

Oakland City Planning Commission**STAFF REPORT**

Case File Number PLN15153

November 18, 2015

Location:	1475 Alice Street (APN: 008-0626-040-00). (See map on reverse)
Proposal:	To install 12 new rooftop panel antennas, screening devices, and other associated equipment on an existing residential building.
Applicant:	Brendon Lenard / for Verizon Wireless
Owner:	CCHNC south Lake Towers, Inc.
Planning Permits Required:	Major Conditional Use Permit and Regular Design Review for Macro-telecommunication facility in a residential zone
General Plan:	Central Business District
Zoning:	CBD-R
Environmental Determination:	Section 15303 of the State CEQA Guidelines: New Small Structures; Section 15183 of the State CEQA Guidelines; projects consistent with a community plan, general plan or zoning.
Historic Status:	Not a historic property; Rating: F1-
Service Delivery District:	Metro
City Council District:	3
Status:	Pending Review by Planning Commission
Action to be Taken:	Decision based on Staff Report
Staff Recommendation:	Approve Staff Report with attached Conditions
Finality of Decision:	Appealable to City Council within 10 days.
For Further Information:	Contact case planner Moe Hackett at 510-238-3973 or mhackett@oaklandnet.com

SUMMARY

The applicant, GTE Mobilnet of California LP dba Verizon Wireless c/o Complete Wireless – Brendon Lenard, requests Planning Commission approval of Major Conditional Use Permit and Regular Design Review to establish a new Macro Telecommunications Facility consisting of 12 panel antennas and associated equipment on the rooftop of an existing residential building. The antennas would be at approximately the 89-foot level and would be screened and/ or otherwise painted to blend into the existing roof top appurtenances (stair towers, mechanical penthouses etc.) regular Design Review is required for the additions and alterations to the existing building, and a Major Conditional Use Permit is required for Telecommunications Facilities within a residential zone.

TELECOMMUNICATIONS BACKGROUND**Limitations on Local Government Zoning Authority under the Telecommunications Act of 1996**

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

CITY OF OAKLAND PLANNING COMMISSION



0 125 250 500 750 1,000 Feet



Case File: PLN15153

Applicant: GTE Mobilnet LP for Verizon Wireless
c/o Complete Wireless / Brendan Leonard

Address: 1475 Alice Street

Zone: CBD-C & CBD-R

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.

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 FCC standards in this regard. See, 47 U.S.C. 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. 47 U.S.C.332(c)(7)(B)(ii). See 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”.

PROJECT DESCRIPTION

The project is to establish a new Macro Telecommunications Facility. Some of the antennas will be mounted on the exterior of an existing penthouse structure and others will be mounted within new structures. A new rooftop compound for equipment will also be established. All equipment, antennas, and screening structures will be painted and textured to match the existing roof top elements. The entire facility will maintain a 1:1 height to roof top /parapet edge setback and will not be easily discernable from most street level vantage points.

PROPERTY DESCRIPTION

The site is an existing seven story residential building located in downtown Oakland on Alice Street between Harrison Street, 14th Street, and 17th Street in the Lakeside District.

GENERAL PLAN ANALYSIS

The site is located in the Central Business District area of the General Plan’s Land Use & Transportation Element (LUTE). The intent of the Central Business District area is: *“to encourage, support, and enhance the downtown area as a high density mixed use urban center of regional importance and a primary hub for business, communication, office, government, high technology, retail, entertainment, and transportation in northern California.”*

Policy N11.4 states that the City should strive to alleviate public nuisances. The proposed antennas and screens is no taller than the highest existing structures on the roof top, and meets the 1:1 ratio requirement for the Macro-

telecommunications chapter. The meeting of the 1:1 ratio will respect the architectural integrity of the existing building. As such this project will have very minimal effect on the existing building particularly as seen from the street frontages. As such this proposal and location will feature a design that is compatible with its setting and therefore conforms to the above Objectives and Policies of the LUTE:

Staff finds the project to be in conformance with the General Plan.

ZONING ANALYSIS

The subject property is located partly within the CBD-R Central Business District Zone. The CBD-R zone, intends to create, maintain, and enhance areas of the Central Business District that are appropriate for residential development with small-scale compatible ground level commercial uses. The proposal is for a new unmanned wireless telecommunication facility on an existing residential structure and requires Regular Design Review and a Major Conditional Use Permit since the project site is within a residential zone.

This proposal involves the placement of Antennas on existing roof top and the creation of new screening structure (penthouse) to allow for the placement of 4 of the 12 new antenna panels. The proposed new screening penthouse projection would be approximately 82 feet above ground level. The 8 (penthouse) wall mounted antennas would be at approximately the 88 ½ to 89 foot height above street level well within the zones maximum developable height (height area 5) of 400 feet

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 15303, and 15183, projects consistent with a community plan, general plan or zoning.

KEY ISSUES AND IMPACTS

1. Conditional Use Permit

Section 17.134.020 of the Planning Code defines such facilities that are in or within 100' of a residential zone as Major Conditional Use Permits and subject to Planning Commission approval.

2. Project Site

Section 17.128.110 of the City of Oakland Telecommunication Regulations indicate that new wireless facilities shall generally be located on designated properties or facilities in the following 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.
- D. Existing commercial or industrial structures in residential zones.
- E. Other non-residential uses in residential zones.
- F. Residential uses in non-residential zones.
- G. Residential uses in residential zones.

*Facilities locating on an A, B or C ranked preference do not require a site alternatives analysis.

This proposed project involves locating the installation of new antennas and associated equipment cabinets on an existing residential facility; the proposed project meets (G). This application includes an Alternative Site

Review (**Attachment D**). The proposal does meet the provisions of the Zoning Code section 17.128.070 for Macro facilities with prefers locations on existing buildings, and in this case the need for placement was limited to the highest building in the area. The applicant review of the area found no other building suitable that was available for the installation of a Macro Facility.

4. Project Design

Section 17.128.120 of the City of Oakland Telecommunications Regulations indicates 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 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 or 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. A site design alternatives analysis shall, at a minimum, consist of:

- a. Written evidence indicating why each higher preference design alternative can not 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).

City of Oakland Planning staff have reviewed and determined that the site selected is conforming to all other telecommunication regulation requirements. The project has met design criteria (B) since the antennas and/or dishes shall be mounted at a 1:1 rooftop edge to height the antennas and equipment will be concealed from view from the vast majority of street level vantage points

5. 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. With the initial application, a RF emissions report, prepared by a licensed professional engineer or other expert, indicating that the proposed site will operate within the current acceptable thresholds as established by the Federal government or any such agency who may be subsequently authorized to establish such standards.
- b. Prior to commencement of construction, a RF emissions report indicating the baseline RF emissions condition at the proposed site.
- c. Prior to final building permit sign off, an RF emissions report indicating that the site is actually operating within the acceptable thresholds as established by the Federal government or any such agency who may be subsequently authorized to establish such standards.

The applicant states that the proposed project meets the radio frequency (RF) emissions standards as required by the regulatory agency. Submitted with the initial application was a RF emissions report, prepared by Hammett & Edison, Inc. Consulting Engineers (**Attachment D**). The report states that the proposed project will comply with the Site Safety Plan for limiting public exposure to radio frequency energy and, therefore,

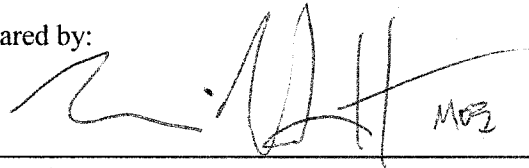
will not cause a significant impact on the environment. Additionally staff recommends that prior to the final building permit sign off, the applicant submits certified RF emissions report stating that the facility is operating within acceptable thresholds established by the regulatory federal agency.

Staff finds that the applicant's current design minimizes visual and traffic impacts and is sensitive to the context in design and landscaping, and is a superior design in terms of site circulation. Staff therefore recommends approval of the project, subject to the attached conditions of approval.

RECOMMENDATIONS:

- For approvals:
1. Affirm staff's environmental determination.
 2. Approve the Design Review and Major Conditional Use Permits subject to the attached findings and conditions.

Prepared by:



MOE HACKETT
Planner II

Approved by:



SCOTT MILLER
Zoning Manager

Approved for forwarding to the
City Planning Commission:



DARIN RANELLETTI
Deputy Director



RACHEL FLYNN
Planning & Building Director

ATTACHMENTS:

- A. Findings
- B. Conditions of Approval, including Standard Conditions of Approval
- C. Project Plans
- D. Radio Frequency Report and alternative Site Analysis

ATTACHMENT A**FINDINGS FOR APPROVAL:**

This proposal meets all the required findings as set forth below and which are required to approve your application. Required findings are shown in **bold** type; reasons your proposal satisfies them are shown in normal type.

Section 17.136.050(B) Regular Design Review Criteria, Nonresidential Facilities:

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 proposal is the addition to a macro telecommunications facility which includes the addition of twelve (12) new panel antennas both within a new penthouse (screening device) and on the exterior of an existing penthouse structure the proposal also include various associated equipment including, Radio Remote Units (RRU's), surge protectors, and conduit. All of the macro facilities will be located on the roof top at a minimum of a 1:1 setback from the building edge including the fencing for a compound containing the equipment cabinets. The proposed antennas screening and equipment will be painted and textured to match the roof top existing conditions and will not be easily visible or discernable from the street level or from surrounding vantage points.

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

The design will be appropriate and compatible with current zoning and general plan land use designations. The proposal protects and preserves the surrounding neighborhood context by adding additional wireless telecommunication that will be concealed and disguised from public view and will not have any visual impact on the neighborhood.

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.**

The proposal conforms with the City of Oakland Comprehensive General Plan meeting specific General Plan policies and the Supplemental Report and Recommendations on Revisions to the Citywide Telecommunications Regulations. The proposal will conform to performance standards for noise set forth in Section 17.120.050 for decibels levels in residential areas for both day and nighttime use. The Project conforms to all macro-facility definitions set forth in Section 17.128.070 and meets all design review criteria to minimize all impacts throughout the neighborhood.

Section 17.134.050 General Use Permit Criteria:

- 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 proposed telecommunications antennas will be located both within a new penthouse and externally on an existing mechanical penthouse on the roof top of an existing residential building and will not adversely affect the operating characteristic or livability of the area. The facility will be unmanned and will not create additional vehicular traffic in the area. The new penthouse screening devices, antenna mounts, and new equipment compound will have a 1:1 setback to height, and will not create any noticeable or adverse impacts.

- 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 proposal is a Telecommunications Facility on the roof of a residential building. It meets this finding by locating the facility on an existing structure, reducing the need for new dedicated telecommunications facilities such as a mono-pole or tower. The equipment and antennas have been screened, and shall be painted and textured to match the building. This stealthing and the proposed 1:1 roof top setback will help this facility blend in with the building and surroundings and make this facility more attractive than just normal antennas or a tower /monopole option.

- 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 development will enhance the successful operation of the surrounding area in its basic residential function and will provide an essential service to the community or region. This will be achieved by improving the functional use of the site by providing a regional telecommunication facility for the community and will be available to police, fire, 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 at Section 17.136.050(B) for non-residential facilities.**

See Design Review Findings above.

- E. That the proposal conforms in all significant respects with the Oakland General Plan and with any other applicable guideline or criteria, district plan or development control map which has been adopted by the Planning Commission or City Council.**

The proposal conforms in all significant aspects with the Oakland General Plan and with any other applicable plan or zoning maps adopted by the City of Oakland. The proposed macro-telecommunication facility in Central Business District General Plan designation will enhance

Findings

and improve communication service for a mixture of residential, civic, commercial and institutional uses in the area.

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 antennas will be painted and textured to match the surrounding roof top appurtenances.

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 addition of the antennas and RRU's and other equipment to the existing building will be mounted at a 1:1 setback from the roofs edge in order to allow for a reduced visual impact from off-site vantage points. The 1:1 setback has been designed to also provide adequate cellular transmission coverage on the street level below.

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

The proposed antennas shall be pole mounted at a 1:1 setback from the buildings parapet wall and roof edge. The antennas, screening elements, and associated equipment's design and color is intended to avoid to the greatest extent possible visibility from surrounding vantage points.

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

The equipment and cabinets will be on the roof top. Due to the equipment cabinets location within an isolated compound at a 1:1 roofs edge setback, and will not be visible from the street.

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

The equipment cabinets will be located on the rooftop and will not be visible from the street.

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 proposed antenna will be setback at the required 1:1 ratio.

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 antenna and associated equipment will be mounted to the roof and will not be accessible to the public.

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):

As stated above, the proposed project meets the Section 17.128.070B special design review criteria.

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

Due to the proposed project small scale, 1:1 setback ratio, and color scheme the proposal will not disrupt the overall community character of the site and will enhance the character of the community.

ATTACHMENT B**CONDITIONS OF APPROVAL**

See Standard Conditions of Approval and Uniformly Applied Development Standards template.

1. Approved Use

The project shall be constructed and operated in accordance with the authorized use as described in the approved application materials, and the approved plans received **September 8, 2015**, 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 calendar 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

Conditions of Approval

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

The project applicant may be required to cover the full costs of independent third-party technical review and City monitoring and inspection, including without limitation, special inspector(s)/inspection(s) during times of extensive or specialized plan-check review or construction, and inspections of potential violations of the Conditions of Approval. The project applicant shall establish a deposit with the Bureau of Building, if directed by the Building Official, Director of City Planning, or designee, prior to the issuance of a construction-related permit and on an ongoing as-needed basis.

11. Public Improvements

The project applicant shall obtain all necessary permits/approvals, such as encroachment permits, obstruction permits, curb/gutter/sidewalk permits, and public improvement (“p-job”) permits from the City for work in the public right-of-way, including but not limited to, streets, curbs, gutters, sidewalks, utilities, and fire hydrants. Prior to any work in the public right-of-way, the applicant shall submit plans for review and approval by the Bureau of Planning, the Bureau of Building, and other City departments as required. Public improvements shall be designed and installed to the satisfaction of the City.

12. Compliance Matrix

The project applicant shall submit a Compliance Matrix, in both written and electronic form, for review and approval by the Bureau of Planning and the Bureau of Building that lists each Condition of Approval (including each mitigation measure if applicable) in a sortable spreadsheet. The Compliance Matrix shall contain, at a minimum, each required Condition of Approval, when compliance with the Condition is required, and the status of compliance with each Condition. For multi-phased projects, the Compliance Matrix shall

indicate which Condition applies to each phase. The project applicant shall submit the initial Compliance Matrix prior to the issuance of the first construction-related permit and shall submit an updated matrix upon request by the City.

AESTHETICS

13. Graffiti Control

Requirement:

- a. During construction and operation of the project, the project applicant shall incorporate best management practices reasonably related to the control of graffiti and/or the mitigation of the impacts of graffiti. Such best management practices may include, without limitation:
 - i. Installation and maintenance of landscaping to discourage defacement of and/or protect likely graffiti-attracting surfaces.
 - ii. Installation and maintenance of lighting to protect likely graffiti-attracting surfaces.
 - iii. Use of paint with anti-graffiti coating.
 - iv. Incorporation of architectural or design elements or features to discourage graffiti defacement in accordance with the principles of Crime Prevention Through Environmental Design (CPTED).
 - v. Other practices approved by the City to deter, protect, or reduce the potential for graffiti defacement.
- b. The project applicant shall remove graffiti by appropriate means within seventy-two (72) hours. Appropriate means include the following:
 - i. Removal through scrubbing, washing, sanding, and/or scraping (or similar method) without damaging the surface and without discharging wash water or cleaning detergents into the City storm drain system.
 - ii. Covering with new paint to match the color of the surrounding surface.
 - iii. Replacing with new surfacing (with City permits if required).

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

AIR QUALITY

14. Stationary Sources of Air Pollution (Toxic Air Contaminants)

Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to on-site stationary sources of toxic air contaminants. The project applicant shall choose one of the following methods:

- c. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk associated with proposed stationary sources of pollution in the project.

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The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City.

- or -

- d. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:
 - i. Installation of non-diesel fueled generators, if feasible, or;
 - ii. Installation of diesel generators with an EPA-certified Tier 4 engine or engines that are retrofitted with a CARB Level 3 Verified Diesel Emissions Control Strategy, if feasible.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

NOISE

15. Construction Days/Hours

Requirement: The project applicant shall comply with the following restrictions concerning construction days and hours:

- a. Construction activities are limited to between 7:00 a.m. and 7:00 p.m. Monday through Friday, except that pier drilling 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.
- b. Construction activities are limited to between 9:00 a.m. and 5:00 p.m. on Saturday. In residential zones and within 300 feet of a residential zone, construction activities are allowed from 9:00 a.m. to 5:00 p.m. only within the interior of the building with the doors and windows closed. No pier drilling or other extreme noise generating activities greater than 90 dBA are allowed on Saturday.
- c. No construction is allowed on Sunday or federal holidays.

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.

Any construction activity proposed outside of the above days and hours for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis by the City, with criteria including the urgency/emergency nature of the work, the proximity of residential or other sensitive uses, and a consideration of nearby residents'/occupants' preferences. The project applicant shall notify property owners and occupants located within 300 feet at least 14 calendar days prior to construction activity proposed outside of the above days/hours. When submitting a request to the City to

Conditions of Approval

allow construction activity outside of the above days/hours, the project applicant shall submit information concerning the type and duration of proposed construction activity and the draft public notice for City review and approval prior to distribution of the public notice.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

16. Construction Noise

Requirement: The project applicant shall implement noise reduction measures to reduce noise impacts due to construction. Noise reduction measures include, but are not limited to, the following:

- a. Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds) wherever feasible.
- b. Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.
- c. Applicant shall use temporary power poles instead of generators where feasible.
- d. Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction.
- e. The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

17. Operational Noise

Requirement: Noise levels from the project site after completion of the project (i.e., during project operation) shall comply with the performance standards of chapter 17.120 of the Oakland Planning Code and chapter 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 City.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

TRANSPORTATION/TRAFFIC

18. Construction Activity in the Public Right-of-Way

a. Obstruction Permit Required

Requirement: The project applicant shall obtain an obstruction permit from the City prior to placing any temporary construction-related obstruction in the public right-of-way, including City streets and sidewalks.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

b. Traffic Control Plan Required

Requirement: In the event of obstructions to vehicle or bicycle travel lanes, the project applicant shall submit a Traffic Control Plan to the City for review and approval prior to obtaining an obstruction permit. The project applicant shall submit evidence of City approval of the Traffic Control Plan with the application for an obstruction permit. The Traffic Control Plan shall contain a set of comprehensive traffic control measures for auto, transit, bicycle, and pedestrian detours, including detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes. The project applicant shall implement the approved Plan during construction.

When Required: Prior to approval of construction-related permit

Initial Approval: Public Works Department, Transportation Services Division

Monitoring/Inspection: Bureau of Building

c. Repair of City Streets

Requirement: The project applicant shall repair any damage to the public right-of way, including streets and sidewalks caused by project construction at his/her expense within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to approval of the final inspection of the construction-related permit. All damage that is a threat to public health or safety shall be repaired immediately.

When Required: Prior to building permit final

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

UTILITY AND SERVICE SYSTEMS

19. Construction and Demolition Waste Reduction and Recycling

Requirement: The project applicant shall comply with the City of Oakland Construction and Demolition Waste Reduction and Recycling Ordinance (chapter 15.34 of the Oakland Municipal Code) by submitting a Construction and Demolition Waste Reduction and

Recycling Plan (WRRP) for City review and approval, and shall implement the approved WRRP. Projects subject to these requirements include all new construction, renovations/alterations/modifications with construction values of \$50,000 or more (except R-3 type construction), and all demolition (including soft demolition) except demolition of type R-3 construction. The WRRP must specify the methods by which the project will divert construction and demolition debris waste from landfill disposal in accordance with current City requirements. The WRRP may be submitted electronically at www.greenhalosystems.com or manually at the City's Green Building Resource Center. Current standards, FAQs, and forms are available on the City's website and in the Green Building Resource Center.

When Required: Prior to approval of construction-related permit

Initial Approval: Public Works Department, Environmental Services Division

Monitoring/Inspection: Public Works Department, Environmental Services Division

PROJECT-SPECIFIC CONDITIONS

20. Paint Color and Texture

Prior to issuance of a construction related permit and Ongoing

The paint color and texture shall be matched to the existing roof top elements and shall be repainted to match any future roof top or building color changes. Samples of the selected color including product name and serial number shall be provided as part of the building plan sets. The finale color shall be selected by the Zoning Manager. At the discretions of the Zoning manager the finished antennas color shall be partly or wholly repainted in a more "sky" compatible color if deemed necessary.

21. Emissions Report

Prior to a final inspection and Ongoing

The applicant shall provide an RF emissions report to the City of Oakland Zoning Division indicating that the site is actually operating within the acceptable thresholds as established by the Federal government or any such agency that may be subsequently authorized to establish such standards.

ATTACHMENT C

12/16/2014	90% ZONING DOCUMENTS	
01/29/2015	100% ZONING DOCUMENTS	
07/27/2015	100% ZONING DOCUMENTS	REVISION 1
08/12/2015	100% ZONING DOCUMENTS	REVISION 2
XX/XX/XXXX	90% CONSTRUCTION DOCUMENTS	
XX/XX/XXXX	100% CONSTRUCTION DOCUMENTS	

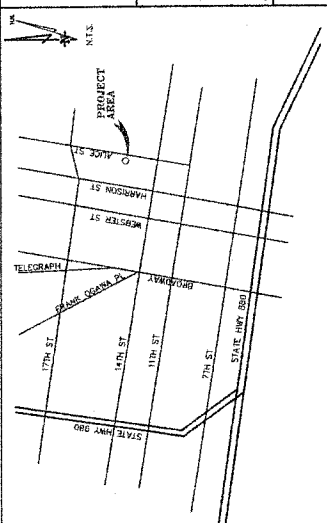
File: 02.117.11.09
Drawn By: ME
Checked By: M
Scale: AS NOTED
Date: 02/12/16
Job No. 02.117

REV	07-28-15	new, loose words	
REV	02-19-15	rev. address	
REV	01-23-15	rev. email	
REV	12-17-14	redlines	
REV	10-08-14	Preliminary Drafting	

LAKE MERRITT WEST
1501 & 1475 Alice Street
Oakland, CA 94612

Verizon Wireless

CELL ENGINEERING	DATE
DESIGNING & DRAWING	DATE
1225 HIGH STREET	
ALHAMBRA, CALIFORNIA 91801	
PHONE (818) 952-1000	
REV	DATE
CHG	DATE
BY	DATE
CHK	DATE
APP	DATE



OAKLAND, CA **VICTIM'S MAIL**

Lake Merritt West
Lease Area Description

Equipment, Lucas Argo
Commencing at the South west corner of the aforementioned parcel of land; thence along the Southwest boundary thereof North 81°42' West 50.03 feet; thence leaving said parcel boundary North 28°15'00" East 63.75 feet to the roof of the existing building now constructed thereon having an elevation of 108.9 feet above mean sea level more or less said point being the True Point of Beginning; thence from said point of beginning North 53°30'00" East 28.11 feet thence North 28°15'00" East 50.03 feet to the base level of bedrock; thence South 28°15'00" West 18.00 feet

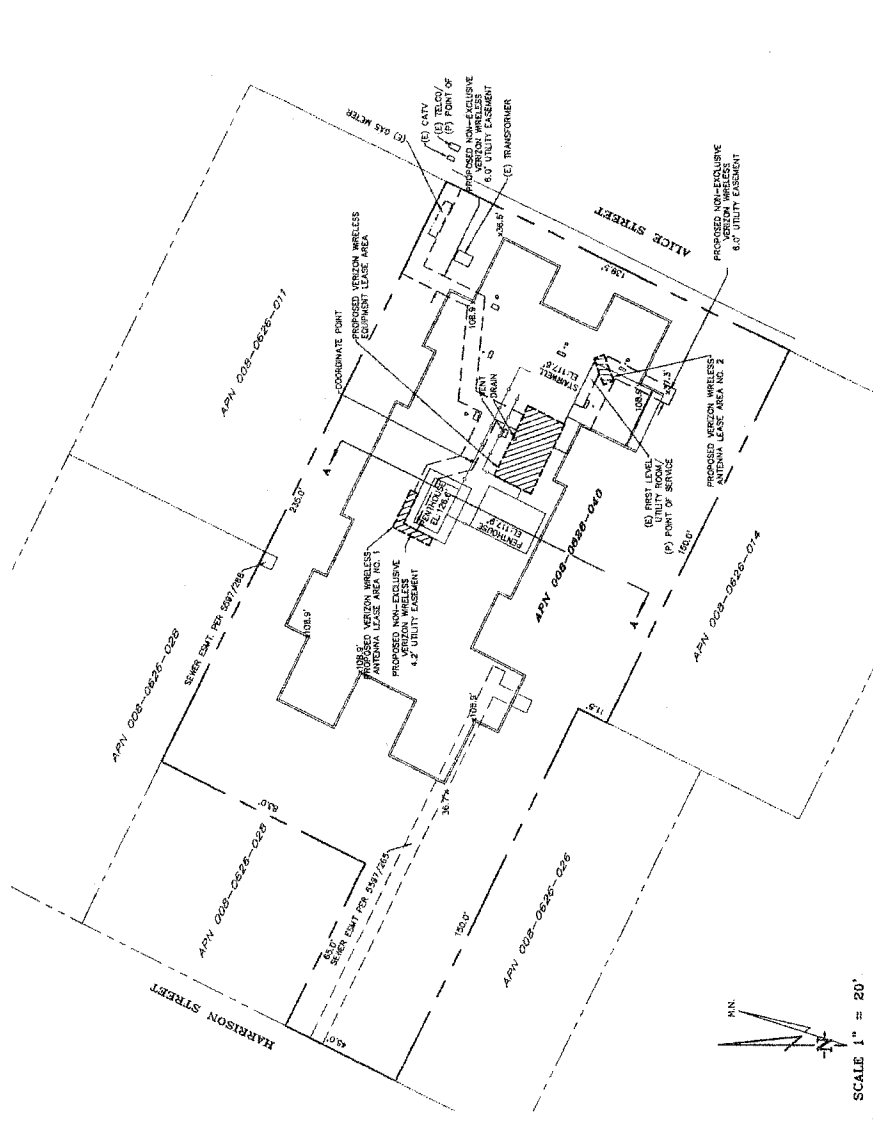
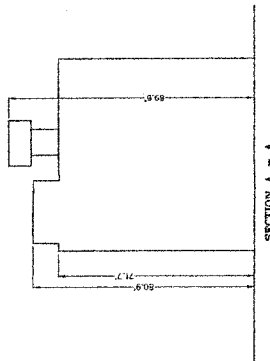
Antenna Leake Area No. 1
Commencing at the South-west corner of the aforementioned parcel of land; thence
along the ground boundary North 26°50'00" East 86.74 feet to a point on the north end of
existing paved building now constructed thereon; thence on direction of 128.6 feet above mentioned
on level more or less and point being the true Point of Beginning; thence North 57°00'00" East
150.00 feet; thence South 63°45'00" East 15.00 feet; thence South 28°15'00" East 3.00 feet;
thence North 63°45'00" East 15.00 feet; thence South 28°15'00" East 12.00 feet to the
true North of beginning.

Ardena Lease Area No. 2
Commencing at the South most corner of the aforementioned parcel of land, thence along the Southwest boundary thereof North 63°46'00" West 28.11 feet, thence leaving said parcel boundary North 28°15'00" East 52.55 feet to a point on the roof of the existing building now constructed thereon having an elevation of 117.6 feet above mean sea level more or less said point being the True Point of Beginning, thence from said point beginning North 19°35'23" West 4.00 feet thence North 70°07'08" East 10.00 feet, thence South 19°35'23" East 4.00 feet, thence South 70°07'08" West 10.00 feet to

together with an easement for access and utility purposes, from the public right of way, and from the easement, through and on the existing buildings and underlying parcel of land as shown on the attached plan, to the above described equipment, lease area and necessary for connection of utility service to the above described equipment, lease area.

Also together with an easement for the placement of cellular antennas and appurtenances from the above described equipment, lease area to the above described underlying lease area as necessary for the enjoyment and use of the above described

leave areas for their intended purposes.



Project Name: Lake Merritt	ASR & MVR Info Sheet	N 37-46-1.38°(N4027)
Project Site Location: 14501 Lake Street Oakland, CA 94612 Alameda County		W 122-59-35.35°(W4027)
Date of Observation: 12-04-14	Expert/Procedure Used: O. Dulak, Coordinates: Tremble Geo X-Map Pro software with Plotting Office software.	37 AUS 122 AUS 958 AUS
	Type of Antenna Mount: Fixed/Fixed Roof Mount	
	Coordinates (Antenna Average):	
	Latitude: N 37-46-1.37°(N4023)	
	Longitude: W 122-59-35.27°(W4023)	
	Elevation of Ground at Structure: (NAD83)	
	Antenna Height (Simplest Antenna):	

DATE OF SURVEY: 12-08-04
 CONDUCTED BY: UNDER DIRECTION OF: KENNETH D. SOLI, RCE 14803
 LOCATED IN THE COUNTY OF ALAMEDA, STATE OF CALIFORNIA
 INFORMATION SHOWN IS BASED UPON RECORDS FOUND AND RECORD INFORMATION PROVIDED BY THE COUNTY OF ALAMEDA. NO WARRANTY IS MADE BY THE COUNTY OF ALAMEDA FOR ANY INFORMATION SHOWN ON THIS PLAN, AND NO LIABILITY SHALL BE INCURRED BY THE COUNTY OF ALAMEDA FOR ANY DAMAGE, ABOVE OR BELOW, CAUSED BY ANY INFORMATION SHOWN HEREON, UNLESS OTHERWISE NOTED.
 (ALAND, 1979 CORRECTION, SUBMITT 271) FROM ELEVATIONS SHOWN
 CONTOUR INTERVAL: N/A.
 ASSESSOR'S PARCEL NUMBER: 009-028-040
 COUNTY: CONTRA COSTA
 LOCALITY: CHONG SOUTH LAKE, INC.
 2241 KINGSBORO RD., #201
 OAKLAND, CA 94612

PROJECT AREA ENLARGEMENT

MST ARCHITECTS
 1501 & 1475 ALICE STREET
 OAKLAND, CA 94612
 (415) 778-1111
 www.mstarchitects.com

COMP-LETS
 1501 & 1475 ALICE STREET
 OAKLAND, CA 94612
 (415) 778-1111
 www.comp-leads.com

verizon
 WIRELESS
 1501 & 1475 ALICE STREET
 OAKLAND, CA 94612
 (415) 778-1111
 www.verizon.com

EQUIPMENT LAYOUT PLAN

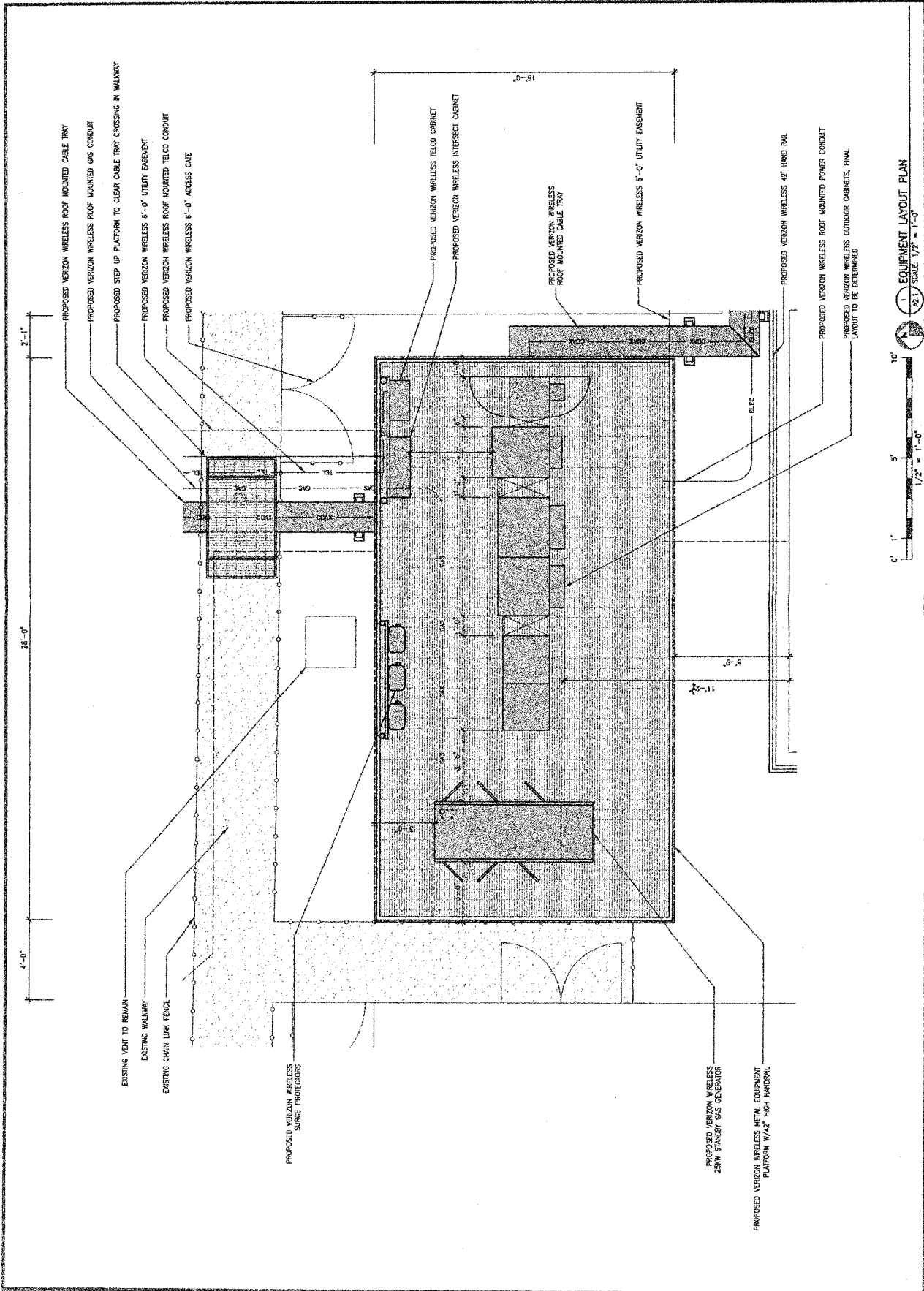
A2.1

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

0' 1' 5' 10'

1/2" = 1'-0"

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



MST ARCHITECTS
 1501 & 1475 ALICE STREET
 OAKLAND, CA 94612
 (415) 778-1120
 www.mstarchitects.com

COMPLETE

PROJECT ELEVATIONS

verizon wireless
 LAKE MERRITT WEST
 1501 & 1475 ALICE STREET
 OAKLAND, CA 94612

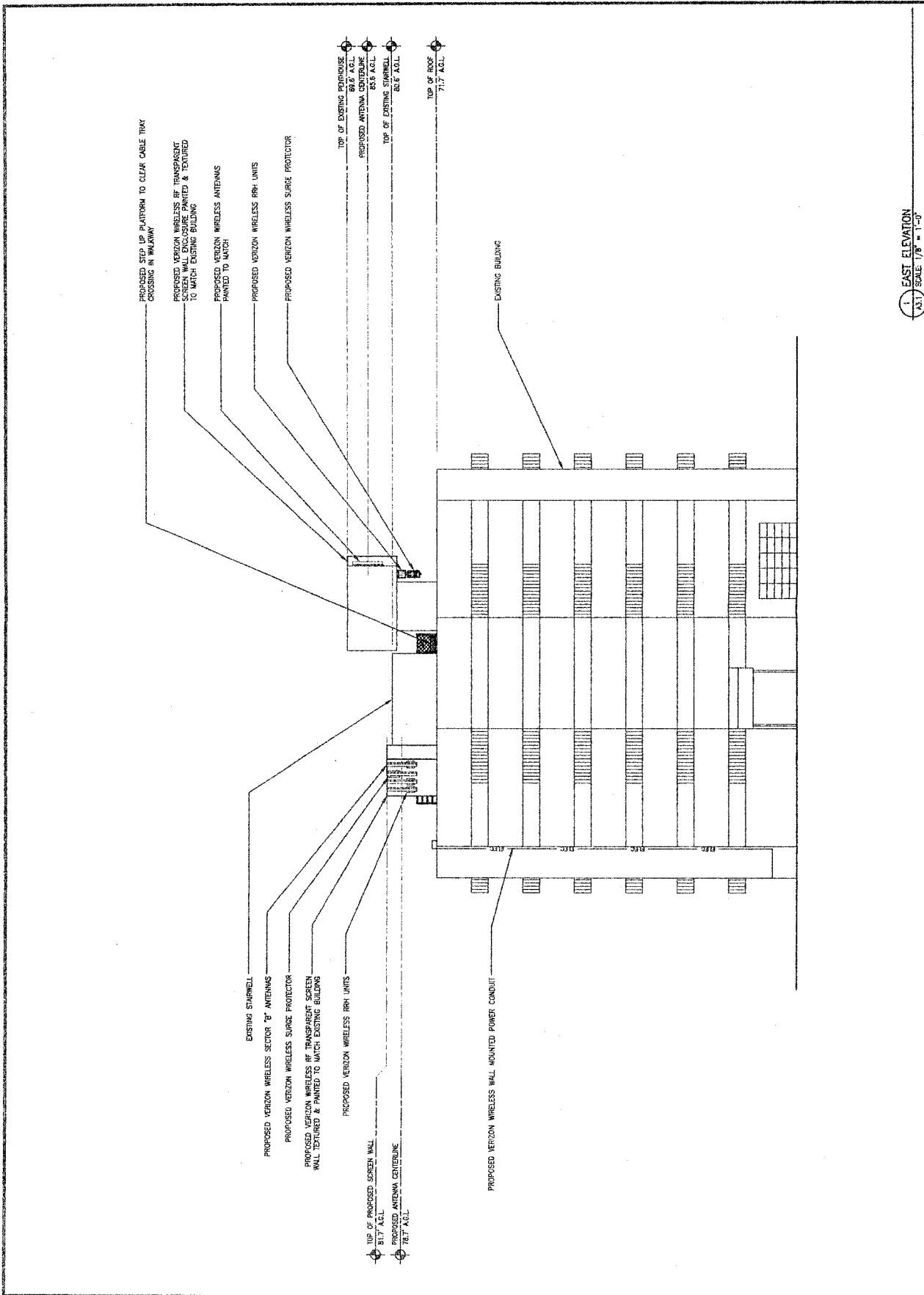
SHEET TITLE:


REVISIONS:

NO.	DATE	DESCRIPTION
1	11/12/12	ISSUED FOR PERMIT
2	11/12/12	SCALE: AS SHOWN
3	11/12/12	DATE: 11/12/12

A3.1

1 EAST ELEVATION
 A3.1 SCALE: 1/8" = 1'-0"





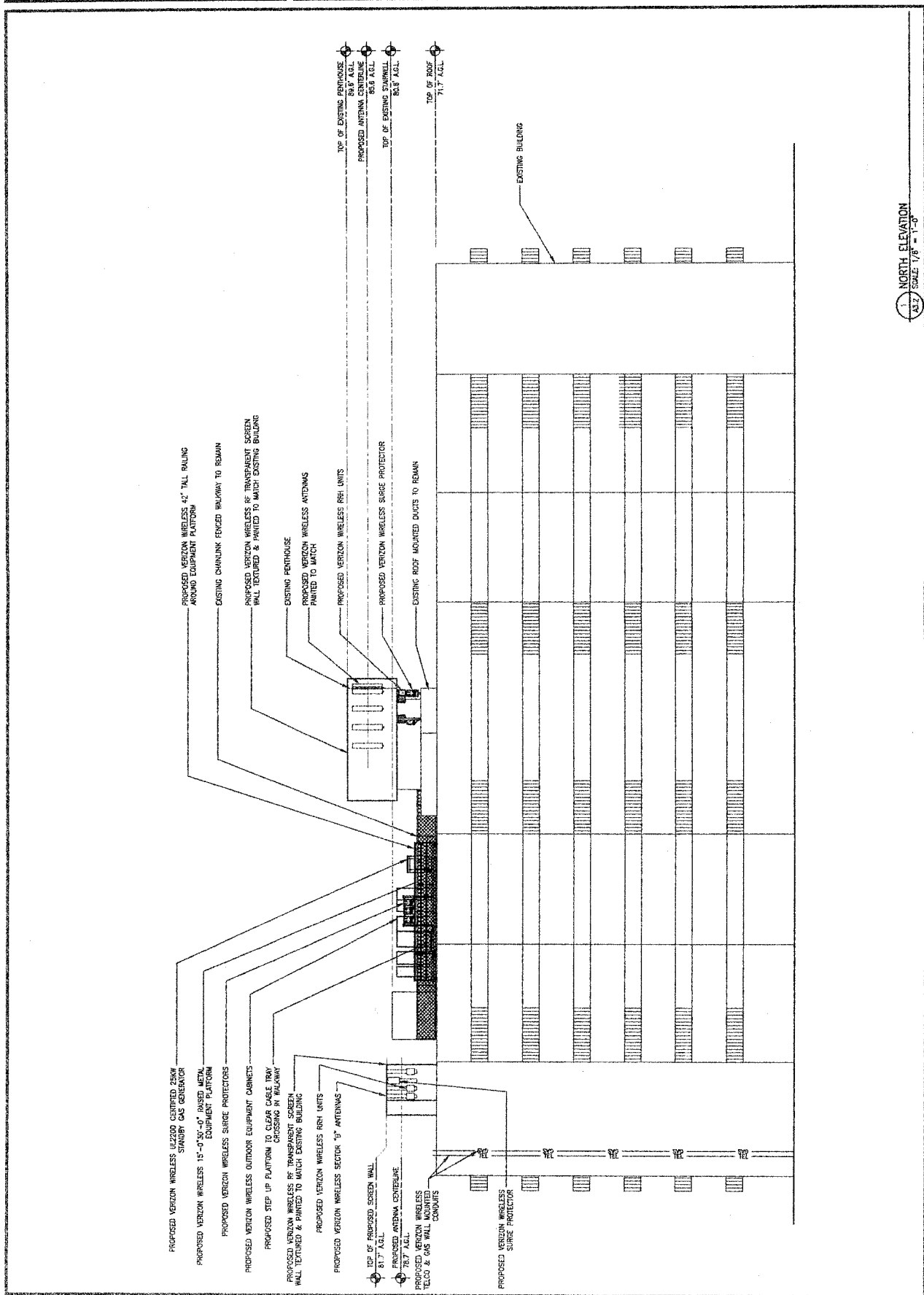
MST ARCHITECTS
 1500 14TH AVENUE, SUITE 100
 OAKLAND, CA 94612
 (415) 778-1000
 www.mstarchitects.com

COMPLETE
 1500 14TH AVENUE, SUITE 100
 OAKLAND, CA 94612
 (415) 778-1000
 www.mstarchitects.com

PROJECT ELEVATIONS
 SHEET TITLE
 verizon
 1501 & 1475 ALICE STREET
 OAKLAND, CA 94612

A3.2
 1501 & 1475 ALICE STREET
 OAKLAND, CA 94612
 (415) 778-1000
 www.mstarchitects.com

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 OAKLAND, CA 94612
 (415) 778-1000
 www.mstarchitects.com



NORTH ELEVATION
 SCALE 1/8" = 1'-0"
 A3.2

Lake Merritt West

1475 Alice Street
Oakland, CA 94612

verizonwireless

Aerial photograph showing the viewpoints for the photosimulations.





Existing

Lake Merritt West

1475 Alice Street
Oakland, CA 94612

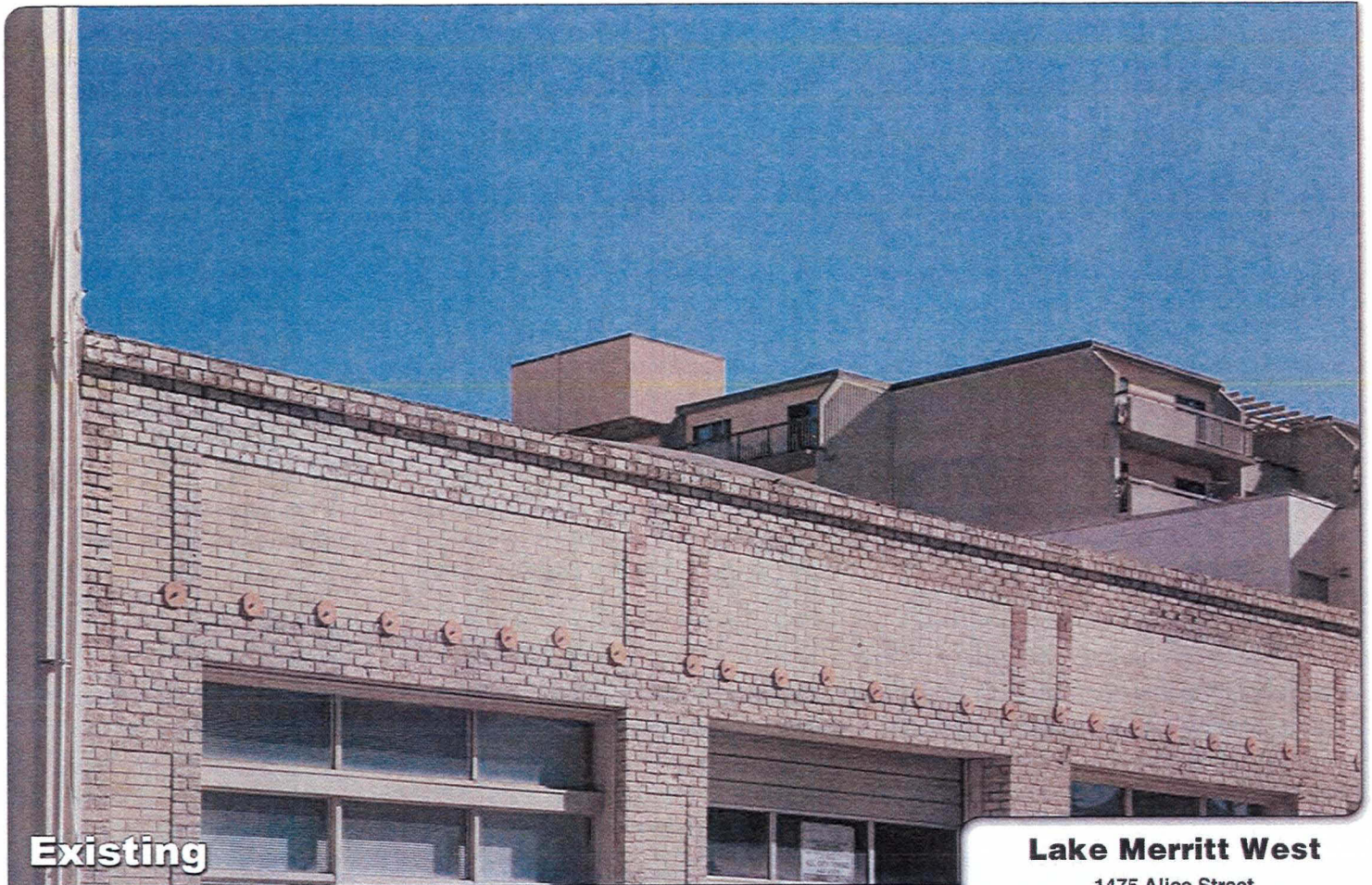
Photosimulation of the view looking northeast from 14th at Harrison.

verizonwireless



Proposed antenna screen to match

Proposed



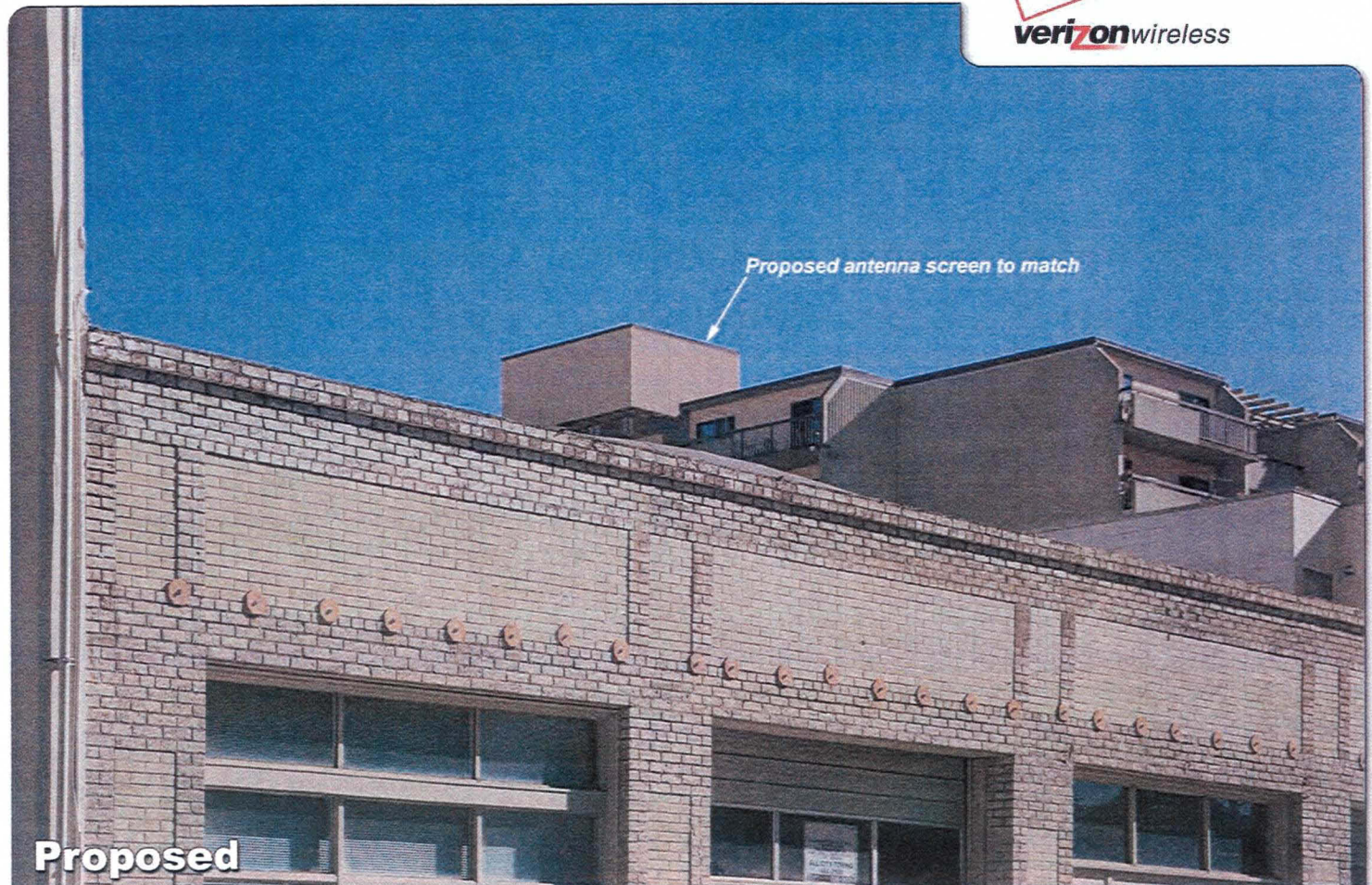
Existing

Photosimulation of a zoom view looking southeast from Harrison.

Lake Merritt West

1475 Alice Street
Oakland, CA 94612

verizonwireless



Proposed



Existing

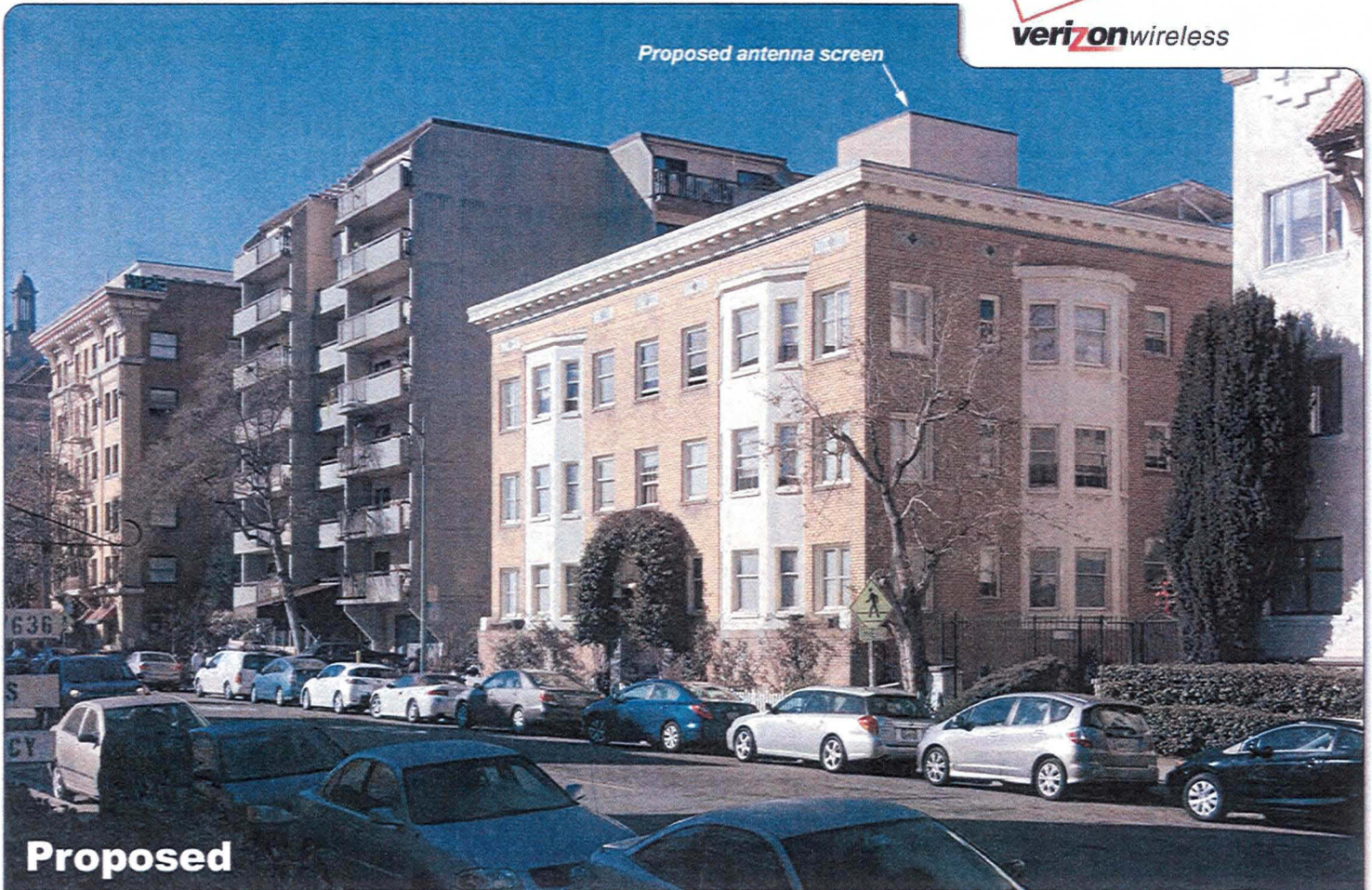
Lake Merritt West

1475 Alice Street
Oakland, CA 94612

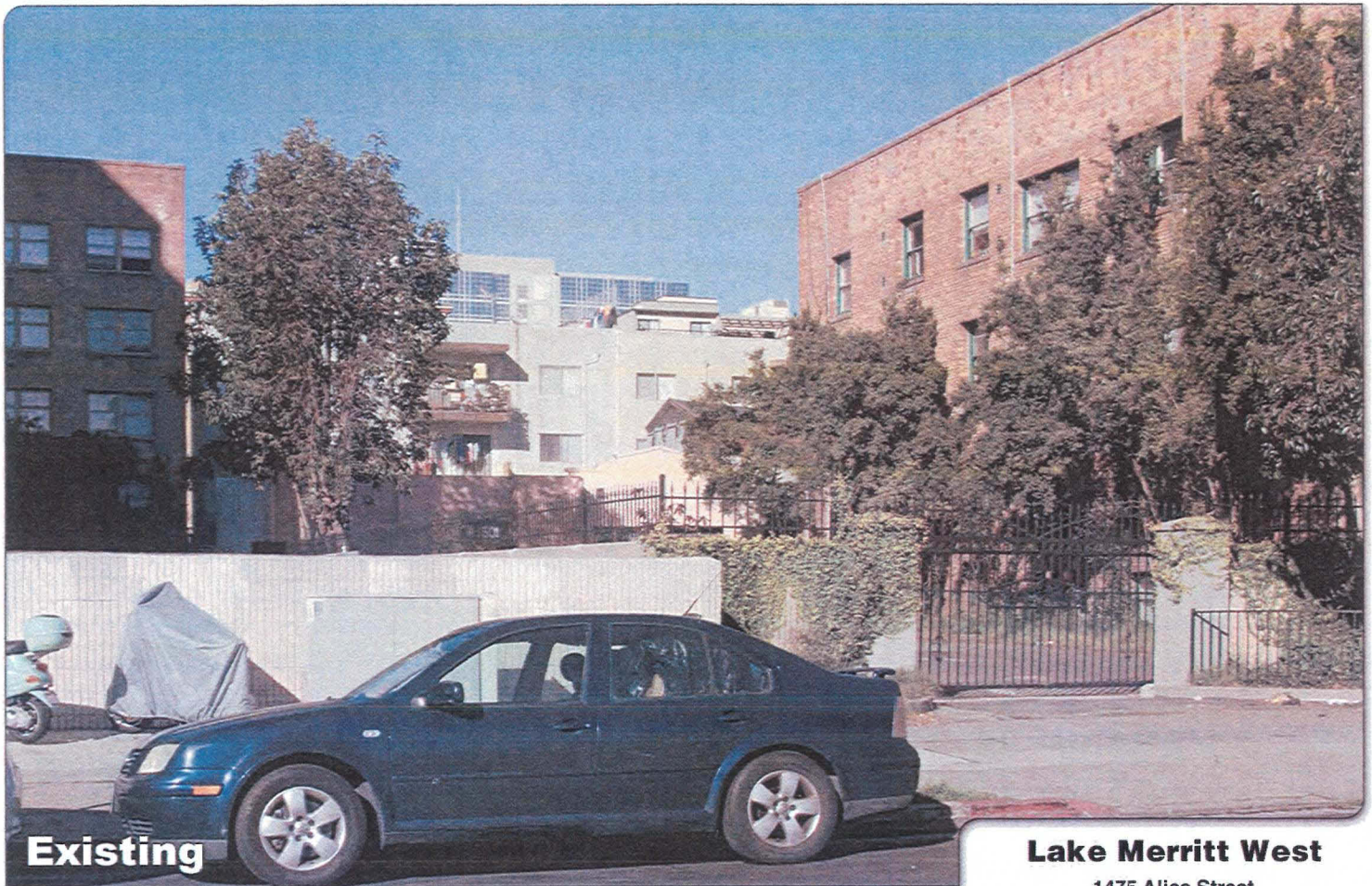
Photosimulation of the view looking southwest from across Alice St.

verizonwireless

Proposed antenna screen



Proposed

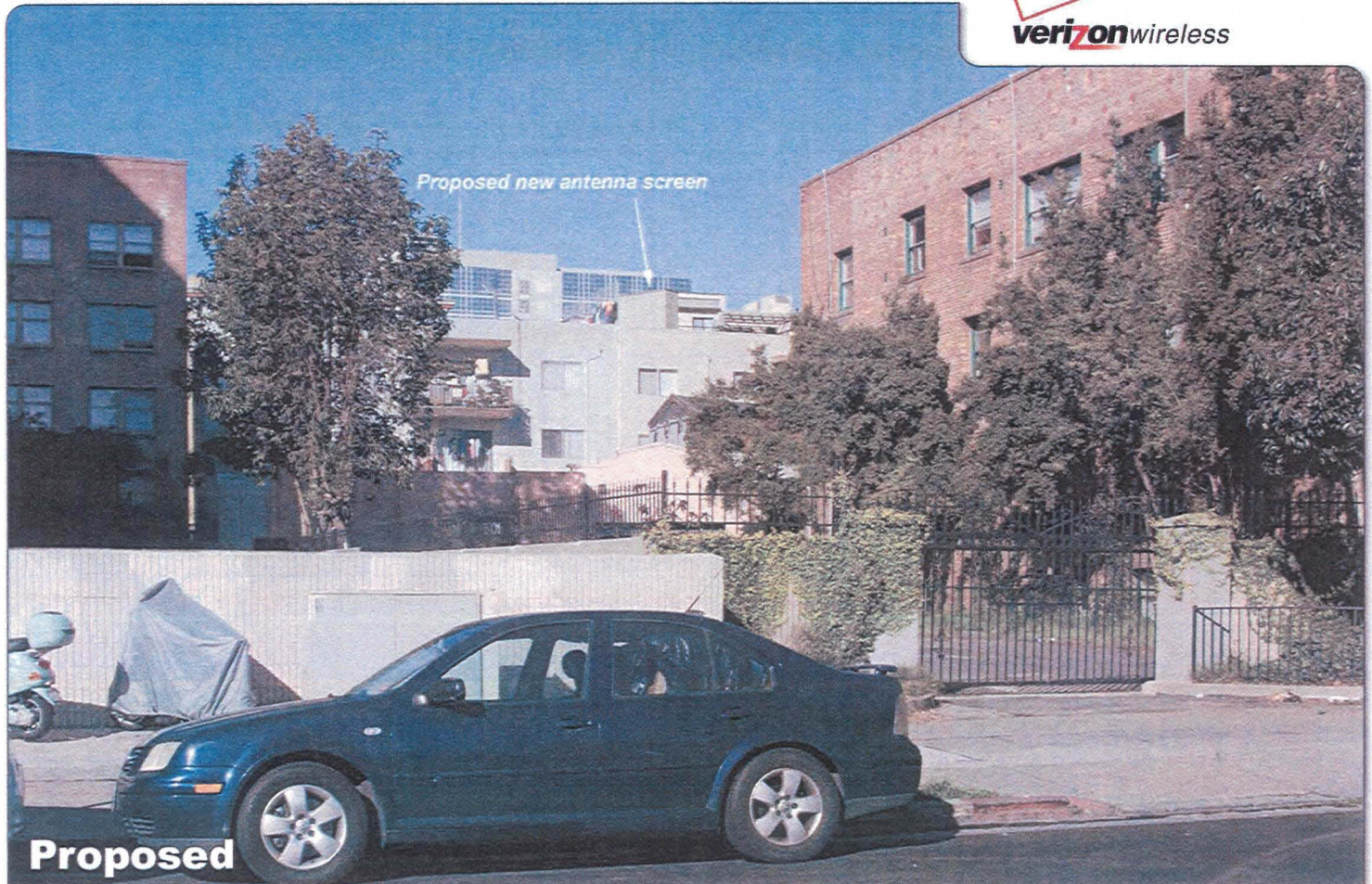


Lake Merritt West

1475 Alice Street
Oakland, CA 94612

verizonwireless

Photosimulation of the view looking northwest from Jackson at 15th.





Existing

Photosimulation looking northeast from the adjacent parking lot.

Lake Merritt West

1475 Alice Street
Oakland, CA 94612

 **verizon**wireless



Proposed

**Verizon Wireless • Proposed Base Station (Site No. 263942 “Lake Merritt West”)
1501 & 1475 Alice Street • 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. 263942 “Lake Merritt West”) proposed to be located at 1501 & 1475 Alice Street in Oakland, California, for compliance with appropriate guidelines limiting human exposure to radio frequency (“RF”) electromagnetic fields.

Executive Summary

Verizon proposes to install directional panel antennas above the roof of the eight-story apartment building located at 1501 & 1475 Alice Street in Oakland. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

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

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

General Facility Requirements

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



HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

ATTACHMENT D

V0CX
Page 1 of 4

**Verizon Wireless • Proposed Base Station (Site No. 263942 “Lake Merritt West”)
1501 & 1475 Alice Street • Oakland, California**

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 January 29, 2015, it is proposed to install twelve Amphenol Model HEX658CW0000x directional panel antennas above the roof of the eight-story apartment building located at 1501 & 1475 Alice Street in Oakland. Eight antennas would be installed high on the face of the penthouse above the center of the roof and the other four antennas would be installed within a new view screen enclosure above the stairwell penthouse to the southeast. The antennas would be mounted with no downtilt at an effective height of about 85½ feet above ground, 14 feet above the roof, and would be oriented in groups of four toward 40°T, 160°T, and 280°T, to provide service in all directions. The maximum effective radiated power in any direction would be 8,690 watts, representing simultaneous operation at 3,370 watts for AWS, 3,160 watts for PCS, and 2,160 watts for 700 MHz service; no operation is proposed on cellular frequencies from this site. There are reported no other wireless telecommunications base stations at the site or nearby.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation is calculated to be 0.0091 mW/cm², which is 0.94% of the applicable public exposure limit. The maximum calculated level at the top-floor elevation of any nearby building* is 3.0% of the public

* Located at least 30 feet away, based on photographs from Google Maps.



**Verizon Wireless • Proposed Base Station (Site No. 263942 "Lake Merritt West")
1501 & 1475 Alice Street • Oakland, California**

exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels from the proposed operation.

Recommended Mitigation Measures

Due to their mounting locations and height, the Verizon antennas would not be accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training, to include review of lock-out tag-out procedures, be provided to all authorized personnel who have access to the antennas, including employees and contractors of Verizon and of the building owner. No access within 10 feet directly in front of the antennas themselves, such as might occur during maintenance above the roof in front of the antennas, should be allowed while the base station is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Posting explanatory signs[†] at the roof access door, at the antennas on the penthouse, and on the view screen in front of the antennas on the stairwell, such that the signs would be readily visible from any angle of approach to persons who might need to work within that distance, would be sufficient to meet FCC-adopted guidelines.

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 1501 & 1475 Alice Street in Oakland, 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. Training authorized personnel and posting explanatory signs is recommended to establish compliance with occupational exposure limits.

[†] 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.



Verizon Wireless • Proposed Base Station (Site No. 263942 "Lake Merritt West")
1501 & 1475 Alice Street • Oakland, California

Authorship

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



Andrea L. Bright

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

March 19, 2015



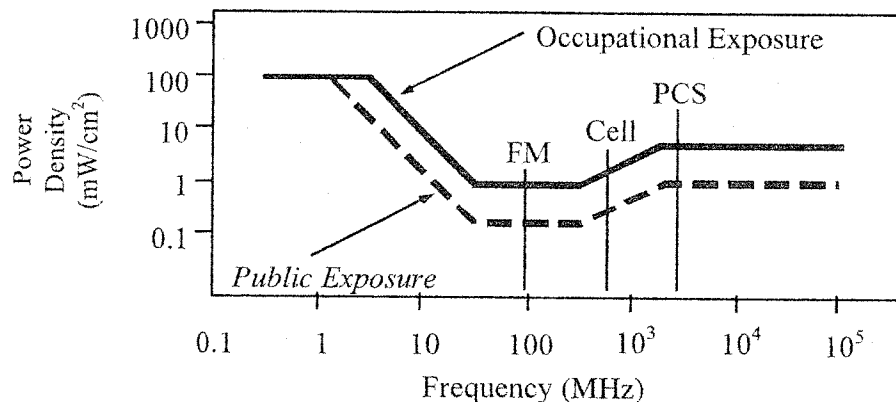
HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

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 (<i>f</i> 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√ <i>f</i>	<i>1.59√f</i>	√ <i>f</i> /106	<i>√f/238</i>	<i>f/300</i>	<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.



HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

FCC Guidelines
Figure 1

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:

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

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.

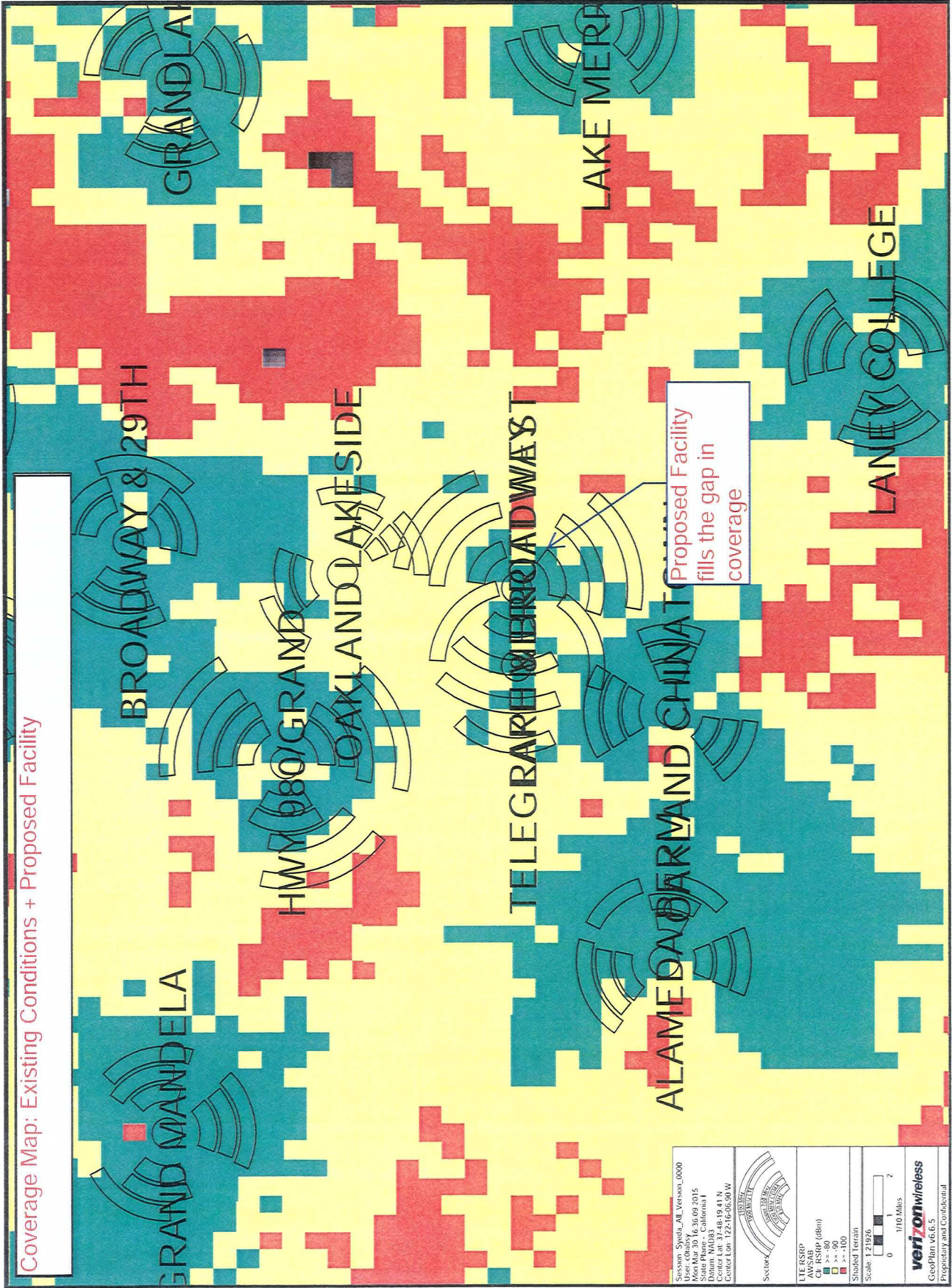
The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 ($1.6 \times 1.6 = 2.56$). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired 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.

 > = -80
 > = -90
 > = -100

Shaded Terrain

verizon
1/10/11GeoPlan v6.6.5
Proprietary and Confidential

Coverage Map: Existing Conditions + Proposed Facility



Service: Speeds All Version: 0000
User: County
Mon Mar 30 16:36:09 2015
Map Date: 16 Mar 2015
Datum: NAD83
Center Lat: 37.481941 N
Center Lon: 122.160600 W

Scale: 1:25000
0 1 2
1/10 Miles

verizonwireless
GeoPlan v6.6.5
Proprietary and Confidential