

Case File Number: PLN16-324

January 11, 2017

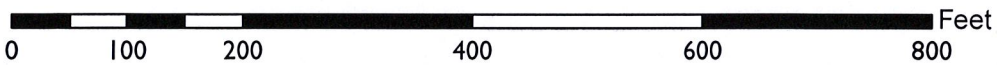
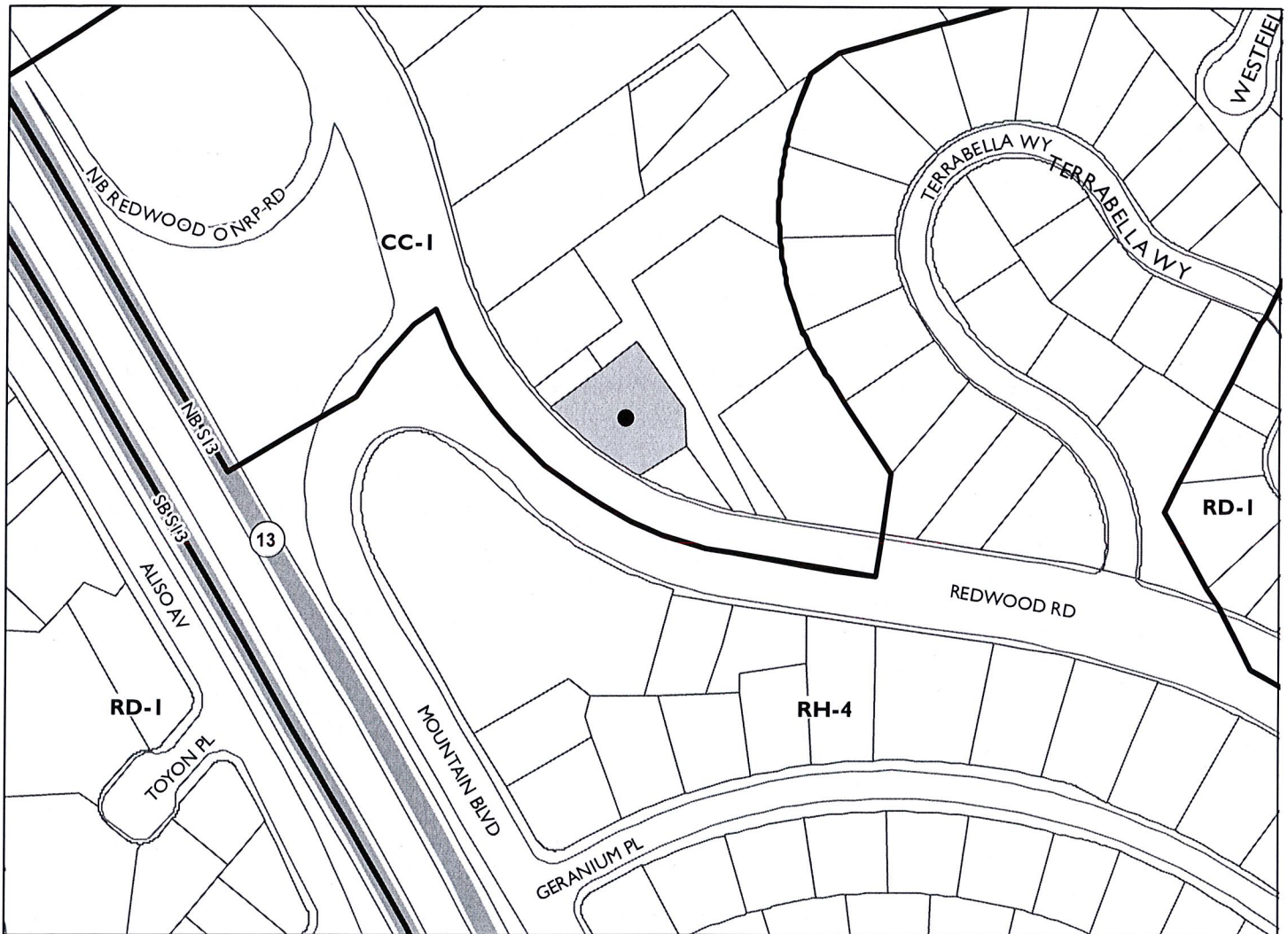
Location:	4130 Redwood Road. (See map on reverse)
Assessor Parcel Numbers:	(037-2570-008-00)
Proposal:	Installation of a wireless telecommunications facility involving six (6) new antennas and fifteen (15) radio units located within two (8'x8' and 7'x7') screening enclosures located on the roof of an existing commercial building; associated equipment cabinets located on a raised steel screened ground platform at the rear portion of one-story commercial building.
Applicant:	Complete Wireless for Verizon Wireless.
Contact Person	Benjamin Merritt
Phone Number:	(916) 747-0624
Owner:	Green Marketplace LLC.
Planning Permits Required:	Major Conditional Use Permit and Regular Design Review to install a Macro Telecommunications Facility located within 100' of a residential zone.
General Plan:	Community Commercial
Zoning:	CC-1 Community Commercial-1 Zone.
Environmental Determination:	Exempt, Sections 15301: existing facilities and 15303: new construction or conversion of small structures; Section 15183: projects consistent with a community plan, general plan or zoning.
Historic Status:	Not a Potential Designated Historic Property; Survey Rating: N/A
Service Delivery District:	3
City Council District:	4
Date Filed:	October 20, 2016
Finality of Decision:	Appealable to City Council
For Further Information:	Contact case planner Jason Madani at (510) 238-4790 or jmadani@oaklandnet.com

SUMMARY

The project applicant (Complete Wireless) is proposing to install a wireless telecommunications facility involving six (6) new antennas and fifteen (15) radio units located within two (8'x8' and 7'x7') platforms housed in faux chimney structures on top of an existing commercial building. The two new structures will be approximately 5' to 7' in height above the existing roof-level and 32'-5" above ground level. The antennas will be an additional 1' in height. A screened mechanical equipment cabinet measuring 28'x10'-5" on a raised steel platform will be located on the hillside below the building facing Redwood Road.

The site is located within the CC-1 zone and 100' of a residential zone. A Major Conditional Use Permit and Design Review are required to install a Macro Telecommunications Facility within 100' of a residential zone. The proposal is located within an area consisting of several one-story commercial buildings (restaurants, dry cleaning, office building, and gas station) and is adjacent to hillside residential development on the upper slope. The proposed antenna and equipment cabinets are designed to be fully concealed from public view and painted and textured to match the existing building.

CITY OF OAKLAND PLANNING COMMISSION



Case File: PLN16324

Applicant: Complete Wireless Consulting for Verizon Wireless

Address: 4130 Redwood Road

Zone: CC-I

This equipment will fill a significant gap in telecommunication coverage in the area around the intersection of Redwood Road and Mountain Boulevard. The project meets all the required findings for approval (see *Findings* section). Therefore, staff recommends approval of the project subject to the attached conditions of approval.

BACKGROUND

Section 704 of the Telecommunications Act of 1996 (TCA) provides federal standards for the siting of “Personal Wireless Services Facilities.” “Personal Wireless Services” include all commercial mobile services (including personal communications services (PCS), cellular radio mobile services, and paging); unlicensed wireless services; and common carrier wireless exchange access services. Under Section 704, local zoning authority over personal wireless services is preserved such that the FCC is prevented from preempting local land use decisions; however, local government zoning decisions are still restricted by several provisions of federal law. Specifically:

- Under Section 253 of the TCA, no state or local regulation or other legal requirement can prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.
- Further, Section 704 of the TCA imposes limitations on what local and state governments can do. Section 704 prohibits any state and local government action which unreasonably discriminates among personal wireless providers. Local governments must ensure that its wireless ordinance does not contain requirements in the form of regulatory terms or fees which may have the “effect” of prohibiting the placement, construction, or modification of personal wireless services.
- Section 704 also preempts any local zoning regulation purporting to regulate the placement, construction and modification of personal wireless service facilities on the basis, either directly or indirectly, on the environmental effects of radio frequency emissions (RF) of such facilities, which otherwise comply with Federal Communications Commission (FCC) standards in this regard. (See 47 U.S.C. Section 332(c)(7)(B)(iv) (1996)). This means that local authorities may not regulate the siting or construction of personal wireless facilities based on RF standards that are more stringent than those promulgated by the FCC.
- Section 704 mandates that local governments act upon personal wireless service facility siting applications to place, construct, or modify a facility within a reasonable time (See 47 U.S.C.332(c)(7)(B)(ii) and FCC Shot Clock ruling setting forth “reasonable time” standards for applications deemed complete).
- Section 704 also mandates that the FCC provide technical support to local governments in order to encourage them to make property, rights-of-way, and easements under their jurisdiction available for the placement of new spectrum-based telecommunications services. This proceeding is currently at the comment stage.

For more information on the FCC's jurisdiction in this area, contact Steve Markendorff, Chief of the Broadband Branch, Commercial Wireless Division, Wireless Telecommunications Bureau, at (202) 418-0640 or e-mail "smarkend@fcc.gov".

PROPERTY DESCRIPTION

The subject property is an approximately 9,846 square foot commercial center consisting of several one-story commercial buildings (restaurants, dry cleaning, office building, and gas station). The parcel is located on the downslope of the hill facing Redwood Road and is adjacent to hillside residential development on the upper slope.

PROJECT DESCRIPTION

The applicant is proposing (Attachment A):

- Installation of six (6) new antennas, fifteen (15) radio units, and three (3) surge suppressors. The telecommunication equipment will be screened inside two rooftop lease areas (7'x7' and 8'x8') designed as faux chimney structures. The structures will be on top of the existing commercial building will be approximately 5' to 7' tall and 32' above the ground. One of the structures will have a hip roof while the other will be flat and the antennas will protrude an additional 1' above the structure, and
- Construction of a third lease area within a raised, mechanical equipment cabinet located on the hillside below the building. The platform will be approximately 16' in height. The cabinet will measure 28'x10'.5" and will be screened with metal stud walls and covered with a Fiberglass Reinforced Panel (FRP) screening painted and textured to match the existing building.

GENERAL PLAN ANALYSIS

The subject property is classified as Community Commercial General Plan per the Oakland General Plan's Land Use and Transportation Element (LUTE). This land use classification is intended to identify, create, maintain, and enhance areas suitable for a wide variety of commercial and institutional operations along the City's major corridors and in shopping districts or centers.

The proposed unmanned wireless telecommunication facility will not adversely affect and detract from the characteristics of the neighborhood and the small commercial center. As a result, the proposal is an appropriate location and would not significantly increase negative visual impacts to adjacent neighboring commercial or residential properties.

ZONING ANALYSIS

The subject property is in the CC-1 Community Commercial Zone. The rear portion of the subject property faces onto Redwood Road and is located within 100' of a residential zone. However, there are no residential buildings located within 177' of the subject site. The intent of the CC-1 is to create, maintain, and enhance suitable for a wide variety of commercial and institutional operations along the City's major corridors and in shopping districts or centers.

Section 17.35.40 of the City of Oakland Planning Code requires a Conditional Use Permit to install a Macro Telecommunication facility. Furthermore, pursuant to Section 17.134.020 (A) (3)(i), a Major Conditional Use Permit is required for any telecommunication facility in or within one hundred (100) feet of the boundary of any residential zone.

Sections 17.128.070, 17.136.040(A)(10) and 17.136.050B of the City of Oakland Planning Code requires a Major Design Review permit for Macro Telecommunication facilities. Special findings are also required for Design Review approval to ensure that the facility is concealed to the greatest extent possible. The project design is discussed later in the *Key Issues* section of this report, and the required *Findings* for Major Conditional Use Permit and Design Review are listed and included in staff's evaluation later in this report.

ENVIRONMENTAL DETERMINATION

The California Environmental Quality Act (CEQA) Guidelines lists the projects that qualify as categorical exemptions from environmental review. The proposed project is categorically exempt from the environmental review requirements pursuant to Section 15301: existing facilities and 15303: new construction or conversion of small structures. In addition, the project is also exempt per Section 15183: projects consistent with a community plan, general plan or zoning.

KEY ISSUES AND IMPACTS

Project Site

Section 17.128.110 of the City of Oakland Telecommunication Regulations requires that new wireless facilities shall generally be located on designated properties or facilities in the following ranked order of preference:

- A. Co-located on an existing structure or facility with existing wireless antennas.
- B. City owned properties or other public or quasi-public facilities.
- C. Existing commercial or industrial structures in non-residential zones (excluding all HBX Zones and the D-CE3 and D-C-4 Zones).
- D. Existing commercial or industrial structures in residential zones, HBX Zones, or the D-CE-3 or D-CE-4 Zones.
- E. Other non-residential uses in residential zones, HBX Zones, or the D-CE-3 or D-CE-4 Zones.
- F. Residential uses in non-residential zones (excluding all HBX Zones and the D-CE-3 and D-CE-4 Zones).
- G. Residential uses in residential zones, HBX Zones, or the D-CE-3 or D-CE-4 Zones.

Facilities sited on an A, B or C ranked preferences do not require a site alternatives analysis. Since the proposed project involves installation of fully concealed new telecommunication facility within a commercial zone, the proposed project meets preference C, and a site alternatives analysis is not required. However, the applicant has provided a site alternative analysis (Attachment B).

Alternative Site Analysis:

The project is located within an existing small shopping center and in an underserved telecommunication area. The project applicant considered three alternative sites on other commercial facilities in this area, but none of these sites were desirable due to the physical constraints or from a service coverage perspective. The proposed location is approximately equidistant from other Distributed Antenna Systems (DAS) nodes proposed in the surrounding area so that service coverage can be evenly distributed.

Staff has reviewed the applicant's alternative sites analysis and determined that the site selected conforms to the telecommunication regulation requirements. In addition, staff agrees that no other sites are more suitable.

Project Design

Section 17.128.120 of the City of Oakland Telecommunications Regulations requires that new wireless facilities shall generally be designed in the following order of preference:

- A. Building or structure mounted antennas completely concealed from view.
- B. Building or structure mounted antennas set back from roof edge, not visible from the public right-of way.
- C. Building or structure mounted antennas below roof line (facade mount, pole mount) visible from public right-of-way, painted to match existing structure.
- D. Building or structure mounted antennas above roof line visible from public right of-way.
- E. Monopoles.
- F. Towers.

Facilities designed to meet an A and B ranked preference do not require a site design alternatives analysis. Facilities designed to meet a C through F ranked preference, inclusive, must submit a site design alternatives analysis as part of the required application materials. The site design alternatives analysis shall, at a minimum, consist of:

Written evidence indicating why each higher preference design alternative cannot be used. Such evidence shall be in sufficient detail that independent verification could be obtained if required by the City of Oakland Zoning Manager. Evidence should indicate if the reason an alternative was rejected was technical (e.g. incorrect height, interference from existing RF sources, inability to cover required area) or for other concerns (e.g. inability to provide utilities, construction or structural impediments).

Since the proposed project meets preference A, a site design alternatives analysis is not required. However, as discussed above the project has been designed so that new antennas, radio units, and surge suppressors will be screened inside two rooftop structures to look like chimneys. The structures will protrude above the roof approximately 5' to 7'. One will have a hip roof while the other will be a flat roof with FRP screening material. The raised, mechanical equipment cabinet will be located on the hillside below the building. The platform will be approximately 28'x10'-5"x 16 and will be screened with metal stud walls within FRP screen

cover painted and textured to match the existing building. This area will also be camouflaged by the existing mature trees located on the downhill slope. Furthermore, staff has included a condition of approval requiring the applicant to submit further details of the screening materials, colors, and textures to ensure that the facilities match, and don't detract from, the existing building facades. Staff has added an additional condition of approval to ensure that the design of the cabinet matches the architecture of the building.

Project Radio Frequency Emissions Standards

Section 17.128.130 of the City of Oakland Telecommunication Regulations require that the applicant submit the following verifications including requests for modifications to existing facilities:

- a.* The Telecommunications regulations require that the applicant submit written documentation demonstrating that the emission from the proposed project are within the limits set by the Federal Communications Commission.

- b.* Prior to final building permit sign off, an RF emissions report indicating that the site is operating within the acceptable thresholds as established by the Federal government or any such agency who may be subsequently authorized to establish such standards.

In the RF emissions report (Attachment C) prepared by Hammett & Edison, the proposed project was evaluated for compliance with appropriate guidelines limiting human exposure to radio frequency electromagnetic fields. The report states that the proposed project will operate and comply with the prevailing standards for limiting public exposure to radio frequency energy, and therefore, will not cause a significant impact on the environment. Additionally, staff recommends that, prior to the final building permit sign off, the applicant submits a certified RF emissions report stating that the facility is operating within acceptable thresholds established by the regulatory federal agency.

CONCLUSION

The new telecommunication facility will be fully concealed from public view and will not have significant visual impacts on the characteristics of the existing commercial shopping center or the residential neighborhood. It will provide an essential telecommunication service to the community and the City of Oakland at large. It will also be available to emergency services such as Police, Fire and Health response teams. Staff believes that the findings for approval can be made to support the Conditional Use Permit, Design Review.

RECOMMENDATIONS:

1. Affirm staff's Environmental Determination
2. Approve the Conditional Use Permit, Design Review, application subject to the attached Findings and Conditions of Approval

Prepared by:



Jason Madani
Planner II

Reviewed by:



Scott Miller,
Zoning Manager

Approved for forwarding to the
City Planning Commission



Darin Ranelletti Interim Director
Bureau of Planning

ATTACHMENTS:

- A. Project Plans
- B. Alternative Site Selection & Photo simulations
- C. Hammett & Edison, Inc. Consulting Engineer RF Emissions Report

FINDINGS FOR APPROVAL

This proposal meets the required findings under Sections 17.134.050 (General Use Permit criteria); 17.136.050 (B) (Non-Residential Design Review criteria); and 17.128.060(B) (Telecommunications Macro Facilities 17.128.060(C)), as set forth below. Required findings are shown in **bold** type; reasons proposal satisfies them are shown in normal type.

SECTION 17.134.050 – GENERAL USE PERMIT FINDINGS:

A. That the location, size, design, and operating characteristics of the proposed development will be compatible with, and will not adversely affect, the livability or appropriate development of abutting properties and the surrounding neighborhood, with consideration to be given to harmony in scale, bulk, coverage, and density; to the availability of civic facilities and utilities; to harmful effect, if any upon desirable neighborhood character; to the generation of traffic and the capacity of surrounding streets; and to any other relevant impact of the development.

The purpose of the project is to enhance wireless telecommunications service in this area. The installation of the telecommunication equipment will not adversely affect the operating characteristics of the existing commercial area because the proposed radio units will be inside two faux chimney screening structures located on the roof of an existing commercial building. These enclosures will also be similar to typical mechanical equipment located on building rooftops.

The proposed rooftop enclosures will be approximately 5-7' above the existing roofline, 32'-5" above ground and below the allowed 35' building height limit. The enclosures will not obstruct possible views as seen from the existing upper hillside residential development. The other equipment cabinet area is located on the hillside below the commercial buildings. It will be also screened from view as well as camouflaged by the existing mature trees. The facility will be unmanned and will not create additional vehicular traffic in the area.

B. That the location, design, and site planning of the proposed development will provide a convenient and functional living, working, shopping, or civic environment, and will be as attractive as the nature of the use and its location and setting warrant.

The location, design and site planning of the proposed facility will provide enhanced telecommunication service for the area. The proposed telecommunication use will not alter existing commercial uses within the shopping center, will look similar to other rooftop mechanical equipment and is not expected to negatively affect the general quality and character of the neighborhood as it will be screened from view.

C. That the proposed development will enhance the successful operation of the surrounding area in its basic community functions, or will provide an essential service to the community or region.

The proposed facility will enhance the successful operation of the surrounding area in its basic community function and will provide an essential telecommunication service to the community. Specifically, the proposal will improve telecommunication coverage for

businesses within the shopping center, the surrounding residences and will be available to the Police, Fire Services, and the public safety organizations and the general public.

D. That the proposal conforms to all applicable design review criteria set forth in the DESIGN REVIEW PROCEDURE of Chapter 17.136 of the Oakland Planning Code.

The proposal conforms with all significant aspects of the Design Review criteria set forth in Chapter 17.136 of the Oakland Planning Code, as outlined below.

E. That the proposal conforms in all significant respects with the Oakland General Plan and with any other applicable plan or development control map which has been adopted by the City Council.

The subject property is located within the Community Commercial land use classification per the City of Oakland Land Use and Transportation Element of the General Plan. This classification is intended to identify, create, maintain, and enhance areas suitable for a wide variety of commercial and institutional operations along the City's major corridors and in shopping districts or centers.

The proposed unmanned wireless telecommunication facility will not adversely affect and detract from the community commercial characteristics of the area where it will be located. It will be similar in design to other rooftop mechanical equipment structures. The other equipment cabinet area is located on hillside below the commercial buildings. It will be also be screened from view as well as camouflaged by the existing mature trees. Therefore, the facility will not likely affect the general quality and character of the neighborhood. As a result, the proposal is an appropriate location and would not significantly increase negative visual impacts to adjacent neighboring commercial or residential properties.

17.136.050(B) – NONRESIDENTIAL DESIGN REVIEW CRITERIA:

1. That the proposal will help achieve or maintain a group of facilities which are well related to one another and which, when taken together, will result in a well-composed design, with consideration given to site, landscape, bulk, height, arrangement, texture, materials, colors, and appurtenances; the relation of these factors to other facilities in the vicinity; and the relation of the proposal to the total setting as seen from key points in the surrounding area. Only elements of design which have some significant relationship to outside appearance shall be considered, except as otherwise provided in Section 17.136.060;

The project is proposed to be located in an existing commercial shopping center with several one-story buildings and a gas station. The new facility will be located inside two faux chimney screening structures located on the roof of the commercial building. The proposed enclosures are below the allowed 35' building height limit and will not obstruct possible views as seen from existing upper hillside residential development. The proposed equipment will be camouflaged and blend in with the existing HVAC equipment located on the roof of commercial building. Photo simulations submitted for the project show the view of the proposed antennas and screening, as seen from the street, with minimum visual impacts. Therefore, the proposal will not have significant impacts on the operating characteristics of the

existing commercial building and surrounding neighborhood. Furthermore, staff has included a condition of approval requiring the applicant to submit further details of the screening materials, colors, and textures to ensure that the facilities match, and don't detract from, the existing building facades. Staff has added an additional condition of approval to ensure that the design of the cabinet matches the architecture of the building.

2. That the proposed design will be of a quality and character which harmonizes with, and serves to protect the value of, private and public investments in the area;

See the findings above which describe how the proposed facility is of a quality and character typical of existing rooftop commercial mechanical equipment and enhances the successful operation of the surrounding area.

3. That the proposed design conforms in all significant respects with the Oakland General Plan and with any applicable design review guidelines or criteria, district plan, or development control map which have been adopted by the Planning Commission or City Council.

See below for design review findings.

17.128.070(B) DESIGN REVIEW CRITERIA FOR MACRO FACILITIES

1. Antennas should be painted and/or textured to match the existing structure:

The proposed screening enclosures will be compatible in color and texture with the existing building materials. The proposed equipment will be camouflaged and blend in with the existing HVAC equipment located on the roof of commercial building as well as screened from below due to the existing mature trees on the downslope side.

2. Antennas mounted on architecturally significant structures or significant architectural details of the building should be covered by appropriate casings which are manufactured to match existing architectural features found on the building:

The proposed telecommunication facility consists of two new rooftop mounted antenna and radio unit platforms housed in faux chimney structures on top of an existing building within a small commercial shopping area. The shopping center is not an architecturally significant structure and contains little noted architecture details. The enclosures are designed to look like faux chimneys and are similar to other typical rooftop equipment on commercial structures. The new platform below the building will be similar in color and texture as the existing building but will also be screened from view due to the tall existing trees on the downslope side. Staff has added an additional condition of approval to ensure that the design of the cabinet matches the architecture of the building.

3. Where feasible, antennas can be placed directly above, below or incorporated with vertical design elements of a building to help in camouflaging:

The antennas are located on the proposed rooftop enclosures and are largely screened from view and similar to other rooftop equipment.

4. Equipment shelters or cabinets shall be screened from the public view by using landscaping, or materials and colors consistent with surrounding backdrop:

The proposed equipment cabinets are located on the hillside below the building area. The cabinets will be enclosed using metal stud walls, covered with a FRP screen, and painted to match the existing building. In addition, it will be camouflaged with existing mature tall trees located on a down sloped parcel.

5. Equipment shelters or cabinets shall be consistent with the general character of the area.

See above findings.

6. For antennas attached to the roof, maintain a 1:1 ratio for equipment setback; screen the antennas to match existing air conditioning units, stairs, or elevator towers; avoid placing roof mounted antennas in direct line with significant view corridors.

The placement of the antennas enclosures will maintain a 1:1 ratio setback from the edge of building roof line. The proposed equipment enclosures are designed to look like chimneys and generally match other typical mechanical equipment.

7. That all reasonable means of reducing public access to the antennas and equipment has been made, including, but not limited to, placement in or on buildings or structures, fencing, anti-climbing measures and anti-tampering devices.

The proposed panel antennas and radio units will be mounted on the roof of an existing commercial building and will not be accessible to the public due to its location approximately 32' above ground. The associated equipment cabinets will be fully concealed from public view with limited access due to the steep slope.

Section 17.128.070(C) CONDITIONAL USE PERMIT (CUP) FINDINGS FOR MACRO FACILITIES

1. The project must meet the special design review criteria listed in subsection B of this section (17.128.070B):

The proposed project meets the special design review criteria listed in section 17.128.070B. (see above).

2. The proposed project must not disrupt the overall community character:

The proposed telecommunications facility will be located on the roof of existing commercial building, within a commercial shopping center, and is fully screened from public view. Therefore, the proposal will not disrupt the overall community character surrounding the subject site.

CONDITIONS OF APPROVAL

1. Approved Use

The project shall be constructed and operated in accordance with the authorized use as described in the approved application materials, **PLN16-324** and the submitted plans **dated October 20, 2016**, as amended by the following conditions of approval and mitigation measures, if applicable (“Conditions of Approval” or “Conditions”).

2. Effective Date, Expiration, Extensions and Extinguishment

This Approval shall become effective immediately, unless the Approval is appealable, in which case the Approval shall become effective in ten calendar days unless an appeal is filed. Unless a different termination date is prescribed, this Approval shall expire **two years** from the Approval date, or from the date of the final decision in the event of an appeal, unless within such period all necessary permits for construction or alteration have been issued, or the authorized activities have commenced in the case of a permit not involving construction or alteration. Upon written request and payment of appropriate fees submitted no later than the expiration date of this Approval, the Director of City Planning or designee may grant a one-year extension of this date, with additional extensions subject to approval by the approving body. Expiration of any necessary building permit or other construction-related permit for this project may invalidate this Approval if said Approval has also expired. If litigation is filed challenging this Approval, or its implementation, then the time period stated above for obtaining necessary permits for construction or alteration and/or commencement of authorized activities is automatically extended for the duration of the litigation.

3. Compliance with Other Requirements

The project applicant shall comply with all other applicable federal, state, regional, and local laws/codes, requirements, regulations, and guidelines, including but not limited to those imposed by the City’s Bureau of Building, Fire Marshal, and Public Works Department. Compliance with other applicable requirements may require changes to the approved use and/or plans. These changes shall be processed in accordance with the procedures contained in Condition #4.

4. Minor and Major Changes

- a. Minor changes to the approved project, plans, Conditions, facilities, or use may be approved administratively by the Director of City Planning
- b. Major changes to the approved project, plans, Conditions, facilities, or use shall be reviewed by the Director of City Planning to determine whether such changes require submittal and approval of a revision to the Approval by the original approving body or a new independent permit/approval. Major revisions shall be reviewed in accordance with the procedures required for the original permit/approval. A new independent permit/approval shall be reviewed in accordance with the procedures required for the new permit/approval.

5. Compliance with Conditions of Approval

- a. The project applicant and property owner, including successors, (collectively referred

to hereafter as the “project applicant” or “applicant”) shall be responsible for compliance with all the Conditions of Approval and any recommendations contained in any submitted and approved technical report at his/her sole cost and expense, subject to review and approval by the City of Oakland.

b. The City of Oakland reserves the right at any time during construction to require certification by a licensed professional at the project applicant’s expense that the as-built project conforms to all applicable requirements, including but not limited to, approved maximum heights and minimum setbacks. Failure to construct the project in accordance with the Approval may result in remedial reconstruction, permit revocation, permit modification, stop work, permit suspension, or other corrective action.

c. Violation of any term, Condition, or project description relating to the Approval is unlawful, prohibited, and a violation of the Oakland Municipal Code. The City of Oakland reserves the right to initiate civil and/or criminal enforcement and/or abatement proceedings, or after notice and public hearing, to revoke the Approval or alter these Conditions if it is found that there is violation of any of the Conditions or the provisions of the Planning Code or Municipal Code, or the project operates as or causes a public nuisance. This provision is not intended to, nor does it, limit in any manner whatsoever the ability of the City to take appropriate enforcement actions. The project applicant shall be responsible for paying fees in accordance with the City’s Master Fee Schedule for inspections conducted by the City or a City-designated third-party to investigate alleged violations of the Approval or Conditions.

6. Signed Copy of the Approval/Conditions

A copy of the Approval letter and Conditions shall be signed by the project applicant, attached to each set of permit plans submitted to the appropriate City agency for the project, and made available for review at the project job site at all times.

7. Blight/Nuisances

The project site shall be kept in a blight/nuisance-free condition. Any existing blight or nuisance shall be abated within 60 days of approval, unless an earlier date is specified elsewhere.

8. Indemnification

a. To the maximum extent permitted by law, the project applicant shall defend (with counsel acceptable to the City), indemnify, and hold harmless the City of Oakland, the Oakland City Council, the Oakland Redevelopment Successor Agency, the Oakland City Planning Commission, and their respective agents, officers, employees, and volunteers (hereafter collectively called “City”) from any liability, damages, claim, judgment, loss (direct or indirect), action, causes of action, or proceeding (including legal costs, attorneys’ fees, expert witness or consultant fees, City Attorney or staff time, expenses or costs) (collectively called “Action”) against the City to attack, set aside, void or annul this Approval or implementation of this Approval. The City may elect, in its sole discretion, to participate in the defense of said Action and the project applicant shall reimburse the City for its reasonable legal costs and attorneys’ fees.

b. Within ten (10) calendar days of the filing of any Action as specified in subsection (a) above, the project applicant shall execute a Joint Defense Letter of Agreement with the City, acceptable to the Office of the City Attorney, which memorializes the above obligations.

These obligations and the Joint Defense Letter of Agreement shall survive termination, extinguishment, or invalidation of the Approval. Failure to timely execute the Letter of Agreement does not relieve the project applicant of any of the obligations contained in this Condition or other requirements or Conditions of Approval that may be imposed by the City.

9. Severability

The Approval would not have been granted but for the applicability and validity of each and every one of the specified Conditions, and if one or more of such Conditions is found to be invalid by a court of competent jurisdiction this Approval would not have been granted without requiring other valid Conditions consistent with achieving the same purpose and intent of such Approval.

10. Job Site Plans

Ongoing throughout demolition, grading, and/or construction

At least one (1) copy of the stamped approved plans, along with the Approval Letter and Conditions of Approval, shall be available for review at the job site at all times.

11. Special Inspector/Inspections, Independent Technical Review, Project Coordination and Management

Prior to issuance of a demolition, grading, and/or construction permit

The project applicant may be required to pay for on-call special inspector(s)/inspections as needed during the times of extensive or specialized plan check review, or construction.

The project applicant may also be required to cover the full costs of independent technical and other types of peer review, monitoring and inspection, including without limitation, third party plan check fees, including inspections of violations of Conditions of Approval.

The project applicant shall establish a deposit with the Building Services Division, as directed by the Building Official, Director of City Planning or designee.

12. Days/Hours of Construction Operation

Ongoing throughout demolition, grading, and/or construction

The project applicant shall require construction contractors to limit standard construction activities as follows:

- a) Construction activities are limited to between 7:00 AM and 7:00 PM Monday through Friday, except that pile driving and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 a.m. and 4:00 p.m. Monday through Friday.
- b) Any construction activity proposed to occur outside of the standard hours of 7:00 am to 7:00 pm Monday through Friday for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case by case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened and such construction activities shall only be allowed with the prior written authorization of the Building Services Division.
- c) Construction activity shall not occur on Saturdays, with the following possible exceptions:

- i. Prior to the building being enclosed, requests for Saturday construction for special activities (such as concrete pouring which may require more continuous amounts of time), shall be evaluated on a case by case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened. Such construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division.
- ii. After the building is enclosed, requests for Saturday construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division, and only then within the interior of the building with the doors and windows closed.
- d) No extreme noise generating activities (greater than 90 dBA) shall be allowed on Saturdays, with no exceptions.
- e) No construction activity shall take place on Sundays or Federal holidays.
- f) Construction activities include but are not limited to: truck idling, moving equipment (including trucks, elevators, etc) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.

PROJECT SPECIFIC CONDITIONS:

13. Radio Frequency Emissions

Prior to the final building permit sign off.

The applicant shall submit a certified RF emissions report stating the facility is operating within the acceptable standards established by the regulatory Federal Communications Commission.

14. Operational

Ongoing.

Noise levels from the activity, property, or any mechanical equipment on site shall comply with the performance standards of Section 17.120 of the Oakland Planning Code and Section 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the Planning and Zoning Division and Building Services.

15. Screening Materials

The project applicant shall submit to City Bureau of Planning staff a materials board, samples and colors of the following: FRP screen, hipped roof material, cabinet platform posts, paint and proposed texturing for review and approval. Furthermore, the raised steel equipment platform shall be completely screened to the ground and will have a wood or foam cornice to match the skirt wall on the upper building.

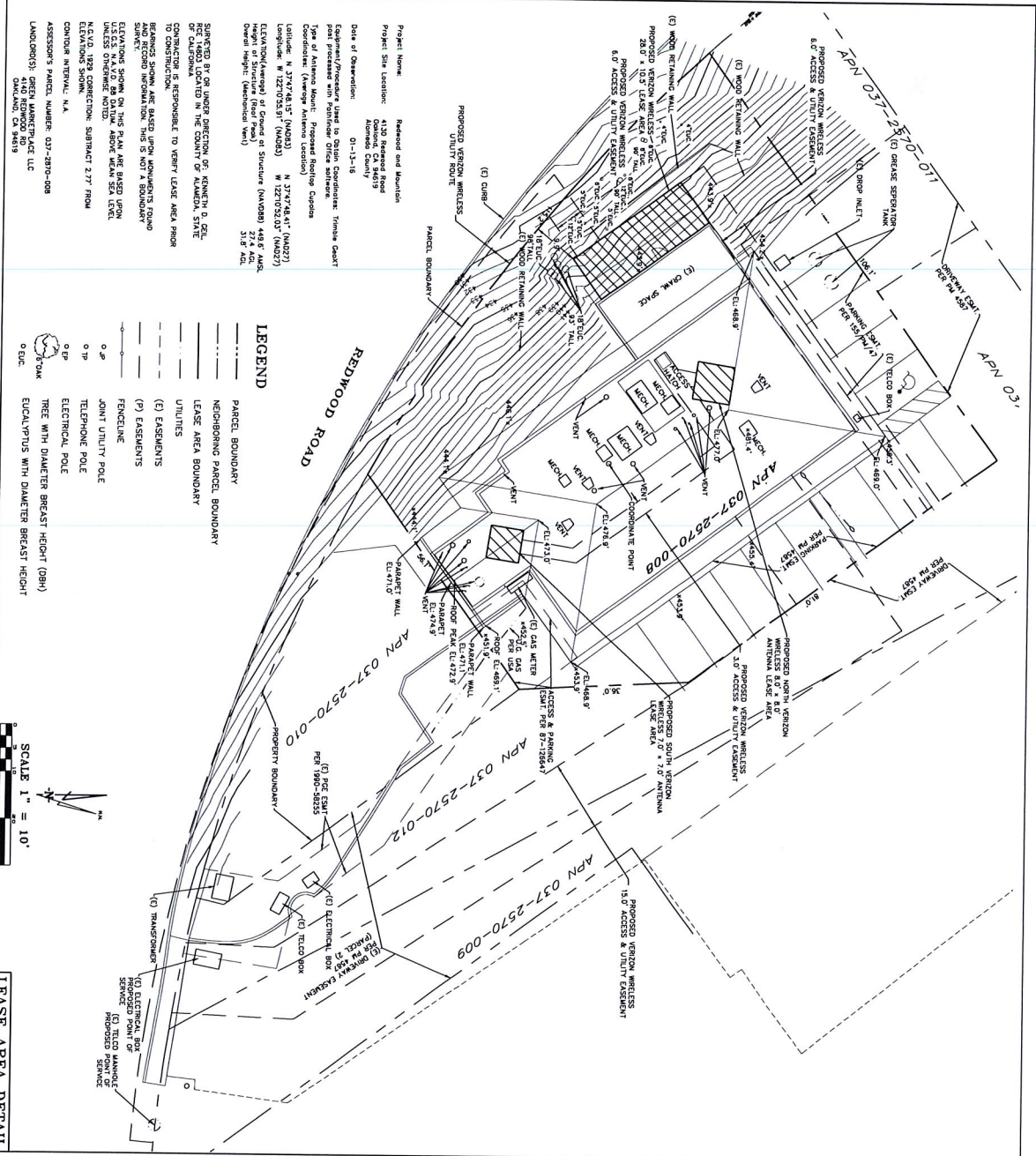
Applicant Statement

I have read and accept responsibility for the Conditions of Approval. I agree to abide by and conform to the Conditions of Approval, as well as to all provisions of the Oakland Planning Code and Oakland Municipal Code pertaining to the project.

Name of Project Applicant

Signature of Project Applicant

Date



LEGEND

- Parcel Boundary
- Neighboring Parcel Boundary
- Lease Area Boundary
- Utilities
- (E) Essentials
- (P) Essentials
- Fence Line
- Joint Utility Pole
- Telephone Pole
- Electrical Pole
- Tree with Diameter Breast Height (DBH)
- Eucalyptus with Diameter Breast Height

SCALE 1" = 10'

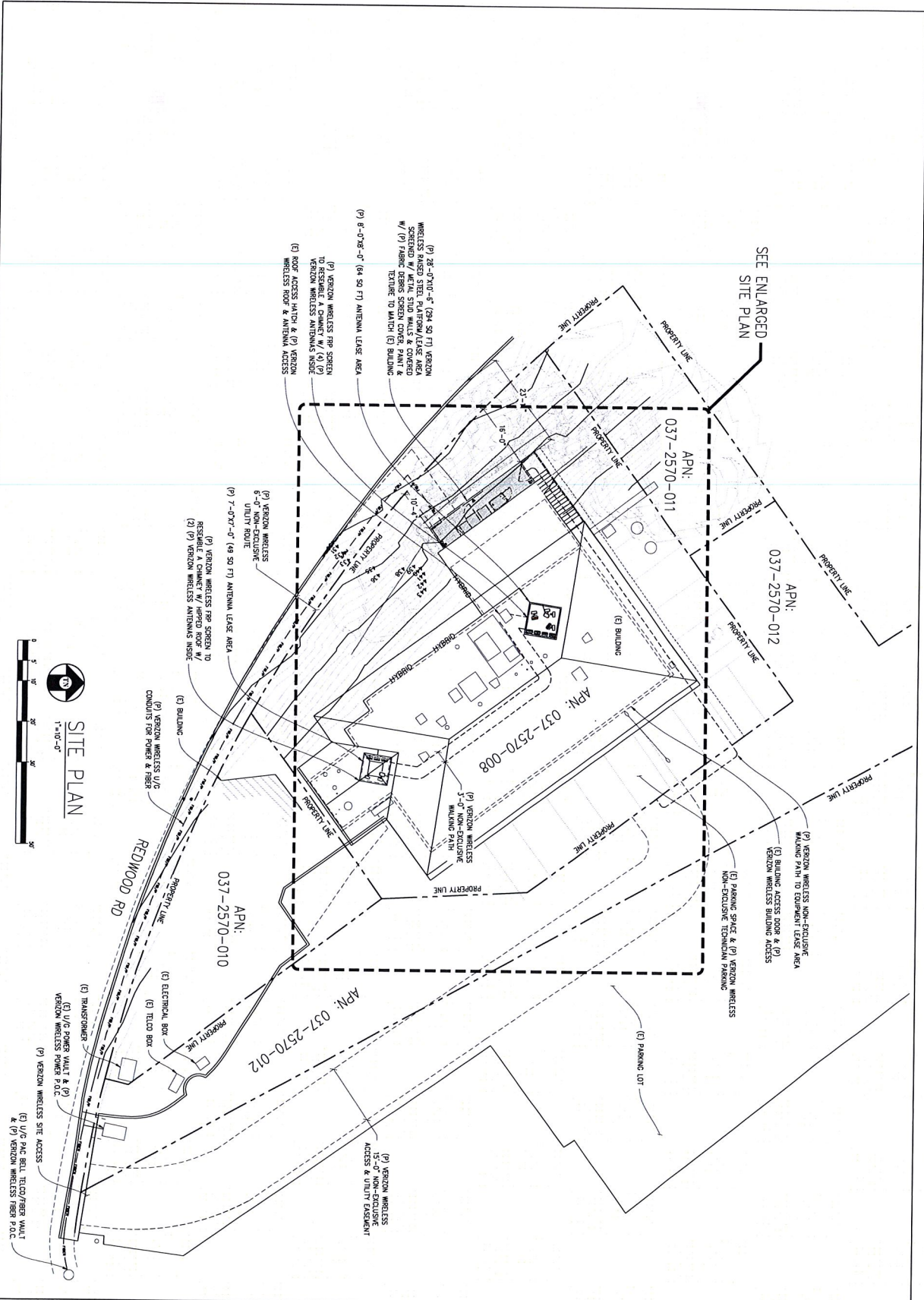
LEASE AREA DETAIL

OKLAND, CA VICINITY MAP

THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OF SERVICE SHALL BE CONSIDERED VOID WITHOUT THESE DRAWINGS AND/OR SPECIFICATIONS. THE CLIENT'S RESPONSIBILITY IS TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE APPLICABLE AGENCIES AND AUTHORITIES. THE CLIENT'S RESPONSIBILITY IS TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE APPLICABLE AGENCIES AND AUTHORITIES. THE CLIENT'S RESPONSIBILITY IS TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE APPLICABLE AGENCIES AND AUTHORITIES.

Redwood and Mountain
 4130 Redwood Road
 Oakland, CA 94619

<p>REVISIONS</p> <table border="1"> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td>01</td> <td>03-13-16</td> <td>Preliminary Drawing</td> </tr> <tr> <td>02</td> <td>03-10-16</td> <td>redlines</td> </tr> <tr> <td>03</td> <td>03-14-16</td> <td>rev lease area</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table> <p>C-1</p>	NO.	DATE	DESCRIPTION	01	03-13-16	Preliminary Drawing	02	03-10-16	redlines	03	03-14-16	rev lease area																<p>verizon</p> <p>PLOT PLAN AND SITE TOPOGRAPHY</p>	<p>CEIL ENGINEERING ENGINEERING & ARCHITECTURE & PLANNING 800 888 8888 4130 REDWOOD ROAD OAKLAND, CA 94619 TEL: (510) 882-1001</p>	<table border="1"> <tr> <th>DEPT</th> <th>APPROVED</th> <th>DATE</th> </tr> <tr> <td>A&C</td> <td></td> <td></td> </tr> <tr> <td>RE</td> <td></td> <td></td> </tr> <tr> <td>SE</td> <td></td> <td></td> </tr> <tr> <td>INT</td> <td></td> <td></td> </tr> <tr> <td>EE/IN</td> <td></td> <td></td> </tr> <tr> <td>OPS</td> <td></td> <td></td> </tr> <tr> <td>EE/OUT</td> <td></td> <td></td> </tr> </table>	DEPT	APPROVED	DATE	A&C			RE			SE			INT			EE/IN			OPS			EE/OUT		
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Δ	DATE	DESCRIPTION	REV
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	06/19/15	2D 30% M.D.	1.0
	09/02/15	2D 35% M.D.	1.0
	10/06/15	CONTRACT REV	1.5
	10/06/15	CONTRACT REV	1.5

DRAWN BY: M. DI DIO
 CHECKED BY: J. GARY
 APPROVED BY: -
 DATE: 02/16/16

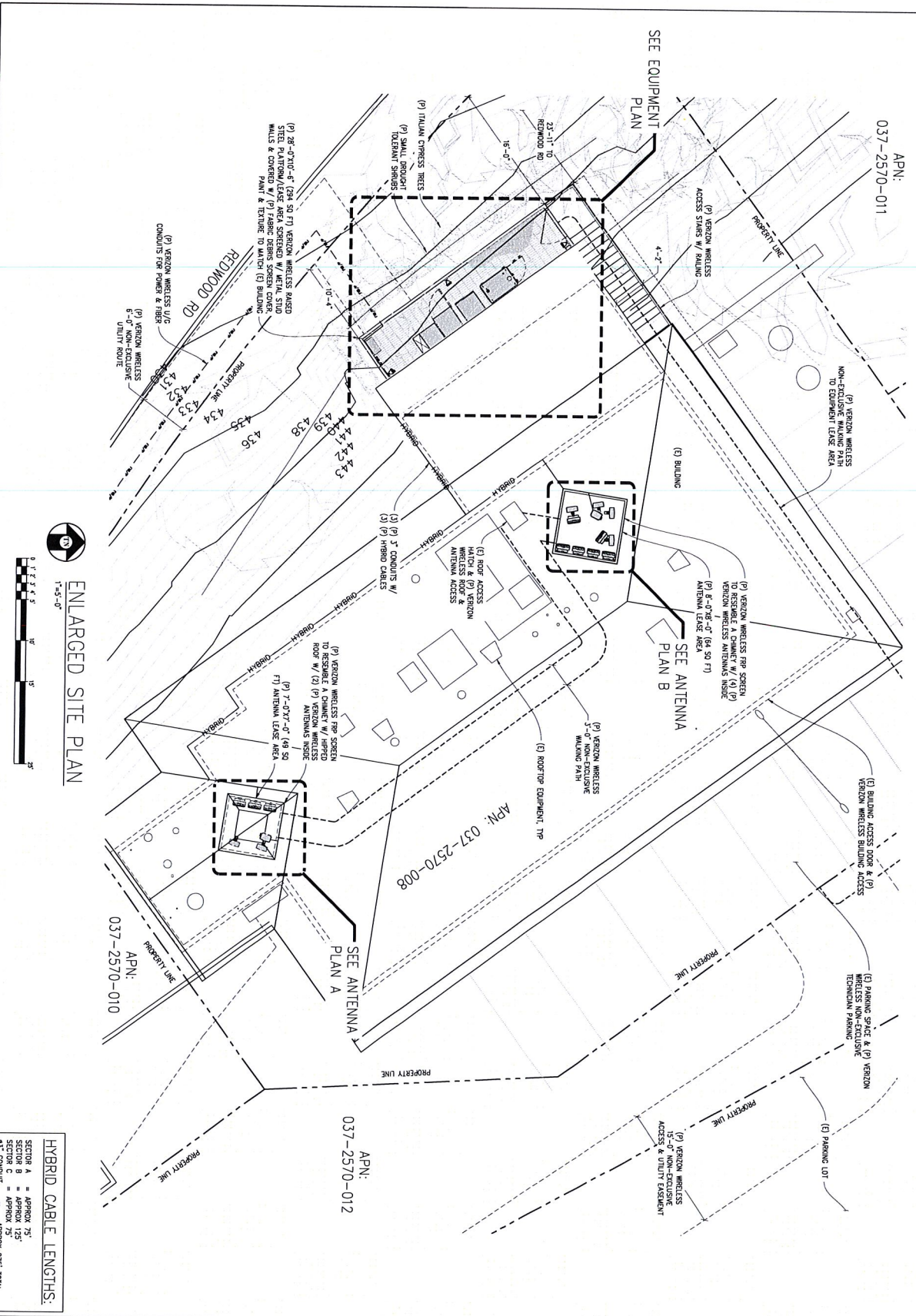
PRELIMINARY:
NOT FOR
CONSTRUCTION
 KEVIN R. SOBSENEN
 3469

Streamline Engineering
and Design Inc.
 8445 Sierra College Blvd, Suite E Granite Bay, CA 95661
 Contact: Larry Houghtby Phone: 916-276-4180
 E-Mail: larry@streamlineeng.com Fax: 916-860-1941

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

REDWOOD AND MOUNTAIN
 255998
 ALVIN ANDY VICKARINO
 OAKLAND, CA 94610

SHEET TITLE:
 SITE PLAN
 SHEET NUMBER:
 A-1



APN: 037-2570-011

APN: 037-2570-008

APN: 037-2570-012

APN: 037-2570-010

ENLARGED SITE PLAN
1"=5'-0"

HYBRID CABLE LENGTHS:

SECTOR A	=	APPROX 75'
SECTOR B	=	APPROX 125'
SECTOR C	=	APPROX 75'
4.5" CONDUIT	=	APPROX 275' TOTAL

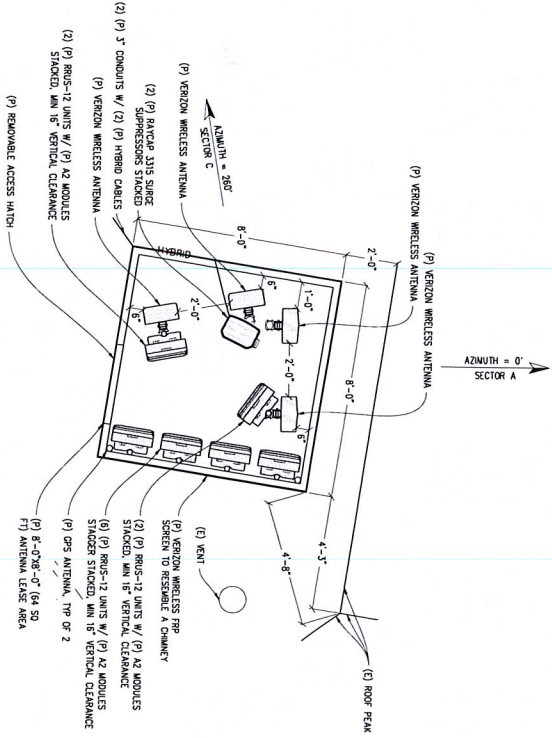
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Δ	DATE / DESCRIPTION REV.
1	07/27/15 / CLIENT REV. 1.5
2	08/19/15 / 20 50% M.D.
3	10/08/15 / CLIENT REV. 1.0
4	10/15/15 / 20 100% M.D.
5	10/15/15 / 20 100% M.D.
DRAWN BY: M. D. DO	
CHECKED BY: L. DAVY	
APPROVED BY: _____	
DATE: 02/16/16	
SHEET TITLE: ENLARGED SITE PLAN	
SHEET NUMBER: A-2	

PRELIMINARY:
NOT FOR
CONSTRUCTION
KENN R. SPENSER
5469

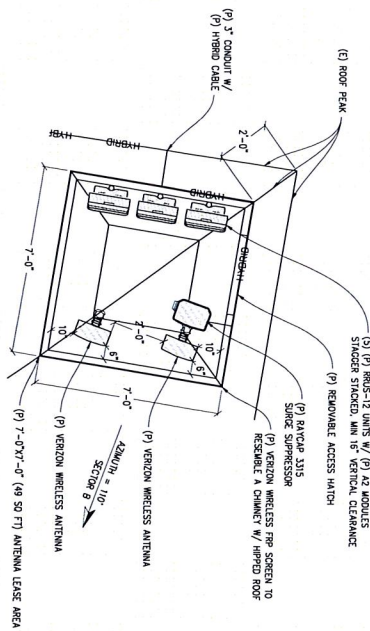
Streamline Engineering and Design Inc.
8445 Sierra College Blvd, Suite E Granite Bay, CA 95661
Contact: Larry Houghtby Phone: 916-275-4180
E-Mail: larry@streamlineeng.com Fax: 916-680-1941

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

REDWOOD AND MOUNTAIN
255998
414 REDWOOD RD
OAKLAND, CA 94612



ANTENNA PLAN B
X=1'-0"



ANTENNA PLAN A
X=1'-0"

DATE	DESCRIPTION	REV.
07/29/15	CLIENT REV.	1.S
08/07/15	20	505
08/19/15	20	505
08/26/15	20	505
10/08/15	CLIENT REV.	1.S
03/16/16	20	700K
		M.D.

DRAWN BY: M. D. DIO
CHECKED BY: J. GAVY
APPROVED BY: -
DATE: 02/16/16

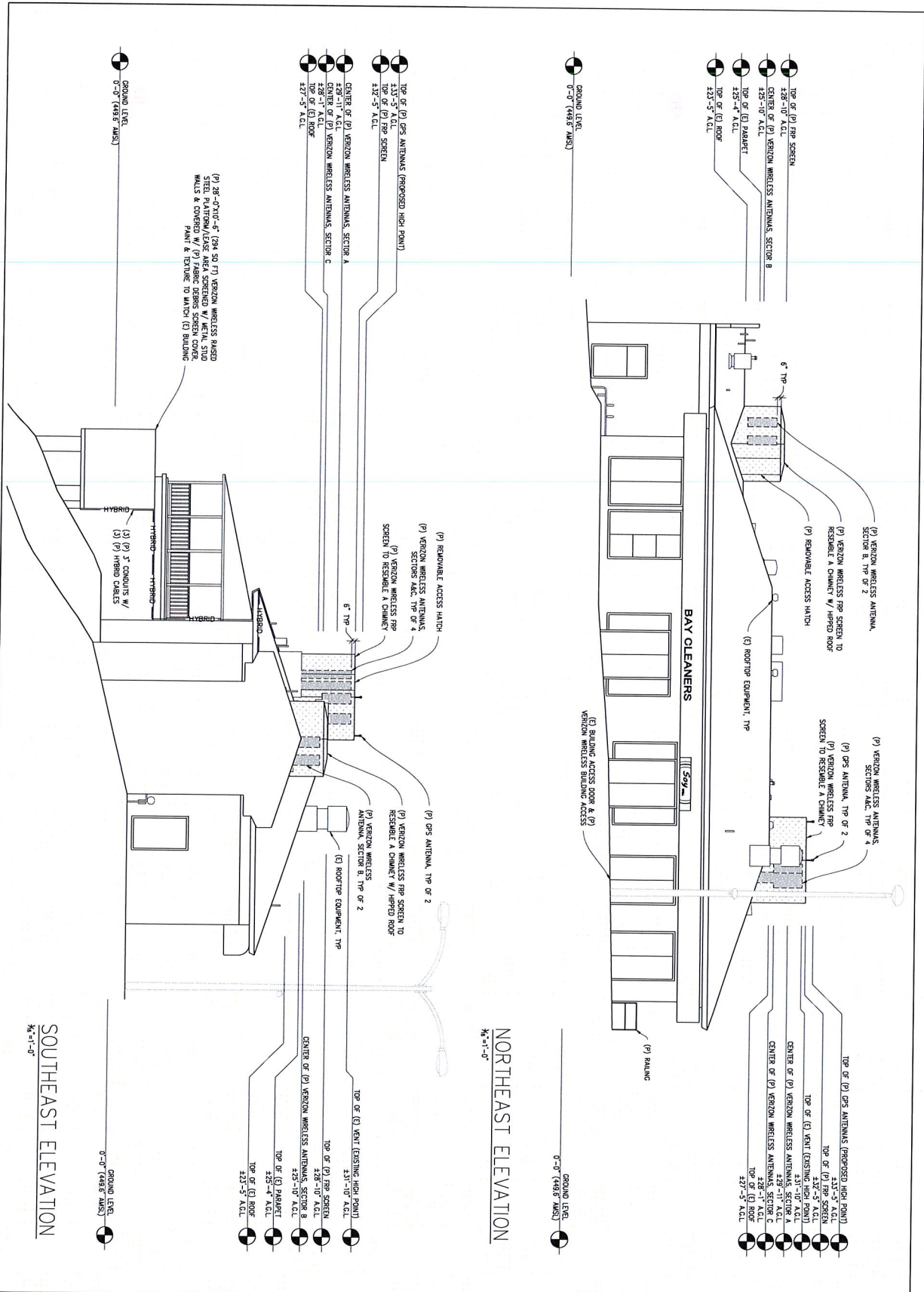
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SHEET NUMBER: A-4

Streamline Engineering and Design, Inc.
 8445 Sierra College Blvd, Suite E Granite Bay, CA 95661
 Contact: Larry Houghtby Phone: 916-275-4180
 E-Mail: larry@streamlineeng.com Fax: 916-660-1941

PRELIMINARY:
NOT FOR CONSTRUCTION
KENN R. SPENSER
54469

2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94588

REDWOOD AND MOUNTAIN
255998
4180 REDWOOD RD
DANFORTH, CA 94510



ISSUE STATUS

Δ	DATE	DESCRIPTION	REV
	07/23/15	CLIENT REV	1.1.S
	08/19/15	REVISED	1.1.D
	09/10/15	20 50% R.F.I.	1.1.D
	10/08/15	CLIENT REV	1.1.S
	10/20/15	20 100% R.F.I.	1.1.D
	11/02/15	REVISED	1.1.D

DRAWN BY: M. D. BO
 CHECKED BY: J. GAVY
 APPROVED BY:
 DATE: 03/16/16

PRELIMINARY:
 NOT FOR
 CONSTRUCTION
 KENN R. SORRENSEN
 34489

StreamLine Engineering and Design Inc.

8445 Sierra College Blvd, Suite E Granite Bay, CA 95661
 Contact: Larry Houlihan Phone: 916-276-4160
 E-Mail: larry@streamlineeng.com Fax: 916-660-1941

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verizon

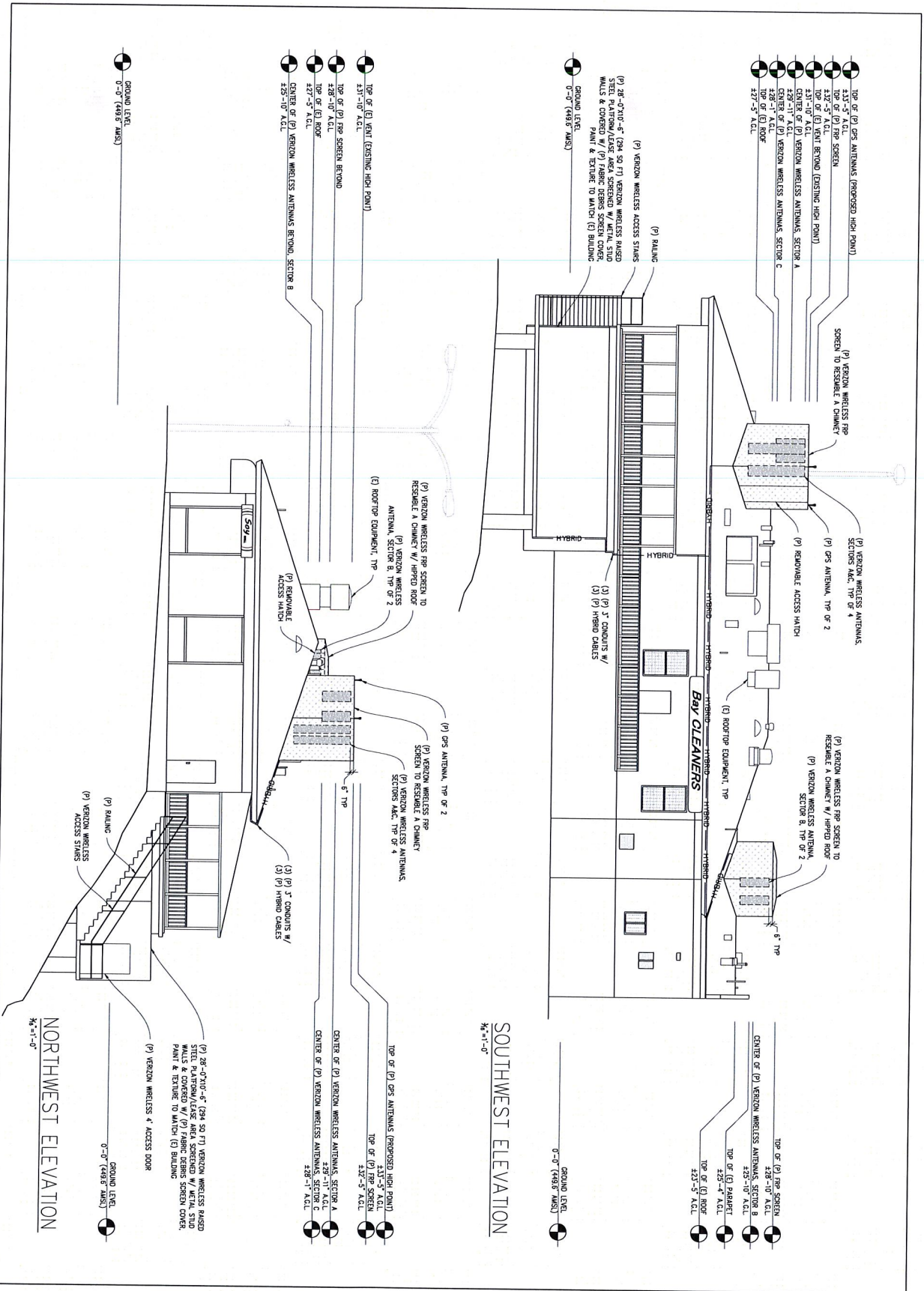
2785 MITCHELL DRIVE, BLDG 9
 WALNUT CREEK, CA 94598

REDWOOD AND MOUNTAIN

253998
 4100 HUNTER CANYON ROAD
 GRANITE BAY, CA 94609

SOUTHEAST ELEVATION
 3/4" = 1'-0"
 GROUND LEVEL: 0'-0" (449.5' MSL)

NORTHEAST ELEVATION
 3/4" = 1'-0"
 GROUND LEVEL: 0'-0" (449.5' MSL)



REDWOOD AND MOUNTAIN
255998
4111 REDWOOD RD
DUBLIN, CA 94568

verizon

2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94598

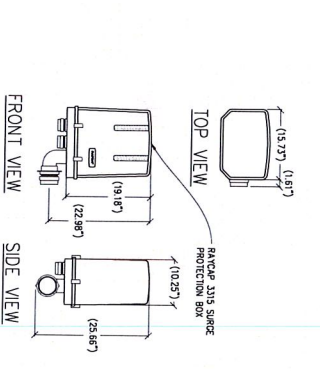
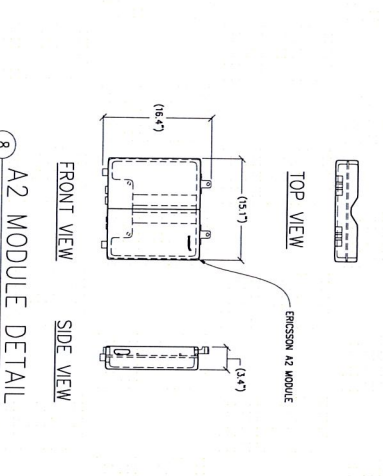
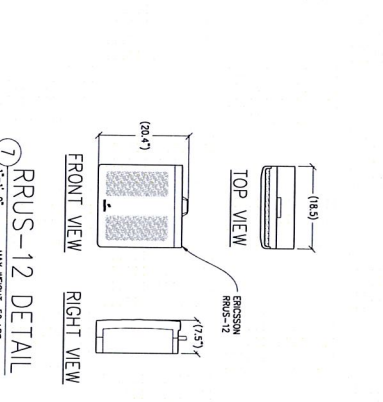
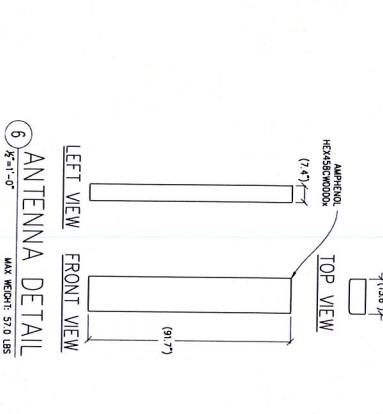
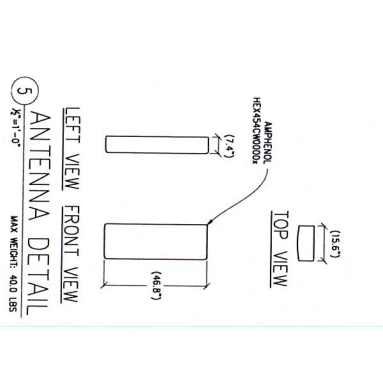
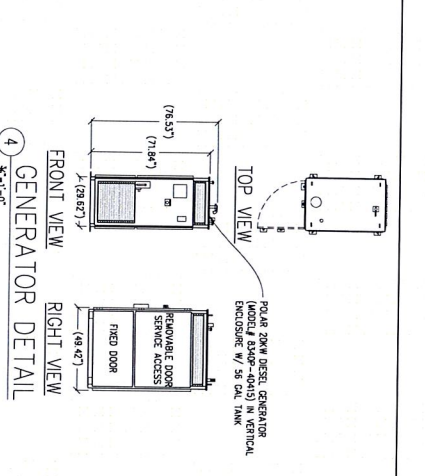
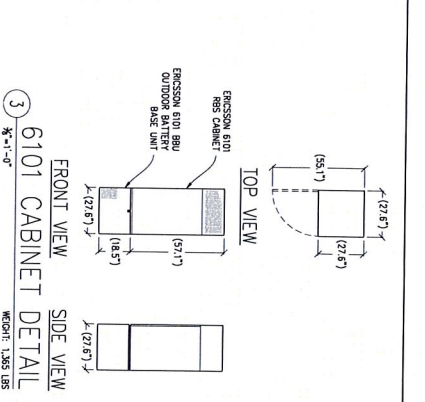
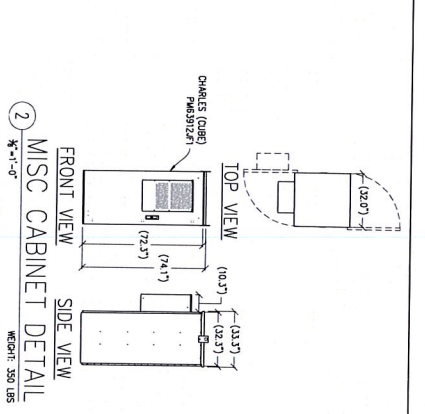
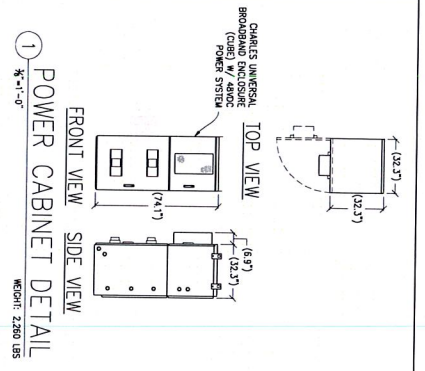
Streamline Engineering and Design, Inc.
8445 Sierra College Blvd, Suite E Granite Bay, CA 95661
Contact: Larry Houghtoby Phone: 916-878-1410
E-Mail: larry@streamlineeng.com Fax: 916-660-1941

PRELIMINARY:
NOT FOR CONSTRUCTION
KENN R. SORRENSEN
54469

Δ	DATE	DESCRIPTION	REV
	07/28/15	CLIENT REV	1.S.
	08/10/15	2D 85% M.D.	1.0.
	09/07/15	2D 85% M.D.	1.0.
	10/06/15	CLIENT REV	1.S.
	03/05/16	2D 100% M.D.	1.0.

DRAWN BY: J. DAVY
 CHECKED BY: M. D. DOD
 APPROVED BY: -
 DATE: 03/16/16

SHEET TITLE: ELEVATIONS
 SHEET NUMBER: A-6



9 SURGE PROTECTION BOX
1/4"=1'-0"
MAX WEIGHT: 32 LBS

DATE	DESCRIPTION	REV
07/22/15	QUANT REV	M.D.
08/10/15	2D 50%	M.D.
08/19/15	2D 50%	M.D.
10/08/15	0.1 100%	M.D.
10/08/15	0.1 100%	M.D.
10/15/16	2D 100%	M.D.

DRAWN BY: M. DI DIO
CHECKED BY: J. BAY
APPROVED BY: -
DATE: 02/16/16

SHEET TITLE: DETAILS
SHEET NUMBER: A-7

ISSUE STATUS

PRELIMINARY:
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CONSTRUCTION

KENN R. SPENSER
54469

Streamline Engineering and Design, Inc.

8445 Sierra College Blvd, Suite E Granite Bay, CA 95661
Contact: Larry Houghtby Phone: 916-276-4180
E-Mail: larry@streamlineeng.com Fax: 916-660-1941

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verizon

2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94598

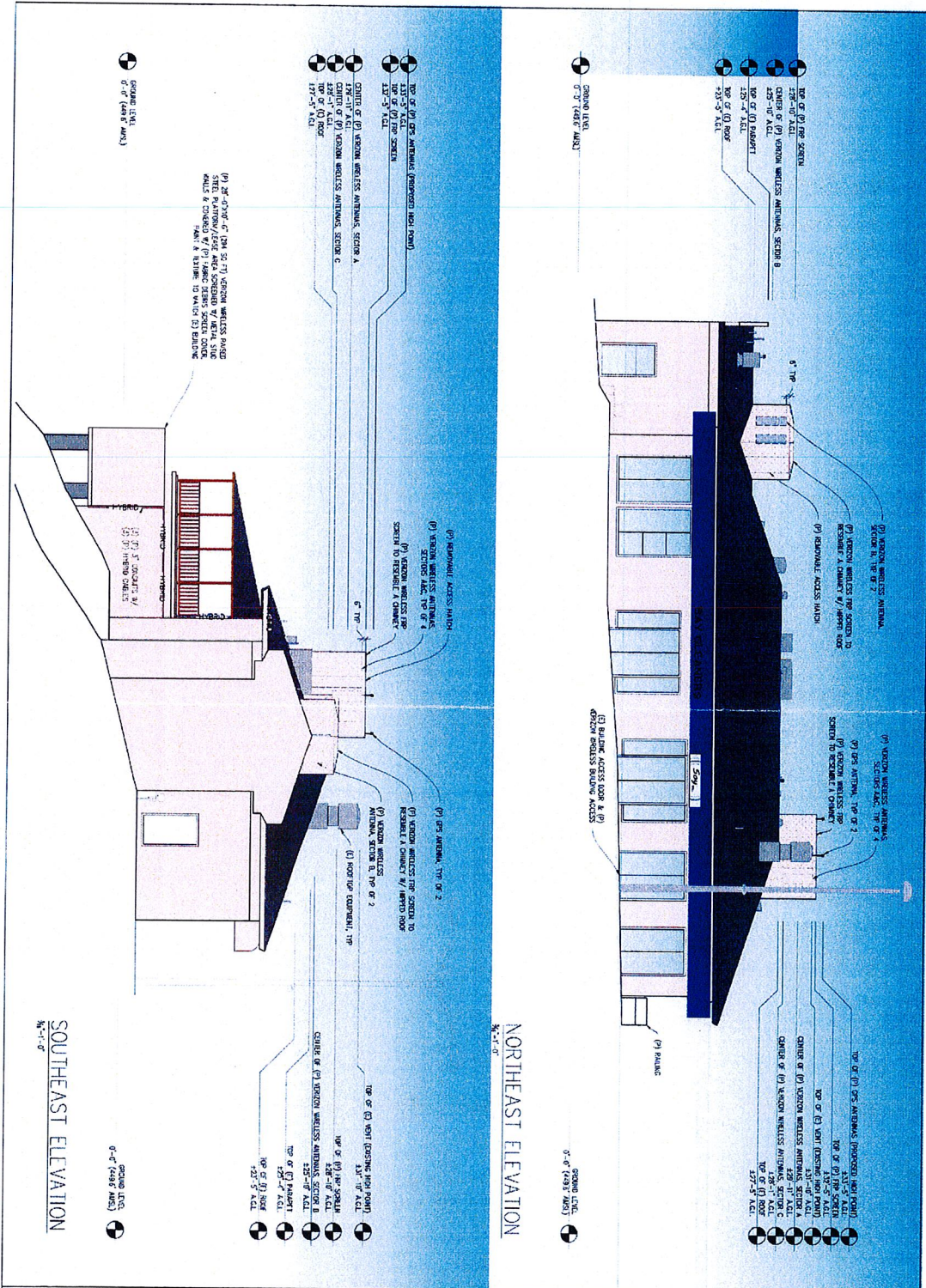
REDWOOD AND MOUNTAIN

255998
4110 REDWOOD RD
OAKLAND, CA 94610

Madani, Jason

From: Jason Madani <jasonmadani@sbcglobal.net>
Sent: Tuesday, December 13, 2016 6:51 AM
To: Madani, Jason
Subject: Public notice





<p>REDWOOD AND MOUNTAIN 255998 4141 REDWOOD ROAD WALNUT CREEK, CA 94598</p>	<p>verizon 2785 MITCHELL DRIVE, BLDG 9 WALNUT CREEK, CA 94588</p>	<p>Streamline Engineering Civil Design, Inc. 8442 Sierra College Blvd, Suite B Granite Bay, CA 95661 Contact: Larry Haughey Phone: 916-276-4189 E-Mail: larry@streamlineeng.com Fax: 916-583-1541</p>	<p>PRELIMINARY: NOT FOR CONSTRUCTION KENN B. SMITH ARCHITECT</p>
--	--	--	--

RECEIVED
OCT 20 2016
City of Oakland
Planning & Zoning Division



Attachment B

December 14, 2016

City of Oakland
Planning Department
250 Frank H. Ogawa Plaza, Suite 2114
Oakland, CA 94612
Attn: Jason Madani

RE: Alternative Sites Analysis Memo; 4130 Redwood Road, Oakland, CA 94619
(APN: 037-2570-008) Verizon Wireless Site: *Redwood and Mountain*

Dear Jason,

This letter is in response to a request by the City of Oakland Planning Department for a memorandum detailing the efforts made to identify alternative candidates prior to selecting the site indicated above and in the planning application.

Customer demand drives the need for new cell sites. Data relating to incomplete and dropped calls is gathered, drive-tests are conducted, and scientific modeling using sophisticated software is evaluated. Once the area requiring a new site is identified, a search ring on a map is provided to a real estate professional to being a search for a suitable location. To satisfy the coverage objective, Verizon Wireless must balance the land use goals of the community while still meeting technical, design and construction objectives for the installation.

Four key elements are considered in the selection process:

- **Leasing:** The property must have an owner who is willing to enter a long-term lease agreement under very specific terms and conditions.
- **Zoning:** It must be suitably zoned in accordance with local land-use codes to allow for a successful permitting process.
- **Construction:** Construction constraints and costs must be reasonable from a business perspective, and it must be feasible for the proposed project to be constructed in accordance with local building code and safety standards.
- **Radiofrequency (RF):** The property and facility must strategically be located to be able to achieve the RF engineer's objective to close the significant gap with antennas at a height to clear nearby obstructions.

Factors which govern the network objectives include, but are not limited to, RF signal strength, topography, and the physical proximity to existing facilities in the network. Topography is a critical component because wireless facilities utilize line of sight technology, which means that the antennas must be able to "see" the facilities in the existing network for the wireless devices to be served. The antennas must be installed at a sufficient height above ground level to function properly; this height is referred to as the "centerline." Natural features such as hills,

Complete Wireless Consulting
www.completewireless.net

2009 V Street
Sacramento, CA 95818
Benjamin Merritt
(916) 747-0624
bmerritt@completewireless.net

rocks, or mountains can block signal transmission. Similarly, man-made structures such as buildings can restrict network performance if located within the requisite “line of sight.”

In April of 2015, Verizon Wireless (VZW) began a search within Alameda County to secure locations for new communications facilities, specifically around Oakland. To address a significant coverage gap in the Redwood Heights & Crestmont neighborhoods, as well as the surrounding roads, VZW identified a search area in Oakland and a requisite centerline height of at least 40 feet above-ground-level.

The picture below shows the search ring within which a new facility could be located to achieve the desired coverage objectives. Much of the search area is zoned residential. In order to maximize the chances of success in obtaining use permit by avoiding placement of the facility in a residential zone, we focused on properties in the non-residential areas.



Alternative Candidates Considered but not Selected

Four candidate sites were considered in the pre-planning process based on the aforementioned criteria. For one or more reasons, they were not selected. For your convenience, they are marked on the map above. Please see below for more information.

Candidate #1: First Covenant Church

- 4000 Redwood Road, Oakland CA (APN: 029109001503)
- This candidate was contacted by mail and by phone. The representative of the church expressed interest in pursuing negotiations for a lease for a new wireless facility. Unfortunately, when the Verizon Wireless RF engineer reviewed this location, the elevation of the parcel was found to be too high to meet the necessary coverage objective, and therefore was infeasible for technical reasons.

Candidate #2: Holy Names College

- 3500 Redwood Road, Oakland, CA (APN: 029109001804)
- The property owner for this candidate was reached. This seemed to be a good candidate due to the abundant space available on the parcel for siting of a wireless facility. Unfortunately, the RF engineer reviewing this candidate again found the elevation to be too high to meet the necessary coverage objective and therefore was infeasible for technical reasons.

Candidate #3: SF Partners

- 4144 Redwood Road, Oakland, CA (APN: 037257001000)
- This candidate would have provided good coverage and the property owner was interested. Unfortunately, the parcel and building were too small to locate the equipment required for the wireless telecommunication facility, and so this site was infeasible due to physical constraints of the site.

Candidate #4: Ethiopian Orthodox Church

- 4100 Mountain Boulevard, Oakland, CA (APN: 037257001000)
- This candidate seemed very good because it has already been used for placement of antennas for wireless telecommunication facilities by other carriers. Because of this though, the church confirmed that there was no remaining viable space to locate the antennas on the bell tower, nor was there ground space available for the associated equipment. Thus, this candidate was found to be infeasible due to physical constraints.

These four candidates represented the best alternative options available in the search ring shown above based on the relevant review criteria of leasing, zoning, construction, and RF requirements. All four were found to be infeasible for various reasons, and so we pursued the candidate at 4130 Redwood Road, which was eventually selected. Based on a thorough search of the area, this location was found to be the least intrusive candidate. Once selected, extensive talks with the property owner regarding the design of the site led to the design proposed and submitted in the use permit application. The colocation of this facility will be done in a way that does not detract from the neighborhood character, and the equipment will be screened and camouflaged to match the existing building on the parcel.

Please contact me with any further questions you may have regarding this application.

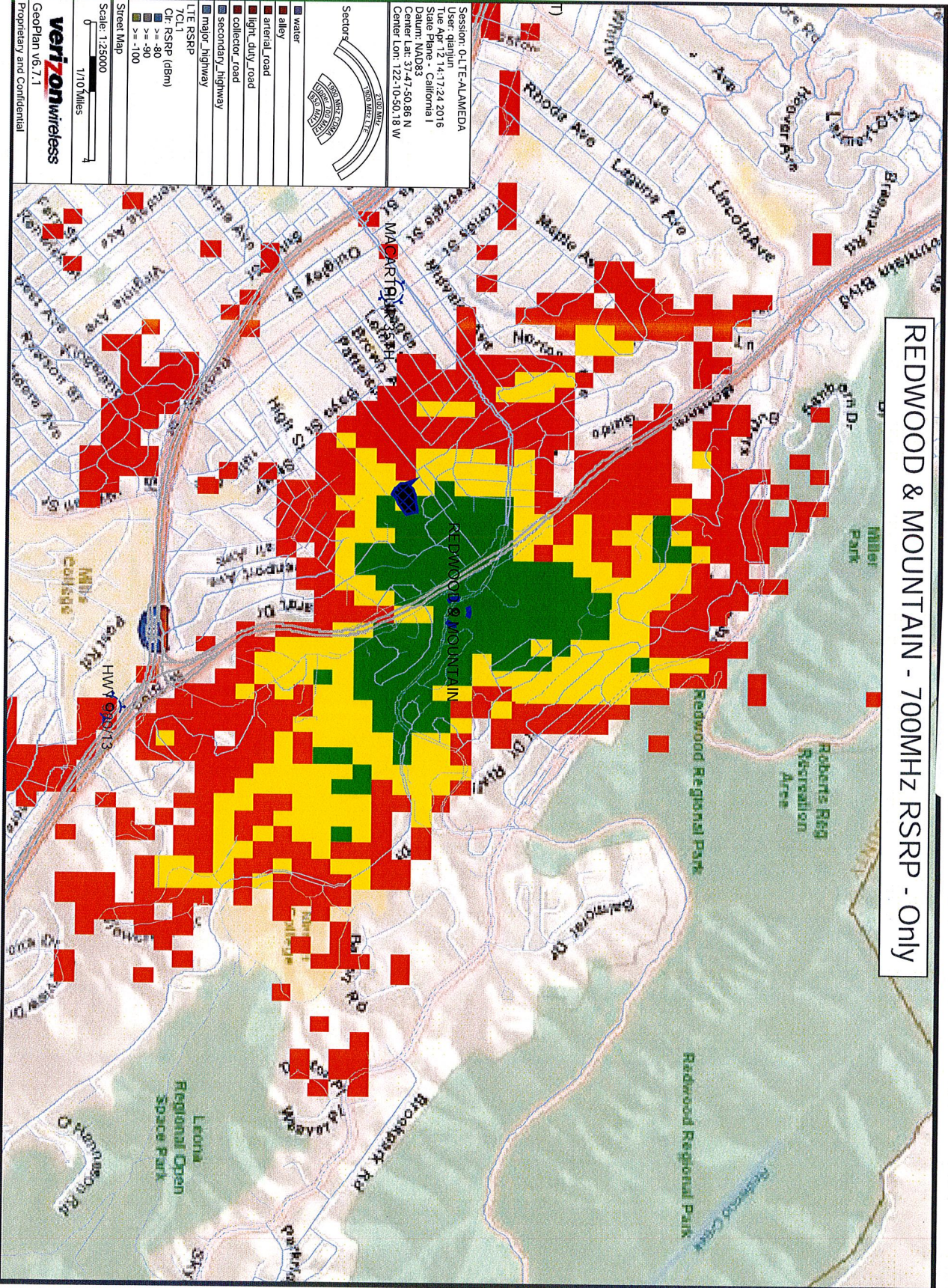
Sincerely,



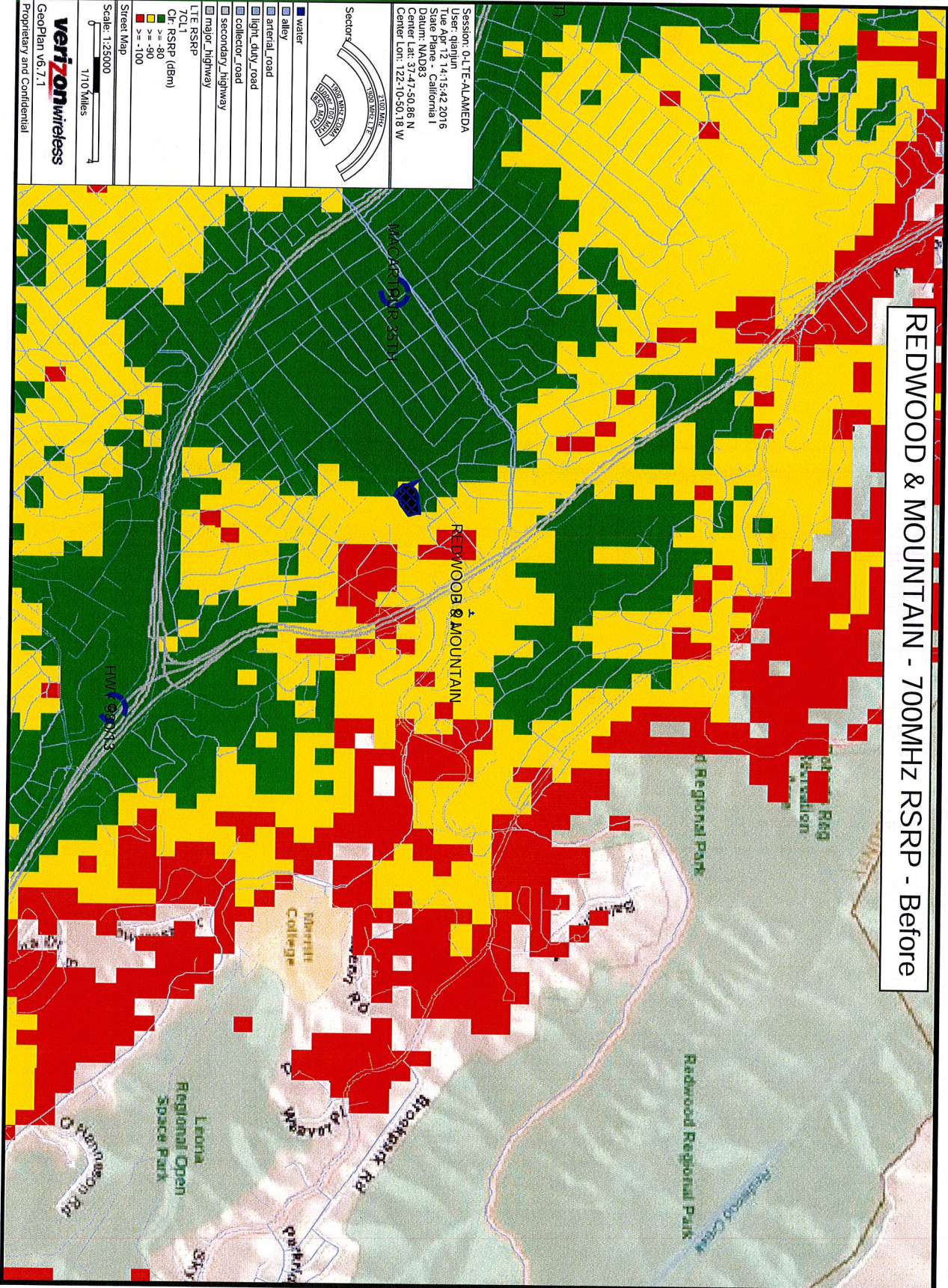
Benjamin Merritt
Complete Wireless Consulting, Inc.
Project Manager

Attachment B

REDWOOD & MOUNTAIN - 700MHZ RSSRP - Only



REDWOOD & MOUNTAIN - 700MHz RSRP - Before



Session: 0, LTE/LAMEDA
 User: qjpin
 Tue Apr 12 14:15:42 2016
 State Plane - California I
 Datum: NAD83
 Center Lat: 37.47-50.88 N
 Center Lon: 122.10-50.18 W

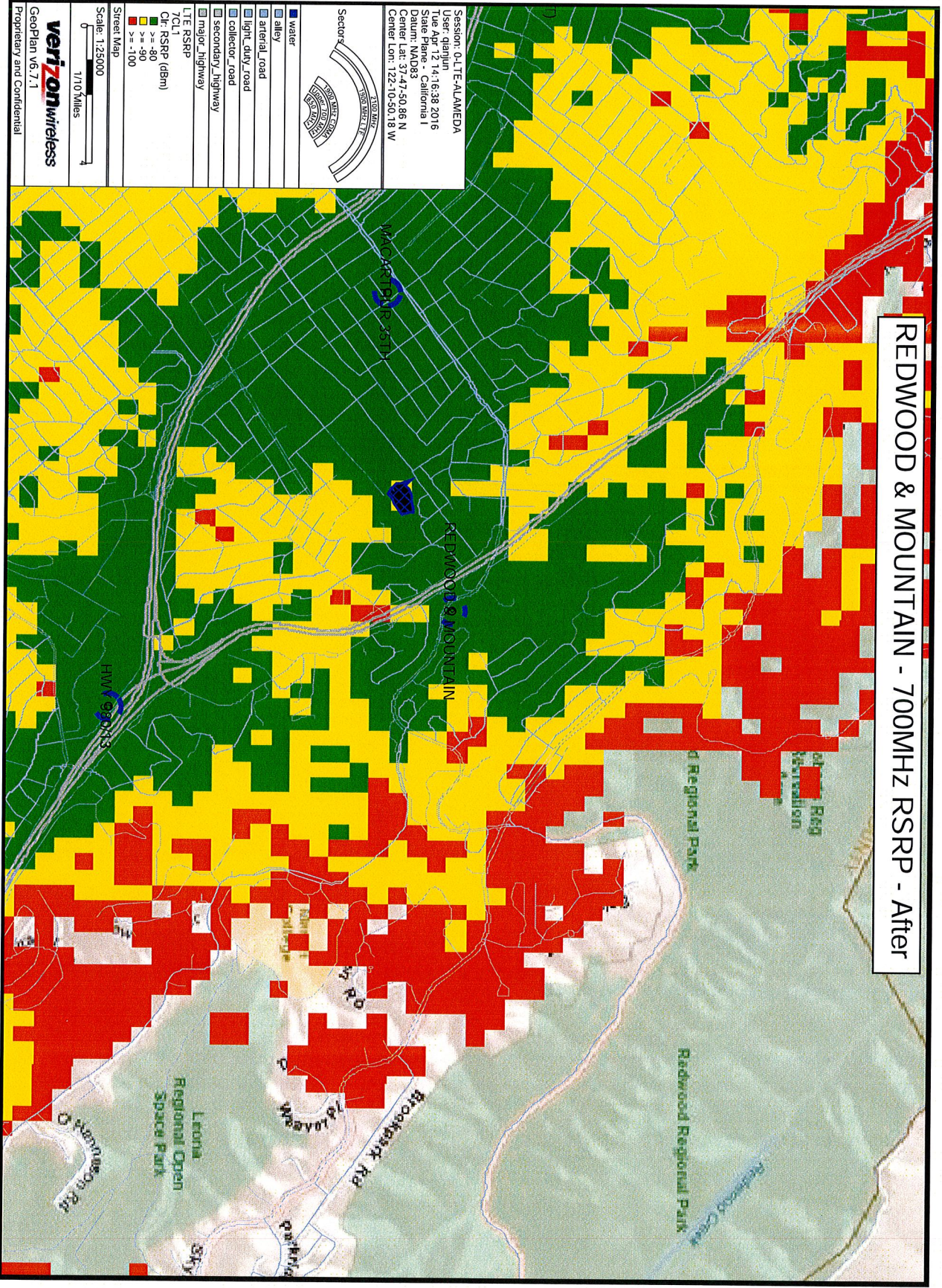


- Sectors
- water
 - alley
 - arterial_road
 - light_duty_road
 - collector_road
 - secondary_highway
 - major_highway
 - LTE RSRP
 - 701
 - Ch. RSRP (dbm)
 - >= -80
 - >= -90
 - >= -100

Street Map
 Scale: 1:25000
 1/10 Miles

verizonwireless
 GeoPlan v6.7.1
 Proprietary and Confidential

REDWOOD & MOUNTAIN - 700MHz RSRP - After



Session: 0-LTE-ALAMEDA
 User: qianjun
 Tue Apr 12 14:16:38 2016
 State Name: California I
 Datum: NAD83 47 50 86 N
 Center Lat: 37.2105018 W
 Center Lon: 122.105018 W

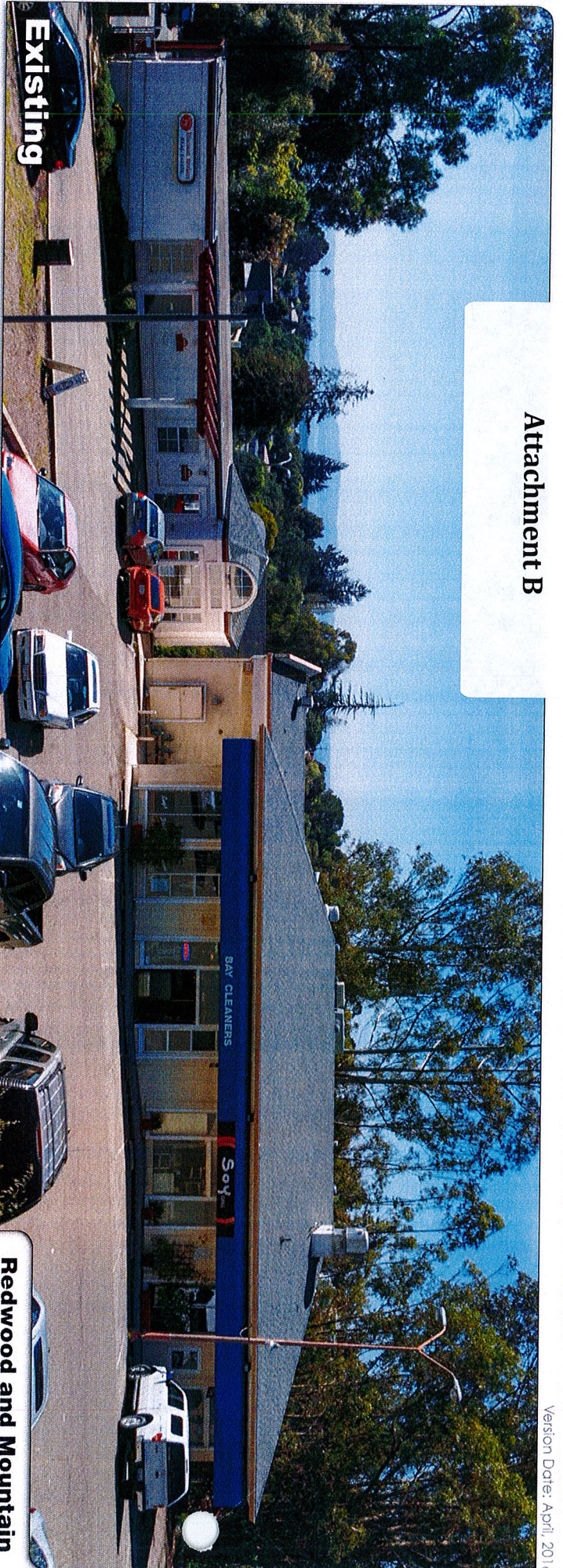


- Sectors:**
- water
 - alley
 - arterial_road
 - light_duty_road
 - collector_road
 - secondary_highway
 - major_highway
 - LTE RSRP
 - OLI
 - Clr: RSRP (dbm)
 - >= -90
 - >= -100

Scale: 1:25000
 Street Map
 1/10 Miles
verizonwireless
 GeoPlan v6.7.1
 Proprietary and Confidential

Attachment B

Version Date: April, 2016



Existing

Photosimulation of the view looking southwest from across the parking lot.

Redwood and Mountain
4130 Redwood Rd
Oakland, CA 94619
verizonwireless

Proposed faux chimneys




Proposed



Existing

Photomontage of the view looking south from the parking lot.

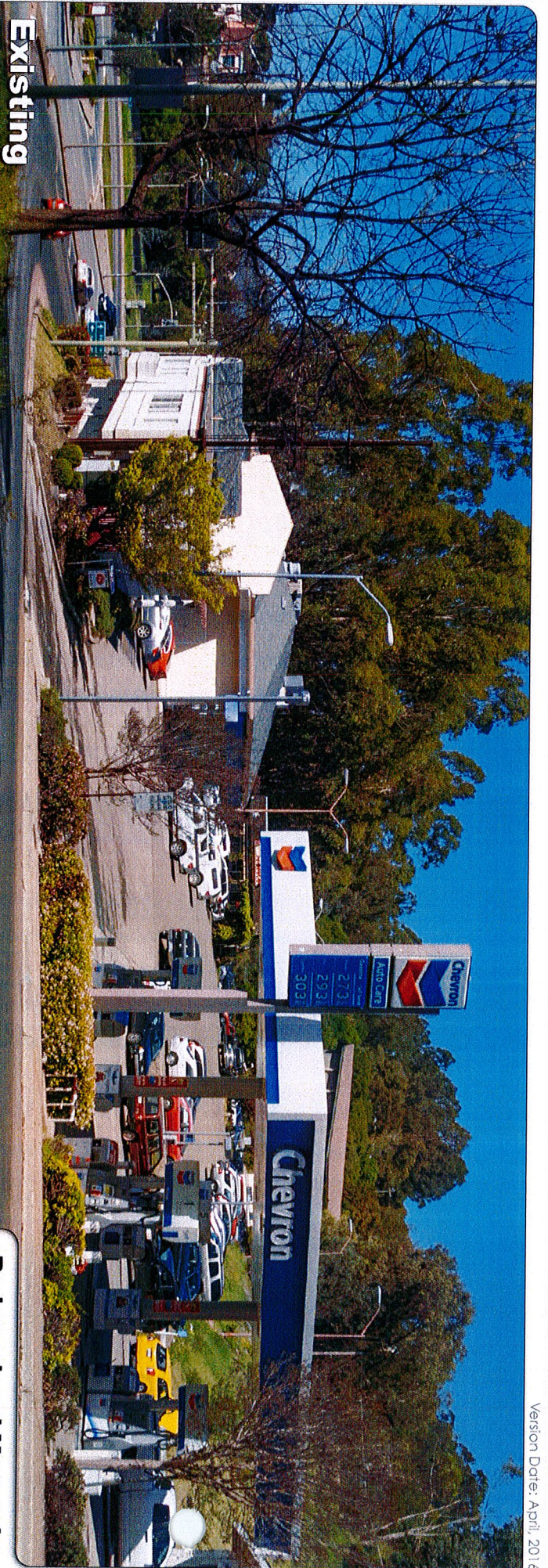
Redwood and Mountain
4130 Redwood Rd
Oakland, CA 94619



verizon wireless



Proposed



Photosimulation of the view looking northwest from Redwood Road.

Redwood and Mountain
4130 Redwood Rd
Oakland, CA 94619
verizonwireless



**Verizon Wireless • Proposed Base Station (Site No. 255998 “Redwood and Mountain”)
4130 Redwood Road • Oakland, 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. 255998 “Redwood and Mountain”) proposed to be located at 4130 Redwood Road in Oakland, California, for compliance with appropriate guidelines limiting human exposure to radio frequency (“RF”) electromagnetic fields.

Attachment C

Executive Summary

Verizon proposes to install directional panel antennas above the roof of the single-story commercial building located at 4130 Redwood Road in Oakland. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy; certain mitigation measures are recommended to comply with FCC occupational guidelines.

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.



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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 Streamline Engineering and Design, Inc., dated March 16, 2016, it is proposed to install six Amphenol directional panel antennas – four Model HEX454CW0000 and two Model HEX458CW0000 – above the roof of the single-story commercial building located at 4130 Redwood Road in Oakland. Two HEX458 antennas would be installed at an effective height of about 30 feet above ground inside a new view screen enclosure above the northwest side of the roof; they would employ no downtilt and would be oriented toward 0°T. The other two HEX458 antennas would be installed at an effective height of about 28 feet above ground within the same enclosure; they would employ up to 8° downtilt and would be oriented toward 260°T. The two HEX454 antennas would be installed at an effective height of about 26 feet above ground inside a new view screen enclosure above the southeast side of the roof; they would employ no downtilt and would be oriented toward 110°T. The maximum effective radiated power in any direction would be 10,310 watts, representing simultaneous operation at 4,340 watts for AWS, 4,070 watts for PCS, and 1,900 watts for 700 MHz service; no operation on cellular frequencies is presently proposed from this site.



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Located on the tall church bell tower, about 230 feet to the southwest, are similar antennas for use by Sprint, MetroPCS,* T-Mobile, and AT&T. 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
Sprint	BRS	1,500 watts	KMW ET-X-WM-18-65-8P	2°	77½ ft
	PCS	7,000	KMW ET-X-TS-70-15-62-18	2	77½
	SMR	500	KMW ET-X-TS-70-15-62-18	2	77½
T-Mobile	AWS	4,400	Ericsson AIR21	2	58
	PCS	2,200	Ericsson AIR21	2	58
	700 MHz	1,800	Andrew LNX-6514DS	2	58
AT&T	AWS	2,100	Andrew SBNH-1D6565A	2	47
	PCS	5,300	Andrew SBNH-1D6565A	2	52½
	Cellular	1,600	Andrew SBNH-1D6565A	4	52½
	700 MHz	1,000	Andrew SBNH-1D6565A	4	47

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 0.027 mW/cm², which is 28% of the applicable public exposure limit. The maximum calculated cumulative exposure level at ground, for the simultaneous operation of all four carriers, is 31% of the public exposure limit. The maximum calculated cumulative level at any nearby building is 9.6% of the public limit. The maximum calculated cumulative level at the top-floor elevation of any nearby residence[†] is 8.1% 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. Levels are calculated to exceed the applicable public exposure limit on the roof of the subject building, in front of the antennas.

Recommended Mitigation Measures

It is recommended that the roof access hatch be kept locked, so that the Verizon antennas are not accessible to unauthorized persons. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training, to include review of the information presented in Figure 3 as well as personal monitor use and lockout/tagout procedures, be provided to all authorized personnel who have access to the roof, including employees and contractors of Verizon and of the property owner. No access within 22 feet directly in front of the antennas themselves, such as might occur during certain maintenance activities, should be allowed while the base station is in operation, unless other measures can be demonstrated to ensure that occupational protection

* Recently acquired by T-Mobile and presumed to be inactive.

† Including the tall residences to the east, about 200 feet away, based on photographs from Google Maps.



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requirements are met. It is recommended that explanatory signs[‡] be posted at the roof access hatch and on the screens in front of the antennas, readily visible from any angle of approach to persons who might need to work within that distance.

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 4130 Redwood Road in Oakland, California, can comply with the prevailing standards for limiting human exposure to radio frequency energy and, therefore, need 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. Locking the roof access hatch is recommended to establish compliance with public exposure limits; training authorized personnel and posting explanatory signs are recommended to establish compliance with occupational exposure limits.

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
William F. Hammett, P.E.

707/996-5200

May 3, 2016

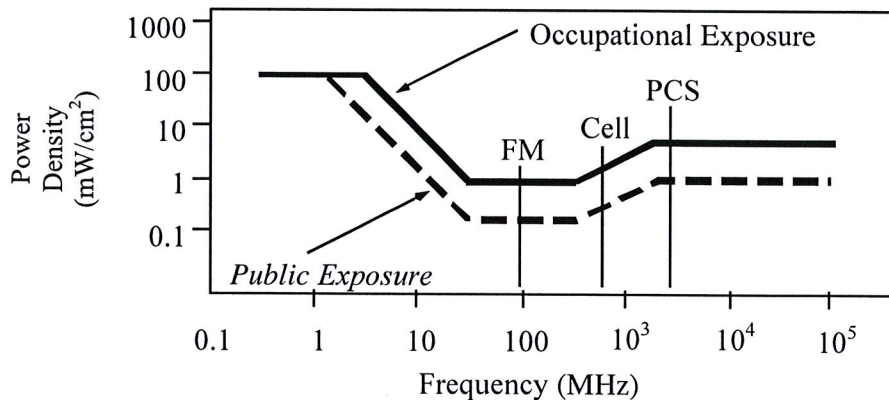
[‡] Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required.

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 Applicable Range (MHz)	Electromagnetic Fields (f is frequency of emission in MHz)					
	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm ²)	
0.3 – 1.34	614	<i>614</i>	1.63	<i>1.63</i>	100	<i>100</i>
1.34 – 3.0	614	<i>823.8/f</i>	1.63	<i>2.19/f</i>	100	<i>180/f²</i>
3.0 – 30	1842/f	<i>823.8/f</i>	4.89/f	<i>2.19/f</i>	900/f ²	<i>180/f²</i>
30 – 300	61.4	<i>27.5</i>	0.163	<i>0.0729</i>	1.0	<i>0.2</i>
300 – 1,500	3.54√f	<i>1.59√f</i>	√f/106	<i>√f/238</i>	f/300	<i>f/1500</i>
1,500 – 100,000	137	<i>61.4</i>	0.364	<i>0.163</i>	5.0	<i>1.0</i>



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/cm²,

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/cm²,

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:

power density $S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}$, in mW/cm²,

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 ($1.6 \times 1.6 = 2.56$). 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.

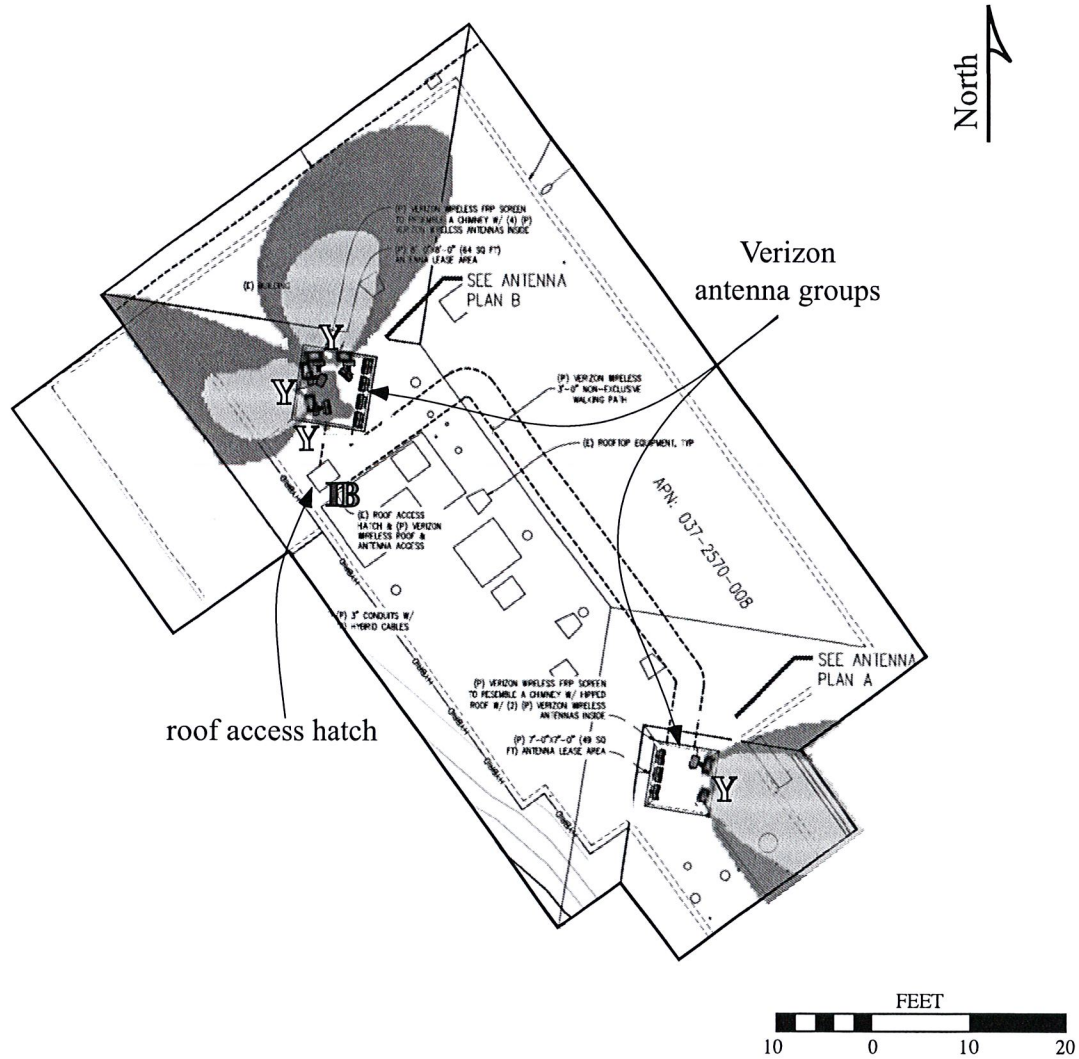


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Calculated RF Exposure Levels on Roof

Recommended Mitigation Measures

- Lock roof access hatch
- Post explanatory signs
- Provide training



Notes: See text.

Base drawing from Streamline Engineering and Design, Inc., dated March 16, 2016.

Calculations performed according to OET Bulletin 65, August 1997.

Legend:	<u>Less Than Public</u>	<u>Exceeds Public</u>	<u>Exceeds Occupational</u>	<u>Exceeds 10x Occupational</u>
Shaded color	N/A			
Boundary marking	N/A			
Sign type	I - Green INFORMATION	B - Blue NOTICE	Y - Yellow CAUTION	O - Orange WARNING