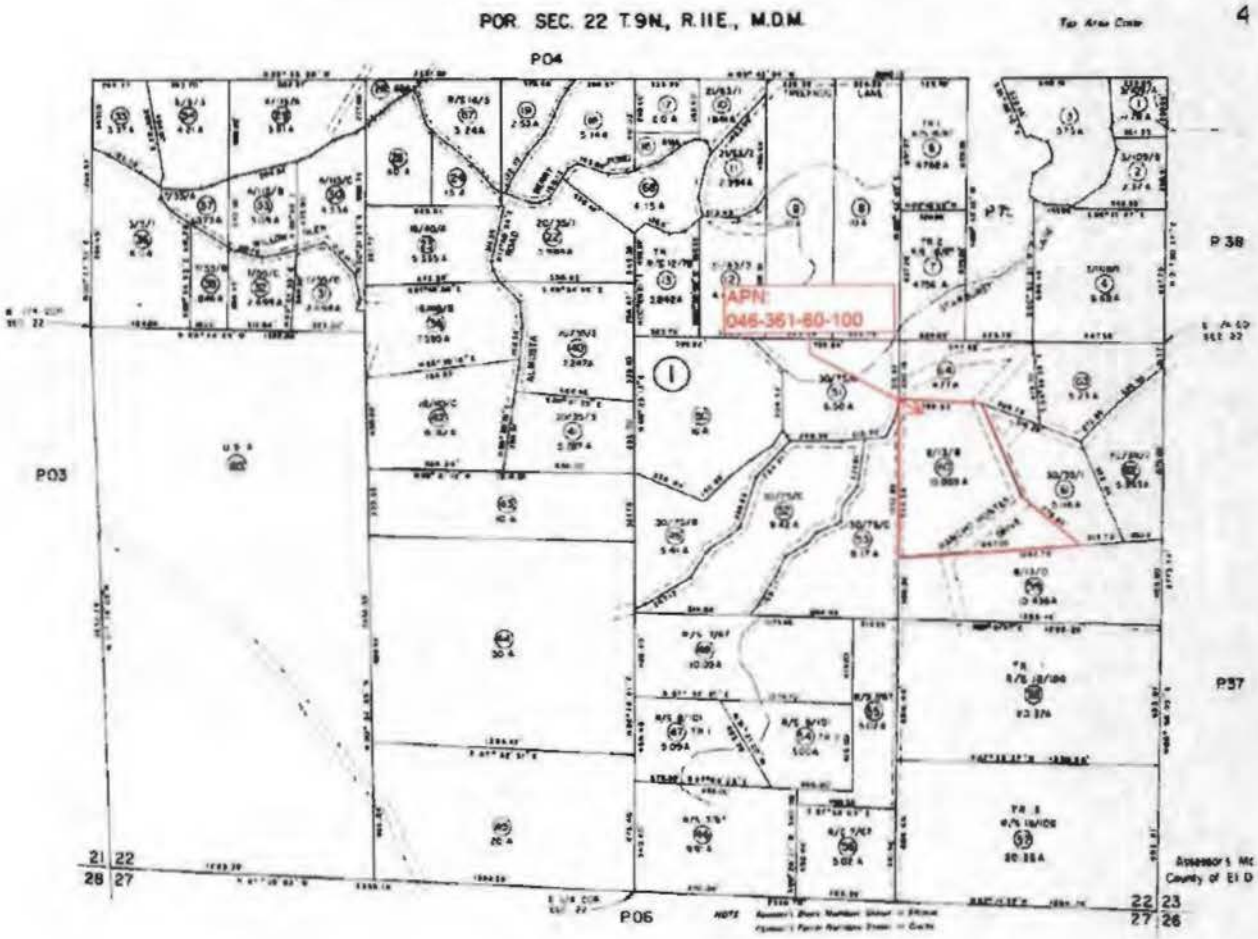
The area surrounding the community is currently served by a Verizon facility at Mt Aukum. However these this site is expected to be at capacity within 12 months. Therefore, Verizon's coverage objective is to

offload capacity for their existing facilities at Mt Aukum and to provide coverage to an underserved area. The proposed lease area is surrounded by a heavy pine tree cover. Therefore, the proposed tower will need to be 150' in order to send signals to the existing tower on Mt. Aukum.

The proposed location was chosen for several reasons. The location is in a clearing and is relatively flat, which is unusual in the surrounding terrain. No trees or bushes will have to be removed. Access will be directly from Helva Lane and will require no grading or clearing. The surrounding trees are tall and will provide natural camouflage. There are few neighbors and the visual impact will be minimal. The elevation, at 1916 feet, also provides the best coverage of Mt. Aukum of all the candidates considered.

This facility will enhance and expand the Verizon network in order to improve wireless communications service for its existing and prospective customers. This facility will provide expanded coverage to an underserved area. After assessing its coverage needs, and surveying the area for existing towers on which to collocate, Verizon's radio frequency engineers determined that a new telecommunications facility—as opposed to collocating on an existing site—is necessary to fulfill their objectives. Based on their coverage objectives, Verizon's engineers formulated a search ring, centered on the high ground above Outingdale-identifying an area where a new-cell site will effectively fulfill their objectives.

# ASSESSOR'S PARCEL MAP 046-361-60-100



## OVERHEAD VIEW OF LEASE AREA

# OPERATIONAL STATEMENT

This project is a Verizon Wireless unmanned Telecommunication Wireless Facility. It will consist of the following:

(1) New Verizon Outdoor Equipment on a new concrete slab
(2) New Verizon GPS Antennas
(1) New Verizon 30KW Generac Standby Generator w/132 Gallon diesel tank(UL 142) on new 6'-0"x12-0" concrete pad.
(1) New Verizon Wireless electrical meter w/fused disconnect on new H-Frame
(1) New Verizon Wireless 150-0" Tall monopine

(12) New Verizon wireless 8'tall panel Antennas

(12)New Verizon wireless RRUS12+A2
(2) New Verizon Wireless 6' microwave Antennas
(4) New Verizon wireless Hybrid cables w/ret
New Verizon Wireless 8-0" tall chain-link W/barbed wire

The facility will operate 24 hours a day 7 days a week. Maintenance workers will visit the site once a month. A 5 foot wide access route will be created directly from Helva Lane. There will be minimal noise from the standby generator. The facility is approximately 450 feet west of a residence and approximately 200 east of the Hjerpe's residence. The location is surrounded by pine trees and rural residences of either 5 or 10 acres. The proposed lease area consists of a small clearing within the tree cover. There are only 3 residences in the surrounding area. The tree cover will camouflage the tower from this residence. Therefore, there will be no interference with any nearby uses and the aesthetic impact will be minimal.

The tower will be built to provide collocation opportunities. Verizon Wireless will add (12) panel antennas at a Rad center of 141 feet. Two microwaves will be added at 132 feet. Given the height of the tower and the amount of ground space, there will be opportunity for collocation.

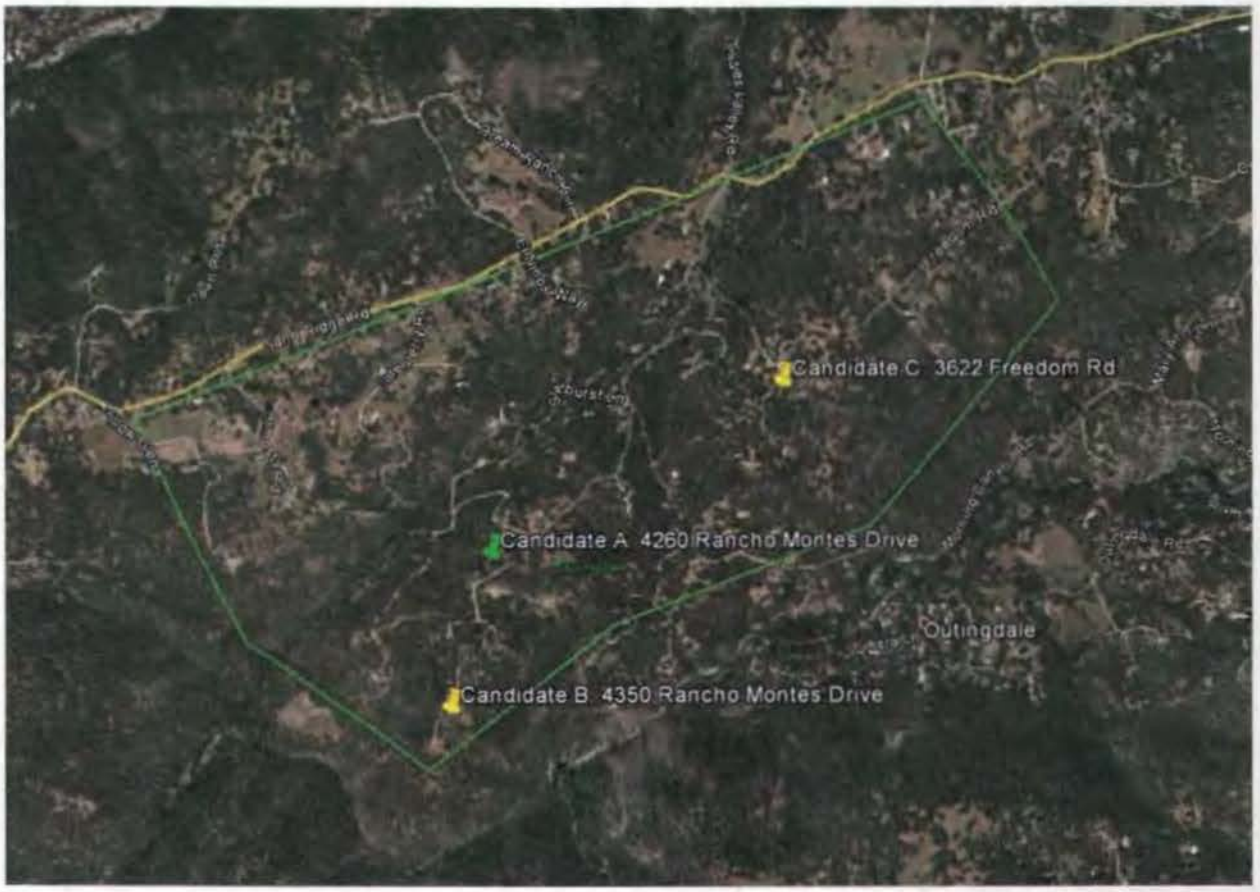
## DESCRIPTION OF POSSIBLE CO-LOCATION OPPORTUNITIES


The red house in the map identifies the proposed lease area. Based on Verizon's coverage needs, a new cell-site within this area will effectively cover an underserved area in the hills above Outingdale. The map above identifies that there are no existing towers within a four-mile radius of the search ring, thus illustrating the lack of collocation opportunities in the area.

Therefore, to effectively meet its objectives Verizon wireless is proposing a new telecommunication facility in this particular location. Please see Verizon's radio engineer's coverage map below for further details on Verizon coverage and capacity requirements and objectives.

The Verizon tower is being built to accommodate collocation.

## ALTERNATIVE SITE ANALYSIS PURSUANT TO §17.14.200 (B) (1)



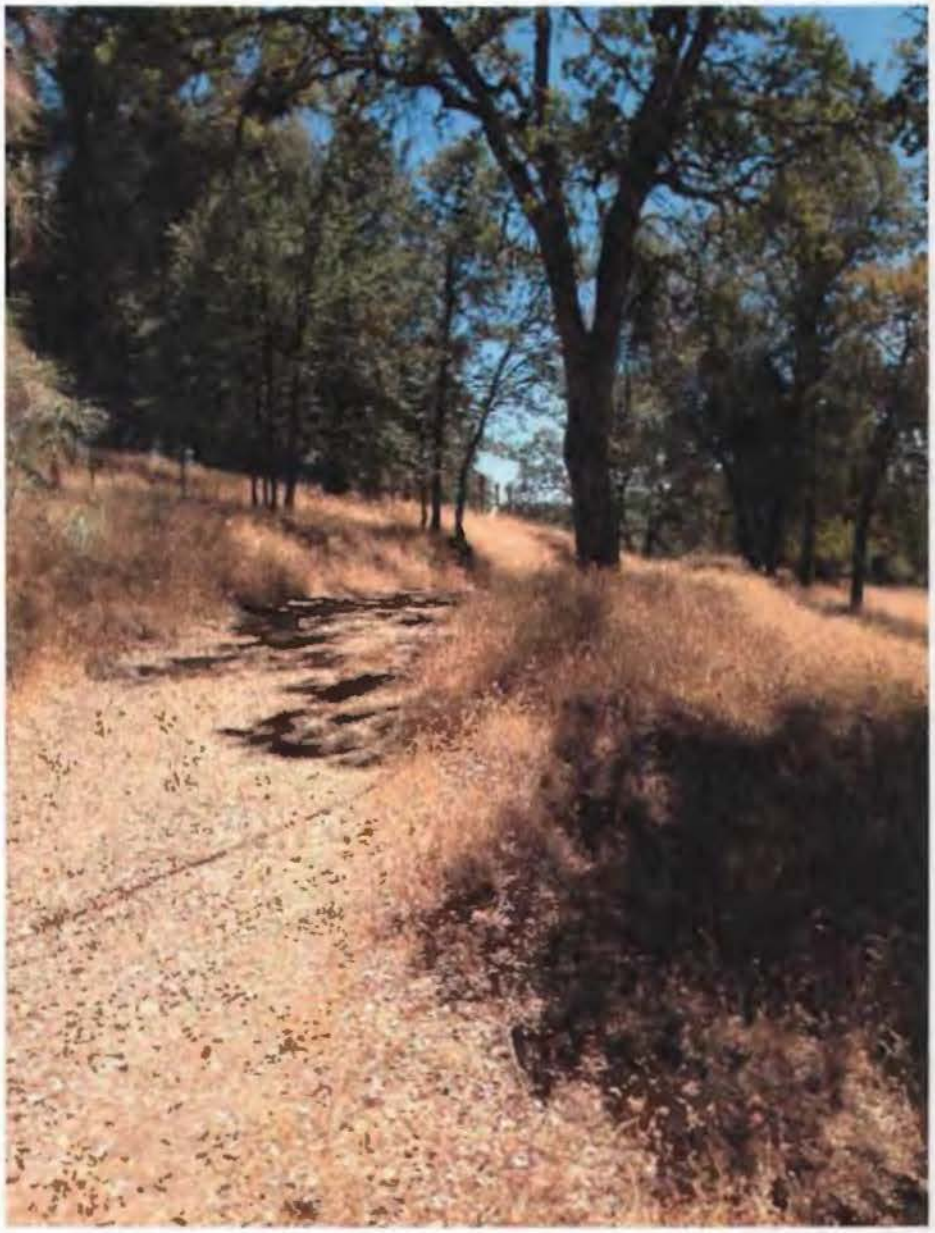

Above is a map showing the proposed site (Green marker) and the two (2) alternative sites (Yellow markers) that were considered for placement of the telecommunications facility. Each Alternative Site is discussed below:

**ALTERNATIVE B**

**"4350 Rancho Montes Drive"- 4350 Rancho Montes Drive, Placerville, CA 95667**

**Latitude/Longitude: 37 N 120 43 32.98W**

**Proposal- New Monopine**



**Considerations**: Candidate B is located approximately 3,160 feet west of the identified center of the search ring. The proposed tower would be located on a 5 acre parcel Michael Larochelle owned by Michael Larochelle. The property is located on top of a ridge, directly above the Cosumnes River, northeast of Outingdale. The chosen lease area is on top of a slope on the property. Candidate B was ranked 2nd in preference by Verizon's engineers due to its location, which would not provide coverage as effective as the chosen location. The final choice was between candidates A and B. Verizon

engineers visited both locations. In order to provide the most effective coverage, Verizon's radio frequency engineers needed a clear site line to the existing Mt. Aukum site. Due to the height of the Mt. Aukum facility, in order to create a clear line of site from the new facility, maximum elevation is extremely important. The elevation of this location was approximately 1891 feet, as opposed to the 1916 for candidate A. The location also provided more difficult access, which would have required grading. The lease area itself was limited in size and trees would likely have to be removed. Therefore, given the difference in elevation and the construction difficulties candidate A was chosen.

**ALTERNATIVE C- "3622 Freedom Rd"**

**3622 Freedom Rd, Placerville, CA 95667**

**Latitude/Longitude: 38 37 21.00N 120 44 2.60W**

**Proposal-New monopine tower**

**Considerations:** Candidate C is located approximately 1,635 east of the center and is the furthest away from Mt. Aukum. The proposed tower would be located on a 10 acre parcel owned by William T. Robinson. The property is undeveloped with a single family residence and a garage/workshop. The identified lease area is located in the northwest corner of the lot and would be accessed via a gravel road. This candidate was ranked 3rd in preference by Verizon's engineers due to its location, which is the furthest away from Mt. Aukum of the 3 candidates considered. The surrounding terrain is characterized

as undulating terrain. There are two hills that separate this location from the other two candidates. Therefore, this would location would require a higher tower in order to provide effective coverage of Mt. Aukum. For these reasons this location would not effectively met the coverage and capacity objectives set out by Verizon.

# PROPERTY INFORMATION PURSUANT TO §17.14.200 (J) (1 and 2)

**Assessor's Parcel Number: 046-361-60**

**PROPERTY INFORMATION:**

| STATUS | JURISDICTION | TAX RATE | LEGAL DESCRIPTION | ACREAGE |
|---|---|---|---|---|
| ON ASSESSMENT ROLL AND TAXED | COUNTY OF EL DORADO | 93 - 10 | PM 8/13/5 | 10 06 |

**SITUS ADDRESS(ES):**

| ADDRESS NUMBER | SITUS ADDRESS |
|---|---|
| 1 | 4260 RANCHO MONTES DR |

**2004 GENERAL PLAN LAND USE INFORMATION:**

| LAND USE DES | AG DIST. | ECOLOGICAL PRESERVES | IMPORTANT BIOLOGICAL RESOURCES | MINERAL RESOURCES | PLATTED LANDS | COMMUNITY REGIONS | RURAL CENTERS | SPECIFIC PLANS | ADOPTED PLAN NAME |
|---|---|---|---|---|---|---|---|---|---|
| RR | | | IBC | | | | | | |

**ZONING INFORMATION:**

| ZONING DESIGNATION | DESIGN CONTROL | PLANNED DEVELOPMENT | OTHER OVERLAYS |
|---|---|---|---|
| RE-10 | | | |

**DISTRICTS:**

| FIRE | SCHOOL | WATER |
|---|---|---|
| PIONEER FPD | PIONEER UNION | UNASSIGNED |

**FLOOD ZONE INFORMATION** (See Note below):

| FIRM PANEL NUMBER & REVISION | PANEL REVISION DATE | FLOOD ZONE | FLOOD ZONE BUFFER | FLOODWAY | NOTES |
|---|---|---|---|---|---|
| 06017C1025E | 09/26/2008 | X | | | |

**MISCELLANEOUS DATA:**

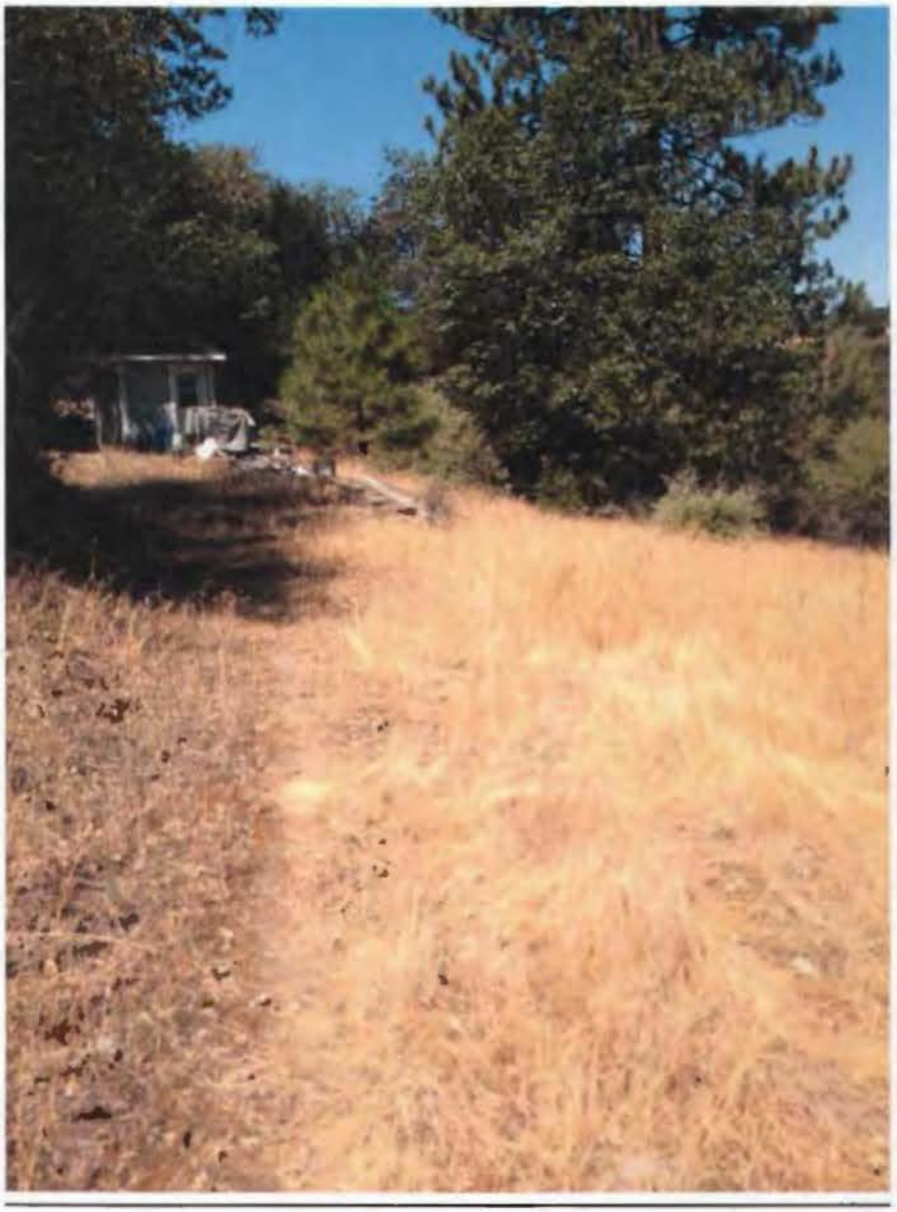
| SUPERVISORIAL DISTRICT | | RARE PLANT MITIGATION AREA | MISSOURI FLAT MC&FP |
|---|---|---|---|
| 2 | SHIVA FRENTZEN | | No |

**REMARKS:**

| No Eligibility Review Required |
|---|

## ACTUAL VIEW OF THE PROPOSED LOCATION:

The proposed lease area is in the northwest corner of the property. The site will not interfere with the existing use of the property. Access will be directly off of Helva Road.



## CONCLUSION:

Candidate A meets Verizon's objectives and is the best choice for the surrounding area. The chosen location will meet Verizon's coverage objectives by providing a clear line of sight to their existing facility on Mt. Aukum. Additionally, the heavy pine tree cover will camouflage the facility thereby proving low visual impact to the surrounding residents. Further, this location is characterized by large lots and will not impact the surrounding residents.

**Verizon Wireless • Proposed Base Station (Site No. 295537 "Outingdale")**
**4620 Rancho Montes Drive • Placerville, California**

## Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate the base station (Site No. 295537 "Outingdale") proposed to be located at 4620 Rancho Montes Drive in Placerville, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

## Executive Summary

Verizon proposes to install directional panel antennas on a tall pole, configured to resemble a pine tree, to be located at 4620 Rancho Montes Drive in Placerville. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

## Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. A summary of the FCC's exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

| Wireless Service | Frequency Band | Occupational Limit | Public Limit |
|---|---|---|---|
| Microwave (Point-to-Point) | 5–80 GHz | 5.00 mW/cm$^2$ | 1.00 mW/cm$^2$ |
| WiFi (and unlicensed uses) | 2–6 | 5.00 | 1.00 |
| BRS (Broadband Radio) | 2,600 MHz | 5.00 | 1.00 |
| WCS (Wireless Communication) | 2,300 | 5.00 | 1.00 |
| AWS (Advanced Wireless) | 2,100 | 5.00 | 1.00 |
| PCS (Personal Communication) | 1,950 | 5.00 | 1.00 |
| Cellular | 870 | 2.90 | 0.58 |
| SMR (Specialized Mobile Radio) | 855 | 2.85 | 0.57 |
| 700 MHz | 700 | 2.40 | 0.48 |
| [most restrictive frequency range] | 30–300 | 1.00 | 0.20 |



## General Facility Requirements

Base stations typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables. A small antenna for reception of GPS signals is also required, mounted with a clear view of the sky.

Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. This means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

## Computer Modeling Method

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation," dated August 1997. Figure 2 describes the calculation methodologies, reflecting the facts that a directional antenna's radiation pattern is not fully formed at locations very close by (the "near-field" effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the "inverse square law"). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

## Site and Facility Description

Based upon information provided by Verizon, including zoning drawings by SAC Wireless, LLC, dated May 6, 2015, it is proposed to install twelve Andrew Model SBNHH-1D65B directional panel antennas on a new 150-foot pole, configured to resemble a pine tree, to be located at 4620 Rancho Montes Drive in Placerville. The antennas would employ up to 4° downtilt, would be mounted at an effective height of about 141 feet above ground, and would be oriented in groups of three toward 10°T, 100°T, 190°T, and 280°T, to provide service in all directions. The maximum effective radiated power in any direction would be 6,680 watts, representing simultaneous operation at 4,620 watts for AWS and 2,060 watts for 700 MHz service; no operation on PCS or cellular frequencies is presently proposed from this site. Also proposed to be located on the pole are two microwave "dish" antennas, for interconnection of this site with others in the Verizon network. There are reported no other wireless telecommunications base stations at the site or nearby.

## Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation, including the contribution of the microwave antennas, is calculated to be 0.0012 mW/cm$^2$, which is 0.19% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 0.21% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels from the proposed operation.

## No Recommended Mitigation Measures

Due to their mounting location and height, the Verizon antennas would not be accessible to unauthorized persons, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. It is presumed that Verizon will, as an FCC licensee, take adequate steps to ensure that its employees or contractors receive appropriate training and comply with FCC occupational exposure guidelines whenever work is required near the antennas themselves.

## Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the base station proposed by Verizon Wireless at 4620 Rancho Montes Drive in Placerville, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations.

## Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration No. E-20309, which expires on March 31, 2017. This work has been carried out under her direction, and all statements are true and correct of her own knowledge except, where noted, when data has been supplied by others, which data she believes to be correct.


Andrea L. Bright, P.E.
707/996-5200

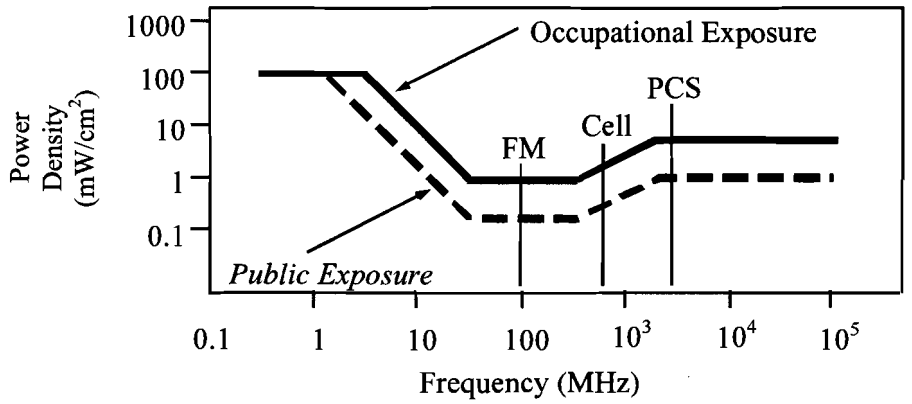
July 21, 2015

## FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements ("NCRP"). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes similar limits. These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

| Frequency | Electromagnetic Fields (f is frequency of emission in MHz) | | | | | |
|---|---|---|---|---|---|---|
| Applicable Range (MHz) | Electric Field Strength (V/m) | | Magnetic Field Strength (A/m) | | Equivalent Far-Field Power Density ($mW/cm^2$) | |
| 0.3 – 1.34 | 614 | *614* | 1.63 | *1.63* | 100 | *100* |
| 1.34 – 3.0 | 614 | *823.8/f* | 1.63 | *2.19/f* | 100 | *180/$f^2$* |
| 3.0 – 30 | 1842/ f | *823.8/f* | 4.89/ f | *2.19/f* | 900/ $f^2$ | *180/$f^2$* |
| 30 – 300 | 61.4 | *27.5* | 0.163 | *0.0729* | 1.0 | *0.2* |
| 300 – 1,500 | $3.54\sqrt{f}$ | *$1.59\sqrt{f}$* | $\sqrt{f}/106$ | *$\sqrt{f}/238$* | f/300 | *f/1500* |
| 1,500 – 100,000 | 137 | *61.4* | 0.364 | *0.163* | 5.0 | *1.0* |




Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required to obtain more accurate projections.

## RFR.CALC™ Calculation Methodology

### Assessment by Calculation of Compliance with FCC Exposure Guidelines

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The maximum permissible exposure limits adopted by the FCC (see Figure 1) apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

**Near Field.**
Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications base stations, as well as dish (aperture) antennas, typically used for microwave links. The antenna patterns are not fully formed in the near field at these antennas, and the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives suitable formulas for calculating power density within such zones.

For a panel or whip antenna, power density $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$, in $mW/cm^2$,

and for an aperture antenna, maximum power density $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$, in $mW/cm^2$,

where $\theta_{BW}$ = half-power beamwidth of the antenna, in degrees, and
$P_{net}$ = net power input to the antenna, in watts,
D = distance from antenna, in meters,
h = aperture height of the antenna, in meters, and
$\eta$ = aperture efficiency (unitless, typically 0.5-0.8).

The factor of 0.1 in the numerators converts to the desired units of power density.

**Far Field.**
OET-65 gives this formula for calculating power density in the far field of an individual RF source:

$$\text{power density } S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}, \text{ in } mW/cm^2,$$

where ERP = total ERP (all polarizations), in kilowatts,
RFF = relative field factor at the direction to the actual point of calculation, and
D = distance from the center of radiation to the point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radiation sources. The program also allows for the description of uneven terrain in the vicinity, to obtain more accurate projections.

HELIX Environmental Planning, Inc.
11 Natoma Street
Suite 155
Folsom, CA 95630
916.365.8700 tel
www.Helixepl.com

HELIX Environmental Planning

May 5, 2016

Mr. Ryan Beaumont
SAC Wireless for Verizon Wireless
1851 Heritage Lane, Suite 182
Sacramento, CA 95815

**Re: Oak Canopy Analysis for Outingdale Verizon Wireless Facility/SIS-0013, 4260 Rancho Montes Drive Placerville, CA 95667 - APN: 046-361-60-100**

**Permit number: TBD**

Dear Mr. Beaumont:

Per your request, HELIX Environmental Consulting, Inc. (HELIX) conducted an oak canopy analysis for the ±10.06-acre project site located at 4260 Rancho Montes Drive Placerville, CA (APN 046-361-60-100). The project applicant proposes to lease a 30' x 30' area on the subject property in order to install a 150' "monopine" Verizon tower and associated equipment. HELIX also developed a conceptual mitigation plan based on the proposed project's impacts to oak trees and their canopies, outlined below. The project is located in Section 22, Township 09N, and Range 11E on the AUKUM, California 7.5 minute USGS quadrangle (**Figure 1 – Regional Location and Vicinity**).

Oak Canopy Impact Analysis

HELIX staff conducted a field survey on February 2, 2016 in order to determine the coverage of the site's oak canopy and to locate the existing oak trees on-site that would be potentially impacted as a result of the proposed project. An oak canopy map was created utilizing several methodologies. First, HELIX staff delineated a portion of the oak canopy on-site utilizing a Trimble GeoXT in order to obtain sub-meter accurate data. The field collected data was then overlaid on the most recent available 2015/16 Google Earth aerials and digitized using ESRI ArcMap (GIS Software package). The mapped oak canopy area consists primarily of scattered canyon live oak (*Quercus chrysolepis*) and interior live oak (*Quercus wislizeni*), with an understory consisting of live oak scrub, coffeeberry (*Rhamnus californica*), deerweed (*Lotus scoparius*), toyon (*Heteromeles arbutifolia*), manzanita and non-native grasses.

The oak canopy impact analysis was performed based on 2015 plans and surveys prepared by SAC Wireless and CAL VADA Surveying, Inc. (**Figure 2 – Project Plans**). The analysis was conducted in accordance with the El Dorado County Oak Woodland Management Plan, Chapter 17.73 of the El Dorado County Zoning Code and State law (PRC 21083.43), and

specifically the Interim Interpretative Guidelines for El Dorado County, General Plan Policy 7.4.4.4 (Option A) (October 2007).

The total acreage of the subject APN is approximately 10.06 acres. Field survey data and aerial photograph mapping determined that the existing oak canopy covers 8.04 acres (438,214 square feet), approximately 80 percent of the entire parcel, as shown in **Figure 3 – Oak Canopy Impact Analysis**. Photographs of the typical landscape of the subject property as well as the area to be leased for the installation of Verizon equipment and the lease area on-site are shown in **Figure 4 – Site Photographs**.

The project's site plan was overlaid with the existing oak canopy mapping in order to determine the area of impact that would occur with implementation of the proposed project. An analysis of the site plan in relation to the existing oak canopy cover determined the project would impact approximately 0.01 acre (436 square feet) of existing oak canopy. Under Option A of the Interim Guidelines, the County requires 60 percent retention of oak canopy for a parcel with 80-100 percent existing canopy cover as stated in Section 17.73.070 under Policy 7.4.4.4. As the property is 10.06 acres in total area with 8.04 acres of existing oak canopy, the percentage of oak canopy coverage is approximately 80 percent of the subject APN, as mentioned above. Based on this requirement, approximately 4.82 acres (60 percent) of the existing oak canopy must be retained. As the proposed project plans to retain 8.03 acres (99 percent), the project more than fulfills the County's oak canopy retention requirement.

Conceptual Mitigation Plan

El Dorado County General Plan Policy 7.4.4.4 is intended to apply exclusively to retention and replacement of oak canopy within oak woodlands. All oak trees, of all sizes, are included in the measurement of oak canopy. The policy stipulates the following regarding potential replacement plans (Option A):

- On-Site Replacement Tree Planting;
- On-Site Planting of Acorns;
- Off-Site Replacement of Canopy Area; and
- Off-Site Conservation Easement to Protect Existing Oak Woodland in Lieu of Replacement.

With regards to replanting, General Plan Policy 7.4.4.4 stipulates that 200 (1-gallon) oak saplings per acre (or equivalent number of acorns or larger sized oak trees) will be planted to offset canopy losses from the proposed project. The replacement of oak canopy is required in addition to meeting the 60 percent oak canopy retention requirement for a development project of this size. According to the Important Habitat Mitigation Program Guidelines (Section 2.2.3 Monitoring and Reporting Plan), the replanted oaks are subject to active management and 10 years of monitoring (15 years for acorns).

*Oak Replacement Planting*

We recommend on-site planting in order to offset the minor tree canopy removal. We propose replanting two (2) interior live oak (*Quercus wislizeni*) adjacent to the proposed lease area, as

shown on **Figure 5 – Conceptual Planting Plan**. Replanting at this location will be contiguous with existing oak woodland habitat. This species of oak is consistent with the native oaks that grow either on the property or throughout the region. There is one large heritage oak approximately 60 ft. east from the lease area. We recommend that all construction and grading activity should remain outside of the critical root zone of this large heritage oak.

It is recommended that an experienced horticulturist or landscape architect plant, space, irrigate and monitor the replacement oak trees. The newly planted trees will be irrigated with water from the current project site once installed, and the trees will be monitored for a period of 10 years. As the project will impact 0.01 acre of oak canopy, replanting two oak trees will meet and/or potentially exceed the requirement for the replacement of oak tree canopy at a 1:1 ratio.

Thank you for the opportunity to work on this project. If you need further information please contact me at 916.365.8700 to discuss the results of this analysis.

Sincerely,

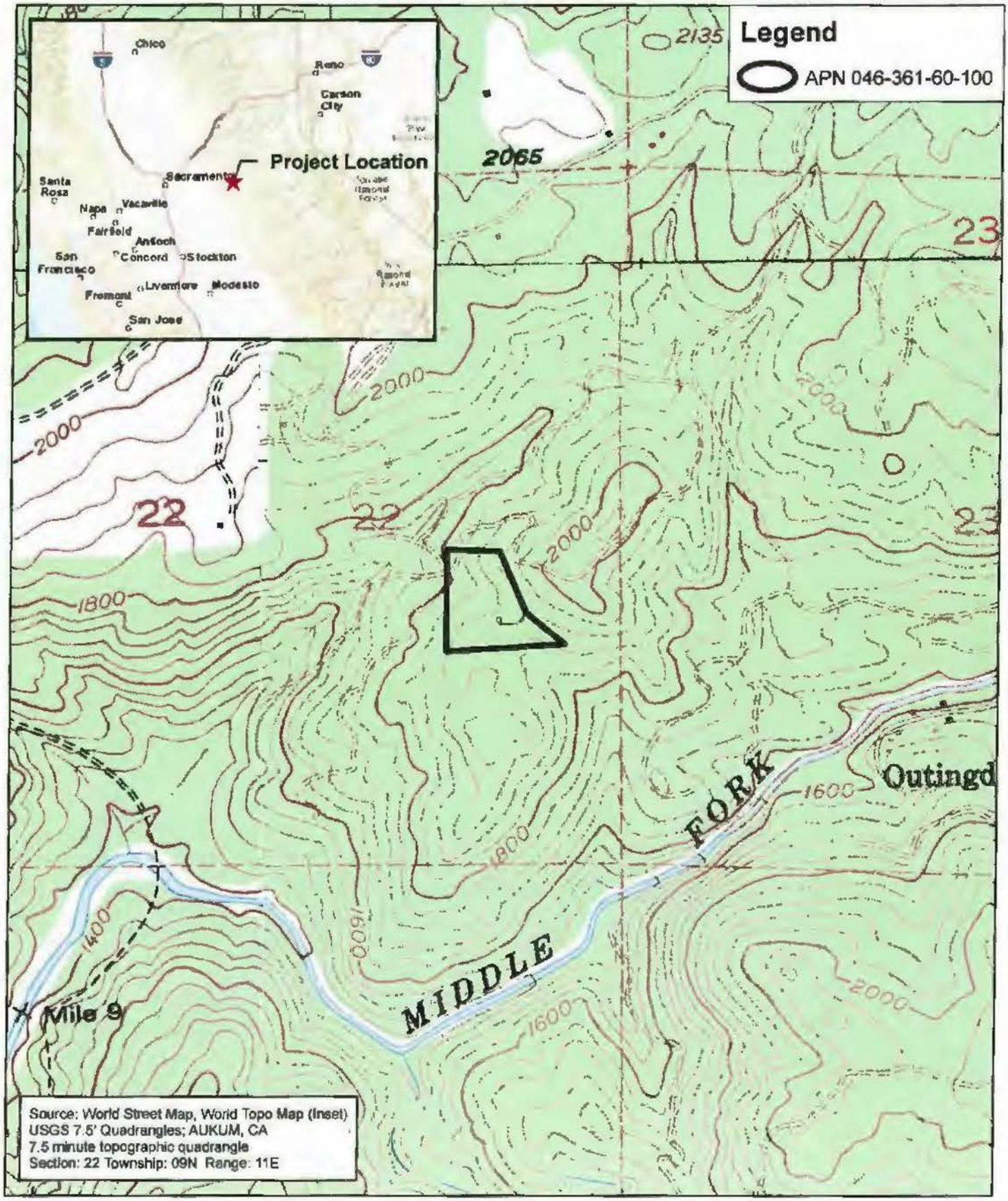
Stephen Stringer, M.S.
ISA Certified Arborist (WE-7129A)/Biologist

*Attachments:*

*Oak Canopy Assessment Form/Resume*

*Figures:*

*Figure 1: Project Vicinity*
*Figure 2: Project Plans*
*Figure 3: Oak Canopy Impact Analyses*
*Figure 4: Site Photographs*
*Figure 5: Conceptual Planting Plan*




*Map Date: May 2016*

Figure 1

**Regional Location and Vicinity**

APN 046-361-60-100
Placerville, El Dorado Co., CA

HELIX Environmental Planning

0 2,000 Feet


**Title Report**

**Legal Description**

**Assessor's Parcel No.**

**Easements**

**Access & Utility Easement/Lease Area**

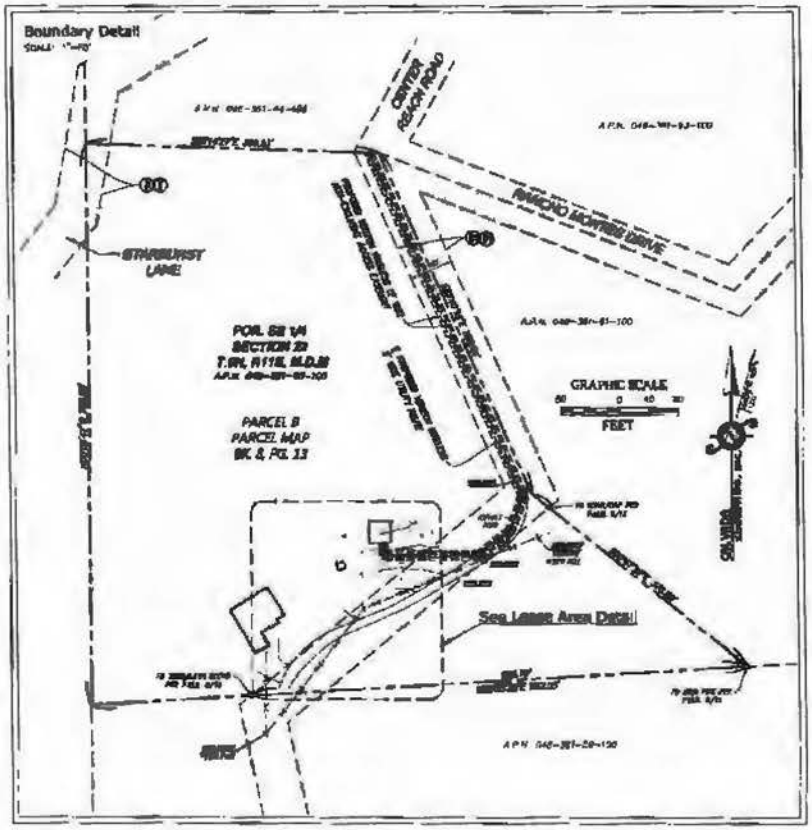
**Geographic Coordinates at Proposed Monopole**

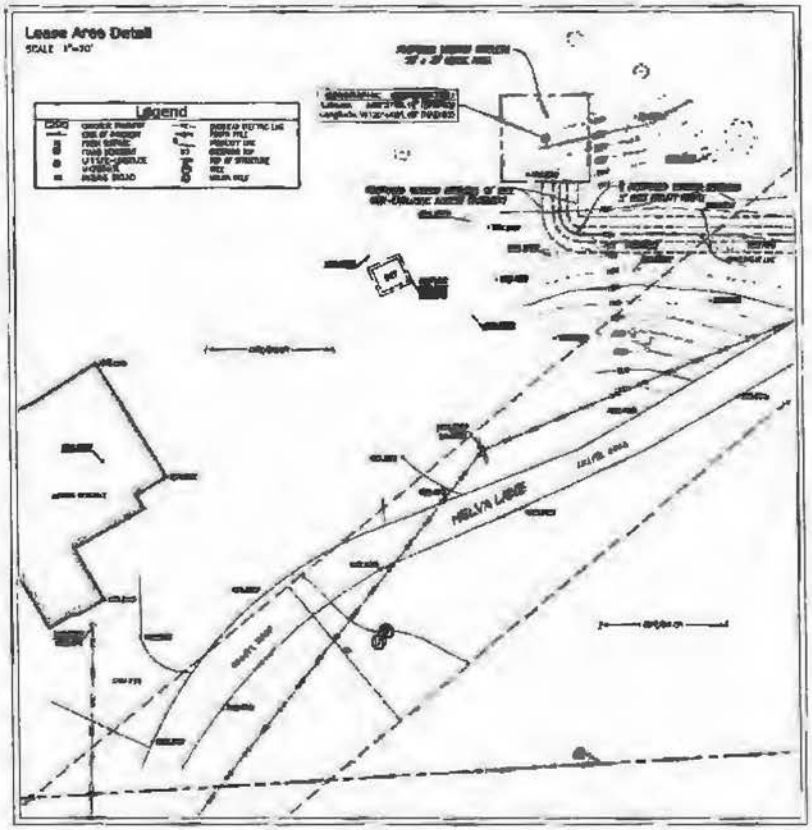
**Basis of Bearings**

**Bench Mark**

**Date of Survey**

FIGURE 2




verizon

SIC WIRELESS

| | |
|---|---|
| PROJECT NO: | 13179 |
| DRAWN BY: | AV |
| CHECKED BY: | RH |

CALVADA SURVEYING, INC.

OUTINGDALE

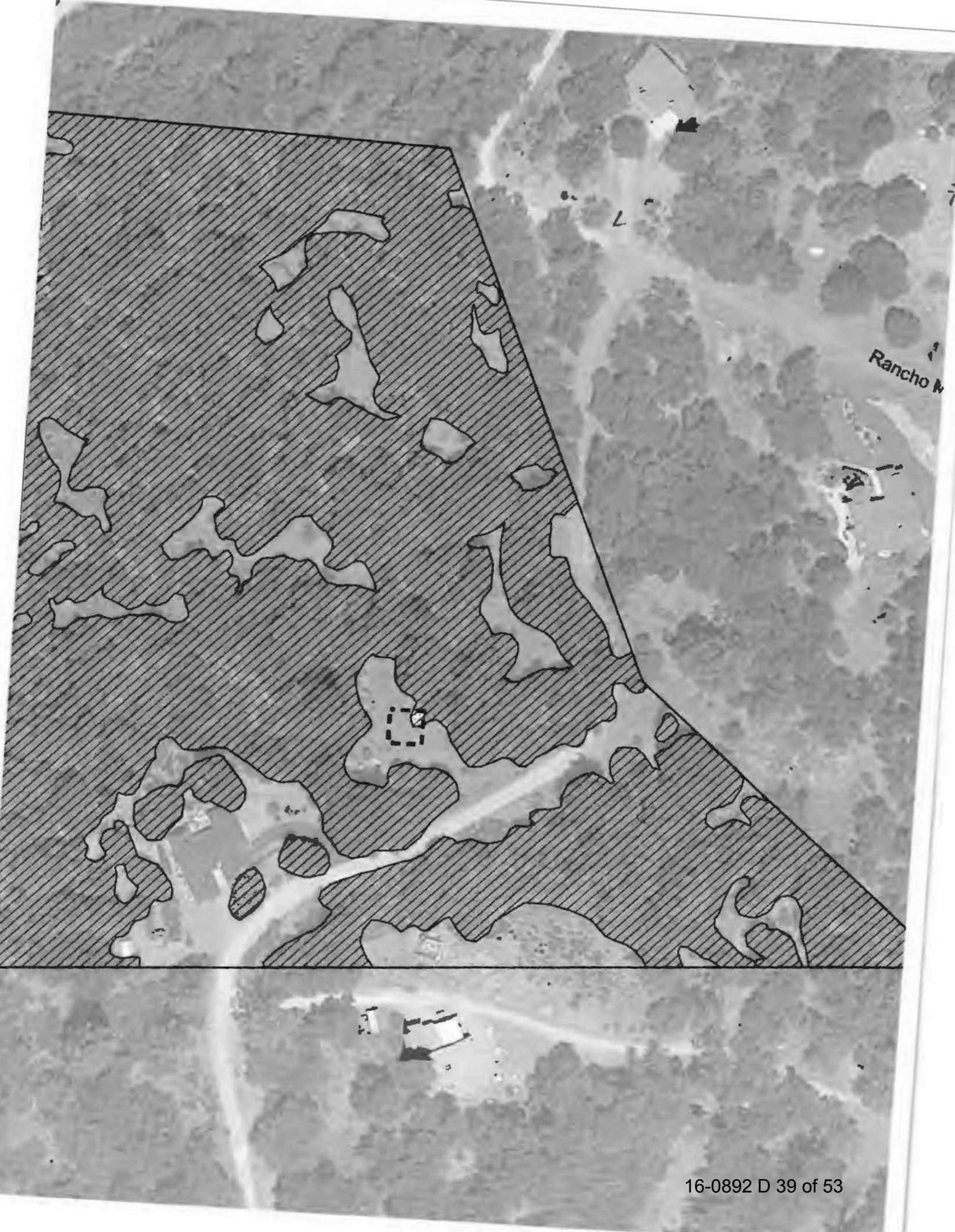
4250 RANCHO MONTES DR.
PLACERVILLE, CA 95667
EL DORADO COUNTY

SHEET TITLE

TOPOGRAPHIC SURVEY

SHEET NUMBER

C-1


Rancho

3a. Viewpoint looking south along Rancho Montes Drive. Typical landscape throughout the site includes scattered canyon and interior live oak.

3b. Viewpoint of the proposed project area, looking north.

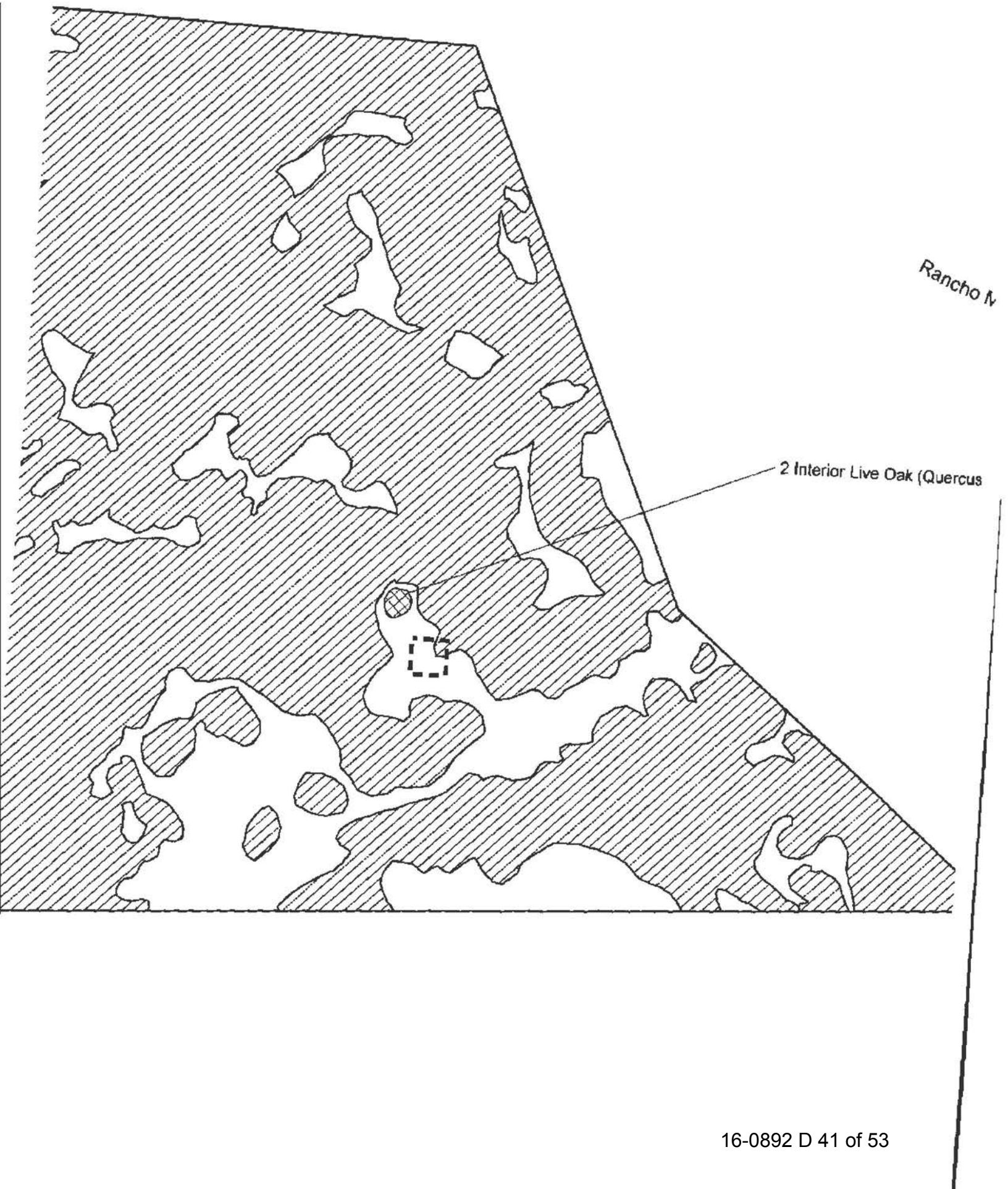
*Photo Date: 02/02/2016*

Figure 4

**Site Photographs**

APN 046-361-60-100
Placerville, El Dorado Co., CA

HELIX Environmental Planning


Rancho M
2 Interior Live Oak (Quercus

# El Dorado County

## OAK/CANOPY SITE ASSESSMENT FORM

| | |
|---|---|
| **Qualified Professional & Contact Information:** *(attach qualifications)* | Stephen Stringer Phone: 916-996-9374 email: StephenS@helixepi.com |
| **Property Owner's Name/APN(s):** | APN: 046-361-60-100 |
| **Address:** | 4260 Rancho Montes Drive Placerville, CA |
| **General Plan Designation:** | Rural Residential |
| **Zoning:** | Rural Residential |
| **Project Description:** *(attach site photos)* | See Letter. |

| **Would the project, directly or indirectly, have the potential to cause any impact, conflict with, or disturbance to:** | YES | NO |
|---|---|---|
| a) Individual landmark or heritage trees (of any species) subject to review under General Plan Policy 7.4.5.2? | | ✓ |
| c) Oak woodland corridor continuity (General Plan Policy 7.4.4.5)? | | ✓ |
| d) Sensitive or important oak woodland habitat as defined in the Guidelines? | | ✓ |
| e) Movement of Wildlife and/or Any Wildlife Migration Corridor? | | ✓ |
| f) Any Candidate, Listed or Special Status Plant or Animal Species observed or expected to occur on or adjacent to the project site? | | ✓ |
| | | |
| g) Is the affected area of oak canopy within or directly adjacent to an Important Biological Corridor or Ecological Preserve overlay? | | ✓ |
| h) Does the removal of oak canopy comply with the retention requirements of Policy 7.4.4.4? | ✓ | |
| i) Was project subject to prior County approval? (If yes, provide Tentative Map # and environmental documents if available) | | ✓ |
| j) For Discretionary Projects, would the project have the potential to cause a significant environmental impact on biological resources? | | ✓ |

*I affirm that all of the information contained in this document is true and correct to the best of my knowledge and I acknowledge and agree that any material misinformation in this document can result in the denial or revocation of any permits or County approvals for this project.*

**Qualified Professional:** Stephen Stringer **Date:** 5/5/2016

**Applicant/Owner:** [signature] **Date:** 5/9/16

**Required Attachments: 1) Qualified Professional Qualifications; 2) Site Photos; 3) Required Tree Survey, Preservation, and Replacement Plan *or* Biological Resources Study and Important Habitat Mitigation Program (see Interim Interpretive Guidelines for El Dorado County Policy 7.4.4.4 Option A)**

# Stephen Stringer M.S.

**Senior Scientist**

## Summary of Qualifications

Mr. Stringer is a biologist with more than 13 years of experience in the public and private sector conducting biological and wetland studies in support of California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) documentation, and aquatic resources issues. He conducts Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA) consultations with U.S. Fish & Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and California Department of Fish and Wildlife (CDFW). His biological survey experience includes conducting general biological surveys, habitat assessments/mapping, botanical surveys, arborist surveys, CRAM assessments, and wetland delineations, as well as USFWS protocol surveys for species such as federally-listed vernal pool branchiopods, California red-legged frog, and Valley elderberry longhorn beetle. He also conducts surveys for other special-status species, including burrowing owl, Swainson's hawk, and other raptors and migratory birds. Mr. Stringer supports the construction phase of projects by providing specialty biological monitoring support or worker awareness training as needed. Mr. Stringer is a USFWS approved biologist authorized to conduct pre-construction surveys, worker awareness training, and biological monitoring efforts for several Bay Area and Central Valley species including San Francisco garter snake, California red-legged frog, San Francisco dusky-footed woodrat, Giant Garter Snake, and California Coastal steelhead. His report preparation experience includes technical biological studies in support of environmental impact reports (EIRs), environmental impact statements (EISs), environmental assessments (EAs), and initial studies, as well as the preparation of biological assessments, natural environment studies, mitigation and monitoring plans, arborist survey reports, rare plant survey reports, wetland delineation reports, and environmental constraints analysis. He also prepares individual and nationwide permit applications for the U.S. Army Corps of Engineers (USACE) permit program under Section 404 of the Clean Water Act; Regional Water Quality Control Board Water Quality Certification Applications, and CDFW Streambed Alteration Agreements.

## Selected Project Experience

**Loma Rica Reservoir Cleaning** (2011 - Present). Lead botanist who conducted a rare plant survey at Loma Rica Reservoir located in the vicinity of Grass Valley, Nevada County, and prepared a rare plant survey report for submittal to the CDFW. Loma Rica Reservoir is part of the Nevada Irrigation District (NID) water-supply system and stores raw water which feeds the Loma Rica Water Treatment Plan and the NID canal system. The purpose of the proposed project was to dredge the reservoir to remove sediments that have accumulated in the reservoir since its construction in 1964. Work performed for Nevada Irrigation District.

**Prop 50 Funding Downieville Public Utilities District Plant Expansion Project** (2013 - Present). Lead scientist who conducted a biological survey and prepared the

**Education**

Master of Science, Biological Sciences, California State University, Sacramento, 2007

Bachelor of Science, Biological Sciences, California State University, Sacramento, 2003

**Registrations/Certifications**

International Society of Arboriculture, Certified Arborist, WE-7129A, 2004

San Francisco Estuary Institute. CRAM Certified for Riverine Habitats, 2011

Society of Wetland Scientists, Professional Wetland Scientist (Certification Pending), 2014

U.S. Fish and Wildlife Service Section 10(a)(1)(A) Recovery Permit (TE-141359-2) for Vernal Pool Branchiopods, 2006, and California Tiger Salamander (Central DPS), 2012

CA Department of Fish and Wildlife, Scientific Collecting Permit #801117-05, 2003

CA Department of Fish and Wildlife, Rare, Threatened, and Endangered Plant Voucher Collecting Permit #05111, 2003

**Professional Affiliations**

International Society of Arboriculture, Western Chapter

California Native Plant Society

The Wildlife Society, Sacramento-Shasta Chapter

Solano Land Trust - Member/Volunteer Docent (Jepson Prairie Preserve)

American Fisheries Society

biological resources section of technical memorandum used to support a Notice of Exemption for the project. The 0.52-acre Downieville Public Utilities District (DPUD) site is located north of the town of Downieville in unincorporated Sierra County. The project consisted of the construction of a Contact Clarification Filtration Plant with integrated disinfection system, all being comprised of approved technologies. Work performed for Downieville Public Utilities District.

**Schaad Road over Forest Creek Bridge Replacement Project** (2013 - Present). Lead scientist who conducted biological and wetland surveys and is overseeing the preparation of biological and wetland reports for the Project in support of environmental documentation in accordance with Caltrans guidelines including a Natural Environment Study, Wetland Delineation, and biological resources sections of NEPA/CEQA documentation. The project proponent, Calaveras County, plans to replace the existing structurally deficient and functionally obsolete bridge that is eligible for rehabilitation under the federal Highway Bridge Program. Work is being performed for T.Y. Lin International.

**Whiskey Slide Road over Jesus Maria Creek Bridge Replacement Project** (2013 - Present). Lead scientist who conducted biological and wetland surveys and is overseeing the preparation of biological and wetland reports for the Project in support of environmental documentation in accordance with Caltrans guidelines including a Natural Environment Study, Wetland Delineation, and biological resources sections of NEPA/CEQA documentation. The project proponent, Calaveras County, plans to replace the existing structurally deficient and functionally obsolete bridge that is eligible for rehabilitation under the federal Highway Bridge Program. Work is being performed for T.Y. Lin International.

**United Auburn Indian Community of the Auburn Rancheria 1,100 Acre Residential Project Management Plan** (2007). Project Manager/Lead Biologist who conducted wet season vernal pool surveys in a complex of twenty-one vernal pools on the project site, according to the Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods dated April 19, 1996 in accordance with a USFWS approved Management Plan, as well as supervised other biologists. The surveys include a complete inventory of vernal pool invertebrates in addition to fairy shrimp. The data that is being collected will be used to determine baseline conditions in the vernal pools prior to project construction and will be used to compare five years of post-construction monitoring and guide future management of the vernal pools on the entire 1,100 acre property. Also assisted with preparation of the management plan. Work performed as a subcontractor to Analytical Environmental Services for the United Auburn Indian Community

**Biological Surveys of 200+ Emergency Levee Repair Sites in the Sacramento-San Joaquin River Delta (Reclamation Districts 3, 17, 524, 544, 551, 755, 784, 785, 1001, 2068, 2098, and 2063)** (2007 - 2008). Lead Biologist/Arborist who was responsible for conducting biological assessments and preparing biological resources evaluations, including tree inventories of each of the levee sites located throughout the Sacramento-San Joaquin River Delta that were damaged in the floods of 2005-2006 and that qualified for federal aid under Public Law 84-99. Conducted general biological surveys, botanical surveys, riparian assessments, wetland assessments, and tree inventories of all of the repair sites and prepared the biological resources section of technical memorandums identifying potential constraints for the sites. Coordinated with USFWS, NMFS, and the U.S. Army Corps of Engineers to develop and implement mitigation measures to protect biological resources and riparian trees during construction. Work performed for the U.S. Army Corps of Engineers, Sacramento District.

**City of Hercules Intermodal Transit Facility EIS/EIR** (2009 - 2011). Lead Biologist responsible for preparation of a Biological Resources Evaluation, the biological resources section of the EIS/EIR, a Jurisdictional Delineation Report, and biological assessments for USFWS and NMFS. Assisted/conducted focused biological studies for California red-legged frog and vernal pool branchiopods. The project included realignment of a segment of Refugio Creek at its confluence with San Pablo Bay and construction of a tidal channel into the Bay, construction of a new railroad passenger station within and adjacent to the Union Pacific Railroad right-of-way, and realignment of approximately 4,000 feet of track adjacent to San Pablo Bay. The project encompasses a station platform and related structures and appurtenances, and an optional overhead access to a future ferry terminal. The Federal Transit Administration was the federal lead agency. Work performed for the City of Hercules.

**North Truckee Drain Realignment Project** (2010). Biologist who assisted with fieldwork and preparation of a wetland delineation to identify potential waters of the U.S. in the project site, which consisted of the realignment of approximately 6,000 linear feet of the North Truckee Drain. The goal of the project is flood damage reduction in a predominately industrial/commercial area. Work performed for City of Sparks.

**Bay-Delta Conservation Plan (BDCP) EIR/EIS** (2010 - 2011). Biologist who conducted protocol avian surveys as well as habitat assessments for giant garter snake throughout the Sacramento-San Joaquin River Delta, including protocol surveys for western yellow-billed cuckoo, clapper rail, black rail, and numerous other special-status bird species. The surveys were conducted in support of the BDCP EIR/EIS. Work performed for the California Department of Water Resources.

**Peer Review of the Terrestrial Biological Resources Chapters of the Bay Delta Conservation Plan EIR/EIS (2014).** Senior Terrestrial Biologist responsible for peer review of the terrestrial biological resources chapters of the Bay Delta Conservation Plan EIR/EIS. Peer reviewed approximately 3,000 pages of technical studies and EIR/EIS chapters related to terrestrial biological resources and provided comments in the manuscript as well as a technical memorandum outlining major comments. Work performed for Metropolitan Water District of Southern California.

**Assessment of Fluvial Geomorphology in Relation to Arroyo Toad Habitat in the San Antonio River at Fort Hunter Liggett (FHL)** (2011). Lead Biologist who assisted the project geomorphologist with study design and project implementation, including conducting a CRAM analysis of select sites on the San Antonio River, and was the lead author on preparation of the report. The purpose of the study was to gain an understanding of disturbance history, habitat conditions, and habitat-forming processes within the San Antonio River and its watershed to provide FHL with information to develop habitat improvement projects in breeding habitat for federally endangered arroyo toads. The study area encompassed an approximately 30 km segment of the San Antonio River and adjacent upland areas in Monterrey County. Work performed for the U.S. Army, Sacramento District.

**Los Padres Dam Fish Passage Project** (2001 - 2012). Biologist/Lead Arborist responsible for preparation of an arborist survey report to document the species, size, and condition of native trees with the potential to be impacted by construction of the proposed project as well as rare plant surveys and wetland surveys in support of CEQA documentation. Observed California red-legged frog during wetland surveys. The project involved the construction of a fixed/floating weir and behavior guidance system that will promote the downstream passage of steelhead in the Carmel River (Monterey County). Work performed for California American Water.

**La Grange Road Bridge at Dry Creek Replacement Project** (2008 - 2012). Lead Biologist who prepared a Natural Environment Study, a Biological Assessment, and a Jurisdictional Delineation for this road/bridge project located in Merced County. Also assisted with consultation with USFWS and CDFG regarding project impacts to California red-legged frog, vernal pool branchiopods, California tiger salamander, and rare plants. The project involved replacement of the existing La Grange Road Bridge over Dry Creek and realignment of the bridge approaches to eliminate a dangerous curve. Work was in support of CEQA/NEPA documentation in accordance with Caltrans procedures. Work performed as a subconsultant to ESA for Merced County Public Works Department.

**Merced Irrigation District Federal Energy Regulatory Commission License Application** (2010). Biologist/Botanist who conducted focused surveys for numerous special-status plant and animal species with the potential to be impacted by the proposed project around the perimeter of Lake McClure and Lake McSwain. Work

was performed in support of an application for renewal of a Federal Energy Regulatory Commission license for Merced Irrigation District. Work performed for Merced Irrigation District.

**Dobbins Pole Replacement** (2010). Lead Biologist who conducted a biological survey and a wetland delineation of the proposed project site and prepared a biological technical memorandum and a delineation of wetlands and other waters of the U.S. report. PG&E planned the replacement of power poles along an existing power line in Dobbins. Work performed for Pacific Gas and Electric, San Ramon.

**Konocti Substation Expansion** (2010). Lead Biologist who conducted a biological and wetland survey of the proposed project site and prepared a technical memorandum outlining potential biological and wetland constraints and recommended mitigation measures. This PG&E project consisted of expanding the existing Konocti Substation facility in Kelseyville, California (Lake County). Work performed for Pacific Gas and Electric, San Ramon.

**PG&E Geysers No. 3** (2010). Lead Biologist who led a team of biologists to survey the proposed project corridor and evaluate the potential impacts of the project on special-status plant and animal species as well as wetlands and other waters of the U.S. Also prepared a technical memorandum outlining potential biological and wetland constraints and recommended mitigation measures. PG&E proposed installation of a fiber-optic cable along an estimated two-mile stretch of the existing Geysers No.3 to Cloverdale 115kV power line in "The Geysers" geothermal area near Geyserville, California (Sonoma County). Work performed for Pacific Gas and Electric, San Ramon.

**Rice-Logan Creek Back Tie** (2010). Lead Biologist who led a team of biologists to survey the proposed project corridor and evaluate the potential impacts of the project on special-status plant and animal species as well as wetlands and other waters of the U.S. Prepared a technical memorandum outlining potential biological and wetland constraints and recommended mitigation measures. Also conducted pre-construction surveys for nesting birds along the project alignment. PG&E proposed the installation of 16 power poles along an estimated length of 4,000 ft to extend service between the Logan Creek and Rice Substations located in Glenn/Colusa counties, near the town of Princeton, California (Colusa County). Work performed for Pacific Gas and Electric, San Ramon.

**Environmental Services for the Mayhew Levee Improvement Project** (2007 - 2008). Biologist who assisted the U.S. Army Corps of Engineers (USACE) in completing a joint NEPA/CEQA document (EIS/EIR) for the highly contentious Mayhew Levee Improvement Project in the City of Sacramento, which involved the scheduled removal of a number of mature oaks and impacts to the adjacent homes and recreational uses affected by the proposed levee improvements. Conducted

field surveys and prepared the biological and wetland resources sections of the document, as well as coordinated with Sacramento Area Flood Control Agency (SAFCA) and USACE. Work performed for SAFCA.

**Natomas Levee Improvement Program (NLIP) Sacramento River Levee Reaches 1, 2, 4B, 5A** (2010 - 2011). Biologist who attended meetings and site visits to assist the project team with designing the project to avoid impacts to biological resources and waters of the U.S. The project consisted of improving a segment of the Sacramento River levee (east bank) (Reaches 1, 2, 4B, and 5A) in the Natomas area (City of Sacramento), which protects a portion of Reclamation District No. 1000. Levee repairs were needed to retain Federal Emergency Management Agency certification and achieve a 200-year level of flood protection. Work performed for Sacramento Area Flood Control Agency.

**New Crystal Springs Bypass Tunnel Construction Management** (2009 - 2011). Specialty Biological Monitor who provided on-call support to the environmental inspector(s) during periods when the project had the potential to impact listed species including San Francisco garter snake and California red-legged frog. As a specialty biological monitor, Mr. Stringer was authorized by U.S. Fish and Wildlife Service to handle California red-legged frog if they are observed in the project site of the New Crystal Springs Bypass Tunnel near the community of Crystal Springs (San Mateo County). The project involved construction of a tunnel and a new 96-inch diameter steel pipe to connect to the existing Crystal Springs Bypass Tunnel and Crystal Springs Pipeline. Work performed for San Francisco Public Utilities Commission.

**MORE Water Project Phase 3 Feasibility Study** (2011). Biologist responsible for conducting biological reconnaissance surveys of the 4,500+ acre project footprint in eastern San Joaquin County and preparing the biological resources section of the feasibility study. Also led a team of biological monitors to monitor geotechnical explorations associated with the feasibility study, in order to avoid impacts to vernal pools. The goal of the Feasibility Study was to examine MORE Water Project alternatives in more detail in order to select a preferred alternative to carry forward into a Project EIR in Phase 4. Work performed for San Joaquin County

**Thornes Creek Bridge at 99W Replacement** (2008 - 2009). Lead Biologist/arborist who was responsible for preparation of a Natural Environment Study, Biological Assessment, California red-legged frog site assessment, arborist survey report, and Wetland Delineation for the proposed project. Conducted consultation with the USFWS regarding potential project impacts to California red-legged frog. As the lead arborist, Mr. Stringer was responsible for preparation of an arborist survey report to document the species, size, and condition of all trees with the potential to be adversely impacted by the proposed project. The project included hydrology, hydraulics, and scour investigations, as well as utility and railroad coordination and floodplain mapping in support of the proposal to replace a nine-span, 650-foot-long

by 31-foot-wide, reinforced concrete arch bridge over Thomes Creek (Tehama County) founded upon short 15 foot long timber pilings, originally constructed in 1920. Work performed for Tehama County Department of Public Works.

**Upper Yuba River Levee Improvement Project** (2009 - 2011). Lead Biologist who prepared biological and wetland technical studies in support of the proposed project, prepared the biological resources section of the NEPA/CEQA document, conducted U.S. Fish and Wildlife Service (USFWS) protocol surveys for vernal pool branchiopods and valley elderberry longhorn beetle, conducted a habitat assessment for giant garter snake, conducted raptor pre-construction surveys, conducted worker awareness training for the construction crews, attended weekly construction meetings, led a team of construction monitors to assist the project proponent with permit compliance throughout construction, and prepared post-construction reports for submittal to the USFWS as required by the project's Biological Opinion. Prepared a Biological Assessment, a Jurisdictional Delineation Report, an Elderberry Mitigation Plan, a vernal pool branchiopod survey report, a pre-construction survey report, worker awareness training materials, and a post-construction compliance report. Assisted with consultation with USFWS for Valley elderberry longhorn beetle, vernal pool fairy shrimp, and vernal pool tadpole shrimp. The project consisted of repairs of a reach along an approximately 4-mile long segment of the Yuba River South Levee (from SR-70 to Yuba Gold Fields ) in Yuba County in order to achieve FEMA certification. Work performed for Three Rivers Levee Improvement Authority.

**South Sacramento County Streams, Unionhouse Creek 30% Conceptual Design and Environmental Assessment Project** (2009). Lead Biologist responsible for conducting biological and wetland surveys of the project site and preparation of a Wetland Delineation as well as the biological resources sections of the Environmental Assessment. Included conducting protocol surveys for Valley elderberry longhorn beetle and coordination with the U.S. Army Corps of Engineers (USACE) and the Sacramento County Regional Sanitation District (SCRSD) with regards to potential impacts to biological resources. The proposed project consisted of modifications to an approximately one mile long segment of Unionhouse Creek between Franklin Blvd. and Center Parkway, in Sacramento County, which was a component of the South Sacramento County Streams Flood Control Project A portion of the levee improvements were located on the SCRSD Bufferlands. Work performed for USACE Sacramento District.

**Abernathy Road Bridge (23C-183) at Ledgewood Creek Project** (2004 - 2005). Biologist who conducted biological reconnaissance surveys, a site assessment and protocol surveys for California red-legged frog according to USFWS protocol, and a jurisdictional delineation, and assisted with the preparation of a Natural Environment Study and Jurisdictional Delineation Report. The purpose of the project was to replace the Abernathy Road Bridge at Ledgewood Creek in Solano County. Work performed for Solano County Public Works Department.

**Aladdin Depot Water Rights Application Tree Survey** (2006). Biologist/arborist who conducted supplementary biological surveys, arborist surveys, and rare plant surveys to update an outdated biological resource assessment for the Aladdin Depot water rights project in Napa County. Conducted USFWS protocol surveys for Valley elderberry longhorn beetle. Prepared a technical memorandum for the State Water Board, reporting the results of the surveys. Work performed for Aladdin Depot.

**Carbondale Road Bridge Improvements Project** (2005 - 2006). Lead biologist who conducted preconstruction surveys and monthly monitoring visits for raptors, western pond turtle, and California red-legged frog and prepared a report documenting the results of the surveys. Assisted Amador County with development of mitigation measures to prevent impacts to nesting swallows. Prepared a Revegetation Plan to restore native vegetation in the creek once construction was completed. Work performed for Amador County Public Works.

**Circle S Ranch Erosion Control Plan** (2006). Lead Biologist who conducted a site assessment for California red-legged frog according to USFWS protocol for the Circle S Ranch in Napa County. Conducted USFWS protocol surveys for Valley elderberry longhorn beetle. Assisted with rare plant surveys. Attended project scoping meetings with the Client and resource agencies to assist with developing project design to avoid sensitive biological resources to the maximum extent practicable. Consulted with Napa County and CDFG to develop mitigation strategies for special-status animal species. Conducted onsite meetings with CDFG and USFWS to evaluate the potential for the project to support special-status species. Work performed for Circle S Ranch.

**Clayton Regency Mobile Home Park Water Treatment Plant** (2005). Biologist/arborist who conducted preconstruction surveys required by 404 Permit requirements for California red-legged frog, California tiger salamander, San Joaquin k t fox, burrowing owl, and raptor nests. Prepared a wildlife survey plan for future surveys to be conducted post-construction. Conducted arborist surveys and prepared a tree preservation plan in accordance with the Contra Costa County Tree Protection Ordinance. Work performed for Clayton Regency Mobile Home Park.

**Cordelia Road Bridge (23C-037) Replacement Project** (2005). Biologist who conducted USFWS protocol surveys for Valley elderberry longhorn beetle and assisted with preparation of a VELB mitigation and monitoring plan for this road/bridge replacement project in Solano County. Work performed for Solano County Public Works.

**Enterprise Rancheria Housing Project** (2006). Biologist who conducted USFWS protocol site assessments and field surveys for California red-legged frog and

assisted with report preparation for this housing project located in Butte County. Work performed for the Estom Yumeka Maidu Indians of the Enterprise Rancheria.

**Gateway Hotel and Gas Station Project** (2005). Biologist who conducted USFWS protocol field surveys for California red-legged frog and assisted with a CRLF field survey report. Also assisted with preparation of a mitigation and monitoring plan for impacts to waters of the U.S. for this hotel and gas station project located near the City of Placerville in El Dorado County. Work performed for Mr. Ed Mackay of Smith Flat Construction Inc.

**Guenoc Winery/ Langtry Estates** (2006). Lead Biologist. Conducted biological reconnaissance surveys of the 21,349 acre Langtry Estate in Napa and Lake Counties, one of the largest contiguous private land holdings in California. Also conducted and led focused biological surveys on the site including a site assessment for California red-legged frog according to USFWS protocol and USFWS protocol surveys for Valley elderberry longhorn beetle. Prepared biological reports to support a water right application to the Regional Water Quality Control Board (RWQCB) and associated CEQA documentation. Attended project scoping meetings with the Client and resource agencies to assist with developing project design to avoid sensitive biological resources to the maximum extent practicable. Consulted with the RWQCB and California Dept. of Fish and Game to develop mitigation strategies for special-status species. \

**Home Depot at Hangtown Creek** (2003 - 2004). Biologist who conducted pre-construction surveys for California red-legged frog, and raptors and other migratory birds as well as USFWS protocol surveys for Valley elderberry longhorn beetle at the site of a proposed Home Depot facility in the City of Placerville, El Dorado County. Conducted amphibian/fish salvage and relocation during dewatering of the creek; conducted benthic macroinvertebrate sampling and water quality sampling; conducted construction biological monitoring. Assisted with the preparation of a revegetation plan for Hangtown Creek and assisted with the as-built report upon completion of restoration. Also assisted with preparation of biological reports. Work performed for The Home Depot U.S.A Inc.

**Ione Band of Miwok Indians Fee-to-Trust Application, Amador County, California** (2006 - 2007). Biologist who conducted USFWS protocol surveys for vernal pool branchiopods (fairy and tadpole shrimp), Valley elderberry longhorn beetle, and California red-legged frog for this project located in Amador County. Conducted a site assessment for California tiger salamander according to USFWS protocol. Conducted fieldwork for a jurisdictional delineation. Prepared a California red-legged frog Site Assessment Report and a Report of Findings from Wet Season Vernal Pool Branchiopod Surveys. Assisted with preparation of the jurisdictional delineation report. Also conducted onsite meetings with USFWS to evaluate the

potential for the project to support California red-legged frog and fairy shrimp. Work performed for the Ione Band of Miwok Indians.

**Jackson Hills Golf Club and Community** (2003). Arborist who inventoried over 3,000 oak trees and prepared an arborist survey report for this proposed 500 acre golf course project located in Amador County. Work performed for Jackson Hills Golf Club.

**Palisades Vineyards Water Rights Application** (2006). Biologist who conducted supplementary biological surveys, arborist surveys, and rare plant surveys to update an outdated biological resource assessment for Palisades Vineyards located in Napa County in support of CEQA documentation for a water rights application. Also conducted USFWS protocol surveys for Valley elderberry longhorn beetle and prepared a mitigation plan for oak trees and elderberry shrubs that were scheduled for removal. Also prepared a technical memorandum evaluating the potential for onsite wetlands to support federally-listed vernal pool branchiopods. Work performed for Palisades Vineyards.

**Pleasant Valley Road Bridge (23C-010) at Pleasants Creek Retrofit Project** (2004 - 2005). Biologist who conducted a USFWS protocol Valley elderberry longhorn beetle (VELB) survey and assisted with the preparation of VELB mitigation and monitoring plan and a Natural Environment Study for this road/bridge project located in Solano County. Work performed for Solano County Public Works.

**River Gold Ranch Equestrian Estates Project** (2004 - 2005). Biologist who conducted fieldwork for a biological resources evaluation for this proposed equestrian estates project located in Calaveras County. Also conducted USFWS protocol surveys for California red-legged frog and jurisdictional delineation surveys and prepared a Site Assessment and Field Survey Report for California red-legged frog and a Jurisdictional Delineation Report. Work performed for River Gold Ranch.

**Santa Fe Riverbank Bridge (1096.719) Improvement Project** (2003 - 2005). Biologist who assisted with the preparation of an Elderberry Mitigation, Monitoring, and Maintenance Plan for this bridge improvement project in Stanislaus and San Joaquin counties. Conducted elderberry shrub annual mitigation monitoring for the mitigation site for Santa Fe Railway Company and prepared annual monitoring reports. Work performed for Santa Fe Railway Company.

**Silva Valley Parkway Water Main and Sewer Force Main** (2004). Biologist who conducted USFWS California red-legged frog protocol surveys and assisted with vernal pool crustacean surveys for proposed water and sewer force main installation sites in El Dorado County. The project consisted of the installation of approximately 13,000 lineal feet of 42-inch water main & 6,800 lineal feet of 16-inch sewer force main. Also assisted with the preparation of the California red-legged frog site

assessment and field survey reports, and vernal pool habitat analysis for submittal to USFWS. Work performed for El Dorado Irrigation District.

**Suisun Valley Road Bridge (23C-077) at Suisun Creek Project** (2004 - 2005). Biologist who conducted a USFWS site assessment and protocol surveys for California red-legged frog and assisted with preparation of a Natural Environment Study and jurisdictional delineation report for the Suisun Valley Road Bridge Project in Solano County. Work performed for Solano County Public Works.

**Sumps 28 & 70 Outfall Stabilization Project** (2005). Biologist who conducted a biological resources survey and prepared a Biological Assessment for Valley elderberry longhorn beetle and delta smelt for submittal to USFWS for this outfall stabilization project on the Sacramento River near Freeport in Sacramento County. Work performed for the City of Sacramento.

**Temple Vineyards Water Rights Application** (2006 - 2007). Biologist who conducted supplementary biological surveys, arborist surveys, and rare plant surveys to update an outdated biological resource assessment for the Temple Vineyards in Napa County in support of CEQA documentation for a water rights application. Conducted U.S. Fish & Wildlife Service (USFWS) protocol surveys for Valley elderberry longhorn beetle. Prepared a technical memorandum for the State Water Board reporting the results of the surveys. Work performed for Temple Vineyards.

**Union Public Utility District Water Storage Tank Project** (2004 - 2005). Biologist who conducted USFWS protocol site assessment and field surveys for California red-legged frog, and prepared the report for submittal to USFWS for this water storage tank project near the City of Murphys in Calaveras County. Assisted with jurisdictional delineation fieldwork and preparation of the jurisdictional delineation report. Work performed for Union Public Utility District.

**Waterman Road Properties Elk Grove Project** (2003). Biologist who conducted Valley Elderberry Longhorn Beetle surveys according to USFWS protocol and prepared the report for submittal to the USFWS for the subdivision project in Sacramento County. Work performed for Waterman Road Properties.