COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: October 26, 2016

TO: Planning Commission

FROM: Planning Staff

SUBJECT: EXECUTIVE SUMMARY: Consideration of the certification of an Initial Study and Mitigated Negative Declaration, a Use Permit and an Architectural Review Permit to allow for the construction of a new wireless telecommunications facility immediately adjacent to two existing telecommunications facilities. The proposed Verizon facility will primarily consist of (1) a single 24-foot high pole, (2) six antennas mounted on the pole, (3) ten remote radio heads, (4) two surge protectors, and (5) four equipment cabinets within a proposed 540 sq. ft. lease area to be enclosed by a 6-foot fence. The parcel is located in a CalTrans right-of-way, on the west side of I-280, in the unincorporated Stanford Lands area of San Mateo County.

County File Number: PLN 2016-00218 (Verizon/CalTrans)

PROPOSAL

The applicant requests a Use Permit and Architectural Review Permit to allow the installation of a new Verizon wireless telecommunications facility immediately adjacent to two existing telecommunications facilities. The proposed Verizon facility will primarily consist of (1) a single 24-foot high pole; (2) six antennas mounted on the pole; (3) ten remote radio heads mounted on a ground mounted utility H-frame; (4) two surge protectors; and (5) four equipment cabinets to be erected on a 26-inch high, 204 sq. ft. platform, within a 540 sq. ft. lease area, to be enclosed by a 6-foot chain link fence with privacy slats. A shared 18-foot by 30-foot gravel parking area will also be created between the existing facilities and the proposed facility. The electrical connection will be installed underground and no overhead wires will be used.

The site is located west of I-280, on the east side of Lawler Ranch Road, in a CalTrans right-of-way. The subject site is currently used as a landscape buffer and frontage road adjacent to I-280, with existing telecommunications facilities.

RECOMMENDATION

That the Planning Commission certify the Initial Study and Mitigated Negative Declaration, and approve the Use Permit and Architectural Review Permit, County

File Number PLN 2016-00218, by making the required findings and adopting the conditions of approval listed in Attachment A.

SUMMARY

An analysis of the environmental impact of the project can be found in the Initial Study and Mitigated Negative Declaration prepared for the project. It was determined that the project will not have significant environmental impacts, and a potentially significant visual impact will be avoided due to distance, differences in elevation/topography, and existing vegetation that will screen the proposed facility so that it will be minimally visible from I-280.

The proposal is subject to (1) the State Streets and Highways Code; (2) General Plan Policies for Visual Quality, Land Use, and Transportation; and (3) the Wireless Telecommunications Regulations of the Zoning Regulations, including the standards for new or co-located facilities (Sections 6512.2, 6513.1 and 6513.2). The project, as conditioned, complies with all applicable Architectural Review Standards, General Plan Policies, and Wireless Telecommunications Regulations. Key aspects of the project that were analyzed include visual quality, co-location and appropriateness of the use. The project is consistent with Visual Quality/Scenic Corridor guidelines found in all of these documents. The proposed pole will only be minimally visible from the scenic corridor; the pole, antennas and equipment lease area will be screened by the existing trees. Also, there is an 18-foot to 35-foot elevation differential between the highway and the base of the pole. The elevation difference, and the speed at which vehicles travel, as well as other factors, prevent the proposed project from having significant adverse visual impacts.

In addition, use permit findings that the project is not detrimental to, and is necessary for public welfare can be made based on (1) the project, which does not have a negative visual impact; (2) the site, which was selected immediately adjacent to existing wireless telecommunications facilities in order to co-locate facilities in a scenic corridor; (3) the radio frequency report, which shows that the site will operate at emission levels which do not exceed Federal Communications Commission (FCC) exposure limits; and (4) the use of the facility, which will improve communication networks for the public.

As summarized above and detailed in the staff report, the proposal is in compliance with all applicable regulations.

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COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: October 26, 2016

TO: Planning Commission

FROM: Planning Staff

SUBJECT: Consideration of the certification of an Initial Study and Mitigated Negative Declaration, subject to the California Environmental Quality Act, a Use Permit, pursuant to Sections 6500 and 6512 of the County Zoning Regulations, and an Architectural Review Permit, pursuant to the State Streets and Highways Code, to allow for the construction of a new wireless telecommunications facility immediately adjacent to two existing telecommunications facilities. The proposed facility will primarily consist of (1) a single 24-foot high pole, (2) six antennas mounted on the pole, (3) ten remote radio heads, (4) two surge protectors, and (5) four equipment cabinets within a proposed 540 sq. ft. lease area to be enclosed by a 6-foot fence. The parcel is located in a CalTrans right-of-way, on the west side of I-280, in the unincorporated Stanford Lands area of San Mateo County.

County File Number: PLN 2016-00218 (Verizon/CalTrans)

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The site is located west of I-280 within the Junipero Serra State Scenic Corridor, on the east side of Lawler Ranch Road, in a CalTrans right-of-way. The subject site is currently used as a landscape buffer and frontage road adjacent to I-280, with existing telecommunications facilities.

RECOMMENDATION

That the Planning Commission certify the Negative Declaration, and approve the Use Permit and Architectural Review Permit, County File Number PLN 2016-00218, by making the required findings and adopting the conditions of approval listed in Attachment A.

BACKGROUND

Report Prepared By: Angela Chavez, Project Planner, Telephone 650/599-7217

Applicant: Verizon Wireless

Owner: CalTrans

Location: Lawler Ranch Road, Stanford Area Lands

APN: N/A, CalTrans Right-of-Way (ROW), Across from APN 073-250-050

Size: N/A

Surrounding Zoning: R-E/S-11 (Residential Estates/Single-Family Residential)

General Plan Designation: Institutional

Sphere-of-Influence: Town of Woodside

Existing Land Use: Wireless Telecommunications Facilities

Water Supply: N/A

Sewage Disposal: N/A

Flood Zone: Zone X (areas of minimal flooding), FEMA Panel 06081C0311E, effective date October 16, 2012.

Environmental Evaluation: Initial Study and Negative Declaration issued with a public review period from September 27, 2016 to October 17, 2016.

Setting: The site is approximately 0.25 miles north of the intersection of Lawler Ranch Road and Sand Hill Road, on the east side of Lawler Ranch Road. Lawler Ranch Road is a public road for a few hundred feet traveling from Sand Hill Road, and then becomes a private road leading to undeveloped property. The project site is located in a CalTrans right-of-way, on the west side of I-280, approximately 125 feet west of Junipero Serra State Highway, which is part of the Junipero Serra State Scenic Corridor. The project site is currently developed with two wireless telecommunications

facilities which accommodate three carriers. The existing site consists of a 15-foot pole and a 25-foot pole with antenna arrays on each pole and equipment cabinets within two separate fenced lease areas.

DISCUSSION

A. KEY ISSUES

1. Conformance with the General Plan

The project complies with all applicable General Plan Policies, with specific discussion of the following chapters:

Chapter 4 – Visual Quality

Policies 4.20 (*Utility Structures*) and 4.21 (*Scenic Corridors*) require minimizing the adverse visual quality of utility structures and discuss the protection and enhancement of the visual quality of scenic corridors by managing the location and appearance of structural development. The proposed new pole is located in a landscaped area with mature trees, approximately 125 feet west of Junipero Serra Highway. The proposed facility will include a 24-foot pole with the top of the antenna array reaching a 24-foot high maximum.

The new wireless telecommunications facility may be visible for some drivers using I-280, but in most cases it is not visible from the scenic highway for the following reasons: (1) there are mature trees around the facility which provide screening from the highway, (2) there is an 18-foot to 35-foot elevation differential between the highway, which is lower, and the base of the pole, (3) the pole itself is approximately 2 feet in diameter, (4) the vehicle speeds for cars along Highway I 280 exceed 50 miles per hour and require visual focus on the road, and (5) the existing screening of the site will not be altered. The visual impact of the proposed wireless telecommunications facility will be minimal due to these factors, and the project is in compliance with General Plan Visual Quality Policies.

Chapter 7 – General Land Use

The subject parcel is designated “Institutional,” which includes cultural, educational, and public service uses. Much of the surrounding land is owned and utilized by Stanford University. The “Institutional” overlay extends to the east side of the highway, and includes the right-of-way, which is the site for this proposal. The use of a small portion of the site for the telecommunications facility does not preclude the continued use of the surrounding land for typical right-of-way uses, or any land uses associated with Stanford University.

Chapter 12 – Transportation

The project meets the applicable local circulation policies found in Policy 12.15, which include: (1) maximum freedom of movement and adequate access to various land uses, (2) routes for truck traffic which avoid residential areas and are structurally designed to accommodate trucks, and (3) access for emergency vehicles. Lawler Ranch Road is a public road for approximately the first 1,500 feet where it then transitions into a private road. The project will utilize this existing road for access and is situated in a location that does not restrict other land uses. The project will be required to meet emergency access requirements as specified by the Woodside Fire Protection District.

2. Conformance with Zoning Regulations

The proposed development is located on a CalTrans road right-of-way, which is within the County's R-E/S-11, Residential Estates Zoning District. Wireless communications facilities are not specifically enumerated as an allowed use within the R-E/S-11 Zoning District, but are allowed per Section 6500 of the County Zoning Regulations with the issuance of a use permit. Although it is zoned "residential," the uses on this property are associated with transportation and telecommunications facilities. As such, an analysis of compliance with the typical development standards for residential uses is not meaningful.

3. Compliance with Telecommunications Ordinance

Section 6510 of the Zoning Regulations (Wireless Telecommunications Facilities), contains development guidelines required for both new and co-located telecommunications facilities. This proposal involves a co-location facility immediately adjacent to an existing wireless telecommunications facility. Part A.3 of Section 6513 of the Ordinance (Permit Requirements and Standards for Co-location Facilities) states that if an environmental report which addressed the environmental impacts of future co-location facilities was not prepared in connection with the original telecommunications facility, a proposed co-location facility is subject to standards and procedures outlined for new wireless telecommunications facilities (Section 6512.2), in addition to standards and procedures for co-location facilities (Sections 6513.1 and 6513.2). While previous environmental studies have been prepared for this project site, they did not evaluate the impacts of a third pole. As such, a separate environmental document has been prepared for the subject proposal, as discussed further below and in Section B.

The Zoning Regulations (Section 6512.2.A) generally prohibit new facilities in areas with sensitive habitats. The project site itself does not contain any

rare or endangered animal or plant species identified on the California Natural Diversity Database. There are threatened perennial herbs approximately 200 feet away from the project site, but not on the project site itself. Since there is minimal ground disturbance associated with this project (the lease area is 375 sq. ft.), no impact will occur. There have been sightings of the California red-legged frog further north at the end of Lawler Ranch Road, but it is unlikely to occur at this small upland area that is between the freeway and Lawler Ranch Road, because it is sparsely vegetated, and already developed with wireless telecommunications facilities.

Section 6512.2.B discourages location of telecommunications facilities in residential zones. The site is located in an area zoned R-E/S-11, Residential Estates, a residential designation; however, the property is owned and operated by CalTrans as a landscape buffer on a major highway. The nearest residence is approximately 800 feet away and on the east side (opposite) of the freeway.

Section 6512.2.C requires that co-location be investigated as an alternative to a new facility, if it can provide equivalent coverage with less environmental impact. Section 6512.2, Item D, states that except in cases where aesthetically inappropriate, new facilities should be constructed to support co-location. Use Permit PLN 1999-00679 was approved by the Planning Commission in 2002, and allowed the construction of a 15-foot high pole with antennas which was subsequently amended to increase the height of the pole by 10 feet (for a maximum of 25-feet). In 2010, a separate 22-foot high pole with associated equipment was approved and constructed adjacent to the original site in a separate 375 sq. ft. lease area. While the existing facility as expanded does not prevent additional co-location on the existing poles, as a practical matter, the height of the pole would need to be extended yet again to accommodate additional antennas. Anything higher than about 25 feet in height would be visible from the highway, as it would extend beyond the existing tree cover (see Photo Simulations, Attachment F). The applicant's proposal for an adjacent facility with a new separate pole under the 25-foot height threshold is, therefore, a better co-location solution for this particular site.

The Zoning Regulations (Sections 6512.2.E and 6513.1.B) state that adverse visual impacts should be limited through: (1) siting out of public view, (2) use of existing and new vegetation, and (3) preventing excessive height. The proposed facility will be slightly visible from I-280; however, the 125-foot distance from the road, 18-foot to 35-foot elevation differential, and the existing tree canopy will minimize the impact from public views. In addition, as the trees continue to grow, they will provide improved screening when traveling along Junipero Serra Highway (I-280), and the already small visual impact of the pole will be further diminished.

To further minimize visual impact and comply with regulations (Sections 6512.2.F and 6513.1.C), the new antennas and equipment will be the same dark green color to blend in with the surrounding vegetation and to ensure that paint/finish on the antennas is not reflective (Sections 6512.2.G and 6513.1.D). These features of the site, along with placement of equipment and selected materials allow the proposed development to meet the Architectural Review Criteria for a State Scenic Corridor (Sections 6512.2.H and 65131.1.E) discussed in Section 4.

The proposed facility meets the required standards of Section 6513.2 (Performance Standards for Co-Location Facilities) for lighting, licensing, provision of permanent power source, timely removal of the facility, and visual resource protection. The proper licenses will be obtained from both the Federal Communications Commission (FCC) and the Federal Aviation Administration (FAA), power for the facility can easily be furnished to the site, there is little visual impact, and conditions of approval require maintenance and/or removal when necessary. Road access to the site is existing and the project will provide an off-street parking area to ensure that routine and emergency access along Lawler Ranch Road remains unobstructed. No noise in excess of the County's Noise Ordinance will be produced.

In addition to meeting the aforementioned standards, the application is in agreement with the other significant standards found in the Wireless Telecommunications Facilities Ordinance and addressed all application requirements.

4. Conformance with Architectural Review Standards

The architectural review's prime consideration is preventing the erection of structures, additions, or alterations which do not properly relate to their sites and detract from the natural landscape features of the Junipero Serra area. Architectural review objectives are similar to the criteria discussed in Sections 1 and 3 involving site planning, materials, size and scale. The proposal, as conditioned, meets the basic Junipero Serra standards as discussed in the previous sections.

5. Conformance with the Use Permit Findings

Under the provisions of Section 6500, wireless communications facilities are permitted in the Residential Estates Zoning District with the issuance of a use permit. Two findings are required to be made in order for issuance of a use permit:

a. Find that the establishment, maintenance and/or conducting of the use will not, under the circumstances of the particular case,

be detrimental to the public welfare or injurious to property or improvements in said neighborhood.

The proposal is for a new wireless telecommunications facility to be co-located in a 540 sq. ft. lease area immediately adjacent to a similar existing facility. The proposal does not impede the use of the remainder of the parcel and surrounding area for transportation purposes (landscape buffer and frontage road), and the design conditions of approval ensure that the public welfare is not injured by the proposed facility.

New cellular communications facilities, such as the proposed project, require the submittal and review of radio frequency (RF) field strength reports to ensure that the RF emissions emanating from the proposed antennas do no exceed the Federal Communications Commission's public exposure limits.

The RF report submitted (included as Attachment G) for the proposed project analyzes the emissions resulting from the proposed equipment, in addition to estimations of the RF from the existing antennas on-site, which are utilized by multiple communications companies. The RF level for all carriers' antennas at ground level is 37% of the public exposure limit. Design features of the project reduce the impact of the project on public health to a level of not significant. The site is fenced off from the remainder of the parcel, and a member of the public cannot get into the fenced off-lease area without special access to the site. The antenna array has two sides; therefore, the emitted RF emissions are dispersed over the two sides. In addition, the lowest portion of the antennas are all located approximately 16 feet above the ground, which greatly reduces the exposure levels and potential for harm to the public.

The proposed antenna complies with the FCC controlled exposure limit and the uncontrolled/general population exposure limits. Additionally, site fencing and the infrequency of access further diminish the potential for human or animal exposure to radio frequency energy generated by the antenna.

Based on the aspects of the proposal discussed above, the project will not be detrimental to the public welfare or injurious to property or improvements in the surrounding area.

b. Find that the use is necessary for the public health, safety, convenience, or welfare.

Adoption of this finding is appropriate because the project will increase reliability and capacity for the existing telecommunications system, which is utilized by the residents of San Mateo County. The project is necessary for public health, safety, convenience or welfare, as it will allow for increased transmission capability for wireless data transfer for wireless telecommunications, which is a public utility and service.

B. ENVIRONMENTAL REVIEW

An Initial Study was prepared for this project, pursuant to the California Environmental Quality Act (CEQA). It was determined that there will not be any significant impacts created by the proposed project. A Mitigated Negative Declaration was posted on September 27, 2016, with the public review ending on October 17, 2016. No comments were received. A copy of the Mitigated Negative Declaration is attached to this staff report (Attachment H).

ATTACHMENTS

A. Recommended Findings and Conditions of Approval
B. Location Map
C. Site Plans
D. Equipment Specifications/Elevations
E. Operational Plan and Co-Location Analysis
F. Photo Simulations
G. Radio Frequency Report
H. Initial Study and Mitigated Negative Declaration

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Attachment A

County of San Mateo
Planning and Building Department

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN 2016-00218 Hearing Date: October 26, 2016

Prepared By: Angela Chavez
Project Planner

For Adoption By: Planning Commission

RECOMMENDED FINDINGS

Regarding the Mitigated Negative Declaration, Find:

1. That the Mitigated Negative Declaration is complete, correct and adequate and prepared in accordance with the California Environmental Quality Act and applicable State and County Guidelines.

2. That, on the basis of the Initial Study, comments received thereto, and testimony presented and considered at the public hearing, there is no substantial evidence that the project, if subject to the mitigation measures contained in the Mitigated Negative Declaration, will have a significant effect on the environment.

3. That the Mitigated Negative Declaration reflects the independent judgment of San Mateo County.

Regarding the Use Permit, Find:

4. That the establishment, maintenance, and/or conducting of the proposed use will not, under the circumstances of the particular case, be detrimental to the public welfare or injurious to property or improvements in said neighborhood. The cumulative radio frequency level for this project site will be 37% of the applicable public exposure limit at ground level. There is no evidence to suggest that this use will impact nearby property or public improvements.

5. That the project is necessary for the public health, safety, convenience or welfare, as it will allow for increased transmission capability for wireless data transfer.

Regarding the Architectural Review Permit, Find:

6. That the proposed Verizon Wireless telecommunications facility will be minimally visible from the Junipero Serra I-280 Scenic Corridor, due to distance, difference in elevation/topography, and screening provided by existing vegetation.

RECOMMENDED CONDITIONS OF APPROVAL

Current Planning Section

1. This approval applies only to the proposal, documents and plans described in this report and submitted to and approved by the Planning Commission on October 26, 2016. Minor adjustments to the project in the course of applying for building permits may be approved by the Community Development Director if they are consistent with the intent of, and in substantial conformance with, this approval.

2. Prior to final inspection for the building permit, the applicant shall paint and maintain the pole and antennas a dark green color to blend in, and have low visibility from the scenic roads in the area.

3. The applicant shall submit the following fees to the Current Planning Section:

   Within four (4) working days of the final approval date of this permit, the applicant shall pay an environmental filing fee of $2,210.25 (fee effective January 1, 2016), as required under Fish and Game Code Section 711.4(d), plus a $50.00 recording fee (total $2,260.25). The check shall be made payable to the San Mateo County Clerk, and submitted to the project planner to file with the Notice of Determination.

4. This use permit shall be valid for ten (10) years following the date of final approval. The applicant shall file for a renewal of this permit six months prior to expiration with the San Mateo County Planning and Building Department, if continuation of this use is desired.

5. At the time of use permit renewal, if staff has determined, based on a field inspection, that the color of the pole and antennas is no longer in compliance with the approved color of non-reflective dark green, the applicant shall repaint the structure and/or antennas.

6. The applicant shall receive and maintain approval from the Federal Communications Commission for the operation of the project at this site. Upon receipt of this approval, the applicant shall supply the Current Planning Section with proof of approval. If this approval is ever revoked, the applicant shall inform the Current Planning Section of the revocation within thirty (30) days of notice of revocation.

7. Any changes in use or intensity of use shall require an amendment to the use permit. Amendment to this use permit shall require compliance with all application, fee payment, and public hearing requirements, prior to construction.

8. This installation shall be removed in its entirety at that time when this technology becomes obsolete or this facility is no longer needed. The applicant shall notify the Current Planning Section within thirty (30) days if it ceases to use the facility.

9. The applicant shall obtain a building permit and install the pole, antennas, and miscellaneous power/communication lines in accordance with the approved plans and conditions of approval. Any new cabling shall be installed underground.

10. During project construction, the applicant shall, pursuant to Chapter 4.100 of the San Mateo County Ordinance Code, minimize the transport and discharge of stormwater runoff from the construction site into storm drain systems and water bodies by:

    a. Using filtration materials on storm drain covers to remove sediment from dewatering effluent.

    b. Stabilizing all denuded areas and maintaining erosion control measures continuously between October 1 and April 30.

    c. Removing spoils promptly, and avoiding stockpiling of fill materials, when rain is forecast. If rain threatens, stockpiled soils and other materials shall be covered with a tarp or other waterproof material.

    d. Storing, handling, and disposing of construction materials and wastes so as to avoid their entry to the storm drain system or water body.

    e. Avoiding cleaning, fueling, or maintaining vehicles on-site, except in an area designated to contain and treat runoff.

    f. Limiting and timing application of pesticides and fertilizers to avoid polluting runoff.

11. **Mitigation Measure 1:** The applicant shall implement the following dust control measures during construction activities:

    a. Water all active construction and grading areas at least twice daily.

    b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.

    c. Apply water two times daily, or apply (non-toxic) soil stabilizers on all paved access roads, parking areas, and staging areas at the project site.

d. Sweep streets daily (with water sweepers) if visible soil material is carried on adjacent public streets.

e. Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).

12. **Mitigation Measure 2:** The applicant shall implement the following basic construction measures at all times:

    a. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxic Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

    b. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.

    c. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person, or his/her designee, shall respond and take corrective action with 48 hours. The Bay Area Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations.

Woodside Fire Protection District

13. Address shall be clearly posted and visible from the street with a minimum of 4-inch numbers on a contrasting background.

14. All electrical shut offs shall have a permanent placard.

15. The applicant shall provide 100-feet of defensible space around the proposed new structure prior to the start of construction. This does not permit the removal of trees or significant vegetation please consult with the County Planning Department before the removal of any trees or vegetation.

16. Upon final inspection 30-feet perimeter of defensible space shall be provided. This does not permit the removal of trees or significant vegetation please consult with the County Planning Department before the removal of any trees or vegetation.

Department of Public Works

17. No proposed construction work within the County right-of-way shall begin until County requirements for the issuance of an encroachment permit, including

review of the plans, have been met and an encroachment permit issued. Applicant shall contact a Department of Public Works Inspector 48 hours prior to commencing work in the right-of-way.

18. The applicant shall obtain an encroachment permit with CalTrans prior to the issuance of a building permit.

CalTrans

19. Please be advised that any work or traffic control that encroaches onto the State right-of-way requires an encroachment permit that is issued by CalTrans. Traffic-related mitigation measures should be incorporated into the construction plans prior to the encroachment permit process. To apply, a completed Encroachment Permit application, environmental documentation, and five (5) sets of plans clearly indicating State right-of-way must be submitted to the following address:

    David Salladay, District Office
    Chief Office of Permits, MS 5E
    California Department of Transportation, District 4
    P.O. Box 23660
    Oakland, CA 94623-0660

    See the following website for more information:

    http://www.dot.ca.gov/trafficops/ep/index.html

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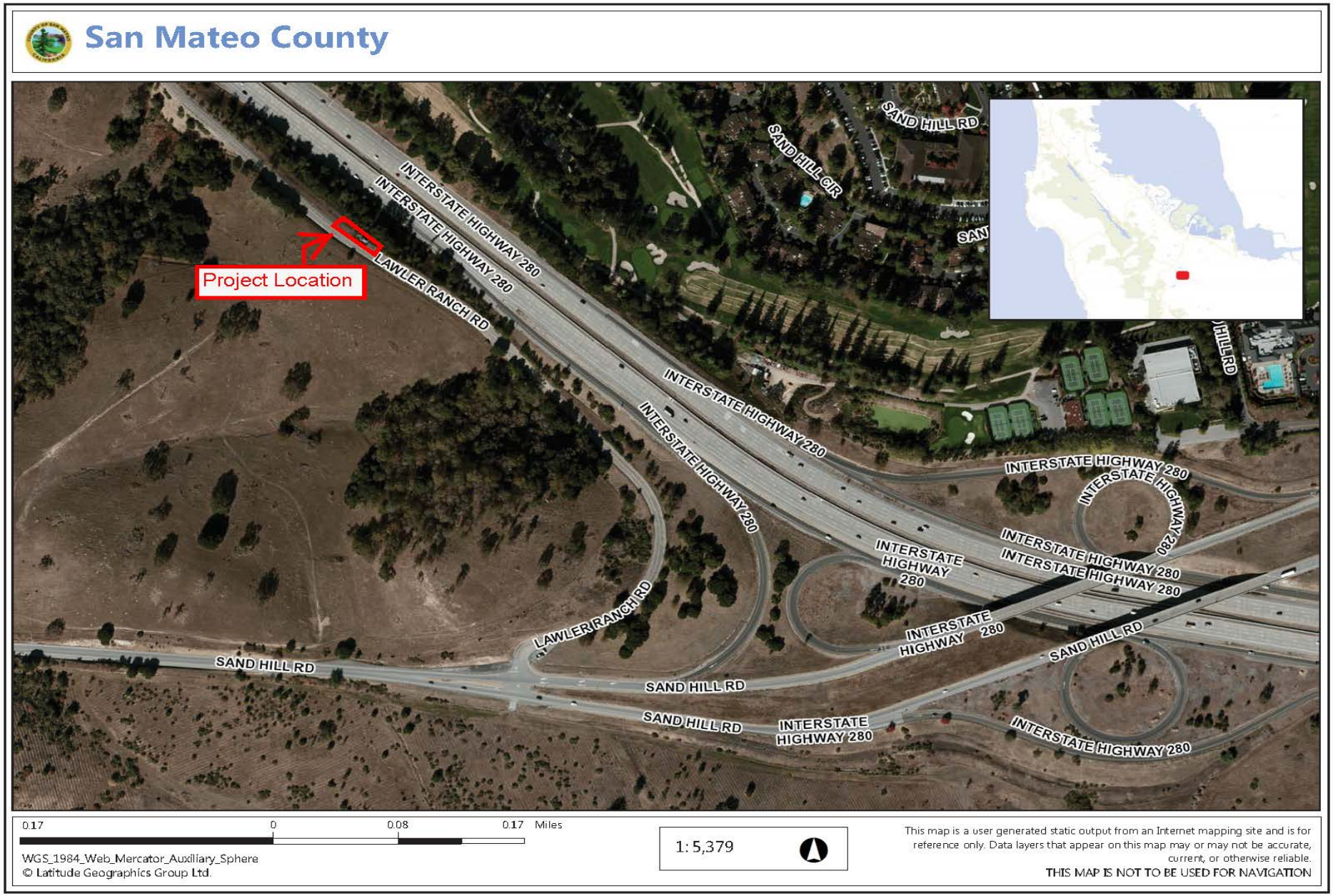


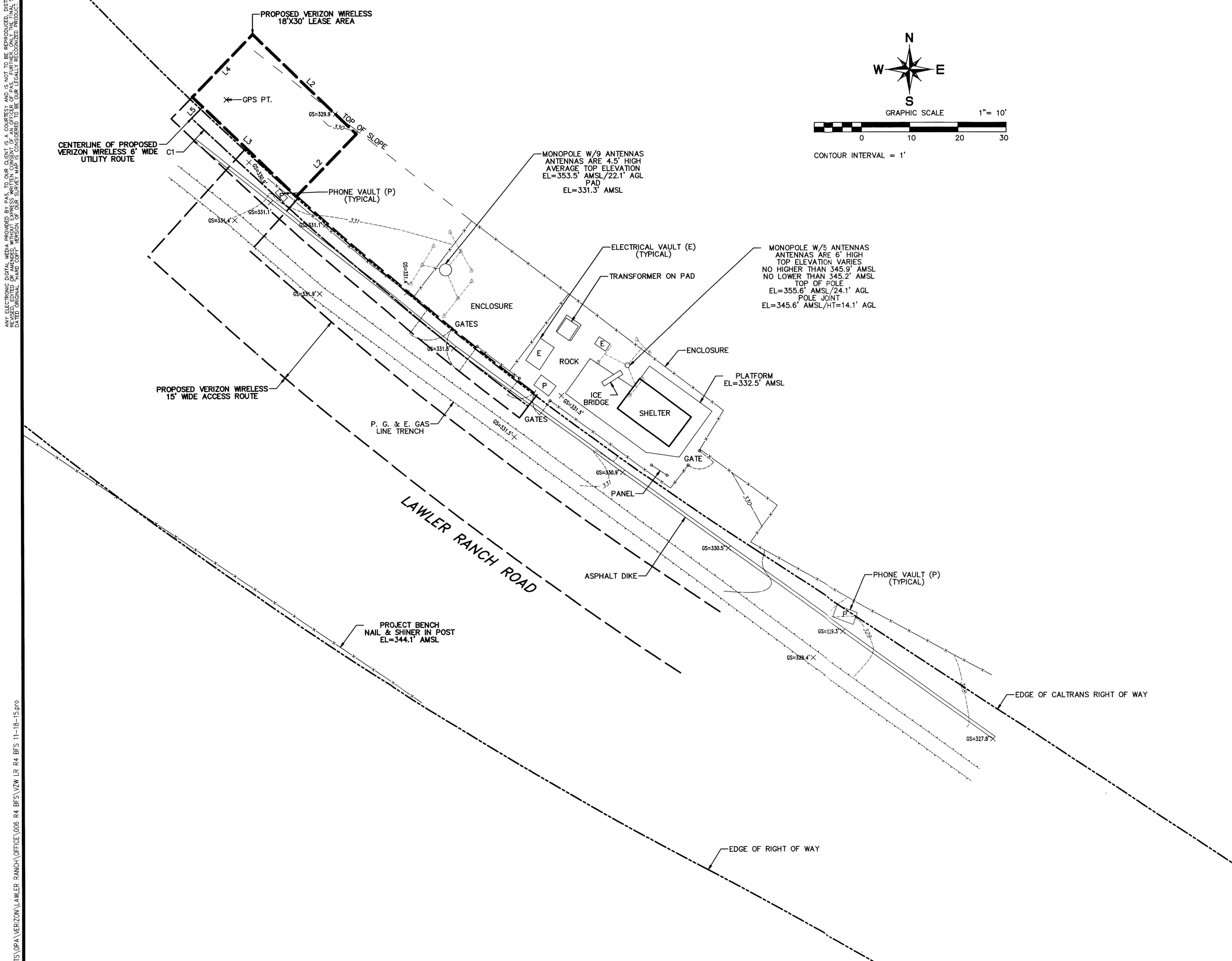
San Mateo County Planning Commission Meeting

Owner/Applicant: **CALTRANS/VERIZON WIRELESS** Attachment: **B**

File Numbers: **PLN2016-00218**

LINE	DELTA	RADIUS	ARC	CHORD BEARING	CHORD
C1	6°42'15"	787.00'	92.09'	S49°22'52"E	92.03'

LINE	BEARING	DISTANCE
L1	S45°51'16"E	30.00'
L2	S44°08'44"W	18.00'
L3	N45°51'16"W	30.00'
L4	N44°08'44"E	18.00'
L5	S44°11'22"W	3.30'



SITE MAP

SCALE: 1"=10'

A

LEGEND

- MANHOLE
- FIRE HYDRANT
- LIGHT POLE
- MONUMENT
- TREE
- HANDICAPPED PARKING
- JP JOINT POLE
- TP TELEPHONE POLE
- PP POWER POLE
- EL=124.5' SPOT ELEVATION
- EDGE OF PAVEMENT
- OVERHEAD ELECTRIC LINE
- FENCE LINE
- PROPERTY LINE

AMSL........ABOVE MEAN SEA LEVEL

AGL..........ABOVE GROUND LEVEL

CP #......FIELD CONTROL POINT

DATE OF FIELD VISIT: 02/05/15

SURVEYED BY/ OR UNDER THE DIRECTION OF: Oliver Philip Auer L.S. 5075

NOTES:

THIS IS NOT A BOUNDARY SURVEY. THIS IS A CELLULAR TELECOMMUNICATIONS TOPOGRAPHIC SURVEY MAP WITH EXISTING PARENT PARCEL LINES AND EASEMENTS BEING A GRAPHIC DEPICTION OF VARIOUS INFORMATION GATHERED FROM PRELIMINARY REPORTS, RECORD INFORMATION AND AVAILABLE MONUMENTS FOUND DURING THE FIELD SURVEY. UNLESS OTHERWISE NOTED, NO UNDERGROUND UTILITY LOCATING SERVICE COMPANY WAS CONTACTED PRIOR TO THIS MAP BEING PREPARED; THEREFORE, THERE MAY BE NON-VISIBLE OR OBSCURE UTILITIES EXISTING ON THE PROPERTY NOT SHOWN ON THIS MAP.

PARENT PARCEL DESCRIPTION:

CALTRANS RIGHT OF WAY.

LEASE AREA DESCRIPTION:

<TO BE PREPARED AT TIME OF FINAL SURVEY ISSUE>

JOINT ACCESS AND UTILITY ROUTE DESCRIPTION:

<TO BE PREPARED AT TIME OF FINAL SURVEY ISSUE>

UTILITY ROUTE DESCRIPTION:

<TO BE PREPARED AT TIME OF FINAL SURVEY ISSUE>

BASIS OF ELEVATIONS: NAVD 88.

BASIS OF BEARINGS: CALIFORNIA STATE PLANE COORDINATE SYSTEM, ZONE 3, NAD 83.

PROJECT BENCH: AS INDICATED HEREON.

LANDLORD INFORMATION: MAHNAZ RASTAKHIZ – CALTRANS
111 GRAND AVENUE
OAKLAND, CA 94623

NET AREA OF:
UNDERLYING PARCEL(S): N/A

SITE LOCATED IN FLOOD ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, PER FEMA FIRM COMMUNITY PANEL NUMBER 06081-C0311E, EFFECTIVE DATE OCTOBER 16, 2012.

FAA 1A CERTIFICATION:

LATITUDE AND LONGITUDE WAS OBTAINED FROM INFORMATION PROVIDED BY A GPS SURVEY. THE GEODETIC POSITION SHOWN WAS DETERMINED UTILIZING FAST-STATIC GPS OBSERVATIONS FROM NGS CORS STATION(S) USING TRIMBLE 4600LS RECEIVERS. THE DATA WAS DIFFERENTIALLY CORRECTED WITH TRIMBLE GPS SURVEY SOFTWARE.

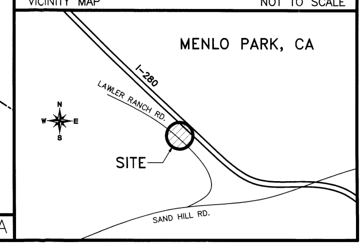
LATITUDE, LONGITUDE AND ELEVATIONS DENOTED ON THIS SURVEY MEET OR EXCEED THE FEDERAL AVIATION ADMINISTRATION 1-A STANDARD.

ELEVATION OF GROUND AT GPS POINT: 330.2' AMSL

STRUCTURE HEIGHT: N/A

LATITUDE: N37°25'20.45"
LONGITUDE: W122°13'37.68" (NAD 83)

VICINITY MAP — NOT TO SCALE



Phil Auer Surveying
14407 Corte Lejos
Bakersfield, CA 93314
Phone: (661) 587-6129
Mobile: (510) 714-7224
E-mail: ls5075@earthlink.net

verizon WIRELESS

LAWLER RANCH RD.
10 LAWLER RANCH RD.
MENLO PARK, CA 94025

SHEET TITLE: TOPOGRAPHIC SURVEY MAP

Revisions:

Name: LAWLER RANCH RD.
Drawn By: PAD
Checked By: OPA
Scale: AS NOTED
Date: 11/18/15

Job No. N/A

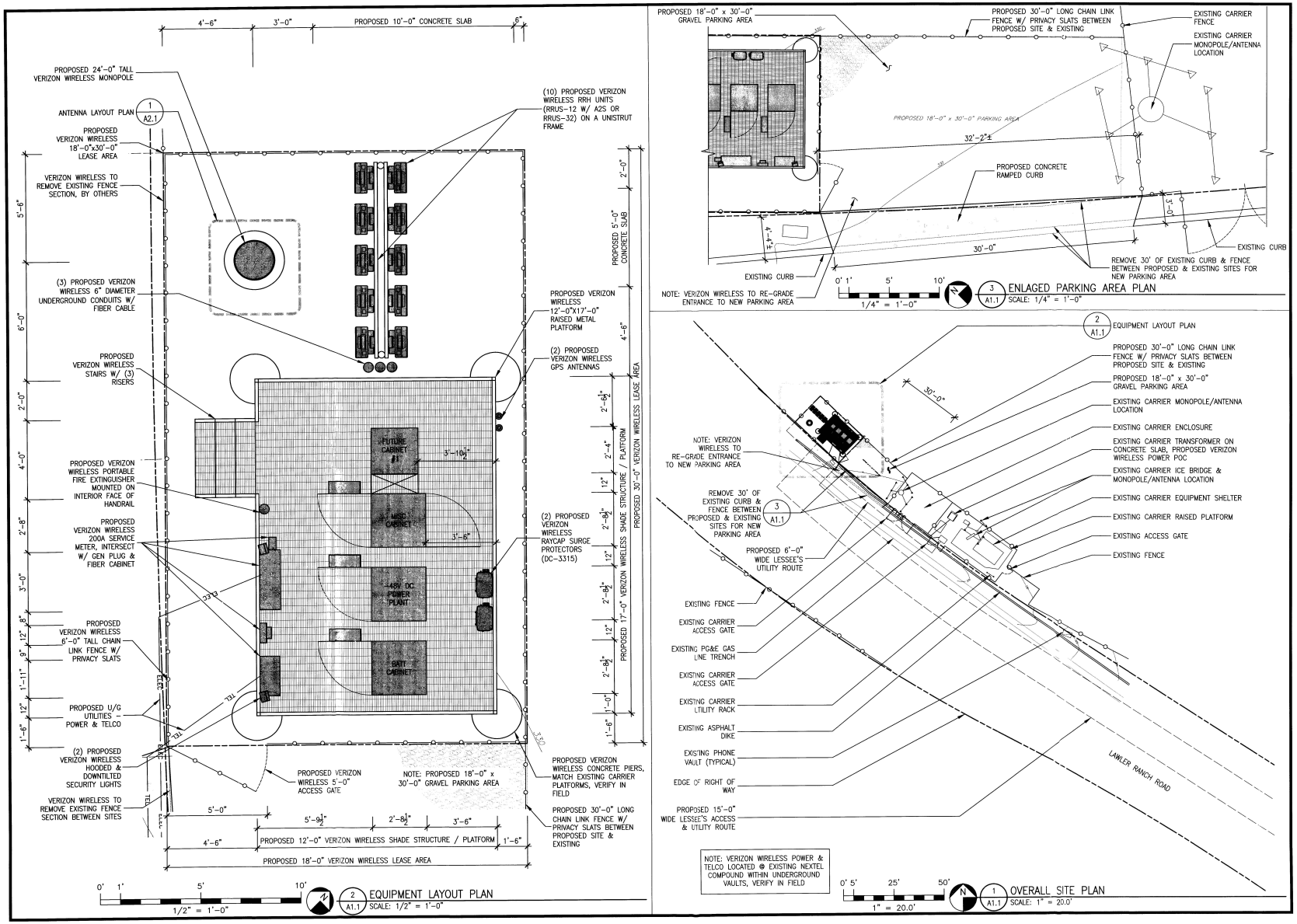
LS1

San Mateo County Planning Commission Meeting

Owner/Applicant: **CALTRANS/VERIZON WIRELESS**

Attachment: **C**

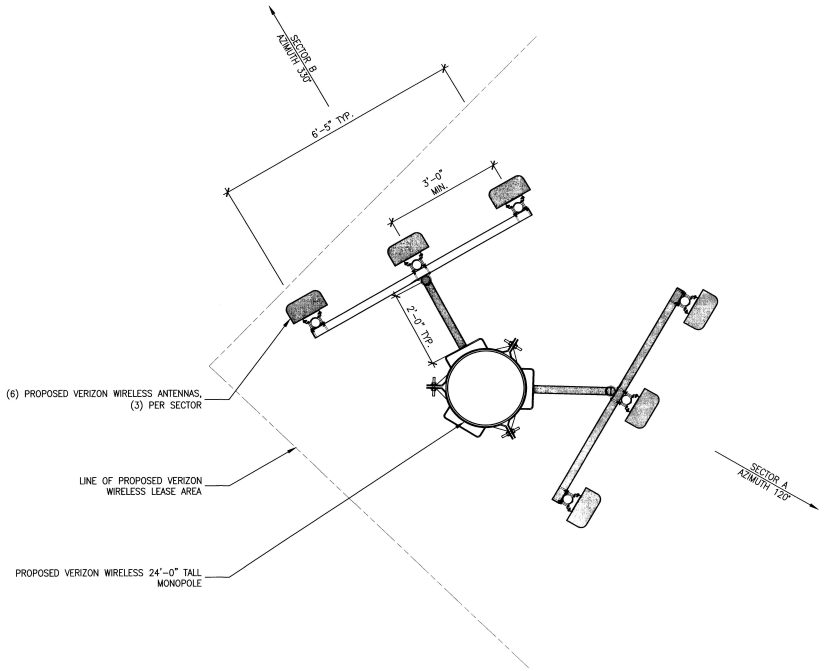
File Numbers: **PLN2016-00218**



San Mateo County Planning Commission Meeting

Owner/Applicant: **CALTRANS/VERIZON WIRELESS** Attachment: **D**

File Numbers: **PLN2016-00218**



0' 1' 5' 10'

3/4" = 1'-0"

1 / A2.1 ENLARGED ANTENNA LAYOUT PLAN

SCALE: 3/4" = 1'-0"

MST ARCHITECTS

verizon

LAWLER RANCH
10 LAWLER RANCH ROAD
MENLO PARK, CA 94025

SHEET TITLE: ANTENNA LAYOUT PLAN

Revisions:
1 11/19/15
2 11/23/15
3 ---
4 ---
5 ---

File: 200.154_A22.dwg
Drawn By: ALB
Checked By: ALB
Scale: AS NOTED
Date: 11/23/2015

Job No. 200.154

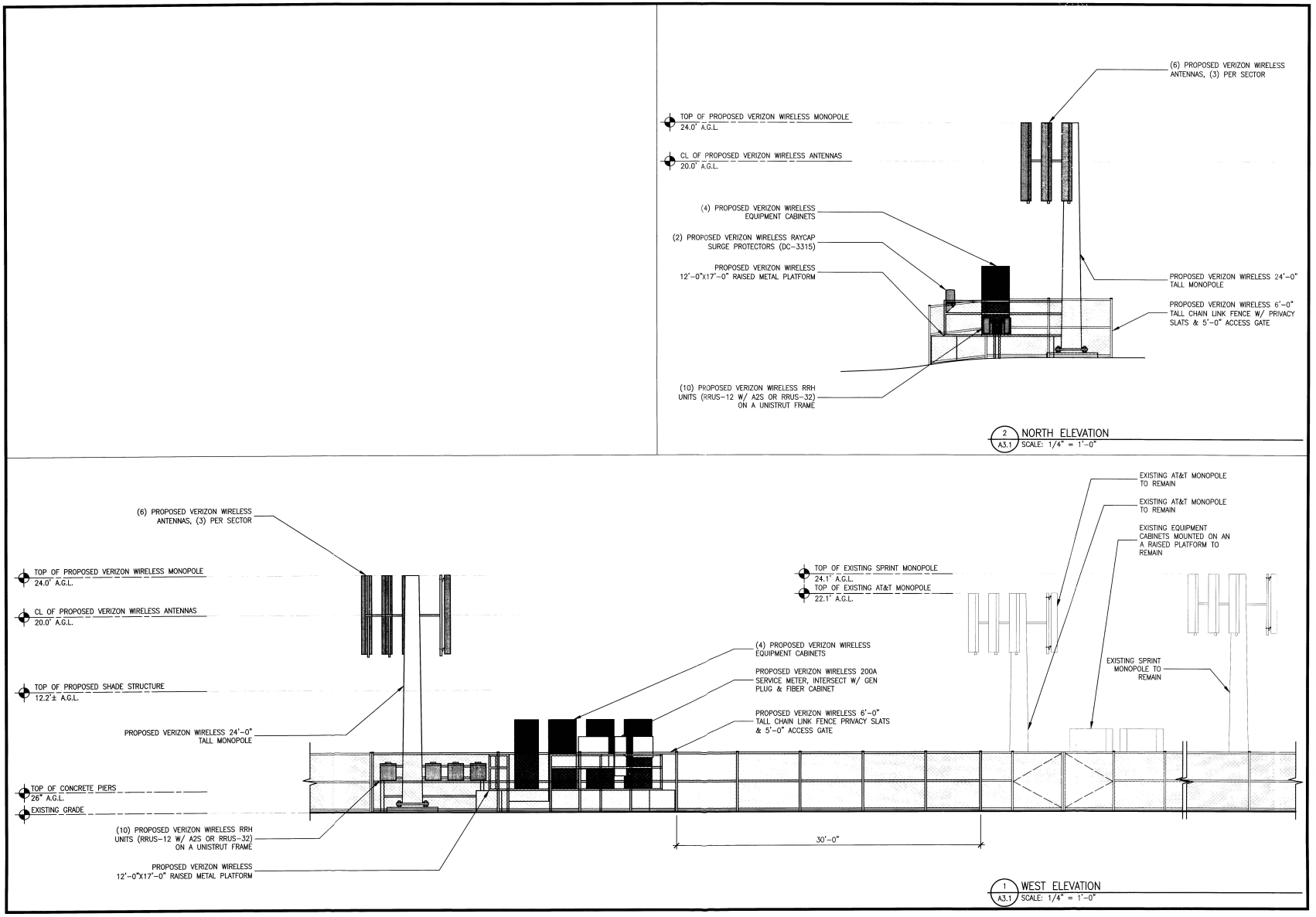
A2.1

San Mateo County Planning Commission Meeting

Owner/Applicant: **CALTRANS/VERIZON WIRELESS**

Attachment: **D**

File Numbers: **PLN2016-00218**



San Mateo County Planning Commission Meeting

Owner/Applicant: **CALTRANS/VERIZON WIRELESS** Attachment: **D**

File Numbers: **PLN2016-00218**

ATTACHMENT E

1757 Greenwood Rd
Pleasanton, CA 94566

T 925-899-1999
F 415-358-5766
bob@beacondev.net

PROJECT DESCRIPTION

Verizon Wireless Installation
10 Lawler Ranch Road, San Mateo County
Verizon Wireless Project ID: 307352 Site Name: Lawler Ranch

Nature of Request

Verizon Wireless seeks a Conditional Use Permit for the installation of a wireless telecommunications facility at the above location. The installation will consist of placing one new 24-foot monopole with six new panel antennas, a new raised metal platform to hold the ground equipment that will house 4 new outdoor equipment cabinets along with associated equipment. The compound will fenced for protection.

Property Description

The subject property is located at 10 Lawler Ranch Road. The property is actually in the Caltrans Right-of-way for Highway 280. The adjacent properties are Hwy 280 and open space.

Project Description

The property is controlled by the California Department of Transportation (Caltrans). The parcel is in they Hwy 280 Right-of-Way. It sites on the west side of the southbound traffic with Lawler Ranch Road boarding it on the West side. Verizon will build it compound on the west side of the right way with access from Lawler Ranch Road. The site will be on top of a rolling hill next to two existing wireless communications sites, both Sprint and AT&T are on property already. A new 24 foot tall monopole will be placed on site with six new panel antennas. The pole and antennas will be painted green to help it blend it to the existing vegetation surrounding the site. Collocation on one of the exiting poles wasn't a viable option for a couple of reason. First the poles were designed and engineered for a single tenant; they could not handle the weight loading for a second set of antennas. Secondly, adding an additional 20 feet to one of the antennas would have created a visual impact that would not be supported due to the Scenic Corridor requirements in this area.

All of the base station equipment will be ground mounted behind the building. Verizon's equipment area will be an 18 x 30 foot lease area. This area will be fenced off with a 6-foot tall chain link fence with green privacy slates. Within the fenced enclosure there will be a 12 x 17 foot raised metal platform that will hold four equipment cabinets and associated equipment, which includes surge protectors, telco cabinet, and interconnect cabinet.

Statement of Operations

The wireless communication facility only requires electrical and telephone services, which have already been brought to the property by the existing tenants. Those services may need to be upgraded but that won't be determined until the project is further along in the process. No nuisances will be generated by the proposed facility, nor will the facility injure the public health, safety, morals or general welfare of the community. Verizon Wireless technology does not interfere with any other forms of communication devices whether public or

private. The additions of this facility will enhance wireless communications for residents or motorists traveling by providing seamless service to numerous customers.

Upon completion of the proposed installation, fine-tuning of the Verizon facility may be necessary, meaning the site will be adjusted once or twice a month by a service technician for routine maintenance. The cabinet on the ground level will be the only item that will need to be maintained on any regular basis. A new parking area will be created off the side of the road so that the technician can safely work on the site. The site is entirely self-monitored and connects directly to a central office where sophisticated computers alert personnel to any equipment malfunction or breach of security.

Because the facility will be un-staffed, there will be no regular hours of operation and no impact to existing traffic patterns. Existing public roads will provide ingress and egress allowing access to the technician who arrives infrequently to service the site. No on-site water or sanitation services will be required as a part of this proposal.

Coverage Objection & Alternative Locations

Verizon Wireless is continually looking at ways to improve both their coverage and their capacity. The use of wireless devices and phones is constantly increasing. Today's smartphones are always on, they are continuously connected to the network: pulling down email, updating Facebook, instagram, texts, etc. This constant connection puts a burden on the network. The coverage objective is increase the coverage as well and increase the capacity of the network for the Lawrence Livermore Lab, the businesses along Patterson Pass and Greenville roads and surrounding areas.

Additional Site Locations Investigated:

1. Sharon Heights Golf Club, 2900 Sand Hill Road, Menlo Park. They would not consider a wireless telecommunication facility on their property.

2. The Horse Park at Woodside, Redwood City, CA and this site was not accepted by Verizon as it would not satisfy the coverage objective. The site would not adequately cover Hwy 280.

3. There were other properties within the Caltrans ROW that were discussed but it was felt that collocating with the existing sites would be the best property to use.

Site Selection Analysis

Verizon's proposed facility will be located in the Caltrans Right-of-way off Hwy 280. The site will be collocated on the property as two existing facilities; both AT&T and Sprint have sites on this property. The site will be placed next to these facilities in order to reduce the external impacts of the site. The pole, antenna and fencing will all be painted a matte green so that it blends into the existing vegetation and area reducing its visual impact. The code encourages collocation over any stand alone facility.

Compliance with Federal Regulations

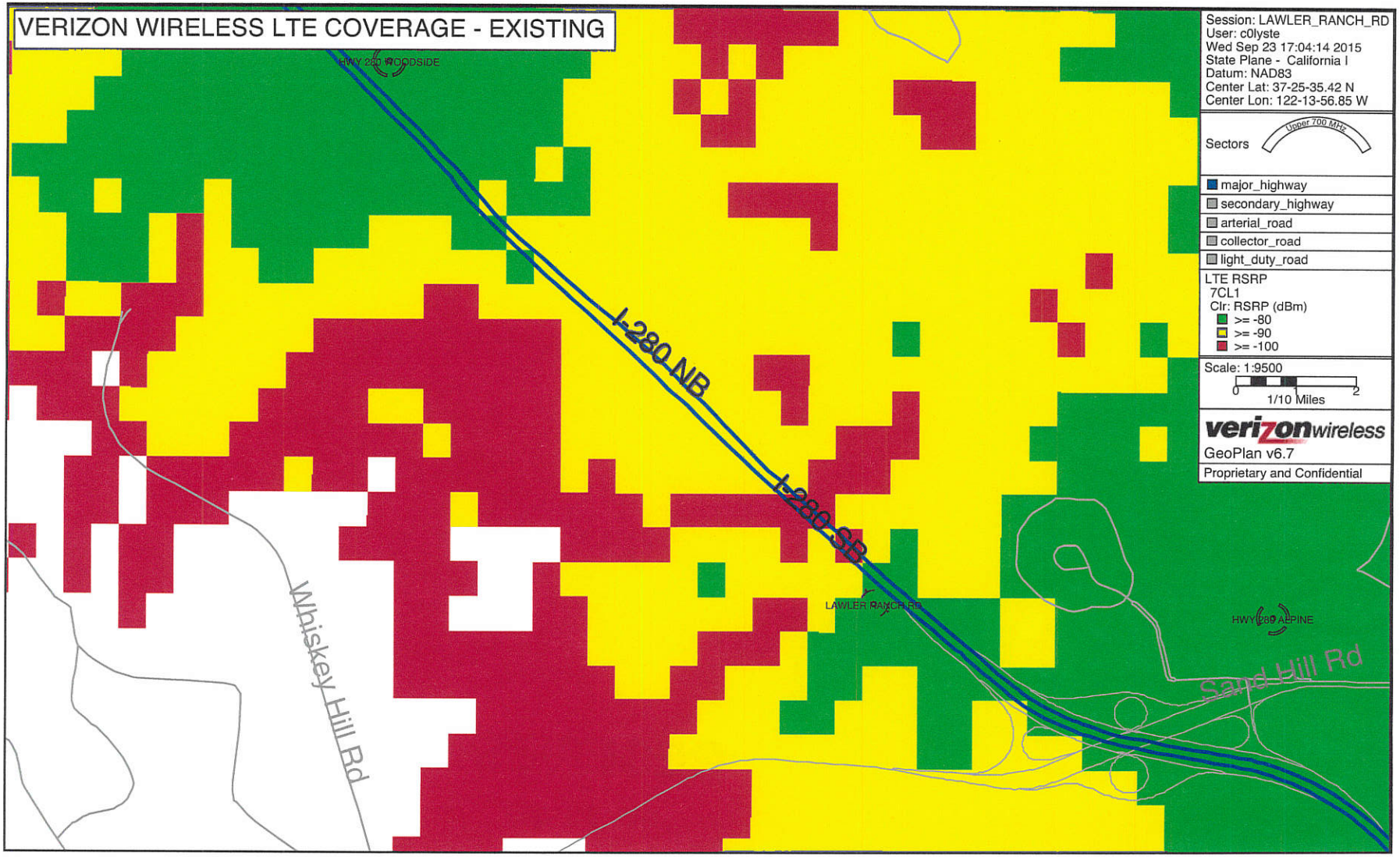
Verizon does and will continue to comply with all FCC rules governing construction requirements, technical standards, interference protection, power and height limitations, and radio frequency standards. In addition, the company will comply with all FAA rules on site location and operation.

Collocation

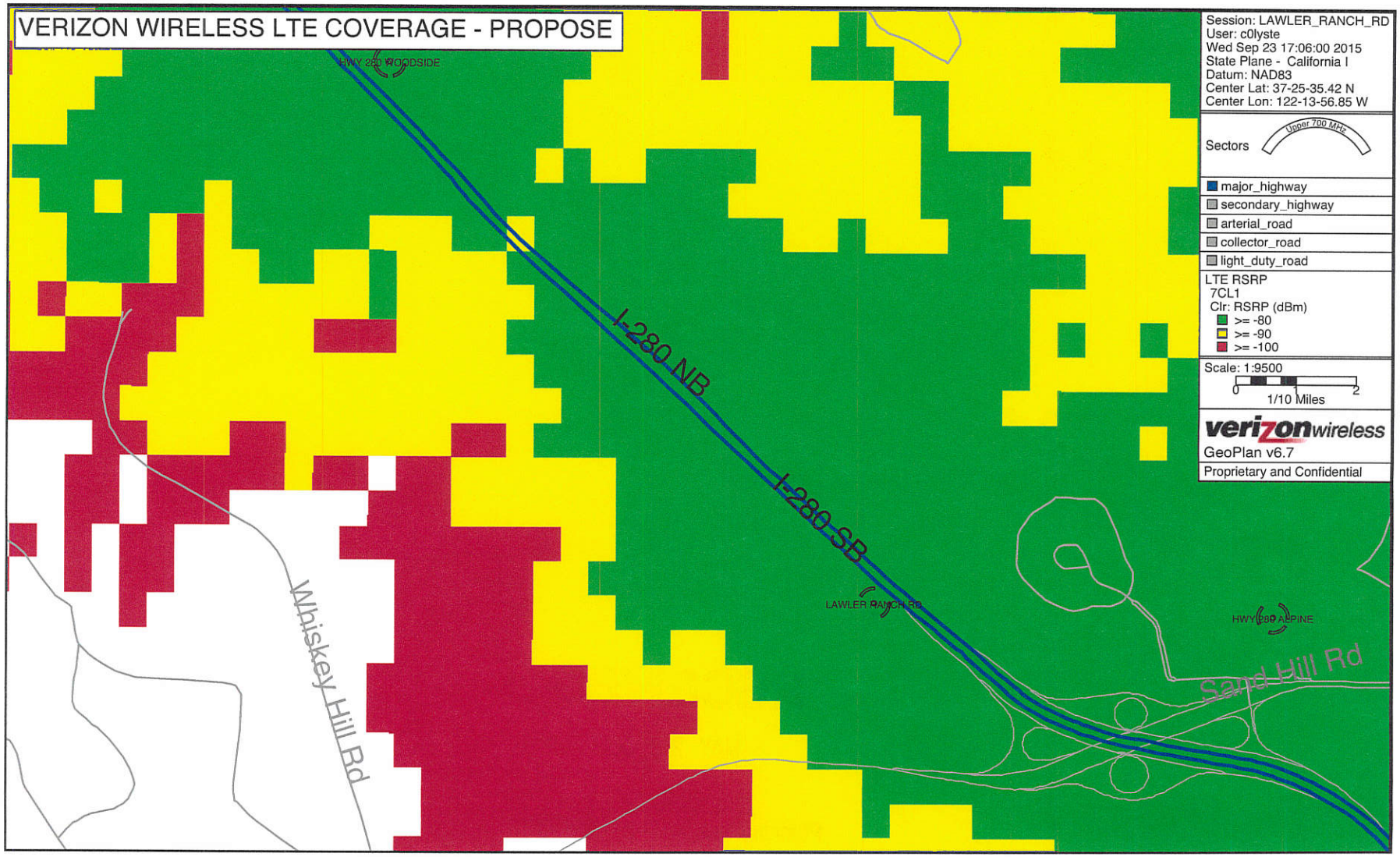
Verizon Wireless is a wireless communications company. We are constantly working on improving our network. In order to do so we are building new sites continuously. Our preference is to collocate on existing sites. We are willing to collocation with any other carrier where it is plausible and we have no issues with other carriers collocating on site that we occupy as long as it is technically feasibly and there are no interference issues.

This are has two existing wireless facilities. We did investigate using them but they proved to be inadequate for collocation for a couple of reason. First the poles were designed and engineered for a single tenant, they could not handle the weight loading for a second set of antennas. They weren' Secondly, adding an additional 20 feet to one of the antennas would have created a visual impact that would not be supported due to the Scenic Corridor requirements in this area.

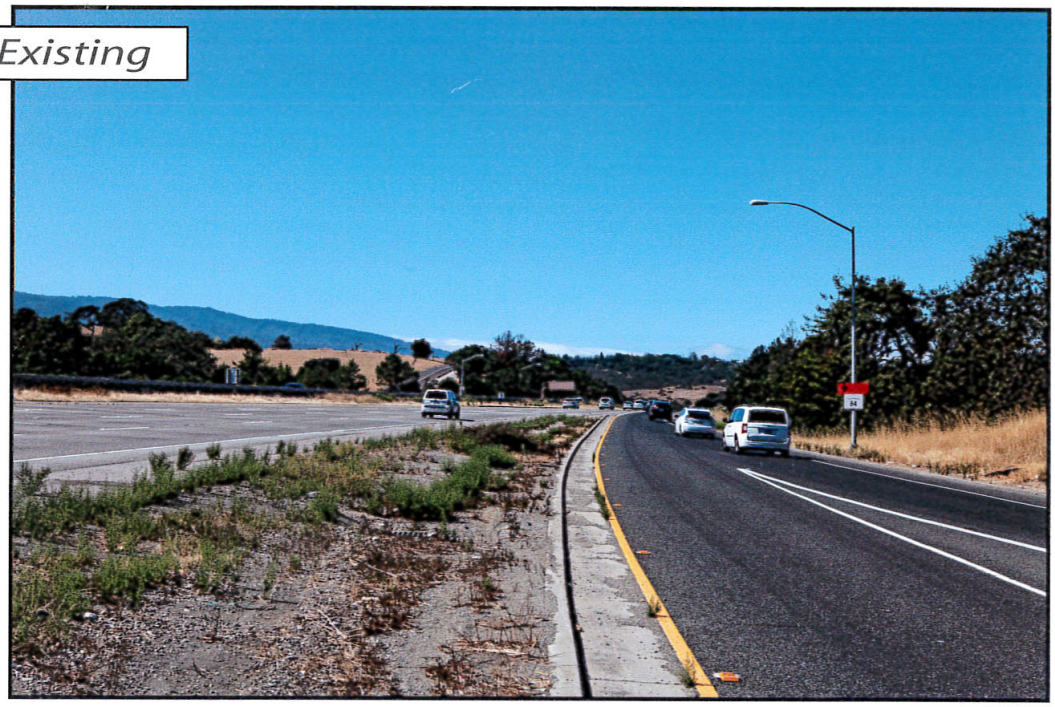
PLN2016-00218



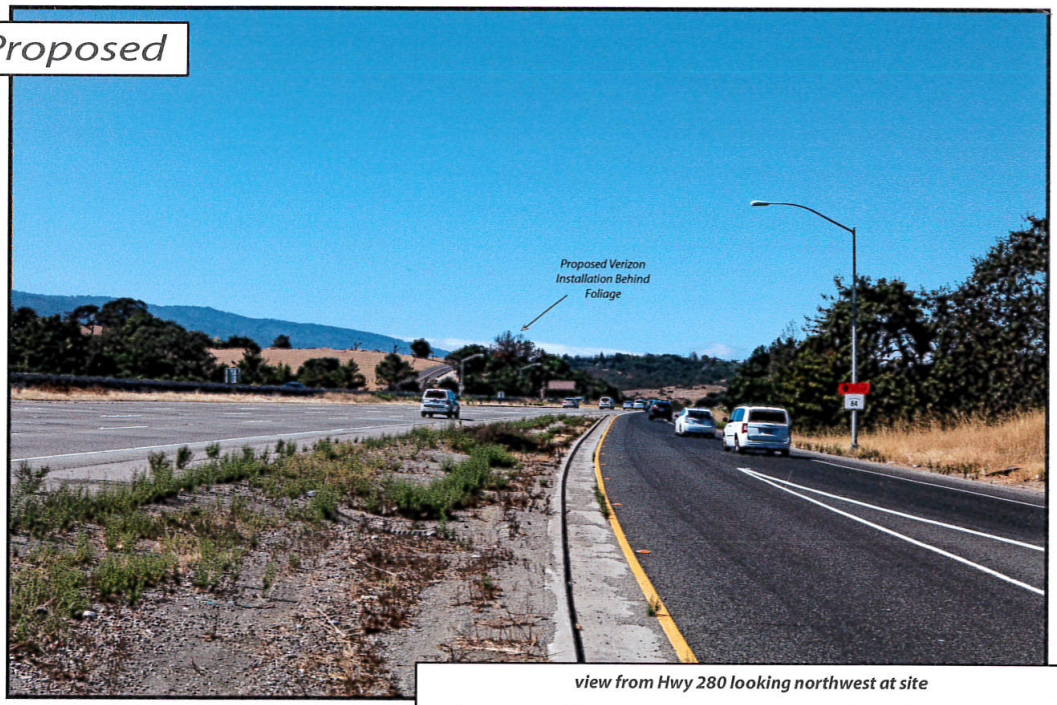
PLN2016-00218



Existing



Proposed



AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

view from Hwy 280 looking northwest at site

verizon

307352 Lawler Ranch
10 Lawer Ranch Road, Menlo Park, CA
Photosims Produced on 10-1-2015

Existing

Proposed

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

verizon

view from Hwy 280 looking south at site

307352 Lawler Ranch
10 Lawer Ranch Road, Menlo Park, CA
Photosims Produced on 10-1-2015

San Mateo County Planning Commission Meeting

Owner/Applicant: **CALTRANS/VERIZON WIRELESS** Attachment: **F**

File Numbers: **PLN2016-00218**

Existing

Proposed

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

view from Lawler Ranch Road looking east at site

verizon

307352 Lawler Ranch
10 Lawer Ranch Road, Menlo Park, CA
Photosims Produced on 10-14-2016

San Mateo County Planning Commission Meeting

Owner/Applicant: **CALTRANS/VERIZON WIRELESS** Attachment: **F**

File Numbers: **PLN2016-00218**

Existing

Proposed

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

view from Sand Hill Road looking northeast at site

verizon

307352 Lawler Ranch
10 Lawer Ranch Road, Menlo Park, CA
Photosims Produced on 10-1-2015

San Mateo County Planning Commission Meeting

Owner/Applicant: **CALTRANS/VERIZON WIRELESS** Attachment: **F**

File Numbers: **PLN2016-00218**

Existing

Proposed

AdvanceSim
Photo Simulation Solutions
Contact (925) 202 8507

view from Hwy 280 looking southwest at site

verizon

307352 Lawler Ranch
10 Lawer Ranch Road, Menlo Park, CA
Photosims Produced on 10-1-2015

San Mateo County Planning Commission Meeting

Owner/Applicant: **CALTRANS/VERIZON WIRELESS** Attachment: **F**

File Numbers: **PLN2016-00218**

ATTACHMENT G

Verizon Wireless • Proposed Base Station (Site No. 307352 "Lawler Ranch")
10 Lawler Ranch Road • Menlo Park, 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. 307352 "Lawler Ranch") proposed to be located at 10 Lawler Ranch Road in Menlo Park, 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 to be sited near 10 Lawler Ranch Road in Menlo Park. The proposed operation will, together with the existing base stations at the site, 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 MST Architects, Inc., dated September 14, 2015, it is proposed to install six Andrew Model SBNHH-1D65C directional panel antennas on a new 24-foot steel pole to be sited on the hill on the north side of Lawler Ranch Road, overlooking Interstate 280, in unincorporated San Mateo County. The antennas would employ no downtilt, would be mounted at an effective height of about 20 feet above ground, and would be oriented in groups of three toward 120°T and 330°T. The maximum effective radiated power in any direction would be 10,410 watts, representing simultaneous operation at 4,110 watts for AWS, 3,580 watts for PCS, and 2,720 watts for 700 MHz service; no operation on cellular frequencies is presently proposed from this site.

Presently located on two nearby poles are similar antennas for use by AT&T Mobility and Sprint. For the limited purpose of this study, the transmitting facilities of those carriers are assumed to be as follows:

Operator	Service	Maximum ERP	Antenna Model	Downtilt	Height
AT&T	AWS	2,100 watts	Andrew SBNH-1D6565A	none	20 ft
	PCS	5,300	Andrew SBNH-1D6565A	none	20
	Cellular	1,600	Andrew SBNH-1D6565A	none	20
	700 MHz	1,000	Andrew SBNH-1D6565A	none	20

Operator	Service	Maximum ERP	Antenna Model	Downtilt	Height
Sprint	BRS	1,500 watts	KMW ET-X-WM-18-65-8P	none	12½ ft
	PCS	7,000	KMW ET-X-TS-70-15-62-18	none	12½
	SMR	500	KMW ET-X-TS-70-15-62-18	none	12½

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation by itself is calculated to be 0.24 mW/cm^2, which is 26% of the applicable public exposure limit. The maximum calculated cumulative level at ground, for the simultaneous operation of all three carriers, is 37% of the public exposure limit. The maximum calculated cumulative level at any nearby building* is 0.30% of the public limit. The maximum calculated cumulative level at the second-floor elevation of any nearby residence† is 0.19% 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.

No Recommended Mitigation Measures

Due to their mounting locations 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 the several carriers will, as FCC licensees, take adequate steps to ensure that their 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 10 Lawler Ranch Road in Menlo Park, 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.

* Located at least 640 feet to the northeast, on the golf course, based on photographs from Google Maps.
† Located at least 920 feet to the north, based on photographs from Google Maps.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2017. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

William F. Hammett, P.E.
707/996-5200

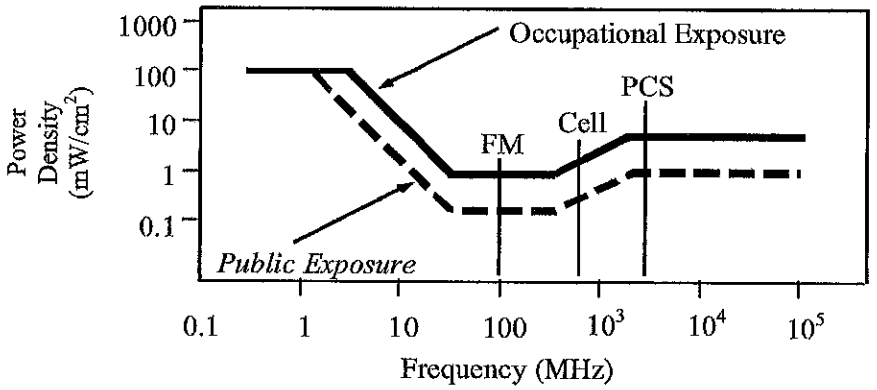
December 11, 2015

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 θ_{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
η = 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.

ATTACHMENT H

COUNTY OF SAN MATEO, PLANNING AND BUILDING DEPARTMENT

NOTICE OF INTENT TO ADOPT
MITIGATED NEGATIVE DECLARATION

A notice, pursuant to the California Environmental Quality Act of 1970, as amended (Public Resources Code 21,000, et seq.), that the following project: *Wireless Telecommunications Facility*, when adopted and implemented, will not have a significant impact on the environment.

FILE NO.: PLN 2016-00218

OWNER: California Department of Transportation (CalTrans)

APPLICANT: Verizon Wireless

ASSESSOR'S PARCEL NO.: Within the CalTrans I-280 Right-of-Way (across from APN 073-250-050)

LOCATION: Lawler Ranch Road, Woodside

PROJECT DESCRIPTION: Use Permit and Architectural Review to allow a new Verizon telecommunication facility which involves the construction of a new 24-foot high monopole which will support six new antennas within a 540 sq. ft. lease area. The lease area will also contain ten ground mounted RRH units and up to four equipment cabinets to be located on a raised (26-inch high) 204 sq. ft. platform. A non-exclusive 18-foot by 30-foot gravel parking area will be added between the existing development on the site and the proposed development which is located within I-280 right-of-way along Lawler Ranch Road in the unincorporated Woodside area of San Mateo County.

FINDINGS AND BASIS FOR A NEGATIVE DECLARATION

The Current Planning Section has reviewed the initial study for the project and, based upon substantial evidence in the record, finds that:

1. The project will not adversely affect water or air quality or increase noise levels substantially.

2. The project will not have adverse impacts on the flora or fauna of the area.

3. The project will not degrade the aesthetic quality of the area.

4. The project will not have adverse impacts on traffic or land use.

5. In addition, the project will not:

    a. Create impacts which have the potential to degrade the quality of the environment.

b. Create impacts which achieve short-term to the disadvantage of long-term environmental goals.

c. Create impacts for a project which are individually limited, but cumulatively considerable.

d. Create environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.

The County of San Mateo has, therefore, determined that the environmental impact of the project is insignificant.

MITIGATION MEASURES included in the project to avoid potentially significant effects:

Mitigation Measure 1: The applicant shall implement the following dust control measures during construction activities:

a. Water all active construction and grading areas at least twice daily.

b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.

c. Apply water two times daily, or apply (non-toxic) soil stabilizers on all paved access roads, parking areas, and staging areas at the project site.

d. Sweep streets daily (with water sweepers) if visible soil material is carried on adjacent public streets.

e. Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).

Mitigation Measure 2: The applicant shall implement the following basic construction measures at all times:

a. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxic Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

b. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.

c. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person, or his/her designee, shall respond and take corrective action with 48 hours. The Bay Area Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations.

RESPONSIBLE AGENCY CONSULTATION: None

INITIAL STUDY: The San Mateo County Current Planning Section has reviewed the Environmental Evaluation of this project and has found that the probable environmental impacts are insignificant. A copy of the initial study is attached.

REVIEW PERIOD: September 27, 2016 to October 17, 2016

All comments regarding the correctness, completeness, or adequacy of this Negative Declaration must be received by the County Planning and Building Department, 455 County Center, Second Floor, Redwood City, no later than **5:00 p.m., October 17, 2016**.

CONTACT PERSON

Angela Chavez
Project Planner, 650/599-7217
achavez@smcgov.org

Angela Chavez, Project Planner

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County of San Mateo
Planning and Building Department

INITIAL STUDY
ENVIRONMENTAL EVALUATION CHECKLIST
(To Be Completed by Planning Department)

1. **Project Title:** Wireless Telecommunications Facility

2. **County File Number:** PLN 2016-00218

3. **Lead Agency Name and Address:** San Mateo County Planning and Building Department
455 County Center, 2nd Floor Redwood City, CA 94063

4. **Contact Person and Phone Number:** Angela Chavez, Project Planner 650/599-7217

5. **Project Location:** CalTrans I-280 right-of-way along Lawler Ranch Road, Woodside

6. **Assessor's Parcel Number and Size of Parcel:** CalTrans I-280 right-of-way across from 073-250-050

7. **Project Sponsor's Name and Address:** Bob Gundermann for Verizon Wireless

8. **General Plan Designation:** Institutional

9. **Zoning:** R-E/S-11 (Residential Estates/Single Family Residential)

10. **Description of the Project:** Use Permit and Architectural Review to allow a new Verizon telecommunication facility which involves the construction of a new 24-foot high monopole which will support six new antennas within a 540 sq. ft. lease area. The lease area will also contain ten ground mounted RRH units and up to four equipment cabinets to be located on a raised (26-inch high) 204 sq. ft. platform. A non-exclusive 18-foot by 30-foot gravel parking area will be added between the existing development on the site and the proposed development.

11. **Surrounding Land Uses and Setting:** The project site approximately .25 miles north of the intersection of Lawler Ranch Road and Sand Hill Road, on the east side of Lawler Ranch Road. Lawler Ranch Road is a public road for a few hundred fee traveling from Sand Hill Road and then becomes a private road ending at a developed property within the boundaries of the incorporated Town of Woodside. The project site is located within a CalTrans right-of-way, on the west side of I-280, approximately 125 feet west of Junipero Serra State Highway, which is part of the Junipero Serra State Scenic Corridor. The project site is currently developed with two separate wireless telecommunications facilities which house three carriers.

12. **Other Public Agencies Whose Approval is Required:** CalTrans

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or "Significant Unless Mitigated" as indicated by the checklist on the following pages.

	Aesthetics	X	Climate Change		Population/Housing
	Agricultural and Forest Resources		Hazards and Hazardous Materials		Public Services
X	Air Quality		Hydrology/Water Quality		Recreation
	Biological Resources		Land Use/Planning		Transportation/Traffic
	Cultural Resources		Mineral Resources		Utilities/Service Systems
	Geology/Soils		Noise		Mandatory Findings of Significance

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in 5. below, may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063(c)(3)(D)). In this case, a brief discussion should identify the following:

   a. Earlier Analysis Used. Identify and state where they are available for review.

b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c. Mitigation Measures. For effects that are "Less Than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources. Sources used or individuals contacted should be cited in the discussion.

1. AESTHETICS. Would the project:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
1.a. Have a significant adverse effect on a scenic vista, views from existing residential areas, public lands, water bodies, or roads?			X	
Discussion: The project site is located approximately 1,300 feet northeast of Sand Hill Road, and approximately 125 feet west of I-280 which is within the Junipero Serra State Scenic Corridor. The project site itself not visible from the scenic highway due to existing vegetation. The proposed project includes the construction of a new 24-foot monopole and expansion of the ground level associated equipment areas. The new facility is clustered amongst the existing development. However, the proposed monopole may be visible for some drivers using I-280. When passing immediately in front of the site there is a break in the vegetation which results in the visibility of the existing facilities and likely the proposed facility. There is an 18-foot to 35-foot elevation differential between I-280 and the base of the monopole; as mentioned the existing vegetation partially screens the monopole, and vehicle speeds will further diminish visibility. To further minimize visual impacts, the facility will be painted a dark green color in order to blend with the surrounding vegetation. **Source:** Project Plans.				
1.b. Significantly damage or destroy scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
Discussion: The project site is located within the Junipero Serra Highway State Scenic Corridor. The existing facility and the proposed improvements will be minimally visible from the scenic				

roadway due to the existing vegetation, topography, and limited views. The project does not involve the removal or alteration to any existing trees, outcropping, and/or any historic buildings. **Source:** Project Plans, Project Location.					
1.c.	Significantly degrade the existing visual character or quality of the site and its surroundings, including significant change in topography or ground surface relief features, and/or development on a ridgeline?			X	
Discussion: The proposed facility will result in the addition of one new 24-foot high monopole which will be clustered amongst the existing development. Six panel antennas will be added to the new pole. The proposed modifications will result in minimal site disturbance given that the site has been previously developed with the required infrastructure (i.e., access, underground conduit, and equipment enclosures). **Source:** Project Plans, Project Location.					
1.d.	Create a new source of significant light or glare that would adversely affect day or nighttime views in the area?			X	
Discussion: Two downward facing security lights are proposed to be located at the entrance to the facility. These lights are located along Lawler Ranch Road and will not be visible from the scenic roadway. Otherwise, this is not a lighted facility. **Source:** Project Plans. Project Location					
1.e.	Be adjacent to a designated Scenic Highway or within a State or County Scenic Corridor?			X	
Discussion: The project site is located within the Junipero Serra Highway State Scenic Corridor and is immediately adjacent to the highway. The proposed project will not be visible from the majority of scenic viewpoints due to existing vegetation and topography in and around the site. However, there is one vantage point when on the highway and passing immediately in front of the site where the project is visible. The proposed project includes painting the monopole a dark green color to blend in with the tree canopy in an effort to minimize the visual impacts. Given the high rate of speed of travel along the highway and the limited view the impacts to the scenic vistas are not significant. **Source:** Project Plans. Project Location.					
1.f.	If within a Design Review District, conflict with applicable General Plan or Zoning Ordinance provisions?				X
Discussion: The project parcel is not located within a Design Review District. The project is compliant with General Plan and Zoning provisions. **Source:** Parcel zoning, San Mateo County General Plan, and San Mateo County Zoning Regulations.					

1.g.	Visually intrude into an area having natural scenic qualities?			X	

Discussion: Please refer to the discussion under Section 1.a and 1.e. above.

Source: Project Plans.

2. AGRICULTURAL AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forestland, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

		Potentially Significant Impacts	*Significant Unless Mitigated*	*Less Than Significant Impact*	*No Impact*
2.a.	For lands outside the Coastal Zone, convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X

Discussion: The project site area is not identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The project site area is largely made up of soils identified as orthents which are associated with recent erosional surfaces. Orthents generally are used mostly as rangeland, pasture, or wildlife habitat and do not have soils suitable for storie index rating.

Source: United States Department of Agriculture: Natural Resources Conservation Service, Web Soil Survey; Project Location.

2.b.	Conflict with existing zoning for agricultural use, an existing Open Space Easement, or a Williamson Act contract?				X

Discussion: The subject parcel is not zoned for agricultural use. There are no existing Open Space Easement or Williamson Act contracts that cover the parcel.

Source: Sam Mateo County Zoning Regulations, San Mateo County General Plan, San Mateo County Williamson Act contract.

2.c.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?				X
Discussion: The project area is not located within an area designated as farmland or forestland. As discussed previously, the proposed wireless telecommunications facility will be clustered amongst the existing development adding approximately 540 sq. ft. of additional fenced area to serve as a new equipment enclosure space (leased area). An additional 540 sq. ft. will be converted to serve as a non-exclusive gravel parking lot to accommodate on-site parking for maintenance vehicles. The proposed project improvements are limited to the project site and will not result in the conversion of Farmland to a non-agricultural use or conversion of forestland to a non-forest use. **Source:** Project Plans, Project Location.					
2.d.	For lands within the Coastal Zone, convert or divide lands identified as Class I or Class II Agriculture Soils and Class III Soils rated good or very good for artichokes or Brussels sprouts?				X
Discussion: The subject parcel is not located within the Coastal Zone. **Source:** Project Location.					
2.e.	Result in damage to soil capability or loss of agricultural land?			X	
Discussion: See discussion of Section 2.a. above. **Source:** United States Department of Agriculture Natural Resources Conservation Service.					
2.f.	Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))? *Note to reader: This question seeks to address the economic impact of converting forestland to a non-timber harvesting use.*				X
Discussion: The proposed project does not conflict with the existing zoning nor is any rezoning proposed. Further, the subject property does not meet the definition of forestland or timberland. **Source:** Project Plans.					

3.	**AIR QUALITY**. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
		Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
3.a.	Conflict with or obstruct implementation of the applicable air quality plan?			X	
Discussion: A temporary increase in the number of vehicles and dust is expected during the construction of the monopole. Construction vehicles are required to meet California Air Resources Board regulations to reduce air pollution (e.g., limits on idling). Operational emissions, which are those emissions occurring after construction and for the life of the development, are minimal. Maintenance for the unmanned facility will occur once a month. It is not anticipated, given the limited maintenance visits that this facility will conflict with the applicable air quality plan. **Source:** Bay Area Air Quality Management District					
3.b.	Violate any air quality standard or contribute significantly to an existing or projected air quality violation?				X
Discussion: The project as proposed will not violate any air quality standard. However, the project site is immediately adjacent I-280 which is considered a hazard for PM-2.5 emissions. The proposed project is for an unmanned facility which does not include any aspects that would contribute to this existing hazard. **Source:** Project Plans, Bay Area Air Quality Management District.					
3.c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	
Discussion: As of December 2012, San Mateo County is a non-attainment area for PM-2.5. A temporary increase in the project area is anticipated during construction since these PM-2.5 particles are a typical vehicle emission. The temporary nature of the proposed construction and California Air Resources Board vehicle regulations reduce the potential effects to a less than significant impact. **Source:** Bay Area Air Quality Management District (BAAQMD).					
3.d.	Expose sensitive receptors to significant pollutant concentrations, as defined by BAAQMD?			X	

Discussion: Construction activities will be temporary in nature and will result in minimal site disturbance. The area immediately adjacent to the project site is largely undeveloped. Therefore, limiting the exposure to potential sensitive receptors. There are no known sensitive receptors within 1,000 feet of the project area (e.g., schools, day cares, nursing homes, etc.). No mapped State or Federal protected species are known to exist within the project area.

Source: Project Plans, Google Maps, Bay Area Air Quality Management District, California Natural Diversity Database.

3.e.	Create objectionable odors affecting a significant number of people?				X

Discussion: Non-odor emitting facility.

Source: Project Plans.

3.f.	Generate pollutants (hydrocarbon, thermal odor, dust or smoke particulates, radiation, etc.) that will violate existing standards of air quality on-site or in the surrounding area?		X		

Discussion: While minor in nature the proposed construction activities will generate temporary increases in dust, motor vehicle, and potentially diesel particulate matter in the area. This temporary increase is not expected to violate existing standards of on-site air quality given required vehicle emissions standards required by the State of California for vehicle operations. To mitigate for the temporary increase in dust, Mitigation Measure 1, below, is recommended. Mitigation Measure 2 as discussed under Section 7.a, below, is recommended to minimize particulate matter and greenhouse gases.

Source: Project Plans, Bay Area Air Quality Management, and California Environmental Protection Agency Air Resources Board.

Mitigation Measure 1: The applicant shall implement the following dust control measures during construction activities:

a. Water all active construction and grading areas at least twice daily.

b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.

c. Apply water two times daily, or apply (non-toxic) soil stabilizers on all paved access roads, parking areas, and staging areas at the project site.

d. Sweep streets daily (with water sweepers) if visible soil material is carried on adjacent public streets.

e. Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).

4.	**BIOLOGICAL RESOURCES**. Would the project:				
		Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
4.a.	Have a significant adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				X
Discussion: No mapped State or Federal protected species are within the project area. **Source:** Project Plans, California Natural Diversity Database.					
4.b.	Have a significant adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				X
Discussion: No riparian habitat or other sensitive communities are located within the project area. **Source:** Project Plans, San Mateo County General Plan.					
4.c.	Have a significant adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
Discussion: No wetlands are located within the project area. **Source:** Project Plans, Project Location.					
4.d.	Interfere significantly with the movement of any native resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X
Discussion: No known migratory wildlife corridors or nursery sites are in the project area. However, even if these were present, the scope of the proposed project is minor in nature and would not pose any impacts to migrating wildlife species.					

Source: Project Plans, Project Location.					
4.e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including the County Heritage and Significant Tree Ordinances)?				X
Discussion: No trees are proposed for removal. **Source:** Project Plans.					
4.f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, other approved local, regional, or State habitat conservation plan?				X
Discussion: No habitat conservation plan, natural conservation community plan, or other type of conservation plan covers this area. **Source:** San Mateo County General Plan.					
4.g.	Be located inside or within 200 feet of a marine or wildlife reserve?				X
Discussion: No marine or wildlife reserve is present in the project area. **Source:** Project Location.					
4.h.	Result in loss of oak woodlands or other non-timber woodlands?				X
Discussion: Not located in such an area; no tree removal is proposed as part of the project. **Source:** Project Plans, Project Location.					

5.	**CULTURAL RESOURCES**. Would the project:	***Potentially Significant Impacts***	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
5.a.	Cause a significant adverse change in the significance of a historical resource as defined in CEQA Section 15064.5?				X
Discussion: No known historical resources are in the project area. **Source:** Project Location, California State Parks Office of Historic Preservation.					

5.b.	Cause a significant adverse change in the significance of an archaeological resource pursuant to CEQA Section 15064.5?				X
Discussion: No known archaeological resources are in the disturbed/developed area. **Source:** Project Location, California State Parks Office of Historic Preservation.					
5.c.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
Discussion: No mapped unique paleontological resource or geologic feature in this area. Area consists of Tes (Sedimentary rocks (Eocene)) which are commonly found throughout the County. **Source:** U.S. Geological Survey Geological Map of the San Francisco Bay Region, 2006.					
5.d.	Disturb any human remains, including those interred outside of formal cemeteries?				X
Discussion: No known human remains in the disturbed/developed area. **Source:** Project Location.					

6.	**GEOLOGY AND SOILS.** Would the project:	***Potentially Significant Impacts***	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
6.a.	Expose people or structures to potential significant adverse effects, including the risk of loss, injury, or death involving the following, or create a situation that results in:				
	i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other significant evidence of a known fault? *Note: Refer to Division of Mines and Geology Special Publication 42 and the County Geotechnical Hazards Synthesis Map.*				X
Discussion: The project area is not located within a Seismic Hazard Act zone of required investigation.					

Source: State of California Department of Conservation				
ii. Strong seismic ground shaking?			X	
Discussion: The project parcel is identified as an area subject to violent earthquake shaking. No structures utilized for human habitation are proposed as part of this project, and given the distance to surrounding development, the proposed project does not pose a risk to the surrounding area. **Source:** San Mateo County Earthquake Shaking Fault Maps (San Andreas Fault, Hayward Fault).				
iii. Seismic-related ground failure, including liquefaction and differential settling?				X
Discussion: The project location is mapped as having a very low risk for seismic related ground failures. These types of failures include liquefaction and differential settling. **Source:** U.S. Geological Survey Susceptibility Map of the San Francisco Bay Area (Map compiled from Knudsen and others, 2000, and Witter and others, 2005).				
iv. Landslides?				X
Discussion: The project area consists of areas of Few Landslides. Review of potential landslide hazards would have occurred under the approved building permit for the initial development of the site. The proposed project will be required, under the building permit, to be constructed in accordance with the building code requirements currently in effect to ensure health and safety. No habitable structure is proposed as part of this project. **Source:** U.S. Geological Survey Summary Distribution of Slides and Earth Flows in San Mateo County, California, 1997.				
v. Coastal cliff/bluff instability or erosion? *Note to reader: This question is looking at instability under current conditions. Future, potential instability is looked at in Section 7 (Climate Change).*				X
Discussion: Not located in such an area. **Source:** Project Location.				
6.b. Result in significant soil erosion or the loss of topsoil?			X	
Discussion: The proposed project will result in minor ground disturbance for the installation of the proposed monopole and connection of the new pole to the existing infrastructure. Due to the relatively minor nature of disturbance, no loss of topsoil or soil erosion is expected. **Source:** Project Plans.				

6.c.	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, severe erosion, liquefaction or collapse?				X
Discussion: Not located in such an area. Due to the minor nature of disturbance the project proposes, there is no expectation that any soil instability or compromise would result as part of this project. **Source:** Project Plans.					
6.d.	Be located on expansive soil, as noted in the 2010 California Building Code, creating significant risks to life or property?				X
Discussion: No known expansive soils. The proposed monopole is located 54-feet from the existing monopole and adjacent to existing similar types of development. The facility is unmanned and given the lack of previous failures, there is no expectation of encountering expansive soils which could result in risks to life or property. **Source:** Project Plans.					
6.e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
Discussion: No septic system is required for this project. **Source:** Project Plans.					

7.	**CLIMATE CHANGE.** Would the project:	***Potentially Significant Impacts***	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
7.a.	Generate greenhouse gas (GHG) emissions (including methane), either directly or indirectly, that may have a significant impact on the environment?		X		
Discussion: Minor temporary increase in greenhouse gasses during the construction phase may occur. Vehicles are subject to California Air Resources Board emission standards. Although the project scope is not likely to significantly generate greenhouse gases, the following mitigation measure is recommended.					

Source: California Air Resources Board, San Mateo County Energy Efficiency Climate Action Plan.

Mitigation Measure 2: The applicant shall implement the following basic construction measures at all times:

a. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxic Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

b. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.

c. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person, or his/her designee, shall respond and take corrective action with 48 hours. The Bay Area Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations.

7.b.	Conflict with an applicable plan (including a local climate action plan), policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Discussion: The project does not conflict with the San Mateo County Energy Efficiency Climate Action Plan provided the mitigation measure outlined in Section 7.a, above, is implemented.

Source: San Mateo County Energy Efficiency Climate Action Plan.

7.c.	Result in the loss of forestland or conversion of forestland to non-forest use, such that it would release significant amounts of GHG emissions, or significantly reduce GHG sequestering?				X

Discussion: No forestland in the project area.

Source: Project Location.

7.d.	Expose new or existing structures and/or infrastructure (e.g., leach fields) to accelerated coastal cliff/bluff erosion due to rising sea levels?				X

Discussion: The project site is not located near any coastal cliffs/bluffs.

Source: Project Location.

7.e.	Expose people or structures to a significant risk of loss, injury or death involving sea level rise?				X

Discussion: The project site is located at an inland location and is not at risk for impacts due to sea level rise from either the Pacific Ocean or San Francisco Bay.

Source: Project Location.					
7.f.	Place structures within an anticipated 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
Discussion: Not located in such an area. Project is located within Flood Zone X (Areas with Minimal risk areas outside the 1-percent and .2-percent-annual-chance floodplains. No base flood elevations or base flood depths are shown within these zones.); Community Panel No. 06081C0311E, effective October 16, 2012. **Source:** Federal Emergency Management Agency.					
7.g.	Place within an anticipated 100-year flood hazard area structures that would impede or redirect flood flows?				X
Discussion: Not located in such an area. **Source:** Federal Emergency Management Agency.					

8.	**HAZARDS AND HAZARDOUS MATERIALS**. Would the project:	*Potentially Significant Impacts*	*Significant Unless Mitigated*	*Less Than Significant Impact*	*No Impact*
8.a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (e.g., pesticides, herbicides, other toxic substances, or radioactive material)?				X
Discussion: No transport of hazardous materials is associated with this project. **Source:** Project Plans.					
8.b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				X
Discussion: The use of hazardous materials are not proposed as part of the project. **Source:** Project Plans.					

8.c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
Discussion: The proposed project does involve the emission of Radio Frequency waves. However, the project is compliant with Federal Communications Commission limits as the power density for the applicant will be at 26% of the applicable public exposure limit. The overall site including existing carriers also continues to be compliant as cumulatively the site will result in 37% of the maximum public exposure limit. There are no schools located within 1/4-mile of the project site. **Source:** Radio Frequency (RF) Report Prepared by Hammett & Edison, Inc., dated December 11, 2015.					
8.d.	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
Discussion: Not located in such an area. **Source:** California Department of Toxic Substances.					
8.e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area?				X
Discussion: Not located in such an area. **Source:** Project Location					
8.f.	For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?				X
Discussion: Not located in such an area. **Source:** Project Location.					
8.g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X

Discussion: No. The proposed project will be located completely within the right-of-way and Lawler Ranch Road which is not identified as an evacuation route on an adopted emergency response or evacuation plan. **Source:** San Mateo County Office of Emergency Services.					
8.h.	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X
Discussion: Project is located in a moderate fire hazard severity zone. No habitable structures are proposed as part of this project. **Source:** Cal-Fire Hazard Severity Zones Maps.					
8.i.	Place housing within an existing 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
Discussion: No housing is proposed as part of this project. **Source:** Project Plans.					
8.j.	Place within an existing 100-year flood hazard area structures that would impede or redirect flood flows?				X
Discussion: Project parcel is not located in an area identified as such. **Source:** Federal Emergency Management Agency Flood Insurance Rate Map 06081C0311E; effective October 16, 2012.					
8.k.	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
Discussion: Not located in a dam failure area. **Source:** San Mateo County General Plan Hazards Map.					
8.l.	Inundation by seiche, tsunami, or mudflow?				X
Discussion: Not located in an area mapped for inundation risks. **Source:** San Mateo County Hazards Maps.					

9.	**HYDROLOGY AND WATER QUALITY.** Would the project:	*Potentially Significant Impacts*	*Significant Unless Mitigated*	*Less Than Significant Impact*	*No Impact*
9.a.	Violate any water quality standards or waste discharge requirements (consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical stormwater pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash))?				X
Discussion: No waste water discharge associated with proposed project. **Source:** Project Plans.					
9.b.	Significantly deplete groundwater supplies or interfere significantly with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
Discussion: No changes in groundwater recharge proposed. **Source:** Project Plans.					
9.c.	Significantly alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in significant erosion or siltation on- or off-site?				X
Discussion: The project involves only minor alterations to install the new facility. There is no water course in the project area and no significant erosion or siltation is expected on or off site. **Source:** Project Plans.					
9.d.	Significantly alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or significantly increase the rate or amount of surface runoff in a				X

manner that would result in flooding on- or off-site?				
Discussion: Due to the relatively minor nature of the proposed project drainage patterns are to remain unchanged. **Source:** Project Plans.				
9.e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide significant additional sources of polluted runoff?				X
Discussion: No additional run-off is proposed. **Source:** Project Plans.				
9.f. Significantly degrade surface or ground-water water quality?				X
Discussion: No degradation of surface or groundwater water quality is expected as part of the project. **Source:** Project Plans.				
9.g. Result in increased impervious surfaces and associated increased runoff?				X
Discussion: The new amount of impervious surface created by the project is minor in nature and will not result in increased runoff. **Source:** Project Plans.				

10. LAND USE AND PLANNING. Would the project:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
10.a. Physically divide an established community?				X
Discussion: None proposed. **Source:** Project Plans.				

10.b. Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
Discussion: As mitigated and conditioned, the project is compliant with applicable land use regulations. **Source:** Project Plans, San Mateo County General Plan, Local Coastal Program, and Zoning Regulations.				
10.c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				X
Discussion: No known conservation plan covers the project parcel. **Source:** San Mateo County General Plan.				
10.d. Result in the congregating of more than 50 people on a regular basis?				X
Discussion: None proposed. **Source:** Project Plans				
10.e. Result in the introduction of activities not currently found within the community?				X
Discussion: The project proposes an expansion of existing facilities but does not involve uses not already found within the community. **Source:** Project Plans.				
10.f. Serve to encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas (examples include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?				X
Discussion: None proposed. **Source:** Project Plans.				
10.g. Create a significant new demand for housing?				X

Discussion: None proposed. **Source:** Project Plans.

11. MINERAL RESOURCES. Would the project:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
11.a. Result in the loss of availability of a known mineral resource that would be of value to the region or the residents of the State?				X
Discussion: None proposed. **Source:** Project Plans.				
11.b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X
Discussion: None proposed. **Source:** Project Plans.				

12. NOISE. Would the project result in:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
12.a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				X
Discussion: No generation of noise levels in excess of established standards including during construction. **Source:** Project Plans, San Mateo County Noise Ordinance.				
12.b. Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?				X

Discussion: None proposed. **Source:** Project Plans.				
12.c. A significant permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
Discussion: No permanent increase in ambient noise levels will be associated with the unmanned facility. **Source:** Project Plans.				
12.d. A significant temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
Discussion: A temporary increase in ambient noise levels during the construction phase of the project is expected. However, due to the project scope this is expected to be extremely limited. Post construction, the site should not result in any additional ambient noise. **Source:** Project Plans, San Mateo County Noise Ordinance.				
12.e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, exposure to people residing or working in the project area to excessive noise levels?				X
Discussion: Not located in such an area. **Source:** Project Plans.				
12.f. For a project within the vicinity of a private airstrip, exposure to people residing or working in the project area to excessive noise levels?				X
Discussion: Not located within the vicinity of a private airstrip. **Source:** Project Location.				

13. **POPULATION AND HOUSING**. Would the project:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
13.a. Induce significant population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
Discussion: None proposed or expected. **Source:** Project Location.				
13.b. Displace existing housing **(including low- or moderate-income housing)**, in an area that is substantially deficient in housing, necessitating the construction of replacement housing elsewhere?				X
Discussion: None propose or expected. **Source:** Project Plans.				

14. **PUBLIC SERVICES**. Would the project result in significant adverse physical impacts associated with the provision of new or physically altered government facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
14.a. Fire protection?				X
14.b. Police protection?				X
14.c. Schools?				X
14.d. Parks?				X
14.e. Other public facilities or utilities (e.g., hospitals, or electrical/natural gas supply systems)?				X
Discussion: No impact to public services. **Source:** Project Plans.				

15. **RECREATION**. Would the project:				
	Potentially Significant Impacts	*Significant Unless Mitigated*	*Less Than Significant Impact*	*No Impact*
15.a. Increase the use of existing neighborhood or regional parks or other recreational facilities such that significant physical deterioration of the facility would occur or be accelerated?				X
Discussion: All of the proposed improvements are to occur completely on the subject parcel. Given that the project does not result in the construction of any habitable structures, and that the facility will remain unmanned, there is no expected increase in the use of existing neighborhood or regional parks or other recreational facilities in connection with this project. **Source:** Project Plans.				
15.b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X
Discussion: No recreational facilities are proposed as part of this project. **Source:** Project Plans.				

16. **TRANSPORTATION/TRAFFIC**. Would the project:				
	Potentially Significant Impacts	*Significant Unless Mitigated*	*Less Than Significant Impact*	*No Impact*
16.a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				X
Discussion: All of the proposed improvements are to occur completely on the subject privately owned parcel. Given that the project does not result in the construction of any habitable structures, and that the facility will remain unmanned, there is no expected conflict with an applicable plan,				

ordinance or policy establishing measures of effectiveness for the performance of the circulation system. **Source:** Project Location.				
16.b. Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways?				X
Discussion: None proposed; unmanned facility to be located adjacent to an existing facility with planned dedicated access and parking. **Source:** Project Location.				
16.c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in significant safety risks?				X
Discussion: None proposed. **Source:** Project Plans.				
16.d. Significantly increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
Discussion: None proposed. **Source:** Project Plans.				
16.e. Result in inadequate emergency access?				X
Discussion: Given that the facility is located directly along the side of Lawler Ranch Road, emergency access to the facility is available directly from the road. **Source:** Project Plans.				
16.f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				X
Discussion: No public transit facilities in the project area. **Source:** Project Location.				

16.g. Cause noticeable increase in pedestrian traffic or a change in pedestrian patterns?				X
Discussion: No. The proposed project is completely contained within the project parcel and will not result in any noticeable increase in pedestrian traffic or patterns. **Source:** Project Plans.				
16.h. Result in inadequate parking capacity?				X
Discussion: Facility is unmanned and parking for service vehicles is planned to be located directly adjacent to the facility. **Source:** Project Plans.				

17. UTILITIES AND SERVICE SYSTEMS. Would the project:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
17.a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
Discussion: No wastewater is generated from the proposed project. **Source:** Project Plans.				
17.b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
Discussion: No construction of water or wastewater facilities is required as part of the project. **Source:** Project Plans.				
17.c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
Discussion: No construction of stormwater drainage facilities or expansion of existing facilities is necessary due to the minor nature of the proposed improvements. **Source:** Project Plans.				

17.d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
Discussion: No water service is required to serve the project. **Source:** Project Plans.				
17.e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
Discussion: No wastewater service is required. **Source:** Project Plans.				
17.f. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
Discussion: Project does not produce solid waste. **Source:** Project Plans.				
17.g. Comply with Federal, State, and local statutes and regulations related to solid waste?				X
Discussion: Project does not produce solid waste. **Source:** Project Plans.				
17.h. Be sited, oriented, and/or designed to minimize energy consumption, including transportation energy; incorporate water conservation and solid waste reduction measures; and incorporate solar or other alternative energy sources?				X
Discussion: Project does not consume water or produce solid waste. Alternative energy sources are not proposed. **Source:** Project Plans.				
17.i. Generate any demands that will cause a public facility or utility to reach or exceed its capacity?				X

Discussion: No. There are existing similar facilities adjacent to the proposed project and the expansion will not generate any demands that will cause a public facility or utility to reach or exceed capacity.

Source: Project Plans.

18. MANDATORY FINDINGS OF SIGNIFICANCE.				
	Potentially Significant Impacts	*Significant Unless Mitigated*	*Less Than Significant Impact*	*No Impact*
18.a. Does the project have the potential to degrade the quality of the environment, significantly reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				X
Discussion: No sensitive habitats are mapped in the project area. Minimal improvements are proposed to occur immediately adjacent to existing development which limits the area amount of disturbance and maintains the majority of the site in its natural state. **Source:** Project Plans, Field Investigation.				
18.b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)				X
Discussion: The existing development on the parcel has been constructed and operates in accordance with their respective approvals. The modifications proposed at this time are minor in nature and consistent with previous approvals. **Source:** Project Plans.				
18.c. Does the project have environmental effects which will cause significant adverse effects on human beings, either directly or indirectly?				X

Discussion: As discussed in Section 8.c, above, the project is in compliance with Federal Communications Commission regulations regarding wireless telecommunications facilities.

Source: Radio Frequency (RF) Report Prepared by Hammett & Edison, Inc., dated December 11, 2015.

RESPONSIBLE AGENCIES. Check what agency has permit authority or other approval for the project.

AGENCY	YES	NO	TYPE OF APPROVAL
U.S. Army Corps of Engineers (CE)		X	
State Water Resources Control Board		X	
Regional Water Quality Control Board		X	
State Department of Public Health		X	
San Francisco Bay Conservation and Development Commission (BCDC)		X	
U.S. Environmental Protection Agency (EPA)		X	
County Airport Land Use Commission (ALUC)		X	
CalTrans	X		Encroachment Permit
Bay Area Air Quality Management District		X	
U.S. Fish and Wildlife Service		X	
Coastal Commission		X	
City		X	
Sewer/Water District:		X	
Other: Federal Communications Commission	X		Licensing: Valid license on file

MITIGATION MEASURES		
	Yes	No
Mitigation measures have been proposed in project application.		X
Other mitigation measures are needed.	X	
The following measures are included in the project plans or proposals pursuant to Section 15070(b)(1) of the State CEQA Guidelines: **Mitigation Measure 1:** The applicant shall implement the following dust control measures during construction activities:		

a. Water all active construction and grading areas at least twice daily.

b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.

c. Apply water two times daily, or apply (non-toxic) soil stabilizers on all paved access roads, parking areas, and staging areas at the project site.

d. Sweep streets daily (with water sweepers) if visible soil material is carried on adjacent public streets.

e. Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).

Mitigation Measure 2: The applicant shall implement the following basic construction measures at all times:

a. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxic Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

b. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.

c. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person, or his/her designee, shall respond and take corrective action with 48 hours. The Bay Area Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations.

DETERMINATION (to be completed by the Lead Agency).

On the basis of this initial evaluation:

____ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Planning Department.

X I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because of the mitigation measures in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

____ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

(Signature)

September 27, 2016
Date

Planner III
(Title)

AC:pac - ACCAA0531_WPH.DOCX

San Mateo County

0.17 0 0.08 0.17 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

1: 5,379

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

ZD DRAWING SIGN-OFF

DATE: TIME: % LYLE-PLEASE RETURN BY:

	SIGNATURE	DATE
LYLE		
SITE ACQUISITION:		
PLANNING:		
CONSTRUCTION:		
MANAGEMENT:		

	SIGNATURE	DATE
verizon		
CONSTRUCTION:		
REAL ESTATE:		
RF ENGINEER:		
EQUIPMENT ENGINEER:		
MW ENG./TRANSPORT:		

OTHER (IF APPLICABLE)

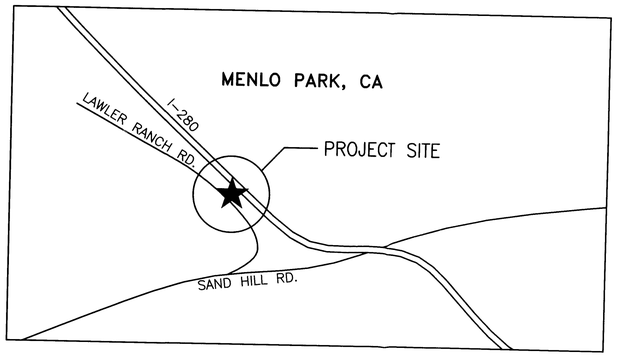
SIGNATURE	DATE

verizon

2785 Mitchell Drive, Walnut Creek, CA 94598

LAWLER RANCH

10 LAWLER RANCH RD
MENLO PARK, CA 94025
APN: N/A- STATE OF CA./DEPARTMENT OF TRANSPORTATION
LOCATION #: 307352



MENLO PARK, CA

LOCATION PLAN

DIRECTIONS

FROM VERIZON OFFICE @ 2785 MITCHELL DRIVE, WALNUT CREEK, CA 94598:

1. HEAD NORTHEAST ON MITCHELL DR TOWARD OAK GROVE RD
2. TURN RIGHT ONTO OAK GROVE RD
3. TAKE THE 2ND RIGHT ONTO YGNACIO VALLEY RD
4. YGNACIO VALLEY RD TURNS SLIGHTLY RIGHT AND BECOMES HILLSIDE AVE
5. TURN RIGHT ONTO THE RAMP TO CA-24 W
6. CONTINUE ONTO CA-24 W
7. KEEP LEFT AT THE FORK TO STAY ON CA-24 W
8. TAKE THE INTERSTATE 580 EXIT TOWARD SAN FRANCISCO/HAYWARD
9. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR INTERSTATE 580 W
10. KEEP LEFT, FOLLOW SIGNS FOR INTERSTATE 580/SAN FRANCISCO/SACRAMENTO & MERGE ONTO I-580 W
11. TAKE THE EXIT ON THE LEFT ONTO I-80 W TOWARD SAN FRANCISCO PARTIAL TOLL ROAD
12. TAKE THE EXIT ON THE LEFT TOWARD SAN JOSE/U.S. 101 S/AIRPORT
13. MERGE ONTO US-101 S
14. TAKE THE I-380 W EXIT TOWARD I-280/SAN BRUNO
15. CONTINUE ONTO I-380 W
16. TAKE THE INTERSTATE 280 S EXIT ON THE LEFT TOWARD SAN JOSE
17. MERGE ONTO I-280 S
18. TAKE THE SAND HILL RD EXIT TOWARD MENLO PARK
19. KEEP RIGHT, FOLLOW SIGNS FOR SAND HILL ROAD W AND MERGE ONTO SAND HILL RD
20. MERGE ONTO SAND HILL RD
21. TURN RIGHT ONTO LAWLER RANCH RD

DESTINATION WILL BE ON THE RIGHT

INDEX OF DRAWINGS

PROJECT DIRECTORY

APPLICANT:
VERIZON WIRELESS
C/O THE LYLE COMPANY
3140 GOLD CAMP DRIVE, SUITE 30
RANCHO CORDOVA, CA 95670
ATTN: BRYAN LINCOLN
OFFICE: 916-266-7052
blincoln@lyleco.com

ARCHITECT:
MANUEL S. TSIHLAS
MST ARCHITECTS, INC.
1520 RIVER PARK DRIVE
SACRAMENTO, CA 95815
916-567-9630
manuel@mstarchitects.com

PROPERTY OWNER:
STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION
111 GRAND AVE.
OAKLAND, CA, 94623
510-286-5418

CONSTRUCTION MANAGER:
VERIZON WIRELESS
C/O THE LYLE COMPANY
3140 GOLD CAMP DRIVE, SUITE 30
RANCHO CORDOVA, CA 95670-6192
ATTN: ROBERT DUNNETT
OFFICE: 916-266-7083
CELL: 916-801-6780
rdunnet@lyleco.com

PROJECT SUMMARY

ASSESSOR'S PARCEL NUMBER: N/A

JURISDICTION:	SAN MATEO COUNTY/STATE OF CA. DEPT. OF TRANSPORTATION
OCCUPANCY:	U (UNMANNED TELECOMMUNICATIONS FACILITY)
TYPE OF CONSTRUCTION:	V-B
ZONING:	CALTRANS

CODE COMPLIANCE

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

2013 CALIFORNIA BUILDING STANDARDS CODE, TITLE 24, CALIFORNIA CODE OF REGULATIONS INCLUDING SUPPLEMENTS EFFECTIVE JULY 1, 2015

PART 1	CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE
PART 2	CALIFORNIA BUILDING CODE
PART 2.5	CALIFORNIA RESIDENTIAL BUILDING CODE
PART 3	CALIFORNIA ELECTRICAL CODE
PART 4	CALIFORNIA MECHANICAL CODE
PART 5	CALIFORNIA PLUMBING CODE
PART 6	CALIFORNIA ENERGY CODE
PART 8	CALIFORNIA HISTORICAL BUILDING CODE
PART 9	CALIFORNIA FIRE CODE
PART 10	CALIFORNIA EXISTING BUILDING CODE
PART 11	CALIFORNIA GREEN BUILDING STANDARDS CODE
PART 12	CALIFORNIA REFERENCE STANDARDS CODE

LOCAL COUNTY OR CITY ORDINANCES

ACCESSIBILITY REQUIREMENTS: THIS FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. ACCESSIBILITY NOT REQUIRED IN ACCORDANCE WITH THE 2013 CBC 11B-203.5, AND 11B-202.4 EXCEPTION 7.

PROJECT DESCRIPTION

PROPOSED VERIZON WIRELESS UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING:

- A 18'-0"x30'-0" LEASE AREA.
- PROPOSED VERIZON WIRELESS 12'-0"x17'-0" RAISED METAL PLATFORM W/ HANDRAIL.
- A 6'-0" TALL CHAIN LINK FENCE W/ PRIVACY SLATS & 5'-0" ACCESS GATE @ LEASE AREA PERIMETER.
- (4) PROPOSED VERIZON WIRELESS EQUIPMENT CABINETS.
- UNDERGROUND POWER & TELCO UTILITIES.
- (3) 6" DIAMETER UNDERGROUND CONDUITS W/ (2) HYBRID TRUNK CABLES.
- (2) ANTENNA SECTORS W/(3) ANTENNAS PER SECTOR MOUNTED ON A PROPOSED 24.0' TALL MONOPOLE.
- (10) RRH UNITS (5 PER SECTOR) MOUNTED ON A UTILITY H-FRAME @ GRADE.
- (2) RAYCAP SURGE PROTECTORS @ EQUIPMENT PLATFORM.

PROJECT MILESTONES

02/23/2015	90% ZONING DOCUMENTS
04/14/2015	95% ZONING DOCUMENTS
09/14/2015	100% ZONING DOCUMENTS
11/19/2015	100% ZONING DOCUMENTS REV 1
11/23/2015	100% ZONING DOCUMENTS REV 2
XX/XX/XXXX	90% CONSTRUCTION DOCUMENTS
XX/XX/XXXX	100% CONSTRUCTION DOCUMENTS

MST ARCHITECTS
MANUEL S. TSIHLAS
1520 River Park Drive, Sacramento, CA 95815
916-567-9630
www.MSTArchitects.com

LAWLER RANCH
10 LAWLER RANCH ROAD
MENLO PARK, CA 94025

verizon

SHEET TITLE: TITLE SHEET, LOCATION PLAN, PROJECT DATA

Not valid unless signed in ink by licensee.

Revisions:
1 11/19/15
1 11/23/15
1 --
1 --
1 --

File: 200.154 _T1.dwg
Drawn By: ALB
Checked By: ALB
Scale: AS NOTED
Date: 11/23/2015

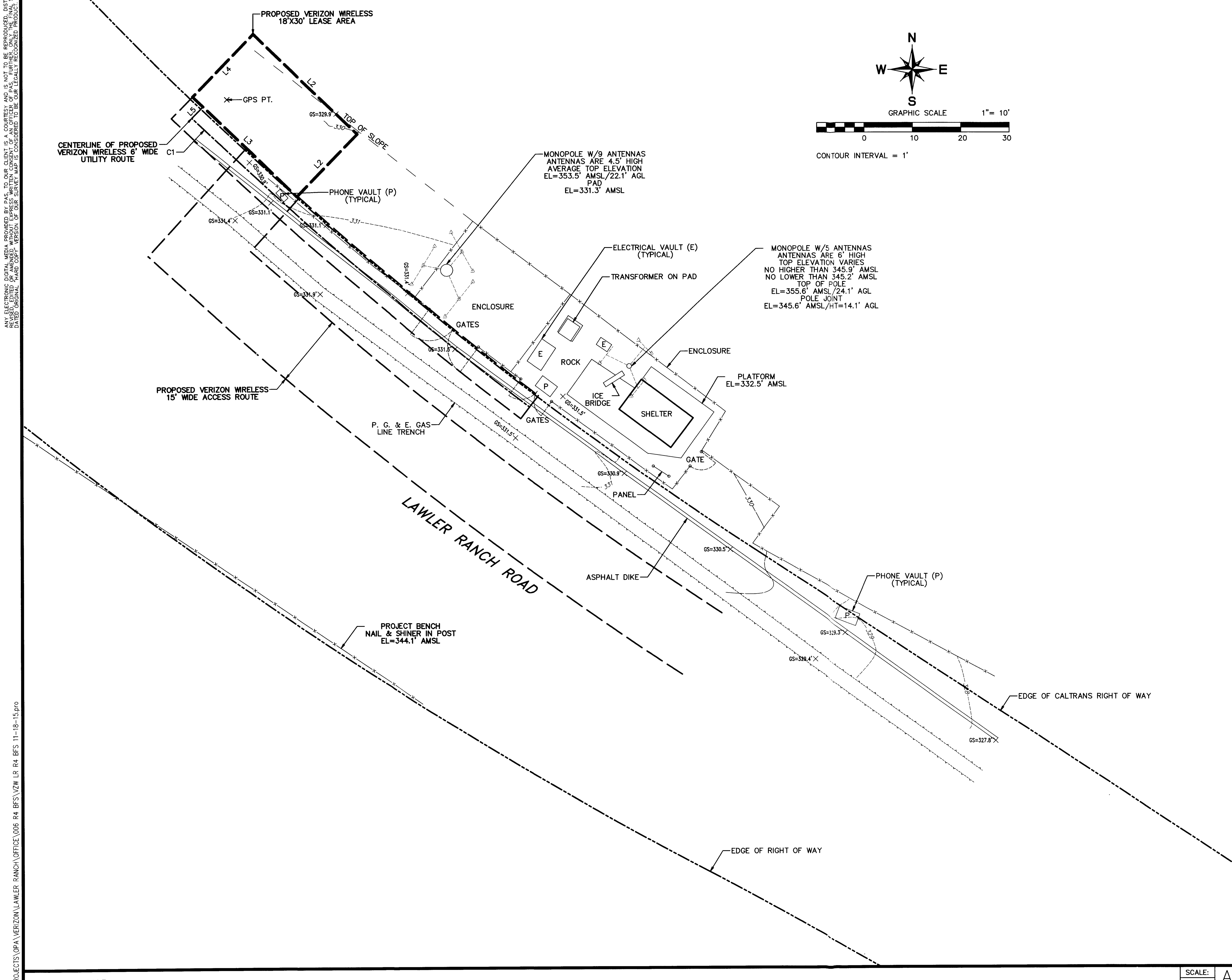
Job No. 200.154

T1.1

PLN2016-00218

LINE	DELTA	RADIUS	ARC	CHORD BEARING	CHORD
C1	6°42'15"	787.00'	92.09'	S49°22'52"E	92.03'

LINE	BEARING	DISTANCE
L1	S45°51'16"E	30.00'
L2	S44°08'44"W	18.00'
L3	N45°51'16"W	30.00'
L4	N44°08'44"E	18.00'
L5	S44°11'22"W	3.30'



SITE MAP

SCALE: 1"=10'

A

LEGEND

MANHOLE — FIRE HYDRANT — LIGHT POLE — MONUMENT — TREE — HANDICAPPED PARKING — JP JOINT POLE — TP TELEPHONE POLE — PP POWER POLE — + EL=124.5' SPOT ELEVATION

EDGE OF PAVEMENT
OVERHEAD ELECTRIC LINE
FENCE LINE
PROPERTY LINE
AMSL........ABOVE MEAN SEA LEVEL
AGL..........ABOVE GROUND LEVEL
CP #......FIELD CONTROL POINT

DATE OF FIELD VISIT: 02/05/15

SURVEYED BY/ OR UNDER THE DIRECTION OF: Oliver Philip Auer L.S. 5075

NOTES:

THIS IS NOT A BOUNDARY SURVEY. THIS IS A CELLULAR TELECOMMUNICATIONS TOPOGRAPHIC SURVEY MAP WITH EXISTING PARENT PARCEL LINES AND EASEMENTS BEING A GRAPHIC DEPICTION OF VARIOUS INFORMATION GATHERED FROM PRELIMINARY REPORTS, RECORD INFORMATION AND AVAILABLE MONUMENTS FOUND DURING THE FIELD SURVEY. UNLESS OTHERWISE NOTED, NO UNDERGROUND UTILITY LOCATING SERVICE COMPANY WAS CONTACTED PRIOR TO THIS MAP BEING PREPARED; THEREFORE, THERE MAY BE NON-VISIBLE OR OBSCURE UTILITIES EXISTING ON THE PROPERTY NOT SHOWN ON THIS MAP.

PARENT PARCEL DESCRIPTION:

CALTRANS RIGHT OF WAY.

LEASE AREA DESCRIPTION:

<TO BE PREPARED AT TIME OF FINAL SURVEY ISSUE>

JOINT ACCESS AND UTILITY ROUTE DESCRIPTION:

<TO BE PREPARED AT TIME OF FINAL SURVEY ISSUE>

UTILITY ROUTE DESCRIPTION:

<TO BE PREPARED AT TIME OF FINAL SURVEY ISSUE>

BASIS OF ELEVATIONS: NAVD 88.

BASIS OF BEARINGS: CALIFORNIA STATE PLANE COORDINATE SYSTEM, ZONE 3, NAD 83.

PROJECT BENCH: AS INDICATED HEREON.

LANDLORD INFORMATION: MAHNAZ RASTAKHIZ – CALTRANS
111 GRAND AVENUE
OAKLAND, CA 94623

NET AREA OF:
UNDERLYING PARCEL(S): N/A

SITE LOCATED IN FLOOD ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, PER FEMA FIRM COMMUNITY PANEL NUMBER 06081–C0311E, EFFECTIVE DATE OCTOBER 16, 2012.

FAA 1A CERTIFICATION:

LATITUDE AND LONGITUDE WAS OBTAINED FROM INFORMATION PROVIDED BY A GPS SURVEY. THE GEODETIC POSITION SHOWN WAS DETERMINED UTILIZING FAST–STATIC GPS OBSERVATIONS FROM NGS CORS STATION(S) USING TRIMBLE 4600LS RECEIVERS. THE DATA WAS DIFFERENTIALLY CORRECTED WITH TRIMBLE GPS SURVEY SOFTWARE.

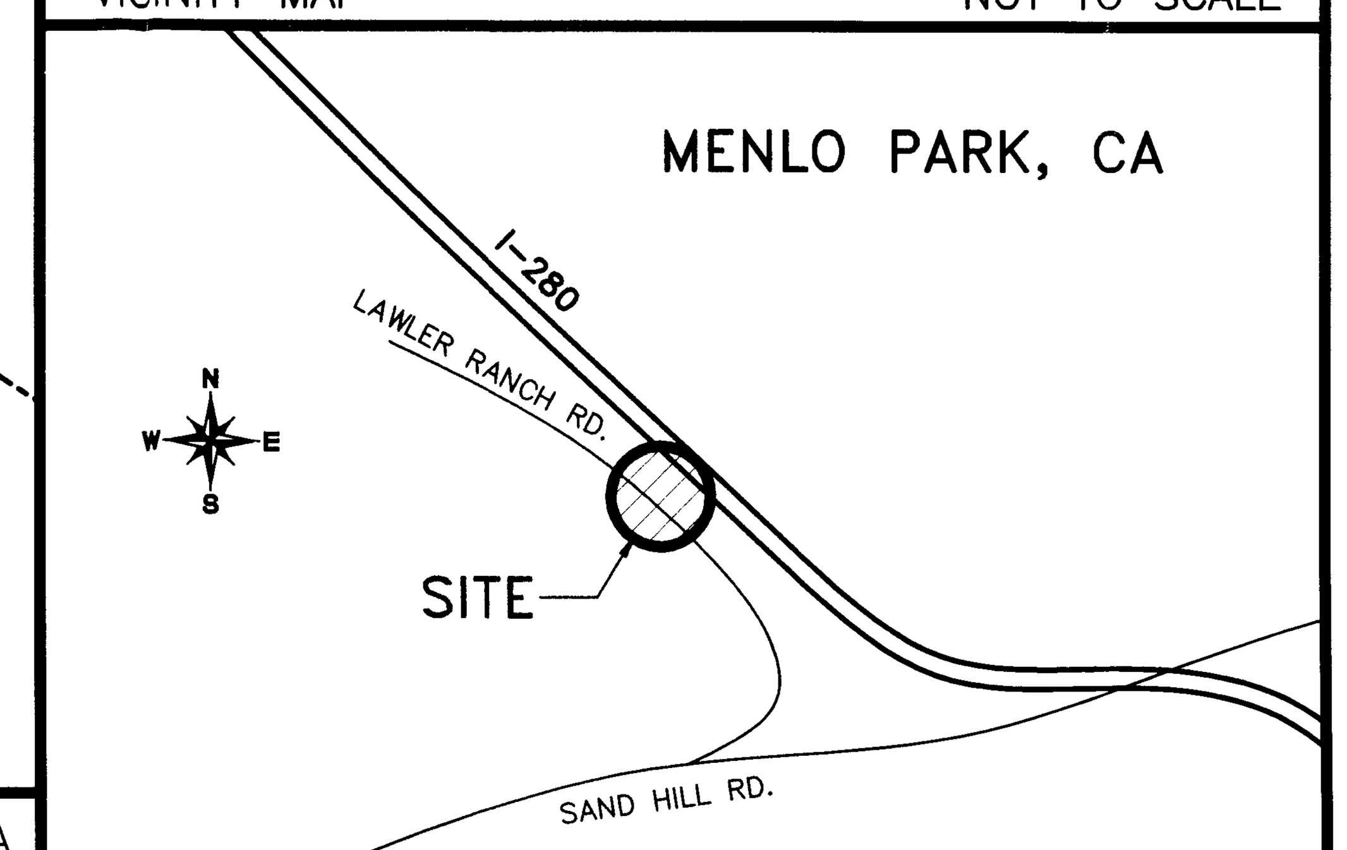
LATITUDE, LONGITUDE AND ELEVATIONS DENOTED ON THIS SURVEY MEET OR EXCEED THE FEDERAL AVIATION ADMINISTRATION 1–A STANDARD.

ELEVATION OF GROUND AT GPS POINT: 330.2' AMSL

STRUCTURE HEIGHT: N/A

LATITUDE: N37°25'20.45"
LONGITUDE: W122°13'37.68" (NAD 83)

VICINITY MAP — NOT TO SCALE



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LAWLER RANCH RD.
10 LAWLER RANCH RD.
MENLO PARK, CA 94025

verizon wireless

SHEET TITLE: TOPOGRAPHIC SURVEY MAP

LICENSED LAND SURVEYOR — OLIVER PHILIP AUER — NO 5075 — (Exp. 06/30/17) — STATE OF CALIFORNIA

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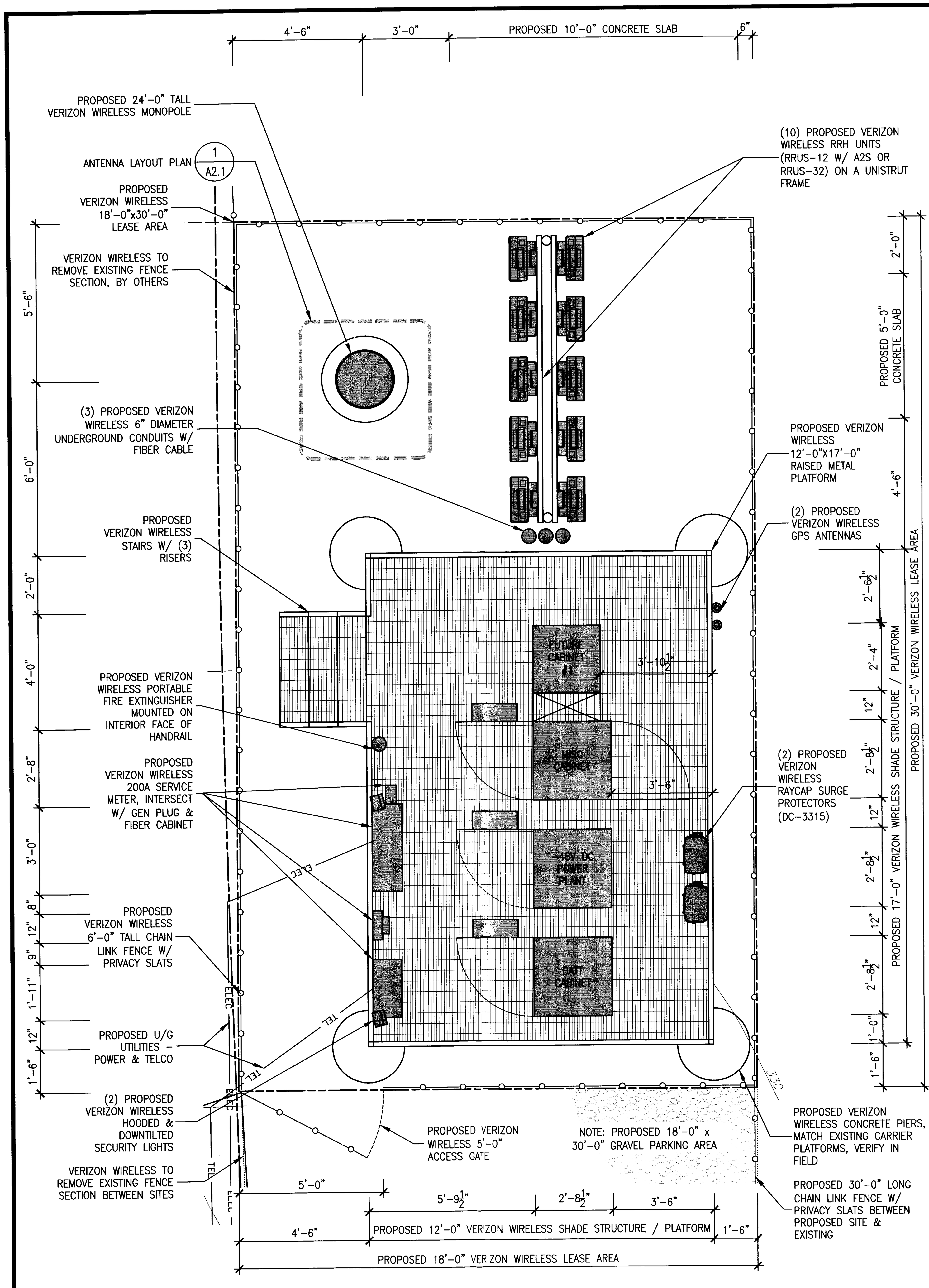
Revisions:

Name: LAWLER RANCH RD.
Drawn By: PAD
Checked By: OPA
Scale: AS NOTED
Date: 11/18/15

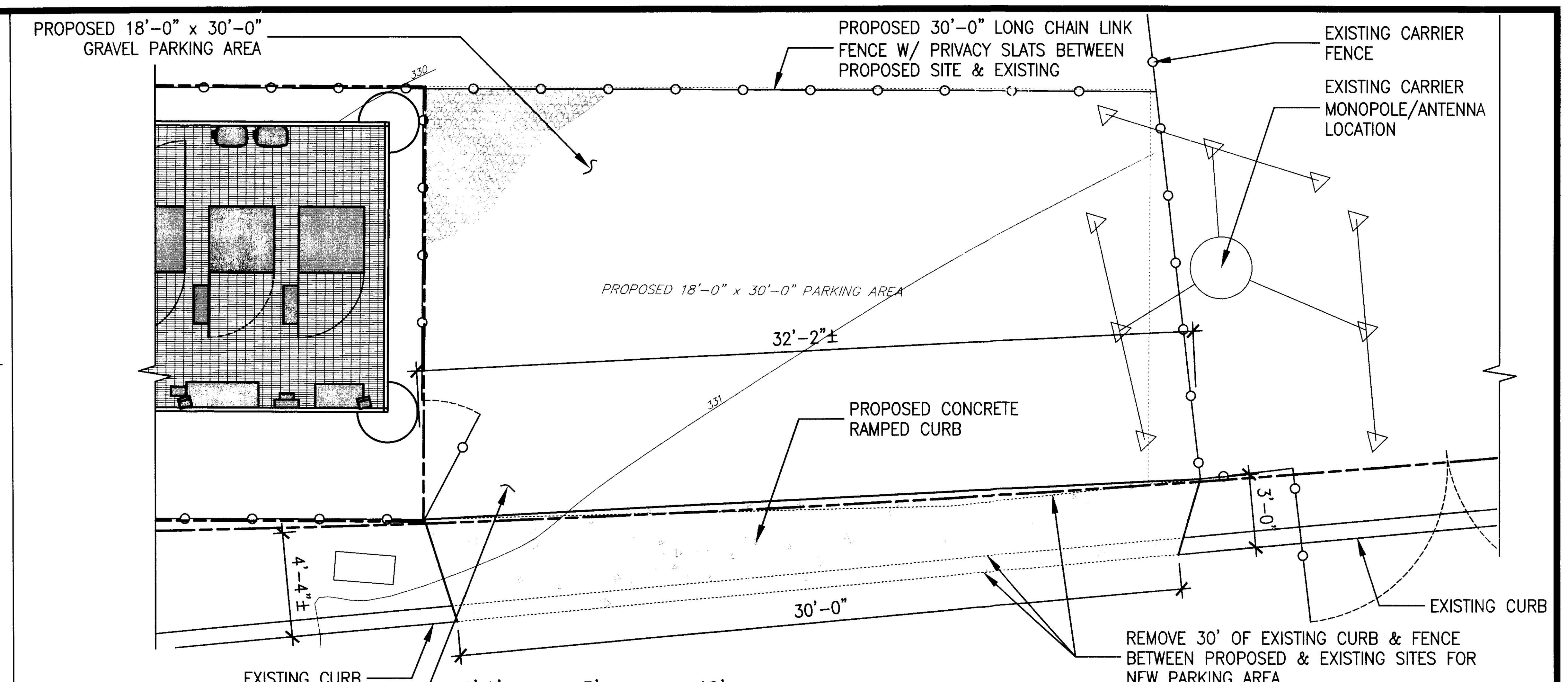
Job No. N/A

LS1

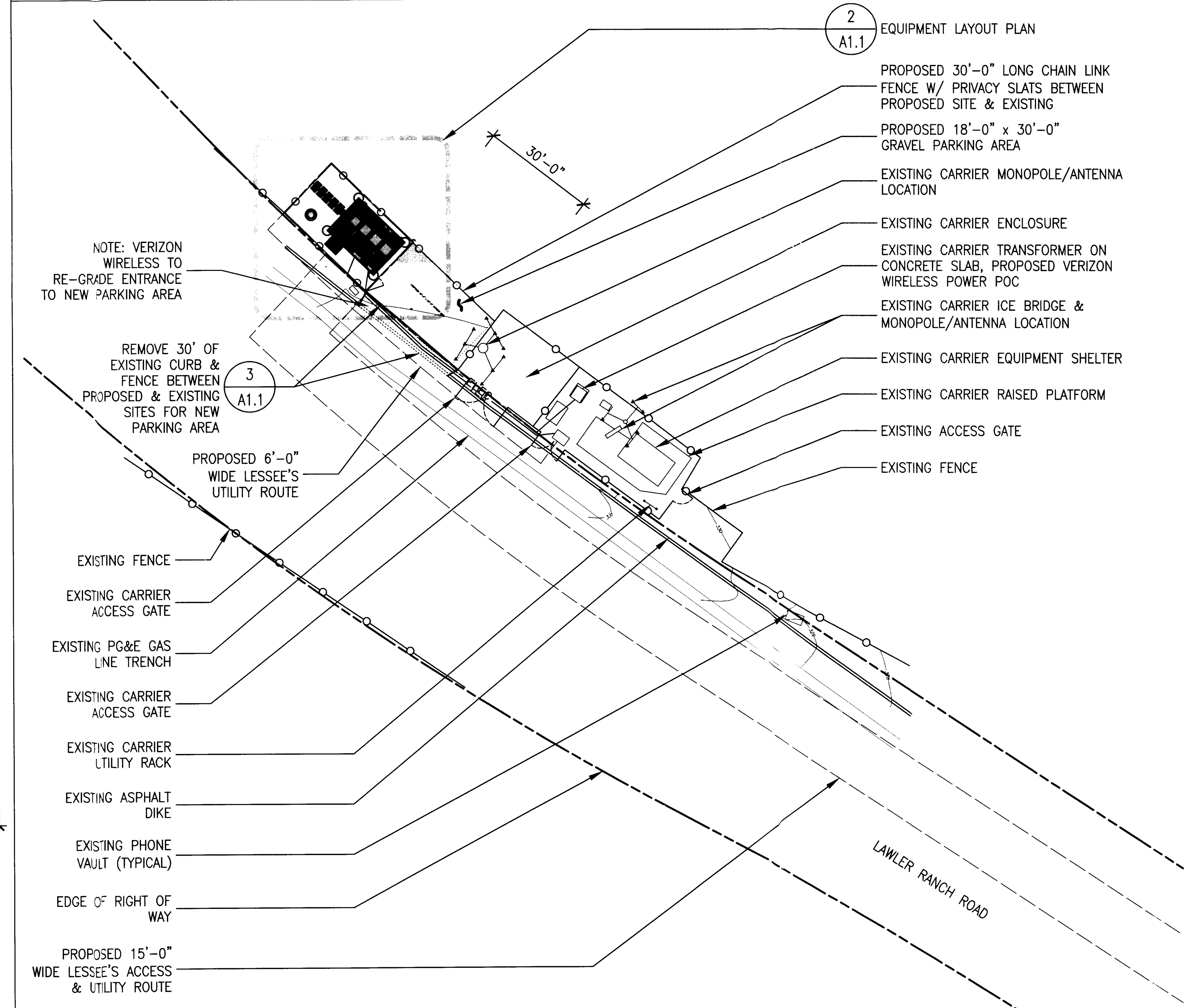
F:\PROJECTS\OPA\VERIZON\LAWLER RANCH\OFFICE\006 R4 BFS\VZW LR R4 BFS 11-18-15.pro



2 A1.1 EQUIPMENT LAYOUT PLAN
SCALE: 1/2" = 1'-0"



3 A1.1 ENLAGED PARKING AREA PLAN
SCALE: 1/4" = 1'-0"



NOTE: VERIZON WIRELESS POWER & TELCO LOCATED @ EXISTING NEXTEL COMPOUND WITHIN UNDERGROUND VAULTS, VERIFY IN FIELD

0' 5' 25' 50'
1" = 20.0'

1 A1.1 OVERALL SITE PLAN
SCALE: 1" = 20.0'

MST ARCHITECTS
1520 River Park Drive, Sacramento, CA 95815
916-567-9630
www.MSTArchitects.com
LYLE

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LAWLER RANCH
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MENLO PARK, CA 94025

SHEET TITLE:
OVERALL SITE PLAN, EQUIPMENT LAYOUT PLAN

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Revisions:
- 1 11/19/15
- 2 11/23/15
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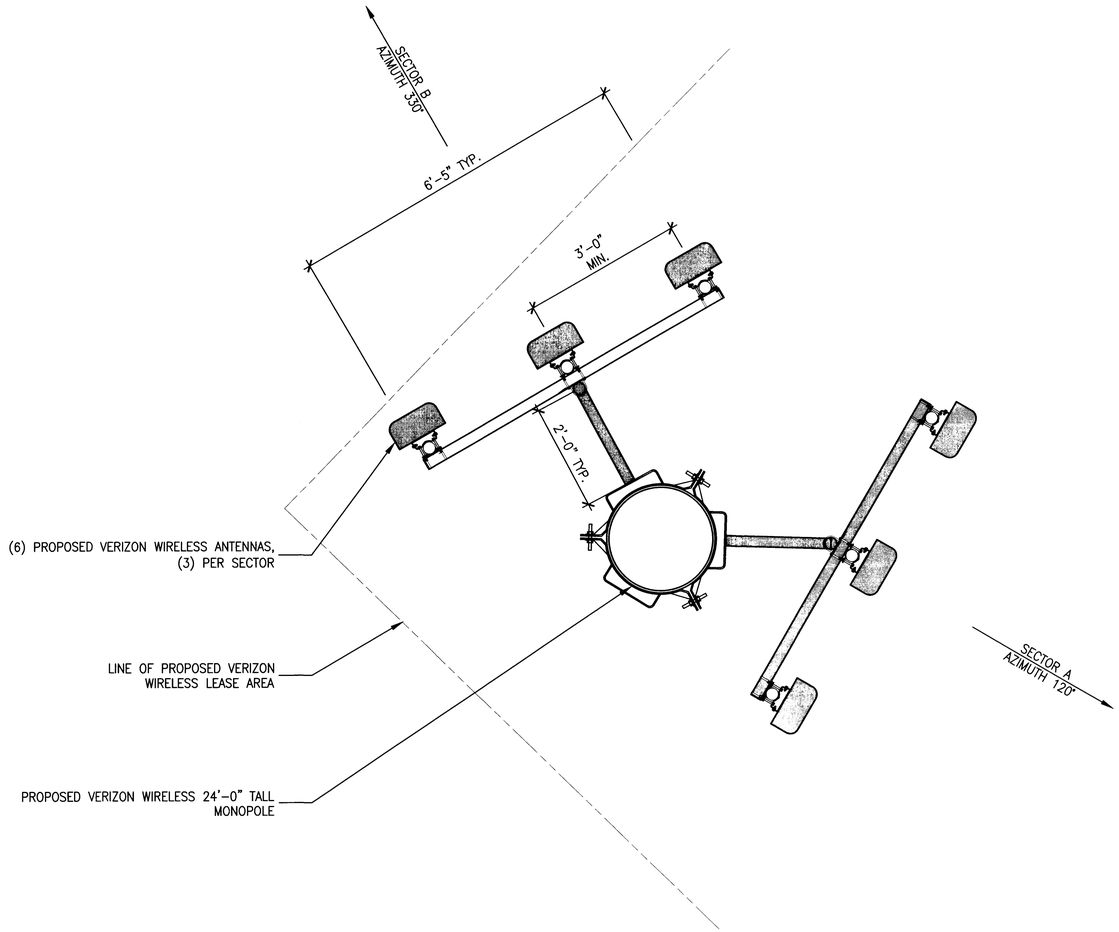
File: 200.154_A11.dwg
Drawn By: ALB
Checked By: ALB
Scale: AS NOTED
Date: 11/23/2015

Job No. 200.154

A1.1



0' 1' 5' 10'

3/4" = 1'-0"

1 / A2.1 ENLARGED ANTENNA LAYOUT PLAN

SCALE: 3/4" = 1'-0"

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SHEET TITLE: ANTENNA LAYOUT PLAN

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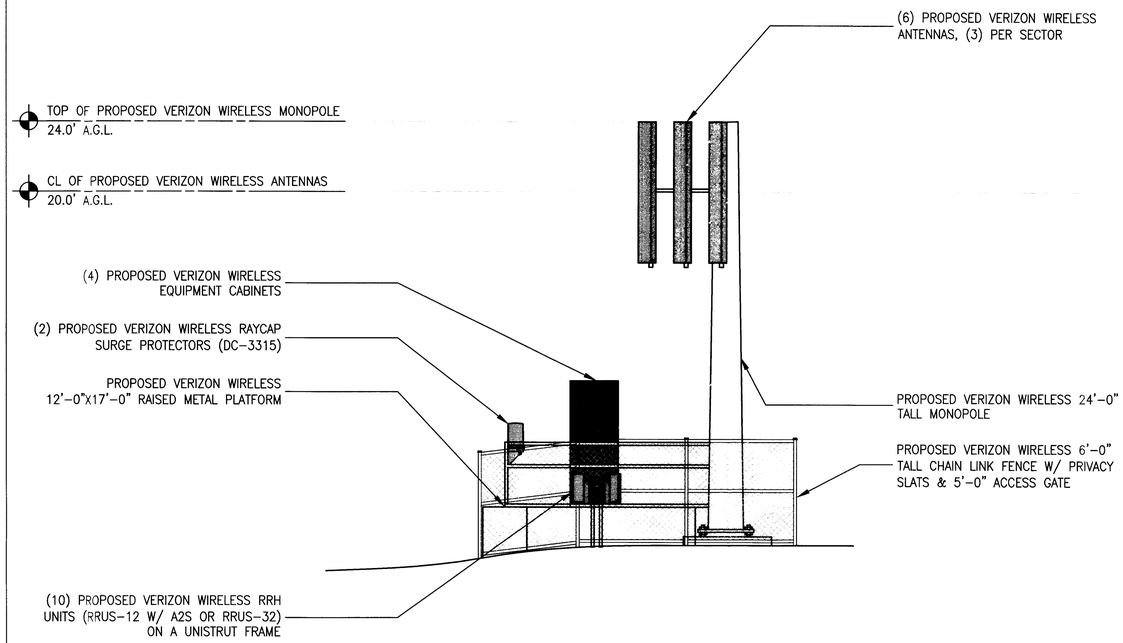
Revisions:
1 11/19/15
2 11/23/15
3 --
4 --
5 --

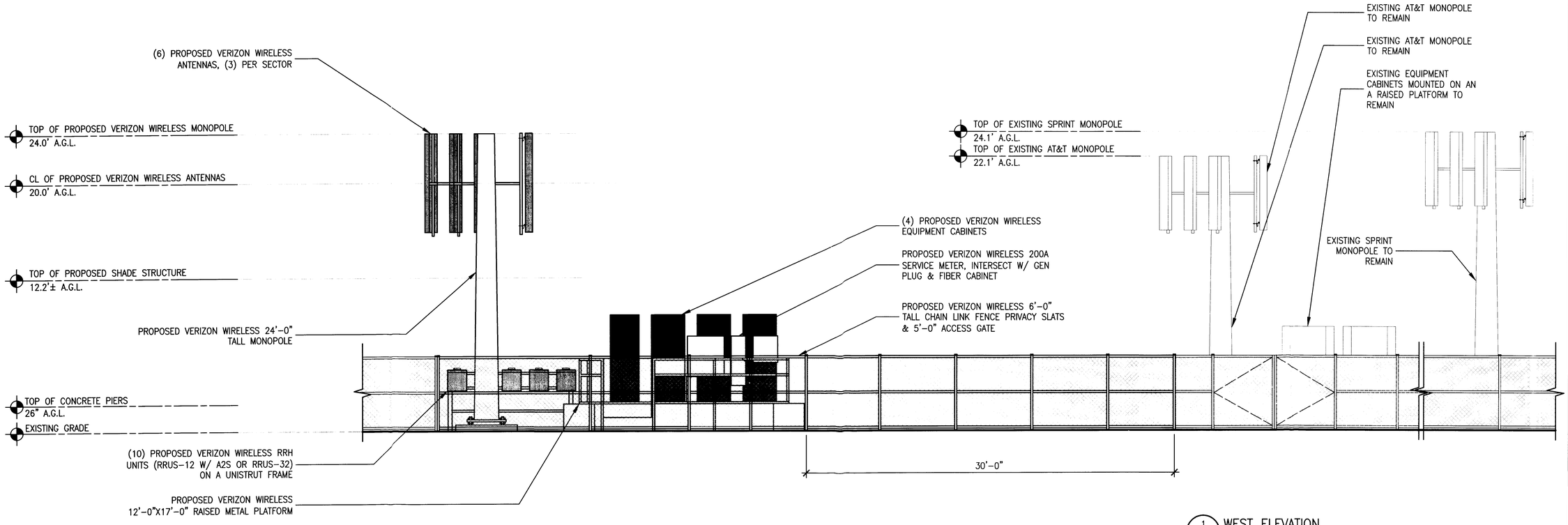
File: 200.154_A22.dwg
Drawn By: ALB
Checked By: ALB
Scale: AS NOTED
Date: 11/23/2015

Job No. 200.154

A2.1



2 A3.1 NORTH ELEVATION
SCALE: 1/4" = 1'-0"



1 A3.1 WEST ELEVATION
SCALE: 1/4" = 1'-0"

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LAWLER RANCH
10 LAWLER RANCH ROAD
MENLO PARK, CA 94025

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SHEET TITLE: PROJECT ELEVATIONS

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Revisions:
- 1 11/19/15
- 1 11/23/15
- 2 --
- 3 --
- 4 --

File: 200.154_A31.dwg
Drawn By: ALB
Checked By: ALB
Scale: AS NOTED
Date: 11/23/2015

Job No. 200.154

A3.1

PLN2016-00218

Verizon Wireless • Proposed Base Station (Site No. 307352 "Lawler Ranch")
10 Lawler Ranch Road • Menlo Park, 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. 307352 "Lawler Ranch") proposed to be located at 10 Lawler Ranch Road in Menlo Park, 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 to be sited near 10 Lawler Ranch Road in Menlo Park. The proposed operation will, together with the existing base stations at the site, 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 MST Architects, Inc., dated September 14, 2015, it is proposed to install six Andrew Model SBNHH-1D65C directional panel antennas on a new 24-foot steel pole to be sited on the hill on the north side of Lawler Ranch Road, overlooking Interstate 280, in unincorporated San Mateo County. The antennas would employ no downtilt, would be mounted at an effective height of about 20 feet above ground, and would be oriented in groups of three toward 120°T and 330°T. The maximum effective radiated power in any direction would be 10,410 watts, representing simultaneous operation at 4,110 watts for AWS, 3,580 watts for PCS, and 2,720 watts for 700 MHz service; no operation on cellular frequencies is presently proposed from this site.

Presently located on two nearby poles are similar antennas for use by AT&T Mobility and Sprint. For the limited purpose of this study, the transmitting facilities of those carriers are assumed to be as follows:

Operator	Service	Maximum ERP	Antenna Model	Downtilt	Height
AT&T	AWS	2,100 watts	Andrew SBNH-1D6565A	none	20 ft
	PCS	5,300	Andrew SBNH-1D6565A	none	20
	Cellular	1,600	Andrew SBNH-1D6565A	none	20
	700 MHz	1,000	Andrew SBNH-1D6565A	none	20

Operator	Service	Maximum ERP	Antenna Model	Downtilt	Height
Sprint	BRS	1,500 watts	KMW ET-X-WM-18-65-8P	none	12½ ft
	PCS	7,000	KMW ET-X-TS-70-15-62-18	none	12½
	SMR	500	KMW ET-X-TS-70-15-62-18	none	12½

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation by itself is calculated to be 0.24 mW/cm^2, which is 26% of the applicable public exposure limit. The maximum calculated cumulative level at ground, for the simultaneous operation of all three carriers, is 37% of the public exposure limit. The maximum calculated cumulative level at any nearby building* is 0.30% of the public limit. The maximum calculated cumulative level at the second-floor elevation of any nearby residence† is 0.19% 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.

No Recommended Mitigation Measures

Due to their mounting locations 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 the several carriers will, as FCC licensees, take adequate steps to ensure that their 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 10 Lawler Ranch Road in Menlo Park, 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.

* Located at least 640 feet to the northeast, on the golf course, based on photographs from Google Maps.
† Located at least 920 feet to the north, based on photographs from Google Maps.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2017. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

William F. Hammett, P.E.
707/996-5200

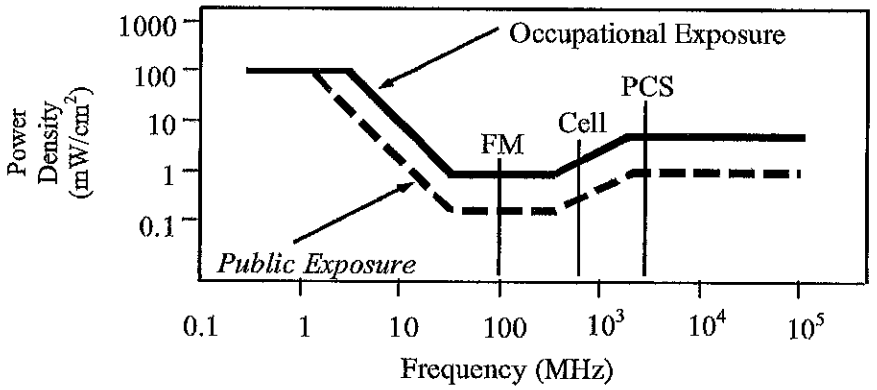
December 11, 2015

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 θ_{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
η = 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.