

**Case File Number: PLN16317**

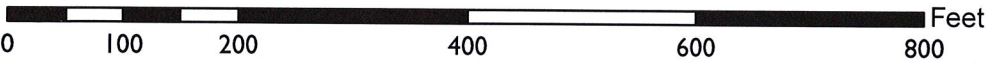
**December 7 2016**

<b>Location:</b>	<b>The public Right of Way in front of 3169 Davis Street on a JPA Utility Telephone Pole (See map on reverse)</b>
<b>Assessor Parcel Numbers:</b>	<b>(027-0845-007-00) nearest lot adjacent to the project site.</b>
<b>Proposal:</b>	To install one (1) telecommunication canister antenna on an existing wood PG&E utility pole 18 feet above ground with the associated equipment mounted to the pole at six (6) feet high and above (breaker box and smart meter).
<b>Applicant:</b>	Black & Veatch for Extenet Systems
<b>Contact Person/ Phone Number:</b>	Ana Gomez of Black & Veatch (913)458-9148
<b>Owner:</b>	Pacific Gas & Electric. (PG&E)
<b>Case File Number:</b>	<b>PLN16317</b>
<b>Planning Permits Required:</b>	Major Design Review to install a wireless Macro Telecommunications Facility one (1) telecommunications canister antenna to an existing PG&E pole located in the public right -of- way in a residential zone.
<b>General Plan:</b>	Mixed Housing Type Residential
<b>Zoning:</b>	RM-3 Mixed Housing Type Residential
<b>Environmental Determination:</b>	Exempt, Section 15301 of the State CEQA Guidelines; minor additions and alterations to an existing facility; Exempt, Section 15302 of the State CEQA Guidelines; replacement or reconstruction of existing utility systems and/or facilities; Exempt, Section 15183 of the State CEQA Guidelines; projects consistent with a community plan, general plan or zoning.
<b>Historic Status:</b>	No Historic Record – Utility Pole
<b>Service Delivery District:</b>	3
<b>City Council District:</b>	5
<b>Date Filed:</b>	October 14, 2016
<b>Finality of Decision:</b>	Appealable to City Council within 10 Days
<b>For Further Information:</b>	Contact case planner Michael Bradley at <b>(510) 238-6935</b> or <a href="mailto:mbradley@oaklandnet.com">mbradley@oaklandnet.com</a>

**SUMMARY**

The project applicant (Extenet Systems) is proposing to install a wireless telecommunication facility on an existing 44 foot high PG&E utility pole located in the public right-of-way. The facility includes one telecommunication canister antenna 18 feet above ground with the associated equipment mounted to the pole six feet high and above (breaker box and smart meter) and two radio units (7.9” tall and 7.9” wide) mounted at a height of 9’-6” above ground. The canister antenna will be located within an antenna shroud measuring 24” long and 7.9” in diameter at a height of 18’. Staff believes, given the topography, slim equipment design, and location of the existing pole between two existing single-family dwellings, it will blend in with the existing utility apparatus already located on the telephone pole. Major Design Review is required for the installation of a new Macro Telecommunications Facility in a residential zone. Staff believes the proposed

# CITY OF OAKLAND PLANNING COMMISSION



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Applicant: Extenet Systems  
Address: Public Right of Way in front of  
3169 Davis Street on JPA Telephone Pole  
Zone: RM-3

antenna and associated equipment are compatible with the existing PG&E utility pole. Further, the proposed antenna will project toward the street, and be painted to match the PG&E utility pole. As result, the proposed telecommunication facility is in an appropriate location and would not significantly increase negative visual impacts to adjacent neighboring residential properties. The proposed project, as conditioned, will be designed to meet the established zoning and telecommunication regulations and staff recommends approval of the Major Design Review application per the required findings.

## **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 Communication Commission (FCC) standards in this regard. (See 47 U.S.C. Section 332(c)(7)(B)(iv) (1996)). This means that local authorities may not regulate the siting or construction of personal wireless facilities based on RF standards that are more stringent than those promulgated by the FCC.

- Section 704 mandates that local governments act upon personal wireless service facility siting applications to place, construct, or modify a facility within a reasonable time (See 47 U.S.C.332(c)(7)(B)(ii) and FCC Shot Clock ruling setting forth “reasonable time” standards for applications deemed complete).
- Section 704 also mandates that the FCC provide technical support to local governments in order to encourage them to make property, rights-of-way, and easements under their jurisdiction available for the placement of new spectrum-based telecommunications services. This proceeding is currently at the comment stage.

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

**PROPERTY DESCRIPTION**

The existing 44’ high PG&E utility pole is located in the City of Oakland public right -of- way adjacent to a cross sloped parcel in front of 3169 Davis Street.

**PROJECT DESCRIPTION**

The applicant is proposing to install a wireless telecommunication facility on an existing 44 foot high PG&E utility pole located in the public right-of-way (Attachment A). The new facility will include:

- One telecommunication canister antenna 18 feet above ground with the associated equipment mounted to the pole six feet high and above (breaker box and smart meter). The canister antenna will be located within an antenna shroud measuring 24” long and 7.9” in diameter, and
- Two radio units (7.9” tall and 7.9” wide) mounted at a height of 9’-6” above ground.

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 Mixed Housing Type Residential per the Oakland General Plan’s Land Use and Transportation Element (LUTE). This classification is intended to create, maintain, and enhance residential areas typically located near the City’s major arterials and characterized by a mix of single-family homes, townhouses, small multi-unit buildings, and neighborhood business where appropriate. “Future development within this classification should be primarily residential in character.”

The proposed telecommunication facilities will be mounted on an existing PG&E utility pole within the City of Oakland public right-of-way. The proposed unmanned wireless

telecommunication facility will not adversely affect and detract from the characteristics of the neighborhood.

## **ZONING ANALYSIS**

The proposed telecommunication facility is located within the RM-3 Mixed Housing Type Residential Zone. The intent of the RM-3 Zone is to create, maintain, and enhance residential areas characterized by a mix of single family homes, duplexes, townhouses, small multi-unit buildings at somewhat higher densities than in RM-2, and neighborhood businesses where appropriate.

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 RM-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 lists the projects that qualify as categorical exemptions from environmental review. The proposed project is categorically exempt from the environmental review requirements pursuant to Section 15301, additions and alterations to existing facilities; Section 15302, replacement or reconstruction of existing utility systems and/or facilities; and Section 15183, projects consistent with a 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 installation of a new antenna on an existing PG&E utility pole within an RM-3 Zone, the proposed project meets both preferences B and G, and a site alternatives analysis is required.

**Alternative Site Analysis:**

Extenet Systems 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 location is approximately equidistant from other Distributed Antenna System (DAS) nodes proposed in the surrounding area so that service coverage can be evenly distributed.

Staff has reviewed the applicant's alternative sites analysis (Attachment B) 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 a site design alternatives analysis. Facilities designed to meet a C through F ranked preference, inclusive, must submit a site design alternatives analysis as part of the required application materials. The site design alternatives analysis shall, at a minimum, consist of:

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

Since the proposed project does not meet preference A and B, a site design alternatives analysis is required.

**Alternative Design Analysis:**

Extenet System evaluated whether the equipment could be under grounded but unfortunately this is not possible because there is insufficient right-of-way space for the necessary equipment access and the equipment would be compromised by rainwater saturation. The proposed antenna design is approximately equidistant from other DAS nodes proposed in the surrounding area so that service coverage can be evenly distributed. 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 written evidence of alternative design analysis and determined that the site selected conforms to the telecommunication regulation requirements. (Attachment B) Specifically, given the topography, streamlined equipment design, and location of the existing pole between two existing single family dwellings, the facility will blend in with the existing utility apparatus on the existing 44 foot high wood telephone pole. Furthermore, the proposed new antenna is located within a shroud screening mounted onto the PG&E utility pole 18' above ground and the two radio units will be attached to the pole at 9'-6" in height above the ground.

**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. In the document (Attachment C) prepared by Hammett & Edison RF Compliance Experts, Inc. Inc. Registered Professional Engineer, the proposed project was evaluated for compliance with appropriate guidelines limiting human exposure to radio frequency electromagnetic fields. According to the report on the proposal, 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.
- 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.

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.

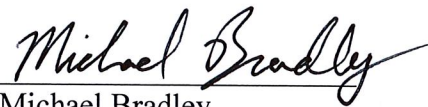
**CONCLUSION**

The proposed project meets all of the required findings for approval. The proposal will provide an essential telecommunication services 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:



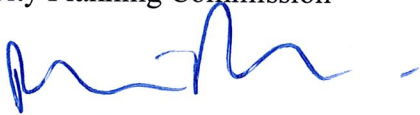
Michael Bradley  
Planner I

Approved by:



Scott Miller  
Zoning Manager

Approved for forwarding to the  
City Planning Commission



Darin Ranelletti, Interim Director  
Planning and Building Department

**ATTACHMENTS:**

- A. Project Plans & Photo simulations
- B. Site & Design Alternative Analysis
- C. Hammett & Edison, Inc., Consulting Engineering RF Emissions Report
- D. Community Outreach Summary
- E. Extenet Systems Antenna Explanation letter



**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 is to install one telecommunication canister antenna on an existing wood PG&E utility pole 18 feet above ground with the associated equipment mounted to the pole at six (6) feet high and above (breaker box and smart meter). Given the topography, slim equipment design, and location of the existing pole between two existing single family dwellings, it will blend in with the existing utility apparatus already located on the telephone pole. Therefore, the proposal will have minimal visual impacts from public view.

**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 slim antenna canister and painted to blend in with the existing surrounding area in order to have minimal visual impacts on public views and protect 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 designated Mixed Housing Type Residential by the Oakland General Plan. This designation is intended to create, maintain, and enhance residential areas typically located near the City's major arterials and characterized by a mix of single-family homes, townhouses, small multi-unit buildings, and neighborhood business where appropriate. The proposed project is residential in nature and consistent with the General Plan. "Future development within this classification should be primarily residential in character." The proposed telecommunication facilities will be mounted on an existing PG&E utility pole within the City of Oakland public right-of-way. The proposed unmanned wireless telecommunication facility will not adversely

affect and detract from the characteristics of the neighborhood. Its visual impacts will be mitigated since the antennas and equipment be aesthetically streamlined and given the topography, and placement of the existing pole between two existing single family dwellings, it will blend in with the existing utility apparatus on the existing 44 foot high wood telephone pole.

**17.128.070(B) DESIGN REVIEW CRITERIA FOR MACRO FACILITIES**

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

The proposed antennas will be painted to match a PG&E utility pole and blend with the surroundings.

**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 will not be mounted on building or architecturally significant structure, but rather on a PG&E utility pole.

**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 mounted on an existing PG&E utility pole and painted to match the utility pole which will be camouflaged to blend-in with existing surrounding wooded area.

**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 equipment will be located within a single equipment box attached to the existing utility pole and painted to match pole to blend with the surroundings.

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

The proposed equipment cabinets will be compatible with the existing PG&E related equipment.

**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 one telecommunication canister antenna will be mounted on an existing wood PG&E utility pole 18 feet above ground and will not be accessible to the public due to its location. The equipment above the breaker box and smart meter will be located 9'-6" above the ground.

**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 **September 12, 2016** and submitted on **October 14, 2016** as amended by the following conditions of approval and mitigation measures, if applicable (“Conditions of Approval” or “Conditions”).

**2. Effective Date, Expiration, Extensions and Extinguishment**

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

**3. Compliance with Other Requirements**

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

**4. Minor and Major Changes**

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

**5. Compliance with Conditions of Approval**

- a. The project applicant and property owner, including successors, (collectively referred to hereafter as the “project applicant” or “applicant”) shall be responsible for compliance with all the Conditions of Approval and any recommendations contained in any submitted and

approved technical report at his/her sole cost and expense, subject to review and approval by the City of Oakland.

- b. The City of Oakland reserves the right at any time during construction to require certification by a licensed professional at the project applicant's expense that the as-built project conforms to all applicable requirements, including but not limited to, approved maximum heights and minimum setbacks. Failure to construct the project in accordance with the Approval may result in remedial reconstruction, permit revocation, permit modification, stop work, permit suspension, or other corrective action.
- c. Violation of any term, Condition, or project description relating to the Approval is unlawful, prohibited, and a violation of the Oakland Municipal Code. The City of Oakland reserves the right to initiate civil and/or criminal enforcement and/or abatement proceedings, or after notice and public hearing, to revoke the Approval or alter these Conditions if it is found that there is violation of any of the Conditions or the provisions of the Planning Code or Municipal Code, or the project operates as or causes a public nuisance. This provision is not intended to, nor does it, limit in any manner whatsoever the ability of the City to take appropriate enforcement actions. The project applicant shall be responsible for paying fees in accordance with the City's Master Fee Schedule for inspections conducted by the City or a City-designated third-party to investigate alleged violations of the Approval or Conditions.

**6. Signed Copy of the Approval/Conditions**

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

**7. Blight/Nuisances**

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

**8. Indemnification**

- a. To the maximum extent permitted by law, the project applicant shall defend (with counsel acceptable to the City), indemnify, and hold harmless the City of Oakland, the Oakland City Council, the Oakland Redevelopment Successor Agency, the Oakland City Planning Commission, and their respective agents, officers, employees, and volunteers (hereafter collectively called "City") from any liability, damages, claim, judgment, loss (direct or indirect), action, causes of action, or proceeding (including legal costs, attorneys' fees, expert witness or consultant fees, City Attorney or staff time, expenses or costs) (collectively called "Action") against the City to attack, set aside, void or annul this Approval or implementation of this Approval. The City may elect, in its sole discretion, to participate in the defense of said Action and the project applicant shall reimburse the City for its reasonable legal costs and attorneys' fees.
- b. Within ten (10) calendar days of the filing of any Action as specified in subsection (a) above, the project applicant shall execute a Joint Defense Letter of Agreement with the City, acceptable to the Office of the City Attorney, which memorializes the above obligations. These obligations and the Joint Defense Letter of Agreement shall survive termination, extinguishment, or invalidation of the Approval. Failure to timely execute the Letter of

Agreement does not relieve the project applicant of any of the obligations contained in this Condition or other requirements or Conditions of Approval that may be imposed by the City.

**9. Severability**

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

**10. Job Site Plans**

***Ongoing throughout demolition, grading, and/or construction***

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

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

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

The project applicant may be required to pay for on-call special inspector(s)/inspections as needed during the times of extensive or specialized plan check review, or construction. The project applicant may also be required to cover the full costs of independent technical and other types of peer review, monitoring and inspection, including without limitation, third party plan check fees, including inspections of violations of Conditions of Approval. The project applicant shall establish a deposit with the Building Services Division, as directed by the Building Official, Director of City Planning or designee.

**12. Days/Hours of Construction Operation**

***Ongoing throughout demolition, grading, and/or construction***

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

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

- construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division.
- ii. After the building is enclosed, requests for Saturday construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division, and only then within the interior of the building with the doors and windows closed.
  - d) No extreme noise generating activities (greater than 90 dBA) shall be allowed on Saturdays, with no exceptions.
  - e) No construction activity shall take place on Sundays or Federal holidays.
  - f) Construction activities include but are not limited to: truck idling, moving equipment (including trucks, elevators, etc) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.

**PROJECT SPECIFIC CONDITIONS:**

**13. Radio Frequency Emissions**

***Prior to the final building permit sign off.***

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

**14. Operational  
Ongoing.**

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

**15. 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

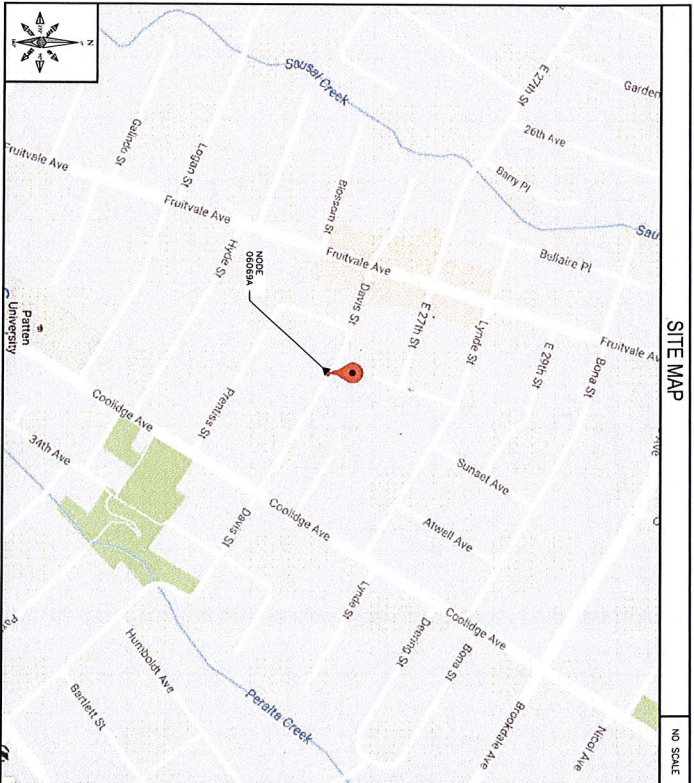
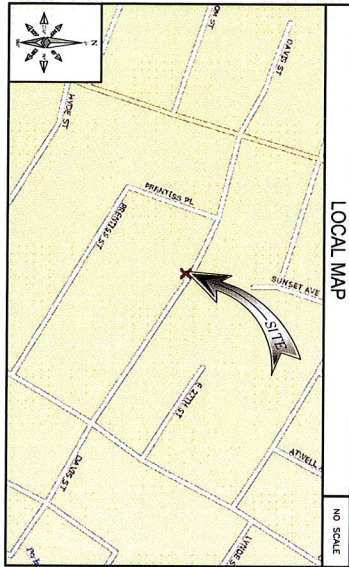
\_\_\_\_\_  
Signature of Project Applicant

\_\_\_\_\_  
Date



# NW-CA-SANFRNMC 06069A

ADJACENT TO (IN PROW)  
3169 DAVIS STREET  
OAKLAND, CA 94601



SHEET INDEX	
SHEET NO:	SHEET TITLE
T-1	GENERAL NOTES AND LEGEND
C-1	GENERAL SITE PLAN
C-2	UTILITY POLE ELEVATIONS AND DEER DETAILS
C-3	EQUIPMENT DETAILS
C-4	EQUIPMENT DETAILS

PROJECT INFORMATION	
<b>POLE OWNER</b>	OWNER: EXTENET SYSTEMS CA, LLC CONTACT: EXTENET SYSTEMS CA, LLC
<b>APPLICANT</b>	COMPANY: EXTENET SYSTEMS (CALIFORNIA), LLC CONTACT: MATTHEW VERBOONICH ADDRESS: 2000 CROW CANYON PLACE, SUITE 210 SAN RAMON, CA 94583 PHONE: (415) 586-3474 E-MAIL: MVERBOONICH@EXTENETSYSTEMS.COM
<b>AGENT</b>	COMPANY: BLACK & VEATCH CONTACT: ANA COMEZ ADDRESS: 2999 OAK ROAD, SUITE 400 SAN FRANCISCO, CA 94107 PHONE: (913) 458-3148 E-MAIL: COMEZ@BLACKANDVEATCH.COM
<b>ENGINEER</b>	COMPANY: BLACK & VEATCH ENGINEER: MARION EVANS PHONE: (925) 888-0751 E-MAIL: EVANS@BLACKANDVEATCH.COM
<b>PROJECT DATA</b>	LONGITUDE: -122.21884 LATITUDE: 37.78933 POLE #: 110141887 ELEVATION: NA ZONING JURISDICTION: CITY OF OAKLAND NEAREST A.P.N.: 27-845-7 CONSTRUCTION TYPE: U, UNMANNED TITLE 24 REQUIREMENTS: ATTACHMENTS TO A WOOD UTILITY FRUIT IS UNMANNED AND NOT FOR EXTENDED OPERATION. THIS PROJECT IS EXTENDED OPERATION.

GENERAL PROJECT NOTES	
1.	PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL VERIFY ALL CONDITIONS WITHIN THE SCOPE OF WORK AND ALL CONDITIONS SHALL BE SHOWN PRIOR TO COMMENCEMENT OF ANY WORK.
2.	CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND DIMENSIONS OF THE JOB SITE AND CONFORM WITH ANY NOTICED ON THESE CONSTRUCTION DOCUMENTS CAN BE ANY WORK AS SHOWN PRIOR TO COMMENCEMENT OF ANY WORK.
3.	ALL FIELD MODIFICATIONS BEFORE, DURING OR AFTER CONSTRUCTION SHALL BE APPROVED IN WRITING BY AN EXTENET SYSTEMS REPRESENTATIVE.
4.	INSTALL ALL EQUIPMENT AND MATERIALS PER THE OTHERS' RECOMMENDATIONS, UNLESS INDICATED OTHERWISE.
5.	DISREGARDERS REGARDING THE CONTRACT DOCUMENTS, EXISTING RECORDS, FIELD CONDITIONS, AND ANY OTHER INFORMATION SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATIONS FROM AN EXTENET SYSTEMS REPRESENTATIVE, AND ADJUSTING THE BID ACCORDINGLY.
6.	CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION OF THE PROJECT UNDER THE CONTRACT AND PROCEDURES OF THE WORK UNDER THE CONTRACT.
7.	CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND FINISHES THAT ARE TO REMAIN. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITIES AND FINISHES TO THE SATISFACTION OF AN EXTENET SYSTEMS REPRESENTATIVE.
8.	CONTRACTOR PLANS TO ILLUSTRATE THE AS-BUILT CONDITION OF THE SITE, FOLLOWING THE FINAL INSPECTION BY EXTENET OR WITH ONE COPY OF ALL RED-LINED DOCUMENTS TO EXTENET REPRESENTATIVE. ALL EQUIPMENT LAYOUT, SPECS, PERFORMANCE RECORDS, AND OTHER INFORMATION ARE TO BE APPROVED FOR COORDINATING HIS/HER WORK WITH THE WORK AND CONDITIONS REQUIRED BY OTHERS RELATED TO SAID INSTALLATIONS.
9.	VERIFY ALL FINAL EQUIPMENT WITH AN EXTENET SYSTEMS REPRESENTATIVE. ALL EQUIPMENT LAYOUT, SPECS, PERFORMANCE RECORDS, AND OTHER INFORMATION ARE TO BE APPROVED FOR COORDINATING HIS/HER WORK WITH THE WORK AND CONDITIONS REQUIRED BY OTHERS RELATED TO SAID INSTALLATIONS.

CODE COMPLIANCE	
ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE FOLLOWING CODES AS ADOPTED BY THE CITY OF OAKLAND, CALIFORNIA (AS APPLICABLE). NOTHING IN THESE PLANS IS TO BE CONSIDERED TO PERMIT WORK NOT CONFORMING TO THESE CODES: 1: IRC - 2012 BUILDING STANDARDS CODE - 2013 2: CALIFORNIA GENERAL ORDER 96 - 2013 3: CALIFORNIA MECHANICAL CODE 2013 4: CALIFORNIA ELECTRICAL CODE 2013 5: CALIFORNIA FIRE CODE 2013 6: CALIFORNIA PLUMBING CODE 2013 7: CITY AND/OR COUNTY ORDINANCES 8: 2012 INTERNATIONAL FIRE CODE 9: BUREAU OF CALIFORNIA FIRE CODE ADMINISTRATION (BOCA) EFFECTIVE UNTIL JANUARY 1ST, 2017	
PROJECT DESCRIPTION	
THESE DRAWINGS DEPICT THE INSTALLATION OF A WIRELESS TELECOMMUNICATIONS MAST IN THE PUBLIC RIGHT OF WAY. HANDMADE AND ANGLERY EQUIPMENT TO BE INSTALLED AS DESCRIBED HEREIN.	

PROJECT DESCRIPTION	
THESE DRAWINGS ARE COPYRIGHTED AND PRODUCED SOLELY FOR THE USE OF OUR CLIENT. ANY REPRODUCTION OR USE OF THESE DRAWINGS IS PROHIBITED WITHOUT WRITTEN CONSENT BY BLACK & VEATCH.	
PROJECT NO:	192417-4211
DRAWN BY:	MBS
CHECKED BY:	CAC
DATE:	09/22/16
SCALE:	AS SHOWN
REVISION:	
DATE:	
DESCRIPTION:	

**BLACK & VEATCH CORPORATION**  
2500 SUITE 400  
WALNUT CREEK, CA 94597

**extenet** telecommunications  
SYSTEMS Equipment

GENERAL PROJECT NOTES	
PROJECT NO:	192417-4211
DRAWN BY:	MBS
CHECKED BY:	CAC
DATE:	09/22/16
SCALE:	AS SHOWN
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PROJECT DESCRIPTION	
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PROJECT NO:	192417-4211
DRAWN BY:	MBS
CHECKED BY:	CAC
DATE:	09/22/16
SCALE:	AS SHOWN
REVISION:	
DATE:	
DESCRIPTION:	

UNDERGROUND SERVICE ALERT  
811  
48 HOURS BEFORE YOU DIG

PRELIMINARY	
IF A VARIATION OF ANY KIND FOR ANY REASON, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATIONS FROM AN EXTENET SYSTEMS REPRESENTATIVE TO ALTER THE DOCUMENT.	
EXTENET SYSTEMS (CA) LLC 2000 CROW CANYON PLACE SUITE 210 SAN RAMON, CA 94585	
SITE ADDRESS ADJACENT TO (IN PROW) 3169 DAVIS STREET OAKLAND, CA 94601	
SHEET TITLE TITLE SHEET	
SHEET NUMBER T-1	

IF USING 11"X17" PLOT, DRAWINGS WILL BE HALF SCALE

SUBCONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

**GENERAL NOTES**

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE WRITTEN SPECIFICATIONS, CONTRACT AND CONSTRUCTION DOCUMENTS.
2. THE WORK SHALL INCLUDE UNLESS OTHERWISE SPECIFIED, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS SHOWN ON THESE PLANS AND IN THE CONTRACT DOCUMENTS.
3. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTOR(S) SHALL VISIT THE JOB SITE(S) AND BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ORDINANCES, AND CONSENTS FROM THE CITY AND COUNTY OF LOS ANGELES. THE CONTRACTOR(S) SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ORDINANCES, AND CONSENTS FROM THE CITY AND COUNTY OF LOS ANGELES. THE CONTRACTOR(S) SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ORDINANCES, AND CONSENTS FROM THE CITY AND COUNTY OF LOS ANGELES.
4. THE CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED ON ANY WORK NOT CLEARLY DEFINED ON THESE PLANS AND CONSTRUCTION DOCUMENTS BEFORE STARTING ANY WORK.
5. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING CODES AND REGULATIONS, INCLUDING BUT NOT LIMITED TO: CALIFORNIA ELECTRICAL CODE, CALIFORNIA MECHANICAL CODE, CALIFORNIA PLUMBING CODE, CALIFORNIA FIRE CODE, CALIFORNIA BUILDING CODE, CALIFORNIA ELECTRICAL CODE, CALIFORNIA MECHANICAL CODE, CALIFORNIA PLUMBING CODE, CALIFORNIA FIRE CODE, CALIFORNIA BUILDING CODE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ORDINANCES, AND CONSENTS FROM THE CITY AND COUNTY OF LOS ANGELES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ORDINANCES, AND CONSENTS FROM THE CITY AND COUNTY OF LOS ANGELES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ORDINANCES, AND CONSENTS FROM THE CITY AND COUNTY OF LOS ANGELES.
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11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ORDINANCES, AND CONSENTS FROM THE CITY AND COUNTY OF LOS ANGELES.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ORDINANCES, AND CONSENTS FROM THE CITY AND COUNTY OF LOS ANGELES.

**DEFINITIONS**

1. "THICK" OR "THIN" MEANS THAT THIS ITEM IS SUBSTANTIALLY THE SAME ACROSS THOSE CONDITIONS. "THIN" SHALL BE UNDERSTOOD TO MEAN "TYPICAL WHERE OCCURS" AND SHALL NOT BE CONSIDERED AS WITHOUT REGARD TO THE CONDITION OF THE FIELD.
2. "TYPICAL" OR "AS SHOWN" MEANS THAT THIS ITEM IS SUBSTANTIALLY THE SAME ACROSS THOSE CONDITIONS. "TYPICAL" SHALL BE UNDERSTOOD TO MEAN "TYPICAL WHERE OCCURS" AND SHALL NOT BE CONSIDERED AS WITHOUT REGARD TO THE CONDITION OF THE FIELD.
3. "AS SHOWN" MEANS AS REQUIRED BY REGULATORY REQUIREMENTS FOR REFERENCED STANDARDS, BY EXISTING CONDITIONS, BY GENERALLY ACCEPTED CONSTRUCTION PRACTICE, OR BY THE CONTRACT DOCUMENTS.
4. "ALLOW" MEANS ACCEPTABLE LOCATE FINISH FACES OF MATERIALS IN THE SAME PLANE.
5. THE TERM "VAPOR" OR "VLT" SHALL BE UNDERSTOOD TO MEAN "VAPOR IN FIELD WITH COUPLER" AND AFTER RECEIVING DIRECTION FROM MANUFACTURER'S INSTRUCTIONS.
6. WHERE THE WORDS "OR EQUAL" OR WORDS OF SIMILAR MEANING FOLLOW A MATERIAL SPECIFICATION, THEY SHALL BE UNDERSTOOD TO REQUIRE SIGNED APPROVAL OF ANY DEVIATION TO SAID SPECIFICATION PRIOR TO THE COMMENCEMENT OF WORK.
7. FINISH AND INSTALL OTHERS TO INSTALL, INSTALL ITEMS FINISHED BY OTHERS, PROVIDE.

**FIELD WELDING NOTES:**

1. WELDING TO BE PERFORMED BY WMS CERTIFIED WELDER FOR THE TYPE OF AND POSITION INDICATED. ALL WORK MUST BE IN CONFORMANCE WITH LATEST EDITION OF AWS D1.1.
2. GRIND SURFACES TO BE WELDED WITH A SILICON CARBIDE WHEEL FROM TO REMOVE ALL AFTER FINISHING.
3. WELDING TECHNIQUE MUST MAINTAIN TEMPERATURE RISE ON THE INSIDE SURFACE OF THE JOINT AND ALSO MAINTAIN AN APPROPRIATE GAP WITHIN THE JOINT. WELDS SHALL BE MADE WITH AN FCAW (LOW HONDERED) STRICTLY FOLLOW ALL MANUFACTURER'S INSTRUCTIONS FOR STRAP AND USE OF ELECTRODES. AVOID REMOVING ELECTRODES FROM MANUFACTURER'S PACKAGING UNTIL READY FOR IMMEDIATE USE.
4. PREHEAT SHALL BE PROVIDED FROM FLAMES. REFER TO AWS STANDARD Z49.1 "SAFETY IN WELDING AND CUTTING" FOR PREHEAT PROCEDURES.
5. UPON COMPLETION OF WELDING, APPLY CALK-STOP TO ALL UNPROTECTED SURFACES. APPLY A SECOND LAYER OF COOL DRAINING SHAHAW COMPOUND CONTAINING A MINIMUM 2%ZINC CONTENT OF 60% IF NECESSARY. APPLY A FINAL COAT OF COMPLETABLE PAINT TO MATCH SURROUNDING SURFACES.

**ANTENNA MOUNTING**

1. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT AWS/IN-322 OR APPLICABLE LOCAL CODES.
2. ALL STEEL MATERIALS SHALL BE OILY CLEANED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 7"INCL. FOR 90°-90° DAMAGED CORNERS ON ROUN AND STEEL PRODUCTS. UNLESS NOTED OTHERWISE.
3. THE GALVANIZING (HOT-DIP OR ELECTROLYTIC) SHALL BE OILY CLEANED AFTER FABRICATION IN ACCORDANCE WITH ASTM A153 7"INCL. FOR 90°-90° DAMAGED CORNERS ON ROUN AND STEEL PRODUCTS. UNLESS NOTED OTHERWISE.
4. ALL ANTENNA MOUNTS SHALL BE REMOVED BY COOL DRAINING IN ACCORDANCE WITH ASTM A280 MANUFACTURER'S RECOMMENDATIONS.
5. CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.
6. WORK TO BE DONE BY THE CONTRACTOR SHALL BE CHECKED BY THE ANTENNA CONTRACTOR. THE ANTENNA CONTRACTOR SHALL BE CHECKED WITHIN 7-15 AS OBTAINED BY THE BIDDING ANTENNA CONTRACTOR. THE ANTENNA CONTRACTOR SHALL BE WITHIN 7-15 AS OBTAINED BY THE BIDDING ANTENNA CONTRACTOR.

**TORQUE REQUIREMENTS**

1. ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
2. ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTENNA HARDWARE SHALL HAVE A TORQUE MARK INSTALLED IN A CONTINUOUS STRAIGHT LINE FROM BOTH SIDES OF THE CONNECTION.
  - A. RF CONNECTION BOTH SIDES OF THE CONNECTION.
  - B. GROUNDING AND ANTENNA HARDWARE ON THE MOUNT SURFACE FROM THE THREADS TO THE SOLID HARDWARE. CHECKED BY 3000 SHIPPER GROUND SWL ANTENNA BRACKET WELD.
3. ALL 8M ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 LB-FT (12 NM).
4. ALL 12M ANTENNA HARDWARE SHALL BE TIGHTENED TO 4.3 LB-FT (58 NM).
5. ALL GROUNDING HARDWARE SHALL BE TIGHTENED UNTIL THE LOCK WASHER COLLAPSES AND THE GROUNDING HARDWARE IS NO LONGER LOOSE.
6. ALL IN-TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20 LB-IN (1.7 - 2.3 NM).
7. ALL IN-TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20 LB-IN (1.7 - 2.3 NM).

**ROW UTILITY POLE CONSTRUCTION NOTES**

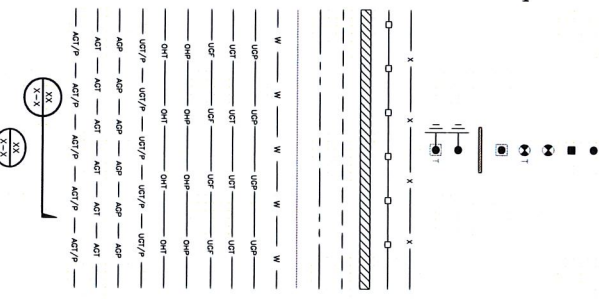
1. NO 80% TOLERANCES TO PROVIDE MORE THAN 1-1/2" (38MM).
2. FILL ALL HOLES LEFT IN POLE FROM REARRANGEMENT OF CABLES.
3. ALL CABLE STEPS NEXT TO CONDUIT SHALL HAVE EXTENDED STEPS.
4. CABLE NOT TO EXCEED 15" (381MM) CLEAR SPACE OFF POLE FACE (12500).
5. 90 SHORT SWEETS UNDER ANTENNA MOUNT. ALL CABLES MUST ONLY TRANSITION ON THE INSIDE OR BOTTOM OF MOUNT (NO CABLE ON TOP OF MOUNT).
6. USE 90 CONNECTOR AT CABLE CONNECTION TO ANTENNAS.
7. USE 1/2" (12.5MM) CABLE ON ANTENNAS UNLESS OTHERWISE SPECIFIED.
8. FILL VOID AROUND CABLES AT CONDUIT OPENING WITH FLOW SEALANT TO PREVENT WATER INTRUSION.

**NODE SITE POWER SHUT DOWN PROCEDURES**

1. FOR NON EMERGENCY/SCHEDULED POWER SHUT DOWN
  - A. CALL EXTENT SYSTEMS NOC (NETWORK OPERATIONS CENTER) (866)992-5227
  - B. 24 HOURS PRIOR TO SCHEDULED POWER SHUT OFF
  - C. PROVIDE THE FOLLOWING INFORMATION:
    - \* YOUR SITE NUMBER ASSIGNED ON SITE NUMBERING STICKER
    - \* YOUR NAME AND REASON FOR POWER SHUT OFF
    - \* PROVIDE DURATION OF OUTAGE
  - D. UNLOCK DISCONNECT BOX, FLIP BOTH BREAKERS TO THE OFF POSITION
  - E. POWER SHUT OFF VERIFICATION WITH APPROVED POLE PROCEDURES
  - F. NOTIFY EXTENT NOC UPON COMPLETION OF WORK
  - G. REMANUAL LOCK ON DISCONNECT BOX
2. EMERGENCY POWER SHUT OFF
  - A. CALL EXTENT SYSTEMS NOC (NETWORK OPERATIONS CENTER) (866)992-5227
  - B. PROVIDE THE FOLLOWING INFORMATION:
    - \* YOUR SITE NUMBER ASSIGNED ON SITE NUMBERING STICKER
    - \* YOUR NAME AND REASON FOR POWER SHUT OFF
    - \* PROVIDE DURATION OF OUTAGE
  - C. UNLOCK DISCONNECT BOX, FLIP BOTH BREAKERS TO THE OFF POSITION
  - D. POWER SHUT OFF VERIFICATION WITH APPROVED POLE PROCEDURES
  - E. POWER SHUT OFF VERIFICATION WITH APPROVED POLE PROCEDURES
  - F. NOTIFY EXTENT NOC UPON COMPLETION OF WORK
  - G. REMANUAL LOCK ON DISCONNECT BOX

**LEGEND**

- EXOTHERMIC CONNECTION
- MICHAEL CONNECTION
- CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
- TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
- EXOTHERMIC WITH INSPECTION SLEEVE
- GROUNDING BAR
- GROUND ROD
- TEST GROUND ROD WITH INSPECTION SLEEVE
- CHANNEL FENCE
- WOOD/WROUGHT IRON FENCE
- WALL STRUCTURE
- LEAST AREA
- PROPERTY LINE (PL)
- SETBACKS
- WATER LINE
- UNDERGROUND POWER
- UNDERGROUND TELCO
- UNDERGROUND FIBER
- OVERHEAD POWER
- OVERHEAD TELCO
- UNDERGROUND TELCO/POWER
- ABOVE GROUND POWER
- ABOVE GROUND TELCO
- ABOVE GROUND TELCO/POWER
- SECTION REFERENCE
- DETAIL REFERENCE



**GENERAL NOTES AND LEGENDS**

**exteneif** connectivity systems

INTERNAL REVIEW: \_\_\_\_\_ DATE: \_\_\_\_\_

CONSTRUCTION SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

RF SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

REAL ESTATE SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

**BLACK & VEATCH**

BLACK & VEATCH CORPORATION  
2999 OAK ROAD  
WALWORTH, CA 94597

PROJECT NO. DRAWN BY CHECKED BY  
1924174211 MBS CAC

DATE DESCRIPTION

1 02/21/16 START CONTRACT

2 02/21/16 DESIGN FOR PERMIT

3 02/21/16 DESIGN FOR PERMIT

4 02/21/16 DESIGN FOR PERMIT

5 02/21/16 DESIGN FOR PERMIT

**PRELIMINARY**

IT IS HEREBY CERTIFIED THAT THE PERSON WHOSE NAME AND PROFESSIONAL LICENSE NUMBER ARE SHOWN ON THIS DOCUMENT IS THE DESIGNER OF THIS PROJECT.

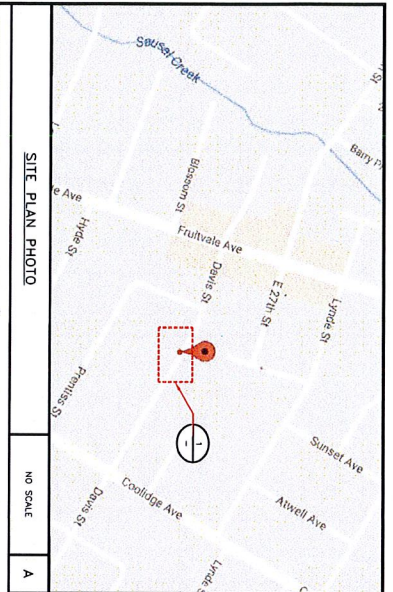
EXTENET SYSTEMS (CA) LLC  
2000 CROW CANYON PLACE  
SUITE 210  
SAN RAMON, CA 94583

SITE ADDRESS  
ADJACENT TO (IN PROW)  
3169 DAVIS STREET  
OAKLAND, CA 94601

SHEET TITLE  
**GN-1**

SHEET NUMBER

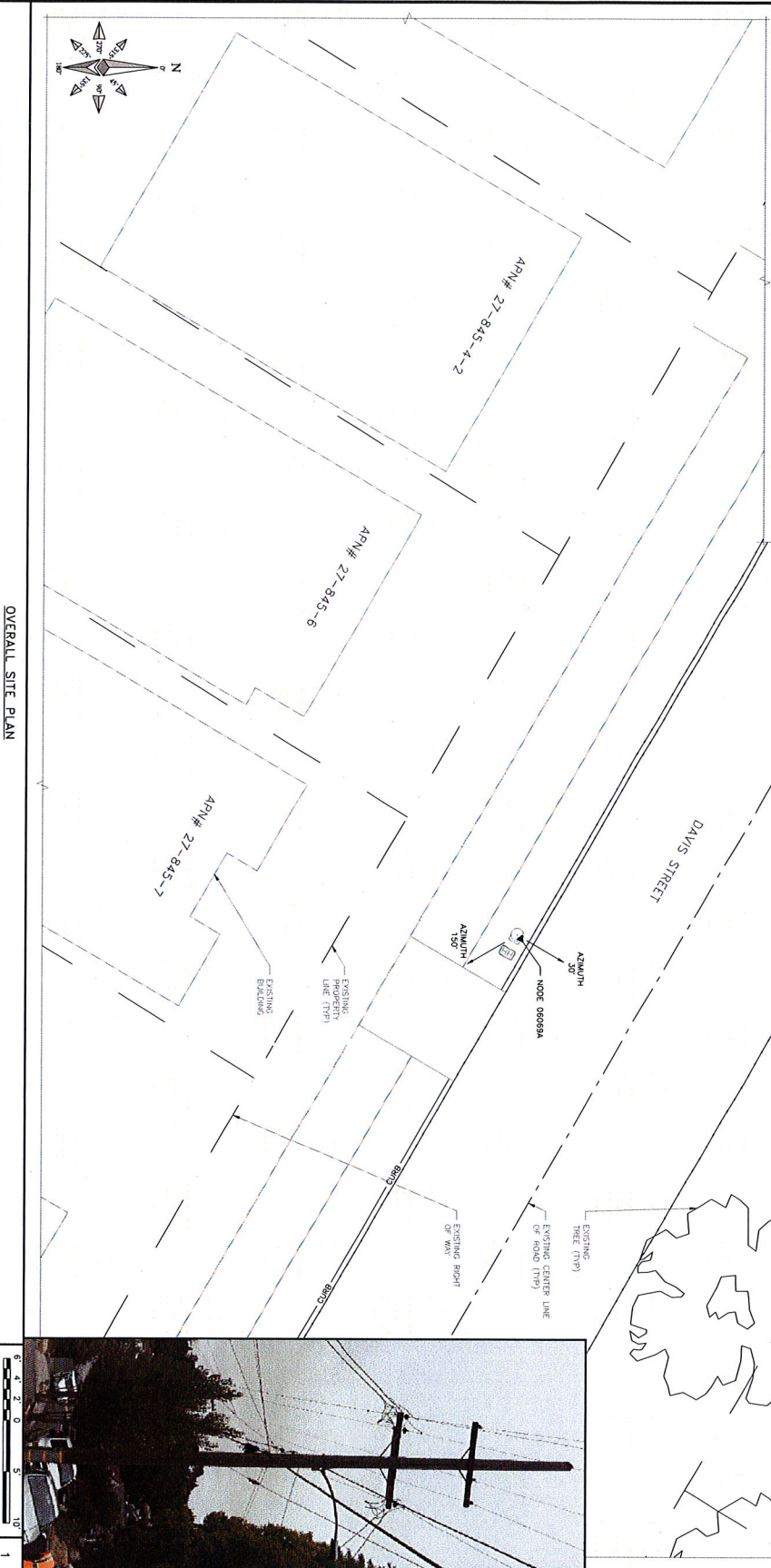
GENERAL NOTES AND LEGEND



SITE PLAN PHOTO

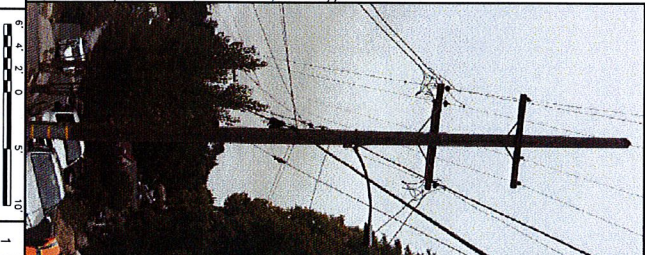
NO SCALE

A



OVERALL SITE PLAN

THIS DRAWING IS NOT A SITE SURVEY. THE PURPOSE OF THIS DRAWING IS TO SHOW HOW THE DEVELOPER IS PROPOSED TO ADJACENT PROPERTIES. NO DIMENSIONS ARE APPROXIMATIONS.



3/16" = 1'-0"



INTERNAL REVIEW  
 CONSTRUCTION SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_  
 RE SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_  
 REAL ESTATE SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

**BLACK & VEATCH**  
 BLACK & VEATCH CORPORATION  
 2895 OAK ST  
 WALNUT CREEK, CA 94597

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PROJECT NO. DRAWN BY CHECKED BY  
 1924174211 MBS GAC

REV	DATE	DESCRIPTION
C	09/22/16	CLIENT COMMENTS
B	09/13/16	ISSUED FOR REVIEW
A	09/12/16	ISSUED FOR REVIEW

**PRELIMINARY**

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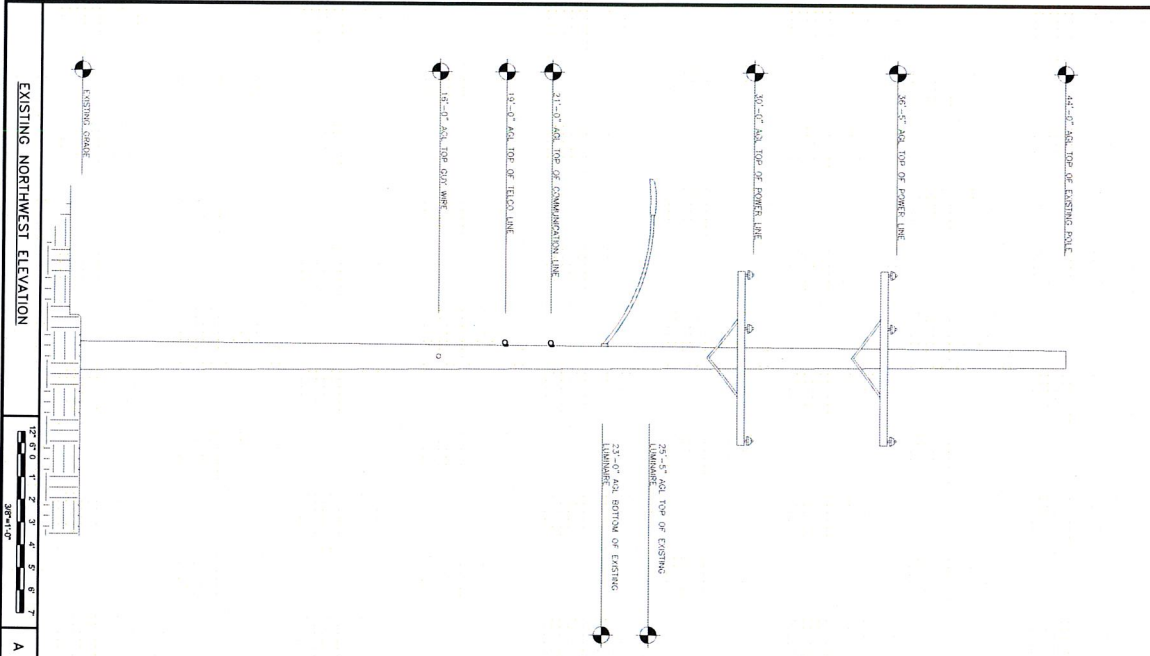
EXTENET SYSTEMS (CA) LLC  
 2000 CROW CANYON PLACE  
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 SAN RAMON, CA 94583

SITE ADDRESS  
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 OAKLAND, CA 94601

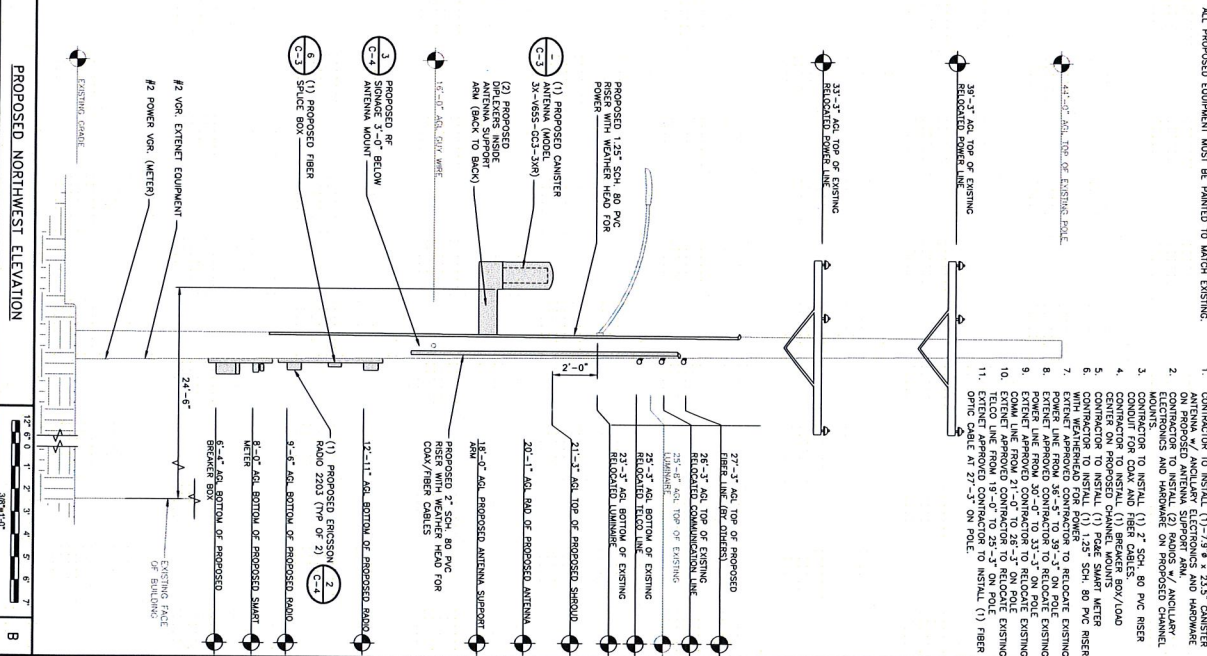
SHEET TITLE  
**OVERALL SITE PLAN**

SHEET NUMBER  
**C-1**

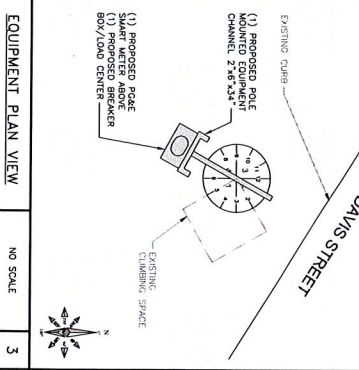
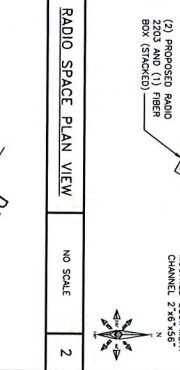
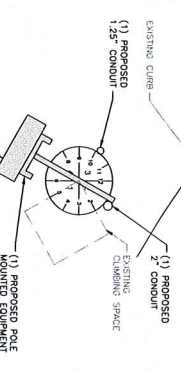
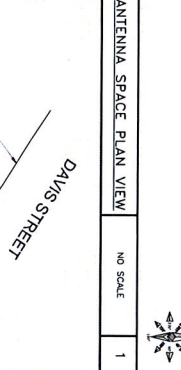
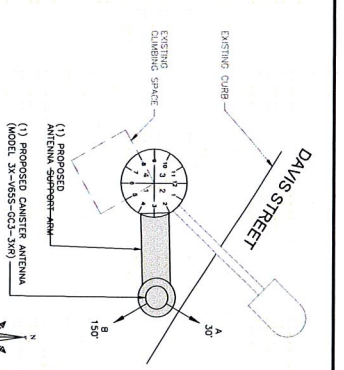
**NOTE**  
 THESE DRAWINGS HAVE BEEN CREATED BASED ON THE ASSUMPTION THAT THE STRUCTURE HAS SUFFICIENT CAPACITY TO SUPPORT THE WEIGHT OF THE ANTENNA. THE ARCHITECT IS NOT RESPONSIBLE FOR THE CORRECTNESS OF THE STRUCTURE'S DESIGN OR THE DESIGNER'S DESIGN CAPACITY OF THE STRUCTURE.



**NOTE**  
 ALL PROPOSED EQUIPMENT MUST BE FINISHED TO MATCH EXISTING.



- CABLE MANIFEST**
- CONTRACTOR TO INSTALL (1) 1.25" SCH. 80 PC RISER ANTENNA W/ ANCHURY ELECTRONICS AND HARDWARE ON PROPOSED ANTENNA SUPPORT ARM. ANCHURY ELECTRONICS AND HARDWARE ON PROPOSED CHANNEL MOUNTS.
  - CONTRACTOR TO INSTALL (1) 1.25" SCH. 80 PC RISER CONDUIT FOR COAX AND FIBER CABLES.
  - CONTRACTOR TO INSTALL (1) BREAKER BOX/LOAD CENTER ON PROPOSED ANTENNA SUPPORT ARM.
  - CONTRACTOR TO INSTALL (1) POLE SMART METER ON PROPOSED ANTENNA SUPPORT ARM.
  - CONTRACTOR TO INSTALL (1) 1.25" SCH. 80 PC RISER CONDUIT TO INSTALL (1) POLE SMART METER ON PROPOSED ANTENNA SUPPORT ARM.
  - EXTENET APPROVED CONTRACTOR TO RELOCATE EXISTING POWER LINE FROM 38'-0" TO 33'-0" ON POLE.
  - EXTENET APPROVED CONTRACTOR TO RELOCATE EXISTING POWER LINE FROM 33'-0" TO 27'-0" ON POLE.
  - EXTENET APPROVED CONTRACTOR TO RELOCATE EXISTING FIELD LINE FROM 19'-0" TO 25'-0" ON POLE.
  - EXTENET APPROVED CONTRACTOR TO RELOCATE EXISTING OPTIC CABLE AT 27'-0" ON POLE.



INTERNAL REVIEW \_\_\_\_\_ DATE \_\_\_\_\_  
 CONSTRUCTION SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_  
 RF SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_  
 REAL ESTATE SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_



**BLACK & VEATCH**  
 BLACK & VEATCH CORPORATION  
 250 SUTTER STREET, SUITE 400  
 WALNUT CREEK, CA 94597

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PROJECT NO.	DRAWN BY	CHECKED BY
1924174211	MBS	QAC

**PRELIMINARY**

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE REGISTERED ENGINEERS, ARCHITECTS OR PROFESSIONAL LANDSCAPE ARCHITECTS, TO ALTER THIS DOCUMENT.

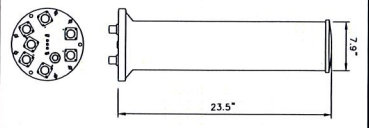
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 SAN RAMON, CA 94583

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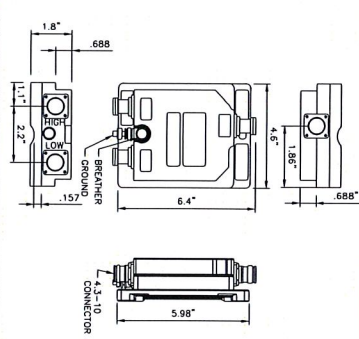
SHEET TITLE  
 UTILITY POLE ELEVATIONS  
 AND RISER DETAILS

SHEET NUMBER  
**C-2**

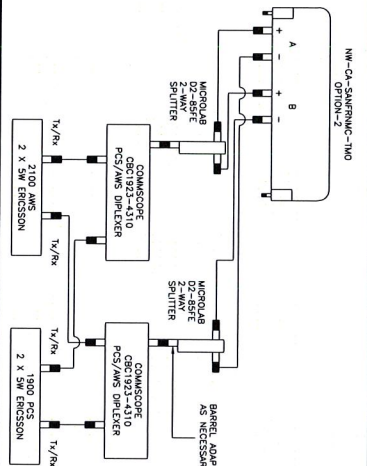
**COMSCOPE 3X-V655-GC3-3XR**  
 RADIO COLOR: LIGHT GREY  
 RADIO MATERIAL: FIBERGLASS, UV RESISTANT  
 DIAMETER: 7.9" (200mm)  
 HEIGHT: 23.5" (596mm)  
 TOTAL WEIGHT (WITHOUT BRACKETS): 7.2 kg (15.9 LB)  
 CONNECTOR INTERFACE: 4-1-9.5 OM FEMALE  
 RF CONNECTOR LOCATION: BOTTOM  
 RF CONNECTOR QUANTITY: 6



**PROPOSED ANTENNA**

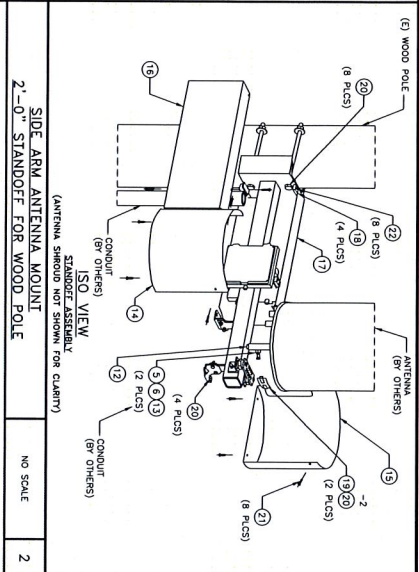


**COMMSCOPE CBC 1923-4310/ E11F13P20**



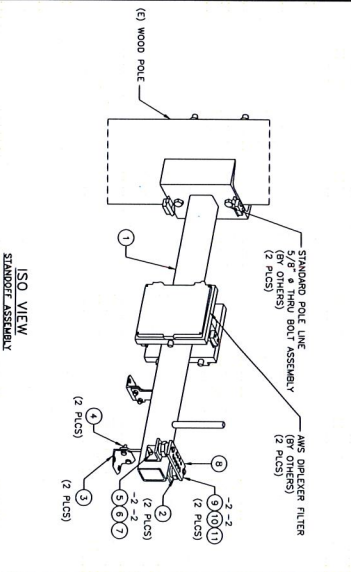
**ANTENNA CONFIGURATION**

NO SCALE 7



**2'-0" STANDOFF FOR WOOD POLE**

NO SCALE 2

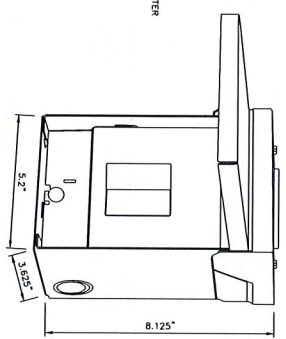


**2'-0" STANDOFF FOR WOOD POLE**

NO SCALE 5

**MURRAY LWO02GRU SPECIFICATION**

LOAD CENTER DEPTH: 3.625"  
 LOAD CENTER WIDTH: 5.2"  
 LOAD CENTER HEIGHT: 8.125"  
 LOAD CENTER TYPE: MAIN LUG  
 MOUNTING TYPE: PLUG IN  
 NUMBER OF PHASES: 1  
 NUMBER OF WINDINGS: 1  
 VOLTAGE (VOLTS): 120/240  
 INDICATOR/OUTDOOR: OUTDOOR  
 ESTIMATED WINDLOAD TYPE: LOAD CENTER



**MURRAY LWO02GRU**

NO SCALE 8

ITEM #	PART #	DESCRIPTION	QTY	UNIT	WT. (LBS)
1	WA-714	STANDOFF ARM ASSEMBLY PARTS/HOMER	1		4.3
2	SS-514	3/8"x1/8"x3/8"-2" STANDOFF ARM W/DMNT	2		0.5
3	SS-516	3/8"x1/8"x3/8" ASS. ANGLE	2		0.4
4	15200	3/8"x1/8" FULLY THRO BOLT/NU/1/W. CALV.	4		0.1
5	41010	3/8"x1/8" ASS. A-HEX NUT. CALV.	2		0.01
6	51000	3/8"x1/8" ASS. A-HEX NUT. CALV.	2		0.01
7	80226	BUS BAR ASSEMBLY PARTS / HOMER	1		0.19
8	PL-718	1/4"x2" COPPER BUS BAR	4		0.8
9	43010	3/8" LOCK COPPER BUS BAR	4		0.1
10	71017	3/8"x4/8" FULLY THRO S.S. BOLT	4		0.04
11	50060	3/8" STANDOFF INSULATOR (559840)	2		0.1
12	WA-688	3/8"x7" 0.5 ASS. TOP CAP W/DMNT	1		2.2
13	16250	3/8" 9x1 1/2" ASS. FULLY THRO BOLT. CALV.	2		0.1
14	41010	3/8" LOCK WASHER. CALV.	2		0.01
15	51000	3/8" ASS. A-HEX NUT. CALV.	2		0.02
14	WA-715L	1/4"x1/2" 1/8"x1/4" 5/8" 10. E.C. FORMED PLATE W/DMNT	1		8
15	WA-715R	1/4"x1/2" 1/8"x1/4" 5/8" 10. E.C. FORMED PLATE W/DMNT	1		8
16	PL-1284	1/4"x1/2" 5/8"x2"-0 7/8" E.C. FORMED COVER	1		9.9
17	PL-1287	1/4"x1/2" 5/8"x2"-0 7/8" E.C. FORMED COVER	1		9.9
18	PL-1281	1/2"x1/2" ASS. PLATE	4		0.3
19	14259-4	110x41 1 1/2"x2 1/2" ASS. FORMED PLATE	2		0.1
20	35500	1/4"-20 U-STYLE SPEED NUT. BLACK PHOSPHATE	16		0.02
21	70217	1/4"x1/4" SS FLOD BUTT-ND SCRT CAP SCRW	18		0.02
22	70218	1/4"x1/4" 1/4" SS FLOD BUTT-ND SCRT CAP SCRW	18		0.03
TOTAL CALV. WT. = 88LBS					

**ANTENNA SHROUD PARTS TABLE**

**F1-4868-FSS FUSION SPlice ENCLOSURE**

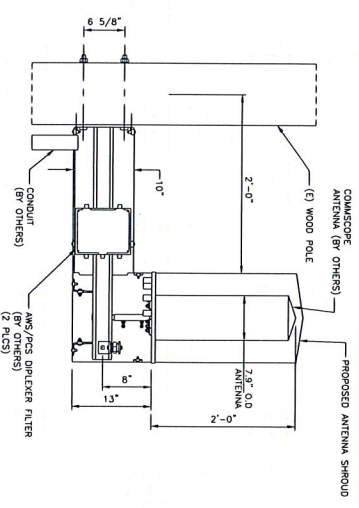
DEPTH: 2 1/8" (0)  
 HEIGHT: 6 3/4" (H)  
 WIDTH: 4 3/4" (W)

**FIBER SPlice BOX**



**2'-0" STANDOFF FOR WOOD POLE**

NO SCALE 6



**2'-0" STANDOFF FOR WOOD POLE**

NO SCALE 9

**extenef**  
 interconnected  
 SYSTEMS  
 ENGINEERING

INTERNAL REVIEW DATE  
 CONSTRUCTION SIGNATURE DATE  
 RF SIGNATURE DATE  
 FINAL ESTIMATE SIGNATURE DATE



**BLACK & VEATCH**  
 BLACK & VEATCH CORPORATION  
 SUITE 400  
 2399 OAK ROAD  
 WALNUT CREEK, CA 94597

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PROJECT NO. BSHWH BR CHECKED BY  
 192417.4211 MBS DAC

REV	DATE	DESCRIPTION
C	09/22/16	CLIENT COMMENTS
B	09/13/16	ISSUED FOR REVIEW
A	09/12/16	ISSUED FOR REVIEW

**PRELIMINARY**

IF IN VIOLATION OF LAW FOR ANY REASON, THE USER OF THESE DRAWINGS SHALL BE RESPONSIBLE FOR ALL DAMAGES AND COSTS INCURRED BY THEM.

**EXTENET SYSTEMS (CA) LLC**  
 2000 CROW CANYON PLACE  
 SUITE 210  
 SAN RAMON, CA 94583

SITE ADDRESS  
 ADJACENT TO (IN PROJ)  
 3169 DAVYS STREET  
 OAKLAND, CA 94601

SHEET TITLE  
 EQUIPMENT DETAILS  
 SHEET NUMBER  
**C-3**



INTERNAL REVIEW \_\_\_\_\_ DATE \_\_\_\_\_  
 CONSTRUCTION SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_  
 RF SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_  
 REAL ESTATE SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

**BLACK & VEATCH**  
 BLACK & VEATCH CORPORATION  
 2999 DAK ROAD  
 WALNUT CREEK, CA 94597

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PROJECT NO.	192417-4211	DRAWN BY	MBS	CHECKED BY	QAC
DATE	09/27/16	ISSUED FOR REVIEW	09/27/16	ISSUED FOR REVIEW	09/27/16
REV	DATE	DESCRIPTION			

**PRELIMINARY**

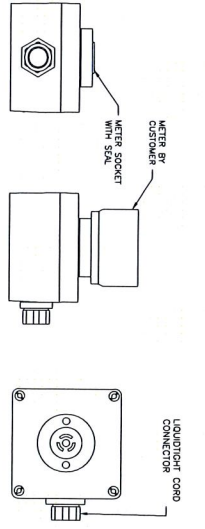
IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE HAVING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT.

EXTENET SYSTEMS (CA) LLC  
 2000 CROWN CANYON PLACE  
 SUITE 210  
 SAN RAMON, CA 94583

SITE ADDRESS  
 ADJACENT TO (IN PROW)  
 3169 DAVIS STREET  
 OAKLAND, CA 94601

SHEET TITLE  
 EQUIPMENT DETAILS  
 SHEET NUMBER  
**C-4**

NOT USED

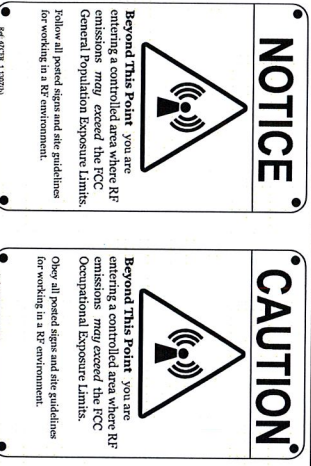


PROPOSED METER ADAPTER

NO SCALE

5

NOT USED



RF SIGNAGE DETAIL

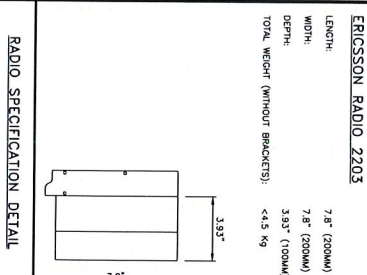
NO SCALE

3

SMART METER/BREAKER BOX DETAIL

NO SCALE

6

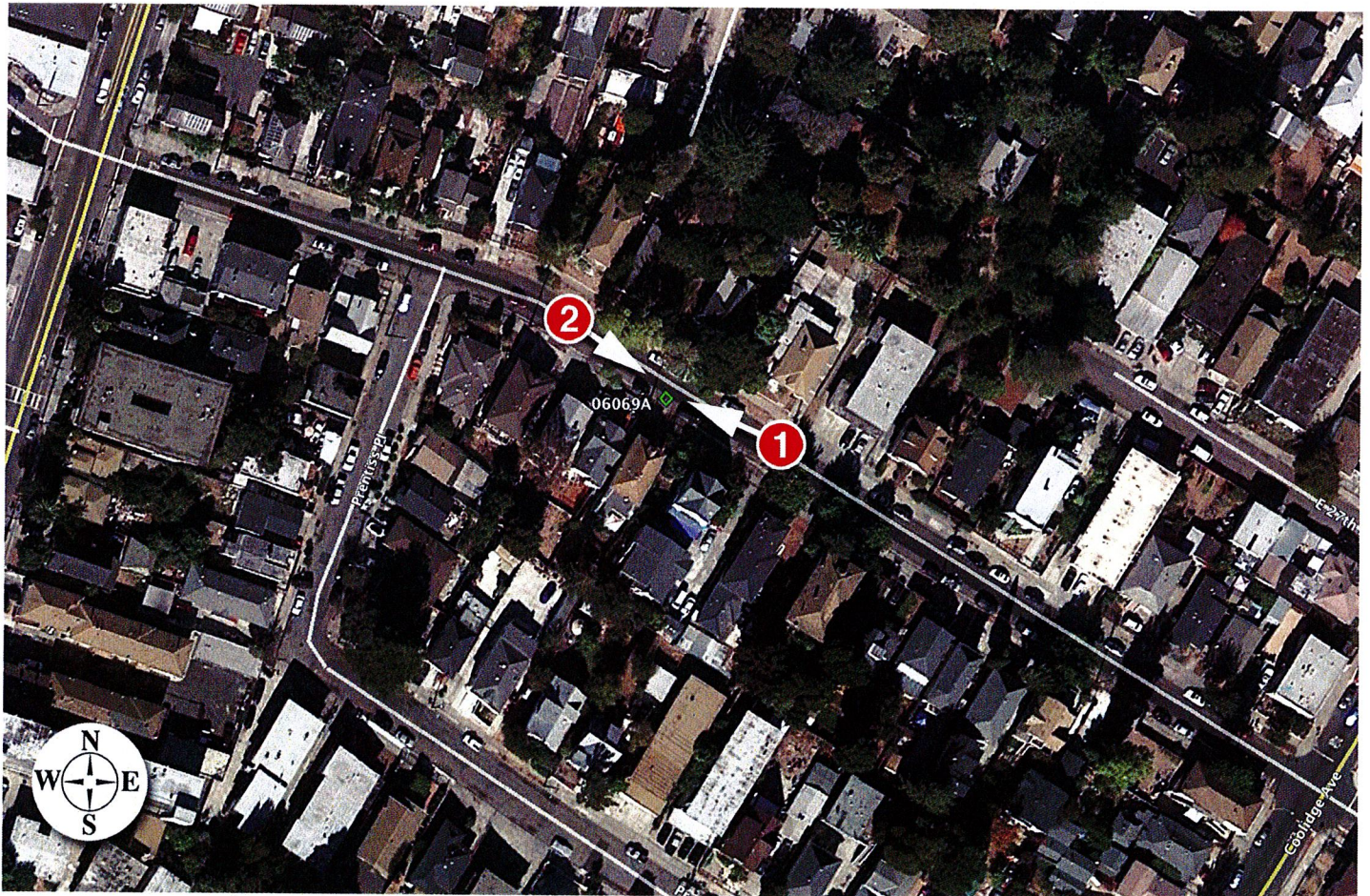


RADIO SPECIFICATION DETAIL

NO SCALE

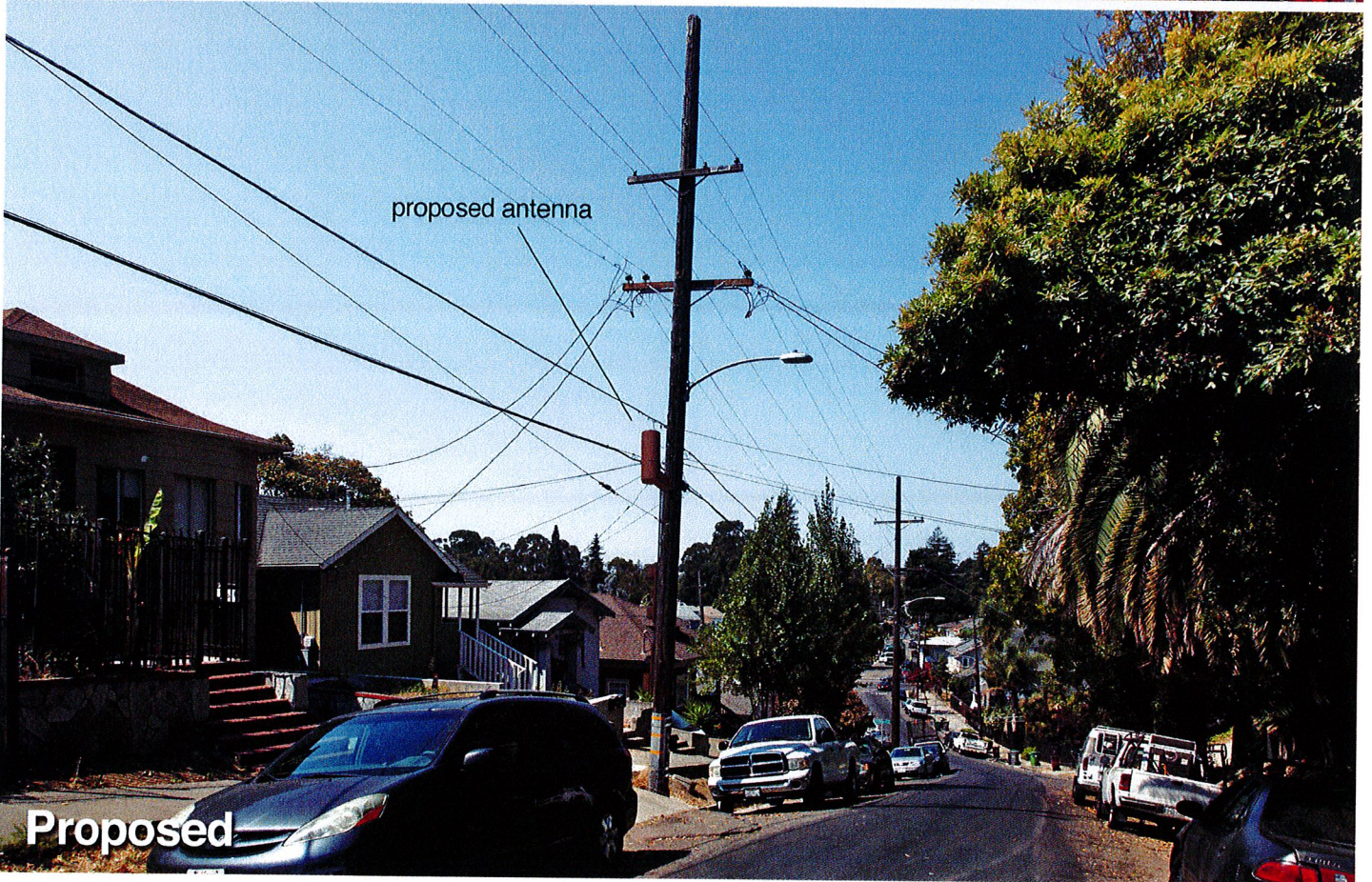
2

# ATTACHMENT A





Existing



proposed antenna

Proposed







**October 20, 2016**

City Planner  
Planning Department  
City of Oakland  
250 Frank Ogawa Plaza, 2<sup>nd</sup> Floor  
Oakland, CA 94612

**Re: Proposed ExteNet Small Cell Node Installation**  
**Applicant: ExteNet Systems (California) LLC**  
**Nearest Site Address: Public Right of Way near 3169 Davis Street**  
**Site ID: NW-CA-SANFRANMC Node 06069A**  
**Latitude/Longitude: 37.789393, -122.218840**

Dear City Planner,

On behalf of ExteNet Systems (California) LLC, this letter and attached materials are to apply for a design review permit to install a small cell node in the public right-of-way near 3169 Davis Street (“Node 06069A”).<sup>1</sup> The following is an explanation of the existing site, a project description of the designed facility, the project purpose and justifications in support of this proposal.

**A. Project Description.**

The proposed location for our facility currently consists of an approximate 44 foot tall wood utility pole in the public right-of-way on the south side of Davis Street just southeast of the intersection with Prentiss Place, at about 3169 Davis Street. Power lines are on the pole at about 30 feet and 36 feet above ground.

ExteNet proposes to utilize existing pole measuring 44 feet above ground and to affix one canister antenna within an antenna shroud on a proposed antenna support. The antenna, measuring 23.5 inches long and 7.9 inches in diameter, will be placed on an antenna support arm attached at 18 feet. Two proposed diplexers measuring 6.4 inches long, 4.6 inches wide and 1.8 inches deep will be placed within the side arm antenna mount. Two MRRUs measuring 7.9 inches tall, 7.9 inches wide and 3.9 inches deep will be placed on the pole at 9 feet 6 inches and 12 feet 11 inches. A miniature emergency shut-off safety switch and electricity meter will be placed on the pole at about eight feet above ground. All equipment will be painted brown to match the utility pole. Our proposal is depicted in the attached design drawings and photographic simulations.

This is an unmanned facility that will operate at all times (24 hours per day, seven days per week) and will be serviced about once per year. Our proposal will greatly benefit the area by improving wireless telecommunications service as detailed below.

**B. Project Purpose.**

---

<sup>1</sup> ExteNet expressly reserves all rights concerning the city’s jurisdiction to assert zoning regulation over the placement of wireless facilities in the public rights-of-way.

The purpose of this project is to provide T-Mobile third and fourth generation (3G and 4G) wireless voice and data coverage to the surrounding area where there is currently a significant gap in service coverage. These wireless services include mobile telephone, wireless broadband, emergency 911, data transfers, electronic mail, Internet, web browsing, wireless applications, wireless mapping and video streaming. The proposed node is part of a larger small cell providing coverage to areas of Oakland that are otherwise very difficult or impossible to cover using traditional macro wireless telecommunications facilities due to the local topography and mature vegetation. The attached radio frequency propagation maps depict T-Mobile's larger small cell project. Further radio frequency details are set forth in the attached Radio Frequency Statement, including propagation maps depicting existing and proposed coverage in the vicinity of Node 06069A.

A small cell network consists of a series of radio access nodes connected to small telecommunications antennas, typically mounted on existing wooden utility poles within the public rights-of-way, to distribute wireless telecommunications signals. Small cell networks provide telecommunications transmission infrastructure for use by wireless services providers. These facilities allow service providers such as T-Mobile to establish or expand their network coverage and capacity. The nodes are linked by fiber optic cable that carry the signal stemming from a central equipment hub to a node antenna. Although the signal propagated from a node antenna spans over a shorter range than a conventional tower system, small cell can be an effective tool to close service coverage gaps.

### **C. Project Justification, Alternative Site and Design Analysis.**

Node 06069A is an integral part of the overall small cell project, and it is located in a difficult coverage area near Coolidge Avenue. The coverage area consists of a primarily residential neighborhood off of Davis Street, Prentiss Place, Fruitvale, Coolidge Avenue, and surrounding areas. Node 06069A will cover transient traffic along the roadways and provide in-building service to the surrounding residences as depicted in the propagation maps, which are exhibits to the attached Radio Frequency Statement.

Based on ExteNet's analysis of alternative sites the currently proposed Node 06069A is the least intrusive means to close T-Mobile's significant service coverage gap in the area. Node 06069A best uses existing utility infrastructure, adding small equipment without disturbing the character of the neighborhoods served. Deploying a small cell node at an existing pole location minimizes any visual impact by utilizing an inconspicuous spot. By installing antennas and equipment at this existing pole location, T-Mobile does not need to propose any new infrastructure in this coverage area.

The small cell node RF emissions are also much lower than the typical macro site, they are appropriate for the area, and they are fully compliant with the FCC's requirements for limiting human exposure to radio frequency energy. The attached radio frequency engineering analysis provided by Hammett & Edison, Inc., Consulting Engineers, confirms that the proposed equipment will operate well within (and actually far below) all applicable FCC public exposure limits. The facility will also comply with California Public Utility Commission (CPUC) General Orders 95 (concerning overhead line design, construction and maintenance) and 170 (CEQA review) that govern utility use in the public right-of-way.

This proposed redesign is a viable design developed according to our discussions with the Planning Department. As discussed with City Planning, Node 06069A is the least intrusive option. Also the proposed location is a good coverage option because it sits at a spot from which point T-Mobile can adequately propagate its wireless signal.

ExteNet considered alternative sites on other utility poles in this area but none of these sites is as desirable from construction, coverage or aesthetics perspectives. The proposed location is approximately equidistant from other small cell nodes that ExteNet plans to place in surrounding hard-to-reach areas, so that service coverage can be evenly distributed. The proposed facility is not in the path of any protected view sheds. The other utility poles in the area are more conspicuous than the proposed pole. In addition to the utility pole proposed to host Node 06069A, ExteNet considered alternative sites set forth in the attached Alternative Site Analysis.

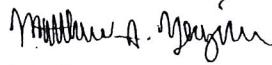
Alternative designs were considered including placing equipment inside of a ground-mounted cabinet. However, the pole-mounted equipment would better suit the area because it would blend in with the pole. We also evaluated whether equipment could be undergrounded but unfortunately this is not possible because there is insufficient right-of-way space for the necessary equipment access and the equipment would be compromised from saturation by rainwater. The antennas cannot be undergrounded because they rely on a line-of-site in order to properly transmit a signal.

Drawings, propagation maps, photographic simulations, and a radio-frequency engineering analysis are included with this packet.

As this application seeks authority to install a wireless telecommunication facility, the FCC's Shot Clock Order<sup>2</sup> requires the city to issue its final decision on ExteNet's application within 150 days. We respectfully request expedited review and approval of this application. Feel free to contact me if you have any questions. Thank you.

Thank you.

Best Regards,  
EXTENET SYSTEMS



*Matthew S. Yergovich*

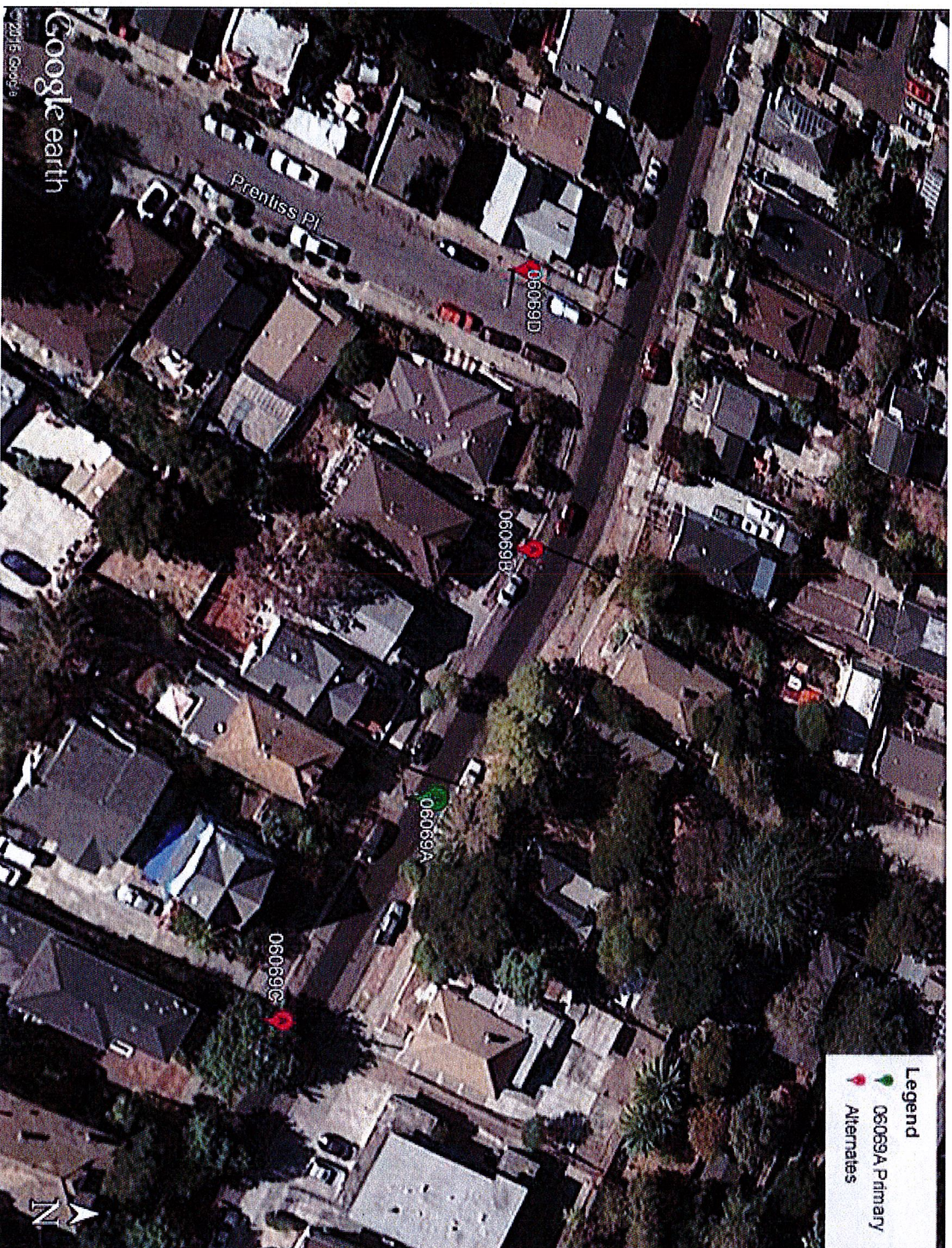
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<sup>2</sup> See Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B), WT Docket No. 08-165, Declaratory Ruling, 24 F.C.C.R. 13994 (2009).



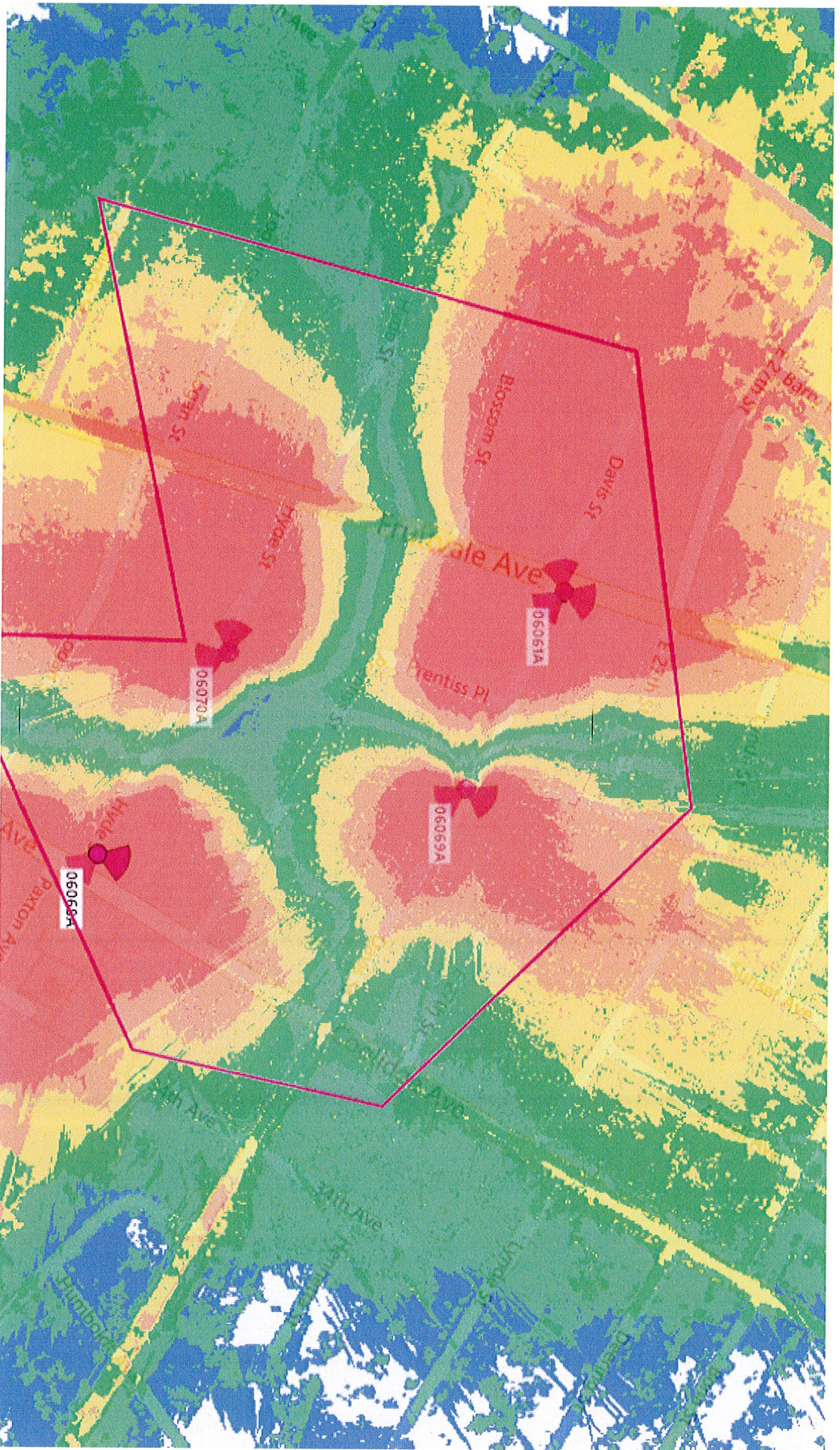
**EXTENET OAKLAND  
NODE 06069A  
ALTERNATIVE SITE ANALYSIS**

## MAP OF ALTERNATIVE POLES EVALUATED FOR NODE 06069A



- The above maps depict ExtNet's proposed Node 06069A in relation to other poles in the area that were evaluated as possibly being viable alternative candidates.
- The following is an analysis of each of those 3 alternative locations.

# PROPAGATION MAP OF NODE 060699A



This propagation map depicts the ExtNet proposed Node 060699A in relation to surrounding proposed ExtNet small cell nodes.

## 06069A - PROPOSED LOCATION



- The location for ExteNet's proposed Node 06069A is a joint utility pole located adjacent to PROW at 3169 Davis Street (37.789393, -122.21884).
- ExteNet's objective is to provide T-Mobile 4G wireless coverage and capacity to the Oakland area.
- ExteNet evaluated this site and nearby alternatives to verify that the selected site is the least intrusive means to close T-Mobile's significant service coverage gap.



## ALTERNATIVE NODE 06069B



- Node 06069B is a joint utility pole next to 3151 Davis Street (37.789517, -122.219178).
- This pole is not a viable alternative candidate because cross lines and cross arms prevent adequate climbing space on the pole pursuant to CPUC General Order 95, thus prohibiting a wireless facility from being installed at this location.
- This pole is not a viable alternative candidate because this pole is located too close to primary Node 06061A.

## ALTERNATIVE NODE 06069C



- Node 06069C is at a joint utility pole at 3201 Davis Street (37.789536, -122.219191)
- This pole is not a viable alternative candidate because cross lines and cross arms prevent adequate climbing space on the pole pursuant to CPUC General Order95, thus prohibiting a wireless facility from being installed at this location.
- This pole is not a viable alternative because the signal would be blocked by a tree.
- This pole is not a viable alternative candidate because this pole is located too far to primary Node 06061A.

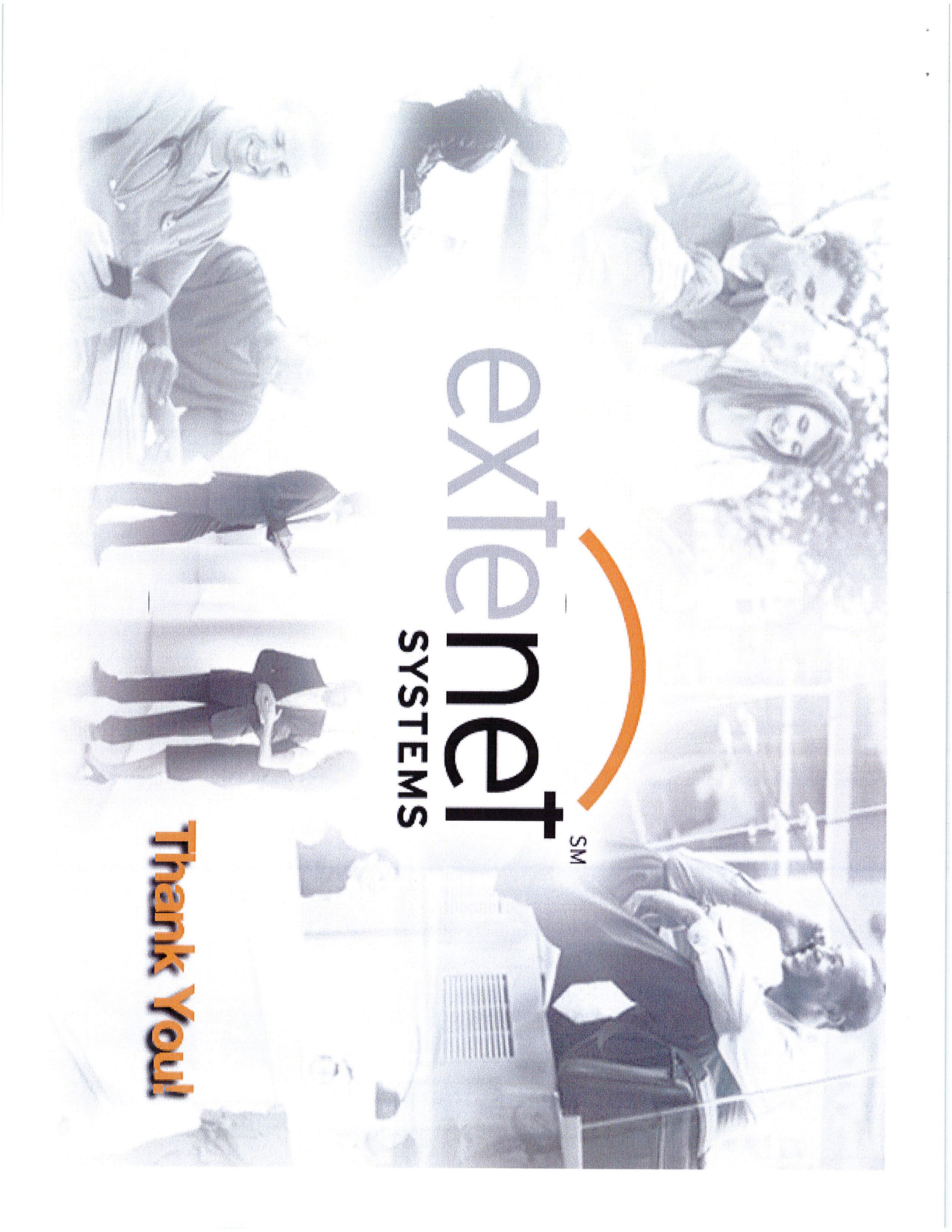
## ALTERNATIVE NODE 06069D



- Node 06069D is at a joint utility pole near 3284 Hyde Street (37.787506, -122.218653).
- This pole is not a viable alternative candidate because this pole is located too close to primary Node 06061A.

# ALTERNATIVE SITE ANALYSIS CONCLUSION

Based on ExteNet's analysis of alternative sites, the currently proposed Node 06069A is the least intrusive location from which to fill the surrounding significant wireless coverage gaps.



**extenet**  
SM  
SYSTEMS

**Thank You!**

**ExteNet Systems CA, LLC • Proposed DAS Node (Site No. 06069A)  
3169 Davis Street • Oakland, California**

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

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of ExteNet Systems CA, LLC, a wireless telecommunications carrier, to evaluate the addition of Node No. 06069A to be added to the ExteNet distributed antenna system (“DAS”) in Oakland, California, for compliance with appropriate guidelines limiting human exposure to radio frequency (“RF”) electromagnetic fields.

**Executive Summary**

ExteNet proposes to install a directional panel antenna on a utility pole sited in the public right-of-way at 3169 Davis Street in Oakland. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

**Prevailing Exposure Standards**

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

Wireless Service	Frequency Band	Occupational Limit	Public Limit
Microwave (Point-to-Point)	5,000–80,000 MHz	5.00 mW/cm <sup>2</sup>	1.00 mW/cm <sup>2</sup>
BRS (Broadband Radio)	2,600	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	2.35	0.47
[most restrictive frequency range]	30–300	1.00	0.20

Power line frequencies (60 Hz) are well below the applicable range of these standards, and there is considered to be no compounding effect from simultaneous exposure to power line and radio frequency fields.

**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.



**ExteNet Systems CA, LLC • Proposed DAS Node (Site No. 06069A)**  
**3169 Davis Street • Oakland, California**

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

**Computer Modeling Method**

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, “Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation,” dated August 1997. Figure 2 attached 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 ExteNet, including drawings by Black & Veatch Corporation, dated September 22, 2016, it is proposed to install one CommScope Model 3X-V65S-GC3-3XR, 2-foot tall, tri-directional cylindrical antenna, with two directions activated, on a cross-arm to be added to a utility pole sited in the public right-of-way in front of the residence located at 3169 Davis Street in Oakland. The antenna would employ no downtilt, would be mounted at an effective height of about 20 feet above ground, and its principal directions would be oriented toward 30°T and 150°T. T-Mobile proposes to operate from this facility with a maximum effective radiated power in any direction of 122 watts, representing simultaneous operation at 61 watts for AWS and 61 watts for PCS service. There are reported no other wireless telecommunications base stations at this site or nearby.

**Study Results**

For a person anywhere at ground, the maximum RF exposure level due to the proposed T-Mobile operation is calculated to be 0.0026 mW/cm<sup>2</sup>, which is 0.26% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 2.5% 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.

**ExteNet Systems CA, LLC • Proposed DAS Node (Site No. 06069A)  
3169 Davis Street • Oakland, California**

**Recommended Mitigation Measures**

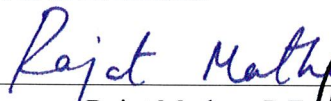
Due to its mounting location and height, the ExteNet antenna would not be accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training be provided to all authorized personnel who have access to the antenna, including employees and contractors of the utility companies. No access within 1 foot directly in front of the antenna itself, such as might occur during certain activities, should be allowed while the base station is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Posting explanatory signs\* on the pole at or below the antenna, such that the signs would be readily visible from any angle of approach to persons who might need to work within that distance, would be sufficient to meet FCC-adopted guidelines.

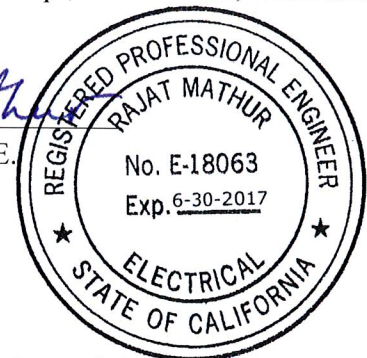
**Conclusion**

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the node proposed by ExteNet Systems CA, LLC, at 3169 Davis Street in Oakland, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations. Training personnel and posting signs is recommended to establish compliance with occupational exposure limitations.

**Authorship**

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration No. E-18063, which expires on June 30, 2017. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

  
Rajat Mathur, P.E.  
707/996-5200



October 5, 2016

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

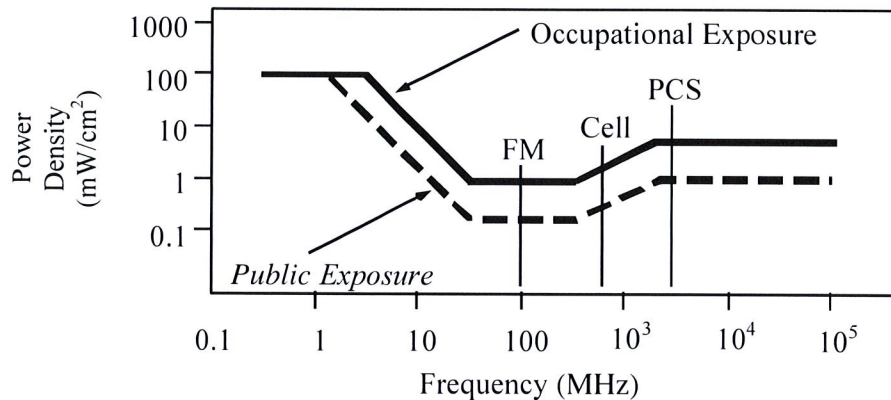


## FCC Radio Frequency Protection Guide

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

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

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



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



## RFR.CALC™ Calculation Methodology

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

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

#### Near Field.

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

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

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

where  $\theta_{BW}$  = half-power beamwidth of the antenna, in degrees, and

$P_{net}$  = net power input to the antenna, in watts,

$D$  = distance from antenna, in meters,

$h$  = aperture height of the antenna, in meters, and

$\eta$  = aperture efficiency (unitless, typically 0.5-0.8).

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

#### Far Field.

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

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

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.



November 18, 2016

City Planner  
Planning Department  
City of Oakland  
250 Frank H. Ogawa Plaza, 2<sup>nd</sup> Floor  
Oakland, CA 94612

**Re: Public Outreach Summary**

**Applicant:** ExteNet Systems (California) LLC  
**Nearest Site Address:** Public Right of Way near 3169 Davis Street  
**Site ID:** NW-CA-SANFRNMC-TMO Node 06069A  
**Latitude/Longitude:** 37.789393, -122.21884  
**Planning Application:** PLN16137

Dear City Planner,

This week we notified the following groups by sending them the attached project flier:

- Friends of Peralta Hacienda Historical Park
- Unity Council/ Fruitvale Business Improvement District

Feel free to contact me if you have any questions. Thank you.

Best Regards,

A handwritten signature in blue ink that reads "Ana Gomez/BV for ExteNet".

Ana Gomez  
ExteNet Permitting Contractor



# ExteneNet is improving wireless service in Oakland!

November 11, 2016

ExteneNet Systems is a neutral host telecommunications infrastructure provider that is working to improve wireless service in Oakland.

We will soon be proposing to install fiberoptic cables and state-of-the-art small cell wireless facilities at existing telephone pole and light pole locations in the Oakland public right-of-way.

Telecommunications carriers transmit their signal through ExteneNet's facilities to improve wireless voice, data, and public safety connectivity.

Although experiences with wireless services vary based on specific location and usage times, the wireless service proposed by this infrastructure will help meet existing, fluctuating and future demands.

Please see attached examples of actual ExteneNet facilities like the ones we will be proposing in Oakland.

## **Want to learn more?**

Please visit <http://www.extenetsystems.com/> or email [myergovich@extenetsystems.com](mailto:myergovich@extenetsystems.com).





November 15, 2016

City Planner  
Planning Department  
City of Oakland  
250 Frank H. Ogawa Plaza, 2<sup>nd</sup> Floor  
Oakland, CA 94612

**Re: GO 95 Required Two Feet Clearance Between Antenna and Pole**  
**Applicant: ExteNet Systems (California) LLC**  
**Nearest Site Address: Public Right of Way near 3169 Davis Street**  
**Site ID: NW-CA-SANFRNMC-TMO Node 06069A**  
**Latitude/Longitude: 37.789393, -122.21884**  
**Planning Application: PLN16137**

Dear City Planner,

This letter is in response to discussions with City of Oakland Planning Department seeking clarification on the proposed antenna placement on the utility pole.

Wireless facility attachments to utility poles must comply with CPUC General Order 95 design, safety and clearance standards. Specifically, Rule 94.4(B) states: *Antennas shall maintain a 2 ft horizontal clearance from centerline of pole when affixed between supply and communication lines or below communication lines.* This rule precludes ExteneNet from placing the antennas flush mounted to the utility pole when there is a power source attached to the pole. ExteneNet minimized the clearance as much as possible by placing the antenna shroud just over two feet from the centerline of the utility pole.

Feel free to contact me if you have any questions. Thank you.

Thank you.

Best Regards,

A handwritten signature in blue ink that reads "Ana Gomez / BV for ExteneNet".

Ana Gomez  
ExteneNet Permitting Contractor