Location:	**Utility pole in sidewalk adjacent to: 1170 88th Ave, along B St (See map on reverse)**
Assessor's Parcel Number:	**Adjacent to: 042 -4275-001-00**
Proposal:	To establish a "small cell site" telecommunications facility, in order to enhance existing services, by attaching an antenna and equipment up to 23'-3" on a 38' wooden utility pole that replaces a 30' pole located in the public right-of-way (sidewalk).
Applicant / Phone Number:	Ana Gomez/Black & Veatch & Extenet (for: T-Mobile) (913) 458-9148
Pole Owner:	Extenet, et al.
Planning Permits Required:	Regular Design Review with additional findings for Macro Telecommunications Facility
General Plan:	Detached Unit Residential
Zoning:	RD-1 Detached Unit Residential Zone
Environmental Determination:	Exempt, Section 15301 of the State CEQA Guidelines: Existing Facilities; Exempt, Section 15302: Replacement or Reconstruction; Exempt, Section 15303: New Construction of Small Structures; Section 15183: Projects Consistent with a Community Plan, General Plan or Zoning
Historic Status:	Non-historic property
City Council District:	7
Date Filed:	December 2, 2016
Action to be Taken:	Approve with conditions
Finality of Decision:	*Appealable to City Council within 10 days*
For Further Information:	Contact case planner **Aubrey Rose, AICP** at **(510) 238-2071** or arose@oaklandnet.com

SUMMARY

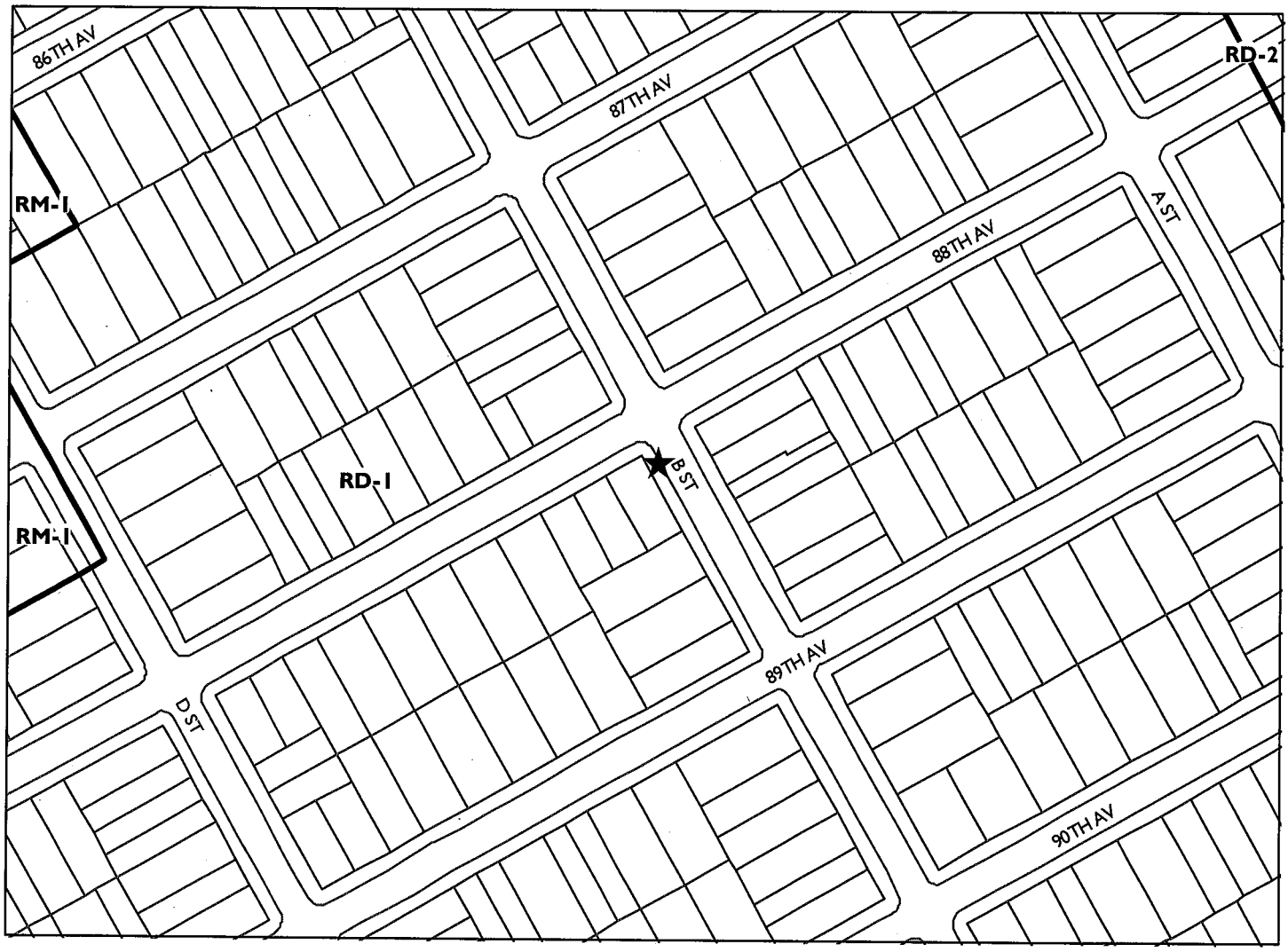
The applicant requests Planning Commission approval of a Regular Design Review with additional findings to establish a Macro Telecommunications Facility ("small cell site"). The purpose is to enhance existing wireless services. The project involves attaching an antenna and equipment up to 23'-3" on a 38-foot wooden utility pole that will replace the existing 30-foot pole located in the public right-of-way (sidewalk).

Staff recommends approval, subject to conditions, as described in this report.

BACKGROUND

For several years in the City of Oakland, telecommunications carriers have proposed facility installation within the public right-of-way, instead of private property. These facilities typically consist of antennas and associated equipment attached to utility poles or street light poles. Poles are often replaced with replicas for technical purposes. The main purpose is to enhance existing service, given increasing technological demands for bandwidth, through new technology and locational advantages. The City exercises zoning jurisdiction over such projects in response to a 2009 State Supreme Court case decision (Sprint v. Palos Verdes Estates). Pursuant to the Planning Code, utility or joint pole authority (JPA) sites are classified by staff as "Macro Facilities," and street light pole sites (lamps, not traffic signals) as "Monopole Facilities." For JPA poles, only Design Review approval may be required, as opposed to Design Review and a Conditional Use Permit, for example. For non-JPA pole sites, such as City light poles, projects also require review by the City's Public Works Agency (PWA) and Real Estate Division,

CITY OF OAKLAND PLANNING COMMISSION



Case File: PLN16403
Applicant: Ana Gomez/Black & Veatch & Extenet (for: T-Mobile)
Address: Utility pole in sidewalk adjacent to: 1170 88th Avenue (on B Street side)
Zone: RD-1

and involve other considerations such as impacts to historical poles. The PWA may also review projects involving street lights. In either case, the practice has been to refer all such projects to the Planning Commission for decision when located in or near a residential zone.

Several projects for new DAS (distributed antenna services) facilities have come before the Planning Commission for a decision and have been installed throughout the Oakland Hills. Some applications have been denied due to view obstructions or propinquity to residences. Improved practices for the processing of all types of sites incorporating Planning Commission direction have been developed as a result. Conditions of approval typically attach requirements such as painting and texturing of approved components to more closely match utility poles in appearance. Approvals do not apply to any replacement project should the poles be removed for any reason. As with sites located on private property, the Federal Government precludes cities from denying an application on the basis of emissions concerns if a satisfactory emissions report is submitted. More recent Federal changes have streamlined the process to service existing facilities.

Currently, telecommunications carriers are in the process of attempting to deploy "small cell sites." These projects also involve attachment of antennas and equipment at public right-of-way facilities such as poles or lights for further enhancement of services. However, components are now somewhat smaller in size than in the past. Also, sites tend to be located in flatland neighborhoods and Downtown where view obstructions are less likely to be an issue. Good design and placement is given full consideration nonetheless, especially with the greater presence of historic structures in Downtown. Additionally, given the sheer multitude of applications, and, out of consideration for Federal requirements for permit processing timelines, staff may develop alternatives to traditional staffing and agendizing.

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, consult the following:

Competition & Infrastructure Policy Division (CIPD) of the Wireless Telecommunications Bureau, main division number: (202) 418-1310.

Main division website:
https://www.fcc.gov/general/competition-infrastructure-policy-division-wireless-telecommunications-bureau

Tower siting:
https://www.fcc.gov/general/tower-and-antenna-siting

SITE DESCRIPTION

The project site consists of a 30-foot tall wooden utility pole in the sidewalk along B Street towards the corner of 88th Avenue. The pole hosts power lines and masts at various locations towards its top and a City light over the street. The lines run along both streets. The pole is situated along the side of a one-story single family home's front yard which is landscaped and faces 88th Avenue. It is lined up with the home's front yard fence and is set back 20'1" from the house. The neighborhood consists of residences as well as a church on an opposite corner. The public rights-of-way measure sixty-feet in width and the sidewalks including planter strips measure approximately 13-feet in width.

PROJECT DESCRIPTION

The proposal is to establish a Macro Telecommunications Facility ("small cell site"), in order to enhance existing wireless service. The project would involve replacing the 30-feet wooden utility pole with a 38-foot pole, attaching an antenna and equipment up to 23'-3", and raising the height of the City light. Various equipment would be installed projecting over the sidewalk between 7'-4" to approximately 13'-1" in height. The purpose of the pole and City light height increases are to conform to California Public Utility Commission (CPUC) standards.

GENERAL PLAN ANALYSIS

The site is located in a Detached Unit Residential area under the General Plan's Land Use and Transportation Element (LUTE). The intent of the area is: "to create, maintain, and enhance residential areas characterized by detached, single unit structures." Given residential and other customers increasing reliance upon cellular service for phone and internet, the proposal for a macro telecommunications facility that is not adjacent to a primary living space or historic structure conforms to this intent.

Staff therefore finds the proposal, as conditioned, to conform to the General Plan.

ZONING ANALYSIS

The site is located within the RD-1 Detached Unit Residential Zone. The intent of the RD-1 Zone is: "to create, maintain, and enhance areas with detached, single unit structures. A limited number of commercial uses will be permitted or conditionally permitted in existing Nonresidential Facilities." Macro telecommunications facilities on JPA poles require a Regular Design Review with additional findings when located in residential zones. New wireless telecommunications facilities may also be subject to a Site Alternatives Analysis, Site Design Alternatives Analysis, and a satisfactory radio-frequency (RF) emissions report. Staff analyzes the proposal in consideration of these requirements in the 'Key Issues and Impacts' section of this report. Given residential and other customers increasing reliance upon cellular service for phone and wi-fi, the proposal for a macro telecommunications facility that is not adjacent to a primary living space or historic structure conforms to this Intent.

Staff finds the proposal, as conditioned, to conform to the Planning Code.

ENVIRONMENTAL DETERMINATION

The California Environmental Quality Act (CEQA) Guidelines categorically exempts specific types of projects from environmental review. Section 15301 exempts projects involving 'Existing Facilities;' Section 15302 exempts projects involving 'Replacement or Reconstruction;' and, Section 15303 exempts projects involving 'Construction of Small Structures.' The proposal fits all of these descriptions. The project is also subject to Section 15183 for 'Projects consistent with a community plan, general plan or zoning.' The project is therefore exempt from further Environmental Review.

KEY ISSUES AND IMPACTS

The proposal to establish a macro telecommunications facility is subject to the following Planning Code development standards, which are followed by staff's analysis in relation to this application:

17.128.070 Macro Telecommunications Facilities.
A. General Development Standards for Macro Telecommunications Facilities.
1. The Macro Facilities shall be located on existing buildings, poles or other existing support structures, or shall be post mounted.

The facility involves attachment to an existing utility pole hosting power lines.

2. The equipment shelter or cabinet must be concealed from public view or made compatible with the architecture of the surrounding structures or placed underground. The shelter or cabinet must be regularly maintained.

Recommended conditions of approval require painting and texturing the antenna matte silver and all components matte brown, per Planning Commission direction, to match the appearance of the wooden utility pole and power line posts.

3. Macro Facilities may exceed the height limitation specified for all zones but may not exceed fifteen (15) feet above the roof line or parapet. Placement of an antenna on a nonconforming structure shall not be considered to be an expansion of the nonconforming structure.

This standard is inapplicable because the proposal does not involve attachment to a roofed structure. Nonetheless, the facility would not exceed the height of the host facility or maximum height permitted in the zoning district.

4. Ground post mounted Macro Facilities must not exceed seventeen (17) feet to the top of the antenna.

This standard is inapplicable because the proposal does not involve ground post mounting.

5. The applicant shall submit written documentation demonstrating that the emissions from the proposed project are within the limits set by the Federal Communications Commission.

This standard is met by the proposal; a satisfactory emissions report has been submitted and is attached to this report (Attachment F).

17.128.110 Site location preferences.
New wireless facilities shall generally be located on the following properties or facilities in 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 Nonresidential Zones (excluding all HBX Zones and the D-CE-3 and D-CE-4 Zones).
D. Existing commercial or industrial structures in Residential Zones, HBX Zones, or the DCE-3 or D-CE-4 Zones.
E. Other Nonresidential uses in Residential Zones, HBX Zones, or the D-CE-3 or D-CE-4 Zones.
F. Residential uses in Nonresidential 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 locating on an A, B or C ranked preference do not require a site alternatives analysis. Facilities proposing to locate on a D through G ranked preference, inclusive, must submit a site alternatives analysis as part of the required application materials. A site alternatives analysis shall, at a minimum, consist of: a. The identification of all A, B and C ranked preference sites within one thousand (1,000) feet of the proposed location. If more than three (3) sites in each preference order exist, the three such closest to the proposed location shall be required. b. Written evidence indicating why each such identified alternative cannot be used. Such evidence shall be in sufficient detail that independent verification, at the applicant's expense, 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. refusal to lease, inability to provide utilities).

A site alternatives analysis is not required because the proposal conforms to 'B' as it would be located on a quasi-public facility (utility pole with power lines). Nonetheless, the applicant has submitted an analysis which is attached to this report (Attachment E).

17.128.120 Site design preferences.
New wireless facilities shall generally be designed in the following order of preference:
A. Building or structure mounted antennas completely concealed from view.
B. Building or structure mounted antennas set back from roof edge, not visible from public right-of way.
C. Building or structure mounted antennas below roof line (facade mount, pole mount) visible from public right-of-way, painted to match existing structure.
D. Building or structure mounted antennas above roof line visible from public right-of-way.
E. Monopoles.
F. Towers.
Facilities designed to meet an A or B ranked preference do not require a site design alternatives analysis. Facilities designed to meet a C through F ranked preference, inclusive, must submit a site design alternatives analysis as part of the required application materials. A site design alternatives analysis shall, at a minimum, consist of: a. Written evidence indicating why each such 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).

The proposal most closely conforms to 'C' (Building or structure mounted antennas below roof line (facade mount, pole mount) visible from public right-of-way, painted to match existing structure), and the applicant has submitted a satisfactory site design alternatives analysis (Attachment E).

17.128.130 Radio frequency emissions standards.
The applicant for all wireless facilities, including requests for modifications to existing facilities, shall submit the following verifications:
a. With the initial application, a RF emissions report, prepared by a licensed professional engineer or other expert, indicating that the proposed site will operate within the current acceptable thresholds as established by the Federal government or any such agency who may be subsequently authorized to establish such standards.
b. Prior to commencement of construction, a RF emissions report indicating the baseline RF emissions condition at the proposed site.
c. Prior to final building permit sign off, an RF emissions report indicating that the site is actually operating within the acceptable thresholds as established by the Federal government or any such agency who may be subsequently authorized to establish such standards.

A satisfactory report is attached to this report (Attachment F).

Analysis
The proposed site design would not be situated on historic pole or structure, be directly adjacent to a primary living space such as a living room or bedroom window, or create a view obstruction. Staff requested for this roll-out in general that the applicant provide a "slimmer" design consisting of tucking the antenna in closer to the pole. The applicant responded that this was not feasible due to the technological requirements by the Public Utilities Commission. Staff also requested for this site in particular that the pole height not be increased; this is not possible due to CPUC standards. Staff, therefore, finds the proposal to provide an essential service with a least-intrusive possible design. Draft conditions of approval stipulate that the components be painted and textured to match the wooden utility pole in appearance for camouflaging.

In conclusion, staff recommends approval subject to recommended Conditions of Approval.

RECOMMENDATIONS:

1. Affirm staff's environmental determination.
2. Approve the Regular Design Review subject to the attached Findings and Conditions of Approval.

Prepared by:

Aubrey Rose

AUBREY ROSE, AICP
Planner III

Reviewed by:

Scott Miller

SCOTT MILLER
Zoning Manager

Approved for forwarding to the
City Planning Commission:

DARIN RANELLETTI, Interim Director
Planning and Building Department

ATTACHMENTS:

A. Findings
B. Conditions of Approval
C. Plans
D. Applicant's Photo-Simulations
E. Site Alternatives Analysis/Site Design Alternatives Analysis dated October 20, 2016
F. RF Emissions Report by Hammett & Edison, Inc. dated October 17, 2016
G. Applicant-proof of public notification posting

ATTACHMENT A: FINDINGS

This proposal meets the required findings under Regular Design Review Criteria for Nonresidential Facilities (OMC Sec. 17.136.050(B)) and Telecommunications Regulations/Design Review Criteria for Macro Telecommunications Facilities (OMC Sec. 17.128.070(B)), as set forth below. Required findings are shown in **bold** type; explanations as to why these findings can be made are in normal type.

REGULAR DESIGN REVIEW CRITERIA FOR NONRESIDENTIAL FACILITIES (OMC SEC. 17.136.050(B))

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 attachment of a small antenna and equipment to a non-historic utility pole, painted and texturized to match the pole and power line posts in appearance for camouflaging, will be the least intrusive design. The proposal would not create a view obstruction, be directly adjacent to a primary living space such as a living room or bedroom window, or be located on an historic structure. The proposal will enhance essential services in an urbanized neighborhood.

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

The attachment of a small antenna and equipment to a non-historic utility pole, painted and texturized to match the pole and power line posts in appearance for camouflaging, will be the least intrusive design. The proposal would not create a view obstruction, be directly adjacent to a primary living space such as a living room or bedroom window, or be located on an historic structure. The proposal will enhance essential services in an urbanized neighborhood.

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

The site is located in a Detached Unit Residential area under the General Plan's Land Use and Transportation Element (LUTE). The intent of the Hillside Residential area is: *"To create, maintain, and enhance residential areas characterized by detached, single unit structures."* Given residential customers' increasing reliance upon cellular service for phone and wi-fi, the proposal for a macro telecommunications facility that is not adjacent to a primary living space or historic structure conforms to this intent.

TELECOMMUNICATIONS REGULATIONS/DESIGN REVIEW CRITERIA FOR MACRO TELECOMMUNICATIONS FACILITIES (OMC SEC. 17.128.070(B))

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

The antenna will be painted and texturized matte silver to match the power line posts in appearance for camouflaging, will be the least intrusive design, as required by conditions of approval.

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

This finding is inapplicable because the antenna will not be mounted onto an architecturally significant structure but to an existing wooden 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 antenna will be located parallel to the host utility pole below power lines.

4. Equipment shelters or cabinets shall be screened from the public view by using landscaping, or materials and colors consistent with surrounding backdrop or placed underground or inside existing facilities or behind screening fences.

Conditions of approval require painting and texturing matte brown to match the pole in appearance for camouflaging.

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

Equipment will be attached to the utility pole with an unobtrusive design.

6. For antennas attached to the roof, maintain a 1:1 ratio (example: ten (10) feet high antenna requires ten (10) feet setback from facade) 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.

This finding is inapplicable because the antenna would be attached to a pole and not to a roofed structure.

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 minimal clearance to the facility will be 7'-4".

Attachment B: Conditions of Approval

1. Approved Use

The project shall be constructed and operated in accordance with the authorized use as described in the approved application materials, **staff report** and the approved plans **dated September 20, 2016 and submitted December 2, 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 calendar years** from the Approval date, or from the date of the final decision in the event of an appeal, unless within such period all necessary permits for construction or alteration have been issued, or the authorized activities have commenced in the case of a permit not involving construction or alteration. Upon written request and payment of appropriate fees submitted no later than the expiration date of this Approval, the Director of City Planning or designee may grant a one-year extension of this date, with additional extensions subject to approval by the approving body. Expiration of any necessary building permit or other construction-related permit for this project may invalidate this Approval if said Approval has also expired. If litigation is filed challenging this Approval, or its implementation, then the time period stated above for obtaining necessary permits for construction or alteration and/or commencement of authorized activities is automatically extended for the duration of the litigation.

3. Compliance with Other Requirements

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

4. Minor and Major Changes

a. Minor changes to the approved project, plans, Conditions, facilities, or use may be approved administratively by the Director of City Planning.

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

d. 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.

e. 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 Monitoring

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

12. Public Improvements

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

13. Construction Days/Hours

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

a. Construction activities are limited to between 7:00 a.m. and 7:00 p.m. Monday through Friday, except that pier drilling and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 a.m. and 4:00 p.m.

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

c. No construction is allowed on Sunday or federal holidays.

Construction activities include, but are not limited to, truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.

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

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

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

PROJECT-SPECIFIC CONDITIONS

14. Emissions Report

Requirement: A RF emissions report shall be submitted to the Planning Bureau 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.

Requirement: Prior to a final inspection

When Required: Prior to final building permit inspection sign-off

Initial Approval: N/A

Monitoring/Inspection: N/A

15. Camouflage

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

When Required: Prior to a final inspection

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

16. Operational

Requirement: 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.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

17. Possible District Undergrounding PG&E Pole

Requirement: Should the PG &E utility pole be permanently 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 Bureau as required by the regulations.

When Required: Ongoing

Initial Approval: N/A

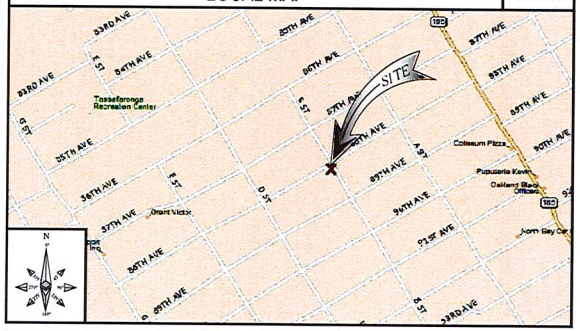
Monitoring/Inspection: N/A

NW-CA-SANFRNMC
06100B

ADJACENT TO (IN PROW)
1170 88TH AVENUE
OAKLAND, CA 94621

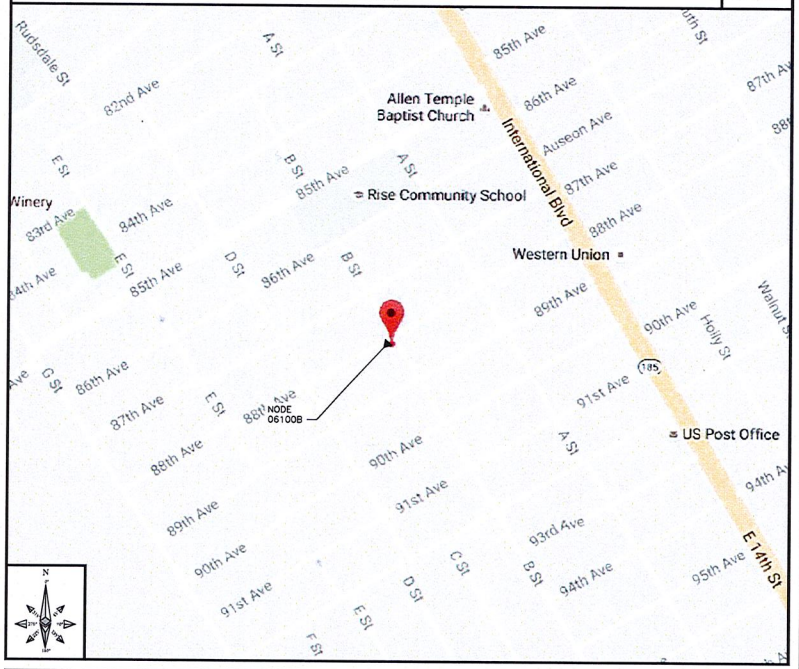
LOCAL MAP

NO SCALE



SITE MAP

NO SCALE



SHEET INDEX

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

1"X17" PLOT, DRAWINGS WILL BE HALF SCALE

CTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON
E SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES
ORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME

PROJECT INFORMATION

POLE OWNER

OWNER: EXTENET SYSTEMS CA, LLC

ADDRESS: 2000 CROW CANYON PL.,
SUITE 210
SAN RAMON, CA 94583

PHONE: –

APPLICANT

COMPANY: EXTENET SYSTEMS (CALIFORNIA), LLC.

CONTACT: MATTHEW YERGOVICH

ADDRESS: 2000 CROW CANYON PL.,
SUITE 210
SAN RAMON, CA 94583

PHONE: (415) 596-3474

E-MAIL: MYERGOVICH@EXTENETSYSTEMS.COM

AGENT

COMPANY: BLACK & VEATCH

CONTACT: ANA GOMEZ

ADDRESS: 2999 OAK ROAD,
SUITE 490
WALNUT CREEK,
CA 94597

PHONE: (913) 458-9148

E-MAIL: GOMEZABARCAA@BV.COM

ENGINEER

COMPANY: BLACK & VEATCH

ENGINEER: AARON EVANS

PHONE: (952) 896-0751

E-MAIL: EVANSRA@BV.COM

PROJECT DATA

LATITUDE:	37.749466
LONGITUDE:	-122.178967
POLE #:	110124286
ELEVATION:	NA
ZONING JURISDICTION:	CITY OF OAKLAND
ZONING DISTRICT:	RD-1
NEAREST A.P.N.:	42-4275-1
OCCUPANCY:	U, UNMANNED
CONSTRUCTION TYPE:	ATTACHMENTS TO A WOOD UTILITY POLE
TITLE 24 REQUIREMENTS:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. THIS PROJECT IS EXEMPT.

CODE COMPLIANCE

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

1: IBC – 2012
2: CALIFORNIA BUILDING STANDARDS CODE – 2013
3: CALIFORNIA GENERAL ORDER 95
4: CALIFORNIA MECHANICAL CODE 2013
5: CALIFORNIA PLUMBING CODE 2013
6: CALIFORNIA ELECTRICAL CODE 2013
7: CITY AND/OR COUNTY ORDINANCES
8: 2012 INTERNATIONAL FIRE CODE
9: BUILDING OFFICIALS AND CODE ADMINISTRATORS (BOCA)
*EFFECTIVE UNTIL JANUARY 1ST, 2017

PROJECT DESCRIPTION

THESE DRAWINGS DEPICT THE INSTALLATION OF A WIRELESS TELECOMMUNICATIONS NODE IN THE PUBLIC RIGHT OF WAY.

HARDWARE AND ANCILLARY EQUIPMENT TO BE INSTALLED AS DESCRIBED HEREIN.

GENERAL PROJECT NOTES

1. PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF/HERSELF WITH THE SCOPE OF WORK AND ALL CONDITIONS AFFECTING THE NEW PROJECT.
2. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND DIMENSIONS OF THE JOB SITE AND CONFIRM THAT WORK AS INDICATED ON THESE CONSTRUCTION DOCUMENTS CAN BE ACCOMPLISHED 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 MANUFACTURER'S RECOMMENDATIONS, UNLESS INDICATED OTHERWISE.
5. NOTIFY EXTENET SYSTEMS, IN WRITING, OF ANY MAJOR DISCREPANCIES REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS, AND DESIGN INTENT. THE CONTRACTOR 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 MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF THE WORK UNDER THE CONTRACT.
7. CONTRACTOR SHALL PROTECT ALL EXISTING IMPROVEMENTS AND FINISHES THAT ARE TO REMAIN. CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY OCCUR DURING THE CONSTRUCTION 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 TMOBILE, THE CONTRACTOR SHALL PROVIDE EXTENET SYSTEMS WITH ONE COPY OF ALL RED-LINED DRAWINGS.
9. VERIFY ALL FINAL EQUIPMENT WITH AN EXTENET SYSTEMS REPRESENTATIVE. ALL EQUIPMENT LAYOUT, SPECS, PERFORMANCE INSTALLATION AND THEIR FINAL LOCATION ARE TO BE APPROVED BY EXTENET SYSTEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS/HER WORK WITH THE WORK AND CLEARANCES REQUIRED BY OTHERS RELATED TO SAID INSTALLATIONS.

UNDERGROUND SERVICE ALERT
UTILITIES PROTECTION CENTER, INC.
811
48 HOURS BEFORE YOU DIG

extenet SYSTEMS mConnectivity Everywhere

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

BLACK & VEATCH
BLACK & VEATCH CORPORATION
2999 OAK ROAD
SUITE 490
WALNUT CREEK, CA 94597

PROJECT NO.	DRAWN BY	CHECKED BY
192417.4351	MBS	GAC

REV	DATE	DESCRIPTION
A	09/20/16	ISSUED FOR REVIEW

PRELIMINARY

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

SITE ADDRESS
ADJACENT TO (IN PROW)
1170 88TH AVENUE
OAKLAND, CA 94621

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

Attachment C

GENERAL NOTES

1. THESE NOTES SHALL BE CONSIDERED A PART OF THE WRITTEN SPECIFICATIONS, CONTRACT AND CONSTRUCTION DOCUMENTS.
2. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED 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 ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS, AND CONFIRM THAT THE WORK MAY BE ACCOMPLISHED PER THE CONTRACT DOCUMENTS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE IMPLEMENTATION ENGINEER AND ARCHITECT/ENGINEER PRIOR TO BID SUBMITTAL.
4. THE CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED ON ANY WORK NOT CLEARLY DEFINED OR IDENTIFIED IN THE CONTRACT AND CONSTRUCTION DOCUMENTS BEFORE STARTING ANY WORK.
5. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES, INCLUDING APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS. IF THESE RECOMMENDATIONS ARE IN CONFLICT WITH THE CONTRACT AND CONSTRUCTION DOCUMENTS AND/OR APPLICABLE CODES OR REGULATIONS, REVIEW AND RESOLVE THE CONFLICT WITH DIRECTION FROM THE IMPLEMENTATION ENGINEER AND ARCHITECT/ENGINEER PRIOR TO PROCEEDING.
7. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATION OF ALL PORTIONS OF THE WORK UNDER THE CONTRACT INCLUDING CONTACT AND COORDINATION WITH THE IMPLEMENTATION ENGINEER AND WITH THE AUTHORIZED REPRESENTATIVE OF ANY OUTSIDE POLE OR PROPERTY OWNER.
8. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO PAVING, CURBS, VEGETATION, GALVANIZED SURFACE OR OTHER EXISTING ELEMENTS AND UPON COMPLETION OF THE WORK, REPAIR ANY DAMAGE THAT OCCURRED DURING CONSTRUCTION TO THE SATISFACTION OF EXTENET.
9. CONTRACTOR IS TO KEEP THE GENERAL AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH, AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. LEAVE PREMISES IN CLEAN CONDITION DAILY.
10. PLANS ARE INTENDED TO BE DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED UNLESS OTHERWISE NOTED. RELY ONLY ON ANNOTATED DIMENSIONS AND REQUEST INFORMATION IF ADDITIONAL DIMENSIONS ARE REQUIRED.
11. THE EXISTENCE AND LOCATION OF UTILITIES AND OTHER AGENCY'S FACILITIES WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. OTHER FACILITIES MAY EXIST. CONTRACTOR SHALL VERIFY LOCATIONS PRIOR TO START OF CONSTRUCTION AND USE EXTREME CARE AND PROTECTIVE MEASURES TO PREVENT DAMAGE TO THESE FACILITIES. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF UTILITIES OR OTHER AGENCY'S FACILITIES WITHIN THE LIMITS OF THE WORK, WHETHER THEY ARE IDENTIFIED IN THE CONTRACT DOCUMENTS OR NOT.
12. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (800) 227-2600, AT LEAST TWO WORKING DAYS PRIOR TO THE START OF ANY EXCAVATION.

DEFINITIONS

1. "TYPICAL" OR "TYP" MEANS THAT THIS ITEM IS SUBSTANTIALLY THE SAME ACROSS SIMILAR CONDITIONS. "TYP." SHALL BE UNDERSTOOD TO MEAN "TYPICAL WHERE OCCURS" AND SHALL NOT BE CONSIDERED AS WITHOUT EXCEPTION OR CONSIDERATION OF SPECIFIC CONDITIONS.
2. "SIMILAR" MEANS COMPARABLE TO CHARACTERISTICS FOR THE CONDITION NOTED. VERIFY DIMENSIONS AND ORIENTATION ON PLAN.
3. "AS REQUIRED" MEANS AS REQUIRED BY REGULATORY REQUIREMENTS, BY REFERENCED STANDARDS, BY EXISTING CONDITIONS, BY GENERALLY ACCEPTED CONSTRUCTION PRACTICE, OR BY THE CONTRACT DOCUMENTS.
4. "ALIGN" MEANS ACCURATELY LOCATE FINISH FACES OF MATERIALS IN THE SAME PLANE.
5. THE TERM "VERIFY" OR "V.I.F." SHALL BE UNDERSTOOD TO MEAN "VERIFY IN FIELD WITH ENGINEER" AND REQUIRES THAT THE CONTRACTOR CONFIRM INTENTION REGARDING NOTED CONDITION AND PROCEED ONLY AFTER RECEIVING DIRECTION.
6. WHERE THE WORDS "OR EQUAL" OR WORDS OF SIMILAR INTENT FOLLOW A MATERIAL SPECIFICATION, THEY SHALL BE UNDERSTOOD TO REQUIRE SIGNED APPROVAL OF ANY DEVIATION TO SAID SPECIFICATION PRIOR TO CONTRACTOR'S ORDERING OR INSTALLATION OF SUCH PROPOSED EQUAL PRODUCT.
7. FURNISH : SUPPLY ONLY, OTHERS TO INSTALL. INSTALL: INSTALL ITEMS FURNISHED BY OTHERS. PROVIDE: FURNISH AND INSTALL.

FIELD WELDING NOTES:

1. WELDING TO BE PERFORMED BY AWS 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 PRIOR TO WELDING TO REMOVE ALL GALVANIZING WHICH MAY OTHERWISE BE CONSUMED IN THE WELD METAL. APPLY ANTI-SPATTER COMPOUND AFTER GRINDING.
3. WELDING TECHNIQUE MUST MINIMIZE TEMPERATURE RISE ON THE INSIDE SURFACE OF THE POLE AND ALSO VOLATIZE ANY REMAINING ZINC WITHIN THE BASE METAL WITH MINIMUM SPATTER. USE AN E70 (LOW HYDROGEN) ELECTRODE. USE LARGEST DIAMETER ELECTRODE COMPATIBLE WITH WELDING POSITION AND MATERIAL THICKNESS. STRICTLY FOLLOW ALL MANUFACTURE'S INSTRUCTIONS FOR STORAGE AND USE OF ELECTRODES. AVOID REMOVING ELECTRODES FROM MANUFACTURE'S PACKAGING UNTIL READY FOR IMMEDIATE USE.
4. WELDING MAY PRODUCE TOXIC FUMES. REFER TO ANSI STANDARD Z49.1 "SAFETY IN WELDING AND CUTTING" FOR PROPER PRECAUTIONS.
5. UPON COMPLETION OF WELDING, APPLY GALV-A-STICK ZINC COATING TO ALL UNPROTECTED SURFACES. APPLY A SECOND LAYER OF COLD GALVANIZING SPRAY COMPOUND CONTAINING A MINIMUM ZINC CONTENT OF 95%. IF NECESSARY, APPLY A FINAL COAT OF COMPATIBLE PAINT TO MATCH SURROUNDING SURFACES.

ANTENNA MOUNTING

1. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT ANSI/TIA-222 OR APPLICABLE LOCAL CODES.
2. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS NOTED OTHERWISE.
3. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS NOTED OTHERWISE.
4. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
5. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.
6. CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.
7. PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, ANTENNA CONTRACTOR SHALL CHECK THE ANTENNA MOUNT FOR TIGHTNESS AND ENSURE THAT THEY ARE PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NORTH AND BE ORIENTED WITHIN +/- 5% AS DEFINED BY THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/- 0.5% AS DEFINED BY THE RFDS.

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 CONNECTOR.
   B. GROUNDING AND ANTENNA HARDWARE ON THE NUT SIDE STARTING FROM THE THREADS TO THE SOLID SURFACE. EXAMPLE OF SOLID SURFACE: GROUND BAR, ANTENNA BRACKET METAL.
3. ALL 8M ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 LB-FT (12 NM).
4. ALL 12M ANTENNA HARDWARE SHALL BE TIGHTENED TO 43 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 DIN TYPE CONNECTIONS SHALL BE TIGHTENED TO 18-22 LB-FT (24.4 - 29.8 NM).
7. ALL N TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20 LB-IN (1.7 - 2.3 NM).

ROW UTILITY POLE CONSTRUCTION NOTES

1. NO BOLT THREADS TO PROTRUDE MORE THAN 1-1/2" [.038M].
2. FILL ALL HOLES LEFT IN POLE FROM REARRANGEMENT OF CLIMBERS.
3. ALL CLIMB STEPS NEXT TO CONDUIT SHALL HAVE EXTENDED STEPS.
4. CABLE NOT TO IMPEDE 15" [.381M] CLEAR SPACE OFF POLE FACE (12:00).
5. 90 SHORT SWEEPS UNDER ANTENNA ARM. ALL CABLES MUST ONLY TRANSITION ON THE INSIDE OR BOTTOM OF ARMS (NO CABLE ON TOP OF ARMS).
6. USE 90 CONNECTOR AT CABLE CONNECTION TO ANTENNAS.
7. USE 1/2" [.013M] CABLE ON ANTENNAS UNLESS OTHERWISE SPECIFIED.
8. FILL VOID AROUND CABLES AT CONDUIT OPENING WITH FOAM SEALANT TO PREVENT WATER INTRUSION.

NODE SITE POWER SHUT DOWN PROCEDURES

1. FOR NON EMERGENCY/SCHEDULED POWER SHUT DOWN
   A. CALL EXTENET SYSTEMS NOC (NETWORK OPERATIONS CENTER) (866)892-5327
   B. 24 HOURS PRIOR TO SCHEDULED POWER SHUT OFF
   C. PROVIDE THE FOLLOWING INFORMATION
      - NOC SITE NUMBER IDENTIFIED ON SITE NUMBERING STICKER
      - YOUR NAME AND REASON FOR POWER SHUTOFF
      - PROVIDE DURATION OF OUTAGE
   D. UNLOCK DISCONNECT BOX, FLIP BOTH BREAKERS TO THE OFF POSITION
   E. POWER SHUT OFF VERIFICATION WITH APPROVED PG&E PROCEDURES
   F. NOTIFY EXTENET NOC UPON COMPLETION OF WORK
   G. REINSTALL LOCK ON DISCONNECT BOX
2. EMERGENCY POWER SHUT OFF
   A. CALL EXTENET SYSTEMS NOC (NETWORK OPERATIONS CENTER) (866)892-5327
   B. PROVIDE THE FOLLOWING INFORMATION
      - NOC SITE NUMBER IDENTIFIED ON SITE NUMBERING STICKER
      - YOUR NAME AND REASON FOR POWER SHUTOFF
      - PROVIDE DURATION OF OUTAGE
   D. UNLOCK DISCONNECT BOX, FLIP BOTH BREAKERS TO THE OFF POSITION
   E. POWER SHUT OFF VERIFICATION WITH APPROVED PG&E PROCEDURES
   F. NOTIFY EXTENET NOC UPON COMPLETION OF WORK
   G. REINSTALL LOCK ON DISCONNECT BOX

LEGEND

EXOTHERMIC CONNECTION
MECHANICAL CONNECTION
CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM (T)
EXOTHERMIC WITH INSPECTION SLEEVE
GROUNDING BAR
GROUND ROD
TEST GROUND ROD WITH INSPECTION SLEEVE (T)
CHAINLINK FENCE (X)
WOOD/WROUGHT IRON FENCE
WALL STRUCTURE
LEASE AREA
PROPERTY LINE (PL)
SETBACKS
WATER LINE (W)
UNDERGROUND POWER (UGP)
UNDERGROUND TELCO (UGT)
UNDERGROUND FIBER (UGF)
OVERHEAD POWER (OHP)
OVERHEAD TELCO (OHT)
UNDERGROUND TELCO/POWER (UGT/P)
ABOVE GROUND POWER (AGP)
ABOVE GROUND TELCO (AGT)
ABOVE GROUND TELCO/POWER (AGT/P)
SECTION REFERENCE (XX / X-X)
DETAIL REFERENCE (XX / X-X)

GENERAL NOTES AND LEGENDS

extenet SYSTEMS mConnectivity Everywhere

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

BLACK & VEATCH
BLACK & VEATCH CORPORATION
2999 OAK ROAD
SUITE 490
WALNUT CREEK, CA 94597

PROJECT NO.	DRAWN BY	CHECKED BY
192417.4351	MBS	GAC

REV	DATE	DESCRIPTION
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2000 CROW CANYON PLACE
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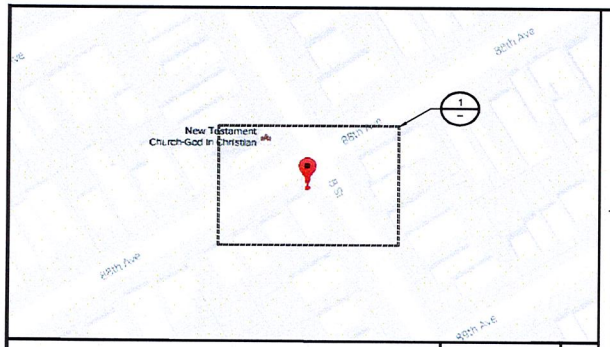
SITE ADDRESS
ADJACENT TO (IN PROW)
1170 88TH AVENUE
OAKLAND, CA 94621

SHEET TITLE
GENERAL NOTES AND LEGEND

SHEET NUMBER
GN-1



SITE PLAN PHOTO | NO SCALE | A

THIS DRAWING IS NOT A SITE SURVEY

THE PURPOSE OF THIS DRAWING IS TO SHOW HOW THE DEVELOPED SITE RELATES TO THE PARENT PARCEL AND ADJACENT PROPERTIES. R.O.W. MEASUREMENTS ARE APPROXIMATIONS.

88TH AVENUE

EXISTING CENTERLINE OF ROAD (TYP)

EXISTING RIGHT-OF-WAY

NODE 06100B

A
AZIMUTH
150°

20'-1" TO NEAREST BUILDING

B STREET

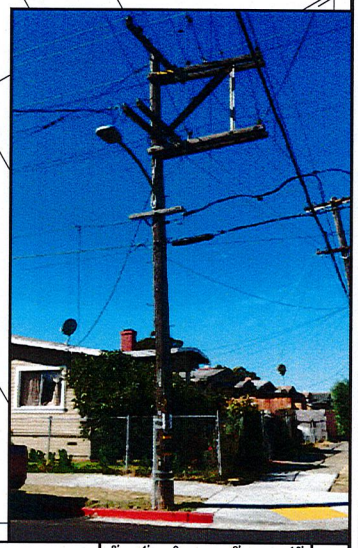
EXISTING FENCE (TYP)

EXISTING PROPERTY LINE (TYP)

EXISTING BUILDING (TYP)

1170 88TH AVE

N
0°
45°
90°
135°
180°
225°
270°
315°



8' 4' 0 8' 16'
1/8"=1'-0"

OVERALL SITE PLAN | 1

extenet SYSTEMS mConnectivity Everywhere

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

BLACK & VEATCH

BLACK & VEATCH CORPORATION
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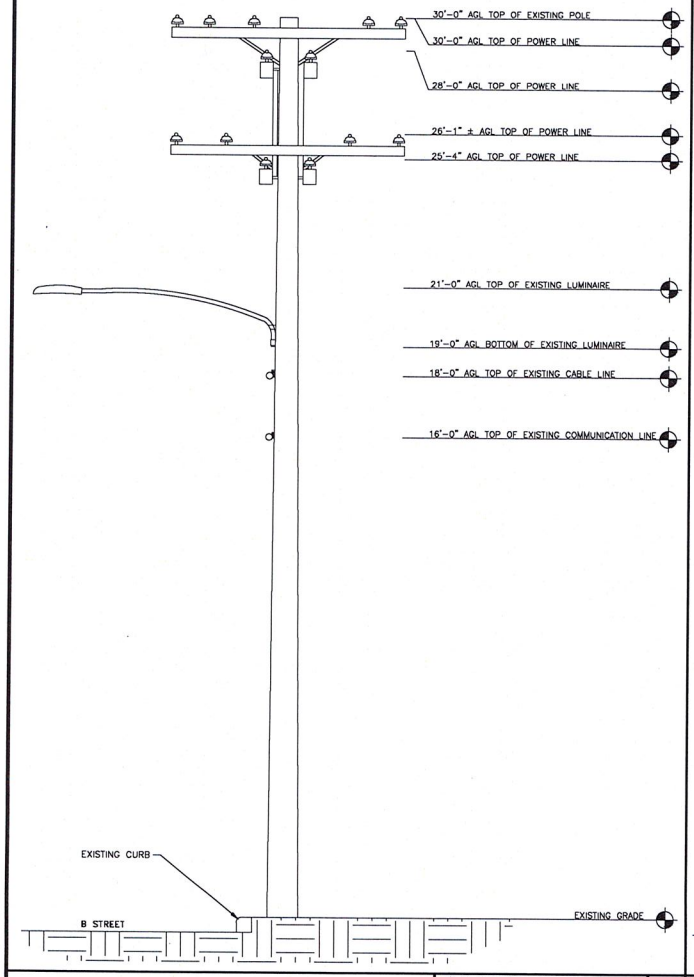
SHEET TITLE
OVERALL SITE PLAN

SHEET NUMBER
C-1

CARRIER MAKE-READY

1. CONTRACTOR TO INSTALL NEW 45' POLE WITH 7' SUNK.
2. CONTRACTOR TO INSTALL CANISTER ANTENNA w/ ANCILLARY ELECTRONICS AND HARDWARE ON PROPOSED ANTENNA SUPPORT ARM.
3. CONTRACTOR TO INSTALL (2) RADIOS w/ ANCILLARY ELECTRONICS AND HARDWARE ON PROPOSED CHANNEL MOUNTS.
4. CONTRACTOR TO INSTALL (1) 2" SCH. 80 PVC RISER CONDUIT FOR COAX AND FIBER CABLES.
5. CONTRACTOR TO INSTALL (1) BREAKER BOX/LOAD CENTER ON PROPOSED CHANNEL MOUNTS.
6. CONTRACTOR TO INSTALL (1) PG&E SMART METER.
7. CONTRACTOR TO INSTALL (1) 1.25" SCH. 80 PVC RISER WITH WEATHERHEAD FOR POWER.
8. PG&E TO RELOCATE TELCO AND COMM LINE TO CREATE REQUIRED CLEARANCE.
9. CONTRACTOR TO INSTALL (1) NEW FIBER LINE AT 25'-3"
10. CONTRACTOR TO INSTALL REQUIRED RF SIGNAGE 3'-0" BELOW PROPOSED ANTENNA MOUNT.
11. EXTENET APPROVED CONTRACTOR TO INSTALL NEW 45'-0" POLE SUNK 7'
12. EXTENET APPROVED CONTRACTOR TO RELOCATE EXISTING POWER FROM 30'-0" TO 38'-0"
13. EXTENET APPROVED CONTRACTOR TO RELOCATE EXISTNG POWER FROM 29'-0" TO 37'-0"
14. EXTENET APPROVED CONTRACTOR TO RELOCATE EXISTING POWER FROM 28'-1" TO 35'-1"
15. EXTENET APPROVED CONTRACTOR TO RELOCATE EXISTING POWER FROM 25'-4" TO 34'-4"
16. EXTENET APPROVED CONTRACTOR TO RELOCATE EXISTING LUMINAIRE FROM 19'-0" TO 26'-3"



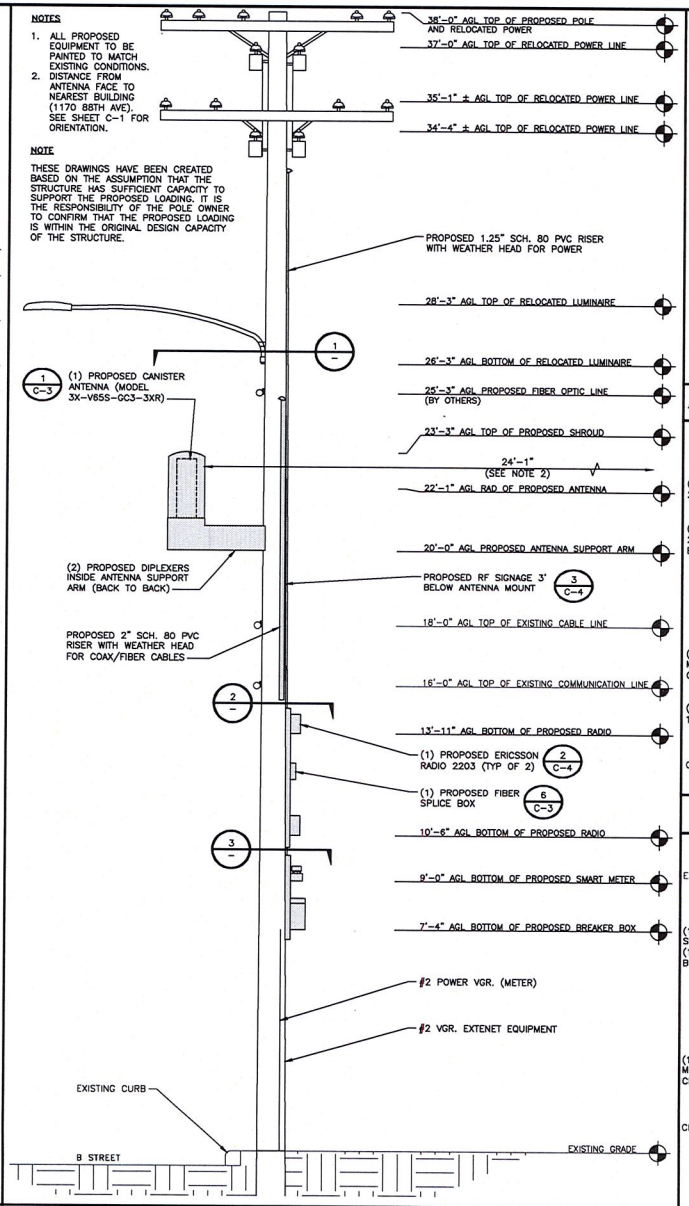
EXISTING NORTH ELEVATION | 1/2"=1'-0" | A

NOTES

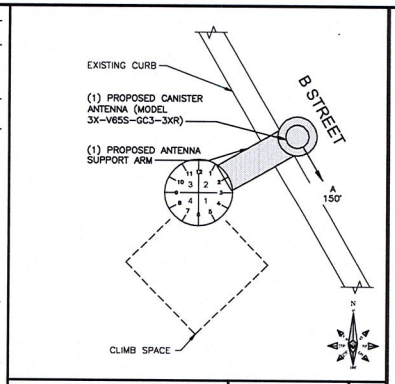
1. ALL PROPOSED EQUIPMENT TO BE PAINTED TO MATCH EXISTING CONDITIONS.
2. DISTANCE FROM ANTENNA FACE TO NEAREST BUILDING (1170 88TH AVE). SEE SHEET C-1 FOR ORIENTATION.

NOTE

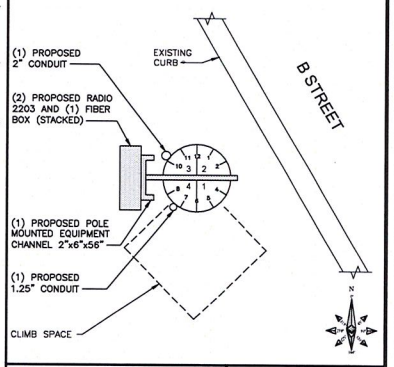
THESE DRAWINGS HAVE BEEN CREATED BASED ON THE ASSUMPTION THAT THE STRUCTURE HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADING. IT IS THE RESPONSIBILITY OF THE POLE OWNER TO CONFIRM THAT THE PROPOSED LOADING IS WITHIN THE ORIGINAL DESIGN CAPACITY OF THE STRUCTURE.



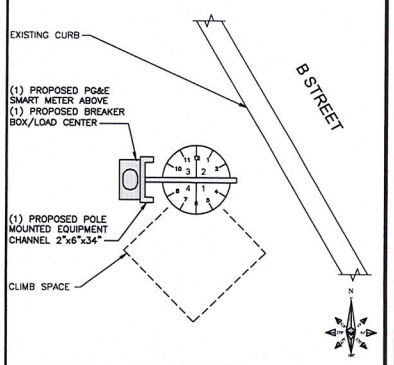
PROPOSED NORTH ELEVATION | 1/2"=1'-0" | B



ANTENNA SPACE PLAN VIEW | NO SCALE | 1



RADIO SPACE PLAN VIEW | NO SCALE | 2



EQUIPMENT PLAN VIEW | NO SCALE | 3

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

BLACK & VEATCH

BLACK & VEATCH CORPORATION
2999 OAK ROAD
SUITE 490
WALNUT CREEK, CA 94597

PROJECT NO.	DRAWN BY	CHECKED BY
192417.4351	MBS	GAC

REV	DATE	DESCRIPTION
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PRELIMINARY

EXTENET SYSTEMS (CA) LLC
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SUITE 210
SAN RAMON, CA 94583

SITE ADDRESS

ADJACENT TO (IN PROW)
1170 88TH AVENUE
OAKLAND, CA 94621

SHEET TITLE

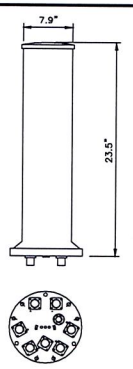
UTILITY POLE ELEVATIONS AND RISER DETAILS

SHEET NUMBER

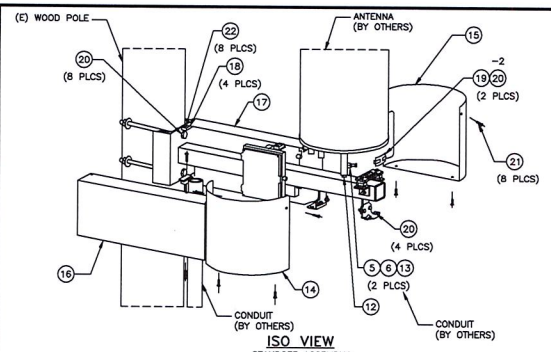
C-2

COMMSCOPE 3X-V65S-GC3-3XR

RADOME COLOR:	LIGHT GREY
RADOME 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 DIN FEMALE
RF CONNECTOR LOCATION:	BOTTOM
RF CONNECTOR QUANTITY:	6



PROPOSED ANTENNA | NO SCALE | 1



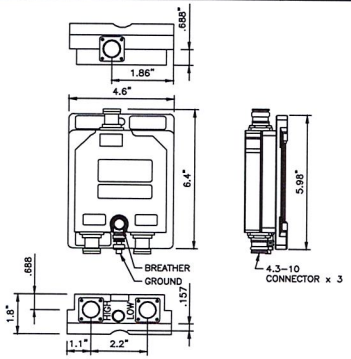
ISO VIEW
STANDOFF ASSEMBLY
(ANTENNA SHROUD NOT SHOWN FOR CLARITY)

SIDE ARM ANTENNA MOUNT
2'-0" STANDOFF FOR WOOD POLE | NO SCALE | 2

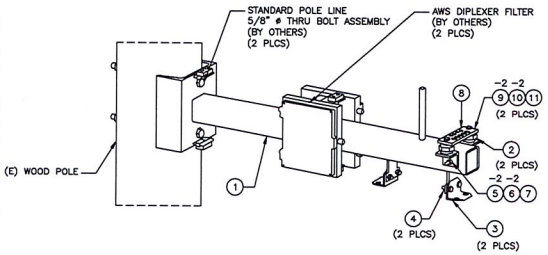
ITEM #	PART #	DESCRIPTION	QTY.	UNIT WT. (lbs)
		STANDOFF ARM ASSEMBLY PARTS/HDWR		
1	WA-714	3"x3"x3/16"x3'-2" STANDOFF ARM WLDMNT	1	43
2	SS-514	2"x2"x1/4"x2" A36, ANGLE	2	0.5
3	SS-516	2"x2"x1/8"x3" A36, ANGLE	2	0.4
4	15230	3/8#x1" A307 FULLY THD'D BOLT/NUT/LW, GALV.	4	0.1
5	41010	3/8#x1" A563-A HEX NUT, GALV.	2	0.01
6	51000	3/8#x1" A563-A HEX NUT, GALV.	2	0.01
7	80326	3/8#x6" A36 THRD ROD, GALV.	1	0.19
		BUS BAR ASSEMBLY PARTS / HDWR		
8	PL-718	1/4"x2"x6" COPPER, BUS BAR	1	0.8
9	43010	3/8"# LOCK COPPER, BUS BAR	4	0.01
10	71017	3/8"#x5/8" FULLY THD'D S.S. BOLT	4	0.04
11	90060	3/8" STANDOFF INSULATOR (559640)	2	0.1
		ANTENNA / EQUIPMENT MOUNT PARTS / HDWR		
12	WA-698	3/8"x7" O.D. A36, TOP CAP WLDMNT	1	2.2
13	16250F	3/8"#x1 1/2" A307 FULLY THD'D BOLT, GALV.	2	0.1
14	41010	3/8"# LOCK WASHER, GALV.	2	0.01
15	51000	3/8"# A563 HEX NUT, GALV.	2	0.02
		SHROUD ASSEMBLY PARTS / HDWR		
14	WA-715L	14GA.x13 1/16"x14 5/8" I.D. E.G., FORMED PLATE WLDMNT	1	8
15	WA-715R	14GA.x13 1/16"x14 5/8" I.D. E.G., FORMED PLATE WLDMNT	1	8
16	PL-1264	14GA.x17 5/8"x2'-0 7/8" E.G., FORMED COVER	1	9.9
17	PL-1267	14GA.X17 5/8"X2'-0 15/16" E.G., FORMED COVER	1	
18	PL-1581	1/2"x1"x2" A36, PLATE	4	0.3
19	14209-4	11GA.x1 1 1/2"x2 15/16" A36, FORMED PLATE	2	0.1
20	55500	1/4-20 U-STYLE SPEED NUT, BLACK PHOSPHATE	16	0.02
21	70217	1/4"#x1" SS FLGD BUTTON-HD SCKT CAP SCRW	18	0.02
22	70218	1/4"#x1 1/4" SS FLGD BUTTON-HD SCKT CAP SCRW	18	0.003

TOTAL GALV. WT. = 89lbs

ANTENNA SHROUD PARTS TABLE | NO SCALE | 3



COMMSCOPE CBC 1923-4310/ E11F13P20 | NO SCALE | 4

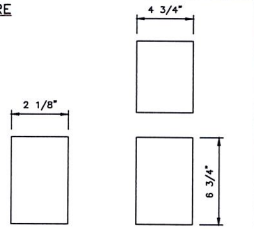


ISO VIEW
STANDOFF ASSEMBLY

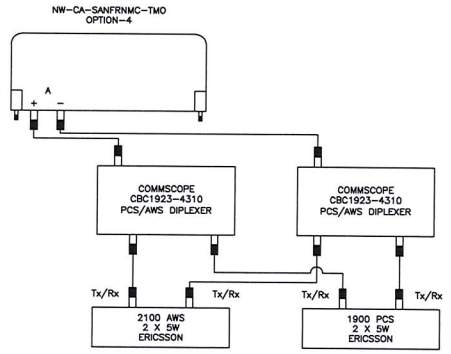
SIDE ARM ANTENNA MOUNT
2'-0" STANDOFF FOR WOOD POLE | NO SCALE | 5

F1-4868-FSS FUSION SPLICE ENCLOSURE

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



FIBER SPLICE BOX | NO SCALE | 6

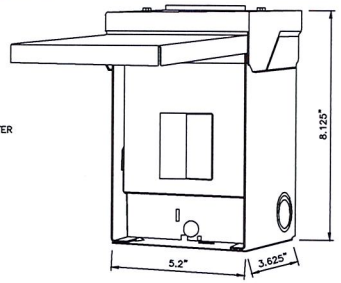


ANTENNA CONFIGURATION | NO SCALE | 7

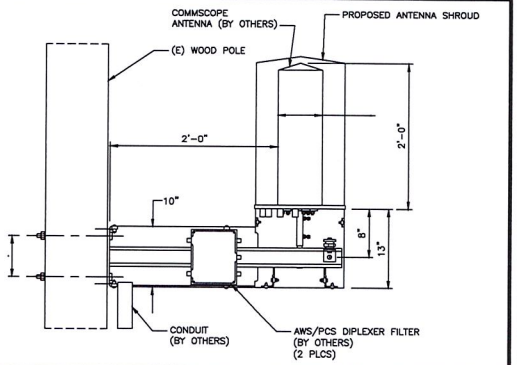
MURRAY LW002GRU SPECIFICATION

DIMENSIONS

LOAD CENTER DEPTH:	3.625"
LOAD CENTER WIDTH:	5.2"
LOAD CENTER HEIGHT:	8.125"
WEIGHT:	4.55 LB
LOAD CENTER TYPE:	MAIN LUG
MAX AMPERAGE:	60
MOUNTING TYPE:	PLUG IN
NUMBER OF PHASES:	1
NUMBER OF SPACES:	2
VOLTAGE (VOLTS):	120/240
INDOOR/OUTDOOR:	OUTDOOR
ELECTRICAL PRODUCT TYPE:	LOAD CENTER



MURRAY LW002GRU | NO SCALE | 8



SIDE ARM ANTENNA MOUNT
2'-0" STANDOFF FOR WOOD POLE | NO SCALE | 9

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INTERNAL REVIEW

CONSTRUCTION SIGNATURE DATE

RF SIGNATURE DATE

REAL ESTATE SIGNATURE DATE

BLACK & VEATCH

BLACK & VEATCH CORPORATION
2999 OAK ROAD
SUITE 490
WALNUT CREEK, CA 94597

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SAN RAMON, CA 94583

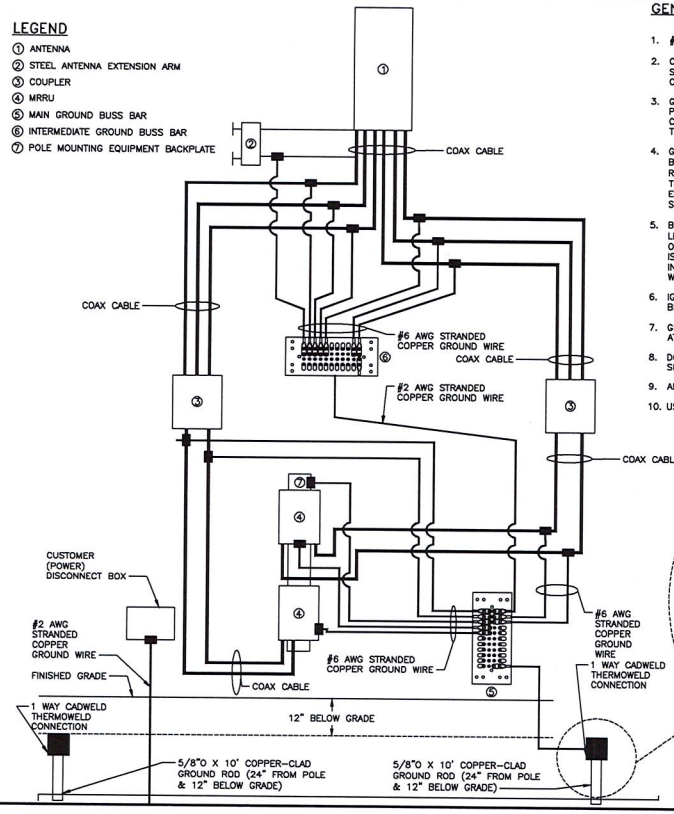
SITE ADDRESS
ADJACENT TO (IN PROW)
1170 88TH AVENUE
OAKLAND, CA 94621

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
C-3

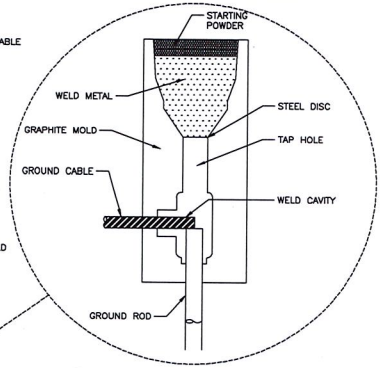
LEGEND

① ANTENNA
② STEEL ANTENNA EXTENSION ARM
③ COUPLER
④ MRRU
⑤ MAIN GROUND BUSS BAR
⑥ INTERMEDIATE GROUND BUSS BAR
⑦ POLE MOUNTING EQUIPMENT BACKPLATE



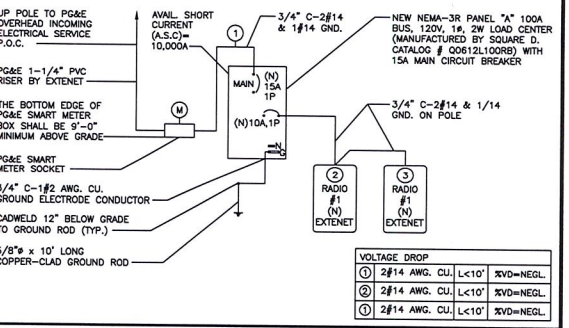
GENERAL GROUNDING NOTES

1. #6 GREEN COATED WIRE TO BE USED.
2. CRIMP (COMPRESSION) TYPE TWO HOLE BOLTED TONGUE CONNECTORS SHALL BE USED TO TERMINATE STRANDED GROUND CONDUCTORS. CONNECTORS SHALL BE TIN PLATED, LONG BARREL LUG.
3. GROUND WIRES SHALL BE INSERTED THE ENTIRE LENGTH OF THE LUG. PROVIDE ANTIOXIDANT COMPOUND ON THE CONDUCTOR BEFORE CRIMPING. CONTRACTOR TO INSTALL A TRANSPARENT HEAT SHRINK INSULATING TUBING ALONG ENTIRE LENGTH OF CRIMP.
4. GROUND CONDUCTORS RUN ALONG POLE SURFACE SHALL BE COVERED BY 3/8" HARD WOOD OR DOUGLAS FIR VGR WOOD MOLDING. CORROSION RESISTANT (GALVANIZED) STAPLE AT 2' INTERVALS TO BE USED FOR VGR. THE GROUNDING CONDUCTOR FROM THE GROUND ROD (GROUND ELECTRODE) TO THE MESSENGER SHALL BE CONTINUOUS, UNLESS SUITABLE ELECTRICAL COMPRESSION CONNECTIONS ARE USED.
5. BOND WIRES AND GROUND WIRES SHALL HAVE A CLEARANCE OF NOT LESS THAN 1 1/2" INCHES FROM METAL PINS, BOLTS, AND OTHER HARDWARE ON WOOD CROSSARMS AND WOOD POLES EXCEPT WHERE THE HARDWARE IS EXTENDED TO BE CONNECTED TO THE BOND OR GROUND WIRES, AND IN BEING SO CONNECTION DOES NOT VIOLATE OTHER RULES OF G095, IN WHICH CASE SUITABLE ELECTRICAL CONTACT SHALL BE MADE.
6. IGB TO BE MOUNTED DIRECTLY TO ANTENNA SUPPORT ARM. MGB TO BE MOUNTED DIRECTLY TO POLE MOUNT EQUIPMENT BACKPLATE.
7. GROUND BUSS BAR LENGTH TO VARY BASED ON NUMBER OF GROUND ATTACHMENTS.
8. DO NOT INSTALL CABLE GROUNDING KITS ON BENDS. CONTRACTOR SHALL ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
9. ALL G095 & NEC GROUNDING RULES TO BE FOLLOWED AT ALL TIMES.
10. USE GROUND LUG TO BOND ANTENNA SUPPORT ARM TO IGB.



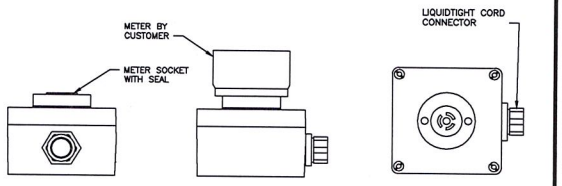
CADWELD THERMOWELD CONNECTOR

CONCEPTUAL WOOD POLE GROUNDING DETAIL | NO SCALE | 1



VOLTAGE DROP			
①	2#14 AWG. CU.	L<10'	%VD=NEGL.
②	2#14 AWG. CU.	L<10'	%VD=NEGL.
①	2#14 AWG. CU.	L<10'	%VD=NEGL.

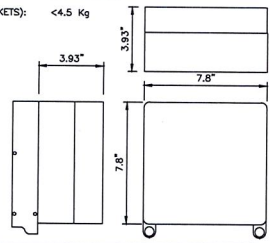
CA-84C WITH 4.1-9.5 DIN CONNECTORS | NO SCALE | 4



PROPOSED METER ADAPTER | NO SCALE | 5

ERICSSON RADIO 2203

LENGTH:	7.8" (200MM)
WIDTH:	7.8" (200MM)
DEPTH:	3.93" (100MM)
TOTAL WEIGHT (WITHOUT BRACKETS):	<4.5 Kg



RADIO SPECIFICATION DETAIL | NO SCALE | 2

NOTICE

Beyond This Point you are entering a controlled area where RF emissions *may exceed* the FCC General Population Exposure Limits.

Follow all posted signs and site guidelines for working in a RF environment.

Ref. 47CFR 1.1307(b)

CAUTION

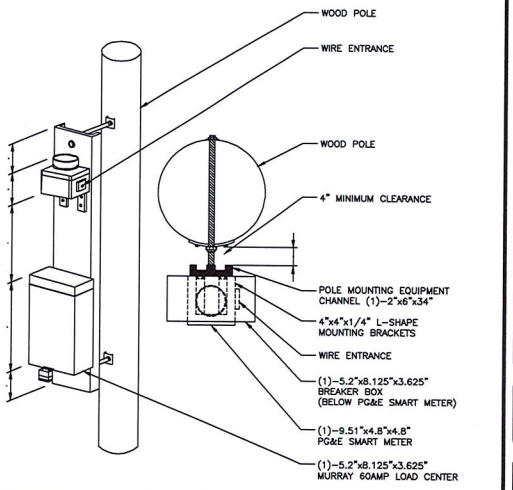
Beyond This Point you are entering a controlled area where RF emissions *may exceed* the FCC Occupational Exposure Limits.

Obey all posted signs and site guidelines for working in a RF environment.

Ref. 47CFR 1.1307(b)

NOTE: SPECIFIC EME PLACARD WILL BE PLACED AFTER EME REPORT

RF SIGNAGE DETAIL | NO SCALE | 3



SMART METER/BREAKER BOX DETAIL | NO SCALE | 6

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

BLACK & VEATCH

BLACK & VEATCH CORPORATION
2999 OAK ROAD
SUITE 490
WALNUT CREEK, CA 94597

PROJECT NO.	DRAWN BY	CHECKED BY
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SITE ADDRESS
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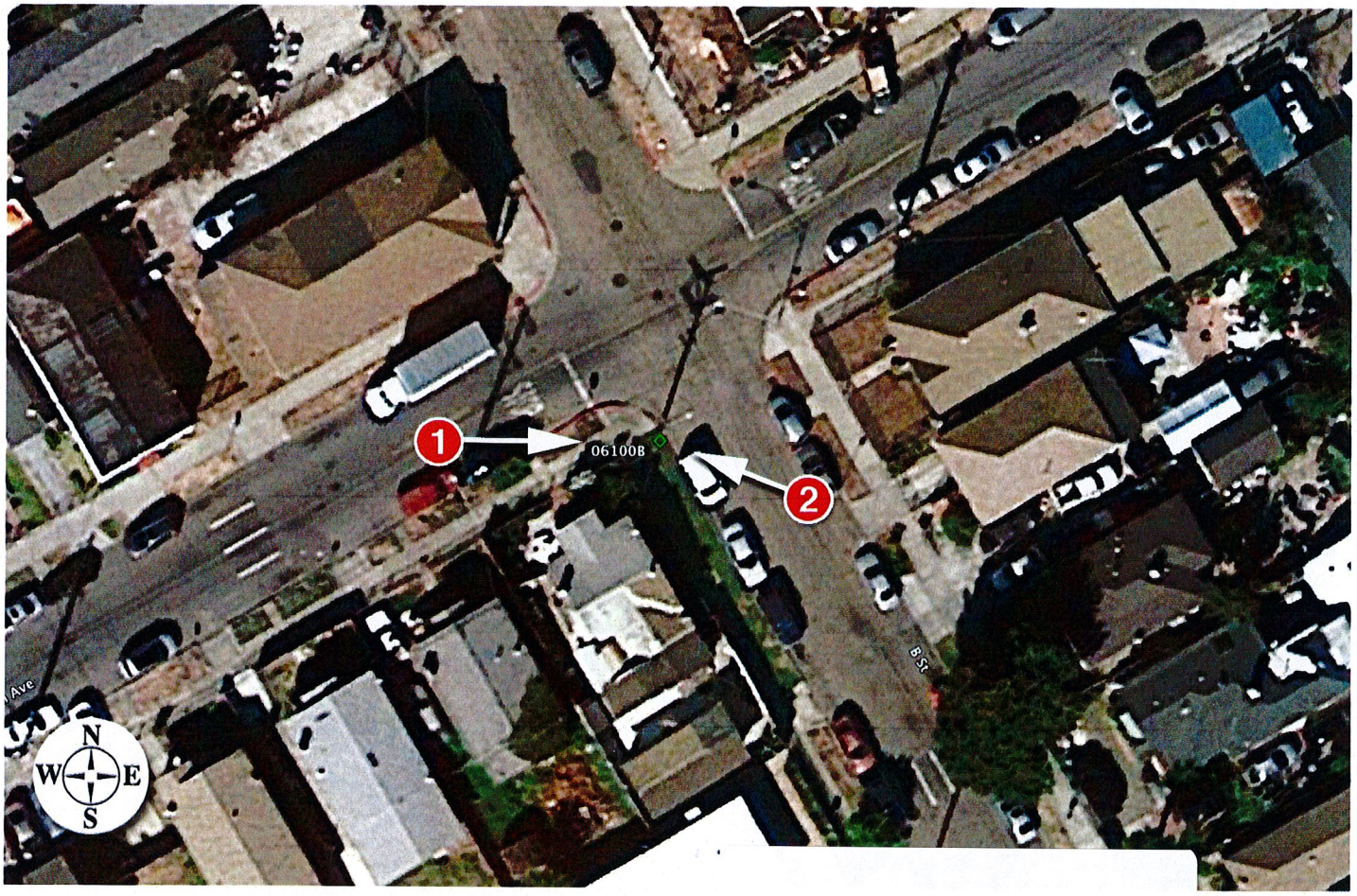
1170 88TH AVENUE
OAKLAND, CA 94621

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
C-4



extenet SYSTEMS

NW-CA-SANFRNMC 06100B

Adjacent to (in PROW)
1170 88th Avenue Oakland, CA

10/3/16

Attachment D

Aerial Map

agination 510 914-0500

extenet SYSTEMS

NW-CA-SANFRNMC 06100B

Looking East from 88th Avenue

10/3/16

Adjacent to (in PROW)
1170 88th Avenue Oakland, CA

View #1

Applied Imagination 510 914-0500

extenet SYSTEMS

NW-CA-SANFRNMC 06100B

Looking Northwest from B Street

10/3/16

Adjacent to (in PROW)
1170 88th Avenue Oakland, CA

View #2

Applied Imagination 510 914-0500

extenet SYSTEMS YOUR NETWORK. EVERYWHERE.

October 20, 2016

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

Re: Proposed ExteNet Small Cell Node Installation

Applicant:	**ExteNet Systems (California) LLC**
Nearest Site Address:	**Public Right of Way near 1170 88th Avenue**
Site ID:	**NW-CA-SANFRANMC Node 06100B**
Latitude/Longitude:	**37.749466, -122.178967**

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 1170 88th Avenue ("Node 06100B").[1] 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 30 foot tall wood utility pole in the public right-of-way on the south side of 88th Avenue just southwest of the intersection with B Street, at about 1170 88th Avenue. Power lines are on the pole at about 25 feet, 26 feet, 28 feet and 30 feet above ground.

ExteNet proposes to swap the pole for a new pole measuring 38 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 20 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 10 feet 6 inches and 13 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.

[1] 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.

ExteNet Systems
2000 Crow Canyon Place, Suite 210 • San Ramon, CA 94583
(415) 596-3474 • myergovich@extenetsystems.com

ATTACHMENT E

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 06100B.

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 06100B is an integral part of the overall small cell project, and it is located in a difficult coverage area near D Street. The coverage area consists of a primarily residential neighborhood off of 88th Avenue, B Street, A Street, D Street, and surrounding areas. Node 06100B 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 06100B is the least intrusive means to close T-Mobile's significant service coverage gap in the area. Node 06100B 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 06100B 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 06100B, 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[2] 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

[2] *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 Systems
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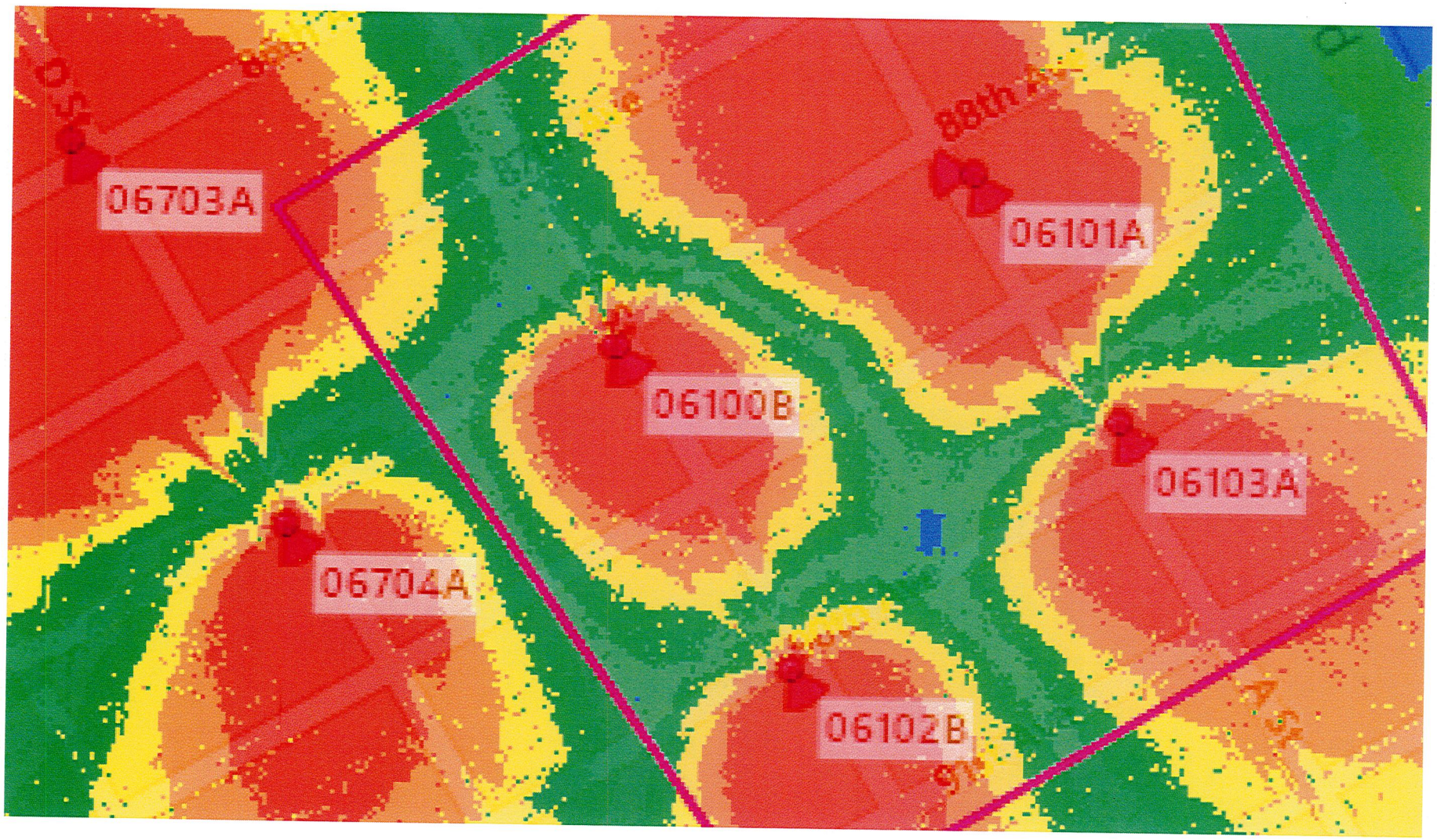
ExteNet Oakland
Node 06100B
Alternative Site Analysis

MAP OF ALTERNATIVE POLES EVALUATED FOR NODE 06100B

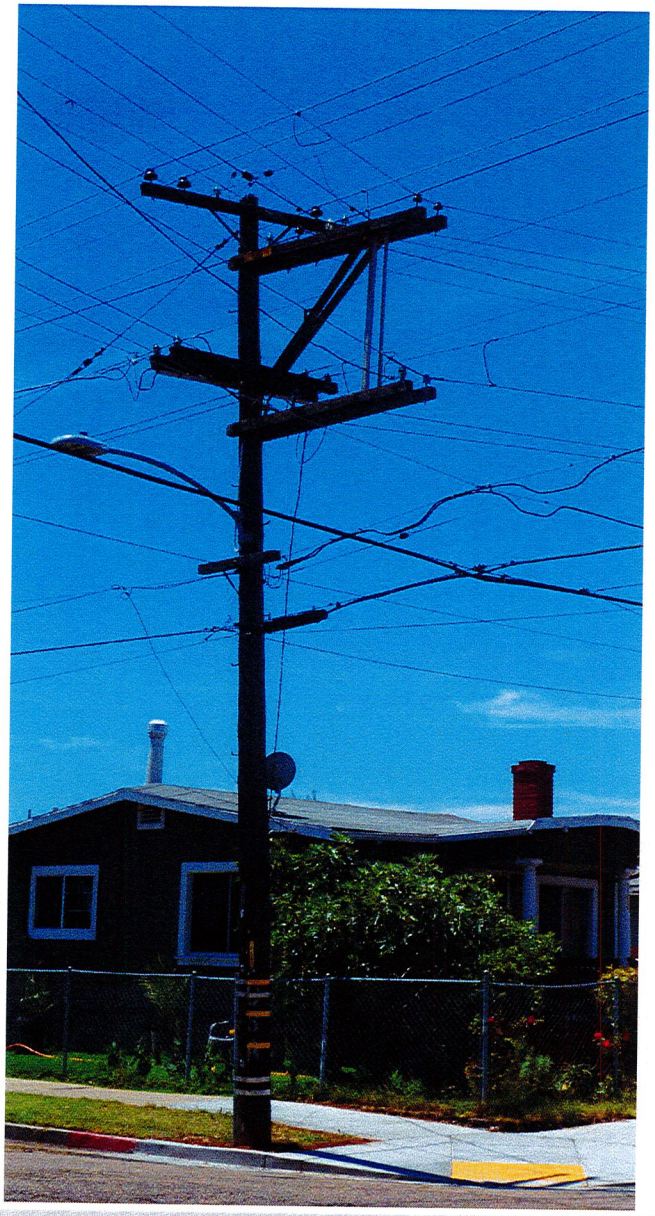
- The above maps depict ExteNet's proposed Node 06100B in relation to other poles in the area that were evaluated as possibly being viable alternative candidates.
- The following is an analysis of each of those 3 alternative locations.

PROPAGATION MAP OF NODES 06100B



This propagation map depicts the ExteNet proposed Node 06100B in relation to surrounding proposed ExteNet small cell nodes.

06100B - PROPOSED LOCATION



- The location for ExteNet's proposed Node 06100B is a joint utility pole located adjacent to PROW at 1170 88th Avenue (37.749466, - 122.178967).
- 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 06100A

- Node 06100A is a joint utility pole located in front of 1164 88th Avenue, (37.749427, - 122.179136).
- 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.

ALTERNATIVE NODE 06100C

- Node 06100C is a joint utility pole located at 8800 B Street Oakland (on side of house by backyard fence), (37.749664, - 122.178551)
- This pole is not a viable alternative candidate because cross lines 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 because the minimum antenna height needed at this pole would violate CPUC General Order-94 Regulation safety clearances. This configuration does not allow ExteNet the proper 2' of separation from the communication lines.
- This pole is not a viable alternative candidate because this pole is located too close to primary Node 06101A.

ALTERNATIVE NODE 06100D

- Node 06100D is a metal light pole near 1529 55th Avenue (37.768704, -122.201893).
- This is a viable alternative.

Alternative Site Analysis Conclusion

Based on ExteNet's analysis of alternative sites, the currently proposed Node 06100B 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. 06100B)
1170 88th Avenue • 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 facilities provider, to evaluate the addition of Node No. 06100B 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 1170 88th Avenue in Oakland. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

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

Wireless Service	Frequency Band	Occupational Limit	Public Limit
Microwave (Point-to-Point)	5,000–80,000 MHz	5.00 mW/cm^2	1.00 mW/cm^2
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.

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 20, 2016, it is proposed to install one CommScope Model 3X-V65S-GC3-3XR, 2-foot tall, tri-directional cylindrical antenna, with one direction activated, on a cross-arm to be added to a utility pole sited in the public right-of-way near the residence located at 1170 88th Avenue in Oakland. The antenna would employ no downtilt, would be mounted at an effective height of about 22 feet above ground, and its principal direction would be oriented toward 150°T. T-Mobile proposes to operate from this facility with a maximum effective radiated power in any direction of 214 watts, representing simultaneous operation 107 watts for AWS and 107 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 0.0036 mW/cm^2, which is 0.36% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 2.2% 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.

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 2 feet 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 1170 88th Avenue 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

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

October 17, 2016

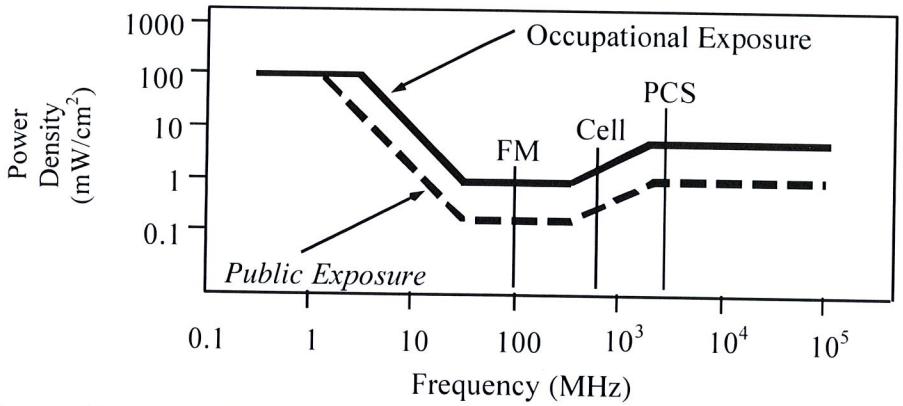
* Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health 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	Electromagnetic Fields (f is frequency of emission in MHz)					
Applicable Range (MHz)	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm^2)	
0.3 – 1.34	614	*614*	1.63	*1.63*	100	*100*
1.34 – 3.0	614	*823.8/f*	1.63	*2.19/f*	100	*180/f^2*
3.0 – 30	1842/ f	*823.8/f*	4.89/ f	*2.19/f*	900/ f^2	*180/f^2*
30 – 300	61.4	*27.5*	0.163	*0.0729*	1.0	*0.2*
300 – 1,500	$3.54\sqrt{f}$	*$1.59\sqrt{f}$*	$\sqrt{f}/106$	*$\sqrt{f}/238$*	f/300	*f/1500*
1,500 – 100,000	137	*61.4*	0.364	*0.163*	5.0	*1.0*



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

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

Near Field.

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

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

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

where θ_{BW} = half-power beamwidth of the antenna, in degrees, and
P_{net} = net power input to the antenna, in watts,
D = distance from antenna, in meters,
h = aperture height of the antenna, in meters, and
η = aperture efficiency (unitless, typically 0.5-0.8).

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

Far Field.

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

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

where ERP = total ERP (all polarizations), in kilowatts,
RFF = relative field factor at the direction to the actual point of calculation, and
D = distance from the center of radiation to the point of calculation, in meters.

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

ATTACHMENT G