COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: May 18, 2017

TO: Zoning Hearing Officer

FROM: Planning Staff

SUBJECT: Consideration of nine Use Permits, pursuant to Sections 6500 and 6510 of the San Mateo County Zoning Regulations, to install new wireless telecommunications facilities on existing joint utility poles located in the public right-of-way in front of: (1) 668 4th Avenue, (2) 600 Oakside Avenue, (3) 2949 Edison Way, (4) 617 3rd Avenue, (5) 650 2nd Avenue, (6) 599 4th Avenue, (7) 718 5th Avenue, (8) 3017 Fair Oaks Avenue, and (9) 612 5th Avenue in the unincorporated North Fair Oaks area of San Mateo County.

County File Numbers:

ITEM 1	PLN 2016-00502
ITEM 2	PLN 2016-00503
ITEM 3	PLN 2016-00504
ITEM 4	PLN 2016-00505
ITEM 5	PLN 2016-00506
ITEM 6	PLN 2016-00507
ITEM 7	PLN 2016-00508
ITEM 8	PLN 2016-00531
ITEM 9	PLN 2016-00532

PROPOSAL

The applicant proposes to install new wireless telecommunication facilities on existing joint utility poles located in the public right-of-way in front of: (1) 668 4th Avenue, (2) 600 Oakside Avenue, (3) 2949 Edison Way, (4) 617 3rd Avenue, (5) 650 2nd Avenue, (6) 599 4th Avenue, (7) 718 5th Avenue, (8) 3017 Fair Oaks Avenue, and (9) 612 5th Avenue in the unincorporated North Fair Oaks area. The new facilities will consist of one new support arm, located at a maximum height of 34 feet 6 inches above grade, one to two panel antennas, located at a maximum height of 21 feet 4 inches above grade, and four equipment boxes, located between 7 and 12 feet above the existing grade, mounted on existing joint utility poles where the maximum height

allowed in each zoning district ranges from 28 feet to 37 feet in height from the existing grade. No grading or tree removal activities are proposed.

ExteNet's entire project includes another five sites, north of Dumbarton Avenue between the railroad tracks and Highway 82, of near identical description (County File Nos. PLN 2016-00509 through PLN 2016-00513). Although "bundled" under a separate staff report, these sites will be considered by the ZHO along with this grouping.

RECOMMENDATION

That the Zoning Hearing Office approve the Use Permits, County File Numbers:

ITEM 1	PLN 2016-00502	668 4th Avenue
ITEM 2	PLN 2016-00503	600 Oakside Avenue
ITEM 3	PLN 2016-00504	2949 Edison Way
ITEM 4	PLN 2016-00505	617 3rd Avenue
ITEM 5	PLN 2016-00506	650 2nd Avenue
ITEM 6	PLN 2016-00507	599 4th Avenue
ITEM 7	PLN 2016-00508	718 5th Avenue
ITEM 8	PLN 2016-00531	3017 Fair Oaks Avenue
ITEM 9	PLN 2016-00532	612 5th Avenue

by making the required findings and adopting the conditions of approval listed in Attachment A.

BACKGROUND

Report Prepared By: Laura Richstone, Project Planner, 650/363-1829

Applicant: ExteNet (for T-Mobile), Mike Mangiantini

Land Owner: Public Right-of-Way (San Mateo County Department of Public Works)

Pole Owner: Pacific Gas and Electric

Sphere-of-Influence: None

Existing Land Use: Utility Poles in the Public Right-of-Way

Property details of the Use Permits recommended for approval:

Item 1 - County File Number: PLN 2016-00502	
Location	Public Right-of-Way in front of 668 4th Avenue, North Fair Oaks
APN	Public Right-of-Way adjacent to 060-034-110
Existing Zoning	R-1/S-73 (Single-Family Residential/Minimum Lot Size 5,000 sq. ft.)
General Plan Designation	Urban Single-Family Residential (15 du/ac to 24 du/ac)
Flood Zone	Zone X (area of minimal flood risk); FEMA Panel No. 06081C 0301E; effective October 2012

Item 2 - County File Number: PLN 2016-00503	
Location	Public Right-of-Way in front 600 Oakside Avenue , North Fair Oaks
APN	Public Right-of-Way adjacent to 054-251-310
Existing Zoning	R-3/S-3 (Multiple-Family Residential/Minimum Lot Size 5,000 sq. ft.)
General Plan Designation	Urban Multifamily Residential (24 du/ac to 60 du/ac)
Flood Zone	Zone X (area of minimal flood risk); FEMA Panel No. 06081C 0302E; effective October 2012

Item 3 - County File Number: PLN 2016-00504	
Location	Public Right-of-Way in front 2494 Edison Way, North Fair Oaks
APN	Public Right-of-Way adjacent to 060-041-110
Existing Zoning	M-1/NFO (Light Industrial/Minimum Lot Size 10,000 sq. ft.)
General Plan Designation	Urban Commercial Mixed Use
Flood Zone	Zone X (area of minimal flood risk); FEMA Panel No. 06081C 0302E; effective October 2012

Item 4 - County File Number: PLN 2016-00505	
Location	Public Right-of-Way in front 617 3rd Avenue , North Fair Oaks
APN	Public Right-of-Way adjacent to 060-032-130
Existing Zoning	R-1/S-73 (Single-Family Residential/Minimum Lot Size 5,000 sq. ft.)
General Plan Designation	Urban Single-Family Residential (15 du/ac to 24 du/ac)
Flood Zone	Zone X (area of minimal flood risk); FEMA Panel No. 06081C 0302E; effective October 2012

Item 5 - County File Number: PLN 2016-00506	
Location	Public Right-of-Way in front 650 2nd Avenue , North Fair Oaks
APN	Public Right-of-Way adjacent to 060-032-230
Existing Zoning	R-1/S-73 (Single-Family Residential/Minimum Lot Size 5,000 sq. ft.)
General Plan Designation	Urban Single-Family Residential (15 du/ac to 24 du/ac)
Flood Zone	Zone X (area of minimal flood risk); FEMA Panel No. 06081C 0302E; effective October 2012

Item 6 - County File Number: PLN 2016-00507	
Location	Public Right-of-Way in front 599 4th Avenue , North Fair Oaks
APN	Public Right-of-Way adjacent to 060-057-010
Existing Zoning	R-3/S-5 (Multiple-Family Residential/Minimum Lot Size 5,000 sq. ft.)
General Plan Designation	Urban Multifamily Residential (24 du/ac to 60 du/ac)
Flood Zone	Zone X (area of minimal flood risk); FEMA Panel No. 06081C 0302E; effective October 2012

Item 7 - County File Number: PLN 2016-00508	
Location	Public Right-of-Way in front 718 5th Avenue , North Fair Oaks
APN	Public Right-of-Way adjacent to 060-015-150
Existing Zoning	R-1/S-73 (Single-Family Residential/Minimum Lot Size 5,000 sq. ft.)
General Plan Designation	Urban Single-Family Residential (15 du/ac to 24 du/ac)
Flood Zone	Zone X (area of minimal flood risk); FEMA Panel No. 06081C 0302E; effective October 2012

Item 8 - County File Number: PLN 2016-00531	
Location	Public Right-of-Way in front 3017 Fair Oaks Avenue , North Fair Oaks
APN	Public Right-of-Way adjacent to 060-012-310
Existing Zoning	R-1/S-73 (Single-Family Residential/Minimum Lot Size 5,000 sq. ft.)
General Plan Designation	Urban Single-Family Residential (15 du/ac to 24 du/ac)
Flood Zone	Zone X (area of minimal flood risk); FEMA Panel No. 06081C 0302E; effective October 2012

Item 9 - File Number: PLN 2016-00532	
Location	Public Right-of-Way in front 612 5th Avenue , North Fair Oaks
APN	Public Right-of-Way adjacent to 060-035-060
Existing Zoning	R-1/S-73 (Single-Family Residential/Minimum Lot Size 5,000 sq. ft.)
General Plan Designation	Urban Single-Family Residential (15 du/ac to 24 du/ac)
Flood Zone	Zone X (area of minimal flood risk); FEMA Panel No. 06081C 0302E; effective October 2012

Environmental Evaluation: All projects are categorically exempt under provisions of Class 3, Section 15303, of the California Environmental Quality Act (CEQA) Guidelines for construction of a new small structure and installation of small new equipment and a facility in a small structure.

Setting: The proposed project sites are located on existing utility poles in the public right-of-way east of Middlefield Road and south of Fair Oaks Elementary School in the unincorporated North Fair Oaks area. The surrounding area is an urbanized single-family residential, multifamily residential, and urban commercial mixed use neighborhoods.

Chronology:

Date		Action
November 30, 2016	-	Use permit applications, the subject of this application, submitted.
December 16, 2016	-	Additional use permit applications (PLN 2016-00531 and PLN 2016-00532), the subject of this application, submitted.
January 20, 2017	-	Application deemed complete.
April 27, 2017	-	North Fair Oaks Community Council hearing date.
May 18, 2017	-	ZHO Public Hearing date.

DISCUSSION

A. KEY ISSUES

1. Compliance with the General Plan

Staff has determined that all projects comply with all applicable County General Plan policies, specifically:

Visual Quality Policies

Policy 4.21 (*Utility Structures*) requires minimizing adverse visual impacts generated by utility structures. The project sites are located within the public right-of-way along residential roads in a single-family, multi-family, and light industrial area. The proposed antenna(s), located 18 feet 1-inch to 21 feet 4 inches above grade, will also be screened by existing trees. Four equipment clusters (two remote radio units, ancillary equipment boxes, and one disconnect switch) will be located on the lower half of the joint utility poles. To ensure visual impacts are minimized, the equipment clusters will be similar in scale and appearance to equipment typically found on utility poles and be painted brown to match the wood material of the joint utility pole. To further reduce visual impacts the antenna(s) will be painted green (when screened by foliage) or brown (when there is no foliage present) to match the wood material of the joint utility pole and the surrounding vegetation.

2. Compliance with Zoning Regulations

The proposed project areas are located within the public right-of-way in the R-1/S-73, R-3/S-3, R-3/S-5, and M-1/NFO Zoning Districts. The zoning district standards, with the exception of height, are not applicable since the site is located within the public right-of-way.

The maximum height allowed in the R-1/S-73 Zoning District is 28 feet; the maximum height allowed in the R-3/S-3 and R-3/S-5 Zoning Districts is 36 feet; and the maximum height allowed in the M-1/NFO Zoning District is 37 feet. The proposed projects will consist of a new support arm, one to two antennas, and four equipment boxes. At 34 feet 6 inches, one support arm (Item 9) will exceed the height limit of the R-1/S-73 Zoning District of 28 feet. Though this support arm will exceed the height limit of the R-1/S-73 Zoning District, it is not in conflict with the height regulations because the support arm is only relocating pre-existing cables that will be displaced due to the location of the proposed antenna(s). No new proposed cables or supporting wires exceed the height limits for their applicable zoning districts. The proposed antenna(s) located at 18 feet 1-inch to 21 feet 4 inches above grade, and four equipment boxes located 7 to 12 feet above grade fall below the maximum height allowed in the R-1/S-73, R-3/S-3 and R-3/S-5 Zoning Districts. The proposed projects comply with the development criteria set forth by the County Zoning Regulations for these districts as noted in the following table:

Item No.	Planning Case No.	Zoning District	Maximum Height Allowed in Zoning District	Maximum Height of Support Arm	Maximum Height of Antenna(s)
ITEM 1	PLN 2016-00502	R-1/S-73	28 feet	23'-6''	21'-3''
ITEM 2	PLN 2016-00503	R-3/S-3	36 feet	23'-10''	21'-3''
ITEM 3	PLN 2016-00504	M-1/NFO	37 feet	23'-10''	21'-3''
ITEM 4	PLN 2016-00505	R-1/S-73	28 feet	26'-6''	21'-3''
ITEM 5	PLN 2016-00506	R-1/S-73	28 feet	24'-5''	21'-3''
ITEM 6	PLN 2016-00507	R-3/S-5	36 feet	23'-6''	21'-3''
ITEM 7	PLN 2016-00508	R-1/S-73	28 feet	23'-6''	21'-3''
ITEM 8	PLN 2016-00531	R-1/S-73	28 feet	21'-0''	21'-0''
ITEM 9	PLN 2016-00532	R-1/S-73	28 feet	34'-6''	21'-4''

Section 6512.2.I.2 (*Development And Design Standards For New Wireless Telecommunication Facilities That Are Not Co-Location Facilities*) of the San Mateo County Zoning Regulations states, in any Residential (R) District, that no monopole or antenna shall exceed the maximum height for structures allowed in that district, except that new equipment on an existing facility in the public right-of-way shall be allowed to exceed the maximum height for structures allowed in that district by 10% of the height of the existing facility, or by 5 feet, whichever is less. The new equipment for the wireless telecommunication facilities will be in compliance with this section by maintaining a maximum height of 21 feet 4 inches for the proposed antenna(s).

3. Compliance with Wireless Telecommunication Facilities Ordinance

Staff has reviewed the project against the provisions of the Wireless Telecommunication Facilities (WTF) Ordinance and determined that the projects comply with the applicable standards discussed below:

a. Development and Design Standards

Section 6512.2.A states that new wireless telecommunication facilities shall be prohibited in a Sensitive Habitat, as defined by Policy 1.8 of the General Plan (*Definition of Sensitive Habitats*) for facilities proposed outside of the Coastal Zone.

The projects are not located in a sensitive habitat, as defined by Policy 1.8 of the General Plan.

Section 6512.2.B prohibits new wireless telecommunication facilities from being located in areas zoned Residential (R), unless the applicant demonstrates that a review has been conducted of other options and no other sites or combination of sites allow feasible service or adequate capacity and coverage.

The proposed facilities will be located on joint utility poles within the public right-of-way in the R-1/S-73, R-3/S-3, R-3/S-5, and M-1/NFO Zoning Districts. The applicant chose the proposed locations to adequately provide T-Mobile wireless voice and data coverage to the surrounding area where there is currently a gap in service coverage. The proposed facilities are a part of a larger Distribution Antenna System (DAS) providing increased coverage capacity to the North Fair Oaks area that is difficult to cover using traditional macro wireless telecommunications facilities due to local land use and densities. The proposed facilities will cover transient traffic along the roadways and provide increased in-building service to the surrounding residences.

In the Extenet Alternative Site Analysis (see Attachment D), the applicant has identified and researched alternative sites within a 2.5-mile radius. The analysis includes a total of 26 monopole, rooftop, and tower alternative locations within a 2.5-mile radius and two alternative utility poles within 150 feet from the proposed sites. The 26 alternative locations were ruled out as viable candidates due to their location outside of the proposed small cell network. In order to provide the needed increase in coverage and capacity, these sites must be located approximately 150 feet from the targeted coverage area. A total of 17 utility poles were identified as possible alternatives (see Attachment K1-K9). Ten out of the 17 possible alternative utility poles identified were ruled out due to additional impacts that may result if chosen. These impacts include the relocation of existing transformers and tree trimming or removal. Other challenges associated with these alternative locations included inadequate space on the existing pole, limited climbing space for maintenance, and an inability to co-locate. Several macro antennas were found within a 2.5-mile radius (See Attachment E). However, placing the proposed facilities on these macro antennas would not fill the significant gap in coverage.

Among the researched locations, these proposed locations are the least intrusive and will fill the coverage gap necessary to provide adequate wireless and data coverage.

Section 6512.2.C prohibits new wireless telecommunication facilities to be located in areas where co-location on existing

facilities would provide equivalent coverage with less environmental impacts.

The applicant was unable to identify any existing wireless facilities within a 2.5-mile radius that would either allow co-location or provide coverage to the target area. Though several monopoles and cellular towers exist within a 2.5-mile radius (see Attachment D), these alternative sites are not feasible due to their location outside of the proposed small cell network and their inability to increase network capacity and coverage.

Section 6512.2.D requires new wireless telecommunication facilities to be constructed so as to accommodate co-location, and must be made available for co-location.

Future co-locations are technically feasible as long as the proposed facilities comply with California Public Utilities Commission General Order 95 (GO95) engineering requirements. However, it would be difficult to comply with the GO95 safety and separation requirements if another wireless facility were to be installed at this location. Therefore, the applicant does not expect future co-locations.

Sections 6512.2.E and F seek to minimize and mitigate visual impacts from public views by siting new facilities outside of public view, using natural vegetation for screening, painting equipment to blend with existing landscaping, and designing the facility to blend in with the surrounding environment.

The proposed facilities include one to two panel antennas located at a maximum height of 21 feet 4 inches above grade, mounted on existing joint utility poles located in the public right-of-way. When screened by foliage, the antenna(s) shall be painted a non-reflective green color to blend with the existing vegetation. When not screened by foliage, the antenna(s) shall be painted a non-reflective brown color to match the utility pole. The equipment boxes shall also be painted a non-reflective brown color to match the utility pole as recommended in Condition of Approval No. 4 (see Attachment A) to reduce visual impacts and blend in with existing equipment. No trees or vegetation are proposed for removal.

Section 6512.2.G requires that the exterior of wireless telecommunication facilities be constructed of non-reflective materials.

The proposed facilities will be constructed of non-reflective materials. As discussed in the section above, the facilities will be painted a

non-reflective green color to match the surrounding vegetation, or a non-reflective brown color to match the brown wood material of the joint utility poles.

Section 6512.2.H requires that wireless telecommunication facilities comply with all the requirements of the underlying zoning district, including, but not limited to, setbacks.

As discussed in Section 2, Compliance with Zoning Regulations, the proposed facilities will comply with all applicable requirements of the R-1/S-73, R-3/S-3, R-3/S-5, and M-1/NFO Zoning Districts. The existing joint utility poles are situated in the public right-of-way and are not subject to the development standards for setbacks.

Section 6512.2.I.2 states that new equipment located on existing facilities in the public right-of-way in any Residential (R) District, shall be allowed to exceed the maximum height for structures allowed in that district by 10% of the height of the existing facility, or by 5 feet, whichever is less.

The maximum height allowed in the R-1/S-73, R-3/S-3, R-3/S-5, and M-1/NFO Zoning Districts is 28 feet, 36 feet, 36 feet, and 37 feet respectively. The proposed projects involve installing new wireless telecommunication facilities on existing joint utility poles. As discussed in Section A.2, the new equipment for the wireless telecommunication facilities will be in compliance with this section by maintaining a maximum height of 34 feet 6 inches for the support arm and a maximum height of 21 feet 4 inches for the antenna(s) (see Attachment G for site specifics).

b. Performance Standards

The proposed projects meet the required standards of Section 6512.3 (*Performance Standards for New Wireless Telecommunication Facilities That Are Not Co-Location Facilities*) for lighting, licensing, provision of a permanent power source, timely removal of the facility, and visual resource protection. There is no lighting proposed, proper licenses will be obtained from both the Federal Communications Commission (FCC) and the California Public Utilities Commission (CPUC), power for the facilities will be provided by PG&E, visual impact will be minimal, and conditions of approval will require maintenance and/or removal of the facilities when they are no longer in operation. Furthermore, road access to the proposed project sites is existing and no noise in excess of San Mateo County's Noise Ordinance will be produced. Conditions of Approval Nos. 8-19 were

added to ensure compliance with the performance standards of this section (see Attachment A).

4. Compliance with Use Permit Findings

For the use permit to be approved by the Zoning Hearing Officer, the following findings must be made:

a. That the establishment, maintenance and/or conducting of the use will not, under the circumstances of this particular case, be detrimental to the public welfare or injurious to property or improvements in said neighborhood.

Cellular communications facilities, such as these proposed projects, require the submittal and review of a radio frequency (RF) report to ensure that the RF emissions from the proposed antenna(s) do not exceed the Federal Communications Commission's public exposure limits. The applicant submitted radio frequency reports prepared by Hammett & Edison, Inc., dated November 22, 2016 and December 20, 2016 confirming that the proposed facilities will comply with the prevailing standards for limiting public exposure to radio frequency energy and thus, will not cause a significant impact on the environment (see Attachment L1-L9). The reports state that the maximum RF level at ground level is calculated to range from 0.47% to 0.83% of the applicable public exposure limit (see tables below). The maximum calculated level at the second-floor elevation of the nearby residences is calculated to range from 1.0% to 5.8% of the public exposure limit (see table below for site specific information). 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. Due to the location of the mounted antenna(s), they will not be accessible to the general public and therefore no mitigation measures are necessary to comply with the FCC public exposure guidelines. To ensure compliance with occupational exposure limitations, staff has included Condition of Approval No. 20 (see Attachment A), recommended by Hammett & Edison, Inc., for the posting of explanatory warning signs at the antennas and/or on the pole below the antennas, readily visible from any angle of approach to persons who may need to work within the area (see Attachment A).

Item No.	Planning Case No.	Approx. Location	Ground Floor Radio Frequency Exposure	Second Floor Radio Frequency Exposure
ITEM 1	PLN 2016-00502	668 4th Avenue	0.83%	3.0%
ITEM 2	PLN 2016-00503	600 Oakside Avenue	0.83%	4.0%
ITEM 3	PLN 2016-00504	2949 Edison Way	0.47%	1.0%
ITEM 4	PLN 2016-00505	617 3rd Avenue	0.83%	5.8%
ITEM 5	PLN 2016-00506	650 2nd Avenue	0.83%	2.1%
ITEM 6	PLN 2016-00507	599 4th Avenue	0.83%	2.1%
ITEM 7	PLN 2016-00508	718 5th Avenue	0.83%	3.9%
ITEM 8	PLN 2016-00531	3017 Fair Oaks Avenue	0.47%	4.4%
ITEM 9	PLN 2016-00532	612 5th Avenue	0.47%	1.1%

Furthermore, the proposed facilities will be unmanned, operate at all times, and be serviced once a year by a T-Mobile technician. The proposed facilities will not generate significant traffic, noise, or intensification of use of the site.

With the discussion above, staff has determined that the proposed project will not have a negative environmental, health, or visual impact on persons or property within the project vicinity.

b. That this telecommunication facility is necessary for the public health, safety, convenience or welfare of the community.

Staff has determined that installation of a cellular facility at these locations will allow for increased clarity, range, and capacity of the existing cellular network and will enhance services for the public. The proposed facilities are the least intrusive option available to expand T-Mobile's network capacity and service coverage in this area of North Fair Oaks. The proposed facilities will use existing utility infrastructure and add small equipment without disturbing the character of the neighborhood.

B. NORTH FAIR OAKS COUNCIL REVIEW

On March 27, 2017 the proposed projects were presented to the North Fair Oaks Community Council. Six members of the Council were present and a motion to recommend denial to the Zoning Hearing Officer was passed by a majority vote. Three council members voted for denial of the projects, two members voted for approval, and one member of the Council abstained. A discussion of the Council's concerns, the Council's comments, and Staff's response are listed below.

Concern No. 1: The Council, members who voted to recommend denial of the project, expressed concerns about the cumulative health impacts on the surrounding North Fair Oaks neighborhood posed by the RF (radio frequency) emissions of both clusters. The council also cited the lack of conclusive studies performed in the United States (U.S.) about possible health effects that may arise due to long term exposure to RF emissions. While there was some discussion of whether the County might require that ExteNet (or the cell provider/user of the infrastructure) submit annual RF reports to ensure that the RF output emissions do not exceed levels identified in the RF reports, that point did not ultimately factor into the Council's overall concerns about the potential health effects of the proposed projects.

Staff's Response: As noted by County Counsel at the North Fair Oaks Community Council meeting, the FCC preempts the County's ability to deny wireless telecommunication facilities due to health concerns related to RF exposure if those emissions are below the FCC's public exposure limits. A jurisdiction can require the submittal of an RF report, prepared by a licensed engineer, to verify that a wireless telecommunication facility is below the FCC's public exposure limit a jurisdiction. The County must accept the report's conclusions if it can adequately demonstrate that the RF emissions of the proposed facilities are below the FCC's public exposure limits. As discussed in Section 4, Part A of this report, the RF reports submitted in conjunction with the proposed facilities verify that emissions from these proposed facilities fall well below the FCC's public exposure limits.

Concern No. 2: The Council expressed concerns that these new types of wireless telecommunication facilities are being unduly concentrated in the unincorporated North Fair Oaks Area where the political will to resist these types of facilities might not be as strong as in other communities. In addition, the Council was concerned about who would benefit from the placement of the proposed facilities. They were concerned that these facilities were being placed in the North Fair Oaks area, but would serve adjacent areas that would not be burdened by the facilities.

Staff's Response: As discussed previously, this technology will create and facilitate better wireless coverage and network capacity within the North Fair Oaks Community. These facilities will serve the North Fair Oaks community immediately surrounding, and adjacent to, the joint utility poles. Those that will benefit the most from the increased wireless coverage and network capacity will be North Fair Oaks residents within an approximate .33 mile radius from the proposed facilities. Attachment B illustrates the current scope and strength of T-Mobile's cell network. Attachment C illustrates the expanded coverage and signal strength of T-Mobile's network with the installation of the proposed facilities. These renderings show that these facilities will benefit the North Fair Oaks community and are not intended (nor do they serve) neighboring communities like Atherton, Menlo Park, Woodside, or Redwood City. While the technology of locating this type of cellular infrastructure onto existing utility poles is relatively

recent, ExteNet has installed such systems in Palo Alto, Redwood City, Oakland, Concord, and San Francisco. Within the unincorporated County similar systems have been installed along a considerable length of Skyline Boulevard, in La Honda, and along Highway 1. That said, staff has no reason to believe that ExteNet is choosing to place this system in the North Fair Oaks Area as a "trial" exercise or that they are doing so because there is an assumption on ExteNet's or the County's part that the North Fair Oaks area would be an easier candidate to accommodate such a network compared to others areas of the unincorporated County.

C. ENVIRONMENTAL REVIEW

These projects are categorically exempt pursuant to Section 15303, Class 3, of the California Environmental Quality Act (CEQA) related to the construction of a new, small structure and installation of small new equipment and a facility in a small structure.

D. REVIEWING AGENCIES

San Mateo County Building Inspection Section
San Mateo County Department of Public Works
Redwood City Fire Protection District
Menlo Park Fire Protection District
North Fair Oaks Community Council

ATTACHMENTS

A. Recommended Findings and Conditions of Approval
B. Existing Cell Coverage Map
C. Expanded Cell Coverage Map after Installation
D. Wireless Telecommunication Facilities Within a 2.5 Mile Radius
E. Wireless Telecommunication Facilities Map
F. Map of Proposed Cell Sites
G. Project Summary Chart
H1.-H9. Vicinity Map; Specific for Each Site
I1.-I9. Project Plans; Specific for Each Site
J1.-J9. Photo Simulations; Specific for Each Site
K1.-K9 Extenet Alternative Site Analysis; Specific for Each Site
L1.-L9. Radio Frequency Radiation Report prepared by Hammett & Edison, Inc., dated November 22, 2016; Specific for Each Site

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Attachment A

County of San Mateo
Planning and Building Department

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Numbers: Hearing Date: May 18, 2017

ITEM 1	PLN 2016-00502
ITEM 2	PLN 2016-00503
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ITEM 5	PLN 2016-00506
ITEM 6	PLN 2016-00507
ITEM 7	PLN 2016-00508
ITEM 8	PLN 2016-00531
ITEM 9	PLN 2016-00532

Prepared By: Laura Richstone
Project Planner

For Adoption By: Zoning Hearing Officer

RECOMMENDED FINDINGS

Regarding the Environmental Review, Find:

1. That these projects are categorically exempt from environmental review, per Class 3, Section 15303, of the California Environmental Quality Act (CEQA) Guidelines for construction of a new, small structure and installation of small new equipment and a facility in a small structure.

Regarding the Use Permits, Find:

2. That the establishment, maintenance, and/or conducting of the use will not, under the circumstances of this particular case, be detrimental to the public welfare or injurious to the property or improvements in said neighborhood because the projects will meet current Federal Communications Commission (FCC) standards as shown in the radio frequency radiation reports and has been conditioned to maintain a valid FCC and California Public Utilities Commission (CPUC) license.

3. That these telecommunications facilities are necessary for the public health, safety, convenience, or welfare of the community in that installing cellular facilities

at these location will provide increased and improved cellular coverage in the area for residents, commuters, and emergency personnel.

RECOMMENDED CONDITIONS OF APPROVAL

Current Planning Section

1. This approval applies only to the proposal, documents, and plans described in this report and submitted to and approved by the Zoning Hearing Officer on May 18, 2017. Minor revisions or modifications may be approved by the Community Development Director if they are consistent with the intent of and in substantial conformance with this approval.

2. These use permits shall be for the proposed projects only. Any change or change in intensity of use shall require an amendment to the use permit. Amendments to these use permits require an application for amendment, payment of applicable fees, and consideration at a public hearing.

3. These permits shall be valid for ten (10) years until May 18, 2027. If the applicant seeks to renew these permits, renewal shall be applied for six (6) months prior to expiration with the Planning and Building Department and shall be accompanied by the renewal application and fee applicable at that time. Renewal of these permits shall be considered at a public hearing.

4. When the proposed antenna(s) are screened by foliage, the applicant shall paint the antenna(s) green. When the proposed antenna(s) are not screened by foliage, the applicant shall paint the antenna(s) brown to match the utility pole. The equipment boxes shall also be painted a non-reflective brown color to match the utility pole. Two copies of each color samples shall be submitted to the Current Planning Section at the time of application for a building permit. Color verification will be confirmed by the Current Planning Section prior to a final inspection for the building permit.

5. During project construction, the applicant shall, pursuant to Chapter 4.100 of the San Mateo County Ordinance Code, minimize the transport and discharge of stormwater runoff from the construction site into storm drain systems by:

    a. Stabilizing all denuded areas and maintaining erosion control measures continuously between October 1 and April 30. Stabilizing shall include both proactive measures, such as the placement of hay bales or coir netting, and passive measures, such as revegetating disturbed areas with plants propagated from seed collected in the immediate area.

    b. Storing, handling, and disposing of construction materials and wastes properly, so as to prevent their contact with stormwater.

c. Controlling and preventing the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, and non-stormwater discharges to storm drains and watercourses.

d. Avoiding cleaning, fueling, or maintaining vehicles on-site, except in a designated area where wash water is contained and treated.

e. Delineating with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses.

f. Protecting adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.

g. Performing clearing and earth-moving activities only during dry weather.

h. Limiting and timing application of pesticides and fertilizers to prevent polluted runoff.

i. Limiting construction access routes and stabilizing designated access points.

j. Avoiding tracking dirt or other materials off-site; cleaning off-site paved areas and sidewalks using dry sweeping methods.

k. The contractor shall train and provide instruction to all employees and subcontractors regarding the construction best management practices.

6. These permits do not allow for the removal of any trees. Any tree removal will require a separate permitting process.

7. The applicant shall not enter into a contract with the landowner or lessee which reserves for one company exclusive use of structures on this site for telecommunications facilities.

8. The wireless telecommunications facilities shall not be lighted or marked unless required by the Federal Communications Commission (FCC) or the Federal Aviation Administration (FAA).

9. The applicant shall file, receive, and maintain all necessary licenses and registrations from the Federal Communications Commission (FCC), the California Public Utilities Commission (CPUC), and any other applicable regulatory bodies prior to initiating the operation of these facilities. The applicant shall supply the Planning and Building Department with evidence of each of these licenses and registrations. If any required license is ever revoked, the applicant shall inform the

Planning and Building Department of the revocation within ten (10) days of receiving notice of such revocation.

10. Once a use permit is obtained, the applicant shall obtain a building permit and build in accordance with the approved plans.

11. The projects' final inspection approval shall be dependent upon the applicant obtaining a permanent and operable power connection from the applicable energy provider.

12. The wireless telecommunication facilities and all equipment associated with it shall be removed in its entirety by the applicant within 90 days if the FCC and/or CPUC license and registration are revoked or the facility is abandoned or no longer needed, and the sites shall be restored to blend with the surrounding area. The owner and/or operator of the wireless telecommunication facilities shall notify the Planning Department upon abandonment of the facility. Restoration shall be completed within two (2) months of the removal of the facility.

13. Wireless telecommunications facilities shall be maintained by the permittee(s) and subsequent owners in a manner that implements visual resource protection requirements of Section 6512.2.E and F above (e.g., landscape maintenance and painting), as well as all other applicable zoning standards and permit conditions.

14. Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property shall be limited to the hours from 7:00 a.m. to 6:00 p.m., weekdays and 9:00 a.m. to 5:00 p.m., Saturdays. Said activities are prohibited on Sundays, Thanksgiving, and Christmas (San Mateo Ordinance Code Section 4.88.360).

15. The use of diesel generators or any other emergency backup energy source shall comply with the San Mateo County Noise Ordinance.

16. If technically practical and without creating any interruption in commercial service caused by electronic magnetic interference (EMI), floor space, tower space and/or rack space for equipment in a wireless telecommunication facility shall be made available to the County for public safety communication use.

17. To reduce the impact of construction activities within the public right-of-way and/or on neighboring properties, the applicant shall ensure that no construction-related vehicles impede through traffic along 4th Avenue, Oakside Avenue, Edison Way, 3rd Avenue, 5th Avenue, and Fair Oaks Avenue, or other public right-of-ways.

18. To reduce the impact of potential traffic hazards from service visits to the facility, the applicant shall ensure that no vehicles related to the service and/or maintenance of the cellular facility impede through traffic along 4th Avenue,

Oakside Avenue, Edison Way, 3rd Avenue, 5th Avenue, and Fair Oaks Avenue, or other public right-of-ways.

19. Explanatory signs are required to be posted at the antennas and/or on the pole below the antennas, readily visible from any angle of approach to persons who might need to work within the project area.

Building Inspection Section

20. The installation shall be based on the latest California Building Standards Code, which at the time of this review is the 2016 California Building Standards, Title 24.

Department of Public Works

21. No proposed construction work within the public right-of-way shall begin until County requirements for the issuance of an encroachment permit, including review of the plans, have been met and an encroachment permit issued. The applicant shall contact a Department of Public Works inspector 48 hours prior to commencing work in the public right-of-way.

Redwood City Fire Protection District

22. The applicant shall meet all applicable requirements of section 608 of the 2016 CFC.

23. The applicant shall provide signage on the poles of the equipment areas and doors to boxes on existing utility poles. The signs shall state the type of voltage of electrical circuits (NFPA 704 labeling). The sign hall also have the 24-hour a day emergency contact numbers and the name of the lessee company.

24. A final inspection is required with all corrections completed.

25. Approved plan, approval letter and a permit must be on-site at the time of inspection.

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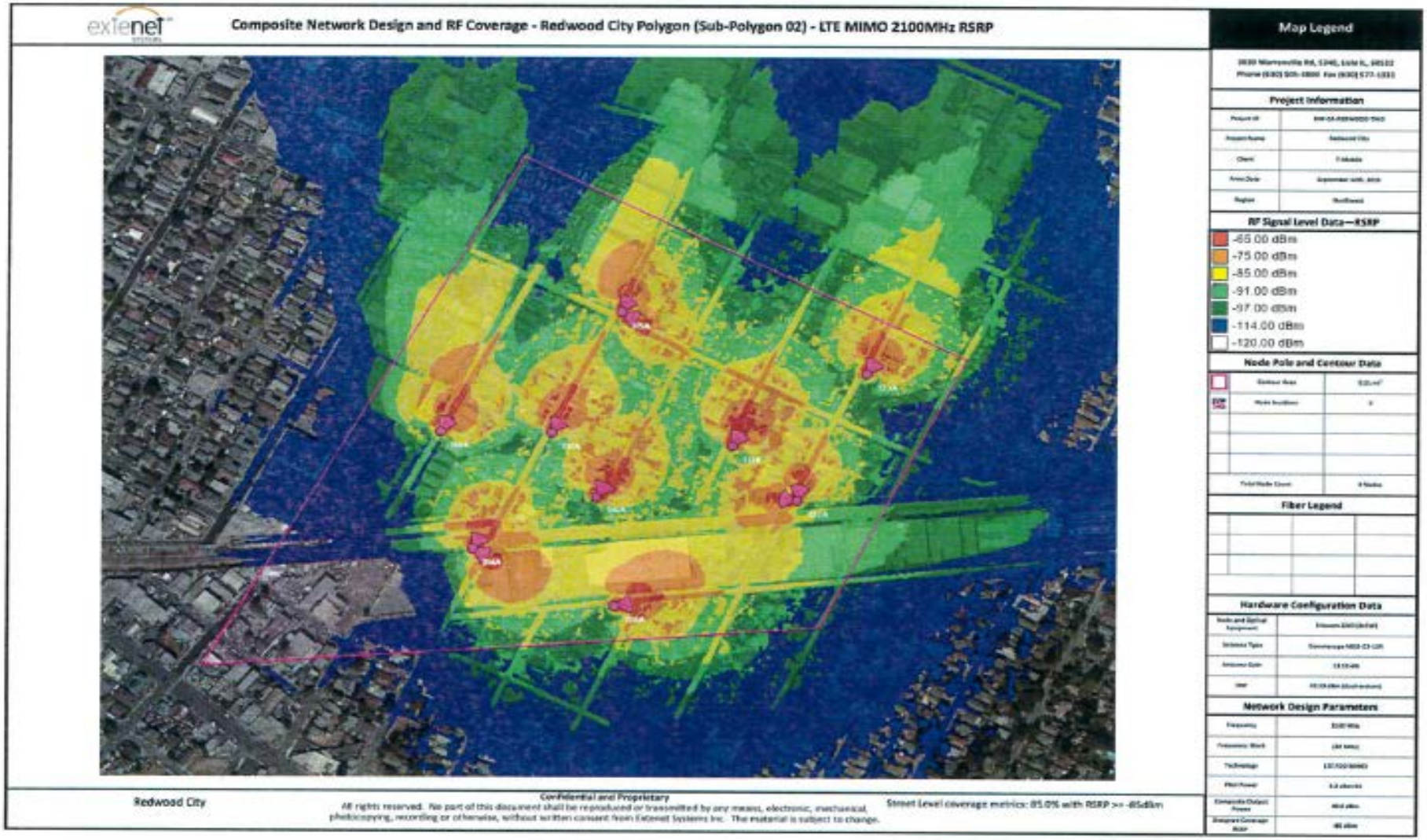
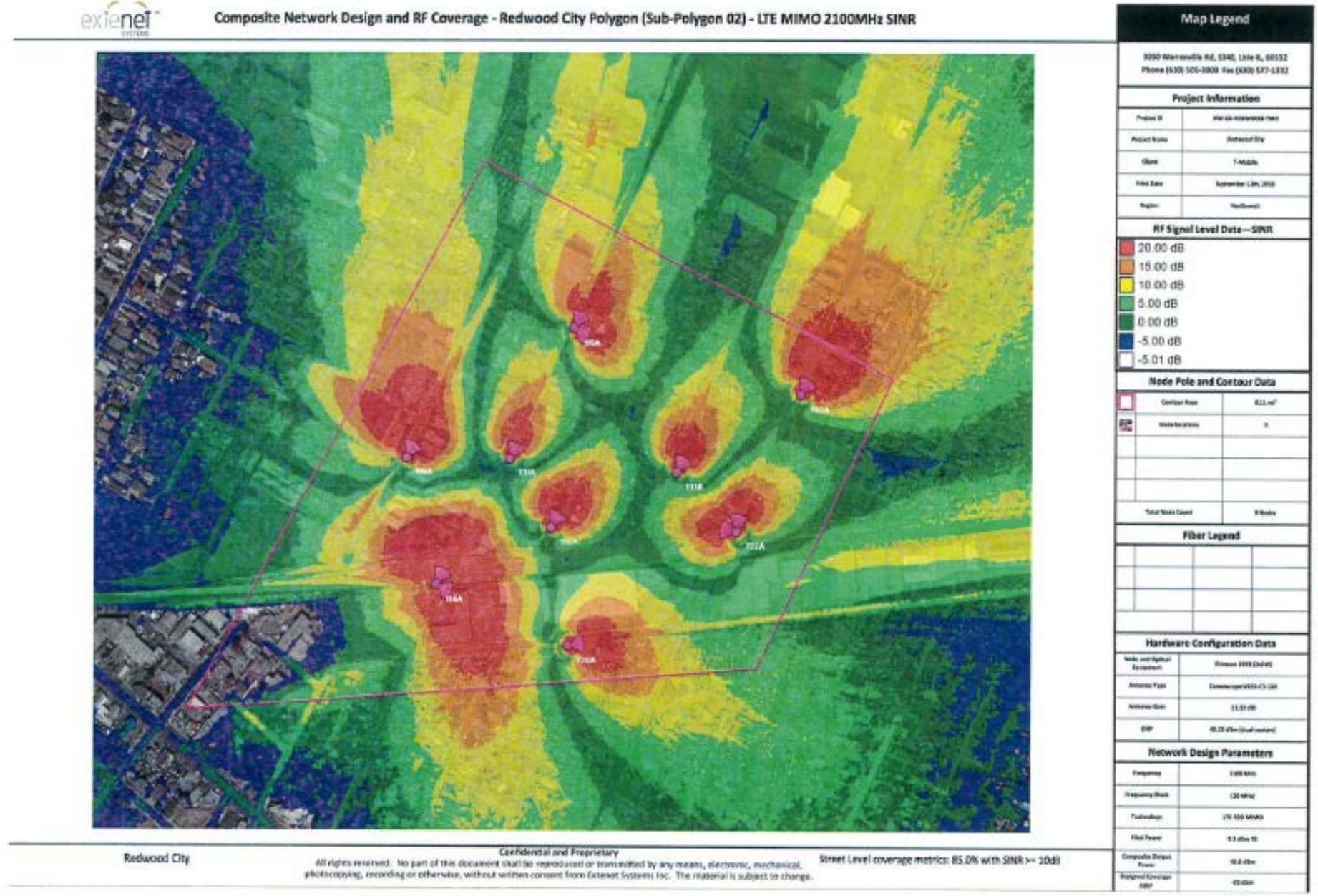
Propagation Map of Proposed Site (and Cluster)



San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **B**

File Numbers: **PLN 2016-00503**



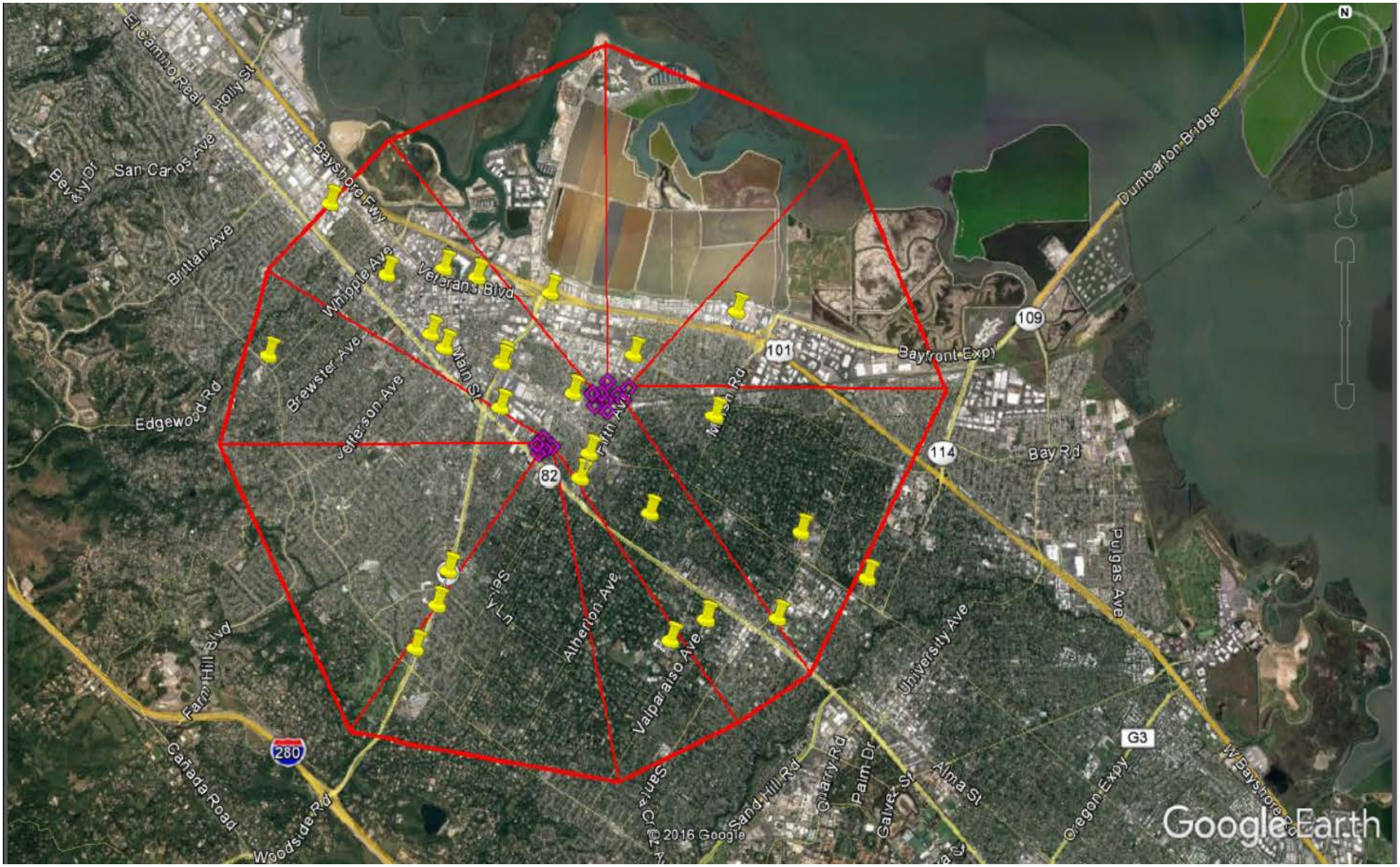
San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **H1**

File Numbers: **PLN 2016-00503**

ExteNet Small Cell Node 3017 Fair Oaks Avenue, Redwood City WTFs Within 2.5 Mile Radius				
Latitude	Longitude	Type	Street Address	APN
37°28'47.84"N	122°13'10.05"W	Existing Monopole	338-385 Manzanita Street, Redwood City	053-355-180
37°28'46.32"N	122°13'10.79"W	Existing Monopole	338-385 Manzanita Street, Redwood City	053-355-180
37°28'34.62"N	122°12'33.23"W	Existing Monopole	2801 Crocker Avenue, Redwood City	054-221-380
37°27'41.41"N	122°10'34.84"W	Existing Monopole	555 Middlefield Road, Atherton	061-282-060
37°29'13.80"N	122°12'45.34"W	Existing Monopole	1100 Broadway, Redwood City	054-023-060
37°29'06.53"N	122°11'07.92"W	Existing Monopole	3600 Haven Avenue, Redwood City	055-162-300
37°29'20.93"N	122°14'11.24"W	Existing Monopole	911 Arguello Street, Redwood City	052-272-040
37°29'48.88"N	122°14'41.77"W	Existing Monopole	1680 Bayport Avenue, San Carlos	046-223-110
37°28'57.76"N	122°13'47.94"W	Existing Rooftop Site	1121 Jefferson Avenue, Redwood City	053-172-999 / SBE 279-41-34
37°27'08.47"N	122°10'47.19"W	Existing Rooftop Site	700 El Camino Real, Menlo Park	071-333-200
37°28'29.13"N	122°13'11.33"W	Existing Rooftop Site	2342 El Camino Real, Redwood City	053-335-270
37°27'26.65"N	122°13'37.63"W	Existing Rooftop Site	1391 Woodside Road, Redwood City	069-311-370
37°26'57.19"N	122°13'54.22"W	Existing Rooftop Site	2000 Woodside Road, Redwood City	069-191-560
37°28'52.35"N	122°13'40.66"W	Existing Rooftop Site	1451 El Camino Real, Redwood City	053-176-170
37°28'49.39"N	122°15'12.56"W	Existing Rooftop Site	170 Alameda de las Pulgas, Redwood City	058-060-080
37°28'25.90"N	122°11'19.67"W	Existing Rooftop Site	723 Marsh Road, Menlo Park	060-143-320
37°29'19.95"N	122°13'24.03"W	Existing Rooftop Site	1100 Veterans Blvd., Redwood City	053-202-140
37°27'13.68"N	122°13'43.33"W	Existing Rooftop Site	1775 Woodside Road, Redwood City	069-341-420
37°27'08.12"N	122°11'24.18"W	Existing Rooftop Site	1330 University Drive, Menlo Park	110-370-999
37°29'23.47"N	122°13'41.42"W	Existing Rooftop Site	900 Veterans Blvd., Redwood City	052-372-250
37°28'49.53"N	122°12'01.71"W	Existing Enclosed Tower	3175 Spring Street, Redwood City	055-081-999 / SBE 312-41-25
37°28'11.45"N	122°12'24.53"W	Existing Guy Tower	197 Fifth Avenue, Redwood City	060-261-260
37°27'48.76"N	122°11'53.01"W	Existing Lattice Tower	83 Ashfield Road, Atherton	060-321-010
37°26'59.99"N	122°11'42.21"W	Existing Water Tower	150 Valparaiso Avenue, Atherton	070-390-010
37°27'23.69"N	122°10'00.50"W	Existing Fire Station Hose Tower Site	300 Middlefield Road, Menlo Park	062-460-030
37°28'01.98"N	122°12'29.32"W	Existing Parking Lot Light Attachment	46 Fifth Avenue, Redwood City	060-281-610

Existing WTFs within 2.5 miles of the proposed site are listed above. Availability of space and owner interest in accommodating additional users at these sites has not been investigated because none of the sites are acceptable for ExteNet's small cell network due to incompatibility with the fundamental design concept associated with the network. The main purpose of the proposed small cell network is to increase network capacity (more bandwidth for customers). This site will improve coverage as well, but the area is already covered so this will be a nominal, secondary benefit. Cell sites can only handle a limited number of voice calls, data megabytes, and total number of active users at any one time. This limitation is directly related to the amount of radio frequency spectrum allocated to wireless carriers by the FCC. In order to increase network capacity, carriers have to add cell sites, which allows for frequency re-use in non-adjacent cells. More frequency re-use means more capacity. If ExteNet located this site at any of the existing WTFs, there would be no opportunity for frequency re-use. Due to their locations outside the proposed small cell network, the signals transmitted from any of the existing WTFs would be cast all over the network, causing co-channel interference, and ExteNet would not be able to build any network capacity. The site needs to be located within the area that will be served by the site, which is very small. It cannot be done from 2.5 miles away. It can only be done at the targeted location, or within approximately 150 feet from the targeted location.



San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **E**

File Numbers: **PLN 2016-00502 thru PLN 2016-00509; 00531; 0053**

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **F**

File Numbers: **PLN 2016-00502 thru PLN 2016-00509; 00531; 0053**

Item No.	Planning Case No.	Approx. Location	Max. Height Allowed	Max Height of Support Arm	Max. Height of Antenna(s)	Ground Floor Radio Frequency Exposure	Second Floor Radio Frequency Exposure
ITEM 1	PLN 2016-00502	668 4th Ave	28'	23'-6''	21'-3''	0.83%	3.0%
ITEM 2	PLN 2016-00503	600 Oakside Ave	36'	23'-10''	21'-3''	0.83%	4%
ITEM 3	PLN 2016-00504	2949 Edison Way	37	23'-10''	21'-3''	0.47%	1.0%
ITEM 4	PLN 2016-00505	617 3rd Ave	28'	26'-6''	21'-3''	0.83%	5.8%
ITEM 5	PLN 2016-00506	650 2nd Ave	28'	24'-5''	21'-3''	0.83%	2.1%
ITEM 6	PLN 2016-00507	599 4th Ave	36'	23'-6''	21'-3''	0.83%	2.1%
ITEM 7	PLN 2016-00508	718 5th Ave	28'	23'-6''	21'-3''	0.83%	3.9%
ITEM 8	PLN 2016-00531	3017 Fair Oaks Ave.	28'	N/A	21'-0''	0.47%	4.4%
ITEM 9	PLN 2016-00532	612 5th Ave.	28'	34'-6''*	21'-4''	0.47%	1.1%

**While the support arm for Item 9 does exceed the max height allowed in the R-1/S-73 zoning district it is allowed because it is supporting existing cables that needed to be relocated for the placement of the proposed antennas.*

San Mateo County North Fair Oaks Community Council Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **G**

File Numbers: **PLN 2016-00502 thru PLN 2016-00509; 00531; 0053**

ITEM 1

File No.: PLN 2016-00502
Location: Public Right-of-Way in front of 668 4th Avenue, North Fair Oaks
APN: Public Right-of-Way adjacent to 060-034-110

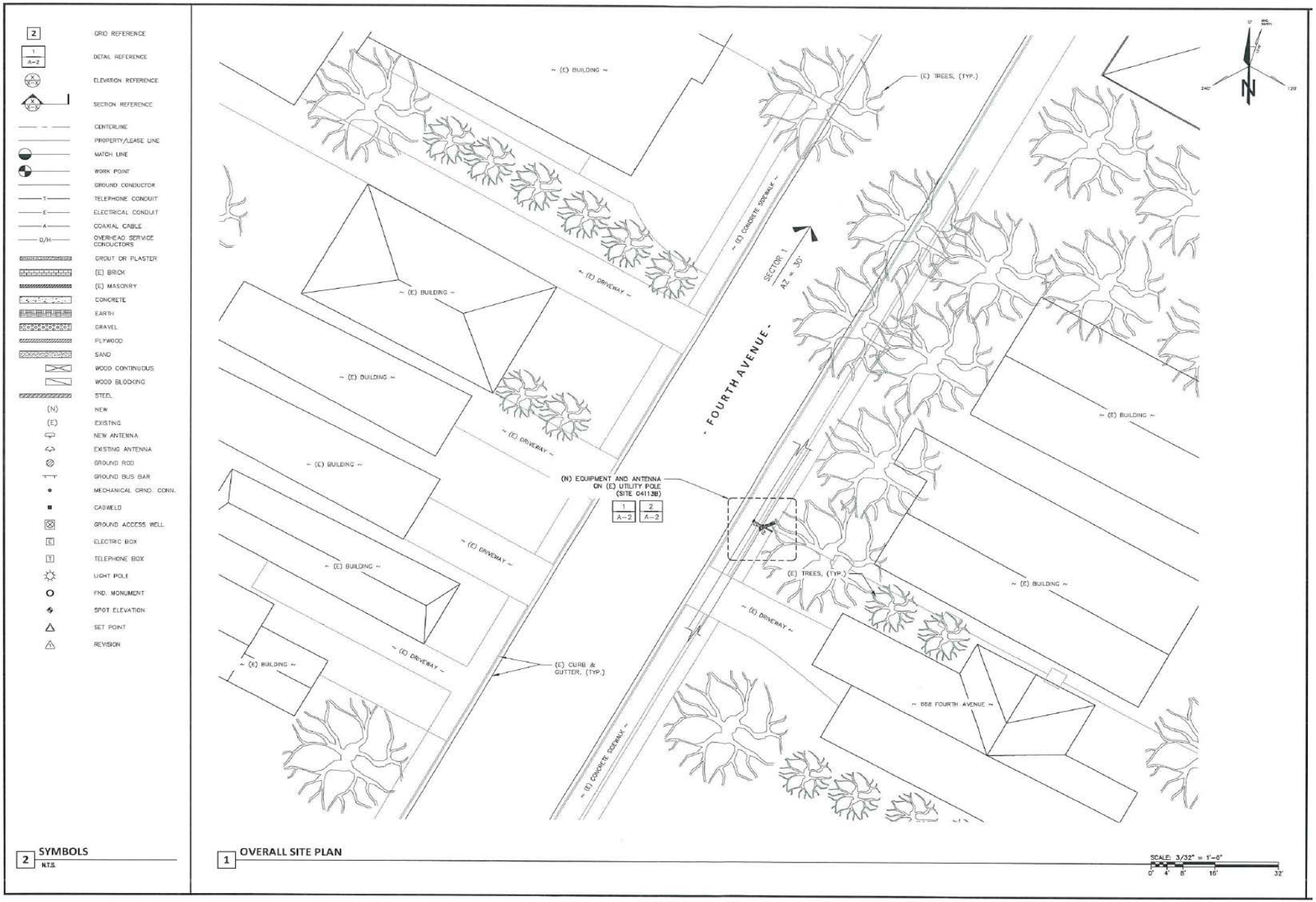
PROJECT SPECIFICATIONS TABLE							
R-1/S-73 Maximum Height	**Height of Existing Utility Pole**	**Maximum Height of Support Arm**	**Maximum Height of Antenna(s)**	**Ground Floor Radio Frequency Exposure**	**Send Floor Radio Frequency Exposure**	**Number of Viable Alternatives**	**Number of Proposed Antenna**
28 feet	39 feet	23 feet 6 inches	21 feet 4 inches	0.83%	3.0%	1	1

San Mateo County North Fair Oaks Community Council Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini**

Attachment: **H1**

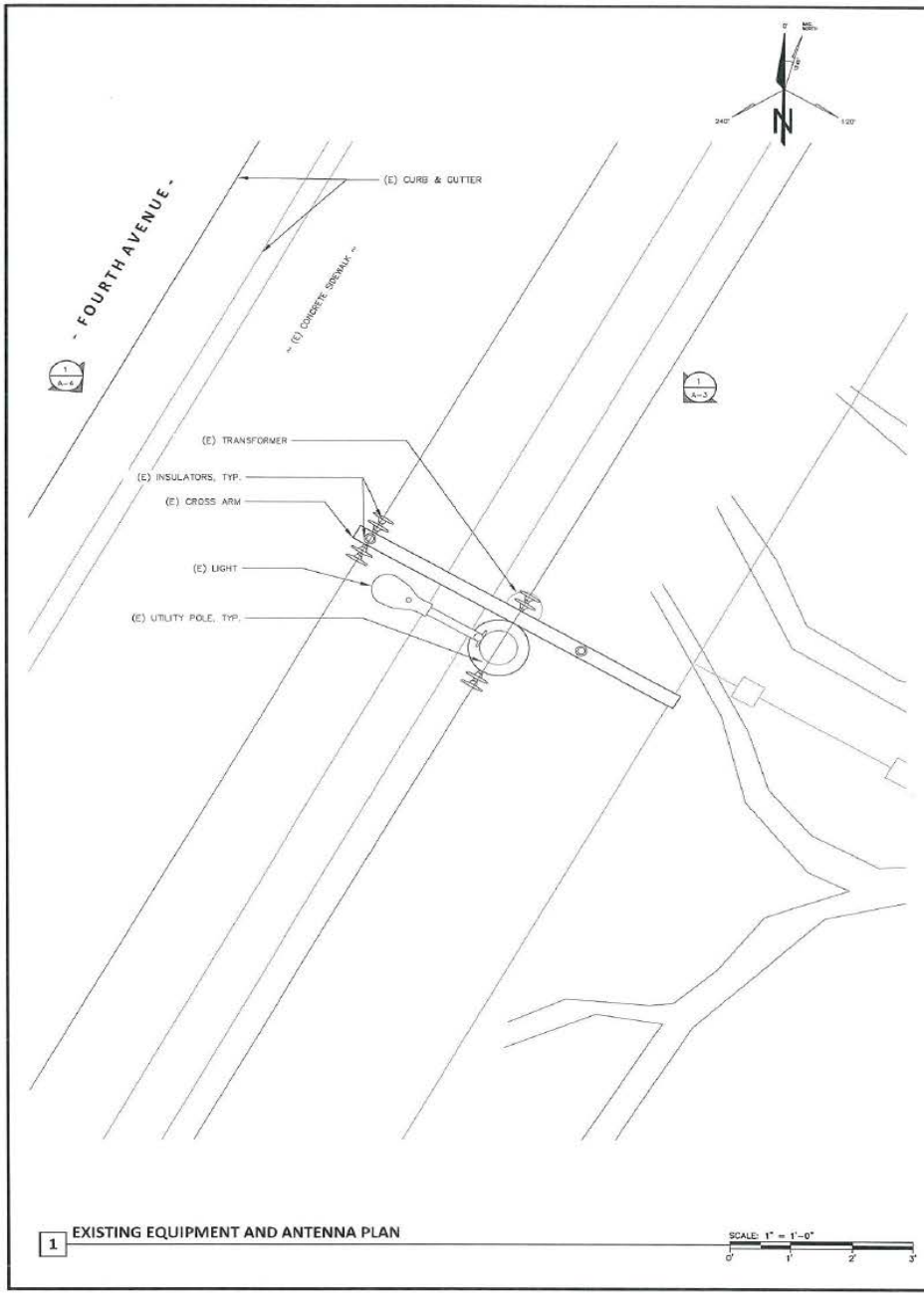
File Numbers: **PLN 2016-00502**

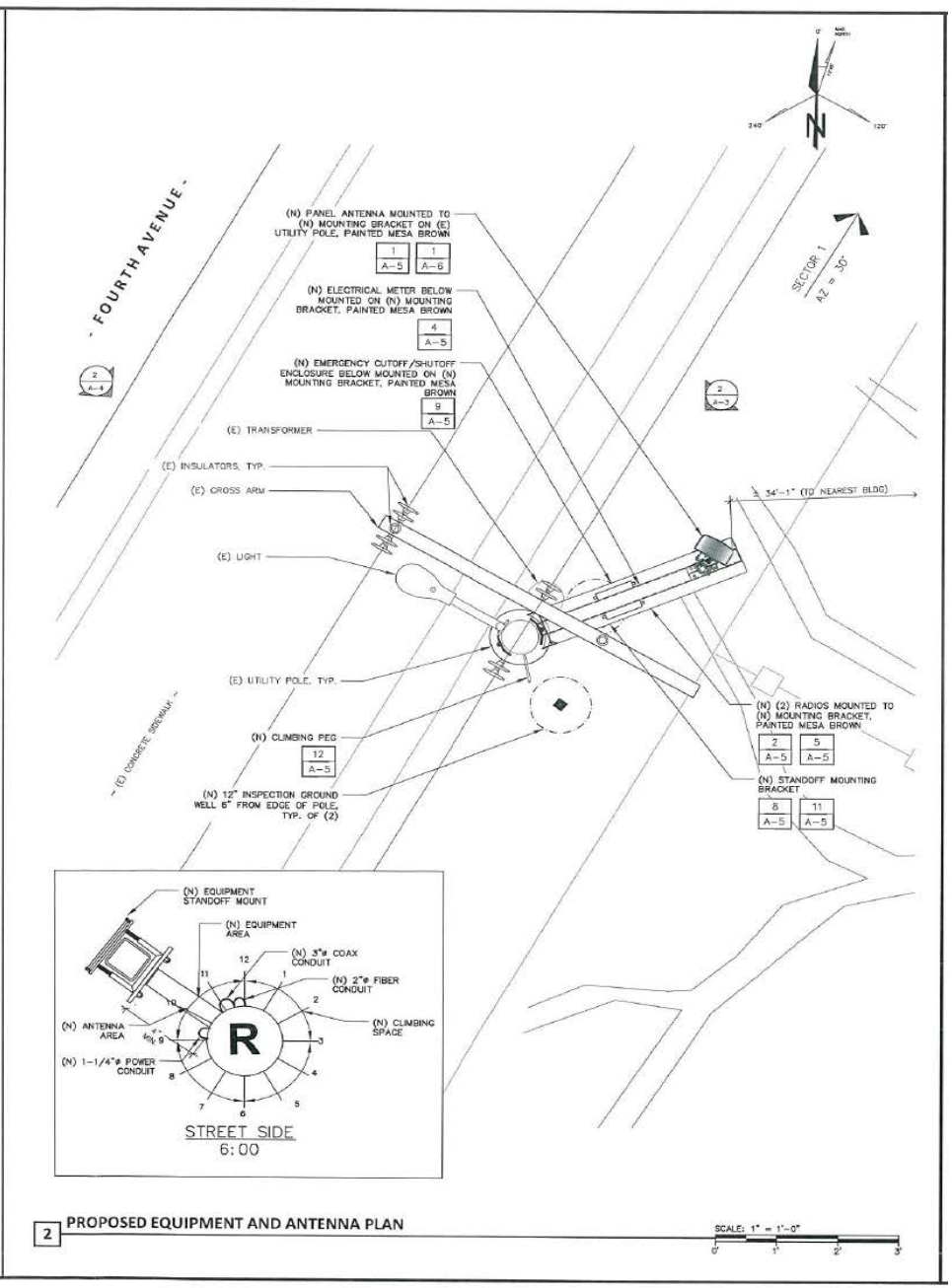


San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I1**

File Numbers: **PLN 2016-00502**

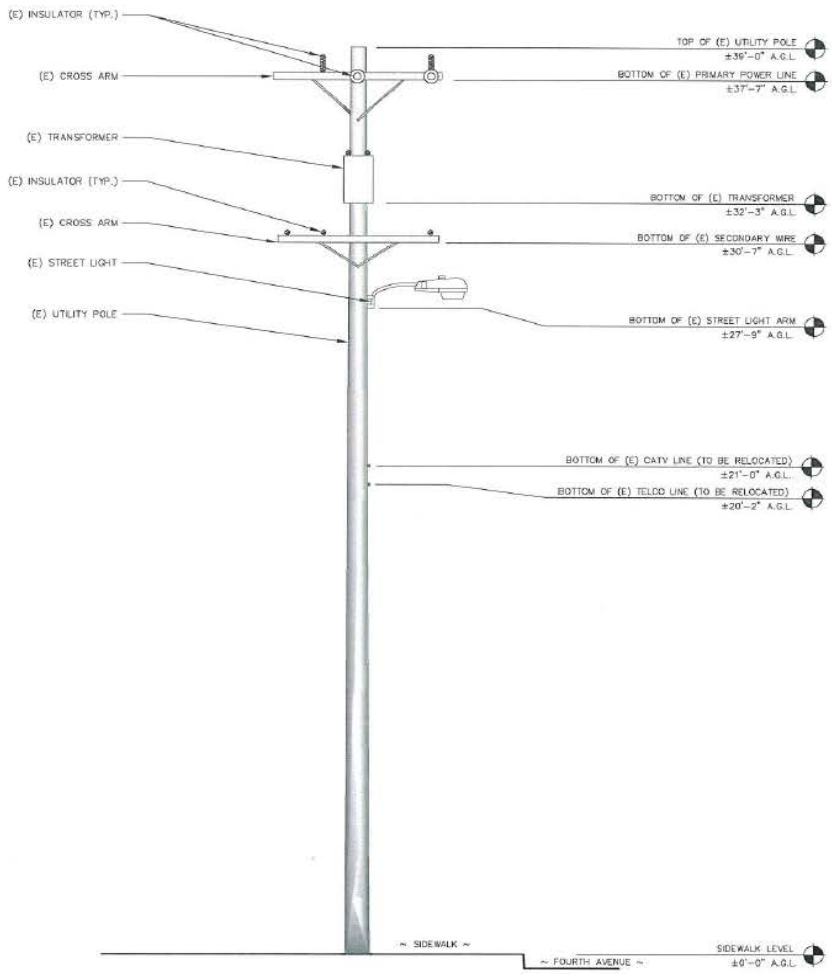




San Mateo County Zoning Hearing Officer Meeting

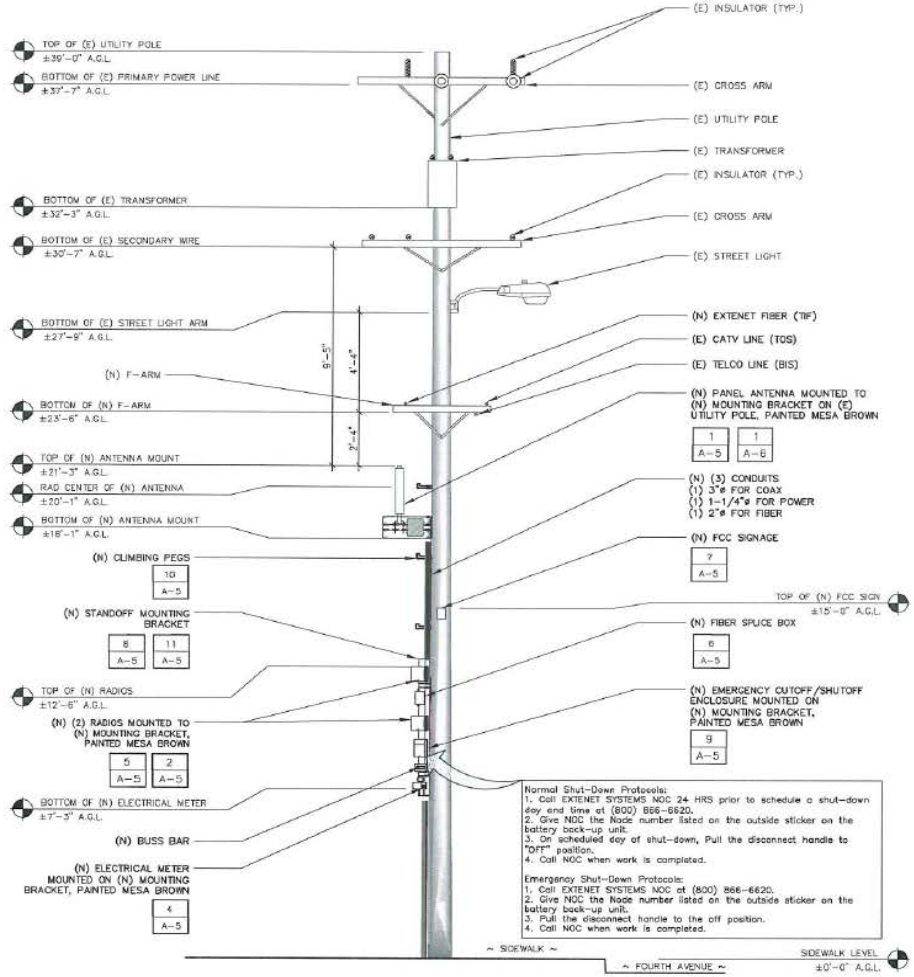
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I1**

File Numbers: **PLN 2016-00502**



1 EXISTING NORTHEAST ELEVATION

SCALE: 3/8" = 1'-0"



MAKE READY INFORMATION

1. EXTENET CONTRACTOR TO PLACE NEW F-ARM ON N/S/O EXISTING POLE AT 23'6" AGL.
2. EXTENET CONTRACTOR TO TRANSFER EXISTING TELCO TO NEW F-ARM AT 23'6" AND ATTACH BOTTOM INSIDE POSITION - STREET SIDE.
3. EXTENET CONTRACTOR TO TRANSFER EXISTING CATV TO NEW F-ARM AT 23'6" AND ATTACH TOP OUTSIDE POSITION - STREET SIDE.
4. EXTENET CONTRACTOR TO PLACE NEW EXTENET FIBER TO NEW F-ARM AT 23'6" AND ATTACH TOP INSIDE POSITION - FIELD SIDE.
5. EXTENET CONTRACTOR TO PLACE BOTTOM OF NEW ANTENNA SUPPORT ARM EXTENDING INTO STREET AT 18'0" AGL.
6. EXTENET CONTRACTOR TO INSTALL NEW ANTENNA(S) TO NEW SUPPORT ARM PER DESIGN.
7. EXTENET CONTRACTOR TO PLACE NEW 2" SCH 80 PVC RISER AT 11:00 POSITION FOR EXTENET COAXIAL CABLES - PER DESIGN.
8. EXTENET CONTRACTOR TO PLACE NEW 2" SCH 80 PVC RISER AT 11:30 POSITION FOR EXTENET FIBER CABLES - PER DESIGN.
9. EXTENET APPROVED ELECTRICAL CONTRACTOR TO PLACE NEW 1 ¼" SCH 80 PVC RISER AT 9:30 POSITION FOR POWER SERVICE FROM 1' BELOW SECONDARY TO NEW POWER METER.
10. EXTENET CONTRACTOR TO CUT IN NEW V-TAP AT 23'6" AGL TO IMPORT NEW FIBER INTO NEW COAXIAL RISER.
11. EXTENET CONTRACTOR TO PLACE NEW 4" X 4" X 60" POLE MOUNTED EQUIPMENT CHANNEL AT 10:30 POSITION ON 4" STANDOFF BOLTS FOR NEW EXTENET EQUIPMENT (BOTTOM AT 7'0" AGL).
12. MOUNT OF 2 NEW RRUS AND ALUMINUM BACKPLATE TO NEW EQUIPMENT CHANNEL.
13. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW PG&E SMART METER BOX TO POLE AT 7'0" AGL.
14. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW BREAKER BOX TO POLE AT 8'9" AGL.
15. EXTENET CONTRACTOR TO PLACE NEW #2 COPPER GROUND ROD 12" BELOW GRADE AND 24" FROM POLE FOR NEW POWER METER.
16. EXTENET CONTRACTOR TO PLACE NEW #2 COPPER GROUND ROD 12" BELOW GRADE AND 24" FROM POLE FOR NEW EXTENET EQUIPMENT.
17. PLACE NEW #2 COVERED GROUND WIRE FROM POWER METER TO NEW METER GROUND ROD.
18. PLACE NEW #2 COVERED GROUND WIRE FROM EXTENET EQUIPMENT TO NEW EQUIPMENT GROUND ROD.
19. EXTENET CONTRACTOR TO QUARTER STEP NEW POLE AT 12:00 AND 5:00 FOR CLIMBING SPACE.
20. EXTENET CONTRACTOR TO PLACE ALL RULE 94 SIGNAGE AS REQUIRED BY LAW.

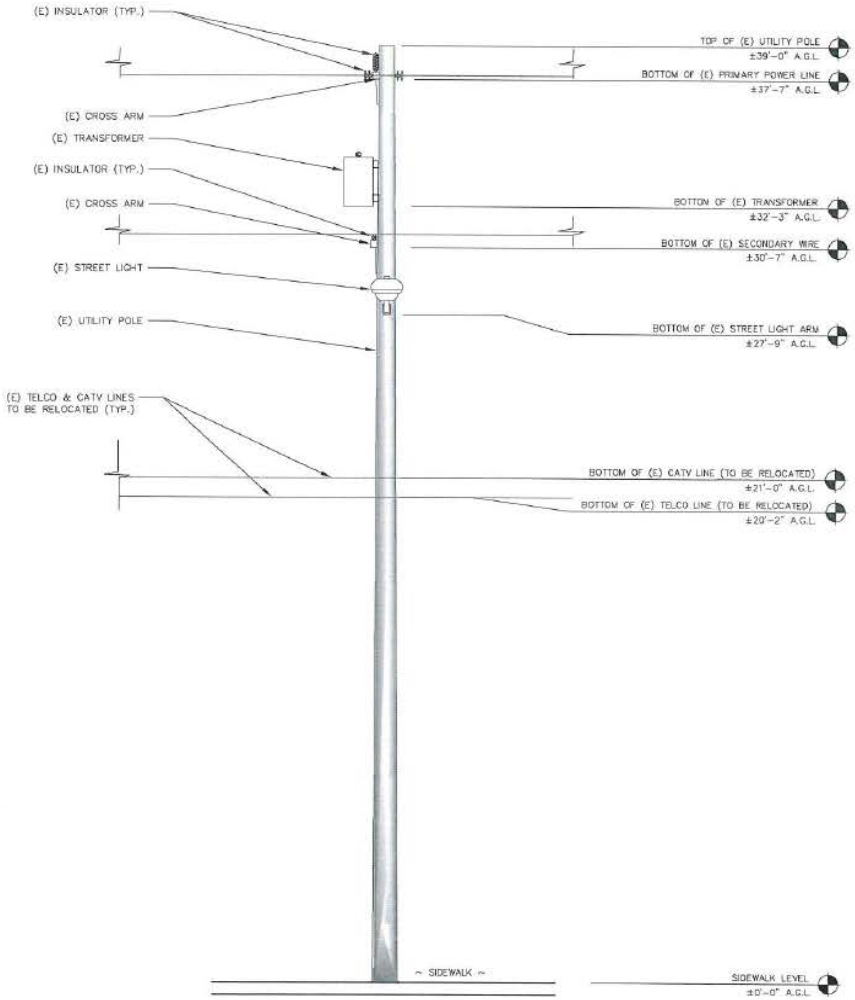
2 PROPOSED NORTHEAST ELEVATION

SCALE: 3/8" = 1'-0"

San Mateo County Zoning Hearing Officer Meeting

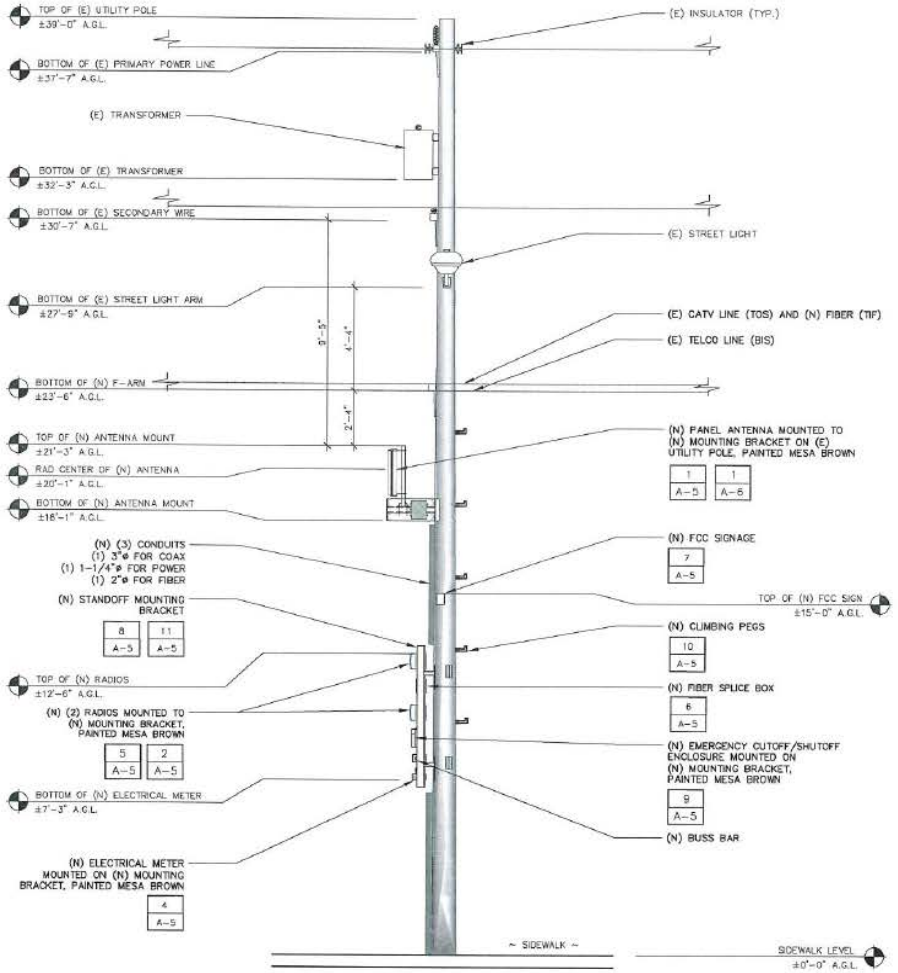
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I1**

File Numbers: **PLN 2016-00502**



1 EXISTING NORTHWEST ELEVATION

SCALE: 3/8" = 1'-0"



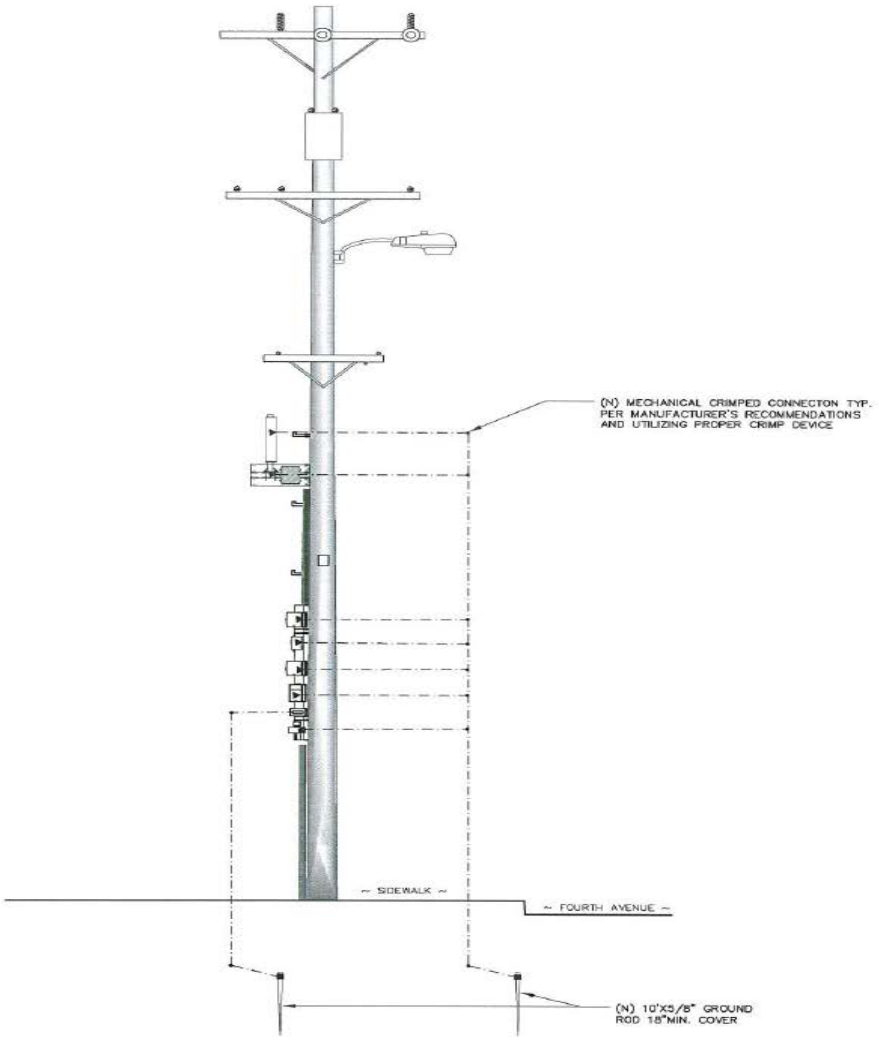
2 PROPOSED NORTHWEST ELEVATION

SCALE: 3/8" = 1'-0"

San Mateo County Zoning Hearing Officer Meeting

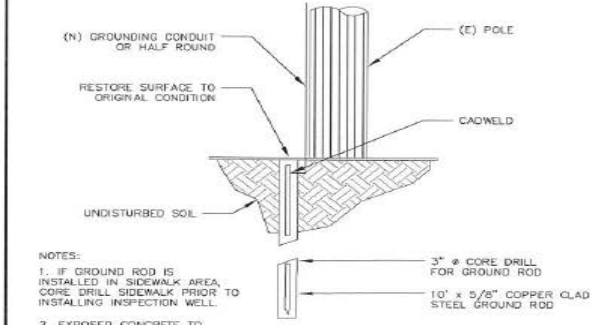
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I1**

File Numbers: **PLN 2016-00502**



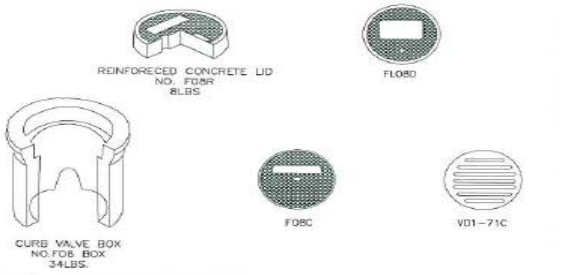
7 POLE GROUNDING DIAGRAM

SCALE: 3/8" = 1'-0"



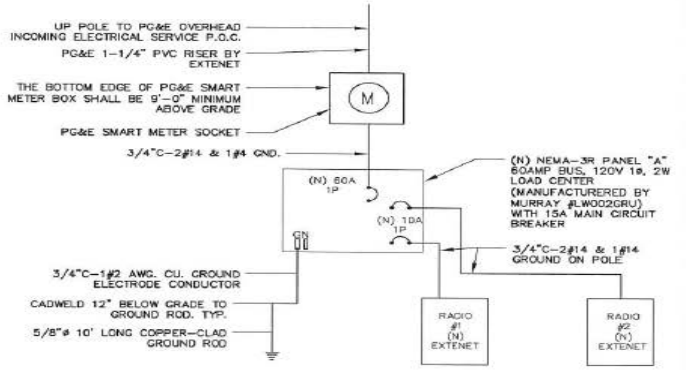
POLE GROUNDING ROD SCALE: N.T.S. 4

NOTES:
- ETCHED POLYPROPYLENE FACE
- FACE ANCHORED IN CONCRETE
- ULTRA-VIOLET INHIBITOR
- EXCEEDS ASTM-D1693 STANDARDS
- FOR ENVIROMENTAL STRESS CRACKING RESISTANCE



F08BOX	BOX	34LBS F08 CURB VALVE BOX (8" I.D. X 12" HIGH) - 48 PER PALLET
F08R	LID	8LBS REINFORCED CONCRETE LID WITH PLASTIC RING
F08C	LID	8LBS CAST IRON LID
F08D	LID	2LBS FIBRELYTE LID, NON-CONCRETE
V01-71C	LID	12LBS COST IRON GRATE ADA COMPLIANT

F08 BOX GROUND WELL DETAIL SCALE: N.T.S. 5



6 SINGLE LINE DIAGRAM

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I1**

File Numbers: **PLN 2016-00502**

exteNet SYSTEMS

NW-CA-SANFRNMC- 04113B

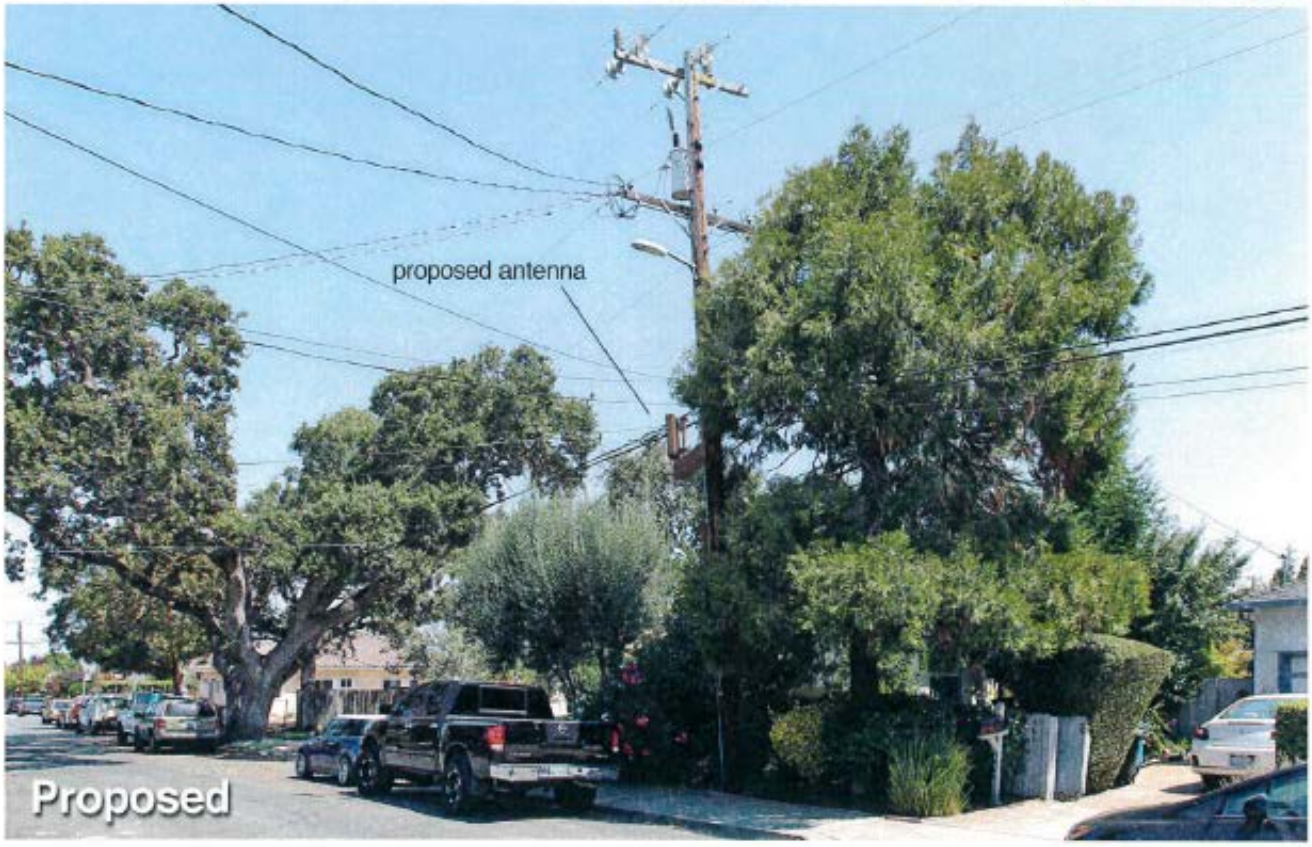
Aerial Map

IFO 668 Fourth Avenue Redwood City, CA

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J1**

File Numbers: **PLN 2016-00502**



extenet SYSTEMS

NW-CA-SANFRNMC- 04113B

IFO 668 Fourth Avenue Redwood City, CA

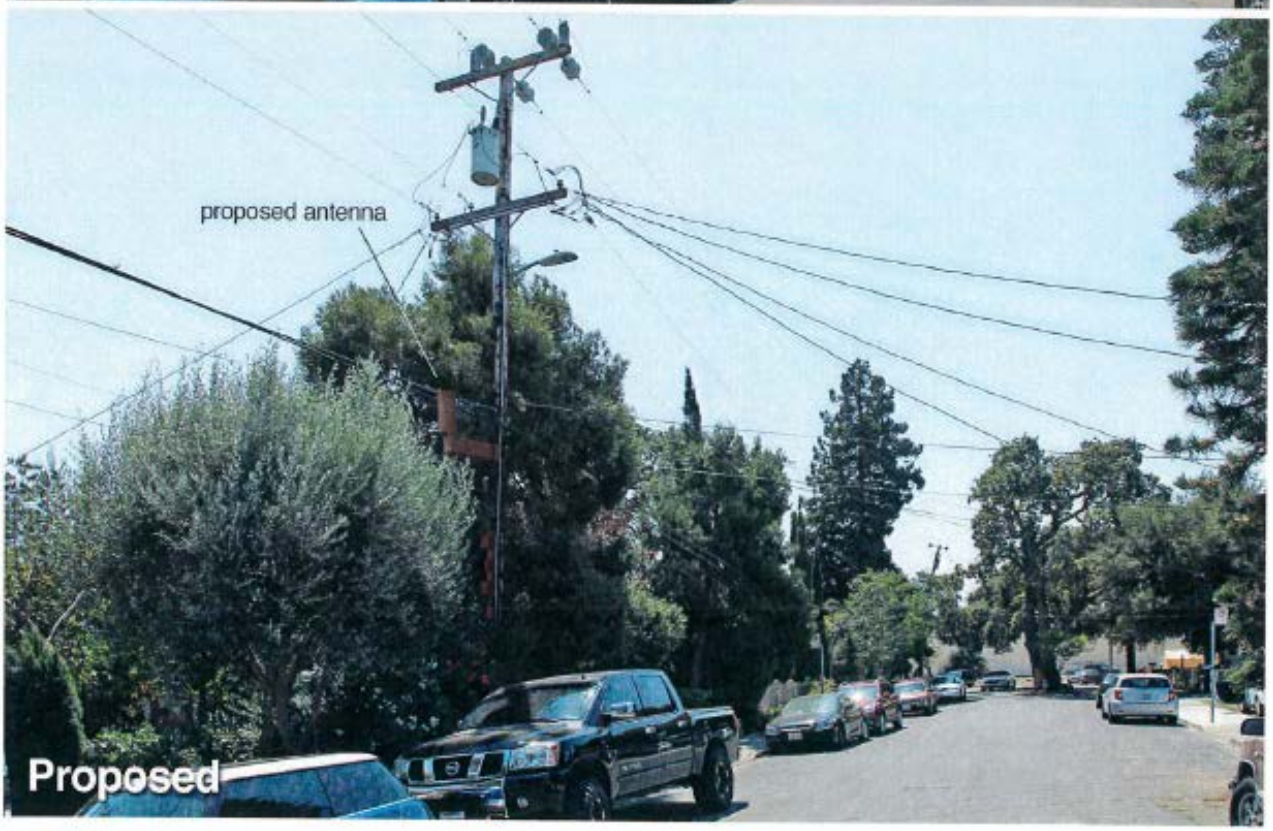
Looking Northeast from Fourth Avenue

View #1

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J1**

File Numbers: **PLN 2016-00502**



exteNet SYSTEMS

NW-CA-SANFRNMC- 04113B

IFO 668 Fourth Avenue Redwood City, CA

Looking South from Fourth Avenue

View #2

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J1**

File Numbers: **PLN 2016-00502**

Alternative Overview

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K1**

File Numbers: **PLN 2016-00502**

Alternative Utility Poles

Alternate Pole NORTH #1- Viable Candidate	Alternate Pole SOUTH #2- Proposed design does not meet G.O. 95 standards for utlity poles
	

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K1**

File Numbers: **PLN 2016-00502**

ExteNet Systems CA, LLC • Proposed DAS Node (Site No. 04113B)
668 Fourth Avenue • Redwood City, 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. 04113B to be added to the ExteNet distributed antenna system ("DAS") in Redwood City, 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 668 Fourth Avenue in Redwood City. 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 The CBR Group, dated November 4, 2016, it is proposed to install one CommScope Model V65S-C3-1XR, 2-foot tall, directional panel antenna, on a cross-arm to be added to a utility pole sited in the public right-of-way in front of the residence located at 668 Fourth Avenue in Redwood City. The antenna would employ no downtilt, would be mounted at an effective height of about 20 feet above ground, and would be oriented toward 30°T. T-Mobile proposes to operate from this facility with a maximum effective radiated power in any direction of 214 watts, representing simultaneous operation at 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 0.0083 mW/cm^2, which is 0.83% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 3.0% 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 668 Fourth Avenue in Redwood City, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations. Training personnel and posting signs is recommended to establish compliance with occupational exposure limitations.

Authorship

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

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

REGISTERED PROFESSIONAL ENGINEER
RAJAT MATHUR
No. E-18063
Exp. 6-30-2017
ELECTRICAL
STATE OF CALIFORNIA

November 22, 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.

ITEM 2

File No.: PLN 2016-00503
Location: Public Right-of-Way in front of 600 Oakside Avenue, North Fair Oaks
APN: Public Right-of-Way adjacent to 054-251-310

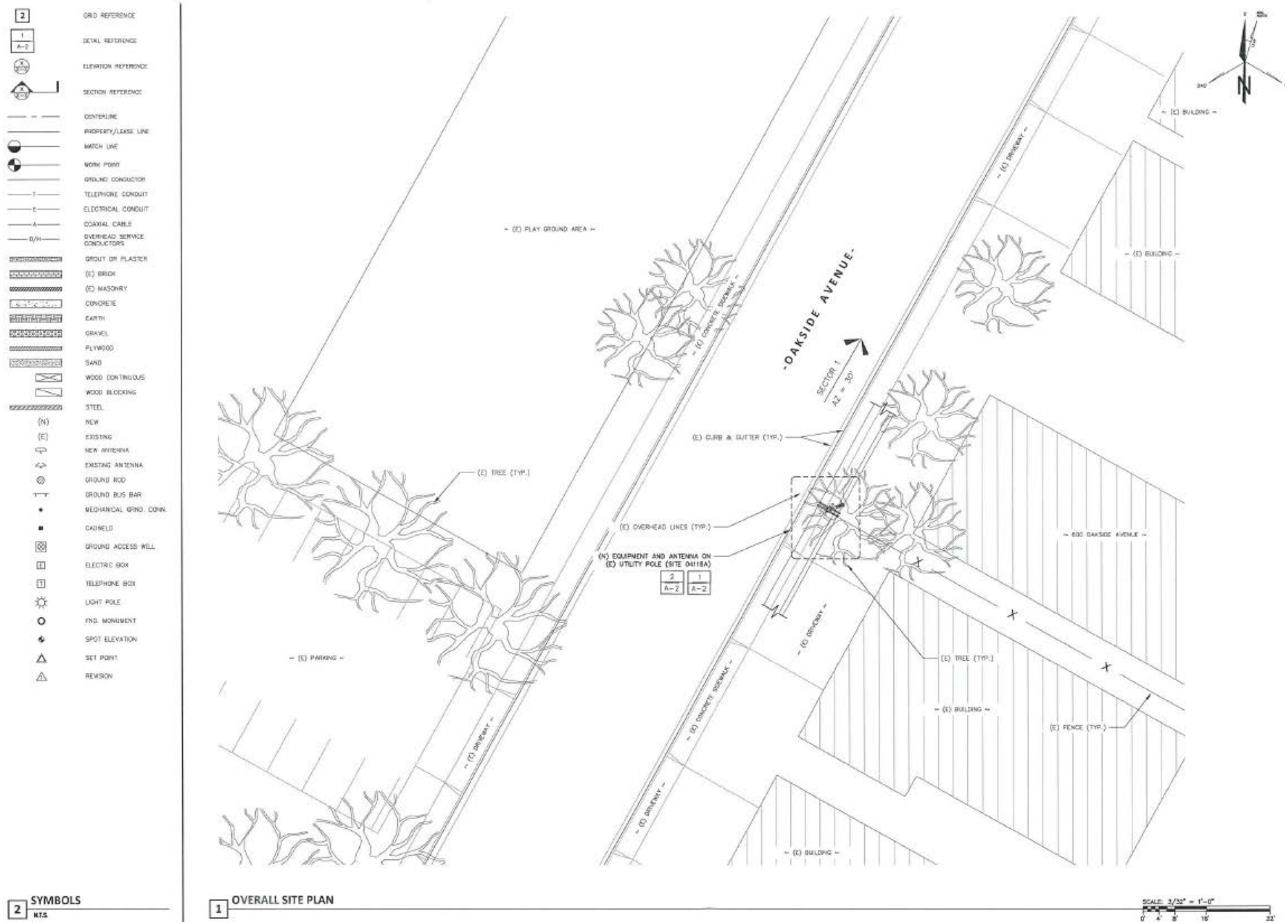
PROJECT SPECIFICATIONS TABLE							
R-3/S-3 Maximum Height	**Height of Existing Utility Pole**	**Maximum Height of Support Arm**	**Maximum Height of Antenna(s)**	**Ground Floor Radio Frequency Exposure**	**Send Floor Radio Frequency Exposure**	**Number of Viable Alternatives**	**Number of Proposed Antenna**
36 feet	41 feet	23 feet 10 inches	21 feet 4 inches	0.83%	4.0%	1	1

San Mateo County North Fair Oaks Community Council Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini**

Attachment: **H2**

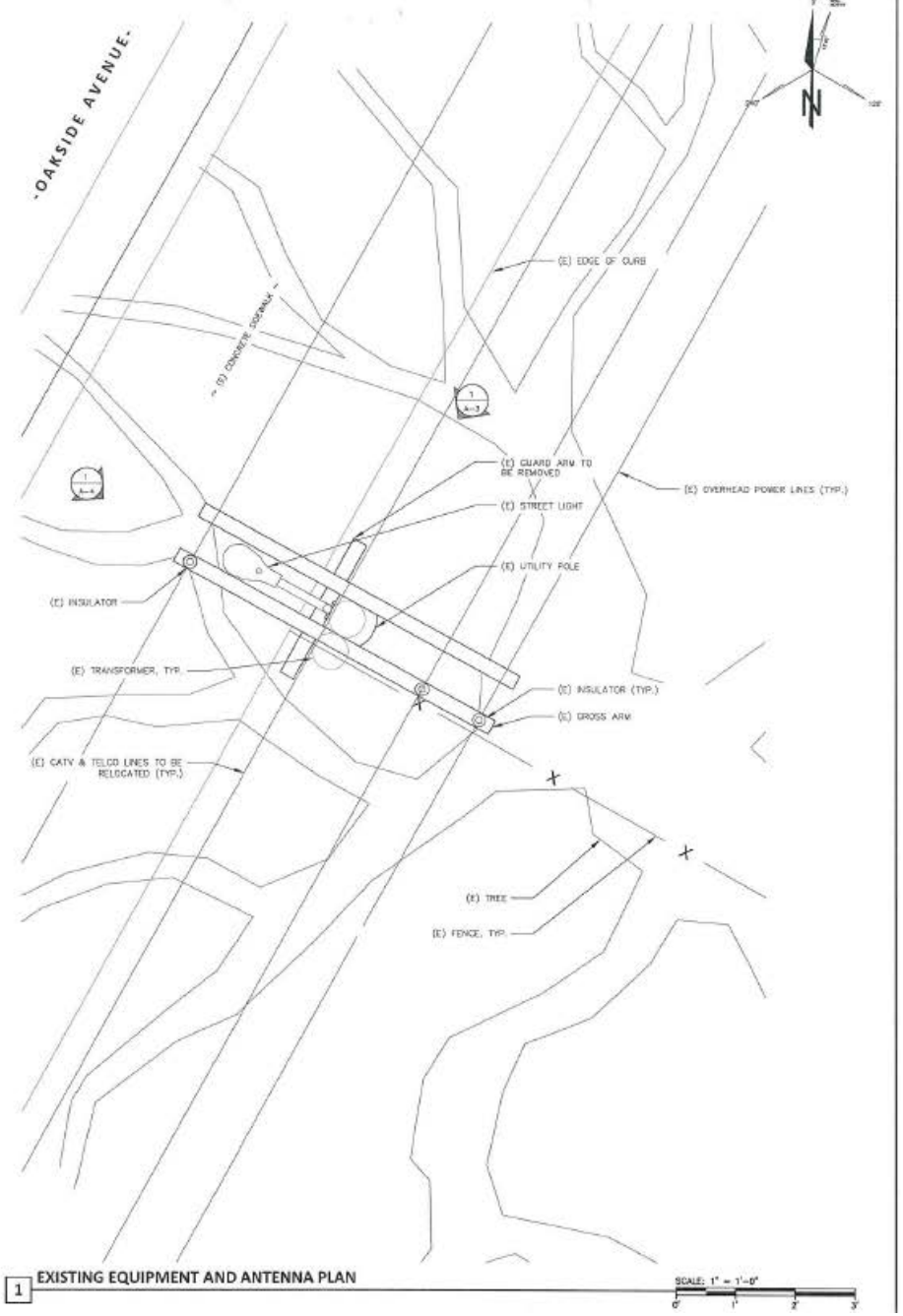
File Numbers: **PLN 2016-00503**



San Mateo County Zoning Hearing Officer Meeting

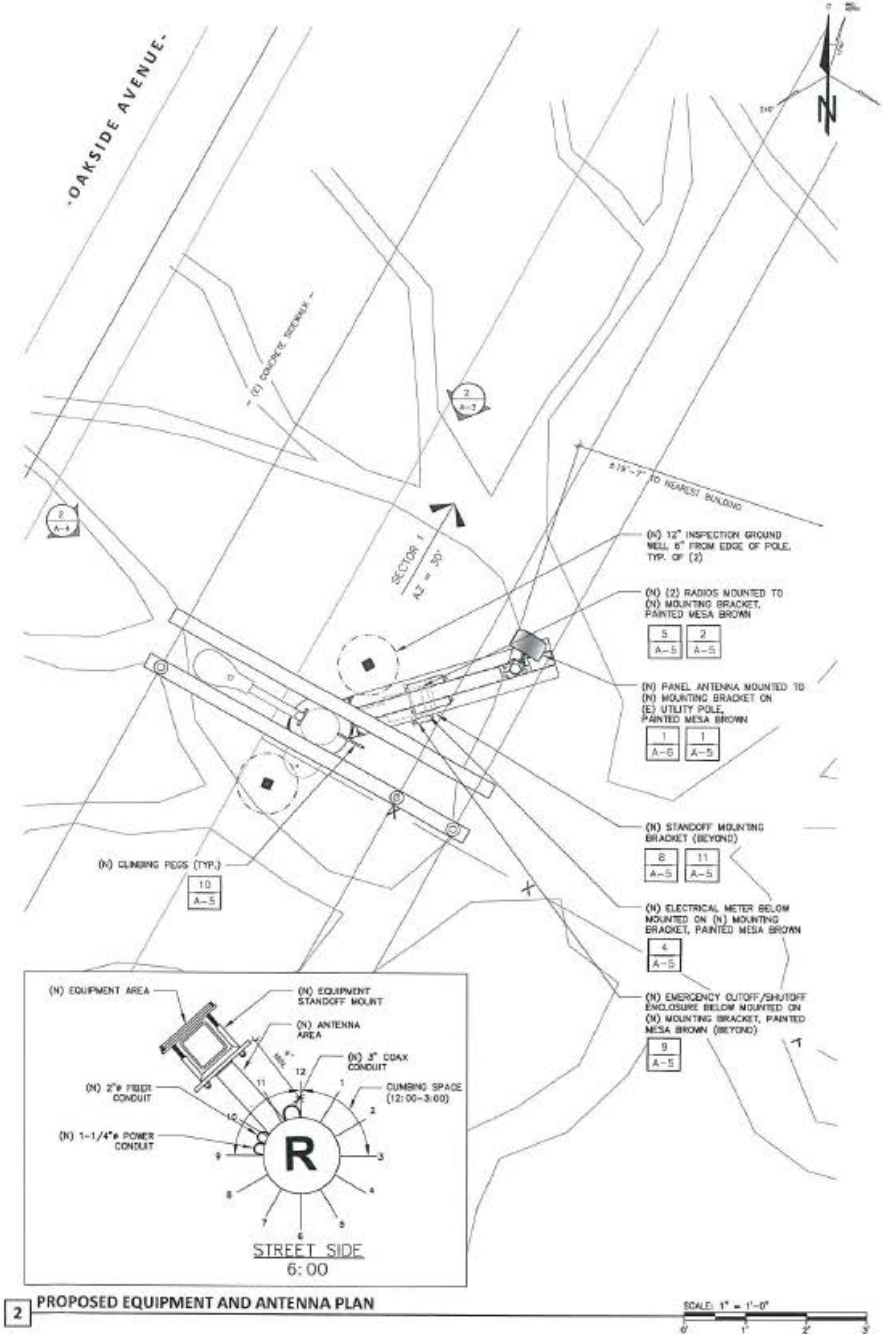
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I2**

File Numbers: **PLN 2016-00503**



1 EXISTING EQUIPMENT AND ANTENNA PLAN

SCALE: 1" = 1'-0"



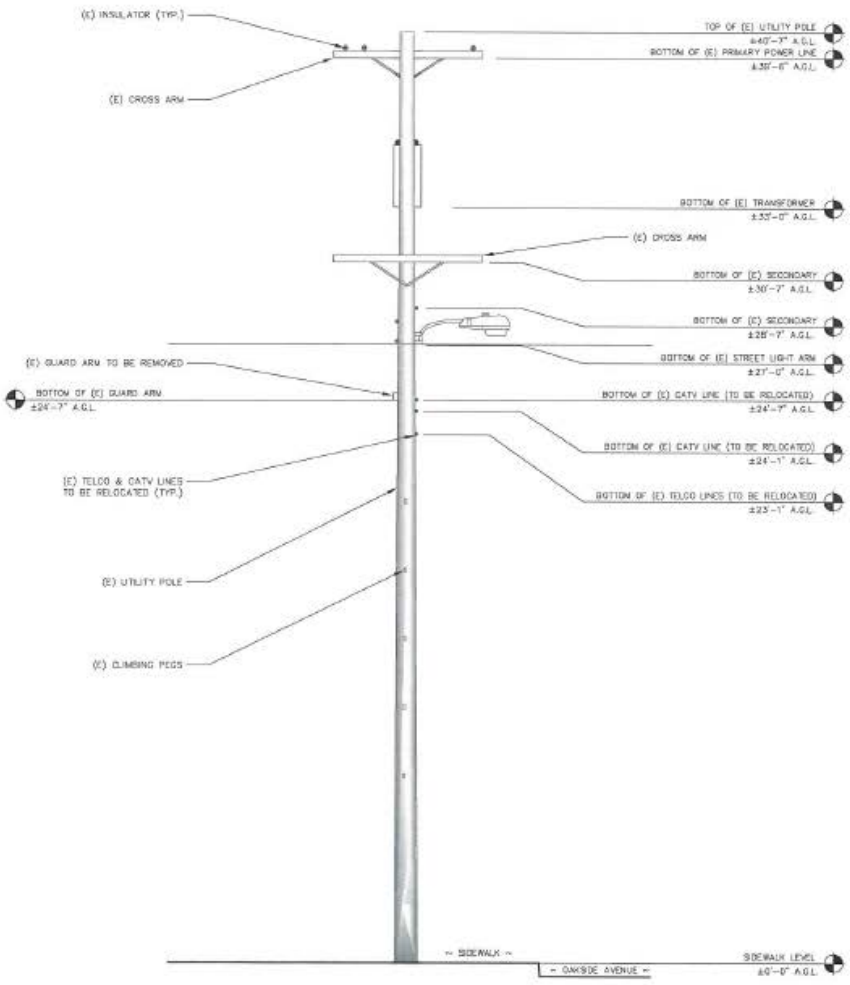
2 PROPOSED EQUIPMENT AND ANTENNA PLAN

SCALE: 1" = 1'-0"

San Mateo County Zoning Hearing Officer Meeting

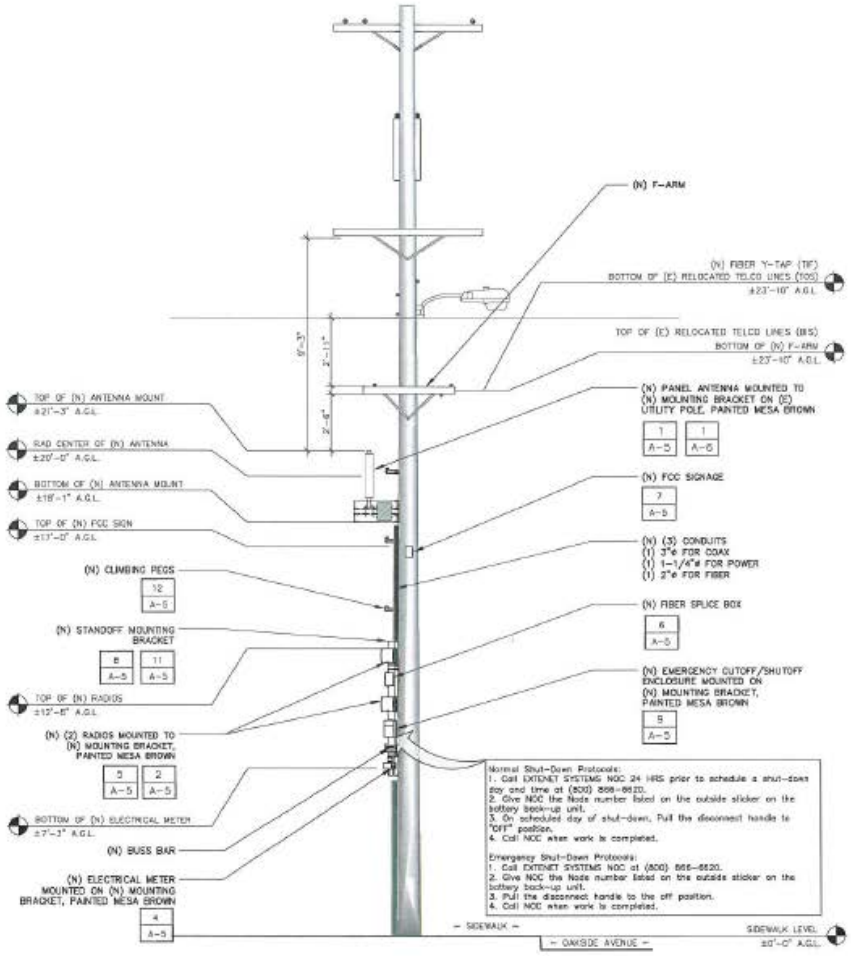
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I2**

File Numbers: **PLN 2016-00503**



1 EXISTING NORTHEAST ELEVATION

SCALE: 3/8" = 1'-0"



MAKE READY INFORMATION

1. TREE TRIMMING WILL BE REQUIRED FOR EXTENET ANTENNA & EQUIPMENT TO BE PLACE ON THE POLE.
2. EXTENET CONTRACTOR TO PLACE NEW F-ARM ON N/S/O EXISTING POLE AT 23'10" AGL.
3. EXTENET CONTRACTOR TO TRANSFER EXISTING TELCO TO NEW F-ARM AT 23'6" AND ATTACH BOTTOM INSIDE POSITION - STREET SIDE.
4. EXTENET CONTRACTOR TO TRANSFER EXISTING CATV TO NEW F-ARM AT 23'10" AND ATTACH TOP OUTSIDE POSITION - STREET SIDE.
5. EXTENET CONTRACTOR TO PLACE NEW EXTENET FIBER TO NEW F-ARM AT 23'10" AND ATTACH TOP INSIDE POSITION - FIELD SIDE.
6. EXTENET CONTRACTOR TO REMOVE GUARD ARM @ HOA 24'7".
7. EXTENET CONTRACTOR TO PLACE BOTTOM OF NEW ANTENNA SUPPORT ARM EXTENDING INTO STREET AT 18'1" AGL.
8. EXTENET CONTRACTOR TO INSTALL NEW ANTENNA(S) TO NEW SUPPORT ARM PER DESIGN.
9. EXTENET CONTRACTOR TO PLACE NEW 3" SCH 80 PVC RISER AT 5:30 POSITION FOR EXTENET COAXIAL CABLES - PER DESIGN.
10. EXTENET CONTRACTOR TO PLACE NEW 2" SCH 80 PVC RISER AT 4:00 POSITION FOR EXTENET FIBER CABLES - PER DESIGN.
11. EXTENET APPROVED ELECTRICAL CONTRACTOR TO PLACE NEW 1 ½" SCH 80 PVC RISER AT 11:30 POSITION FOR POWER SERVICE FROM UTILITY BELOW SECONDARY TO NEW POWER METER.
12. EXTENET CONTRACTOR TO CUT IN NEW Y-TAP AT 23'10" AGL TO INSERT NEW FIBER INTO NEW COAXIAL RISER.
13. EXTENET CONTRACTOR TO PLACE NEW 4" X 4" X 60" POLE MOUNTED EQUIPMENT CHANNEL AT 10:30 POSITION ON 4" STANDOFF BOLTS FOR NEW EXTENET EQUIPMENT (BOTTOM AT 7'0" AGL)
14. MOUNT OF 2 NEW RRUS AND A12 ON NEW BACKPLATE TO NEW EQUIPMENT CHANNEL
15. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW PG&E SMART METER BOX TO POLE AT 7'0" AGL.
16. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW BREAKER BOX TO POLE AT 10'0" AGL.
17. EXTENET CONTRACTOR TO PLACE NEW #6 COPPER GROUND ROD 12" BELOW GRADE AND 24" FROM POLE FOR NEW POWER METER.
18. EXTENET CONTRACTOR TO PLACE NEW #2 COPPER GROUND ROD 12" BELOW GRADE AND 24" FROM POLE FOR NEW EXTENET EQUIPMENT.
19. PLACE NEW #6 COVERED GROUND WIRE FROM POWER METER TO NEW METER GROUND ROD.
20. PLACE NEW #2 COVERED GROUND WIRE FROM EXTENET EQUIPMENT TO NEW EQUIPMENT GROUND ROD.
21. EXTENET CONTRACTOR TO QUARTER STEP NEW POLE AT 12:30 AND 1:00 FOR CLIMBING SPACE.
22. EXTENET CONTRACTOR TO PLACE ALL RULE 94 SIGNAGE AS REQUIRED BY LAW.

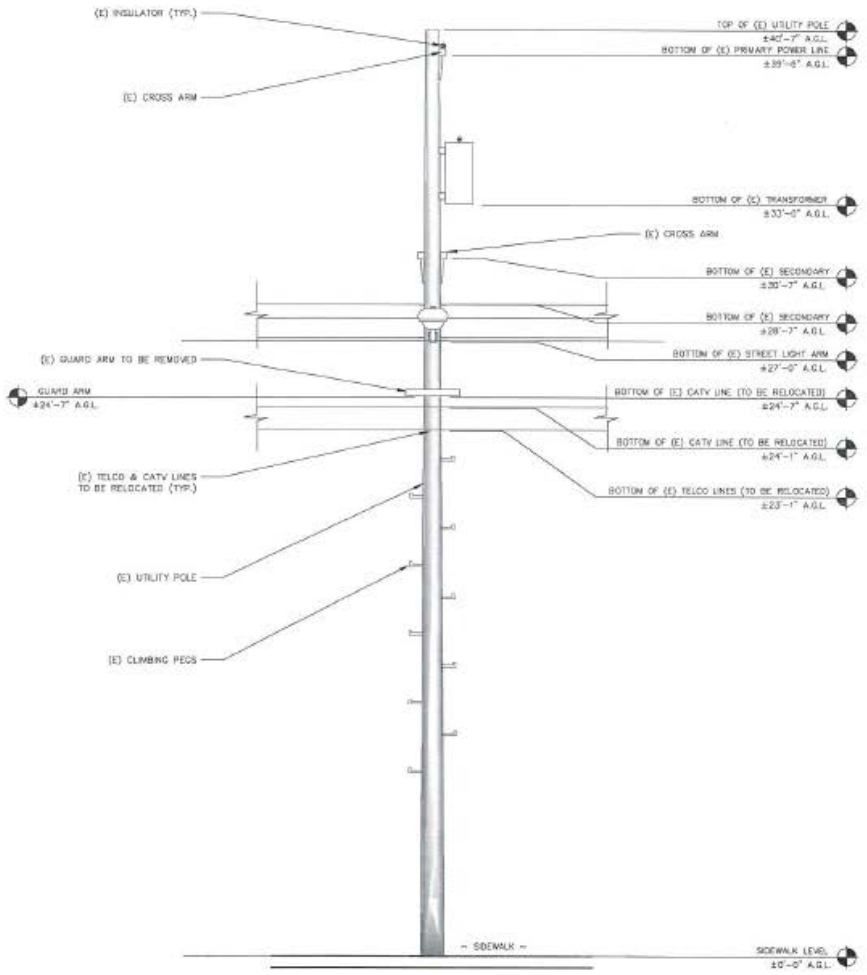
2 PROPOSED NORTHEAST ELEVATION

SCALE: 3/8" = 1'-0"

San Mateo County Zoning Hearing Officer Meeting

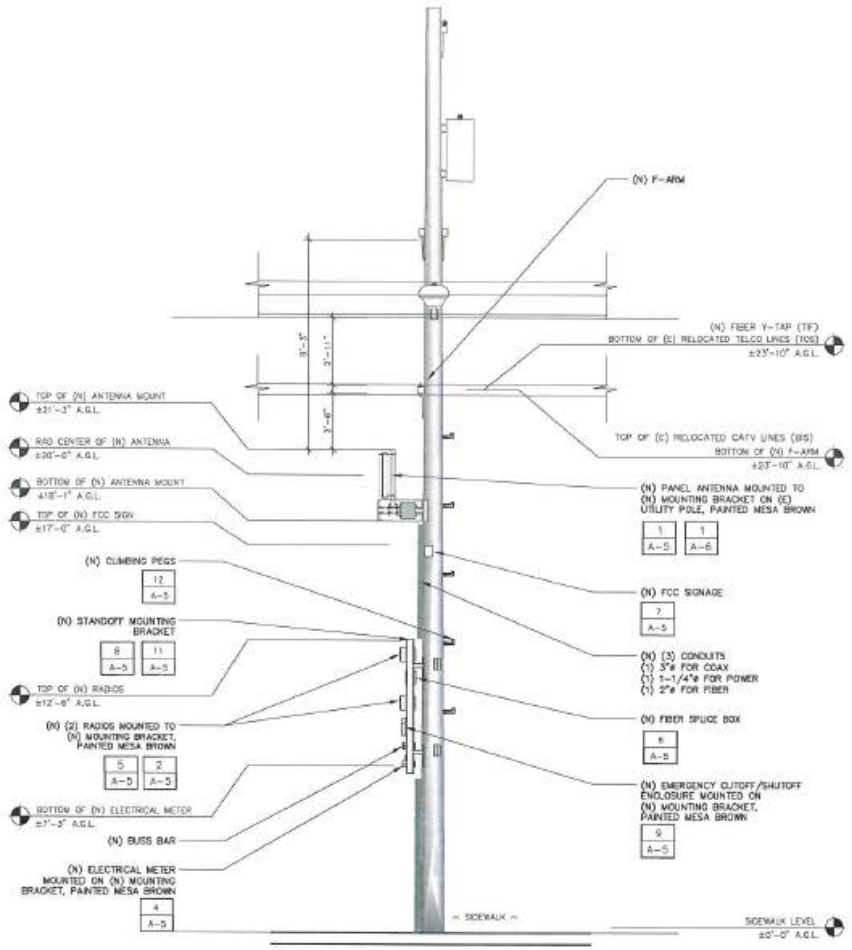
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I2**

File Numbers: **PLN 2016-00503**



1 EXISTING NORTHWEST ELEVATION

SCALE: 3/8" = 1'-0"



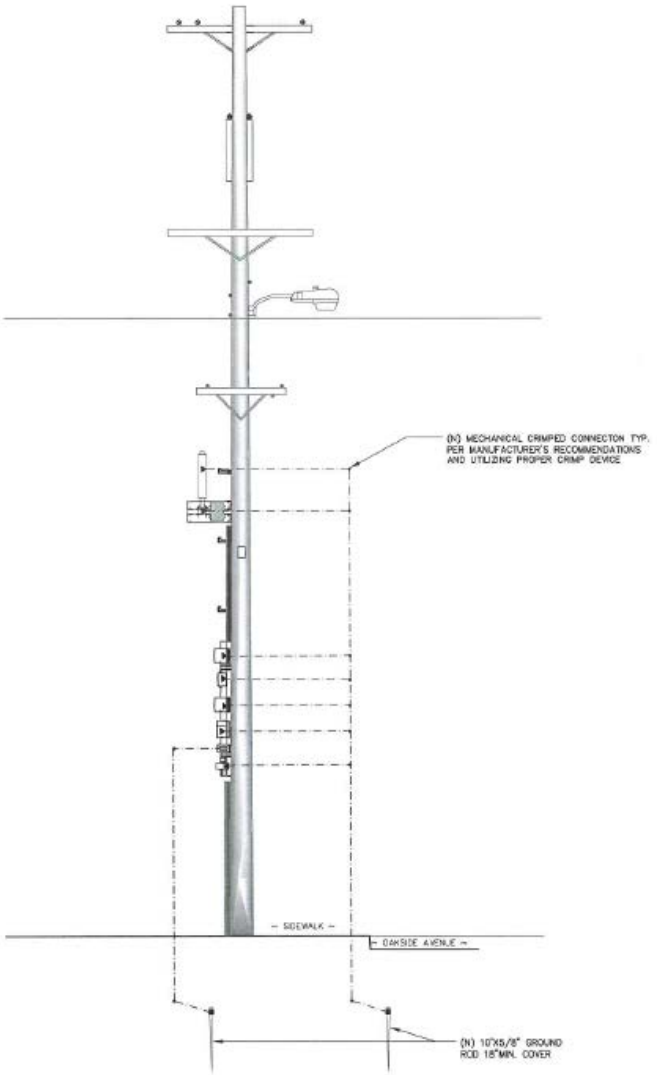
2 PROPOSED NORTHWEST ELEVATION

SCALE: 3/8" = 1'-0"

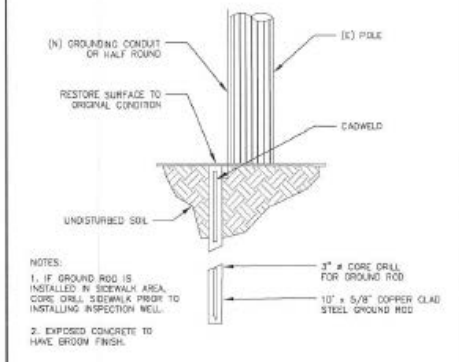
San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I2**

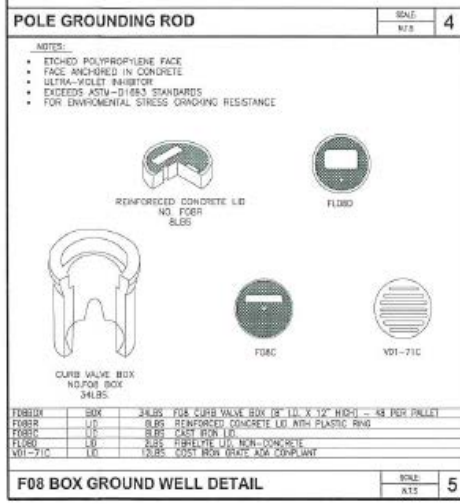
File Numbers: **PLN 2016-00503**



7 POLE GROUNDING DIAGRAM SCALE: 3/8" = 1'-0"

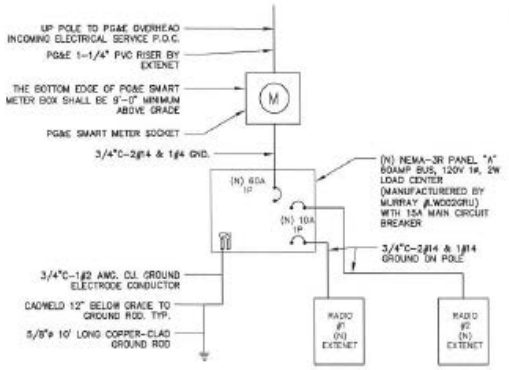


POLE GROUNDING ROD SCALE: N.T.S. 4



FOB20	BOX	34LBS FOR CURB VALVE BOX (8" I.D. X 12" HIGH) - 48 PER PALLET
FOBR	LID	8LBS REINFORCED CONCRETE LID WITH PLASTIC RING
FOBSD	LID	8LBS SLOT IRON LID
FLDBD	LID	8LBS FIBERLITE I/D NON-CONCRETE
VD1-71C	LID	130LBS COST IRON GRATE ADA COMPLIANT

F08 BOX GROUND WELL DETAIL SCALE: N.T.S. 5



6 SINGLE LINE DIAGRAM

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I2**

File Numbers: **PLN 2016-00503**

exte net systems

NW-CA-SANFRNMC- 04118A

Aerial Map

IFO 600 Oakside Avenue Redwood City, CA

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J2**

File Numbers: **PLN 2016-00503**

exteNet SYSTEMS

NW-CA-SANFRNMC- 04118A

IFO 600 Oakside Avenue Redwood City, CA

Looking Northeast from Oakside Avenue

View #1

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J2**

File Numbers: **PLN 2016-00503**

exteNet systems

NW-CA-SANFRNMC- 04118A

IFO 600 Oakside Avenue Redwood City, CA

Looking South from Oakside Avenue

View #2

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J2**

File Numbers: **PLN 2016-00503**

Alternative Overview

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K2**

File Numbers: **PLN 2016-00503**

Alternative Utility Poles

Alternate Pole NORTH #1- Possible Candidate	Alternate Pole SOUTH #2- Proposed design will not comply with GO 95, utlity pole standards & PG&E Requirement (Primary Riser Pole)
	

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K2**

File Numbers: **PLN 2016-00503**

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. 04118A to be added to the ExteNet distributed antenna system ("DAS") in Redwood City, 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 600 Oakside Avenue in Redwood City. 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
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[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 The CBR Group, dated November 3, 2016, it is proposed to install one CommScope Model V65S-C3-1XR, 2-foot tall, directional panel antenna, on a cross-arm to be added to a utility pole sited in the public right-of-way in front of the two-story residential building located at 600 Oakside Avenue in Redwood City. The antenna would employ no downtilt, would be mounted at an effective height of about 20 feet above ground, and would be oriented toward 30°T. T-Mobile proposes to operate from this facility with a maximum effective radiated power in any direction of 214 watts, representing simultaneous operation at 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 0.0083 mW/cm^2, which is 0.83% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 4.0% of the public exposure limit. The maximum calculated level at the playground area across the street is 0.23% 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 600 Oakside Avenue in Redwood City, 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

November 22, 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.

ITEM 3

File No.: PLN 2016-00504
Location: Public Right-of-Way in front of 2949 Edison Way, North Fair Oaks
APN: Public Right-of-Way adjacent to 060-041-110

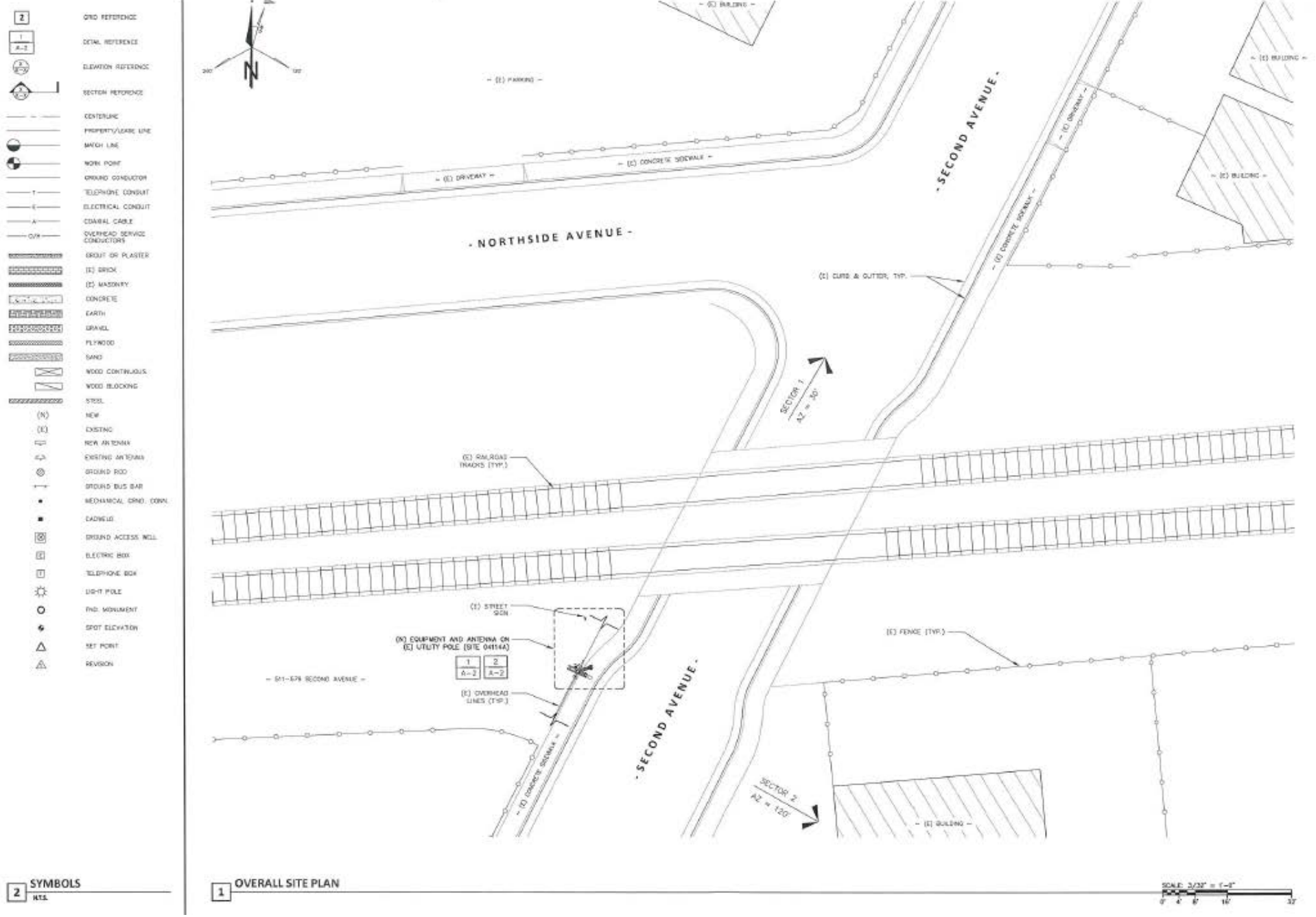
PROJECT SPECIFICATIONS TABLE							
M-1/NFO Maximum Height	**Height of Existing Utility Pole**	**Maximum Height of Support Arm**	**Maximum Height of Antenna(s)**	**Ground Floor Radio Frequency Exposure**	**Send Floor Radio Frequency Exposure**	**Number of Viable Alternatives**	**Number of Proposed Antenna**
37 feet	39 feet	23 feet 10 inches	21 feet 4 inches	0.47%	1.0%	1	2

San Mateo County North Fair Oaks Community Council Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini**

Attachment: **H3**

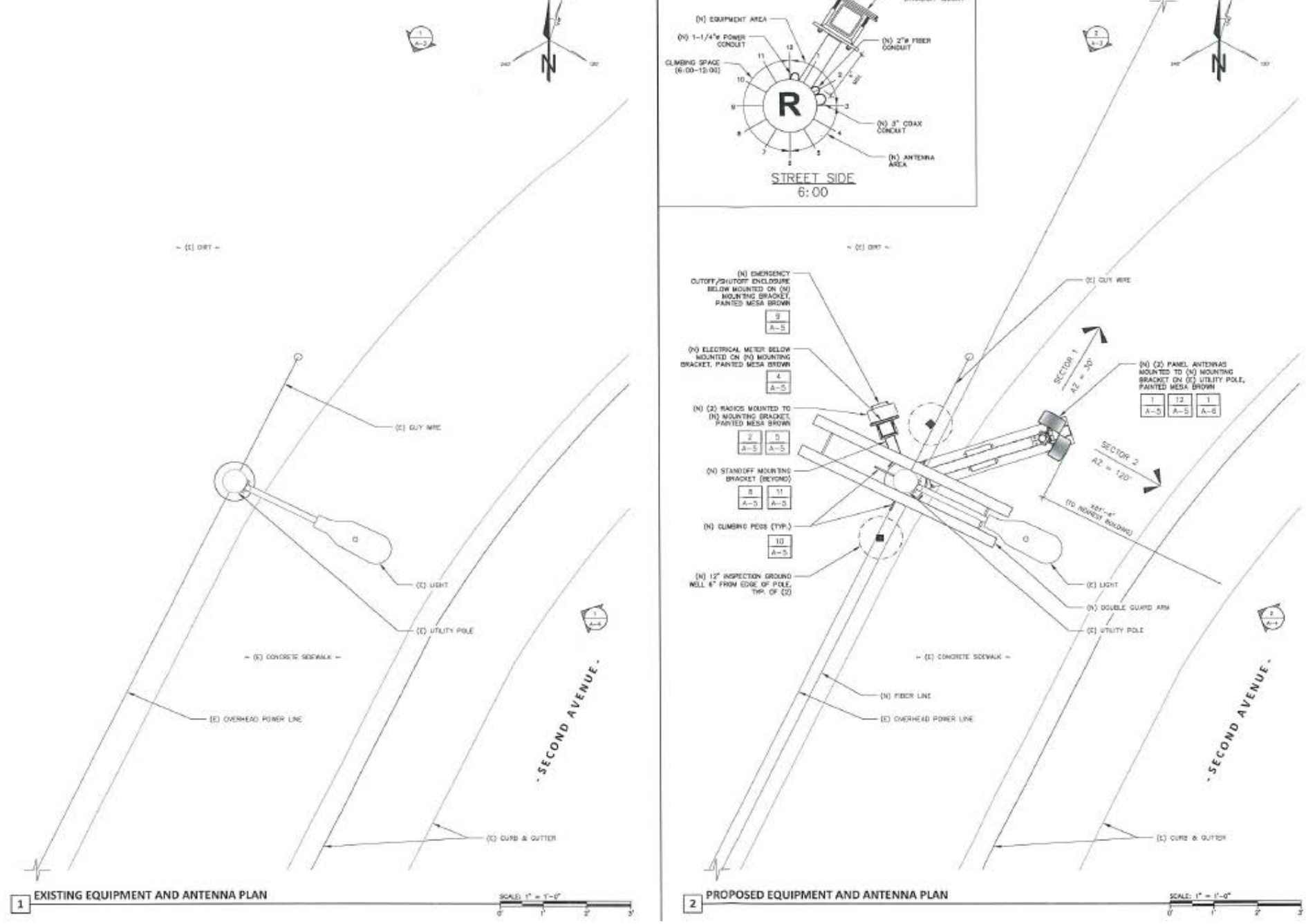
File Numbers: **PLN 2016-00504**



San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I3**

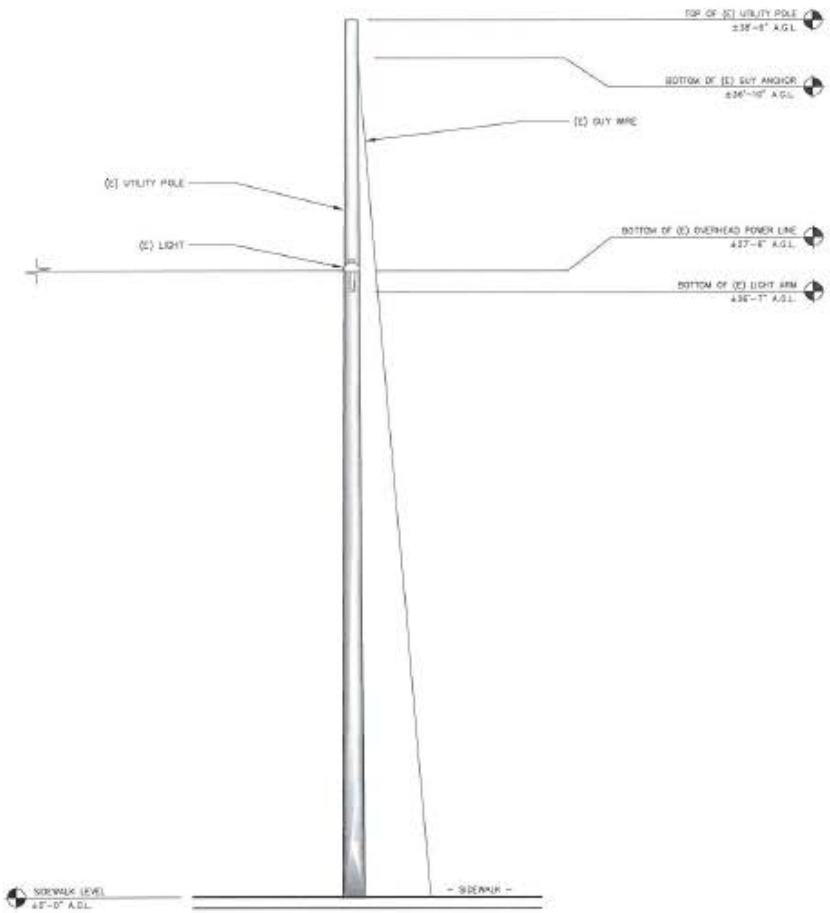
File Numbers: **PLN 2016-00504**



San Mateo County Zoning Hearing Officer Meeting

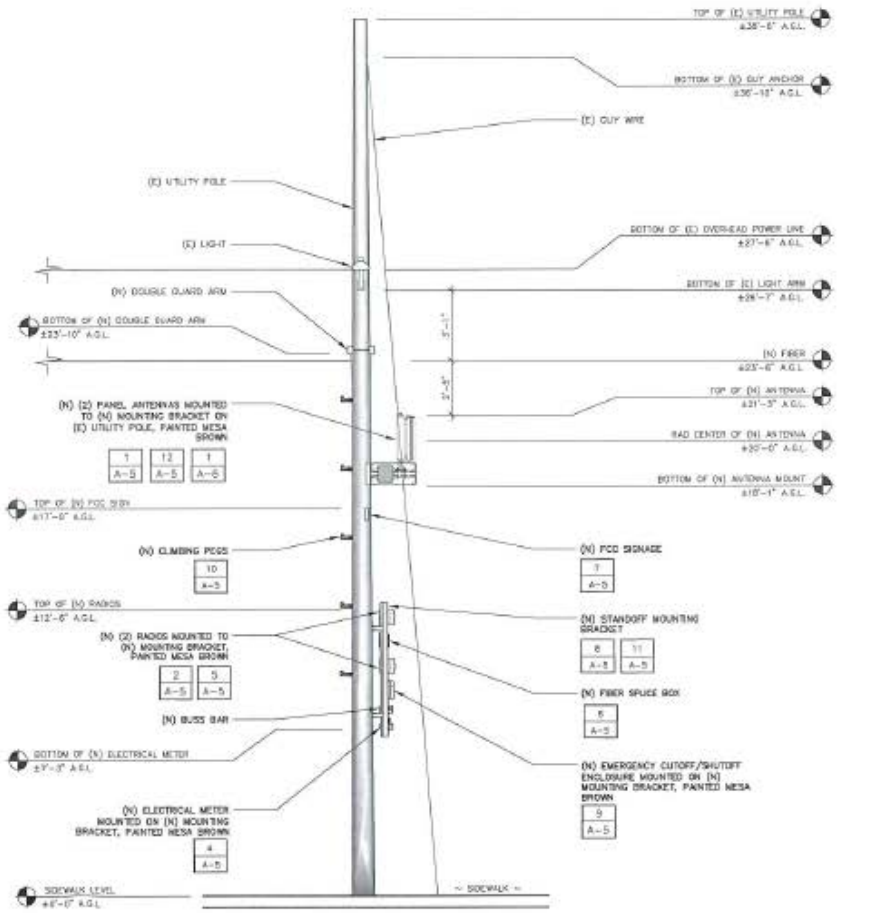
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I3**

File Numbers: **PLN 2016-00504**



1 EXISTING SOUTHEAST ELEVATION

SCALE: 3/8" = 1'-0"



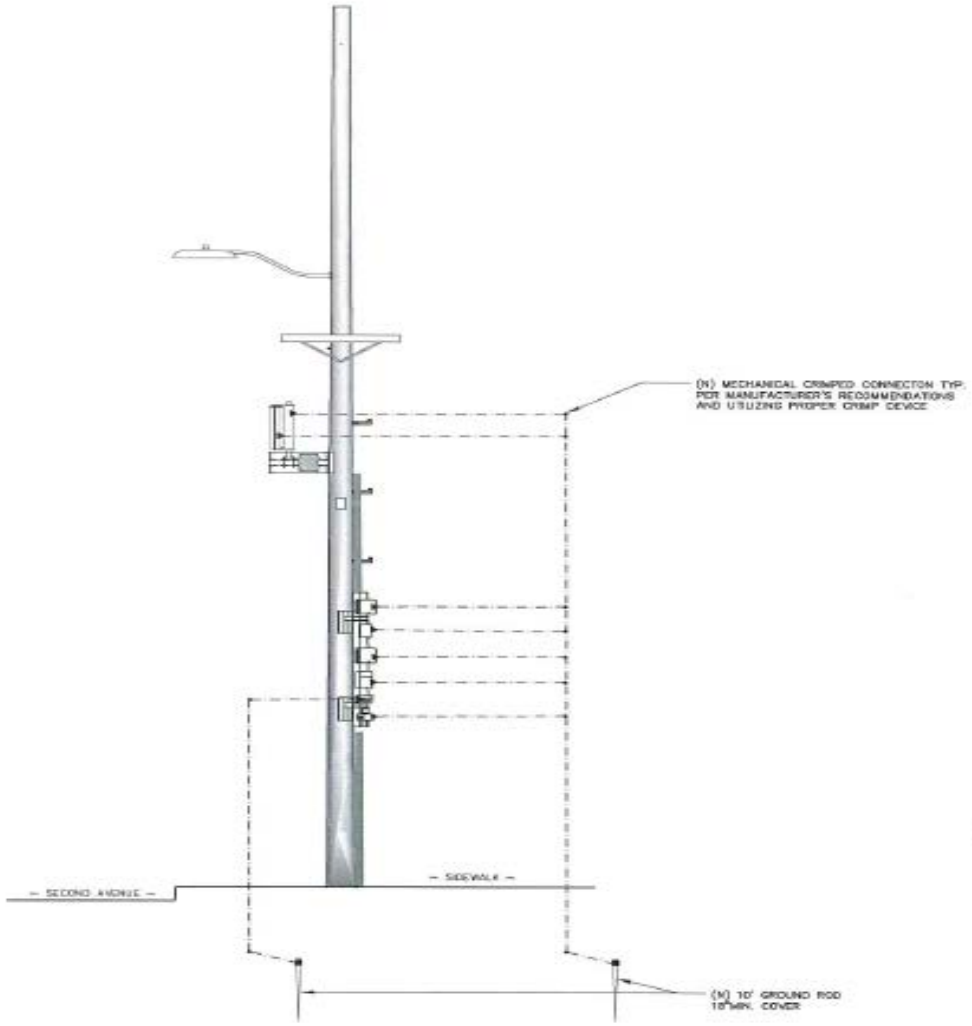
2 PROPOSED SOUTHEAST ELEVATION

SCALE: 3/8" = 1'-0"

San Mateo County Zoning Hearing Officer Meeting

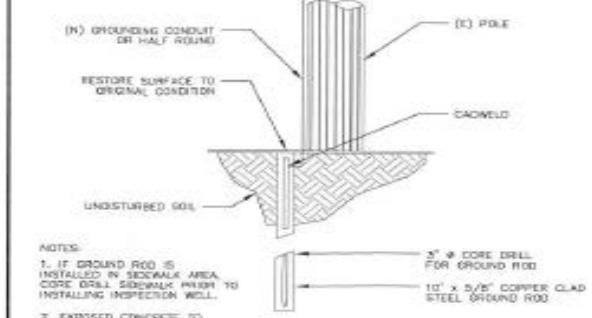
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I3**

File Numbers: **PLN 2016-00504**

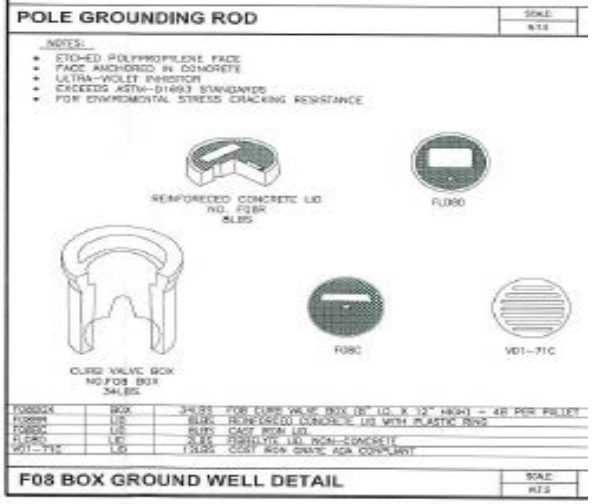


7 POLE GROUNDING DIAGRAM

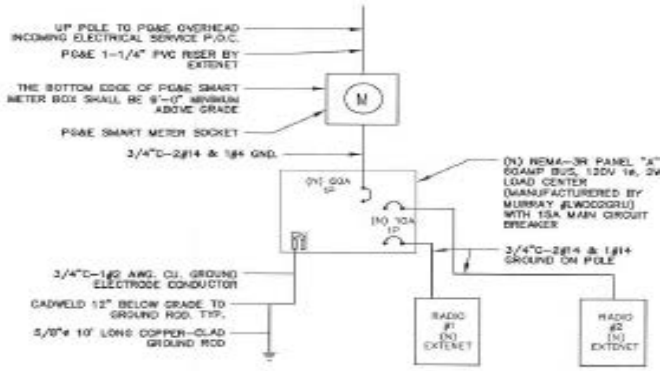
SCALE: 3/8" = 1'-0"



POLE GROUNDING ROD



F08 BOX GROUND WELL DETAIL

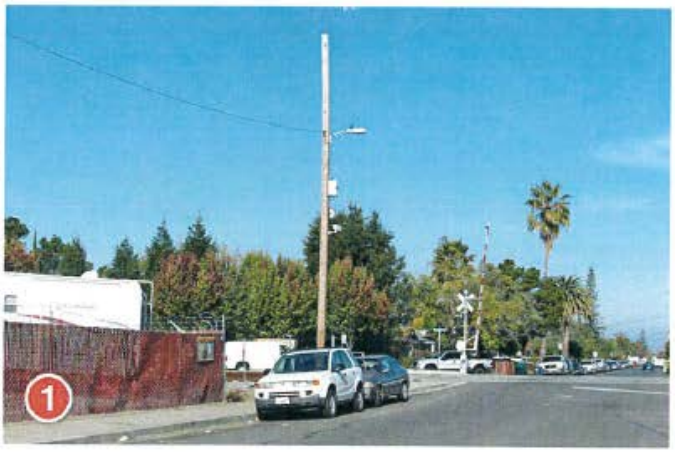


6 SINGLE LINE DIAGRAM

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I3**

File Numbers: **PLN 2016-00504**



extenet SYSTEMS

NW-CA-SANFRNMC- 04114A

Aerial Map

2949 Edison Way (Second Ave Frontage) Redwood City, CA

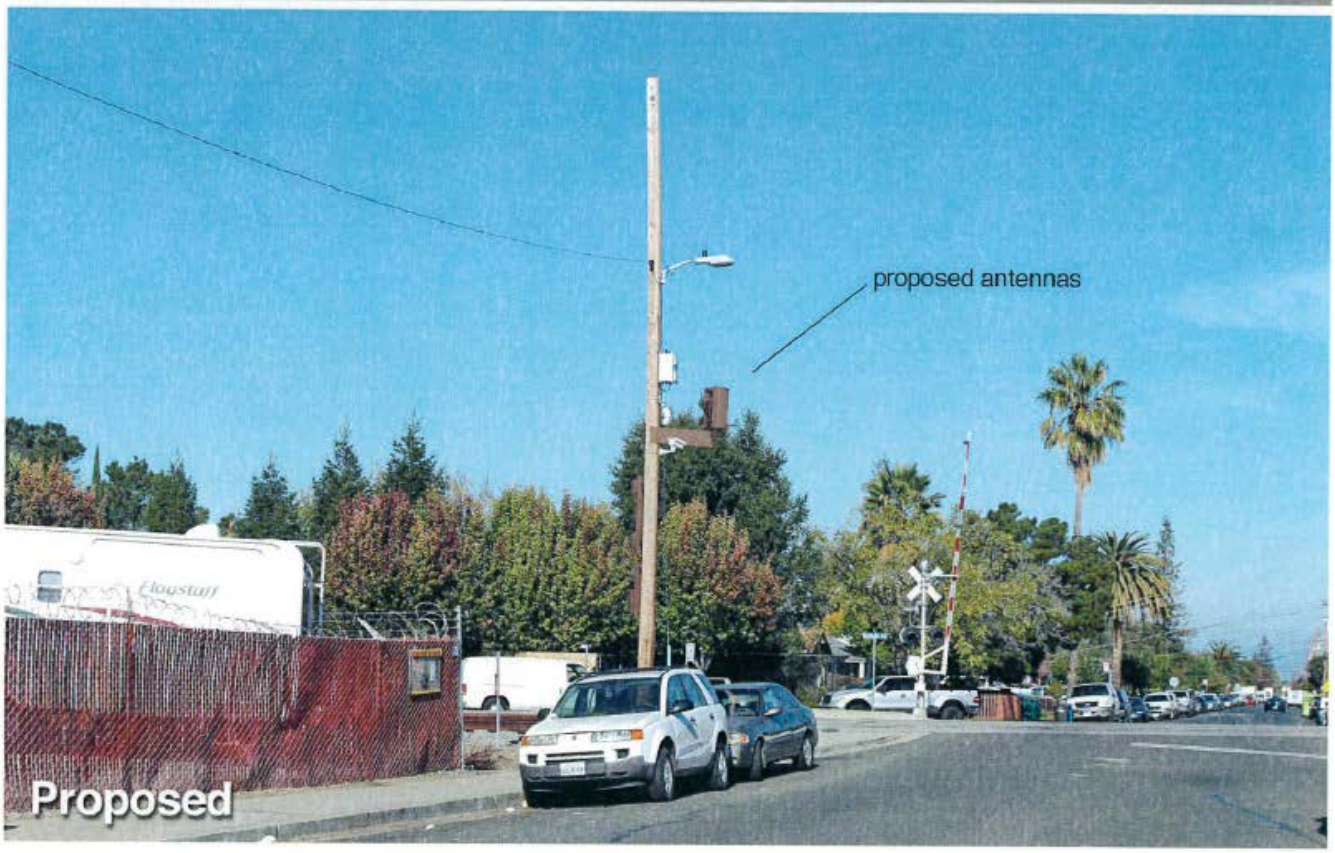
11/14/16

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J3**

File Numbers: **PLN 2016-00504**



extenet SYSTEMS

NW-CA-SANFRNMC- 04114A

2949 Edison Way (Second Ave Frontage) Redwood City, CA

Looking North from Second Avenue

View #1

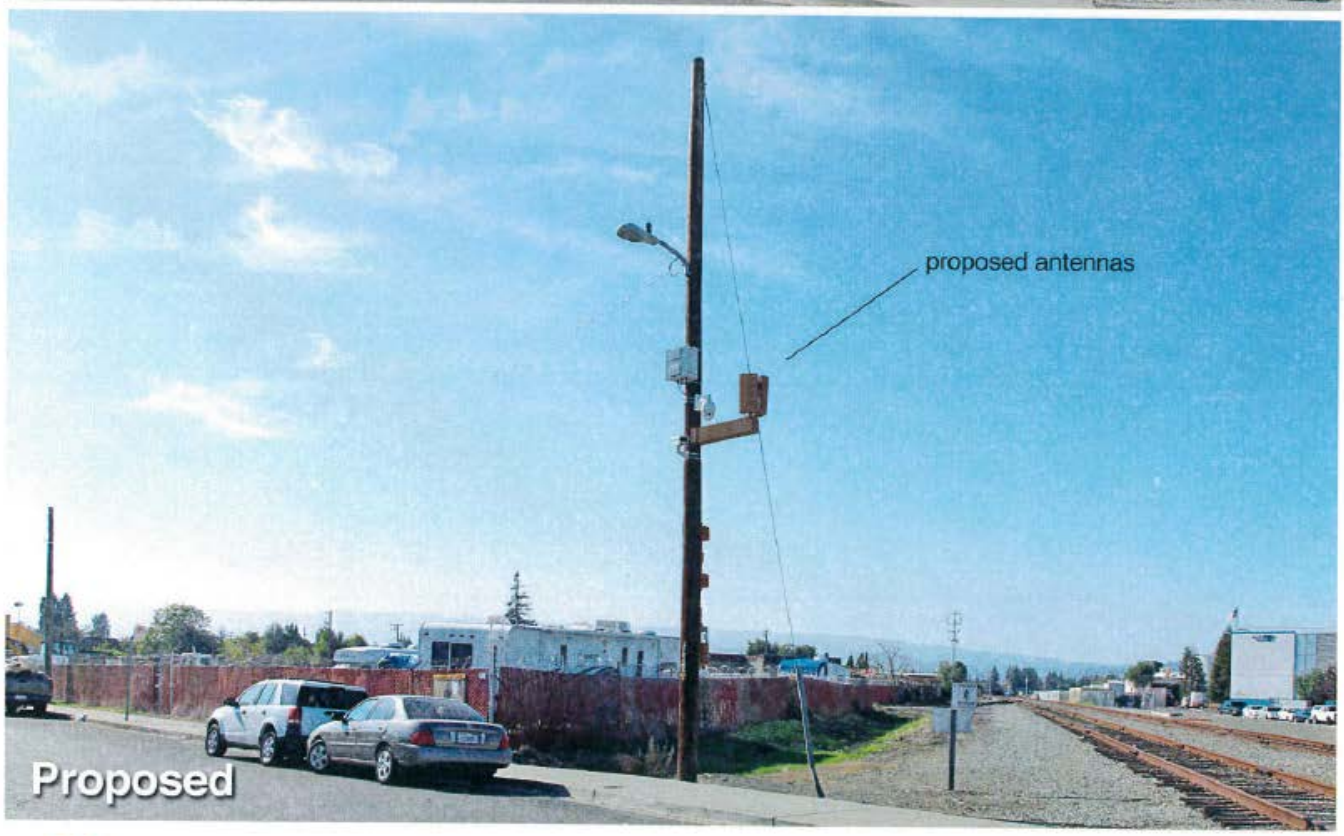
11/14/16

Applied Imagination 510.914.0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J3**

File Numbers: **PLN 2016-00504**



exteNet SYSTEMS

NW-CA-SANFRNMC- 04114A

2949 Edison Way (Second Ave Frontage) Redwood City, CA

Looking Southwest from Second Avenue

View #2

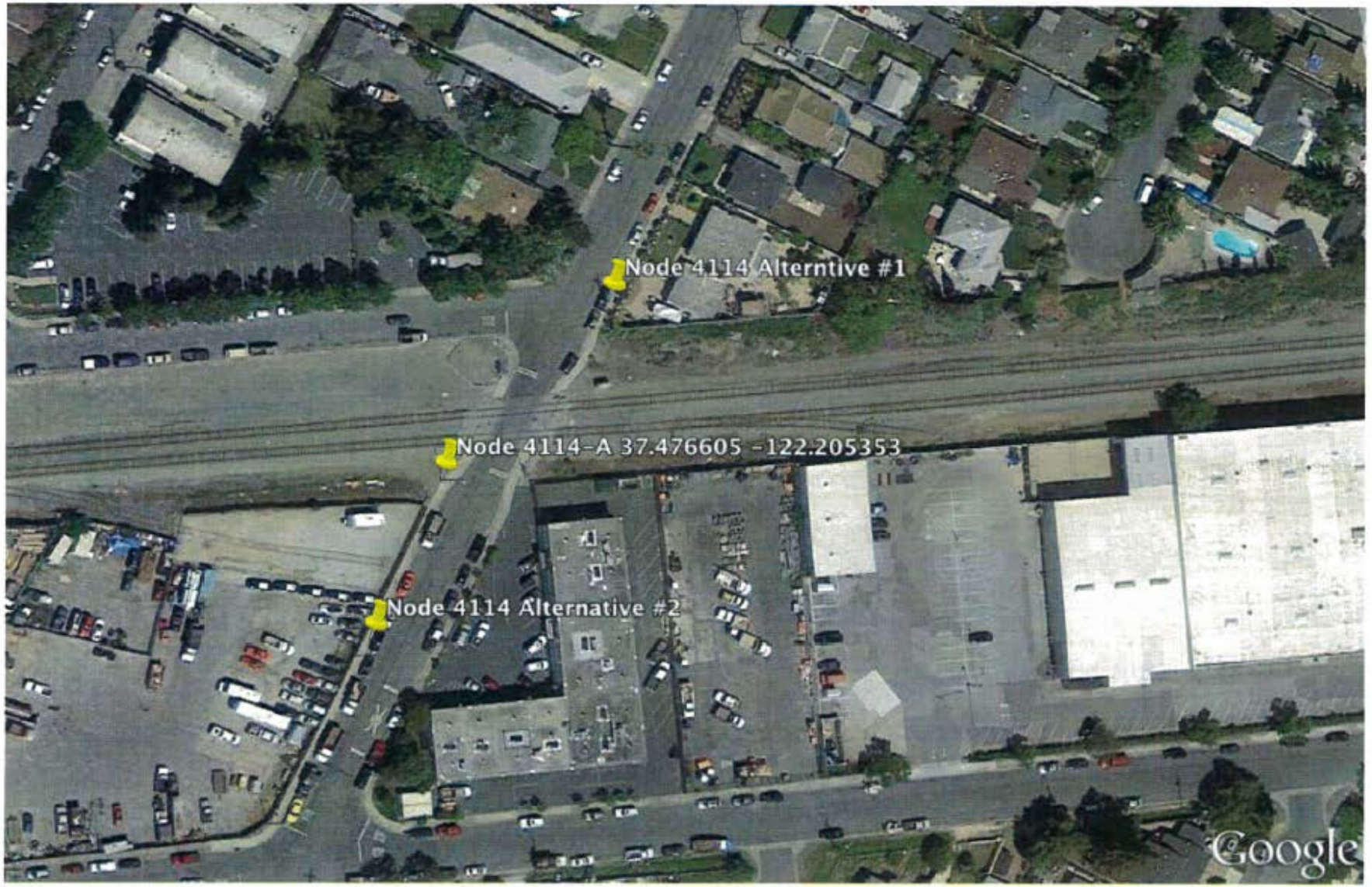
11/14/16

San Mateo County Planning Commission Meeting

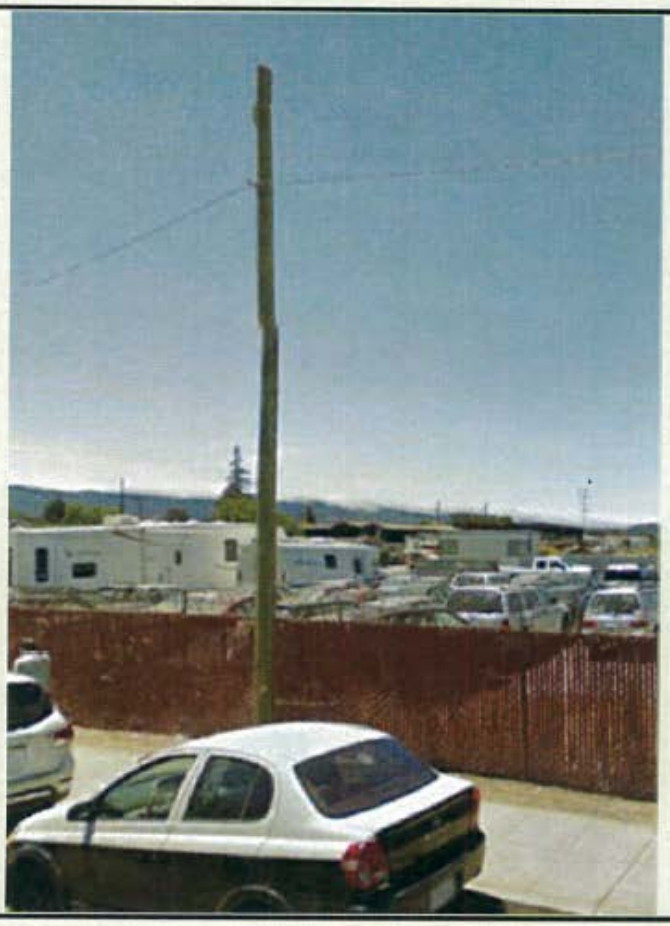
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J3**

File Numbers: **PLN 2016-00504**

Alternative Overview



Alternative Utility Poles

Alternate Pole NORTH #1- Proposed design does not meet GO95 standards for utlity poles	Alternate Pole SOUTH #2- Viable Candidate
	

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K3**

File Numbers: **PLN 2016-00504**

ExteNet Systems CA, LLC • Proposed DAS Node (Site No. 04114A)
2949 Edison Way (Second Avenue Frontage) • Redwood City, 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. 04114A to be added to the ExteNet distributed antenna system ("DAS") in Redwood City, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

ExteNet proposes to install directional panel antennas on a utility pole sited in the public right-of-way at 2949 Edison Way (Second Avenue frontage) in Redwood City. 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 The CBR Group, dated November 3, 2016, it is proposed to install two CommScope Model V65S-C3-1XR, 2-foot tall, directional panel antennas, on a cross-arm to be added to a utility pole sited in the public right-of-way on Second Avenue, northeast of the lot located at 2949 Edison Way in Redwood City. The antennas would employ no downtilt, would be mounted at an effective height of about 20 feet above ground, and would be oriented toward 30°T and 120°T. T-Mobile proposes to operate from this facility with a maximum effective radiated power in any direction of 122 watts, representing simultaneous operation at 61 watts for AWS and 61 watts for PCS service. There are reported no other wireless telecommunications base stations at this site or nearby.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed T-Mobile operation is calculated to be 0.0047 mW/cm^2, which is 0.47% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 1.0% 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 their mounting location and height, the ExteNet antennas would not be accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training be provided to all authorized personnel who have access to the antennas, including employees and contractors of the utility companies. No access within 1 foot directly in front of the antennas themselves, 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 antennas, 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 2949 Edison Way (Second Avenue frontage) in Redwood City, 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

November 22, 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.

ITEM 4

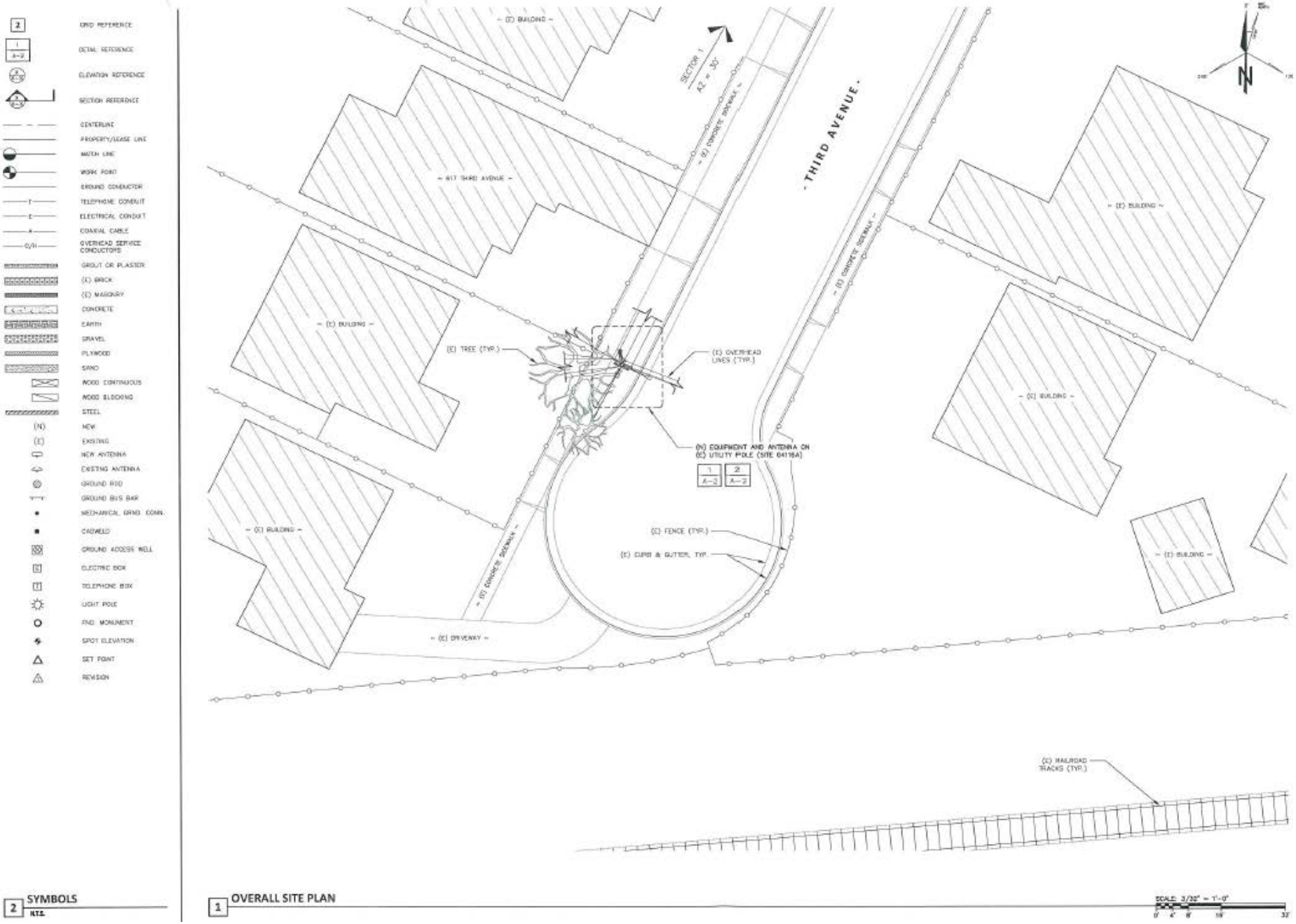
File No.: PLN 2016-00505
Location: Public Right-of-Way in front of 617 3rd Avenue, North Fair Oaks
APN: Public Right-of-Way adjacent to 060-032-130

PROJECT SPECIFICATIONS TABLE							
R-1/S-73 Maximum Height	**Height of Existing Utility Pole**	**Maximum Height of Support Arm**	**Maximum Height of Antenna(s)**	**Ground Floor Radio Frequency Exposure**	**Send Floor Radio Frequency Exposure**	**Number of Viable Alternatives**	**Number of Proposed Antenna**
28 feet	39 feet	26 feet 6 inches	21 feet 4 inches	0.83%	5.8%	0	1

San Mateo County North Fair Oaks Community Council Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **H4**

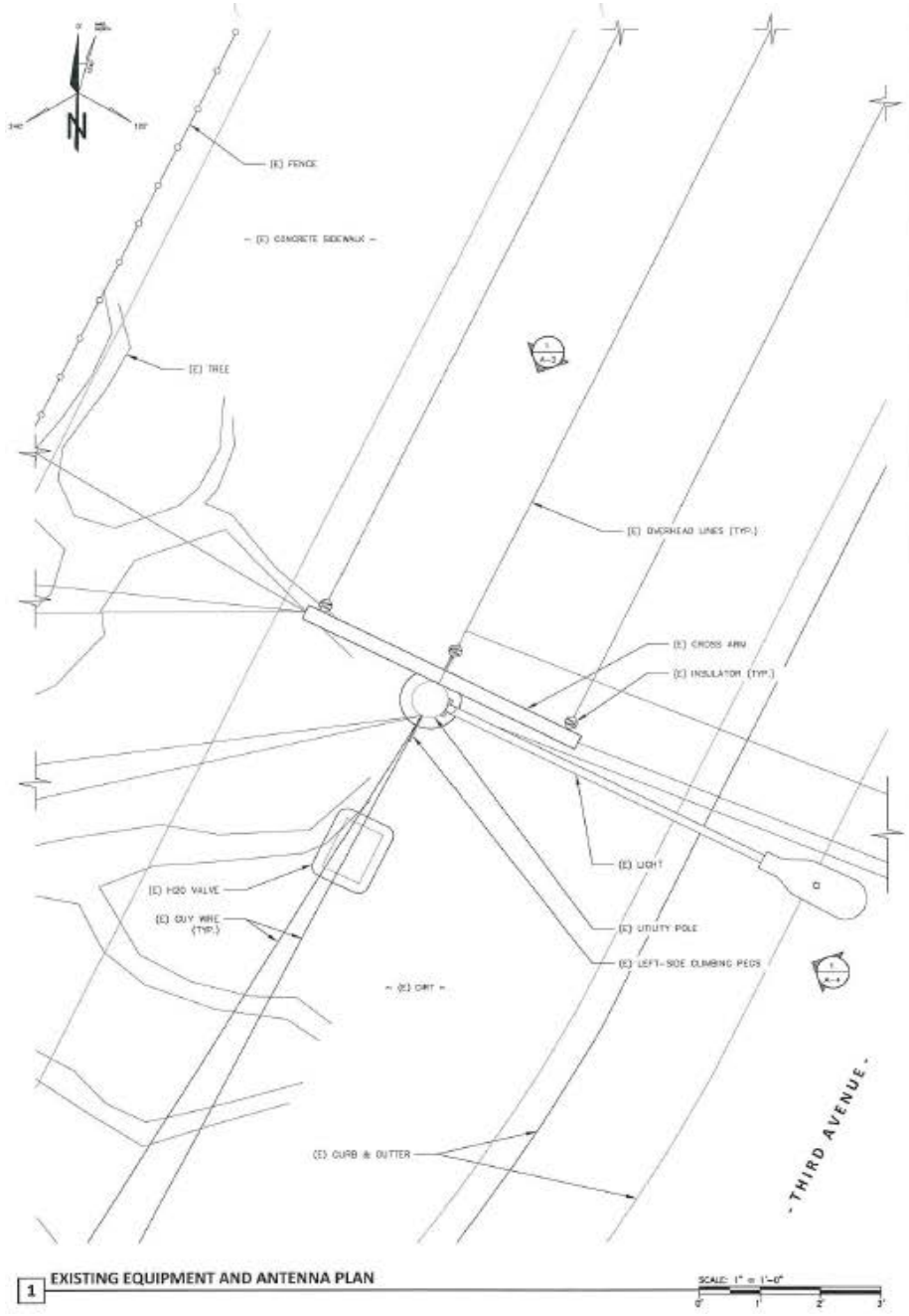
File Numbers: **PLN 2016-00505**



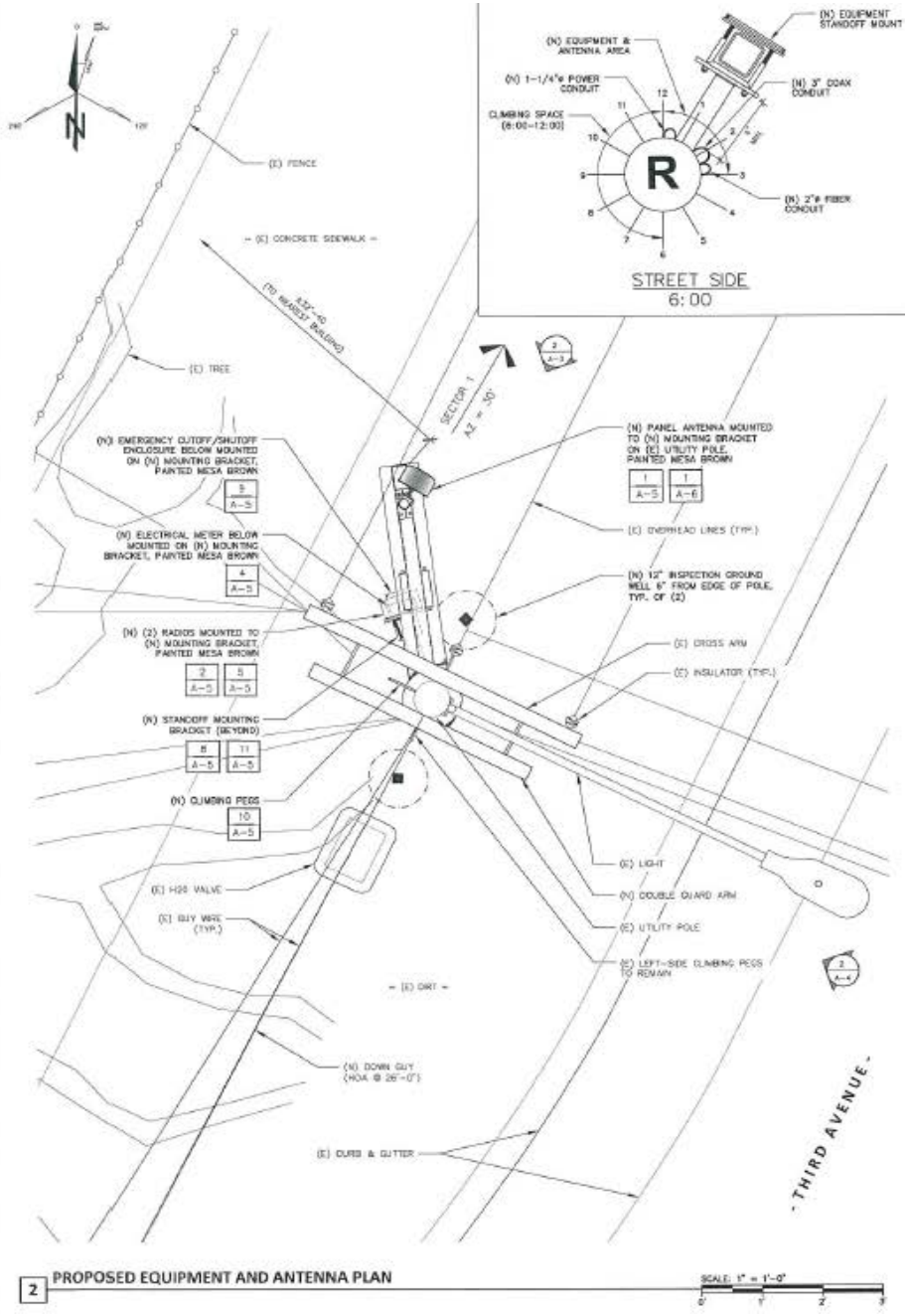
San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I4**

File Numbers: **PLN 2016-00505**



1 EXISTING EQUIPMENT AND ANTENNA PLAN

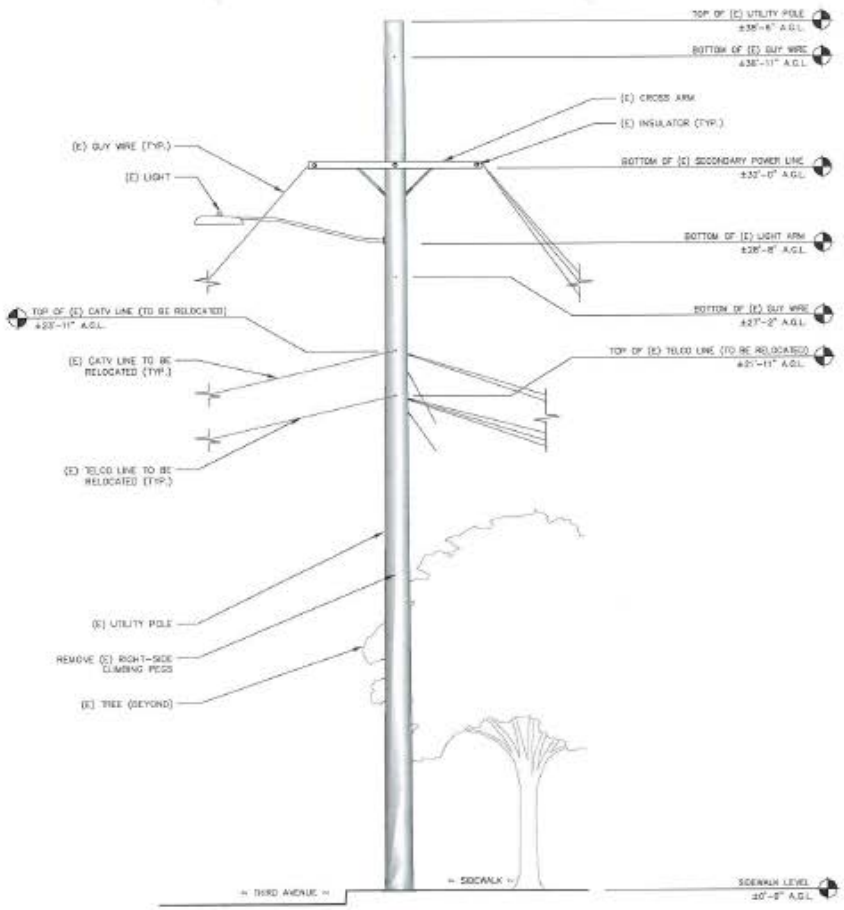


2 PROPOSED EQUIPMENT AND ANTENNA PLAN

San Mateo County Zoning Hearing Officer Meeting

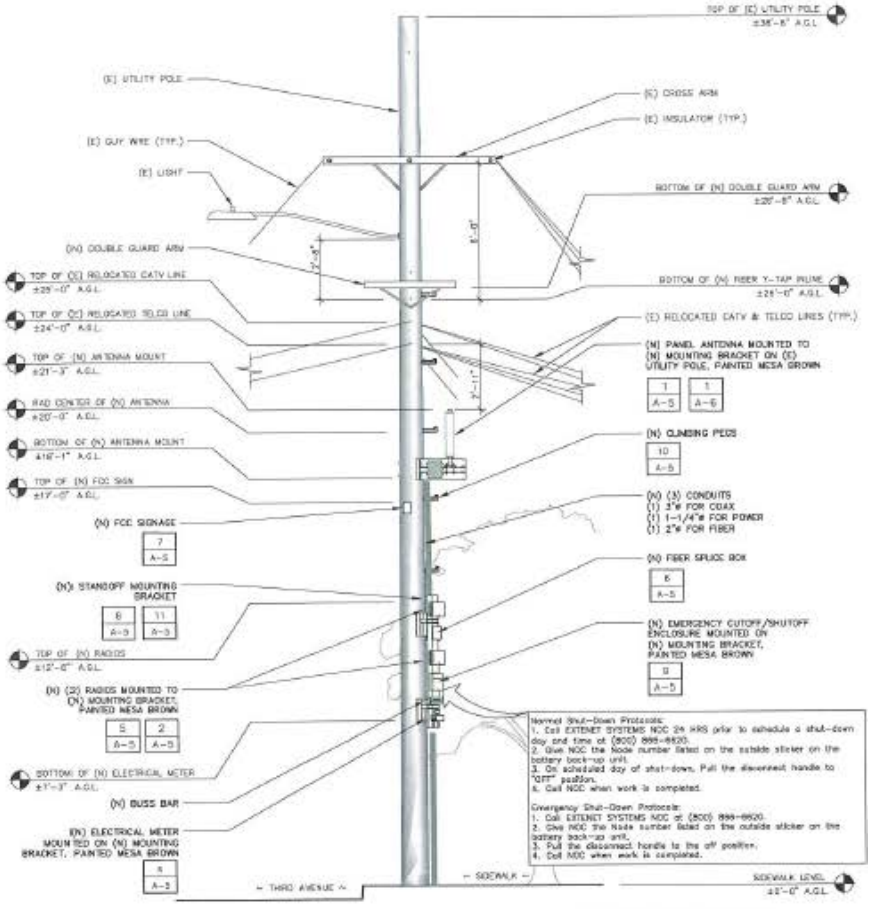
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I4**

File Numbers: **PLN 2016-00505**



1 EXISTING NORTHEAST ELEVATION

SCALE: 3/8" = 1'-0"

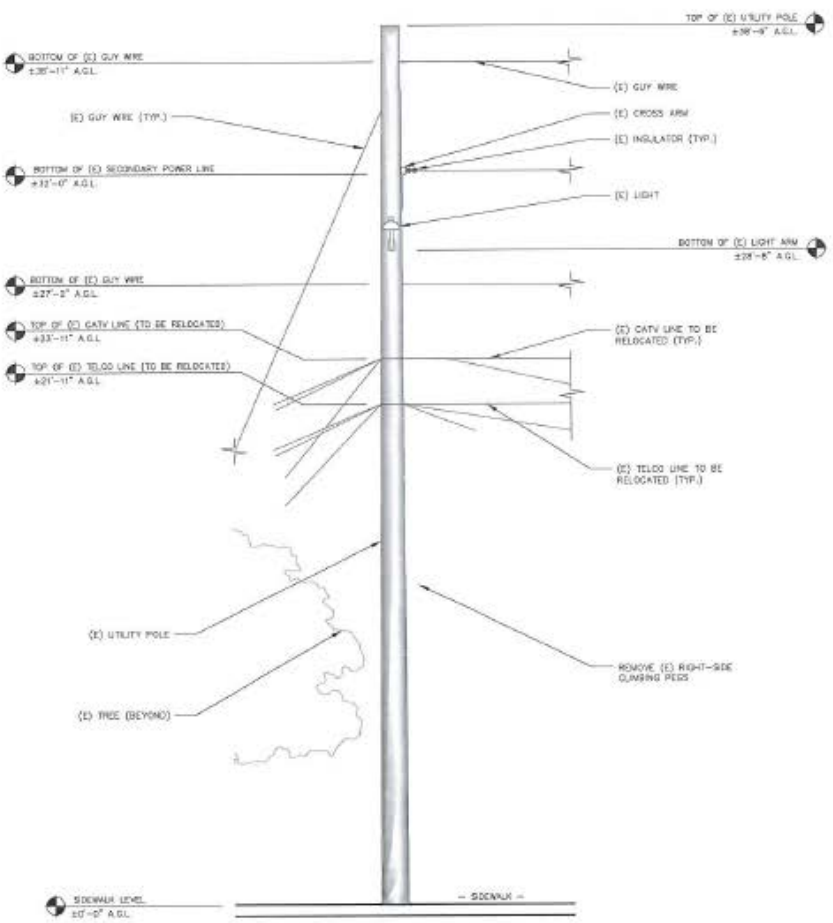


MAKE READY INFORMATION

1. EXTENET CONTRACTOR TO PLACE NEW DOUBLE GUARD ARM ON THE WEST & EAST S/O NEW POLE AT 28'8" AGL.
2. EXTENET CONTRACTOR TO PLACE N'EW EXTENET 1" ANCHOR AT L=15'9" SOUTH.
3. EXTENET CONTRACTOR TO ATTACH NEW EXTENET 16M DG AT HOA 28'0" AGL TO NEW ANCHOR L=15'0" SOUTH.
4. EXTENET CONTRACTOR TO PLACE NEW EXTENET FIBER AT 24'0" AGL AND ATTACH POSITION - INLINE.
5. EXTENET CONTRACTOR TO REMOVE AND REPLACE EXISTING CATV DG TO NEW HOA AT 25'0" AGL.
6. EXTENET CONTRACTOR TO RAISE EXISTING CATV TO NEW HOA AT 23'0" AGL.
7. EXTENET CONTRACTOR TO REMOVE AND REPLACE EXISTING TELCO DG TO NEW HOA AT 24'0" AGL.
8. EXTENET CONTRACTOR TO RAISE EXISTING TELCO TO NEW HOA AT 24'0" AGL.
9. EXTENET CONTRACTOR TO PLACE BOTTOM OF NEW ANTENNA SUPPORT ARM EXTENDING INTO FIELD SIDE AT 18'1" AGL.
10. EXTENET CONTRACTOR TO INSTALL NEW ANTENNA(S) TO NEW SUPPORT ARM PER DESIGN.
11. EXTENET CONTRACTOR TO PLACE NEW 3" SCH 80 PVC RISER AT 3.00 POSITION FOR EXTENET COAXIAL CABLES - PER DESIGN.
12. EXTENET CONTRACTOR TO PLACE NEW 2" SCH 80 PVC RISER AT 3.30 POSITION FOR EXTENET FIBER CARRIER - PER DESIGN.
13. EXTENET APPROVED ELECTRICAL CONTRACTOR TO PLACE NEW 1.5" SCH 80 PVC RISER AT 12:30 POSITION FOR POWER SERVICE FROM 'T' BELOW SECONDARY TO NEW POWER METER.
14. EXTENET CONTRACTOR TO CUT IN NEW V-TAP AT 23'0" AGL TO IMPORT NEW FIBER INTO NEW COAXIAL RISER.
15. EXTENET CONTRACTOR TO PLACE NEW 4" X 4" X 60" POLE MOUNTED EQUIPMENT CHANNEL AT 10.00 POSITION ON 4" STANDOFF BOLTS FOR NEW EXTENET EQUIPMENT. (BOTTOM AT 7'0" AGL)
16. MOUNT OF 2 NEW RRUS AND ALUMINUM BACKPLATE TO NEW EQUIPMENT CHANNEL
17. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW PG&E SMART METER BOX TO POLE AT 7'-5" AGL.
18. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW BREAKER BOX TO POLE AT 8'9" AGL.
19. EXTENET CONTRACTOR TO PLACE NEW 10'COPPER GROUND ROD 12" BELOW GRADE AND 24" FROM POLE FOR NEW POWER METER.
20. EXTENET CONTRACTOR TO PLACE NEW 8' COPPER GROUND ROD 12" BELOW GRADE AND 24" FROM POLE FOR NEW EXTENET EQUIPMENT.
21. PLACE NEW #2 COVERED GROUND WIRE FROM POWER METER TO NEW METER GROUND ROD.
22. PLACE NEW #2 COVERED GROUND WIRE FROM EXTENET EQUIPMENT TO NEW EQUIPMENT GROUND ROD.
23. EXTENET CONTRACTOR TO QUARTER STEP NEW POLE AT 6.00 AND 12.00 FOR CLIMBING SPACE.
24. EXTENET CONTRACTOR TO PLACE ALL RULE 94 SIGNAGE AS REQUIRED BY CPUC.

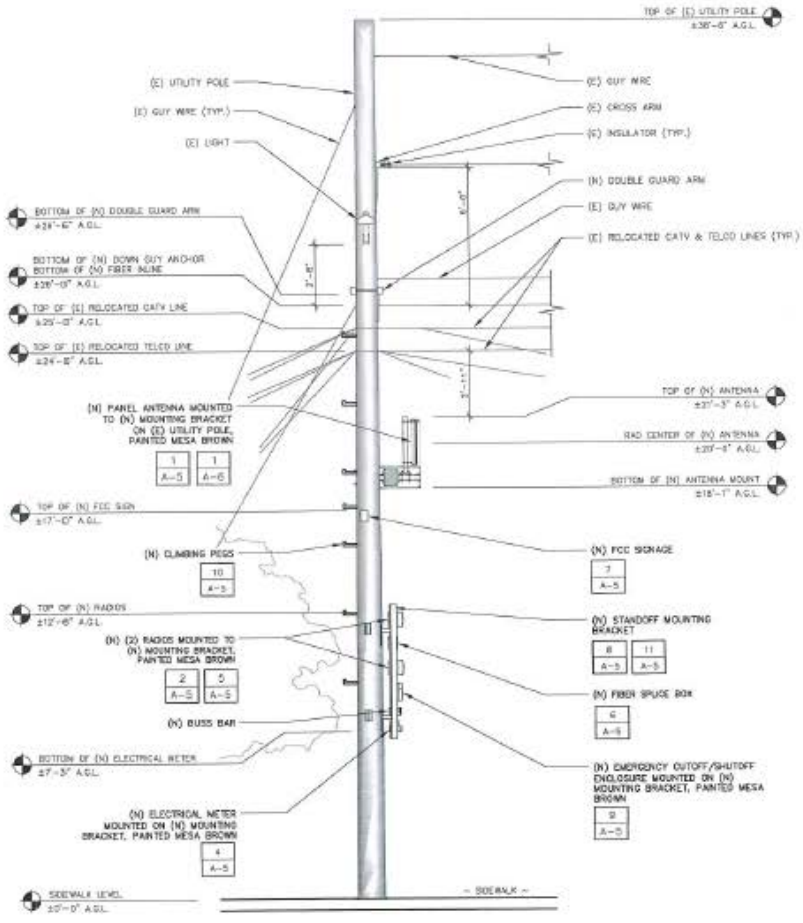
2 PROPOSED NORTHEAST ELEVATION

SCALE: 3/8" = 1'-0"



1 EXISTING SOUTHEAST ELEVATION

SCALE: 3/8" = 1'-0"



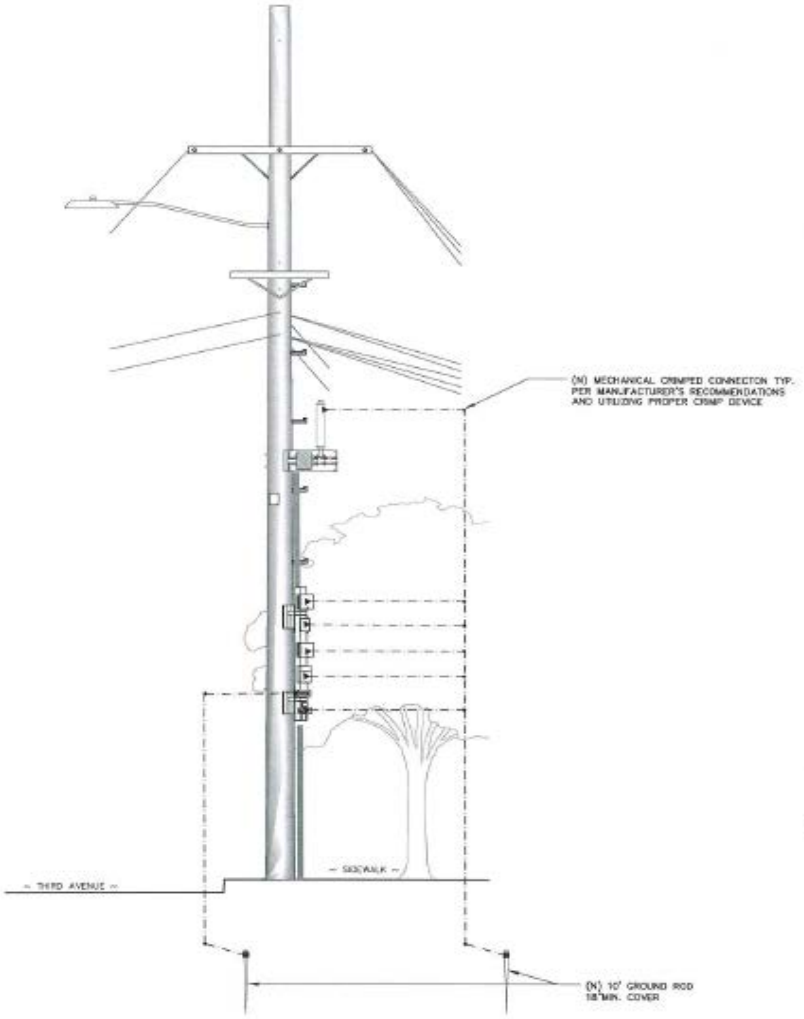
2 PROPOSED SOUTHEAST ELEVATION

SCALE: 3/8" = 1'-0"

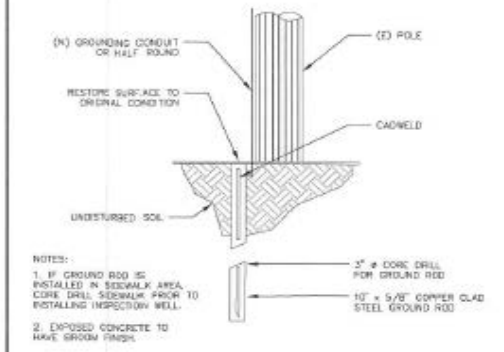
San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I4**

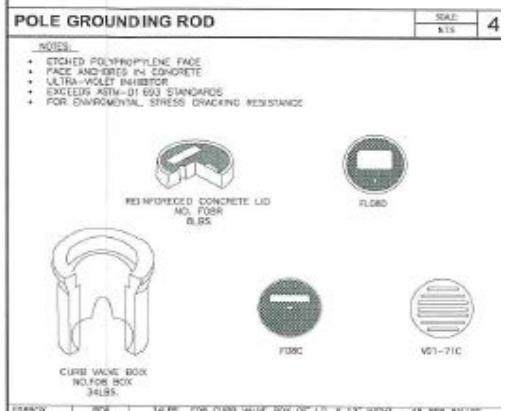
File Numbers: **PLN 2016-00505**



7 POLE GROUNDING DIAGRAM SCALE: 3/8" = 1'-0"

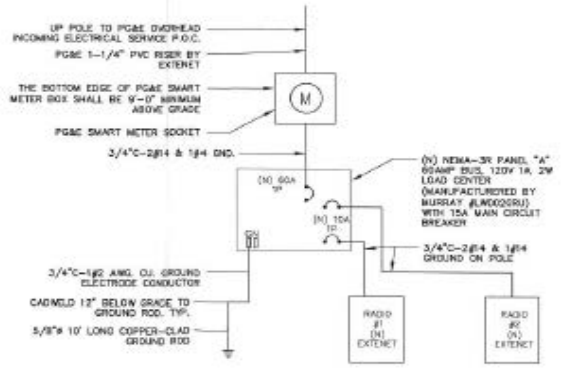


POLE GROUNDING ROD SCALE: N.T.S. 4



ITEM NO	SIZE	WEIGHT	DESCRIPTION
F08RCH	BOX	24LBS	F08 CURB VALVE BOX (8" I.D. X 13" HIGH) — 48 PER PALLET
F08RN	LID	9.8 LBS	REINFORCED CONCRETE LID WITH PLASTIC RING
F08RC	LID	9.8 LBS	CAST IRON LID
F08D	LID	2 LBS	FIBERGLASS LID NON-CONCRETE
V01-71C	LID	9 LBS	CAST IRON TRAFFIC ADA COMPLIANT

F08 BOX GROUND WELL DETAIL SCALE: N.T.S. 5



6 SINGLE LINE DIAGRAM

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I4**

File Numbers: **PLN 2016-00505**

PLN2016-00505

NOV 30 2016

San Mateo County
Planning Division

extenet SYSTEMS

NW-CA-SANFRNMC- 04116A

Aerial Map

IFO 617 Third Avenue Redwood City, CA

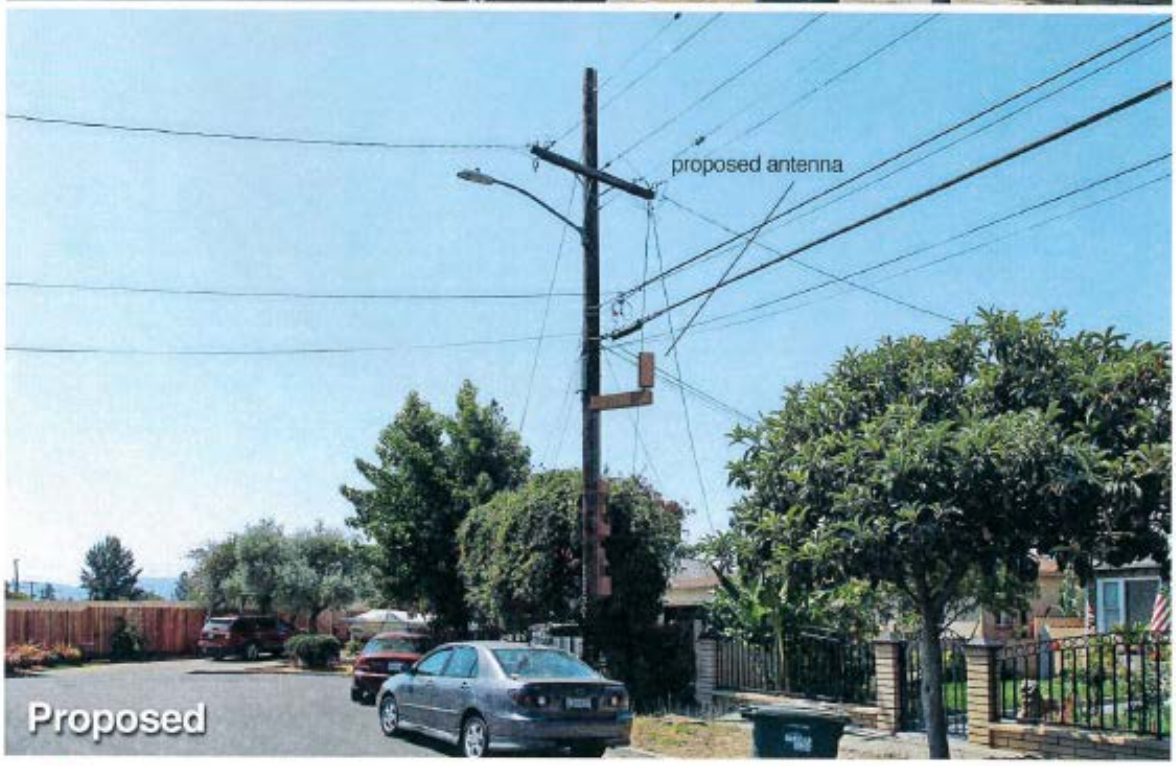
11/14/16

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J4**

File Numbers: **PLN 2016-00505**



exfenet

NW-CA-SANFRNMC- 04116A

IFO 617 Third Avenue Redwood City, CA

11/14/16

Looking Southwest from Third Avenue

View #1

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J4**

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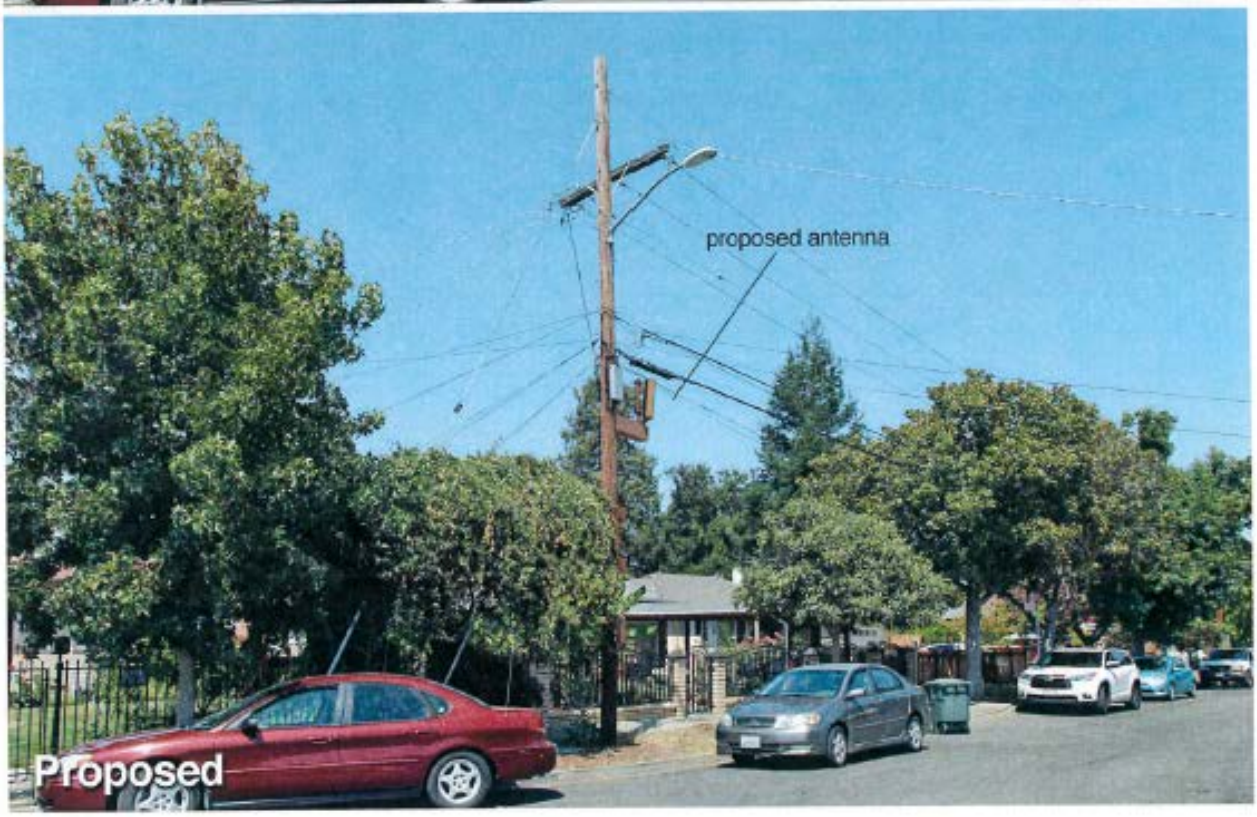

exteNet SYSTEMS

NW-CA-SANFRNMC- 04116A

IFO 617 Third Avenue Redwood City, CA

11/14/16

Looking North from Third Avenue

View #2

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J4**

File Numbers: **PLN 2016-00505**

Alternative Overview

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K4**

File Numbers: **PLN 2016-00505**

Alternative Utility Poles

Alternate Pole NORTH #1- Proposed design will exceed GO 95 guidelines for utlity poles	Alternate Pole South #2- No Candidate. Dead End Street
	No Candidate

Statement of Hammett & Edison, Inc., Consulting Engineers

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Executive Summary

ExteNet proposes to install a directional panel antenna on a utility pole sited in the public right-of-way at 617 Third Avenue in Redwood City. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

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Based upon information provided by ExteNet, including drawings by The CBR Group, dated November 3, 2016, it is proposed to install one CommScope Model V65S-C3-1XR, 2-foot tall, directional panel antenna, on a cross-arm to be added to a utility pole sited in the public right-of-way in front of the residence located at 617 Third Avenue in Redwood City. The antenna would employ no downtilt, would be mounted at an effective height of about 20 feet above ground, and would be oriented toward 30°T. T-Mobile proposes to operate from this facility with a maximum effective radiated power in any direction of 214 watts, representing simultaneous operation at 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 0.0083 mW/cm^2, which is 0.83% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 5.8% 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 617 Third Avenue in Redwood City, 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

REGISTERED PROFESSIONAL ENGINEER
RAJAT MATHUR
No. E-18063
Exp. 6-30-2017
ELECTRICAL
STATE OF CALIFORNIA

November 22, 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.

ITEM 5

File No.: PLN 2016-00506
Location: Public Right-of-Way in front of 650 2nd Avenue, North Fair Oaks
APN: Public Right-of-Way adjacent to 060-032-230

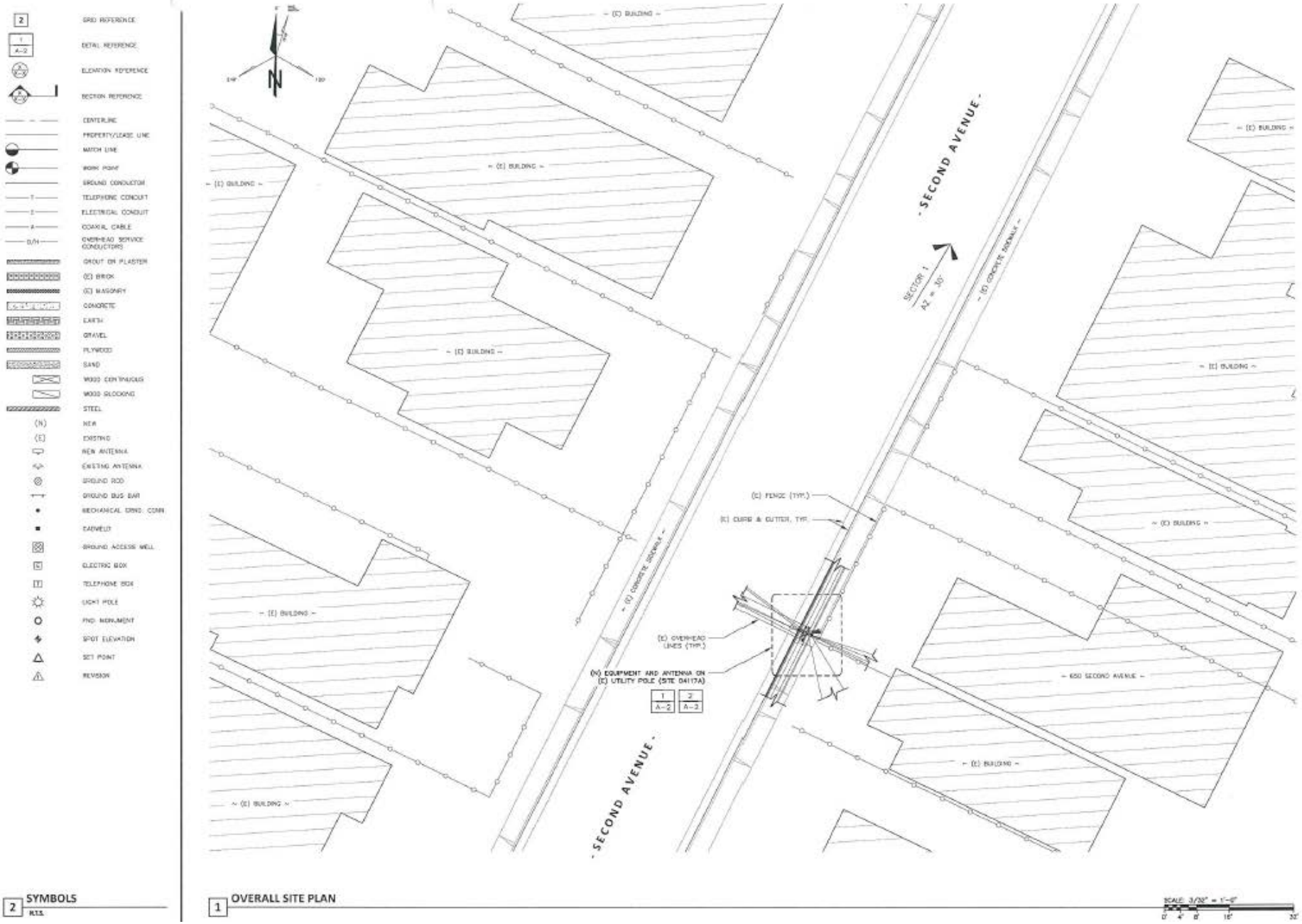
PROJECT SPECIFICATIONS TABLE							
R-1/S-73 Maximum Height	**Height of Existing Utility Pole**	**Maximum Height of Support Arm**	**Maximum Height of Antenna(s)**	**Ground Floor Radio Frequency Exposure**	**Send Floor Radio Frequency Exposure**	**Number of Viable Alternatives**	**Number of Proposed Antenna**
28 feet	28 feet	24 feet 5 inches	21 feet 4 inches	0.83%	2.1%	2	1

San Mateo County North Fair Oaks Community Council Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini**

Attachment: **H5**

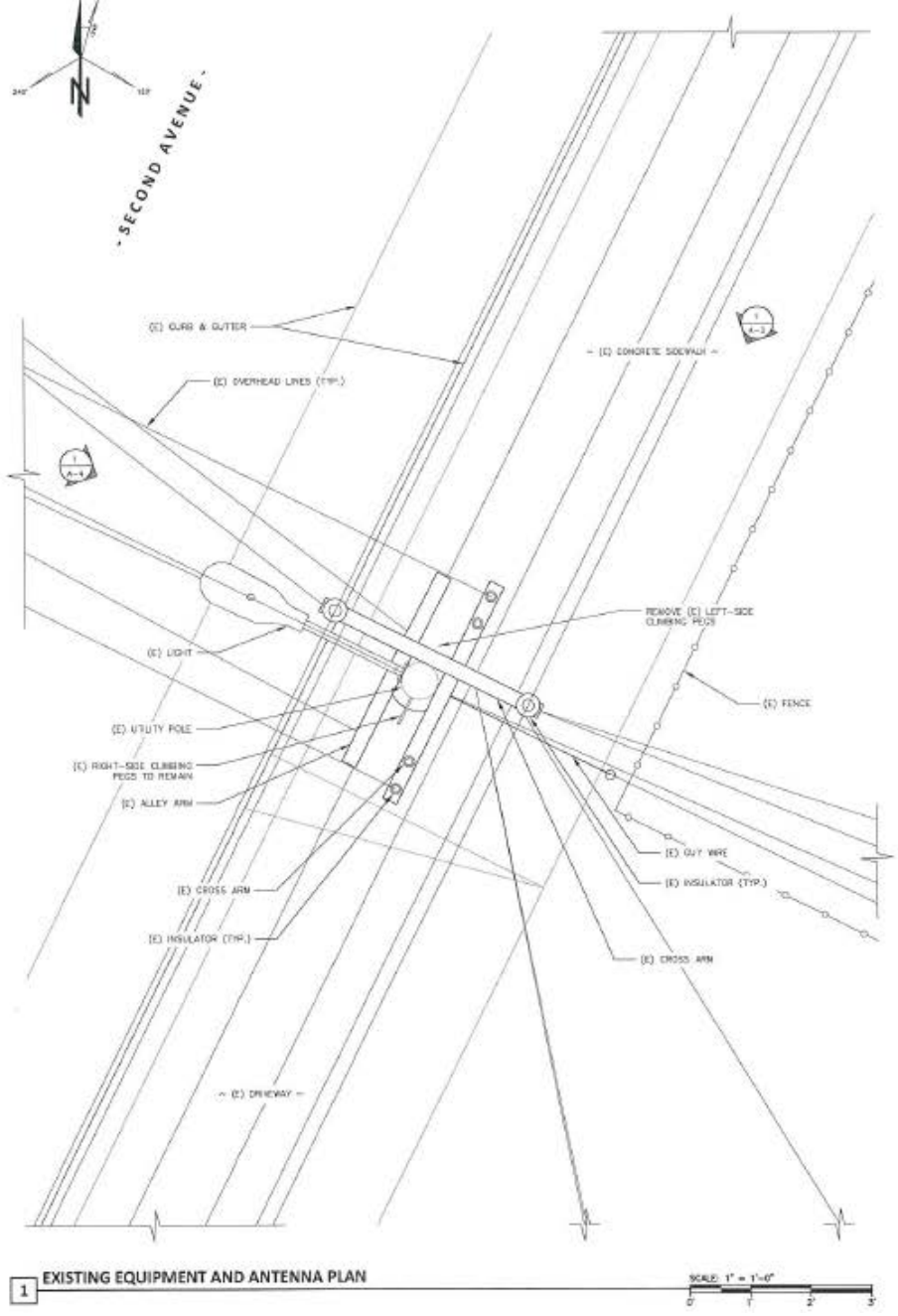
File Numbers: **PLN 2016-00506**

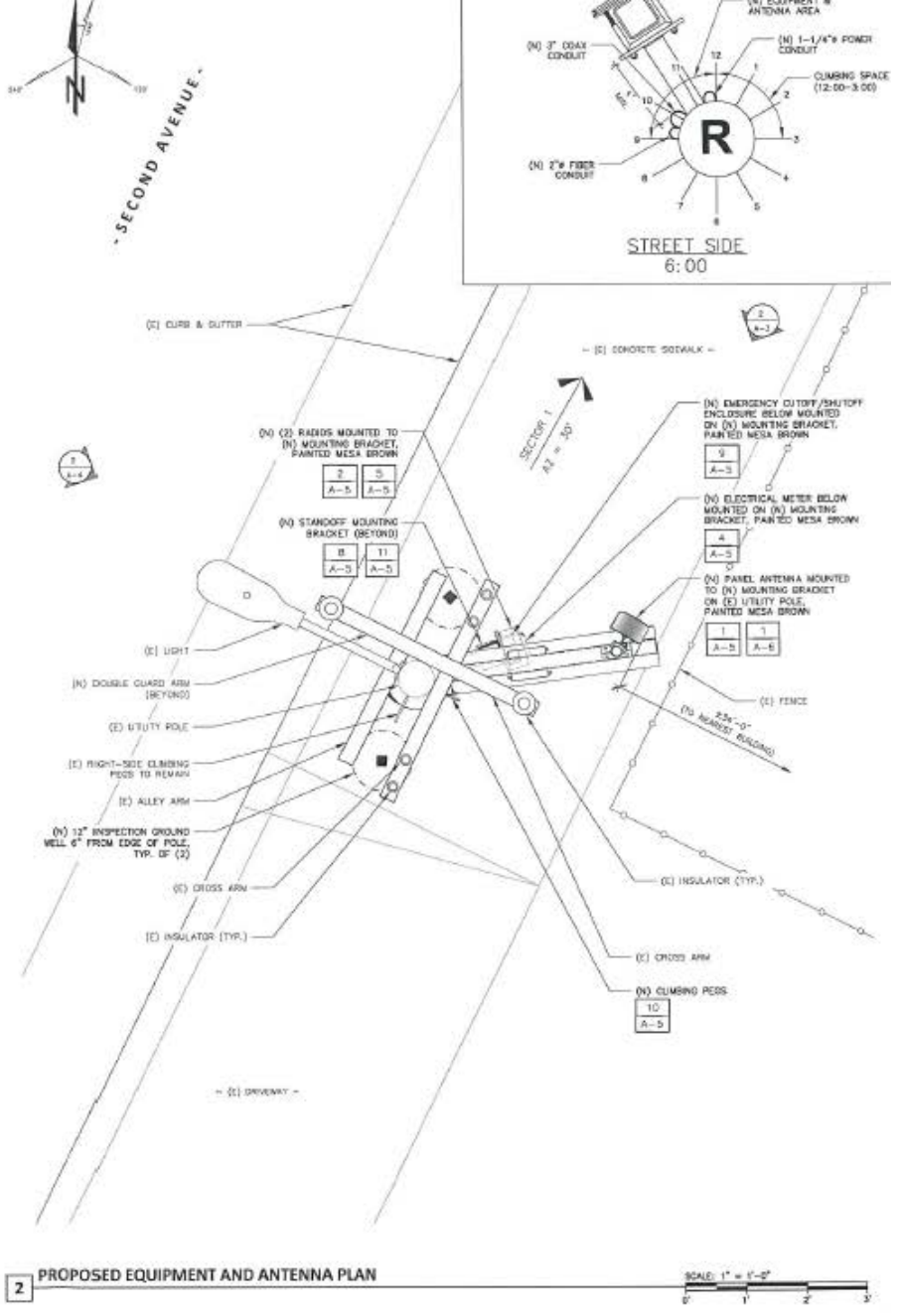


San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I5**

File Numbers: **PLN 2016-00506**

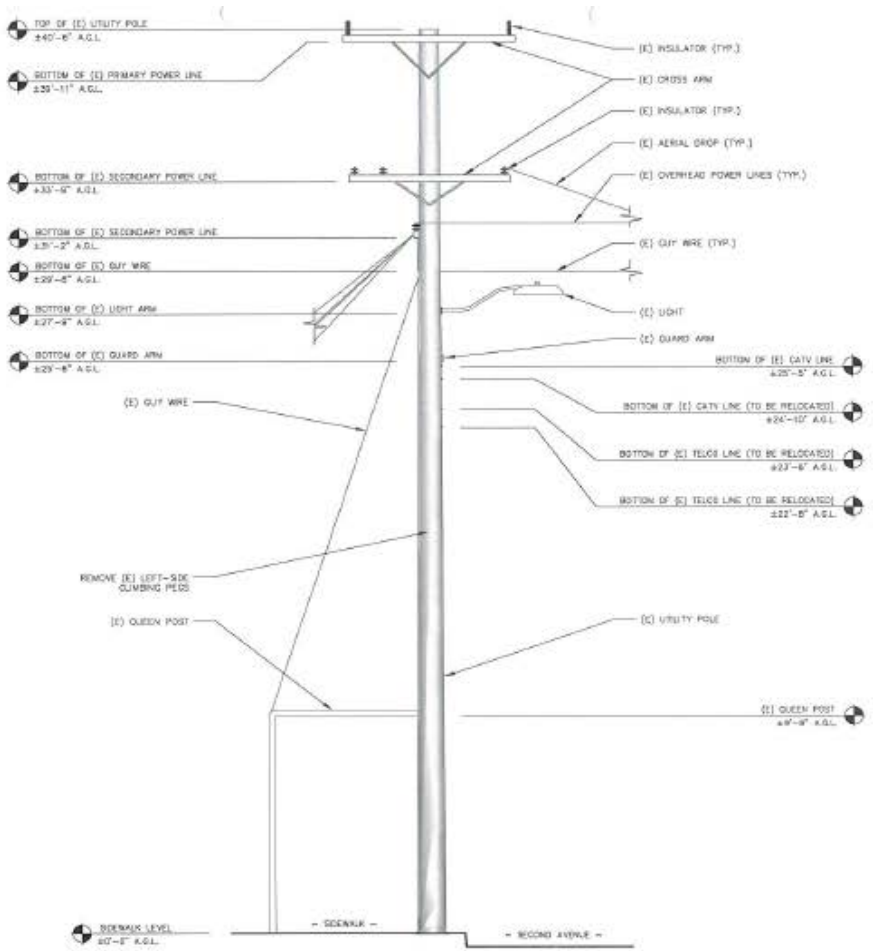




San Mateo County Zoning Hearing Officer Meeting

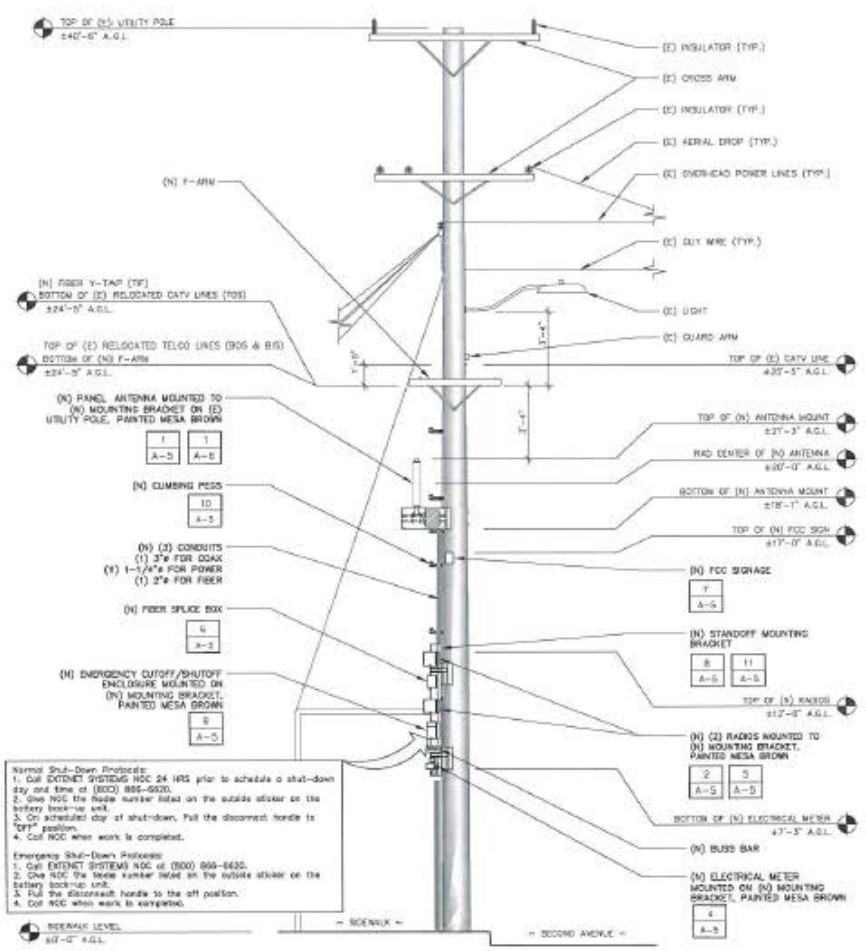
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I5**

File Numbers: **PLN 2016-00506**



1 EXISTING NORTHEAST ELEVATION

SCALE: 3/8" = 1'-0"



MAKE READY INFORMATION

1. EXTENET CONTRACTOR TO PLACE NEW F-ARM ON N/S/O EXISTING POLE AT 24'5" AGL.
2. EXTENET CONTRACTOR TO TRANSFER EXISTING MCE 24'10" TO NEW F-ARM AT 24'5" AND ATTACH TOP OUTSIDE POSITION - STREET SIDE.
3. EXTENET CONTRACTOR TO TRANSFER EXISTING TELCO 23'8" TO NEW F-ARM AT 24'5" AND ATTACH BOTTOM INSIDE POSITION - STREET SIDE.
4. EXTENET CONTRACTOR TO TRANSFER EXISTING TELCO 22'8" TO NEW F-ARM AT 24'5" AND ATTACH BOTTOM OUTSIDE POSITION - STREET SIDE.
5. EXTENET CONTRACTOR TO PLACE NEW EXTENET FIBER TO NEW F-ARM AT 24'6" AND ATTACH TOP INSIDE POSITION - FIELD SIDE.
6. EXTENET CONTRACTOR TO PLACE BOTTOM OF NEW ANTENNA SUPPORT ARM EXTENDING INTO FIELD AT 18'1" AGL.
7. EXTENET CONTRACTOR TO INSTALL NEW ANTENNAS TO NEW SUPPORT ARM PER DESIGN.
8. EXTENET CONTRACTOR TO PLACE NEW 3" SCH 80 PVC RISER AT 0:00 POSITION FOR EXTENET COAXIAL CABLES - PER DESIGN.
9. EXTENET CONTRACTOR TO PLACE NEW 2" SCH 80 PVC RISER AT 0:00 POSITION FOR EXTENET FIBER CABLES - PER DESIGN.
10. EXTENET APPROVED ELECTRICAL CONTRACTOR TO PLACE NEW 1 ½ " SCH 80 PVC RISER AT 11:30 POSITION FOR POWER SERVICE FROM 1' BELOW SECONDARY TO NEW POWER METER.
11. EXTENET CONTRACTOR TO CUT IN NEW Y-TAP AT 24'5" AGL TO INPORT NEW FIBER INTO NEW COAXIAL RISER.
12. EXTENET CONTRACTOR TO PLACE NEW 4" X 4" X 60" POLE MOUNTED EQUIPMENT CHANNEL AT 10:30 POSITION ON 6" STANDOFF BOLTS FOR NEW EXTENET EQUIPMENT. (BOTTOM AT 7'9" AGL)
13. MOUNT OF 2 NEW BRUS AND ALUM PLAM BACKPLATE TO NEW EQUIPMENT CHANNEL
14. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW PG&E SMART METER BOX TO POLE AT 7'9" AGL
15. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW BREAKER BOX TO POLE AT 8'9" AGL
16. EXTENET CONTRACTOR TO PLACE NEW 10 COPPER GROUND ROD 12" BELOW GRADE AND 18" FROM POLE FOR NEW POWER METER.
17. EXTENET CONTRACTOR TO PLACE NEW 8' COPPER GROUND ROD 12" BELOW GRADE AND 24" FROM POLE FOR NEW EXTENET EQUIPMENT.
18. PLACE NEW #2 COVERED GROUND WIRE FROM POWER METER TO NEW METER GROUND ROD.
19. PLACE NEW #2 COVERED GROUND WIRE FROM EXTENET EQUIPMENT TO NEW EQUIPMENT GROUND ROD.
20. EXTENET CONTRACTOR TO QUARTER STEP NEW POLE AT 11:00 AND 5:00 FOR CLIMBING SPACE.
21. EXTENET CONTRACTOR TO PLACE ALL RULE 94 SIGNAGE AS REQUIRED BY LAW.

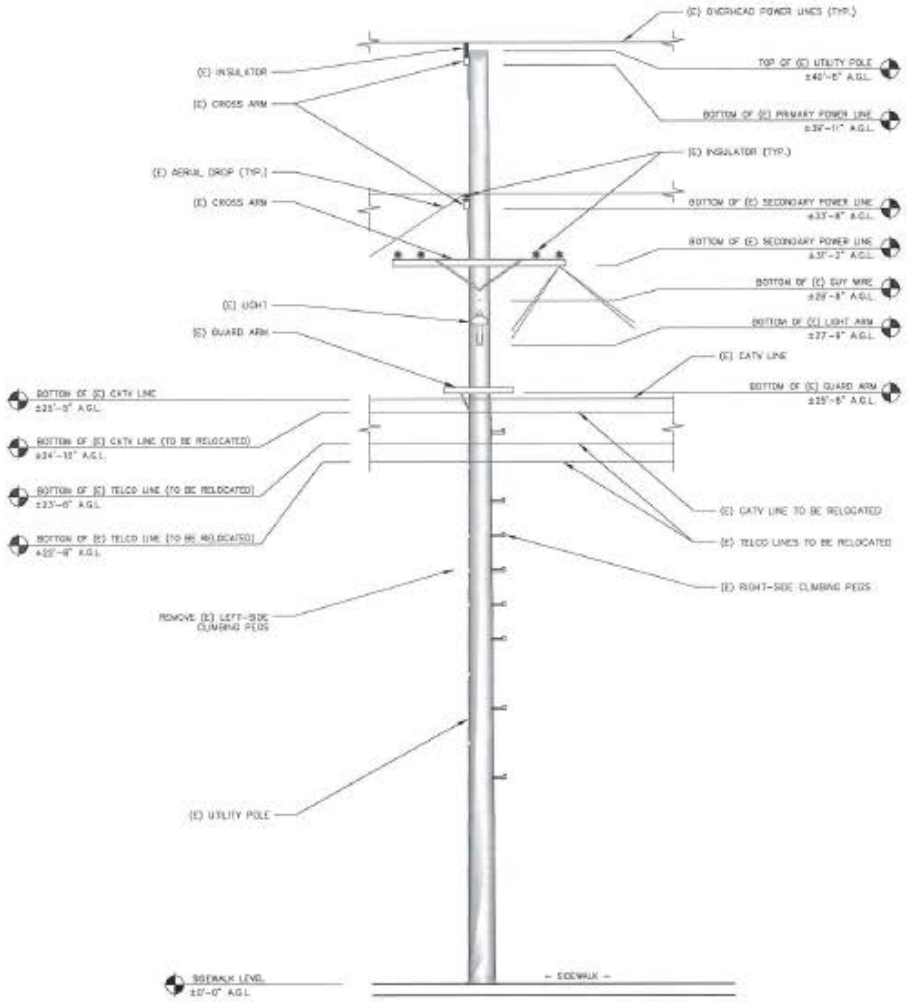
2 PROPOSED NORTHEAST ELEVATION

SCALE: 3/8" = 1'-0"

San Mateo County Zoning Hearing Officer Meeting

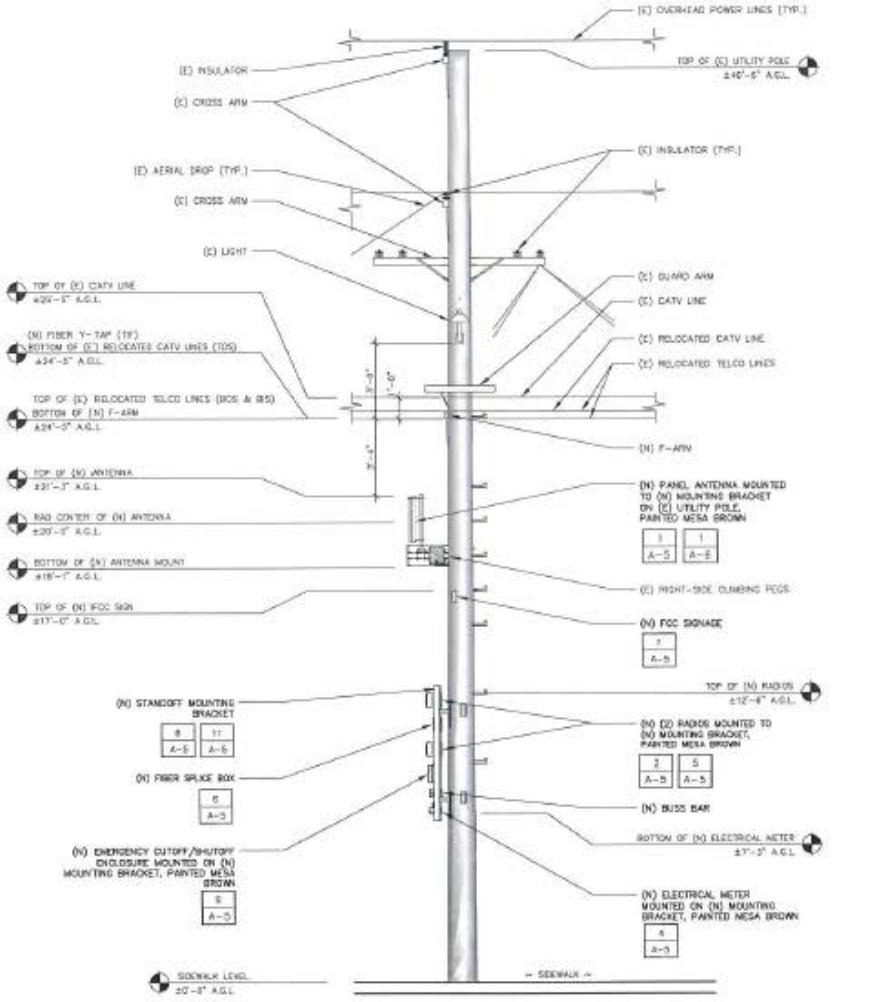
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I5**

File Numbers: **PLN 2016-00506**



1 EXISTING NORTHWEST ELEVATION

SCALE: 3/8" = 1'-0"



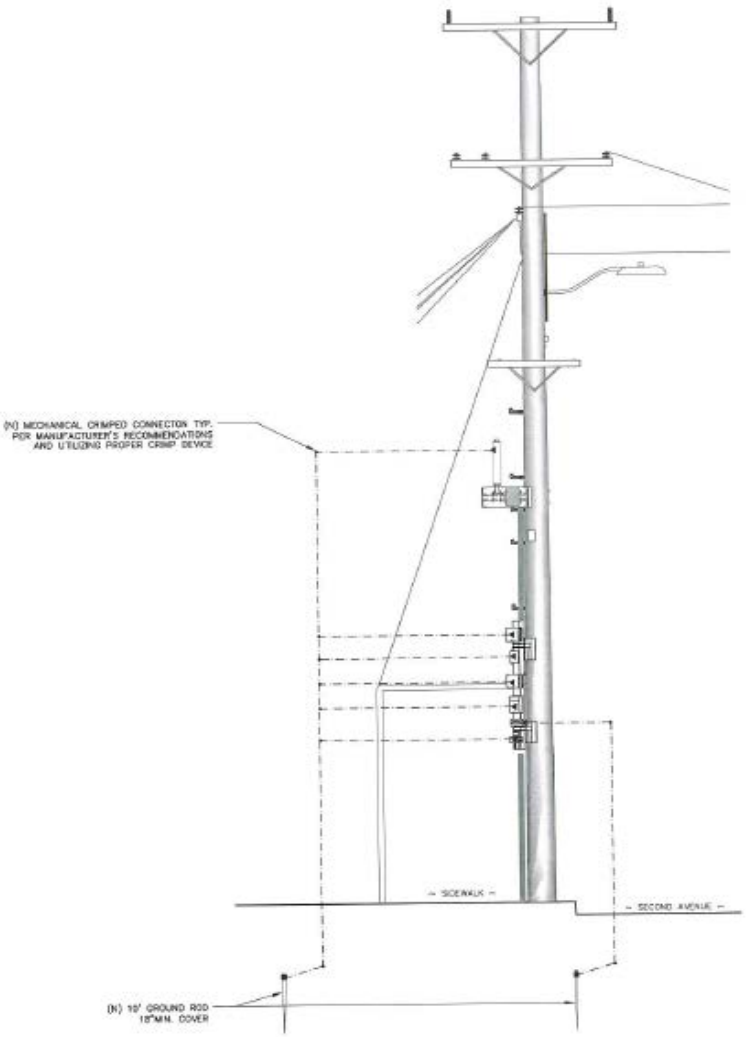
2 PROPOSED NORTHWEST ELEVATION

SCALE: 3/8" = 1'-0"

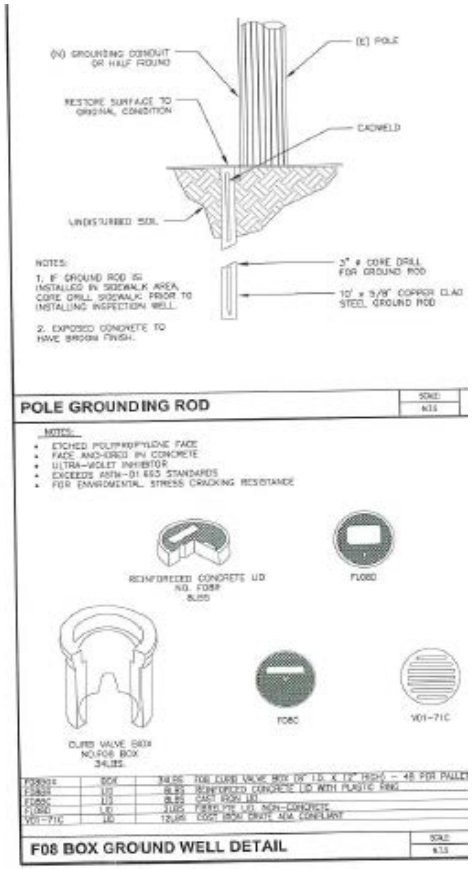
San Mateo County Zoning Hearing Officer Meeting

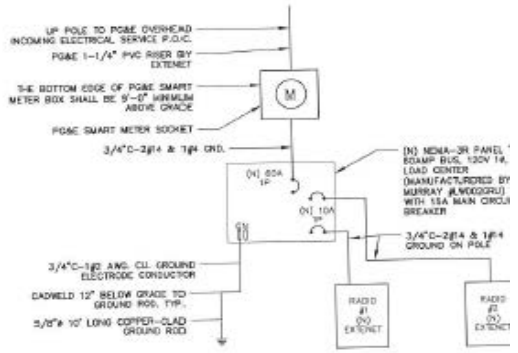
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I5**

File Numbers: **PLN 2016-00502 thru PLN 2016-00509; 00531; 0053**



7 POLE GROUNDING DIAGRAM SCALE: 3/8" = 1'-0"



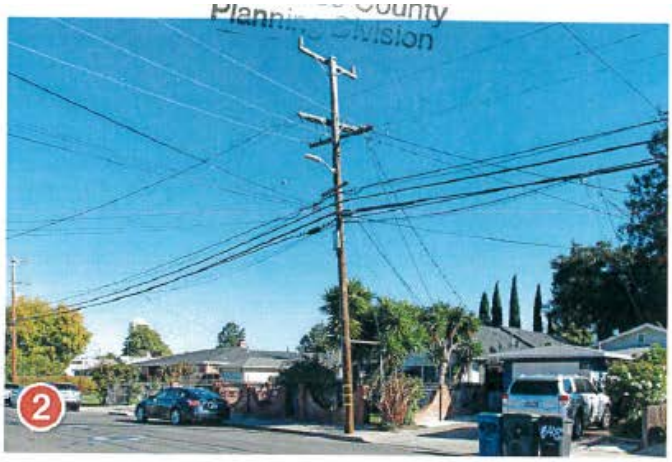


6 SINGLE LINE DIAGRAM

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I5**

File Numbers: **PLN 2016-00506**



exteNet SYSTEMS

NW-CA-SANFRNMC- 04117A

IFO 650 Second Avenue Redwood City, CA

Aerial Map

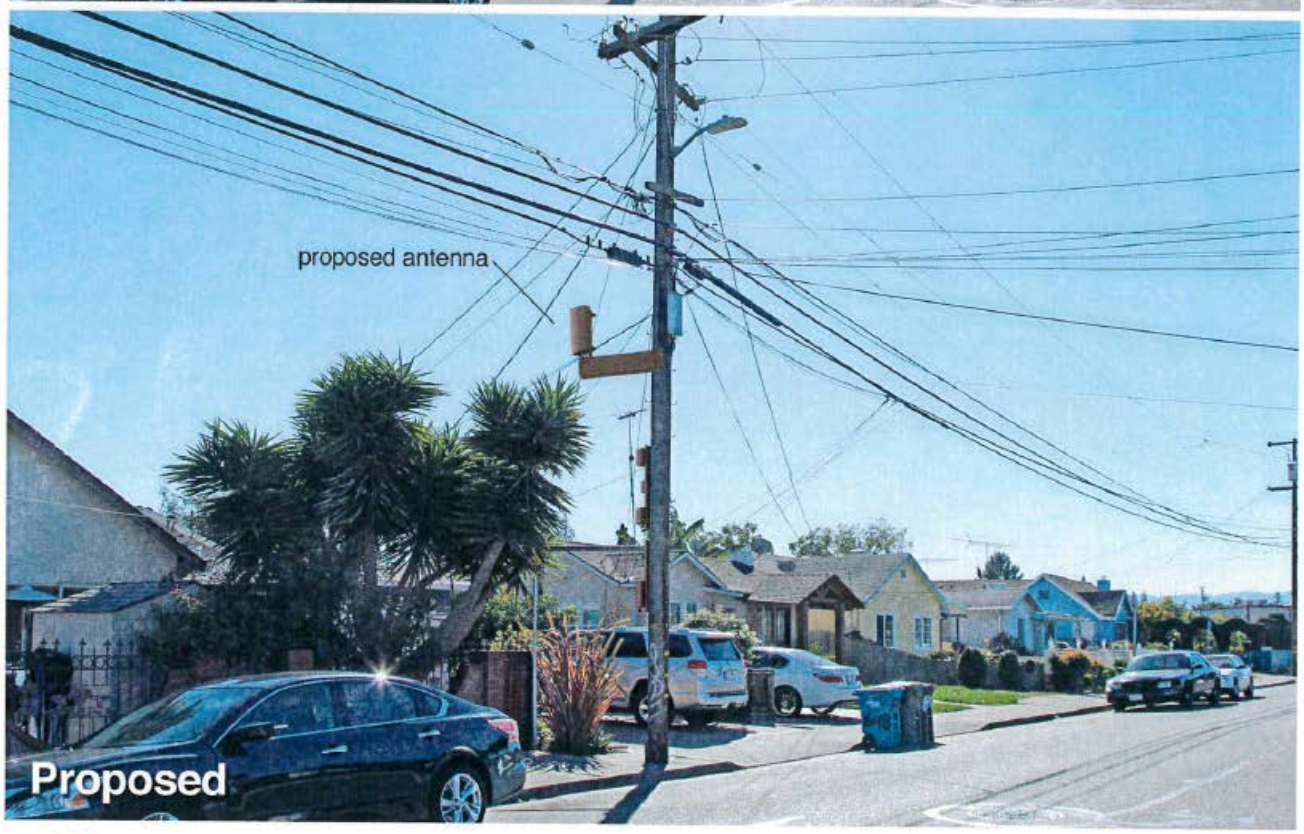
11/14/16

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J5**

File Numbers: **PLN 2016-00506**



exteNet SYSTEMS

NW-CA-SANFRNMC- 04117A

IFO 650 Second Avenue Redwood City, CA

11/14/16

Looking South from Second Avenue

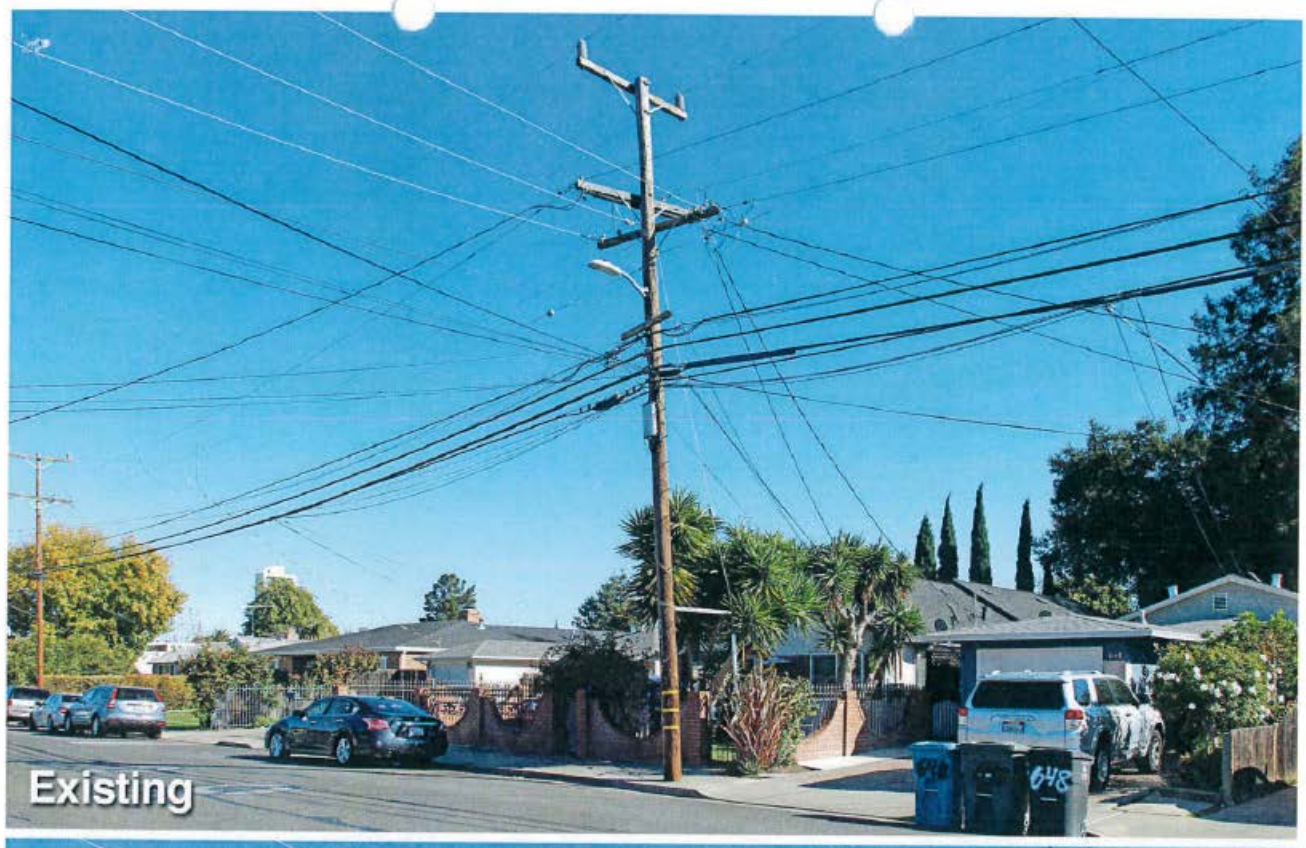
View #1

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J5**

File Numbers: **PLN 2016-00506**



exteNet SYSTEMS

NW-CA-SANFRNMC- 04117A

IFO 650 Second Avenue Redwood City, CA

11/14/16

Looking Northeast from Second Avenue

View #2

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J5**

File Numbers: **PLN 2016-00506**

Alternative Overview

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K5**

File Numbers: **PLN 2016-00506**

Alternative Utility Poles

Alternate Pole NORTH #1- Viable Candidate	Alternate Pole South #2- Viable Candidate
	

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K5**

File Numbers: **PLN 2016-00506**

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. 04117A to be added to the ExteNet distributed antenna system ("DAS") in Redwood City, 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 650 Second Avenue in Redwood City. 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 The CBR Group, dated November 3, 2016, it is proposed to install one CommScope Model V65S-C3-1XR, 2-foot tall, directional panel antenna, on a cross-arm to be added to a utility pole sited in the public right-of-way in front of the residence located at 650 Second Avenue in Redwood City. The antenna would employ no downtilt, would be mounted at an effective height of about 20 feet above ground, and would be oriented toward 30°T. T-Mobile proposes to operate from this facility with a maximum effective radiated power in any direction of 214 watts, representing simultaneous operation at 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 0.0083 mW/cm^2, which is 0.83% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 2.1% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels 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 650 Second Avenue in Redwood City, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations. Training personnel and posting signs is recommended to establish compliance with occupational exposure limitations.

Authorship

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

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

November 22, 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.

ITEM 6

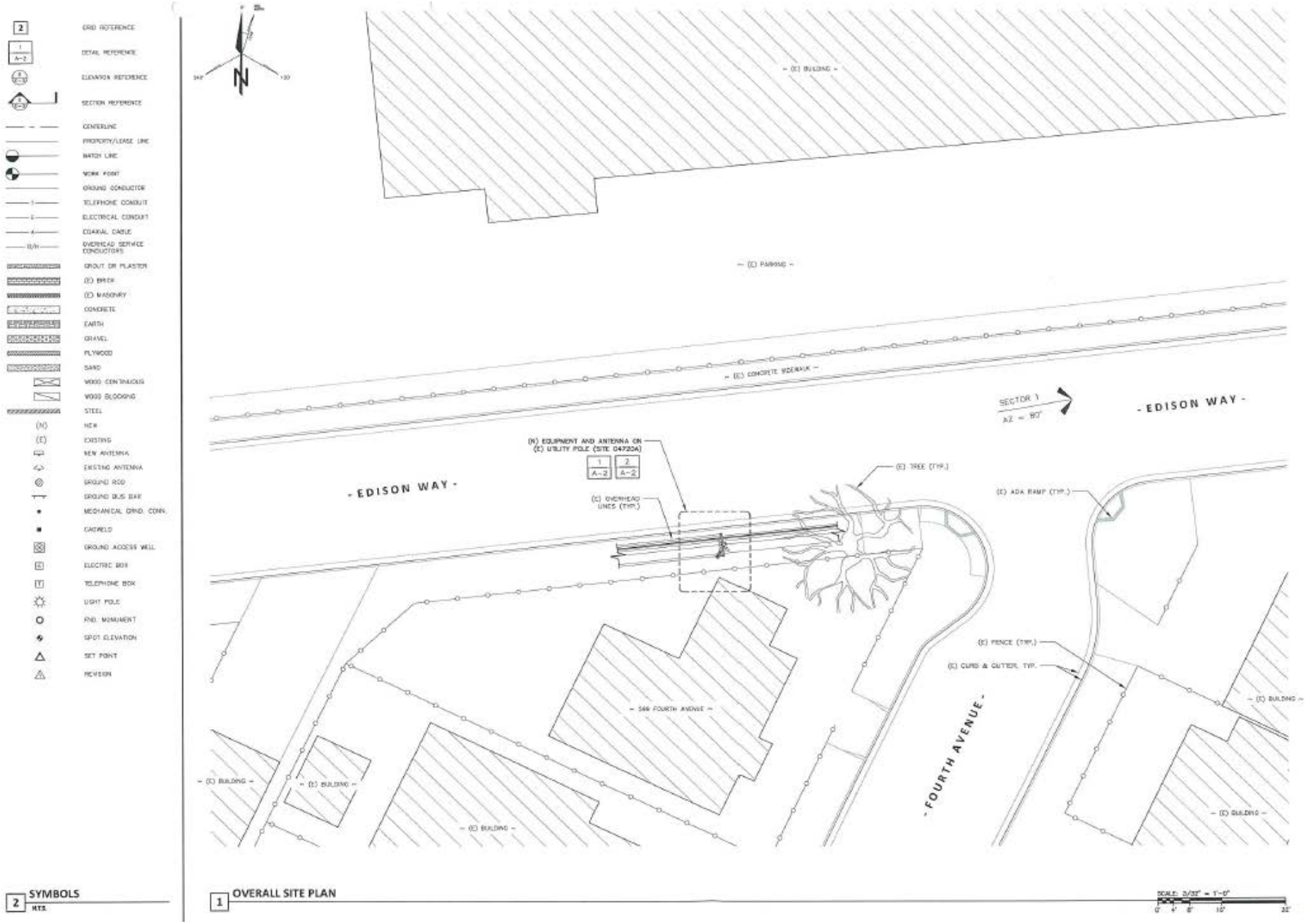
File No.: PLN 2016-00507
Location: Public Right-of-Way in front of 599 4th Avenue, North Fair Oaks
APN: Public Right-of-Way adjacent to 060-057-010

PROJECT SPECIFICATIONS TABLE							
R-3/S-5 Maximum Height	**Height of Existing Utility Pole**	**Maximum Height of Support Arm**	**Maximum Height of Antenna(s)**	**Ground Floor Radio Frequency Exposure**	**Send Floor Radio Frequency Exposure**	**Number of Viable Alternatives**	**Number of Proposed Antenna**
36 feet	39 feet	23 feet 6 inches	21 feet 4 inches	0.83%	2.1%	1	1

San Mateo County North Fair Oaks Community Council Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **H6**

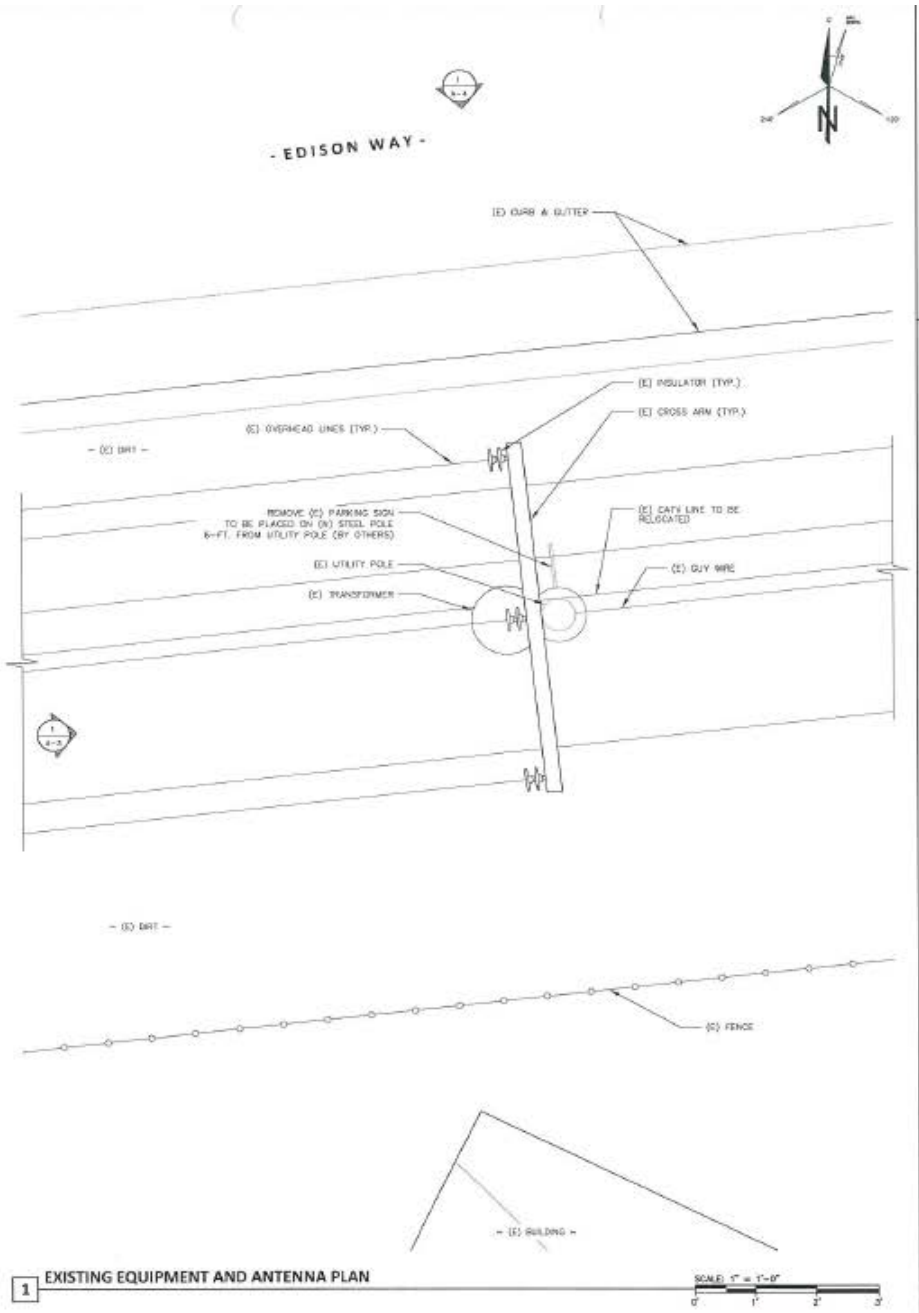
File Numbers: **PLN 2016-00507**

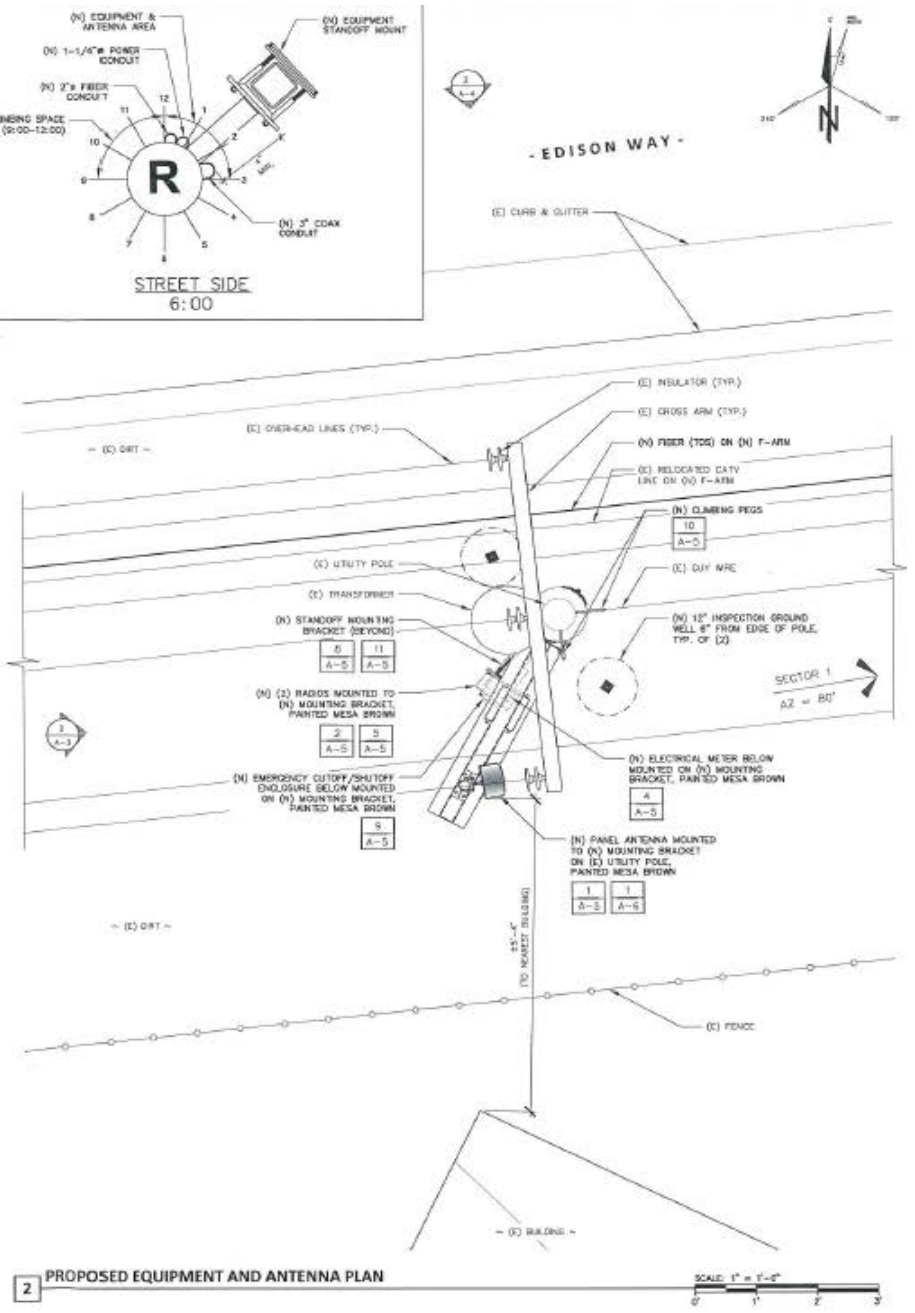


San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I6**

File Numbers: **PLN 2016-00507**

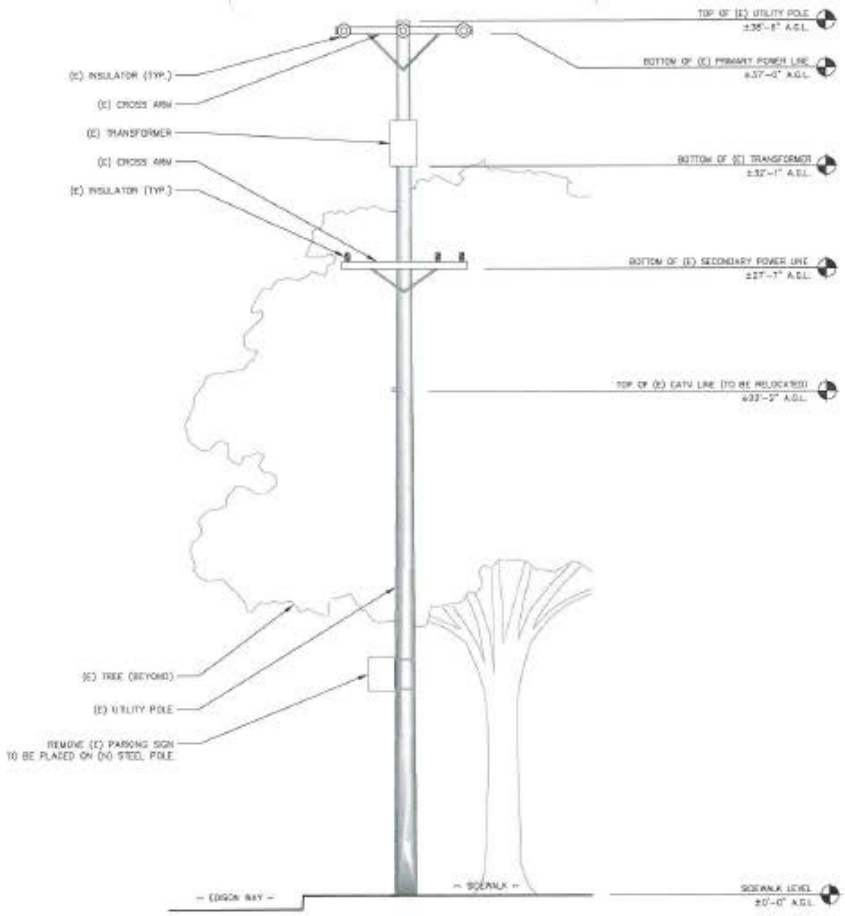




San Mateo County Zoning Hearing Officer Meeting

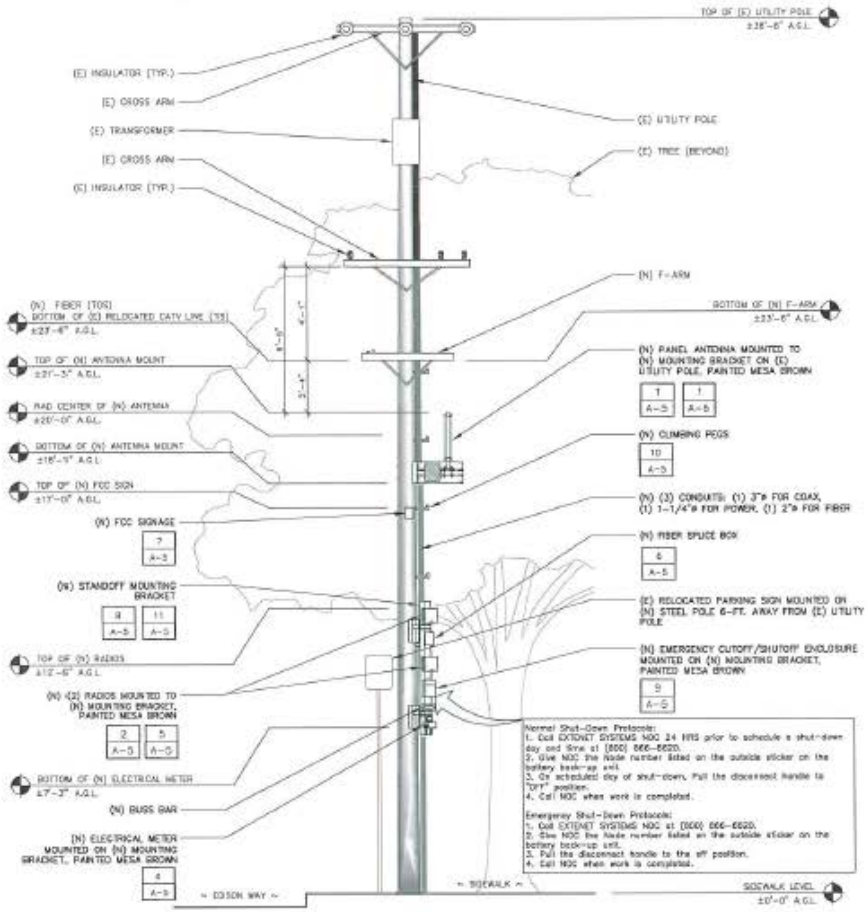
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I6**

File Numbers: **PLN 2016-00507**



1 EXISTING WEST ELEVATION

SCALE: 3/8" = 1'-0"



MAKE READY INFORMATION

1. EXTENET CONTRACTOR TO PLACE NEW F-ARM ON (E)/(N) EXISTING POLE AT ±33'-6" AGL.
2. EXTENET CONTRACTOR TO TRANSFER EXISTING CATV TO NEW F-ARM AT 23'-6" AND ATTACH TOP INSIDE POSITION - STREET SIDE.
3. EXTENET CONTRACTOR TO PLACE NEW EXTENET FIBER TO NEW F-ARM AT 23'-0" AND ATTACH TOP OUTSIDE POSITION - STREET SIDE.
4. EXTENET CONTRACTOR TO PLACE BOTTOM OF NEW ANTENNA SUPPORT ARM EXTENDING INTO FIELD AT 18'-3" AGL.
5. EXTENET CONTRACTOR TO INSTALL NEW ANTENNA(S) TO NEW SUPPORT ARM PER DESIGN.
6. EXTENET CONTRACTOR TO PLACE NEW 3" SCH 80 PVC RISER AT 2:30 POSITION FOR EXTENET COAXIAL CABLES - PER DESIGN.
7. EXTENET CONTRACTOR TO PLACE NEW 2" SCH 80 PVC RISER AT 12:00 POSITION FOR EXTENET FIBER CABLES - PER DESIGN.
8. EXTENET APPROVED ELECTRICAL CONTRACTOR TO PLACE NEW 3 & 1 "SCH 80 PVC RISER AT 11:30 POSITION FOR POWER SERVICE FROM 1' BELOW SECONDARY TO NEW POWER METER.
9. EXTENET CONTRACTOR TO CUT IN NEW Y-TAP AT 23'-0" AGL TO IMPORT NEW FIBER INTO NEW COAXIAL RISER.
10. EXTENET CONTRACTOR TO PLACE NEW 4" X 4" X 68" POLE MOUNTED EQUIPMENT CHANNEL AT 1:30 POSITION ON 4" STANDOFF BOLTS FOR NEW EXTENET EQUIPMENT. (BOTTOM AT 7'0" AGL)
11. MOUNT OF 2 NEW RRUS AND ACQUINUM RADIO PLATE TO NEW EQUIPMENT CHANNEL.
12. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW PG&E SMART METER BOX TO POLE AT 7'-5" AGL.
13. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW BREAKER BOX TO POLE AT 5'-0" AGL.
14. EXTENET CONTRACTOR TO PLACE NEW 10' COPPER GROUND ROD 12" BELOW GRADE AND 24" FROM POLE FOR NEW POWER METER.
15. EXTENET CONTRACTOR TO PLACE NEW 8' COPPER GROUND ROD 12" BELOW GRADE AND 24" FROM POLE FOR NEW EXTENET EQUIPMENT.
16. PLACE NEW #2 COVERED GROUND WIRE FROM POWER METER TO NEW METER GROUND ROD.
17. PLACE NEW #2 COVERED GROUND WIRE FROM EXTENET EQUIPMENT TO NEW EQUIPMENT GROUND ROD.
18. EXTENET CONTRACTOR TO CLIMATER STEP AT NEW POLE AT 9.00 AND 12.00 FOR CLIMBING SPACE.
EXTENET CONTRACTOR TO PLACE ALL RULE 94 SIGNAGE AS REQUIRED BY LAW.

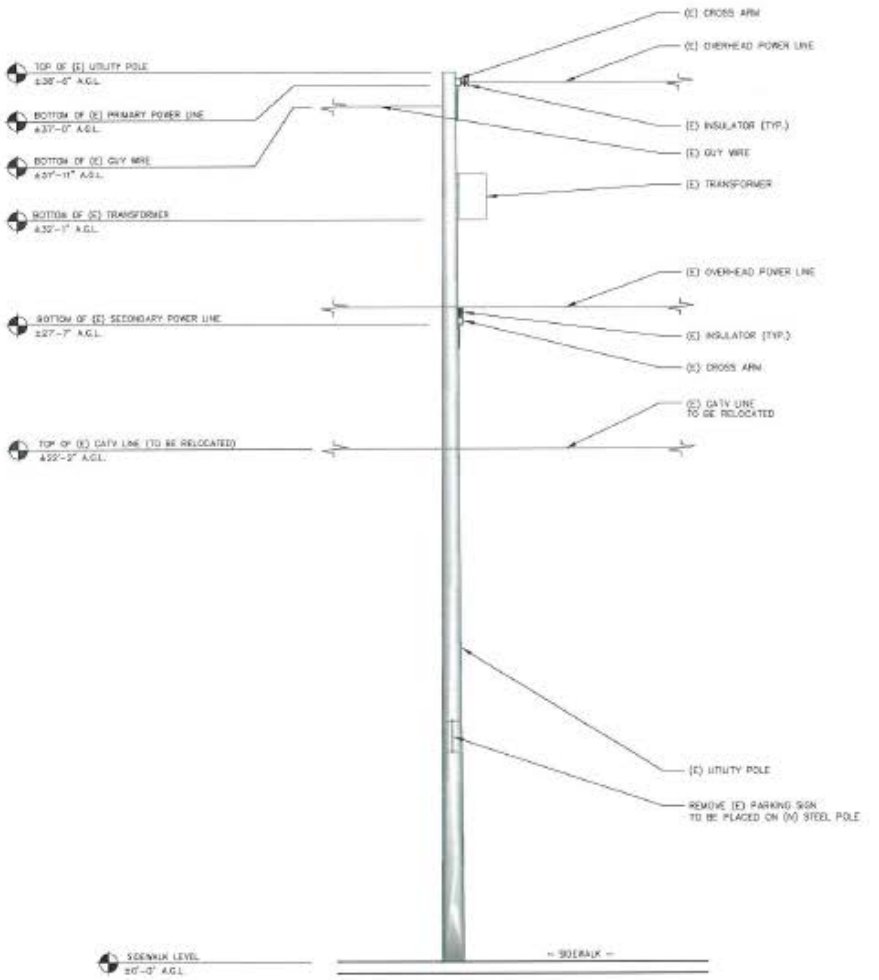
2 PROPOSED WEST ELEVATION

SCALE: 3/8" = 1'-0"

San Mateo County Zoning Hearing Officer Meeting

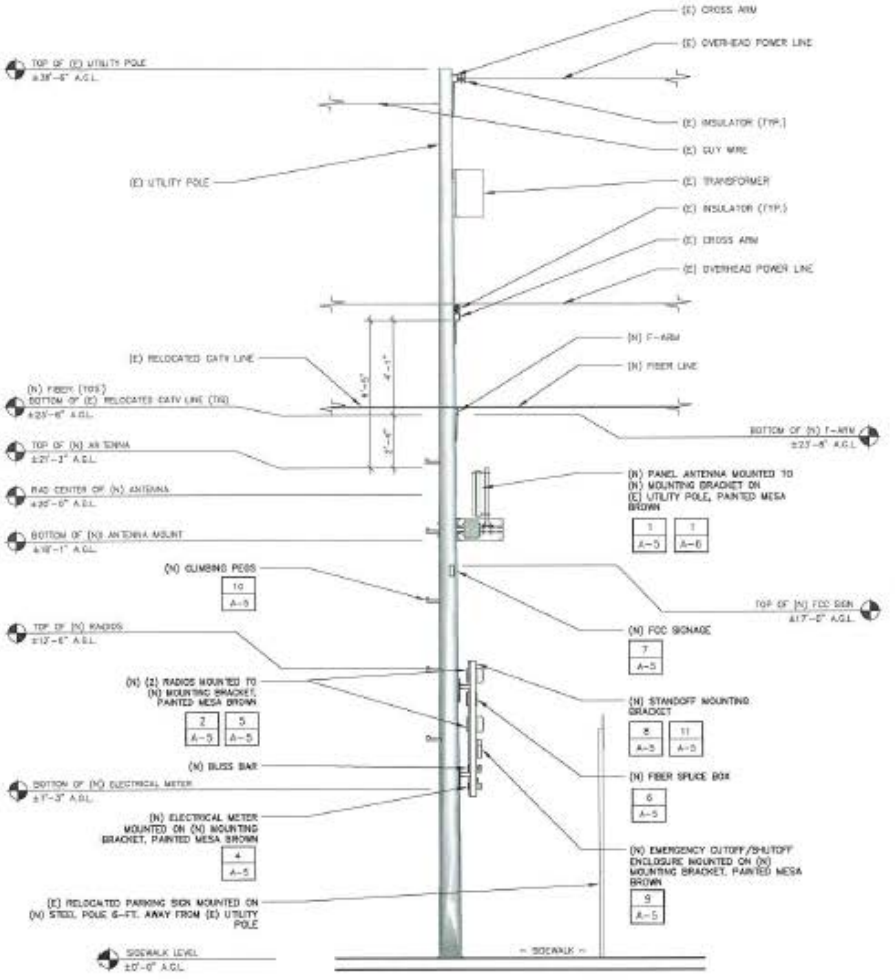
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I6**

File Numbers: **PLN 2016-00507**



1 EXISTING NORTH ELEVATION

SCALE: 3/8" = 1'-0"



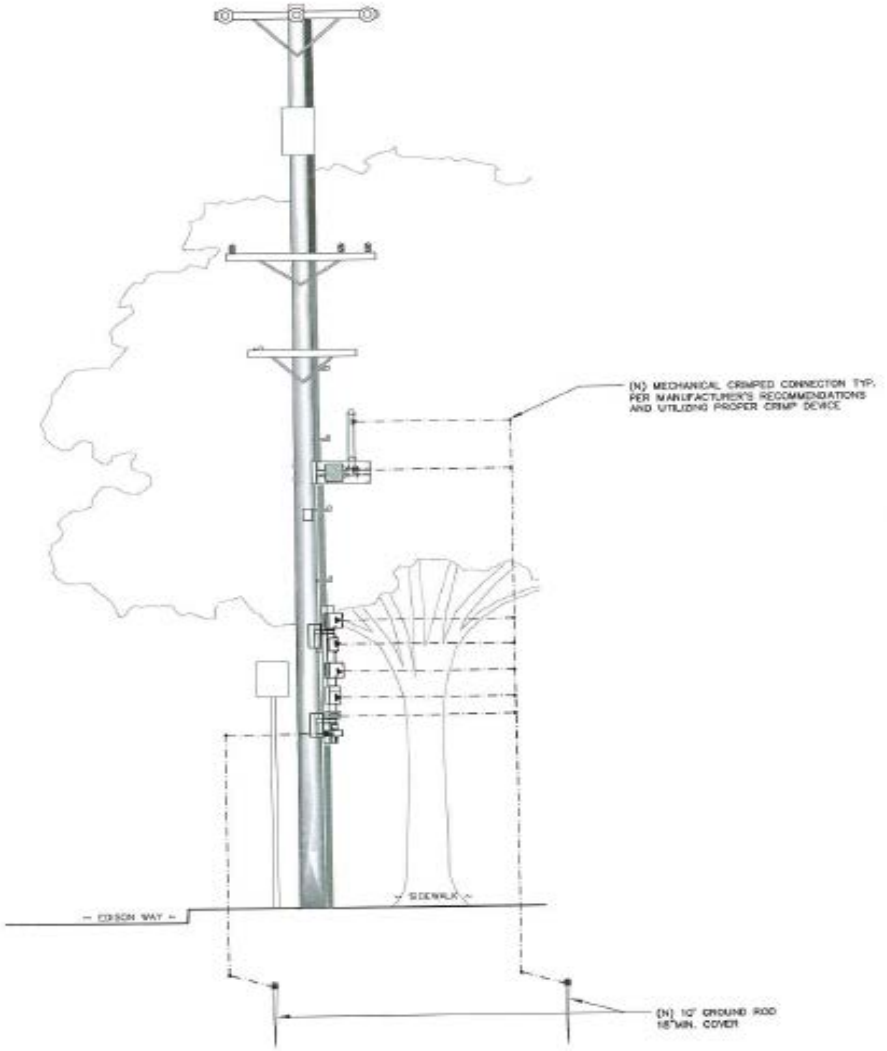
2 PROPOSED NORTH ELEVATION

SCALE: 3/8" = 1'-0"

San Mateo County Zoning Hearing Officer Meeting

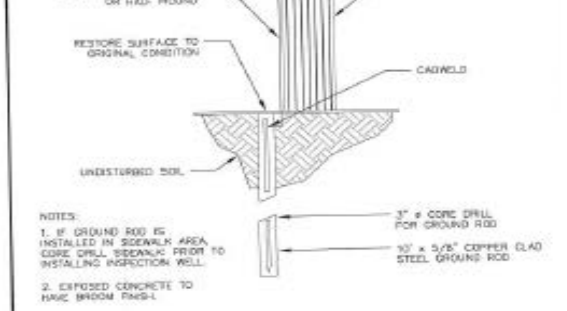
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I6**

File Numbers: **PLN 2016-00507**

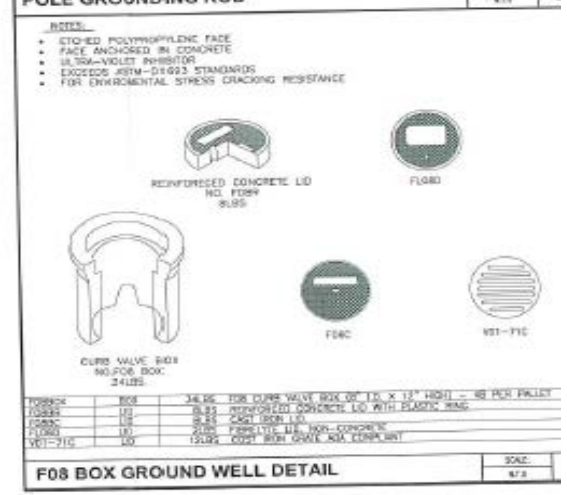


7 POLE GROUNDING DIAGRAM

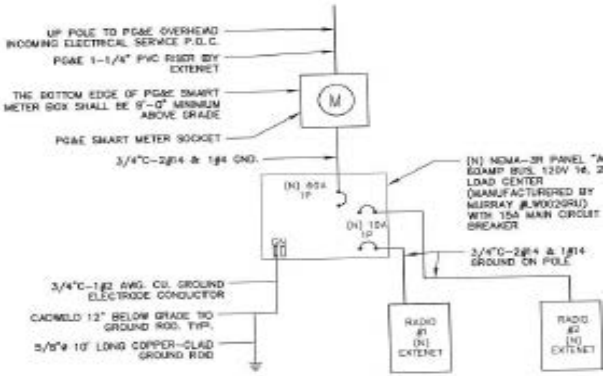
SCALE: 3/8" = 1'-0"



POLE GROUNDING ROD



F08 BOX GROUND WELL DETAIL

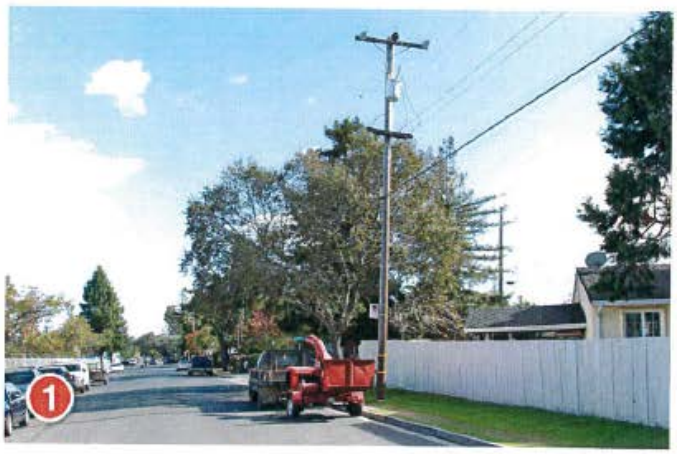


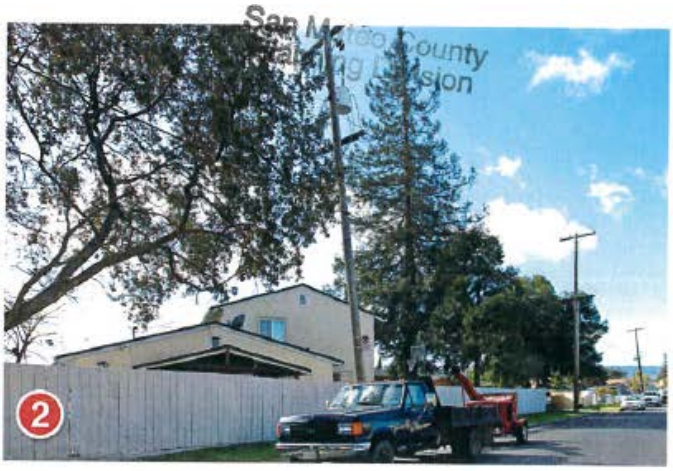
6 SINGLE LINE DIAGRAM

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I6**

File Numbers: **PLN 2016-00507**





extenet SYSTEMS

NW-CA-SANFRNMC- 04720A

Aerial Map

IFO 599 Fourth Avenue (Edison Way Frontage) Redwood City, CA

11/14/16

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J6**

File Numbers: **PLN 2016-00507**

extenet SYSTEMS

NW-CA-SANFRNMC- 04720A

IFO 599 Fourth Avenue (Edison Way Frontage) Redwood City, CA

11/14/16

Looking Southeast from Edison Way

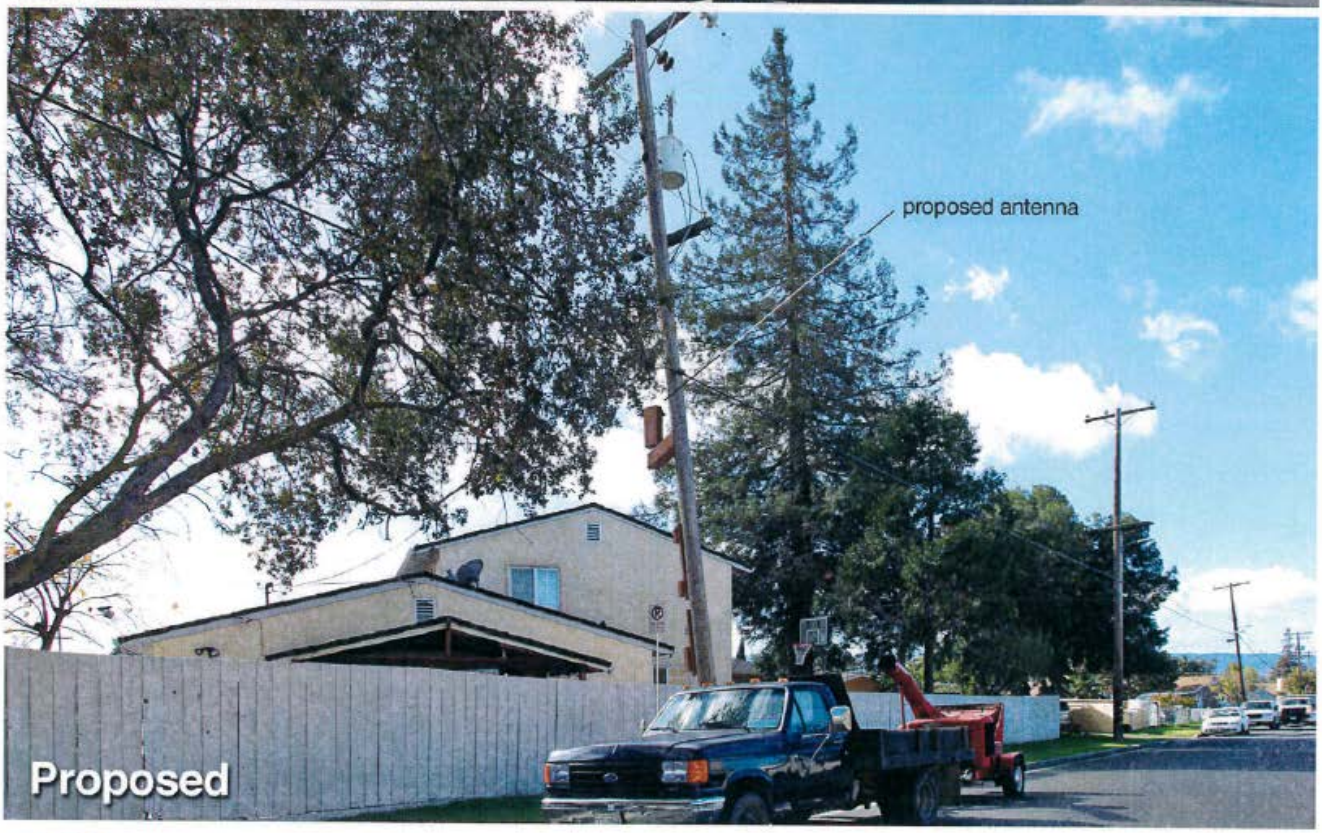
View #1

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J6**

File Numbers: **PLN 2016-00507**



exteNet SYSTEMS

NW-CA-SANFRNMC- 04720A

IFO 599 Fourth Avenue (Edison Way Frontage) Redwood City, CA

Looking Southwest from Edison Way

View #2

11/14/16

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J6**

File Numbers: **PLN 2016-00507**

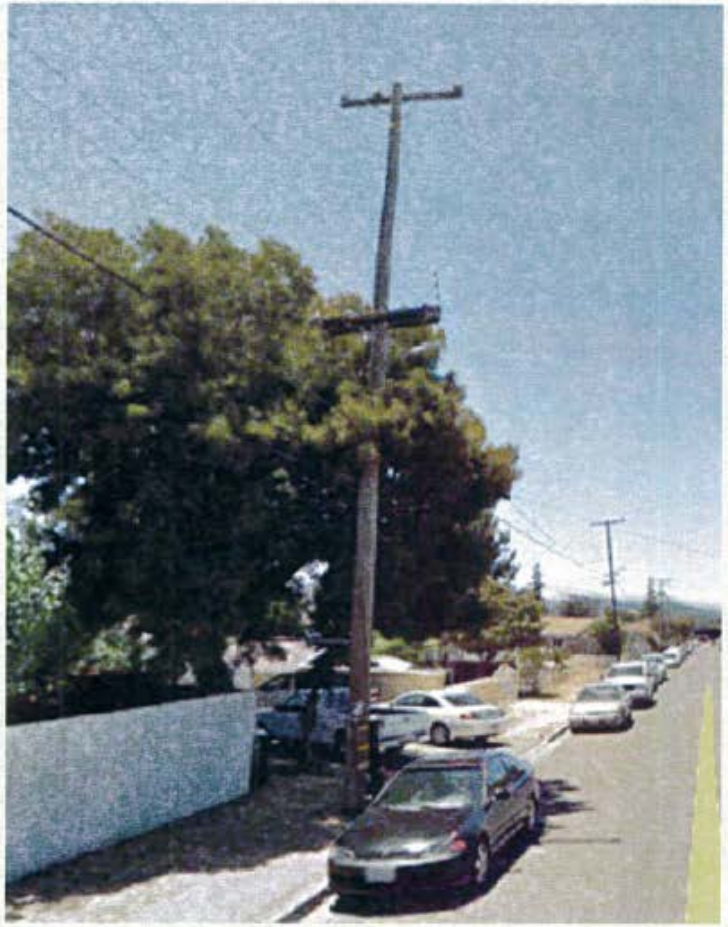
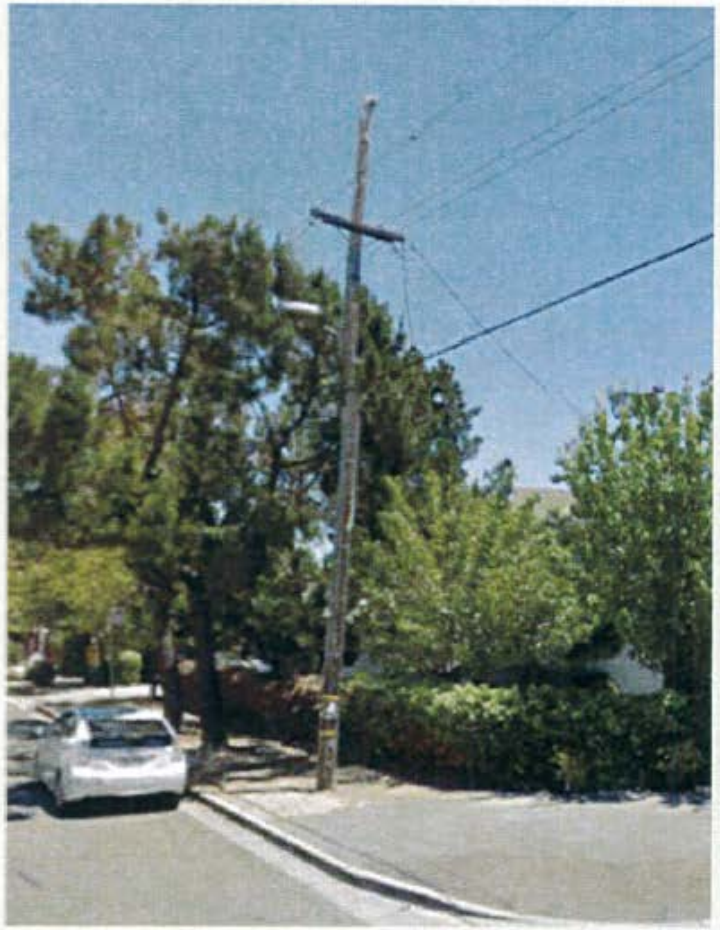
Alternative Overview

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K6**

File Numbers: **PLN 2016-00507**

Alternative Utility Poles

Alternate Pole West #1- Viable Alternative	Alternate Pole East #2- Pole will not support proposed design and stay in GO 95 compliance
	

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K6**

File Numbers: **PLN 2016-00507**

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. 04720A to be added to the ExteNet distributed antenna system ("DAS") in Redwood City, 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 599 Fourth Avenue (Edison Way frontage) in Redwood City. 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 The CBR Group, dated November 1, 2016, it is proposed to install one CommScope Model V65S-C3-1XR, 2-foot tall, directional panel antenna, on a cross-arm to be added to a utility pole sited in the public right-of-way on Edison Way adjacent to the residence located at 599 Fourth Avenue in Redwood City. The antenna would employ no downtilt, would be mounted at an effective height of about 20 feet above ground, and would be oriented toward 80°T. T-Mobile proposes to operate from this facility with a maximum effective radiated power in any direction of 214 watts, representing simultaneous operation at 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 0.0083 mW/cm^2, which is 0.83% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 2.1% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels 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 599 Fourth Avenue (Edison Way frontage) in Redwood City, 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

November 22, 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.

ITEM 7

File No.: PLN 2016-00508
Location: Public Right-of-Way in front of 718 5th Avenue, North Fair Oaks
APN: Public Right-of-Way adjacent to 060-015-150

PROJECT SPECIFICATIONS TABLE							
R-1/S-73 Maximum Height	**Height of Existing Utility Pole**	**Maximum Height of Support Arm**	**Maximum Height of Antenna(s)**	**Ground Floor Radio Frequency Exposure**	**Send Floor Radio Frequency Exposure**	**Number of Viable Alternatives**	**Number of Proposed Antenna**
28 feet	39 feet	23 feet 6 inches	21 feet 4 inches	0.83%	3.9%	0	1

San Mateo County North Fair Oaks Community Council Meeting

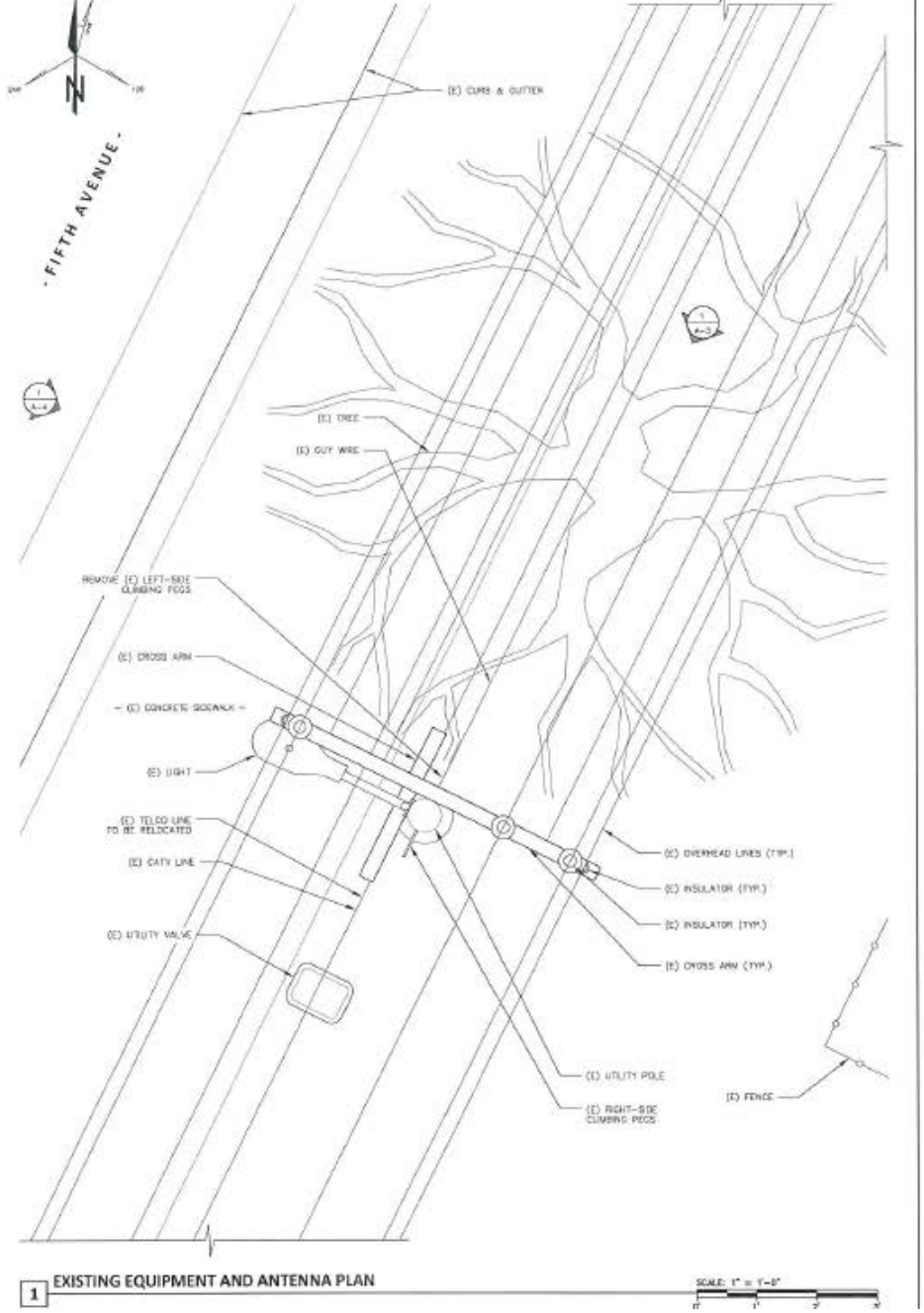
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **H7**

File Numbers: **PLN 2016-00508**

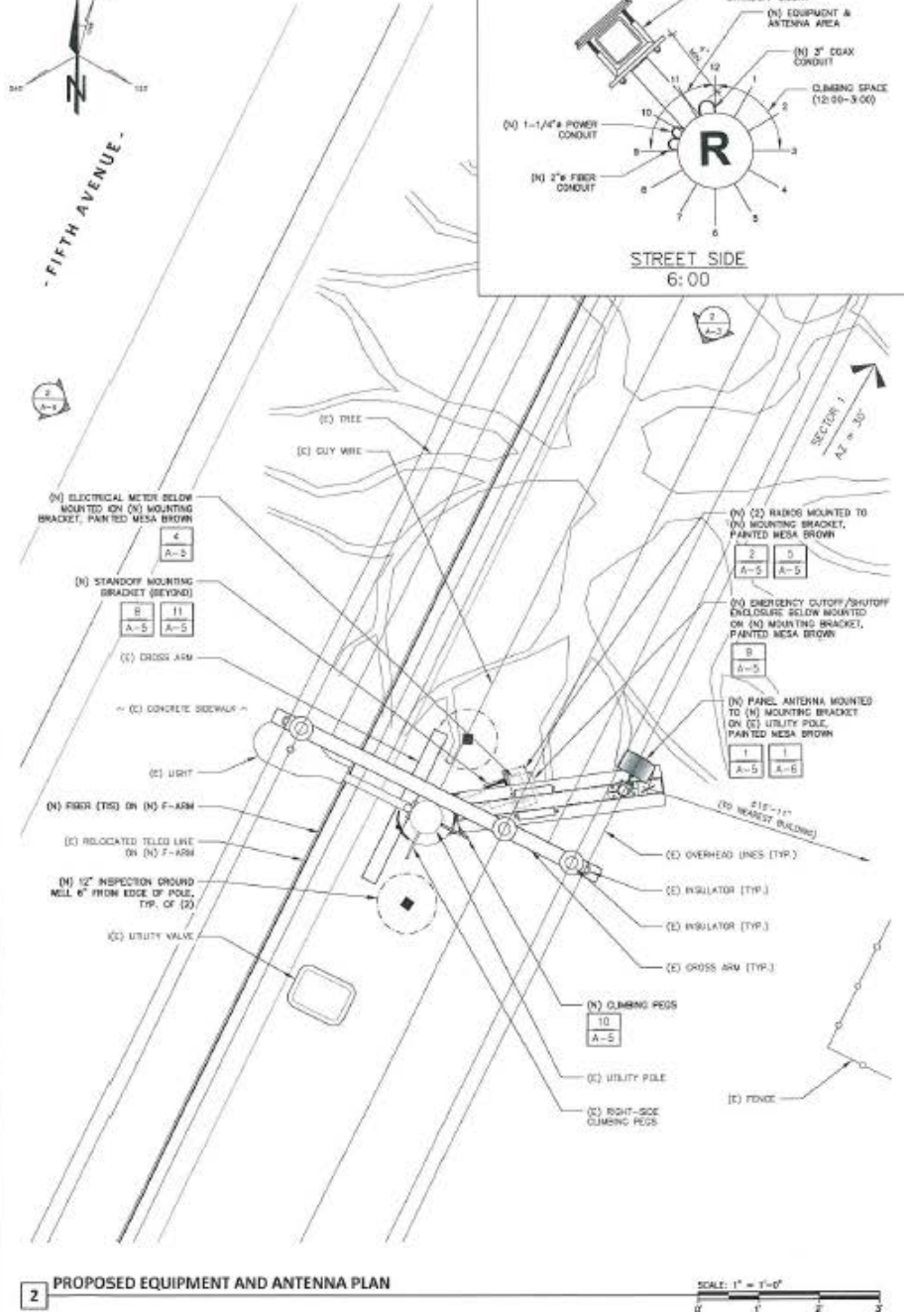
San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I7**

File Numbers: **PLN 2016-00506**



1 EXISTING EQUIPMENT AND ANTENNA PLAN

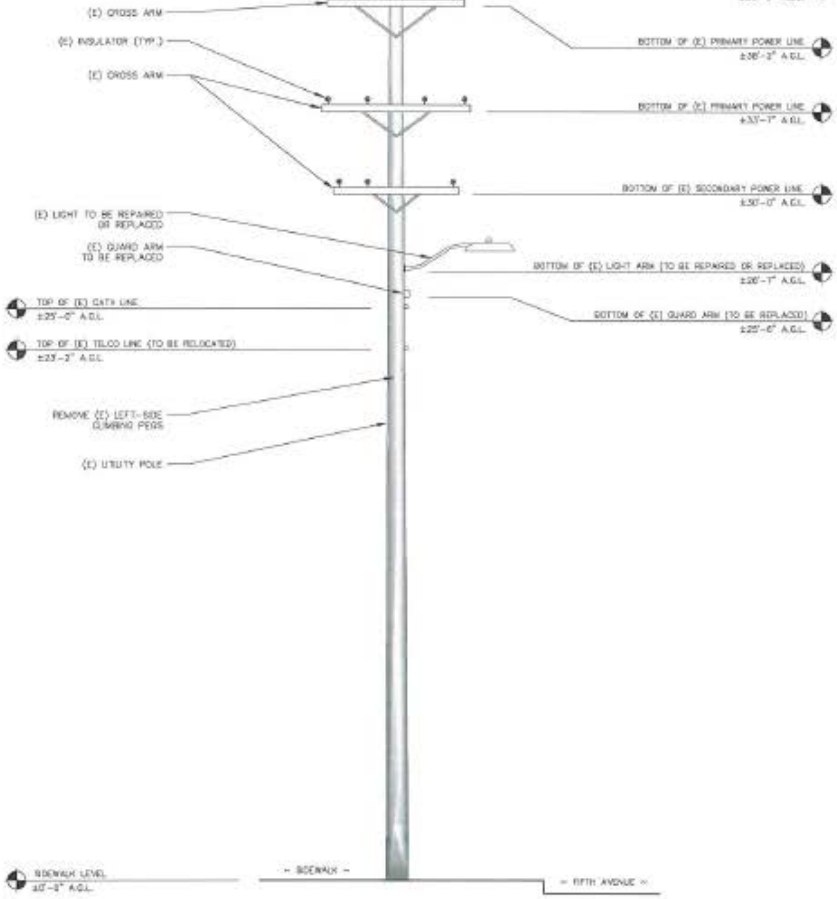


2 PROPOSED EQUIPMENT AND ANTENNA PLAN

San Mateo County Zoning Hearing Officer Meeting

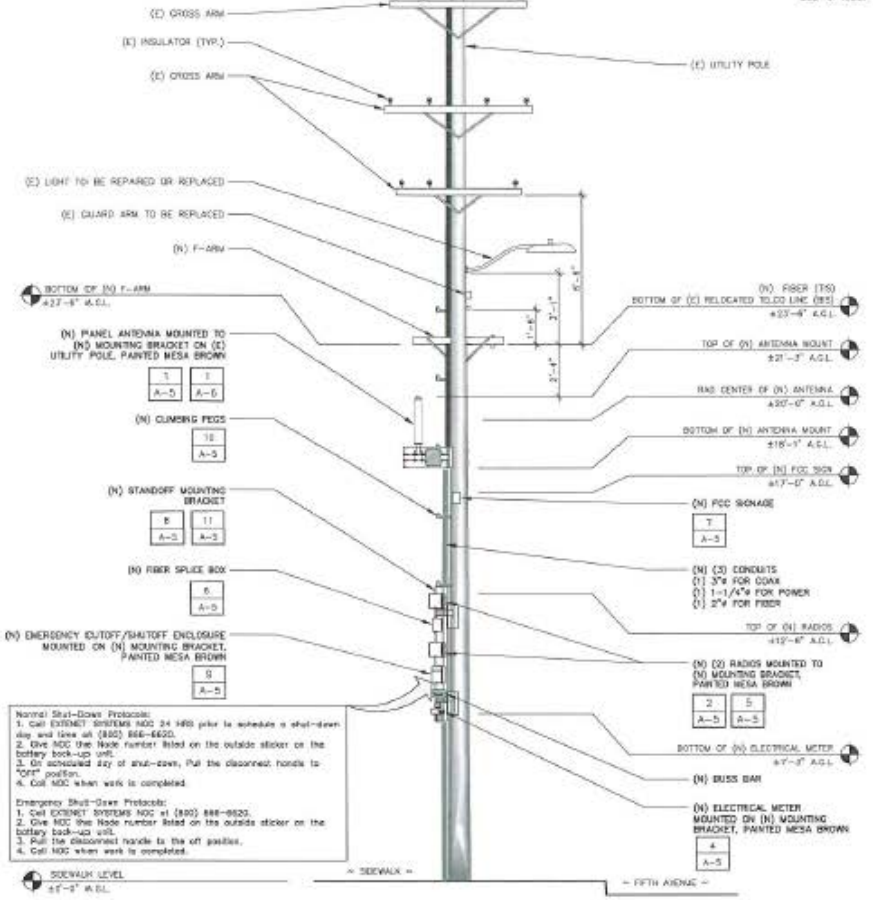
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I7**

File Numbers: **PLN 2016-00506**



1 EXISTING NORTHEAST ELEVATION

SCALE: 3/8" = 1'-0"



MAKE READY INFORMATION

1. FOR APPROVED CONTRACTOR TO REPAIR OR REPLACE STREET LIGHT TO POLE AT SAME GRADE 26'0" AGL (BOLT)
2. EXTENET CONTRACTOR TO REMOVE AND REPLACE GUARD ARM @ 90A 25'9".
3. EXTENET CONTRACTOR TO PLACE NEW F-ARM ON N/S/O EXISTING POLE AT 27'6" AGL.
4. EXTENET CONTRACTOR TO TRANSFER EXISTING TELCO TO NEW F-ARM AT 23'0" AND ATTACH BOTTOM INSIDE POSITION - STREET SIDE.
5. EXTENET CONTRACTOR TO PLACE NEW EXTENET FIBER TO NEW F-ARM AT 23'0" AND ATTACH TOP INSIDE POSITION - STREET SIDE.
6. EXTENET CONTRACTOR TO PLACE BOTTOM OF NEW ANTENNA SUPPORT ARM EXTENDING INTO FIELD AT 18'7" AGL.
7. EXTENET CONTRACTOR TO INSTALL NEW ANTENNA(S) TO NEW SUPPORT ARM PER DESIGN.
8. EXTENET CONTRACTOR TO PLACE NEW 3" SCH 80 PVC RISER AT 0:30 POSITION FOR EXTENET COAXIAL CABLES - PER DESIGN.
9. EXTENET CONTRACTOR TO PLACE NEW 2" SCH 80 PVC RISER AT 9:00 POSITION FOR EXTENET FIBER CABLES - PER DESIGN.
10. EXTENET APPROVED ELECTRICAL CONTRACTOR TO PLACE NEW 1 ½ " SCH 80 PVC RISER AT 11:30 POSITION FOR POWER SERVICE FROM 1' BELOW SECONDARY TO NEW POWER METER.
11. EXTENET CONTRACTOR TO CUT IN NEW Y-TAP AT 23'0" AGL TO IMPORT NEW FIBER INTO NEW CONDUIT RISER.
12. EXTENET CONTRACTOR TO PLACE NEW 6" X 4" X 66" POLE MOUNTED EQUIPMENT CHANNEL AT 19'30 POSITION ON 4" STANDOFF BOLTS FOR NEW EXTENET EQUIPMENT. (BOTTOM AT 7'0" AGL)
13. MOUNT OF 2 NEW BRUS AND ALUMINUM BACKPLATE TO NEW EQUIPMENT CHANNEL.
14. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW PG&E SMART METER BOX TO POLE AT 7'0" AGL.
15. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW BREAKER BOX TO POLE AT 6'0" AGL.
16. EXTENET CONTRACTOR TO PLACE NEW 10'COPPER GROUND ROD 12" BELOW GRADE AND 24" FROM POLE FOR NEW POWER METER.
17. EXTENET CONTRACTOR TO PLACE NEW 8' COPPER GROUND ROD 12" BELOW GRADE AND 24" FROM POLE FOR NEW EXTENET EQUIPMENT.
18. PLACE NEW #2 COVERED GROUND WIRE FROM POWER METER TO NEW METER GROUND ROD.
19. PLACE NEW #2 COVERED GROUND WIRE FROM EXTENET EQUIPMENT TO NEW EQUIPMENT GROUND ROD.
20. EXTENET CONTRACTOR TO QUARTER STEP NEW POLE AT 12:00 AND 6:00 FOR CLIMBING SPACE.
21. EXTENET CONTRACTOR TO PLACE ALL RULE 94 SIGNAGE AS REQUIRED BY LAW.

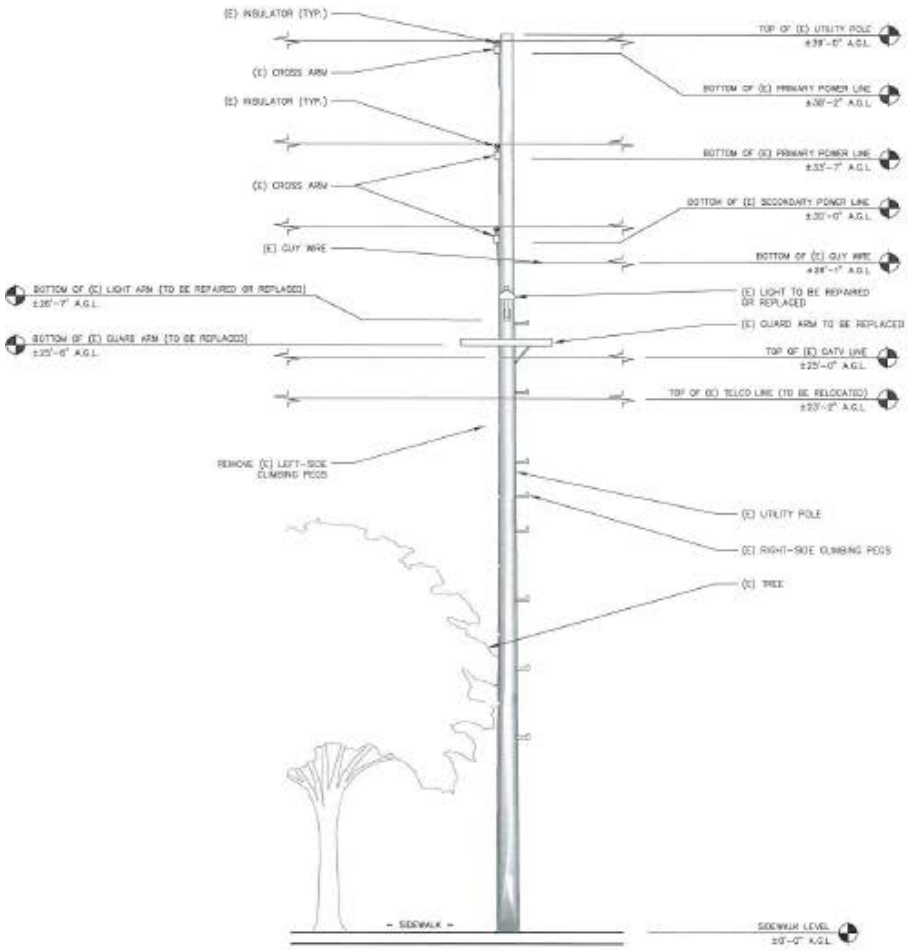
2 PROPOSED NORTHEAST ELEVATION

SCALE: 3/8" = 1'-0"

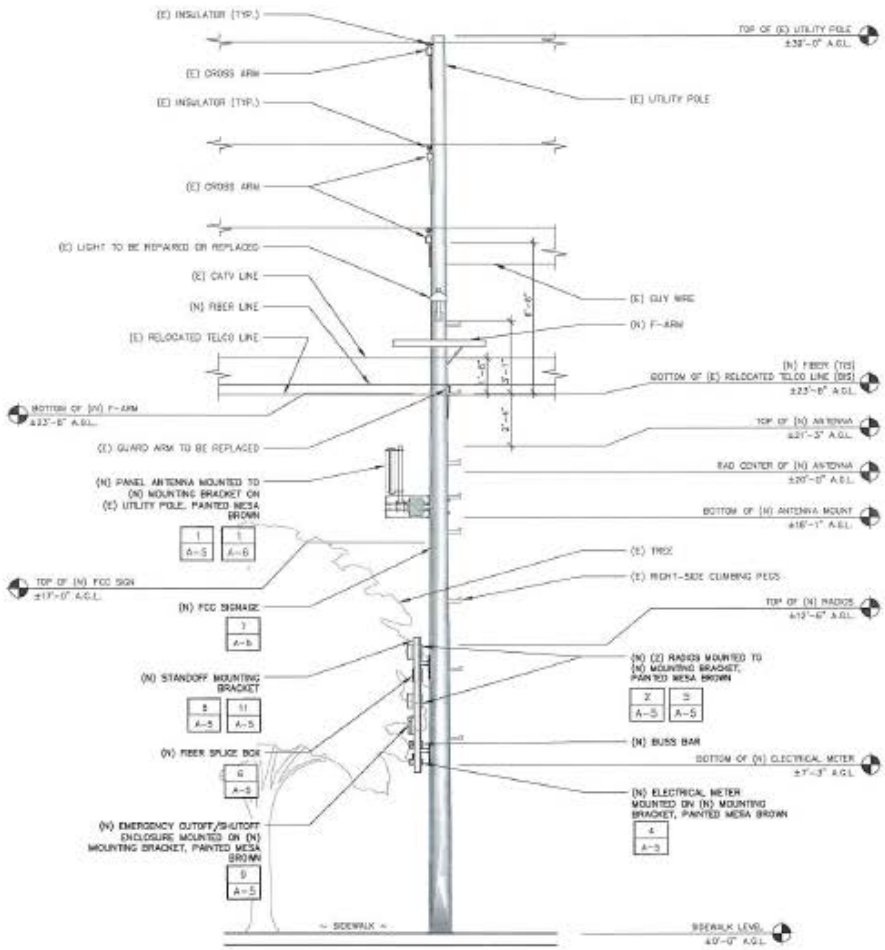
San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I7**

File Numbers: **PLN 2016-00506**



1 EXISTING NORTHWEST ELEVATION SCALE: 3/8" = 1'-0"

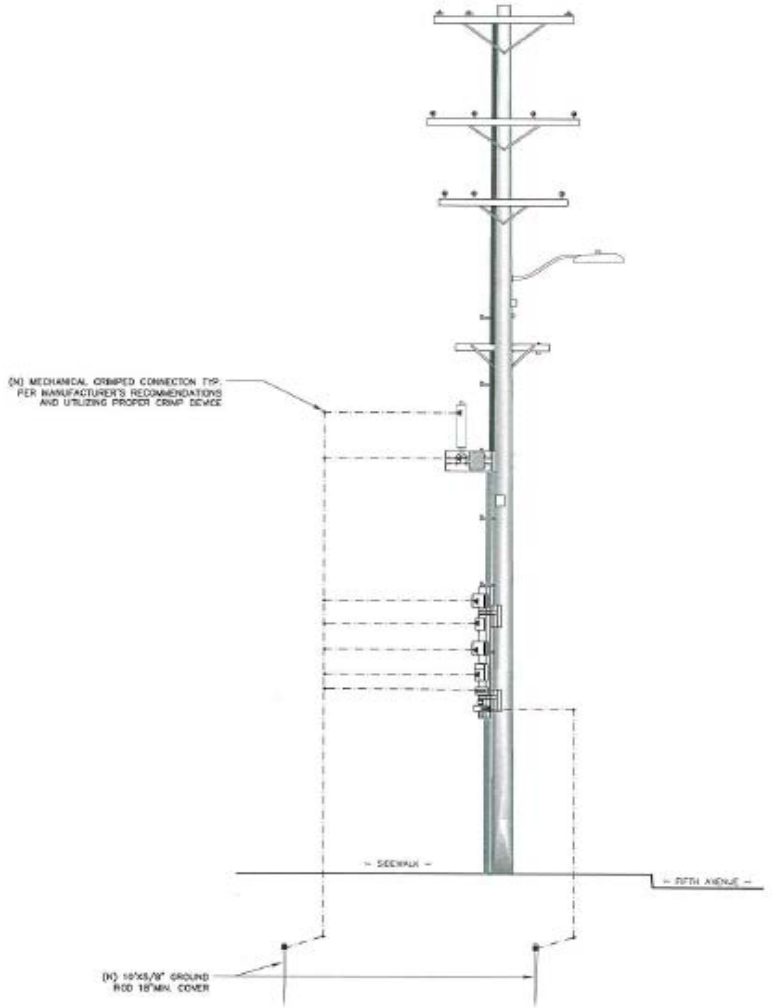


2 PROPOSED NORTHWEST ELEVATION SCALE: 3/8" = 1'-0"

San Mateo County Zoning Hearing Officer Meeting

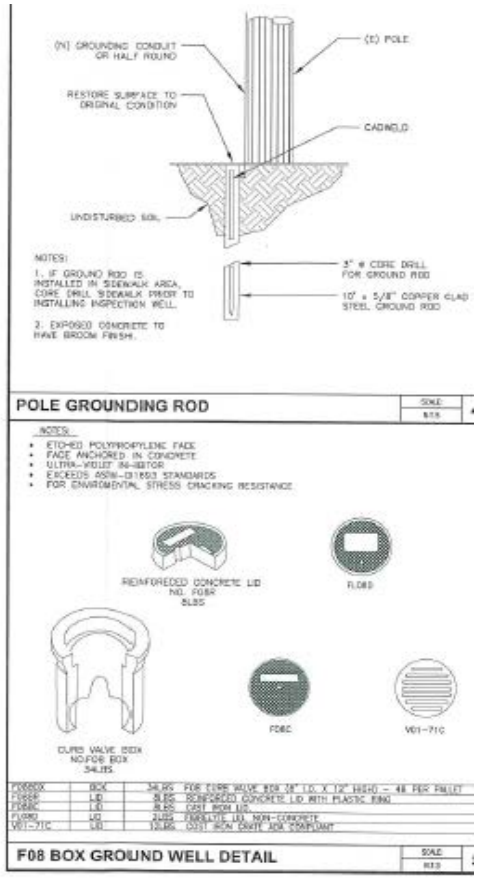
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I7**

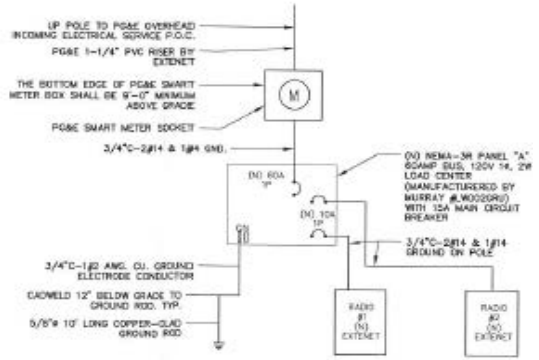
File Numbers: **PLN 2016-00506**



7 POLE GROUNDING DIAGRAM

SCALE: 3/8" = 1'-0"



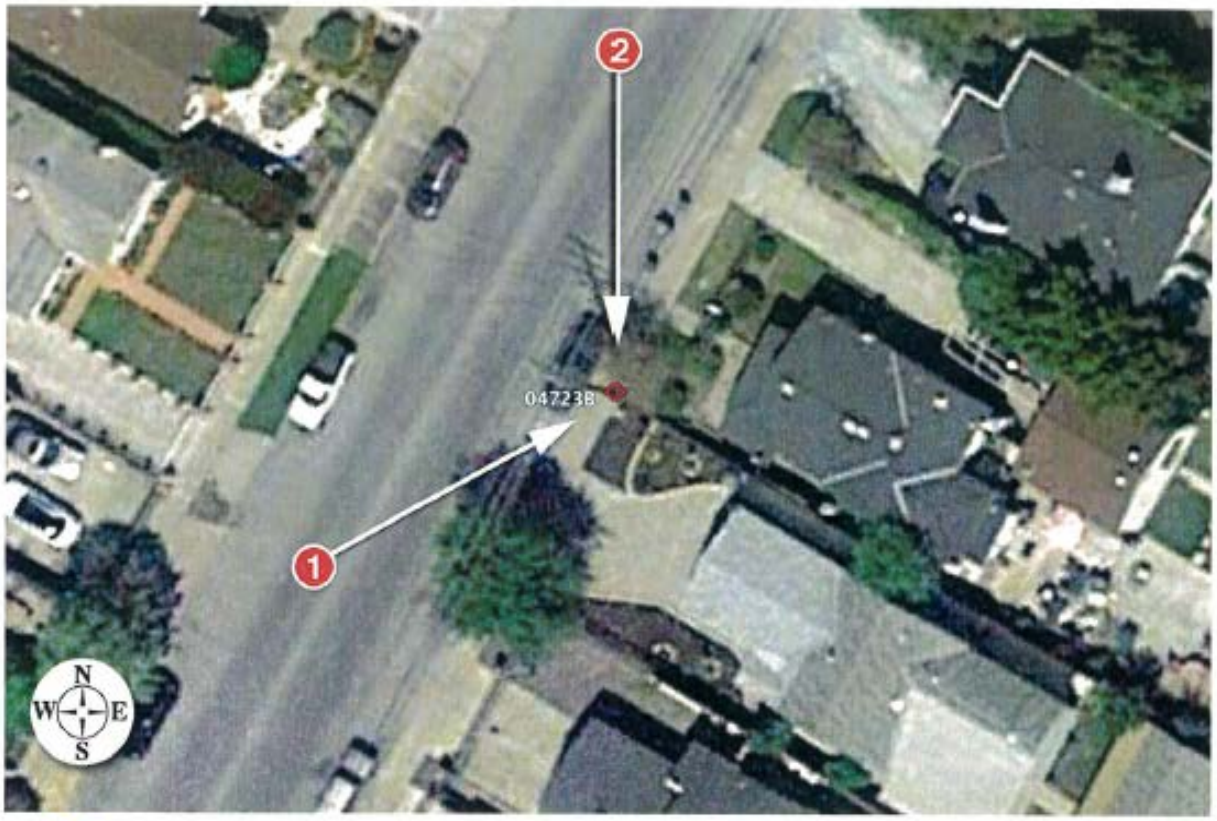


6 SINGLE LINE DIAGRAM

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I7**

File Numbers: **PLN 2016-00506**



exteNet systems

NW-CA-SANFRNMC- 04723B

IFO 718 Fifth Avenue Redwood City, CA

Aerial Map

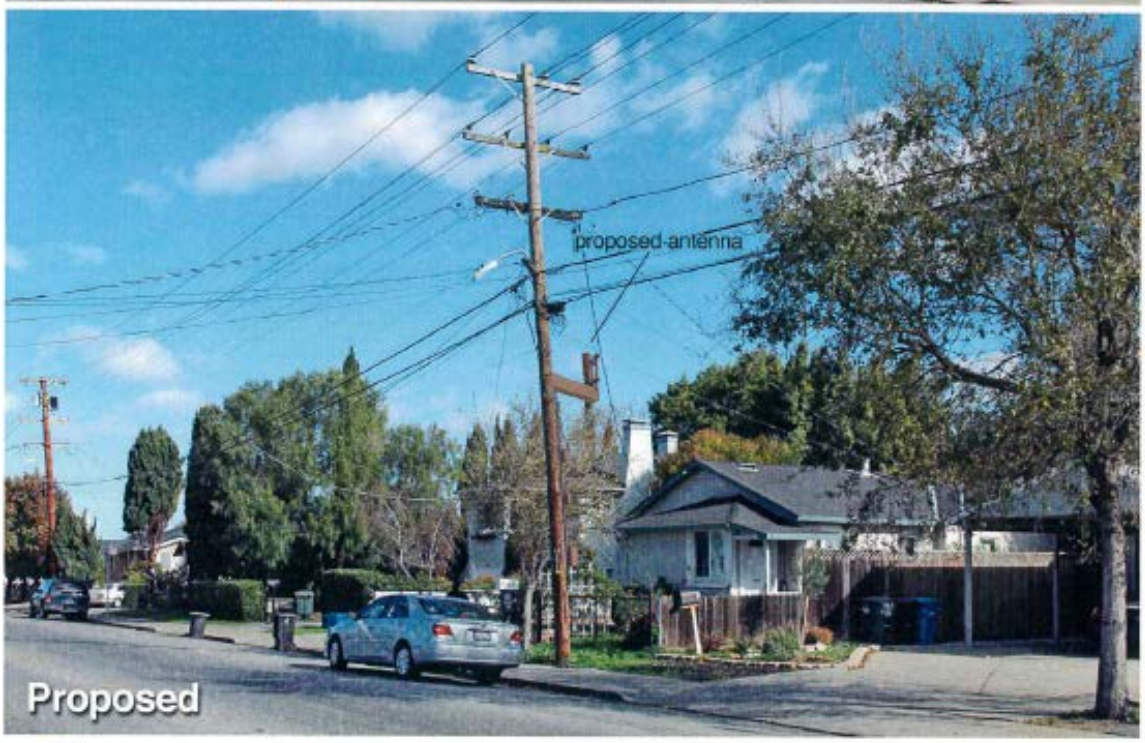
11/14/16

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J7**

File Numbers: **PLN 2016-00506**



extenet

NW-CA-SANFRNMC- 04723B

IFO 718 Fifth Avenue Redwood City, CA

11/14/16

Looking Northeast from Fifth Avenue

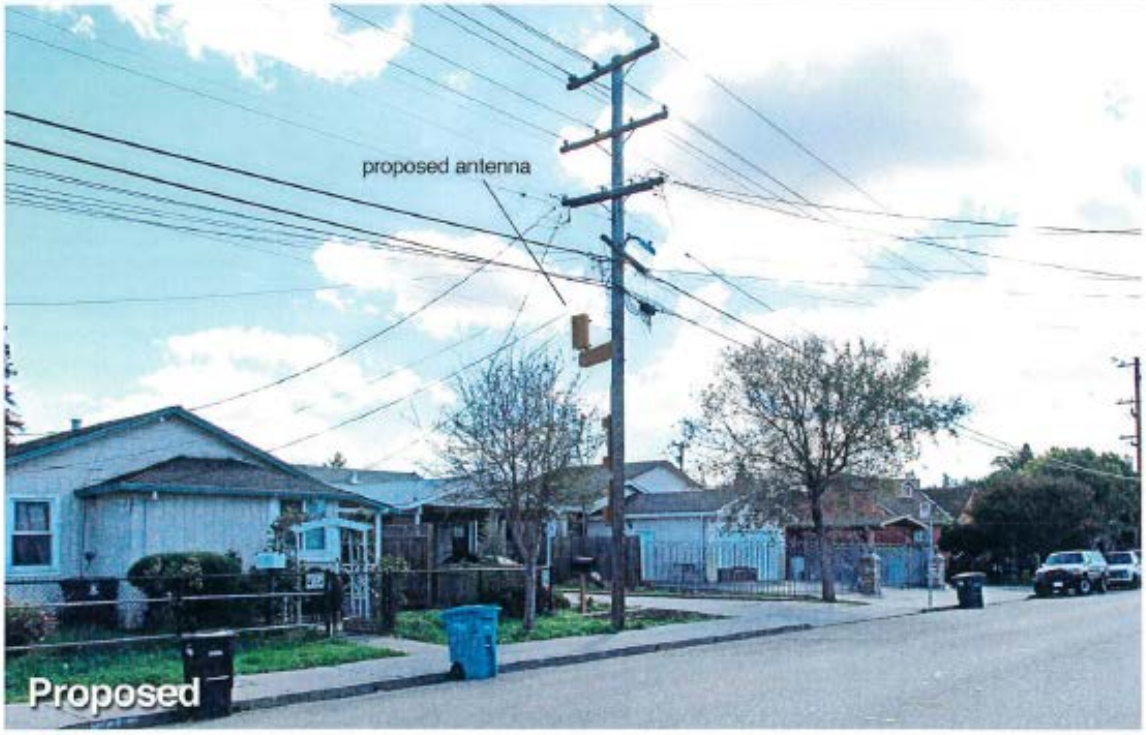
View #1

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J7**

File Numbers: **PLN 2016-00506**



extenet SYSTEMS

NW-CA-SANFRNMC- 04723B

IFO 718 Fifth Avenue Redwood City, CA

Looking South from Fifth Avenue

View #2

11/14/16

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J7**

File Numbers: **PLN 2016-00506**

Alternative Overview

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K7**

File Numbers: **PLN 2016-00506**

Alternative Utility Poles

Alternate Pole NORTH #1- Pole will not support proposed design, due to GO95 regulations	Alternate Pole South #2- Pole will not support proposed design, due to GO95 regulations
	

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K7**

File Numbers: **PLN 2016-00506**

ExteNet Systems CA, LLC • Proposed DAS Node (Site No. 04723B)
718 Fifth Avenue • Redwood City, California

Statement of Hammett & Edison, Inc., Consulting Engineers

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Executive Summary

ExteNet proposes to install a directional panel antenna on a utility pole sited in the public right-of-way at 718 Fifth Avenue in Redwood City. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

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Based upon information provided by ExteNet, including drawings by The CBR Group, dated November 11, 2016, it is proposed to install one CommScope Model V65S-C3-1XR, 2-foot tall, directional panel antenna, on a cross-arm to be added to a utility pole sited in the public right-of-way in front of the residence located at 718 Fifth Avenue in Redwood City. The antenna would employ no downtilt, would be mounted at an effective height of about 20 feet above ground, and would be oriented toward 30°T. T-Mobile proposes to operate from this facility with a maximum effective radiated power in any direction of 214 watts, representing simultaneous operation at 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 0.0083 mW/cm^2, which is 0.83% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 3.9% 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 718 Fifth Avenue in Redwood City, 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

REGISTERED PROFESSIONAL ENGINEER
RAJAT MATHUR
No. E-18063
Exp. 6-30-2017
ELECTRICAL
STATE OF CALIFORNIA

November 22, 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.

ITEM 8

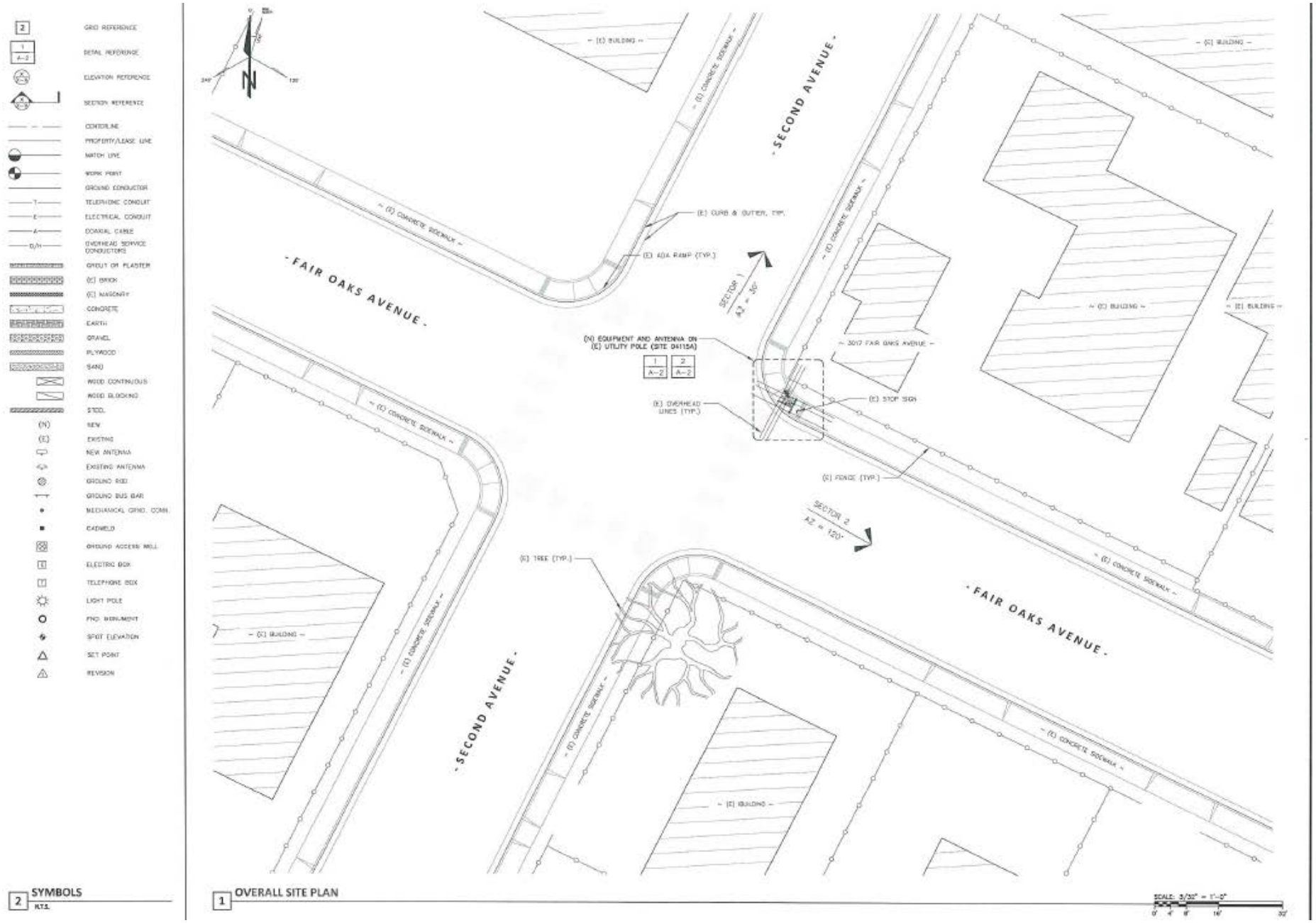
File No.: PLN 2016-00531
Location: Public Right-of-Way in front of 3017 Fair Oaks Avenue, North Fair Oaks
APN: Public Right-of-Way adjacent to 060-012-310

PROJECT SPECIFICATIONS TABLE							
R-1/S-73 Maximum Height	**Height of Existing Utility Pole**	**Maximum Height of Support Arm**	**Maximum Height of Antenna(s)**	**Ground Floor Radio Frequency Exposure**	**Send Floor Radio Frequency Exposure**	**Number of Viable Alternatives**	**Number of Proposed Antenna**
28 feet	44 feet	21 feet	21 feet 4 inches	0.47%	4.4%	0	2

San Mateo County North Fair Oaks Community Council Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **H8**

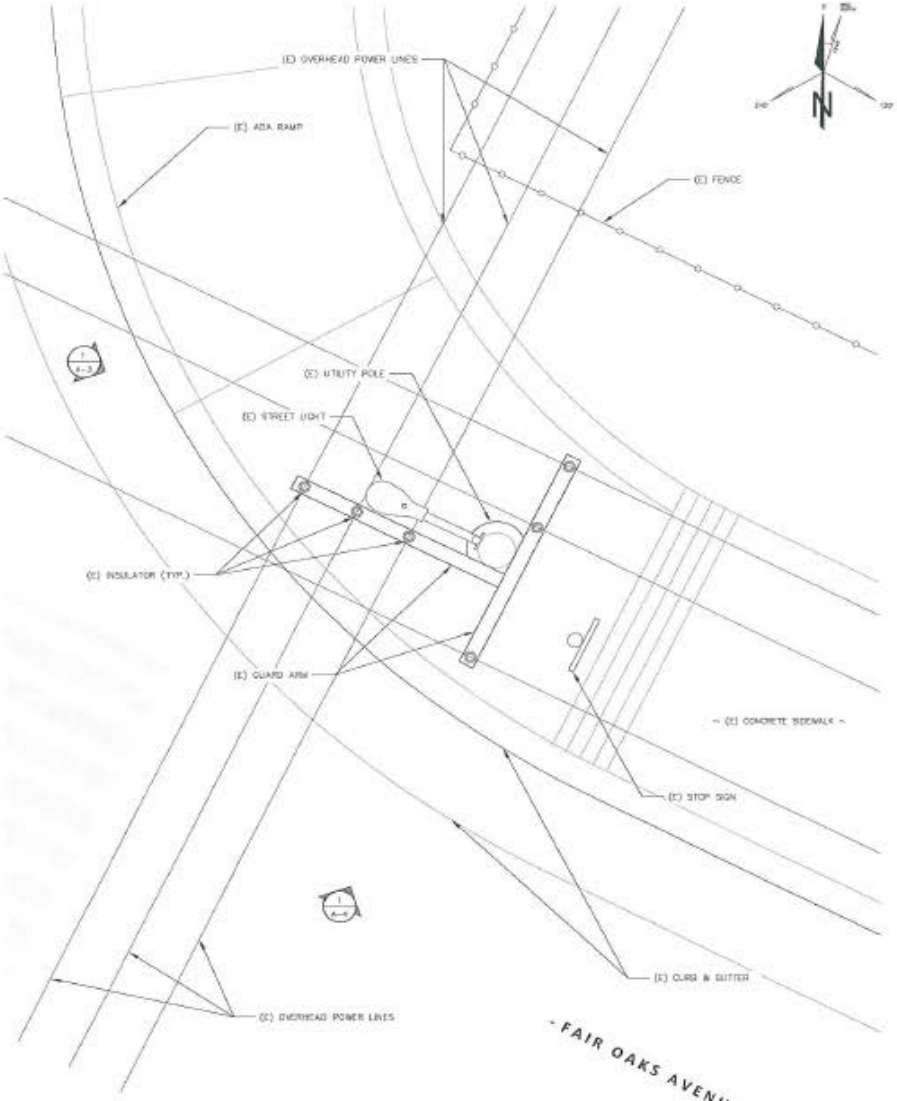
File Numbers: **PLN 2016-00531**



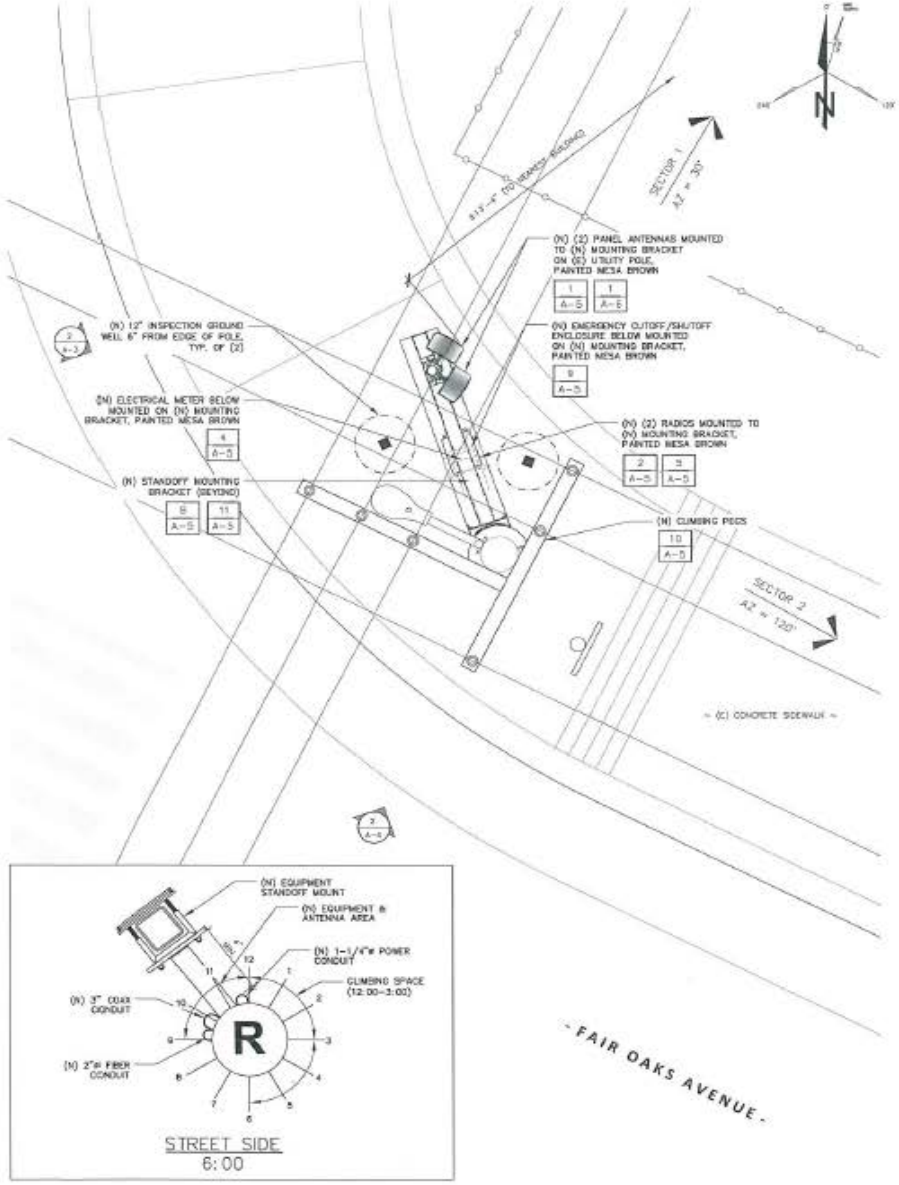
San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I8**

File Numbers: **PLN 2016-00531**



1 EXISTING EQUIPMENT AND ANTENNA PLAN

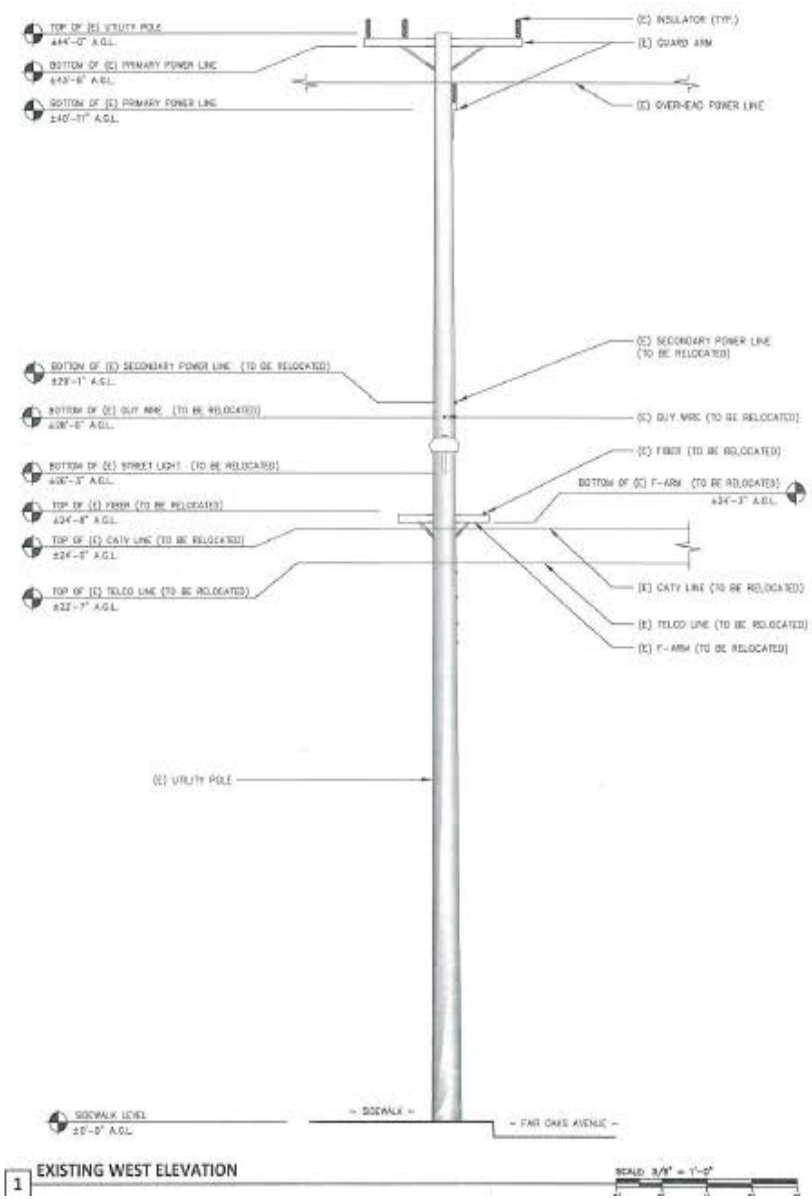


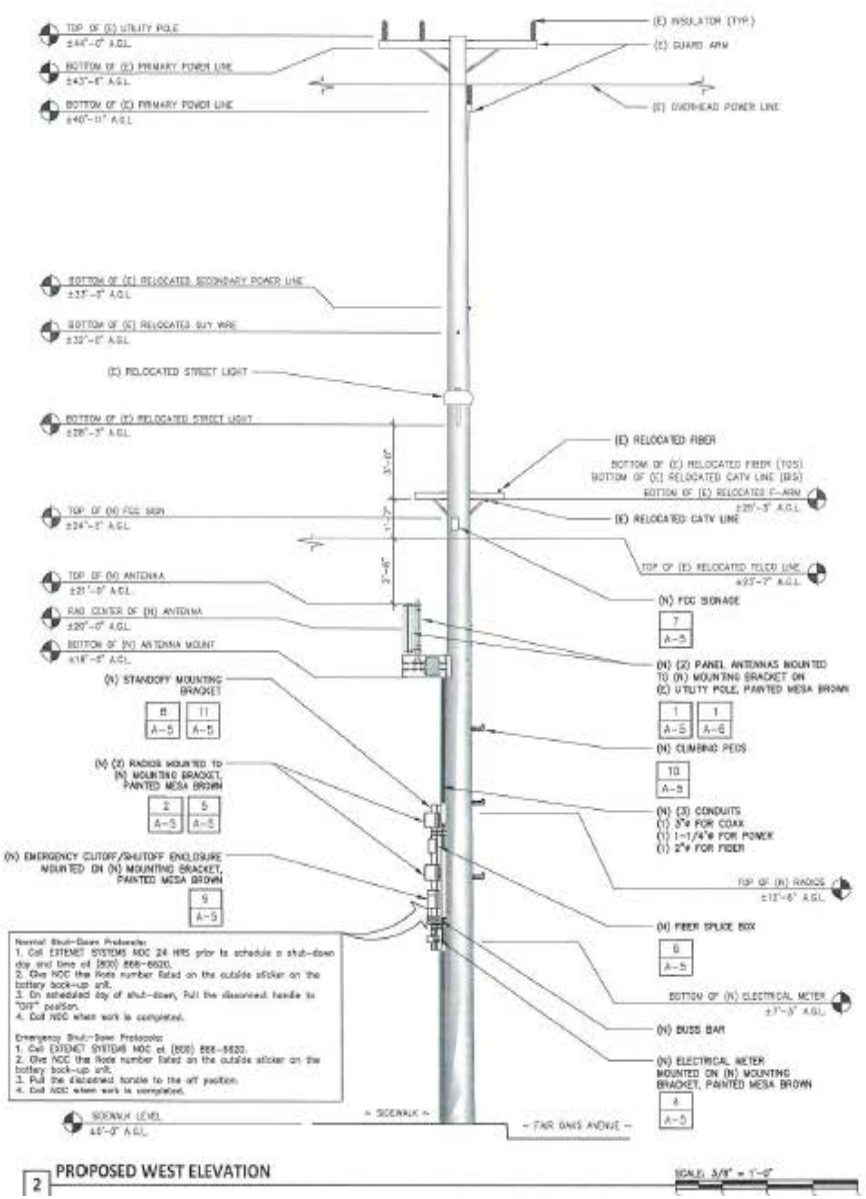
2 PROPOSED EQUIPMENT AND ANTENNA PLAN

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I8**

File Numbers: **PLN 2016-00531**

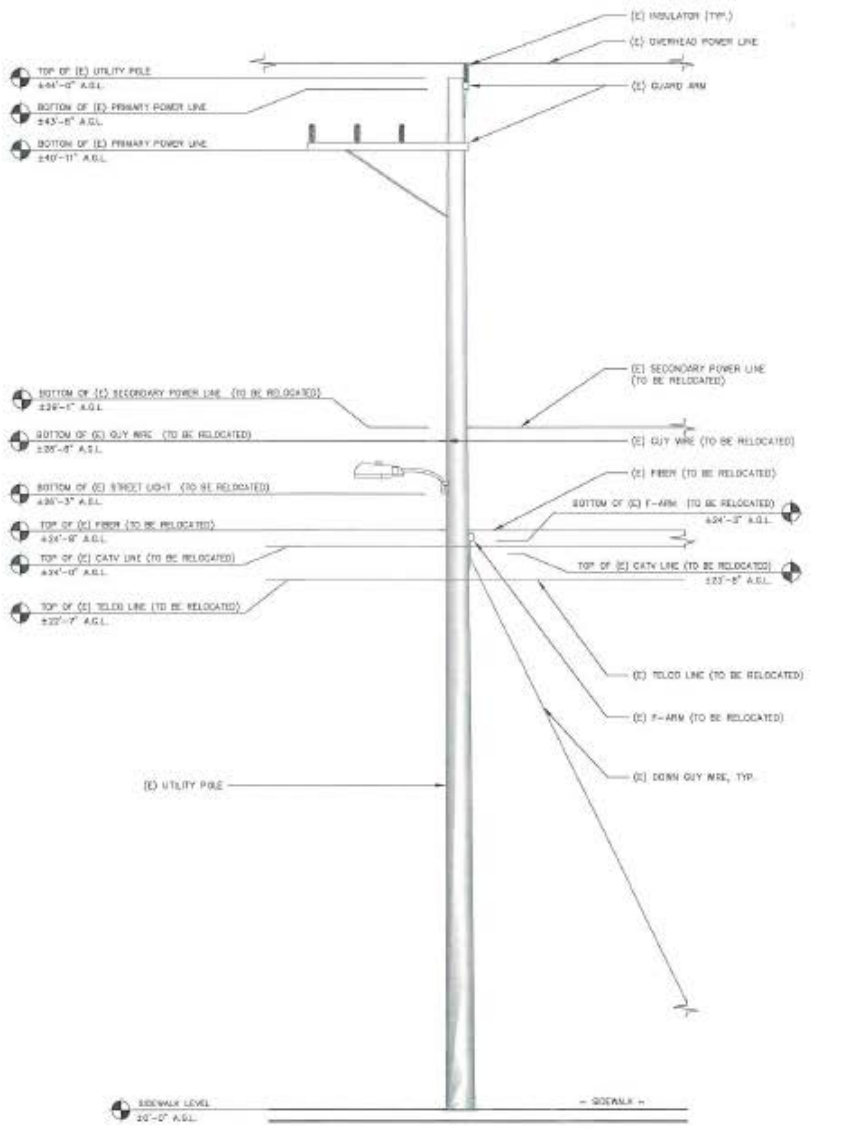




San Mateo County Zoning Hearing Officer Meeting

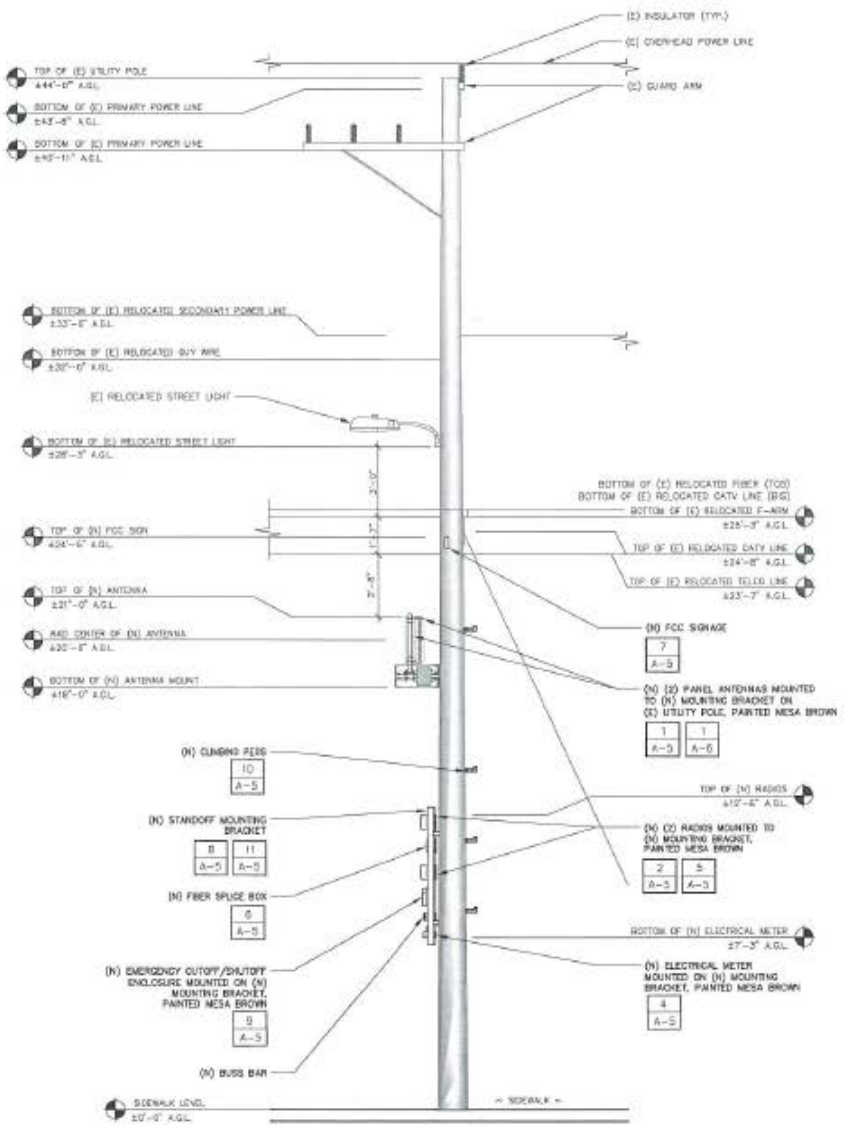
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I8**

File Numbers: **PLN 2016-00531**



1 EXISTING SOUTH ELEVATION

SCALE: 3/8" = 1'-0"



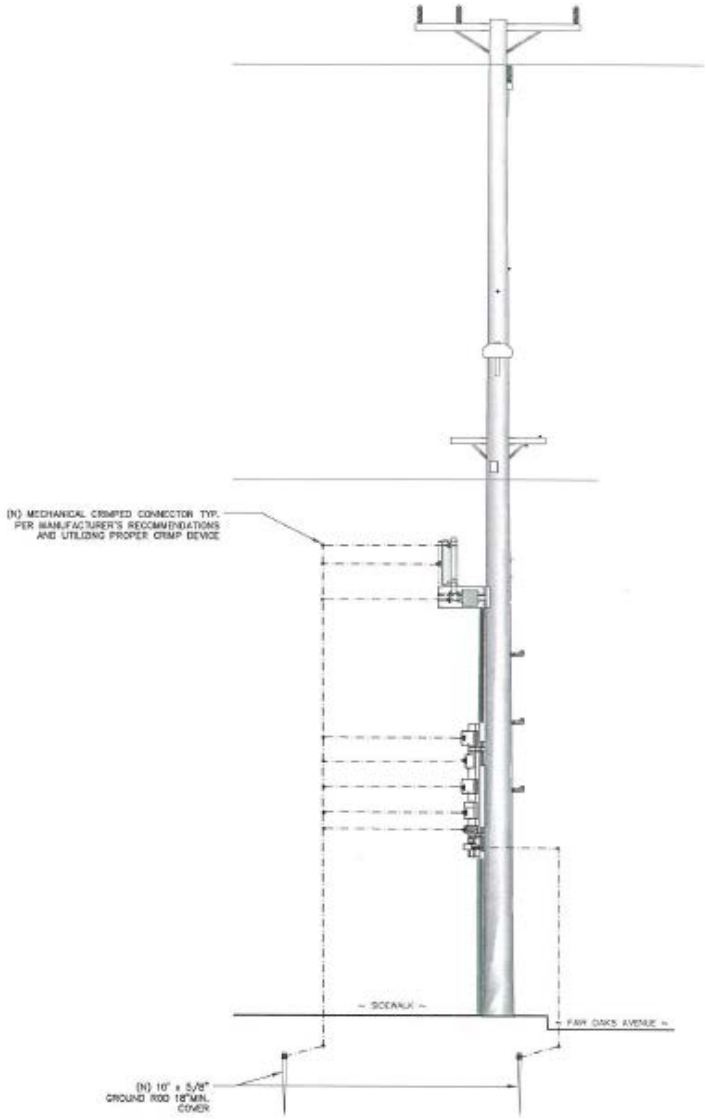
2 PROPOSED SOUTH ELEVATION

SCALE: 3/8" = 1'-0"

San Mateo County Zoning Hearing Officer Meeting

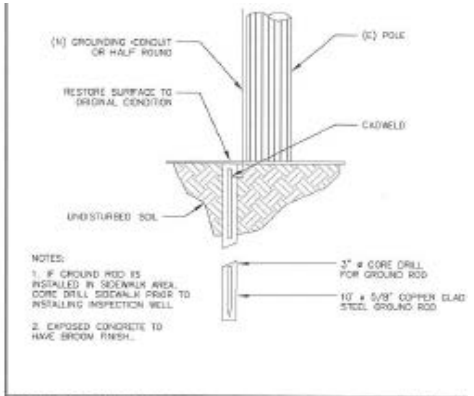
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I8**

File Numbers: **PLN 2016-00531**

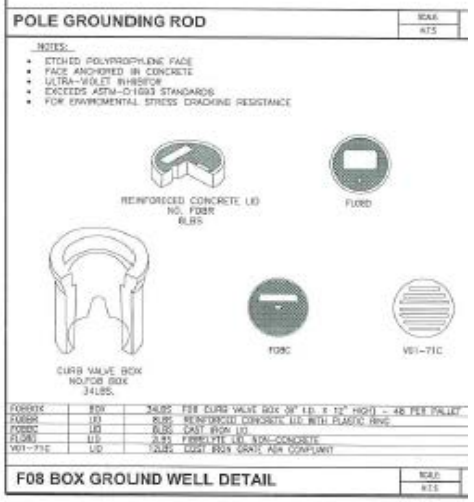


7 POLE GROUNDING DIAGRAM

SCALE: 3/8" = 1'-0"

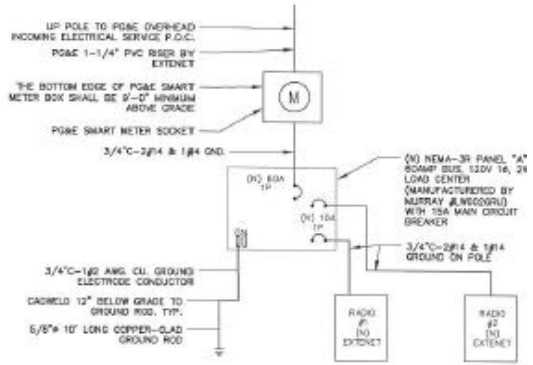


POLE GROUNDING ROD



F08RTE	BOX	34LBS	F08 CURB VALVE BOX (30" I.D. X 12" HIGH) - 48 PER PALLET
F08RR	LID	8LBS	REINFORCED CONCRETE LID WITH PLASTIC RING
F08RT	LID	8LBS	CAST IRON LID
F08D	LID	2.8LBS	FIBERLITE LID, NON-CONCRETE
V01-71C	LID	20LBS	CAST IRON GRATE ADA COMPLIANT

F08 BOX GROUND WELL DETAIL

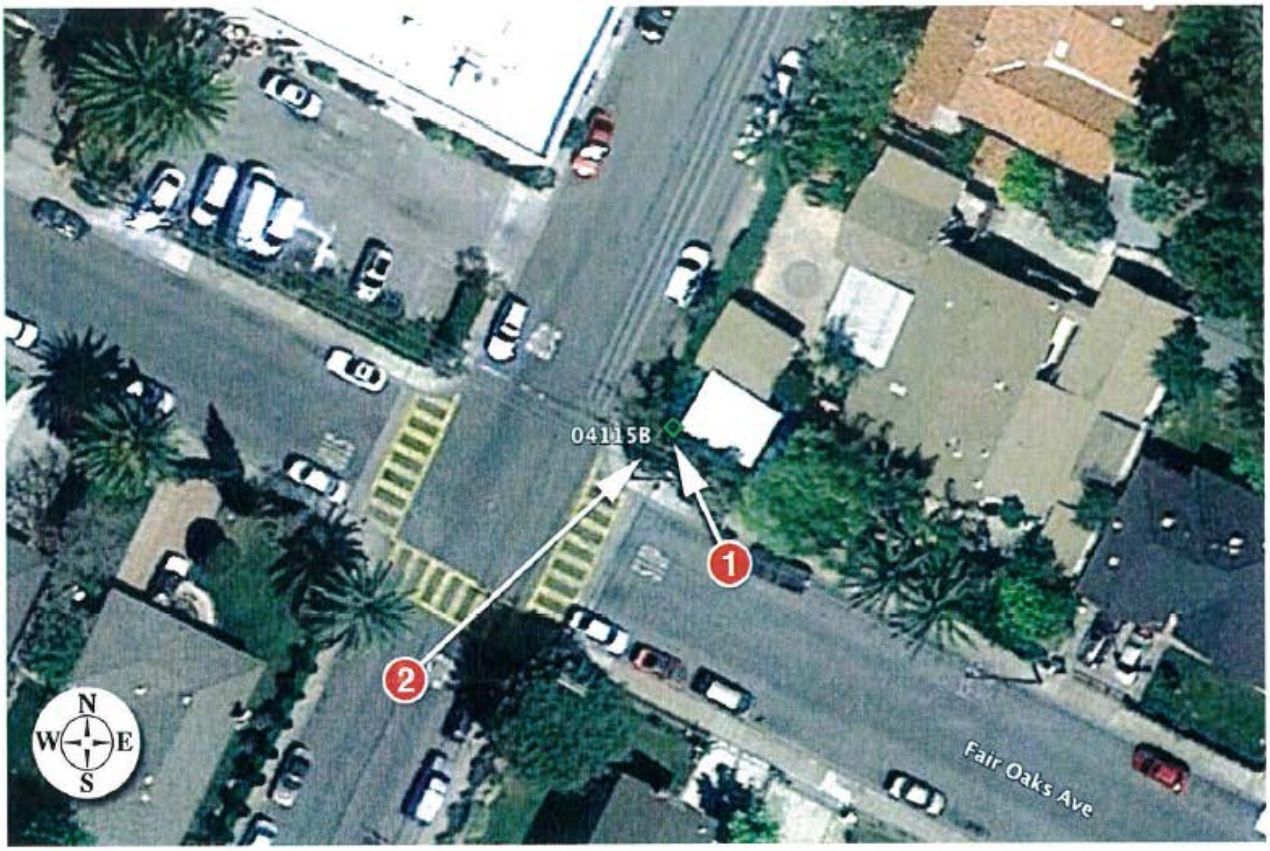


6 SINGLE LINE DIAGRAM

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I8**

File Numbers: **PLN 2016-00531**



exteNet SYSTEMS

NW-CA-SANFRNMC - 04115A

Aerial Map

3017 Fair Oaks Avenue Redwood City, CA

12/14/16

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J8**

File Numbers: **PLN 2016-00531**

extenet SYSTEMS

NW-CA-SANFRNMC - 04115A

3017 Fair Oaks Avenue Redwood City, CA

12/14/16

Looking Northwest from Fair Oaks Avenue

View #1

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J8**

File Numbers: **PLN 2016-00531**

exteNet SYSTEMS

NW-CA-SANFRNMC - 04115A

3017 Fair Oaks Avenue Redwood City, CA

12/14/16

Looking Northeast from Fair Oaks Avenue

View #2

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J8**

File Numbers: **PLN 2016-00531**

Overview of Proposed facility and Alternative locations

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K8**

File Numbers: **PLN 2016-00531**

Alternative #1

Location has obstruction issue / RF coverage capability with the proximity to the tree.

Alternative #2

Site does not meet RF objectives (does not cover Fair Oaks)

Alternative #3

Site will not support design under GO95 guidelines

Alternative #4

Site will not support design and be GO 95 compliant

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K8**

File Numbers: **PLN 2016-00531**

Alternative #5

This pole will not support proposed design and stay in compliance with GO95, as well as not achieving coverage objectives.

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. 04115A to be added to the ExteNet distributed antenna system ("DAS") in Redwood City, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

ExteNet proposes to install directional panel antennas on a utility pole sited in the public right-of-way at 3017 Fair Oaks Avenue in Redwood City. 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

Wireless nodes typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to a central "hub" (which in turn are connected to the traditional wired telephone lines), and the passive antenna(s) that send the wireless signals created by the radios out to be received by individual subscriber units. The radios are often located on the same pole as the

antennas and are connected to the antennas by coaxial cables. 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 The CBR Group, dated December 13, 2016, it is proposed to install two CommScope Model V65S-C3-1XR, 2-foot tall, directional panel antennas, on a cross-arm to be added to a utility pole sited in the public right-of-way in front of the residence located at 3017 Fair Oaks Avenue in Redwood City. The antennas would employ no downtilt, would be mounted at an effective height of about 20 feet above ground, and would be oriented toward 30°T and 120°T. T-Mobile proposes to operate from this facility with a maximum effective radiated power in any direction of 122 watts, representing simultaneous operation at 61 watts for AWS and 61 watts for PCS service. There are reported no other wireless telecommunications base stations at this site or nearby.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed T-Mobile operation is calculated to be 0.0047 mW/cm^2, which is 0.47% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 4.4% 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 their mounting location and height, the ExteNet antennas would not be accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training be provided to all authorized personnel who have access to the antennas, including employees and contractors of the utility companies. No access within 1 foot directly in front of the antennas themselves, 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 antennas, 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 3017 Fair Oaks Avenue in Redwood City, 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-21306, which expires on September 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.

Neil J. Olij, P.E.
707/996-5200

REGISTERED PROFESSIONAL ENGINEER
NEIL J OLIJ
No. E-21306
Exp. 9-30-2017
ELECTRICAL
STATE OF CALIFORNIA

December 20, 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.

ITEM 9

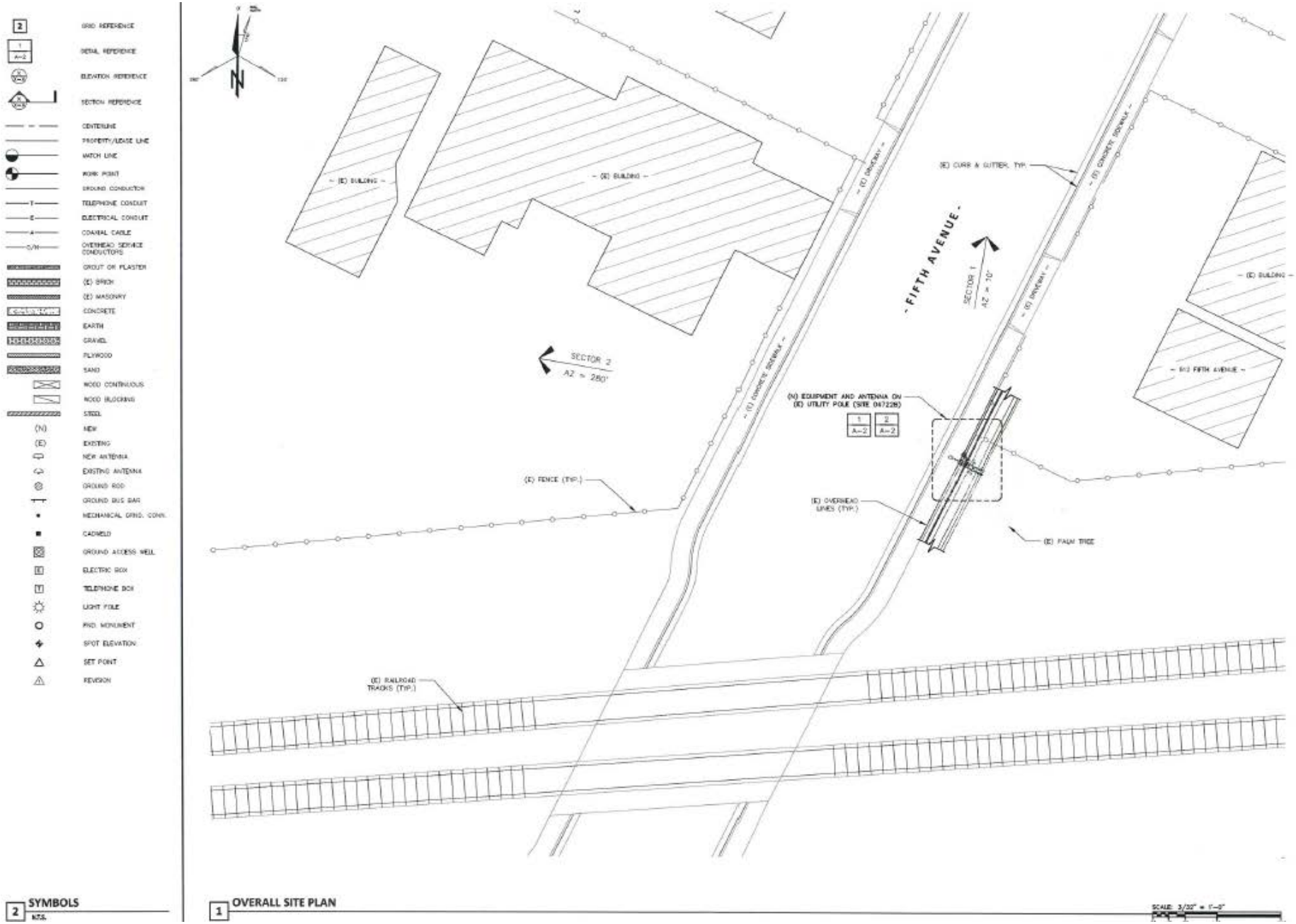
File No.: PLN 2016-00532
Location: Public Right-of-Way in front of 612 5th Avenue, North Fair Oaks
APN: Public Right-of-Way adjacent to 060-035-060

PROJECT SPECIFICATIONS TABLE							
R-1/S-73 Maximum Height	**Height of Existing Utility Pole**	**Maximum Height of Support**	**Maximum Height of Antenna(s)**	**Ground Floor Radio Frequency Exposure**	**Send Floor Radio Frequency Exposure**	**Number of Viable Alternatives**	**Number of Proposed Antenna**
28 feet	52 feet	21 feet 4 inches	21 feet 4 inches	0.47%	1.1%	1	2

San Mateo County North Fair Oaks Community Council Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **H9**

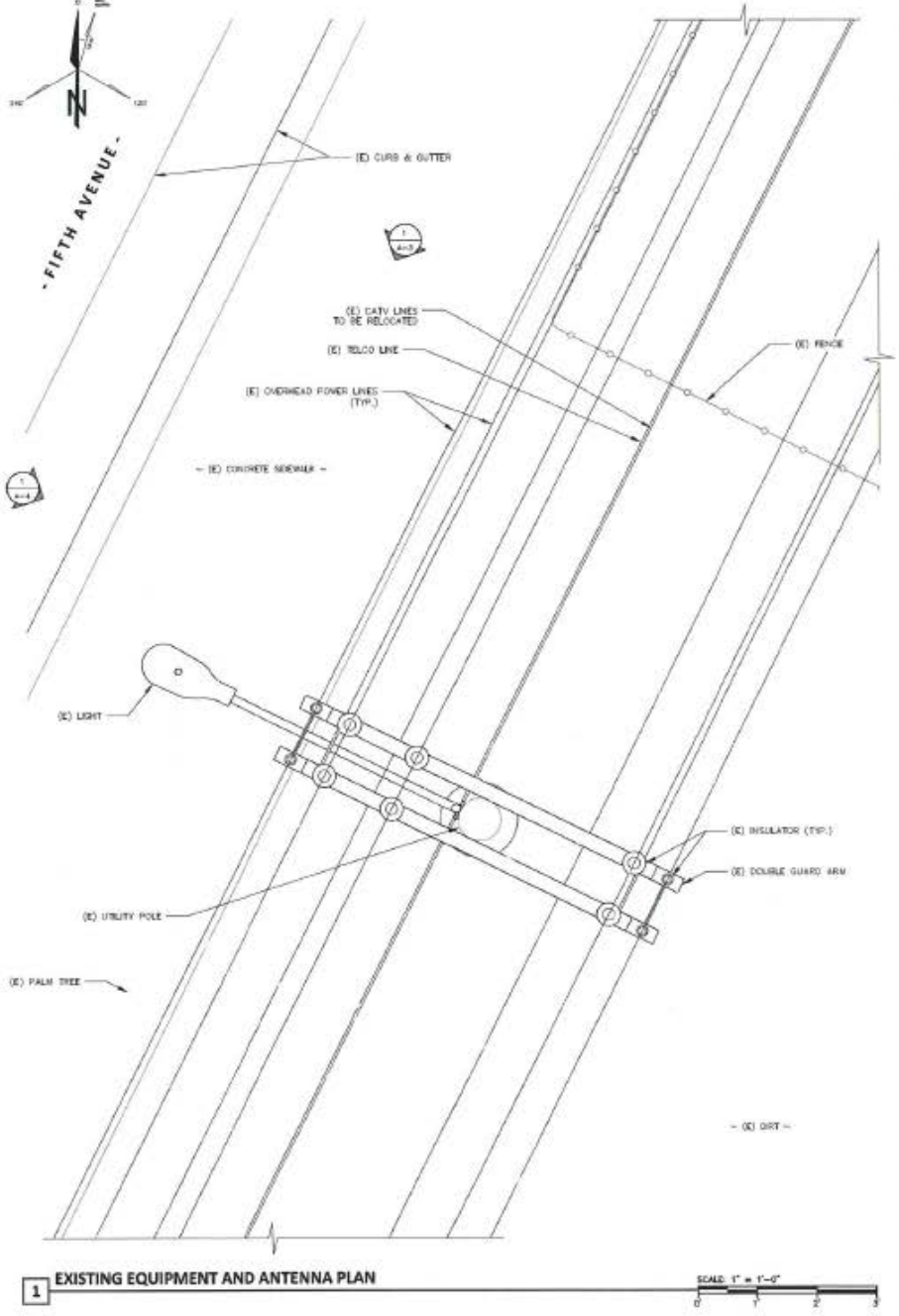
File Numbers: **PLN 2016-00532**



San Mateo County Zoning Hearing Officer Meeting

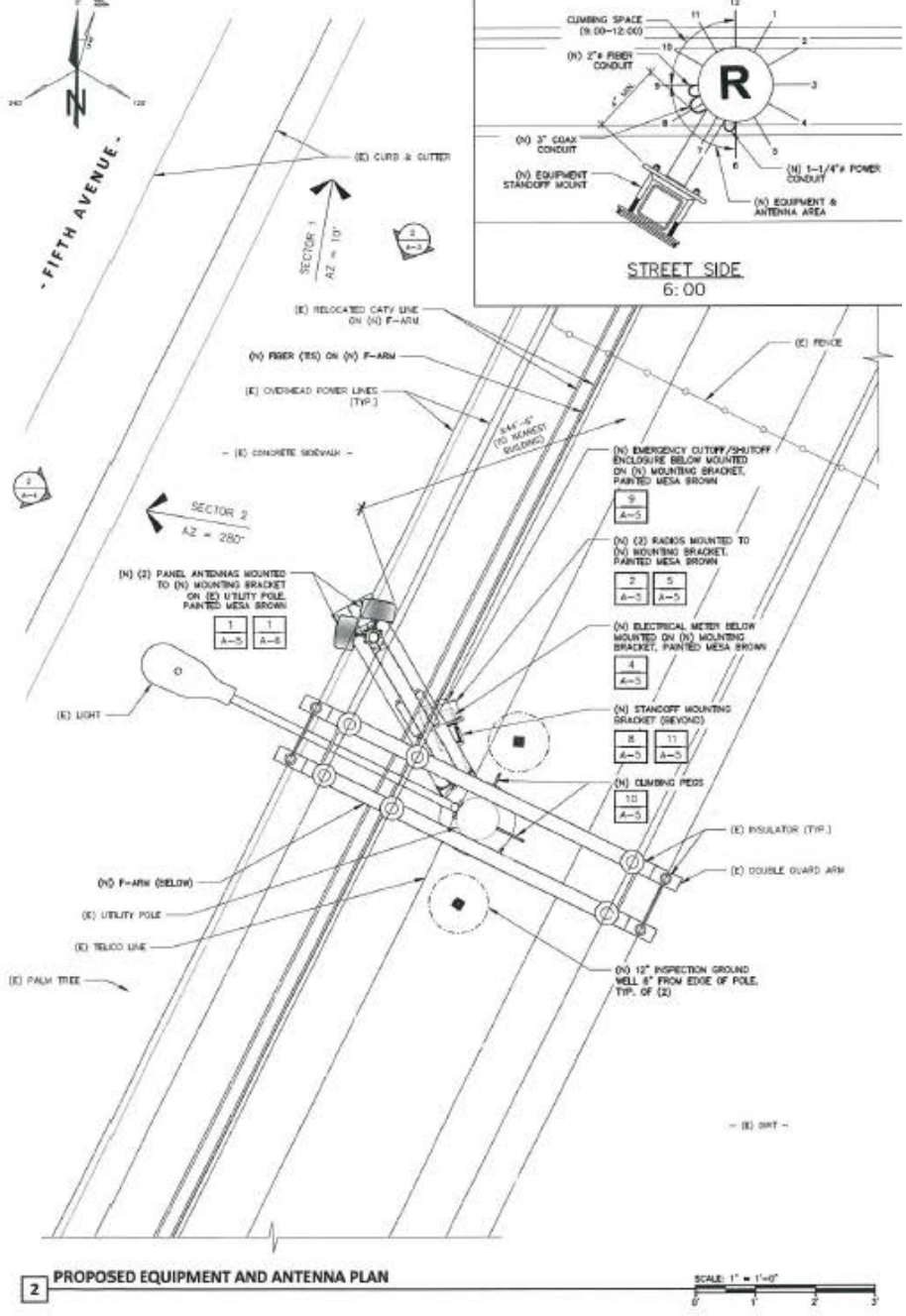
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I9**

File Numbers: **PLN 2016-00532**



1 EXISTING EQUIPMENT AND ANTENNA PLAN

SCALE: 1" = 1'-0"



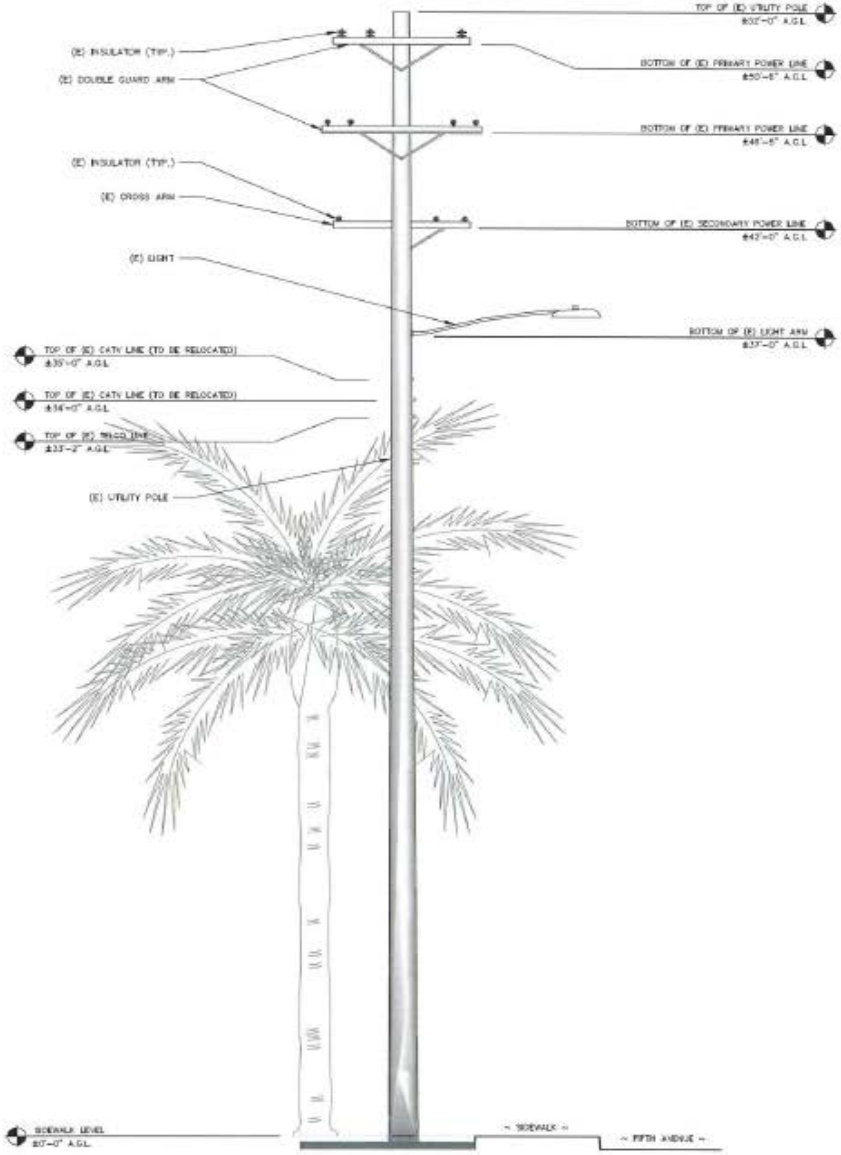
2 PROPOSED EQUIPMENT AND ANTENNA PLAN

SCALE: 1" = 1'-0"

San Mateo County Zoning Hearing Officer Meeting

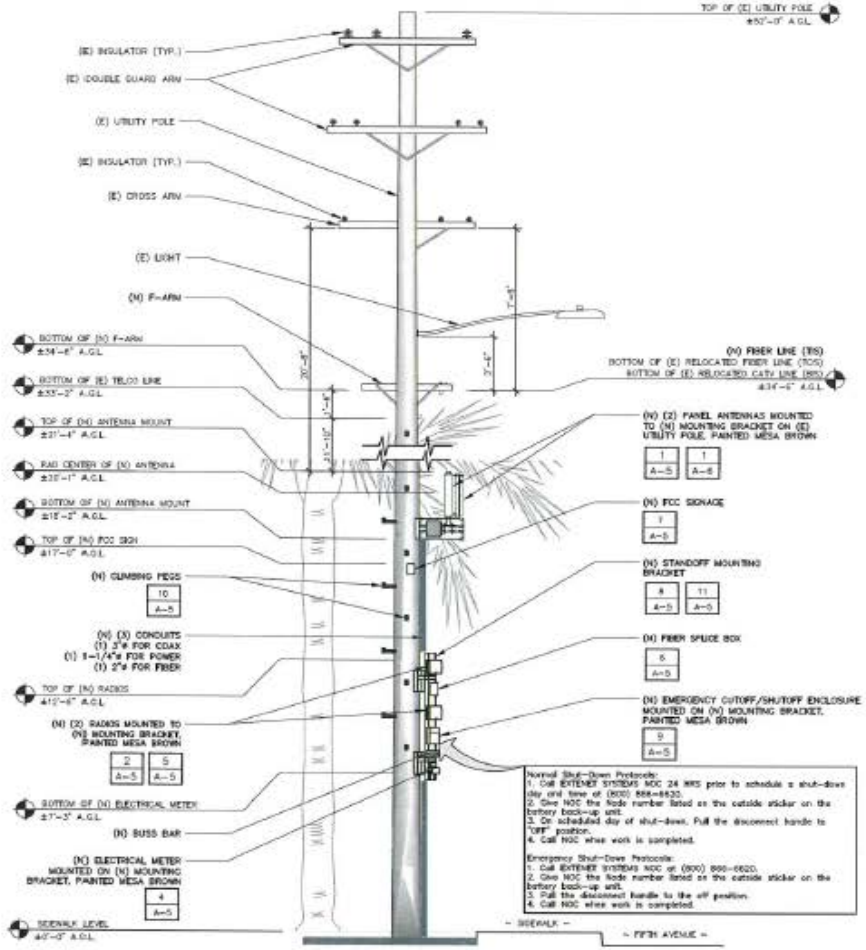
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I9**

File Numbers: **PLN 2016-00532**



MAKE READY INFORMATION

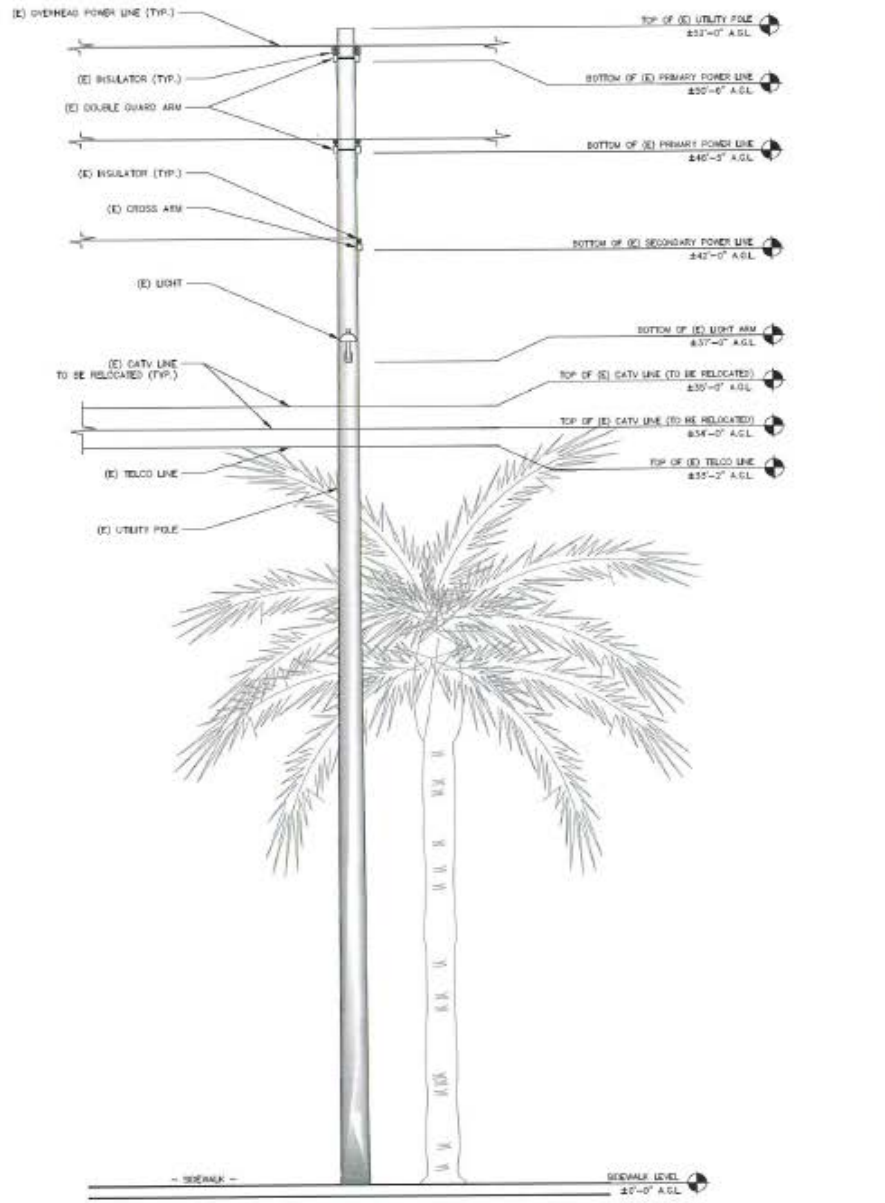
1. EXTENET CONTRACTOR TO PLACE NEW F-ARM ON S/L/O EXISTING POLE AT 36'6" AGL.
2. EXTENET CONTRACTOR TO TRANSFER EXISTING CATV 44" TO NEW F-ARM AT 44'6" AND ATTACH BOTTOM INSIDE POSITION - STREET SIDE.
3. EXTENET CONTRACTOR TO TRANSFER EXISTING FIBER 35" TO NEW F-ARM AT 34'6" AND ATTACH TOP OUTSIDE POSITION - STREET SIDE.
4. EXTENET CONTRACTOR TO PLACE NEW EXTENET FIBER TO NEW F-ARM AT 34'6" AND ATTACH TOP INSIDE POSITION - STREET SIDE.
5. EXTENET CONTRACTOR TO PLACE BOTTOM OF NEW ANTENNA SUPPORT ARM EXTENDING INTO STREET SIDE AT 18'-3" AGL.
6. EXTENET CONTRACTOR TO INSTALL NEW ANTENNA(S) TO NEW SUPPORT ARM PER DESIGN.
7. EXTENET CONTRACTOR TO PLACE NEW 3" SCH 80 PVC RISER AT 8'-10" POSITION FOR EXTENET COAXIAL CABLES - PER DESIGN.
8. EXTENET CONTRACTOR TO PLACE NEW 2" SCH 80 PVC RISER AT 9'-00" POSITION FOR EXTENET FIBER CABLES - PER DESIGN.
9. EXTENET APPROVED ELECTRICAL CONTRACTOR TO PLACE NEW 1 ½" SCH 80 PVC RISER AT 6'-00" POSITION FOR POWER SERVICE FROM 1" BELOW SECONDARY TO NEW POWER METER.
10. EXTENET CONTRACTOR TO CUT IN NEW P-TAP AT 34'6" AGL TO IMPORT NEW FIBER INTO NEW COAXIAL RISER.
11. EXTENET CONTRACTOR TO PLACE NEW 6" X 4" X 60" POLE MOUNTED EQUIPMENT CHANNEL AT 7'-00" POSITION ON 4" STANDOFF BOLTS FOR NEW EXTENET EQUIPMENT. (BOTTOM AT 7'0" AGL)
12. MOUNT OF 2 NEW RRUS AND ALUMINUM BACKPLATE TO NEW EQUIPMENT CHANNEL.
13. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW PG&E SMART METER BOX TO POLE AT 7'-0" AGL.
14. EXTENET CONTRACTOR TO MOUNT BOTTOM OF NEW BREAKER BOX TO POLE AT 8'-9" AGL.
15. EXTENET CONTRACTOR TO PLACE NEW 10' COPPER GROUND ROD 12" BELOW GRADE AND 24" FROM POLE FOR NEW POWER METER.
16. EXTENET CONTRACTOR TO PLACE NEW 10' COPPER GROUND ROD 12" BELOW GRADE AND 24" FROM POLE FOR NEW EXTENET EQUIPMENT.
17. PLACE NEW #2 COVERED GROUND WIRE FROM POWER METER TO NEW METER GROUND ROD.
18. PLACE NEW #2 COVERED GROUND WIRE FROM EXTENET EQUIPMENT TO NEW EQUIPMENT GROUND ROD.
19. EXTENET CONTRACTOR TO QUARTER STEP NEW POLE AT 9'-00 AND 12'-00 FOR CLIMBING SPACE.
20. EXTENET CONTRACTOR TO PLACE ALL RULE 94 SIGNAGE AS REQUIRED BY LAW.



San Mateo County Zoning Hearing Officer Meeting

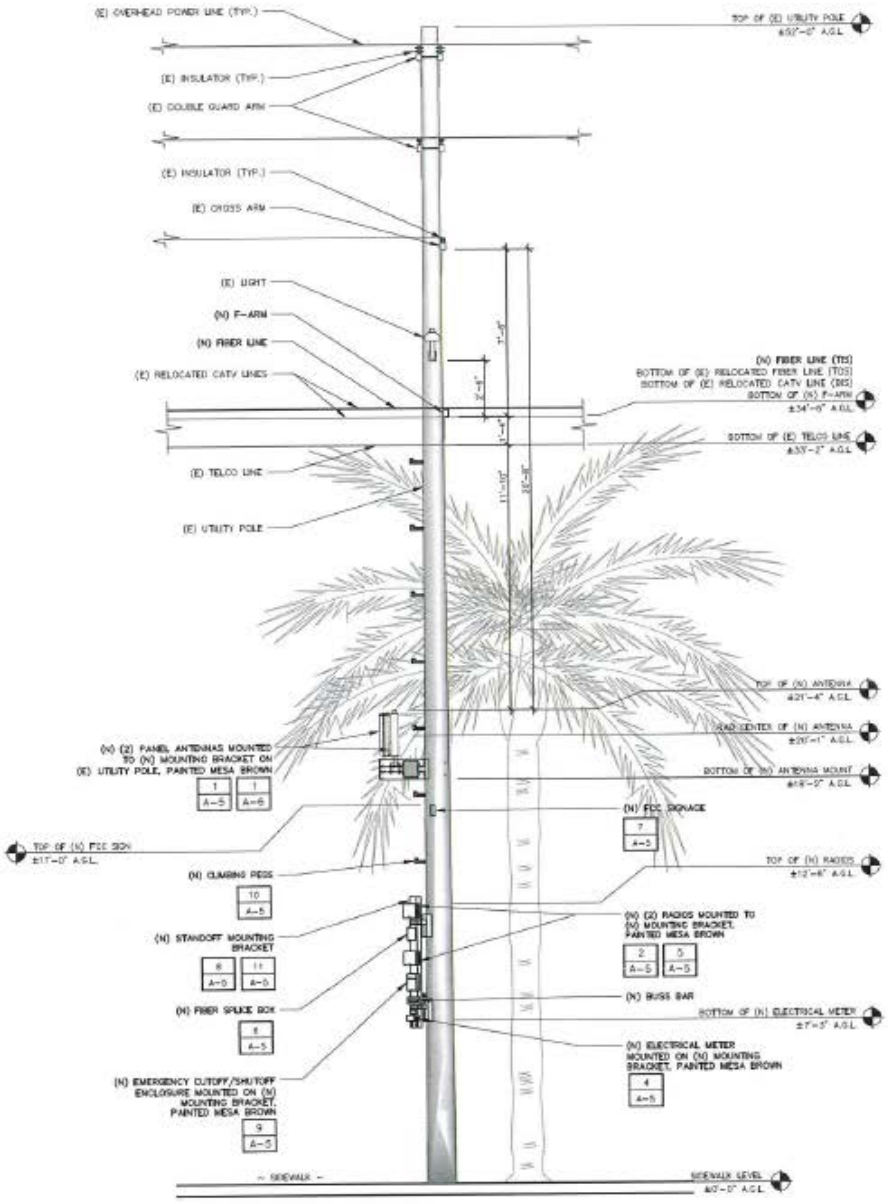
Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I9**

File Numbers: **PLN 2016-00532**



1 EXISTING NORTHWEST ELEVATION

SCALE: 3/8" = 1'-0"



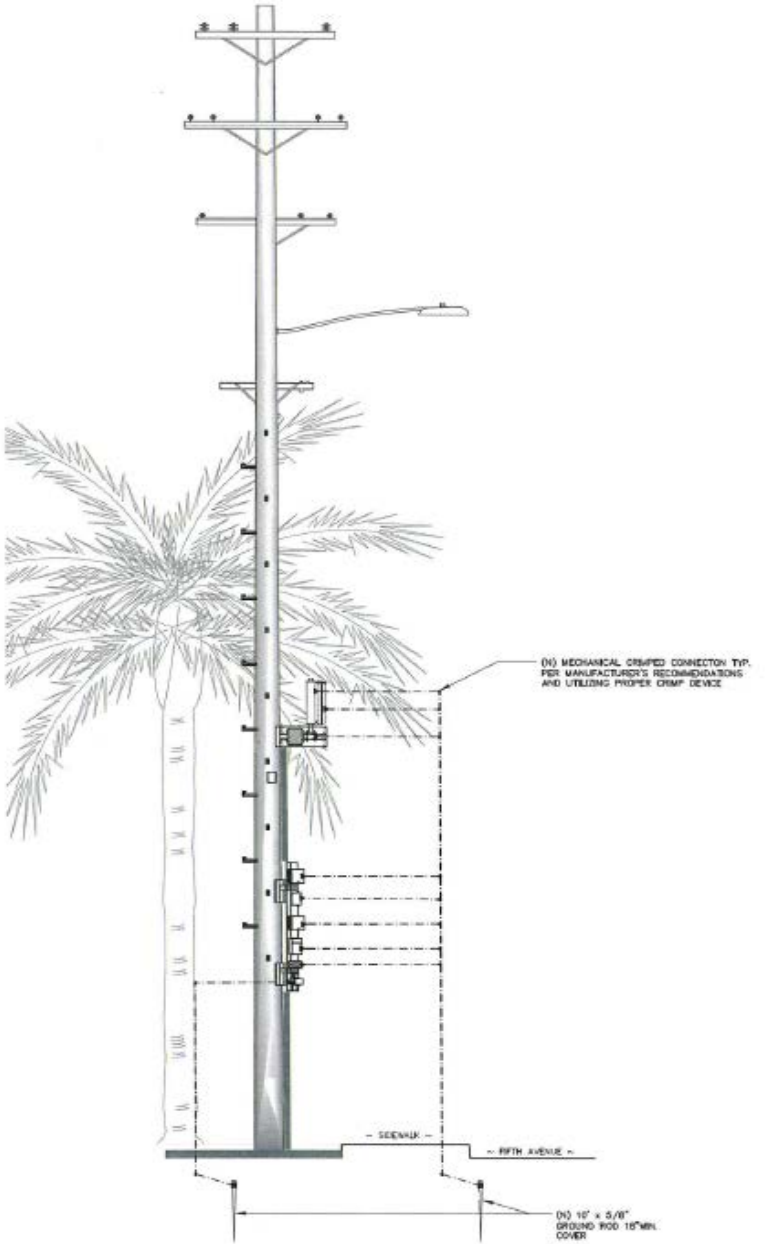
2 PROPOSED NORTHWEST ELEVATION

SCALE: 3/8" = 1'-0"

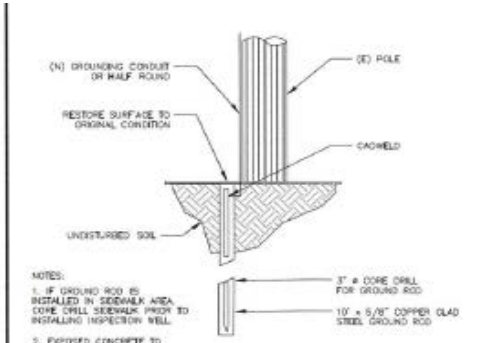
San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I9**

File Numbers: **PLN 2016-00532**



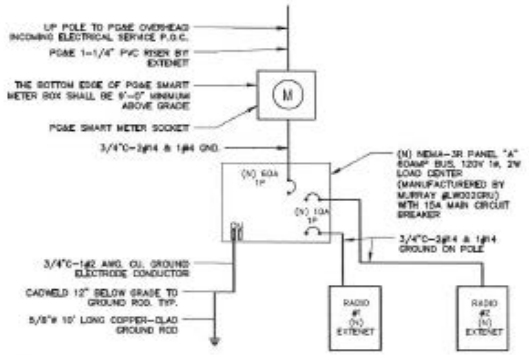
7 POLE GROUNDING DIAGRAM SCALE: 3/8" = 1'-0"



POLE GROUNDING ROD SCALE: NTS 4

F08BOX	BOX	34LBS. F08 CURB VALVE BOX (8" I.D. X 11" HIGH) – 48 PER PALLET
F08R	LID	8LBS. REINFORCED CONCRETE LID WITH PLASTIC RING
F08C	LID	8LBS. CAST IRON LID
F08D	LID	24LBS. FIBERGLASS LID, NON-CONCRETE
V01-71C	LID	15LBS. CAST IRON GRADE ADA COMPLIANT

F08 BOX GROUND WELL DETAIL SCALE: NTS 5

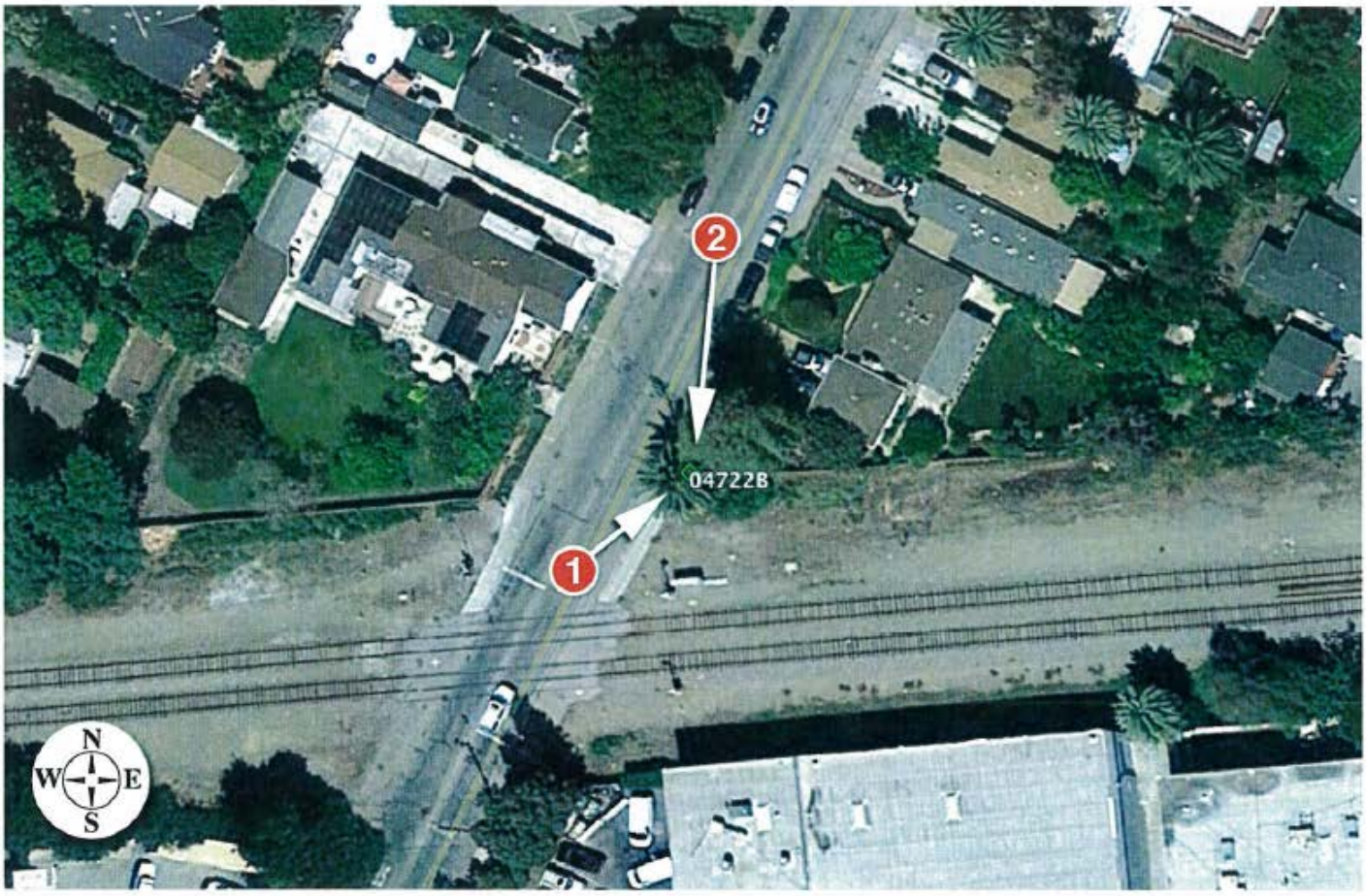


6 SINGLE LINE DIAGRAM

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **I9**

File Numbers: **PLN 2016-00532**



exte net SYSTEMS

NW-CA-SANFRNMC- 04722B

IFO 612 Fifth Avenue Redwood City, CA

Aerial Map

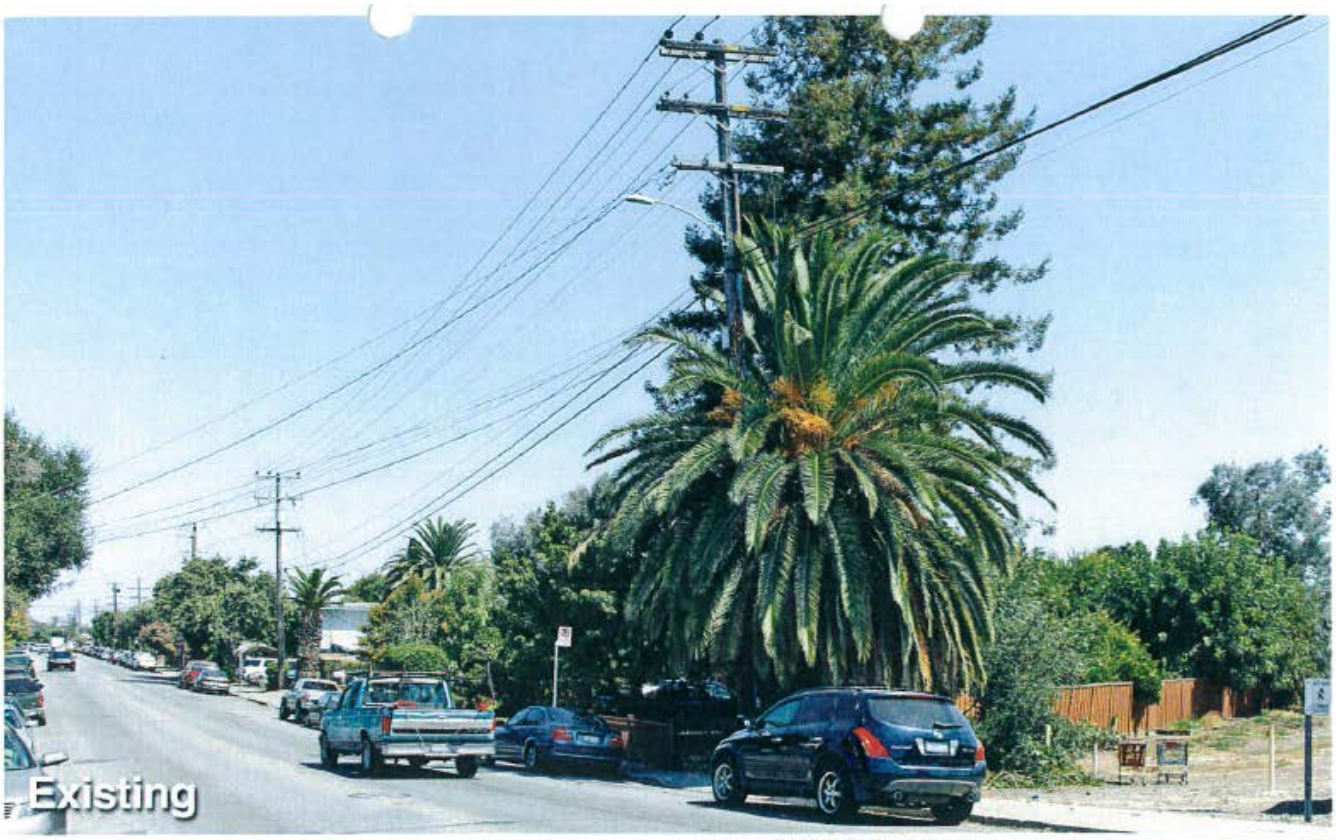
11/28/16

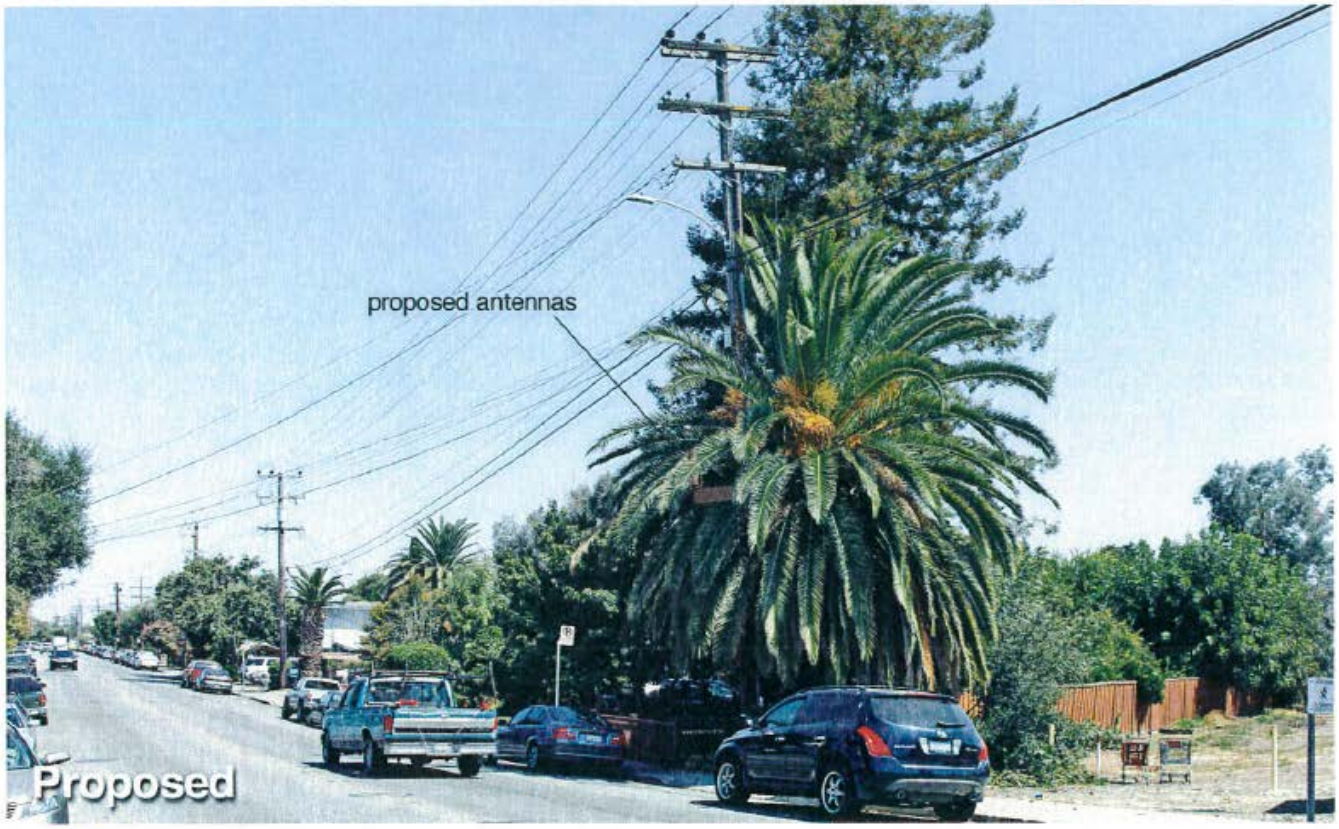
Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J9**

File Numbers: **PLN 2016-00532**





extenet SYSTEMS

NW-CA-SANFRNMC- 04722B

IFO 612 Fifth Avenue Redwood City, CA

Looking Northeast from Fifth Avenue

View #1

11/28/16

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J9**

File Numbers: **PLN 2016-00532**

extenet SYSTEMS

NW-CA-SANFRNMC- 04722B

IFO 612 Fifth Avenue Redwood City, CA

11/28/16

Looking South from Fifth Avenue

View #2

Applied Imagination 510 914-0500

San Mateo County Planning Commission Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **J9**

File Numbers: **PLN 2016-00532**

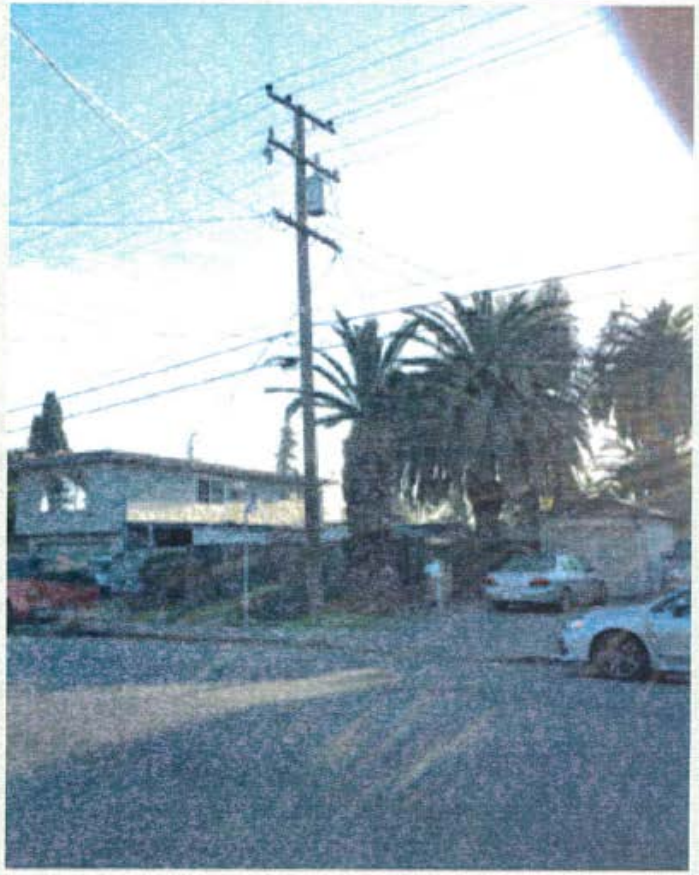
Alternative Overview

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K9**

File Numbers: **PLN 2016-00532**

Alternative Utility Poles

Alternate Pole NORTH #1- Potential Candidate	Alternate Pole South #2- Proposed design will not comply with GO 95 regulations
	

San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **ExteNet/ Mike Mangiantini** Attachment: **K9**

File Numbers: **PLN 2016-00532**

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. 04722B to be added to the ExteNet distributed antenna system ("DAS") in Redwood City, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

ExteNet proposes to install directional panel antennas on a utility pole sited in the public right-of-way at 612 Fifth Avenue in Redwood City. 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

Wireless nodes typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to a central "hub" (which in turn are connected to the traditional wired telephone lines), and the passive antenna(s) that send the wireless signals created by the radios out to be received by individual subscriber units. The radios are often located on the same pole as the

antennas and are connected to the antennas by coaxial cables. 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 The CBR Group, dated November 22, 2016, it is proposed to install two CommScope Model V65S-C3-1XR, 2-foot tall, directional panel antennas, on a cross-arm to be added to a utility pole sited in the public right-of-way in front of the residence located at 612 Fifth Avenue in Redwood City. The antennas would employ no downtilt, would be mounted at an effective height of about 20 feet above ground, and would be oriented toward 10°T and 280°T. T-Mobile proposes to operate from this facility with a maximum effective radiated power in any direction of 122 watts, representing simultaneous operation at 61 watts for AWS and 61 watts for PCS service. There are reported no other wireless telecommunications base stations at this site or nearby.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed T-Mobile operation is calculated to be 0.0047 mW/cm^2, which is 0.47% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 1.1% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels from the proposed operation.

Recommended Mitigation Measures

Due to their mounting location and height, the ExteNet antennas would not be accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training be provided to all authorized personnel who have access to the antennas, including employees and contractors of the utility companies. No access within 1 foot directly in front of the antennas themselves, 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 antennas, 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 612 Fifth Avenue in Redwood City, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations. Training personnel and posting signs is recommended to establish compliance with occupational exposure limitations.

Authorship

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

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

December 5, 2016

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