

Case File Number: PLN17-422

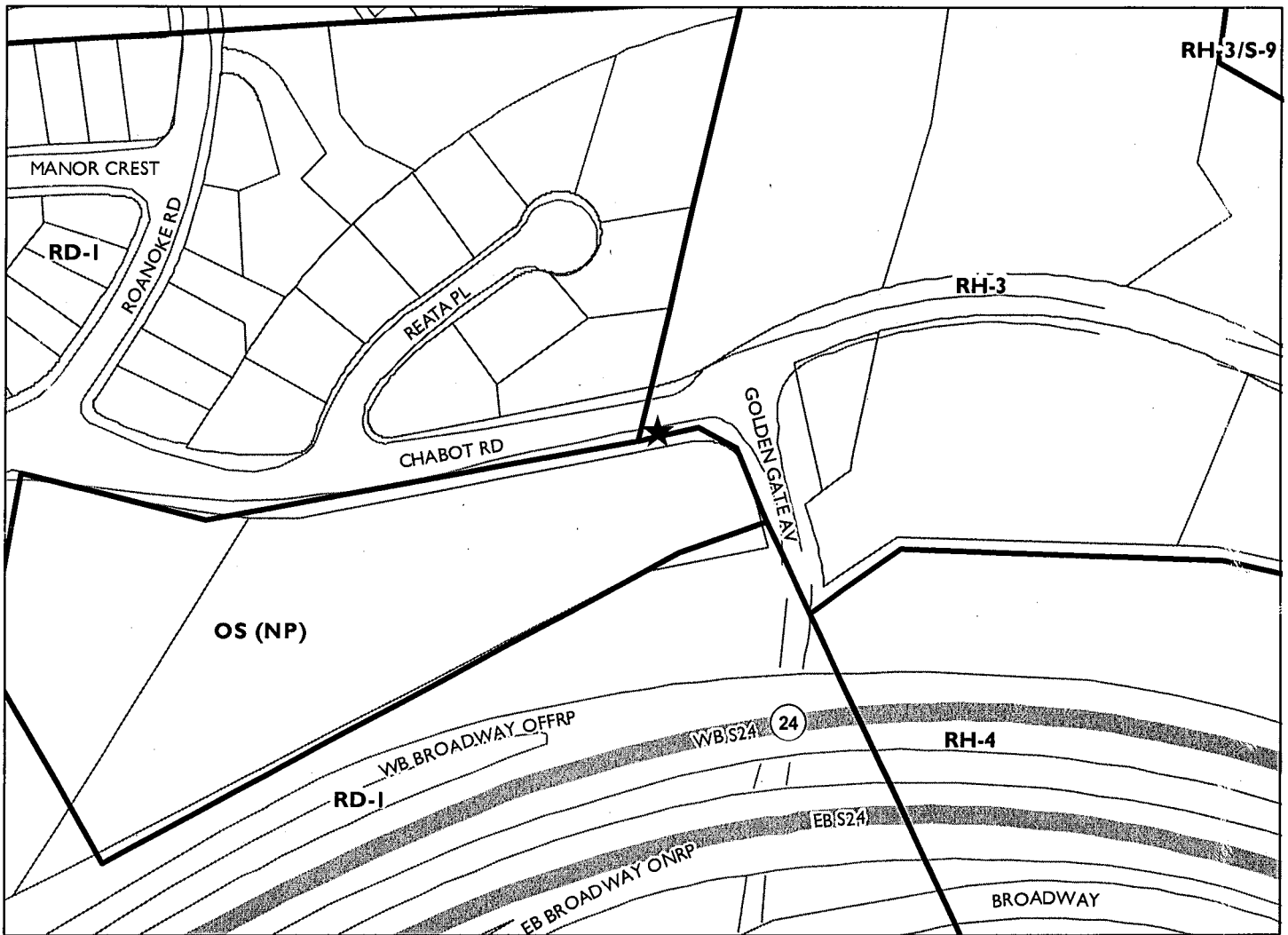
December 6, 2017

Location:	The public right of way adjacent to 6898 Chabot Road on a JPA Utility Telephone Pole (See map on reverse)
Assessor Parcel Numbers:	048A-7093-003-01 (nearest lot adjacent to the project site)
Proposal:	Installation of a wireless telecommunication facility on a wooden utility pole located in the public right-of-way. The project involves replacement of an existing 24' tall wood utility pole with 50'-9" tall pole and installation of 1) one antenna within a canister shroud measuring 4'-9" tall and 2'-6" in diameter at a height of 50'-9"; 2) two radio units mounted at a height of 18'; two diplexers; and 3) one cabinet and related equipment mounted 14'-9" above ground.
Applicant:	On Air for Verizon Wireless
Contact Person/ Phone Number:	Aaron Salers (707) 320-7248
Owner:	Pacific Gas & Electric (PG&E)
Case File Number:	PLN17-422
Planning Permits Required:	Major Design Review to install a wireless Macro Telecommunications Facility on a replaced PG&E pole located in the public right -of- way in a residential zone.
General Plan:	Hillside Residential
Zoning:	RH-3 Hillside Residential-3
Environmental Determination:	Exempt, Section 15303 of the State CEQA Guidelines; minor additions and alterations to a replaced PG&E utility pole; Section 15302: replacement or reconstruction of existing utility systems and/or facilities; Section 15183: projects consistent with a community plan, general plan or zoning.
Historic Status:	No Historic Record – Utility Pole
Service Delivery District:	2
City Council District:	1
Date Filed:	October 23, 2017
Finality of Decision:	Appealable to City Council within 10 Days
For Further Information:	Contact case planner Jason Madani at (510) 238-4790 or jmadani@oaklandnet.com

SUMMARY

The project applicant (On Air for Verizon Wireless) is proposing to install a wireless telecommunication facility located in the public right-of-way near 6898 Chabot Road. The project involves replacement of an existing 24' tall wood utility pole at the same location with a 50'-9" tall pole and installation of 1) one antenna within a canister shroud measuring 4'-9" tall and 2'-6" in diameter at a height of 50'-9"; 2) two radio units mounted at a height of 17'-9"; 3) two diplexers; and 4) one cabinet and related equipment mounted 14'-9" above ground. Major Design Review is required for the installation of a new Macro Telecommunications Facility in a residential zone. The proposed new pole, antenna and associated equipment are similar to other utility poles and equipment within the same block and around the City. The proposed pole is located adjacent to public tennis courts and is across street from adjacent residences. The antenna shroud and associated equipment will be painted grey or brown to match the pole and/or other utilities located on the pole. As result, the proposed telecommunication facility is an appropriate location and

CITY OF OAKLAND PLANNING COMMISSION



0 100 200 400 600 800 Feet



Case File: PLN17422

Applicant: On Air for Verizon Wireless

Address: The public right-of-way adjacent to 6898 Chabot Rd
on a JPA Utility Telephone Pole

Zone: RH-3

would not significantly increase negative visual impacts to adjacent neighboring residential properties. The project meets all the required findings for approval of the project.

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 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, consult the following:

Competition & Infrastructure Policy Division (CIPD) of the Wireless Telecommunications Bureau, main division number: (202) 418-1310. <https://www.fcc.gov/general/competition-infrastructure-policy-division-wireless-telecommunications-bureau>

PROPERTY DESCRIPTION

The existing 24' tall wooden PG&E utility pole is located in the City of Oakland public right-of-way adjacent to tennis courts and is across street from the residence at 6898 Chabot Road.

PROJECT DESCRIPTION

As shown in Attachment C and D, the project applicant proposes to:

- Replace an existing 24' tall wooden PG&E utility pole with a new 50'-9" tall wood utility pole in the same location,
- Install one canister antenna within an antenna shroud measuring 4'-9" tall and 2'-6" in diameter mounted at a height of 51',
- Install two radio units measuring 27.2" tall and 12.1" wide mounted at a height of 18' above ground,
- Install two diplexers,
- Install one cabinet and related equipment mounted 14'-9" above ground, and
- Paint the proposed antennas and associated equipment grey or brown to match the pole and/or other utilities located on the pole.

No portion of the telecommunication facilities will be located on the ground within City of Oakland public right-of-way. The proposed antenna and associated equipment will not be accessible to the public.

GENERAL PLAN ANALYSIS

The site is classified Hillside Residential per the Oakland General Plan's Land Use and Transportation Element (LUTE). This classification is intended to create, maintain, and enhance neighborhood residential areas typically that are characterized by detached, single unit structures on hillside lots. "Future development within this classification should be primarily residential in character."

The proposed unmanned wireless telecommunication facility will not adversely affect and detract from the characteristics of the neighborhood.

ZONING ANALYSIS

The site is located in RH-3 zone. The intent of the RH-3 Zone is to create, maintain, and enhance areas with detached, single unit on lots of at least structures. This classification is intended to create, maintain, and enhance areas for single-family dwellings on hillside lots. "Future development within this classification should be primarily residential in character."

Section 17.136.040 and 17.128.070 of the City of Oakland Planning Code requires a Major Design Review permit for Macro Telecommunication facilities that are attached to utility poles in the RH-3 Zone or that are located within one hundred (100) feet of the boundary of any residential zone. 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 Design Review are listed and included in staff's evaluation later in this report.

ENVIRONMENTAL DETERMINATION

The California Environmental Quality Act (CEQA) Guidelines list 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, minor additions and alterations to an existing PG&E utility pole; Section 15302, replacement or reconstruction of existing utility systems and/or facilities; Section 15303, new construction or conversion of small structures, and Section 15183, projects consistent with the 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 preference do not require a site alternatives analysis. Since the proposed project involves the replacement of the utility pole and installation of new antenna and radio units within an RH-3 Zone, the proposed project meets preference B, and a site alternatives analysis is not required. However, applicant has provided a site alternative analysis (Attachment E).

Alternative Site Analysis:

The project is located in an area with existing residential structures and public tennis courts. The project applicant considered alternative sites on other utility poles in this area but none of these sites are as desirable from a service coverage perspective or from an aesthetics perspective to minimize visual impacts. The proposed project is in an underserved area. 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 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 an alternative design analysis. Facilities designed to meet a C through F ranked preference, inclusive, must submit an alternative design analysis as part of the required application materials. The 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 does not meet preference A and B, an alternative design analysis is required.

Alternative Design Analysis:

The project applicant submitted an alternative design analysis (Attachment E). The analysis evaluated whether the equipment could be undergrounded and concealed from view. Unfortunately, this is not possible because there is insufficient right-of-way space for the necessary equipment access and the equipment could be compromised by rainwater saturation. The proposed design is a good option because the facility is located where a signal can be adequately propagated without obstruction, which could not have been the case if the antenna was located on a building and concealed.

Planning staff has reviewed the applicant's alternative design analysis and determined that the site selected conforms to the telecommunication regulation requirements. Specifically, given the flat topography, streamlined equipment design and location of the replaced pole at the corner, the facility will blend in with the existing utility apparatus on the replaced pole. In addition, the proposed new antenna is located within a shroud screening. Both the antenna and the radio units will be attached above head height, 17'-9" above the ground. The shroud and radio units will be painted grey to match the other utilities or brown to match the pole. Finally, the replaced pole will be taller in order to avoid transmission interference between the PG&E and telecommunication equipment.

Project Radio Frequency Emissions Standards

Section 17.128.130 of the City of Oakland Telecommunication Regulations requires 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 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.

In the analysis prepared by Hammett & Edison, Inc. (Attachment F), the proposed project was evaluated for compliance with appropriate guidelines limiting human exposure to radio frequency electromagnetic fields. According to the report, the project will comply with the prevailing standards for limiting public

exposure to radio frequency energy, and therefore, the proposed site will operate within the current acceptable thresholds as established by the Federal government or any such agency that may be subsequently authorized to establish such standards. The RF emissions report, states that the proposed project will not cause a significant impact on the environment. Additionally, staff recommends that, prior to the final building permit sign off, the applicant submit a certified RF emissions report stating that the facility is operating within acceptable thresholds established by the regulatory federal agency.

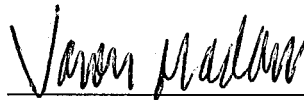
CONCLUSION

The proposed project meets all the required findings for approval. The proposal 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 department and emergency response teams. Staff believes that the proposal is designed to meet the established zoning and telecommunication regulations and recommends supporting the Major Design Review application.

RECOMMENDATIONS:

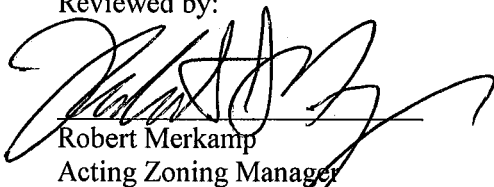
1. Affirm staff's environmental determination
2. Approve Design Review application, subject to the attached findings and conditions of approval.

Prepared by:



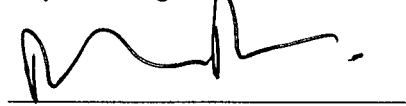
Jason Madani
Planner II

Reviewed by:



Robert Merkamp
Acting Zoning Manager

Approved for forwarding to the
City Planning Commission



Darin Ranelletti, Deputy Director
Planning and Building Bureau

ATTACHMENTS:

- A. Findings
- B. Conditions of Approval
- C. Project Plans
- D. Photo-simulations
- E. Site/Site Design Alternatives Analysis
- F. RF Emissions Report

- G. CPUC Compliance Letter
- H. Proof of public notification posting
- I. Public comments received by date of packet preparation

ATTACHMENT A: FINDINGS FOR APPROVAL**FINDINGS FOR APPROVAL:**

This proposal meets all the required findings under Section 17.136.050(B), of the Non-Residential Design Review criteria and all the required findings under Section 17.128.070(B), of the telecommunication facilities (Macro) Design Review criteria and as set forth below: Required findings are shown in **bold** type; reasons your proposal satisfies them are shown in normal type.

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 involves replacement of an existing 24' tall wooden utility pole with a new 50'-9" tall PG&E utility pole and installation of one antenna within an antenna shroud and two radio units mounted above the cabinet, breaker box and smart meter. The pole will be similar to other wood PG&E poles found in the area and throughout the City. In addition, the proposed antennas and radio units will be typical of the utility equipment found on these poles, located high up on the pole, oriented toward the street and painted grey or brown to match the pole or other equipment. The replaced pole will be taller than the existing pole but the additional height is necessary to avoid interference between the PG&E and telecommunication equipment. Therefore, the facility will not adversely affect and detract from the residential characteristics of the neighborhood.

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;

The proposal improves wireless telecommunication service in the residential area. The facility will be camouflaged by the antenna canister, located on top of utility pole and painted grey or brown to blend in with the existing surrounding area. These measures will result in the proposal having minimal visual impacts on public views and protecting the value of private and public investments in the area. Service will also be available to emergency services such as police, fire department and emergency response teams.

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 site is classified as Hillside Residential per the Oakland General Plan's Land Use and Transportation Element (LUTE). This classification is intended to create, maintain, and enhance neighborhood residential areas typically that are characterized by detached, single unit structures on hillside lots. "Future development within this classification should be primarily residential in character."

Section 17.128.120 of the City of Oakland Telecommunications Regulations describes the design criteria for wireless facilities. In general, these facilities should either be concealed from view or not visible from the public right of way. Since the project did not meet either ranked criteria, but did meet criteria C as described above, an alternative site design study needed to be undertaken. The proposed antenna and associated related equipment are compatible with and typical of utility equipment on these poles. The

proposed antenna will be placed on top of the utility pole within public right-of-way and is located across the street from the residence at 6898 Chabot Road and painted to match either the pole or utilities. The replaced pole will be taller than the existing pole but is necessary to avoid interference between the PG&E and telecommunication equipment. As result, the proposal is consistent telecommunication regulation requirements, is in an appropriate location, and of an appropriate design that would not significantly increase negative visual impacts to adjacent neighboring residential properties

17.128.070(B) DESIGN REVIEW CRITERIA FOR MACRO FACILITIES

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

The antennas and equipment will be painted grey to match the existing utility equipment or brown to match the proposed wooden utility pole in order to minimize the potential visual impact.

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 antennas and equipment will not be mounted onto an architecturally significant structure but onto a replaced wooden utility pole similar to other poles in the City and on the block.

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 will be placed above head height, and vertically in line with the proposed utility pole. The equipment will be painted to match the pole or utility equipment and blend with the surroundings.

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

The associated antenna will be located within a shroud attached to a replaced utility pole and painted to match the proposed wooden pole or the other utilities in order to minimize visual impacts on the neighboring properties.

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

See above finding # 4

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.

N/A

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 screened antenna will be mounted at a height of 50'-9" on a replaced PG&E utility pole and will not be accessible to the public due to its location. The radio unit equipment will be attached to the pole more than 17'-9" above the ground.

ATTACHMENT B: STANDARD CONDITIONS:

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 dated **August 1, 2017** and submitted on **October 23, 2017** 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. 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.

13. 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.

14. 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.

15. Camouflage

Requirement: The antenna shall be painted, texturized, and maintained matte silver, and the equipment and any other accessory items including cables matte brown, to better camouflage the facility to the utility pole and attached power line posts.

When Required: Prior to a final inspection

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

16. 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.

17. Possible District Undergrounding PG&E Pole

Ongoing

Should the PG &E utility pole be voluntarily removed for purposes of district undergrounding or otherwise, the telecommunications facility can only be re-established by applying for and receiving approval of a new application to the Oakland Planning Department as required by the regulations.

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



CHABOT TUNNEL SC1

(NEAR) 6898 CHABOT ROAD
OAKLAND, CA 94618

PSL #318887

Attachment C



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client: _____



Project Architect: _____



Site Agent: _____

100% Construction
Drawings

Drawing Phase: _____

CHABOT TUNNEL SC1
(near) 6898 Chabot Road
Oakland, CA 94618

PSL# 318887

Site Name: _____

Professional Seal: _____

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Rev.	Date	Description
01	03/19/17	Constr. Dwg 90%
02	05/05/17	Constr. Dwg 100%
03	05/24/17	Constr. Dwg 100%
04	08/01/17	Constr. Dwg 100%

Project No.: _____

Date: 08/01/17 Job No.: _____

Scale: AS SHOWN CAD File: _____

Designed By: JG Checked: RB

TITLE SHEET

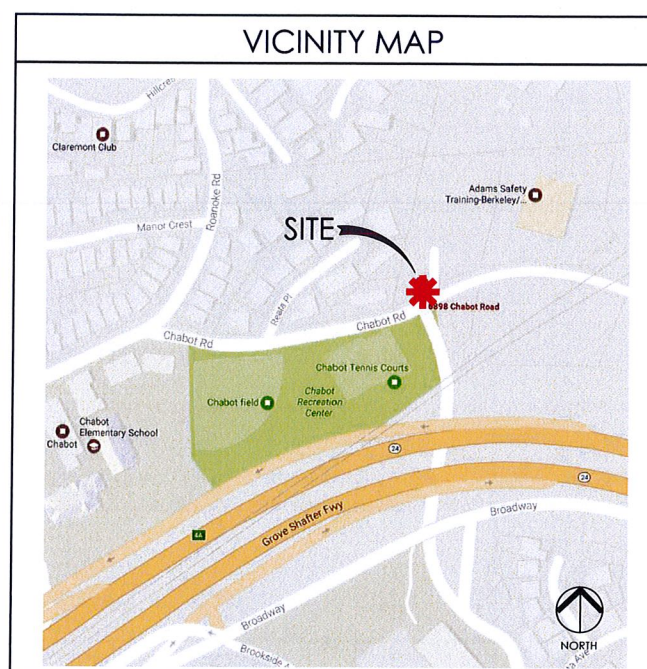
Sheet Title: _____

T.1

Sheet No.: _____

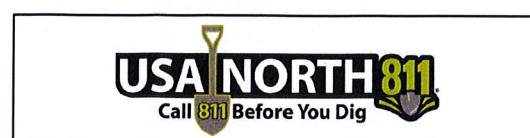
© Meridian Management LLC, 2017

SITE INFORMATION	
PSL #:	318887
OWNER:	PG&E 245 MARKET STREET SAN FRANCISCO, CA 94110 CONTACT: MARK ANDERSON TEL (925) 459-8052
APPLICANT:	VERIZON WIRELESS 2785 MITCHELL DRIVE, SUITE 9 WALNUT CREEK, CA 94598
AGENT:	ON AIR LLC 465 FIRST ST. WEST SUITE 101 SONOMA, CA 95476 TEL (707) 933-9633
APN ADJACENCY:	(ADJACENT TO) 048A-7093-003-1
SITE ADDRESS:	(NEAR) 6898 CHABOT ROAD OAKLAND, CA 94618
COUNTY:	ALAMEDA COUNTY
ZONING:	PUBLIC ROW
ZONING JURISDICTION:	CITY OF OAKLAND



PROJECT TEAM	
ON AIR, LLC ON AIR LLC 465 FIRST ST. WEST SUITE 101 SONOMA, CA 95476	
PROJECT MGR: AARON SALARS MOBILE: (707) 320.7248 OFFICE: (707) 933.9633 EMAIL: asalars@onairllc.com	
CONSTRUCTION MANAGER: MOHAMMAD A. BASEER MOBILE: (510) 414.7075 EMAIL: mbaseer@onairllc.com	
SITE ACQUISITION MGR: AARON SALARS MOBILE: (707) 320.7248 OFFICE: (707) 933.9633 EMAIL: asalars@onairllc.com	
ARCHITECT/ENGINEER PROJECT MANAGER: RODNEY BARNES MERIDIAN MANAGEMENT, INC. MOBILE: (707) 592-5924 EMAIL: rodney@meridian.management	
VERIZON WIRELESS VERIZON WIRELESS 2785 MITCHELL DRIVE BUILDING 9 WALNUT CREEK, CA 94598	
PROJECT MANAGER: _____	

HANDICAP REQUIREMENTS
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
HANDICAPPED ACCESS NOT REQUIRED IN ACCORDANCE WITH
CALIFORNIA ADMINISTRATIVE STATE CODE PART 2, TITLE 24,
CHAPTER 11B, SECTION 1103B.



PROJECT DESCRIPTION	
THIS IS AN UNMANNED TELECOMMUNICATIONS FACILITY FOR THE VERIZON WIRELESS NETWORK CONSISTING OF THE INSTALLATION AND OPERATION OF AN ANTENNA AND ASSOCIATED EQUIPMENT ON A REPLACEMENT WOOD POLE IN THE PUBLIC RIGHT-OF-WAY.	
<u>SCOPE OF WORK</u>	
1. INSTALL NEW TELECOMMUNICATIONS EQUIPMENT BOXES ON A NEW 46' HT. REPLACEMENT WOOD POLE. ALL POLE-MOUNTED EQUIPMENT TO BE INSTALLED ON A GO95 COMPLIANT STANDOFF BRACKET.	
2. EQUIPMENT CONSISTS OF (1) ELECTRIC METER, (2) DISCONNECT SWITCHES, (1) BUSBAR, (1) SMALL CELL CABINET, (2) AWS/PCS DIPLEXERS, (6) HYBRID COMBINERS, (1) CHRISTY PULL BOX, (2) RRU'S AND (1) ANTENNA W/ RADOME SHROUD ON TOP OF POLE.	
3. INSTALL POLE STEPS AS REQUIRED	
4. ALL EQUIPMENT TO BE PAINTED SHERWIN WILLIAMS MESA BROWN.	
5. UTILITY SERVICE TO BE FROM EITHER OVERHEAD OR UNDERGROUND.	

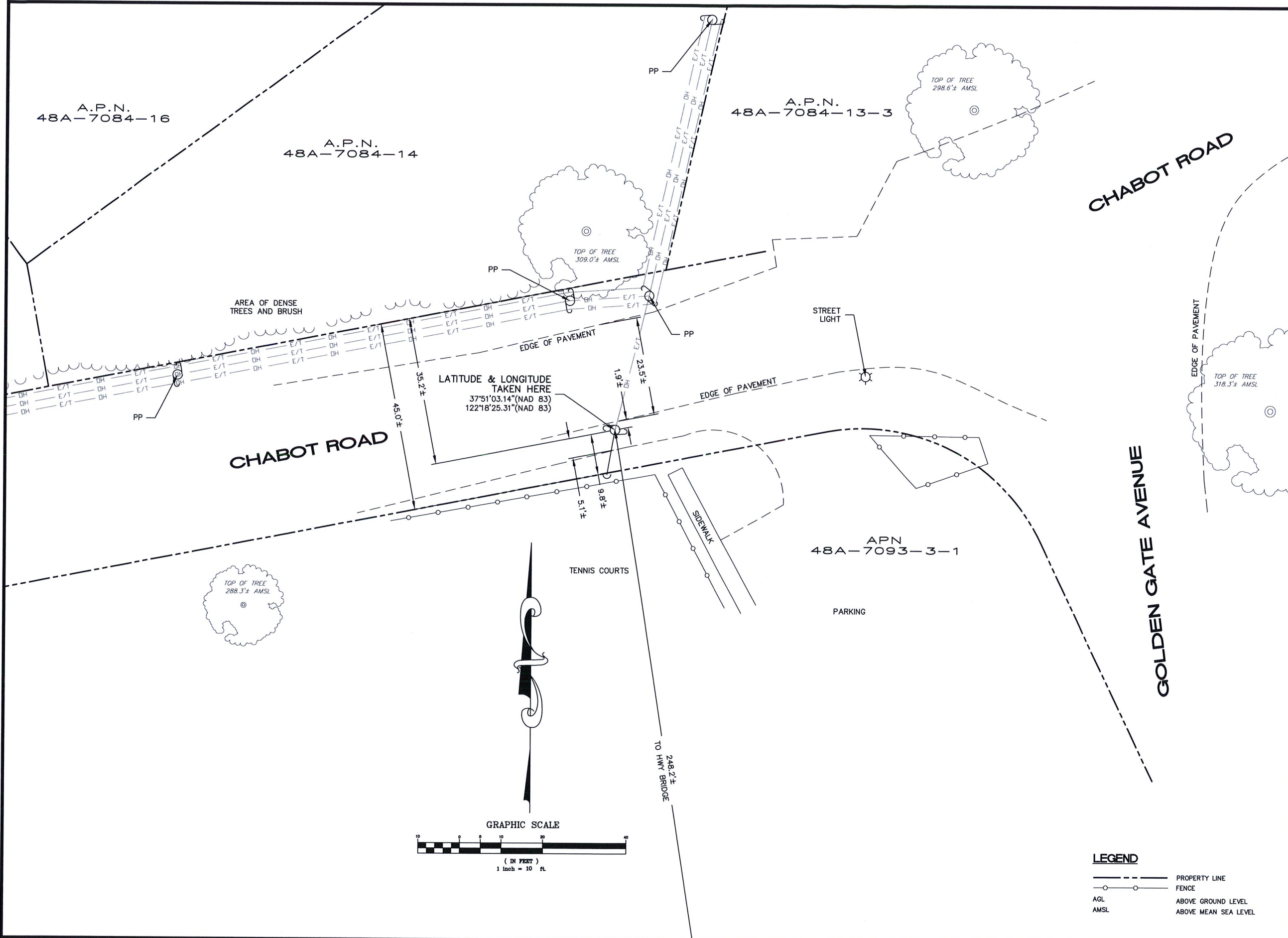
DRAWING INDEX	
SHEET NO:	SHEET TITLE
T.1	TITLE SHEET
T.2	GENERAL NOTES, LEGENDS, AND ABBREVIATIONS
C.1	SITE SURVEY
C.2	SITE SURVEY
A.1	OVERALL SITE PLAN
A.2	POLE PLAN ENLARGEMENT, POLE SECTIONS
A.3	ELEVATIONS
A.4	ELEVATIONS
A.5	EQUIPMENT DETAILS
E.1	ELECTRICAL SPECS, NOTES, LEGENDS, AND ABBREVIATIONS
E.2	SINGLE LINE DIAGRAM, BUSS DIAGRAM, PANEL SCHEDULE
E.3	POLE GROUNDING, ELECTRICAL DETAILS

ADMINISTRATIVE REQUIREMENTS
CONTRACTOR SHALL VERIFY ALL PLANS & (E) DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME IF USING 11"x17" PLOT, DRAWINGS WILL BE HALF SCALE

CODE COMPLIANCE	
CONSTRUCTION WORKS AND MATERIALS MUST COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY LOCAL JURISDICTION, INCLUDING BUT NOT LIMITED TO:	
<ul style="list-style-type: none"> CALIFORNIA CODE OF REGULATIONS 2016 CALIFORNIA BUILDING CODE 2016 CALIFORNIA MECHANICAL CODE 2016 CALIFORNIA PLUMBING CODE 2016 CALIFORNIA ELECTRIC CODE 2016 GREEN CODE 2016 EDITION OF TITLE 24 ENERGY STANDARDS ANY LOCAL BUILDING CODE AMENDMENTS TO THE ABOVE CITY / COUNTY ORDINANCES 2016 CALIFORNIA FIRE CODES WITH ALL LOCAL AMENDMENTS GO 95 	

DRIVING DIRECTIONS	
<u>DIRECTIONS FROM VERIZON WIRELESS RF MARKET OFFICE:</u>	
<ol style="list-style-type: none"> DEPART MITCHELL DR TOWARD N WIGET LN TURN LEFT ONTO N WIGET LN TURN RIGHT ONTO YGNACIO VALLEY RD PASS SHELL IN 1.0 MI ROAD NAME CHANGES TO HILLSIDE AVE TAKE RAMP RIGHT FOR CA-24 WEST TOWARD OAKLAND TAKE RAMP RIGHT TOWARD COLLEGE AVENUE TURN RIGHT ONTO PRESLEY AVE TURN RIGHT ONTO CHABOT RD KEEP RIGHT TO STAY ON CHABOT RD ARRIVE AT CHABOT RD THE LAST INTERSECTION IS REATA PL IF YOU REACH GOLDEN GATE AVE, YOU'VE GONE TOO FAR 	

SITE MAP



NO.	DATE	DESCRIPTION	ISSUED FOR REVIEW
1	03/10/17		

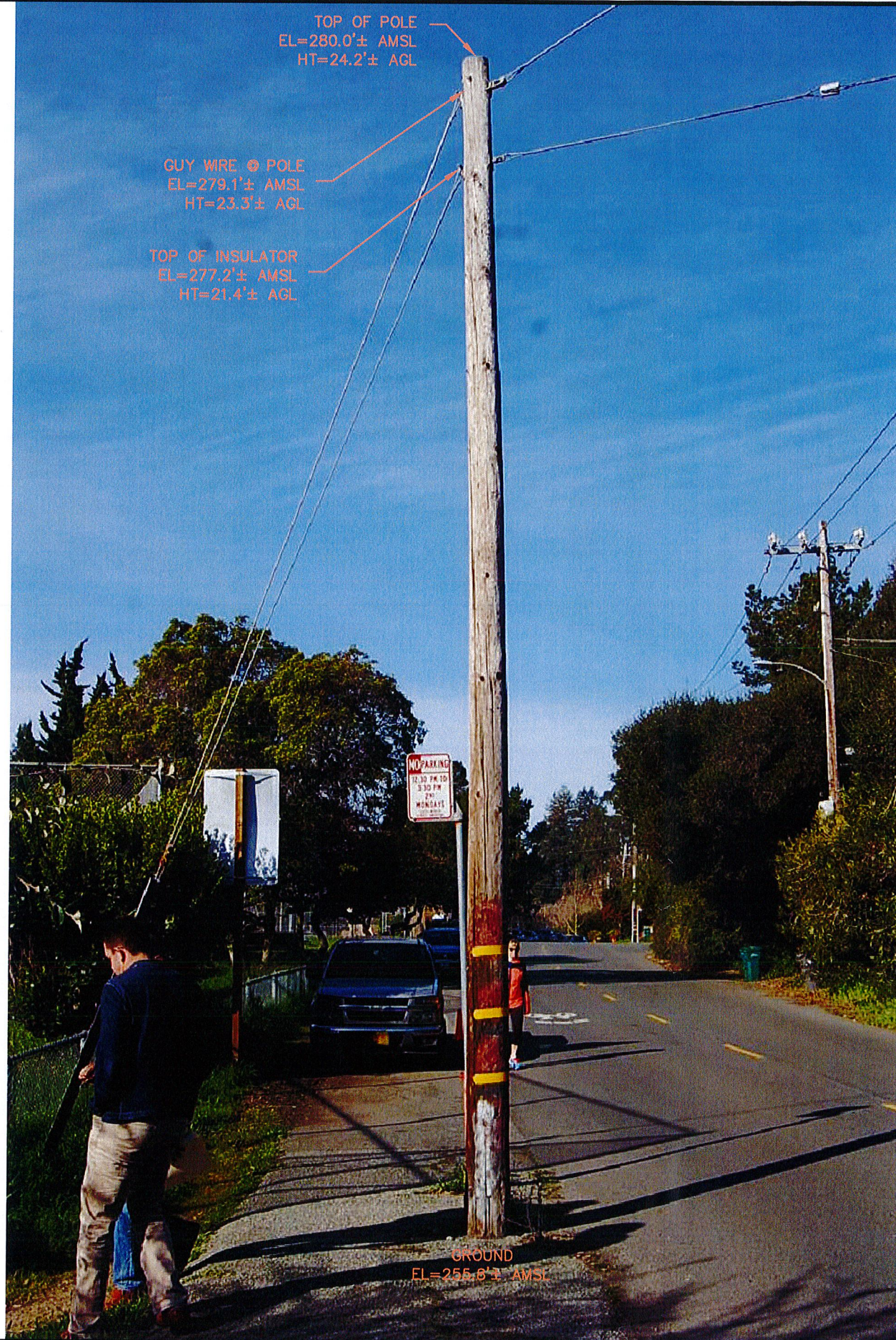
verizon
 VERIZON WIRELESS
 2785 MITCHELL DRIVE, BLDG 9
 WALNUT CREEK, CA. 94598

318887
 CHABOT TUNNEL SC1
 NEAR 6898 CHABOT ROAD
 OAKLAND, CA 94618

DRAWN: _____ DATE: 03/14/17
 JOB NO. 17019
 SHEET NO. C-1

- LEGEND**
- — — — — PROPERTY LINE
 - ○ — ○ — FENCE
 - AGL ABOVE GROUND LEVEL
 - AMSL ABOVE MEAN SEA LEVEL

POLE DETAIL



Curtis C. Surveying | Professional Land Surveyor | Mapping | Drafting
 43445 | CA 9724 | CO 3854 | ID 6010 | NY 20714 | UT 779066
 916.513.5500 | curt@curtissurveying.com | www.curtissurveying.com

REVISIONS		DESCRIPTION
NO.	DATE	
1		
2		
3		
4		

verizon
 VERIZON WIRELESS
 2785 MITCHELL DRIVE, BLDG 9
 WALNUT CREEK, CA. 94598

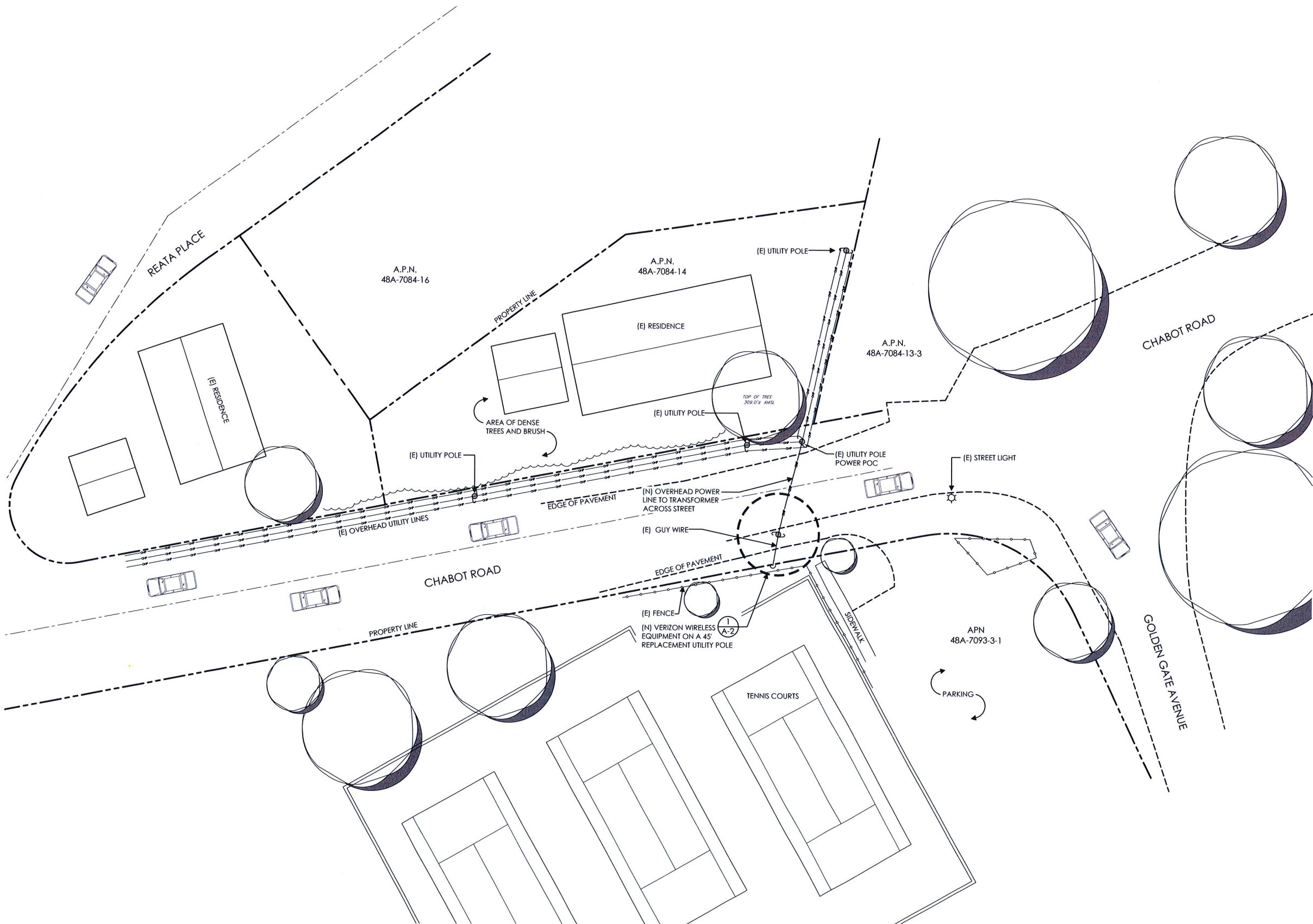
318887
 CHABOT TUNNEL SC1
 NEAR 6898 CHABOT ROAD
 OAKLAND, CA 94618

DRAWN: _____ DATE: 03/14/17
 JOB NO. 17019
 SHEET NO.

C-2

LEGEND

AGL ABOVE GROUND LEVEL
 AMSL ABOVE MEAN SEA LEVEL



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client: _____

MM Meridian Management LLC
785 Oak Grove Road E2
Suite 251
Concord, CA 94518
1 707.592.5924
www.meridian.management

Project Architect: _____

ON AIR
Wireless Site Acquisition &
Construction Management
465 First St. West, Suite 101
Sausalito, CA 94965
Phone: 707-633-9633
Fax: 707-633-9611

Site Agent: _____

100% Construction Drawings
(E) LIGHT POLE
Drawing Phase: _____

CHABOT TUNNEL SC1
(near) 6898 Chabot Road
Oakland, CA 94618
PSL# 318887

Site Name: _____

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Date: 08/01/17 Job No.: _____

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Designed By: JG Checked: RB

OVERALL SITE PLAN
Sheet Title: _____

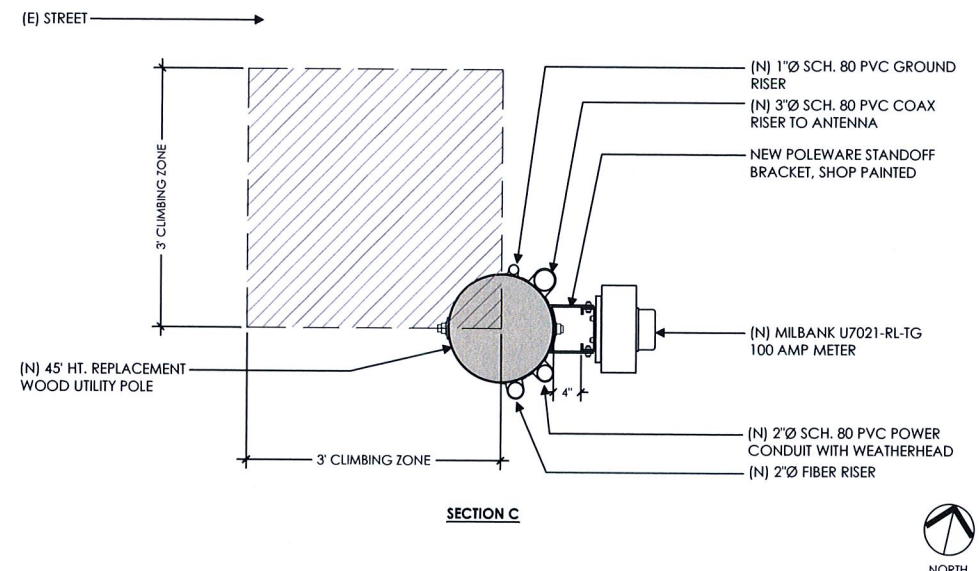
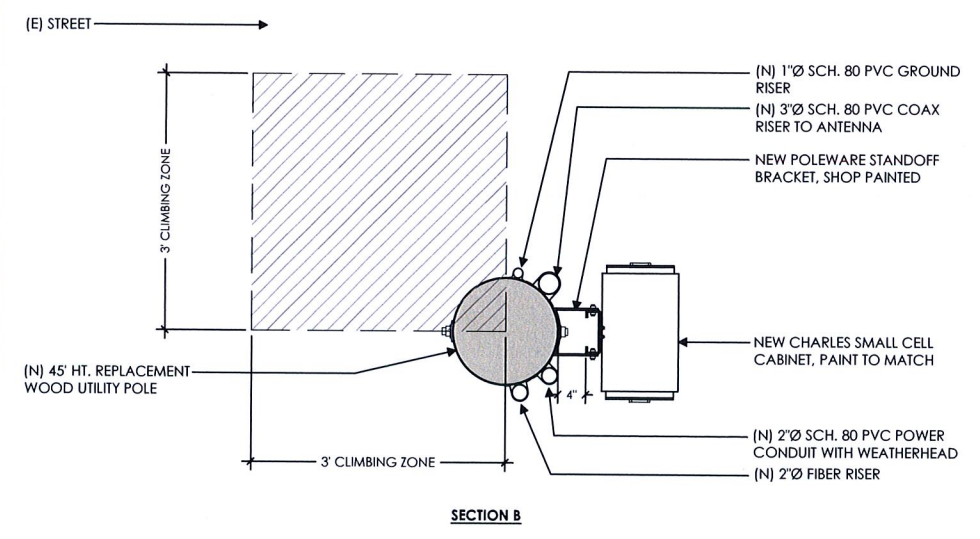
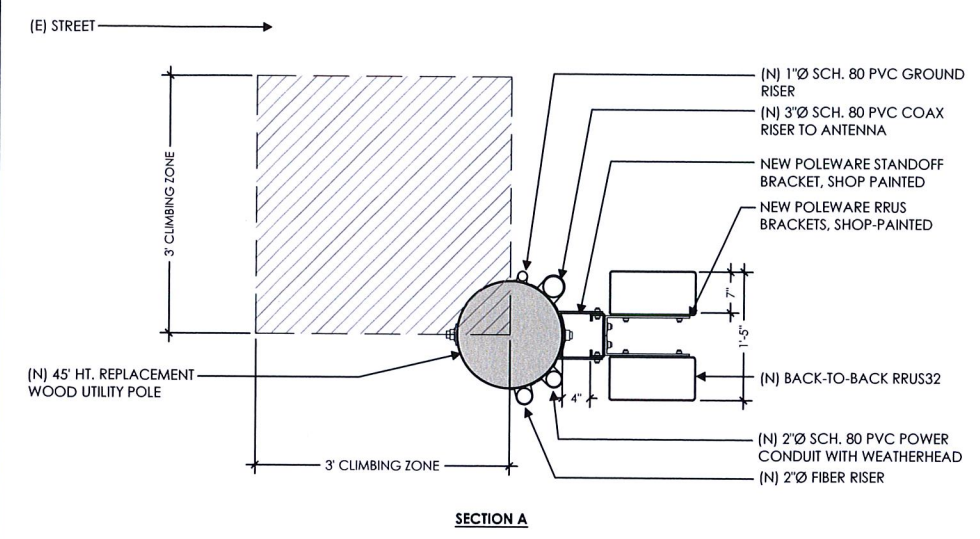
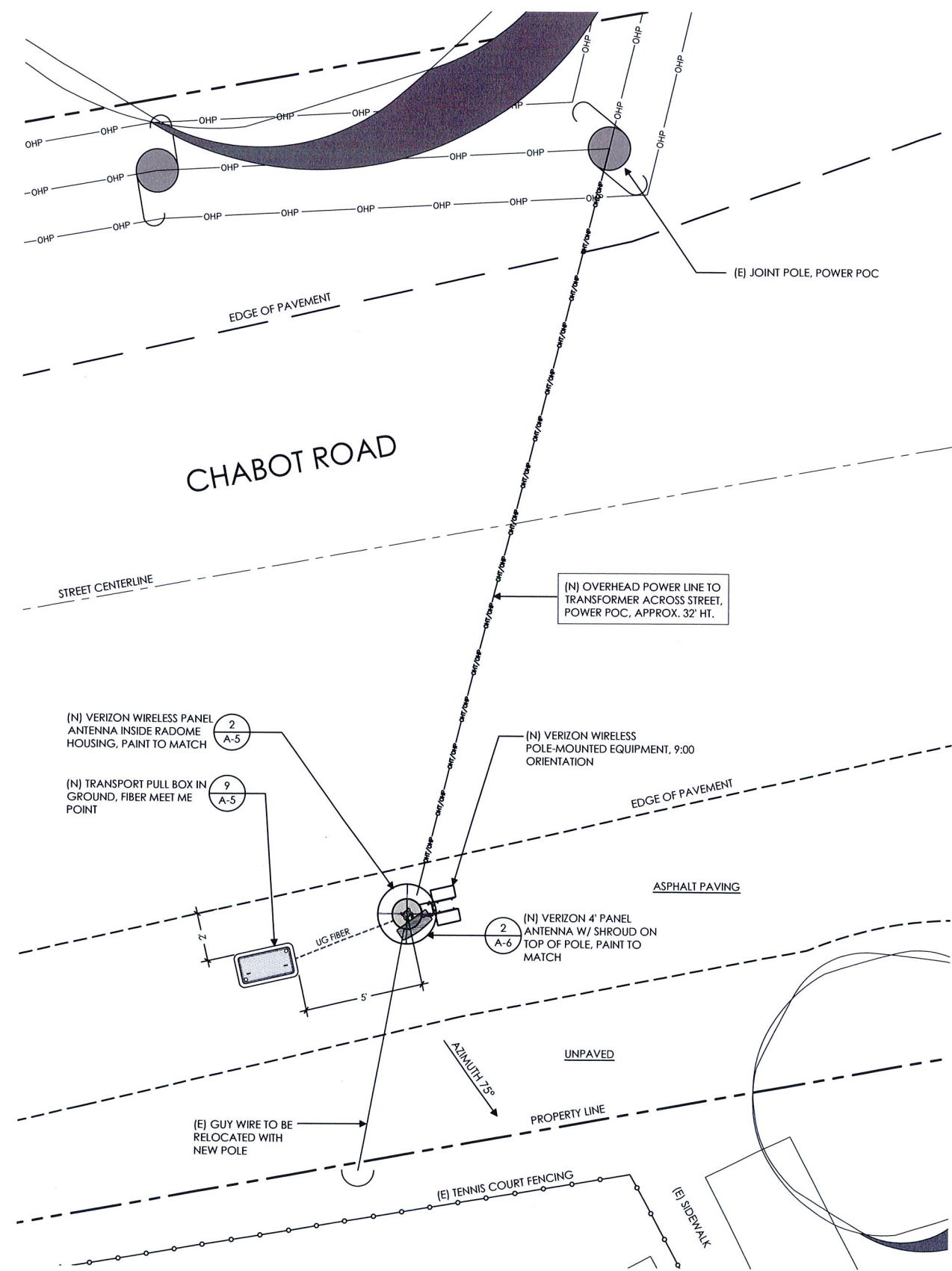
A.1
Sheet No.: _____

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(N) VERIZON EQUIPMENT TO BE MOUNTED IN 9:00 ORIENTATION. CLIMBING SPACE BETWEEN 3:00 & 6:00. POLE STEPS REQUIRED FROM 8.5' TO COMMUNICATIONS ZONE. STEPS SHOULD BE USABLE WHEN INSTALLED WITHIN CLIMBING SPACE

EQUIPMENT SYSTEM:
ALL NEW POLE COMPONENTS NOT SHOP PAINTED SHOULD BE FIELD PAINTED SHERWIN WILLIAMS MESA BROWN

NEW CONDUIT FOR POWER/TELCO:
(1) 2" CONDUIT FOR POWER
(1) 2" CONDUIT FOR FIBER
(1) 3" CONDUIT FOR COAX
(1) 1" CONDUIT FOR GROUND



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client:



Project Architect:



Site Agent:

100% Construction Drawings
(E) LIGHT POLE
Drawing Phase:

CHABOT TUNNEL SC1
(near) 6898 Chabot Road
Oakland, CA 94618

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Site Name:

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Date: 08/01/17 Job No.:

Scale: AS SHOWN CAD File:

Designed By: JG Checked: RB

POLE PLAN ENLARGEMENT

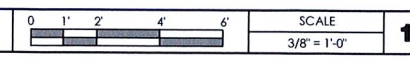
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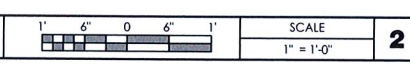
Sheet No.:

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POLE PLAN ENLARGEMENT



POLE SECTIONS



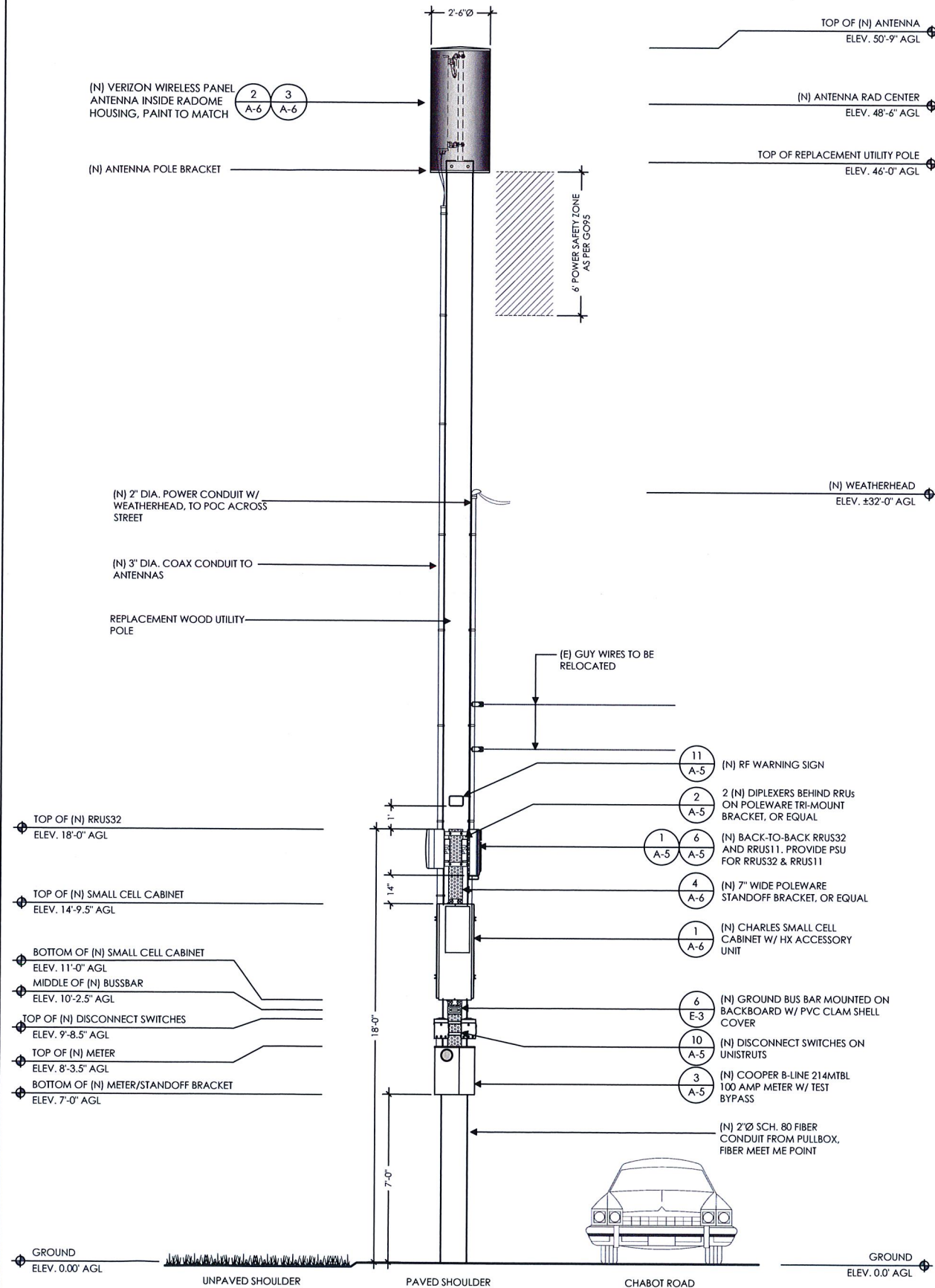
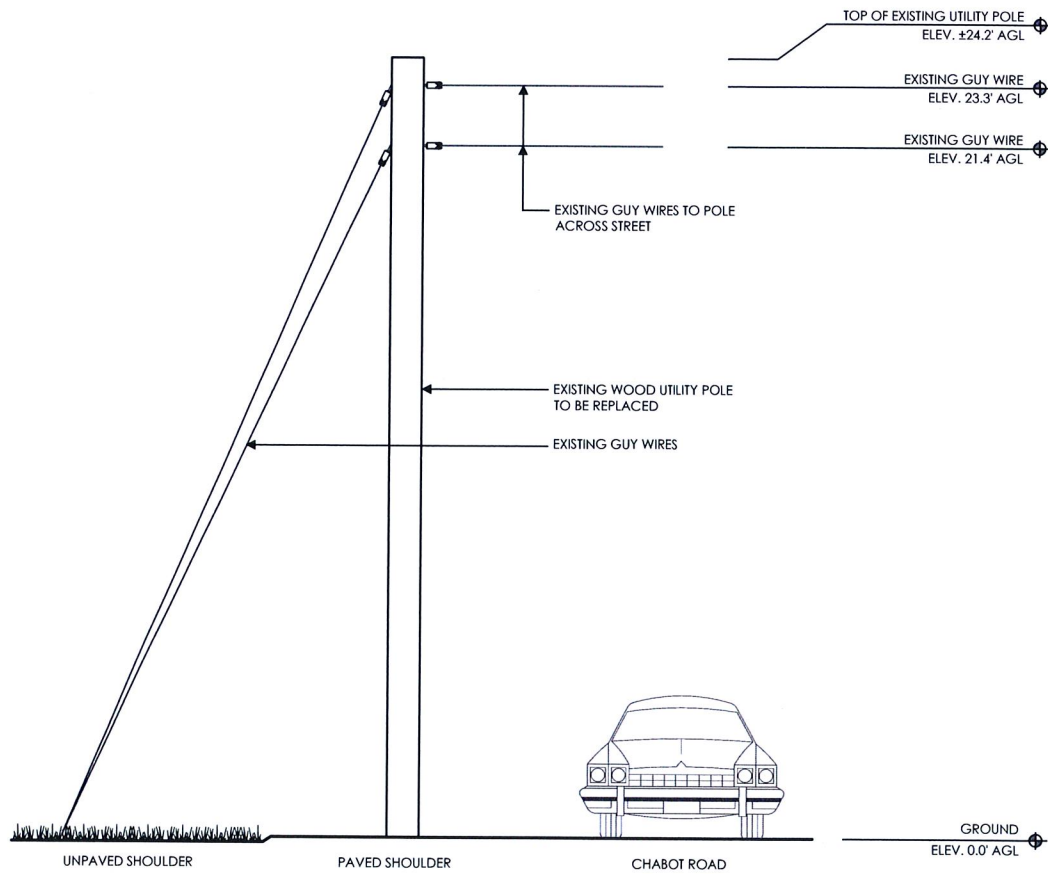
SCALE NOTE:

IF DIMENSIONS SHOWN ON PLAN DO NOT SCALE CORRECTLY, CHECK FOR REDUCTION OR ENLARGEMENT FROM ORIGINAL PLANS.

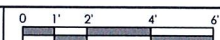
(N) VERIZON EQUIPMENT TO BE MOUNTED IN THE 9:00 QUADRANT. POLE STEPS REQUIRED FROM 8.5' TO COMMUNICATIONS ZONE. STEPS SHOULD BE USABLE WHEN INSTALLED WITHIN CLIMBING SPACE

EQUIPMENT SYSTEM:

ALL NEW COMPONENTS NOT SHOP PAINTED SHOULD BE FIELD PAINTED SHERWIN WILLIAMS MESA BROWN



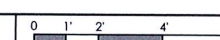
EAST ELEVATION - EXISTING



SCALE
3/8" = 1'-0"

1

EAST ELEVATION - PROPOSED



SCALE
3/8" = 1'-0"

2



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client:



Project Architect:



Site Agent:

100% Construction Drawings

Drawing Phase:

CHABOT TUNNEL SC1
(near) 6898 Chabot Road
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PSL# 318887

Site Name:

Professional Seal:

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Project No.: V-12-CA2039

Date: 08/01/17 Job No.:

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Designed By: JG Checked: RB

ELEVATIONS

Sheet Title:

A.3

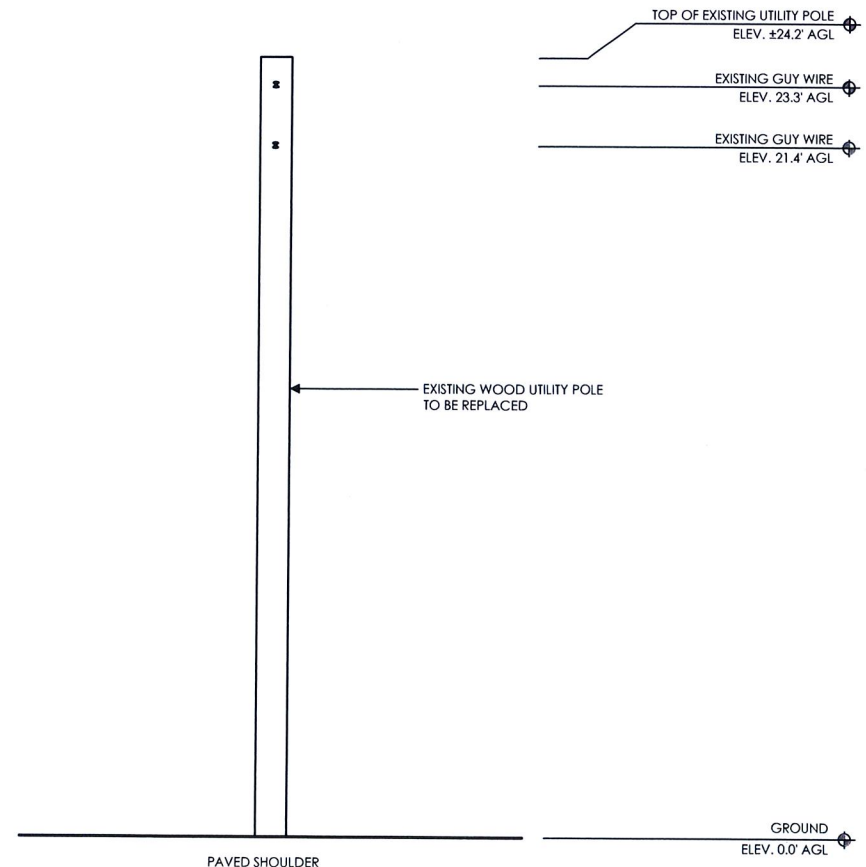
Sheet No.:

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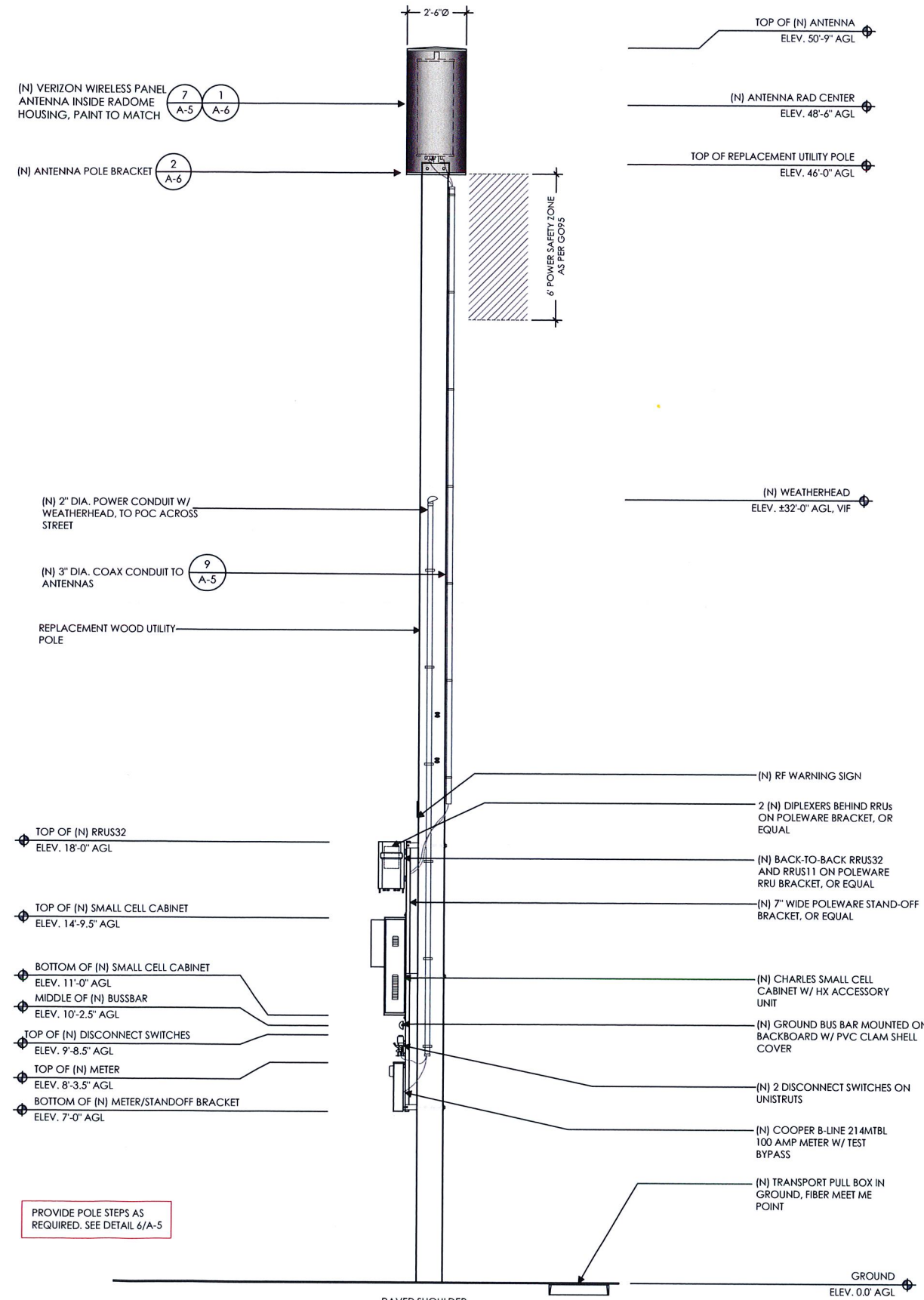
SCALE NOTE:
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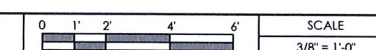
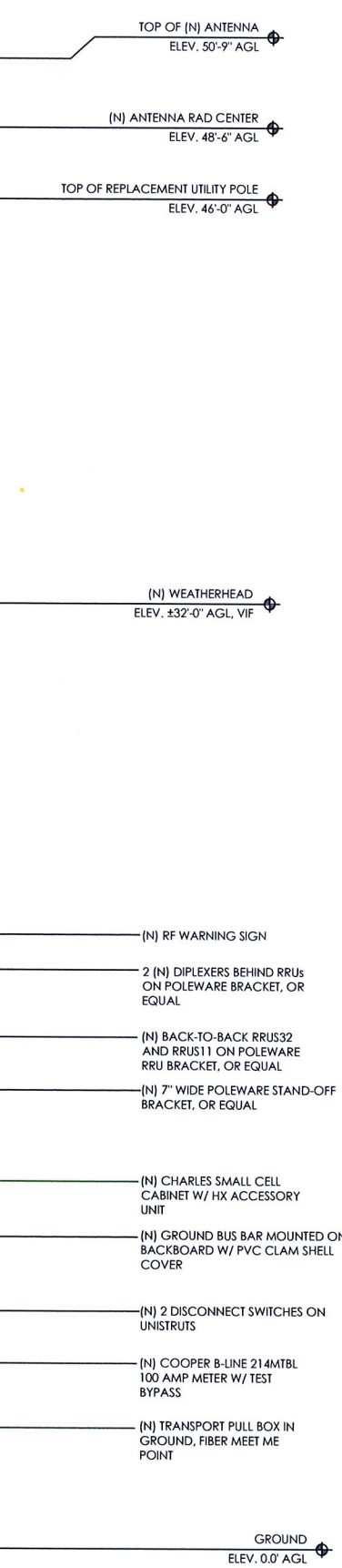
EQUIPMENT SYSTEM:
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NORTH ELEVATION - EXISTING



NORTH ELEVATION - PROPOSED



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Project Architect:



Site Agent:

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Drawing Phase:

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ELEVATIONS

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A.4

Sheet No.:

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RRUS 32

- PCS
 - TX = 1930 - 1990 MHz
 - RX = 1850 - 1910 MHz
- CPRI 2 ports x 10 Gbps. Install 2 SFPs and connect 2 fiber pairs to the RRUS32 during initial install.
- Only use Ericsson supplied and approved SFPs, RDH10247/3
- 6 external alarm inputs
- Max wind load @ 50m/sec = 350N
- Breaker size = 30A, DC Power Consumption = 910W (for dimensioning)
- 200mm horizontal separation required for side by side mounting
- 200mm separation required from antenna backplane to radio
- 600mm/800mm vertical outdoor/indoor separation required
- Min, Max DC cable size from squid to radio = 10, 8 AWG,
- Adapter is required for 2-wire connection
 - Shielded DC cable is required
- Ground cable size = 2AWG
- Dimensions (incl. handles, feet and sunshield)
 - Height: 27.2" (690 mm)
 - Width: 12.1" (306 mm)
 - Depth: 7.0" (178 mm)
- Weight, excl. mounting hardware = 53 lbs (24 kg)



RRUS 32 Data sheet for TSP/Verizon | Confidential | Rev. A.1 | 2016-01-21 | Page 1

RRUS 11 - RRUS 12 COMPARISON

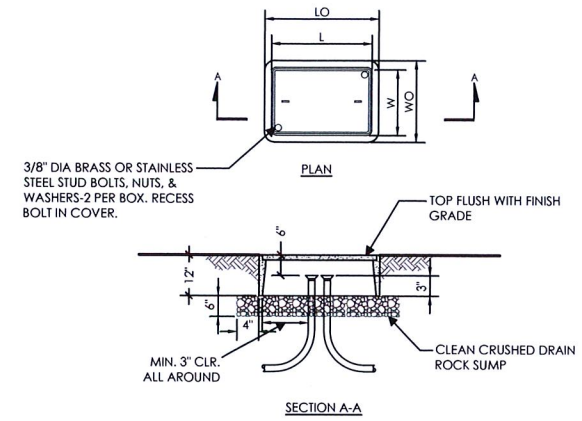


RRUS 11



RRUS 12

- RRUS 11
 - > GSM, WCDMA, LTE
 - > 4 carriers over 20 MHz IBW
 - 4 carriers WCDMA, LTE
 - > Up to 20 MHz LTE
 - > Up to 2 x 40 W
 - > IBW = up to 20 MHz
 - > 19.7"x17.0"x7.2"
 - > 50 lbs
- RRUS 12
 - > GSM, WCDMA, LTE
 - > 8 carriers over 40 MHz IBW
 - 4 carriers WCDMA, LTE
 - > Up to 20 MHz LTE
 - > Up to 2 x 60 W
 - > IBW = up to 40 MHz
 - > 20.4"x18.5"x7.5"
 - > 50 lbs
 - > 58 lbs in Extranet description



PULL BOX	CONCRETE BOX		COVER (PCC ONLY)	
	LO	WO	L	W
	30"	17"	25-3/8"	13-1/4"

RRUS32

1

RRUS11 & 12

6

PULL BOX

9

5 Saver Product Line

- Dual Diplexer - Compact Design
- Integrates PCS/ISDN INCO with AWS-1 & AWS-2 & WES Bands
- 40 dB Input Isolation
- High Return Loss
- Includes Mounting Bracket
- Low P.P. Guaranteed
- Up to 100 W Input Avg. Power
- Rugged, High Reliability
- RoHS compliant

Model Number	Band	Connector	Power	Weight
MS-1000	IS-130	2.4mm	100W	0.2kg
MS-1000	IS-130	2.4mm	100W	0.2kg

PSU AC 08 (100-250 V AC)

Technical Data	PSU AC 01	PSU AC 02	PSU AC 03	PSU AC 08	PSU AC 09	PSU 24 01	PSU 48 02
Output Characteristics	Default output voltage: -54.5 V DC	-54.5 V DC	-54.5 V DC	54.5 V DC	-54.5 V DC	-54.5 V DC	-54.5 V DC
Voltage range	-42.0 to -58.0 V DC	-54.0 to -58.0 V DC	-42.0 to -58.0 V DC	-54.0 to -58.0 V DC	-42.0 to -58.0 V DC	53.0 to -56.0 V DC	-54.0 to 100.0 V DC
Output power	1,200 or 1,800 W	700 W	See Table 2	1000 W	1000 W	1,200 or 1,800 W	700 W
Height	43 mm	68 mm	43 mm	69 mm	100 mm	43 mm	68 mm
Width	145 mm	130 mm	145 mm	274 mm	285 mm	145 mm	330 mm
Depth	225 mm	179 mm	225 mm	180 mm	180 mm	225 mm	179 mm
Weight	< 2.2 kg	5.2 kg	< 2.3 kg	5.2 kg	< 5.2 kg	< 2.2 kg	5.2 kg

STEP: WEIGHT PER 100: MANUFACTURER: MODEL #: DESCRIPTION:

POLE 1/2 X 10 INCH GALVANIZED 99 LBS AERIAL SERVICE COMPANY, INC. 1-800-256-5186 http://www.linemen-tools.com/J1118

POLE STEPS ARE USED ON WOOD POLES WHERE FREQUENT ACCESS TO POLE MOUNTED EQUIPMENT IS REQUIRED. FLAT DRIVING SURFACE AND SHARP POINT EASE INSTALLATION. FETTER-DRIVE THREAD PERMITS REMOVAL WITH A WRENCH. HOT-DIPPED GALVANIZED FOR CORROSION RESISTANCE. NOTCHED MARK ON STEP INDICATES PROPER DRIVING DEPTH.

DIPLEXER

2

POWER SUPPLY UNIT (PSU)

4

POLE STEPS

SCALE N.T.S.

DISCONNECT SWITCHES

10

COOPER B-Line

3 x 3 Hybrid Coupler, CM-80 series

NORMAL SHUT-DOWN PROTOCOLS:

1. Call 800-264-6620 NOC 24 HRS prior to schedule a shutdown day and time.
2. Give NOC the Node number _____.
3. On scheduled day of shutdown, pull the disconnect handle to the "OFF" position.
4. Call NOC when work is completed.

EMERGENCY SHUT-DOWN PROTOCOLS:

1. Call 800-264-6620 NOC immediately.
2. Give NOC the Node number _____.
3. Pull the disconnect handle to the "OFF" position.
4. Call NOC when work is completed.

ELECTRIC METER

3

HYBRID COMBINER

5

DISCONNECT SIGNAGE

8

RF WARNING SIGNAGE

11



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client:



Project Architect:



Site Agent:

100% Construction Drawings

Drawing Phase:

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PSL# 318887

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Project No.:

Date: 08/01/17 Job No.:

Scale: AS SHOWN CAD File:

Designed By: JG Checked: RB

EQUIPMENT DETAILS

Sheet Title:

A.5

Sheet No.:

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Client:

MM Meridian Management LLC
785 Oak Grove Road E2
Suite 251
Concord, CA 94518
1 707.592.5924
www.meridianmanagement.com

Project Architect:

ON AIR
Wireless Site Acquisition &
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485 First St., West, Suite 101
Sanoma, CA 94578
Phone: 707-833-6633
Fax: 707-833-9811

Site Agent:

100% Construction
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Date: 08/01/17 Job No.:

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Designed By: JG Checked: RB

EQUIPMENT
SPECIFICATIONS

Sheet Title:

A.6

Sheet No.:

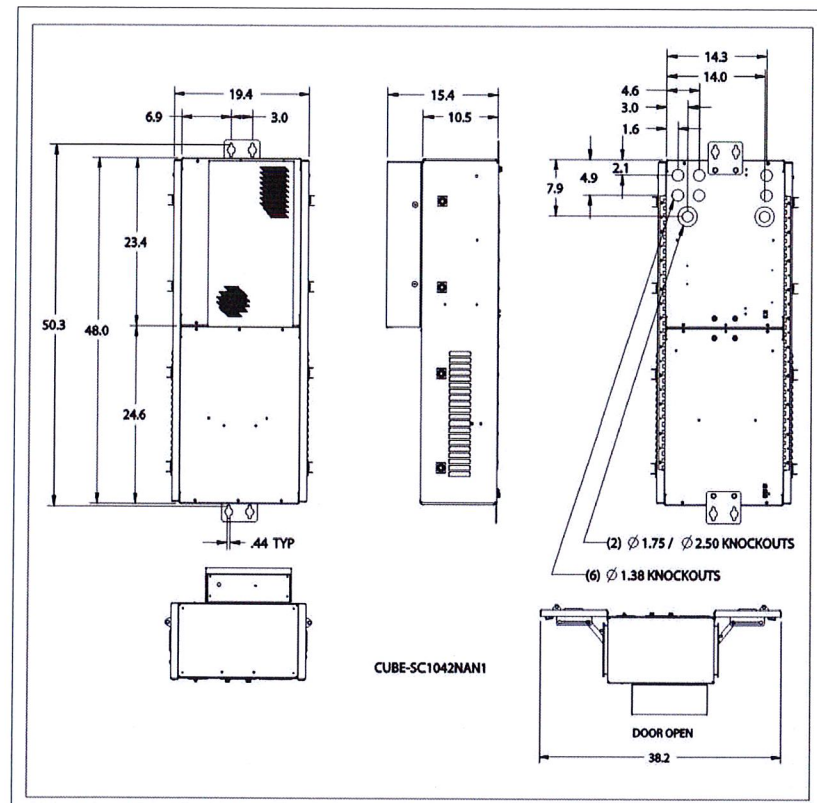


Figure 2 CUBE-SC1042NANx Dimensions (in inches) - Equipment and Battery Compartments with Heat Exchanger

Product Specifications **COMMSCOPE**

SBNH-1D45A
Multiband Antenna, 698-896 and 2x 1695-2360 MHz, 45° horizontal beamwidth, internal RETs.

- Interleaved dipole technology providing for attractive, low wind load mechanical package
- Three internal RETs for independent tilt on all three bands

Color	Light gray
Mounting Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Reflector Material	Aluminum Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Location	Bottom
Wind Loading, frontal	693.0 N @ 150 km/h 155.8 lbf @ 150 km/h
Wind Loading, lateral	145.0 N @ 150 km/h 32.6 lbf @ 150 km/h
Wind Loading, rear	728.0 N @ 150 km/h 163.7 lbf @ 150 km/h
Wind Speed, maximum	241 km/h 150 mph

Dimensions	
Length	1220.0 mm 48.0 in
Width	457.0 mm 18.0 in
Depth	178.0 mm 7.0 in
Net Weight, without mounting kit	22.5 kg 50.5 lb

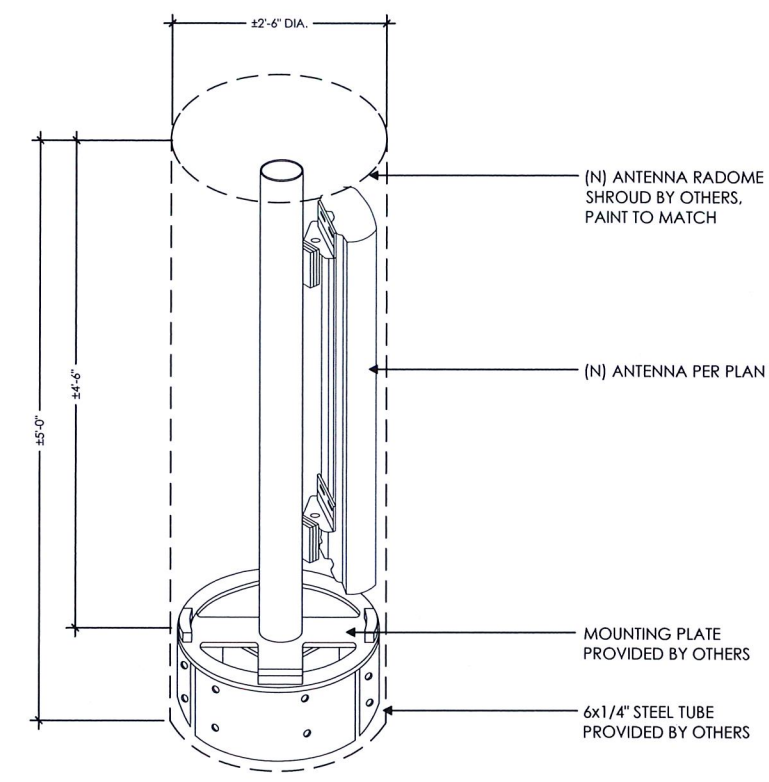
Remote Electrical Tilt (RET) Information

Input Voltage	10-30 Vdc
Internal RET	High band (2) Low band (1)
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal cond. tons, maximum	13.0 W
Protocol	3GPP/4G LTE 2.0 (Multi-RET)
RET Interface	8-pin DIN Female 8-pin DIN Male
RET Interface, quantity	1 female 1 male

Packed Dimensions	
Length	1342.0 mm 52.8 in
Width	567.0 mm 22.3 in
Depth	311.0 mm 12.2 in
Shipping Weight	34.6 kg 76.3 lb

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/05/EU	Compliant by Exemption
China RoHS SJT 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system



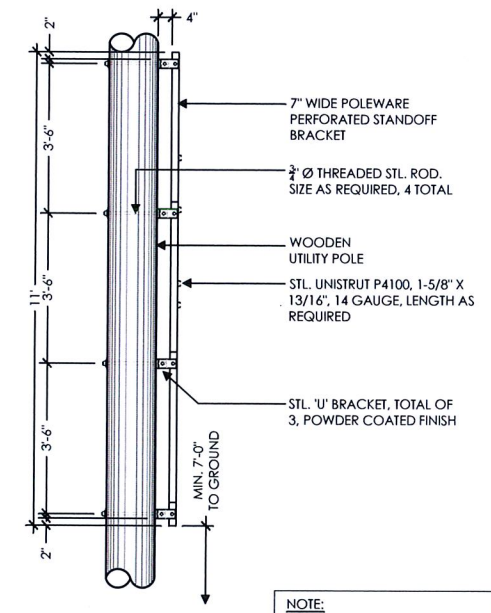
SMALL CELL CABINET

1 PANEL ANTENNA

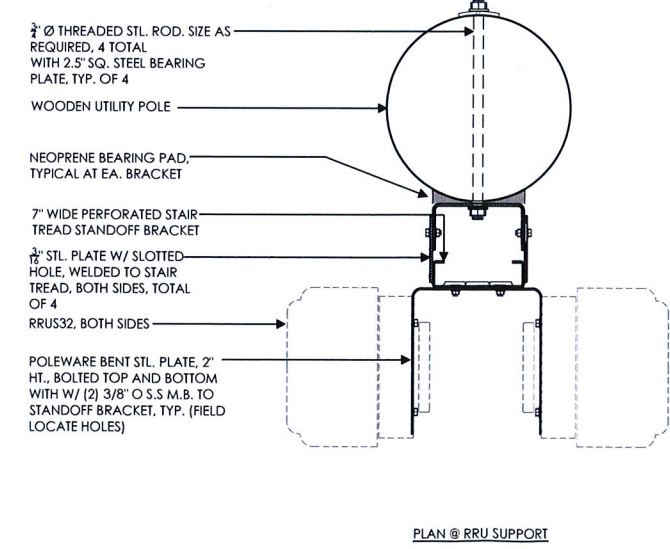
2 ANTENNA MOUNTING DETAIL

SCALE
NOT TO SCALE

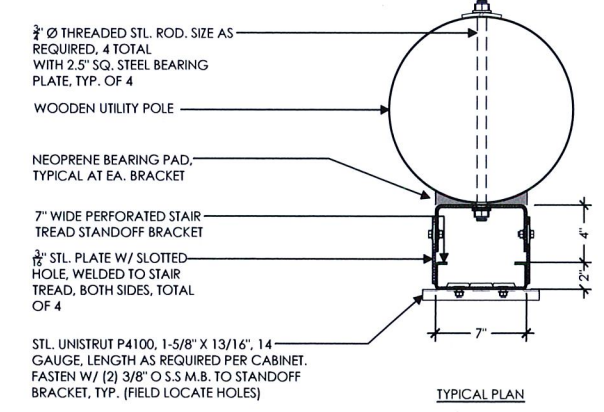
3



NOTE:
STANDOFF BRACKET MFG. BY
POLEWARE, LLC. (916) 941-1264
OR EQUAL



PLAN @ RRU SUPPORT

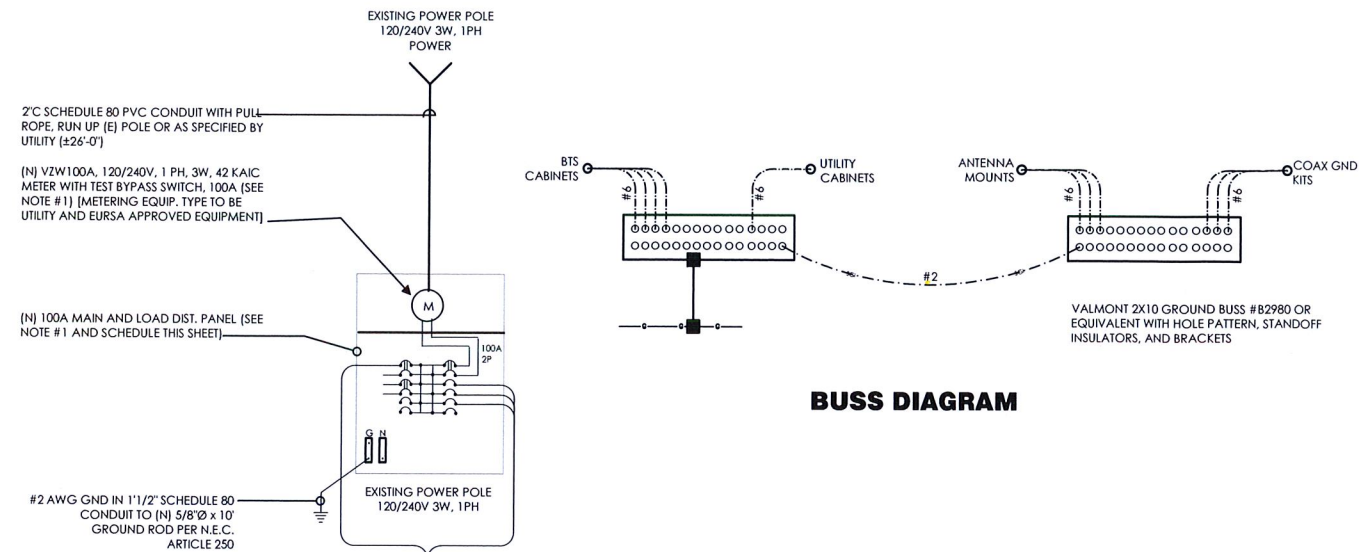


TYPICAL PLAN

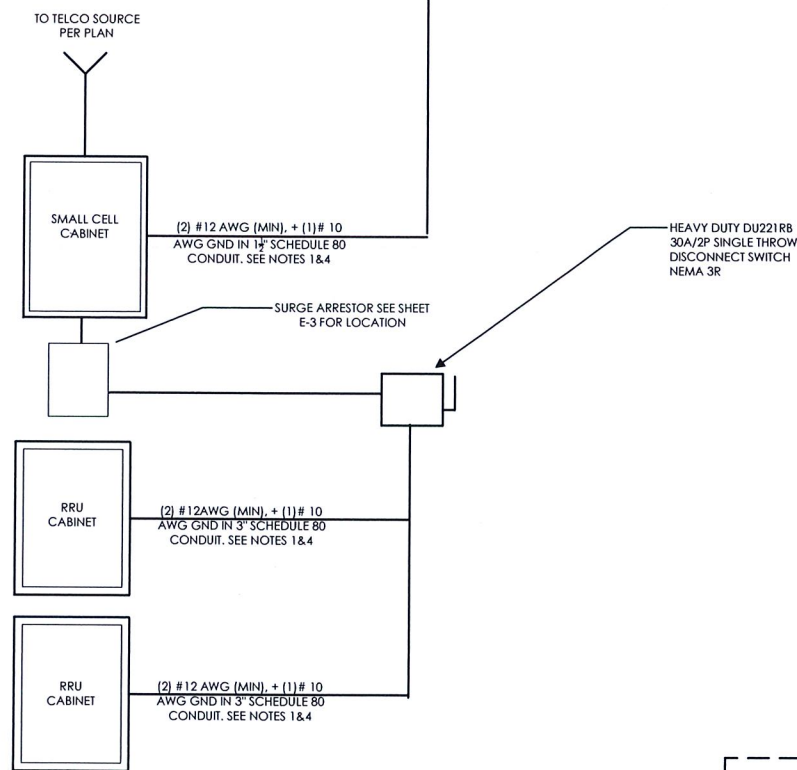
STANDOFF BRACKET

SCALE
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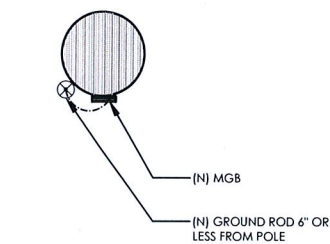
4



BUSS DIAGRAM



SINGLE LINE DIAGRAM



GROUNDING PLAN

LOAD CALCULATIONS - VERIZON WIRELESS

EXISTING LOAD: 0 AMPS
 NEW LOAD: 6.67 AMPS MAX.
 NEW TOTAL LOAD: 6.67 AMPS MAX.

POWER AND TELCO DESIGN IS BASED ON INITIAL SITE VISIT.

CONTRACTOR SHALL OBTAIN CURRENT UTILITY COORDINATOR PLANS PRIOR TO START OF CONSTRUCTION.

AVAILABLE FAULT CURRENT PER UTILITY.

NOTE: CONTRACTOR TO CHECK WITH UTILITY TO ENSURE ELEC. METER IS BRACED FOR ACTUAL FAULT CURRENT.

POWER AND TELCO NOTES:

1. POWER AND TELCO POINTS OF CONNECTION AND ANY EASEMENTS ARE PRELIMINARY AND SUBJECT TO CHANGE BY THE UTILITY COMPANIES.
2. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK/MATERIALS REQUIREMENTS AND CONSTRUCT TO UTILITY ENGINEERING PLANS AND SPECIFICATIONS ONLY WHERE APPLICABLE PER PROJECT SCOPE OF WORK.
3. CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT, PULL WIRES, CABLE PULL BOXES, CONCRETE ENCASUREMENT OF CONDUIT, TRANSFORMER PAD, BARRIERS, POLE RISER TRENCHING, BACK FILL AND UTILITY FEES, AND INCLUDE REQUIREMENTS IN SCOPE.
4. CONTRACTOR SHALL LABEL ALL MAIN DISCONNECT SWITCHES AS REQUIRED BY CODE.

NOTES:

1. SUBCONTRACTOR SHALL PROVIDE METER WITH DIST. PANEL AND BREAKERS FOR POWER TO THE BTS UNITS AND THE BTS/UTILITY CABINET.
2. ALL SERVICE EQUIPMENT AND INSTALLATIONS SHALL COMPLY WITH THE N.E.C. AND UTILITY COMPANY AND LOCAL CODE REQUIREMENTS.
3. SUBCONTRACTOR SHALL PROVIDE ELECTRICAL SERVICE ENTRANCE EQUIPMENT WITH FAULT CURRENT RATINGS GREATER THAN THE AVAILABLE FAULT CURRENT FROM THE POWER UTILITY.
4. FIELD ROUTE CONDUIT TO CABINETS AS REQUIRED.
5. MAXIMUM ONE WAY CIRCUIT RUN NOT TO EXCEED 75 FEET.

GENERAL ELECTRICAL NOTES:

1. PROVIDE ALL ELECTRICAL WORK & MATERIALS AS SHOWN ON THE DWGS, AS CALLED FOR HEREIN, & AS IS NECESSARY TO FURNISH A COMPLETE INSTALLATION.
2. THE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ADOPTED CALIFORNIA ELECTRICAL CODE, STATE OF CALIFORNIA TITLE24, ALL OTHER APPLICABLE CODES AND ORDINANCES & THE REQUIREMENTS OF THE FIRE MARSHALL. ALL EQUIPMENT & WIRING SHALL BEAR THE APPROVAL STAMP OF UNDERWRITERS LABORATORY (UL) OR AN APPROVED TESTING LABORATORY. PAYMENT FOR ALL INSPECTION FEES AND PERMITS ARE PART OF THIS CONTRACT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY AND GOOD CONDITION OF ALL MATERIALS & EQUIPMENT FOR THE ENTIRE INSTALLATION & UNIT COMPLETION OF WORK. ERECT & MAINTAIN APPROVED & SUITABLE BARRIERS, PROTECTIVE DEVICES & WARNING SIGNS, BE FULLY RESPONSIBLE FOR ANY LOSS OR INJURY TO PERSONS OR PROPERTY RESULTING FROM NEGLIGENCE AND/OR ENFORCEMENT OF ALL SAFETY PRECAUTIONS & WARNINGS.
4. COORDINATE THE ELECTRICAL INSTALLATION WITH ALL OTHER TRADES.
5. ALL SAW CUTTING, TRENCHING, BACK FILLING & PATCHING SHALL BE PART OF THIS CONTRACT.
6. FINALIZE ALL ELECTRICAL SERVICE ARRANGEMENTS, INCLUDING VERIFICATION OF LOCATIONS, DETAILS, COORDINATION OF THE INSTALLATION & PAYMENT OF ACCRUED CHARGES WITH LOCAL POWER COMPANY. VERIFY LOCATION FOR FACILITIES & DETAILS WITH POWER UTILITY. IN ADDITION TO THE REQUIREMENTS SHOWN IN THE CONTRACT DOCUMENTS, WORK SHALL COMPLY WITH CONSTRUCTION STANDARDS & SERVICE REQUIREMENTS OF THE RESPECTIVE UTILITIES, INCLUDING ANY SUPPLEMENTAL DWGS ISSUED & SHALL BE SUBJECT TO APPROVAL OF THESE UTILITIES.
7. ALL WIRING SHALL BE COPPER. INSULATION FOR BRANCH CIRCUIT CONDUCTORS SHALL BE TYPE "THWN" CONDUCTORS LARGER AND #6 AWG MAY BE TYPE "THWN" OR "TWN".
8. PROVIDE CONDUIT SEALS FOR ALL CONDUITS PENETRATING WEATHERPROOFING OR WEATHERPROOF ENCLOSURE ENVELOPE. MASTIC SEAL ALL CONDUIT OPENING PENETRATIONS COMPLETELY WATERTIGHT.
9. UNLESS SHOWN OTHERWISE, FUSED DISCONNECT SWITCHES SHALL BE PROVIDED WITH LOW-PEAK, S/DUAL ELEMENT FUSES SIZED TO EQUIPMENT NAMEPLATE FUSE CURRENT RATING. MOTOR STARTERS SHALL BE PROVIDED WITH SIMILARLY SIZED FUSIBLE ELEMENTS, SWITCHES AND OTHER OUTDOOR EQUIPMENT SHALL BE RATED NEMA 3R AND/OR UL LISTED FOR WET ENVIRONMENT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING THE GROUNDING SYSTEM AND ENSURING A 5 OHM OR LESS GROUNDING PATH. ADDITIONAL GROUND RODS AND/OR CHEMICAL ROD SYSTEM SHALL BE USED TO ACHIEVE THIS REQUIREMENT IF THE GIVEN DESIGN CANNOT BE MADE TO ACHIEVE THIS REQUIREMENT.

* 1. MOUNT PER MANUFACTURER'S RECOMMENDATIONS.
 2. E.C. SHALL MODIFY BRANCH CIRCUIT ARRANGEMENT AS SHOWN IN THE PANEL SCHEDULE
 ** 3. MAIN ACB INSTALLED BY MANUFACTURER

TO 100 AMP METER SOCKET **

LOAD										LOAD PER PHASE (VA)										LOAD									
DESCRIPTION	CIRCUIT	WIRE SIZE	PHASE	LOAD PER PHASE (VA)			LOAD CONTINUOUS	LOAD NON-CONTINUOUS	TOTAL	WIRE SIZE	PHASE	LOAD PER PHASE (VA)			LOAD CONTINUOUS	LOAD NON-CONTINUOUS	TOTAL	WIRE SIZE	PHASE	LOAD PER PHASE (VA)			LOAD CONTINUOUS	LOAD NON-CONTINUOUS	TOTAL				
				A	B	C						A	B	C						A	B	C				A	B	C	
1	GENERATOR RECEPT							100	2	2	10,000	THHN																	
3								20	2	2	10,000	THHN																	
5	SPARE										10,000																		
7											10,000																		
9	BLANK																												
SUBTOTAL CONTINUOUS																													
SUBTOTAL NON-CONTINUOUS																													
TOTAL																													
TOTAL VA																													
TOTAL AMPS																													

VOLTAGE: 120/240 CYCLE: 60 PHASE: 1 WIRE: 3

INDUSTRAL: 100 AMPS
 MAIN BREAKER: 100 AMPS A.I.C.: 10,000 TRIP:
 MAIN LUGS: 100 AMPS MAIN COPPER BUS: 100 AMPS

MANUFACTURER: MURRAY
 TYPE AND CATALOG NUMBER: JA1000R1000 (UL 891)
 NO. EQUAL: APPROVED EQUAL: X
 MOUNTING: SURFACE X FLUSH

PANEL SCHEDULE -- PANEL " PP "

verizon

Verizon Wireless
 2785 Mitchell Drive, Suite 9
 Walnut Creek, CA 94598

Client: _____

MM Meridian Management LLC
 785 Oak Grove Road E2
 Suite 251
 Concord, CA 94518
 1 707.592.5924
 www.meridian.management

Project Architect: _____

ON AIR
 Wireless Site Acquisition & Construction Management
 465 First St. West, Suite 101
 Sonoma, CA 94976
 Phone: 707-933-9633
 Fax: 707-933-9611

Site Agent: _____

100% Construction Drawings

Drawing Phase: _____

CHABOT TUNNEL SC1
 (near) 6898 Chabot Road
 Oakland, CA 94618

PSL# 318887

Site Name: _____

Professional Seal: _____

It is a violation of law for any person, unless they are acting under the direction of a licensed Professional Architect/Engineer, to alter this document.

Rev.	Date	Description
01	03/19/17	Constr. Dwgs 90%
02	05/05/17	Constr. Dwgs 100%
03	05/24/17	Constr. Dwgs 100%
04	08/01/17	Constr. Dwgs 100%

Project No.: V-12-CA2039

Date: 08/01/17 Job No.: _____

Scale: AS SHOWN CAD File: _____

Designed By: JG Checked: RB

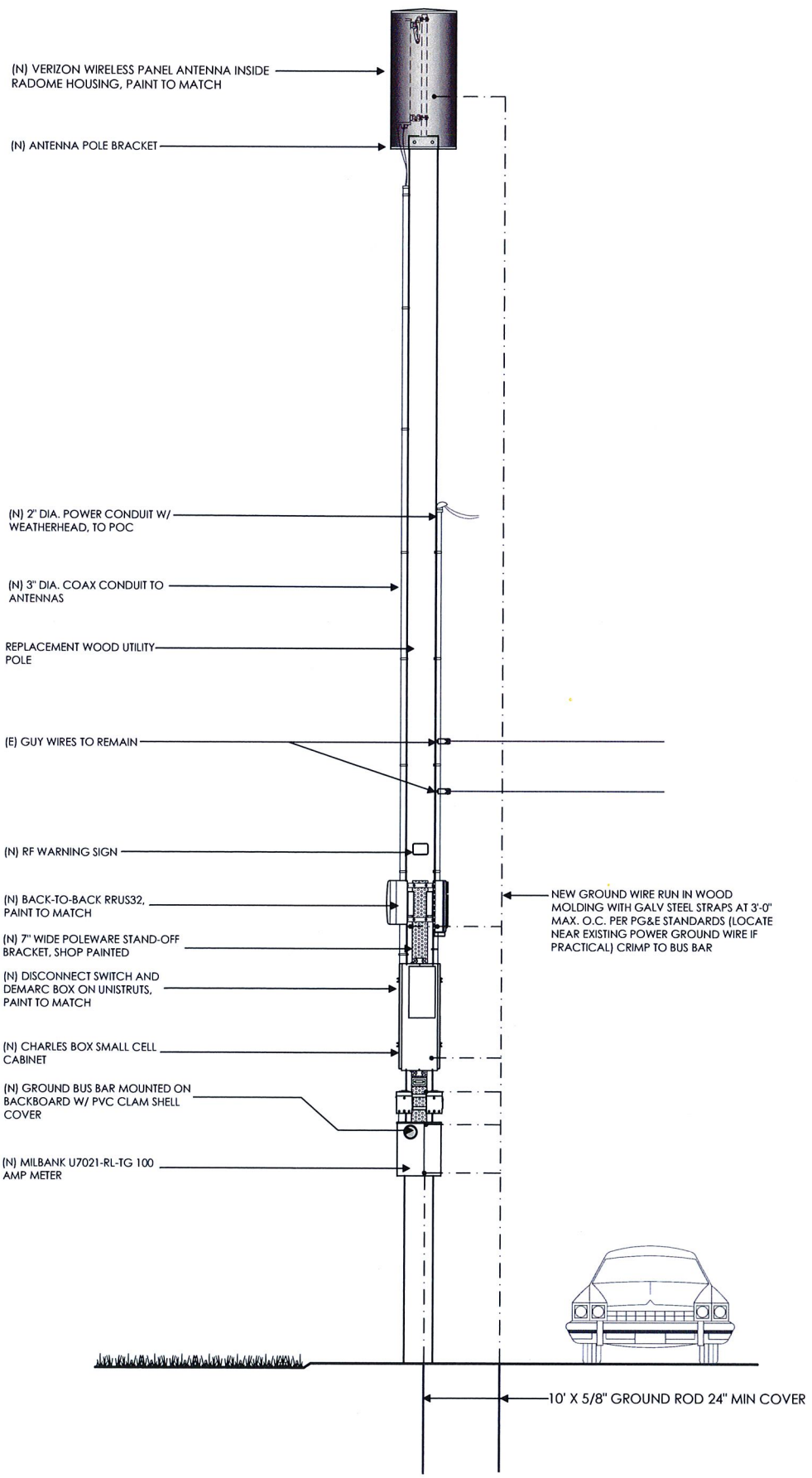
**SINGLE LINE DIAGRAM
 BUSS DIAGRAM
 PANEL SCHEDULE**

Sheet Title: _____

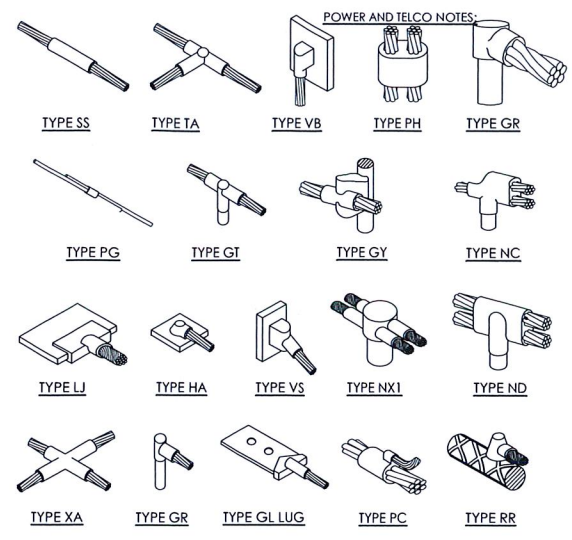
E.2

Sheet No.: _____

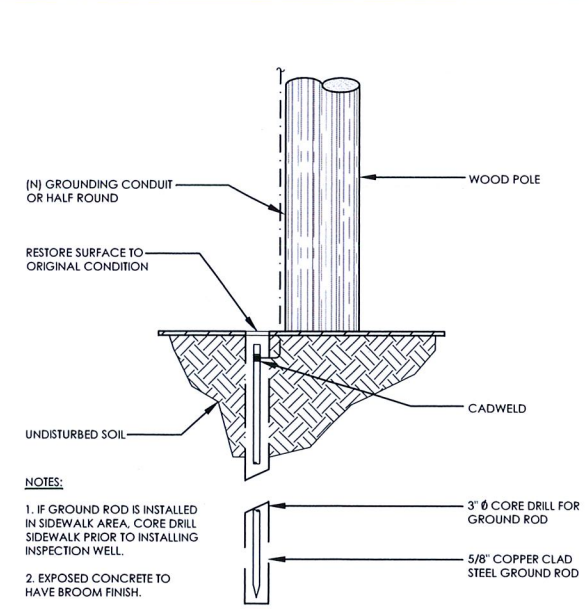
© Meridian Management LLC, 2017



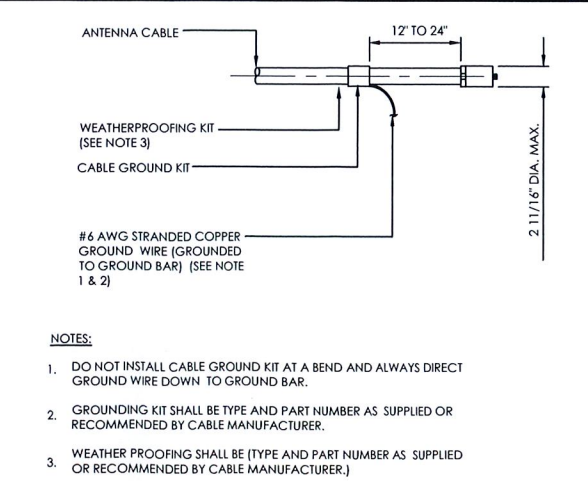
POLE GROUNDING RISER DIAGRAM (TYP.)



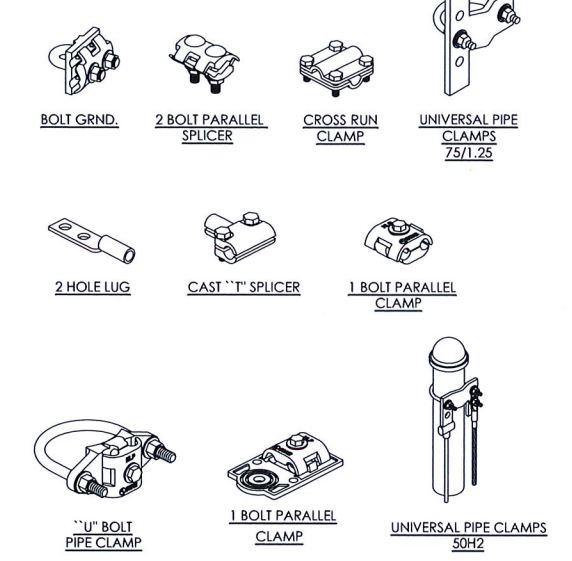
EXOTHERMIC WELD CONNECTION



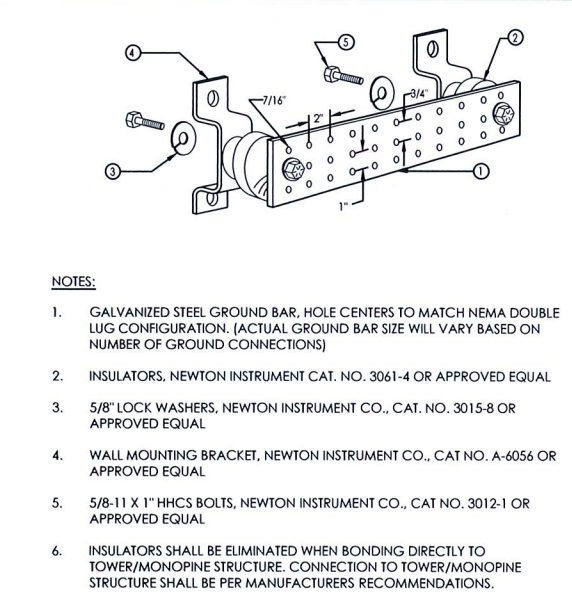
POLE GROUNDING ROD



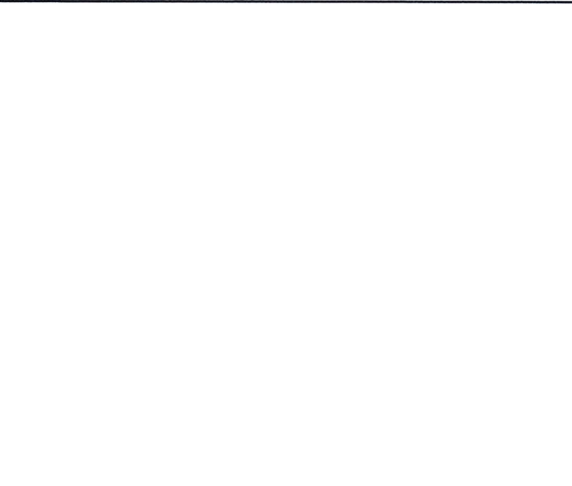
CONN. OF CABLE GND KIT TO ANT.



MECHANICAL CONNECTION



BUSS BAR



NOT USED



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client:



Project Architect:



Site Agent:

100% Construction Drawings

Drawing Phase:

CHABOT TUNNEL SC1
(near) 6898 Chabot Road
Oakland, CA 94618

PSL# 318887

Site Name:

Professional Seal:

It is a violation of law for any person, unless they are acting under the direction of a licensed Professional Architect/Engineer, to alter this document.

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04	08/01/17	Constr. Dwg 100%

Project No.: V-12-CA2039

Date: 08/01/17 Job No.:

Scale: AS SHOWN CAD File:

Designed By: JG Checked: RB

ELECTRICAL DETAILS

Sheet Title:

E.3

Sheet No.:

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Attachment D

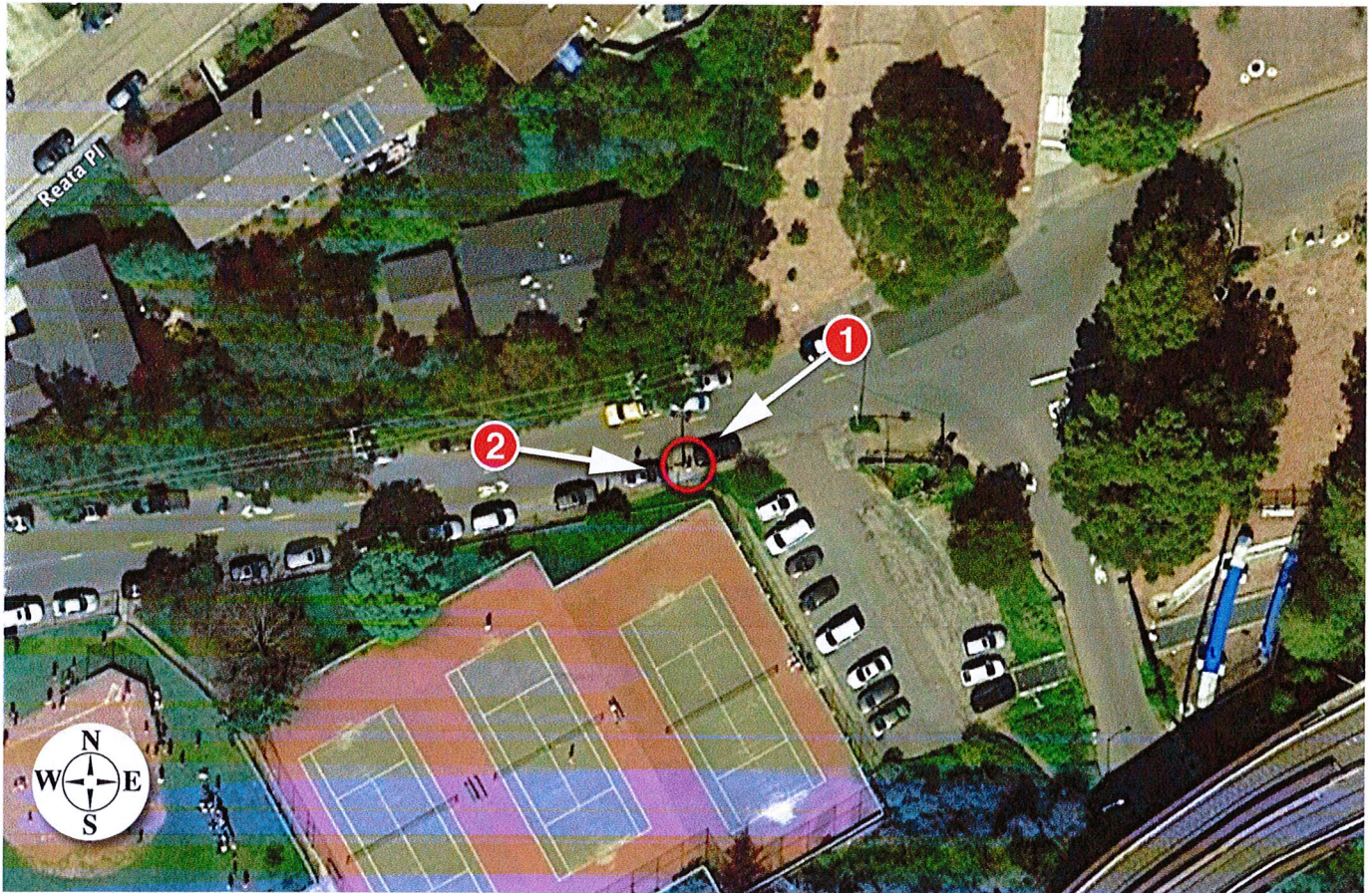


Chabot Tunnel SC1

Site Photo Simulations

Includes:

- 1 Shot Location Map**
- 2 Simulated Views**





Existing



proposed antenna

Proposed



Existing



proposed antenna ———

Proposed



Chabot Tunnel SC1 Site # 318887

Looking Southeast from Chabot Road

8/08/17

(near) 6898 Chabot Road
Oakland, CA

View #2

Applied Imagination 510 914-0500

Attachment E



Alternative Sites Analysis

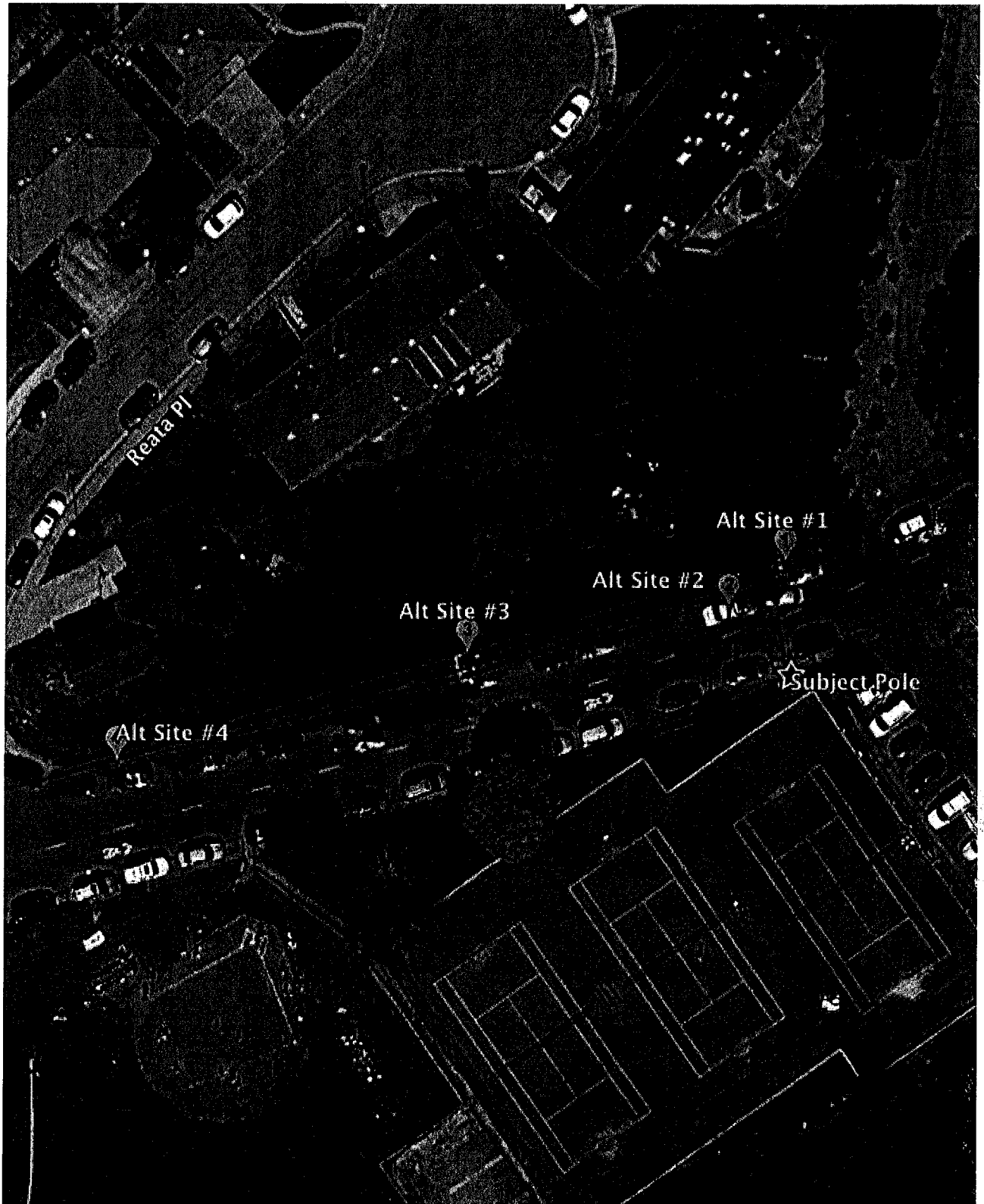
Verizon Wireless - "Chabot Tunnel SC1"
Near 6898 Chabot Road, Oakland, CA 94618

The objective of this search ring is to find a site that will improve the coverage in and along Chabot Road near the Chabot Tennis Courts and Recreation Center. There were several sites reviewed before Verizon Wireless decided to develop this location. Through careful analysis we believe the subject site provides the least intrusive way to fill the significant coverage gap.

At the bottom of this page is an aerial view of the four (4) alternative sites discussed in this report. It is important to understand that these micro cell sites are lower powered and do not cover the area that a full macro site would. Due to that the Verizon Wireless Radio Frequency Engineer (RF Engineer) has little flexibility in location of this site. Also the RF Engineer has to make sure that the site will be located in a position that it works well with the other existing and proposed sites in the local vicinity.

In addition to the constraint from the RF engineer, Verizon has constraints on what they believe the county can legally require them to analyze as far as the type of technology Verizon should use. Verizon has chosen to use their microcell technology in the Right of Way (ROW) to cover the significant gap in coverage/capacity. Therefore this report reviews only the poles in the ROW. Furthermore, California courts have determined that local jurisdictions have a limited right to regulate aesthetics in the ROW for wireless facilities. As part of their aesthetic review, a local jurisdiction may evaluate alternate poles in the ROW that have less aesthetic impact. In our analysis we have found no pole in the ROW that would have less visual impact than the proposed location. The design would be identical to the subject design on the poles that are available and feasible to use.

Aerial Map of the Alternatives



1) Alternate Site #1

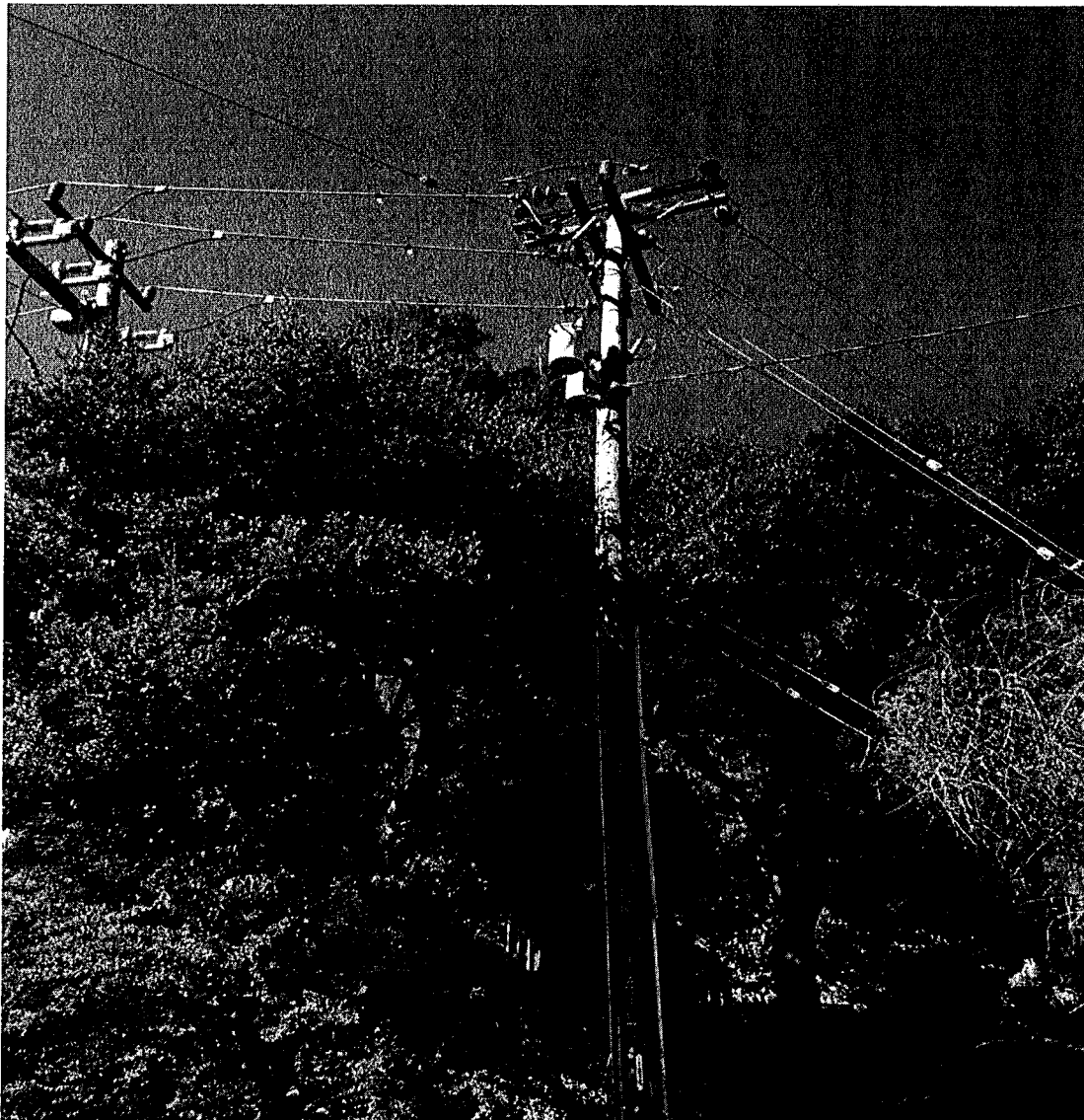
Address: Near 6885 Chabot Rd ROW

Lat: 37.850952°N

Long: -122.240376°W

Reason (s) did not work:

This location is just across Chabot Road to the north of the subject pole. The pole is owned by PG&E. It not feasible to build a site on this pole due to General Order 95 requiring that at least one quadrant of the pole be free of equipment and be designed as climbing space. This pole has too much existing equipment on the pole so that there is no way add the needed Verizon equipment and also be able to have one quadrant of the pole remain free for climbing space. In addition, this pole was not selected as it is closer to the residence than the subject pole and therefore could not be determined to be a less intrusive site to fill the coverage gap.



2) Alternate Site #2

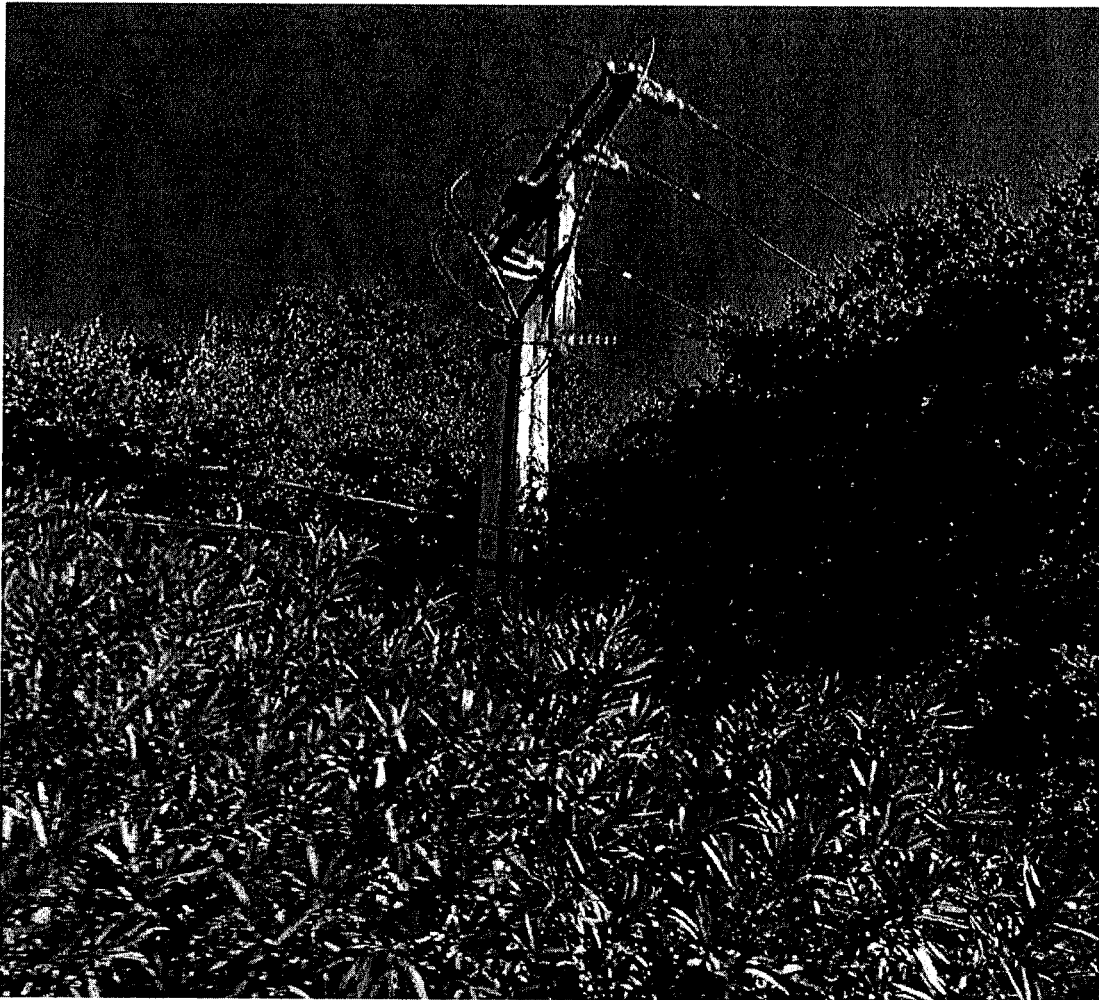
Address: Also Near 6885 Chabot Rd ROW

Lat: 37.850925°N

Long: -122.240446°W

Reason (s) did not work:

This location is just across Chabot Road to the north of the subject pole and very close to Alternative Site #1. The pole is owned by PG&E. It not feasible to build a site on this pole due to General Order 95 requiring that at least one quadrant of the pole be free of equipment and be designed as climbing space. This pole has too much existing equipment on the pole so that there is no way add the needed Verizon equipment and also be able to have one quadrant of the pole remain free for climbing space. In addition, this pole was not selected as it is closer to the residence than the subject pole. Also this pole would require significant tree trimming or possibly removal where the subject pole has no tree trimming issues and therefore, for these reasons this pole could not be determined to be a less intrusive site to fill the coverage gap.



3) Alternate Site #3

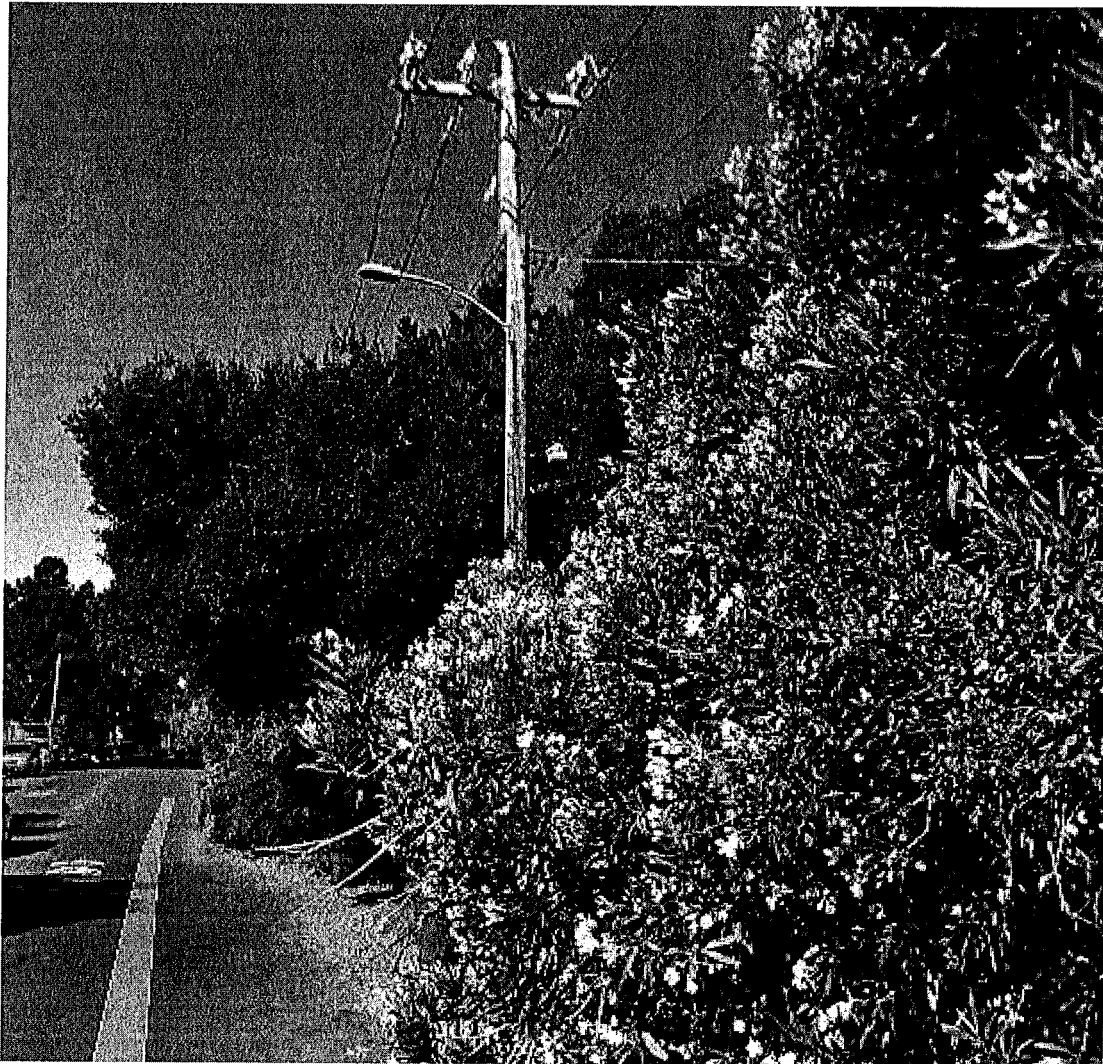
Address: Chabot Road ROW near Reata Pl. intersection

Lat: 37.850907° N

Long: -122.240757° W

Reason (s) did not work:

This location is also on the north side of Chabot Road, but slightly west of the other two previous alternative site locations. The pole is owned by PG&E. It not feasible to build a site on this pole due to General Order 95 requiring that at least one quadrant of the pole be free of equipment and be designed as climbing space. This pole has too much existing equipment on the pole so that there is no way add the needed Verizon equipment and also be able to have one quadrant of the pole remain free for climbing space. In addition, this pole was not selected as it is closer to the residence than the subject pole and therefore could not be determined to be a less intrusive site to fill the coverage gap.



4) Alternate Site #4

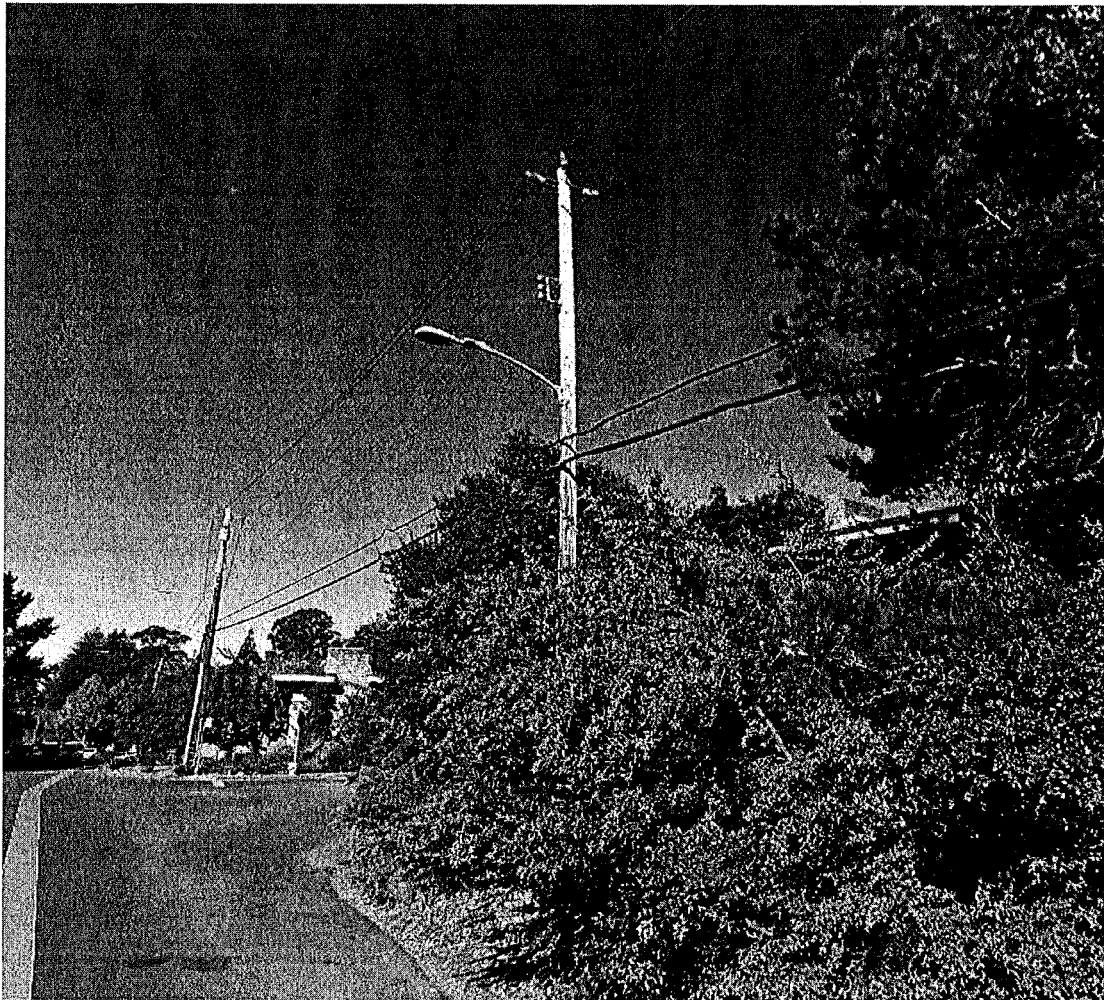
Address: Chabot Road ROW near Reata Pl. intersection

Lat: 37.850840°N

Long: -122.241175°W

Reason (s) did not work:

This alternative pole, while feasible to build a micro cell on with similar design that is being proposed on the subject pole, it was not selected as it is closer to several residences both on Chabot Road and Reata Place than the subject pole. Also this pole would require significant tree trimming or possibly removal where the subject pole has no tree trimming issues and therefore, for these reasons, this pole could not be determined to be a less intrusive site to fill the coverage gap.



Summary

There is relatively small vicinity that the Verizon Wireless Radio Frequency Engineer would allow the facility to be placed so that it would integrate into the existing and proposed site that make up the Verizon network in the local vicinity. There has been a thorough search and analysis of the poles in this area. Three of the four alternative sites cannot be used as candidate due to the amount of equipment and risers already on the poles. In addition, the one alternative pole that has been identified as feasible to build a microcell facility on would all be closer to home(s) than the subject pole. Significant tree trimming would be needed at every alternative pole, even if they were all feasible, and therefore bringing them more into the public view than ever before. Thus, Verizon has concluded that of all the alternative poles, it could not determined than any of them would be less intrusive than the subject pole. Therefore Verizon believes that the subject site is the least intrusive means to fill the known coverage gap.

**Verizon Wireless • Proposed Base Station (Site No. 318887 “Chabot Tunnel SC1”)
6989 Chabot 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. 318887 “Chabot Tunnel SC1”) proposed to be located at 6989 Chabot Road 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 on the utility pole sited on Chabot Road at Golden Gate Avenue 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. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the



**Verizon Wireless • Proposed Base Station (Site No. 318887 “Chabot Tunnel SC1”)
6989 Chabot Road • Oakland, California**

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 construction drawings by On Air, dated May 24, 2017, it is proposed to install one CommScope Model SBNHH-1D45A directional panel antenna on top of a new 46-foot utility pole to replace the existing pole sited on the south side of Chabot Road about 100 feet west of Golden Gate Avenue in Oakland, near the north corner of the tennis courts at the Chabot Recreation Center. The antenna would employ up to 2° downtilt, would be mounted at an effective height of about 48½ feet above ground, and would be oriented toward 75°T, northeast along Chabot Road. The maximum effective radiated power in that direction would be 9,120 watts, representing simultaneous operation at 6,960 watts for AWS and 2,160 watts for 700 MHz service. 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 0.017 mW/cm², which is 2.1% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby residence* is 0.0061% of the public exposure limit. It should be noted that these results include several “worst-case” assumptions and therefore are expected to overstate actual power density levels from the proposed operation.

* Located at least 50 feet away, based on photographs from Google Maps.



**Verizon Wireless • Proposed Base Station (Site No. 318887 "Chabot Tunnel SC1")
6989 Chabot Road • Oakland, California**

Recommended Mitigation Measures

Due to its mounting location and height, the Verizon antenna would not be accessible to unauthorized persons, 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 personal monitor use and lockout/tagout procedures, be provided to all authorized personnel who have access high on the pole, including employees and contractors of Verizon and of the utility companies. No access within 22 feet directly in front of the Verizon antenna itself, such as might occur during certain maintenance activities, should be allowed while the antenna is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. It is recommended that explanatory signs[†] be posted on the pole at or below the antenna, 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 6989 Chabot Road 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 are recommended to establish compliance with occupational exposure limits.

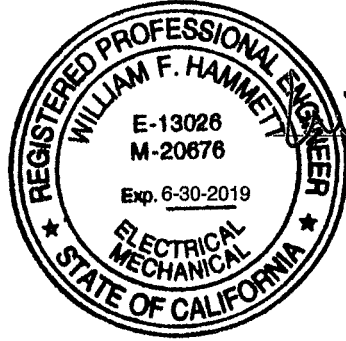
† Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required. Signage may also need to comply with the requirements of California Public Utilities Commission General Order No. 95.



**Verizon Wireless • Proposed Base Station (Site No. 318887 "Chabot Tunnel SC1")
6989 Chabot Road • Oakland, California**

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, 2019. 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

August 24, 2017



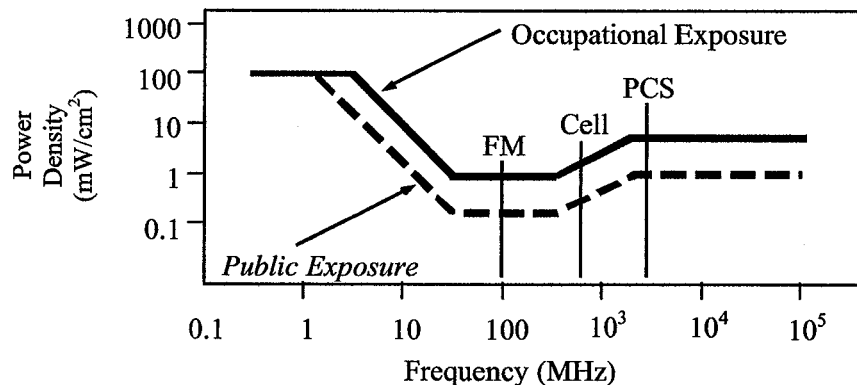
HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

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:

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.



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:

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



Attachment G



To Whom It May Concern:

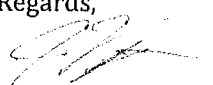
PG&E entered into a Master License Agreement (MLA) with Verizon Wireless in October 2016. The MLA allows Verizon to attach their equipment and antennas to PG&E distribution poles, subject to PG&E approval. Verizon had already been authorized to attach their equipment below the primary and secondary power lines in the "communications zone". Under the MLA, Verizon is now licensed to use the "power zone" space owned by PG&E. The power zone is at the pole top, above the power lines. California Public Utilities Commission (CPUC) General Order 95, Rule 94 established that the antennas can be installed at the pole top position.

PG&E will comply with CPUC regulations and standards with regard to its distribution poles and reviews of proposed attachments.

However, Verizon is solely liable and responsible for complying with all applicable requirements, including CPUC General Order 95, with regard to its attachments on distribution poles.

Please call me at (925) 270-2729 if you have any questions or concerns regarding this matter.

Regards,



Lee Vaughan
ilvf@pge.com
Sr. Electric Program Manager
PG&E Joint Utilities

Exhibit A – JPA and CPUC Information

APPENDIX A PARTIES

PARTIES TO THE NCJPA AGREEMENT dated October 10, 1960
Reference Recital B: 1. **EFFECTIVE DATE January 1, 1998**

AT&T Wireless (BAY AREA CELLULAR TELEPHONE COMPANY)	05/14/98
FRONTIER, A CITIZENS COMMUNICATIONS COMPANY	03/11/98
ALAMEDA POWER & TELECOM (CITY OF ALAMEDA/BUREAU OF ELECTRICITY)	05/19/98
CITY OF GRIDLEY	06/15/98
CITY OF SHASTA LAIKE	02/09/98
COMCAST COMMUNICATIONS	01/01/98
EVANS TELEPHONE COMPANY	01/02/98
VERIZON CALIFORNIA, INC (GTE CALIFORNIA, INC)	06/11/98
HAPPY VALLEY TELEPHONE COMPANY	03/16/98
ICG TELECOM GROUP	06/25/98
LASSEN MUNICIPAL UTILITY DISTRICT	02/04/98
MCImetro ACCESS TRANSMISSION SERVICES, INC.	04/10/98
MCI Telecommunications, Inc.	04/10/98
MODESTO IRRIGATION DISTRICT	01/27/98
PACIFIC BELL WEST/SBC	01/16/98
CINGULAR WIRELESS (PACIFIC BELL MOBILE SERVICES)	04/24/98
PG&E	12/30/97
ROSEVILLE TELEPHONE COMPANY	03/12/98
SACRAMENTO MUNICIPAL UTILITY DISTRICT	03/30/98
SIERRA TELEPHONE COMPANY	01/09/98
SISKIYOU TELEPHONE COMPANY	01/26/98
TRINITY COUNTY PUBLIC UTILITY DISTRICT	04/30/98
VOLCANO TELEPHONE COMPANY	06/08/98

NEW PARTIES

<u>NEW PARTIES</u>	<u>EFFECTIVE DATE</u>
CITY OF LODI, ELECTRIC UTILITY DEPARTMENT	05/01/98
MERCED IRRIGATION DISTRICT	05/01/98
RCN of California, Inc.	01/01/99
GEYSERS POWER COMPANY, LLC	07/01/99
SPRINT PCS	07/01/99
SCHLUMBERGER RESOURCES MGMT SVCS. (CELLNET DATA SERVICES (CA) INC.)	12/17/99
UBIQUITEL	02/01/01
CELLULAR ONE OF SAN LUIS OBISPO	07/01/01
NEXTEL COMMUNICATIONS	08/01/01
WESTERN STATES TELEPORT CORPORATION	01/01/02
VERIZON WIRELESS	02/01/02
NEXTG NETWORKS, INC.	04/10/03
TURLOCK IRRIGATION DISTRICT	11/01/03
NEXTG NETWORKS INC.	04/10/03
METRO PCS	05/01/04
T-MOBILE	01/01/05
NEW PATH NETWORKS	02/15/05
CROWN CASTLE SOLUTIONS CORPORATION ,CA-CLEC LLC, a wholly owned subsidiary	05/11/05
CLEARLINX	10/01/05
CALAVERAS TELEPHONE COMPANY	08/15/06
EAST BAY MUNICIPAL UTILITY DISTRICT	11/07

Verizon Wireless was added to the JPA in 2002

From: Robles, Felix V. felix.robles@cpuc.ca.gov
Subject: GTE Mobilnet (U-3002-C)
Date: January 27, 2015 at 2:55 PM
To: aaron.salars@comcast.net
Cc: Figueroa, Carlos carlos.figueroa@cpuc.ca.gov, Tse, Danny danny.tse@cpuc.ca.gov

Mr. Aaron Salars-

This email confirms that GTE Mobilnet (U-3002-C) is authorized as a public utility to offer telecommunications services in the state of California.

Felix Robles
Program and Project Supervisor
Communications Division, High-Cost Support and Surcharge Section
Carrier Oversight and Programs Branch
California Public Utilities Commission
505 Van Ness Ave 3rd Floor
San Francisco, CA 94102
Phone: (415) 703-2801
Fax: (415) 703-2200

Verizon Wireless is the dba for GTE Mobilnet

ATTACHMENT H

