COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: November 15, 2018

TO: Zoning Hearing Officer

FROM: Planning Staff

SUBJECT: Consideration of three Use Permits, pursuant to Section 6500 of the San Mateo County Zoning Regulations, to install new wireless telecommunication facilities on existing joint utility poles located in the public right-of-way in front of 1852 Lexington Avenue and 1175 Parrott Drive in the unincorporated San Mateo Highlands area of San Mateo County.

County File Numbers: (Verizon Wireless/Modus)

Item 1	PLN 2018-00071
Item 2	PLN 2018-00079

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 1852 Lexington Avenue and 1175 Parrott Drive in the unincorporated San Mateo Highlands area. The new facilities will consist of a 7-foot pole extension, one 4-foot tall omnidirectional cylindrical antenna, and ancillary pole mounted equipment boxes. The new facilities will have an effective height of 48'-11'' and 50'-8.5'', respectively, above grade where the maximum allowed height is 36 feet above grade. No grading or tree removal activities are proposed.

RECOMMENDATION

That the Zoning Hearing Officer approve the Use Permits, County File Numbers, as listed below, by making the required findings and adopting the conditions of approval listed in Attachment A:

Item 1	PLN 2018-00071	1852 Lexington Avenue
Item 2	PLN 2018-00079	1175 Parrott Drive

BACKGROUND

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

Applicant: Verizon Wireless c/o Modus

Land Owner: San Mateo County Department of Public Works

Pole Owner: PG&E

Property Details for the Proposed Use Permits:

Item 1 - County File Number: PLN 2018-00071	
Location	Public Right-of-Way in front of 1852 Lexington Avenue
APN	Public Right-of-Way adjacent to 041-135-120
Existing Zoning	R-1/S-8 (Single-Family Residential/Minimum Lot Size 7,500 sq. ft.)
General Plan Designation	Medium Low Density Residential Urban
Flood Zone	Zone X (area of minimal flood risk): FEMA Panel No. 06081C 0165E; Effective October 2012
Sphere-of-Influence	City of San Mateo

Item 2 – County File Number: PLN 2018-00079	
Location	Public Right-of-Way in front of 1175 Parrott Drive
APN	Public Right-of-Way adjacent to 038-130-120
Existing Zoning	R-1/S-8 (Single-Family Residential/Minimum Lot Size 7,500 sq. ft.)
Genera l Plan Designation	Medium Low Density Residential Urban
Flood Zone	Zone X (area of minimal flood risk); FEMA Panel No. 06081C 0165E; Effective October 2012
Sphere-of-Influence	City of San Mateo

Environmental Evaluation: All projects are categorically exempt under the provisions of Class 3, Section 15303, of the California Environmental Quality Act (CEQA) Guidelines for the 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 (ROW) north of Highway 92 and east of Highway 280 in the unincorporated San Mateo Highlands area of San Mateo County. All proposed project sites are located in urbanized single-family residential neighborhoods.

Chronology:

Date		Action
April 11, 2018	-	Use Permit applications submitted.
September 24, 2018	-	Applications deemed complete.
November 15, 2018	-	Zoning Hearing Officer Public Hearing date.

DISCUSSION

A. KEY ISSUES

1. Compliance with the General Plan

Staff has determined that the proposed projects comply with the 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 (ROW) along local roads in single-family residential areas. To reduce the visual impacts of the proposed projects, the antennas and mounted equipment, located 48'-11'' to 50'-8.5'' above grade, will be painted to match the existing utility poles and shall be constructed of non-reflective materials.

2. Compliance with the Zoning Regulations

The proposed project areas are located within the public ROW in the R-1/S-8 (San Mateo Highlands) Zoning Districts. Zoning district standards, with the exception of height are not applicable to projects located within the public right-of-way.

The maximum height allowed in the R-1/S-8 Zoning District is 36 feet. The proposed projects consist of a 7-foot pole extension, one cylindrical cell antenna (approximately 4 feet tall), and ancillary pole mounted equipment and will exceed the maximum height allowed in the R-1/S-8 Zoning District. General Order No. 95 (GO-95), mandated by the California Public Utilities Commission, requires a 6-foot vertical separation between all cellular antennas and the nearest adjacent power supply lines. With power supply lines located at the top of the poles and communication lines located in the middle of the existing utility poles, the applicant has proposed to extend the height of the utility poles by placing a 7-foot[1] extension bracket on top of the existing poles to achieve the required State mandated 6-foot safety separation. With the addition of the brackets and the proposed antennas, an average of 11 feet will be added to the existing utility poles as outlined in the table below:

[1] The extension brackets only come in 3-, 5-, and 7-foot models.

Table 1					
Item No.	**Planning Case No.**	**Zoning District**	**Maximum Height Allowed in Zoning District**	**Existing Pole Height**	**Proposed Pole and Equipment Height**
Item 1	PLN 2018-00071	R-1/S-8	36 ft.	39'-2"	50'-8"
Item 2	PLN 2018-00079	R-1/S-8	36 ft.	37'-8"	48'-11"

Section 6512.2.I.2 (*Development and Design Standards for New Wireless Facilities That Are Not Co-Location Facilities*) of the San Mateo County Zoning Regulations state that, in any Residential (R) District, 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 ROW 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. As outlined in the chart above, the proposed projects will exceed the allowed height for new facilities in the ROW and will not be in compliance with Section 6512.2.I.2. The applicant requests that the proposed projects be permitted to exceed the height criteria outlined in Section 6512.2.I.2 in order to comply with the safety and engineering requirements of GO-95. While the alternative site analyses submitted by the applicant (Attachments C3, and D3,) identified nearby alternative utility poles, these poles either: (1) did not have adequate space to support the proposed equipment or, (2) the equipment would require extension brackets to comply with the GO-95 and thus exceed the height criteria of Section 6512.2.I.2. As illustrated by the alternative analyses, if the additional height is not granted the proposed projects could not be located on any of the nearby utility poles. As small cell facilities are designed to unload traffic from macro sites and only cover a 500- to 700-foot radius, these project must be located within or in close proximity to identified target areas. Verizon Wireless cannot effectively extend service to these areas if these projects cannot be placed on utility poles within these identified target areas.

The imposition of the County's height regulations in conjunction with the requirements of GO-95 would effectively prohibit the installation of wireless facilities in these identified service areas due to the fact that: (1) no other feasible alternative sites were identified, (2) local jurisdictions cannot require wireless facilities to locate outside of the right-of-way, and (3) local jurisdictions cannot require providers to consider alternatives outside of the right-of-way. When the application of the County's height criteria results in the effective prohibition of wireless facilities, local regulations (i.e., height in this case) are preempted by federal law. In this instance, though the proposed projects will exceed the height limits of their respective zoning district, State (i.e., GO-95) and Federal regulations supersede local regulations.

3. Compliance with the Wireless Telecommunication Facilities Ordinance

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

a. Development and Design Standards

Section 6512.2.A prohibits location in a Sensitive Habitat as defined by Policy 1.8 of the General Plan for facilities proposed outside the Coastal Zone.

The proposed projects are not located in or near mapped sensitive habitats, as defined by Policy 1.8 of the General Plan.

Section 6512.2.B prohibits wireless facilities to be located in residential-zoned areas, unless the applicant demonstrates that no other site allows feasible or adequate capacity and coverage. Evidence shall include an alternative site analysis within 2.5 miles of the proposed facility.

The proposed facilities will be located on existing joint utility poles in the public ROW with the R-1/S-8 Zoning District. Small cell technology requires sites to be much closer together than larger macro sites. These sites are not meant to increase the coverage of an area but to assist with unloading traffic from the macro site network to provide increased data speeds and decrease dropped calls for the surrounding residences and transient traffic. As such, small cell facilities are frequently located in residential neighborhoods where data traffic is high. Though the WTF Ordinance requires applicants to demonstrate the need for wireless facilities through the submittal of propagation maps and alternative analyses, wireless providers have a state mandated right to place their facilities in the public ROW (California Public Utilities Code Section 7901), and recent legal developments indicate that wireless providers are not required to consider alternatives outside of the ROW, nor prove the need for their facilities when they are located in the right-of-way. Consequently, the County's ability to request information demonstrating the need for proposed facilities in the public ROW is limited. As such, propagation maps and the 2.5-mile alternative site analyses were not submitted for these projects (see below for further discussion).

Section 6512.2.C C prohibits wireless telecommunication facilities to be located in areas where co-location on existing facilities would provide equivalent coverage with less environmental impact.

The small cell technology proposed by the applicant is the least environmentally impactful wireless technology currently available. As small cell technology requires sites to be located in close proximity to one another and closer to targeted service areas, co-locating small cell sites on macro cell towers (which are often located far outside service areas) is often infeasible. As such, a 2.5-mile radius alternative map does not identify feasible alternative locations. Instead of providing a 2.5-mile radius map, the applicant has identified and researched alternative sites within the required service areas. These alternative site analyses (Attachments C3 and D3) assessed the feasibility of locating the proposed small wireless facilities on nearby joint utility poles. The utility poles identified in the alternative site analyses would either require significant tree trimming, or could not meet GO-95 safety separation standards. As such, the applicant was unable to identify any existing wireless facilities or alternative poles that would allow an opportunity for co-location or provide the necessary coverage to the target area.

Section 6512.2.D requires wireless telecommunication facilities to be constructed so as to accommodate and be made available for co-location unless technologically infeasible.

Future co-locations are technically feasible as long as the proposed facilities comply with GO-95 engineering requirements. As pole top mounted facilities cannot accommodate additional wireless facilities in a manner that complies with both PG&E and GO-95 requirements, the applicant does not expect future co-locations given the present equipment configuration of the utility poles.

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 a 4-foot cylindrical antenna attached to a 7-foot pole extension and ancillary equipment boxes mounted onto an existing joint utility pole. The equipment boxes will be located 7 to 18 feet above grade while the top of the antennas will be located between 48’-11’’ and 50’-8.5’’ above grade. To mitigate the visual impact of the proposed projects, the antennas and utility boxes shall be painted a non-reflective brown color to blend-in with the existing utility pole (Condition of Approval No. 4). No trees or vegetation are proposed for removal to accommodate the proposed projects.

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

The proposed facilities shall be constructed of non-reflective materials, and as stated in the section above, shall be painted a non-reflective brown color to blend-in with the existing utility pole.

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.

The existing utility poles are situated in the public right-of-way. As discussed in Section 2 above, zoning district standards (with the exception of height) are not applicable to wireless facilities located in the right-of-way.

Section 6512.2.I.2 requires that no 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.

General Order No. 95 (GO-95) requires a 6-foot vertical safety separation between all wireless facilities and the nearest adjacent powerlines for facilities located on utility poles. Due to the height of the existing utility poles, and the 4-foot height of the antennas, the proposed projects are not in compliance with this section and will exceed the height limits of their respective zoning district. Imposition of the County's height regulations in conjunction with the requirements of GO-95 would effectively prohibit the installation of wireless facilities in these areas. Such a prohibition is preempted by Federal law. Because wireless carriers: (1) have a state mandated right to utilize the public ROW, (2) must abide by a 6-foot safety separation (GO-95), and (3) are not required to consider alternative sites outside the ROW, this is a situation in which State and Federal regulations supersede location regulations (i.e., height criteria). As such, the height of the proposed facilities has been designed to comply with the State's minimum safety requirements for clearance between the proposed equipment and the powerlines and limit the overall height of the structures as much as possible.

Section 6512.2.J seek to regulate the size, quantity, and location of accessory buildings required for wireless facilities located in any Residential (R) District.

No accessory buildings or ground floor equipment boxes are required for these projects. The equipment boxes necessary for these projects are small in size and will be mounted on the existing utility poles.

Section 6512.2.K requires the overall footprint of a facility to be as minimal as possible and not cover more than 15% in area of the lot or an area greater than 1,600 sq. ft. in residential districts.

No new ground structures will be built or utilized to support the operation of these wireless telecommunication facilities. All required utility boxes will be small in size and mounted between 7 to 18 feet above grade on the utility poles.

Section 6512.2.L prohibits diesel generators as emergency power sources unless electricity, natural gas, solar, wind or other renewable energy sources are not feasible.

No generators are proposed.

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 impacts 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.

4. Compliance with the Use Permit Findings

For the use permits 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.

The proposed wireless facilities will be unmanned and serviced twice a year by a Verizon technician with a pickup sized truck for no more than a couple of hours. As such, the maintenance of these facilities will not generate significant traffic, noise, or be detrimental to the public welfare.

Cellular communication facilities, such as the proposed projects, require the submittal and review of radio frequency (RF) reports to ensure that the RF emissions from the proposed antennas do not exceed the Federal Communications Commission's (FCC) public exposure limits. The applicant submitted radio frequency reports prepared by EBI Consulting (EBI), dated January, February, and September of 2018, 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 (Attachments C4 and D4). The reports state that the maximum RF exposure experienced at ground level is expected to range from 10.30% to 10.80% of the applicable public exposure limit (see Table 2 below). 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.

Table 2

Item No.	Planning Case No.	Approximate Location	Radio Frequency Exposure at Ground Level
Item 1	PLN 2018-00071	1852 Lexington Avenue	10.80%
Item 2	PLN 2018-00079	1175 Parrott Drive	10.30%

Though ground and second floor elevation exposure to RF radiation falls within the Maximum Permissible Exposure (MPE) limits for the general public, the facilities do emit RF radiation that exceed these limits along the upper 10-15 feet of their respective poles. However, these exposures occur roughly 45 to 50 feet above ground level and are not accessible to the general public. Though these areas do exceed the MPE limits, a wireless communication facility is only considered to be out of compliance with FCC's rules and regulations if there are areas that exceed the FCC limits and if there are no RF hazard mitigation measures in place (i.e., warning signs). As recommended by the RF reports, all project poles will be required to post caution signs on the poles (Condition of Approval No. 17) to bring these sites into compliance with the FCC's rules and regulations. Staff has determined that the proposed projects will not be detrimental to the public welfare, or injurious to property or improvements to the unincorporated San Mateo Highlands area of San Mateo County.

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 Verizon Wireless's network capacity and service coverage in the San

Mateo Highlands area. The proposed facilities will use existing utility infrastructure and add small equipment without disturbing the overall character of the neighborhood.

B. 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.

C. REVIEWING AGENCIES

Building Inspection Section
Department of Public Works
Cal-Fire

ATTACHMENTS

A. Recommended Findings and Conditions of Approval

B. Vicinity Maps

C1-C4. PLN 2018-00071 Project Plans, Photo Simulations, Alternative Analysis, Radio Frequency Radiation Reports prepared by EBI Consulting, dated February 4, 2018

D1-D4. PLN 2018-0079 Project Plans, Photo Simulations, Alternative Analysis, Radio Frequency Radiation Reports prepared by EBI Consulting, dated February 15, 2018

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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: November 15, 2018

Item 1	PLN 2018-00071
Item 2	PLN 2018-00079

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 the installation of small new equipment and a facility in a small structure.

Regarding the Use Permit, Find:

2. That the establishment, maintenance, and/or conducting of the use will not, under the circumstances of this particular case, result in a significant adverse impact, or be detrimental to the public welfare or injurious to the property or improvements in said neighborhood because the projects will meet the health and safety standards set by the California Public Utilities Commission (CPUC) and the Federal Communications Commission (FCC). The project has been conditioned to maintain a valid FCC license and has been reviewed and granted conditional approval by Cal-Fire and the County's Building Inspection Section.

3. That these telecommunications facilities are necessary for the public health, safety, convenience, or welfare of the community. The proposed facilities contribute to an enhanced Verizon wireless network for increased clarity, range, and system capacity, and therefore, are a benefit to both public and private users. The wireless network will be utilized by residents, commuters, and emergency personnel and is considered necessary for public health, safety, convenience, and welfare for the area.

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 November 15, 2018. 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 modification 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 prior to any changes to the facilities.

3. These permits shall be valid for ten (10) years until November 15, 2028. 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. The applicant shall paint the antennas and associated ancillary boxes a non-reflective brown color to match the existing utility poles. 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. These 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., 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. 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.

16. To reduce the impact of construction and maintenance 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 Lexington Avenue and Parrott Drive or other public right-of-ways.

17. Caution signs are required to be posted 10-15 feet below the antennas readily visible from any angle of approach to person who might need to work within the project area as recommended by the attached RF reports.

18. If a less visually obtrusive/reduced antenna technology becomes available for use during the life of this project, the applicant shall present a redesign incorporating this technology into the project for review by the Community Development Director and any parties that have expressed an interest.

Public Works

19. No proposed construction work within the County 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. Applicant shall contact a Department of Public Works Inspector 48 hours prior to commencing work in the right-of-way.

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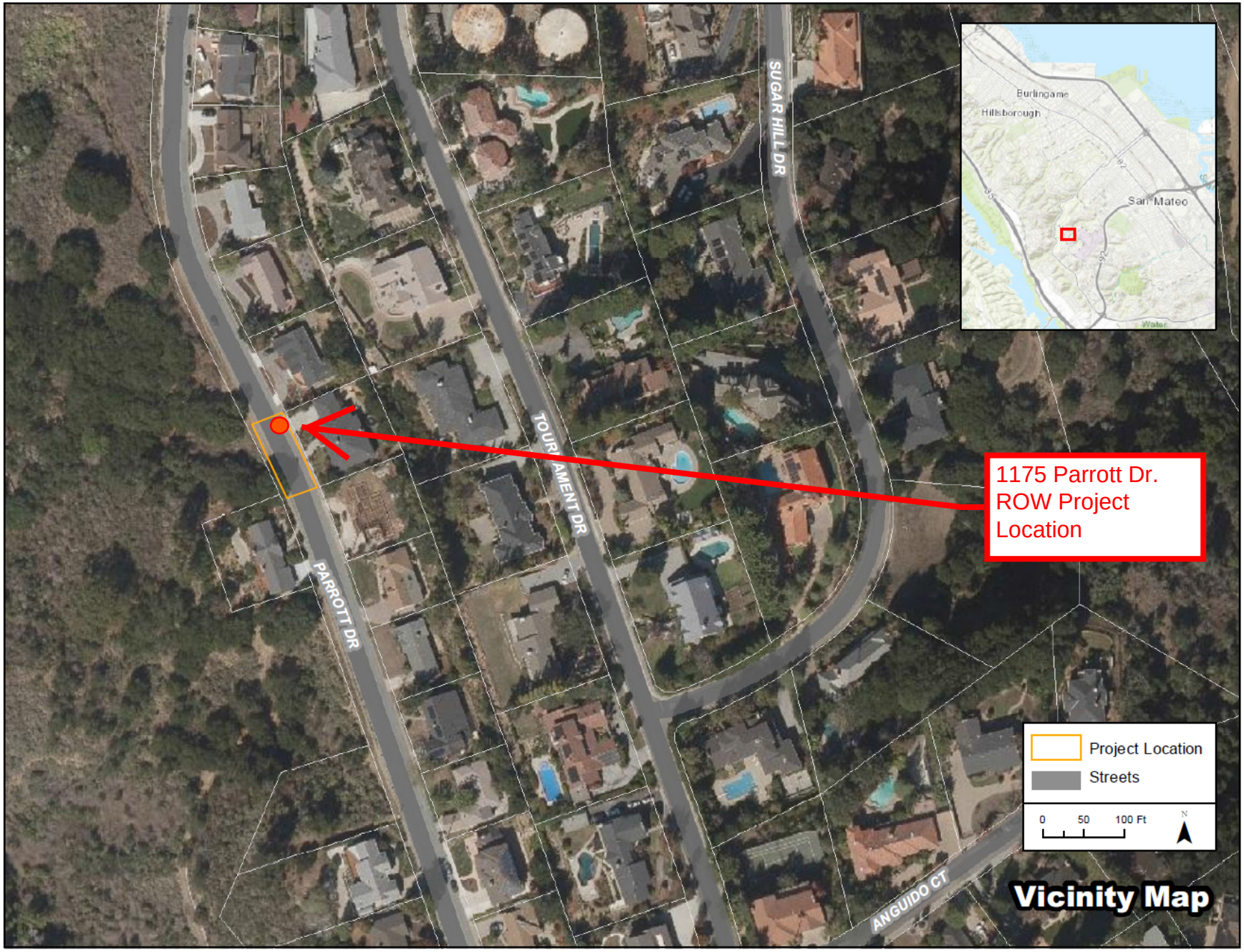
San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **Modus/Verizon** Attachment: **B**

File Numbers: **PLN 2018-00071**



San Mateo County Zoning Hearing Officer Meeting

Owner/Applicant: **Modus/Verizon** Attachment: **B**

File Numbers: **PLN 2018-00079**


Vicinity Map- MODUS
San Mateo Highlands
Legend
Feature 1
Feature 2
Parrott Drive Area
Lakeview
Tobin Clark Estate
PLN2018-00079
s Reservoir
Western Hills
Baywood Park
Highlands-Baywood Park
PLN2018-00071
280
35
92
Crystal Springs Rd
Polhemus Rd
Junipero Serra Fwy
Bunker Hill Dr
Parrott Dr
Bel Aire Rd
Lakeshore Dr
Starlite Dr
Ascension Dr
Newport St
Monticello Rd
Yorktown Rd
Clearview Way
Los Altos Dr
Fairmont Dr
Cherrywood Dr
Parkwood Dr
Shasta Dr
Verdun Ave
Caxton Ct
Overlook Ct
Scenic Way
31st Ave
28th Ave
29th Ave
27th Ave
26th Ave
Sequoia Ave
Pico Ave
Alameda De Las Pulgas
Clydesdale Dr
Vernon Terrace
Yew St
Tournament Dr
Sugarhill Dr
Bel Aire Ct
Brooke Ct
Lakeview Dr
Buckingham Way
Oak Rim Dr
Crystal Dr
Rizal Dr
Braemar Dr
Google earth
©2018 Google
1000 ft
N

County of San Mateo - Planning and Building Department

ATTACHMENT C-1

PROPERTY INFORMATION

NO: 20171536393

SITE: SF HIGHLANDS BAYWOOD PARK 003
1840 LEXINGTON AVENUE
SAN MATEO, CA 94402

BASIS OF BEARING

BEARINGS SHOWED HEREON ARE BASED UPON U.S. STATE PLANE NAD83 COORDINATE SYSTEM *STATE PLANE COORDINATE ZONE 3*, DETERMINED BY GPS OBSERVATIONS.

BENCHMARK

ELEVATION ESTABLISHED FROM GPS DERIVED ORTHOMETRIC HEIGHTS, APPLYING GEOID 99 SEPARATIONS, CONSTRAINING TO NGS CONTROL STATION 'LUTZ' ELEVATION=450.0' (NAVD88)

UTILITY NOTES

SURVEYOR DOES NOT GUARANTEE THAT ALL UTILITIES ARE SHOWN OR THEIR LOCATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND DEVELOPER TO CONTACT U.S.A. AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. REMOVAL, RELOCATION AND/ OR REPLACEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

SURVEYOR'S NOTES

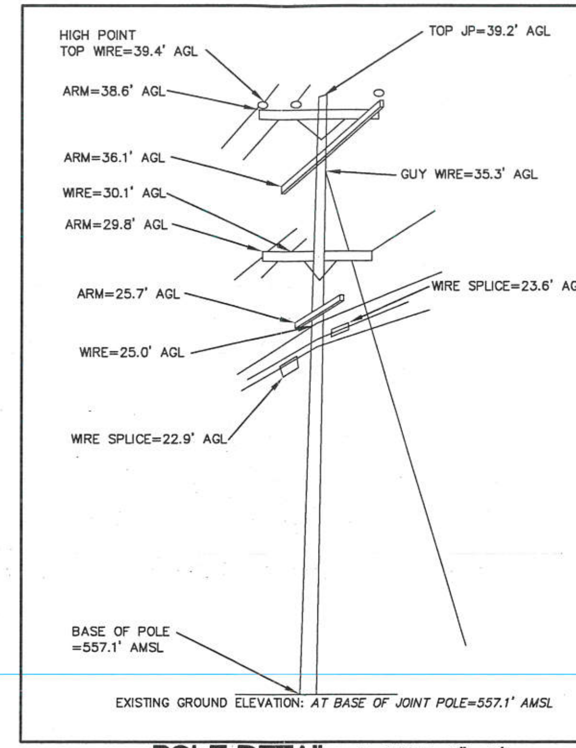
ALL EASEMENTS CONTAINED IN SAID TITLE REPORT AFFECTING THE IMMEDIATE AREA SURROUNDING THE LEASE HAVE BEEN PLOTTED. SURVEYOR HAS NOT PERFORMED A SEARCH OF PUBLIC RECORDS TO DETERMINE ANY DEFECT IN TITLE ISSUED. THE BOUNDARY SHOWN HEREON IS PLOTTED FROM RECORD INFORMATION AND DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PROPERTY.

LEGEND

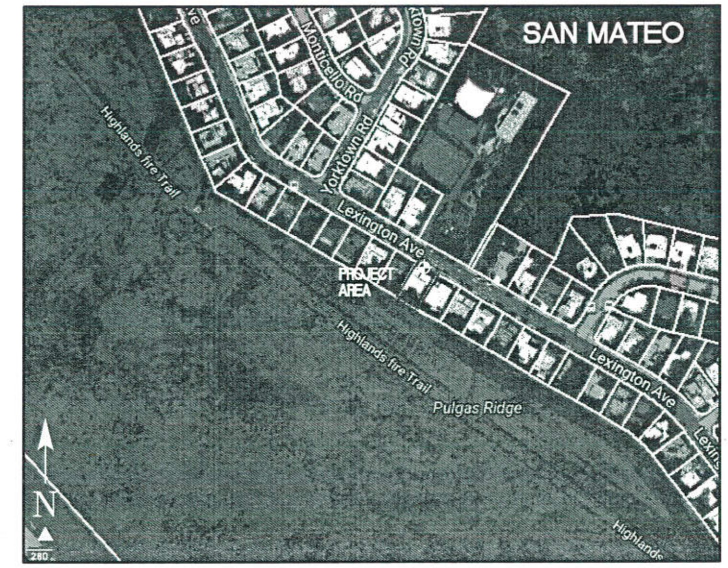
DI	DRAIN INLET
TFC	TOP FACE OF CURB
R/W	RIGHT OF WAY
EP	EDGE OF PAVED
DW	DRIVEWAY
STLT	STREET LIGHT
SW	SIDEWALK
TP	TOP OF PARAPET
OH	OVERHANG
FH	FIRE HYDRANT
WV	WATER VALVE
MH	MANHOLE
	GEODETIC COORDINATES
	SPOT ELEVATION
	DISH ANTENNA
	WATER CONTROL VALVE
	FIRE HYDRANT
	GUY CONDUCTOR
	FOUND AS NOTED
	POWER POLE
	LIGHT POLE
	ELECTRICAL TRANSFORMER
	AIR CONDITIONING UNIT
	TELEPHONE PEDESTAL
	TELEPHONE VAULT
	TELEPHONE MANHOLE
	GAS VALVE
	GAS METER
	PROPERTY LINE
	CHAIN LINK FENCE

SURVEY DATE

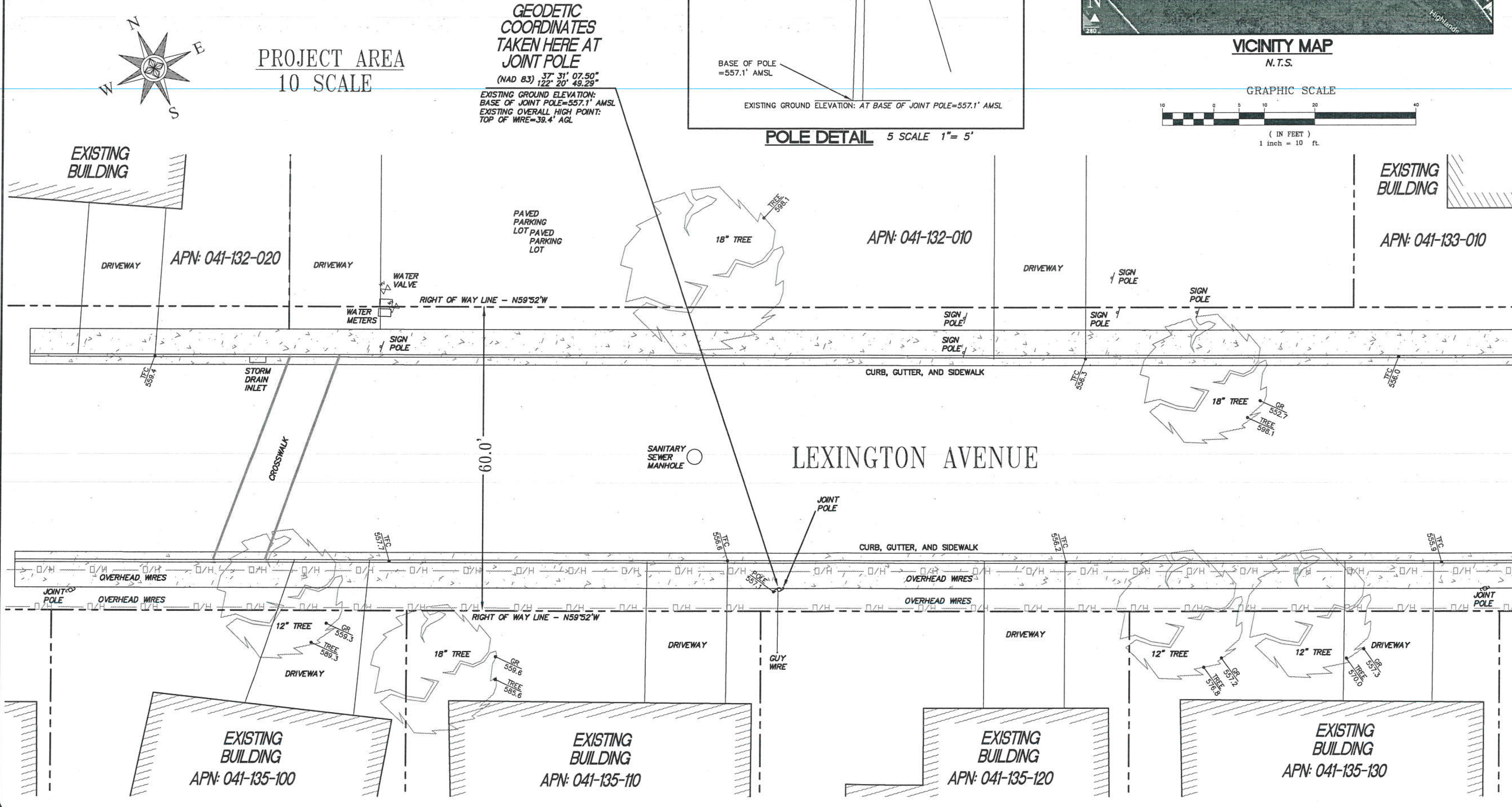
7/14/17



POLE DETAIL 5 SCALE 1"= 5'



VICINITY MAP
N.T.S.



ISSUE STATUS

△	DATE	DESCRIPTION	REV.
	7/22/2017	SITE PLAN	

HAYES Land Surveying And Mapping
2830 MADIGAN COURT
CONCORD, CA 94518
PHONE: (925) 798-3591

verizon
2785 MITCHELL DRIVE
WALNUT CREEK, CA. 94598
OFFICE: 925-279-6000
(925) 279-6333

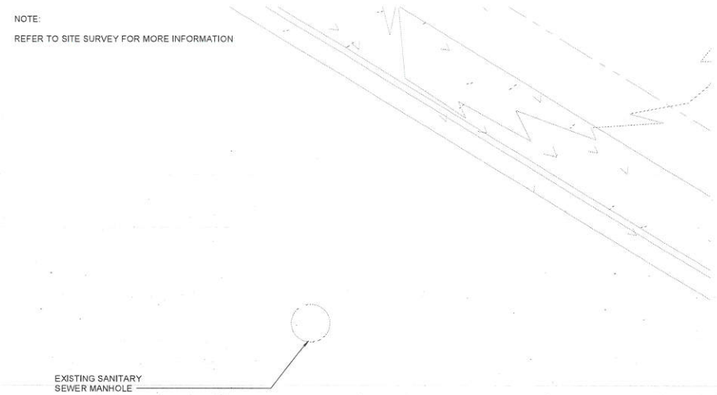
TOPOGRAPHIC SURVEY
EXISTING CONDITIONS

20171536393
SF HIGHLANDS
BAYWOOD PARK 003
1840 LEXINGTON AVENUE
SAN MATEO, CA 94402

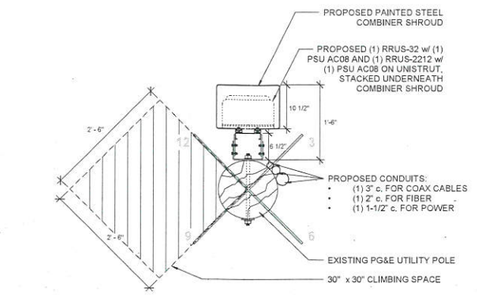
C-1
SHEET 1 of 1

NOTE:

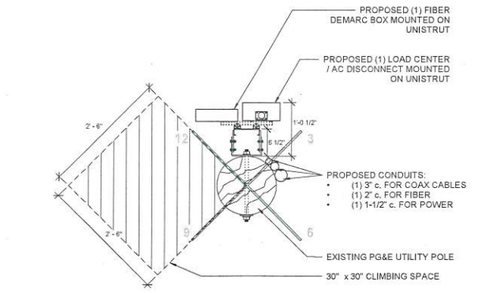
REFER TO SITE SURVEY FOR MORE INFORMATION



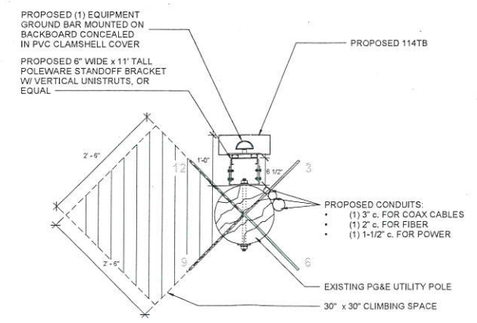
5 ENLARGED SITE PLAN
1/4" = 1'-0"



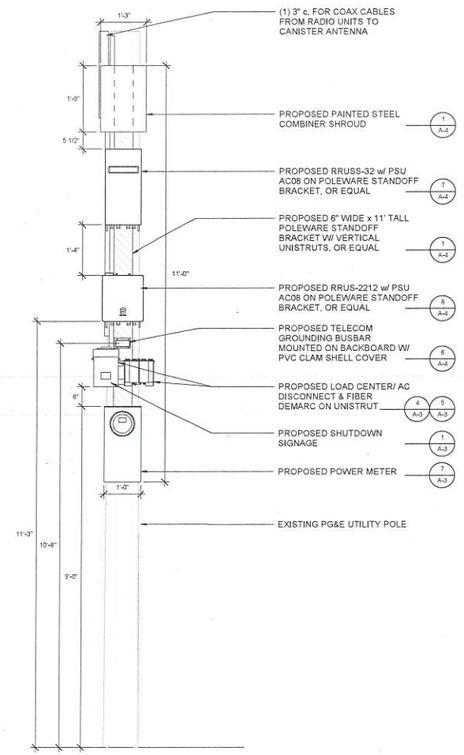
4 TOP OF RRUS PLANS
1" = 1'-0"



3 TOP OF DISCONNECT AND FIBER DEMARC
1" = 1'-0"



2 TOP OF METER
1" = 1'-0"



1 ENLARGED EQUIPMENT ELEVATION
3/4" = 1'-0"

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

MODUS INC.
240 STOCKTON ST., 3rd FLOOR
SAN FRANCISCO, CA 94108

Charles M. Salter ASSOCIATES INC
CHARLES M. SALTER ASSOCIATES
130 SUTTER ST. FLR. 5
SAN FRANCISCO, CA 94104

LICENSED ARCHITECT
RYAN GNUSTI RASKOP
C-35434
RENEWAL 12/31/2019
STATE OF CALIFORNIA

No.	Description	Date
1	90% CONSTRUCTION DOCUMENTS	27 JULY 2017
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3	90% CONSTRUCTION DOCUMENTS REV.2	06 NOVEMBER 2017
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6	90% CONSTRUCTION DOCUMENTS REV.5	04 JANUARY 2018
7	100% CONSTRUCTION DOCUMENTS	31 JANUARY 2018
8	100% CONSTRUCTION DOCUMENTS REV.1	16 FEBRUARY 2018

SF HIGHLANDS BAYWOOD PARK 003

1852 LEXINGTON AVENUE
SAN MATEO, CA 94402

ENLARGED SITE & EQUIPMENT PLANS

MODUS PROJECT #	20171536393
LOCATION IDENTIFICATION #	438407
DATE DRAWN	01/04/2018
DRAWN BY	AEM, RGR
CHECKED BY	AEM, RGR

A-1

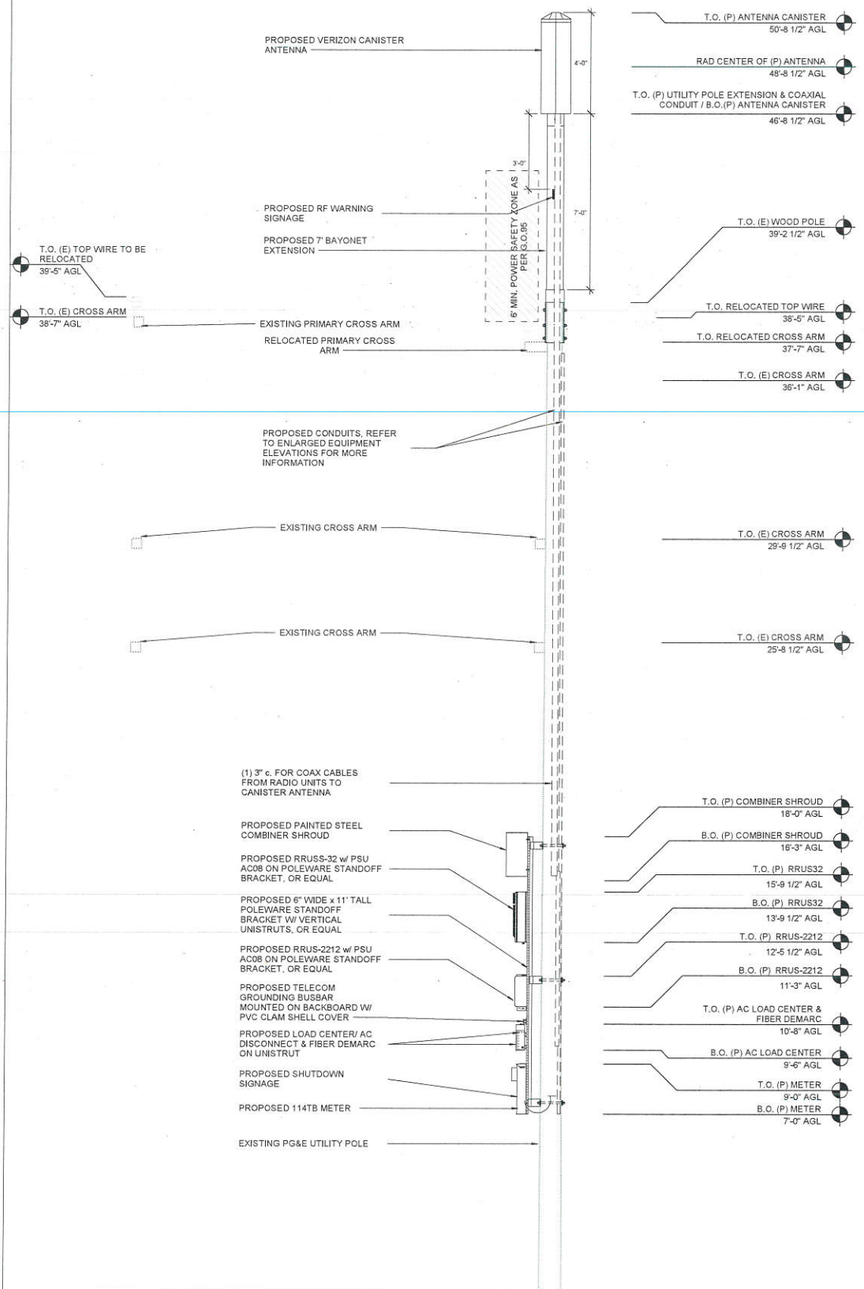
SCALE AS NOTED, SHEET SIZE 30"x42"
SCALE .75xNOTED, SHEET SIZE 24"x36"

2/16/2018 11:03:46 AM

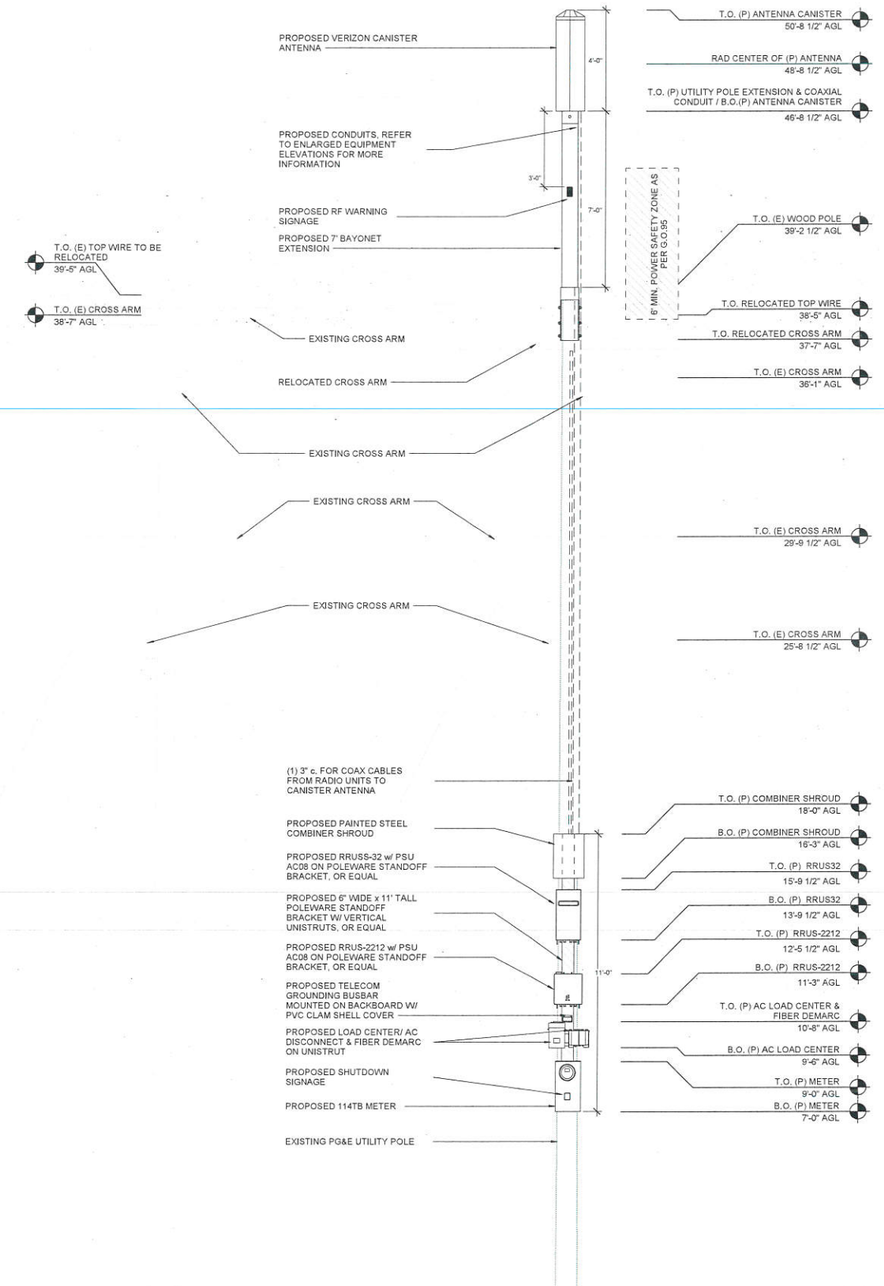
PLN 2018-00071

SHEET NOTES:

1. VERIFY ALL MEASUREMENTS OF EXISTING CONDITIONS IN-FIELD. DIMENSIONS ARE SHOWN FOR COORDINATION ONLY
2. WIRES NOT SHOWN FOR CLARITY



2 EXISTING AND PROPOSED ELEVATIONS - SOUTHEAST
1/2" = 1'-0"



1 EXISTING AND PROPOSED ELEVATIONS - SOUTHWEST
1/2" = 1'-0"

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

MODUS INC.
240 STOCKTON ST., 3rd FLOOR
SAN FRANCISCO, CA 94108

Charles M. Salter ASSOCIATES INC
CHARLES M. SALTER ASSOCIATES
130 SUTTER ST. FLR. 5
SAN FRANCISCO, CA 94104

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C-35434
RENEW 10/31/2019
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SF HIGHLANDS
BAYWOOD PARK 003

1852 LEXINGTON AVENUE
SAN MATEO, CA 94402

ELEVATIONS

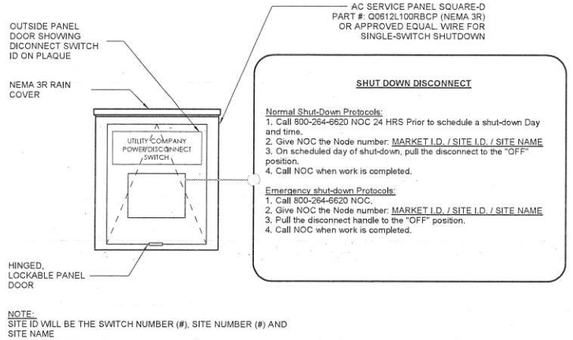
MODUS PROJECT #	20171536393
LOCATION IDENTIFICATION #	438407
DATE DRAWN	01/04/2018
DRAWN BY	AEM, RGR
CHECKED BY	AEM, RGR

A-2

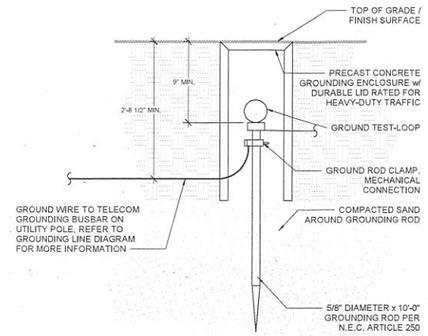
SCALE AS NOTED, SHEET SIZE 30"x42"
SCALE .75xNOTED, SHEET SIZE 24"x36"

2/16/2018 11:03:49 AM

PLN 2018-00071

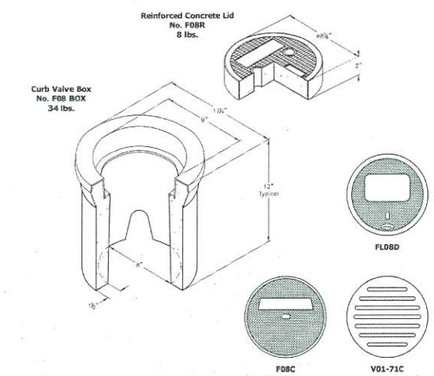


1 AC PANEL SHUT DOWN PROTOCOL SIGNAGE
NTS



2 GROUNDING ROD
NTS

- Etched polypropylene face
- Face anchored in concrete
- Ultra-violet inhibitor
- Exceeds ASTM-D1693 Standards for Environmental Stress Cracking Resistance

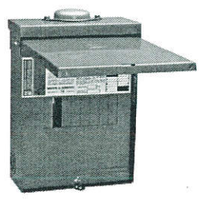


A high density reinforced concrete box with non-settling shoulders positioned to maintain grade and facilitate back filling. Approximate dimensions and weight shown.

Oldcastle Ordering Code	Item	Approx. Shipping Weight	Description
F08BOX	BOX	34 lbs.	F08 Curb Valve Box (8" I.D. x 12" High) – 48 per pallet
F08R	LID	8 lbs.	Reinforced Concrete Lid with Plastic Ring
F08C	LID	8 lbs.	Cast Iron Lid
FL08D	LID	2 lbs.	Fibrelyte Lid, Non-Concrete
V01-71C	LID	12 lbs.	Cast Iron Grate ADA Compliant

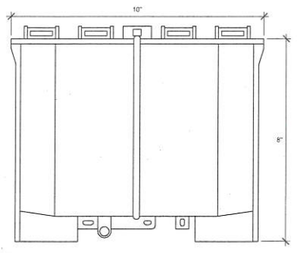
3 OLDCASTLE PRECAST GROUNDING WELL
NTS

PRODUCT SPECIFICATION:	
MODEL NUMBER:	QO612L100RB OR APPROVED EQUAL
DIMENSION:	12.65" x 8.88" x 4.27"
WEIGHT:	3LBS
WIRING CONFIG.:	3-WIRE, 3-PHASE
SPACES:	6
AMPERE RATING:	100A
MAX. SINGLE POLE CIRCUITS:	12
APPROVAL:	UL LISTED
COVER TYPE:	SURFACE
ENCLOSURE RATING:	2R
VOLTAGE RATING:	120/240 VAC
WIRE SIZE:	#8 TO #1 AWG
MAX. CIRCUIT BREAKERS:	6

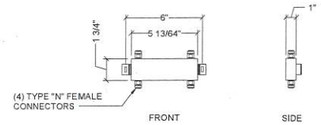


4 SCHNEIDER ELECTRIC QO612L100RB LOAD CENTER/ AC POWER DISCONNECT
NTS

PRODUCT SPECIFICATION:	
MODEL NUMBER:	ARIA TECHNOLOGIES NID-12 OR APPROVED EQUAL
CONNECTOR TYPE:	6-PACK DUPLEX SC OR LC CONNECTORS; 12-STRAnd fiber



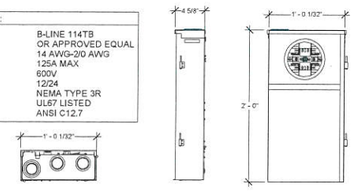
5 NETWORK INTERFACE DEVICE
NTS



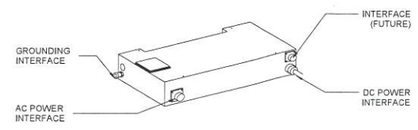
PRODUCT INFORMATION:	
COUPLER	MICROLAB CA-X4
WIND AREA	0.06 sf
WEIGHT	1.43 lbs / 0.65 kg
DIMENSIONS	5.20" X 1.73" X 1.0"

6 MICROLAB CA-X4 HYBRID COUPLER
NTS

PRODUCT SPECIFICATION:	
MODEL NUMBER:	B-LINE 114TB OR APPROVED EQUAL
NEUTRAL CONDUCTOR:	14 AWG-2/0 AWG
AMP RATING:	125A MAX
VOLTAGE:	600V
LOADCENTER:	12/24
CONSTRUCTION TYPE:	NEMA TYPE 3R
STANDARDS:	UL67 LISTED ANSI C12.7



7 114TB METER MAIN w/ TEST BLOCK BYPASS
NTS



8 PSU AC 02 / AC 08 DETAIL
NTS

CAUTION

Transmitting Antenna(s)

Radio frequency fields beyond this point MAY EXCEED the FCC Occupational exposure limit.

Obey all posted signs and site guidelines.

Call Verizon Wireless at 1-800-264-6620 PRIOR to working beyong this point

STATE: _____ SWITCH: _____

SITE ID: _____

SECTOR / NODE: _____

NOTE: MOUNT WARNING SIGNAGE 3'-0" BELOW PROPOSED CANISTER ANTENNA

9 GO95 COMPLIANT VERIZON WIRELESS WARNING SIGNAGE
NTS

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

MODUS INC.
240 STOCKTON ST., 3rd FLOOR
SAN FRANCISCO, CA 94108

Charles M. Salter ASSOCIATES INC
CHARLES M. SALTER ASSOCIATES
130 SUTTER ST. FLR. 5
SAN FRANCISCO, CA 94104

LICENSED ARCHITECT
RYAN GNUSTI RASKOP
C-35434
RENEW 10/31/2019
STATE OF CALIFORNIA

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SF HIGHLANDS BAYWOOD PARK 003

1852 LEXINGTON AVENUE
SAN MATEO, CA 94402

CONSTRUCTION DETAILS

MODUS PROJECT #	20171536393
LOCATION IDENTIFICATION #	438407
DATE DRAWN	01/04/2018
DRAWN BY	AEM, RGR
CHECKED BY	AEM, RGR

A-3

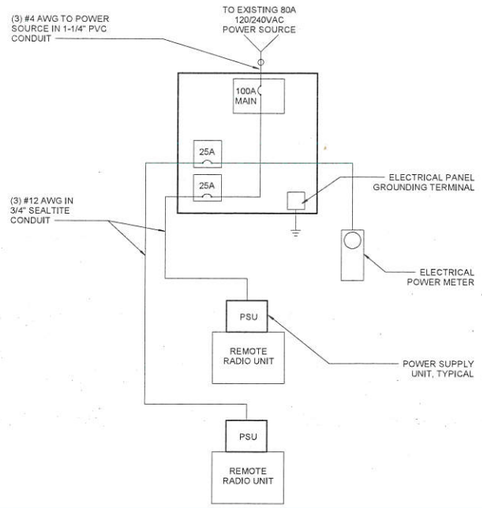
SCALE AS NOTED, SHEET SIZE 30"x42"
SCALE .75xNOTED, SHEET SIZE 24"x36"

2/16/2018 11:03:50 AM

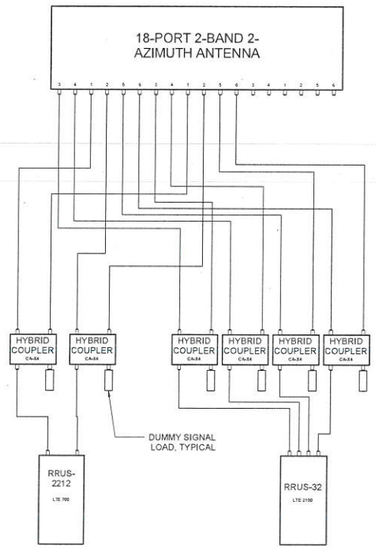
PLN 2018-00071

ELECTRICAL POWER NOTES:

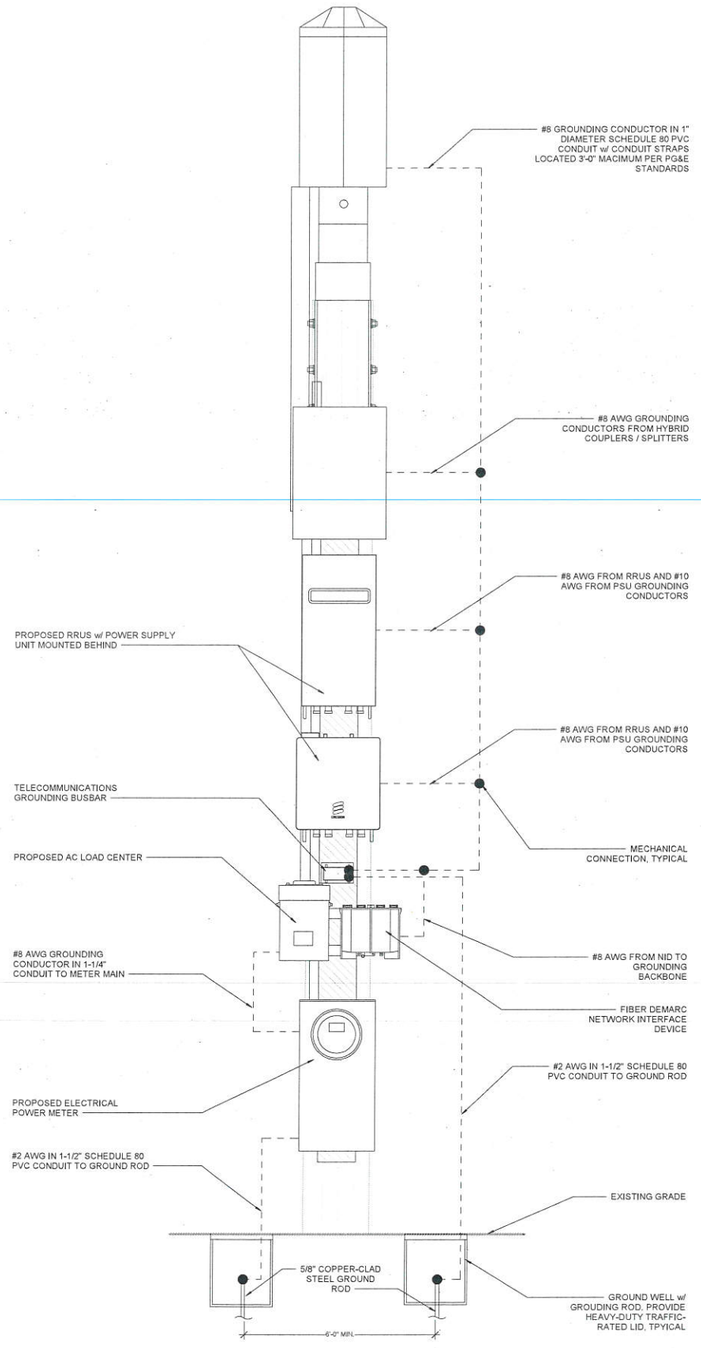
1. ALL WORK SHALL COMPLY WITH VERIZON WIRELESS CONSTRUCTION STANDARDS FOR SMALL-CELL INSTALLATION
2. AFFIX MAIN ELECTRICAL AC PANEL TO BOTH POLES OF THE MAIN LUG-BUSS AND FED THROUGH THE LOAD-SIDE. PROVIDE SINGLE SHUT-OFF SWITCH FOR ALL SMALL-CELL POWER ON AC ELECTRICAL PANEL
3. COORDINATE WITH UTILITY COMPANY PRIOR TO CONSTRUCTION, INSTALL POWER AND TELECOMMUNICATIONS CONDUIT PER UTILITY COMPANY REQUIREMENTS
4. PROVIDE 25A 120VAC ELECTRICAL SERVICE AT SMALL-CELL SITE



1 ELECTRICAL POWER LINE DIAGRAM1
NTS



3 18-PORT ANTENNA, 2-BAND LOW-HI 2-AZIMUTH ANTENNA WIRING DIAGRAM
NTS



NOTE: REFER TO ELEVATIONS FOR MOUNTING REQUIREMENTS.
BOND ALL ELECTRONIC COMPONENTS TO NEW GROUNDING RING

2 GROUNDING LINE DIAGRAM
NTS

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

MODUS INC.
240 STOCKTON ST., 3rd FLOOR
SAN FRANCISCO, CA 94108

Charles M. Salter ASSOCIATES INC
CHARLES M. SALTER ASSOCIATES
130 SUTTER ST. FLR. 5
SAN FRANCISCO, CA 94104

LICENSED ARCHITECT
RYAN GNUSTI RASKOP
C-35434
RENEW 12/31/2019
STATE OF CALIFORNIA

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SF HIGHLANDS BAYWOOD PARK 003

1852 LEXINGTON AVENUE
SAN MATEO, CA 94402

CABLING LINE & GROUNDING DIAGRAMS

MODUS PROJECT #	20171536393
LOCATION IDENTIFICATION #	438407
DATE DRAWN	01/04/2018
DRAWN BY	AEM, RGR
CHECKED BY	AEM, RGR

E-1

SCALE AS NOTED, SHEET SIZE 30"x42"
SCALE .75xNOTED, SHEET SIZE 24"x36"

2/16/2018 11:03:52 AM

PLN 2018-00071

County of San Mateo - Planning and Building Department

ATTACHMENT C-2

BEFORE

AFTER

BLD 2018-00071

ASK-01

PHOTO SIMULATION - EAST

SHEETS REF:

SF BAYWOOD PARK 003

REVISION:

PROJECT#: 20171536393

DATE: 1/23/2018 1:12:52 PM

DRAWN: AEM

CHECK: RGR

Charles M. Salter ASSOCIATES INC

130 SUTTER STREET, FLOOR 5
SAN FRANCISCO, CA 94104
TEL (415)397-0442

BEFORE

AFTER

ASK-02

PHOTO SIMULATION - NORTHWEST

SHEETS REF:

SF BAYWOOD PARK 003

REVISION:

PROJECT#: 20171536393

DATE: 1/23/2018 1:12:52 PM

DRAWN: AEM

CHECK: RGR

Charles M. Salter ASSOCIATES INC
130 SUTTER STREET, FLOOR 5
SAN FRANCISCO, CA 94104
TEL (415)397-0442

County of San Mateo - Planning and Building Department

ATTACHMENT C-3

BLD2018-00071

RECEIVED
FEB 23 2018
San Mateo County
Planning Division

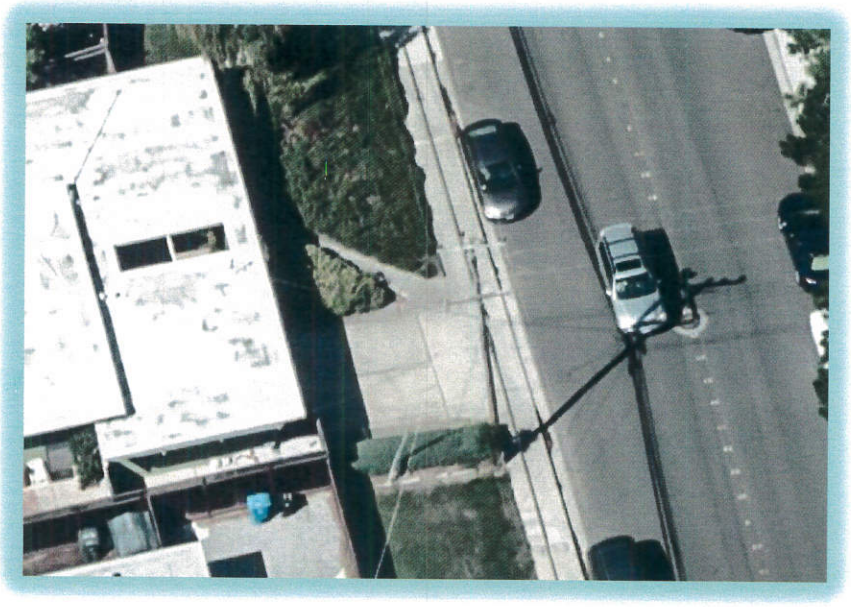
County of San Mateo - Planning and Building Department

ATTACHMENT C-4

Radio Frequency - Electromagnetic Energy (RF-EME) Jurisdictional Report

Site No. 438407
SF HIGHLANDS BAYWOOD PARK 003
Adjacent to 1852 Lexington Avenue
San Mateo, California 94002
San Mateo County
37° 31' 7.50" N, -122° 20' 49.29" W NAD83

EBI Project No. 6218000384
February 4, 2018



Prepared for:

Verizon Wireless
c/o Modus, Inc.
115 Sansome Street, 14th Floor
San Francisco, CA 94104

Prepared by:

EBI Consulting
environmental | engineering | due diligence

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by Verizon Wireless to conduct radio frequency electromagnetic (RF-EME) modeling for Verizon Site 438407 located at Adjacent to 1852 Lexington Avenue in San Mateo, California to determine RF-EME exposure levels from proposed Verizon wireless communications equipment at this site. As described in greater detail in Section 2.0 of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

Statement of Compliance

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

As presented in the sections below, based on worst-case predictive modeling, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site.

At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately **10.80** percent of the FCC's general public limit (**2.16** percent of the FCC's occupational limit).

Recommended control measures are outlined in Section 5.0 and within a Site Safety Plan (attached); this plan includes instructions to shut down and lockout/tagout this wireless equipment in accordance with Verizon's standard operating protocol.

1.0 INTRODUCTION

Radio frequency waves are electromagnetic waves from the portion of the electromagnetic spectrum at frequencies lower than visible light and microwaves. The wavelengths of radio waves range from thousands of meters to around 30 centimeters. These wavelengths correspond to frequencies as low as 3 cycles per seconds (or hertz [Hz]) to as high as one gigahertz (one billion cycles per second).

Personal Communication (PCS) facilities used by Verizon in this area operate within a frequency range of 700-2100 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed a distance above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of in areas in the immediate vicinity of the antennas.

MPE limits do not represent levels where a health risk exists, since they are designed to provide a substantial margin of safety. 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.

2.0 SITE DESCRIPTION

This project site includes one (1) wireless telecommunication antennas (at two transmitting sectors) on a utility pole located at Adjacent to 1852 Lexington Avenue in San Mateo, California.

Verizon Antenna Information (proposed Configuration)									
Antenna # and Model	Frequency (MHz)	# of Transmitters	Transmit Power (Watts)	Azimuth	Gain (dBd)	Feet above Ground (CL)	X	Y	Z (feet)
A1 Ampheno CUUT070X12Fxyz0	700 2100	2 2	60 60	100° 340°	6.95 9.85	48.71	30	30	46.71

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general population/uncontrolled exposure limits for members of the general public that may be exposed to antenna fields. While access to this site is considered uncontrolled, the analysis has considered exposures with respect to both controlled and uncontrolled limits as an untrained worker may access adjacent rooftop locations. Additional information regarding controlled/uncontrolled exposure limits is provided in Section 3.0. Appendix B presents a site safety plan that provides a plan view of the utility pole with antenna locations.

3.0 FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

The FCC has established Maximum Permissible Exposure (MPE) limits for human exposure to Radiofrequency Electromagnetic (RF-EME) energy fields, based on exposure limits recommended by the

National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general public/uncontrolled exposure limits for members of the general public.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/ controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general public/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

General public/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Table 1 and Figure 1 (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm^2). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm^2) and an uncontrolled MPE of 1 mW/cm2 for equipment operating in the 1900 MHz frequency range. For the Verizon equipment operating at 700 MHz or 850 MHz, the FCC's occupational MPE is 2.83 mW/cm^2 and an uncontrolled MPE of 0.57 mW/cm^2. These limits are considered protective of these populations.

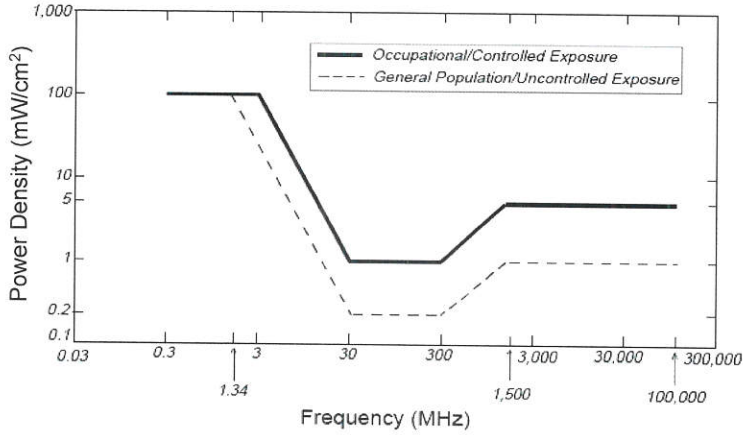
Table 1: Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				

Table 1: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)
* Plane-wave equivalent power density

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)
Plane-wave Equivalent Power Density



Based on the above, the most restrictive thresholds for exposures of unlimited duration to RF energy for several personal wireless services are summarized below:

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Cellular Telephone	870 MHz	2.90 mW/cm^2	0.58 mW/cm^2
Specialized Mobile Radio	855 MHz	2.85 mW/cm^2	0.57 mW/cm^2
Most Restrictive Freq, Range	30-300 MHz	1.00 mW/cm^2	0.20 mW/cm^2

MPE limits are designed to provide a substantial margin of safety. 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.

Personal Communication (PCS) facilities used by Verizon in this area operate within a frequency range of 700-2100 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be

received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of areas directly in front of the antennas.

4.0 WORST-CASE PREDICTIVE MODELING

EBI has performed theoretical modeling using RoofView® software to estimate the worst-case power density at the site ground-level resulting from operation of the antennas. RoofView® is a widely-used predictive modeling program that has been developed by Richard Tell Associates to predict both near field and far field RF power density values for roof-top and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

The modeling is based on worst-case assumptions for the number of antennas and transmitter power. The modeling assumes a maximum 2-2 radio configuration for Sectors A and B, with a power level of 48 dbM (60 watts) per transmitter for 700 and 2100 frequencies, in order to provide a worst-case evaluation of predicted MPE levels. The assumptions used in the modeling are based upon information provided by Verizon, and information gathered from other sources. The parameters used for the modeling are summarized in the RoofView® export files presented in Appendix C.

There are no other wireless carriers with equipment installed at this site.

Based on worst-case predictive modeling, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed Verizon antennas that exceed the FCC's occupational or general public exposure limits at this site. At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately 10.80 percent of the FCC's general public limit (2.16 percent of the FCC's occupational limit). The composite exposure level from all carriers on this site is approximately 10.80 percent of the FCC's general public limit (2.16 percent of the FCC's occupational limit) at the nearest walking/working surface to each antenna.

The Site Safety Plan also presents areas where Verizon Wireless antennas contribute greater than 5% of the applicable MPE limit for a site. A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

The inputs used in the modeling are summarized in the RoofView® export file presented in Appendix C. A graphical representation of the RoofView® modeling results is presented in Appendix B. It should be noted that RoofView is not suitable for modeling microwave dish antennas; however, these units are designed for point-to-point operations at the elevations of the installed equipment rather than ground level coverage.

5.0 MITIGATION/SITE CONTROL OPTIONS

EBI's modeling indicates that there are no areas in front of the Verizon antennas that exceed the FCC standards for occupational or general public exposure. All exposures above the FCC's safe limits require that individuals be elevated above the ground level. In order to alert people accessing the ground, a Caution sign isrecommended for installation 12 feet below antenna bottom facing street.

These protocols and recommended control measures have been summarized and included with a graphic representation of the antennas and associated signage and control areas in a RF-EME Site Safety Plan, which is included as Appendix B. Individuals and workers accessing the roof should be provided with a copy of the attached Site Safety Plan, made aware of the posted signage, and signify their understanding of the Site Safety Plan.

Implementation of the signage recommended in the Site Safety Plan and in this report will bring this site into compliance with the FCC's rules and regulations.

6.0 SUMMARY AND CONCLUSIONS

EBI has prepared a Radiofrequency – Electromagnetic Energy (RF-EME) Compliance Report for telecommunications equipment installed by Verizon Site Number 438407 located at Adjacent to 1852 Lexington Avenue in San Mateo, California to determine worst-case predicted RF-EME exposure levels from wireless communications equipment installed at this site. This report summarizes the results of RF-EME modeling in relation to relevant Federal Communications Commission (FCC) RF-EME compliance standards for limiting human exposure to RF-EME fields.

As presented in the sections above, based on the FCC criteria, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site. Workers should be informed about the presence and locations of antennas and their associated fields. Recommended control measures are outlined in Section 5.0 and within a Site Safety Plan (attached); this plan includes procedures to shut down and lockout/tagout this wireless equipment in accordance with Verizon's standard operating protocol.

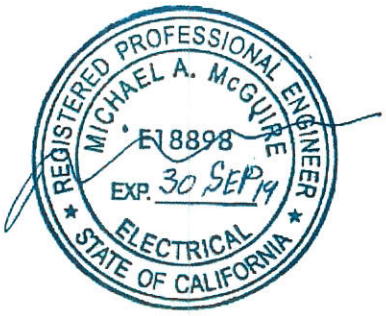
7.0 LIMITATIONS

This report was prepared for the use of Verizon Wireless. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by EBI are based solely on the information provided by the client. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to EBI so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

Appendix A

Certifications

Reviewed and Approved by:



sealed 4feb2018

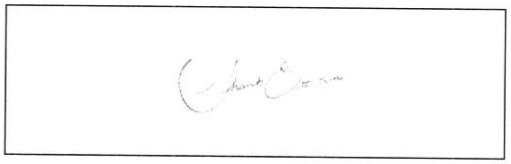
Michael McGuire
Electrical Engineer

Note that EBI's scope of work is limited to an evaluation of the Radio Frequency – Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the structure, as well as the impact of the antennas and broadcast equipment on the structural integrity of the structure, are specifically excluded from EBI's scope of work.

Preparer Certification

I, Thanh Estevam, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.

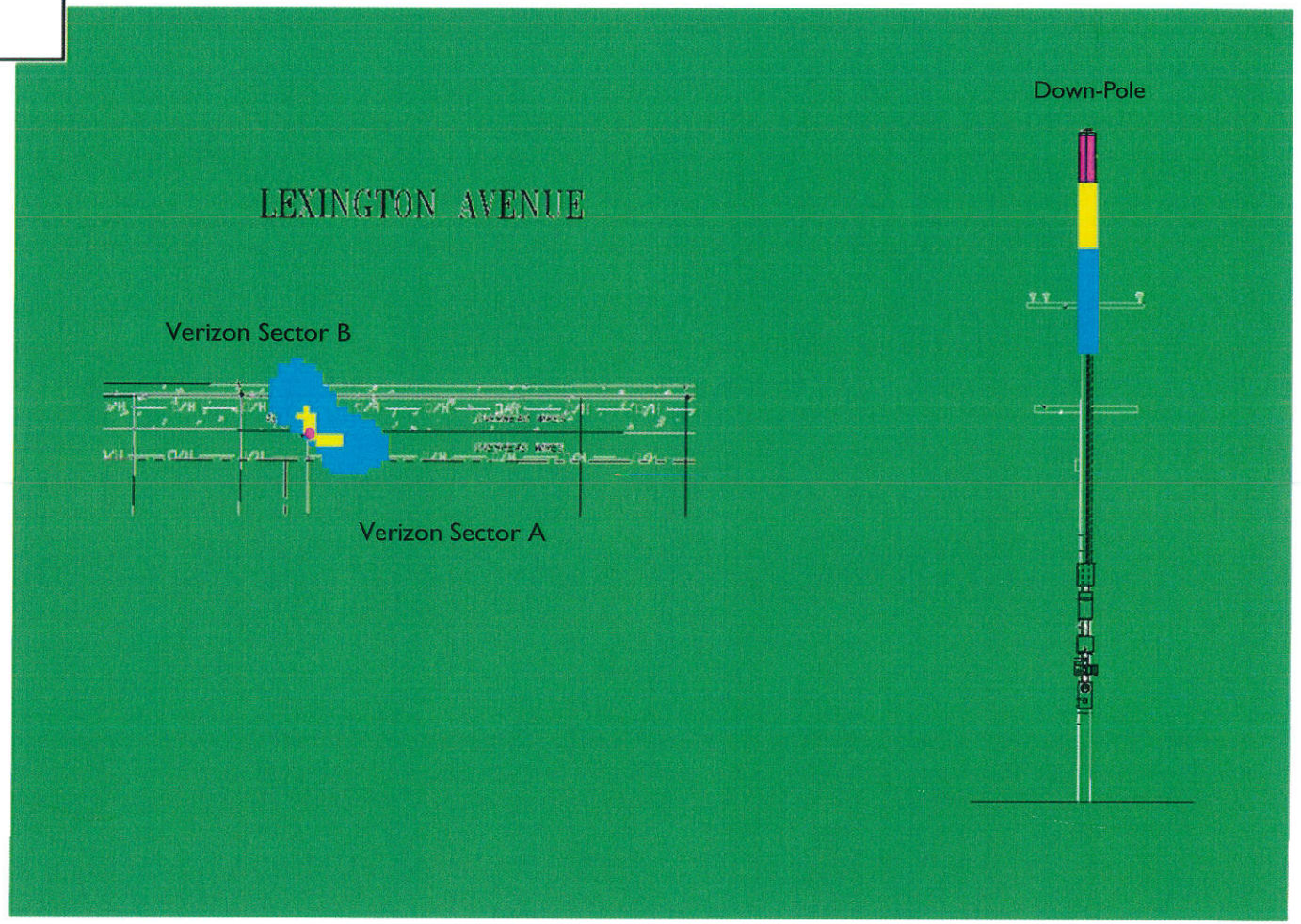


Appendix B

Radio Frequency Electromagnetic Energy

Safety / Signage Plans

% FCC Public Exposure Limit
Exposure Level ≥ 5,000
500 < Exposure Level ≤ 5,000
100 < Exposure Level ≤ 500
Exposure Level ≤ 100



10' 0 10' 20' 40'

Verizon Antennas

Other Carrier Antennas

Roofview: Composite Exposure Levels

Facility Operator: Verizon Wireless

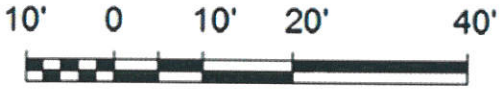
Site Name: SF HIGHLANDS BAYWOOD PARK 003

Verizon Site Number: 438407

Report Date: 02-04-18

EBI Consulting
environmental | engineering | due diligence

% FCC Public Exposure Limit	
	Exposure Level > 5
	Exposure Level ≤ 5

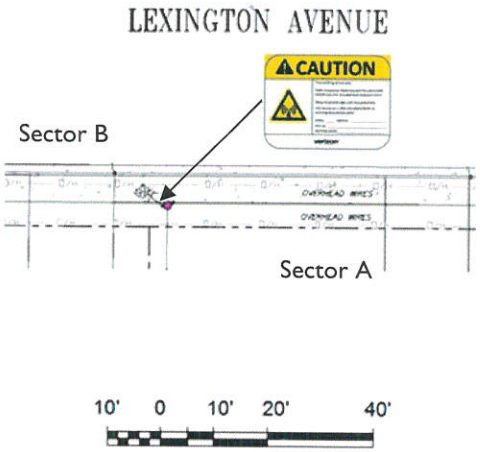


Verizon Antennas

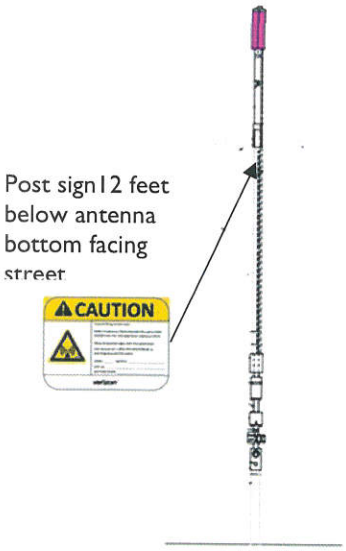
Rooftop: Verizon Exposure Levels
Facility Operator: Verizon Wireless
Site Name: SF HIGHLANDS BAYWOOD PARK 003
Verizon Site Number: 438407
Report Date: 02-04-18

EBI Consulting
environmental | engineering | due diligence

Verizon Signage Plan



Elevations View



Verizon Antennas

Sign Image	Description	Posting Instructions	Required Signage
	**Yellow Caution Sign** Used to alert individuals that they are entering an area where the power density emitted from transmitting antennas may exceed the FCC's maximum permissible exposure limit for the general public and the occupational exposure limit.	Securely post in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.	Post sign 12 feet below antenna bottom facing street

Appendix C

Roofview® Export File

StartMapDefinition

Roof Max Y	Roof Max X	Map Max Y	Map Max X	Y Offset	X Offset	Number of envelope	
120	120	140	140	20	20	1	$AE$81:$E`$AE$81:$ET$200

StartSettingsData

Standard	Method	Uptime	Scale Facto	Low Thr	Low Color	Mid Thr	Mid Color	Hi Thr	Hi Color	Over Color	Ap Ht Mult	Ap Ht Method
4	2	1	1	100	1	500	4	5000	2	3	1.5	1

StartAntennaData It is advisable to provide an ID (ant 1) for all antennas

ID	Name	(MHz) Freq	Trans Power	Trans Count	Coax Len	Coax Type	Other Loss	Input Power	Calc Power	Mfg	Model	(ft) X	(ft) Y	(ft) Z	Type	(ft) Aper	dBd Gain	BWdth Pt Dir	Uptime Profile	ON flag
VZW A1	LTE	700	60	1	0	0	1			Amphenol	CUUT070X	30	30	46.71		4	6.95	70;100		ON
VZW A1	LTE	2100	60	1	0	0	1			Amphenol	CUUT070X	30	30	46.71		4	9.85	70;100		ON
VZW A1	LTE	700	60	1	0	0	1			Amphenol	CUUT070X	30	30	46.71		4	6.95	70;340		ON
VZW A1	LTE	2100	60	1	0	0	1			Amphenol	CUUT070X	30	30	46.71		4	9.85	70;340		ON

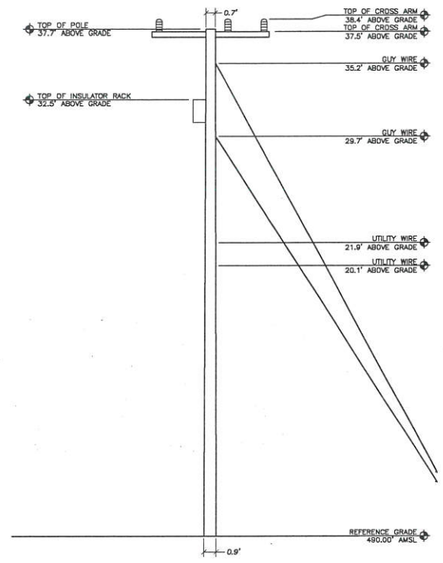
StartSymbolData

Sym	Map Marke	Roof X	Roof Y	Map Label	Description (notes for this table only)
Sym		5	35	AC Unit	Sample symbols
Sym		14	5	Roof Access	
Sym		45	5	AC Unit	
Sym		45	20	Ladder	

County of San Mateo - Planning and Building Department

ATTACHMENT D-1

2 SITE PLAN
SCALE: 1"=5'



3 UTILITY POLE ELEVATION
SCALE: 1"=5'

BOUNDARY AND TITLE INFORMATION

THIS MAP IS A GRAPHIC DEPICTION OF DATA COMPILED FROM MAPS AND VARIOUS OTHER INFORMATION. IT IS NOT A BOUNDARY SURVEY. THIS MAP IS A TOPOGRAPHIC MAP SHOWING PROPERTY LINES PLOTTED FROM SAID RECORD DATA AND BEST FIT ONTO EXISTING IMPROVEMENTS. THE LIMITS OF TOPOGRAPHIC DATA AND/OR IMPROVEMENTS GATHERED AND DEPICTED ARE LIMITED TO THE CONTRACTUAL SCOPE FOR THIS PROJECT. NO MONUMENTS WERE SET OR WILL BE SET. NO TITLE RESEARCH WAS PERFORMED BY OMNI DESIGN GROUP INC. PROPERTY LINE LOCATION COULD POSSIBLY SHIFT FROM LOCATIONS SHOWN HEREON SHOULD A BOUNDARY SURVEY BE PERFORMED. LOCATIONS OF EXISTING FEATURES RELATIVE TO PROPERTY LINES THEREFORE ARE APPROXIMATE

BASIS OF BEARINGS

THE BEARINGS ARE BASED UPON CALIFORNIA COORDINATE SYSTEM, ZONE 3, NAD 83

BENCHMARK:

TRIMBLE R8 GPS SYSTEM WAS USED TO OBSERVE ONSITE CONTROL. DATA PROCESSED THROUGH NATIONAL GEODETIC SURVEY'S ONLINE POSITIONING USER SERVICE TO OBTAIN STATE PLANE COORDINATES AND LATITUDE AND LONGITUDE (NAD 83) ALONG WITH ELEVATIONS (NAVD 88).

NOTES:

1. DATE OF SURVEY: 06/08/17
2. NO UNDERGROUND UTILITIES WERE LOCATED.

LEGEND

EP	=	EDGE OF PAVEMENT
FL	=	FLOWLINE
FS	=	FINISHED SURFACE
GD	=	GROUND ELEVATION
TC	=	TOP OF CURB
AGL	=	ABOVE GRADE LEVEL
AMSL	=	ABOVE MEAN SEA LEVEL

1 BOUNDARY & LEGAL DESCRIPTIONS
SCALE: NONE

verizon
2785 MITCHELL DR.
WALNUT CREEK, CA 94598

PROJECT INFORMATION:

SF HIGHLANDS BAYWOOD PARK 005
VERIZON SITE #438409

1175 PARROTT DR
SAN MATEO, CA

CURRENT ISSUE DATE:

07/10/17

ISSUED FOR:

100% SURVEY

REV.:	DATE:	DESCRIPTION:	BY:

COORDINATING ARCHITECT:

omni design group
Architecture
Civil Engineering
Surveying
Telecommunications
711 Tank Farm Road, Suite 100
San Luis Obispo, California 93401
Phone: (805) 544-9700
www.omnidesigngroup.com
email: omni@odgslo.com

SEAL:

PROFESSIONAL LAND SURVEYOR
DAVID A. MARCHELL
EXP. 12-31-18
NO. PLS8375
STATE OF CALIFORNIA

CONSULTANT:

Modus, Inc.
240 Stockton Street, 3rd Floor
San Francisco, CA 94108

DRAWN BY:	CHK.:	APV.:
AK/DKN	DM	DM

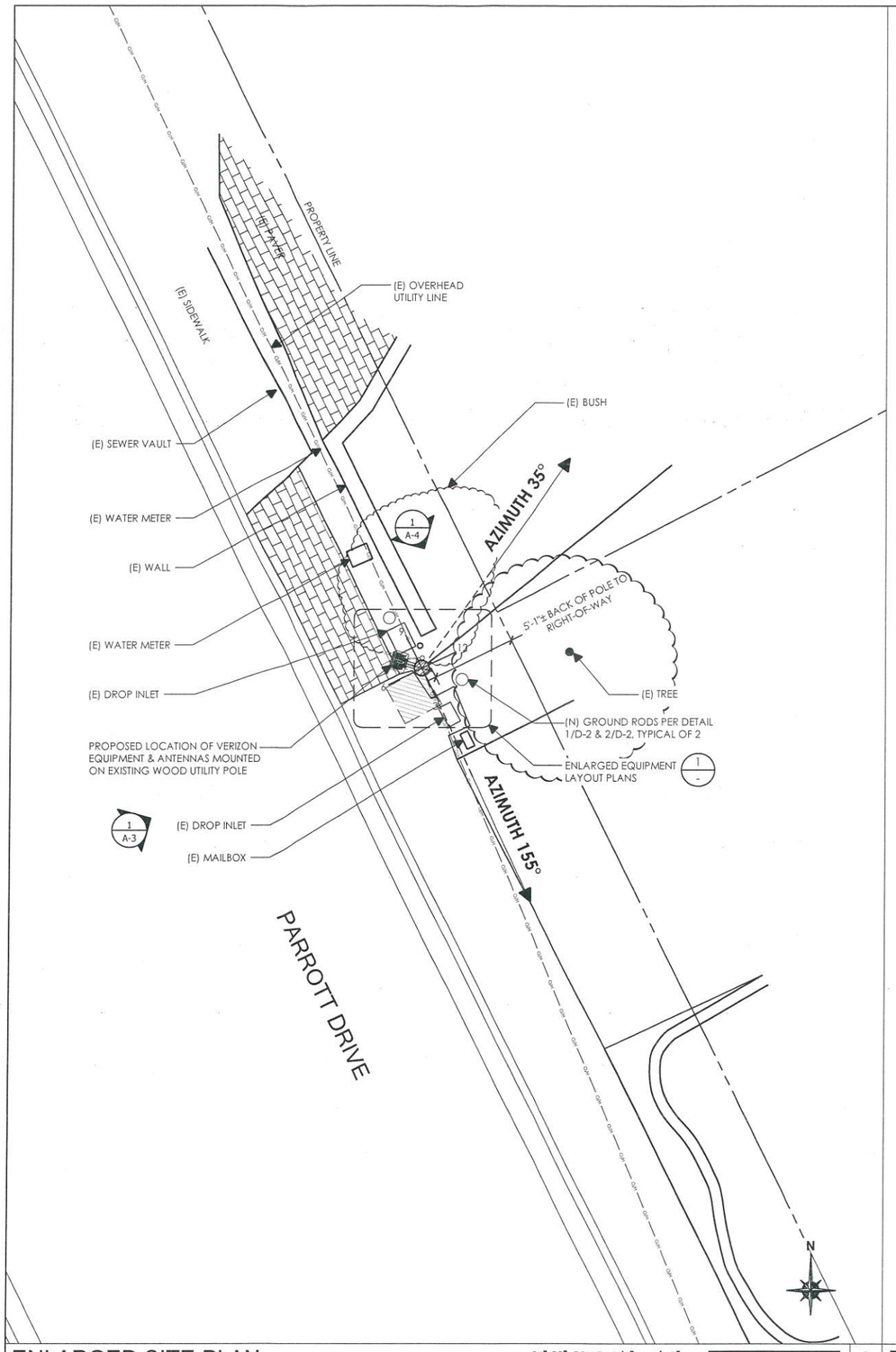
SHEET TITLE:

SITE PLAN

SHEET NUMBER: C-1

REVISION:

1180-16



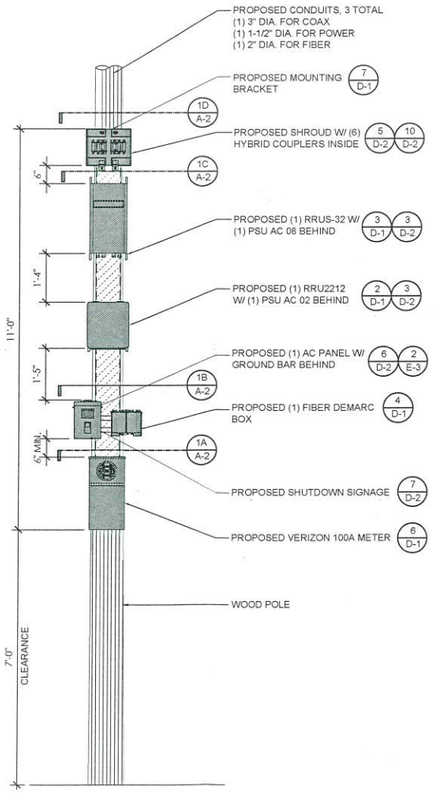
ENLARGED SITE PLAN

24"x36" SCALE: 1/4" = 1'-0"
11"x17" SCALE: 1/8" = 1'-0"
4' 3' 2' 1' 0" 4'

3

NOTES:

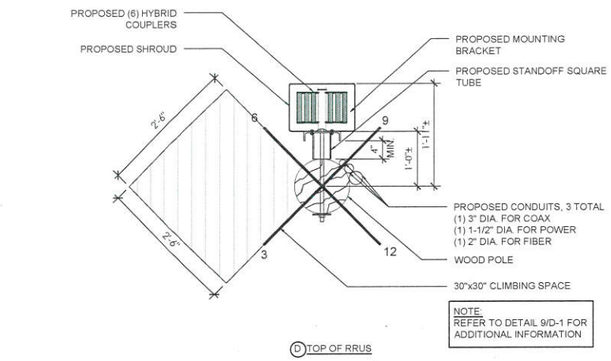
1. ALL EQUIPMENT SHALL BE PLACED (VERTICALLY) AS CLOSE AS ALLOWED BY POLE OWNER, WHILE MAINTAINING MINIMUM CLEARANCE REQUIREMENTS.
2. MAINTAIN 4" MIN. OFFSET BETWEEN THE MOUNTING BRACKET FLANGE AND THE POLE
3. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT, AND OTHER EQUIPMENT WILL BE PAINTED TO MATCH POLE COLOR (NON-GLOSSY SABLE BY SHERWIN WILLIAMS, OR EQUIVALENT)
4. SWEEP CONDUIT RUNS AROUND (E) CROSS ARMS WHERE THEY OCCUR, SEE DETAIL 12/D-1
5. CABLING TO BE INSTALLED IN A TIGHT NEAT MANNER WITHOUT EXCESS CABLE LOOPS

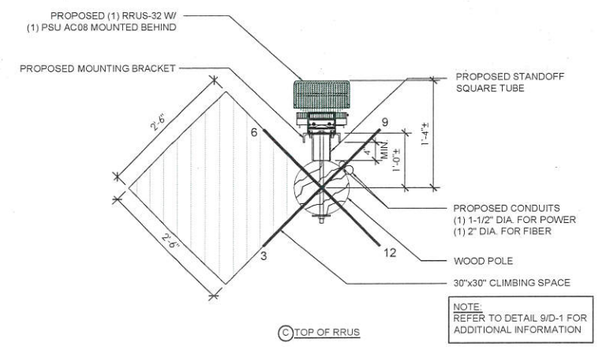


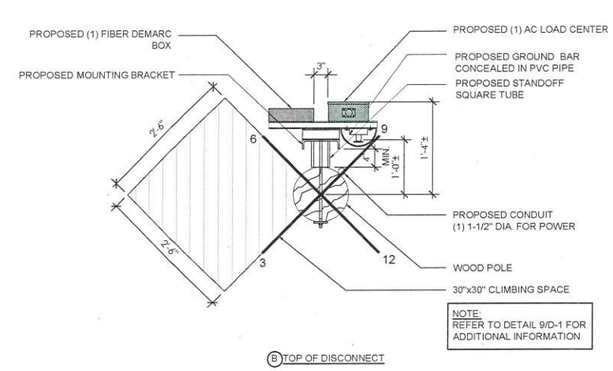
PROPOSED ELEVATION

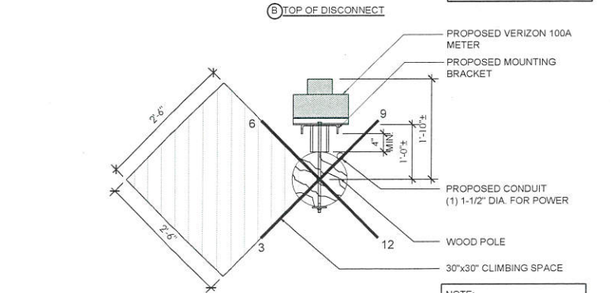
24"x36" SCALE: NTS
11"x17" SCALE: NTS

2









(P) EQUIPMENT PLANS

24"x36" SCALE: 3/4" = 1'-0"
11"x17" SCALE: 3/8" = 1'-0"
1' 6" 0" 1'

1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

MODUS
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108

COMMSENSE
2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/05/17	90% CD
1	10/25/17	95% CD
2	12/20/17	100% CD
3	02/28/18	100% CD REV

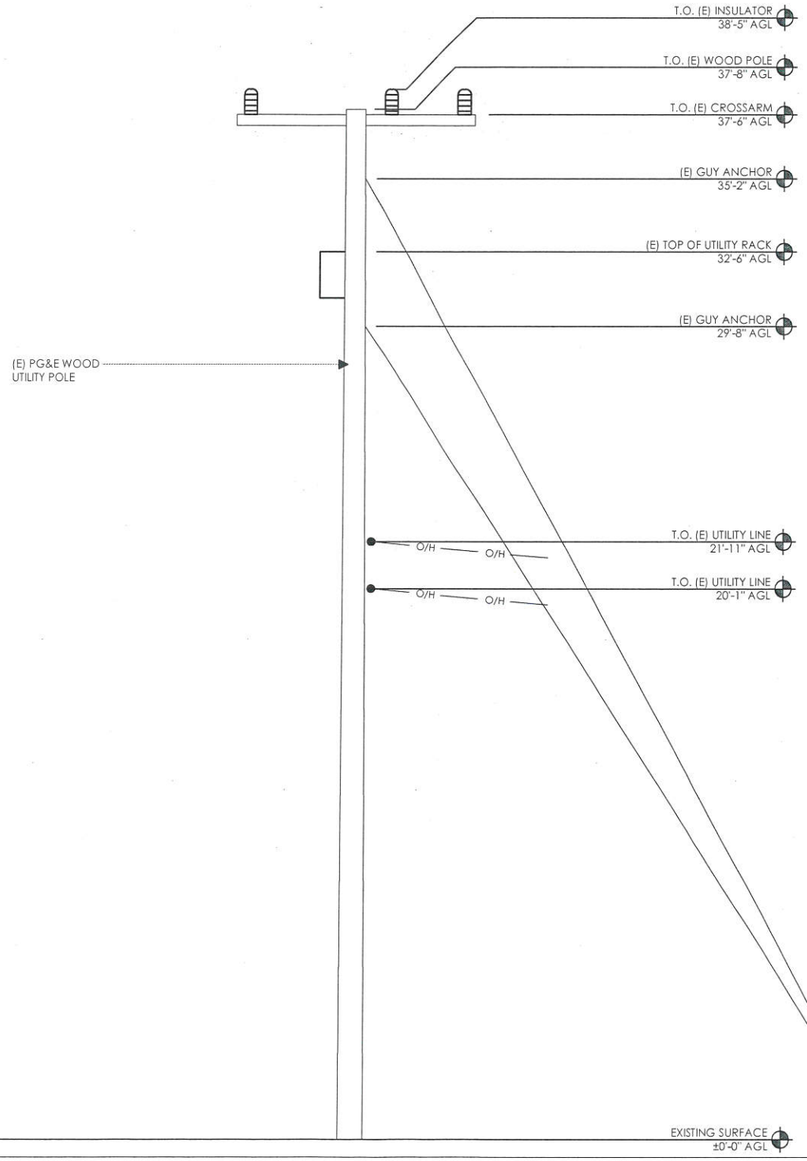
REGISTERED DRIVE SURVEY MANAGER
KEVIN JAMES BROWN
NO. 26855
EXP. 6/30/19
CIVIL
STATE OF CALIFORNIA

SF HIGHLANDS
BAYWOOD PARK 005

(NEAR) 1175 PARROTT DRIVE
SAN MATEO, CA 94402

ENLARGED SITE PLAN & PROPOSED ELEVATION / EQUIPMENT PLANS

A-2



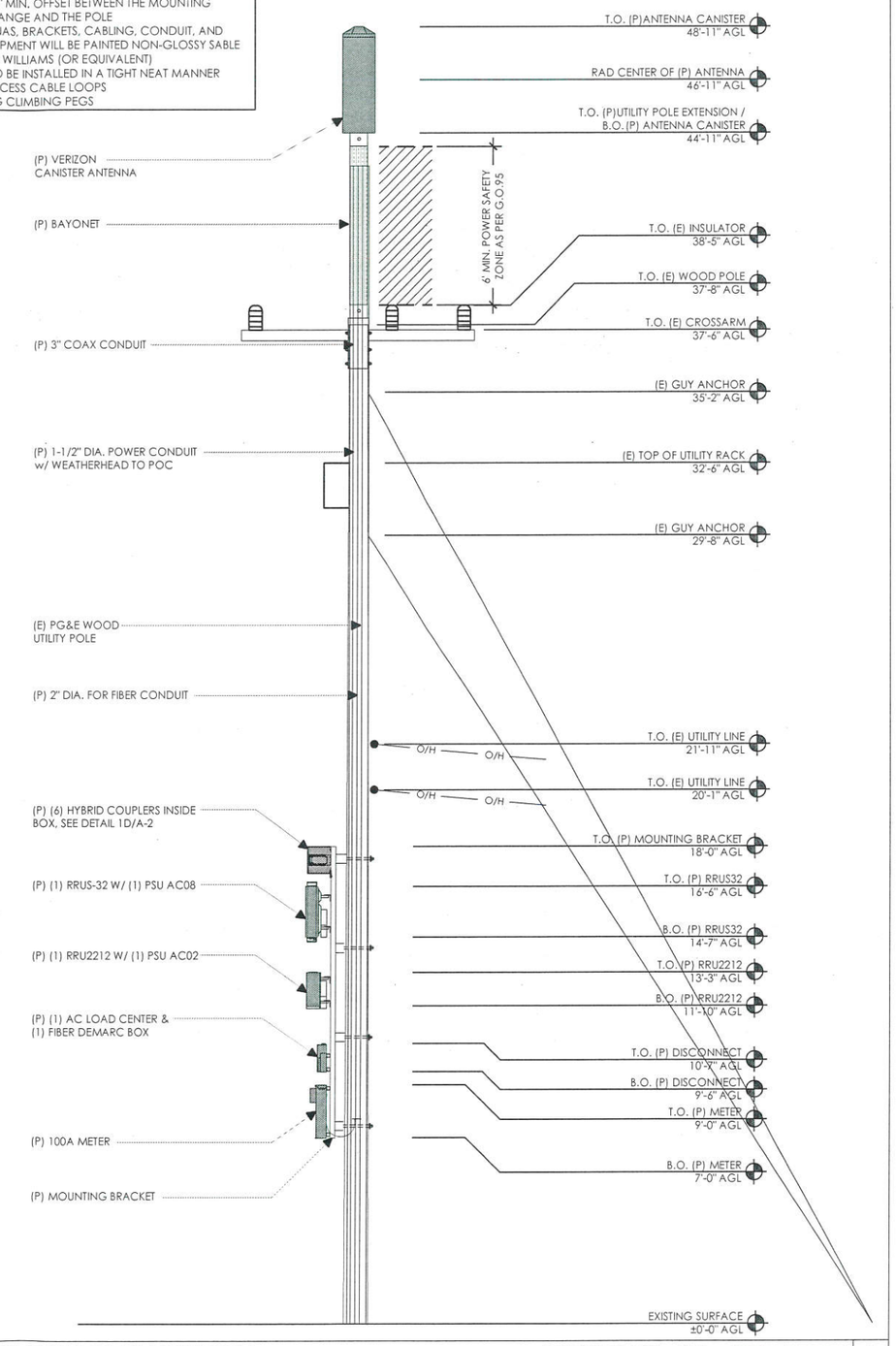
EXISTING FRONT ELEVATION

24"x36" SCALE: 3/8" = 1'-0"
11"x17" SCALE: 3/16" = 1'-0"
2' 1' 0" 2'

2

NOTES:

1. ALL EQUIPMENT SHALL BE PLACED (VERTICALLY) AS CLOSE AS ALLOWED BY POLE OWNER, WHILE MAINTAINING MINIMUM CLEARANCE REQUIREMENTS.
2. MAINTAIN 6" MIN. CLEARANCE TO GUY WIRE FROM PROPOSED EQUIPMENT.
3. MAINTAIN 4" MIN. OFFSET BETWEEN THE MOUNTING BRACKET FLANGE AND THE POLE
4. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT, AND OTHER EQUIPMENT WILL BE PAINTED NON-GLOSSY SABLE BY SHERWIN WILLIAMS (OR EQUIVALENT)
5. CABLING TO BE INSTALLED IN A TIGHT NEAT MANNER WITHOUT EXCESS CABLE LOOPS
6. NO EXISTING CLIMBING PEGS



PROPOSED FRONT ELEVATION

24"x36" SCALE: 3/8" = 1'-0"
11"x17" SCALE: 3/16" = 1'-0"
2' 1' 0" 2'

1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

MODUS

240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108

COMMSENSE

2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/05/17	90% CD
1	10/25/17	95% CD
2	12/20/17	100% CD
3	02/28/18	100% CD REV

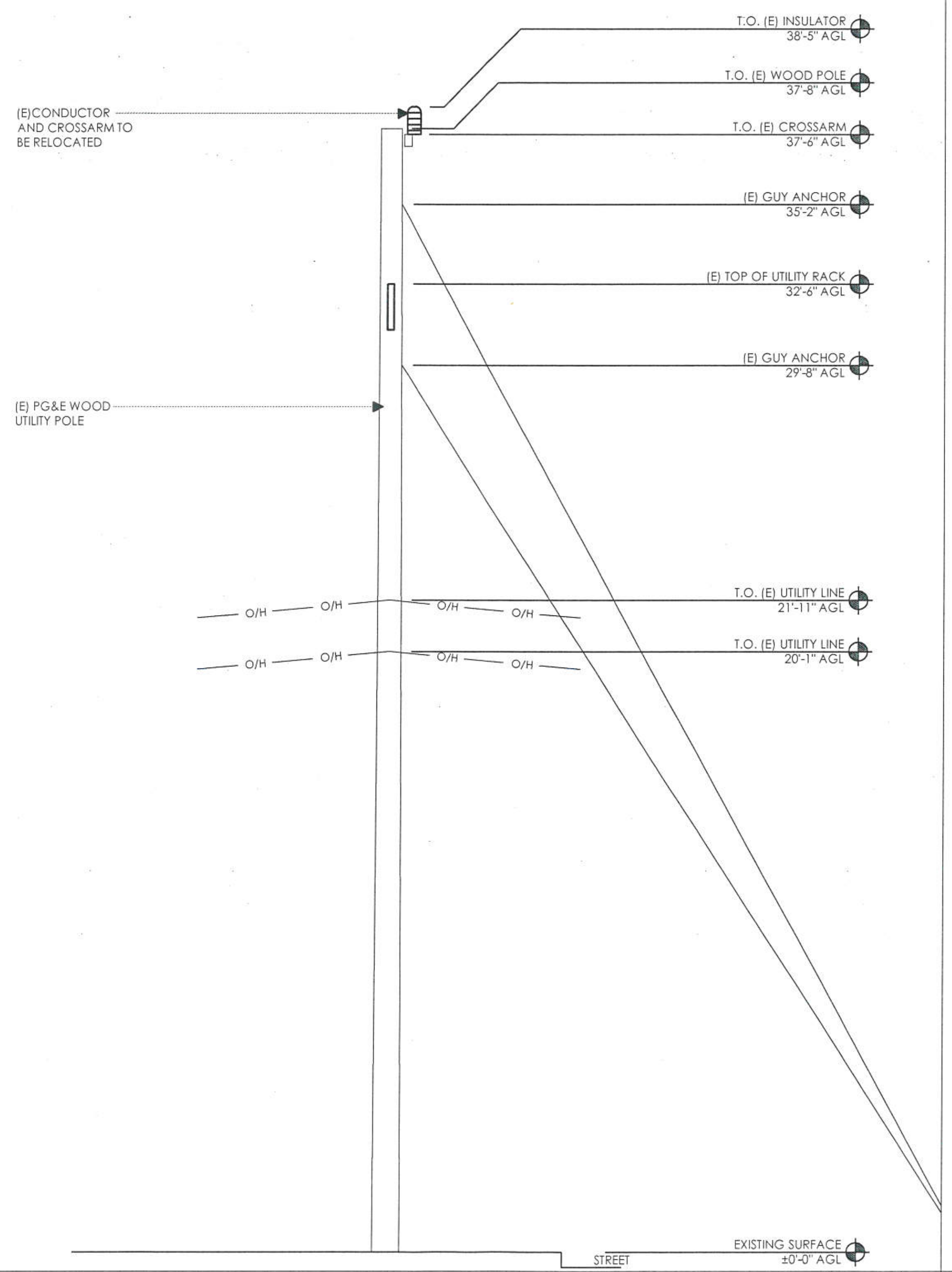
REGISTERED PROFESSIONAL ENGINEER
JAMES RUSSOMANNO
NO. 024853
REN. 8/31/19
CIVIL
STATE OF CALIFORNIA

SF HIGHLANDS
BAYWOOD PARK 005

(NEAR) 1175 PARROTT DRIVE
SAN MATEO, CA 94402

ELEVATIONS

A-3



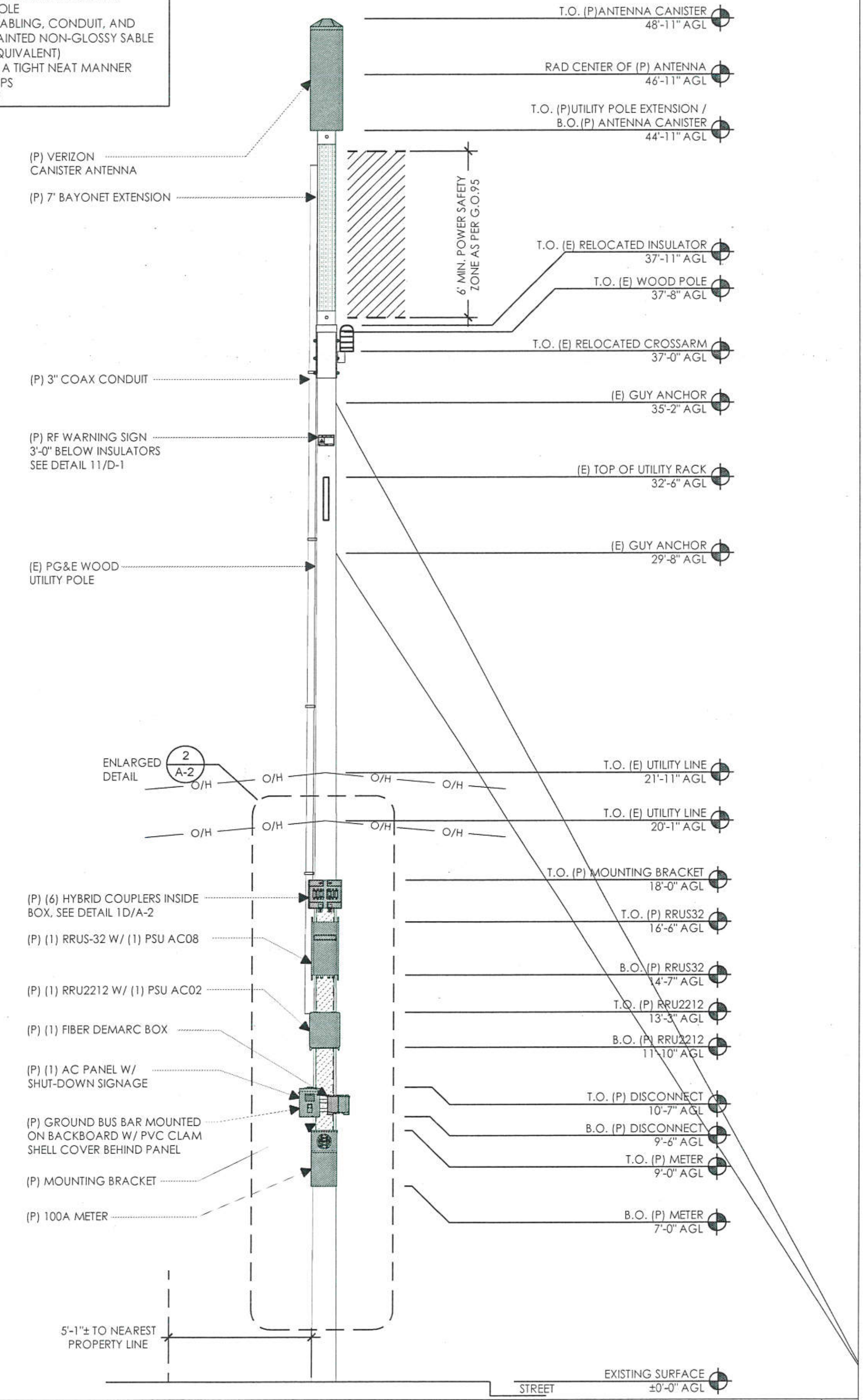
EXISTING SIDE ELEVATION

24"x36" SCALE: 3/8" = 1'-0"
11"x17" SCALE: 3/16" = 1'-0"
2' 1' 0" 2'

2

NOTES:

1. ALL EQUIPMENT SHALL BE PLACED (VERTICALLY) AS CLOSE AS ALLOWED BY POLE OWNER, WHILE MAINTAINING MINIMUM CLEARANCE REQUIREMENTS.
2. MAINTAIN 6" MIN. CLEARANCE TO GUY WIRE FROM PROPOSED EQUIPMENT.
3. MAINTAIN 4" MIN. OFFSET BETWEEN THE MOUNTING BRACKET FLANGE AND THE POLE
4. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT, AND OTHER EQUIPMENT WILL BE PAINTED NON-GLOSSY SABLE BY SHERWIN WILLIAMS (OR EQUIVALENT)
5. CABLING TO BE INSTALLED IN A TIGHT NEAT MANNER WITHOUT EXCESS CABLE LOOPS
6. NO EXISTING CLIMBING PEGS



PROPOSED SIDE ELEVATION

24"x36" SCALE: 3/8" = 1'-0"
11"x17" SCALE: 3/16" = 1'-0"
2' 1' 0" 2'

1

verizon✓

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

modus

240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108

COMMSENSE

2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/05/17	90% CD
1	10/25/17	95% CD
2	12/20/17	100% CD
3	02/28/18	100% CD REV

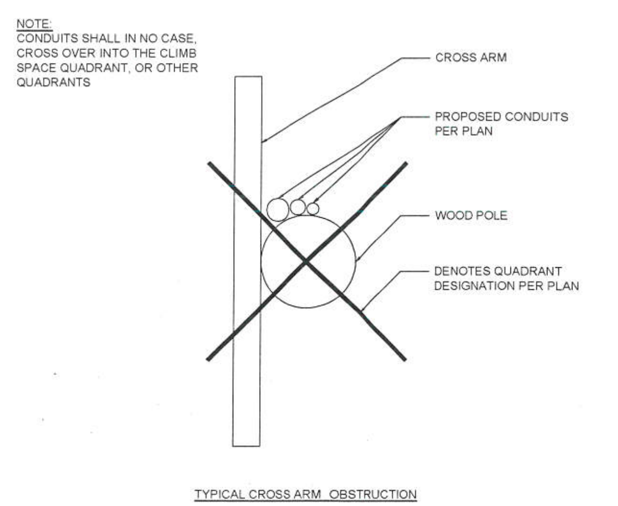
IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT

SF HIGHLANDS
BAYWOOD PARK 005

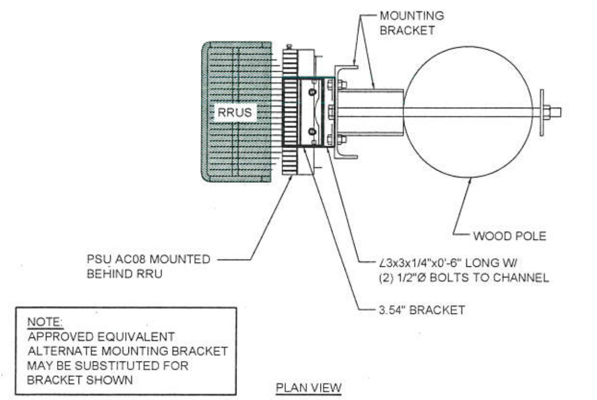
(NEAR) 1175 PARROTT DRIVE
SAN MATEO, CA 94402

ELEVATIONS

A-4



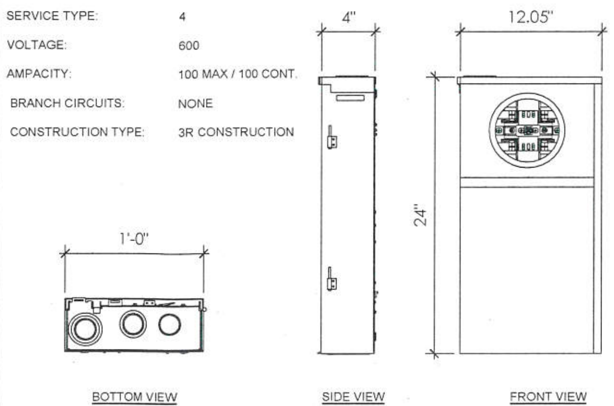
TYP CROSS ARM OBSTRUCTION		12



RRUS MOUNTING	SCALE NTS	9

U21MTBL METER MAIN

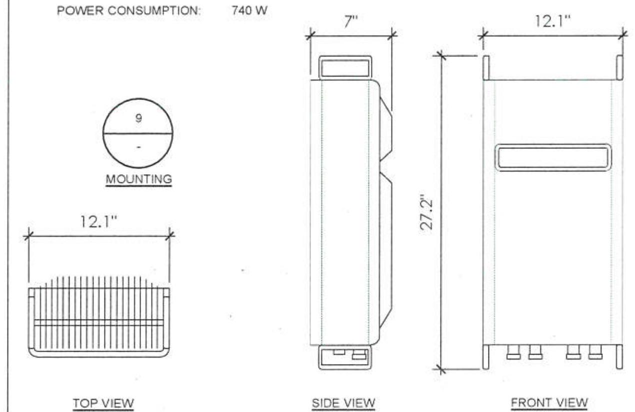
COLOR:	GRAY
DIMENSIONS:	24" TALL x 12.05" WIDE x 4"DEEP
NEUTRAL CONDUCTOR:	14 AWG-2/0 AWG
HUB PROV.:	AW
SERVICE TYPE:	4
VOLTAGE:	600
AMPACITY:	100 MAX / 100 CONT.
BRANCH CIRCUITS:	NONE
CONSTRUCTION TYPE:	3R CONSTRUCTION



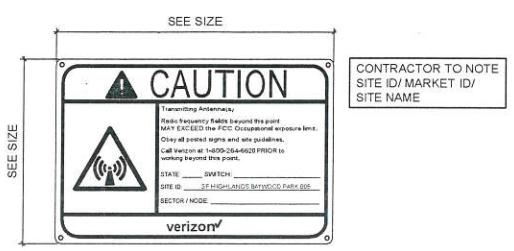
ELECTRIC METER	SCALE NTS	6

ERICSSION RRUS-32 REMOTE RADIO UNIT (OR APPROVED EQUIVALENT)

COLOR:	GRAY
DIMENSIONS:	27.2" TALL X 12.1" WIDE X 7.0"
TOTAL WEIGHT:	60 LBS.
POWER CONSUMPTION:	740 W



ERICSSON RRUS-32	SCALE NTS	3

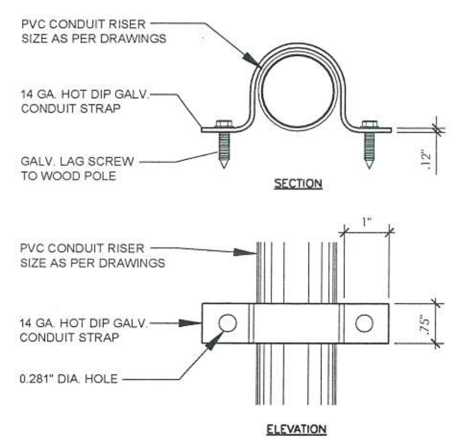


NOTE:

ALUMINUM SUBSTRATE SIGNS PRINTED WITH UV RESISTANT ECO-SOLVENT INK, REINFORCED WITH UV, CHEMICAL, ABRASION, AND MOISTURE RESISTANT LAMINATE LAYER.

SUBSTRATE:	0.040" ALUMINUM, WHITE ENAMEL COATED BOTH SIDES
PRINTING LAYER:	4.0 MIL VINYL WITH PERMANENT ACRYLIC ADHESIVE UV STABLE ECO-SOLVENT INK
LAMINATE:	2.5 MIL, PVC FILM (OPTICALLY CLEAR) SCRATCH RESISTANT CHEMICAL RESISTANT UV RESISTANT
MOUNTING:	0.20" DIAMETER HOLES IN EACH OF 4 CORNER; OFFSET 025" FROM ADJACENT EDGE.
SIZE:	12X8, 7X5, 6X3

G.O. 95 RF SIGNAGE	SCALE NTS	11

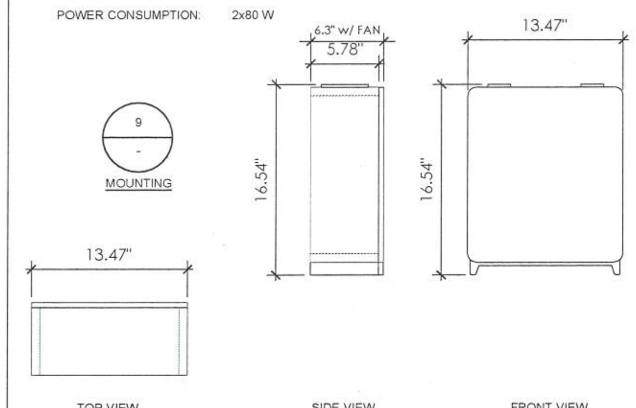


CONDUIT BRACKET	SCALE NTS	8

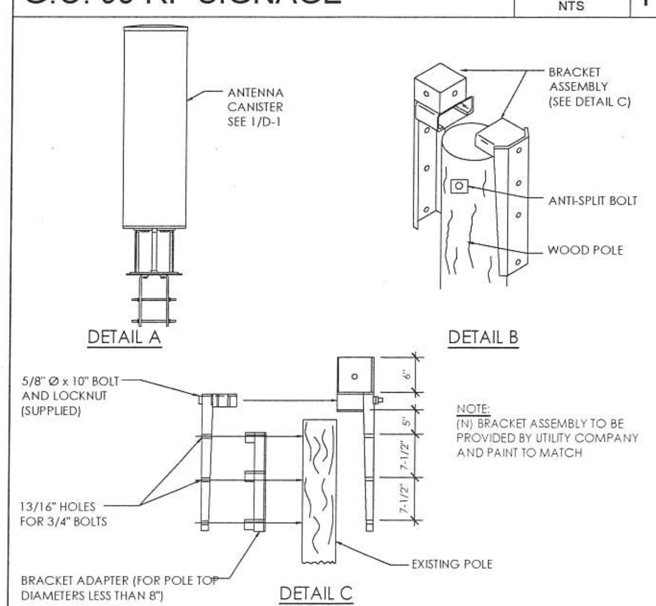
NOT USED	SCALE NTS	5

ERICSSION RRU2212 REMOTE RADIO UNIT (OR APPROVED EQUIVALENT)

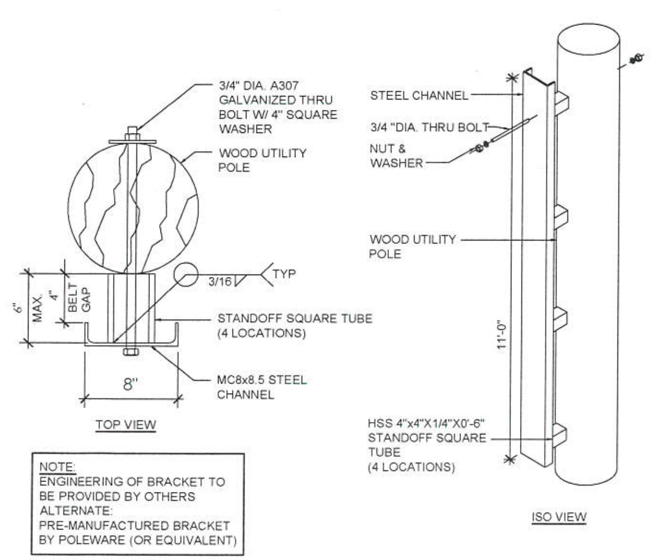
COLOR:	GRAY
DIMENSIONS:	16.54" TALL X 13.47" WIDE X 6.3"
TOTAL WEIGHT:	43 LBS.
POWER CONSUMPTION:	2x80 W



ERICSSON RRU2212	SCALE NTS	2



UTILITY POLE TOP EXTENSION	SCALE NTS	10

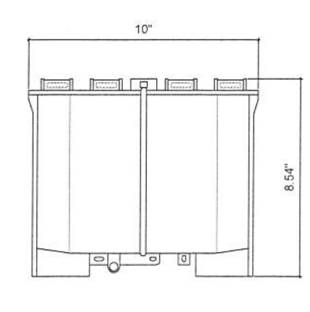


NOTE:
ENGINEERING OF BRACKET TO BE PROVIDED BY OTHERS
ALTERNATE:
PRE-MANUFACTURED BRACKET BY POLEWARE (OR EQUIVALENT)

MOUNTING BRACKET	SCALE NTS	7

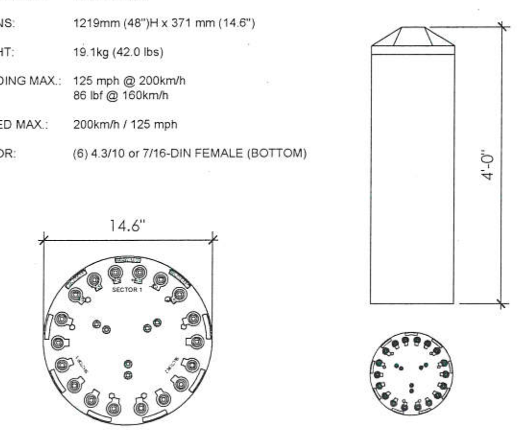
NETWORK INTERFACE DEVICE (NID) NID-12 (OR APPROVED EQUIVALENT)

COLOR:	GRAY
DIMENSIONS:	8.54" TALL x 10" WIDE x 2.88"DEEP
CAPACITY:	6-PACK DUPLEX SC OR LC: 12 FIBERS



FIBER BOX	SCALE NTS	4

ANTENNA COLOR:	LIGHT GRAY
DIMENSIONS:	1219mm (48")H x 371 mm (14.6")
NET WEIGHT:	19.1kg (42.0 lbs)
WIND LOADING MAX.:	125 mph @ 200km/h 86 lbf @ 160km/h
WIND SPEED MAX.:	200km/h / 125 mph
CONNECTOR:	(6) 4.3/10 or 7/16-DIN FEMALE (BOTTOM)



ANTENNA	SCALE NTS	1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

modus

240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108

COMMSENSE

2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/05/17	90% CD
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REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — CIVIL

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SF HIGHLANDS
BAYWOOD PARK 005

(NEAR) 1175 PARROTT DRIVE
SAN MATEO, CA 94402

DETAILS

D-1

County of San Mateo - Planning and Building Department

ATTACHMENT D-2

verizon

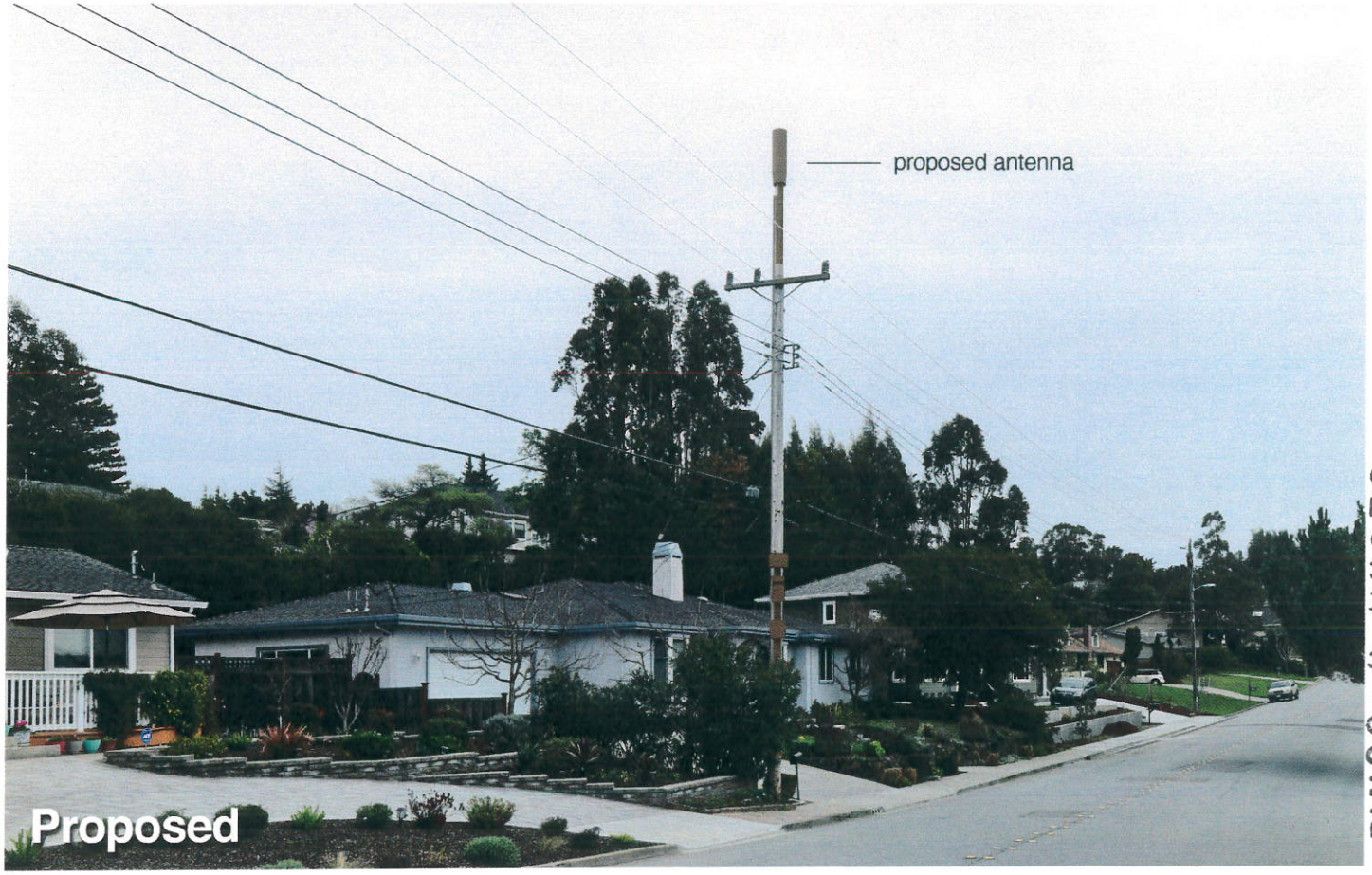
SF Highlands 005 Site # 483409

(Near) 1175 Parrott Dr.
San Mateo, CA

Aerial Map

2/16/18

Applied Imagination 510 914-0500



PLN2018-00079

verizon

SF Highlands 005 Site # 483409

(Near) 1175 Parrott Dr.
San Mateo, CA

2/16/18

Looking Southeast from Parrott Dr.

View #1

Applied Imagination 510 914-0500

verizon

SF Highlands 005 Site # 483409

(Near) 1175 Parrott Dr.
San Mateo, CA

2/16/18

Looking Northwest from Parrott Dr.

View #2

Applied Imagination 510 914-0500

County of San Mateo - Planning and Building Department

ATTACHMENT D-3

PLN2018-00079

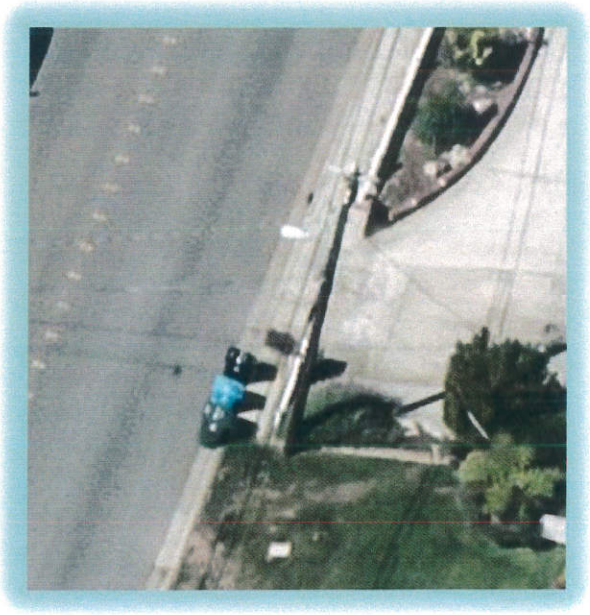
County of San Mateo - Planning and Building Department

ATTACHMENT D-4

Radio Frequency - Electromagnetic Energy (RF-EME) Jurisdictional Report

Site No. 483409
SF Highlands Baywood Park 005
1175 Parrott Drive
San Mateo, California 94402
San Mateo County
37° 32' 17.42" N, -122° 20' 44.37" W NAD83

EBI Project No. 6218000845
February 15, 2018



Prepared for:

Verizon Wireless
c/o Modus, Inc.
115 Sansome Street, 14th Floor
San Francisco, CA 94104

Prepared by:

EBI Consulting
environmental | engineering | due diligence

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by Verizon Wireless to conduct radio frequency electromagnetic (RF-EME) modeling for Verizon Site 483409 located at 1175 Parrott Drive in San Mateo, California to determine RF-EME exposure levels from proposed Verizon wireless communications equipment at this site. As described in greater detail in Section 2.0 of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

Statement of Compliance

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

As presented in the sections below, based on worst-case predictive modeling, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site. Additionally, there are areas where workers who may be elevated above the ground may be exposed to power densities greater than the occupational limits. Therefore, workers should be informed about the presence and locations of antennas and their associated fields.

At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately **10.30** percent of the FCC's general public limit (**2.06** percent of the FCC's occupational limit).

Recommended control measures are outlined in Section 5.0 and within a Site Safety Plan (attached); this plan includes instructions to shut down and lockout/tagout this wireless equipment in accordance with Verizon's standard operating protocol.

1.0 INTRODUCTION

Radio frequency waves are electromagnetic waves from the portion of the electromagnetic spectrum at frequencies lower than visible light and microwaves. The wavelengths of radio waves range from thousands of meters to around 30 centimeters. These wavelengths correspond to frequencies as low as 3 cycles per seconds (or hertz [Hz]) to as high as one gigahertz (one billion cycles per second).

Personal Communication (PCS) facilities used by Verizon in this area operate within a frequency range of 700-2100 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed a distance above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of in areas in the immediate vicinity of the antennas.

MPE limits do not represent levels where a health risk exists, since they are designed to provide a substantial margin of safety. 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.

2.0 SITE DESCRIPTION

This project site includes one (1) wireless telecommunication antenna on a utility pole located at 1175 Parrott Drive in San Mateo, California.

Verizon Antenna Information (proposed Configuration)									
Antenna # and Model	Frequency (MHz)	# of Transmitters	Transmit Power (Watts)	Azimuth	Gain (dBd)	Feet above Ground (CL)	X	Y	Z (feet)
A1 Amphenol CUUT070X12Fxyz0	700 2100	2 2	60 60	35° 155°	10.35 14.05	46.92	30	30	44.92

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general population/uncontrolled exposure limits for members of the general public that may be exposed to antenna fields. While access to this site is considered uncontrolled, the analysis has considered exposures with respect to both controlled and uncontrolled limits as an untrained worker may access adjacent rooftop locations. Additional information regarding controlled/uncontrolled exposure limits is provided in Section 3.0. Appendix B presents a site safety plan that provides a plan view of the utility pole with antenna locations.

3.0 FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

The FCC has established Maximum Permissible Exposure (MPE) limits for human exposure to Radiofrequency Electromagnetic (RF-EME) energy fields, based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc.

(IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general public/uncontrolled exposure limits for members of the general public.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/ controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general public/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

General public/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Table 1 and Figure 1 (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm^2). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm^2) and an uncontrolled MPE of 1 mW/cm2 for equipment operating in the 1900 MHz frequency range. For the Verizon equipment operating at 700 MHz or 850 MHz, the FCC's occupational MPE is 2.83 mW/cm^2 and an uncontrolled MPE of 0.57 mW/cm^2. These limits are considered protective of these populations.

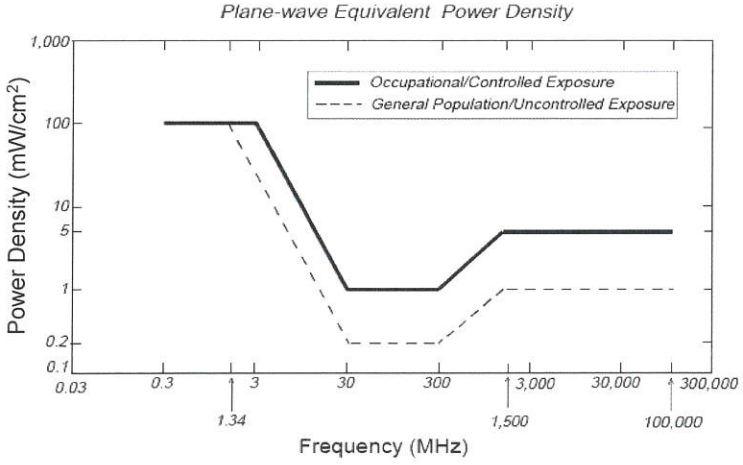
Table 1: Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $[E]^2$, $[H]^2$, or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)
* Plane-wave equivalent power density

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)



Based on the above, the most restrictive thresholds for exposures of unlimited duration to RF energy for several personal wireless services are summarized below:

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Cellular Telephone	870 MHz	2.90 mW/cm^2	0.58 mW/cm^2
Specialized Mobile Radio	855 MHz	2.85 mW/cm^2	0.57 mW/cm^2
Most Restrictive Freq, Range	30-300 MHz	1.00 mW/cm^2	0.20 mW/cm^2

MPE limits are designed to provide a substantial margin of safety. 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.

Personal Communication (PCS) facilities used by Verizon in this area operate within a frequency range of 700-2100 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for

exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of areas directly in front of the antennas.

4.0 WORST-CASE PREDICTIVE MODELING

EBI has performed theoretical modeling using RoofView® software to estimate the worst-case power density at the site ground-level and nearby rooftops resulting from operation of the antennas. RoofView® is a widely-used predictive modeling program that has been developed by Richard Tell Associates to predict both near field and far field RF power density values for roof-top and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

The modeling is based on worst-case assumptions for the number of antennas and transmitter power. The modeling assumes a maximum 4 radio configuration for Sector A with a power level of 48 dbM (60 watts) per transmitter for 700 and 2100 frequencies, in order to provide a worst-case evaluation of predicted MPE levels.The assumptions used in the modeling are based upon information provided by Verizon, and information gathered from other sources. The parameters used for the modeling are summarized in the RoofView® export files presented in Appendix C.

There are no other wireless carriers with equipment installed at this site.

Based on worst-case predictive modeling, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed Verizon antennas that exceed the FCC's occupational or general public exposure limits at this site. At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately 10.30 percent of the FCC's general public limit (2.06 percent of the FCC's occupational limit).

The Site Safety Plan also presents areas where Verizon Wireless antennas contribute greater than 5% of the applicable MPE limit for a site. A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

The inputs used in the modeling are summarized in the RoofView® export file presented in Appendix C. A graphical representation of the RoofView® modeling results is presented in Appendix B. It should be noted that RoofView is not suitable for modeling microwave dish antennas; however, these units are designed for point-to-point operations at the elevations of the installed equipment rather than ground level coverage.

5.0 MITIGATION/SITE CONTROL OPTIONS

EBI's modeling indicates that there are no areas in front of the Verizon antennas that exceed the FCC standards for occupational or general public exposure. All exposures above the FCC's safe limits require that individuals be elevated above the ground. In order to alert people accessing the pole, a Caution sign is recommended for installation approximately 12 feet below the antenna facing the street.

There are no barriers recommended on this site.

These protocols and recommended control measures have been summarized and included with a graphic representation of the antennas and associated signage and control areas in a RF-EME Site Safety Plan, which is included as Appendix B. Individuals and workers accessing the roof should be provided with a copy of the attached Site Safety Plan, made aware of the posted signage, and signify their understanding of the Site Safety Plan.

Implementation of the signage recommended in the Site Safety Plan and in this report will bring this site into compliance with the FCC's rules and regulations.

6.0 SUMMARY AND CONCLUSIONS

EBI has prepared a Radiofrequency – Electromagnetic Energy (RF-EME) Compliance Report for telecommunications equipment installed by Verizon Site Number 483409 located at 1175 Parrott Drive in San Mateo, California to determine worst-case predicted RF-EME exposure levels from wireless communications equipment installed at this site. This report summarizes the results of RF-EME modeling in relation to relevant Federal Communications Commission (FCC) RF-EME compliance standards for limiting human exposure to RF-EME fields.

As presented in the sections above, based on the FCC criteria, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site. Workers should be informed about the presence and locations of antennas and their associated fields. Recommended control measures are outlined in Section 5.0 and within a Site Safety Plan (attached); this plan includes procedures to shut down and lockout/tagout this wireless equipment in accordance with Verizon's standard operating protocol.

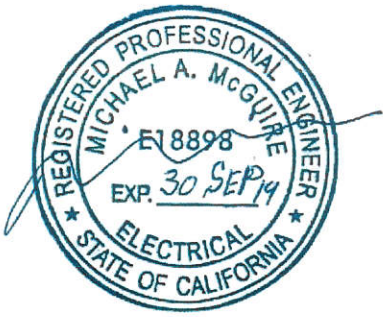
7.0 LIMITATIONS

This report was prepared for the use of Verizon Wireless. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by EBI are based solely on the information provided by the client. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to EBI so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

Appendix A

Certifications

Reviewed and Approved by:



sealed 16feb2018

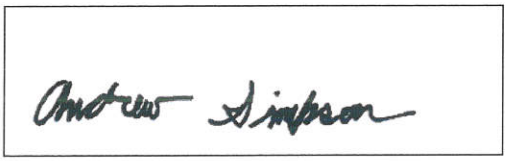
Michael McGuire
Electrical Engineer

Note that EBI's scope of work is limited to an evaluation of the Radio Frequency – Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the structure, as well as the impact of the antennas and broadcast equipment on the structural integrity of the structure, are specifically excluded from EBI's scope of work.

Preparer Certification

I, Andrew Simpson, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.



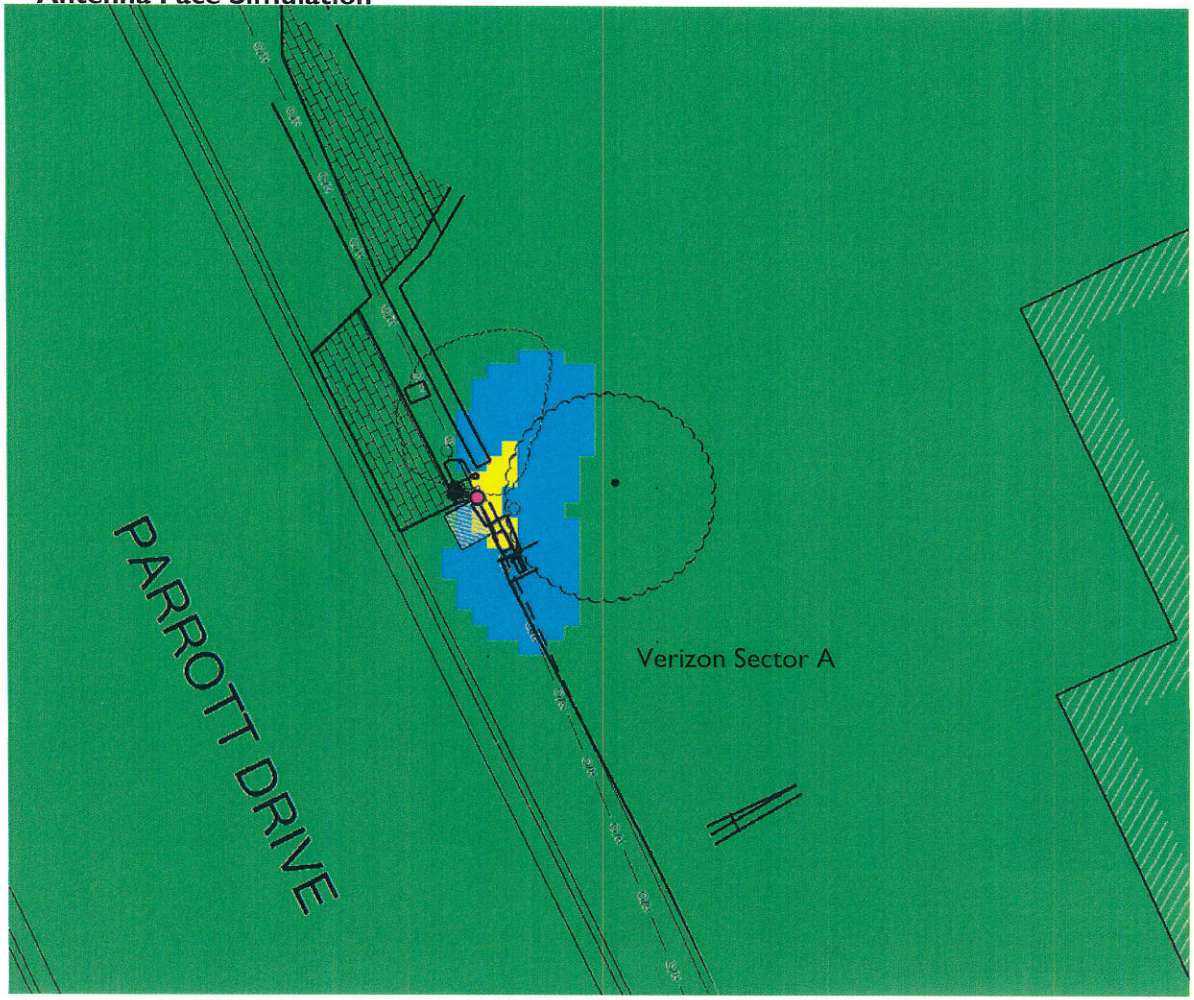
Appendix B

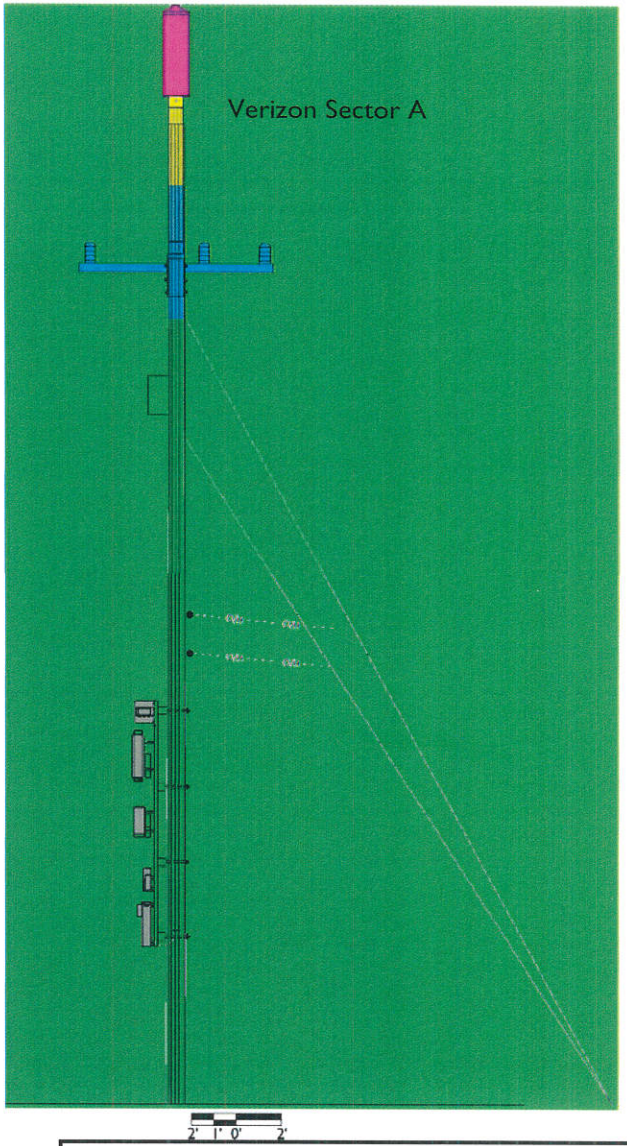
Radio Frequency Electromagnetic Energy

Safety / Signage Plans

% FCC Public Exposure Limit	
	Exposure Level ≥ 5,000
	500 < Exposure Level ≤ 5,000
	100 < Exposure Level ≤ 500
	Exposure Level ≤ 100

*Antenna Face Simulation





Verizon Antennas

Roofview: Composite Exposure Levels

Facility Operator: Verizon Wireless

Site Name: SF Highlands Baywood Park 005

Verizon Site Number: 483409

Report Date: 02-15-18

EBI Consulting
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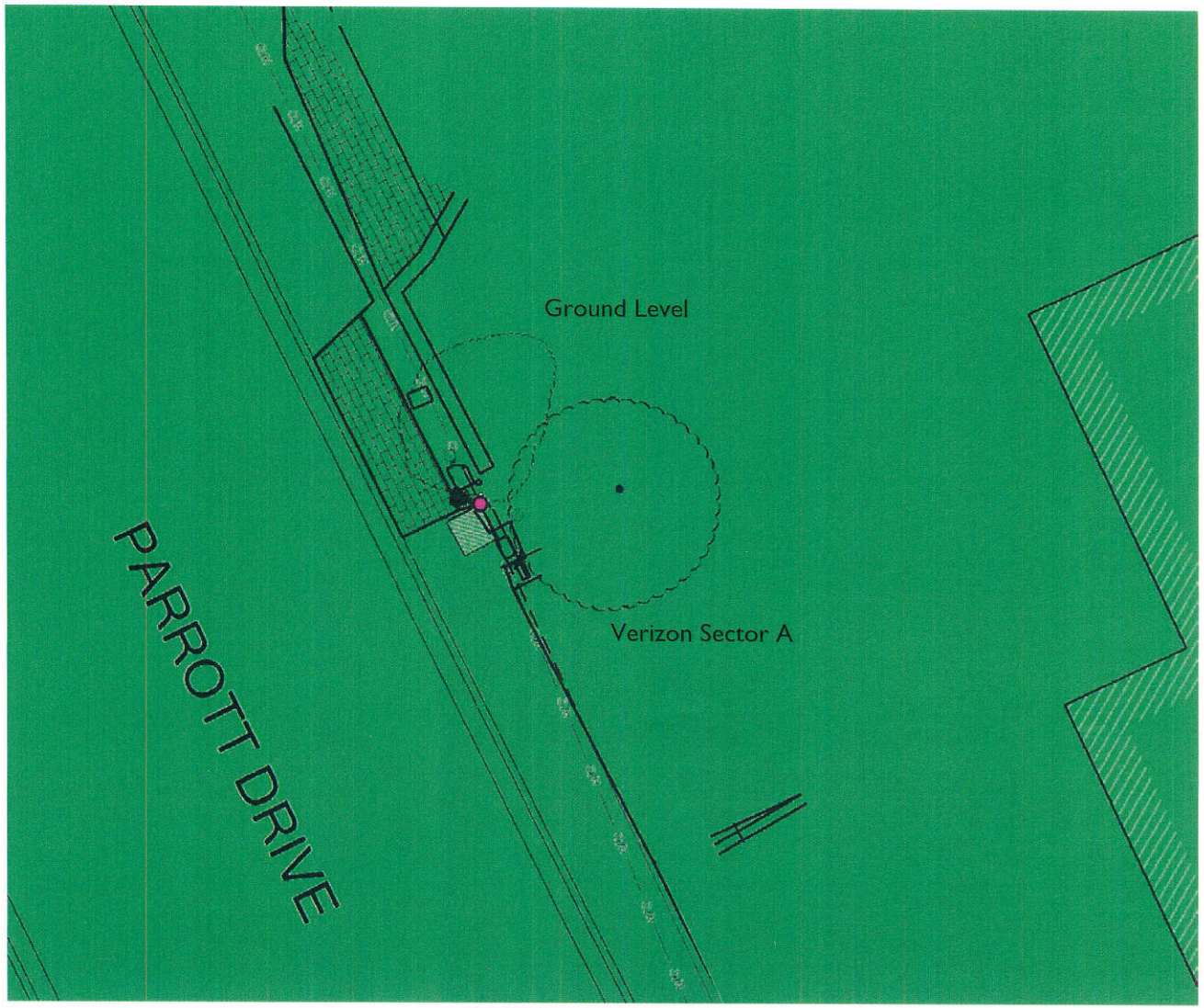
% FCC Public Exposure Limit	
	Exposure Level > 5
	Exposure Level ≤ 5

*Ground Level Simulation



Roofview: Verizon Exposure Levels

Facility Operator: Verizon Wireless

Site Name: SF Highlands Baywood Park 005

Verizon Site Number: 483409

Report Date: 02-15-18

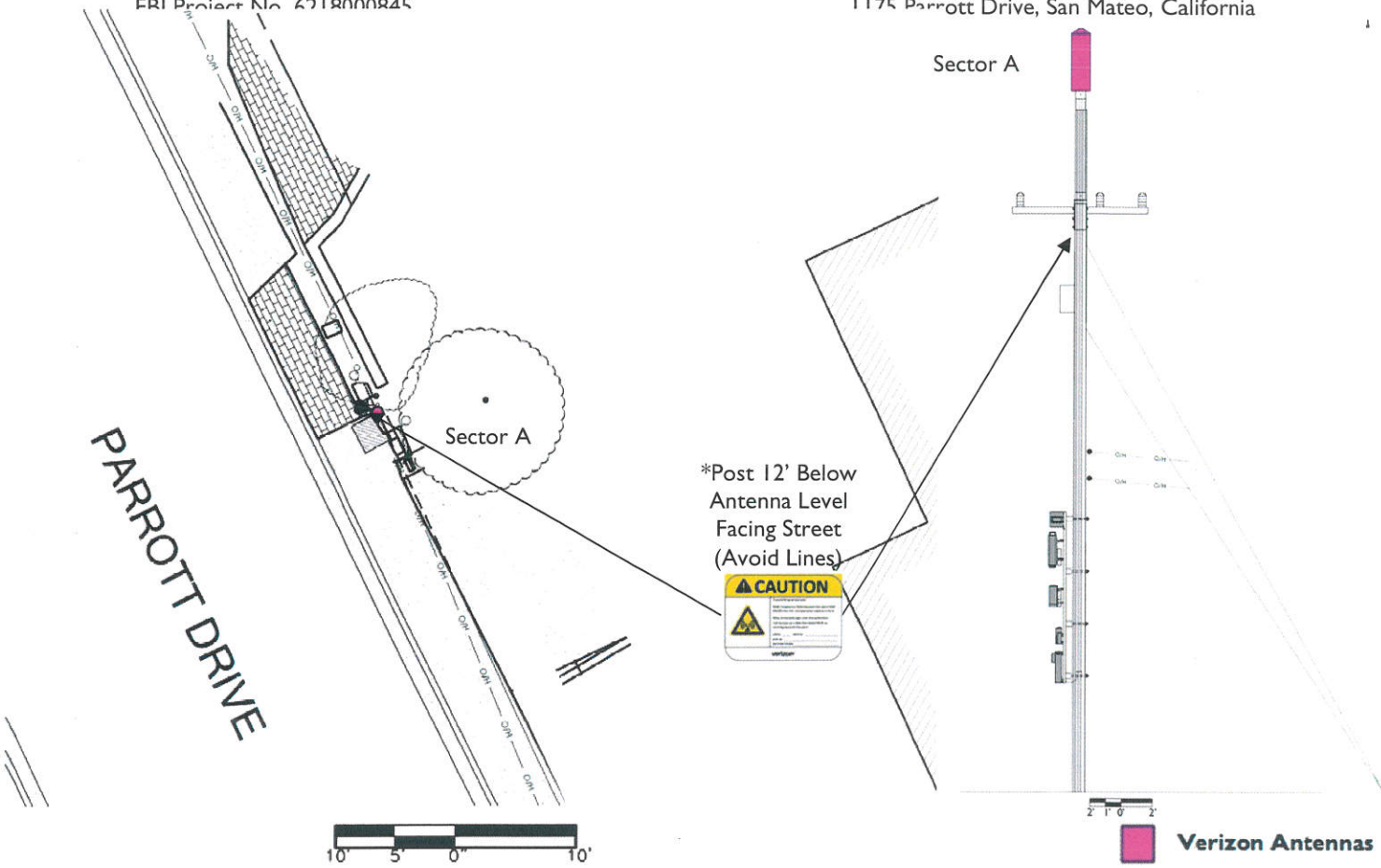
EBI Consulting
environmental | engineering | due diligence

Verizon Antennas

RF-EME Compliance Report
FBI Project No. 6218000845

Verizon Signage Plan

Site No. 483409
1175 Parrott Drive, San Mateo, California



Sign Image	Description	Posting Instructions	Required Signage
	**Notice To Workers** Informational sign, used to notify workers that there are active antennas installed and provide guidelines for working in RF environments.	N/A	Not Required.
	**NOC Information Sign** Informational sign with NOC Phone Number and Base Transceiver Station (BTS) Number	N/A	Not Required.
	**Blue Notice Sign** Used to alert individuals that they are entering an area where the power density emitted from transmitting antennas exceeds the FCC's maximum permissible exposure limit for the general public but is less than the occupational exposure limit.	N/A	Not Required.
	**Yellow Caution Sign** Used to alert individuals that they are entering an area where the power density emitted from transmitting antennas may exceed the FCC's maximum permissible exposure limit for the general public and the occupational exposure limit.	Securely post 12' below the antenna in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.	Post 12' Below Antenna Level Facing Street
	**Red Warning Sign** Used to alert individuals that they are entering an area where the power density emitted from the transmitting is substantially above the FCC's maximum permissible limit for occupational exposure (greater than ten times the Occupational limit).	N/A	Not Required.

Appendix C

Roofview® Export File

StartMapDefinition

Roof Max Y	Roof Max X	Map Max Y	Map Max X	Y Offset	X Offset	Number of envelope	
120	120	140	140	20	20	1	$AE$81:EAE$81:$ET$200

StartSettingsData

Standard	Method	Uptime	Scale Facto	Low Thr	Low Color	Mid Thr	Mid Color	Hi Thr	Hi Color	Over Color	Ap Ht Mult	Ap Ht Method
4	2	1	1	100	1	500	4	5000	2	3	1.5	1

StartAntennaData It is advisable to provide an ID (ant 1) for all antennas

ID	Name	(MHz) Freq	Trans Power	Trans Count	Coax Len	Coax Type	Other Loss	Input Power	Calc Power	Mfg	Model	(ft) X	(ft) Y	(ft) Z	Type	(ft) Aper	dBd Gain	BWdth Pt Dir	Uptime Profile	ON flag
VZW A1	LTE	700	60	1	0	0		1		Amphenol	CUUT070X	30	30	44.92		4	10.35	82;35		ON•
VZW A1	LTE	2100	60	1	0	0		1		Amphenol	CUUT070X	30	30	44.92		4	14.05	74;35		ON•
VZW A1	LTE	700	60	1	0	0		1		Amphenol	CUUT070X	30	30	44.92		4	10.35	82;155		ON•
VZW A1	LTE	2100	60	1	0	0		1		Amphenol	CUUT070X	30	30	44.92		4	14.05	74;155		ON•

StartSymbolData

Sym	Map Marke	Roof X	Roof Y	Map Label	Description (notes for this table only)
Sym		5	35	AC Unit	Sample symbols
Sym		14	5	Roof Access	
Sym		45	5	AC Unit	
Sym		45	20	Ladder	