COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: November 15, 2018

TO: Zoning Hearing Officer

FROM: Planning Staff

SUBJECT: Consideration of four Coastal Development Permits and Use Permits, pursuant to Sections 6328.4 and 6500 of the San Mateo County Zoning Regulations, respectively, to install new Verizon Wireless Telecommunication Facilities on existing joint utility poles in the public right-of-way (in front of APNs 047-261-030, 037-171-860, 037-146-050, and 047-045-330) at two locations in the unincorporated El Granada area and two locations in the Moss Beach area of San Mateo County.

County File Numbers: (Verizon Wireless/Modus)

Item 1	PLN 2018-00081
Item 2	PLN 2018-00083
Item 3	PLN 2018-00091
Item 4	PLN 2018-00197

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 APNs 047-261-030, 037-171-860, 037-146-050, and 047-045-330) at two locations in the unincorporated El Granada (Items 1 and 4) area and two locations in the Moss Beach (Items 2 and 3) 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 between 49'-8'' to 50'-8'' above grade where the maximum height allowed in each zoning district ranges from 16 to 28 feet above grade. No grading or tree removal activities are proposed.

RECOMMENDATION

That the Zoning Hearing Officer approve the Coastal Development Permits and 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 2018-00081	047-261-030
Item 2	PLN 2018-00083	037-171-860
Item 3	PLN 2018-00091	037-146-050
Item 4	PLN 2018-00197	047-045-330

BACKGROUND

Report Prepared By: Ruemel Panglao, Project Planner, 650/363-4582

Applicant: Verizon Wireless c/o Modus

Land Owners: San Mateo County Department of Public Works (Items 1, 3 and 4) and Caltrans (Item 2)

Pole Owner: PG&E

Property Details for the Proposed Use Permits:

Item 1 - County File Number: PLN 2018-00081	
Location	Public Right-of-Way on Obispo Road
APN	Public Right-of-Way adjacent to 047-261-030
Existing Zoning	EG/DR (El Granada Gateway/Minimum Lot Size 3.5 acres)
General Plan Designation	Open Space with Park Overlay Urban
Flood Zone	Zone X (area of minimal flood risk): FEMA Panel No. 06081C0138F; Effective August 2017
Sphere-of-Influence	Half Moon Bay

Item 2 – County File Number: PLN 2018-00083	
Location	Public Right-of-Way in front of 9400 Cabrillo Highway
APN	Public Right-of-Way adjacent to 037-171-860
Existing Zoning	C-1/S-3/DR/CD (Neighborhood Business/Minimum Lot Size 5,000 sq. ft.)
Genera l Plan Designation	Neighborhood Commercial Urban
Flood Zone	Zone X (area of minimal flood risk); FEMA Panel No. 06081C0119F; Effective August 2017
Sphere-of-Influence	Half Moon Bay

Item 3 – County File Number: PLN 2018-00091	
Location	Public Right-of-Way in front of 854 Sierra Street
APN	Public Right-of-Way adjacent to 037-146-050
Existing Zoning	R-1/S-17/DR/CD (Single-Family Residential/Minimum Lot Size 5,000 sq. ft.)
General Plan Designation	Medium Density Residential Urban
Flood Zone	Zone X (area of minimal flood risk); FEMA Panel No. 06081C0119F; Effective August 2017
Sphere-of-Influence	Half Moon Bay

Item 4 – County File Number: PLN 2018-00197	
Location	Public Right-of-Way in front of 51 Avenue Alhambra
APN	Public Right-of-Way adjacent to 047-045-330
Existing Zoning	C-1/S-3/DR/CD (Neighborhood Business/Minimum Lot Size 5,000 sq. ft.)
General Plan Designation	Neighborhood Commercial Urban
Flood Zone	Zone X (area of minimal flood risk); FEMA Panel No. 06081C0138F; Effective August 2017
Sphere-of-Influence	Half Moon Bay

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) east and west of Cabrillo Highway and north of Highway 92 in the unincorporated El Granada and Moss Beach areas.

Chronology:

Date		Action
March 1, 2018	-	Coastal Development and Use Permit applications submitted for PLN 2018-00081 and PLN 2018-00083.
March 8, 2018	-	Coastal Development and Use Permit application submitted for PLN 2018-00091.
May 31, 2018	-	Coastal Development and Use Permit application submitted for PLN 2018-00197.
August 22, 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, commercial areas. To reduce the visual impacts of the proposed projects, the antennas and mounted equipment, located 49'-8'' to 50'-8'' above grade, will be painted to match the existing utility poles and shall be constructed of non-reflective materials.

2. Compliance with the Local Coastal Program

A Coastal Development Permit is required pursuant to Section 6328.4 of the County Zoning Regulations for projects meeting the definition of development in the Coastal Development (CD) District. Staff has determined that the projects are considered development and in compliance with applicable Local Coastal Program (LCP) Policies, elaborated as follows:

a. Energy

Policies 4.31 (*Locational Criteria*) and 4.35 (*Siting*) require the utilization of existing utility rights-of-way to provide consolidated transmission facilities wherever such uses are compatible or feasible and minimize impacts on coastal resources such as scenic views, recreation, sensitive habitats, archaeological areas, and geological hazard areas. The telecommunications facilities are proposed to be located on the top of existing utility poles in PG&E's utility rights-of-way thereby avoiding impacts on coastal resources.

Policy 4.36 (*Color and Design*) requires the color and design of the facilities to be compatible with the surroundings. The telecommunications facilities will be painted to match the existing utility pole and will therefore blend in with the surroundings, which include multiple utility poles, which will minimize impacts on visual resources.

b. Visual Resources

Policy 8.32 (*Regulation of Scenic Corridors in Urban Areas*) requires the application of design criteria of the Community Design Manual and Urban Design Policies of the Local Coastal Program. Item 2 (PLN 2018-00083) is located in the County Scenic Corridor. Measures to mitigate the visual impacts of the telecommunications facility is discussed in Section A(1) of this staff report.

3. Compliance with the Zoning Regulations

The proposed project areas are located within the public ROW in the EG/DR, C-1/S-3/DR/CD, and R-1/S-17/DR/CD 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 EG/DR Zoning District is 16 feet and the maximum height allowed in the C-1/S-3/DR/CD and R-1/S-17/DR/CD Zoning Districts is 28 feet. The proposed projects consist of a 7-foot pole extension, one cylindrical cell antenna (approximately 4 feet tall), and ancillary pole mounted equipment. The proposed antennas and extension brackets will exceed the maximum height allowed in the aforementioned Zoning Districts. 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:

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 2018-00081	EG/DR	16 ft.	39'-2''	49'-8''
Item 2	PLN 2018-00083	C-1/S-3/DR/CD	28 ft.	40'-3''	50'-5''
Item 3	PLN 2018-00091	R-1/S-17/DR/CD	28 ft.	38'-4''	50'-7''
Item 4	PLN 2018-00197	C-1/S-3/DR/CD	28 ft.	39'-8"	50'-8"

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

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 the maximum height permitted in the respective Zoning Districts. The applicant requests that the proposed projects be permitted to exceed the height criteria in order to comply with the safety and engineering requirements of GO-95. While the alternative site analyses submitted by the applicant (Attachments C3, D3, E3, and F3) 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 GO-95 and thus exceed the maximum allowed building height. 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 projects 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.

4. 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 7.1 of the Local Coastal Program for facilities proposed in the Coastal Zone.

The proposed projects are not located in or near mapped sensitive habitats, as defined by Policy 7.1 of the Local Coastal Program.

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.

Item 3 (PLN 2018-00091) will be located on an existing joint utility pole in the public ROW within the R-1/S-17/DR/CD Zoning Districts. 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, D3, E3, and F3) 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 49'-8'' and 50'-8'' 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.

Regarding Item 3 (PLN 2018-00091), 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.

Regarding Item 3 (PLN 2018-00091), 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.

Regarding Item 3 (PLN 2018-00091), 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. The required

utility box will be small in size and mounted 7 feet above grade on the utility pole.

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.

5. 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, result in a significant adverse impact to coastal resources, 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 February and March 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, D4, E4, and F4). The reports state that the maximum RF exposure experienced at ground level is expected to range from 9.70% to 13.30% 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 2018-00081	Obispo Road	10.00%
Item 2	PLN 2018-00083	9400 Cabrillo Highway	11.00%
Item 3	PLN 2018-00091	854 Sierra Street	9.70%
Item 4	PLN 2018-00197	51 Avenue Alhambra	13.30%

The report noted that this exposure level only pertains to the area directly below the antenna and that RF exposure quickly drops as one moves horizontally away from the antenna.

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 El Granada or Moss Beach areas 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 these areas of El Granada and Moss Beach. 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 2018-00081 Project Plans, Photo Simulations, Alternative Analysis, Radio Frequency Radiation Reports prepared by EBI Consulting, dated February 28, 2018

D1-D4. PLN 2018-00083 Project Plans, Photo Simulations, Alternative Analysis, Radio Frequency Radiation Reports prepared by EBI Consulting, dated February 15, 2018

E1-E4. PLN 2018-00091 Project Plans, Photo Simulations, Alternative Utility Pole Sites Radio Frequency Radiation Reports prepared by EBI Consulting, dated March 5, 2018

F1-F4. PLN 2018-00197 Project Plans, Photo Simulations, Alternative Utility Pole Sites Radio Frequency Radiation Reports prepared by EBI Consulting, dated February 28, 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 2018-00081
Item 2	PLN 2018-00083
Item 3	PLN 2018-00091
Item 4	PLN 2018-00197

Prepared By: Ruemel Panglao
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 Coastal Development Permit, Find:

2. That the project, as described in the application and accompanying materials required by the Zoning Regulations, Section 6328.4, and as conditioned in accordance with Section 6328.14, conforms with the applicable policies and required findings of the San Mateo County Local Coastal Program (LCP). Specifically, the project complies with policies regarding location and impacts to visual resources.

Regarding the Use Permit, Find:

3. 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 to coastal resources, 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.

4. 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 Obispo Road, Cabrillo Highway, Sierra Street, Avenue Alhambra 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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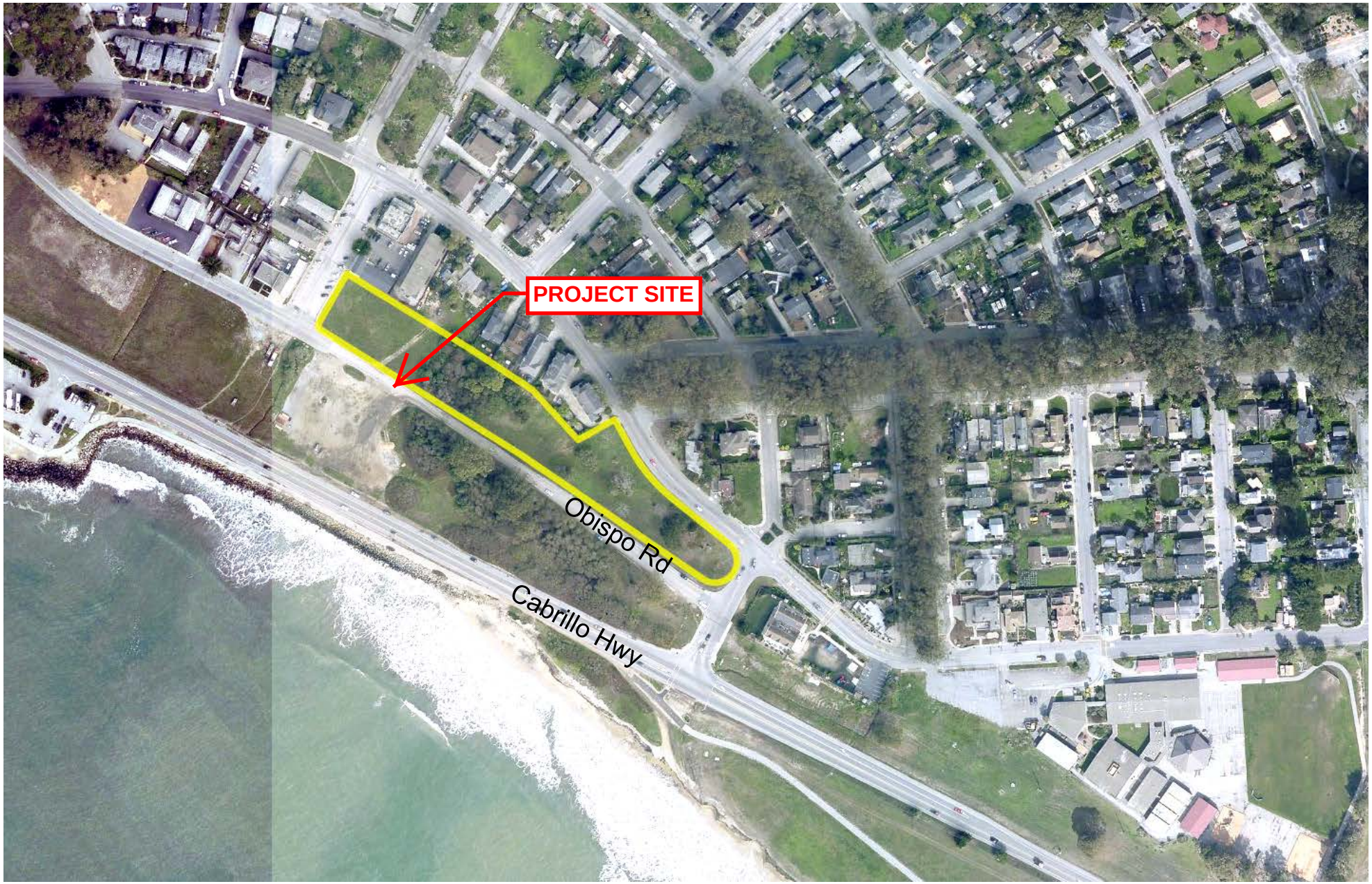
County of San Mateo - Planning and Building Department

ATTACHMENT B



Owner/Applicant:	**PG&E/Modus**
File Numbers:	**PLN 2018-00081**
Attachment:	**B**

Owner/Applicant:	**PG&E/Modus**
File Numbers:	**PLN 2018-00083**
Attachment:	**B**

Owner/Applicant:	**PG&E/Modus**
File Numbers:	**PLN 2018-00091**
Attachment:	**B**

Owner/Applicant:	**PG&E/Modus**
File Numbers:	**PLN 2018-00197**
Attachment:	**B**

County of San Mateo - Planning and Building Department

ATTACHMENT C1

verizon

SF EL GRANADA 001

(BEHIND) 570 AVENUE ALHAMBRA
EL GRANADA, CA 94019

SITE ID:	SF EL GRANADA 001
LOCATION CODE:	438656
PROJECT ID:	2017544396
SITE TYPE:	UTILITY POLE
POLE #:	TBD
COUNTY:	SAN MATEO

RECEIVED
MAR 01 2018
San Mateo County
Planning Division

PLN2018-00081

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES & MODIFICATIONS THEY MAY IMPOSE.

VERIZON CONSTRUCTION SIGNATURE: ______	DATE: ______
VERIZON - RF ENGINEER SIGNATURE: ______	DATE: ______
VERIZON - EQUIPMENT ENGINEER SIGNATURE: ______	DATE: ______
VERIZON REAL ESTATE SIGNATURE: ______	DATE: ______
MODUS - CONSTRUCTION SIGNATURE: ______	DATE: ______
MODUS - LEASING SIGNATURE: ______	DATE: ______
OTHER (IF APPLICABLE) SIGNATURE: ______	DATE: ______

PROJECT TEAM

APPLICANT:
VERIZON WIRELESS
2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598
CONTACT: KAREN MCPHERSON
PHONE: (925) 200.6328
EMAIL:
karen.mcpherson@verizonwireless.com

SITE ACQUISITION:
MODUS, INC.
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108
CONTACT: SCOTT REVARD
PHONE: (415) 595.0938
EMAIL: srevard@modus-corp.com

PROJECT MANAGER:
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CONTACT: SCOTT REVARD
PHONE: (415) 595.0938
EMAIL: srevard@modus-corp.com
CONTACT: KEVIN BOWYER
phone: (408) 219.5442
EMAIL: kbowyer@modus-corp.com

A&E PROJECT MANAGER:
COMM-SENSE CONSULTING
2930 DOMINGO AVENUE, SUITE 150
BERKELEY, CA 94705
CONTACT: JIM BURROWS, P.E.
PHONE: (916) 412.7896
EMAIL: commsense.jim@gmail.com

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CONTACT: CAL BORDONARO
PHONE: (415) 261.0000
EMAIL: cbordonaro@modus-corp.com

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SAN FRANCISCO, CA 94108
CONTACT: KEVIN BOWYER
PHONE: (408) 219.5442
EMAIL: kbowyer@modus-corp.com

PROJECT DESCRIPTION

VERIZON WIRELESS PROPOSES TO INSTALL A NEW WIRELESS COMMUNICATION SITE ON A WOODEN UTILITY POLE IN THE PUBLIC RIGHT-OF-WAY.

SCOPE:
- INSTALL (1) NEW 4' CANISTER ANTENNA ON TOP OF UTILITY POLE
- INSTALL (1) NEW 100A METER ON UTILITY POLE
- INSTALL (1) NEW 7' BAYONET EXTENSION
- INSTALL (1) NEW RRU2212 ON UTILITY POLE
- INSTALL (1) NEW RRUS32 ON UTILITY POLE
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- INSTALL (1) NEW COAX CONDUIT FROM EQUIPMENT TO NEW CANISTER ANTENNA
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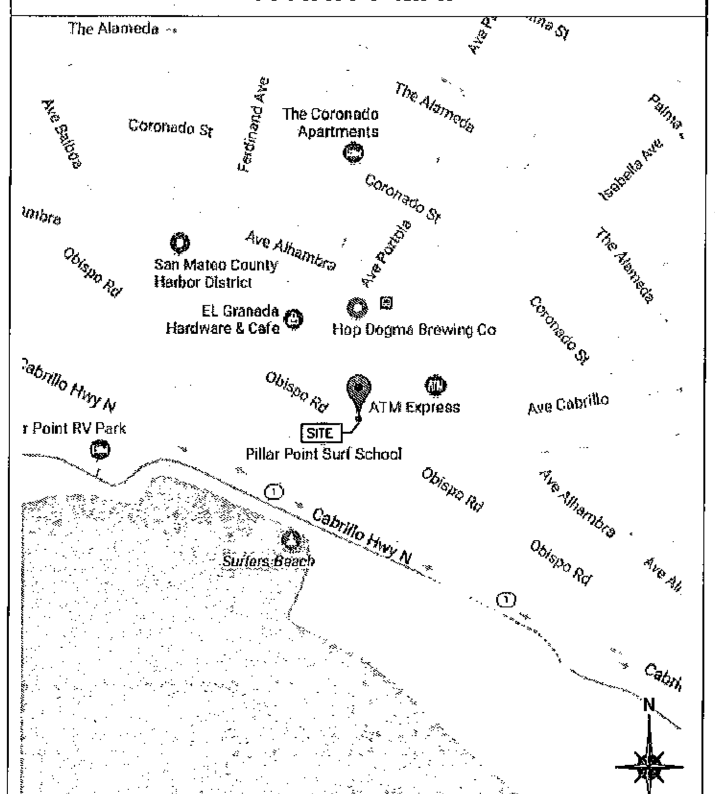
- INSTALL (4) NEW HYBRID COUPLERS ON UTILITY POLE
- INSTALL (1) NEW AC PANEL ON UTILITY POLE
- INSTALL (1) NEW FIBER DEMARC BOX ON UTILITY POLE
- CABLING TO BE INSTALLED IN A TIGHT NEAT MANNER WITHOUT EXCESS CABLE LOOPS
- ALL VERIZON ADDED APPURTENANCES SHALL BE PAINTED TO MATCH POLE COLOR (NON-GLOSSY "SABLE" BY SHERWIN WILLIAMS, OR EQUIVALENT)

DRIVING DIRECTIONS

DIRECTIONS FROM VERIZON WIRELESS OFFICE AT 2785 MITCHELL DRIVE, WALNUT CREEK, CA :

1. HEAD NORTHEAST ON MITCHELL DR TOWARD OAK GROVE RD
2. TURN RIGHT ONTO OAK GROVE RD
3. TURN RIGHT ONTO YGNACIO VALLEY RD
4. YGNACIO VALLEY RD TURNS RIGHT AND BECOMES HILLSIDE AVE
5. TURN RIGHT ONTO THE 24 W RAMP TO OAKLAND
6. CONTINUE ONTO CA-24 W/ HWY 24 W
7. KEEP LEFT AT THE FORK TO CONTINUE ON CA-24 W
8. USE THE RIGHT 2 LANES TO TAKE EXIT 2B FOR INTERSTATE 580 W
9. USE THE LEFT LANE TO MERGE ONTO I-580 W
10. USE THE LEFT 3 LANES TO TAKE EXIT 19A TO MERGE ONTO I-80 W TOWARD SAN FRANCISCO
11. KEEP LEFT, FOLLOW SIGNS FOR SAN JOSE/U.S.101 S/ AIRPORT
12. MERGE ONTO US-101 S
13. USE THE RIGHT 2 LANES TO TAKE EXIT 431 FOR INTERSTATE 280 S TOWARD DALY CITY
14. MERGE ONTO I-280 S
15. KEEP RIGHT AT THE FORK TO CONTINUE ON CA-1 S/ PACIFIC COAST HWY, FOLLOW SIGNS FOR PACIFICA
16. TURN LEFT ONTO AVE ALHAMBRA
17. SLIGHT RIGHT ONTO OBISPO RD
18. DESTINATION WILL BE ON THE LEFT

VICINITY MAP



SITE INFORMATION

SITE ADDRESS:	(BEHIND) 570 AVENUE ALHAMBRA EL GRANADA, CA 94019
OWNER:	PG&E
APPLICANT:	VERIZON WIRELESS 2785 MITCHELL DRIVE, SUITE 9 WALNUT CREEK, CA 94598
LATITUDE:	N 37° 30' 05.38"
LONGITUDE:	W 122° 28' 10.58"
COUNTY:	SAN MATEO
JURISDICTION:	SAN MATEO COUNTY
ASSESSORS PARCEL NUMBER:	PUBLIC RIGHT-OF-WAY ADJACENT TO 047-261-030
ZONING:	PUBLIC ROW
ELEVATION:	±24.3' AMSL

CALL 811 BEFORE YOU DIG
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A-1	SITE PLAN
A-2	ENLARGED SITE PLAN & PROPOSED EQUIPMENT LAYOUT PLANS
A-3	ELEVATIONS
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D-2	DETAILS
E-1	ELECTRICAL GENERAL NOTES
E-2	ONE-LINE DIAGRAM & GROUNDING SCHEMATIC
E-3	ELECTRICAL DETAILS

CODE COMPLIANCE

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HANDICAP REQUIREMENTS:
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verizon
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COMMSENSE
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DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	08/10/17	90% CD
1	12/20/17	95% CD
2	02/28/18	100% CD

REGISTERED PROFESSIONAL ENGINEER
NO. C64533
CIVIL
STATE OF CALIFORNIA

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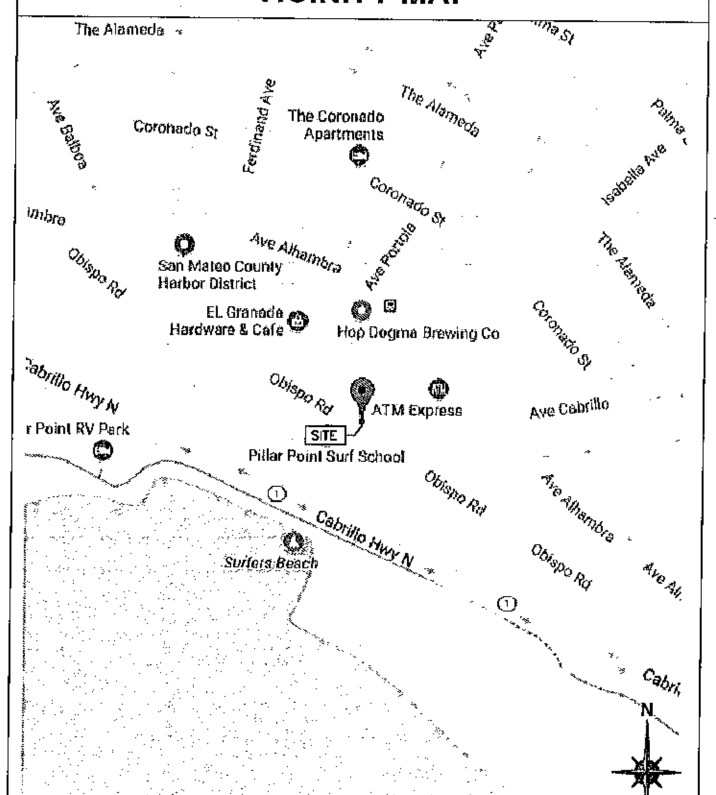

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DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	08/10/17	90% CD
1	12/20/17	95% CD
2	02/28/18	100% CD

REGISTERED PROFESSIONAL ENGINEER
LESLIE JAMES BURROWS
No. C64553
Exp. 9/30/19
CIVIL
STATE OF CALIFORNIA

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TITLE SHEET

T-1

GENERAL NOTES

GENERAL CONSTRUCTION NOTES

1. PLANS ARE INTENDED TO BE DIAGRAMMATIC ONLY, UNLESS NOTED OTHERWISE. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
2. THE CONTRACTOR SHALL OBTAIN, IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
3. CONTRACTOR SHALL CONTACT USA (UNDERGROUND SERVICE ALERT) AT (800) 227-2600, FOR UTILITY LOCATIONS, 2 WORKING DAYS BEFORE PROCEEDING WITH ANY EXCAVATION, SITE WORK OR CONSTRUCTION.
4. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE, OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CBC'S REQUIREMENTS REGARDING EARTHQUAKE RESISTANCE, FOR, BUT NOT LIMITED TO, PIPING, LIGHT FIXTURES, CEILING GRID, INTERIOR PARTITIONS, AND MECHANICAL EQUIPMENT. ALL WORK MUST COMPLY WITH LOCAL EARTHQUAKE CODES AND REGULATIONS.
6. REPRESENTATIONS OF TRUE NORTH, OTHER THAN THOSE FOUND ON THE PLOT OF SURVEY DRAWINGS, SHALL NOT BE USED TO IDENTIFY OR ESTABLISH BEARING OF TRUE NORTH AT THE SITE. THE CONTRACTOR SHALL RELY SOLELY ON THE PLOT OF SURVEY DRAWING AND ANY SURVEYOR'S MARKINGS AT THE SITE FOR THE ESTABLISHMENT OF TRUE NORTH, AND SHALL NOTIFY THE ARCHITECT / ENGINEER PRIOR TO PROCEEDING WITH THE WORK IF ANY DISCREPANCY IS FOUND BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND THE TRUE NORTH ORIENTATION AS DEPICTED ON THE CIVIL SURVEY. THE CONTRACTOR SHALL ASSUME SOLE LIABILITY FOR ANY FAILURE TO NOTIFY THE ARCHITECT / ENGINEER.
7. THE BUILDING DEPARTMENT ISSUING THE PERMITS SHALL BE NOTIFIED AT LEAST TWO WORKING DAYS PRIOR TO THE COMMENCEMENT OF WORK, OR AS OTHERWISE STIPULATED BY THE CODE ENFORCEMENT OFFICIAL HAVING JURISDICTION.
8. DO NOT EXCAVATE OR DISTURB BEYOND THE PROPERTY LINES OR LEASE AREA LINES, UNLESS OTHERWISE NOTED.
9. ALL EXISTING UTILITIES, FACILITIES, CONDITIONS, AND THEIR DIMENSIONS SHOWN ON THE PLAN HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THE ARCHITECT / ENGINEER AND THE OWNER ASSUME NO RESPONSIBILITY WHATSOEVER AS TO THE SUFFICIENCY OR THE ACCURACY OF THE INFORMATION SHOWN ON THE PLANS, OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTORS SHALL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL EXISTING UTILITIES AND FACILITIES PRIOR TO START OF CONSTRUCTION. CONTRACTORS SHALL ALSO OBTAIN FROM EACH UTILITY COMPANY DETAILED INFORMATION RELATIVE TO WORKING SCHEDULES AND METHODS OF REMOVING OR ADJUSTING EXISTING UTILITIES.
10. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES, BOTH HORIZONTAL AND VERTICALLY, PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHOULD BE IMMEDIATELY REPORTED TO THE ARCHITECT / ENGINEER FOR RESOLUTION AND INSTRUCTION, AND NO FURTHER WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT / ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT HIS/HER OWN RISK AND EXPENSE.
11. ALL NEW AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS TO BE DISTURBED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISH ELEVATIONS PRIOR TO FINAL INSPECTION OF WORK.
12. ANY EXISTING COMPONENTS DISTURBED DURING CONSTRUCTION SHALL BE RETURNED TO IT'S ORIGINAL CONDITION PRIOR TO COMPLETION OF WORK. SIZE, LOCATION AND TYPE OF ANY UNDERGROUND UTILITIES OR IMPROVEMENTS SHALL BE ACCURATELY NOTED AND PLACED ON "AS-BUILT" DRAWINGS BY GENERAL CONTRACTOR, AND ISSUED TO THE ARCHITECT / ENGINEER AT COMPLETION OF PROJECT.
13. ALL TEMPORARY EXCAVATIONS FOR THE INSTALLATION OF FOUNDATIONS, UTILITIES, ETC., SHALL BE PROPERLY LAID BACK OR BRACED IN ACCORDANCE WITH CORRECT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS.

GENERAL NOTES FOR EXISTING CELL SITES

1. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
2. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
3. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
4. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
5. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD (N) TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
6. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

APPLICABLE CODES, REGULATIONS AND STANDARDS:

1. CONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION.
2. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE TIME OF PERMITTING AWARD SHALL GOVERN THE DESIGN.
3. CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
   - 3.1. - AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   - 3.2. - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
   - 3.3. - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARD FOR STRUCTURAL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES
   - 3.4. - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRICAL EQUIPMENT.
   - 3.5. -IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")
4. TIA 607 COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
   - 4.1. TELCORDIA GR-63 NETWORK EQUIPMENT-BUILDING SYSTEM (NEBS): PHYSICAL PROTECTION
   - 4.2. TELCORDIA GR-347 CENTRAL OFFICE POWER WIRING
   - 4.3. TELCORDIA GR-1275 GENERAL INSTALLATION REQUIREMENTS
   - 4.4. TELCORDIA GR-1503 COAXIAL CABLE CONNECTIONS
5. ANY AND ALL OTHER LOCAL & STATE LAWS AND REGULATIONS
6. FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

GENERAL TRENCHING NOTES

1. MAINTAIN 24" MINIMUM COVER FOR ALL ELECTRICAL CONDUITS, U.O.N.
2. MAINTAIN 30" MINIMUM COVER FOR ALL TELECOMMUNICATIONS CONDUITS.
3. MINIMUM 1" SAND SHADING BELOW CONDUITS, AND 6" COVERING ON TOP OF CONDUITS REQUIRED.
4. REFER TO SHEET E-1 FOR ADDITIONAL REQUIREMENTS

GENERAL GROUNDING NOTES

1. GROUNDING SHALL BE TESTED AT 5 OHMS OR LESS.
2. WOOD MOLDING, STAPLED EVERY 3'-0" AND AT EACH END.

GENERAL CONDUIT NOTES

1. ALL CONDUITS WILL BE MANDRELED AND EQUIPPED WITH 3/8" PULL ROPE.
2. SCHEDULE 40 CONDUIT FOR UNDERGROUND USE.
3. SCHEDULE 80 CONDUIT FOR RISER USE AND ELSEWHERE AS NOTES. TRANSITION FROM SCHEDULE 40 PVC OR RIGID STEEL CONDUIT TO SCHEDULE 80 USING APPROVED FITTINGS DESIGNED TO PROVIDE A SMOOTH INTERIOR WALL TRANSITION TO THE REDUCED INTERIOR DIAMETER OF SCHEDULE 80. ADJUST CONDUIT SIZE IF NECESSARY TO MAINTAIN THE INTERIOR AREA REQUIRED FOR THE WIRING SPECIFIED.
4. GALVANIZED STEEL CONDUIT FOR ANY CONDUIT UNDER 3", STUB UP 10" THEN CONVERT TO SCHEDULE 80.
5. CONTRACTOR TO STUB UP POLE 10" w/ 3" POWER CONDUIT. POWER COMPANY TO CONVERT FROM 3" STUB SCHEDULE 80 TO 2" SCHEDULE 80 FROM TOP OF STUB UP.
6. ZRC COLD GALVANIZING COMPOUND OR EQUIVALENT IS REQUIRED ON EXPOSED THREADS IN RIGID STEEL CONDUIT AND THE CUT ENDS OF SUPPORT STRUTS, ETC. TO PREVENT RUSTING.

TYPICAL R.O.W. POLE CONSTRUCTION NOTES

1. CABLE NOT TO IMPEDE 15" CLEAR SPACE OFF POLE FACE.
2. ALL CLIMB STEPS NEXT TO CONDUIT SHALL HAVE EXTENDED STEPS.
3. NO BOLT THREADS TO PROTRUDE MORE THAN 1-1/2"
4. ALL HOLES IN POLE LEFT FROM REARRANGEMENT OF CLIMB STEPS TO BE FILLED.
5. 90° SHORT SWEEPS UNDER ANTENNA ARM, ALL CABLES MUST TRANSITION ON THE INSIDE OR BOTTOM OF THE ARM (NO CABLE ON TOP OF ARM).
6. USE 90° CONNECTOR AT CABLE CONNECTION FOR OMNI DOWN ANTENNAS.
7. USE CABLE CLAMPS TO SECURE CABLE TO ARMS, PLACE 2" VERIZON WIRELESS CABLE I.D. TAGS ON BOTH SIDES OF ARMS.
8. USE 1/2" DIA. CABLE ON ANTENNAS UNLESS OTHERWISE SPECIFIED.
9. PLACE GPS ON ARM OF SOUTHERN SKY EXPOSURE AT MINIMUM 6" FROM TRANSMIT ANTENNA WHICH IS 24" AWAY FROM CENTER OF POLE.
10. FILL VOID AROUND CABLES AT CONDUIT OPENING WITH FOAM SEALANT TO PREVENT WATER INTRUSION.

CONTRACTOR REQUIREMENTS

DO NOT SCALE OFF DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

ABBREVIATIONS

A.B.	ANCHOR BOLT	GLB. (GLU-LAM)	GLUE LAMINATED BEAM
ABV.	ABOVE	GPS	GLOBAL POSITIONING SYSTEM
ACCA	ANTENNA CABLE COVER ASSEMBLY	GRND.	GROUND
ADD'L	ADDITIONAL	HDR.	HEADER
A.F.F.	ABOVE FINISHED FLOOR	HGR.	HANGER
A.F.G.	ABOVE FINISHED GRADE	HT.	HEIGHT
AGL	ABOVE GROUND LEVEL	ICGB.	ISOLATED COPPER GROUND BUS
ALUM	ALUMINUM	IN.(")	INCH(ES)
ALT.	ALTERNATE	INT.	INTERIOR
AMSL	ABOVE SEA LEVEL	LB.(#)	POUND(s)
ANT.	ANTENNA	L.B.	LAG BOLTS
APPRX.	APPROXIMATE(LY)	L.F.	LINEAR FEET(FOOT)
ARCH.	ARCHITECT(URAL)	L	LONGITUDINAL
AWG.	AMERICAN WIRE GAUGE	MAS.	MASONRY
BLDG.	BUILDING	MAX.	MAXIMUM
BLK.	BLOCK	M.B.	MACHINE BOLT
BLKG	BLOCKING	MECH.	MECHANICAL
BM.	BEAM	MFR.	MANUFACTURER
B.N.	BOUNDARY NAILING	MIN.	MINIMUM
BN	BACK-UP CABINET	MISC.	MISCELLANEOUS
BTCW.	BARE TINNED COPPER WIRE	MTL.	METAL
B.O.	BOTTOM	NO.(#)	NUMBER
B.O.F.	BOTTOM OF FOOTING	N.T.S.	NOT TO SCALE
CAB.	CABINET	(N)	NEW
CANT.	CANTILEVER(ED)	O.C.	ON CENTER
C.I.P.	CAST IN PLACE	OPNG.	OPENING
CLG.	CEILING	P/C	PRE CAST CONCRETE
℄	CENTERLINE	PCS	PERSONAL COMMUNICATION SERVICES
CLR.	CLEAR	℘	PLATE
COL.	COLUMN	PLY.	PLYWOOD
CONC.	CONCRETE	PPC.	POWER PROTECTION CABINET
CONN.	CONNECTION(OR)	PRC.	PRIMARY FLEXING CABINET
CONST.	CONSTRUCTION	P.S.F.	POUNDS PER SQUARE FOOT
CONT.	CONTINUOUS	P.S.I.	POUNDS PER SQUARE INCH
d	PENNY (NAILS)	P.T.	PRESSURE TREATED
DBL.	DOUBLE	PWR.	POWER (CABINET)
DEPT.	DEPARTMENT	QTY.	QUANTITY
D.F.	DOUGLAS FIR	RAD.(R)	RADIUS
DIA.	DIAMETER	REF.	REFERENCE
DIAG.	DIAGONAL	REINF.	REINFORCING
DIM.	DIMENSION	REQ'D.	REQUIRED
DWG.	DRAWING(S)	RGS.	RIGID GALVANIZED STEEL
DWL.	DOWEL(S)	R.O.W.	RIGHT OF WAY
EA.	EACH	SCH.	SCHEDULE
EL.	ELEVATION	SHT.	SHEET
ELEC.	ELECTRICAL	SIM.	SIMILAR
ELEV.	ELEVATOR	SPEC.	SPECIFICATION(S)
EMT.	ELECTRICAL METALLIC TUBING	SQ.	SQUARE
E.N.	EDGE NAIL	S.S.	STAINLESS STEEL
ENG.	ENGINEER	STD.	STANDARD
EQ.	EQUAL	STL.	STEEL
EXP.	EXPANSION	STRUC.	STRUCTURAL
EXST.(E)	EXISTING	TEMP.	TEMPORARY
EXT.	EXTERIOR	THK.	THICKNESS
FAB.	FABRICATION(OR)	T.N.	TOE NAIL
F.F.	FINISH FLOOR	T.O.A.	TOP OF ANTENNA
F.G.	FINISH GRADE	T.O.C.	TOP OF CURB
FIN.	FINISH(ED)	T.O.F.	TOP OF FOUNDATION
FLR.	FLOOR	T.O.P.	TOP OF PLATE(PARAPET)
FDN.	FOUNDATION	T.O.S.	TOP OF STEEL
F.O.C.	FACE OF CONCRETE	T.O.W.	TOP OF WALL
F.O.M.	FACE OF MASONRY	TYP.	TYPICAL
F.O.S.	FACE OF STUD	U.G.	UNDER GROUND
F.O.W.	FACE OF WALL	U.L.	UNDERWRITES LABORATORY
F.S.	FINISH SURFACE	U.N.O.	UNLESS NOTED OTHERWISE
FT.(')	FOOT(FEET)	V.I.F.	VERIFY IN FIELD
FTG.	FOOTING	W	WIDE(WIDTH)
G.	GROWTH(CABINET)	W/	WITH
GA.	GAUGE	WD.	WOOD
GI.	GALVANIZE(D)	W.P.	WEATHERPROOF
G.F.I.	GROUND FAULT CIRCUIT INTERRUPTER	WT.	WEIGHT

LEGEND

NEW ANTENNA	GROUT OR PLASTER
EXISTING ANTENNA	(E) BRICK
GROUND ROD	(E) MASONRY
GROUND BUS BAR	CONCRETE
MECHANICAL GRND. CONN.	EARTH
CADWELD	GRAVEL
GROUND ACCESS WELL	PLYWOOD
	SAND
ELECTRIC BOX	CENTERLINE
TELEPHONE BOX	PROPERTY/LEASE LINE
LIGHT POLE	MATCH LINE
FND. MONUMENT	WORK POINT
SPOT ELEVATION	GROUND CONDUCTOR
SET POINT	TELEPHONE CONDUIT
REVISION	ELECTRICAL CONDUIT
GRID REFERENCE	ELECTRICAL & TELCO CONDUITS
	COAXIAL CABLE
DETAIL REFERENCE	OVERHEAD SERVICE CONDUCTORS
ELEVATION REFERENCE	CHAIN LINK FENCING
SECTION REFERENCE	WOOD FENCING
WOOD CONTINUOUS	OHT/OHP OVERHEAD TELEPHONE/ OVERHEAD POWER
	OHT OVERHEAD TELEPHONE
WOOD BLOCKING	OHP OVERHEAD POWER LINE
STEEL	E E POWER RUN

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

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	08/10/17	90% CD
1	12/20/17	95% CD
2	02/28/18	100% CD

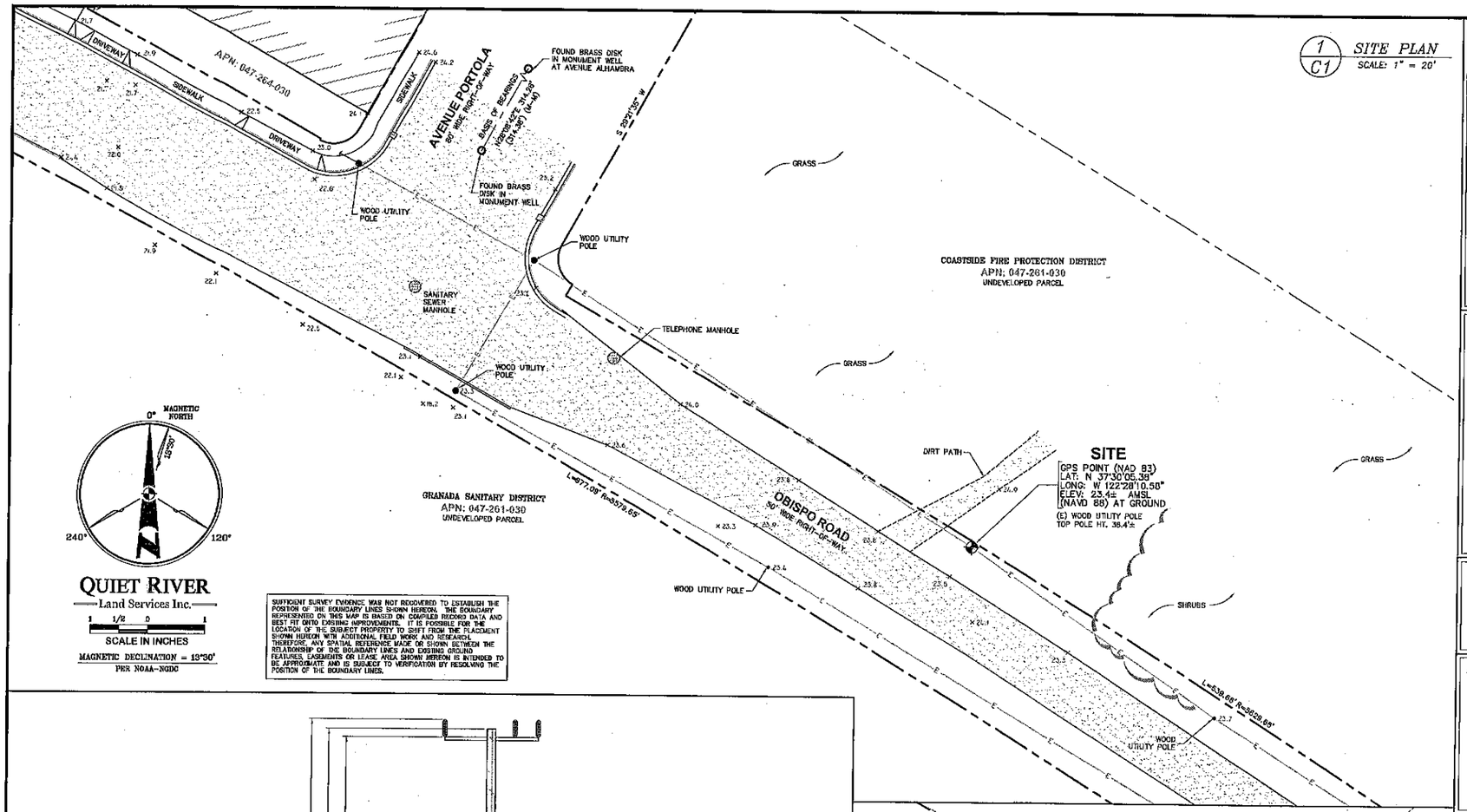
IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT

SF EL GRANADA 001

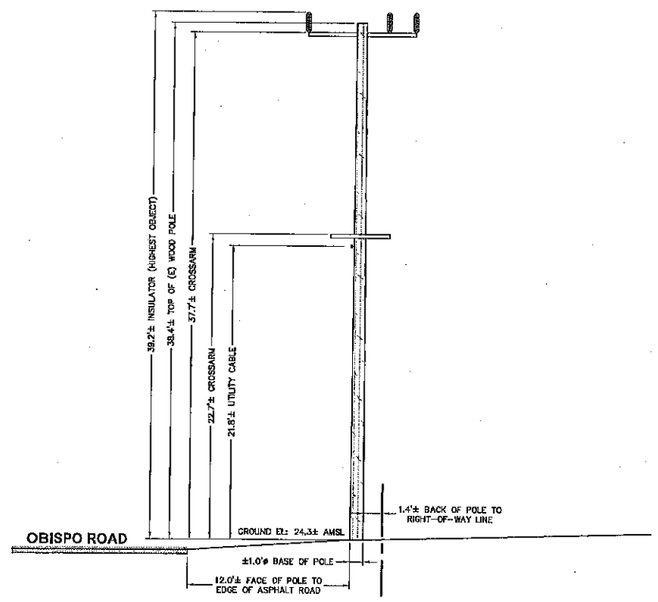
(BEHIND) 570 AVENUE ALHAMBRA
EL GRANADA, CA 94019

GENERAL NOTES

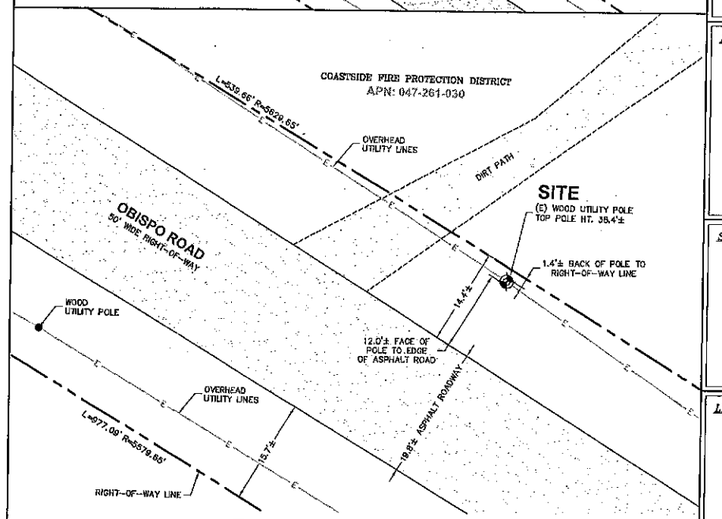
T-2



SUFFICIENT SURVEY EVIDENCE WAS NOT RECOVERED TO ESTABLISH THE POSITION OF THE BOUNDARY LINES SHOWN HEREON. THE BOUNDARY REPRESENTED ON THIS MAP IS BASED ON COMPILED RECORD DATA AND BEST FIT ONTO EXISTING IMPROVEMENTS. IT IS POSSIBLE FOR THE LOCATION OF THE SUBJECT PROPERTY TO SHIFT FROM THE PLACEMENT SHOWN HEREON WITH ADDITIONAL FIELD WORK AND RESEARCH. THEREFORE, ANY SPATIAL REFERENCE MADE OR SHOWN BETWEEN THE RELATIONSHIP OF THE BOUNDARY LINES AND EXISTING GROUND FEATURES, EASEMENTS OR LEASE AREA SHOWN HEREON IS INTENDED TO BE APPROXIMATE AND IS SUBJECT TO VERIFICATION BY RESOLVING THE POSITION OF THE BOUNDARY LINES.



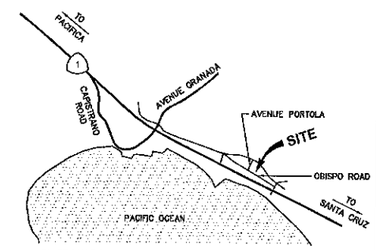
3/C1 *UTILITY POLE ELEVATION*
SCALE: 1" = 5'



2/C1 *ENLARGED SITE PLAN*
SCALE: 1" = 10'

1/C1 *SITE PLAN*
SCALE: 1" = 20'

VICINITY MAP
NOT TO SCALE



EL GRANADA
SAN MATEO COUNTY
CALIFORNIA

PROPERTY INFORMATION

Owner: SAN MATEO COUNTY
Address: 455 COUNTY CENTER, 2ND FLOOR
REDWOOD CITY, CA 94063

Site: EL GRANADA 001
Address: 570 AVENUE ALHAMBRA
EL GRANADA, CA 94019

Assessor's Parcel Number: PUBLIC RIGHT-OF-WAY

Height of Building/Tower: 38.4'± A.G.L. TOP OF UTILITY POLE

Title Report:
NO TITLE REPORT FURNISHED. EXCEPTIONS TO THE TITLE AND RESERVATIONS THEREFROM COULD NOT BE DETERMINED. BOUNDARY INFORMATION SHOWN IS COMPILED FROM AVAILABLE RECORD DATA.

Legal Description:
PROPERTY SITUATED IN THE CITY OF EL GRANADA, COUNTY OF SAN MATEO, STATE OF CALIFORNIA.

FEMA FLOOD ZONE DESIGNATION National Flood Insurance Program

County: SAN MATEO Effective Date: OCTOBER 16, 2012
Community-Panel Number: 060311C-0138-E
The Flood Zone Designation for this site as plotted by scale is:

ZONE X (no shading) – Areas determined to be outside the 0.2% annual chance floodplain.

SURVEY DATA

NAD 83 Datum:
Lat: N 37°30'05.38" Long: W 122°28'10.58"
Datum Base: NAD 83 Equipment Used: CHCX900-OPUS Receiver
(See Note 2)
Site Ground Elevation: 24.3± AMSL (NAVD88) AT BASE OF POLE
Basis of Elevations:
GLOBAL POSITIONING SYSTEM (GPS)
(SEE NOTE 2)
Basis of Bearings:
CALIFORNIA COORDINATES ZONE III (NAD83), AND TWO FOUND MONUMENTS AS SHOWN.
Date of Field Survey: JUNE 23, 2017

NOTES

1.) This is not a boundary survey. This is a specialized topographic map with property lines and easements being a graphic depiction of various information gathered from preliminary title reports, back-up documents of record, maps and available monuments found during the field survey. No property monuments were set. No title research was performed by Quiet River Land Services, Inc.

2.) The latitude, longitude and elevation shown hereon were derived from post-processed L-1/L-2 data collected using Navstar Global Positioning System (GPS) and a CHCX900-OPUS Receiver. CHC Navigation specifications report: decimeter level accuracy (horizontally) when data is properly collected and processed. (Deviation = ±3.0 feet.)

3.) Unless otherwise noted, no underground utility locating service company was contacted prior to this map being prepared; therefore, there may be non-visible or obscure utilities existing on the property not shown on this map — so CALL BEFORE YOU DIG.

4.) Any electronic digital media provided by Quiet River Land Services, Inc. to our client is a courtesy and is not to be reproduced, distributed, sold, altered, resized, added or amended without the express written consent of an Officer of Quiet River Land Services, Inc. Further, only the filed stamped, signed and dated original "hard copy" version of our survey or map is considered to be our legally recognized product.

SURVEYOR'S STATEMENT

I, the undersigned, a Registered Professional Land Surveyor licensed under the laws of the State of California do hereby state that the information, measurements, easements, record boundary lines, bearings and distances as shown hereon are based upon a field survey as dated above and upon items of public record and data contained in a title report, as referenced. Furthermore, the Latitude and Longitude coordinates are reported in: NAD 83 Datum and are accurate to within ±15 feet horizontally and the ground elevation, reported in NAVD 1988 Datum, is within ±3 feet vertically. The coordinate values and elevations are within the 1-A Accuracy Code categories as listed in the A.S.A.C. Information Sheet 91.003 and are accurate to the best of my knowledge and belief.

SIGNATURE DATE

LEGEND

APN:	ASSESSOR'S PARCEL NUMBER		ASPHALT
CP	CONTROL POINT		CONCRETE
EL.	ELEVATION	△	CONTROL POINT
FH	FIRE HYDRANT	○	FOUND MONUMENT
FND.	FOUND	⊕	GPS POINT
HT.	HEIGHT	P 16.3 / R 12.3	PARAPET/ROOF ELEVATIONS
MON.	MONUMENT	× 12.3	SPOT ELEVATION
(M-M)	MONUMENT TO MONUMENT	BM	TEMPORARY BENCHMARK
P.O.B.	POINT OF BEGINNING		
P.O.C.	POINT OF COMMENCEMENT		
PP	POWER POLE		
(TYP.)	TYPICAL		

DATE:	JUNE 29, 2017
DRAWN BY:	MAS
FILE NO.:	MDSC1770

REVISIONS

DATE	DESCRIPTION	INITIAL
6/29/17	100% COMPLETE	MAS

verizon wireless
2785 MITCHELL DRIVE
WALNUT CREEK, CA 94598
TEL: (925) 279-6329 FAX: (925) 279-6365

QUIET RIVER
Land Services Inc.
11501 Dublin Boulevard, Suite 200
Dublin, CA 94568
(925) 734-6788 Phone

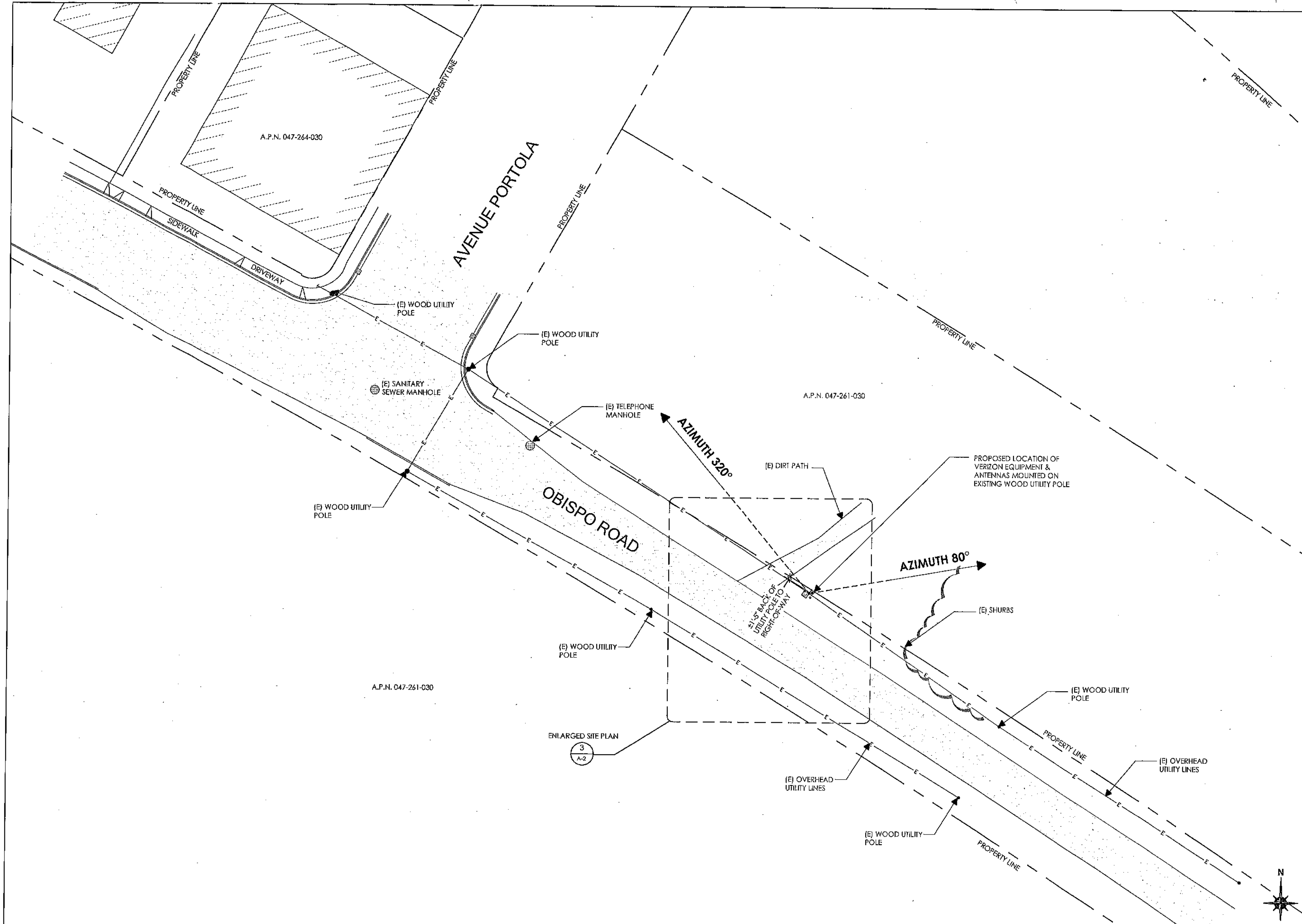
EXISTING SITE CONDITIONS

EL GRANADA 001

570 AVENUE ALHAMBRA
EL GRANADA, CA 94019

C1
OF 1 SHEET

I:\MDSC1770\Dwg\MDSC1770.dwg Jun. 29, 2017 – 11:39pm mashwartz



SITE PLAN

24"x36" SCALE: 1" = 20'-0"
11"x17" SCALE: 1" = 40'-0"

20' 10' 0 20'

1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

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	08/10/17	90% CD
1	12/20/17	95% CD
2	02/28/18	100% CD

REGISTERED PROFESSIONAL ENGINEER LEWIS JAMES BURROWS NO. C64635 Exp. 6/30/19 CIVIL STATE OF CALIFORNIA

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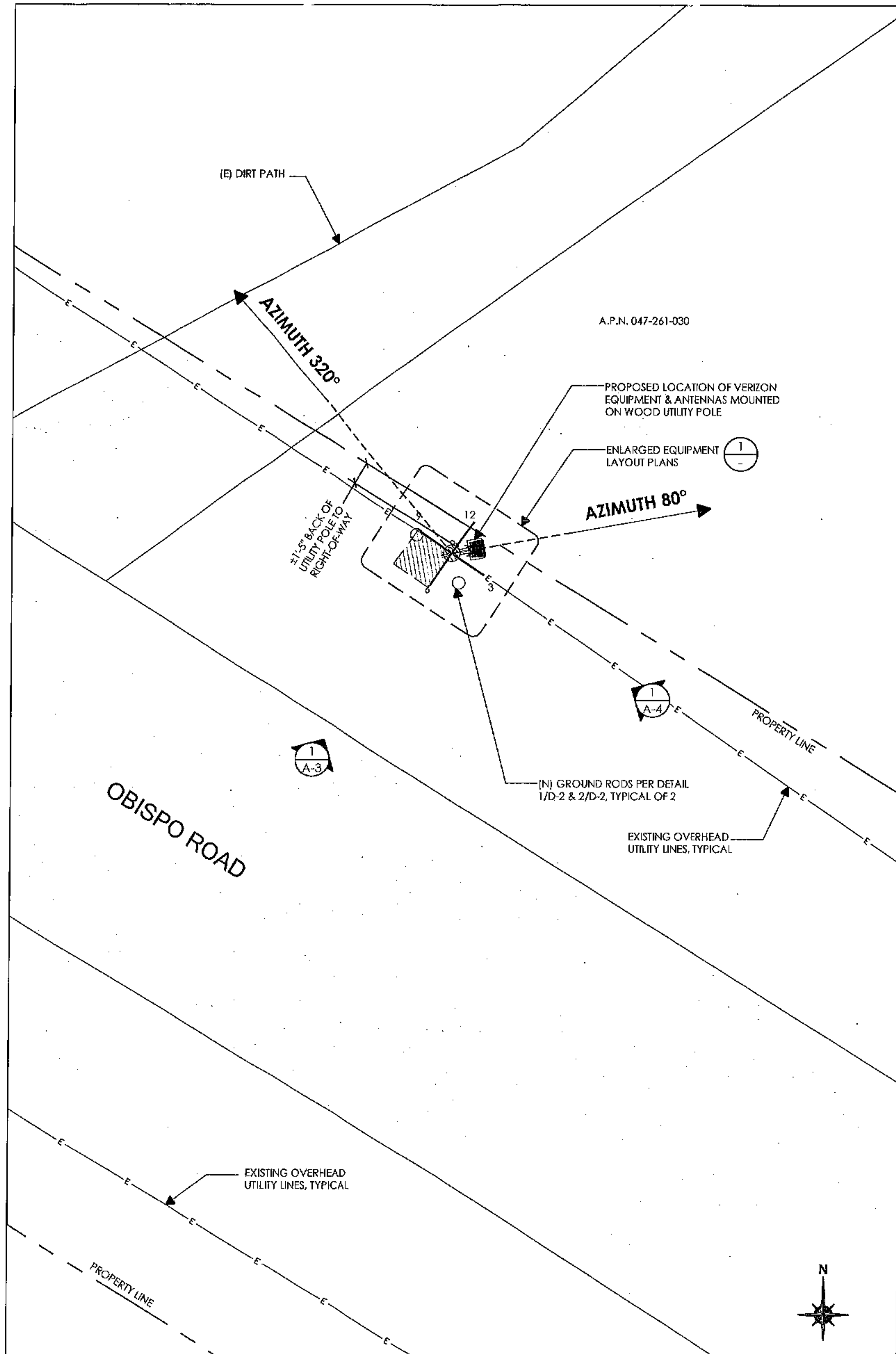
SF EL GRANADA 001

(BEHIND) 570 AVENUE ALHAMBRA
EL GRANADA, CA 94019

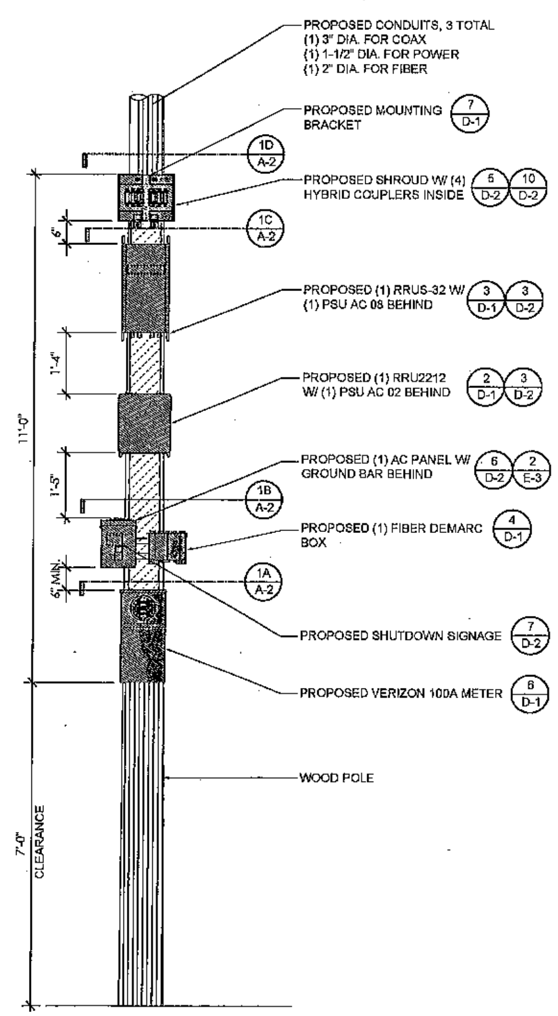
SITE PLAN

A-1

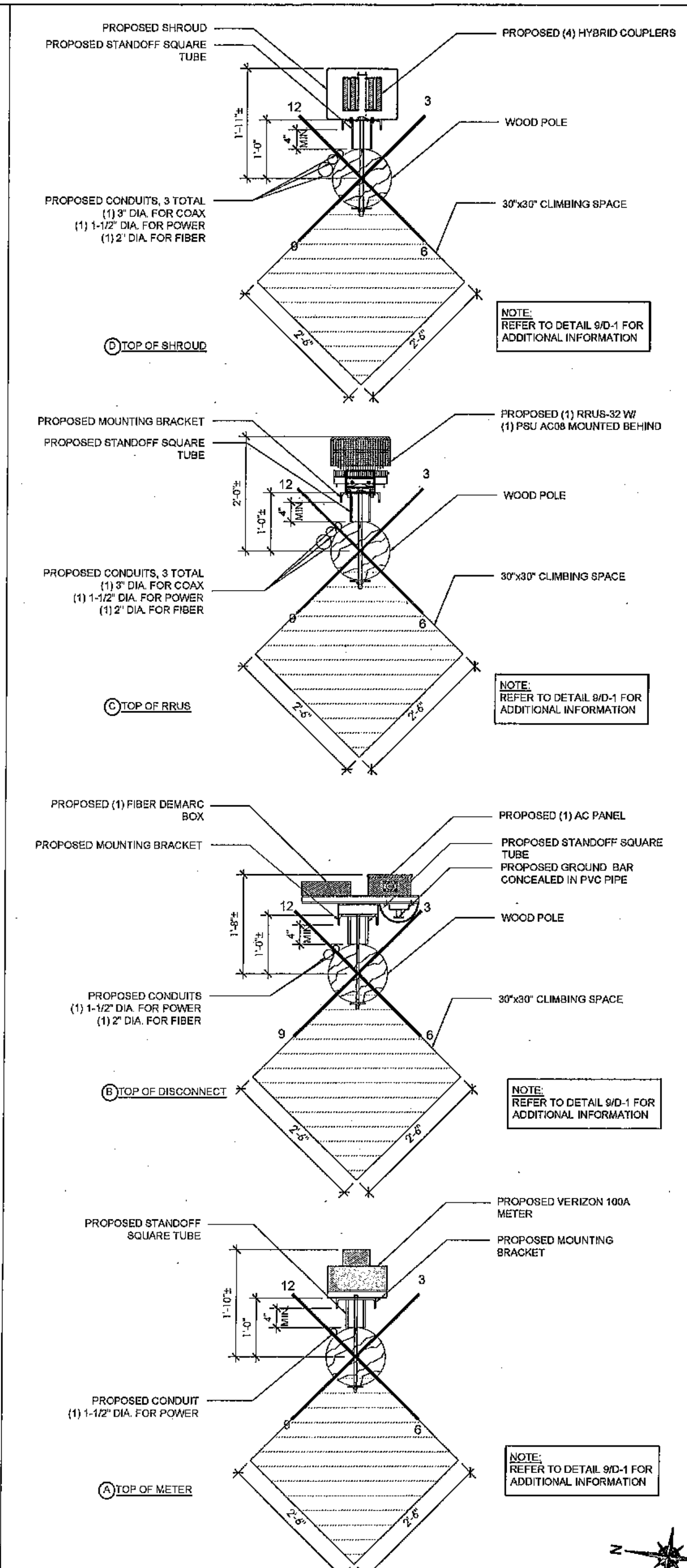
NOTES:
1. ALL EQUIPMENT SHALL BE PLACED (VERTICALLY) AS CLOSE AS ALLOWED BY POLE OWNER, WHILE MAINTAINING MINIMUM CLEARANCE REQUIREMENTS.
2. MAINTAIN 4" MIN. OFFSET BETWEEN THE MOUNTING BRACKET FLANGE AND THE POLE
3. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT, AND OTHER EQUIPMENT WILL BE PAINTED TO MATCH 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



ENLARGED SITE PLAN 24"x36" SCALE: 1/4" = 1'-0" 11"x17" SCALE: 1/8" = 1'-0" | 3



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

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

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

COMMSENSE
2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY: LM
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1	12/20/17	95% CD
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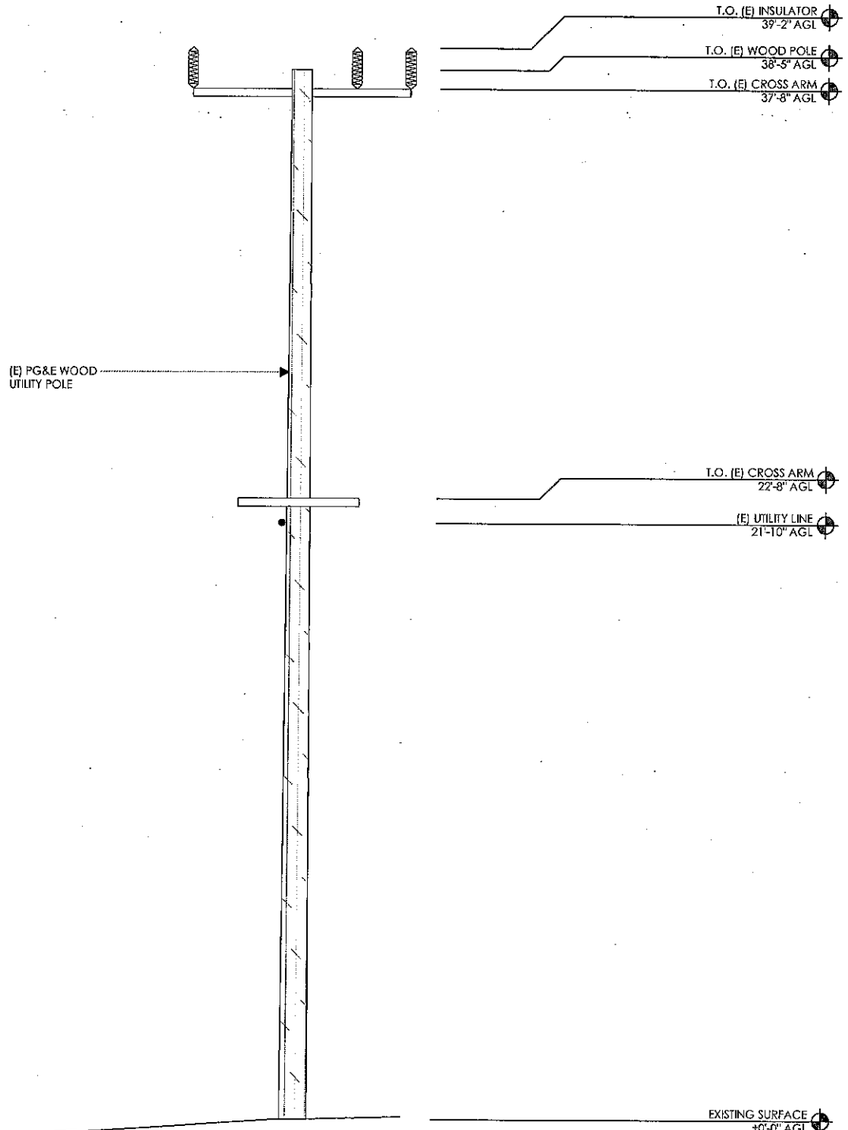
SF EL GRANADA 001

(BEHIND) 570 AVENUE ALHAMBRA
EL GRANADA, CA 94019

ENLARGED SITE PLAN & PROPOSED ELEVATION / EQUIPMENT PLANS

A-2



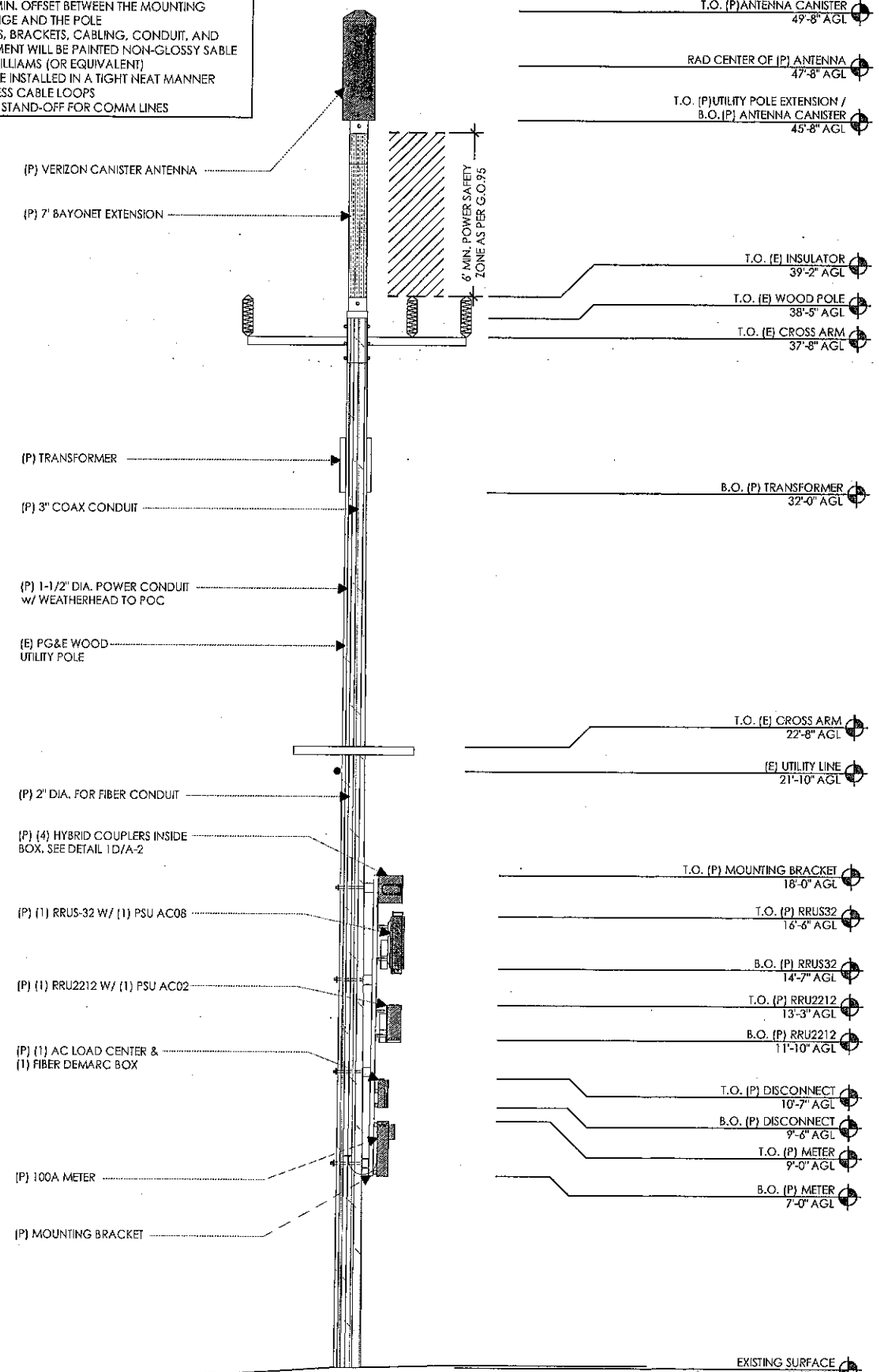
EXISTING FRONT ELEVATION

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. PROVIDE NEW STAND-OFF FOR COMM LINES



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

MOBIUM

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	08/10/17	90% CD
1	12/20/17	95% CD
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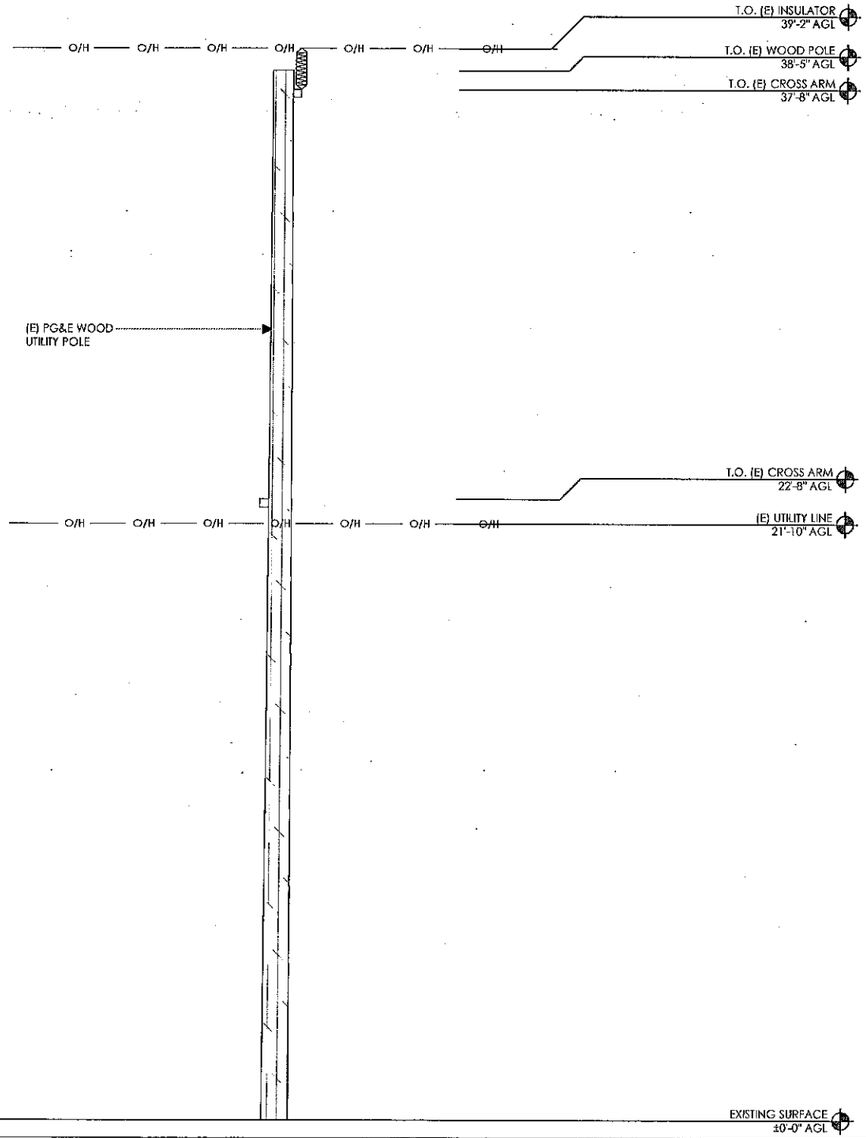
REGISTERED PROFESSIONAL ENGINEER
LEWIS JAMES BURROWS
No. 28653
Exp. 6/30/19
CIVIL
STATE OF CALIFORNIA

SF EL GRANADA 001

(BEHIND) 570 AVENUE
ALHAMBRA
EL GRANADA, CA 94019

ELEVATIONS

A-3



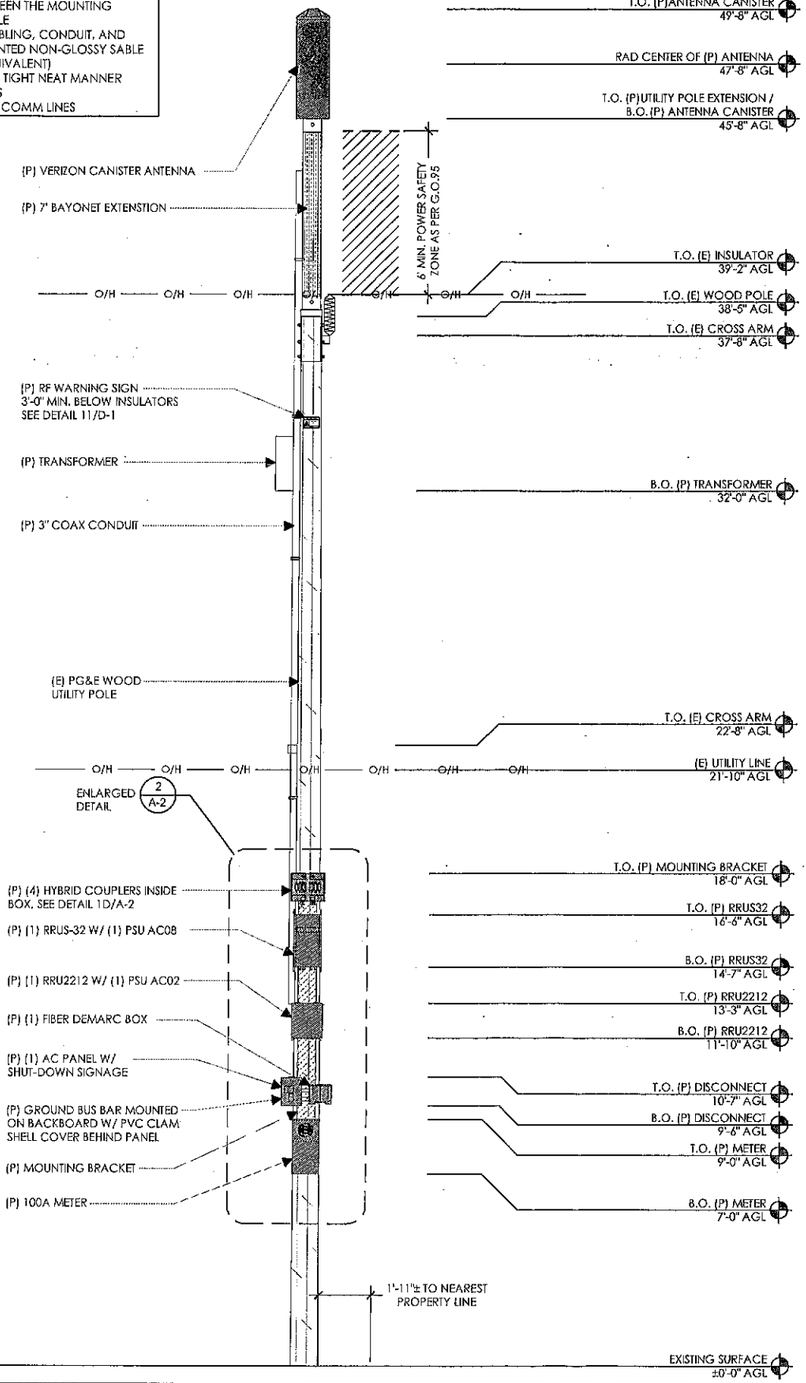
EXISTING SIDE ELEVATION

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. PROVIDE NEW STAND-OFF FOR COMM LINES



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

COMSENSE

2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	08/10/17	90% CD
1	12/20/17	95% CD
2	02/28/18	100% CD

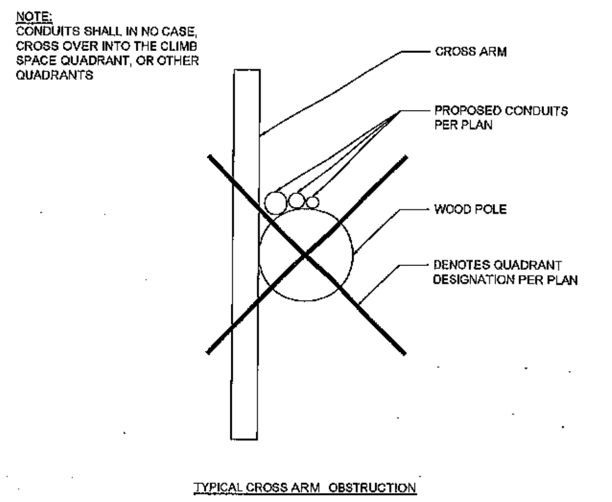
REGISTERED PROFESSIONAL ENGINEER
BRYAN JAMES BARRONS
No. 26433
Exp. 6/30/19
CIVIL
STATE OF CALIFORNIA

SF EL GRANADA 001

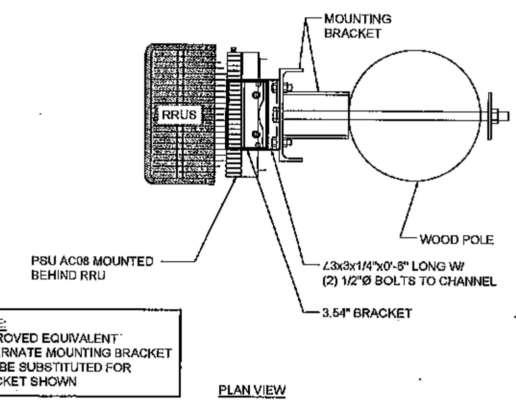
(BEHIND) 570 AVENUE
ALHAMBRA
EL GRANADA, CA 94019

ELEVATIONS

A-4



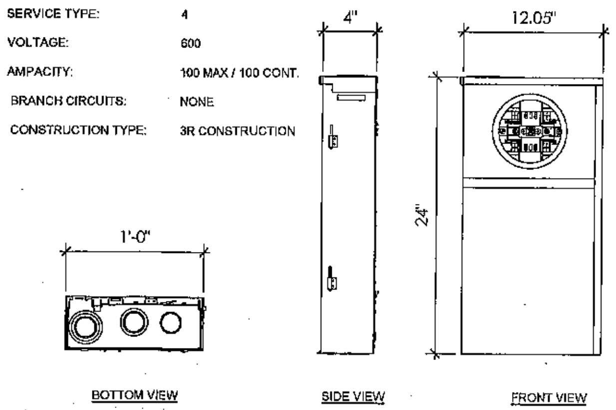
TYP CROSS ARM OBSTRUCTION — 12



RRUS MOUNTING — SCALE: NTS — 9

U21MTBL METER MAIN

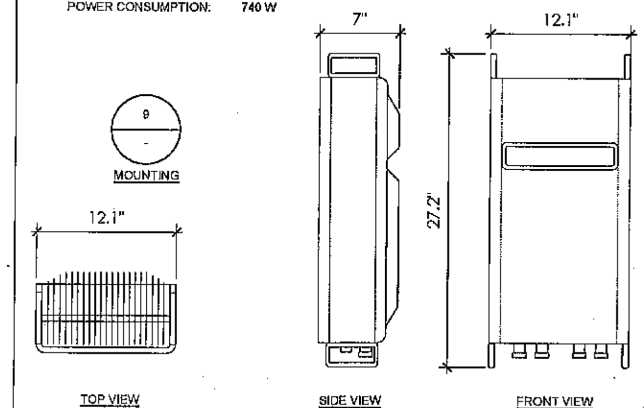
COLOR:	GRAY
DIMENSIONS:	24" TALL x 12.05" WIDE x 4" DEEP
NEUTRAL CONDUCTOR:	14 AWG-2/0 AWG
HUB PROV.:	AW
SERVICE TYPE:	4
VOLTAGE:	600
AMPACITY:	100 MAX / 100 CONT.
BRANCH CIRCUITS:	NONE
CONSTRUCTION TYPE:	3R CONSTRUCTION



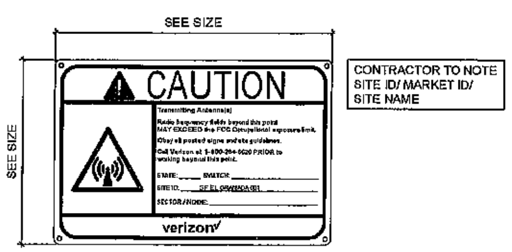
ELECTRIC METER — SCALE: NTS — 6

ERICSSON 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



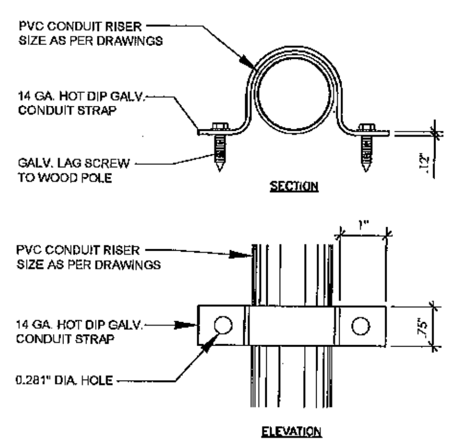
ERICSSON RRUS-32 — SCALE: NTS — 3



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:	12X6, 7X5, 6X3

G.O. 95 RF SIGNAGE — SCALE: NTS — 11

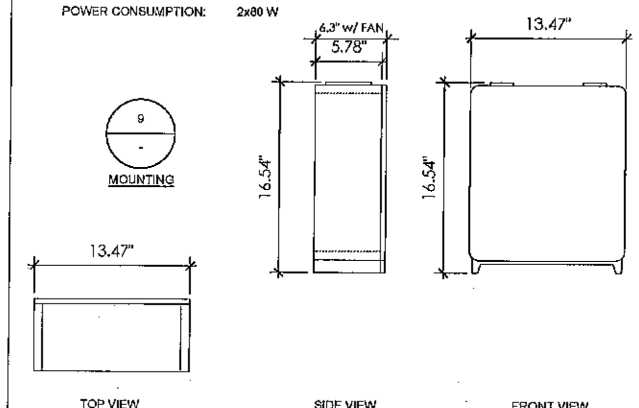


CONDUIT BRACKET — SCALE: NTS — 8

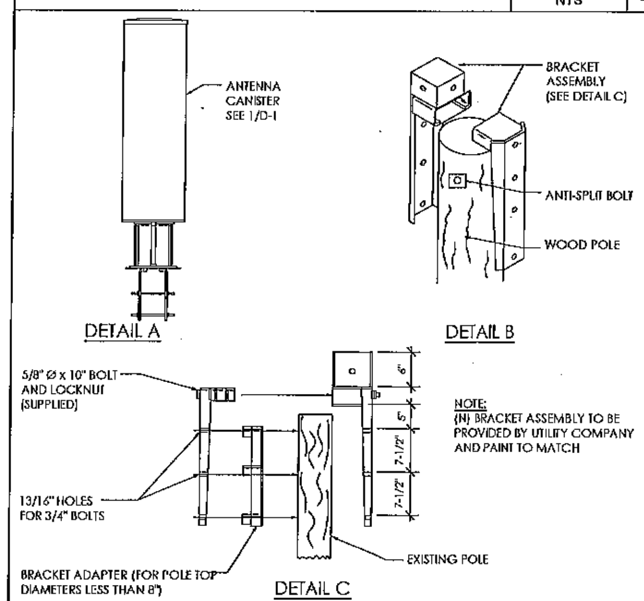
NOT USED — SCALE: NTS — 5

ERICSSON RRU2212 REMOTE RADIO UNIT (OR APPROVED EQUIVALENT)

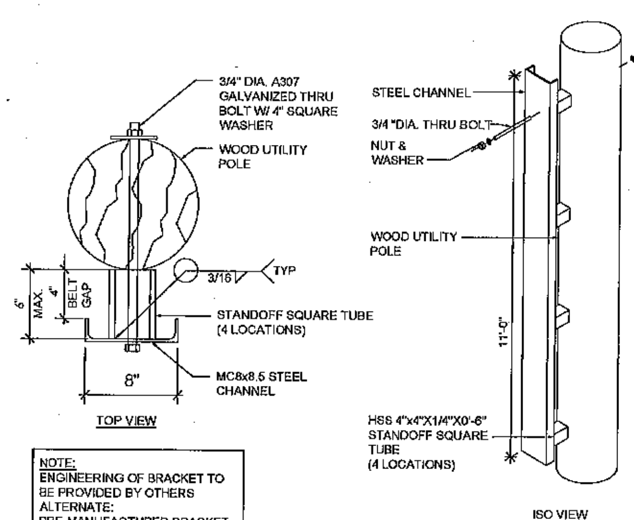
COLOR:	GRAY
DIMENSIONS:	16.54" TALL X 13.47" WIDE X 6.3"
TOTAL WEIGHT:	43 LBS.
POWER CONSUMPTION:	2x80 W



ERICSSON RRU2212 — SCALE: NTS — 2



UTILITY POLE TOP EXTENSION — SCALE: NTS — 10

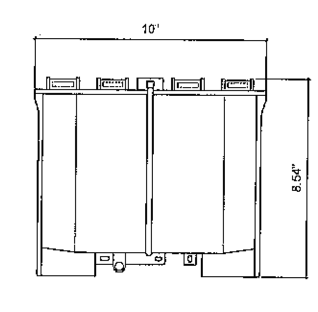


NOTE:
ENGINEERING OF BRACKET TO BE PROVIDED BY OTHERS
ALTERNATE:
PRE-MANUFACTURED BRACKET BY POLEWARE (OR EQUIVALENT)

MOUNTING BRACKET — SCALE: NTS — 7

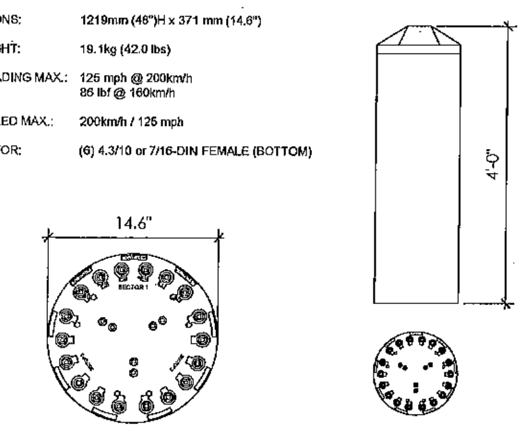
NETWORK INTERFACE DEVICE (NID) NID-12 (OR APPROVED EQUIVALENT)

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

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WALNUT CREEK, CA 94598

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	08/10/17	90% CD
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2	02/28/18	100% CD

REGISTERED PROFESSIONAL ENGINEER — No. C64533 — CIVIL — STATE OF CALIFORNIA

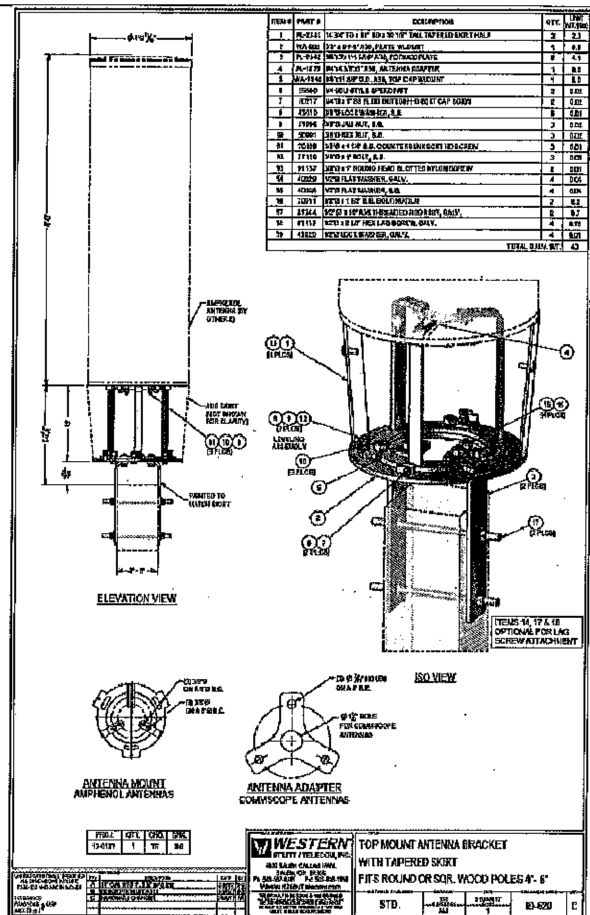
IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT

SF EL GRANADA 001

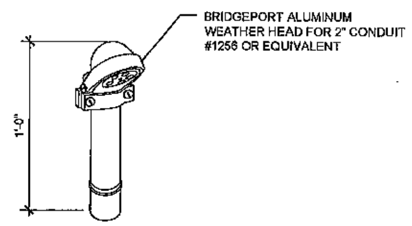
(BEHIND) 570 AVENUE ALHAMBRA
EL GRANADA, CA 94019

DETAILS

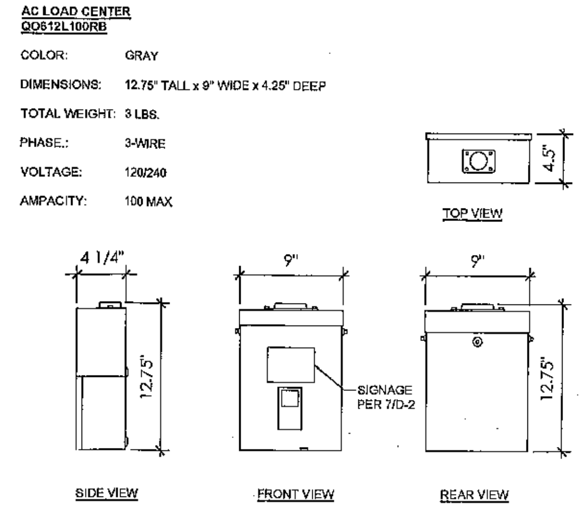
D-1



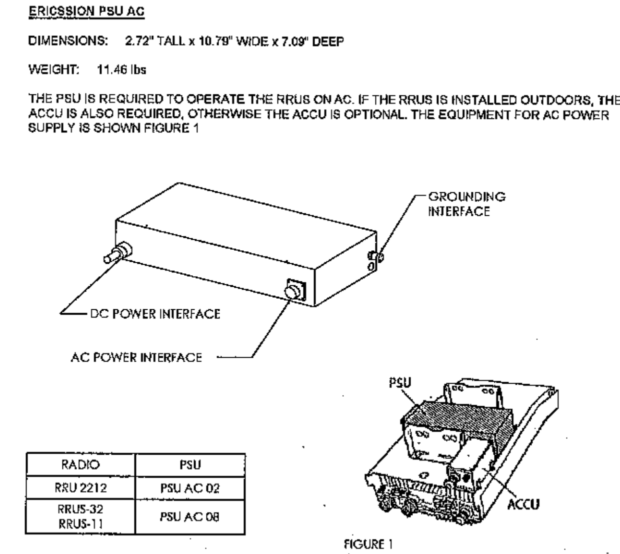
ANTENNA CANISTER 11



WEATHERHEAD 9



AC LOAD CENTER 6

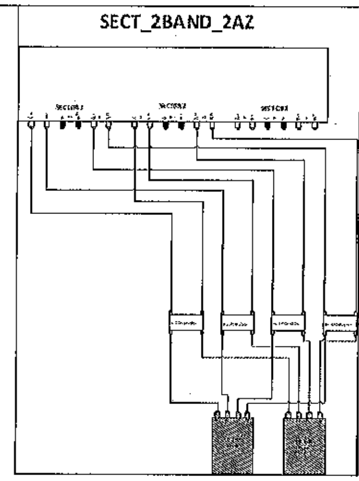


RADIO	PSU
RRU 2212	PSU AC 02
RRUS-32 RRUS-11	PSU AC 08

POWER SUPPLY UNIT (PSU)

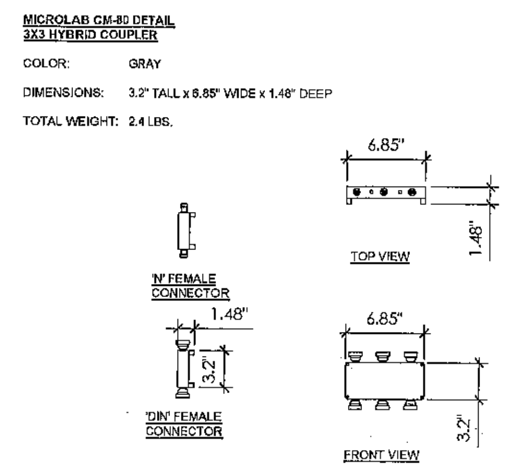
SCALE
NTS

3



CABLE SIZE	
(6) & (8) PORT DESIGN	1/2" COAX CABLE
(12) & (18) PORT DESIGN	1/4" SUPERFLEX CABLE

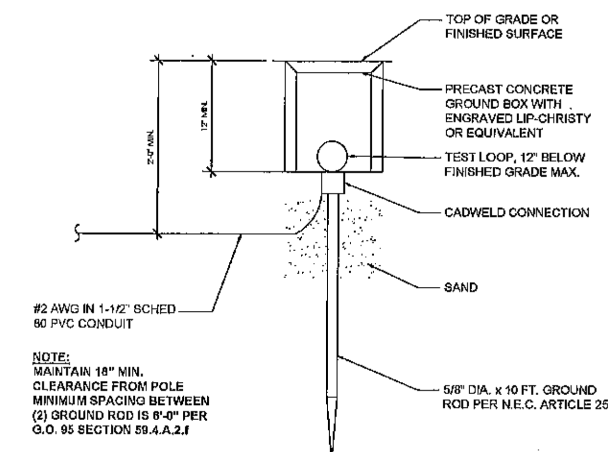
PLUMBING DIAGRAM 8



HYBRID COUPLER

SCALE
NTS

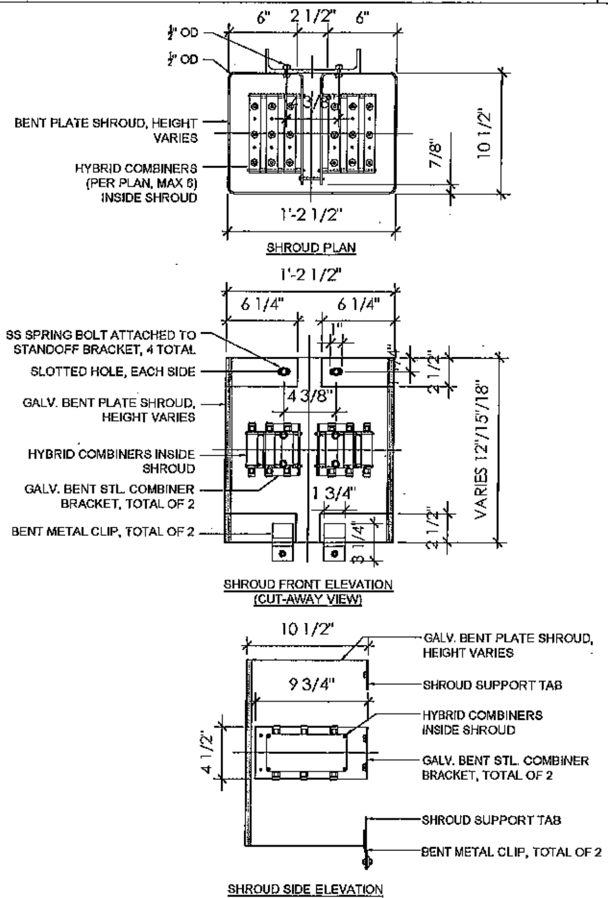
5



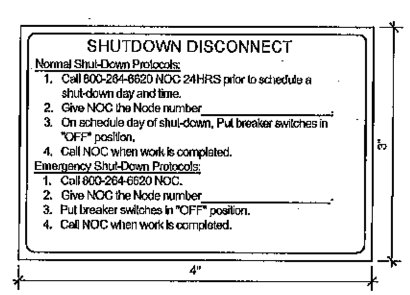
GROUND ROD

SCALE
NTS

2



COMBINER SHROUD 10



NOTES:

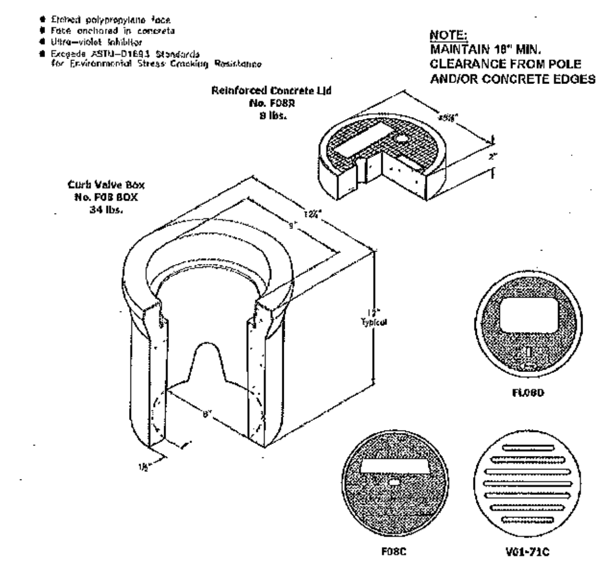
1. SIGN PROVIDED BY GC MOUNTED TO OUTSIDE OF LOAD CENTER COVER
2. CONTRACTOR TO NOTE SITE ID/ MARKET ID/ SITE NAME

LOAD CENTER SHUT-DOWN SIGNAGE 7

NOT USED

SCALE
NTS

4



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
F08D	LID	2 lbs.	Fiberlyte Lid, Non-Concrete
V01-71C	LID	12 lbs.	Cast Iron Grate ADA Compliant

GROUND ROD ENCLOSURE

SCALE
NTS

1

verizon

2785 MITCHELL DRIVE, SUITE 9
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mobilitie

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SF EL GRANADA 001

(BEHIND) 570 AVENUE ALHAMBRA
EL GRANADA, CA 94019

DETAILS

D-2

A	AMPERE	ELEC	ELECTRICAL	MFR	MANUFACTURER	SAF	SAFETY
ACCA	ANTENNA CABLE COVER ASSEMBLY	EMT	ELECTRICAL METALLIC TUBING	MIN	MINIMUM	SDBC	SOFT DRAWN BARE COPPER
		ENCL	ENCLOSURE	MLO	MAIN LUGS ONLY	SEC	SECONDARY
AIC	AMPERE INTERRUPTING CAPACITY	EXIST	EXISTING	MTD	MOUNTED	S.N.	SOLID NEUTRAL
		FAC	FACTOR	MTG	MOUNTING	SURF	SURFACE
APPROX	APPROXIMATELY	F/A	FIRE ALARM	MTS	MANUAL TRANSFER SWITCH	SW	SWITCH
AT	AMPERE TRIP	FLUOR	FLUORESCENT	N	NEUTRAL	TEL	TELEPHONE
AWG	AMERICAN WIRE GAGE	FT	FOOT/FEET	(N)	NEW	TYP	TYPICAL
BATT	BATTERY	FU	FUSE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.	U/G	UNDERGROUND
BD	BOARD	G	GROUND			U.L.	UNDERWRITER'S LABORATORY INC.
BR	BRANCH	GEN	GENERATOR	OH	OVERHEAD		
BRKR	BREAKER	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	P	POLE	U.N.O.	UNLESS NOTED OTHERWISE
BTCW	BARE TINNED COPPER WIRE			PCS	PERSONAL COMMUNICATION SYSTEM	V	VOLT
BTS	BASE TRANSMISSION SYSTEM	GND	GROUNDING			VAC	VOLT ALTERNATING CURRENT
C	CONDUIT	GPS	GLOBAL POSITIONING SYSTEM	PH	PHASE	W	WATT OR WIRE
CAB	CABINET	GR	GROWTH	PNLBD	PANELBOARD	W/	WITH
CB	CIRCUIT BREAKER	HDBC	HARD DRAWN COPPER WIRE	PPC	POWER PROTECTION CABINET	W/O	WITHOUT
CKT	CIRCUIT	HPS	HIGH PRESSURE SODIUM	PRC	PRIMARY RADIO CABINET	XFER	TRANSFER
CONT	CONTINUOUS	LG	LENGTH	PRI	PRIMARY	XFMR	TRANSFORMER
DEM	DEMAND	LPS	LOW PRESSURE SODIUM	PWR	POWER	XLPE	CROSS-LINK POLYETHYLENE
(E)	EXISTING	MAX	MAXIMUM	RCPT	RECEPTACLE		
EGR	EMERGENCY GEN. RECEPTACLE	MECH	MECHANICAL	RGS	RIGID GALVANIZED STEEL		

GENERAL ABBREVIATIONS 3

OHT/OHP	OVERHEAD TELEPHONE/OVERHEAD POWER		LIGHTING FIXTURE, 1/175W. METAL HALIDE, HUBBELL CAT #MIG-0175H-336
OHT	OVERHEAD TELEPHONE LINE	⊗	5/8" X 10'-0" ,CU. GND ROD 24" MIN. BELOW GRADE.
OHP	OVERHEAD POWER LINE	⊠	5/8" X 10'-0" ,CU. GND ROD IN TEST WELL 24" MIN. BELOW GRADE.
E	POWER RUN		CHEMICAL GROUND ROD (KIT GROUND ROD)
T	TELCO RUN	■	CADWELD CONNECTION
E/T	POWER/TELCO RUN	●	MECHANICAL CONNECTION
	GROUNDING CONDUCTOR	◀	HALO GROUND CONNECTION
	FUSE, SIZE AND TYPE AS INDICATED.		CIRCUIT BREAKER
	SAFETY SWITCH, 2P-240V-60A W/60A FUSES, NEMA 3R ENCLOSURE, SQ D CATALOG NO. H222NRB	M	UTILITY METER BASE
	MANUAL TRANSFER SWITCH, 2P-240V-200A, NO FUSE, NEMA 3R ENCLOSURE	⊖	RECEPTACLE, 2P-3W-125V-15A, DUPLEX, GROUND TYPE, HUBBEL CATALOG #5362
	LIGHTING FIXTURE, INCANDESCENT, 1/100W, WALL MOUNTING TYPE, HUBBELL LIGHTING CATALOG #BRH-100-06-1	S	TOGGLE SWITCH, 1P-125V-15A, HUBBELL CATALOG #HBL 1201CN
		S_{WP}	TOGGLE SWITCH, 1P-120V-15A, "WP"

ELECTRICAL LEGENDS 2

1. GENERAL REQUIREMENTS

A. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE AND ALL STATE AND LOCAL CODES. NOTHING IN THESE PLANS OR SPECIFICATIONS SHALL BE CONSTRUED AS TO PERMIT WORK NOT CONFORMING TO THE MOST STRINGENT OF THESE CODES. SHOULD CHANGES BE NECESSARY IN THE DRAWINGS OR SPECIFICATIONS TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND CEASE WORK ON PARTS OF THE CONTRACT

B. THE CONTRACTOR SHALL MAKE A SITE VISIT PRIOR TO BIDDING AND CONSTRUCTION TO VERIFY ALL EXISTING CONDITIONS AND SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES. THE CONTRACTOR ASSUMES ALL LIABILITY FOR FAILURE TO COMPLY WITH THIS PROVISION.

C. THE EXTENT OF THE WORK IS INDICATED BY THE DRAWINGS, SCHEDULES, AND SPECIFICATIONS AND IS SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT. THE WORK SHALL CONSIST OF FURNISHING ALL LABOR, EQUIPMENT, MATERIALS AND SUPPLIES NECESSARY FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM. THE WORK SHALL ALSO INCLUDE THE COMPLETION OF ALL ELECTRICAL WORK NOT MENTIONED OR SHOWN WHICH ARE NECESSARY FOR SUCCESSFUL OPERATION OF ALL SYSTEMS.

D. THE CONTRACTOR SHALL PREPARE A BID FOR A COMPLETE AND OPERATIONAL SYSTEM, WHICH INCLUDES THE COST FOR MATERIAL AND LABOR.

E. WORKMANSHIP AND NEAT APPEARANCE SHALL BE AS IMPORTANT AS THE OPERATION. DEFECTIVE OR DAMAGED MATERIALS SHALL BE REPLACED OR REPAIRED PRIOR TO FINAL ACCEPTANCE IN A MANNER ACCEPTABLE TO OWNER AND ENGINEER.

F. COMPLETE THE ENTIRE INSTALLATION AS SOON AS THE PROGRESS OF THE WORK WILL PERMIT.

G. ANY ERROR, OMISSION OR DESIGN DISCREPANCY ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION OR CORRECTION BEFORE CONSTRUCTION.

H. "PROVIDE" INDICATES THAT ALL ITEMS ARE TO BE FURNISHED, INSTALLED AND CONNECTED IN PLACE.

I. CONTRACTOR SHALL SECURE ALL NECESSARY BUILDING PERMITS AND PAY ALL REQUIRED FEES.

2. EQUIPMENT LOCATION

A. ALL DRAWINGS INDICATE DIAGRAMMATICALLY THE DESIRED LOCATIONS OR ARRANGEMENTS OF CONDUIT RUNS, OUTLETS, EQUIPMENT, ETC., AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE. PROPER JUDGEMENT MUST BE EXERCISED IN EXECUTING THE WORK SO AS TO SECURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE AND TO OVERCOME LOCAL DIFFICULTIES DUE TO SPACE LIMITATIONS OR INTERFERENCE OF STRUCTURE CONDITIONS ENCOUNTERED.

B. IN THE EVENT CHANGES IN THE INDICATED LOCATIONS OR ARRANGEMENTS ARE NECESSARY, DUE TO FIELD CONDITIONS IN THE BUILDING CONSTRUCTION OR REARRANGEMENT OF EQUIPMENT, SUCH CHANGES SHALL BE MADE WITHOUT COST, PROVIDING THE CHANGE IS ORDERED BEFORE THE CONDUIT RUNS, ETC., AND WORK DIRECTLY CONNECTED TO THE SAME IS INSTALLED AND NO EXTRA MATERIALS ARE REQUIRED.

C. COORDINATE THE WORK OF THE SECTION WITH THAT OF ALL OTHER TRADES. WHERE CONFLICTS OCCUR, CONSULT WITH THE PERSPECTIVE CONTRACTOR AND COME TO AGREEMENT AS TO CHANGES NECESSARY. OBTAIN WRITTEN ACCEPTANCE FROM ENGINEER FOR THE PROPOSED CHANGES BEFORE PROCEEDING.

3. TESTS

A. BEFORE FINAL ACCEPTANCE OF WORK, THE CONTRACTOR SHALL INSURE THAT ALL EQUIPMENT, SYSTEMS, FIXTURES, ETC., ARE WORKING SATISFACTORILY AND TO THE INTENT OF THE DRAWINGS.

4. PERMITS

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING OUT AND PAYING FOR ALL THE REQUIRED PERMITS, INSPECTION AND EXAMINATION WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

5. GROUNDING

A. THE CONTRACTOR SHALL PROVIDE A COMPLETE, AND APPROVED GROUNDING SYSTEM INCLUDING ELECTRODES. ELECTRODE CONDUCTOR, BONDING CONDUCTORS, AND EQUIPMENT CONDUCTORS AS REQUIRED BY ARTICLE 250 OF NATIONAL ELECTRICAL CODE.

B. CONDUITS CONNECTED TO EQUIPMENT AND DEVICES SHALL BE METALLICALLY JOINED TOGETHER TO PROVIDE EFFECTIVE ELECTRICAL CONTINUITY.

C. FEEDERS AND BRANCH CIRCUIT WIRING INSTALLED IN A NONMETALLIC CONDUIT SHALL INCLUDE A CODE SIZED GROUNDING CONDUCTOR HAVING GREEN INSULATION. THE GROUND CONDUCTOR SHALL BE PROPERLY CONNECTED AT BOTH ENDS TO MAINTAIN ELECTRICAL CONTINUITY.

D. REFER TO GROUND BUS DETAILS. PROVIDE NEW GROUND SYSTEM COMPLETE WITH CONDUCTORS, GROUND ROD AND DESCRIBED TERMINATIONS.

E. ALL GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2 UNLESS NOTED OTHERWISE.

F. ALL NON-DIRECT BURIED TELEPHONE EQUIPMENT GROUND CONDUCTORS SHALL BE #2 STRANDED, THHN (GREEN) INSULATION.

G. ALL GROUND CONNECTIONS SHALL BE MADE WITH "HYGROUND" COMPRESSION SYSTEM BURNDY CONNECTORS EXCEPT WHERE NOTED OTHERWISE.

H. PAINT AT ALL GROUND CONNECTIONS SHALL BE REMOVED.

I. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE OWNER FOR FUTURE INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE. SUBMIT TEST REPORTS AND FURNISH TO VERIZON ONE COMPLETE SET OF PRINTS SHOWING "INSTALLED WORK".

6. UTILITY SERVICE

A. TELEPHONE AND ELECTRICAL METERING FACILITIES SHALL CONFORM TO THE REQUIREMENTS OF THE SERVING UTILITY COMPANIES. CONTRACTOR SHALL VERIFY SERVICE LOCATIONS AND REQUIREMENTS. SERVICE INFORMATION WILL BE FURNISHED BY THE SERVING UTILITIES.

B. CONFORM TO ALL REQUIREMENTS OF THE SERVING UTILITY COMPANIES.

7. PRODUCTS

A. ALL MATERIALS SHALL BE NEW, CONFORMING WITH THE NEC, ANSI, NEMA, AND THEY SHALL BE U.L. LISTED AND LABELED.

B. CONDUIT:

B.1. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.

B.2. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL. FITINGS SHALL BE COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.

B.3. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE. SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL HAVE FULL SIZE GROUND WIRE.

B.4. ALL UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 24" BELOW GRADE.

B.5. ALL CONDUIT ONLY (C.O.) SHALL HAVE PULL ROPE.

C. ALL WIRE AND CABLE SHALL BE COPPER, 600 VOLT, #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED. TYPE THHN INSULATION USED UNLESS CONDUCTORS INSTALLED IN CONDUIT EXPOSED TO WEATHER, IN WHICH CASE TYPE THWN INSULATION SHALL BE USED.

D. PROVIDE GALVANIZED COATED STEEL BOXES AND ACCESSORIES SIZED PER CODE TO ACCOMMODATE ALL DEVICES AND WIRING.

E. TOGGLE SWITCHES SHALL BE 20 AMP, 120 VOLT AC, SPECIFICATION GRADE WHITE (UNLESS NOTED OTHERWISE) FINISH. MOUNT SWITCHES AT +48" ABOVE FINISHED FLOOR.

F. PANELBOARD SHALL BE DEAD FRONT SAFETY TYPE WITH ANTI-BURN SOLDERLESS COMPRESSION APPROVED FOR COPPER CONDUCTORS. COPPER BUS BARS, FULL SIZED NEUTRAL BUS, GROUND BUS AND EQUIPPED WITH QUICK-MAKE QUICK-BREAK BOLT-IN TYPE THERMAL MAGNETIC CIRCUIT BREAKERS. MOUNT TOP OF THE PANELBOARD AT 6'-5" ABOVE FINISHED FLOOR. PROVIDE TYPEWRITTEN CIRCUIT DIRECTORY.

G. ALL CIRCUIT BREAKERS, MAGNETIC STARTERS AND OTHER ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED.

H. GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8" ROUND AND 10' LONG. COPPERWELD OR APPROVED EQUAL.

I. SERVICE POWER SHALL BE 100A 1Ø, 3W, 120/208 OR 120/240V.

J. ALL WIRING SHALL BE COPPER 75° C U.N.O.

K. CONDUIT REQUIREMENTS (TYP., U.N.O.): UNDERGROUND: PVC (SCHED 40 OR 80), INDOOR: EMT (RGS IN TRAFFIC AREAS, OUTDOOR (ABOVE GRADE): RGS.

L. PLACE "TRUE TAPE" AND PULL ROPE IN THE CONDUITS AS REQUIRED.

8. INSTALLATION

A. PROVIDE SUPPORTING DEVICES FOR ALL ELECTRICAL EQUIPMENT, FIXTURES, BOXES, PANEL, ETC., EQUIPMENT SHALL BE BRACED TO WITHSTAND HORIZONTAL FORCES IN ACCORDANCE WITH STATE AND LOCAL CODE REQUIREMENTS. PROVIDE PRIOR ALIGNMENT AND LEVELING OF ALL DEVICES AND FIXTURES.

9. PROJECT CLOSEOUT

A. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.

B. PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS.

ELECTRICAL NOTES 1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

mobilia

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	08/10/17	90% CD
1	12/20/17	95% CD
2	02/28/18	100% CD

REGISTERED PROFESSIONAL ENGINEER
Thomas Andrew Bynum
E14044
Dec. 31, 2018
ELECTRICAL
STATE OF CALIFORNIA

SF EL GRANADA 001

(BEHIND) 570 AVENUE
ALHAMBRA
EL GRANADA, CA 94019

ELECTRICAL
GENERAL NOTES

E-1

NOTES:
1. GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 5/8" DIAMETER x 10'-0" LONG. ALL GROUND RODS MAY BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

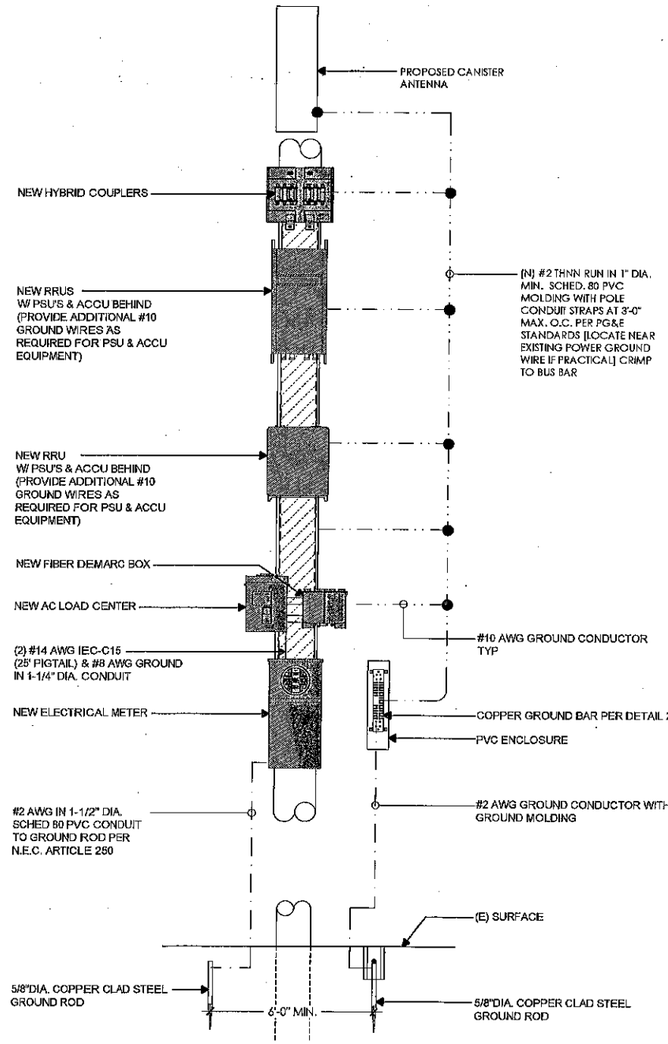
2. CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.

3. EXTERIOR UNIT BONDS: METALLIC OBJECTS SHALL BE BONDED TO THE EXTERIOR GROUND RING.

4. PROVIDE ALL ELECTRICAL WORK & MATERIALS AS SHOWN ON THE DWGS, AS CALLED FOR HEREIN, & AS IS NECESSARY TO FURNISH A COMPLETE INSTALLATION.

5. UNLESS SHOWN OTHERWISE, FUSED DISCONNECT SWITCHES SHALL BE PROVIDED WITH LOW-PEAK, SIDUAL ELEMENT FUSES SIZED TO EQUIPMENT NAMEPLATE FUSE CURRENT RATING. MOTOR STARTERS SHALL BE PROVIDED WITH SIMILARLY SIZED FUSIBLE ELEMENTS, SWITCHES, AND OTHER OUTDOOR EQUIPMENT SHALL BE RATED NEMA 3R AND/OR UL LISTED FOR WET ENVIRONMENT.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING THE GROUNDING SYSTEM AND ENSURING A .5 OHM OR LESS GROUNDING PATH. ADDITIONAL GROUND RODS AND/OR CHEMICAL ROD SYSTEM SHALL BE USED TO ACHIEVE THIS REQUIREMENT IF THE GIVEN DESIGN CANNOT BE MADE TO ACHIEVE THIS REQUIREMENT.



GROUNDING SCHEMATIC

SCALE: NTS | 2

MOUNTING SURFACE — PANEL — "PPC A" — 10,000 A.I.C. SYM

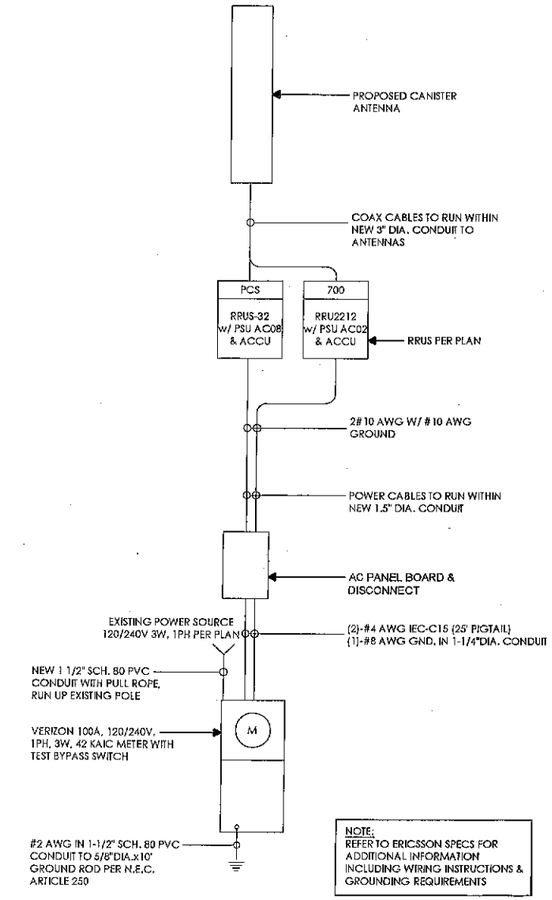
240/120 VOLTS 1 PHASE 3 WIRE — MAIN 100A — BUS 100A

VOLT AMPS PHASE A	VOLT AMPS PHASE B	OTHER	REC	LTG	POLE	BKR	CIR		CIR	BKR	POLE	LTG	REC	VOLT AMPS PHASE A	VOLT AMPS PHASE B
200		RRUS-11			1	30	1	2	2	-	-				
	800	RRUS-32			1	20	3	4	4	-	-				
		SPARE			1	15	5	6	6						
		SPARE			1	20	7	8	8						
							9	10	10						
							11	12	12						
200	800														

PHASE A = 200 — PHASE B = 800

CONTINUOUS LOADS		NON-CONTINUOUS LOADS					
1000	X1.25 = 1250	RECEPTACLES	UP TO 10KVA -	x1.00 = -	OTHER = -	x1.00 = -
			REMAINDER -	x1.00 = -		

TOTAL DESIGN KW = 1.25 — TOTAL DESIGN AMPS = 5.2



NOTE:
REFER TO ERICSSON SPECS FOR ADDITIONAL INFORMATION INCLUDING WIRING INSTRUCTIONS & GROUNDING REQUIREMENTS

ONE-LINE DIAGRAM

SCALE: NTS | 1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

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

COMSENSE
2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705

DRAWN BY:	LM
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	08/10/17	90% CD
1	12/20/17	95% CD
2	02/28/18	100% CD

REGISTERED PROFESSIONAL ENGINEER — Thomas Andrew Bailey — E14044 — Dec. 31, 2018 — ELECTRICAL — STATE OF CALIFORNIA

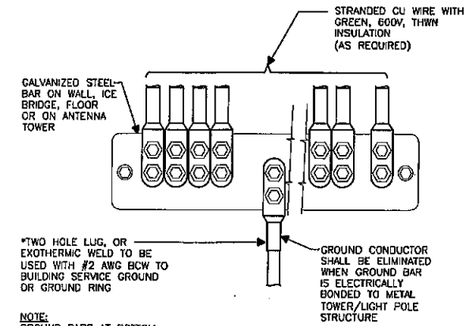
SF EL GRANADA 001

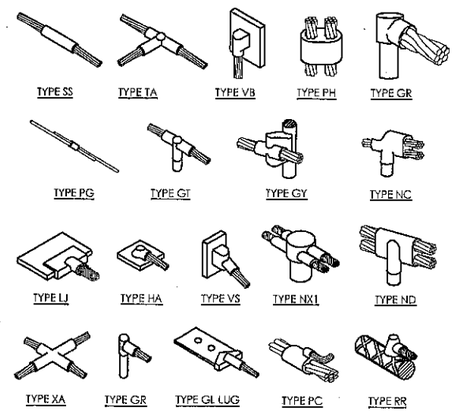
(BEHIND) 570 AVENUE ALHAMBRA
EL GRANADA, CA 94019

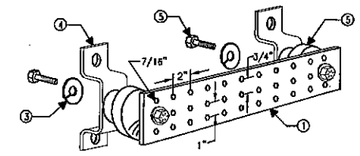
ONE-LINE DIAGRAM & GROUNDING SCHEMATIC

E-2

NOT USED	9	NOT USED	6	GROUND WIRE TO BAR	3
NOT USED	8	EXOTHERMIC WELD CONNECTION	5	GROUND BAR	2
NOT USED	10	NOT USED	7	MECHANICAL CONNECTION	4	GROUND TEST WELL	1

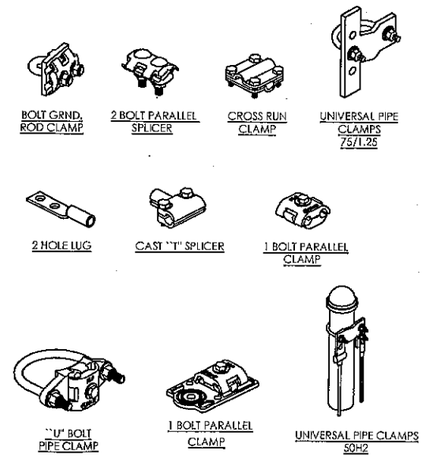


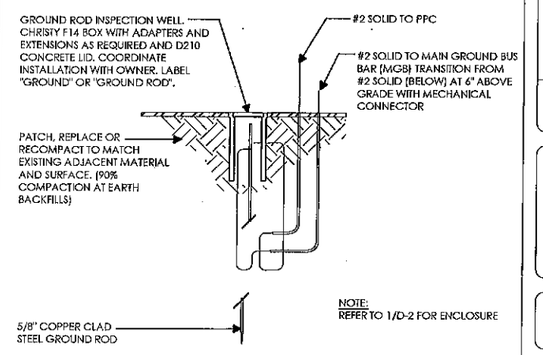




NOTES:

1. COPPER GROUND BAR, HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION. (ACTUAL GROUND BAR SIZE WILL VARY BASED ON NUMBER OF GROUND CONNECTIONS)
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4 OR APPROVED EQUAL
3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO., CAT. NO. 3015-8 OR APPROVED EQUAL
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO., CAT NO. A-6056 OR APPROVED EQUAL
5. 5/8-11 X 1" HHCS BOLTS, NEWTON INSTRUMENT CO., CAT NO. 3012-1 OR APPROVED EQUAL
6. INSULATORS SHALL BE ELIMINATED WHEN BONDING DIRECTLY TO TOWER/MONOPINE STRUCTURE. CONNECTION TO TOWER/MONOPINE STRUCTURE SHALL BE PER MANUFACTURERS RECOMMENDATIONS.
7. VALMONT TINMG212U-K (OR EQUIVALENT) 1/4"X2"X12"





verizon

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REGISTERED PROFESSIONAL ENGINEER
Thomas Andrew Bray
E14644
Dec. 31, 2018
ELECTRICAL
STATE OF CALIFORNIA

SF EL GRANADA 001

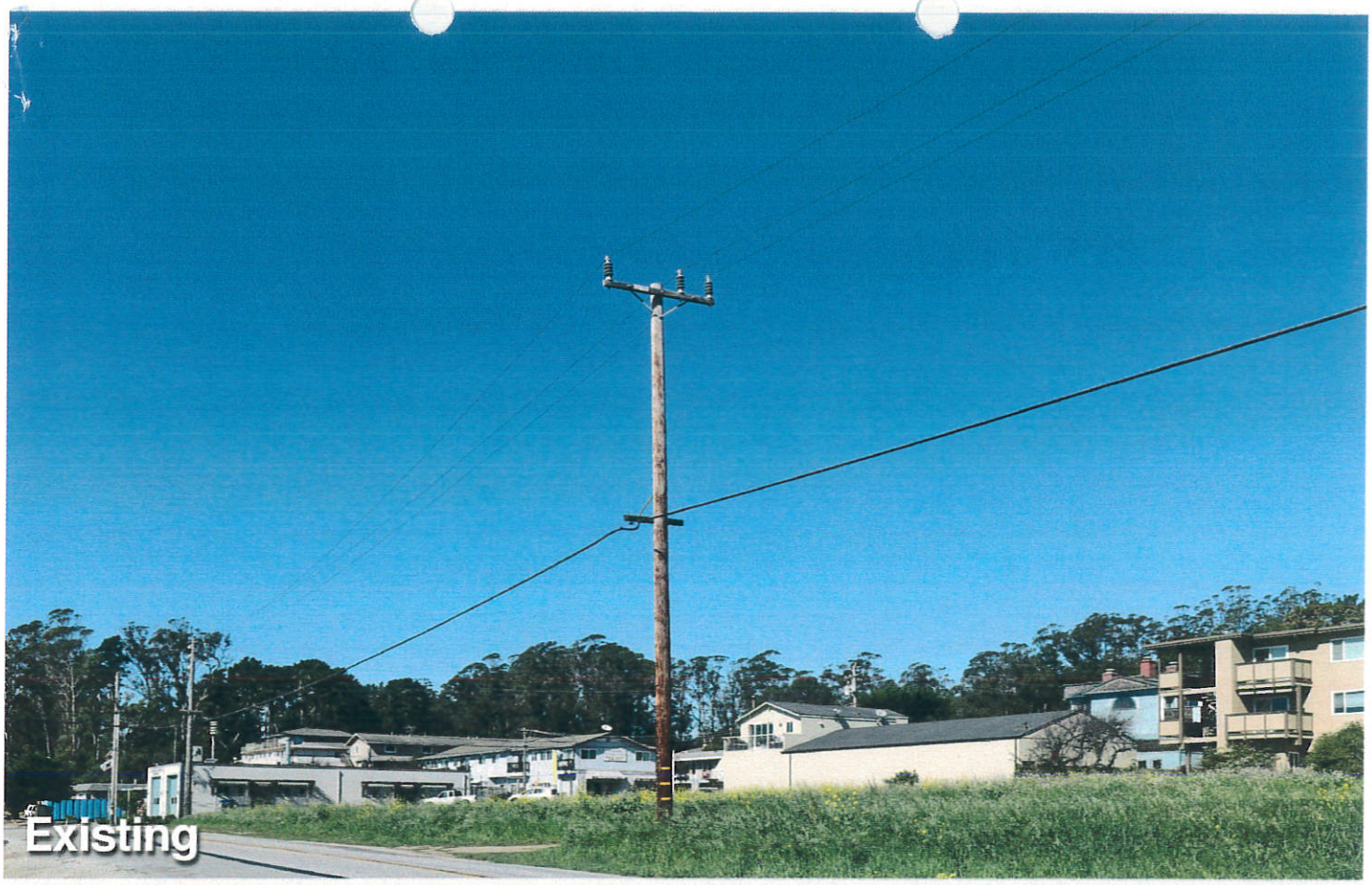
(BEHIND) 570 AVENUE
ALHAMBRA
EL GRANADA, CA 94019

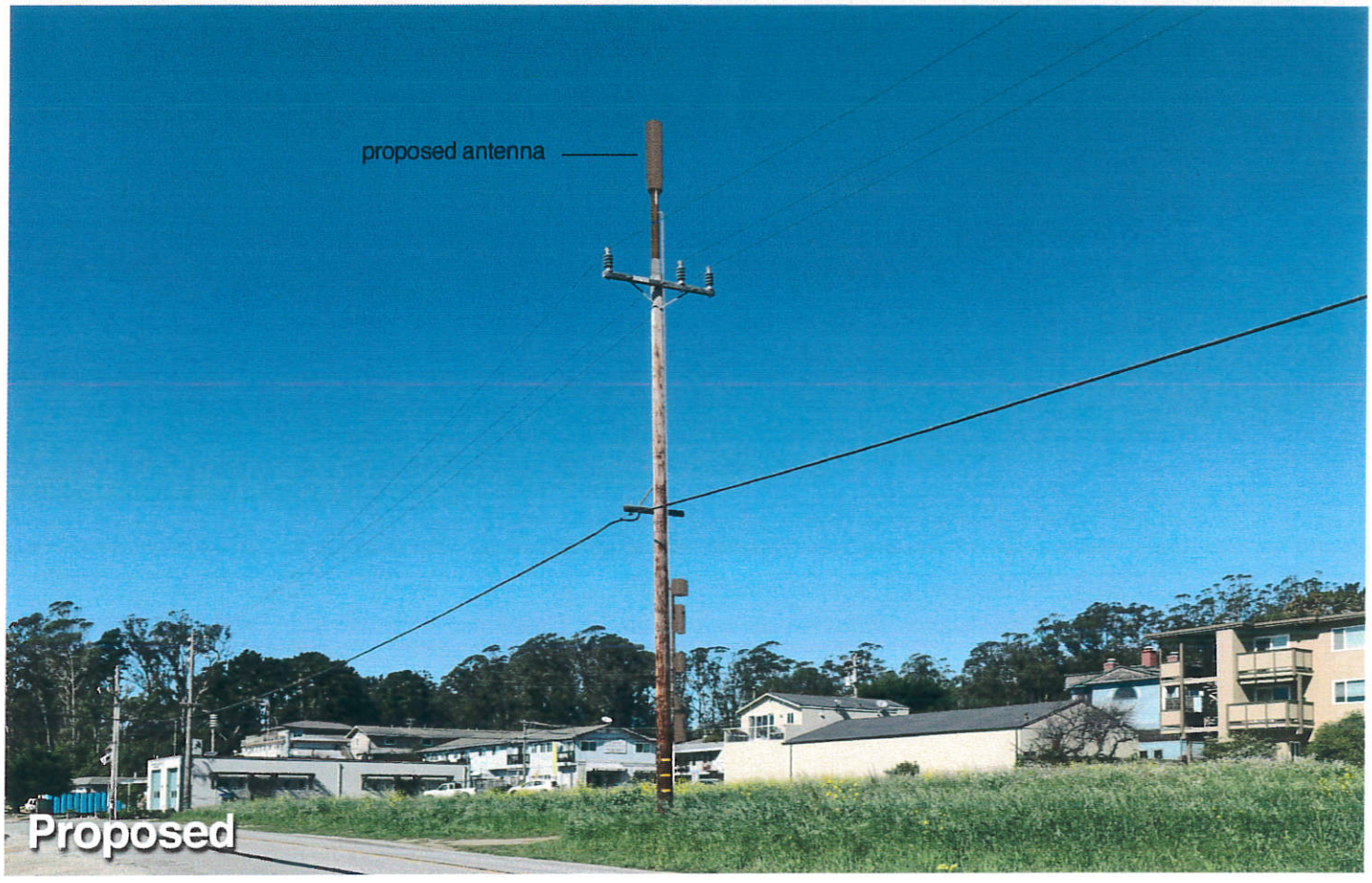
ELECTRICAL DETAILS

E-3

County of San Mateo - Planning and Building Department

ATTACHMENT C2





PLN2018-00081

verizon

SF El Granada 001 Site # 438656

(Behind) 570 Avenue Alhambra
El Granada, CA

Looking Northwest from Obispo Road

View #1

2/16/18

Applied Imagination 510 914-0500

verizon

SF El Granada 001 Site # 438656

(Behind) 570 Avenue Alhambra
El Granada, CA

Looking Southeast from Obispo Road

View #2

2/16/18

Applied Imagination 510 914-0500

verizon

SF El Granada 001 Site # 438656

Aerial Map

(Behind) 570 Avenue Alhambra
El Granada, CA

2/16/18

Applied Imagination 510 914-0500

County of San Mateo - Planning and Building Department

ATTACHMENT C3

PLN2018-00081

County of San Mateo - Planning and Building Department

ATTACHMENT C4

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

Site No. 438656
SF EL GRANADA 001
Behind 570 Avenue Alhambra on Obisbo Road
El Granada, California 94019
San Mateo County
37° 30' 5.38" N, -122° 28' 10.58" W NAD83

EBI Project No. 6218000820
February 28, 2018

Prepared for:

Verizon Wireless
c/o Modus, LLC
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 438656 located at Behind 570 Avenue Alhambraon on Obisbo Road in El Granada, 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. The worst-case emitted power density may exceed the FCC's general public limit within approximately 12 feet of Verizon's proposed antenna at the antenna face level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 5 feet of Verizon's proposed antenna at the antenna face level. As noted, 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 the antenna and its associated fields.

At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately **10.00** percent of the FCC's general public limit (**2.00** percent of the FCC's occupational limit).

The composite exposure level from all carriers on this site is approximately **10.00** percent of the FCC's general public limit (**2.00** percent of the FCC's occupational limit) at the nearest walking/working surface to each antenna.

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 (at two sector locations) on a utility pole located at Behind 570 Avenue Alhambraon on Obisbo Road in El Granada, 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	80° 320°	10.35 14.05	47.7	30	30	45.7

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)

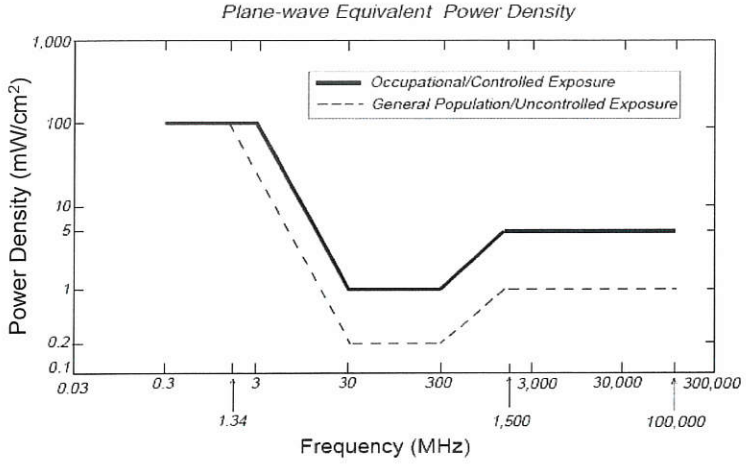
(A) Limits for Occupational/Controlled Exposure

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

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)**
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 2-2 radio configuration for Sectors A and B, with a power level of 48 dbM (60 watts) per transmitter for the 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. The worst-case emitted power density may exceed the FCC's general public limit within approximately 12 feet of Verizon's proposed antenna at the antenna face level level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 5 feet of Verizon's proposed antenna at the antenna face level. At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately 10.00 percent of the FCC's general public limit (2.00 percent of the FCC's occupational limit). The composite exposure level from all carriers on this site is approximately 10.00 percent of the FCC's general public limit (2.00 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 utility pole from ground level, a yellow CAUTION sign is recommended for installation on the street side of the pole approximately 12 feet below the antenna. If there are obstructions on the pole that prevent placing the sign 12 feet below the antenna, then adjust accordingly.

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 438656 located at Behind 570 Avenue Alhambraon on Obisbo Road in El Granada, 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. The worst-case emitted power density may exceed the FCC's general public limit within approximately 12 feet of Verizon's proposed antenna at the antenna face level level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 5 feet of Verizon's proposed antenna at the antenna face level. 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.

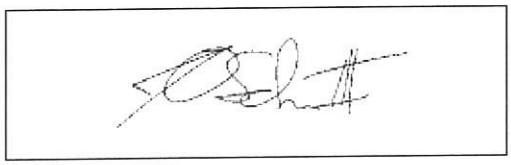
Appendix A

Certifications

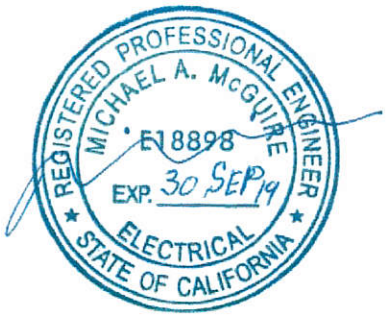
Preparer Certification

I, Jos Schorr, 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.



Reviewed and Approved by:



sealed 1mar2018

Michael McGuire
Electrical Engineer

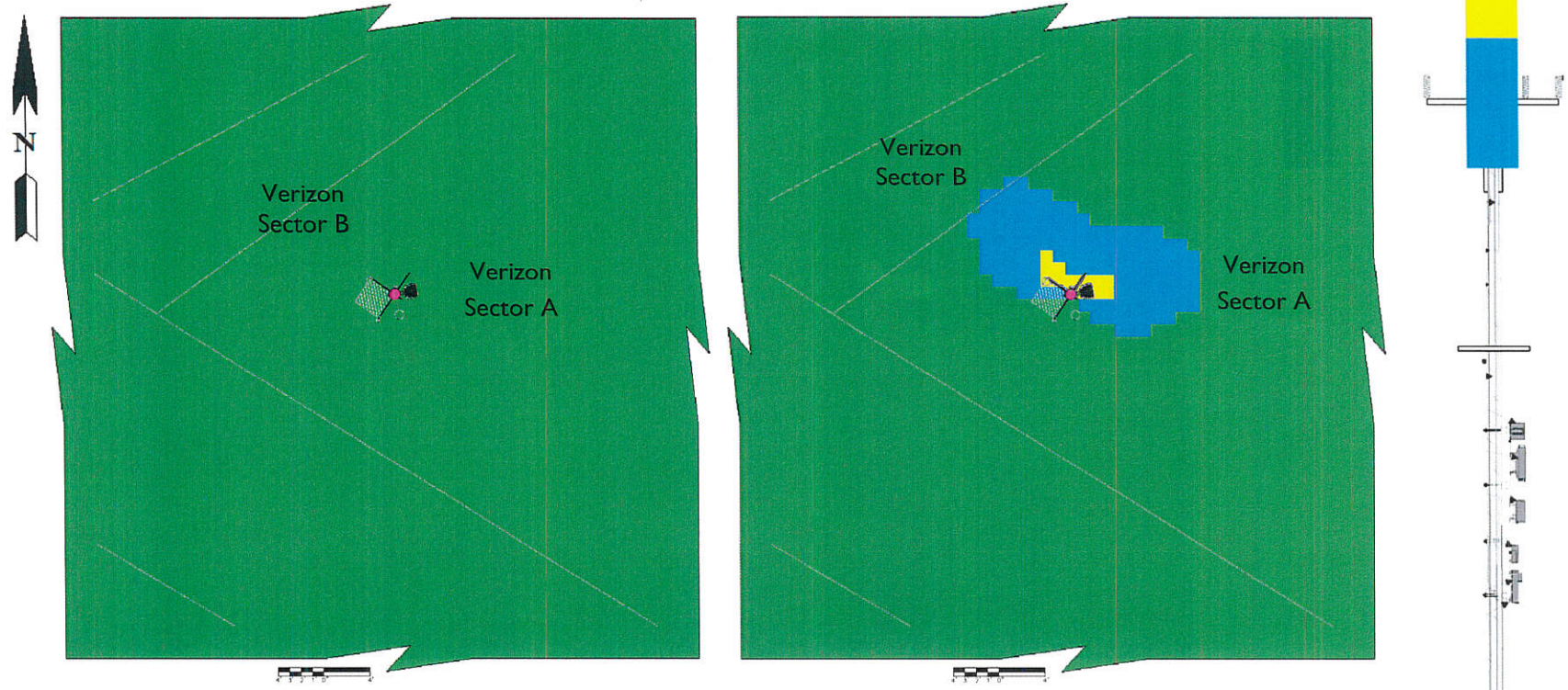
Note that EBI's scope of work is limited to an evaluation of the Radio Frequency – Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the structure, as well as the impact of the antennas and broadcast equipment on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

Appendix B

Radio Frequency Electromagnetic Energy

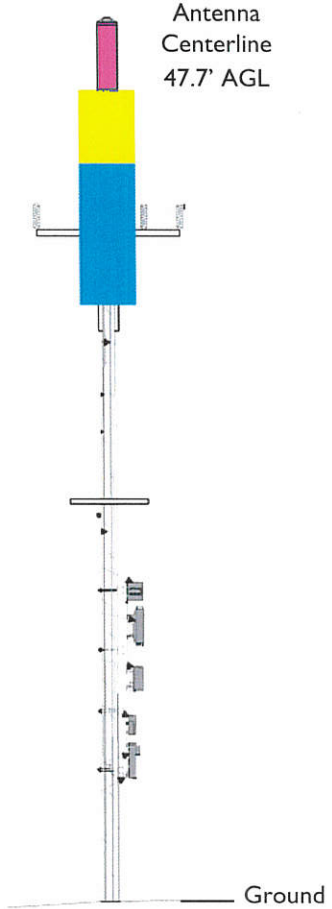
Safety / Signage Plans

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



Ground Level

Antenna Face Level



Profile View

Verizon Antennas

Roofview: Composite Exposure Levels

Facility Operator: Verizon Wireless

Site Name: SF EL GRANADA 001

Verizon Site Number: 438656

Report Date: 02-28-18

EBI Consulting
environmental | engineering | due diligence

Roofview: Verizon Exposure Levels

Facility Operator: Verizon Wireless

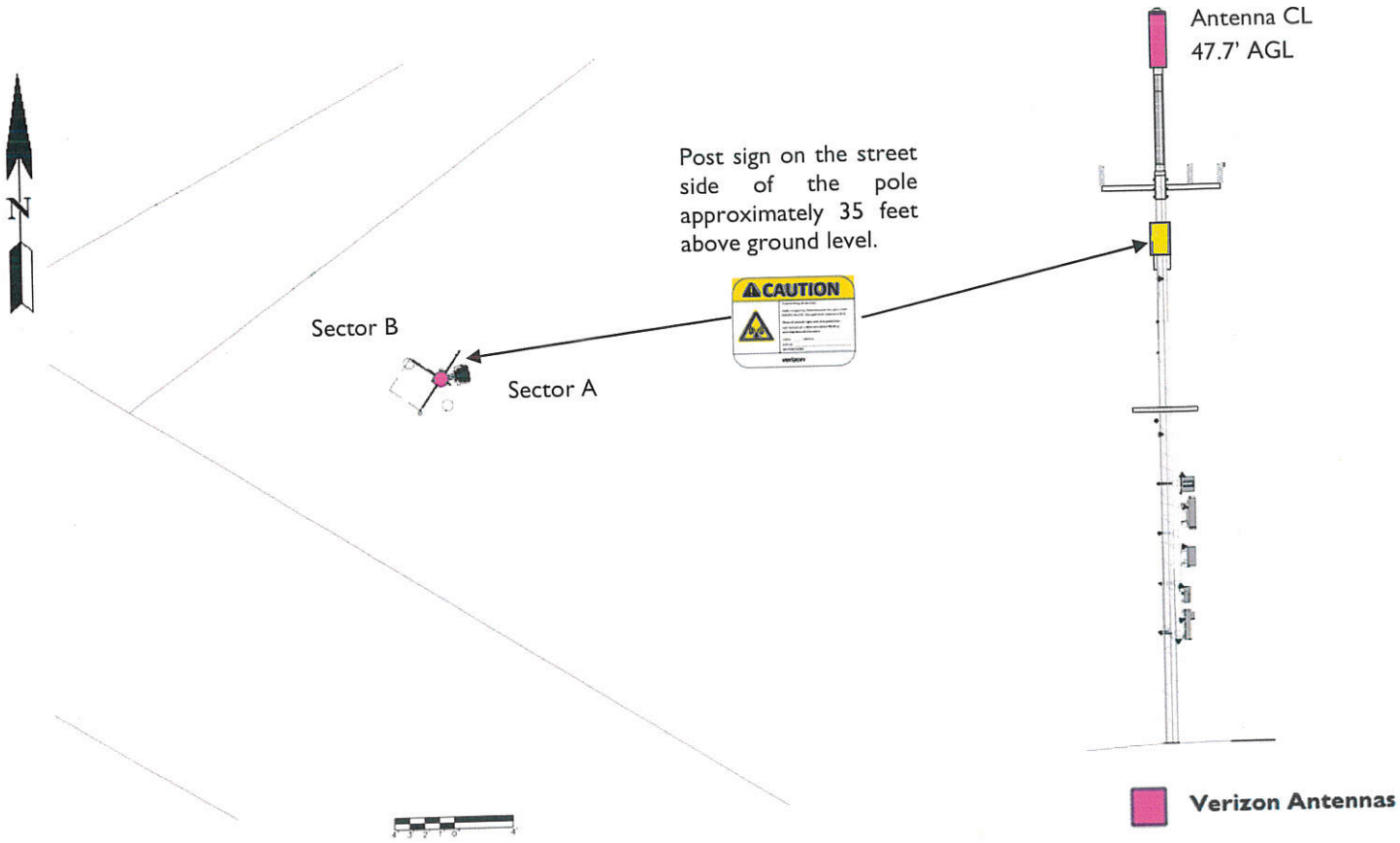
Site Name: SF EL GRANADA 001

Verizon Site Number: 438656

Report Date: 02-28-18

EBI Consulting
environmental | engineering | due diligence

Verizon Signage Plan



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	N/A
	**NOC Information Sign** Informational sign with NOC Phone Number and Base Transceiver Station (BTS) Number	N/A	N/A
	**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	N/A
	**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 on the side of the utility pole that is facing the street in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.	Post sign approximately 12 feet below the antennas (35 feet AGL) on the street side of the pole.
	**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	N/A

Appendix C

Roofview® Export File

StartMapDefinition

Roof Max X	Roof Max Y	Map Max X	Map Max Y	Y Offset	X Offset	Number of envelope		
60	60	80	90	20	20	1	$AE$141:$	$AE$141:$CL$200

StartSettingsData

Standard	Method	Uptime	Scale Factc	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	Freq (MHz)	Trans Power	Trans Count	Coax Len	Coax Type	Other Loss	Input Power	Calc Power	Mfg	Model	X (ft)	Y (ft)	Z (ft)	Type	Aper	Gain dBd	Pt Dir BWdth	Profile Uptime	flag ON
VZW A1-A	LTE	700	60	1			1		47.65969	Amphenol	CUUT070X	30	30	45.66		4	10.35	82;80		ON•
VZW A1-A	LTE	2100	60	1			1		47.65969	Amphenol	CUUT070X	30	30	45.66		4	14.05	73.7;80		ON•
VZW A1-B	LTE	700	60	1			1		47.65969	Amphenol	CUUT070X	30	30	45.66		4	10.35	82;320		ON•
VZW A1-B	LTE	2100	60	1			1		47.65969	Amphenol	CUUT070X	30	30	45.66		4	14.05	73.7;320		ON•

StartSymbolData

Sym	Map Mark	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	

List Of Area
$AE$141:$

County of San Mateo - Planning and Building Department

ATTACHMENT D1

verizon

SF MOSS BEACH 003

(IFO) 9400 CABRILLO HIGHWAY
MOSS BEACH, CA 94038

SITE ID:	SF MOSS BEACH 003
LOCATION CODE:	438419
PROJECT ID:	20171536244
SITE TYPE:	UTILITY POLE
POLE #:	120017218
COUNTY:	SAN MATEO

PLN2018-00083

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES & MODIFICATIONS THEY MAY IMPOSE.

VERIZON CONSTRUCTION
SIGNATURE: _____ DATE: _____

VERIZON - RF ENGINEER
SIGNATURE: _____ DATE: _____

VERIZON - EQUIPMENT ENGINEER
SIGNATURE: _____ DATE: _____

VERIZON REAL ESTATE
SIGNATURE: _____ DATE: _____

MODUS - CONSTRUCTION
SIGNATURE: _____ DATE: _____

MODUS - LEASING
SIGNATURE: _____ DATE: _____

OTHER (IF APPLICABLE)
SIGNATURE: _____ DATE: _____

PROJECT TEAM

APPLICANT:
VERIZON WIRELESS
2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598
CONTACT: KAREN MCPHERSON
PHONE: (925) 200.6328
EMAIL:
karen.mcpherson@verizonwireless.com

SITE ACQUISITION:
MODUS, INC.
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108
CONTACT: SCOTT REVARD
PHONE: (415) 595.0938
EMAIL: srevard@modus-corp.com

PROJECT MANAGER:
MODUS, INC.
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108
CONTACT: SCOTT REVARD
PHONE: (415) 595.0938
EMAIL: srevard@modus-corp.com
CONTACT: KEVIN BOWYER
phone: (408) 219.5442
EMAIL: kbowyer@modus-corp.com

A&E PROJECT MANAGER:
COMM-SENSE CONSULTING
2930 DOMINGO AVE, SUITE 150
BERKELEY, CA 94705
CONTACT: JIM BURROWS, P.E.
PHONE: (916) 412.7896
EMAIL: commsense.jim@gmail.com

CONSTRUCTION/IMPLEMENTATION MANAGER:
MODUS, INC.
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108
CONTACT: CAL BORDONARO
PHONE: (415) 261.0000
EMAIL: cbordonaro@modus-corp.com

LAND USE PLANNER:
MODUS, INC.
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108
CONTACT: KEVIN BOWYER
PHONE: (408) 219.5442
EMAIL: kbowyer@modus-corp.com

PROJECT DESCRIPTION

VERIZON WIRELESS PROPOSES TO INSTALL A NEW WIRELESS COMMUNICATION SITE ON A WOODEN UTILITY POLE IN THE PUBLIC RIGHT-OF-WAY.

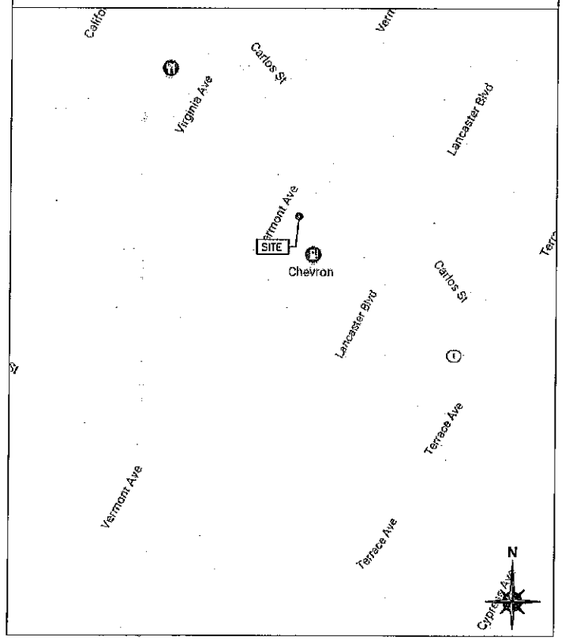
SCOPE:
- INSTALL (1) NEW 4' CANISTER ANTENNA ON TOP OF UTILITY POLE
- INSTALL (1) NEW 100A METER ON UTILITY POLE
- INSTALL (1) NEW 7' BAYONET EXTENSION
- INSTALL (1) NEW RRU2212 ON UTILITY POLE
- INSTALL (1) NEW RRUS32 ON UTILITY POLE
- INSTALL (1) NEW PSU AC 08 & (1) NEW PSU AC 02 ON UTILITY POLE
- INSTALL (1) NEW COAX CONDUIT FROM EQUIPMENT TO NEW CANISTER ANTENNA
- INSTALL (1) NEW POWER CONDUIT FROM P.O.C. TO EQUIPMENT
- INSTALL (1) NEW FIBER CONDUIT FROM P.O.C. TO EQUIPMENT
- INSTALL (1) NEW EQUIPMENT BRACKET ON UTILITY POLE
- INSTALL (6) NEW HYBRID COUPLERS ON UTILITY POLE
- INSTALL (1) NEW AC PANEL ON UTILITY POLE
- INSTALL (1) NEW FIBER DEMARC BOX ON UTILITY POLE
- CABLING TO BE INSTALLED IN A TIGHT NEAT MANNER WITHOUT EXCESS CABLE LOOPS
- ALL VERIZON ADDED APPURTENANCES SHALL BE PAINTED TO MATCH POLE COLOR (NON-GLOSSY "SABLE" BY SHERWIN WILLIAMS, OR EQUIVALENT)

DRIVING DIRECTIONS

DIRECTIONS FROM VERIZON WIRELESS OFFICE AT 2785 MITCHELL DRIVE, WALNUT CREEK, CA :

1. HEAD NORTHEAST ON MITCHELL DR TOWARD OAK GROVE RD
2. TURN RIGHT ONTO OAK GROVE RD
3. TURN RIGHT ONTO YGNACIO VALLEY RD
4. YGNACIO VALLEY RD TURNS RIGHT AND BECOMES HILLSIDE AVE
5. TURN RIGHT ONTO THE 24 W RAMP TO OAKLAND
6. CONTINUE ONTO CA-24 W/HWY 24 W
7. KEEP LEFT AT THE FORK TO CONTINUE ON CA-24 W
8. USE THE RIGHT 2 LANES TO TAKE EXIT 2B FOR INTERSTATE 580 W
9. USE THE LEFT LANE TO MERGE ONTO I-580 W
10. USE THE LEFT 3 LANES TO TAKE EXIT 19A TO MERGE ONTO I-80 W TOWARD SAN FRANCISCO
11. KEEP LEFT, FOLLOW SIGNS FOR SAN JOSE/U.S. 101 S/AIRPORT
12. MERGE ONTO US-101 S
13. USE THE RIGHT 2 LANES TO TAKE EXIT 431 FOR INTERSTATE 280 S TOWARD DALY CITY
14. MERGE ONTO I-280 S
15. KEEP RIGHT AT THE FORK TO CONTINUE ON CA-1 S/PACIFIC COAST HWY., FOLLOW SIGNS FOR PACIFICA
16. TURN RIGHT ONTO VALLEMAR ST

VICINITY MAP



SITE INFORMATION

SITE ADDRESS:	(IFO) 9400 CABRILLO HIGHWAY MOSS BEACH, CA 94038
OWNER:	PG&E
APPLICANT:	VERIZON WIRELESS 2785 MITCHELL DRIVE, SUITE 9 WALNUT CREEK, CA 94598
LATITUDE:	N 37° 31' 33.70"
LONGITUDE:	W 122° 30' 44.17"
COUNTY:	SAN MATEO
JURISDICTION:	CITY OF MOSS BEACH
ASSESSORS PARCEL NUMBER:	PUBLIC RIGHT-OF-WAY ADJACENT TO 037-171-860
ZONING:	PUBLIC ROW
ELEVATION:	±61.5' AMSL

CALL 811 BEFORE YOU DIG
IT'S THE LAW

THE UTILITIES SHOWN HEREIN ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER/SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL THE UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO THE (E) UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

DRAWING INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
T-2	GENERAL NOTES
C1	SITE SURVEY
A-1	SITE PLAN
A-2	ENLARGED SITE PLAN & PROPOSED EQUIPMENT LAYOUT PLANS
A-3	ELEVATIONS
A-4	ELEVATIONS
D-1	DETAILS
D-2	DETAILS
E-1	ELECTRICAL GENERAL NOTES
E-2	ONE-LINE DIAGRAM & GROUNDING SCHEMATIC
E-3	ELECTRICAL DETAILS

CODE COMPLIANCE

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

- 2016 CALIFORNIA CODE
- 2016 CALIFORNIA BUILDING CODE (CBC), BASED ON THE 2015 IBC
- 2016 CALIFORNIA RESIDENTIAL CODE (CRC), BASED ON THE 2015 IRC
- 2016 CALIFORNIA ELECTRICAL CODE (CEC), BASED ON THE 2014 NEC
- 2016 CALIFORNIA MECHANICAL CODE (CMC), BASED ON THE 2015 UMC
- 2016 CALIFORNIA PLUMBING CODE (CPC), BASED ON THE 2015 UPC
- 2016 CALIFORNIA GREEN BUILDINGS STANDARDS CODE (CALGREEN)
- 2016 CALIFORNIA FIRE CODES WITH ALL LOCAL AMENDMENTS
- ANY LOCAL BUILDING CODE AMENDMENTS TO THE ABOVE
- CITY / COUNTY ORDINANCES
- GO 95

HANDICAP REQUIREMENTS:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED IN ACCORDANCE WITH CALIFORNIA ADMINISTRATIVE STATE CODE PART 2, TITLE 24, CHAPTER 11B, SECTION 11038.

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

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

COMMSENSE
2930 DOMINGO AVE, STE 150
BERKELEY, CA 94705

DRAWN BY:	SH
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/03/17	90% CD
1	12/29/17	95% CD
2	01/16/18	100% CD
3	02/28/18	100% CD REV

REGISTERED PROFESSIONAL ENGINEER
JAMES MICHAEL BURROWS
RENEWAL 08/31/19
CIVIL
STATE OF CALIFORNIA

SF MOSS BEACH 003
(IFO) 9400 CABRILLO HIGHWAY
MOSS BEACH, CA 94038

TITLE SHEET

T-1

GENERAL NOTES

GENERAL CONSTRUCTION NOTES

1. PLANS ARE INTENDED TO BE DIAGRAMMATIC ONLY, UNLESS NOTED OTHERWISE. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
2. THE CONTRACTOR SHALL OBTAIN, IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
3. CONTRACTOR SHALL CONTACT USA (UNDERGROUND SERVICE ALERT) AT (800) 227-2600, FOR UTILITY LOCATIONS, 2 WORKING DAYS BEFORE PROCEEDING WITH ANY EXCAVATION, SITE WORK OR CONSTRUCTION.
4. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE, OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CBC'S REQUIREMENTS REGARDING EARTHQUAKE RESISTANCE, FOR, BUT NOT LIMITED TO, PIPING, LIGHT FIXTURES, CEILING GRID, INTERIOR PARTITIONS, AND MECHANICAL EQUIPMENT. ALL WORK MUST COMPLY WITH LOCAL EARTHQUAKE CODES AND REGULATIONS.
6. REPRESENTATIONS OF TRUE NORTH, OTHER THAN THOSE FOUND ON THE PLOT OF SURVEY DRAWINGS, SHALL NOT BE USED TO IDENTIFY OR ESTABLISH BEARING OF TRUE NORTH AT THE SITE. THE CONTRACTOR SHALL RELY SOLELY ON THE PLOT OF SURVEY DRAWING AND ANY SURVEYOR'S MARKINGS AT THE SITE FOR THE ESTABLISHMENT OF TRUE NORTH, AND SHALL NOTIFY THE ARCHITECT / ENGINEER PRIOR TO PROCEEDING WITH THE WORK IF ANY DISCREPANCY IS FOUND BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND THE TRUE NORTH ORIENTATION AS DEPICTED ON THE CIVIL SURVEY. THE CONTRACTOR SHALL ASSUME SOLE LIABILITY FOR ANY FAILURE TO NOTIFY THE ARCHITECT / ENGINEER.
7. THE BUILDING DEPARTMENT ISSUING THE PERMITS SHALL BE NOTIFIED AT LEAST TWO WORKING DAYS PRIOR TO THE COMMENCEMENT OF WORK, OR AS OTHERWISE STIPULATED BY THE CODE ENFORCEMENT OFFICIAL HAVING JURISDICTION.
8. DO NOT EXCAVATE OR DISTURB BEYOND THE PROPERTY LINES OR LEASE AREA LINES, UNLESS OTHERWISE NOTED.
9. ALL EXISTING UTILITIES, FACILITIES, CONDITIONS, AND THEIR DIMENSIONS SHOWN ON THE PLAN HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THE ARCHITECT / ENGINEER AND THE OWNER ASSUME NO RESPONSIBILITY WHATSOEVER AS TO THE SUFFICIENCY OR THE ACCURACY OF THE INFORMATION SHOWN ON THE PLANS, OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTORS SHALL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL EXISTING UTILITIES AND FACILITIES PRIOR TO START OF CONSTRUCTION. CONTRACTORS SHALL ALSO OBTAIN FROM EACH UTILITY COMPANY DETAILED INFORMATION RELATIVE TO WORKING SCHEDULES AND METHODS OF REMOVING OR ADJUSTING EXISTING UTILITIES.
10. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES, BOTH HORIZONTAL AND VERTICALLY, PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHOULD BE IMMEDIATELY REPORTED TO THE ARCHITECT / ENGINEER FOR RESOLUTION AND INSTRUCTION, AND NO FURTHER WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT / ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT HIS/HER OWN RISK AND EXPENSE.
11. ALL NEW AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS TO BE DISTURBED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISH ELEVATIONS PRIOR TO FINAL INSPECTION OF WORK.
12. ANY EXISTING COMPONENTS DISTURBED DURING CONSTRUCTION SHALL BE RETURNED TO IT'S ORIGINAL CONDITION PRIOR TO COMPLETION OF WORK. SIZE, LOCATION AND TYPE OF ANY UNDERGROUND UTILITIES OR IMPROVEMENTS SHALL BE ACCURATELY NOTED AND PLACED ON "AS-BUILT" DRAWINGS BY GENERAL CONTRACTOR, AND ISSUED TO THE ARCHITECT / ENGINEER AT COMPLETION OF PROJECT.
13. ALL TEMPORARY EXCAVATIONS FOR THE INSTALLATION OF FOUNDATIONS, UTILITIES, ETC., SHALL BE PROPERLY LAID BACK OR BRACED IN ACCORDANCE WITH CORRECT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS.

GENERAL NOTES FOR EXISTING CELL SITES

1. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
2. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
3. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
4. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
5. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD (N) TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
6. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

APPLICABLE CODES, REGULATIONS AND STANDARDS:

1. CONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION.
2. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE TIME OF PERMITTING AWARD SHALL GOVERN THE DESIGN.
3. CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
   - 3.1. - AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   - 3.2. - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
   - 3.3. - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARD FOR STRUCTURAL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES
   - 3.4. - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRICAL EQUIPMENT.
   - 3.5. -IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")
4. TIA 607 COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
   - 4.1. TELCORDIA GR-63 NETWORK EQUIPMENT-BUILDING SYSTEM (NEBS): PHYSICAL PROTECTION
   - 4.2. TELCORDIA GR-347 CENTRAL OFFICE POWER WIRING
   - 4.3. TELCORDIA GR-1275 GENERAL INSTALLATION REQUIREMENTS
   - 4.4. TELCORDIA GR-1503 COAXIAL CABLE CONNECTIONS
5. ANY AND ALL OTHER LOCAL & STATE LAWS AND REGULATIONS
6. FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

GENERAL TRENCHING NOTES

1. MAINTAIN 24" MINIMUM COVER FOR ALL ELECTRICAL CONDUITS, U.O.N.
2. MAINTAIN 30" MINIMUM COVER FOR ALL TELECOMMUNICATIONS CONDUITS.
3. MINIMUM 1" SAND SHADING BELOW CONDUITS, AND 6" COVERING ON TOP OF CONDUITS REQUIRED.
4. REFER TO SHEET E-1 FOR ADDITIONAL REQUIREMENTS

GENERAL GROUNDING NOTES

1. GROUNDING SHALL BE TESTED AT 5 OHMS OR LESS.
2. WOOD MOLDING, STAPLED EVERY 3'-0" AND AT EACH END.

GENERAL CONDUIT NOTES

1. ALL CONDUITS WILL BE MANDRELED AND EQUIPPED WITH 3/8" PULL ROPE.
2. SCHEDULE 40 CONDUIT FOR UNDERGROUND USE.
3. SCHEDULE 80 CONDUIT FOR RISER USE AND ELSEWHERE AS NOTES. TRANSITION FROM SCHEDULE 40 PVC OR RIGID STEEL CONDUIT TO SCHEDULE 80 USING APPROVED FITTINGS DESIGNED TO PROVIDE A SMOOTH INTERIOR WALL TRANSITION TO THE REDUCED INTERIOR DIAMETER OF SCHEDULE 80. ADJUST CONDUIT SIZE IF NECESSARY TO MAINTAIN THE INTERIOR AREA REQUIRED FOR THE WIRING SPECIFIED.
4. GALVANIZED STEEL CONDUIT FOR ANY CONDUIT UNDER 3", STUB UP 10" THEN CONVERT TO SCHEDULE 80.
5. CONTRACTOR TO STUB UP POLE 10" W/ 3" POWER CONDUIT. POWER COMPANY TO CONVERT FROM 3" STUB SCHEDULE 80 TO 2" SCHEDULE 80 FROM TOP OF STUB UP.
6. ZRC COLD GALVANIZING COMPOUND OR EQUIVALENT IS REQUIRED ON EXPOSED THREADS IN RIGID STEEL CONDUIT AND THE CUT ENDS OF SUPPORT STRUTS, ETC. TO PREVENT RUSTING.

TYPICAL R.O.W. POLE CONSTRUCTION NOTES

1. CABLE NOT TO IMPEDE 15" CLEAR SPACE OFF POLE FACE.
2. ALL CLIMB STEPS NEXT TO CONDUIT SHALL HAVE EXTENDED STEPS.
3. NO BOLT THREADS TO PROTRUDE MORE THAN 1-1/2"
4. ALL HOLES IN POLE LEFT FROM REARRANGEMENT OF CLIMB STEPS TO BE FILLED.
5. 90° SHORT SWEEPS UNDER ANTENNA ARM, ALL CABLES MUST TRANSITION ON THE INSIDE OR BOTTOM OF THE ARM (NO CABLE ON TOP OF ARM).
6. USE 90° CONNECTOR AT CABLE CONNECTION FOR OMNI DOWN ANTENNAS.
7. USE CABLE CLAMPS TO SECURE CABLE TO ARMS, PLACE 2" VERIZON WIRELESS CABLE I.D. TAGS ON BOTH SIDES OF ARMS.
8. USE 1/2" DIA. CABLE ON ANTENNAS UNLESS OTHERWISE SPECIFIED.
9. PLACE GPS ON ARM OF SOUTHERN SKY EXPOSURE AT MINIMUM 6" FROM TRANSMIT ANTENNA WHICH IS 24" AWAY FROM CENTER OF POLE.
10. FILL VOID AROUND CABLES AT CONDUIT OPENING WITH FOAM SEALANT TO PREVENT WATER INTRUSION.

CONTRACTOR REQUIREMENTS

DO NOT SCALE OFF DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

ABBREVIATIONS

A.B.	ANCHOR BOLT	GLB. (GLU-LAM)	GLUE LAMINATED BEAM
ABV.	ABOVE	GPS	GLOBAL POSITIONING SYSTEM
ACCA	ANTENNA CABLE COVER ASSEMBLY	GRND.	GROUND
ADD'L	ADDITIONAL	HDR.	HEADER
A.F.F.	ABOVE FINISHED FLOOR	HGR.	HANGER
A.F.G.	ABOVE FINISHED GRADE	HT.	HEIGHT
AGL	ABOVE GROUND LEVEL	ICGB.	ISOLATED COPPER GROUND BUS
ALUM	ALUMINUM	IN.(")	INCH(ES)
ALT.	ALTERNATE	INT.	INTERIOR
AMSL	ABOVE SEA LEVEL	LB.(#)	POUND(s)
ANT.	ANTENNA	L.B.	LAG BOLTS
APPRX.	APPROXIMATE(LY)	L.F.	LINEAR FEET(FOOT)
ARCH.	ARCHITECT(URAL)	L	LONGITUDINAL
AWG.	AMERICAN WIRE GAUGE	MAS.	MASONRY
BLDG.	BUILDING	MAX.	MAXIMUM
BLK.	BLOCK	M.B.	MACHINE BOLT
BLKG	BLOCKING	MECH.	MECHANICAL
BM.	BEAM	MFR.	MANUFACTURER
B.N.	BOUNDARY NAILING	MIN.	MINIMUM
BN	BACK-UP CABINET	MISC.	MISCELLANEOUS
BTCW.	BARE TINNED COPPER WIRE	MTL.	METAL
B.O.	BOTTOM	NO.(#)	NUMBER
B.O.F.	BOTTOM OF FOOTING	N.T.S.	NOT TO SCALE
CAB.	CABINET	(N)	NEW
CANT.	CANTILEVER(ED)	O.C.	ON CENTER
C.I.P.	CAST IN PLACE	OPNG.	OPENING
CLG.	CEILING	P/C	PRE CAST CONCRETE
℄	CENTERLINE	PCS	PERSONAL COMMUNICATION SERVICES
CLR.	CLEAR	ℙ	PLATE
COL.	COLUMN	PLY.	PLYWOOD
CONC.	CONCRETE	PPC.	POWER PROTECTION CABINET
CONN.	CONNECTION(OR)	PRC.	PRIMARY FLEXING CABINET
CONST.	CONSTRUCTION	P.S.F.	POUNDS PER SQUARE FOOT
CONT.	CONTINUOUS	P.S.I.	POUNDS PER SQUARE INCH
d	PENNY (NAILS)	P.T.	PRESSURE TREATED
DBL.	DOUBLE	PWR.	POWER (CABINET)
DEPT.	DEPARTMENT	QTY.	QUANTITY
D.F.	DOUGLAS FIR	RAD.(R)	RADIUS
DIA.	DIAMETER	REF.	REFERENCE
DIAG.	DIAGONAL	REINF.	REINFORCING
DIM.	DIMENSION	REQ'D.	REQUIRED
DWG.	DRAWING(S)	RGS.	RIGID GALVANIZED STEEL
DWL.	DOWEL(S)	R.O.W.	RIGHT OF WAY
EA.	EACH	SCH.	SCHEDULE
EL.	ELEVATION	SHT.	SHEET
ELEC.	ELECTRICAL	SIM.	SIMILAR
ELEV.	ELEVATOR	SPEC.	SPECIFICATION(S)
EMT.	ELECTRICAL METALLIC TUBING	SQ.	SQUARE
E.N.	EDGE NAIL	S.S.	STAINLESS STEEL
ENG.	ENGINEER	STD.	STANDARD
EQ.	EQUAL	STL.	STEEL
EXP.	EXPANSION	STRUC.	STRUCTURAL
EXST.(E)	EXISTING	TEMP.	TEMPORARY
EXT.	EXTERIOR	THK.	THICKNESS
FAB.	FABRICATION(OR)	T.N.	TOE NAIL
F.F.	FINISH FLOOR	T.O.A.	TOP OF ANTENNA
F.G.	FINISH GRADE	T.O.C.	TOP OF CURB
FIN.	FINISH(ED)	T.O.F.	TOP OF FOUNDATION
FLR.	FLOOR	T.O.P.	TOP OF PLATE(PARAPET)
FDN.	FOUNDATION	T.O.S.	TOP OF STEEL
F.O.C.	FACE OF CONCRETE	T.O.W.	TOP OF WALL
F.O.M.	FACE OF MASONRY	TYP.	TYPICAL
F.O.S.	FACE OF STUD	U.G.	UNDER GROUND
F.O.W.	FACE OF WALL	U.L.	UNDERWRITES LABORATORY
F.S.	FINISH SURFACE	U.N.O.	UNLESS NOTED OTHERWISE
FT.(')	FOOT(FEET)	V.I.F.	VERIFY IN FIELD
FTG.	FOOTING	W	WIDE(WIDTH)
G.	GROWTH(CABINET)	W/	WITH
GA.	GAUGE	WD.	WOOD
GI.	GALVANIZE(D)	W.P.	WEATHERPROOF
G.F.I.	GROUND FAULT CIRCUIT INTERRUPTER	WT.	WEIGHT

LEGEND

NEW ANTENNA	GROUT OR PLASTER
EXISTING ANTENNA	(E) BRICK
GROUND ROD	(E) MASONRY
GROUND BUS BAR	CONCRETE
MECHANICAL GRND. CONN.	EARTH
CADWELD	GRAVEL
GROUND ACCESS WELL	PLYWOOD
	SAND
E ELECTRIC BOX	CENTERLINE
T TELEPHONE BOX	PROPERTY/LEASE LINE
LIGHT POLE	MATCH LINE
FND. MONUMENT	WORK POINT
SPOT ELEVATION	GROUND CONDUCTOR
SET POINT	—T— TELEPHONE CONDUIT
1 REVISION	—E— ELECTRICAL CONDUIT
X GRID REFERENCE	—E/T— ELECTRICAL & TELCO CONDUITS
X X-X DETAIL REFERENCE	—A— COAXIAL CABLE
X X-X ELEVATION REFERENCE	—OH— OVERHEAD SERVICE CONDUCTORS
X X-X SECTION REFERENCE	—X— CHAIN LINK FENCING
WOOD CONTINUOUS	WOOD FENCING
WOOD BLOCKING	—OHT/OHP— OVERHEAD TELEPHONE/ OVERHEAD POWER
STEEL	—OHT— OVERHEAD TELEPHONE
	—OHP— OVERHEAD POWER LINE
	—E—E— POWER RUN

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2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

mosaic

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

COMMSENSE

2930 DOMINGO AVE, STE 150
BERKELEY, CA 94705

DRAWN BY:	SH
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/06/17	90% CD
1	12/29/17	95% CD
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REGISTERED PROFESSIONAL ENGINEER
CIVIL
STATE OF CALIFORNIA

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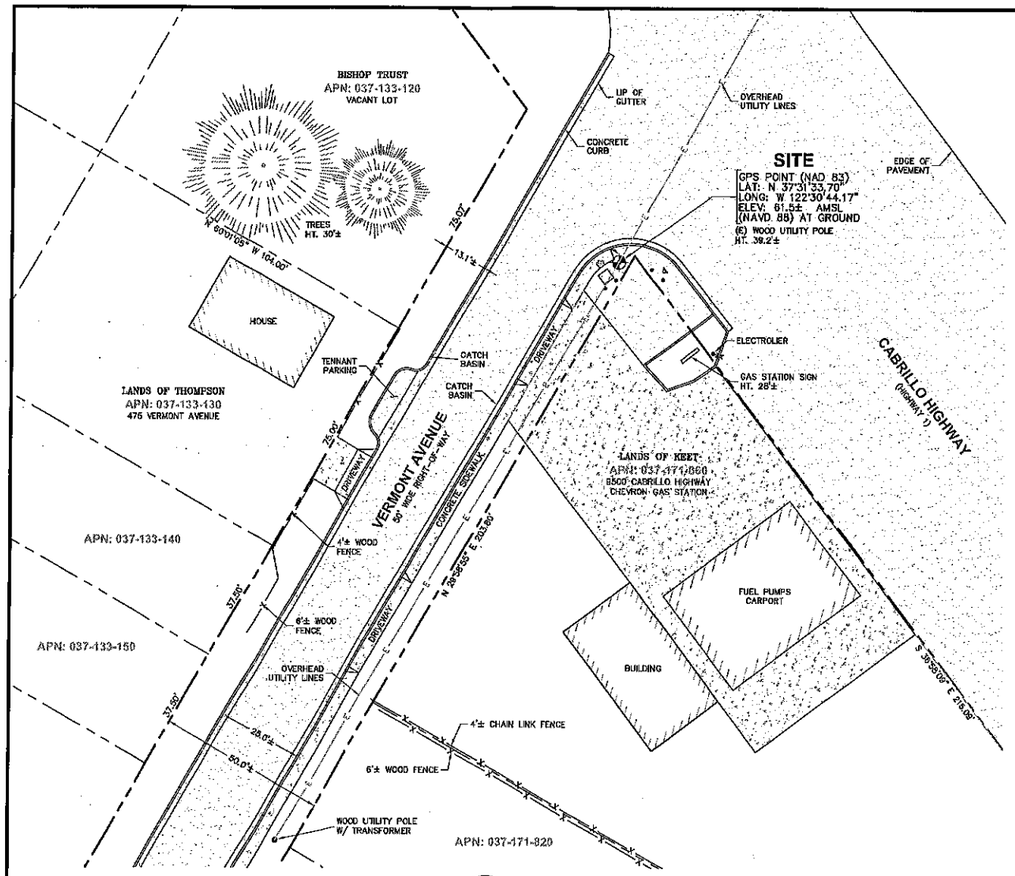
SF MOSS BEACH 003

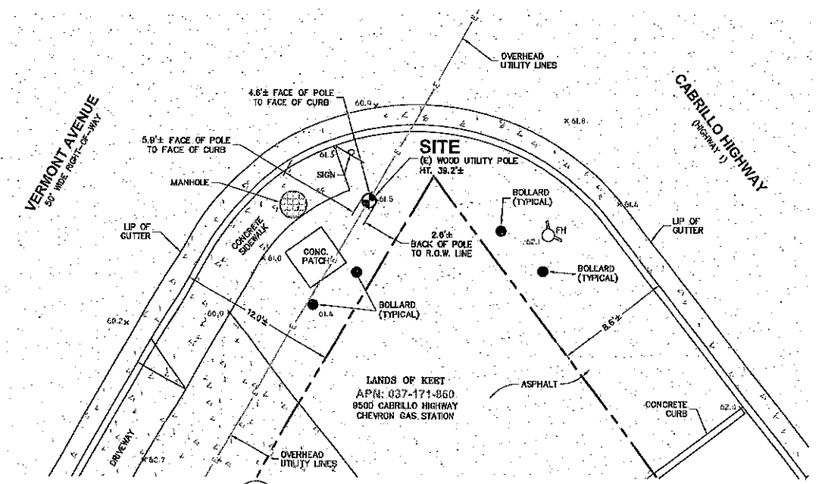
(IFO) 9400 CABRILLO HIGHWAY
MOSS BEACH, CA 94038

GENERAL NOTES

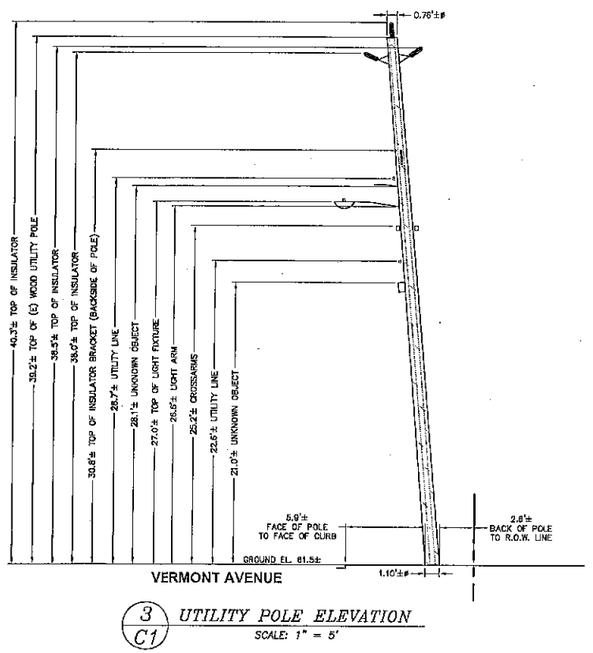
T-2



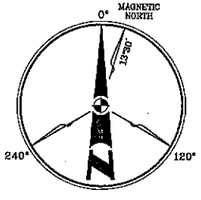
1 / C1 SITE PLAN
SCALE: 1" = 20'



2 / C1 ENLARGED SITE PLAN
SCALE: 1" = 5'



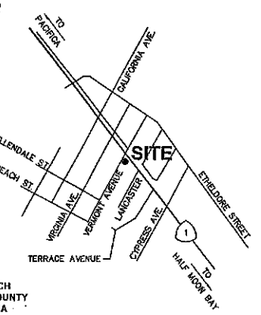
3 / C1 UTILITY POLE ELEVATION
SCALE: 1" = 5'



QUIET RIVER
Land Services Inc.
1 1/2 0 1
SCALE IN INCHES
MAGNETIC DECLINATION = 13°30'
PER NOAA-NGDC

SUFFICIENT SURVEY EVIDENCE WAS NOT RECOVERED TO ESTABLISH THE POSITION OF THE BOUNDARY LINES SHOWN HEREON. THE BOUNDARY REPRESENTED ON THIS MAP IS BASED ON COMPILED RECORD DATA AND BEST FIT ONTO EXISTING IMPROVEMENTS. IT IS POSSIBLE FOR THE LOCATION OF THE SUBJECT PROPERTY TO SHIFT FROM THE PLACEMENT SHOWN HEREON WITH ADDITIONAL FIELD WORK AND RESEARCH. THEREFORE, ANY SPATIAL REFERENCE MADE OR SHOWN BETWEEN THE RELATIONSHIP OF THE BOUNDARY LINES AND EXISTING GROUND FEATURES, EASEMENTS OR LEASE AREA SHOWN HEREON IS INTENDED TO BE APPROXIMATE AND IS SUBJECT TO VERIFICATION BY RESOLVING THE POSITION OF THE BOUNDARY LINES.

VICINITY MAP
NOT TO SCALE



MOSS BEACH
SAN MATEO COUNTY
CALIFORNIA

PROPERTY INFORMATION

Owner: SAN MATEO COUNTY
Address: 455 COUNTY CENTER, 2ND FLOOR
REDWOOD CITY, CA 94063

Site: MOSS BEACH 003
Address: 9400 CABRILLO HIGHWAY
MOSS BEACH, CA 94038

Assessor's Parcel Number: PUBLIC RIGHT-OF-WAY

Height of Building/Tower: 39.2'± A.G.L. TOP OF (E) WOOD UTILITY POLE

Title Report:
NO TITLE REPORT FURNISHED. EXCEPTIONS TO THE TITLE AND RESERVATIONS THEREFROM COULD NOT BE DETERMINED. BOUNDARY INFORMATION SHOWN IS COMPILED FROM AVAILABLE RECORD DATA.

Legal Description:
PROPERTY SITUATED IN THE TOWN OF MOSS BEACH, COUNTY OF SAN MATEO, STATE OF CALIFORNIA.

FEMA FLOOD ZONE DESIGNATION National Flood Insurance Program
County: SAN MATEO Effective Date: OCTOBER 16, 2012
Community—Panel Number: 060316C-0119-E
The Flood Zone Designation for this site as plotted by scale is:

ZONE X – Areas determined to be outside the 0.2% annual chance floodplain

SURVEY DATA
NAD 83 Datum:
Lat: N 37°31'33.70" Long: W 122°30'44.17"
Datum Base: NAD 83 Equipment Used: CHCX90D-OPUS Receiver (See Note 2)
Site Ground Elevation: 61.5± AMSL (NAVD88) AT BASE OF (E) SITE POLE
Basis of Elevations:
GLOBAL POSITIONING SYSTEM (GPS)
(SEE NOTE 2)
Basis of Bearings:
CALIFORNIA COORDINATES ZONE III (NAD83) AND BEST FIT WITH EXISTING IMPROVEMENTS.
Date of Field Survey: JUNE 23, 2017

NOTES

1.) This is not a boundary survey. This is a specialized topographic map with property lines and easements being a graphic depiction of various information gathered from preliminary title reports, back-up documents of record, maps and available monuments found during the field survey. No property monuments were set. No title research was performed by Quiet River Land Services, Inc.

2.) The latitude, longitude and elevation shown hereon were derived from post-processed L-1/L-2 data collected using Navstar Global Positioning System (GPS) and a CHCX90D-OPUS Receiver. CHC Navigation specifications report decimeter level accuracy (horizontally) when data is properly collected and processed. (Elevation = ±3.0 feet.)

3.) Unless otherwise noted, no underground utility locating service company was contacted prior to this map being prepared; therefore, there may be non-visible or obscure utilities existing on the property not shown on this map – so CALL BEFORE YOU DIG.

4.) Any electronic digital media provided by Quiet River Land Services, Inc. to our client is a courtesy and is not to be reproduced, distributed, sold, altered, revised, edited or amended without the express written consent of an Officer of Quiet River Land Services, Inc. Further, only the final stamped, signed and dated original "hard copy" version of our survey or map is considered to be our legally recognized product.

SURVEYOR'S STATEMENT

I, the undersigned, a Registered Professional Land Surveyor licensed under the laws of the State of California do hereby state that the information, measurements, easements, record boundary lines, bearings and distances as shown hereon are based upon a field survey as noted above and upon items of public record and data contained in a title report, as referenced. Furthermore, the Latitude and Longitude coordinates are reported in NAD 83 Datum and are accurate to within 3.15 feet horizontally and the ground elevation, reported in NAVD 1988 Datum, is within 3.3 feet vertically. The coordinate values and elevations are within the 1-A Accuracy Code designation as listed in the A.S.A.C. Information Sheet 91-003 and are accurate to the best of my knowledge and belief.

SIGNATURE DATE

LEGEND

APN:	ASSESSOR'S PARCEL NUMBER		ASPHALT
CP	CONTROL POINT		CONCRETE
EL.	ELEVATION	△	CONTROL POINT
FH	FIRE HYDRANT	○	FOUND MONUMENT
FND.	FOUND		GPS POINT
HT.	HEIGHT	P 15.3 / R 12.3	PARAPET/ROOF ELEVATIONS
MON.	MONUMENT	× 12.3	SPOT ELEVATION
(M-M)	MONUMENT TO MONUMENT	■	TEMPORARY BENCHMARK
P.O.B.	POINT OF BEGINNING		
P.O.C.	POINT OF COMMENCEMENT		
PP	POWER POLE		
(TYP.)	TYPICAL		

DATE: JUNE 29, 2017
DRAWN BY: RO
FILE NO.: MDSC1776

REVISIONS

DATE	DESCRIPTION	INITIAL
6/29/17	100% COMPLETE	RO

verizon wireless
2785 MITCHELL DRIVE
WALNUT CREEK, CA 94598
TEL: (925) 279-6329 FAX: (925) 279-6365

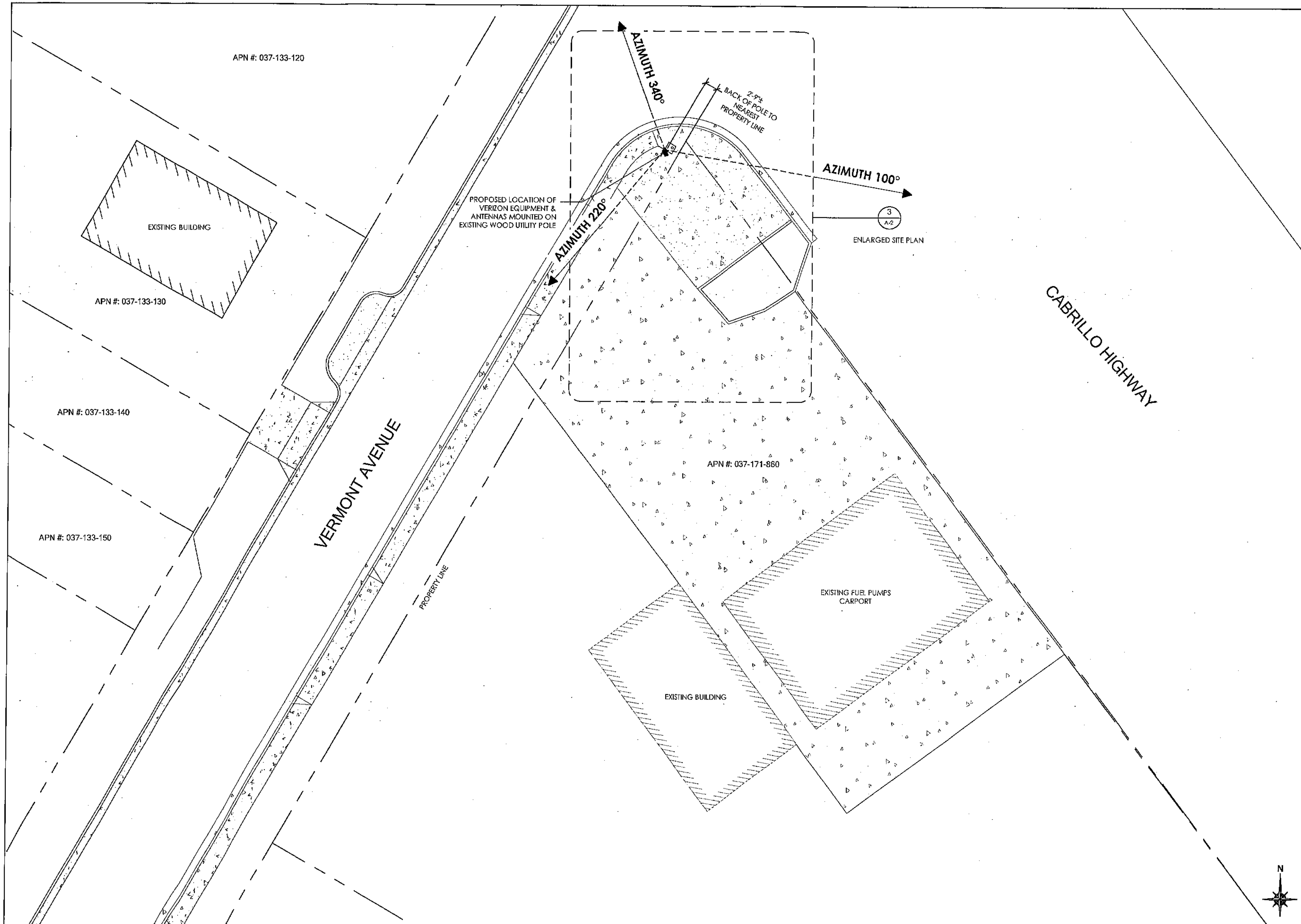
QUIET RIVER
Land Services Inc.
11501 Dublin Boulevard, Suite 200
Dublin, CA 94568
(925) 734-6788 Phone

EXISTING SITE CONDITIONS

MOSS BEACH 003

9400 CABRILLO HIGHWAY
MOSS BEACH, CA 94038

C1
OF 1 SHEET



SITE PLAN

24"x36" SCALE: 1" = 10'-0"
11"x17" SCALE: 1" = 20'-0"

10' 5' 0' 10'

1

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2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

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

COMMSENSE

2930 DOMINGO AVE, STE 150
BERKELEY, CA 94705

DRAWN BY: SH
CHECKED BY: JB

REV	DATE	DESCRIPTION
0	10/06/17	90% CD
1	12/29/17	95% CD
2	01/18/18	100% CD
3	02/28/18	100% CD REV

REGISTERED PROFESSIONAL ENGINEER — NO. C64533 — Exp 6/30/19 — CIVIL — STATE OF CALIFORNIA

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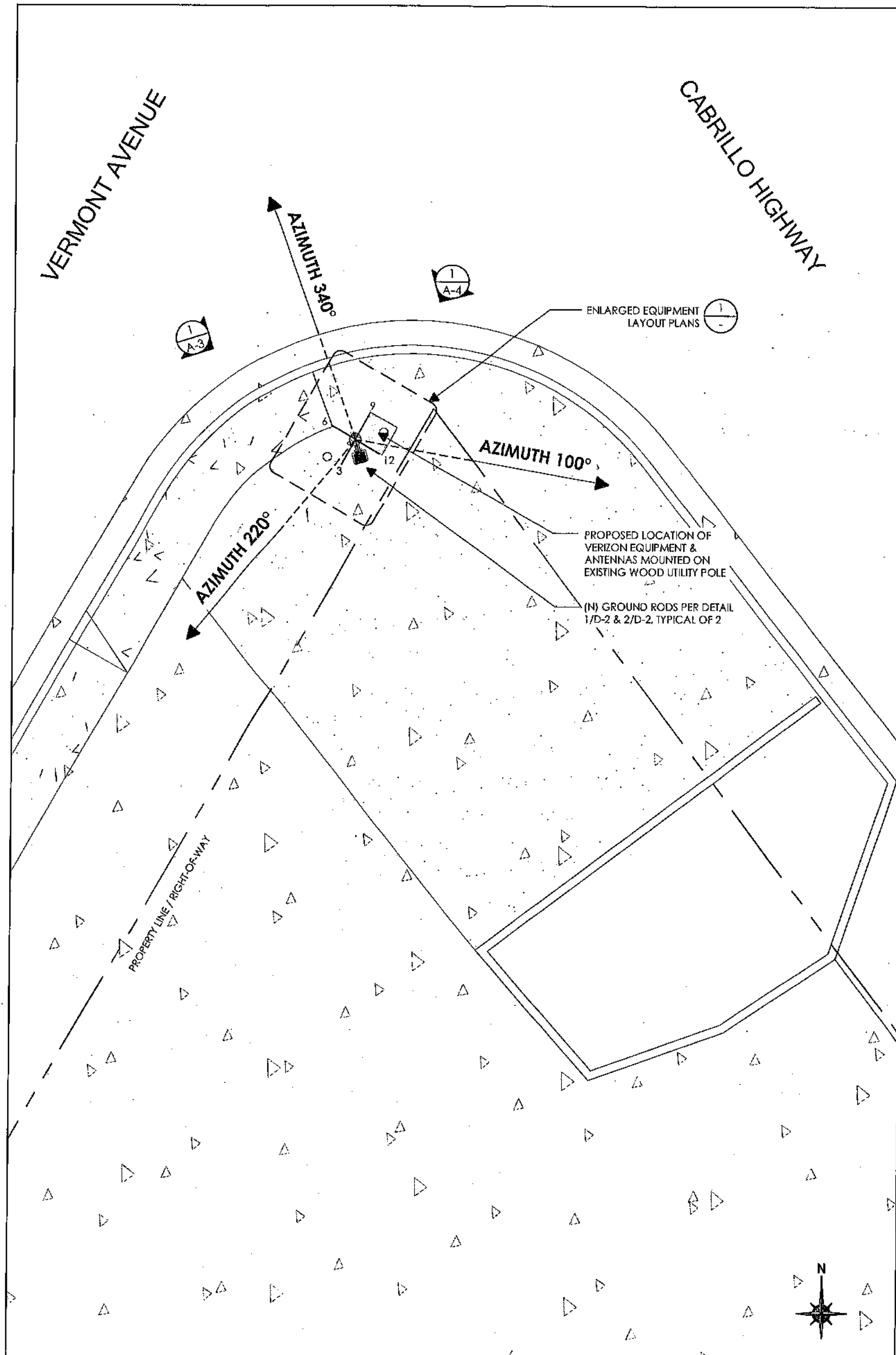
MOSS BEACH, CA 94038

SITE PLAN

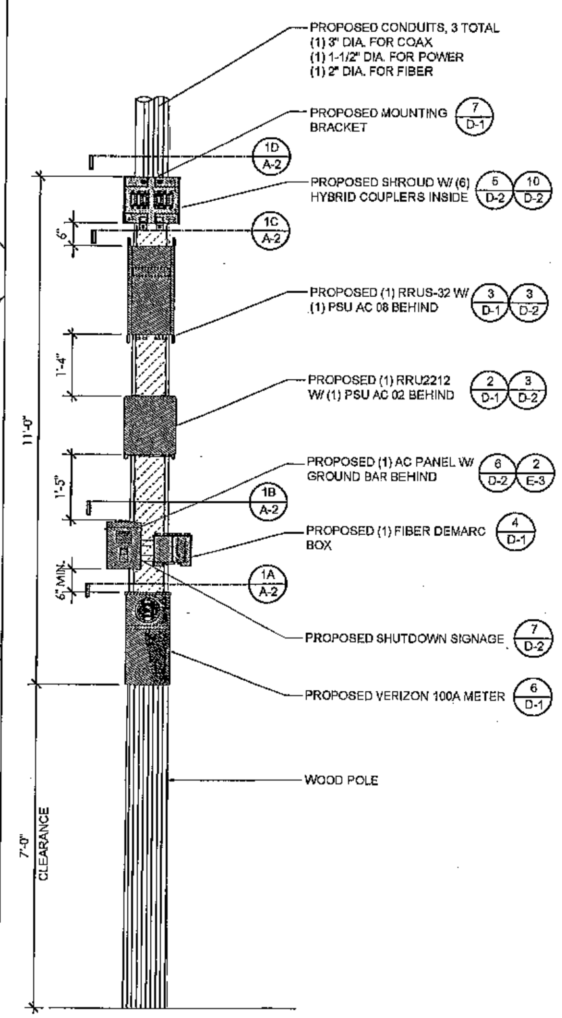
A-1



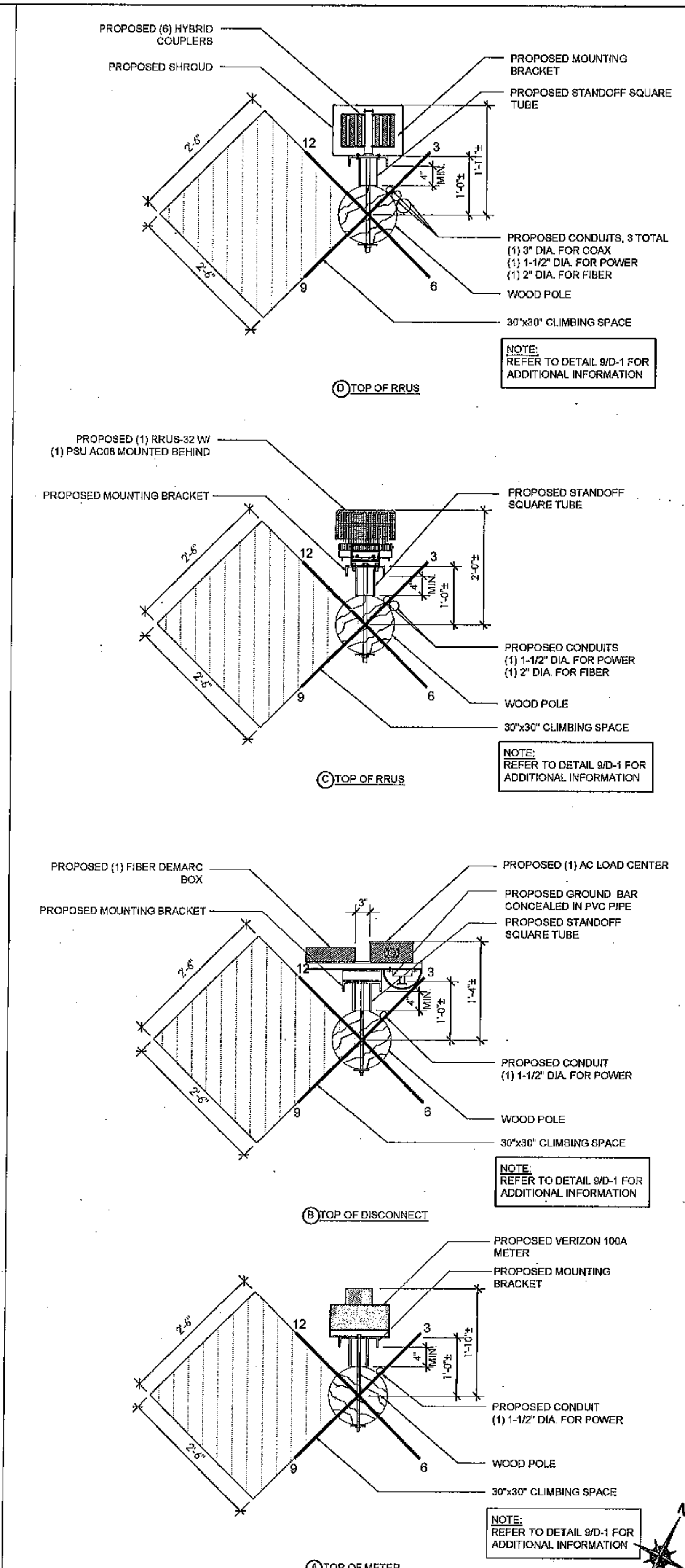
ENLARGED SITE PLAN 24"x36" SCALE: 1/4" = 1'-0" 11"x17" SCALE: 1/8" = 1'-0" | 3

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

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2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

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

COMSENSE

2930 DOMINGO AVE, STE 150
BERKELEY, CA 94705

DRAWN BY: SH

CHECKED BY: JB

REV	DATE	DESCRIPTION
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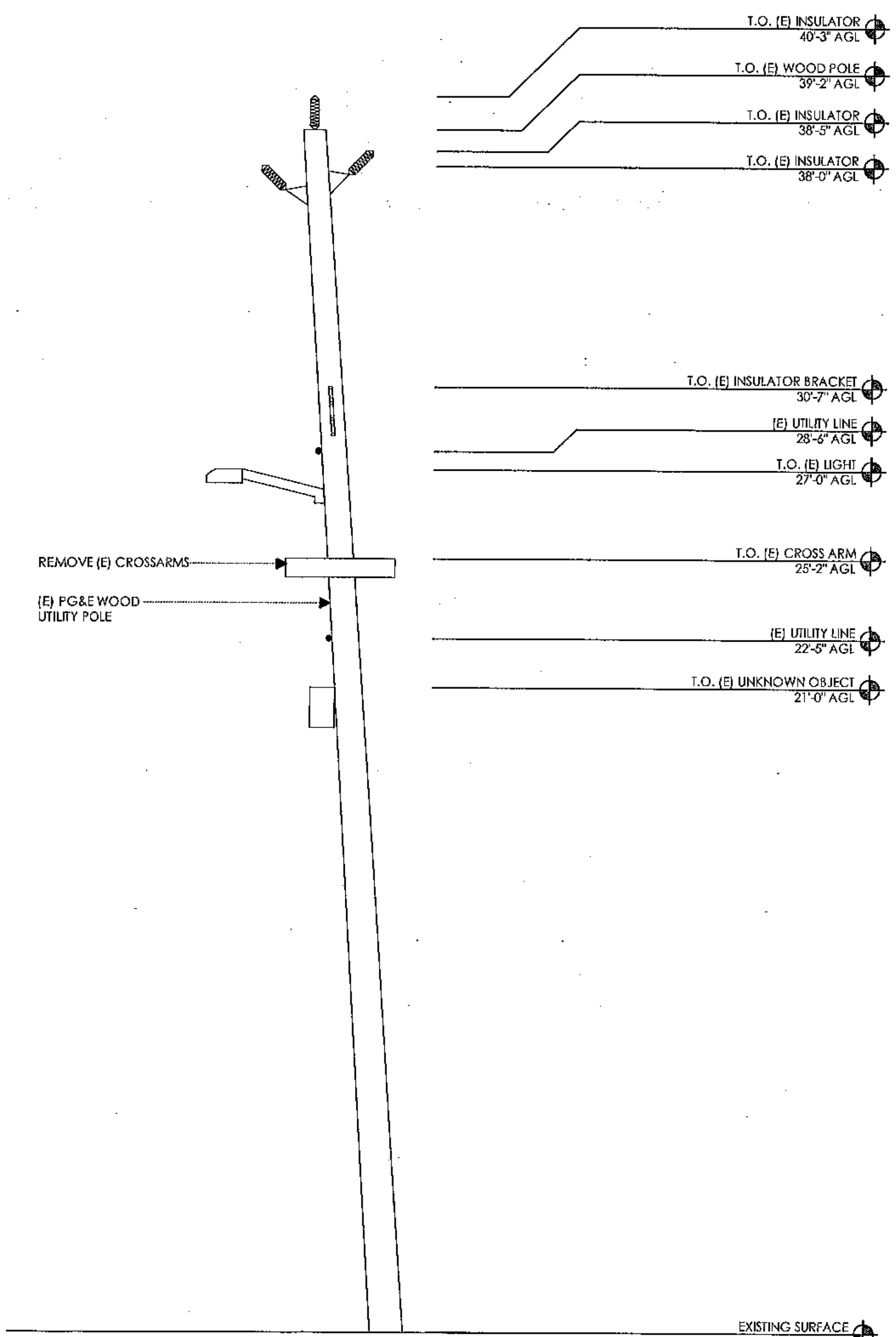
MOSS BEACH, CA 94038

ENLARGED SITE PLAN & PROPOSED ELEVATION / EQUIPMENT PLANS

A-2

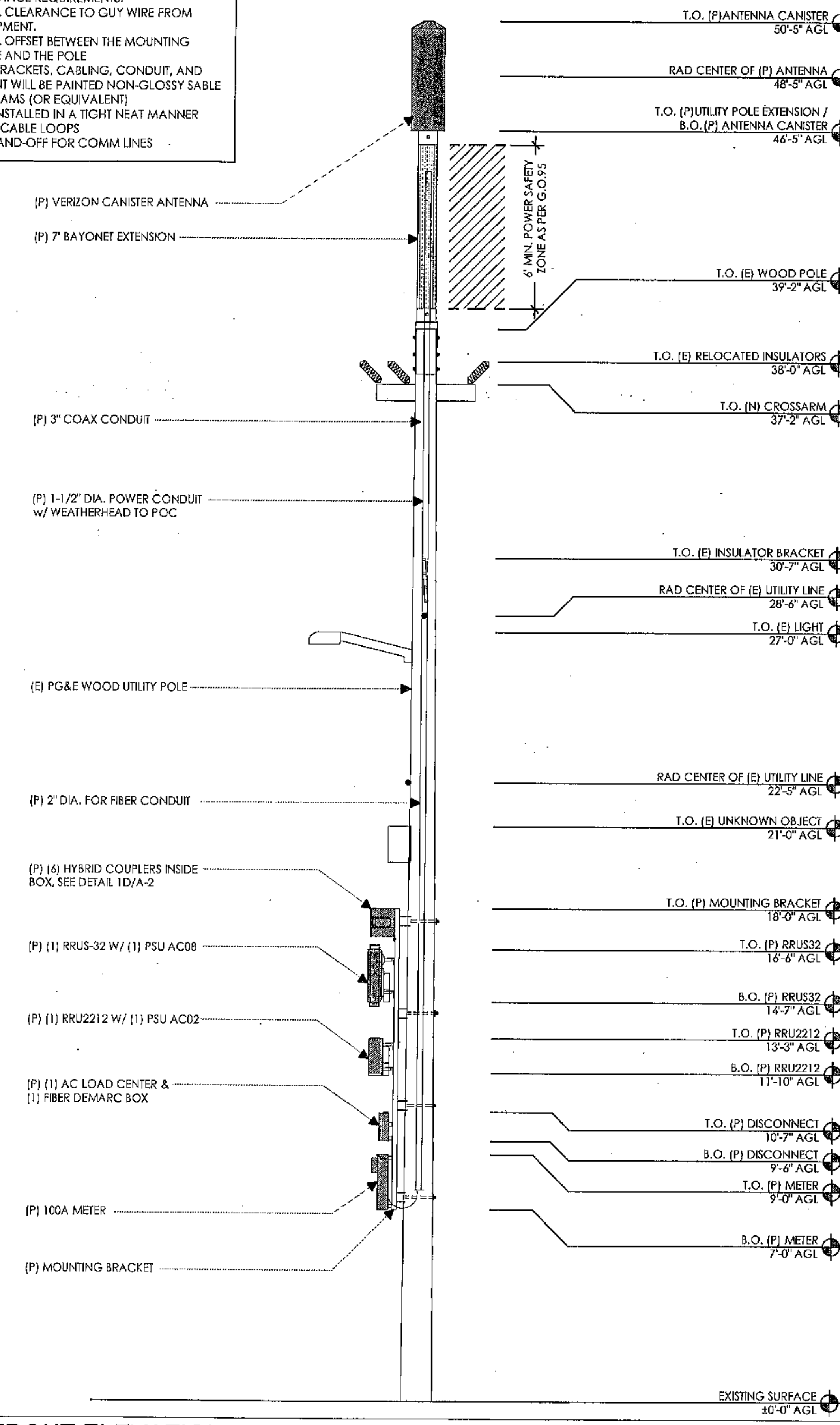
NOTES:
1. ALL EQUIPMENT SHALL BE PLACED (VERTICALLY) AS CLOSE AS ALLOWED BY POLE OWNER, WHILE MAINTAINING MINIMUM CLEARANCE REQUIREMENTS.
2. MAINTAIN 6" MIN. CLEARANCE TO GUY WIRE FROM PROPOSED EQUIPMENT.
3. MAINTAIN 4" MIN. OFFSET BETWEEN THE MOUNTING BRACKET FLANGE AND THE POLE
4. ALL ANTENNAS, BRACKETS, 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. PROVIDE NEW STAND-OFF FOR COMM LINES



EXISTING FRONT ELEVATION

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

2



PROPOSED FRONT ELEVATION

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1

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SF MOSS BEACH 003

(IFO) 9400 CABRILLO HIGHWAY
MOSS BEACH, CA 94038

ELEVATIONS

A-3

NOTES:
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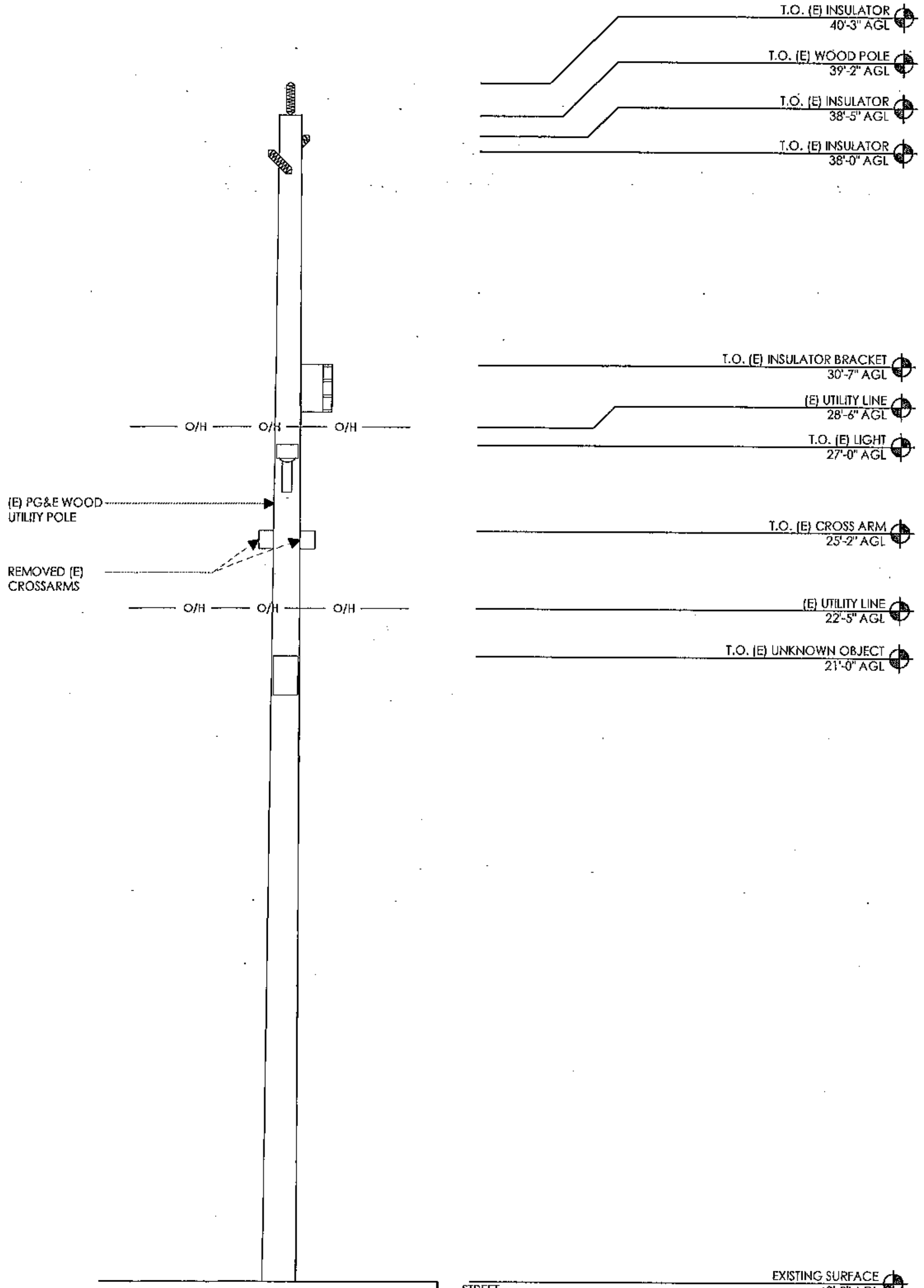
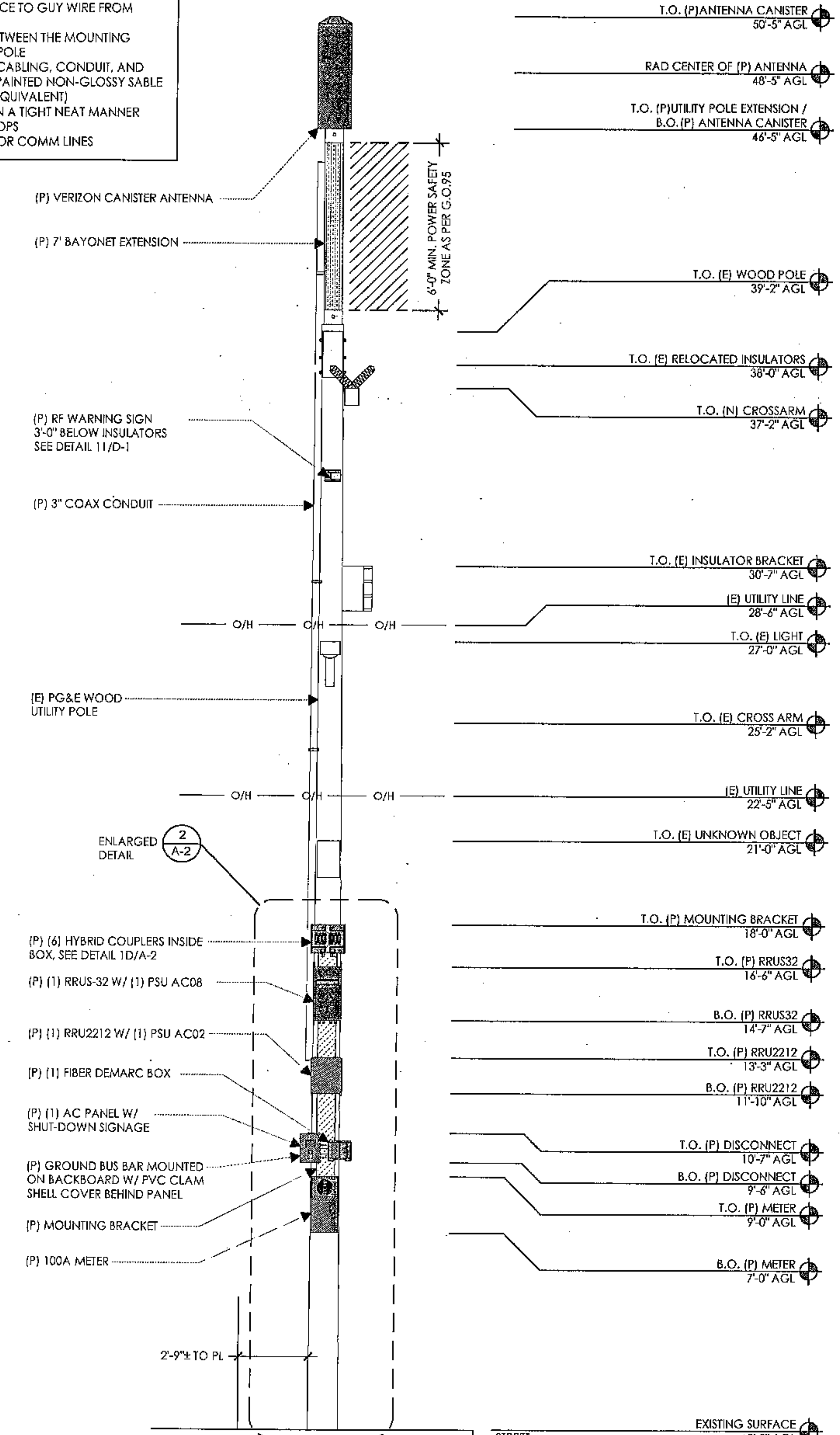
2. MAINTAIN 6" MIN. CLEARANCE TO GUY WIRE FROM PROPOSED EQUIPMENT.
3. MAINTAIN 4" MIN. OFFSET BETWEEN THE MOUNTING BRACKET FLANGE AND THE POLE
4. ALL ANTENNAS, BRACKETS, CABLING, CONDUIT, AND OTHER EQUIPMENT WILL BE PAINTED NON-GLOSSY SABLE BY SHERWIN WILLIAMS (OR EQUIVALENT)
5. CABLING TO BE INSTALLED IN A TIGHT NEAT MANNER WITHOUT EXCESS CABLE LOOPS
6. PROVIDE NEW STAND-OFF FOR COMM LINES



EXISTING SIDE ELEVATION

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

2



PROPOSED SIDE ELEVATION

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11"x17" SCALE: 3/16" = 1'-0"

1

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SAN FRANCISCO, CA 94108

COMMSENSE

2930 DOMINGO AVE, STE 150
BERKELEY, CA 94705

DRAWN BY:	SH
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/06/17	90% CD
1	12/29/17	95% CD
2	01/18/18	100% CD
3	02/28/18	100% CD REV

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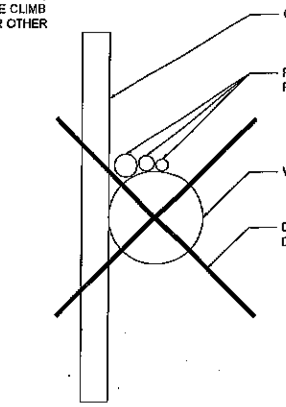
SF MOSS BEACH 003

(IFO) 9400 CABRILLO HIGHWAY
MOSS BEACH, CA 94038

ELEVATIONS

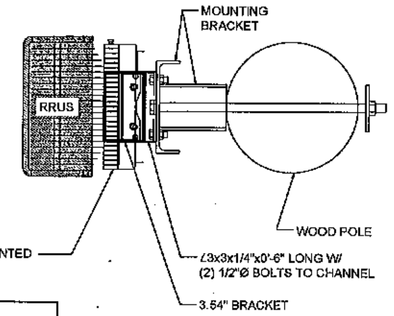
A-4

NOTE:
CONDUITS SHALL IN NO CASE, CROSS OVER INTO THE CLIMB SPACE QUADRANT, OR OTHER QUADRANTS



TYPICAL CROSS ARM OBSTRUCTION

TYP CROSS ARM OBSTRUCTION — 12



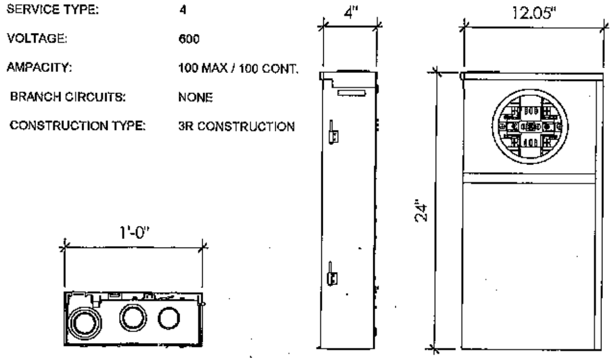
NOTE:
APPROVED EQUIVALENT ALTERNATE MOUNTING BRACKET MAY BE SUBSTITUTED FOR BRACKET SHOWN

PLAN VIEW

RRUS MOUNTING — SCALE: NTS — 9

U21MTBL METER MAIN

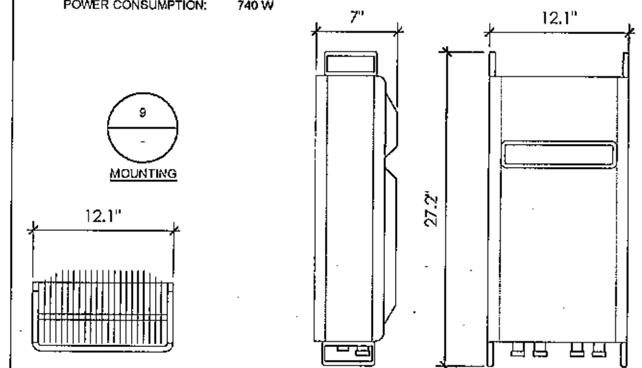
COLOR:	GRAY
DIMENSIONS:	24" TALL x 12.05" WIDE x 4"DEEP
NEUTRAL CONDUCTOR:	14 AWG-2/0 AWG
HUB PROV.:	AW
SERVICE TYPE:	4
VOLTAGE:	600
AMPACITY:	100 MAX / 100 CONT.
BRANCH CIRCUITS:	NONE
CONSTRUCTION TYPE:	3R CONSTRUCTION



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

SEE SIZE

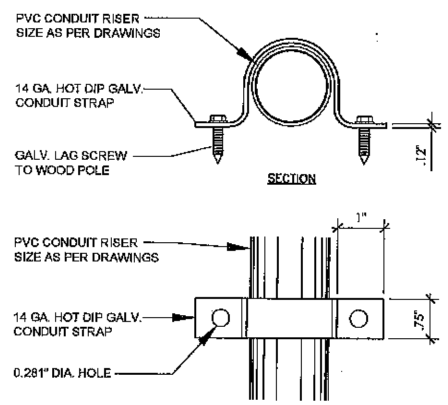
CONTRACTOR TO NOTE SITE ID/ MARKET ID/ SITE NAME

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

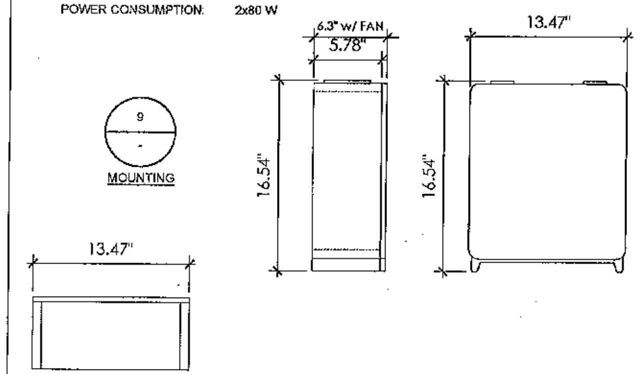


CONDUIT BRACKET — SCALE: NTS — 8

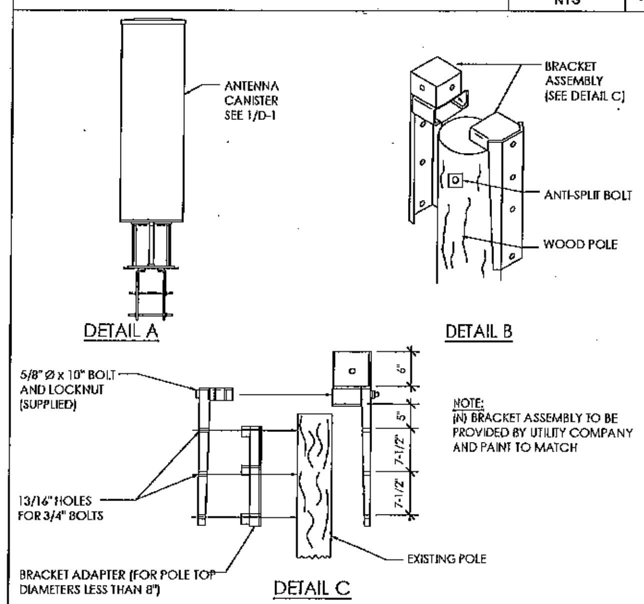
NOT USED — SCALE: NTS — 5

ERICSSION RRUS2212 REMOTE RADIO UNIT (OR APPROVED EQUIVALENT)

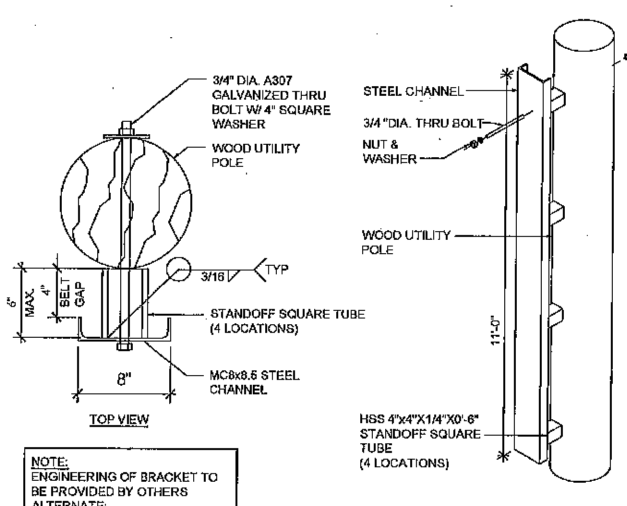
COLOR:	GRAY
DIMENSIONS:	16.54" TALL X 13.47" WIDE X 6.3"
TOTAL WEIGHT:	43 LBS.
POWER CONSUMPTION:	2x80 W



ERICSSON RRU2212 — SCALE: NTS — 2



UTILITY POLE TOP EXTENSION — SCALE: NTS — 10

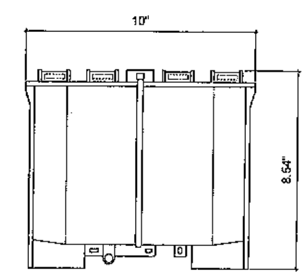


NOTE:
ENGINEERING OF BRACKET TO BE PROVIDED BY OTHERS
ALTERNATE:
PRE-MANUFACTURED BRACKET BY POLEWARE (OR EQUIVALENT)

MOUNTING BRACKET — SCALE: NTS — 7

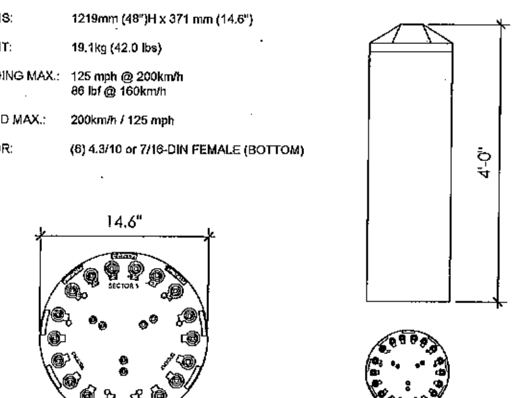
NETWORK INTERFACE DEVICE (NID)
NID-12 (OR APPROVED EQUIVALENT)

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

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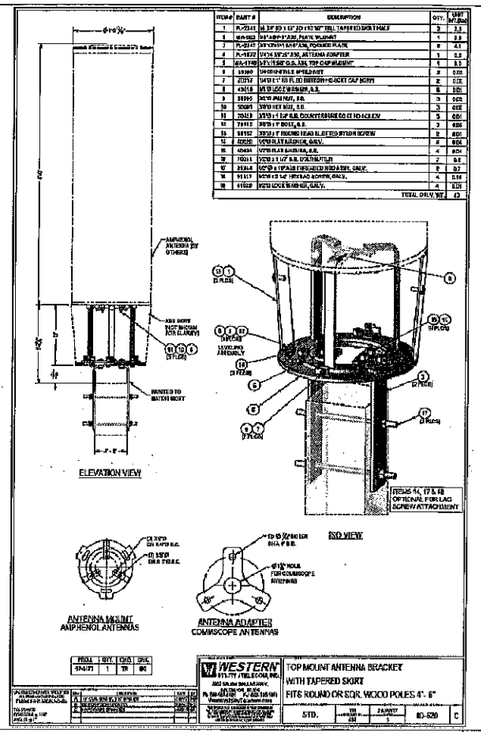
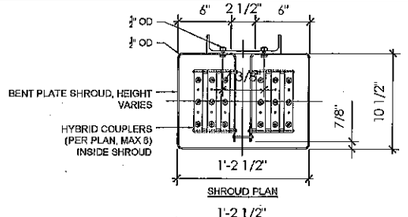
DETAILS

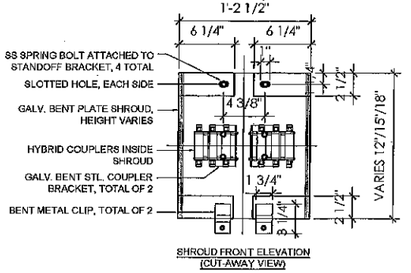
D-1



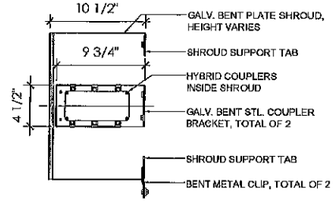
ANTENNA CANISTER — 11



SHROUD PLAN

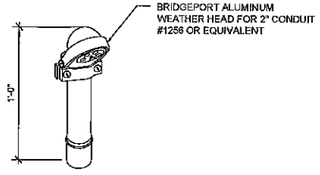


SHROUD FRONT ELEVATION (CUT-AWAY VIEW)

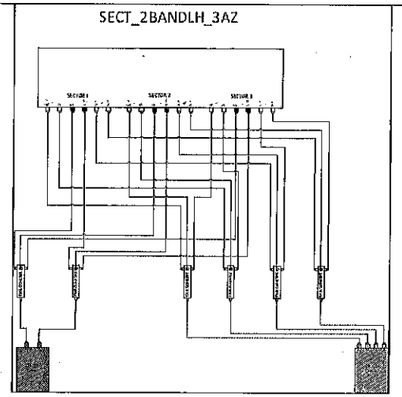


SHROUD SIDE ELEVATION (CUT-AWAY VIEW)

COMBINER SHROUD — 10



WEATHERHEAD — 9



CABLE SIZE	
(6) & (8) PORT DESIGN	1/2" COAX CABLE
(12) & (16) PORT DESIGN	1/4" SUPERFLEX CABLE

PLUMBING DIAGRAM — 8

SHUTDOWN DISCONNECT

Normal Shut-Down Protocols:
1. Call 800-264-6620 NOC 24HRS prior to schedule a shut-down day and time.
2. Give NOC the Node number_____
3. On schedule day of shut-down, Pull breaker switches in "OFF" position.
4. Call NOC when work is completed.

Emergency Shut-Down Protocols:
1. Call 800-264-6620 NOC.
2. Give NOC the Node number_____.
3. Put breaker switches in "OFF" position.
4. Call NOC when work is completed.

3" × 4"

NOTES:

1. SIGN PROVIDED BY GC MOUNTED TO OUTSIDE OF LOAD CENTER COVER
2. CONTRACTOR TO NOTE SITE ID/ MARKET ID/ SITE NAME

LOAD CENTER SHUT-DOWN SIGNAGE — 7

AC LOAD CENTER
QO612L100RB

COLOR: GRAY

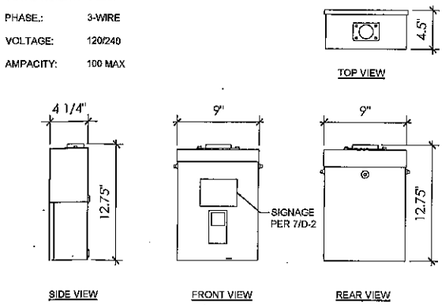
DIMENSIONS: 12.75" TALL x 9" WIDE x 4.25" DEEP

TOTAL WEIGHT: 3 LBS.

PHASE.: 3-WIRE

VOLTAGE: 120/240

AMPACITY: 100 MAX



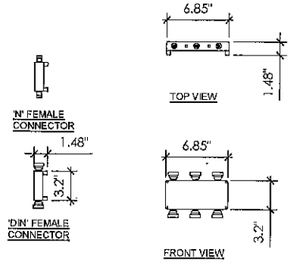
AC LOAD CENTER — 6

MICROLAB CM-60 DETAIL
3X3 HYBRID COUPLER

COLOR: GRAY

DIMENSIONS: 3.2" TALL x 6.85" WIDE x 1.48" DEEP

TOTAL WEIGHT: 2.4 LBS.



HYBRID COUPLER — SCALE NTS — 5

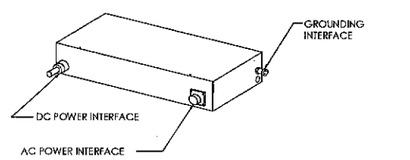
NOT USED — SCALE NTS — 4

ERICSSION PSU AC

DIMENSIONS: 2.72" TALL x 10.79" WIDE x 7.09" DEEP

WEIGHT: 11.46 lbs

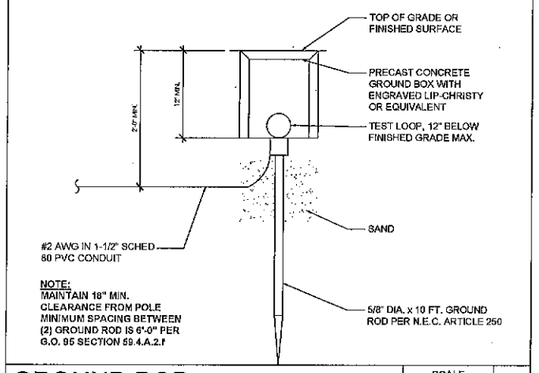
THE PSU IS REQUIRED TO OPERATE THE RRUS ON AC. IF THE RRUS IS INSTALLED OUTDOORS, THE ACCU IS ALSO REQUIRED, OTHERWISE THE ACCU IS OPTIONAL. THE EQUIPMENT FOR AC POWER SUPPLY IS SHOWN FIGURE 1



RADIO	PSU
RRU 2212	PSU AC 02
RRUS-32 RRUS-11	PSU AC 08

FIGURE 1

POWER SUPPLY UNIT (PSU) — SCALE NTS — 3

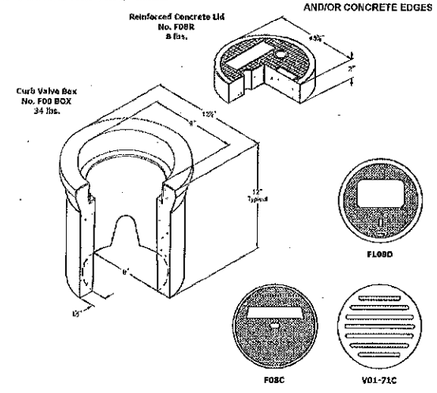


NOTE:
MAINTAIN 18" MIN.
CLEARANCE FROM POLE
MINIMUM SPACING BETWEEN
(2) GROUND ROD IS 6'-0" PER
G.O. 95 SECTION 59.4.A.2.f

GROUND ROD — SCALE NTS — 2

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

NOTE:
MAINTAIN 18" MIN.
CLEARANCE FROM POLE
AND/OR CONCRETE EDGES



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

Oldcastle Cornerstone Catalog Code	Item	Approx. Shipping Weight	Description
FOBBOX	BOX	34 lbs.	FDH Curb Valve Box (8" I.D. x 12" High) – 48 per pallet
FOBR	LID	8 lbs.	Reinforced Concrete Lid with Plastic Ring
FOBC	LID	8 lbs.	Cast Iron Lid
FLOBD	LID	2 lbs.	Fiberglass Lid, Non-Concrete
V01-71C	LID	12 lbs.	Cast Iron Ciscle ADA Compliant

GROUND ROD ENCLOSURE — SCALE NTS — 1

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REGISTERED PROFESSIONAL ENGINEER — LEWIS JAMES ROBBINS — No. 26835 — Exp. 6/30/19 — CIVIL — STATE OF CALIFORNIA

SF MOSS BEACH 003

(IFO) 9400 CABRILLO HIGHWAY
MOSS BEACH, CA 94038

DETAILS

D-2

A	AMPERE	ELEC	ELECTRICAL	MFR	MANUFACTURER	SAF	SAFETY
ACCA	ANTENNA CABLE COVER ASSEMBLY	EMT	ELECTRICAL METALLIC TUBING	MIN	MINIMUM	SDBC	SOFT DRAWN BARE COPPER
		ENCL	ENCLOSURE	MLO	MAIN LUGS ONLY	SEC	SECONDARY
AIC	AMPERE INTERRUPTING CAPACITY	EXIST	EXISTING	MTD	MOUNTED	S.N.	SOLID NEUTRAL
		FAC	FACTOR	MTG	MOUNTING	SURF	SURFACE
APPROX	APPROXIMATELY	F/A	FIRE ALARM	MTS	MANUAL TRANSFER SWITCH	SW	SWITCH
AT	AMPERE TRIP	FLUOR	FLUORESCENT	N	NEUTRAL	TEL	TELEPHONE
AWG	AMERICAN WIRE GAGE	FT	FOOT/FEET	(N)	NEW	TYP	TYPICAL
BATT	BATTERY	FU	FUSE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.	U/G	UNDERGROUND
BD	BOARD	G	GROUND			U.L.	UNDERWRITER'S LABORATORY INC.
BR	BRANCH	GEN	GENERATOR	OH	OVERHEAD		
BRKR	BREAKER	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	P	POLE	U.N.O.	UNLESS NOTED OTHERWISE
BTCW	BARE TINNED COPPER WIRE			PCS	PERSONAL COMMUNICATION SYSTEM	V	VOLT
BTS	BASE TRANSMISSION SYSTEM	GND	GROUNDING			VAC	VOLT ALTERNATING CURRENT
C	CONDUIT	GPS	GLOBAL POSITIONING SYSTEM	PH	PHASE	W	WATT OR WIRE
CAB	CABINET	GR	GROWTH	PNLBD	PANELBOARD	W/	WITH
CB	CIRCUIT BREAKER	HDBC	HARD DRAWN COPPER WIRE	PPC	POWER PROTECTION CABINET	W/O	WITHOUT
CKT	CIRCUIT	HPS	HIGH PRESSURE SODIUM	PRC	PRIMARY RADIO CABINET	XFER	TRANSFER
CONT	CONTINUOUS	LG	LENGTH	PRI	PRIMARY	XFMR	TRANSFORMER
DEM	DEMAND	LPS	LOW PRESSURE SODIUM	PWR	POWER	XLPE	CROSS-LINK POLYETHYLENE
(E)	EXISTING	MAX	MAXIMUM	RCPT	RECEPTACLE		
EGR	EMERGENCY GEN. RECEPTACLE	MECH	MECHANICAL	RGS	RIGID GALVANIZED STEEL		

GENERAL ABBREVIATIONS

3

OHT/OHP	OVERHEAD TELEPHONE/OVERHEAD POWER		LIGHTING FIXTURE, 1/175W. METAL HALIDE, HUBBELL CAT #MC-0175H-336
OHT	OVERHEAD TELEPHONE LINE	⊗	5/8" X 10'-0" ,CU. GND ROD 24" MIN. BELOW GRADE.
OHP	OVERHEAD POWER LINE	⊠	5/8" X 10'-0" ,CU. GND ROD IN TEST WELL 24" MIN. BELOW GRADE.
E	POWER RUN	⊖	CHEMICAL GROUND ROD (KIT GROUND ROD)
T	TELCO RUN	■	CADWELD CONNECTION
E/T	POWER/TELCO RUN	●	MECHANICAL CONNECTION
	GROUNDING CONDUCTOR	◀	HALO GROUND CONNECTION
	FUSE, SIZE AND TYPE AS INDICATED.		CIRCUIT BREAKER
	SAFETY SWITCH, 2P-240V-60A W/60A FUSES, NEMA 3R ENCLOSURE, SQ D CATALOG NO. H222NRB	M	UTILITY METER BASE
	MANUAL TRANSFER SWITCH, 2P-240V-200A, NO FUSE, NEMA 3R ENCLOSURE		RECEPTACLE, 2P-3W-125V-15A, DUPLEX, GROUND TYPE, HUBBEL CATALOG #5362
	LIGHTING FIXTURE, INCANDESCENT, 1/100W, WALL MOUNTING TYPE, HUBBELL LIGHTING CATALOG #BRH-100-06-1	S	TOGGLE SWITCH, 1P-125V-15A, HUBBELL CATALOG #HBL 1201CN
		S_{WP}	TOGGLE SWITCH, 1P-120V-15A, "WP"

ELECTRICAL LEGENDS

2

1. GENERAL REQUIREMENTS

A. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE AND ALL STATE AND LOCAL CODES. NOTHING IN THESE PLANS OR SPECIFICATIONS SHALL BE CONSTRUED AS TO PERMIT WORK NOT CONFORMING TO THE MOST STRINGENT OF THESE CODES. SHOULD CHANGES BE NECESSARY IN THE DRAWINGS OR SPECIFICATIONS TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND CEASE WORK ON PARTS OF THE CONTRACT

B. THE CONTRACTOR SHALL MAKE A SITE VISIT PRIOR TO BIDDING AND CONSTRUCTION TO VERIFY ALL EXISTING CONDITIONS AND SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES. THE CONTRACTOR ASSUMES ALL LIABILITY FOR FAILURE TO COMPLY WITH THIS PROVISION.

C. THE EXTENT OF THE WORK IS INDICATED BY THE DRAWINGS, SCHEDULES, AND SPECIFICATIONS AND IS SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT. THE WORK SHALL CONSIST OF FURNISHING ALL LABOR, EQUIPMENT, MATERIALS AND SUPPLIES NECESSARY FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM. THE WORK SHALL ALSO INCLUDE THE COMPLETION OF ALL ELECTRICAL WORK NOT MENTIONED OR SHOWN WHICH ARE NECESSARY FOR SUCCESSFUL OPERATION OF ALL SYSTEMS.

D. THE CONTRACTOR SHALL PREPARE A BID FOR A COMPLETE AND OPERATIONAL SYSTEM, WHICH INCLUDES THE COST FOR MATERIAL AND LABOR.

E. WORKMANSHIP AND NEAT APPEARANCE SHALL BE AS IMPORTANT AS THE OPERATION. DEFECTIVE OR DAMAGED MATERIALS SHALL BE REPLACED OR REPAIRED PRIOR TO FINAL ACCEPTANCE IN A MANNER ACCEPTABLE TO OWNER AND ENGINEER.

F. COMPLETE THE ENTIRE INSTALLATION AS SOON AS THE PROGRESS OF THE WORK WILL PERMIT.

G. ANY ERROR, OMISSION OR DESIGN DISCREPANCY ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION OR CORRECTION BEFORE CONSTRUCTION.

H. "PROVIDE" INDICATES THAT ALL ITEMS ARE TO BE FURNISHED, INSTALLED AND CONNECTED IN PLACE.

I. CONTRACTOR SHALL SECURE ALL NECESSARY BUILDING PERMITS AND PAY ALL REQUIRED FEES.

2. EQUIPMENT LOCATION

A. ALL DRAWINGS INDICATE DIAGRAMMATICALLY THE DESIRED LOCATIONS OR ARRANGEMENTS OF CONDUIT RUNS, OUTLETS, EQUIPMENT, ETC., AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE. PROPER JUDGEMENT MUST BE EXERCISED IN EXECUTING THE WORK SO AS TO SECURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE AND TO OVERCOME LOCAL DIFFICULTIES DUE TO SPACE LIMITATIONS OR INTERFERENCE OF STRUCTURE CONDITIONS ENCOUNTERED.

B. IN THE EVENT CHANGES IN THE INDICATED LOCATIONS OR ARRANGEMENTS ARE NECESSARY, DUE TO FIELD CONDITIONS IN THE BUILDING CONSTRUCTION OR REARRANGEMENT OF EQUIPMENT, SUCH CHANGES SHALL BE MADE WITHOUT COST, PROVIDING THE CHANGE IS ORDERED BEFORE THE CONDUIT RUNS, ETC., AND WORK DIRECTLY CONNECTED TO THE SAME IS INSTALLED AND NO EXTRA MATERIALS ARE REQUIRED.

C. COORDINATE THE WORK OF THE SECTION WITH THAT OF ALL OTHER TRADES. WHERE CONFLICTS OCCUR, CONSULT WITH THE PERSPECTIVE CONTRACTOR AND COME TO AGREEMENT AS TO CHANGES NECESSARY. OBTAIN WRITTEN ACCEPTANCE FROM ENGINEER FOR THE PROPOSED CHANGES BEFORE PROCEEDING.

3. TESTS

A. BEFORE FINAL ACCEPTANCE OF WORK, THE CONTRACTOR SHALL INSURE THAT ALL EQUIPMENT, SYSTEMS, FIXTURES, ETC., ARE WORKING SATISFACTORILY AND TO THE INTENT OF THE DRAWINGS.

4. PERMITS

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING OUT AND PAYING FOR ALL THE REQUIRED PERMITS, INSPECTION AND EXAMINATION WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

5. GROUNDING

A. THE CONTRACTOR SHALL PROVIDE A COMPLETE, AND APPROVED GROUNDING SYSTEM INCLUDING ELECTRODES. ELECTRODE CONDUCTOR, BONDING CONDUCTORS, AND EQUIPMENT CONDUCTORS AS REQUIRED BY ARTICLE 250 OF NATIONAL ELECTRICAL CODE.

B. CONDUITS CONNECTED TO EQUIPMENT AND DEVICES SHALL BE METALLICALLY JOINED TOGETHER TO PROVIDE EFFECTIVE ELECTRICAL CONTINUITY.

C. FEEDERS AND BRANCH CIRCUIT WIRING INSTALLED IN A NONMETALLIC CONDUIT SHALL INCLUDE A CODE SIZED GROUNDING CONDUCTOR HAVING GREEN INSULATION. THE GROUND CONDUCTOR SHALL BE PROPERLY CONNECTED AT BOTH ENDS TO MAINTAIN ELECTRICAL CONTINUITY.

D. REFER TO GROUND BUS DETAILS. PROVIDE NEW GROUND SYSTEM COMPLETE WITH CONDUCTORS, GROUND ROD AND DESCRIBED TERMINATIONS.

E. ALL GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2 UNLESS NOTED OTHERWISE.

F. ALL NON-DIRECT BURIED TELEPHONE EQUIPMENT GROUND CONDUCTORS SHALL BE #2 STRANDED, THHN (GREEN) INSULATION.

G. ALL GROUND CONNECTIONS SHALL BE MADE WITH "HYGROUND" COMPRESSION SYSTEM BURNDY CONNECTORS EXCEPT WHERE NOTED OTHERWISE.

H. PAINT AT ALL GROUND CONNECTIONS SHALL BE REMOVED.

I. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE OWNER FOR FUTURE INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE. SUBMIT TEST REPORTS AND FURNISH TO VERIZON ONE COMPLETE SET OF PRINTS SHOWING "INSTALLED WORK".

6. UTILITY SERVICE

A. TELEPHONE AND ELECTRICAL METERING FACILITIES SHALL CONFORM TO THE REQUIREMENTS OF THE SERVING UTILITY COMPANIES. CONTRACTOR SHALL VERIFY SERVICE LOCATIONS AND REQUIREMENTS. SERVICE INFORMATION WILL BE FURNISHED BY THE SERVING UTILITIES.

B. CONFORM TO ALL REQUIREMENTS OF THE SERVING UTILITY COMPANIES.

7. PRODUCTS

A. ALL MATERIALS SHALL BE NEW, CONFORMING WITH THE NEC, ANSI, NEMA, AND THEY SHALL BE U.L. LISTED AND LABELED.

B. CONDUIT:

B.1. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.

B.2. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL. FITTINGS SHALL BE COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.

B.3. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE. SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL HAVE FULL SIZE GROUND WIRE.

B.4. ALL UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 24" BELOW GRADE.

B.5. ALL CONDUIT ONLY (C.O.) SHALL HAVE PULL ROPE.

C. ALL WIRE AND CABLE SHALL BE COPPER, 600 VOLT, #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED. TYPE THHN INSULATION USED UNLESS CONDUCTORS INSTALLED IN CONDUIT EXPOSED TO WEATHER, IN WHICH CASE TYPE THWN INSULATION SHALL BE USED.

D. PROVIDE GALVANIZED COATED STEEL BOXES AND ACCESSORIES SIZED PER CODE TO ACCOMMODATE ALL DEVICES AND WIRING.

E. TOGGLE SWITCHES SHALL BE 20 AMP, 120 VOLT AC, SPECIFICATION GRADE WHITE (UNLESS NOTED OTHERWISE) FINISH. MOUNT SWITCHES AT +48" ABOVE FINISHED FLOOR.

F. PANELBOARD SHALL BE DEAD FRONT SAFETY TYPE WITH ANTI-BURN SOLDERLESS COMPRESSION APPROVED FOR COPPER CONDUCTORS. COPPER BUS BARS, FULL SIZED NEUTRAL BUS, GROUND BUS AND EQUIPPED WITH QUICK-MAKE QUICK-BREAK BOLT-IN TYPE THERMAL MAGNETIC CIRCUIT BREAKERS. MOUNT TOP OF THE PANELBOARD AT 6'-3" ABOVE FINISHED FLOOR. PROVIDE TYPEWRITTEN CIRCUIT DIRECTORY.

G. ALL CIRCUIT BREAKERS, MAGNETIC STARTERS AND OTHER ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED.

H. GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8" ROUND AND 10' LONG. COPPERWELD OR APPROVED EQUAL.

I. SERVICE POWER SHALL BE 100A 1Ø, 3W, 120/208 OR 120/240V.

J. ALL WIRING SHALL BE COPPER 75° C U.N.O.

K. CONDUIT REQUIREMENTS (TYP., U.N.O.): UNDERGROUND: PVC (SCHED 40 OR 80), INDOOR: EMT (RGS IN TRAFFIC AREAS, OUTDOOR (ABOVE GRADE): RGS.

L. PLACE "TRUE TAPE" AND PULL ROPE IN THE CONDUITS AS REQUIRED.

8. INSTALLATION

A. PROVIDE SUPPORTING DEVICES FOR ALL ELECTRICAL EQUIPMENT, FIXTURES, BOXES, PANEL, ETC., EQUIPMENT SHALL BE BRACED TO WITHSTAND HORIZONTAL FORCES IN ACCORDANCE WITH STATE AND LOCAL CODE REQUIREMENTS. PROVIDE PRIOR ALIGNMENT AND LEVELING OF ALL DEVICES AND FIXTURES.

9. PROJECT CLOSEOUT

A. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.

B. PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS.

ELECTRICAL NOTES

1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

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

2930 DOMINGO AVE, STE 150
BERKELEY, CA 94705

DRAWN BY:	SH
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/08/17	90% CD
1	12/29/17	95% CD
2	01/18/18	100% CD
3	02/28/18	100% CD REV

REGISTERED PROFESSIONAL ENGINEER — Thomas Andrew Bovy — Exp. Dec. 31, 2018 — ELECTRICAL — STATE OF CALIFORNIA

SF MOSS BEACH 003

(IFO) 9400 CABRILLO HIGHWAY
MOSS BEACH, CA 94038

ELECTRICAL
GENERAL NOTES

E-1

NOTES:
1. GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 5/8" DIAMETER x 10'-0" LONG. ALL GROUND RODS MAY BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

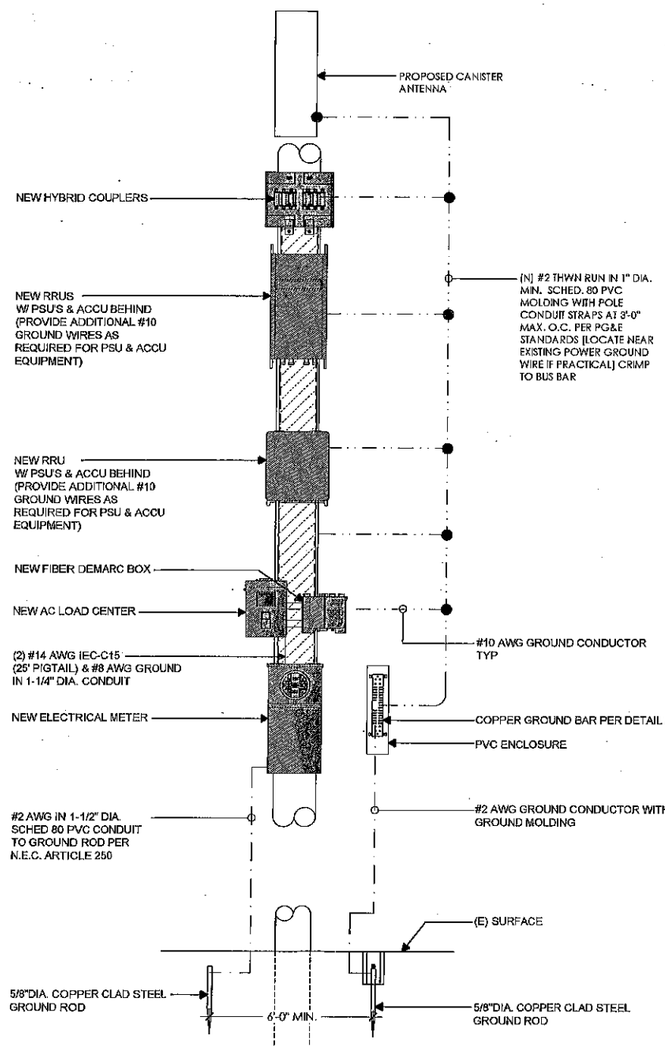
2. CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.

3. EXTERIOR UNIT BONDS: METALLIC OBJECTS SHALL BE BONDED TO THE EXTERIOR GROUND RING.

4. PROVIDE ALL ELECTRICAL WORK & MATERIALS AS SHOWN ON THE DWGS, AS CALLED FOR HEREIN & AS IS NECESSARY TO FURNISH A COMPLETE INSTALLATION.

5. UNLESS SHOWN OTHERWISE, FUSED DISCONNECT SWITCHES SHALL BE PROVIDED WITH LOW-PEAK, SIDUAL ELEMENT FUSES SIZED TO EQUIPMENT NAMEPLATE FUSE CURRENT RATING. MOTOR STARTERS SHALL BE PROVIDED WITH SIMILARLY SIZED FUSIBLE ELEMENTS, SWITCHES, AND OTHER OUTDOOR EQUIPMENT SHALL BE RATED NEMA 3R AND/OR UL LISTED FOR WET ENVIRONMENT.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING THE GROUNDING SYSTEM AND ENSURING A .5 OHM OR LESS GROUNDING PATH. ADDITIONAL GROUND RODS AND/OR CHEMICAL ROD SYSTEM SHALL BE USED TO ACHIEVE THIS REQUIREMENT IF THE GIVEN DESIGN CANNOT BE MADE TO ACHIEVE THIS REQUIREMENT.



GROUNDING SCHEMATIC | SCALE NTS | 2

MOUNTING SURFACE — PANEL — "PPC A" — 10,000 A.I.C. SYM

240/120 VOLTS 1 PHASE 3 WIRE — MAIN 100A — BUS 100A

VOLT AMPS PHASE A	VOLT AMPS PHASE B	OTHER	REC	LTG	POLE	BKR	CIR		CIR	BKR	POLE	LTG	REC	VOLT AMPS PHASE A	VOLT AMPS PHASE B
200		RRUS-11			1	30	1	2	-	-					
	800	RRUS-32			1	20	3	4	-	-					
		SPARE			1	15	5	6							
		SPARE			1	20	7	8							
							9	10							
							11	12							
200	800														

PHASE A = 200 — PHASE B = 800

CONTINUOUS LOADS	NON-CONTINUOUS LOADS				
1000 X1.25 = 1250	RECEPTACLES	UP TO 10KVA -	x1.00 = -	OTHER = -	x1.00 = -
		REMAINDER -	x1.00 = -		

TOTAL DESIGN KW = 1.25 — TOTAL DESIGN AMPS = 5.2

NOTE:
REFER TO ERICSSON SPECS FOR ADDITIONAL INFORMATION INCLUDING WIRING INSTRUCTIONS & GROUNDING REQUIREMENTS

ONE-LINE DIAGRAM | 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, STE 150
BERKELEY, CA 94705

DRAWN BY:	SH
CHECKED BY:	JB

REV	DATE	DESCRIPTION
0	10/06/17	90% CD
1	12/28/17	95% CD
2	01/18/18	100% CD
3	02/28/18	100% CD REV

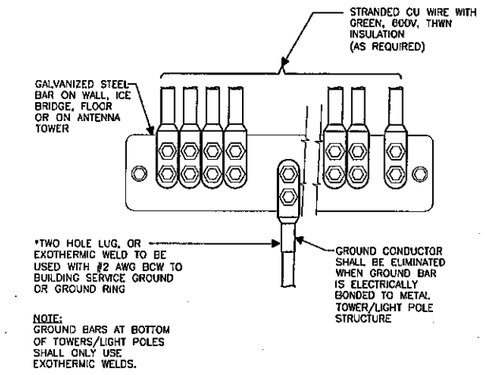
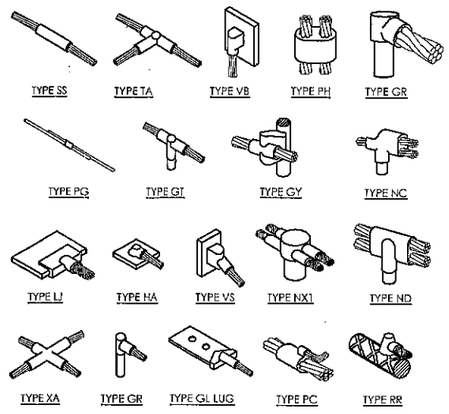
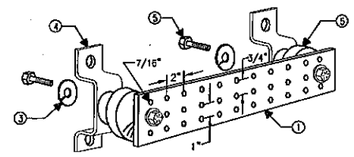
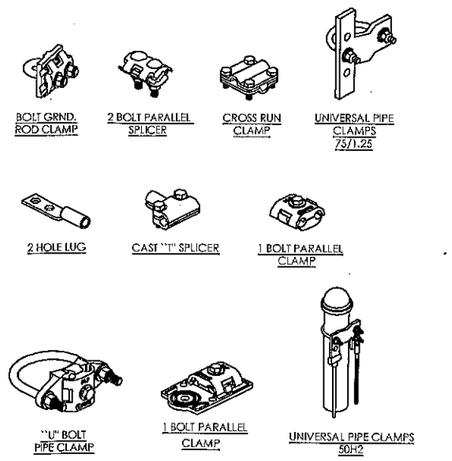
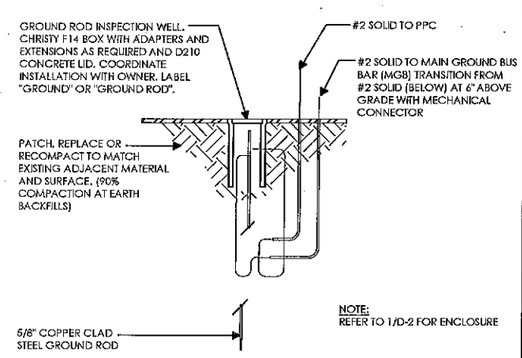
LICENSED PROFESSIONAL ENGINEER — Thomas Andrew Shipley — 51404 — Dec. 31, 2018 — ELECTRICAL — STATE OF CALIFORNIA

SF MOSS BEACH 003

(IFO) 9400 CABRILLO HIGHWAY
MOSS BEACH, CA 94038

ONE-LINE DIAGRAM & GROUNDING SCHEMATIC

E-2

						
NOT USED	9	NOT USED	6	GROUND WIRE TO BAR	3
				 NOTES: 1. COPPER GROUND BAR, HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION. (ACTUAL GROUND BAR SIZE WILL VARY BASED ON NUMBER OF GROUND CONNECTIONS) 2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4 OR APPROVED EQUAL 3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO., CAT. NO. 3015-8 OR APPROVED EQUAL 4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO., CAT NO. A-6056 OR APPROVED EQUAL 5. 5/8-11 X 1" HHCS BOLTS, NEWTON INSTRUMENT CO., CAT NO. 3012-1 OR APPROVED EQUAL 6. INSULATORS SHALL BE ELIMINATED WHEN BONDING DIRECTLY TO TOWER/MONOPINE STRUCTURE. CONNECTION TO TOWER/MONOPINE STRUCTURE SHALL BE PER MANUFACTURERS RECOMMENDATIONS. 7. VALMONT TINMG212U-K (OR EQUIVALENT) 1/4"X2"X12"	
NOT USED	8	EXOTHERMIC WELD CONNECTION	5	GROUND BAR	2
					
NOT USED	10	NOT USED	7	MECHANICAL CONNECTION	4	GROUND TEST WELL	1

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

mobilitie

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

COMMSENSE

2930 DOMINGO AVE, STE 150
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DRAWN BY:	SH
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REV	DATE	DESCRIPTION
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3	02/28/18	100% CD REV

SF MOSS BEACH 003

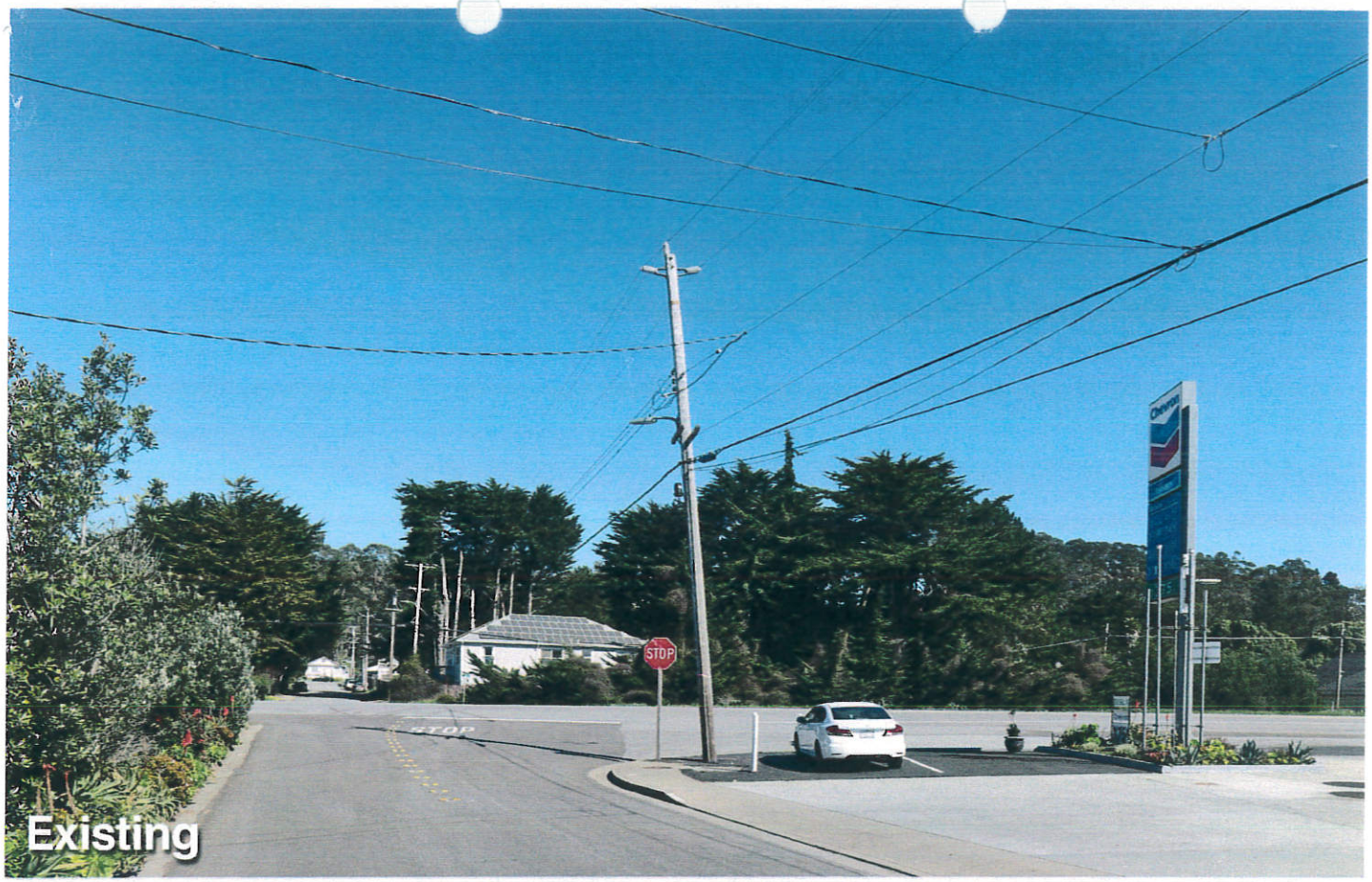
(IFO) 9400 CABRILLO HIGHWAY
MOSS BEACH, CA 94038

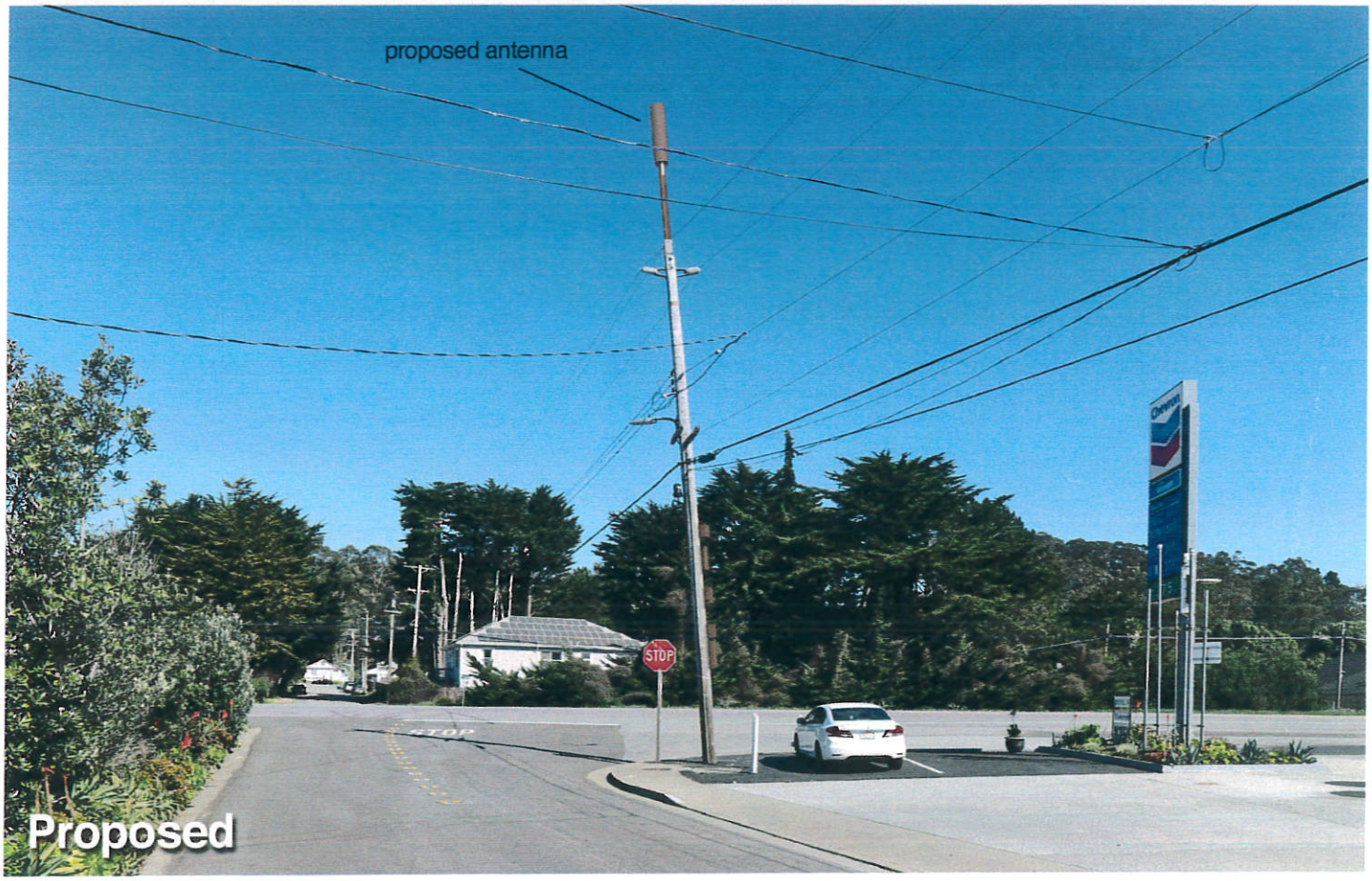
ELECTRICAL DETAILS

E-3

County of San Mateo - Planning and Building Department

ATTACHMENT D2





verizon

SF Moss Beach 003 Site # 438419

(IFO) 9400 Cabrillo Highway
Moss Beach, CA

Looking Northeast from Vermont Ave.

View #1

2/13/18

Applied Imagination 510 914-0500

verizon

SF Moss Beach 003 Site # 438419

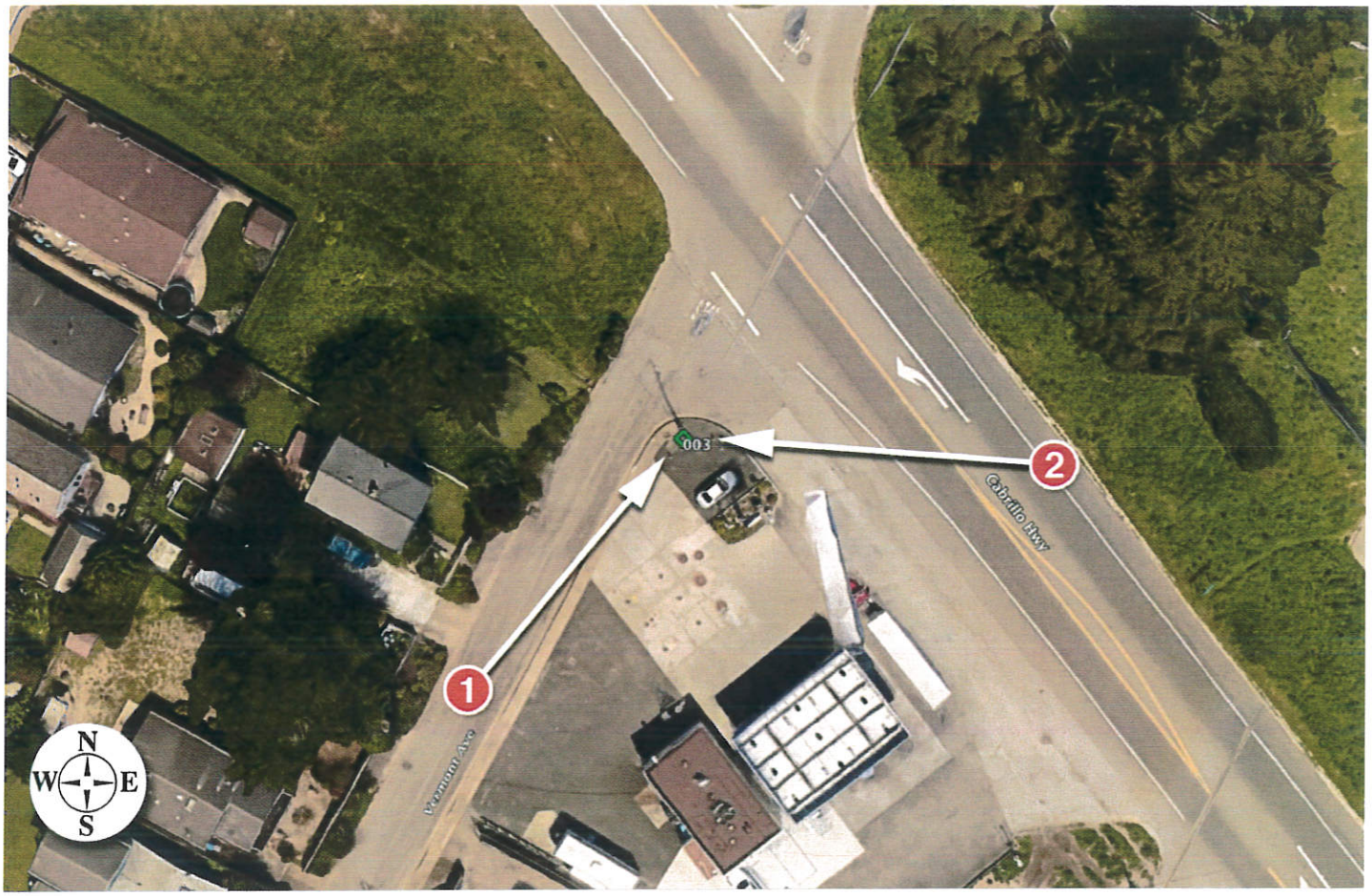
(IFO) 9400 Cabrillo Highway
Moss Beach, CA

2/13/18

Looking Northwest from Cabrillo Highway

View #2

Applied Imagination 510 914-0500



verizon

SF Moss Beach 003 Site # 438419

Aerial Map

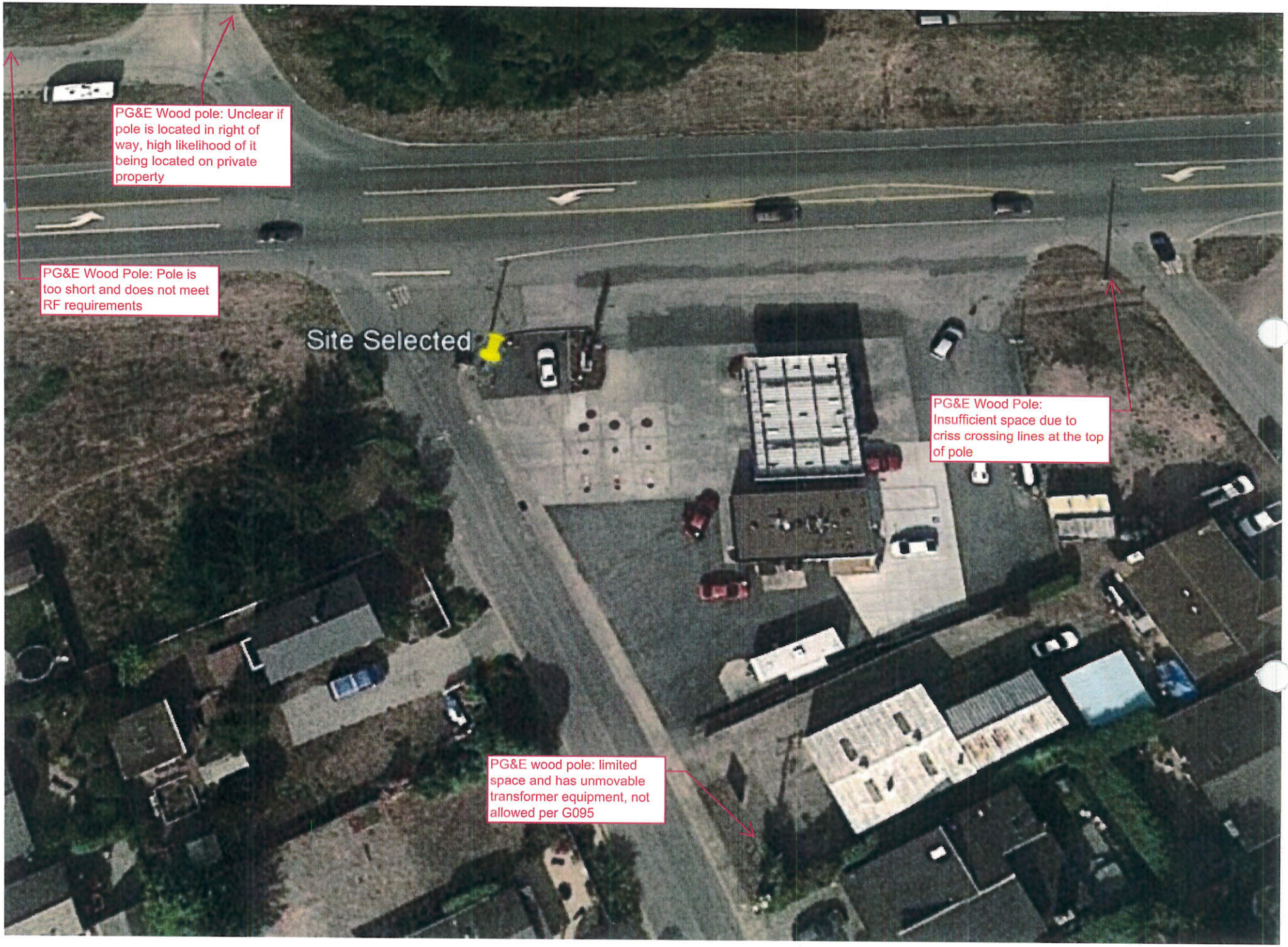
(IFO) 9400 Cabrillo Highway
Moss Beach, CA

2/13/18

Applied Imagination 510 914-0500

County of San Mateo - Planning and Building Department

ATTACHMENT D3


PG&E Wood pole: Unclear if pole is located in right of way, high likelihood of it being located on private property
PG&E Wood Pole: Pole is too short and does not meet RF requirements
Site Selected
PG&E Wood Pole: Insufficient space due to criss crossing lines at the top of pole
PG&E wood pole: limited space and has unmovable transformer equipment, not allowed per G095

County of San Mateo - Planning and Building Department

ATTACHMENT D4

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

Site No. 438419
SF Moss Beach 003
9400 Cabrillo Hwy
Moss Beach, California 94038
San Mateo County
37° 31' 33.70" N, -122° 30' 44.17" W NAD83

EBI Project No. 6218000837
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 438419 located at 9400 Cabrillo Hwy in Moss Beach, 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 **11.00** percent of the FCC's general public limit (**2.20** 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 9400 Cabrillo Hwy in Moss Beach, 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	100° 220° 340°	10.35 14.05	48.42	30	30	46.42

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.

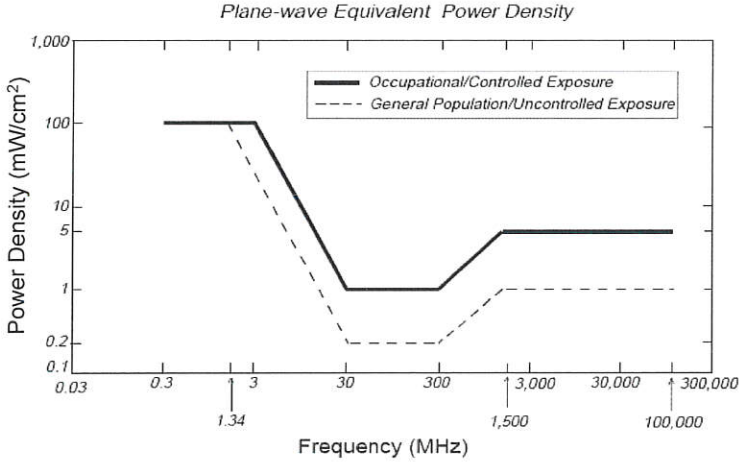
Table 1: Limits for Maximum Permissible Exposure (MPE)

(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 11.00 percent of the FCC's general public limit (2.20 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 10 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 438419 located at 9400 Cabrillo Hwy in Moss Beach, 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. Based on worst-case predictive modeling, the maximum power density may exceed the FCC's general public MPE limits within approximately 10 feet of the antenna face. 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.

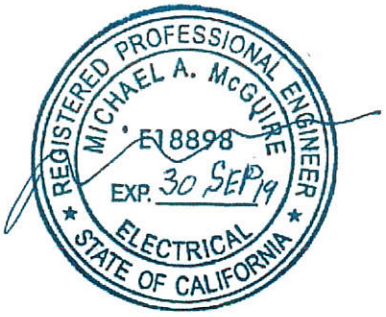
7.0 LIMITATIONS

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

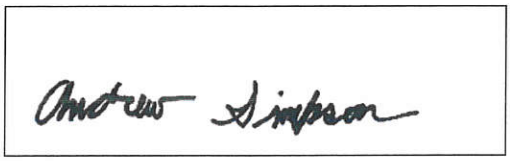
Michael McGuire
Electrical Engineer

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.



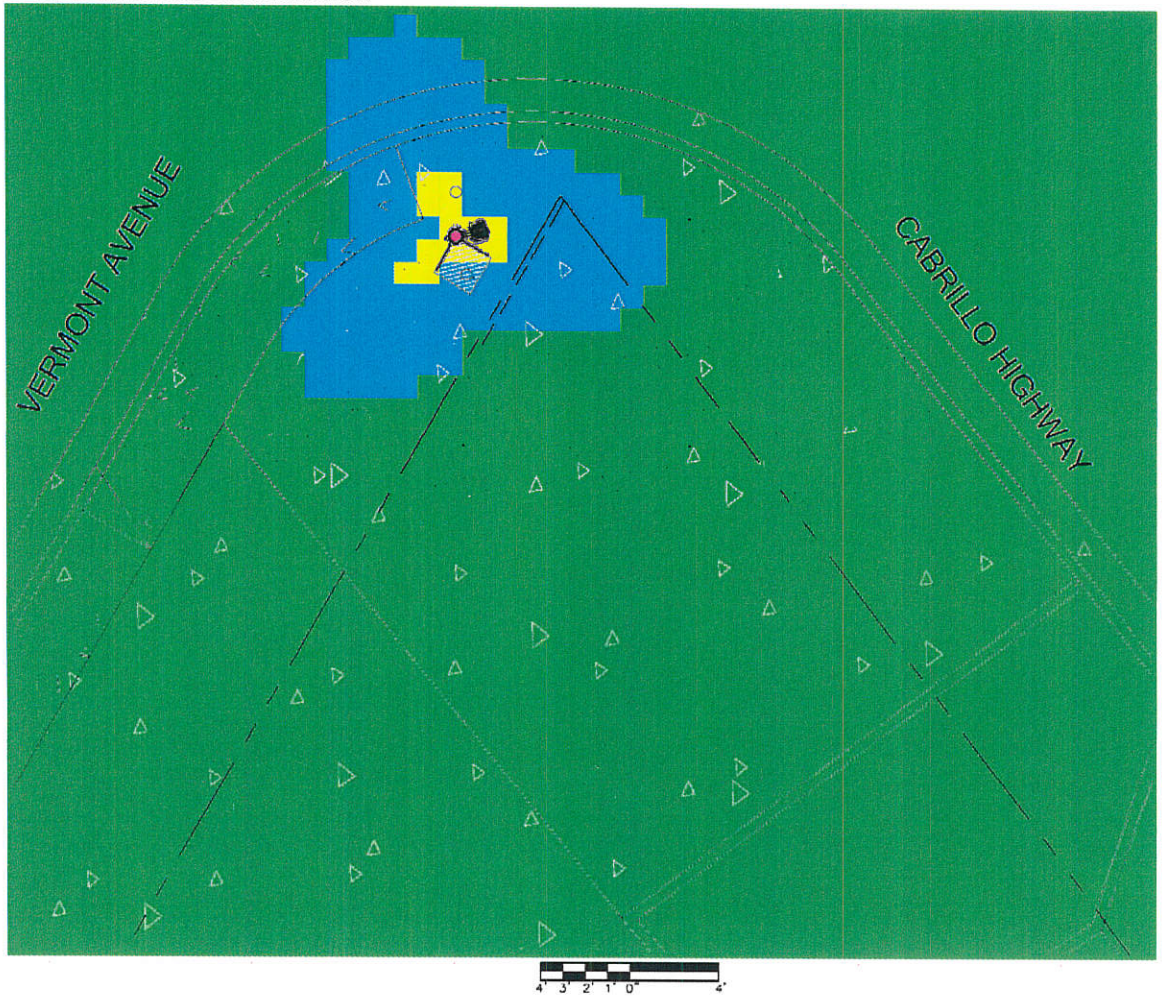
Appendix B

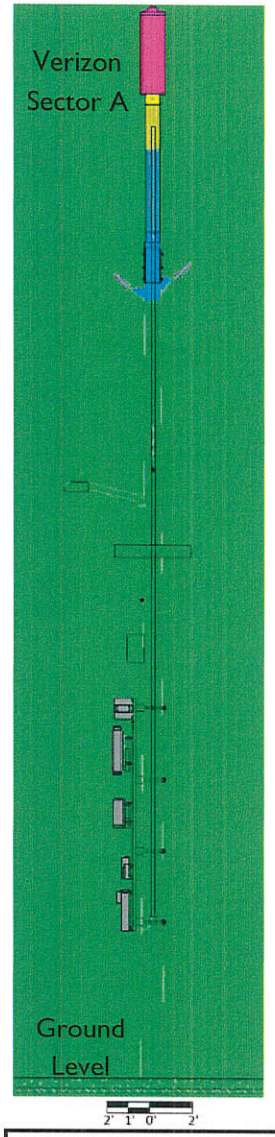
Radio Frequency Electromagnetic Energy

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**





N

Verizon Antennas

Roofview: Composite Exposure Levels

Facility Operator: Verizon Wireless

Site Name: SF Moss Beach 003

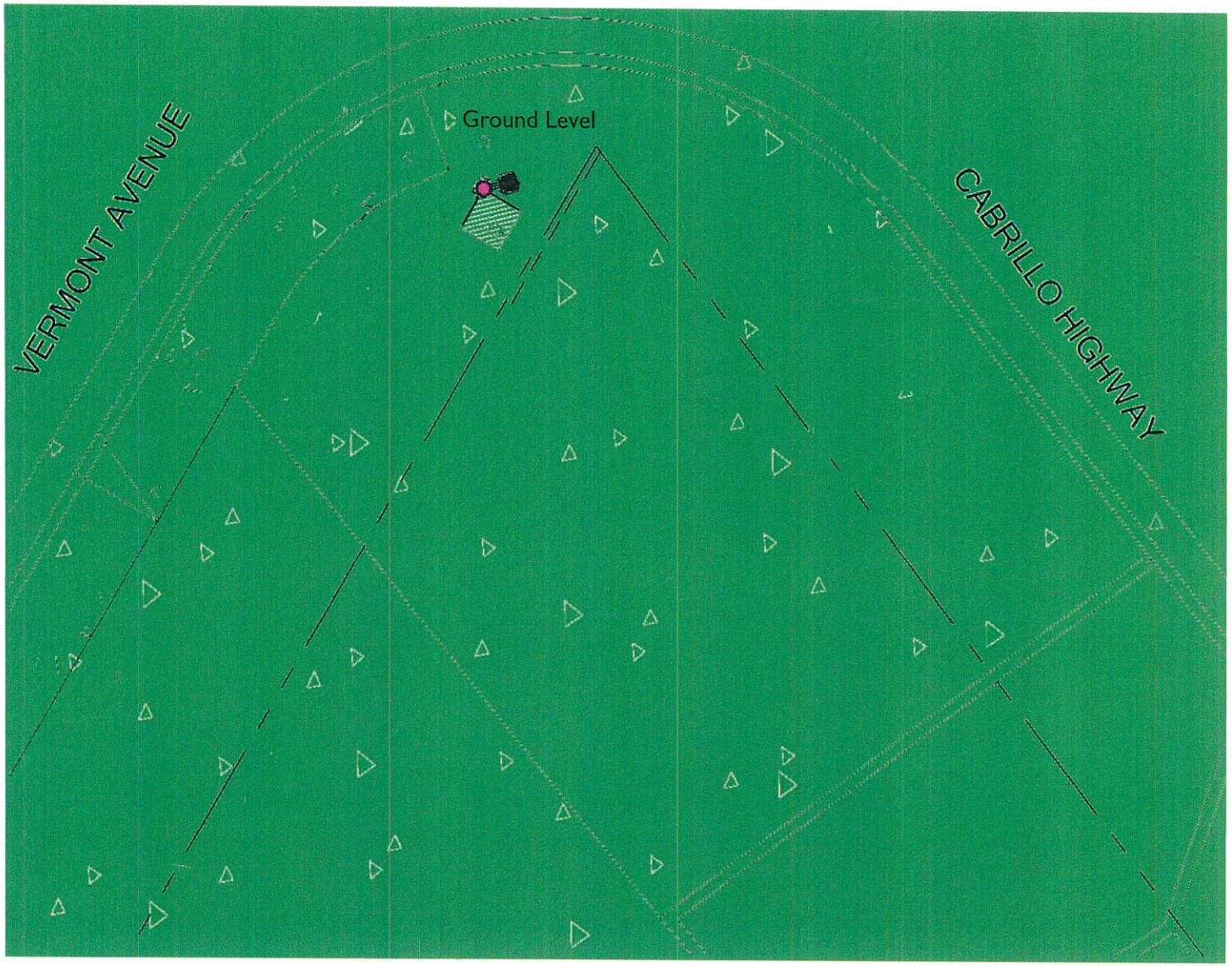
Verizon Site Number: 438419

Report Date: 02-15-18

EBI Consulting
environmental | engineering | due diligence

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

*Ground Level Simulation



Roofview: Verizon Exposure Levels

Facility Operator: Verizon Wireless

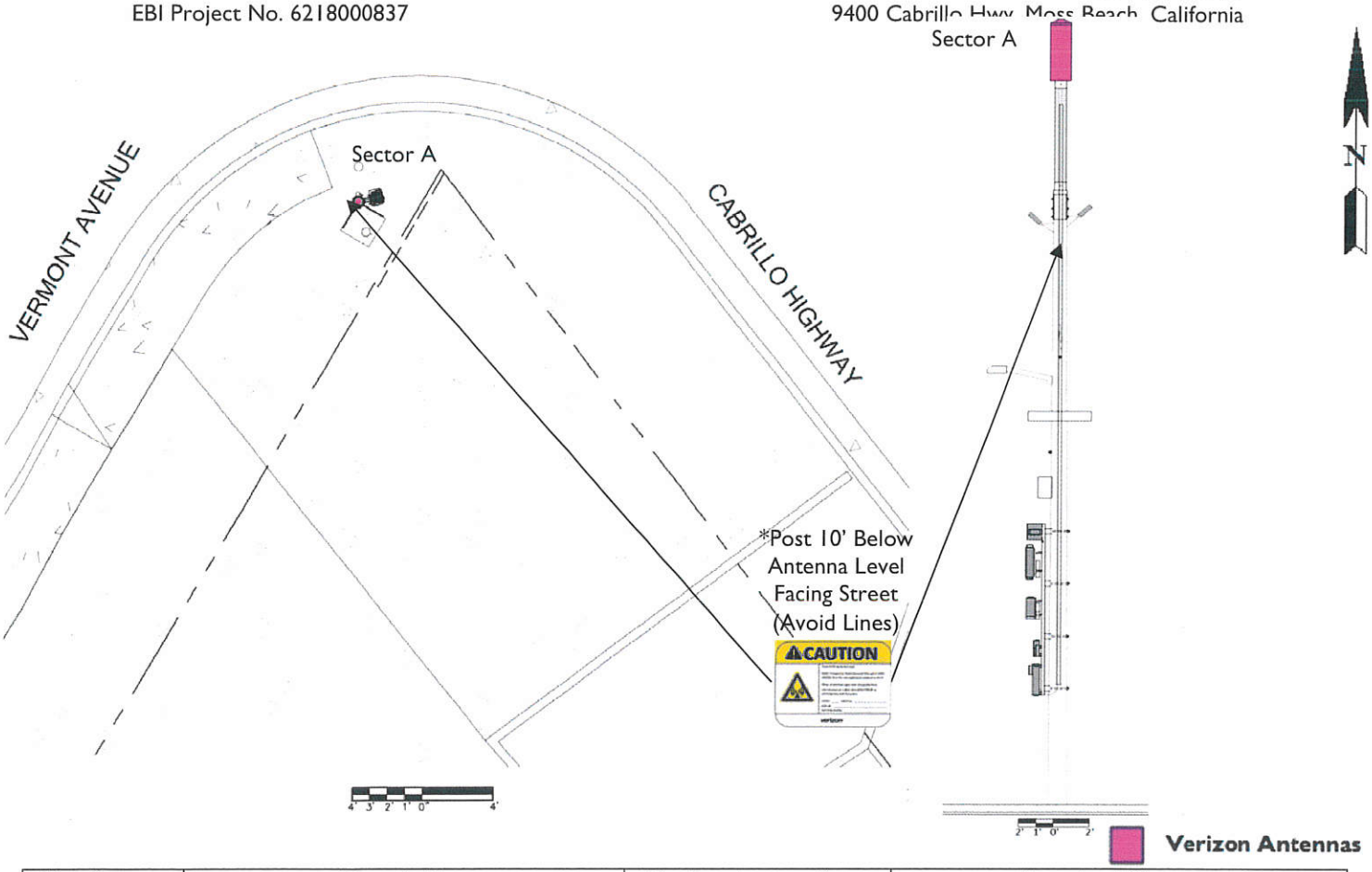
Site Name: SF Moss Beach 003

Verizon Site Number: 438419

Report Date: 02-15-18

EBI Consulting
environmental | engineering | due diligence

Verizon Antennas



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 10' below the antenna in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.	Post 10' 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 X	Roof Max Y	Map Max X	Map Max Y	Map Max X Offset	Y 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	40	1	0	0		1		Amphenol	CUUT070X	30	30	46.42		4	10.35	70;100		ON•
VZW A1	LTE	2100	40	1	0	0		1		Amphenol	CUUT070X	30	30	46.42		4	15.05	70;100		ON•
VZW A1	LTE	700	40	1	0	0		1		Amphenol	CUUT070X	30	30	46.42		4	10.35	70;220		ON•
VZW A1	LTE	2100	40	1	0	0		1		Amphenol	CUUT070X	30	30	46.42		4	15.05	70;220		ON•
VZW A1	LTE	700	40	1	0	0		1		Amphenol	CUUT070X	30	30	46.42		4	10.35	70;340		ON•
VZW A1	LTE	2100	40	1	0	0		1		Amphenol	CUUT070X	30	30	46.42		4	15.05	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 E1

verizon

SITE NAME:	MOSS BEACH 001
PROJECT ID#:	MB_001
LOCATION:	N/A
SITE ADDRESS:	854 SIERRA STREET MOSS BEACH, CA 94038
COUNTY:	SAN MATEO
SITE TYPE:	PG&E POLE TOP

PROJECT DESCRIPTION

THIS IS AN UNMANNED WIRELESS TELECOMMUNICATION FACILITY FOR VERIZON WIRELESS CONSISTING OF THE INSTALLATION AND OPERATION OF AN ANTENNA AND ASSOCIATED EQUIPMENT ON AN EXISTING UTILITY POLE IN THE PUBLIC RIGHT OF WAY.

SCOPE OF WORK & SITE COMPLETION CHECKLIST

- ANTENNA & ASSOCIATED EQUIPMENT BOXES - INSTALL A NEW TELECOMMUNICATION ANTENNA AND EQUIPMENT BOXES ON AN EXISTING WOOD UTILITY POLE ON GO95 COMPLIANT STANDOFF BRACKET. INSTALLATION CONSISTS OF (1) CYLINDRICAL ANTENNA, (1) RRUS-32 w/ PSU-08, (1) RRUS-2212 W/ PSU-08 (1) ELECTRICAL METER, (1) LOAD CENTER & (1) DISCONNECT SWITCH, (1) FIBER DEMARCATION BOX.
- CABLING - CABLING TO BE INSTALLED IN A TIDY MANNER WITHOUT EXCESS CABLE LOOPS
- SPACING OF SUPPORT ELEMENTS - SUPPORT EQUIPMENT (E.G. RRUS) TO BE CLUSTERED (VERTICALLY) AS CLOSE AS TECHNICALLY FEASIBLE ON POLE.
- LOGO REMOVAL - ALL EQUIPMENT LOGOS, OTHER THAN THOSE REQUIRED BY REGULATION (E.G. NODE IDENTIFICATION) SHALL BE PAINTED OVER OR REMOVED. RAISED OR DEPRESSED TEXT ON RRUS OR OTHER EQUIPMENT, IF PRESENT, SHALL BE SANDED OFF OR SIMILARLY REMOVED / FILLED.
- SIGNAGE - FCC MANDATED RF WARNING SIGNAGE SHALL FACE OUT TO STREET WHEN PLACED IN FRONT OF, OR NEAR A WINDOW. SIGNAGE SHALL FACE TOWARD A BUILDING IF THERE IS NO WINDOW.
- ALL CABLING, ANTENNAS, AND EQUIPMENT TO BE PAINTED TO MATCH POLE

CODE COMPLIANCE

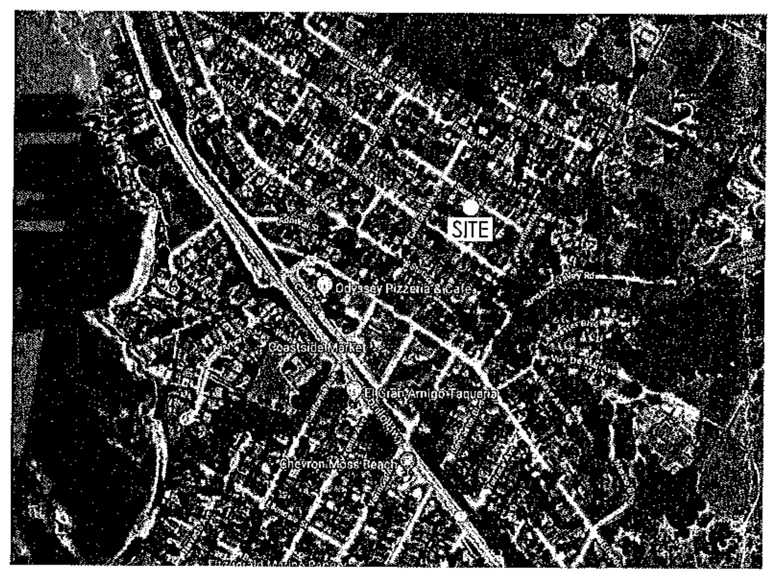
ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1) 2016 CALIFORNIA ADMINISTRATIVE CODE, CHAPTER 10, PART 1, TITLE 24 CODE OF REGULATIONS
2) 2016 CALIFORNIA BUILDING CODE (CBC) WITH CALIFORNIA AMENDMENTS, BASED ON THE 2015 IBC (PART 2, VOL 1-2)
3) 2016 CALIFORNIA RESIDENTIAL CODE (CRC) WITH APPENDIX H, PATIO COVERS, BASED ON THE 2015 IRC (PART 2.5)
4) 2016 CALIFORNIA GREEN BUILDINGS STANDARDS CODE (CALGREEN) (PART 11) (AFFECTED ENERGY PROVISIONS ONLY
5) 2016 CALIFORNIA FIRE CODE (CFC), BASED ON THE 2015 IFC, WITH CALIFORNIA AMENDMENTS (PART 9)
6) 2016 CALIFORNIA MECHANICAL CODE (CMC), BASED ON THE 2015 UMC (PART 4)
7) 2016 CALIFORNIA PLUMBING CODE (CPC), BASED ON THE 2015 UPC (PART 5)
8) 2016 CALIFORNIA ELECTRICAL CODE (CEC) WITH CALIFORNIA AMENDMENTS, BASED ON THE 2015 NEC (PART 3)
9) 2016 CALIFORNIA ENERGY CODE (CEC)
10) ANSI / EIA-TIA-222-H
11) 2015 NFPA 101, LIFE SAFETY CODE
12) 2016 NFPA 72, NATIONAL FIRE ALARM CODE
13) 2016 NFPA 13, FIRE SPRINKLER CODE

DISABLED ACCESS REQUIREMENTS

FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, ACCESSIBILITY REQUIREMENTS ARE NOT REQUIRED, IN ACCORDANCE WITH CALIFORNIA BUILDING CODE, CODE OF REGULATIONS, TITLE 24, PART 2, VOLUME 1, CHAPTER 11B, DIVISION 2, SECTION 11B-203.5

VICINITY MAP



DIRECTIONS FROM VERIZON'S OFFICE

DIRECTIONS FROM VERIZON WIRELESS's OFFICE AT 2785 MITCHELL DRIVE, WALNUT CREEK, CA

1. DEPART MITCHELL DR TOWARD N WIGET LN
2. TURN LEFT ONTO N WIGET LN
3. TURN RIGHT ONTO YGNACIO VALLEY RD
4. ROAD NAME CHANGES TO HILLSIDE AVE
5. TAKE RAMP RIGHT FOR CA-24 WEST TOWARD OAKLAND
6. TAKE RAMP RIGHT FOR I-580 WEST TOWARD SACRAMENTO / SAN FRANCISCO
7. TAKE RAMP LEFT FOR I-80 WEST TOWARD SAN FRANCISCO
8. KEEP RIGHT ONTO I-80 W
9. KEEP STRAIGHT ONTO US-101 S
10. TAKE RAMP RIGHT FOR I-280 TOWARD DALY CITY
11. BEAR RIGHT ONTO CA-1 S
12. TURN LEFT ONTO CALIFORNIA AVE
13. TURN RIGHT ONTO SIERRA ST
14. ARRIVE AT SIERRA ST

PROJECT INFORMATION

Property Information:
Site Name: MOSS BEACH 001
Site Number: MB_001
Site Address: 854 SIERRA STREET
MOSS BEACH, CA 94038
A.P.N. Number: Adjacent to 037-146-290
Current Zoning: N/A - PUBLIC RIGHT OF WAY
Jurisdiction:
Latitude: N 37°31' 47.45" (37.529847)
Longitude: W 122°30' 38.90" (-122.510806)
Elevation: +/- 183.4' AMSL

Power Agency:
PG&E
1 MARKET STREET, SPEAR TOWER
SAN FRANCISCO, CA 94105-1126

Telephone Agency:
AT&T CALIFORNIA
525 MARKET STREET
SAN FRANCISCO, CA 94105
ph: (415) 778-1231

Property Owner:
CITY OF BURLINGAME
501 PRIMROSE RD
BURLINGAME, CA 94010

PROJECT TEAM

Agent:
Scott Revard
Modus-Corporation, Inc.
240 Stockton Street, 3rd Floor
San Francisco, CA 94108
ph: (415) 595-0938
email: srevard@modus-corp.com

Project Manager:
Scott Revard
Modus-Corporation, Inc.
240 Stockton Street, 3rd Floor
San Francisco, CA 94108
ph: (415) 595-0938
email: srevard@modus-corp.com

Construction Manager:
Kresston Haynes
Modus-Corporation, Inc.
240 Stockton Street, 3rd Floor
San Francisco, CA 94108
ph: (209) 938-7251
email: khaynes@modus-corp.com

Architect / Engineer of Record:
Borges Architectural Group, Inc.
1478 Stone Point Drive, Suite 350
Roseville, CA 95661
contact: Brian K. Winslow
ph: (916) 782-7200
email: brian@borgesarch.com

SIGNATURE BLOCK

TITLE	SIGNATURE	DATE
VERIZON PM		
VERIZON CM		
VERIZON RF		
MODUS PM		
MODUS CM		
UTILITIES		
LANDLORD/ PROPERTY OWNER		

OCCUPANCY AND CONSTRUCTION TYPE

OCCUPANCY : N/A
CONSTRUCTION TYPE: G.O. 128 AND 2009 AASHTO 5TH EDITION STANDARD

GENERAL CONTRACTOR NOTES

DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE FORMATTED TO BE FULL SIZE AT 36" x 24" (D1). CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOBSITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME.

SHEET INDEX

DIGALERT
800-227-2600
Call 2 Full Working Days In Advance

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

modus-corp.com
240 STOCKTON STREET, 3RD FLOOR
SAN FRANCISCO, CA 94108

ARCHITECTURAL GROUP Borges
borgesarch.com
1478 STONE POINT DRIVE, SUITE 350
ROSEVILLE CA 95661
916 782 7200 TEL
916 773 3037 FAX

REV	DATE	DESCRIPTION
0	02/15/18	90% CD Submittal

SITE NUMBER:
MB_001

SITE ADDRESS:
854 SIERRA STREET
MOSS BEACH, CA 94038

STAMP
LICENSED ARCHITECT
RICHARD SAMBUCETTI
No. C11535
Ren. 09-30-19
STATE OF CALIFORNIA

DRAWN BY: D.A.G. PROJECT NO.: T-10519-45
CHECK BY: B.K.W.

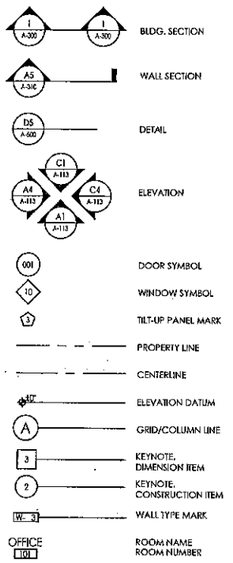
SHEET TITLE
TITLE SHEET

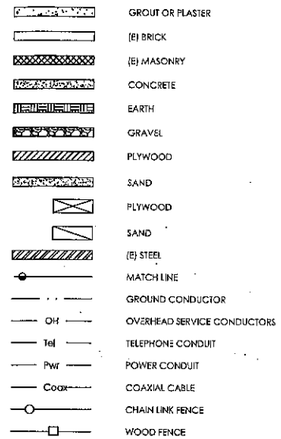
SHEET NO.
T-1

ABBREVIATIONS:

A.B.	ANCHOR BOLT
ABV.	ABOVE
ACCA	ANTENNA CABLE COVER ASSEMBLY
ADD'L	ADDITIONAL
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
ALUM.	ALUMINUM
ALT.	ALTERNATE
ANT.	ANTENNA
APPRX.	APPROXIMATE(LY)
ARCH.	ARCHITECT(URAL)
AWG.	AMERICAN WIRE GAUGE
BLDG.	BUILDING
BLK.	BLOCK
BLKG.	BLOCKING
BM.	BEAM
B.N.	BOUNDARY NAILING
BTCW.	BARE TINNED COPPER WIRE
B.O.F.	BOTTOM OF FOOTING
B/U	BACK-UP CABINET
CAB.	CABINET
CANT.	CANTILEVER(ED)
C.I.P.	CAST IN PLACE
CLG.	CEILING
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION(OR)
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
d	PENNY (NAILS)
DBL.	DOUBLE
DEPT.	DEPARTMENT
D.F.	DOUGLAS FIR
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DWG.	DRAWING(S)
DWL.	DOWEL(S)
EA.	EACH
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
EMT.	ELECTRICAL METALLIC TUBING
E.N.	EDGE NAIL
ENG.	ENGINEER
EQ.	EQUAL
EXP.	EXPANSION
EXST.(E)	EXISTING
EXT.	EXTERIOR
FAB.	FABRICATION(OR)
F.F.	FINISH FLOOR
F.G.	FINISH GRADE
FIN.	FINISH(ED)
FLR.	FLOOR
FDN.	FOUNDATION
F.O.C.	FACE OF CONCRETE
F.O.M.	FACE OF MASONRY
F.O.S.	FACE OF STUD
F.O.W.	FACE OF WALL
F.S.	FINISH SURFACE
FT.(')	FOOT (FEET)
FTG.	FOOTING
G.	GROWTH (CABINET)
GA.	GAUGE
GI.	GALVANIZE(D)
G.F.I.	GROUND FAULT CIRCUIT INTERRUPTER
GLB. (GLU-LAM)	GLUE LAMINATED BEAM
GPS	GLOBAL POSITIONING SYSTEM
GRND.	GROUND
HDR.	HEADER
HGR.	HANGER
HT.	HEIGHT
ICGB.	ISOLATED COPPER GROUND BUS
IN. (")	INCH(ES)
INT.	INTERIOR
LB.(#)	POUND(S)
L.B.	LAG BOLTS
L.F.	LINEAR FEET (FOOT)
L.	LONG(ITUDINAL)
MAS.	MASONRY
MAX.	MAXIMUM
M.B.	MACHINE BOLT
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MTL.	METAL
(N)	NEW
NO.(#)	NUMBER
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OPNG.	OPENING
(P)	PROPOSED
P/C	PRECAST CONCRETE
PCS	PERSONAL COMMUNICATION SERVICES
PLY.	PLYWOOD
PPC	POWER PROTECTION CABINET
PRC	PRIMARY RADIO CABINET
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
P.T.	PRESSURE TREATED
PWR.	POWER (CABINET)
QTY.	QUANTITY
RAD.(R)	RADIUS
REF.	REFERENCE
REINF.	REINFORCEMENT(ING)
REQ'D/	REQUIRED
RGS.	RIGID GALVANIZED STEEL
SCH.	SCHEDULE
SHT.	SHEET
SIM.	SIMILAR
SPEC.	SPECIFICATIONS
SQ.	SQUARE
S.S.	STAINLESS STEEL
STD.	STANDARD
STL.	STEEL
STRUC.	STRUCTURAL
TEMP.	TEMPORARY
THK.	THICK(NESS)
T.N.	TOE NAIL
T.O.A.	TOP OF ANTENNA
T.O.C.	TOP OF CURB
T.O.F.	TOP OF FOUNDATION
T.O.P.	TOP OF PLATE (PARAPET)
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TYP.	TYPICAL
U.G.	UNDER GROUND
U.L.	UNDERWRITERS LABORATORY
U.N.O.	UNLESS NOTED OTHERWISE
V.I.F.	VERIFY IN FIELD
W	WIDE (WIDTH)
w/	WITH
WD.	WOOD
W.P.	WEATHERPROOF
WT.	WEIGHT
℄	CENTERLINE
℄	PLATE, PROPERTY LINE

SYMBOL LEGEND:





GENERAL NOTES:

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

DEFINITIONS:

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

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

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Borges

borgesarch.com

1478 STONE POINT DRIVE, SUITE 350
ROSEVILLE CA 95661
916 782 7200 TEL
916 773 3037 FAX

REV	DATE	DESCRIPTION
0	02/15/18	90% CD Submittal

SITE NUMBER:

MB_001

SITE ADDRESS:
854 SIERRA STREET
MOSS BEACH, CA 94038

STAMP

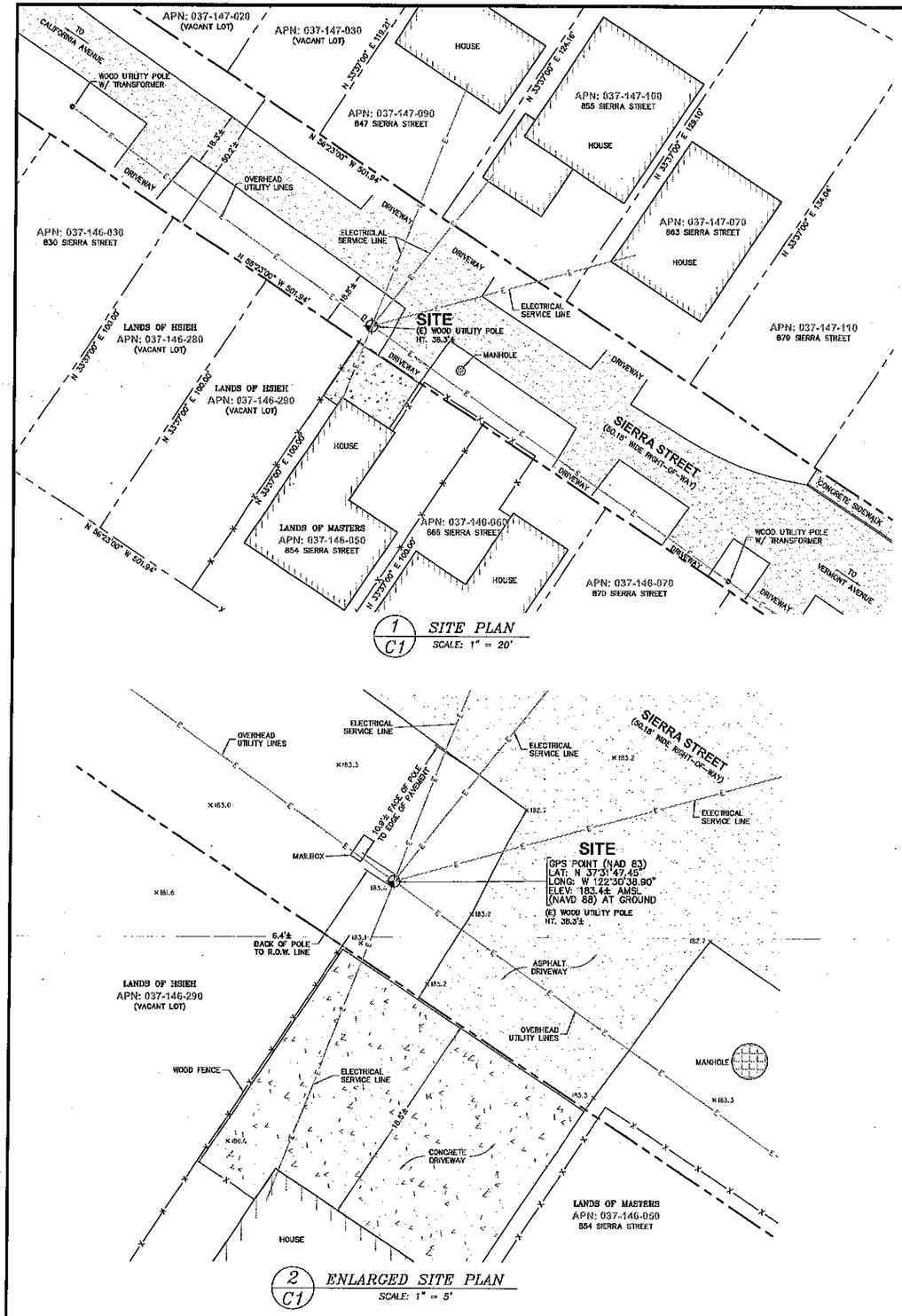
DRAWN BY: D.A.G. PROJECT NO.: T-16519-45
CHECK BY: R.K.W.

SHEET TITLE

GENERAL NOTES

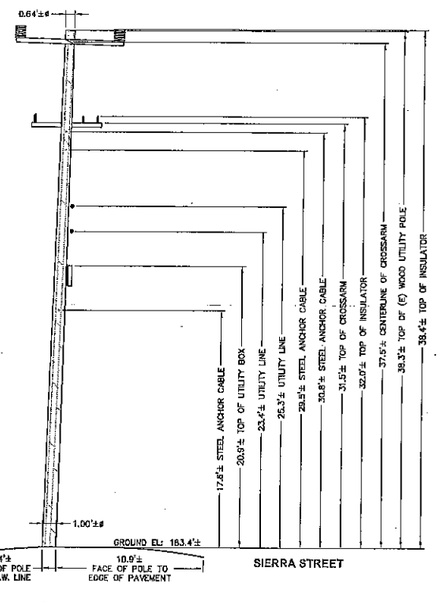
SHEET NO.

GN-1

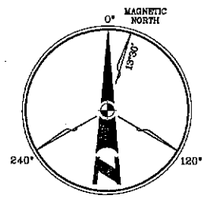


1/C1 SITE PLAN
SCALE: 1" = 20'

2/C1 ENLARGED SITE PLAN
SCALE: 1" = 5'



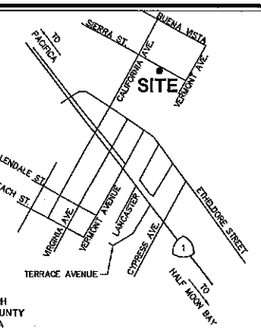
3/C1 UTILITY POLE ELEVATION
SCALE: 1" = 5'



QUIET RIVER
Land Services Inc.
1 1/2 0 1
SCALE IN INCHES
MAGNETIC DECLINATION = 13°30'
PER NOAA-NGDC

SUFFICIENT SURVEY EVIDENCE WAS NOT RECOVERED TO ESTABLISH THE POSITION OF THE BOUNDARY LINES SHOWN HEREON. THE BOUNDARY REPRESENTED ON THIS MAP IS BASED ON COMPILED RECORD DATA AND BEST FIT ONTO EXISTING IMPROVEMENTS. IT IS POSSIBLE FOR THE LOCATION OF THE SUBJECT PROPERTY TO SHIFT FROM THE PLACEMENT SHOWN HEREON WITH ADDITIONAL FIELD WORK AND RESEARCH. THEREFORE, ANY SPATIAL REFERENCE MADE OR SHOWN BETWEEN THE RELATIONSHIP OF THE BOUNDARY LINES AND EXISTING GROUND FEATURES, EASEMENTS OR LEASE AREA SHOWN HEREON IS INTENDED TO BE APPROXIMATE AND IS SUBJECT TO VERIFICATION BY RESOLVING THE POSITION OF THE BOUNDARY LINES.

VICINITY MAP
NOT TO SCALE



MOSS BEACH
SAN MATEO COUNTY
CALIFORNIA

PROPERTY INFORMATION

Owner: SAN MATEO COUNTY
Address: 455 COUNTY CENTER, 2ND FLOOR
REDWOOD CITY, CA 94063

Site: MOSS BEACH 001
Address: 854 SIERRA STREET
MOSS BEACH, CA 94038

Assessor's Parcel Number: PUBLIC RIGHT-OF-WAY

Height of Building/Tower: 38.3'± A.G.L. TOP OF (E) WOOD UTILITY POLE

Title Report:
NO TITLE REPORT FURNISHED. EXCEPTIONS TO THE TITLE AND RESERVATIONS THEREFROM COULD NOT BE DETERMINED. BOUNDARY INFORMATION SHOWN IS COMPILED FROM AVAILABLE RECORD DATA.

Legal Description:
PROPERTY SITUATED IN THE TOWN OF MOSS BEACH, COUNTY OF SAN MATEO, STATE OF CALIFORNIA.

FEMA FLOOD ZONE DESIGNATION National Flood Insurance Program
County: SAN MATEO *Effective Date:* AUGUST 2, 2017
Community-Panel Number: 06081C-0119-F
The Flood Zone Designation for this site as plotted by scale is:

ZONE X – Areas determined to be outside the 0.2% annual chance floodplain

SURVEY DATA
NAD 83 Datum:
Lat: N 37°31'47.45" *Long:* W 122°30'38.90"
Datum Base: NAD 83 *Equipment Used:* CHCX900-GPUS Receiver (See Note 2)
Site Ground Elevation: 183.4± AMSL (NAVD88) AT BASE OF (E) SITE POLE
Basis of Elevations:
GLOBAL POSITIONING SYSTEM (GPS)
(SEE NOTE 2)
Basis of Bearings:
CALIFORNIA COORDINATES ZONE III (NAD83) AND BEST FIT WITH EXISTING IMPROVEMENTS.
Date of Field Survey: AUGUST 31, 2017

NOTES

1.) This is not a boundary survey. This is a specialized topographic map with property lines and easements being a graphic depiction of various information gathered from preliminary title reports, back-up documents of record, maps and available monuments found during the field survey. No property monuments were set. No title research was performed by Quiet River Land Services, Inc.

2.) The latitude, longitude and elevation shown hereon were derived from post-processed L1/L2 data collected using Navstar Global Positioning System (GPS) and a CHCX900-GPUS Receiver. GNS Navigation specifications report decimeter level accuracy (horizontally) when data is properly collected and processed. (Elevation = ±3X feet.)

3.) Unless otherwise noted, no underground utility locating service company was contacted prior to this map being prepared; therefore, there may be non-visible or obscure utilities existing on the property not shown on this map – so CALL BEFORE YOU DIG.

4.) Any electronic digital media provided by Quiet River Land Services, Inc. to our client is a courtesy and is not to be reproduced, distributed, sold, altered, restored, edited or amended without the express written consent of an Officer of Quiet River Land Services, Inc. Further, only the final stamped, signed and dated original "hard copy" version of our survey or map is considered to be our legally recognized product.

SURVEYOR'S STATEMENT

I, the undersigned, a Registered Professional Land Surveyor licensed under the laws of the State of California do hereby state that the information, measurements, easements, record boundary lines, bearings and distances as shown hereon are based upon a field survey as dated above and upon items of public record and data contained in a title report, as referenced. Furthermore, the latitude and longitude coordinates are reported in NAD 83 Datum and are accurate to within ±15 feet horizontally, and the ground elevation, reported in NAVD 1988 Datum, is within ±3 feet vertically. The coordinate values and elevations are within the 1-A Accuracy Code designation as listed in the A.S.A.C. Information Sheet 91-003 and are accurate to the best of my knowledge and belief.

SIGNATURE DATE

LEGEND

APN:	ASSESSOR'S PARCEL NUMBER		ASPHALT
CP	CONTROL POINT		CONCRETE
EL.	ELEVATION		CONTROL POINT
FH	FIRE HYDRANT		FOUND MONUMENT
FND.	FOUND		GPS POINT
HT.	HEIGHT		PARAPET/ROOF ELEVATIONS
MON.	MONUMENT	P 18.3 / R 12.3	SPOT ELEVATION
(M-M)	MONUMENT TO MONUMENT		TEMPORARY BENCHMARK
P.O.B.	POINT OF BEGINNING		
P.O.C.	POINT OF COMMENCEMENT		
PP	POWER POLE		
(TYP.)	TYPICAL		

DATE: SEPTEMBER 8, 2017
DRAWN BY: RO
FILE NO.: MDSC17137

REVISIONS

DATE	DESCRIPTION	INITIAL
9/8/17	100% COMPLETE	RO

verizon wireless
2785 MITCHELL DRIVE
WALNUT CREEK, CA 94598
TEL: (925) 279-6329 FAX: (925) 279-6365

QUIET RIVER
Land Services Inc.
11501 Dublin Boulevard, Suite 200
Dublin, CA 94568
(925) 734-6766 Phone

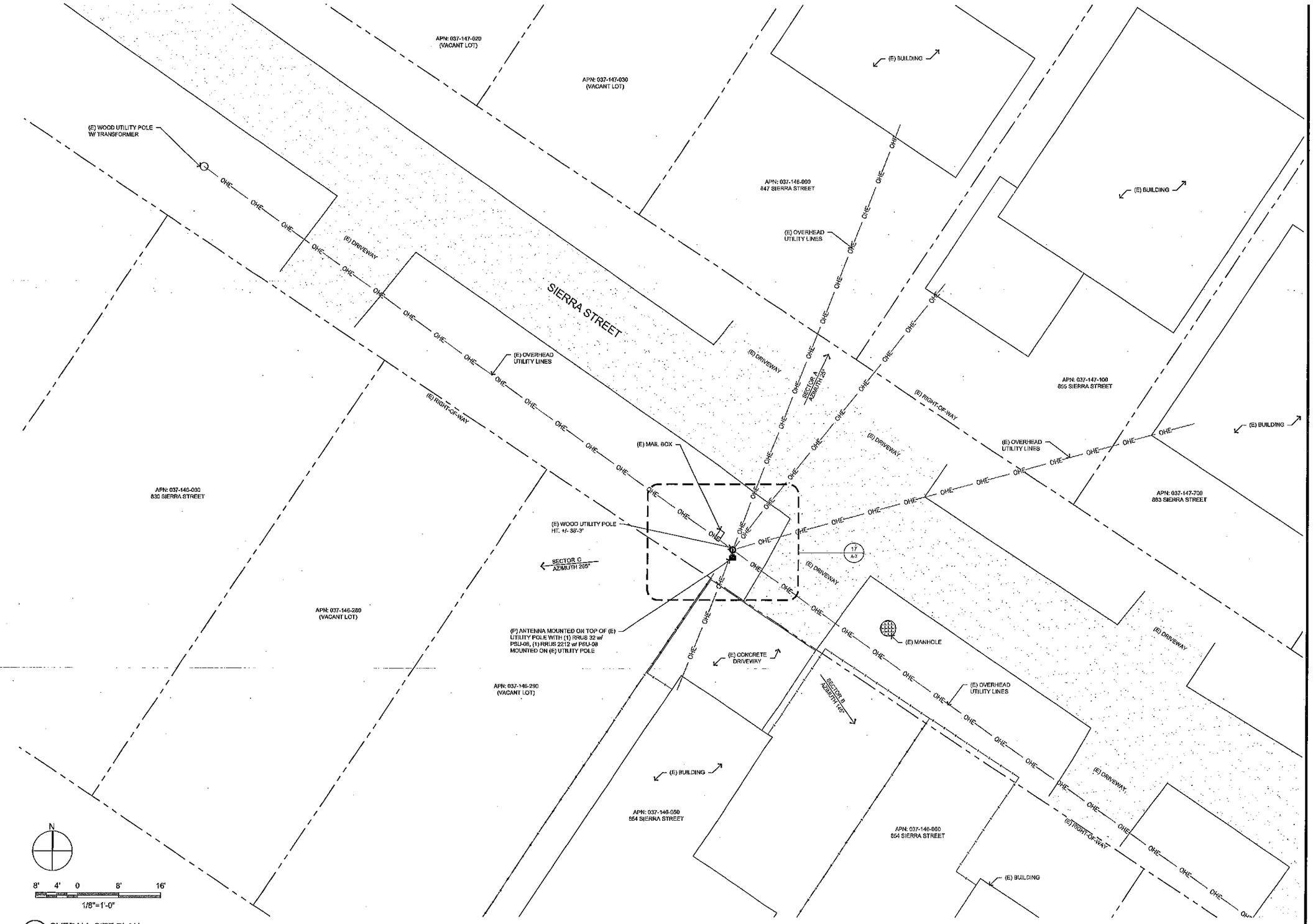
EXISTING SITE CONDITIONS

MOSS BEACH 001

854 SIERRA STREET
MOSS BEACH, CA 94038

C1
OF 1 SHEET

Y:\MDSC17137\dwg\MDSC17137.dwg Sep. 08, 2017 - 8:09am mashworth



17 OVERALL SITE PLAN
1/8" = 1'-0"

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

modus-corp.com

240 STOCKTON STREET, 3RD FLOOR
SAN FRANCISCO, CA 94108

ARCHITECTURAL GROUP
Borges
borgesarch.com

1478 STONE POINT DRIVE, SUITE 350
ROSEVILLE CA 95661
916 782 7200 TEL
916 773 3937 FAX

REV	DATE	DESCRIPTION
0	02/15/16	90% CD Submittal

SITE NUMBER:

MB_001

SITE ADDRESS:
854 SIERRA STREET
MOSS BEACH, CA 94038

STAMP

LICENSED ARCHITECT
RICHARD SAUNDERS
No. C11535
Exp. 09-30-16
STATE OF CALIFORNIA

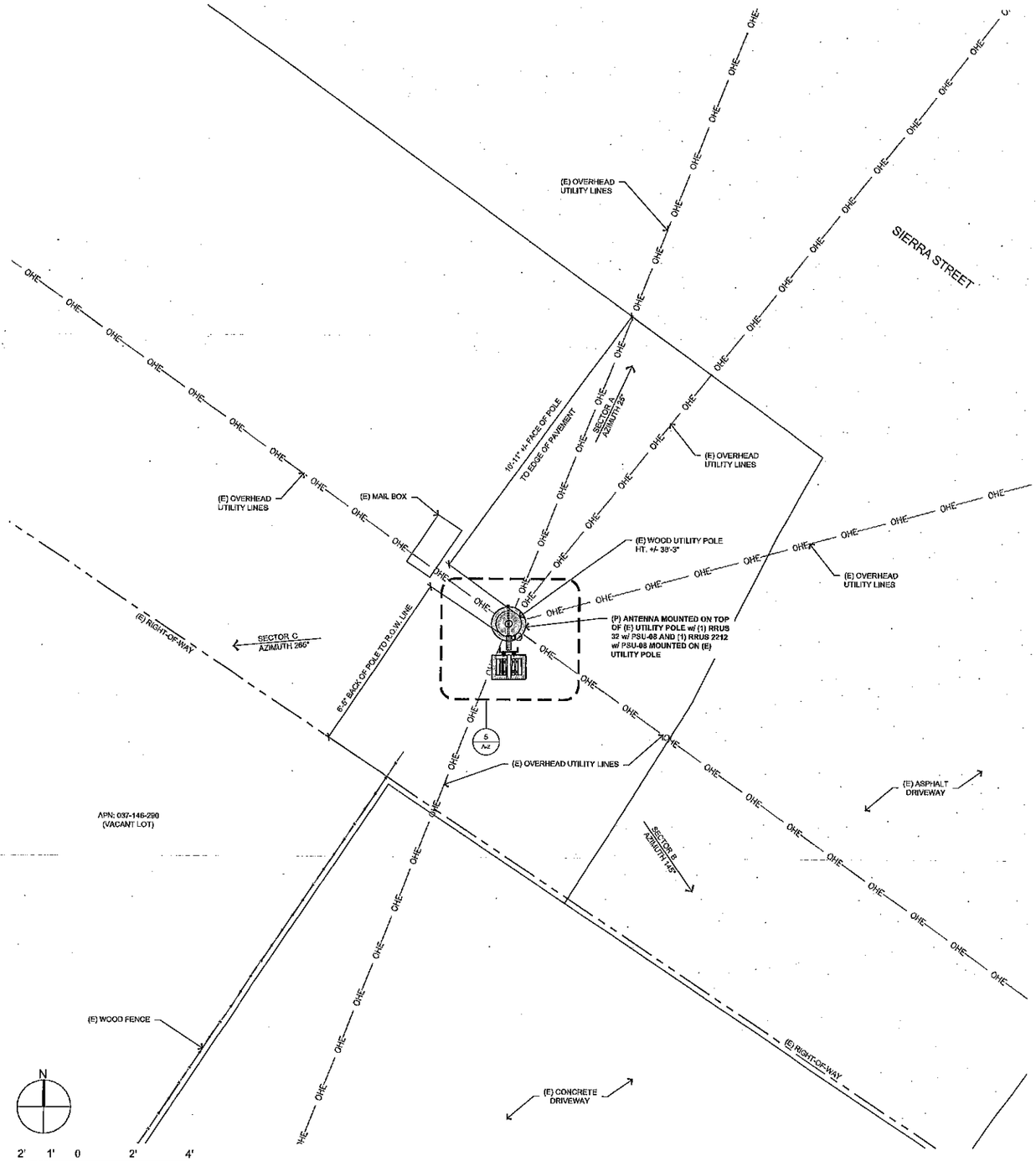
DRAWN BY: D.A.O. PROJECT NO.: T-16519-45
CHECK BY: R.K.W.

SHEET TITLE

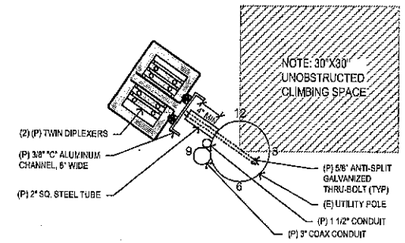
SITE PLAN

SHEET NO.

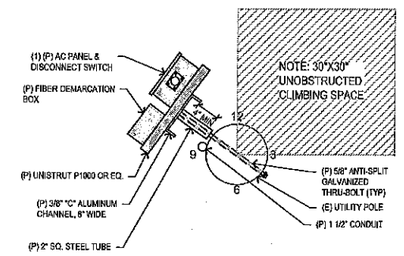
A-1



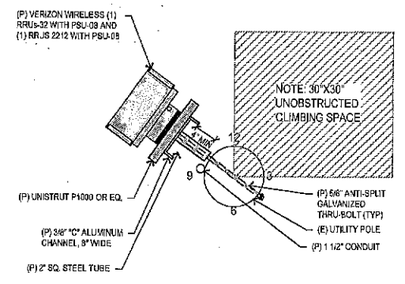
17 ENLARGED SITE PLAN
1/2" = 1'-0"



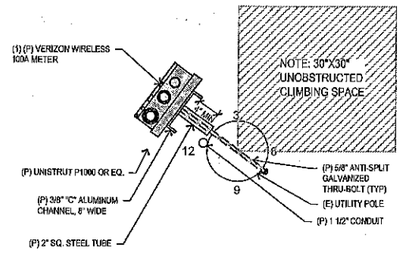
8 COUPLER MOUNTING DETAIL
1" = 1'-0"



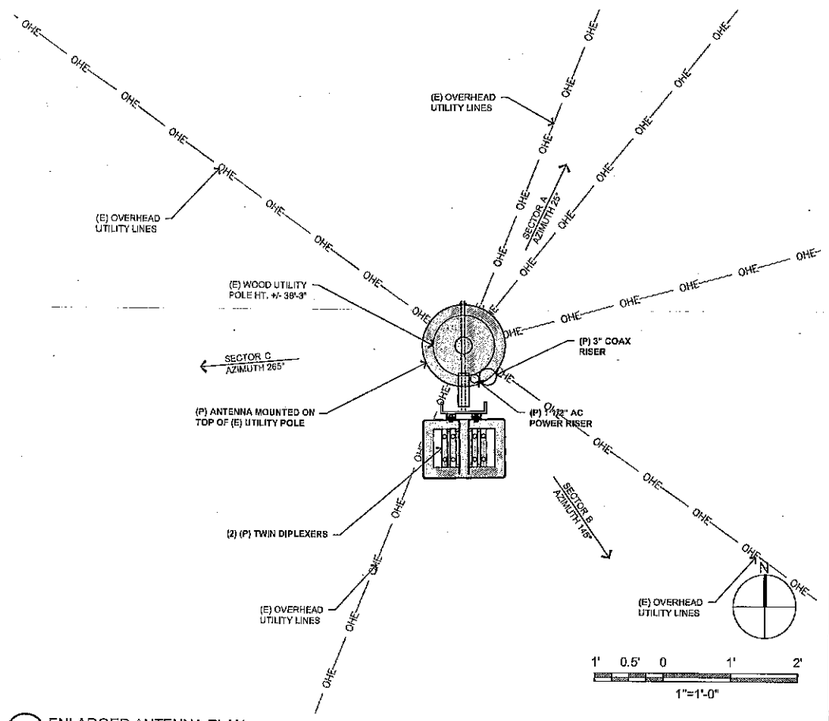
4 DISCONNECT AND PANEL MOUNTING DETAIL
1" = 1'-0"



7 RRU MOUNTING DETAIL
1" = 1'-0"



3 POWER METER MOUNTING DETAIL
1" = 1'-0"



5 ENLARGED ANTENNA PLAN
1" = 1'-0"

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

modus-corp.com
240 STOCKTON STREET, 3RD FLOOR
SAN FRANCISCO, CA 94108

ARCHITECTURAL GROUP
Borges
borgesarch.com
1426 STONE POINT DRIVE, SUITE 350
ROSEVILLE CA 95661
916 782 7200 TEL
916 773 3037 FAX

REV	DATE	DESCRIPTION
0	02/15/16	90% CD Submittal

SITE NUMBER:

MB_001

SITE ADDRESS:
854 SIERRA STREET
MOSS BEACH, CA 94038

STAMP

LICENSED ARCHITECT RICHARD SAVAGEAU No. C31535 REN. 08-31-17 STATE OF CALIFORNIA

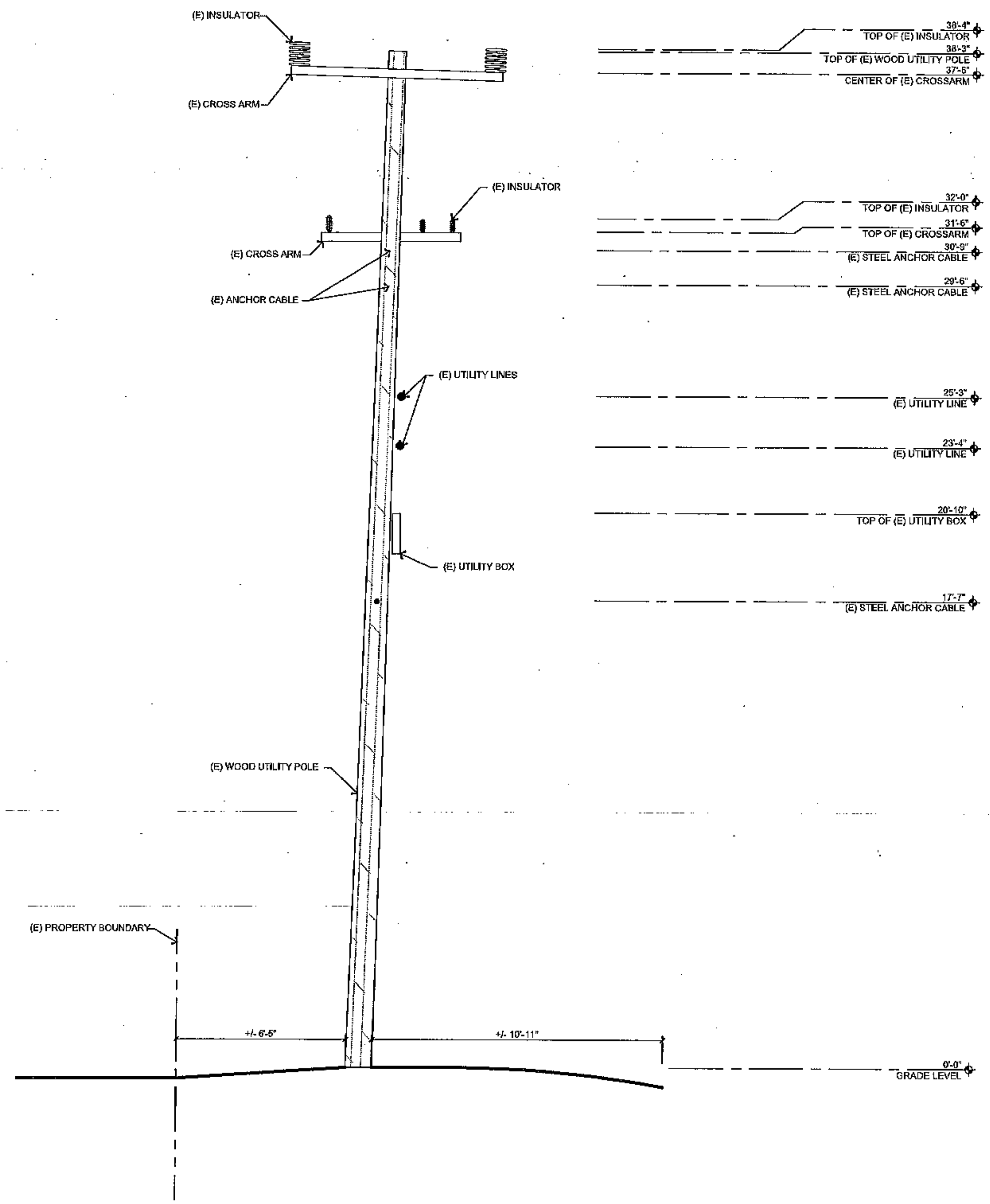
DRAWN BY: D.A.G. PROJECT NO.: T-16516-45
CHECK BY: R.K.W.

SHEET TITLE
ENLARGED SITE PLAN & ANTENNA PLAN

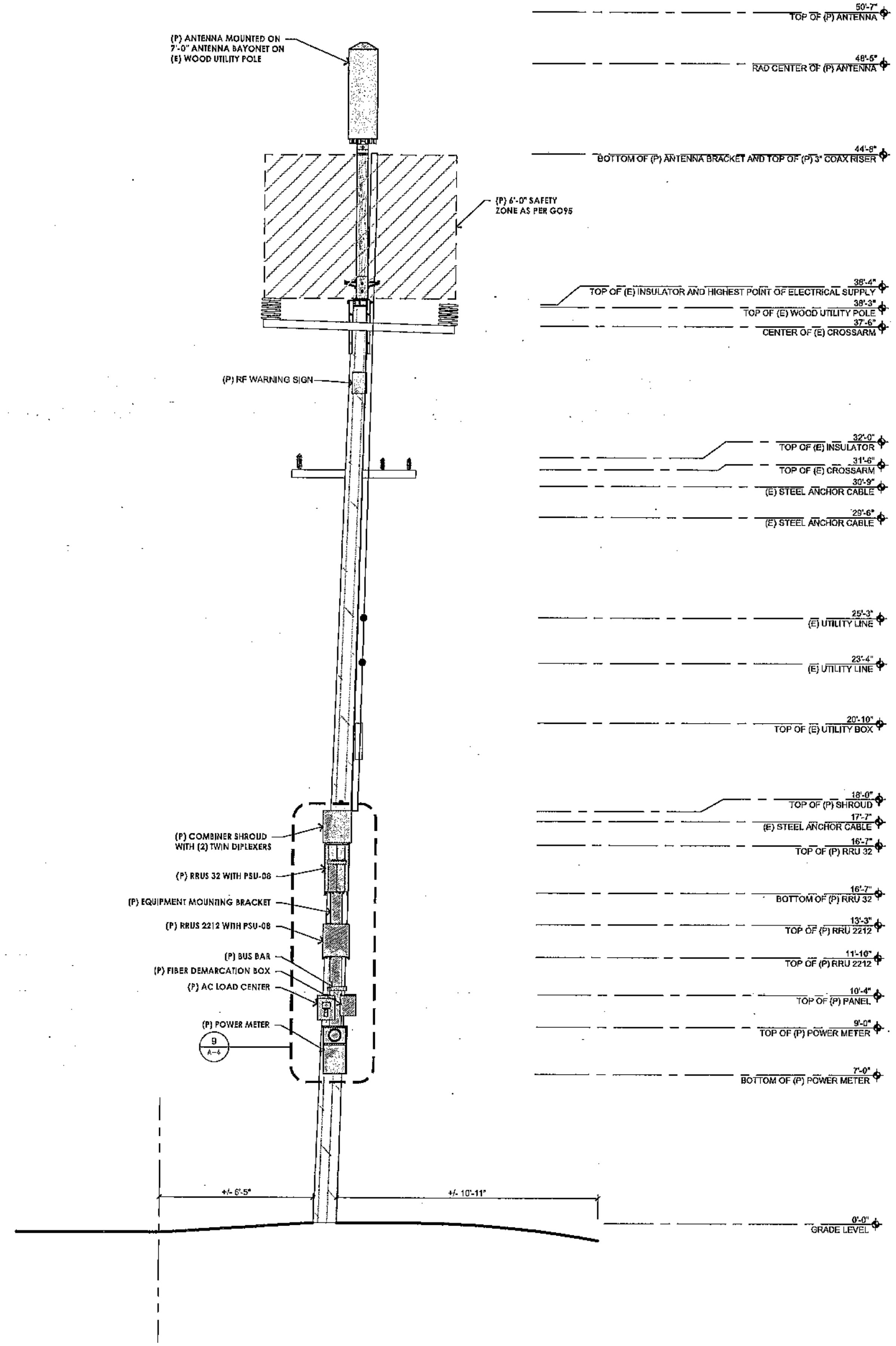
SHEET NO.
A-2

NOTES:

1. PAINT RRU SOLAR SHIELD, MOUNTING COMPONENTS & CABLE SWEEP TO MATCH (E) POLE.
2. FINISH FRP CONCEALMENT SHROUD & SKIRT TO MATCH (E) POLE.
3. NOTICE / CAUTION SIGNAGE DECAL SHALL FACE OUT TO STREET AND WHEN FEASIBLE



17 EXISTING SOUTH EAST ELEVATION
3/8" = 1'-0"



9 PROPOSED SOUTH EAST ELEVATION
3/8" = 1'-0"

verizon

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borgesarch.com

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ROSEVILLE CA 95661
916 782 7200 TEL
916 773 3037 FAX

REV	DATE	DESCRIPTION
0	02/15/18	90% CD Submittal

SITE NUMBER:

MB_001

SITE ADDRESS:
854 SIERRA STREET
MOSS BEACH, CA 94038

STAMP

LICENSED ARCHITECT RICHARD SAMBUCETTI No. C11535 Ren. 09-30-19 STATE OF CALIFORNIA

DRAWN BY: D.A.G. PROJECT NO.: T-16510-45

CHECK BY: B.K.W.

SHEET TITLE

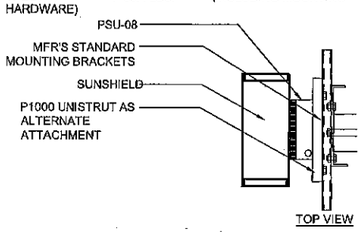
ELEVATIONS

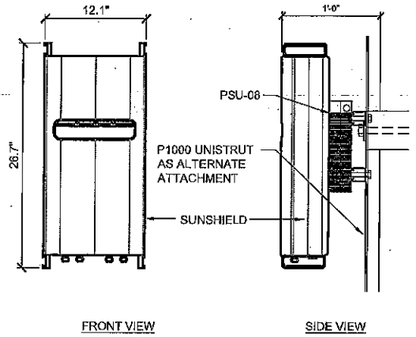
SHEET NO.

A-3

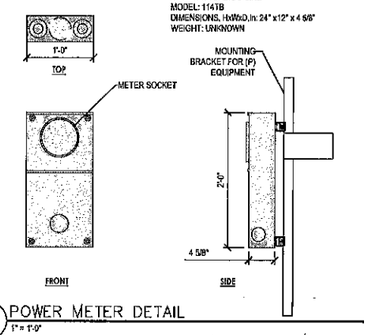
ERICSSON RRU-32 WITH PSU-08

MODEL: RRUS 32 WITH PSU-08
COLOR: WHITE
DIMENSIONS: 26.7" TALL X 12.1" WIDE X 6.7" DEEP (INCLUDING SUNSHIELD)
WIEGHT: +/- 80.4 LBS. (INCLUDING MOUNTING HARDWARE)

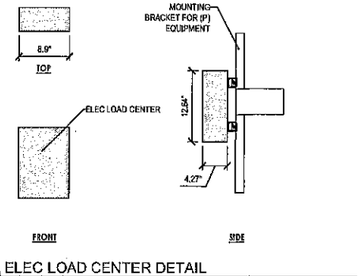




19 RRUS 32 WITH PSU-08 MOUNTING DETAIL
1 1/2" = 1'-0"



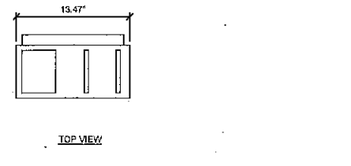
16 POWER METER DETAIL
1" = 1'-0"



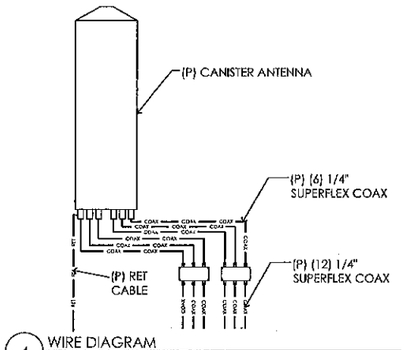
12 ELEC LOAD CENTER DETAIL
1" = 1'-0"

ERICSSON RRUS2212

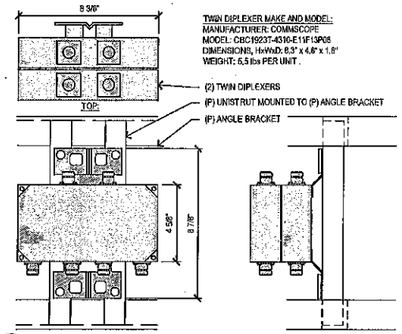
MODEL: RRUS22212
COLOR: WHITE
DIMENSIONS: 16.54" TALL X 12.6" WIDE X 13.47" DEEP (INCLUDING SUNSHIELD)
WIEGHT: +/- 82 LBS. (INCLUDING MOUNTING HARDWARE)



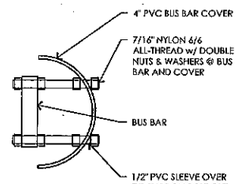
7 ERICSSON RRUS-2212
1 1/2" = 1'-0"



4 WIRE DIAGRAM
3/4" = 1'-0"



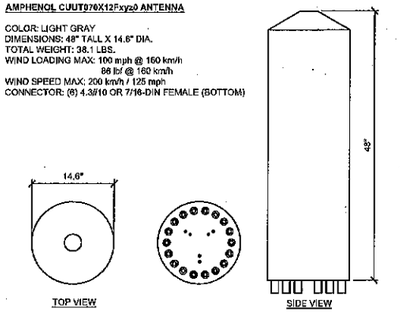
11 TWIN DIPLEXER
3" = 1'-0"



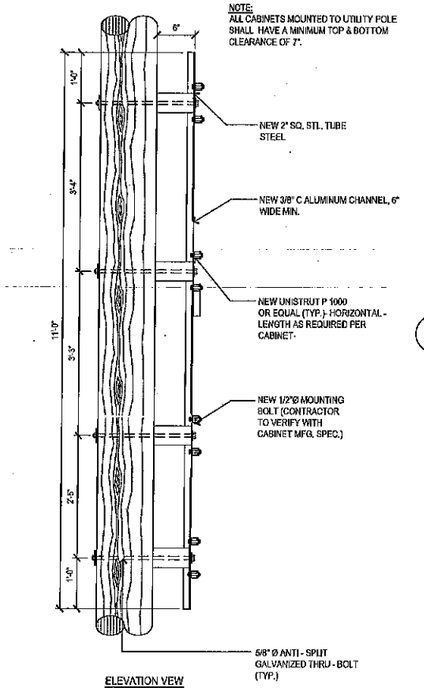
15 BUS BAR COVER
NOT TO SCALE

AMPHENOL CUUT070X12Fxyz0 ANTENNA

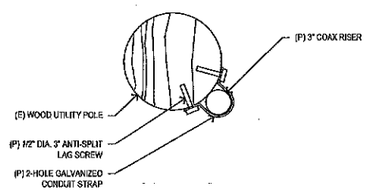
COLOR: LIGHT GRAY
DIMENSIONS: 48" TALL X 14.6" DIA.
TOTAL WEIGHT: 38.1 LBS.
WIND LOADING MAX: 100 mph @ 150 km/h
86 lbf @ 150 km/h
WIND SPEED MAX: 200 km/h / 125 mph
CONNECTOR: (6) 4.3/10 OR 7/16-DIN FEMALE (BOTTOM)



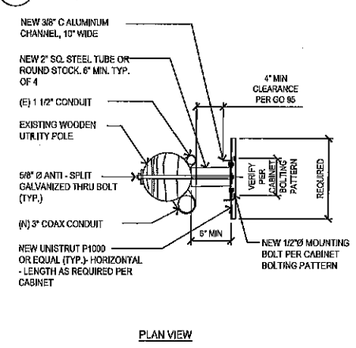
3 CUUT070X12Fxyz0
1"=1'-0"

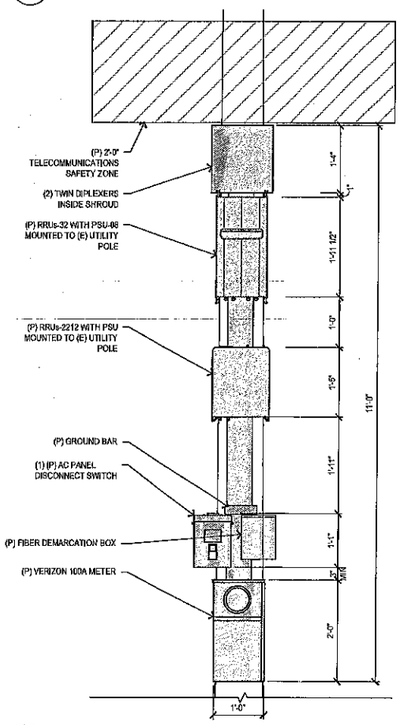


17 EQUIPMENT MOUNTING DETAIL
3/4" = 1'-0"



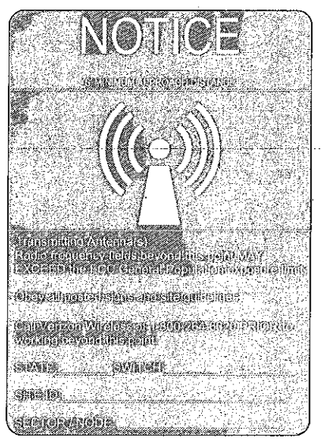
14 CONDUIT STRAP DETAIL
1 1/2" = 1'-0"





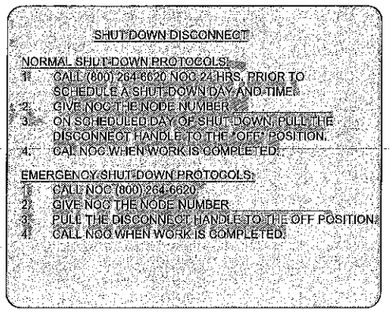
9 ANTENNA EQUIPMENT FRONT ELEVATION
3/4" = 1'-0"

NOTE:
SIGN BACKGROUND COLOR TO MATCH (E) POLE
ALL TEXT AND SYMBOLS TO BE WHITE



5 NOTICE SIGNAGE
1" = 1'-0"

NOTE:
1. INSIDE AND OUTSIDE PANEL DOOR SHOWING SHUT-DOWN PROTOCOL ON 3"X4" LABEL
2. SITE ID WIL LBE SWITCH #, SITE #, & SITE NAME
3. SIGN PROVIDED BY GC MOUNTED TO OUTSIDE OF SERVICE DISCONNECT



1 SHUT DOWN PROTOCOL SIGNAGE
1" = 1'-0"

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

modus-corp.com
240 STOCKTON STREET, 3RD FLOOR
SAN FRANCISCO, CA 94108

ARCHITECTURAL GROUP Borges
borgesarch.com
1478 STONE POINT DRIVE, SUITE 350
ROSEVILLE CA 95661
916 782 7200 TEL
916 772 3037 FAX

REV	DATE	DESCRIPTION
0	02/15/18	90% CD Submittal

SITE NUMBER:

MB_001

SITE ADDRESS:
854 SIERRA STREET
MOSS BEACH, CA 94038

STAMP:

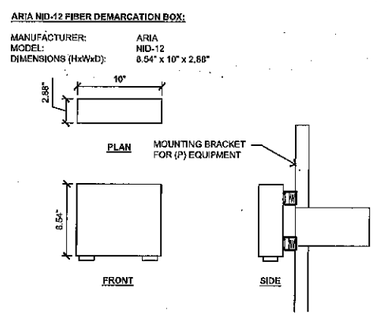
REGISTERED ARCHITECT RICHARD SAVERCOOL No. C18335 Exp. 09-30-19 STATE OF CALIFORNIA

DRAWN BY: D.A.G. PROJECT NO.: T-16518-45
CHECK BY: B.K.W.
SHEET TITLE

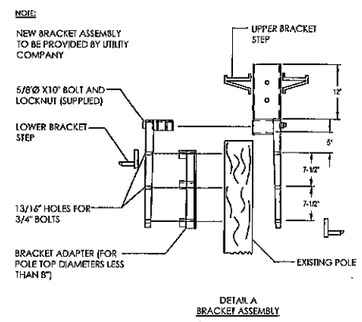
DETAILS

SHEET NO.

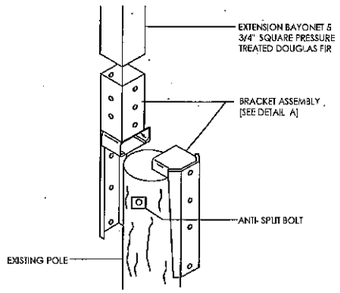
A-4.1



15 ARIA NID-12 FIBER DEMARCATION BOX
1 1/2" = 1'-0"
rename me to this view "dwn" name

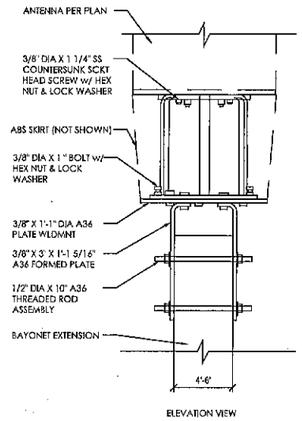


DETAIL A
BRACKET ASSEMBLY

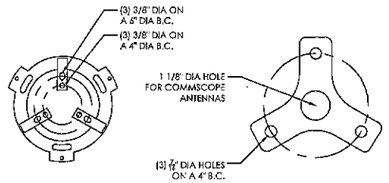


DETAIL B
WOOD EXTENSION ASSEMBLY

11 WOOD POLE EXTENSION
3/4" = 1'-0"



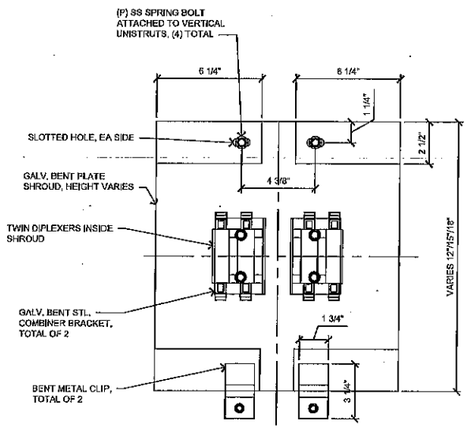
ELEVATION VIEW



ANTENNA MOUNT AMPHENOL ANTENNAS

ANTENNA ADAPTER COMMSCOPE ANTENNAS

7 TOP MOUNT ANTENNA BRACKET
NOT TO SCALE



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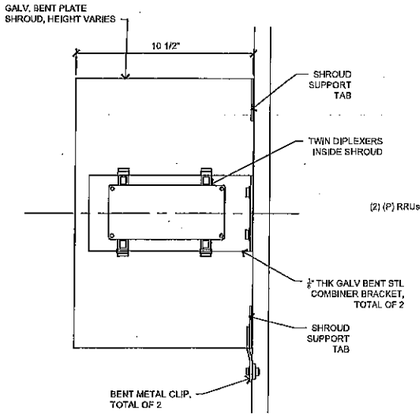
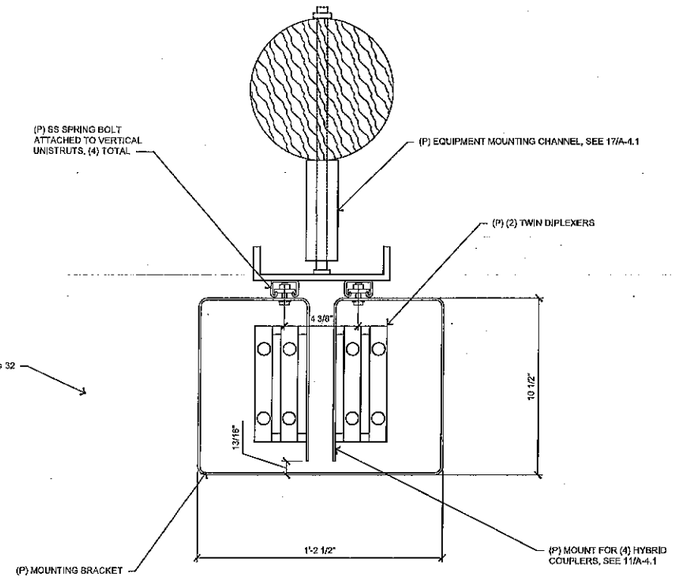


SIDE



TOP

13 COMBINER SHROUD DETAIL
3" = 1'-0"

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

modus-corp.com

240 STOCKTON STREET, 3RD FLOOR
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REV	DATE	DESCRIPTION
0	02/15/18	90% CD Submittal

SITE NUMBER:

MB_001

SITE ADDRESS:
854 SIERRA STREET
MOSS BEACH, CA 94038

STAMP

LICENSED ARCHITECT RICHARD SAMBRAILO No. C11535 Rev. 02-28-18 STATE OF CALIFORNIA

DRAWN BY: D.A.G. PROJECT NO.: T-16519-45
CHECK BY: B.K.W.

SHEET TITLE

DETAILS

SHEET NO.

A-4.2

ELECTRICAL NOTES

GENERAL REQUIREMENTS:

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRICAL CODE AND ALL STATE AND LOCAL CODES. NOTHING IN THESE PLANS OR SPECIFICATIONS SHALL BE CONSTRUED AS TO PERMIT WORK NOT CONFORMING TO THE MOST STRINGENT OF THESE CODES. SHOULD CHANGES BE NECESSARY IN THE DRAWINGS OR SPECIFICATIONS TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND CEASE WORK ON PARTS OF THE CONTRACT WHICH ARE AFFECTED.

2. THE CONTRACTOR SHALL MAKE A SITE VISIT PRIOR TO BIDDING AND CONSTRUCTION TO VERIFY ALL EXISTING CONDITIONS AND SHALL NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES. THE CONTRACTOR ASSUMES ALL LIABILITY FOR FAILURE TO COMPLY WITH THIS PROVISION.

3. THE EXTENT OF THE WORK IS INDICATED BY THE DRAWINGS, SCHEDULES, AND SPECIFICATIONS AND IS SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT. THE WORK SHALL CONSIST OF FURNISHING ALL LABOR, EQUIPMENT, MATERIALS, AND SUPPLIES NECESSARY FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM. THE WORK SHALL ALSO INCLUDE THE COMPLETION OF ALL ELECTRICAL WORK NOT MENTIONED OR SHOWN WHICH IS NECESSARY FOR SUCCESSFUL OPERATION OF ALL SYSTEMS.

4. THE CONTRACTOR SHALL PREPARE A BID FOR A COMPLETE AND OPERATIONAL SYSTEM, WHICH INCLUDES THE COST FOR MATERIAL AND LABOR.

5. WORKMANSHIP AND NEAT APPEARANCE SHALL BE AS IMPORTANT AS THE OPERATION. DEFECTIVE OR DAMAGED MATERIALS SHALL BE REPLACED OR REPAIRED PRIOR TO FINAL ACCEPTANCE IN A MANNER ACCEPTABLE TO OWNER AND ENGINEER.

6. COMPLETE THE ENTIRE INSTALLATION AS SOON AS THE PROGRESS OF THE WORK WILL PERMIT, ARRANGE ANY OUTAGE OF SERVICE WITH THE OWNER AND BUILDING MANAGER IN ADVANCE. MINIMIZE DOWNTIME ON THE BUILDING ELECTRICAL SYSTEM.

7. THE ENTIRE ELECTRICAL SYSTEM INSTALLED UNDER THIS CONTRACT SHALL BE DELIVERED IN PROPER WORKING ORDER. REPLACE, WITHOUT ADDITIONAL COST TO THE OWNER, ANY DEFECTIVE MATERIAL AND EQUIPMENT WITHIN ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.

8. ANY ERROR, OMISSION OR DESIGN DISCREPANCY ON THE DRWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION OR CORRECTION BEFORE CONSTRUCTION.

9. "PROVIDE" INDICATES THAT ALL ITEMS ARE TO BE FURNISHED, INSTALLED AND CONNECTED IN PLACE.

10. CONTRACTOR SHALL SECURE ALL NECESSARY BUILDING PERMITS AND PAY ALL REQUIRED FEES.

EQUIPMENT LOCATION:

1. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE DESIRED LOCATIONS OR ARRANGEMENTS OF CONDUIT RUNS, OUTLETS, EQUIPMENT, ETC., AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE. PROPER JUDGEMENT MUST BE EXERCISED IN EXECUTING THE WORK SO AS TO SECURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE LIMITATIONS OR INTERFERENCE OF STRUCTURE CONDITIONS ENCOUNTERED.

2. IN THE EVENT CHANGES IN THE INDICATED LOCATIONS OR ARRANGEMENTS ARE NECESSARY, DUE TO FIELD CONDITIONS IN THE BUILDING CONSTRUCTION OR REARRANGEMENT OF FURNISHINGS OR EQUIPMENT, SUCH CHANGES SHALL BE MADE WITHOUT COST, PROVIDING THE CHANGE IS ORDERED BEFORE THE CONDUIT RUNS, ETC., AND WORK DIRECTLY CONNECTED TO THE SAME IS INSTALLED AND NO EXTRA MATERIALS ARE REQUIRED.

3. LIGHTING FIXTURES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS ONLY. COORDINATE THE FIXTURE LOCATION WITH MECHANICAL EQUIPMENT TO AVOID INTERFERENCE.

4. COORDINATE THE WORK OF THIS SECTION WITH THAT OF ALL OTHER TRADES, WHERE CONFLICTS OCCUR, CONSULT WITH THE RESPECTIVE CONTRACTOR AND COME TO AGREEMENT AS TO CHANGES NECESSARY. OBTAIN WRITTEN ACCEPTANCE FROM ENGINEER FOR THE PROPOSED CHANGES BEFORE PROCEEDING.

SHOP DRAWINGS:

1. N/A UNLESS NOTED OTHERWISE.

SUBSTITUTIONS:

1. NO SUBSTITUTIONS ARE ALLOWED

TESTS:

1. BEFORE FINAL ACCEPTANCE OF WORK, THE CONTRACTOR SHALL INSURE THAT ALL EQUIPMENT, SYSTEMS, FIXTURES, ETC., ARE WORKING SATISFACTORILY AND TO THE INTENT OF THE DRAWINGS.

PERMITS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING OUT AND PAYING FOR ALL REQUIRED PERMITS, INSPECTION AND EXAMINATION WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

GROUNDING:

1. THE CONTRACTOR SHALL PROVIDE A COMPLETE, AND APPROVED GROUNDING SYSTEM INCLUDING ELECTRODES, ELECTRODE CONDUCTOR, BONDING CONDUCTORS, AND EQUIPMENT CONDUCTORS AS REQUIRED BY ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.

2. CONDUITS CONNECTED TO EQUIPMENT AND DEVICES SHALL BE METALICALY JOINED TOGETHER TO PROVIDE EFFECTIVE ELECTRICAL CONTINUITY.

3. FEEDERS AND BRANCH CIRCUIT WIRING INSTALLED IN A NONMETALLIC CONDUIT SHALL INCLUDE A CODE SIZED GROUNDING CONDUCTOR HAVING GREEN INSULATION. THE GROUND CONDUCTOR SHALL BE PROPERLY CONNECTED AT BOTH ENDS TO MAINTAIN ELECTRICAL CONTINUITY.

4. REFER TO GROUND BUS DETAILS. PROVIDE NEW GROUND SYSTEM COMPLETE WITH CONDUCTORS, GROUND ROD AND DESCRIBED TERMINATIONS.

5. ALL GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2 UNLESS NOTED OTHERWISE.

6. ALL NON-DIRECT BURIED TELEPHONE EQUIPMENT GROUND CONDUCTORS SHALL BE #2 STRANDED THHN (GREEN) INSULATION.

7. ALL GROUND CONNECTIONS SHALL BE MADE WITH "HYGROUND" COMPRESSION SYSTEM BURNDY CONNECTORS EXCEPT WHERE NOTED OTHERWISE.

8. PAINT AT ALL GROUND CONNECTIONS SHALL BE REMOVED.

9. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE OWNER FOR FUTURE INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE. SUBMIT TEST REPORTS AND FURNISH TO SMART SMR ONE COMPLETE SET OF PRINTS SHOWING "INSTALLED WORK".

UTILITY SERVICE:

1. TELEPHONE AND ELECTRICAL METERING FACILITIES SHALL CONFORM TO THE REQUIREMENTS OF THE SERVING UTILITY COMPANIES. CONTRACTOR SHALL VERIFY SERVICE LOCATIONS AND REQUIREMENTS. SERVICE INFORMATION WILL BE FURNISHED BY THE SERVING UTILITIES.

2. CONFORM TO ALL REQUIREMENTS OF THE SERVING UTILITY COMPANIES.

PRODUCTS:

1. ALL MATERIALS SHALL BE NEW, CONFORMING WITH NEC, ANSI, NEMA. AND THEY SHALL BE U.L. LISTED AND LABELED.

2. CONDUIT:
   - A) RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
   - B) ELECTRICAL METALLIC TUBING SHALL U.L. LABEL. FITTINGS SHALL BE COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
   - C) FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE. SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT EXCESS OF SIX FEET IN LENGTH SHALL HAVE FULL SIZE GROUND WIRE.
   - D) CONDUIT RUNS MAY BE SURFACE MOUNTED IN CEILING OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH ARCHITECT PRIOR TO INSTALLING.
   - E) ALL UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 (UNLEES NOTED OTHERWISE) AT A MINIMUM DEPTH OF 24" BELOW GRADE
   - F) ALL CONDUIT ONLY (C.O.) SHALL HAVE PULL ROPE.
   - G) CONDUITS RUN ON ROOFS SHALL BE INSTALLED ON 4x4 REDWOOD SLEEPERS, 4'-0" ON CENTER, SET IN NON-HARDENING MASTIC.
3. ALL WIRE AND CABLE SHALL BE COPPER, 600 VOLT, #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED. TYPE THHN INSULATION USED UNLESS CONDUCTORS INSTALLED IN CONDUIT EXPOSED TO WEATHER, IN WHICH CASE TYPE THWN INSULATION SHALL BE USED.

4. PROVIDE GALVANIZED COATED STEEL BOXES AND ACCESSORIES SIZED PER CODE TO ACCOMMODATE ALL DEVICES AND WIRING.

5. DUPLEX RECEPTACLES SHALL BE SPECIFICATION GRADE WITH WHITE FINISH (UNLESS NOTED BY ENGINEER), 20 AMP, 125 VOLT, THREE WIRE GROUNDING TYPE, NEMA 5-20R. MOUNT RECEPTACLE AT +12" ABOVE FINISHED FLOOR UNLESS OTHERWISE INDICATED ON DRAWINGS OR IN DETAILS. WEATHERPROOF RECEPTACLES SHALL BE GROUND FAULT INTERRUPTIER TYPE WITH SIERRA #WPD-8 LIFT COVERPLATES.

6. TOGGLE SWITCHES SHALL BE 20 AMP, 120 VOLT AC. SPECIFICATION GRADE WHITE (UNLESS NOTED OTHERWISE) FINISH. MOUNT SWITCHES AT +48" ABOVE FINISHED FLOOR.

7. PANELBOARDS SHALL BE DEAD FRONT SAFETY TYPE WITH ANTI-BURN SOLDERLESS COMPRESSION APPROVED FOR COPPER CONDUCTORS, COPPER BUS BARS, FULL SIZED NEUTRAL BUS, GROUND BUS AND EQUIPPED WITH QUICK-MAKE QUICK-BREAK BOLT-IN TYPE THERMAL MAGNETIC CIRCUIT BREAKERS. MOUNT TOP OF THE PANELBOARDS AT 6'-3" ABOVE FINISHED FLOOR. PROVIDE TYPE WRITTEN CIRCUIT DIRECTORY.

8. ALL CIRCUIT BREAKERS, MAGNETIC STARTERS AND OTHER ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED.

9. GROUND RODS SHALL BE COPPER CLAD STEEL 5/8" ROUND AND 10' LONG. COPPERWELD OR APPROVED EQUAL.

INSTALLATION:

1. PROVIDE SUPPORTING DEVICES FOR ALL ELECTRICAL EQUIPMENT, FIXTURES, BOXES, PANEL, ETC., SUPPORT LUMINARIES FROM UNDERSIDE OF STRUCTURAL CEILING. EQUIPMENT SHALL BE BRACED TO WITHSTAND HORIZONTAL FORCES IN ACCORDANCE WITH STATE AND LOCAL CODE REQUIREMENTS. PROVIDE PRIOR ALIGNMENT AND LEVELING OF ALL DEVICES AND FIXTURES.

2. CUTTING, PATCHING, CHASES, OPENINGS: PROVIDE LAYOUT IN ADVANCE TO ELIMINATE UNNECESSARY CUTTING OR DRILLING OF WALLS, FLOORS CEILINGS, AND ROOFS. ANY DAMAGE TO BUILDING STRUCTURE OR EQUIPMENT SHALL BE REPAIRED BY THE CONTRACTOR. OBTAIN PERMISSION FROM THE ENGINEER BEFORE CORING.

3. IN DRILLING HOLES INTO CONCRETE WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, PIPE RUNS, ETC., IT MUST BE CLEARLY UNDERSTOOD THAT TENDONS AND/OR REINFORCING STEEL WILL NOT BE DRILLED INTO, CUT OR DAMAGED UNDER THE CIRCUMSTANCES.

4. LOCATION OF TENDONS AND/OR REINFORCING STEEL ARE NOT DEFINITELY KNOWN AND THEREFORE, MUST BE SEARCHED FOR BY APPROPRIATE METHODS AND EQUIPMENT VIA X-RAY OR OTHER DEVICES THAT CAN ACCURATELY LOCATE THE REINFORCING AND/OR STEEL TENDONS.

5. PENETRATIONS IN FIRE RATED WALLS SHALL BE FIRE STOPPED IN ACCORDANCE WITH THE REQUIREMENTS OF THE C.B.C.

PROJECT CLOSEOUT:

1. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALLS DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.

2. PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS.

3. ALL BROCHURES, OPERATING MANUALS, CATALOG, SHOP DRAWINGS, ETC., SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.

GROUNDING NOTES:

1. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL GROUNDING INSTALLATION REQUIREMENTS AND CONSTRUCTION ACCORDING TO SITE CONDITIONS.

2. ALL GROUNDING CONDUCTORS: #2 AWG SOLID BARE TINNED COPPER WIRE UNLESS OTHERWISE NOTED.

3. GROUND BAR LOCATED IN BASE OF EQUIPMENT WILL BE PROVIDED, FURNISHED AND INSTALLED BY THE VENDOR.

4. ALL BELOW GRADE CONNECTIONS: EXOTHERMIC WELD TYPE, ABOVE GRADE CONNECTIONS: EXOTHERMIC WELD TYPE.

5. GROUND RING SHALL BE LOCATED A MINIMUM OF 24" BELOW GRADE OR 6" MINIMUM BELOW THE FROST LINE.

6. INSTALL GROUND CONDUCTORS AND GROUND ROD MINIMUM OF 1'-0" FROM EQUIPMENT CONCRETE SLAB, SPREAD FOOTING, OR FENCE.

7. EXOTHERMIC WELD GROUND CONNECTION TO FENCE POST: TREAT WITH A COLD GALVANIZED SPRAY.

8. GROUND BARS:
   - A) EQUIPMENT GROUND BUS BAR (EGB) LOCATED AT THE BOTTOM OF ANTENNA POLE/MAST FOR MAKING GROUNDING JUMPER CONNECTIONS TO COAX FEEDER CABLES SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. JUMPERS (FURNISHED BY OWNERS) SHALL BE INSTALLED AND CONNECTED BY ELECTRICAL CONTRACTOR.

9. ALL GROUNDING INSTALLATIONS AND CONNECTIONS SHALL BE MADE BY ELECTRICAL CONTRACTOR.

10. OBSERVE N.E.C. AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.

11. GROUNDING ATTACHMENT TO TOWER SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS OR AT GROUNDING POINTS PROVIDED (2 MINIMUM).

12. IF EQUIPMENT IS IN A C.L. FENCE ENCLOSURE, GROUND ONLY CORNER POSTS AND SUPPORT POSTS OF GATE. IF CHAIN LINK LID IS USED, THEN GROUND LID ALSO.

13. GROUNDING AT PPC CABINET SHALL BE VERTICALLY INSTALLED.

14. ALL GROUNDING FOR ANTENNAS SHALL BE CONNECTED SO THAT IT WILL BY-PASS MAIN BUSS BAR.

15. ALL EMT RUNS SHALL BE GROUNDED AND HAVE A BUSHING. NO PVC ABOVE GROUND.

16. USE SEPARATE HOLES FOR GROUNDING AT BUSS BAR. NO "DOUBLE-UP" OF LUGS.

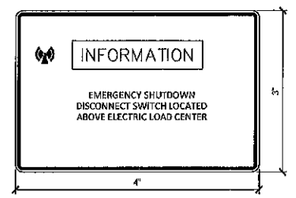
17. POWER AND TELCO CABINETS SHALL BE GROUNDED (BONDED) TOGETHER.

18. NO LB'S ALLOWED ON GROUNDING.

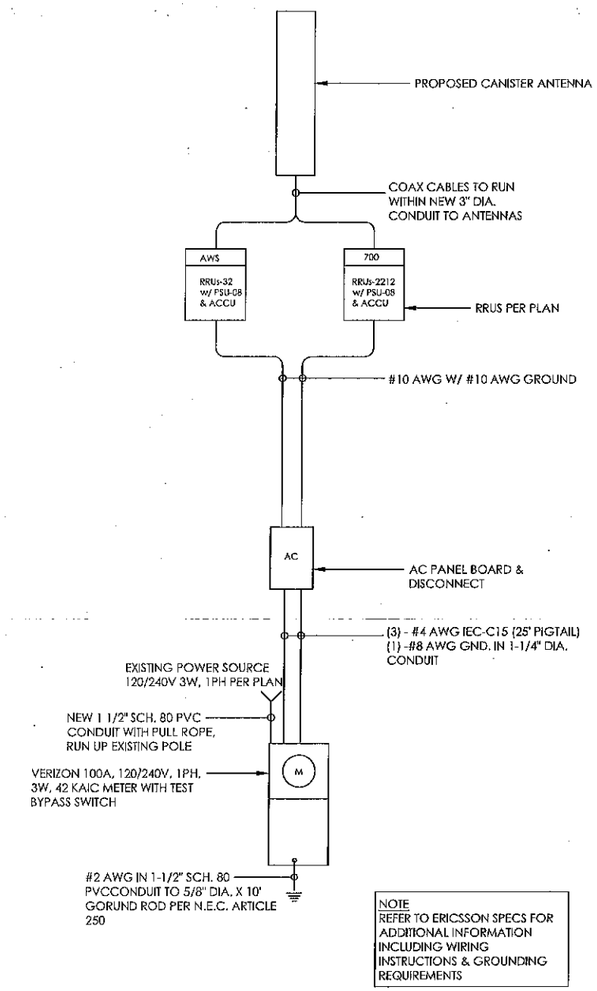
19. PROVIDE STAINLESS STEEL CLAMP AND BRASS TAGS ON COAX AT ANTENNAS AND DOGHOUSE.

(5) ELECTRICAL NOTES
N.T.S.

NOTE:
NEW WITH SIGN TO BE PROVIDED BY VERIZON WIRELESS AND BE LOCATED ON THE SIDE OF THE EQUIPMENT. SIGN TO BE YELLOW.



(4) SHUTDOWN DISCONNECT SIGNAGE
NOT TO SCALE



verizon
2785 MITCHELL DRIVE, SUITE 9
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SITE NUMBER:

MB_001

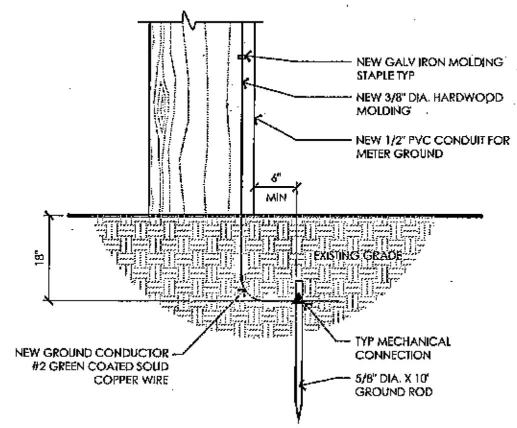
SITE ADDRESS:
854 SIERRA STREET
MOSS BEACH, CA 94038

STAMP

DRAWN BY: D.A.G. PROJECT NO.: T-16510-45
CHECK BY: B.K.W.

SHEET TITLE
SINGLE LINE DIAGRAM & PANEL SCHEDULE

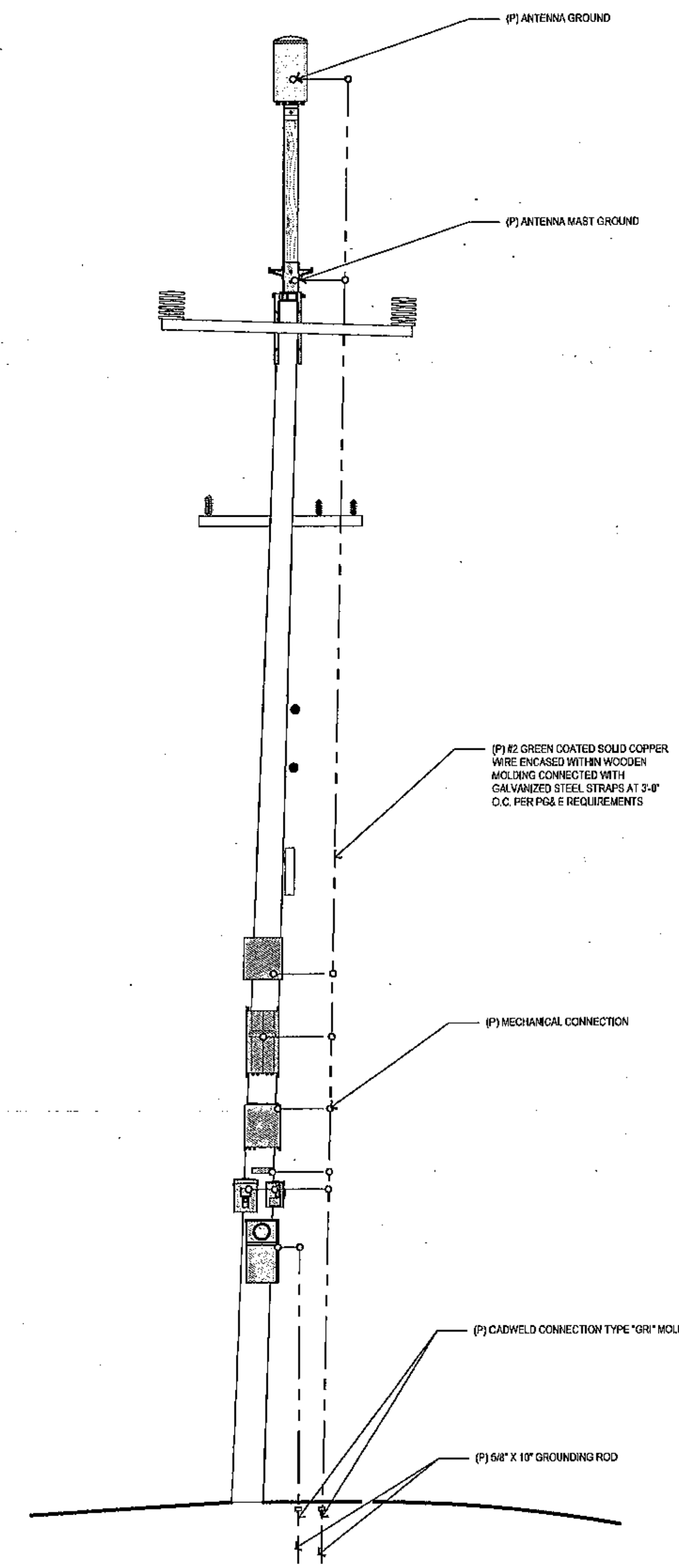
SHEET NO.
E-1



GROUND LEGEND

Symbol	Description
⊕	MECHANICAL CONNECTION
▭	EXOTHERMIC CADWELD
–(Ⓜ)–	TYP 5/8" DIA. X 10' LONG COPPER CLAD GROUND ROD AT 10' O.C. MAX AND 18" MIN BELOW FINISH GRADE

15 GROUND DETAIL
1" = 1'-0"



5 GROUNDING PLAN
1/2" = 1'-0"

verizon

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LICENSED ARCHITECT
RICHARD SAMBUCETTI
No. C11535
Ren. 09-30-19
STATE OF CALIFORNIA

DRAWN BY: D.A.G. PROJECT NO.: T-16510-45

CHECK BY: B.K.W.

SHEET TITLE

POLE GROUND & RISER DIAGRAM & DETAILS

SHEET NO.

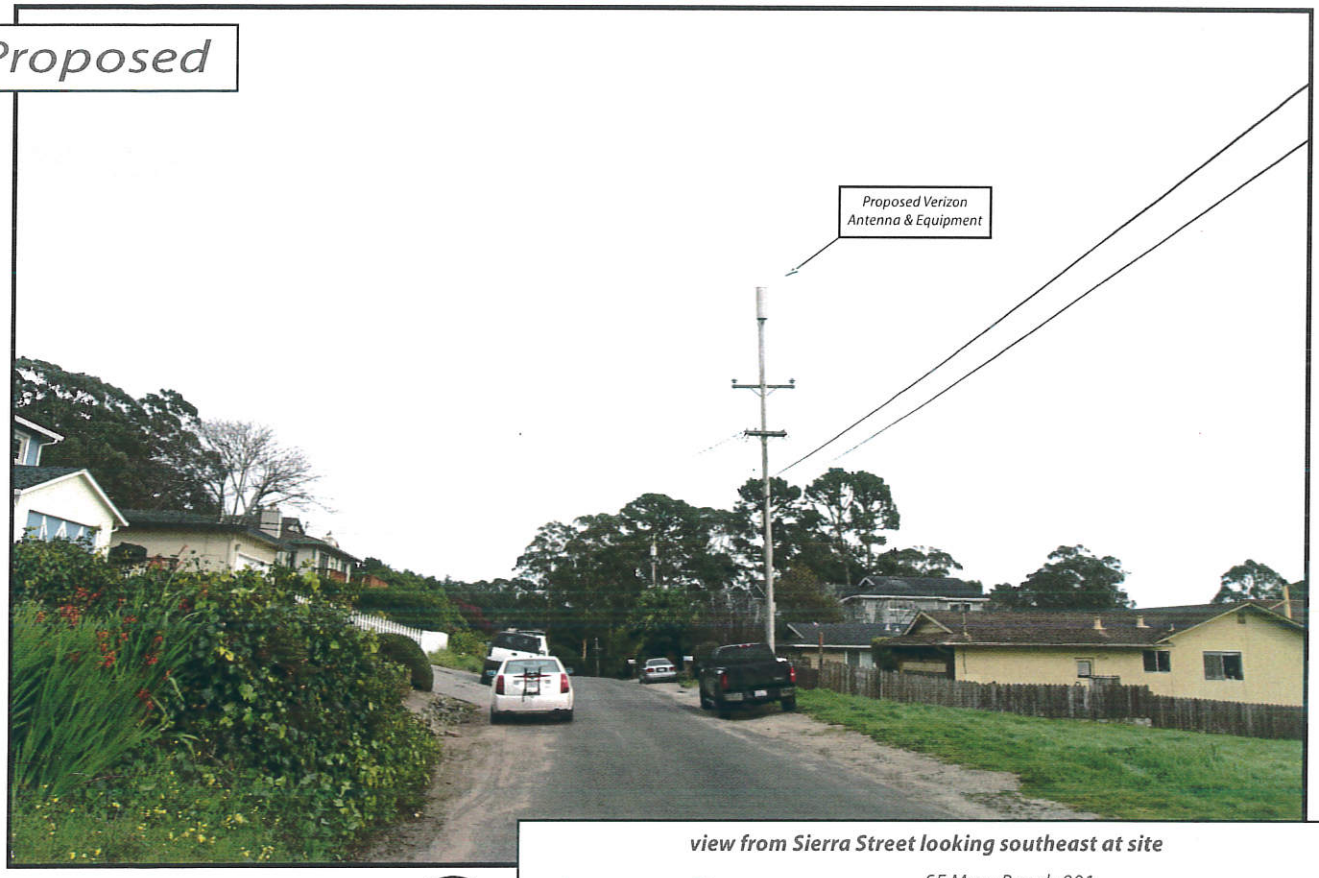
E-2

County of San Mateo - Planning and Building Department

ATTACHMENT E2

Existing

Proposed



view from Sierra Street looking southeast at site

SF Moss Beach 001
854 Sierra Street, Moss Beach, CA
Photosims Produced on 2-23-2018

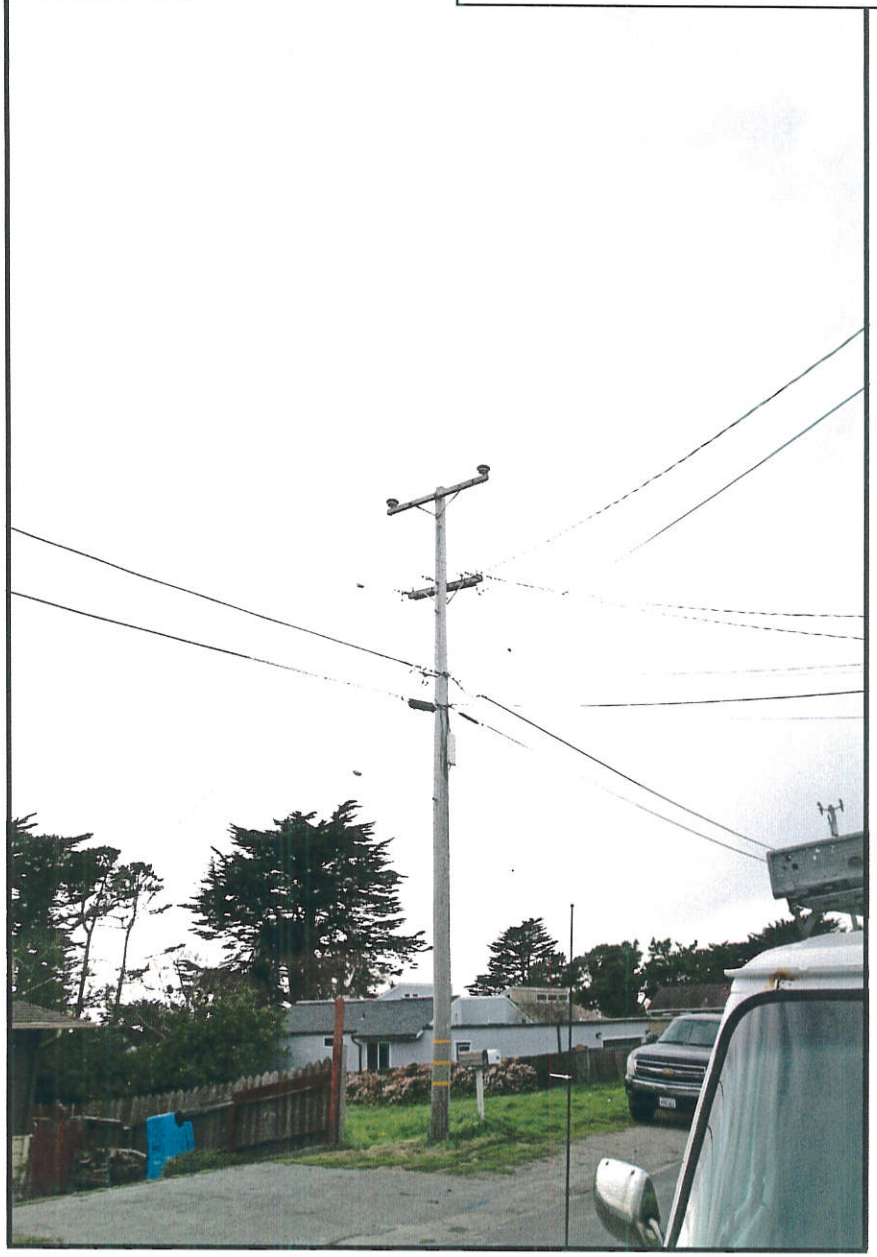
AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

view from Sierra Street looking west at site

verizon

SF Moss Beach 001
854 Sierra Street, Moss Beach, CA
Photosims Produced on 2-23-2018

Existing



Proposed

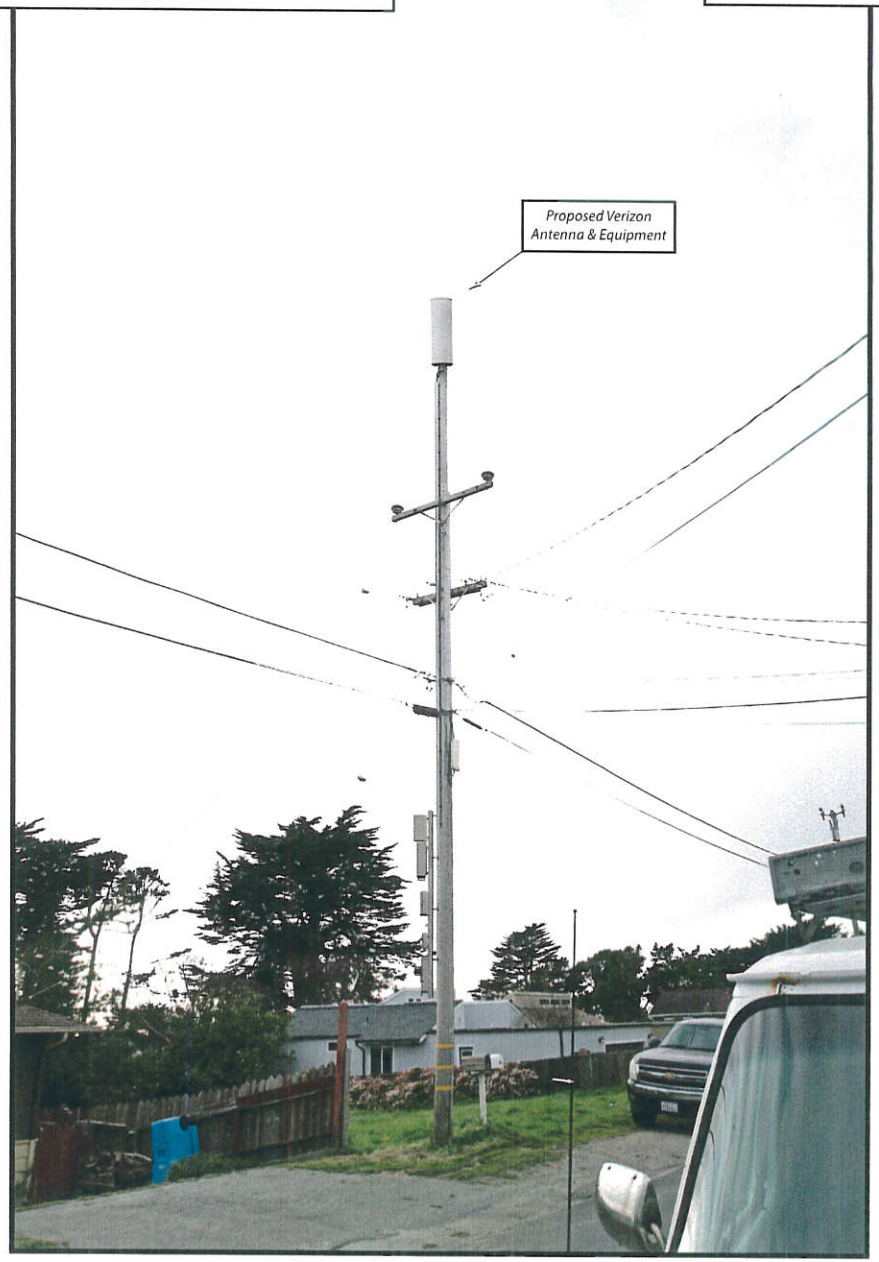


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Photo Simulation Solutions
Contact (925) 202-8507

County of San Mateo - Planning and Building Department

ATTACHMENT E3


PG&E Wood Utility Pole: limited space, pole is too busy and does not have enough space for equipment and installation
Sierra St
PG&E Wood Utility Pole: Pole is viable but selected pole is a better option because it has more space.
Sierra St
Sierra St
PG&E Wood Utility Pole: pole is too busy and has insufficient space for equipment and installation

County of San Mateo - Planning and Building Department

ATTACHMENT E4

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

Site No. MB-001
SF MOSS BEACH 001
854 Sierra St
Moss Beach, California 94038
San Mateo County
37° 31' 47.45" N, -122° 30' 38.90" W NAD83

EBI Project No. 6218000836
March 5, 2018

Prepared for:

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

Prepared by:

EBI Consulting
environmental | engineering | due diligence

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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 MB_001 located at 854 Sierra St in Moss Beach, 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 **9.70** percent of the FCC's general public limit (**1.94** 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 1 Tri-Sector wireless telecommunication antenna on a utility pole located at 854 Sierra St in Moss Beach, 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	25° 145° 265°	10.35 14.05	48.4	30	30	46.4

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)

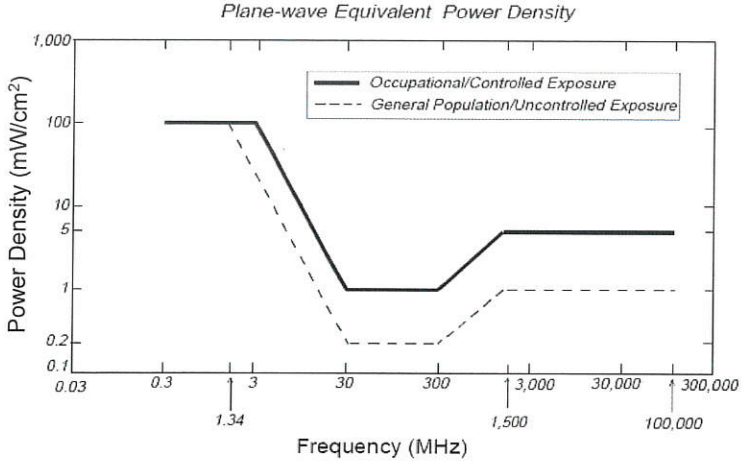
(A) Limits for Occupational/Controlled Exposure

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

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)**
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 the Tri-Sector antenna, 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 9.70 percent of the FCC's general public limit (1.94 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 on the pole approximately 10 feet below the bottom of the antenna.

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 MB_001 located at 854 Sierra St in Moss Beach, 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.

Based on worst-case predictive modeling, the maximum power density may exceed the FCC's general public MPE limits within approximately 10 feet of the antenna face.

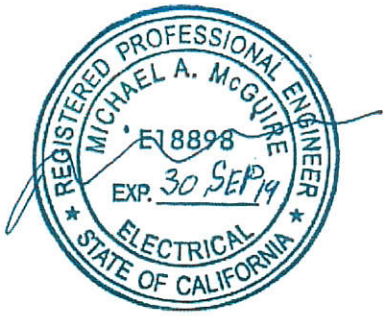
7.0 LIMITATIONS

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 6mar2018

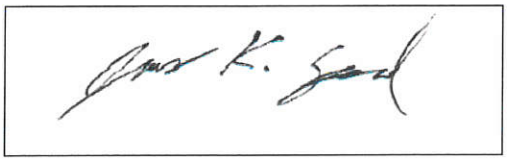
Michael McGuire
Electrical Engineer

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, James Speed, 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.



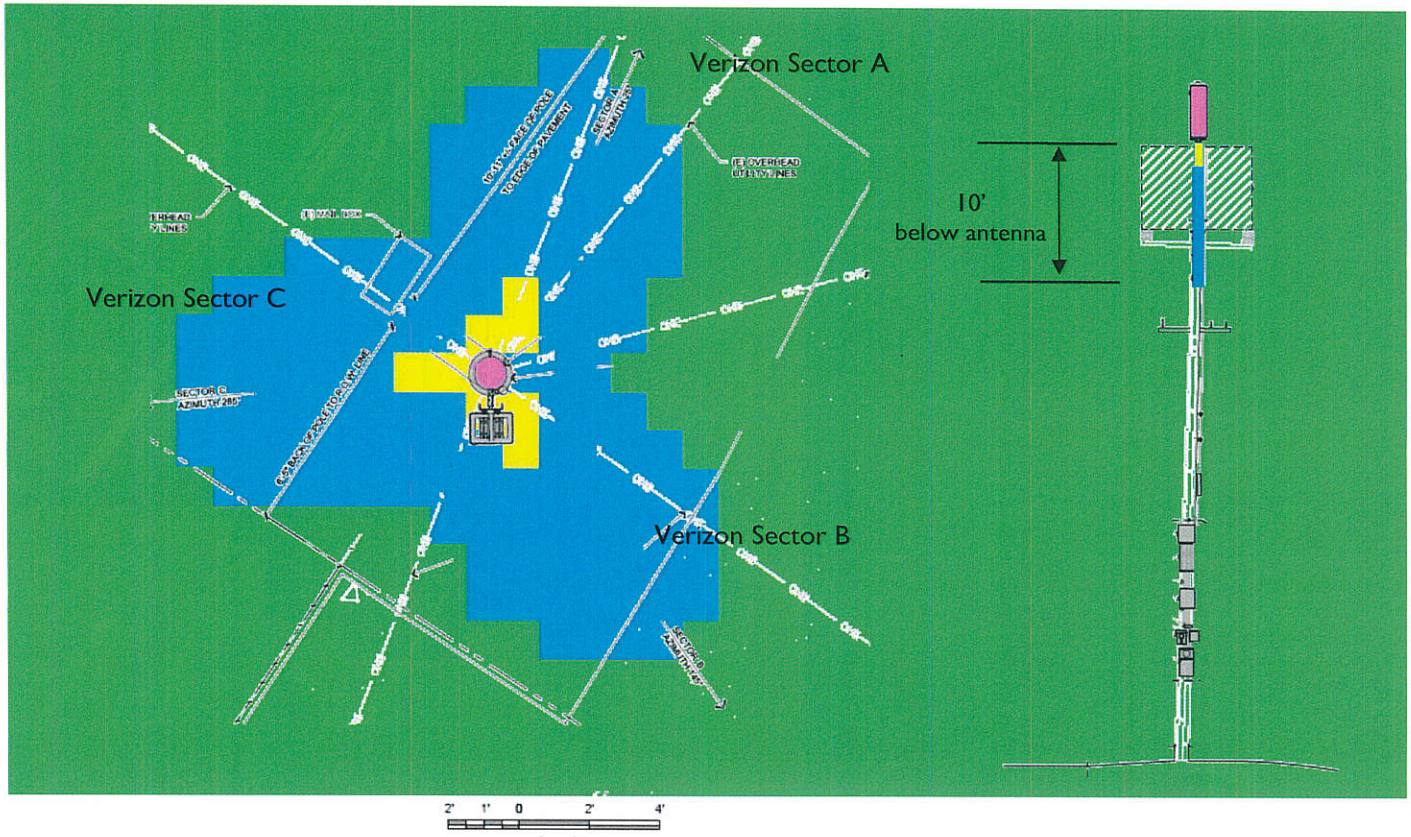
Appendix B

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 Level Simulation



Verizon Antennas

Other Carrier Antennas

Roofview: Composite Exposure Levels

Facility Operator: Verizon Wireless

Site Name: SF MOSS BEACH 001

Verizon Site Number: MB_001

Report Date: 03-05-18

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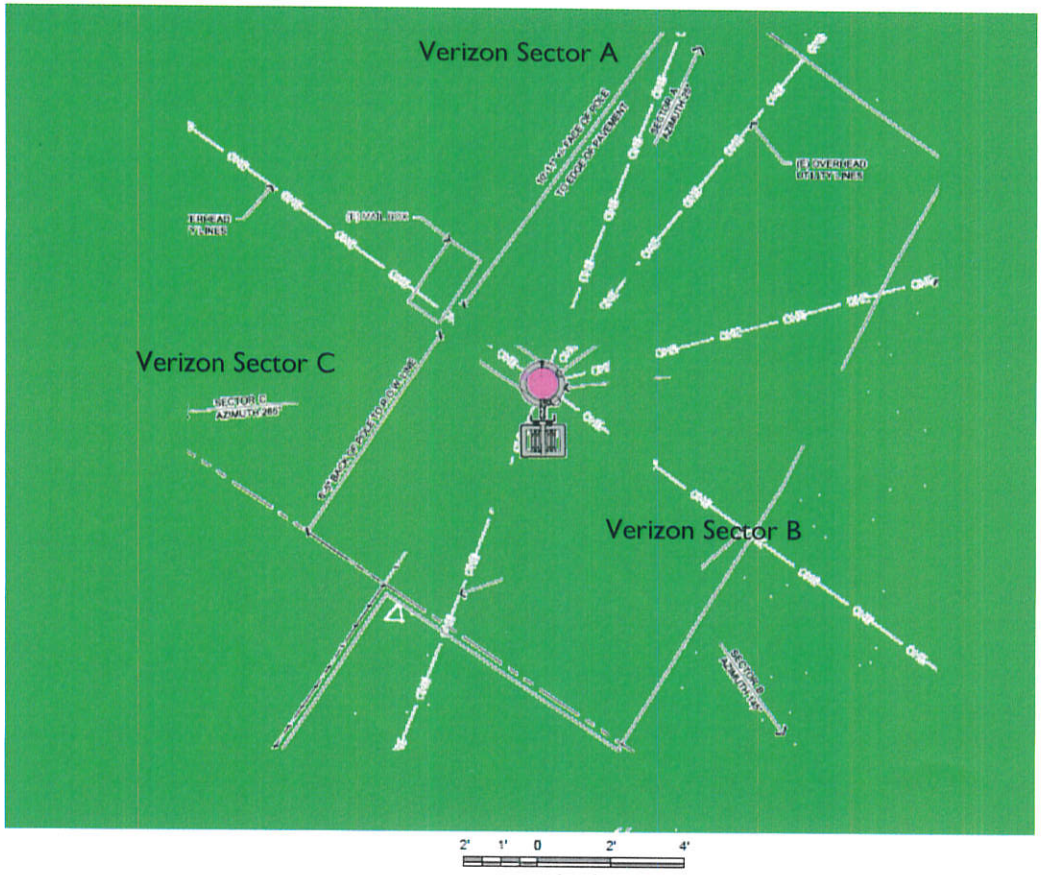
% FCC Public Exposure Limit	
	Exposure Level ≥ 5,000
	500 < Exposure Level ≤ 5,000
	100 < Exposure Level ≤ 500
	Exposure Level ≤ 100

Ground Level Simulation



N

Verizon Antennas

Other Carrier Antennas

Roofview: Composite Exposure Levels

Facility Operator: Verizon Wireless

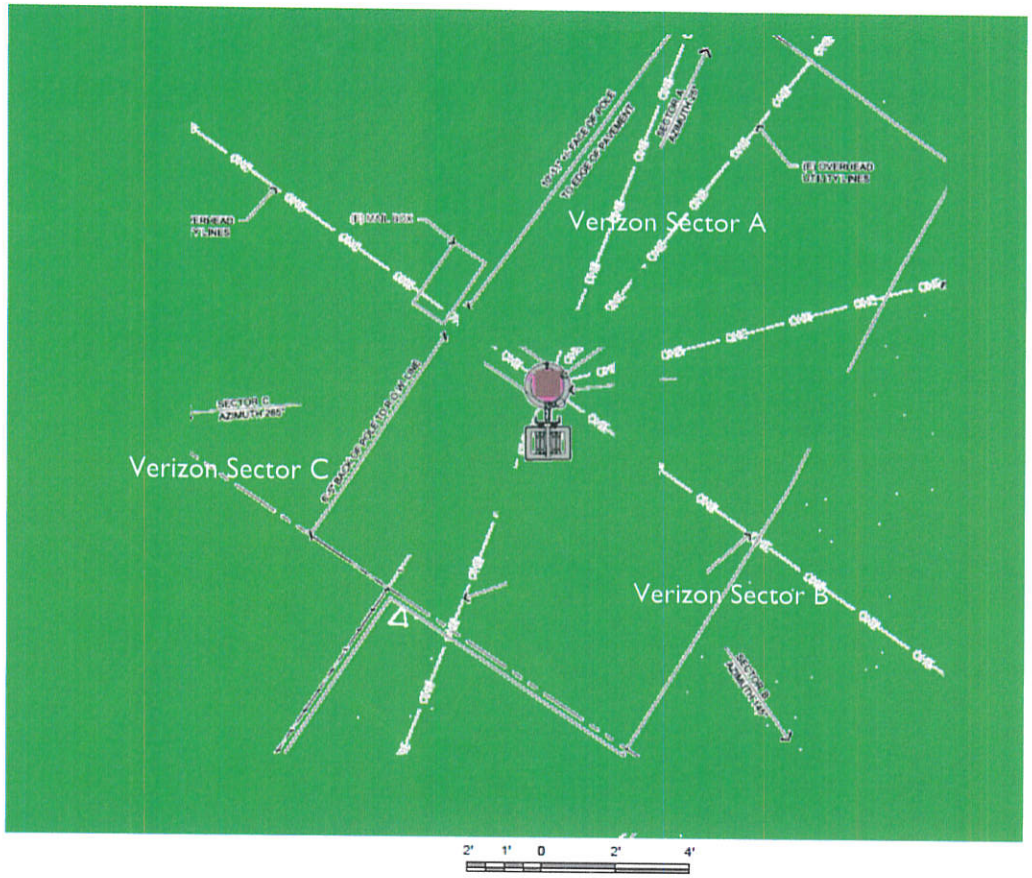
Site Name: SF MOSS BEACH 001

Verizon Site Number: MB_001

Report Date: 03-05-18

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

Ground Level 5% MPE Simulation



N

	Verizon Antennas
	Other Carrier Antennas

Roofview: Verizon Exposure Levels

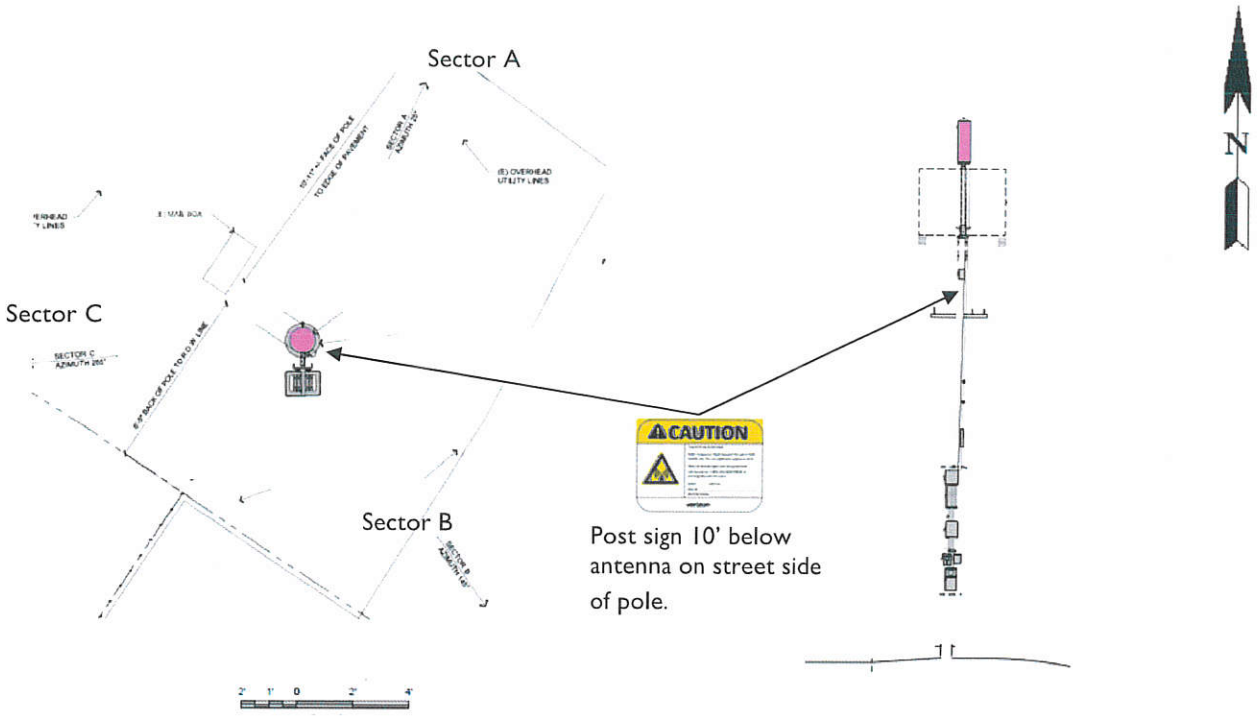
Facility Operator: Verizon Wireless

Site Name: SF MOSS BEACH 001

Verizon Site Number: MB_001

Report Date: 03-05-18

EBI Consulting
environmental | engineering | due diligence



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 on pole in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.	1 sign posted 10' below antenna on street side of pole.

Appendix C

Roofview® Export File

StartMapDefinition

Roof Max X	Roof Max Y	Map Max X	Map Max Y	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 Factc	Low Thr	Low Color	Mid Thr	Mid Color	Hi Thr	Hi Color	Over Color	Ap Ht Mul	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	40	1	0	0	1			Amphenol	CUUT070X	30	30	46.4		4	10.35	82;25		ON•
VZW A1	LTE	700	40	1	0	0	1			Amphenol	CUUT070X	30	30	46.4		4	10.35	82;145		ON•
VZW A1	LTE	700	40	1	0	0	1			Amphenol	CUUT070X	30	30	46.4		4	10.35	82;265		ON•
VZW A1	LTE	2100	40	1	0	0	1			Amphenol	CUUT070X	30	30	46.4		4	14.05	73.7;25		ON•
VZW A1	LTE	2100	40	1	0	0	1			Amphenol	CUUT070X	30	30	46.4		4	14.05	73.7;145		ON•
VZW A1	LTE	2100	40	1	0	0	1			Amphenol	CUUT070X	30	30	46.4		4	14.05	73.7;265		ON•

StartSymbolData

Sym	Map Mark	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 F1

verizon

SITE NAME: EL GRANADA 002
PROJECT ID#: EG_002
LOCATION: N/A
SITE ADDRESS: 51 ALHAMBRA AVE.
HALF MOON BAY, CA 94019
COUNTY: SAN MATEO
SITE TYPE: PG&E POLE TOP

RECEIVED
MAY 31 2018
San Mateo County
Planning and Building Department

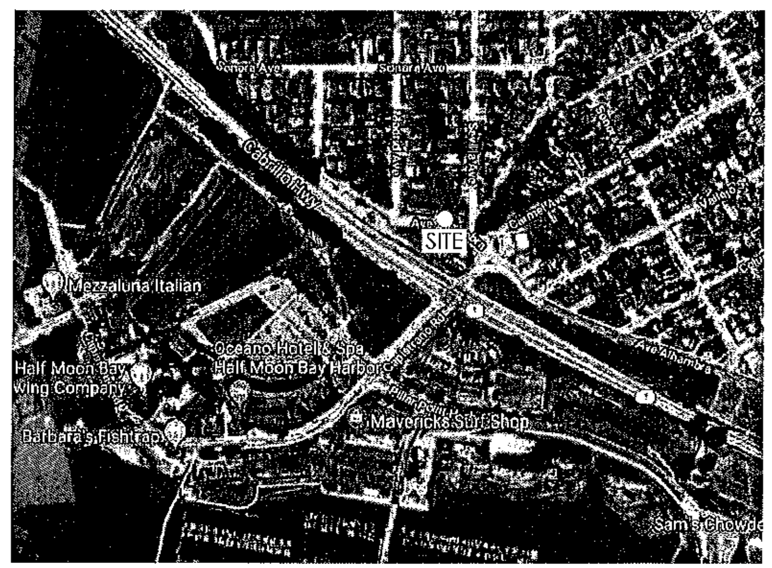
PROJECT DESCRIPTION

THIS IS AN UNMANNED WIRELESS TELECOMMUNICATION FACILITY FOR VERIZON WIRELESS CONSISTING OF THE INSTALLATION AND OPERATION OF AN ANTENNA AND ASSOCIATED EQUIPMENT ON AN EXISTING UTILITY POLE IN THE PUBLIC RIGHT OF WAY.

SCOPE OF WORK & SITE COMPLETION CHECKLIST

- ANTENNA & ASSOCIATED EQUIPMENT BOXES - INSTALL A NEW TELECOMMUNICATION ANTENNA AND EQUIPMENT BOXES ON AN EXISTING WOOD UTILITY POLE ON GO95 COMPLIANT STANDOFF BRACKET. INSTALLATION CONSISTS OF (1) CYLINDRICAL ANTENNA, (1) RRUS-32 w/ PSU-08, (1) RRUS-2212 W/ PSU-08 (1) ELECTRICAL METER, (1) LOAD CENTER WITH DISCONNECT SWITCH, (1) FIBER DEMARCATION BOX, COMBINER SHROUD W/ (6) 3X3 HYBRID COUPLERS.
- CABLING - CABLING TO BE INSTALLED IN A TIDY MANNER WITHOUT EXCESS CABLE LOOPS
- SPACING OF SUPPORT ELEMENTS - SUPPORT EQUIPMENT (E.G. RRUS) TO BE CLUSTERED (VERTICALLY) AS CLOSE AS TECHNICALLY FEASIBLE ON POLE.
- LOGO REMOVAL - ALL EQUIPMENT LOGOS, OTHER THAN THOSE REQUIRED BY REGULATION (E.G. NODE IDENTIFICATION) SHALL BE PAINTED OVER OR REMOVED. RAISED OR DEPRESSED TEXT ON RRUS OR OTHER EQUIPMENT, IF PRESENT, SHALL BE SANDED OFF OR SIMILARLY REMOVED / FILLED.
- SIGNAGE - FCC MANDATED RF WARNING SIGNAGE SHALL FACE OUT TO STREET WHEN PLACED IN FRONT OF, OR NEAR A WINDOW. SIGNAGE SHALL FACE TOWARD A BUILDING IF THERE IS NO WINDOW.
- ALL CABLING, ANTENNAS, AND EQUIPMENT TO BE PAINTED TO MATCH POLE

VICINITY MAP



PROJECT INFORMATION

Property Information:
Site Name: EL GRANADA 002
Site Number: EG_002
Site Address: 51 ALHAMBRA AVE.
HALF MOON BAY, CA 94019
A.P.N. Number: Adjacent to 047-045-330
Current Zoning: N/A - PUBLIC RIGHT OF WAY
Jurisdiction: CITY OF HALF MOON BAY
Latitude: N 37°30' 21.7" (37.506037)
Longitude: W 122°28' 53.1" (-122.481419)
Elevation: +/- 42.21" AMSL

Power Agency:
PG&E
1 MARKET STREET, SPEAR TOWER
SAN FRANCISCO, CA 94105-1126

Telephone Agency:
AT&T CALIFORNIA
525 MARKET STREET
SAN FRANCISCO, CA 94105
ph: (415) 778-1231

Property Owner:
CITY OF BURLINGAME
501 PRIMROSE RD
BURLINGAME, CA 94010

PROJECT TEAM

Agent:
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ph: (415) 595-0938
email: srevard@modus-corp.com

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Construction Manager:
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email: khaynes@modus-corp.com

Architect / Engineer of Record:
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1478 Stone Point Drive, Suite 350
Roseville, CA 95661
contact: Brian K. Winslow
ph: (916) 782-7200
email: brian@borgesarch.com

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
GN-1	GENERAL NOTES
C-1	SURVEY
A-1	SITE PLAN
A-2	ENLARGED SITE PLAN & ANTENNA PLAN
A-3	ELEVATIONS
A-4.1	DETAILS
A-4.2	DETAILS
E-1	SINGLE LINE DIAGRAM & PANEL SCHEDULE
E-2	POLE GROUND & RISER DIAGRAM & DETAILS

CODE COMPLIANCE

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

1) 2016 CALIFORNIA ADMINISTRATIVE CODE, CHAPTER 10, PART 1, TITLE 24 CODE OF REGULATIONS
2) 2016 CALIFORNIA BUILDING CODE (CBC) WITH CALIFORNIA AMENDMENTS, BASED ON THE 2015 IBC (PART 2, VOL 1-2)
3) 2016 CALIFORNIA RESIDENTIAL CODE (CRC) WITH APPENDIX H, PATIO COVERS, BASED ON THE 2015 IRC (PART 2.5)
4) 2016 CALIFORNIA GREEN BUILDINGS STANDARDS CODE (CALGREEN) (PART 11) (AFFECTED ENERGY PROVISIONS ONLY
5) 2016 CALIFORNIA FIRE CODE (CFC), BASED ON THE 2015 IFC, WITH CALIFORNIA AMENDMENTS (PART 9)
6) 2016 CALIFORNIA MECHANICAL CODE (CMC), BASED ON THE 2015 UMC (PART 4)
7) 2016 CALIFORNIA PLUMBING CODE (CPC), BASED ON THE 2015 UPC (PART 5)
8) 2016 CALIFORNIA ELECTRICAL CODE (CEC) WITH CALIFORNIA AMENDMENTS, BASED ON THE 2015 NEC (PART 3)
9) 2016 CALIFORNIA ENERGY CODE (CEC)
10) ANSI / EIA-TIA-222-H
11) 2015 NFPA 101, LIFE SAFETY CODE
12) 2016 NFPA 72, NATIONAL FIRE ALARM CODE
13) 2016 NFPA 13, FIRE SPRINKLER CODE

DISABLED ACCESS REQUIREMENTS

FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, ACCESSIBILITY REQUIREMENTS ARE NOT REQUIRED, IN ACCORDANCE WITH CALIFORNIA BUILDING CODE, CODE OF REGULATIONS, TITLE 24, PART 2, VOLUME 1, CHAPTER 11B, DIVISION 2, SECTION 11B-203.5

DIRECTIONS FROM VERIZON'S OFFICE

DIRECTIONS FROM VERIZON WIRELESS's OFFICE AT 2785 MITCHELL DRIVE, WALNUT CREEK, CA

1. DEPART MITCHELL DR TOWARD N WIGET LN
2. TURN LEFT ONTO N WIGET LN
3. TURN RIGHT ONTO YGNACIO VALLEY RD
4. ROAD NAME CHANGES TO HILLSIDE AVE
5. TAKE RAMP RIGHT FOR CA-24 WEST TOWARD OAKLAND
6. TAKE RAMP RIGHT FOR I-580 WEST TOWARD SACRAMENTO / SAN FRANCISCO
7. KEEP RIGHT ONTO I-80 W
8. KEEP STRAIGHT ONTO US-101 S
9. TAKE RAMP RIGHT FOR I-280 TOWARD DALY CITY
10. BEAR RIGHT ONTO CA-1 S
11. TURN LEFT ONTO CAPISTRANO RD, AND THEN IMMEDIATELY TURN LEFT ONTO AVENUE ALHAMBRA
12. ARRIVE AT AVENUE ALHAMBRA

SIGNATURE BLOCK

TITLE	SIGNATURE	DATE
VERIZON PM		
VERIZON CM		
VERIZON RF		
MODUS PM		
MODUS CM		
UTILITIES		
LANDLORD/ PROPERTY OWNER		

OCCUPANCY AND CONSTRUCTION TYPE

OCCUPANCY : N/A
CONSTRUCTION TYPE: G.O. 128 AND 2009 AASHTO 5TH EDITION STANDARD

GENERAL CONTRACTOR NOTES

DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE FORMATTED TO BE FULL SIZE AT 36" x 24" (D1). CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOBSITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME.

DIGALERT
800-227-2600
Call 2 Full Working Days In Advance

verizon
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borgesarch.com
1478 STONE POINT DRIVE, SUITE 350
ROSEVILLE CA 95661
916 782 7200 TEL
916 773 3037 FAX

REV	DATE	DESCRIPTION
1	05/04/18	100% CD Submittal
0	03/22/18	90% CD Submittal

SITE NUMBER:
EG_002

SITE ADDRESS:
51 ALHAMBRA AVE.
HALF MOON BAY, CA 94019

STAMP
LICENSED ARCHITECT
RICHARD SAMBUCETTI
No. C11535
Ren. 09-30-19
STATE OF CALIFORNIA

DRAWN BY: D.A.G. PROJECT NO.: T-16518-32
CHECK BY: B.K.W.

SHEET TITLE
TITLE SHEET

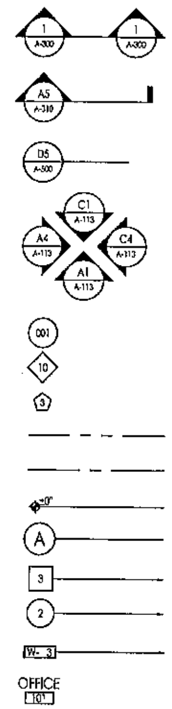
SHEET NO.
T-1

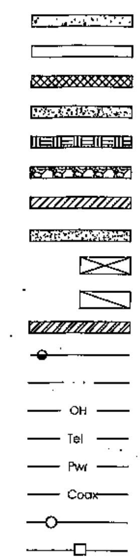
PLN 2018-000197

ABBREVIATIONS:

A.B.	ANCHOR BOLT
ABV.	ABOVE
ACCA	ANTENNA CABLE COVER ASSEMBLY
ADD'L	ADDITIONAL
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
ALUM.	ALUMINUM
ALT.	ALTERNATE
ANT.	ANTENNA
APPRX.	APPROXIMATE(LY)
ARCH.	ARCHITECT(URAL)
AWG.	AMERICAN WIRE GAUGE
BLDG.	BUILDING
BLK.	BLOCK
BLKG.	BLOCKING
BM.	BEAM
B.N.	BOUNDARY NAILING
BTCW.	BARE TINNED COPPER WIRE
B.O.F.	BOTTOM OF FOOTING
B/U	BACK-UP CABINET
CAB.	CABINET
CANT.	CANTILEVER(ED)
C.I.P.	CAST IN PLACE
CLG.	CEILING
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION(OR)
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
d	PENNY (NAILS)
DBL.	DOUBLE
DEPT.	DEPARTMENT
D.F.	DOUGLAS FIR
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DWG.	DRAWING(S)
DWL.	DOWEL(S)
EA.	EACH
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
EMT.	ELECTRICAL METALLIC TUBING
E.N.	EDGE NAIL
ENG.	ENGINEER
EQ.	EQUAL
EXP.	EXPANSION
EXST.(E)	EXISTING
EXT.	EXTERIOR
FAB.	FABRICATION(OR)
F.F.	FINISH FLOOR
F.G.	FINISH GRADE
FIN.	FINISH(ED)
FLR.	FLOOR
FDN.	FOUNDATION
F.O.C.	FACE OF CONCRETE
F.O.M.	FACE OF MASONRY
F.O.S.	FACE OF STUD
F.O.W.	FACE OF WALL
F.S.	FINISH SURFACE
FT.(')	FOOT (FEET)
FTG.	FOOTING
G.	GROWTH (CABINET)
GA.	GAUGE
GI.	GALVANIZE(D)
G.F.I.	GROUND FAULT CIRCUIT INTERRUPTER
GLB. (GLU-LAM)	GLUE LAMINATED BEAM
GPS	GLOBAL POSITIONING SYSTEM
GRND.	GROUND
HDR.	HEADER
HGR.	HANGER
HT.	HEIGHT
ICGB.	ISOLATED COPPER GROUND BUS
IN. (")	INCH(ES)
INT.	INTERIOR
LB.(#)	POUND(S)
L.B.	LAG BOLTS
L.F.	LINEAR FEET (FOOT)
L.	LONG(ITUDINAL)
MAS.	MASONRY
MAX.	MAXIMUM
M.B.	MACHINE BOLT
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MTL.	METAL
(N)	NEW
NO.(#)	NUMBER
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OPNG.	OPENING
(P)	PROPOSED
P/C	PRECAST CONCRETE
PCS	PERSONAL COMMUNICATION SERVICES
PLY.	PLYWOOD
PPC	POWER PROTECTION CABINET
PRC	PRIMARY RADIO CABINET
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
P.T.	PRESSURE TREATED
PWR.	POWER (CABINET)
QTY.	QUANTITY
RAD.(R)	RADIUS
REF.	REFERENCE
REINF.	REINFORCEMENT(ING)
REQ'D/	REQUIRED
RGS.	RIGID GALVANIZED STEEL
SCH.	SCHEDULE
SHT.	SHEET
SIM.	SIMILAR
SPEC.	SPECIFICATIONS
SQ.	SQUARE
S.S.	STAINLESS STEEL
STD.	STANDARD
STL.	STEEL
STRUC.	STRUCTURAL
TEMP.	TEMPORARY
THK.	THICK(NESS)
T.N.	TOE NAIL
T.O.A.	TOP OF ANTENNA
T.O.C.	TOP OF CURB
T.O.F.	TOP OF FOUNDATION
T.O.P.	TOP OF PLATE (PARAPET)
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TYP.	TYPICAL
U.G.	UNDER GROUND
U.L.	UNDERWRITERS LABORATORY
U.N.O.	UNLESS NOTED OTHERWISE
V.I.F.	VERIFY IN FIELD
W	WIDE (WIDTH)
w/	WITH
WD.	WOOD
W.P.	WEATHERPROOF
WT.	WEIGHT
℄	CENTERLINE
℄	PLATE, PROPERTY LINE

SYMBOL LEGEND:





GENERAL NOTES:

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

DEFINITIONS:

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

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REV	DATE	DESCRIPTION
1	05/04/18	100% CD Submittal
0	03/22/18	90% CD Submittal

SITE NUMBER:

EG_002

SITE ADDRESS:
51 ALHAMBRA AVE.
HALF MOON BAY, CA 94019

STAMP

LICENSED ARCHITECT
RICHARD SANDUCETTI
No. C11535
Ren. 09-30-19
STATE OF CALIFORNIA

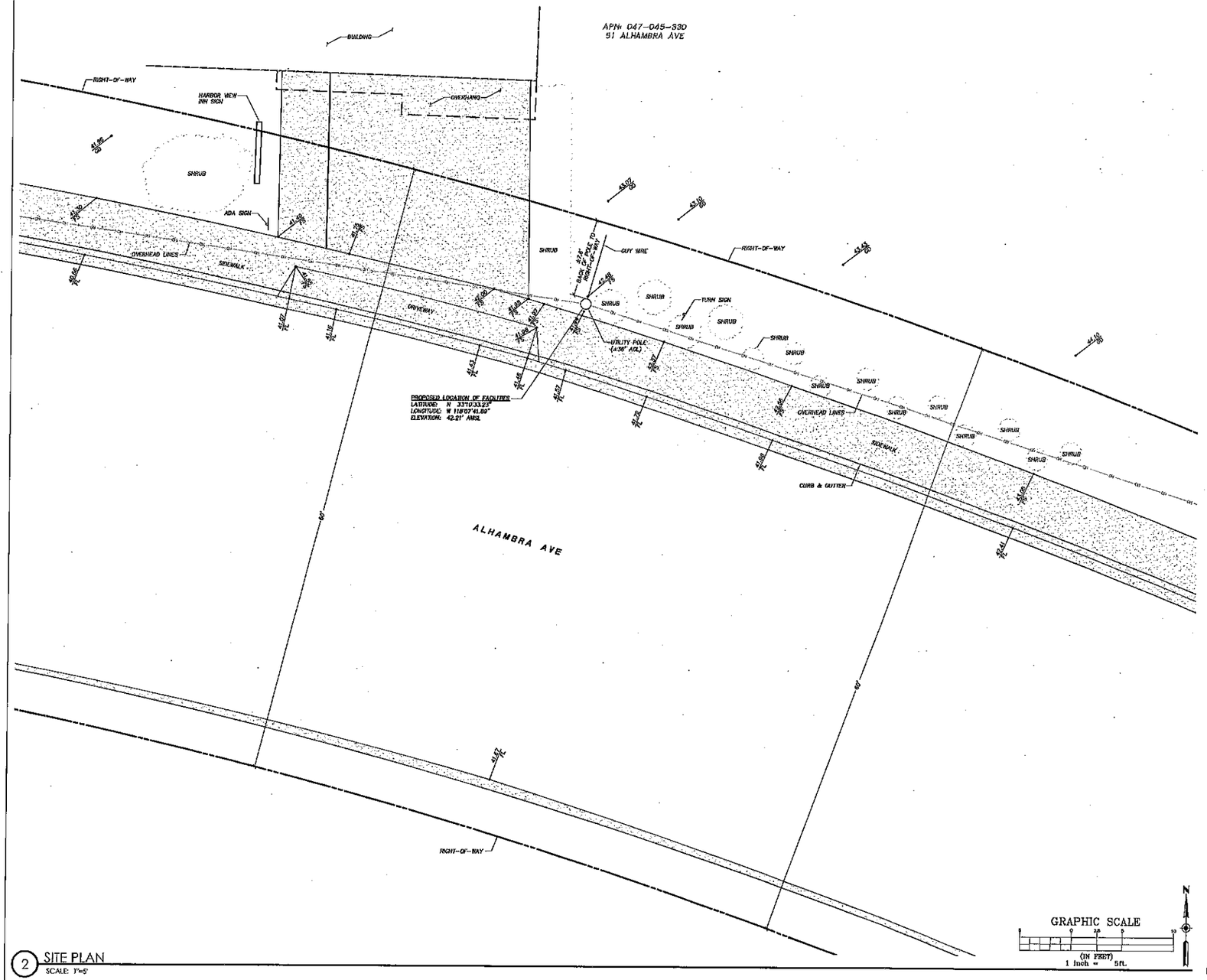
DRAWN BY: D.A.G.
PROJECT NO.: T-10510-32
CHECK BY: B.K.W.

SHEET TITLE

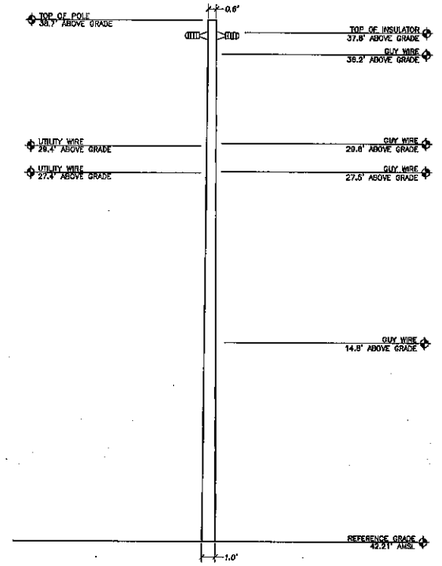
GENERAL NOTES

SHEET NO.

GN-1



2 SITE PLAN
SCALE: 1"=5'



3 UTILITY POLE ELEVATION
SCALE: 1"=5'

GRAPHIC SCALE
(IN FEET)
1 Inch = 5ft.

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

DATUM:

HORIZONTAL & VERTICAL DATUMS SHOWN ON THESE PLANS WERE OBTAINED FROM GPS OBSERVATIONS USING CALIFORNIA REAL TIME NETWORK "CRTN".

BASIS OF BEARINGS

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

BENCHMARK:

THE ELEVATIONS ARE BASED UPON NAVD 88

NOTES:

1. DATE OF SURVEY: 08/11/17
2. NO UNDERGROUND UTILITIES WERE LOCATED.
3. ADDRESS(S) AND ASSESSOR PARCEL NUMBER(S) "APN" WERE OBTAINED USING THE COUNTY OF SAN MATEO'S GIS WEBSITE. OMNI DESIGN GROUP, INC. ASSUMES NO LIABILITY FOR INFORMATION OBTAINED.

LEGEND

AC = ASPHALTIC CONCRETE
EP = EDGE OF PAVEMENT
FL = FLOWLINE
FS = FINISHED SURFACE
GS = 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 EL GRANADA 002
VERIZON SITE #438657

51 ALHAMBRA AVE
HALF MOON BAY, CA

CURRENT ISSUE DATE:

09/05/17

ISSUED FOR:

100% SURVEY

REV.:	DATE:	DESCRIPTION:	BY:

COORDINATING ARCHITECT:

Architecture
Civil Engineering
Surveying
Telecommunications

711 Tank Farm Road, Suite 100
San Luis Obispo, California 93401
Phone: (805) 544-9700
www.omnidesigngroup.com
e-mail: omni@odgslo.com

SEAL:

DAVID A. MARCHELL
EXP. 12-31-18
NO. PLS6376
STATE OF CALIFORNIA
PROFESSIONAL LAND SURVEYOR

CONSULTANT:

DRAWN BY:	CHK.:	APV.:
JH	DM	DM

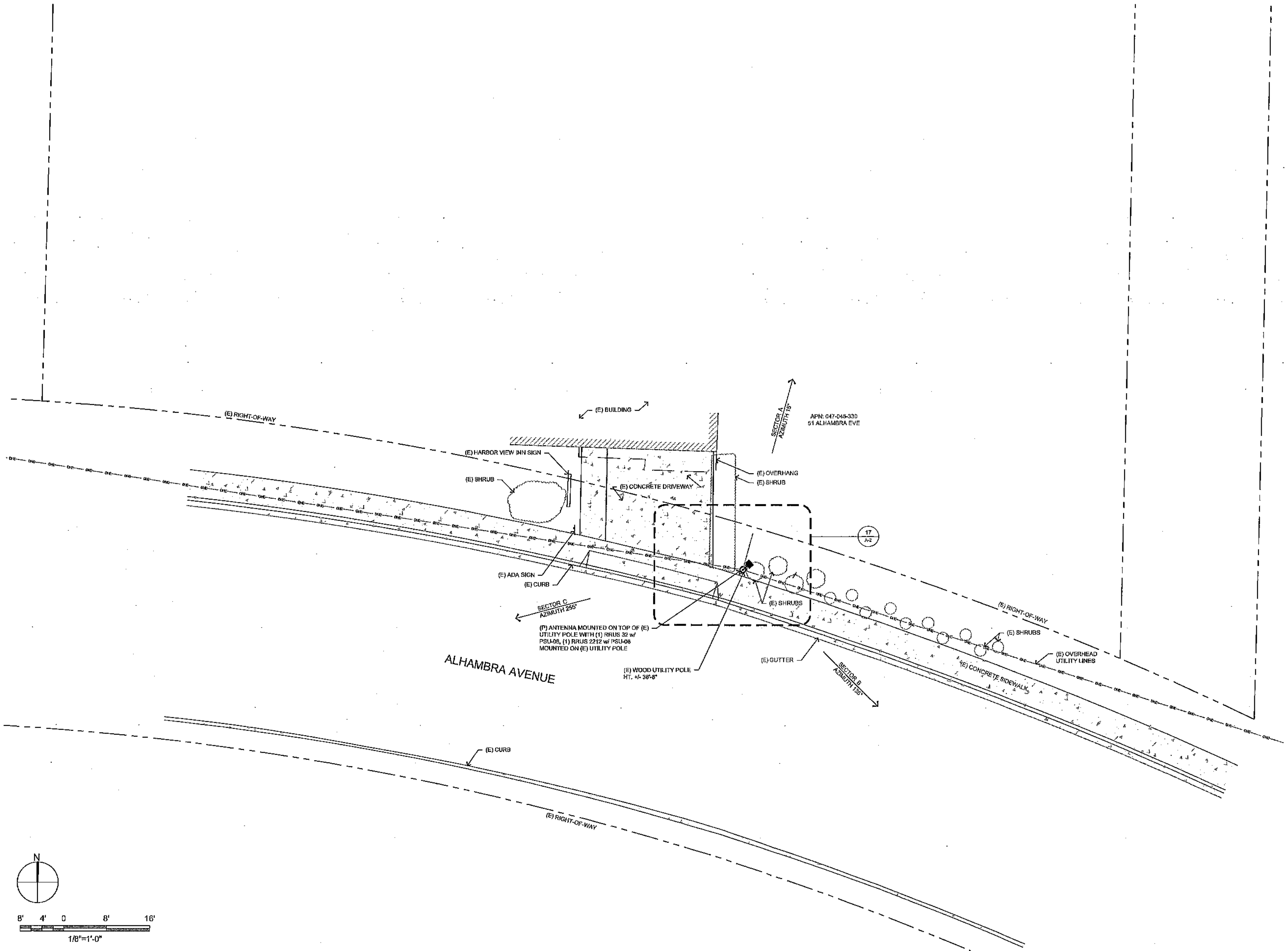
SHEET TITLE:

SITE PLAN

SHEET NUMBER: C-1

REVISION:

1180-92



17 OVERALL SITE PLAN
1/8" = 1'-0"

verizon

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WALNUT CREEK, CA 94598

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Borges ARCHITECTURAL GROUP

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REV	DATE	DESCRIPTION
1	05/04/16	100% CD Submittal
0	03/22/16	90% CD Submittal

SITE NUMBER:

EG_002

SITE ADDRESS:
51 ALHAMBRA AVE.
HALF MOON BAY, CA 94019

STAMP

LICENSED ARCHITECT RICHARD SANDUCCI No. C11535 Ren. 09-30-19 STATE OF CALIFORNIA

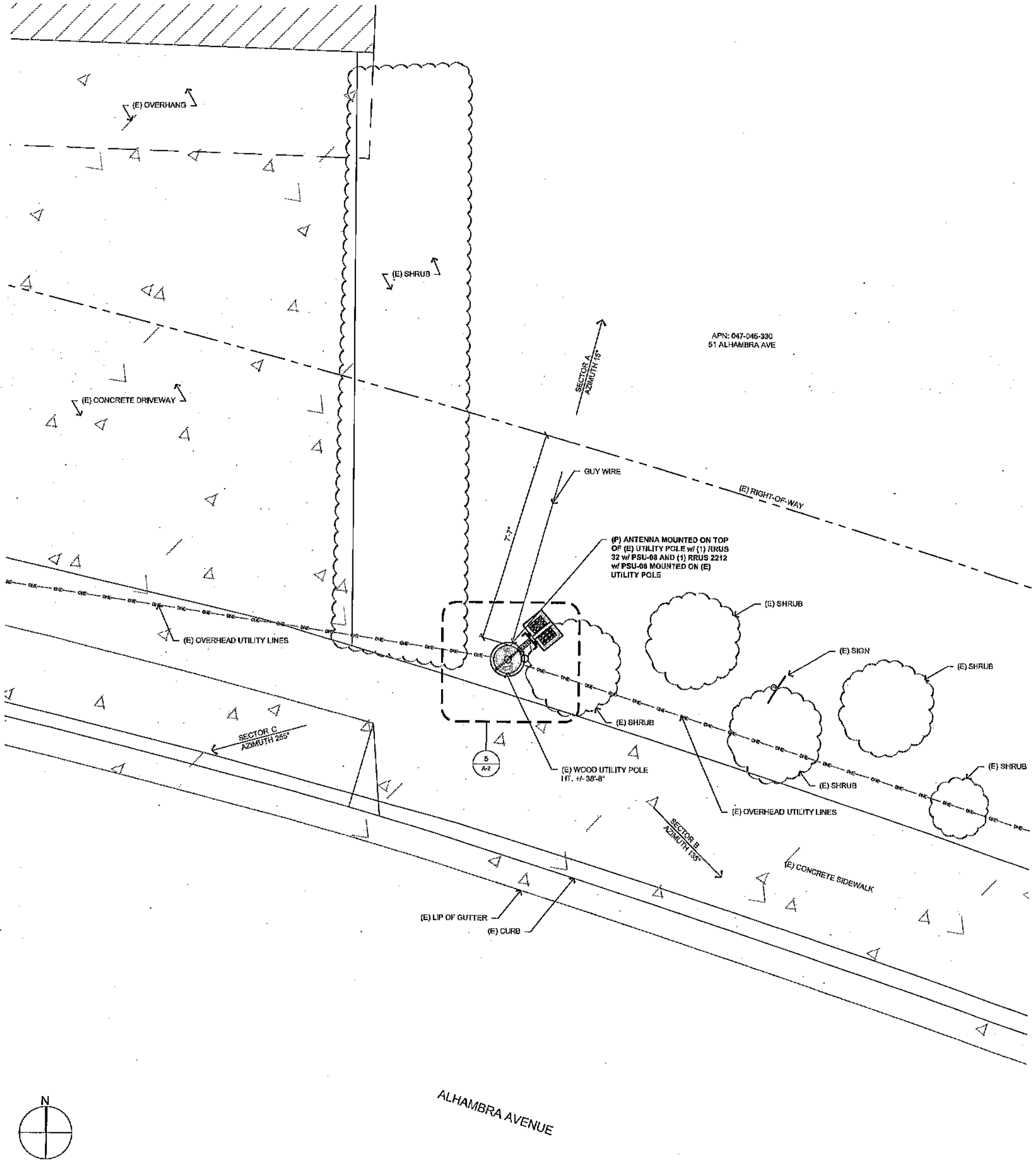
DRAWN BY: D.A.G. PROJECT NO.: T-16519-32
CHECK BY: B.K.W.

SHEET TITLE

SITE PLAN

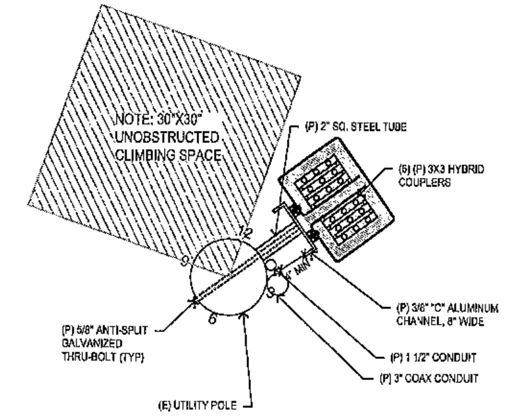
SHEET NO.

A-1

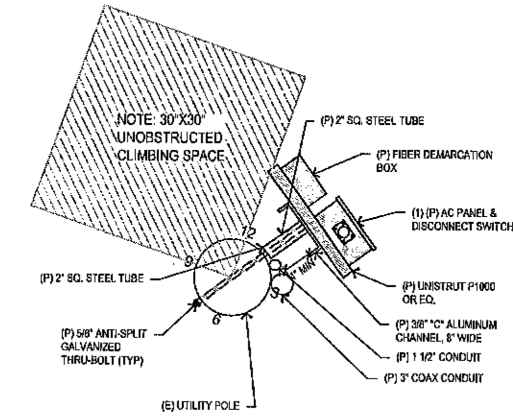


2' 1' 0 2' 4'
1/2"=1'-0"

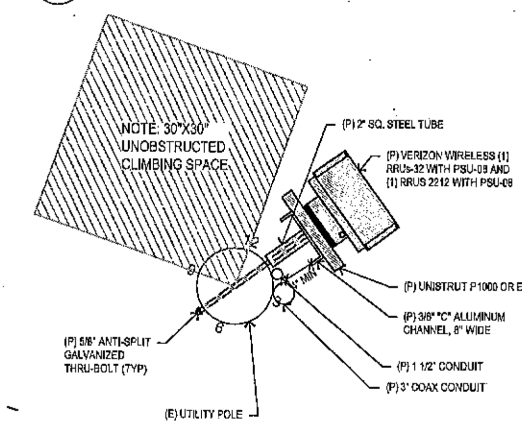
17 ENLARGED SITE PLAN
1/2" = 1'-0"



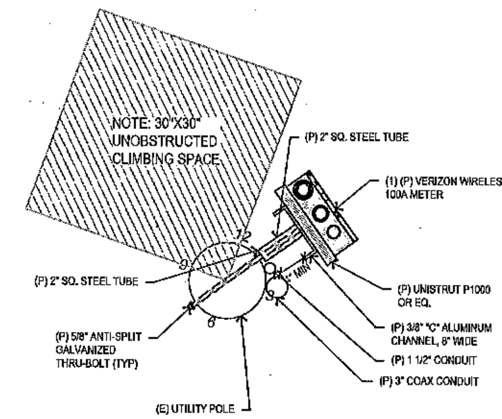
8 COUPLER MOUNTING DETAIL
1" = 1'-0"



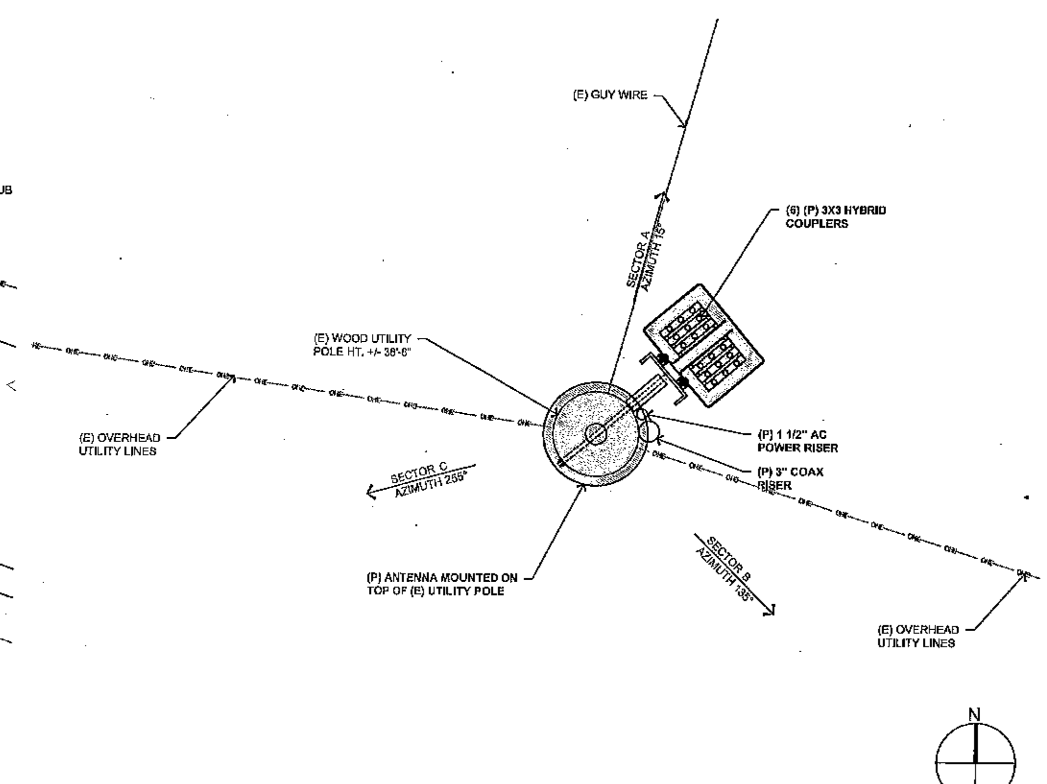
4 DISCONNECT AND PANEL MOUNTING DETAIL
1" = 1'-0"



7 RRU MOUNTING DETAIL
1" = 1'-0"



3 POWER METER MOUNTING DETAIL
1" = 1'-0"



1' 0.5' 0 1' 2'
1"=1'-0"

5 ENLARGED ANTENNA PLAN
1" = 1'-0"

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REV	DATE	DESCRIPTION
1	08/04/16	100% CD Submittal
0	03/22/16	90% CD Submittal

SITE NUMBER:

EG_002

SITE ADDRESS:
51 ALHAMBRA AVE.
HALF MOON BAY, CA 94019

STAMP

LICENSED ARCHITECT
No. C11535
STATE OF CALIFORNIA

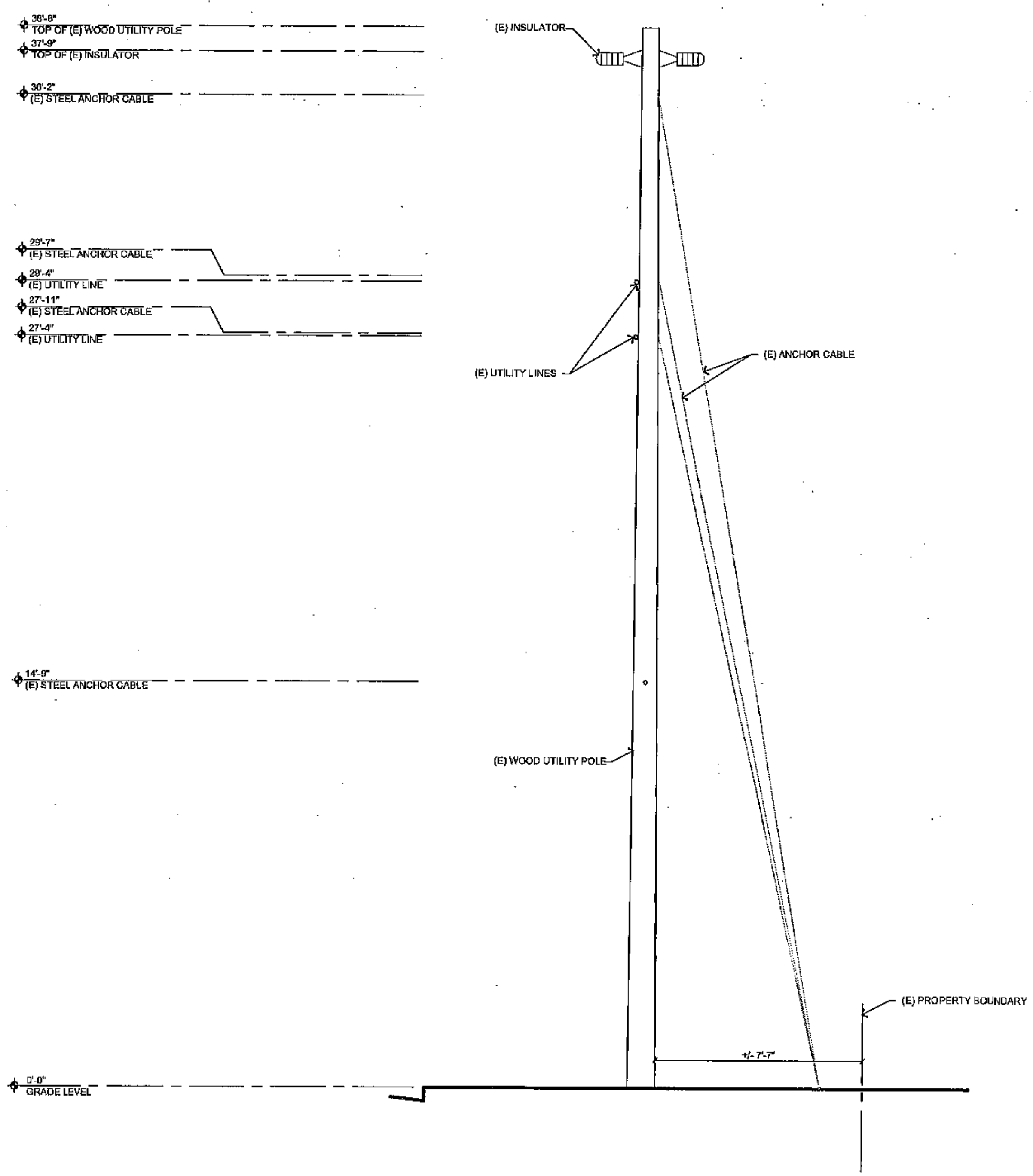
DRAWN BY: D.A.G. PROJECT NO.: T-16510-32
CHECK BY: B.K.W.

SHEET TITLE
ENLARGED SITE PLAN & ANTENNA PLAN

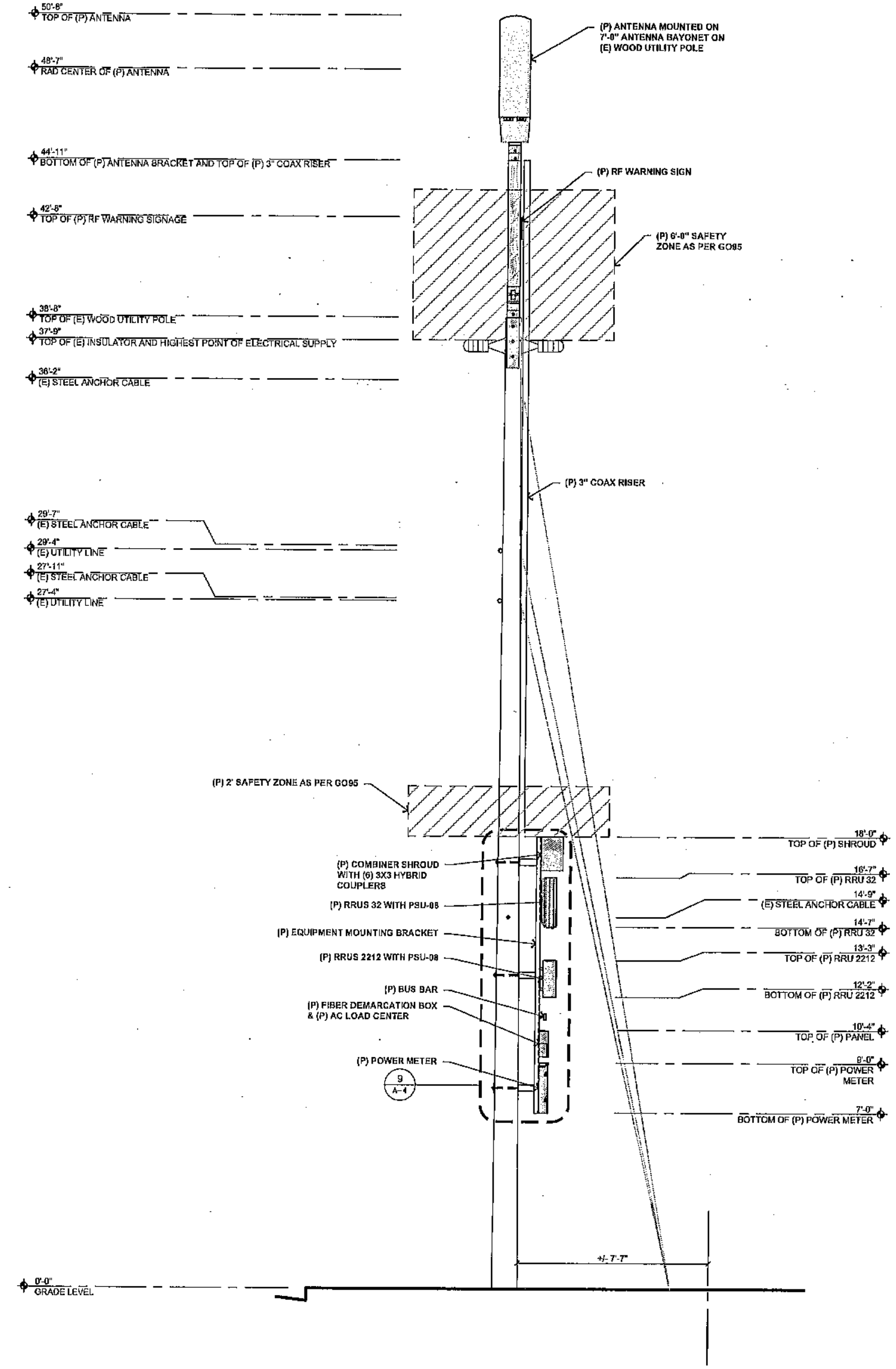
SHEET NO.
A-2

NOTES:

1. PAINT RRU SOLAR SHIELD, MOUNTING COMPONENTS & CABLE SWEEP TO MATCH (E) POLE.
2. FINISH FRP CONCEALMENT SHROUD & SKIRT TO MATCH (E) POLE.
3. NOTICE / CAUTION SIGNAGE DECAL SHALL FACE OUT TO STREET AND WHEN FEASIBLE



17 EXISTING SOUTH EAST ELEVATION
3/8" = 1'-0"



9 PROPOSED SOUTH EAST ELEVATION
3/8" = 1'-0"

verizon

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WALNUT CREEK, CA 94598

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ARCHITECTURAL GROUP Borges

borgesarch.com

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REV	DATE	DESCRIPTION
1	06/04/18	100% CD Submittal
0	03/22/18	90% CD Submittal

SITE NUMBER:

EG_002

SITE ADDRESS:
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HALF MOON BAY, CA 94019

STAMP

LICENSED ARCHITECT RICHARD SAMBUCETTI No. C11525 Ren. 09-30-19 STATE OF CALIFORNIA

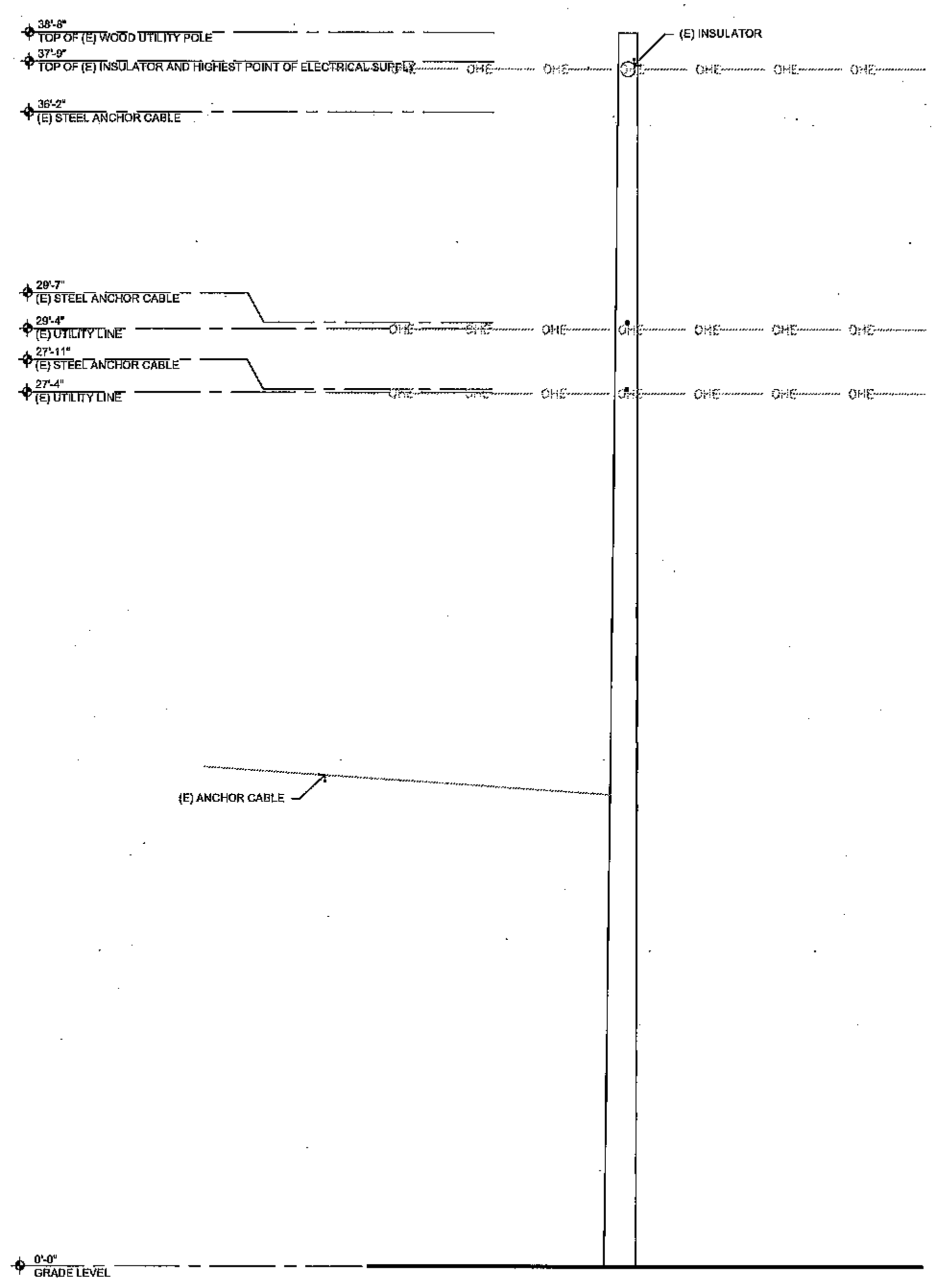
DRAWN BY: D.A.G. PROJECT NO.: T-10519-32
CHECK BY: B.K.W.

SHEET TITLE

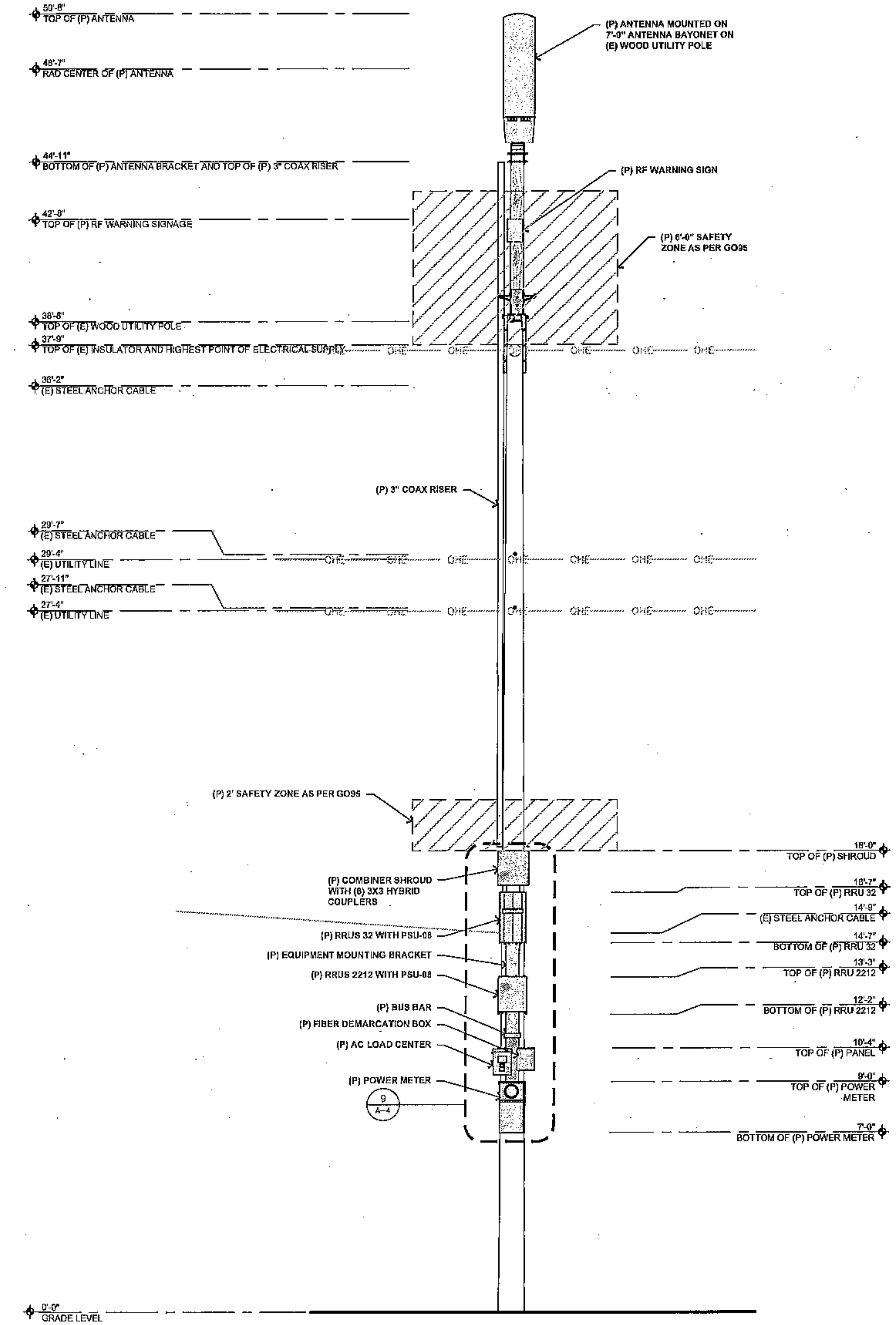
ELEVATIONS

SHEET NO.

A-3.1



17 EXISTING NORTH EAST ELEVATION
3/8" = 1'-0"



9 PROPOSED NORTH EAST ELEVATION
3/8" = 1'-0"

verizon

2785 MITCHELL DRIVE, SUITE 9
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1478 STONE POINT DRIVE, SUITE 350
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916 773 0037 FAX

REV	DATE	DESCRIPTION
1	05/04/18	100% CD Submittal
0	03/22/18	90% CD Submittal

SITE NUMBER:

EG_002

SITE ADDRESS:
51 ALHAMBRA AVE.
HALF MOON BAY, CA 94019

STAMP

LICENSED ARCHITECT
RICHARD SAMBUCETTI
No. C11535
Ren. 09-30-19
STATE OF CALIFORNIA

DRAWN BY: D.A.G. PROJECT NO.: T-10519-32
CHECK BY: B.K.W.

SHEET TITLE

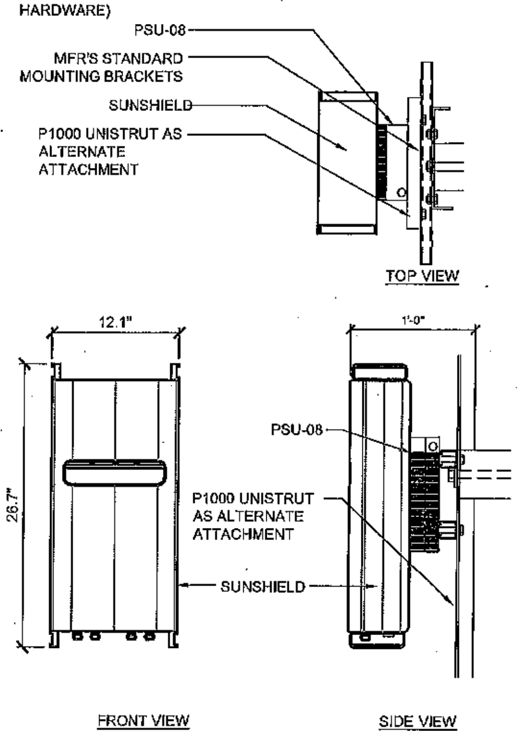
ELEVATIONS

SHEET NO.

A-3.2

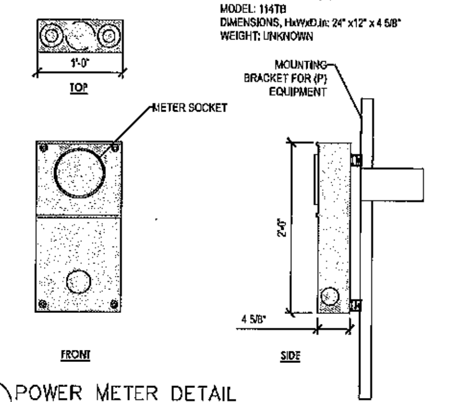
ERICSSON RRU-32 WITH PSU-08

MODEL: RRUS 32 WITH PSU-08
COLOR: WHITE
DIMENSIONS: 26.7" TALL X 12.1" WIDE X 6.7" DEEP (INCLUDING SUNSHIELD)
WIEGHT: +/- 80.4 LBS. (INCLUDING MOUNTING HARDWARE)



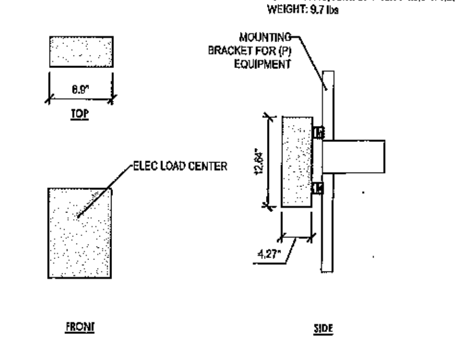
19 RRUS 32 WITH PSU-08 MOUNTING DETAIL
1 1/2" = 1'-0"

METER MAKE AND MODEL:
MANUFACTURER: B-LINE
MODEL: 114TB
DIMENSIONS, HxWxD,in: 24" x12" x 4 5/8"
WEIGHT: UNKNOWN



16 POWER METER DETAIL
1" = 1'-0"

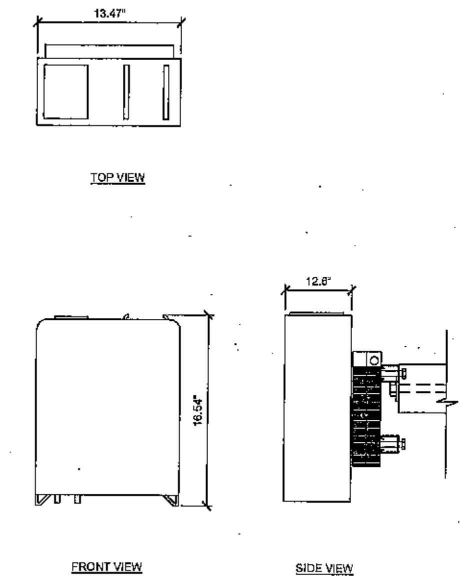
ELEC LOAD CENTER MAKE AND MODEL:
MANUFACTURER: SQUARE D
MODEL: QO612L100RB
DIMENSIONS, HxWxD,in: 12.64" x9.9" x 4.27"
WEIGHT: 9.7 lbs



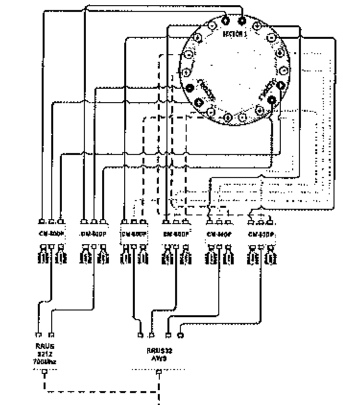
12 ELEC LOAD CENTER DETAIL
1" = 1'-0"

ERICSSON RRUS2212

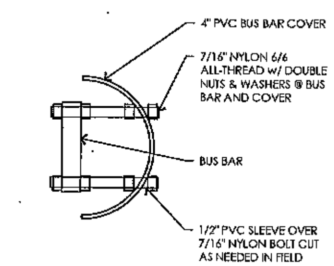
MODEL: RRUS22212
COLOR: WHITE
DIMENSIONS: 16.54" TALL X 12.6" WIDE X 13.47" DEEP (INCLUDING SUNSHIELD)
WIEGHT: +/- 82 LBS. (INCLUDING MOUNTING HARDWARE)



7 ERICSON RRUS-2212
1 1/2" = 1'-0"

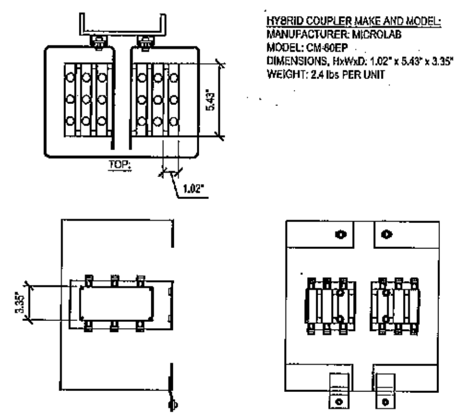


4 WIRE DIAGRAM
3/4" = 1'-0"



15 BUS BAR COVER
NOT TO SCALE

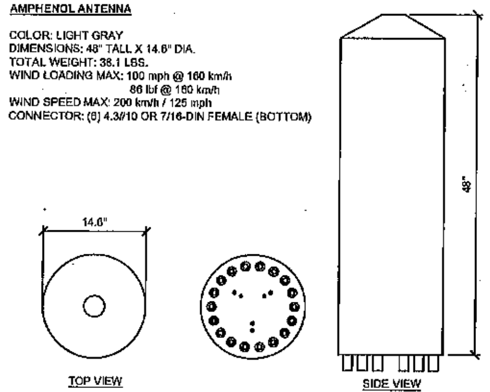
HYBRID COUPLER MAKE AND MODEL:
MANUFACTURER: MICROLAB
MODEL: CM-80EP
DIMENSIONS, HxWxD: 1.02" x 5.43" x 3.35"
WEIGHT: 2.4 lbs PER UNIT



11 HYBRID COUPLER
1 1/2" = 1'-0"

AMPHENOL ANTENNA

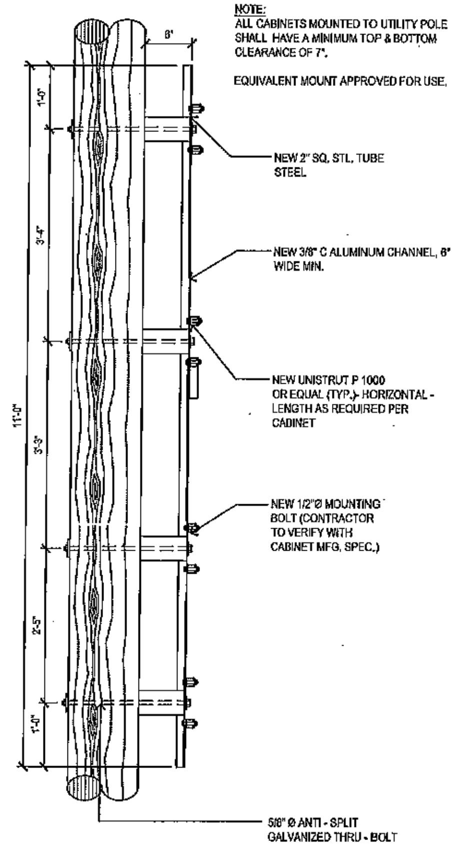
COLOR: LIGHT GRAY
DIMENSIONS: 48" TALL X 14.6" DIA.
TOTAL WEIGHT: 38.1 LBS.
WIND LOADING MAX: 100 mph @ 160 km/h
86 lbf @ 160 km/h
WIND SPEED MAX: 200 km/h / 125 mph
CONNECTOR: (6) 4.3//10 OR 7/16-DIN FEMALE (BOTTOM)



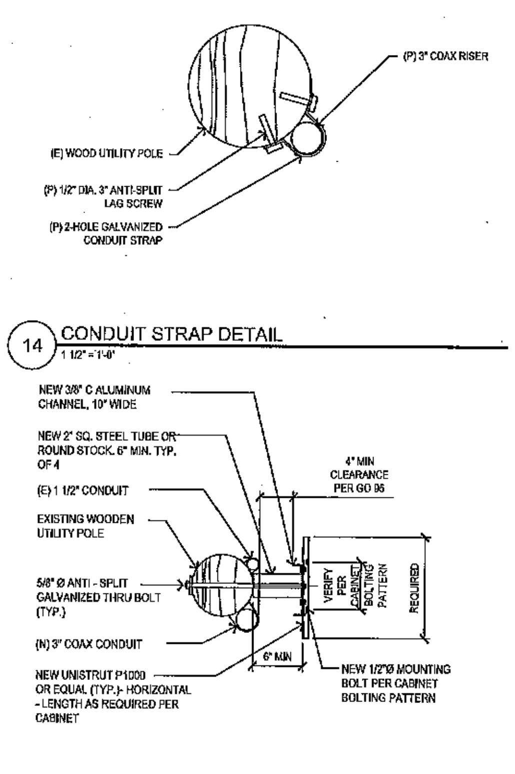
3 CYLINDRICAL ANTENNA
1"=1'-0"

NOTE:
ALL CABINETS MOUNTED TO UTILITY POLE SHALL HAVE A MINIMUM TOP & BOTTOM CLEARANCE OF 7".

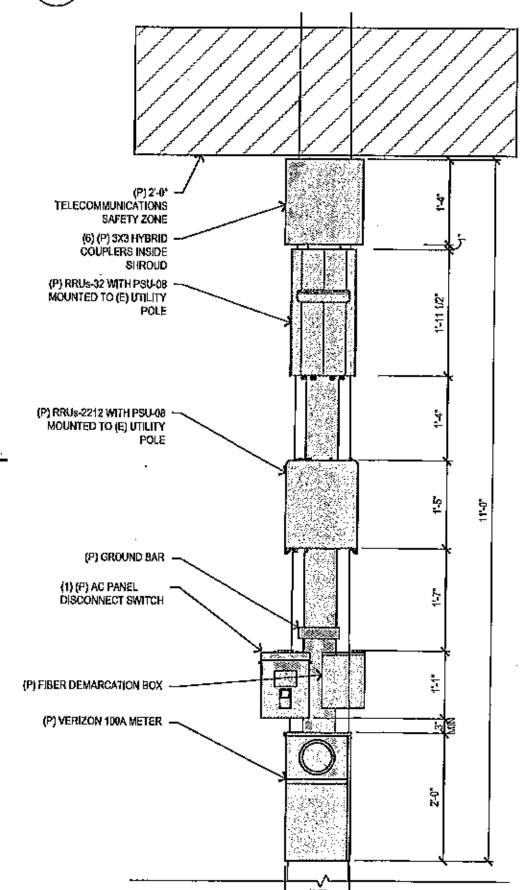
EQUIVALENT MOUNT APPROVED FOR USE.



17 EQUIPMENT MOUNTING DETAIL
3/4" = 1'-0"

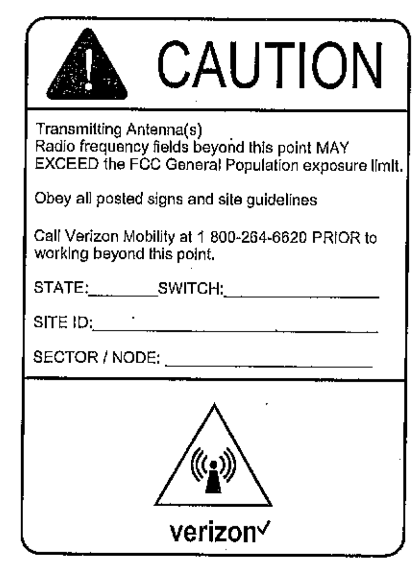


14 CONDUIT STRAP DETAIL
1 1/2" = 1'-0"



9 ANTENNA EQUIPMENT FRONT ELEVATION
3/4" = 1'-0"

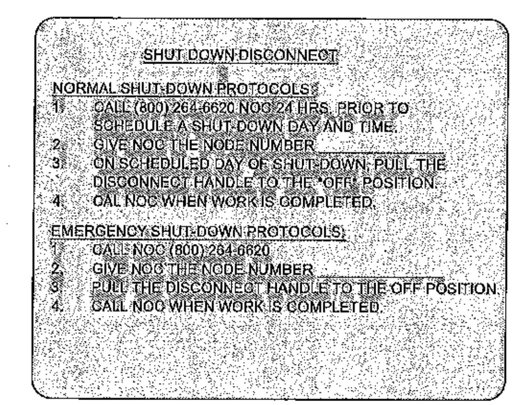
NOTE:
SIGN BACKGROUND COLOR TO MATCH (E) POLE, BE YELLOW, ALL TEXT AND SYMBOLS TO BE BLACK



NOTE:
- THE SITE ID SHALL BE AS FOLLOWS: MARKET #-CELL SITE #-SMALL CELL NAME. EXAMPLE: "031-426-SAN JOSE 002"
- THE GENERAL CONTRACTOR SHALL MAKE THE NODE NUMBER PART OF THE SIGN OR APPLY IT IN A PERMANENT MANNER RESISTANT TO DEGRADATION BY THE SUN OR WEATHER.
- FCC MANDATED RF WARNING SIGNAGE SHALL FACE OUT TO STREET WHEN PLACED IN FRONT OF OR NEAR WINDOW. SIGNAGE SHALL FACE TOWARD BUILDING IF THERE IS NO WINDOW.
- EME SIGNAGE SHALL BE VISIBLE FROM THE CLIMBING SPACE AND FROM THE STREET.

17 NOTICE SIGNAGE
1" = 1'-0"

NOTE:
1. OUTSIDE PANEL DOOR SHOWING SHUT-DOWN PROTOCOL ON 3"X4" LABEL
2. SITE ID WIL LBE SWITCH #, SITE #, & SITE NAME
3. SIGN PROVIDED BY GC MOUNTED TO OUTSIDE OF SERVICE DISCONNECT



1 SHUT DOWN PROTOCOL SIGNAGE
1" = 1'-0"

verizon

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ARCHITECTURAL GROUP Borges

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1478 STONE POINT DRIVE, SUITE 350
ROSEVILLE CA 95661

916 782 7200 TEL
916 773 3037 FAX

REV	DATE	DESCRIPTION
1	05/04/18	100% CD Submittal
0	03/22/18	90% CD Submittal

SITE NUMBER:

EG_002

SITE ADDRESS:
51 ALHAMBRA AVE.
HALF MOON BAY, CA 94019

STAMP

LICENSED ARCHITECT RICHARD SAMBUCETTI No. C11535 Ren. 09-30-19 STATE OF CALIFORNIA

DRAWN BY: D.A.G. PROJECT NO.: T-16519-32

CHECK BY: B.K.W.

SHEET TITLE

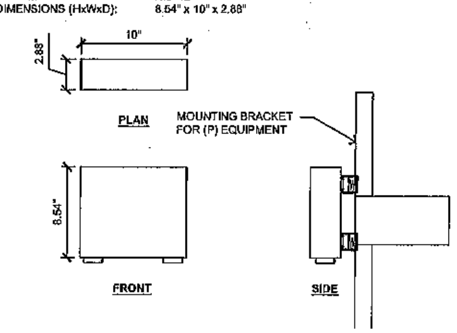
DETAILS

SHEET NO.

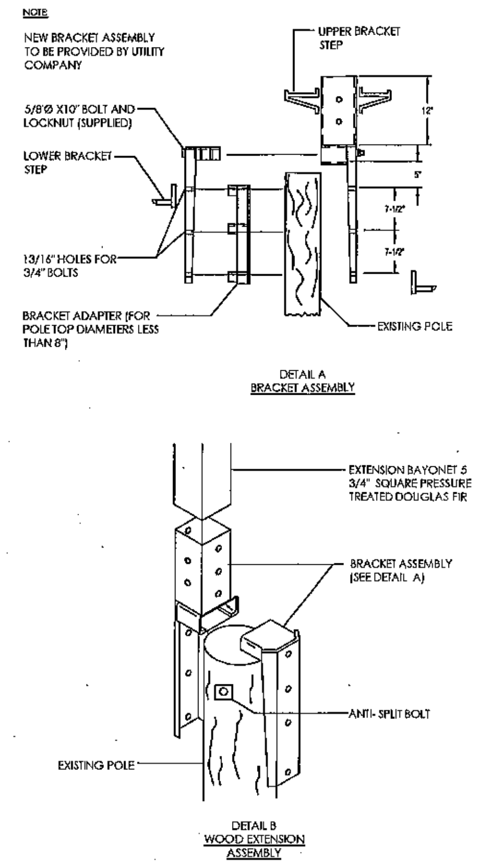
A-4.1

ARIA NID-12 FIBER DEMARCATION BOX: OR APPROVED EQUIVALENT

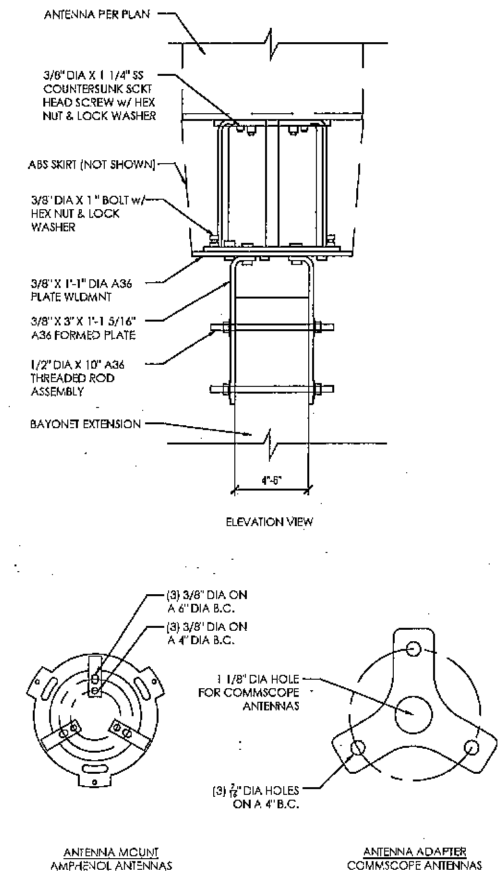
MANUFACTURER: ARIA
MODEL: NID-12
DIMENSIONS (HxWxD): 8.64" x 10" x 2.88"



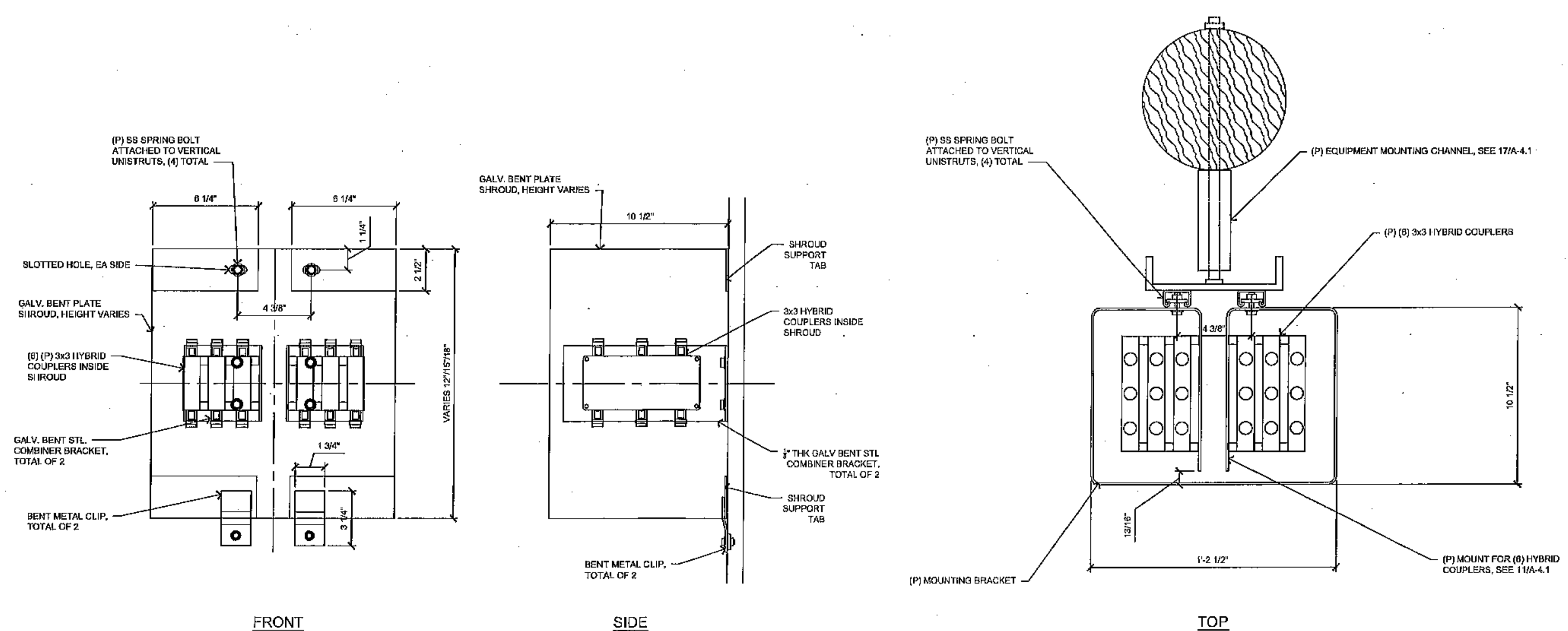
11 ARIA NID-12 FIBER DEMARCATION BOX
1 1/2" = 1'-0"
rename me to this view "dwg" name



7 WOOD POLE EXTENSION
3/4" = 1'-0"



7 TOP MOUNT ANTENNA BRACKET
NOT TO SCALE



13 COMBINER SHROUD DETAIL
3" = 1'-0"

verizon

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DRAWN BY: D.A.G. PROJECT NO.: T-16519-32

CHECK BY: B.K.W.

SHEET TITLE

DETAILS

SHEET NO.

A-4.2

ELECTRICAL NOTES

GENERAL REQUIREMENTS:

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRICAL CODE AND ALL STATE AND LOCAL CODES. NOTHING IN THESE PLANS OR SPECIFICATIONS SHALL BE CONSTRUED AS TO PERMIT WORK NOT CONFORMING TO THE MOST STRINGENT OF THESE CODES. SHOULD CHANGES BE NECESSARY IN THE DRAWINGS OR SPECIFICATIONS TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND CEASE WORK ON PARTS OF THE CONTRACT WHICH ARE AFFECTED.
2. THE CONTRACTOR SHALL MAKE A SITE VISIT PRIOR TO BIDDING AND CONSTRUCTION TO VERIFY ALL EXISTING CONDITIONS AND SHALL NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES. THE CONTRACTOR ASSUMES ALL LIABILITY FOR FAILURE TO COMPLY WITH THIS PROVISION.
3. THE EXTENT OF THE WORK IS INDICATED BY THE DRAWINGS, SCHEDULES, AND SPECIFICATIONS AND IS SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT. THE WORK SHALL CONSIST OF FURNISHING ALL LABOR, EQUIPMENT, MATERIALS, AND SUPPLIES NECESSARY FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM. THE WORK SHALL ALSO INCLUDE THE COMPLETION OF ALL ELECTRICAL WORK NOT MENTIONED OR SHOWN WHICH IS NECESSARY FOR SUCCESSFUL OPERATION OF ALL SYSTEMS.
4. THE CONTRACTOR SHALL PREPARE A BID FOR A COMPLETE AND OPERATIONAL SYSTEM, WHICH INCLUDES THE COST FOR MATERIAL AND LABOR.
5. WORKMANSHIP AND NEAT APPEARANCE SHALL BE AS IMPORTANT AS THE OPERATION. DEFECTIVE OR DAMAGED MATERIALS SHALL BE REPLACED OR REPAIRED PRIOR TO FINAL ACCEPTANCE IN A MANNER ACCEPTABLE TO OWNER AND ENGINEER.
6. COMPLETE THE ENTIRE INSTALLATION AS SOON AS THE PROGRESS OF THE WORK WILL PERMIT. ARRANGE ANY OUTAGE OF SERVICE WITH THE OWNER AND BUILDING MANAGER IN ADVANCE. MINIMIZE DOWNTIME ON THE BUILDING ELECTRICAL SYSTEM.
7. THE ENTIRE ELECTRICAL SYSTEM INSTALLED UNDER THIS CONTRACT SHALL BE DELIVERED IN PROPER WORKING ORDER. REPLACE, WITHOUT ADDITIONAL COST TO THE OWNER, ANY DEFECTIVE MATERIAL AND EQUIPMENT WITHIN ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
8. ANY ERROR, OMISSION OR DESIGN DESCREPANCY ON THE DRWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION OR CORRECTION BEFORE CONSTRUCTION.
9. "PROVIDE" INDICATES THAT ALL ITEMS ARE TO BE FURNISHED, INSTALLED AND CONNECTED IN PLACE.
10. CONTRACTOR SHALL SECURE ALL NECESSARY BUILDING PERMITS AND PAY ALL REQUIRED FEES.

EQUIPMENT LOCATION:

1. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE DESIRED LOCATIONS OR ARRANGEMENTS OF CONDUIT RUNS, OUTLETS, EQUIPMENT, ETC., AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE. PROPER JUDGEMENT MUST BE EXERCISED IN EXECUTING THE WORK SO AS TO SECURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE LIMITATIONS OR INTERFERENCE OF STRUCTURE CONDITIONS ENCOUNTERED.
2. IN THE EVENT CHANGES IN THE INDICATED LOCATIONS OR ARRANGEMENTS ARE NECESSARY, DUE TO FIELD CONDITIONS IN THE BUILDING CONSTRUCTION OR REARRANGEMENT OF FURNISHINGS OR EQUIPMENT, SUCH CHANGES SHALL BE MADE WITHOUT COST, PROVIDING THE CHANGE IS ORDERED BEFORE THE CONDUIT RUNS, ETC., AND WORK DIRECTLY CONNECTED TO THE SAME IS INSTALLED AND NO EXTRA MATERIALS ARE REQUIRED.
3. LIGHTING FIXTURES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS ONLY. COORDINATE THE FIXTURE LOCATION WITH MECHANICAL EQUIPMENT TO AVOID INTERFERENCE.
4. COORDINATE THE WORK OF THIS SECTION WITH THAT OF ALL OTHER TRADES, WHERE CONFLICTS OCCUR, CONSULT WITH THE RESPECTIVE CONTRACTOR AND COME TO AGREEMENT AS TO CHANGES NECESSARY, OBTAIN WRITTEN ACCEPTANCE FROM ENGINEER FOR THE PROPOSED CHANGES BEFORE PROCEEDING.

SHOP DRAWINGS:

1. N/A UNLESS NOTED OTHERWISE.

SUBSTITUTIONS:

1. NO SUBSTITUTIONS ARE ALLOWED

TESTS:

1. BEFORE FINAL ACCEPTANCE OF WORK, THE CONTRACTOR SHALL INSURE THAT ALL EQUIPMENT, SYSTEMS, FIXTURES, ETC., ARE WORKING SATISFACTORILY AND TO THE INTENT OF THE DRAWINGS.

PERMITS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING OUT AND PAYING FOR ALL REQUIRED PERMITS, INSPECTION AND EXAMINATION WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

GROUNDING:

1. THE CONTRACTOR SHALL PROVIDE A COMPLETE, AND APPROVED GROUNDING SYSTEM INCLUDING ELECTRODES, ELECTRODE CONDUCTOR, BONDING CONDUCTORS, AND EQUIPMENT CONDUCTORS AS REQUIRED BY ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
2. CONDUITS CONNECTED TO EQUIPMENT AND DEVICES SHALL BE METALICALY JOINED TOGETHER TO PROVIDE EFFECTIVE ELECTRICAL CONTINUITY.
3. FEEDERS AND BRANCH CIRCUIT WIRING INSTALLED IN A NONMETALLIC CONDUIT SHALL INCLUDE A CODE SIZED GROUNDING CONDUCTOR HAVING GREEN INSULATION. THE GROUND CONDUCTOR SHALL BE PROPERLY CONNECTED AT BOTH ENDS TO MAINTAIN ELECTRICAL CONTINUITY.
4. REFER TO GROUND BUS DETAILS. PROVIDE NEW GROUND SYSTEM COMPLETE WITH CONDUCTORS, GROUND ROD AND DESCRIBED TERMINATIONS.
5. ALL GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2 UNLESS NOTED OTHERWISE.
6. ALL NON-DIRECT BURIED TELEPHONE EQUIPMENT GROUND CONDUCTORS SHALL BE #2 STRANDED THHN (GREEN) INSULATION.
7. ALL GROUND CONNECTIONS SHALL BE MADE WITH "HYGROUND" COMPRESSION SYSTEM BURNDY CONNECTORS EXCEPT WHERE NOTED OTHERWISE.
8. PAINT AT ALL GROUND CONNECTIONS SHALL BE REMOVED.
9. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE OWNER FOR FUTURE INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE. SUBMIT TEST REPORTS AND FURNISH TO SMART SMR ONE COMPLETE SET OF PRINTS SHOWING "INSTALLED WORK".

UTILITY SERVICE:

1. TELEPHONE AND ELECTRICAL METERING FACILITIES SHALL CONFORM TO THE REQUIREMENTS OF THE SERVING UTILITY COMPANIES. CONTRACTOR SHALL VERIFY SERVICE LOCATIONS AND REQUIREMENTS. SERVICE INFORMATION WILL BE FURNISHED BY THE SERVING UTILITIES.
2. CONFORM TO ALL REQUIREMENTS OF THE SERVING UTILITY COMPANIES.

PRODUCTS:

1. ALL MATERIALS SHALL BE NEW, CONFORMING WITH NEC, ANSI, NEMA, AND THEY SHALL BE U.L. LISTED AND LABELED.
2. CONDUIT:
   - A) RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR, RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
   - B) ELECTRICAL METALLIC TUBING SHALL U.L. LABEL, FITTINGS SHALL BE COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
   - C) FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE. SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT EXCESS OF SIX FEET IN LENGTH SHALL HAVE FULL SIZE GROUND WIRE.
   - D) CONDUIT RUNS MAY BE SURFACE MOUNTED IN CEILING OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH ARCHITECT PRIOR TO INSTALLING.
   - E) ALL UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 (UNLEES NOTED OTHERWISE) AT A MINIMUM DEPTH OF 24" BELOW GRADE
   - F) ALL CONDUIT ONLY (C.O.) SHALL HAVE PULL ROPE.
   - G) CONDUITS RUN ON ROOFS SHALL BE INSTALLED ON 4x4 REDWOOD SLEEPERS, 6'-0" ON CENTER, SET IN NON-HARDENING MASTIC.
3. ALL WIRE AND CABLE SHALL BE COPPER, 600 VOLT, #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED. TYPE THHN INSULATION USED UNLESS CONDUCTORS INSTALLED IN CONDUIT EXPOSED TO WEATHER, IN WHICH CASE TYPE THWN INSULATION SHALL BE USED.
4. PROVIDE GALVANIZED COATED STEEL BOXES AND ACCESSORIES SIZED PER CODE TO ACCOMMODATE ALL DEVICES AND WIRING.
5. DUPLEX RECEPTACLES SHALL BE SPECIFICATION GRADE WITH WHITE FINISH (UNLESS NOTED BY ENGINEER), 20 AMP, 125 VOLT, THREE WIRE GROUNDING TYPE, NEMA 5-20R. MOUNT RECEPTACLE AT +12" ABOVE FINISHED FLOOR UNLESS OTHERWISE INDICATED ON DRAWINGS OR IN DETAILS. WEATHERPROOF RECEPTACLES SHALL BE GROUND FAULT INTERRUPTER TYPE WITH SIERRA #WPD-8 LIFT COVERPLATES.
6. TOGGLE SWITCHES SHALL BE 20 AMP, 120 VOLT AC, SPECIFICATION GRADE WHITE (UNLESS NOTED OTHERWISE) FINISH. MOUNT SWITCHES AT +48" ABOVE FINISHED FLOOR.
7. PANELBOARDS SHALL BE DEAD FRONT SAFETY TYPE WITH ANTI-BURN SOLDERLESS COMPRESSION APPROVED FOR COPPER CONDUCTORS, COPPER BUS BARS, FULL SIZED NEUTRAL BUS, GROUND BUS AND EQUIPPED WITH QUICK-MAKE QUICK-BREAK BOLT-IN TYPE THERMAL MAGNETIC CIRCUIT BREAKERS. MOUNT TOP OF THE PANELBOARDS AT 6'-3" ABOVE FINISHED FLOOR. PROVIDE TYPE WRITTEN CIRCUIT DIRECTORY.
8. ALL CIRCUIT BREAKERS, MAGNETIC STARTERS AND OTHER ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED.
9. GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8" ROUND AND 10' LONG. COPPERWELD OR APPROVED EQUAL.

INSTALLATION:

1. PROVIDE SUPPORTING DEVICES FOR ALL ELECTRICAL EQUIPMENT, FIXTURES, BOXES, PANEL, ETC., SUPPORT LUMINARIES FROM UNDERSIDE OF STRUCTURAL CEILING. EQUIPMENT SHALL BE BRACED TO WITHSTAND HORIZONTAL FORCES IN ACCORDANCE WITH STATE AND LOCAL CODE REQUIREMENTS. PROVIDE PRIOR ALIGNMENT AND LEVELING OF ALL DEVICES AND FIXTURES.
2. CUTTING, PATCHING, CHASES, OPENINGS: PROVIDE LAYOUT IN ADVANCE TO ELIMINATE UNNECESSARY CUTTING OR DRILLING OF WALLS, FLOORS CEILINGS, AND ROOFS. ANY DAMAGE TO BUILDING STRUCTURE OR EQUIPMENT SHALL BE REPAIRED BY THE CONTRACTOR. OBTAIN PERMISSION FROM THE ENGINEER BEFORE CORING.
3. IN DRILLING HOLES INTO CONCRETE WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, PIPE RUNS, ETC., IT MUST BE CLEARLY UNDERSTOOD THAT TENDONS AND/OR REINFORCING STEEL WILL NOT BE DRILLED INTO, CUT OR DAMAED UNDER THE CIRCUMSTANCES.
4. LOCATION OF TENDONS AND/OR REINFORCING STEEL ARE NOT DEFINITELY KNOWN AND THEREFORE, MUST BE SEARCHED FOR BY APPROPRIATE METHODS AND EQUIPMENT VIA X-RAY OR OTHER DEVICES THAT CAN ACCURATELY LOCATE THE REINFORCING AND/OR STEEL TENDONS.
5. PENETRATIONS IN FIRE RATED WALLS SHALL BE FIRE STOPPED IN ACCORDANCE WITH THE REQUIREMENTS OF THE C.B.C.

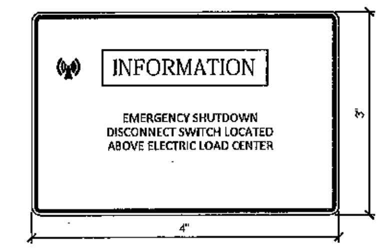
PROJECT CLOSEOUT:

1. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALLS DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
2. PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS.
3. ALL BROCHURES, OPERATING MANUALS, CATALOG, SHOP DRAWINGS, ETC., SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.

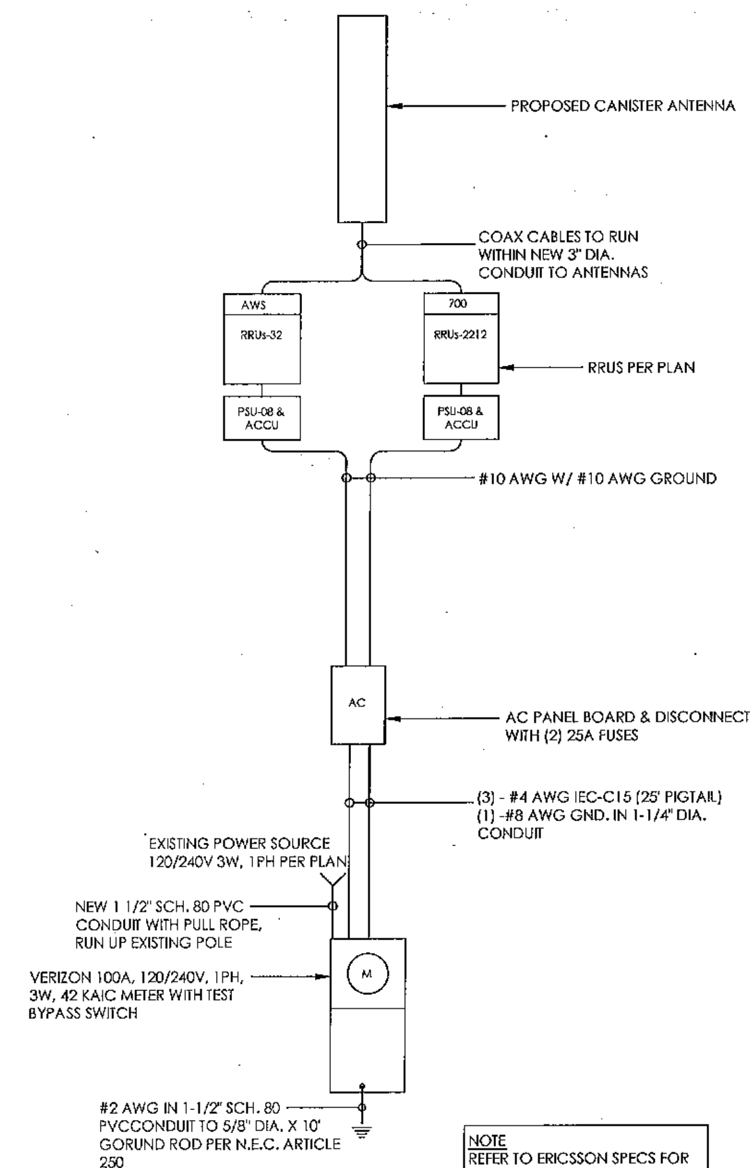
GROUNDING NOTES:

1. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL GROUNDING INSTALLATION REQUIREMENTS AND CONSTRUCTION ACCORDING TO SITE CONDITIONS.
2. ALL GROUNDING CONDUCTORS: #2 AWG SOLID BARE TINNED COPPER WIRE UNLESS OTHERWISE NOTED.
3. GROUND BAR LOCATED IN BASE OF EQUIPMENT WILL BE PROVIDED, FURNISHED AND INSTALLED BY THE VENDOR.
4. ALL BELOW GRADE CONNECTIONS: EXOTHERMIC WELD TYPE. ABOVE GRADE CONNECTIONS: EXOTHERMIC WELD TYPE.
5. GROUND RING SHALL BE LOCATED A MINIMUM OF 24" BELOW GRADE OR 6" MINIMUM BELOW THE FROST LINE.
6. INSTALL GROUND CONDUCTORS AND GROUND ROD MINIMUM OF 1'-0" FROM EQUIPMENT CONCRETE SLAB, SPREAD FOOTING, OR FENCE.
7. EXOTHERMIC WELD GROUND CONNECTION TO FENCE POST: TREAT WITH A COLD GALVANIZED SPRAY.
8. GROUND BARS:
   - A) EQUIPMENT GROUND BUS BAR (EGB) LOCATED AT THE BOTTOM OF ANTENNA POLE/MAST FOR MAKING GROUNDING JUMPER CONNECTIONS TO COAX FEEDER CABLES SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. JUMPERS (FURNISHED BY OWNERS) SHALL BE INSTALLED AND CONNECTED BY ELECTRICAL CONTRACTOR.
9. ALL GROUNDING INSTALLATIONS AND CONNECTIONS SHALL BE MADE BY ELECTRICAL CONTRACTOR.
10. OBSERVE N.E.C. AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.
11. GROUNDING ATTACHMENT TO TOWER SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS OR AT GROUNDING POINTS PROVIDED (2 MINIMUM).
12. IF EQUIPMENT IS IN A C.L. FENCE ENCLOSURE, GROUND ONLY CORNER POSTS AND SUPPORT POSTS OF GATE. IF CHAIN LINK LID IS USED, THEN GROUND LID ALSO.
13. GROUNDING AT PPC CABINET SHALL BE VERTICALLY INSTALLED.
14. ALL GROUNDING FOR ANTENNAS SHALL BE CONNECTED SO THAT IT WILL BY-PASS MAIN BUSS BAR.
15. ALL EMT RUNS SHALL BE GROUNDED AND HAVE A BUSHING, NO PVC ABOVE GROUND.
16. USE SEPARATE HOLES FOR GROUNDING AT BUSS BAR. NO "DOUBLE-UP" OF LUGS.
17. POWER AND TELCO CABINETS SHALL BE GROUNDED (BONDED) TOGETHER.
18. NO LB'S ALLOWED ON GROUNDING.
19. PROVIDE STAINLESS STEEL CLAMP AND BRASS TAGS ON COAX AT ANTENNAS AND DOGHOUSE.

NOTE:
NEW VINYL SIGN TO BE PROVIDED BY VERIZON WIRELESS AND BE LOCATED ON THE SIDE OF THE METER BOX. SIGN TO BE YELLOW.



4 SHUTDOWN DISCONNECT SIGNAGE
NOT TO SCALE



NOTE
REFER TO ERICSSON SPECS FOR ADDITIONAL INFORMATION INCLUDING WIRING INSTRUCTIONS & GROUNDING REQUIREMENTS

5 ELECTRICAL NOTES
N.T.S.

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

modus-corp.com

240 STOCKTON STREET, 3RD FLOOR
SAN FRANCISCO, CA 94108

ARCHITECTURAL GROUP Borges

borgesarch.com

1478 STONE POINT DRIVE, SUITE 350
ROSEVILLE CA 95661
916 782 7200 TEL
916 773 3037 FAX

REV	DATE	DESCRIPTION
1	05/04/16	100% CD Submittal
0	03/22/16	90% CD Submittal

SITE NUMBER:

EG_002

SITE ADDRESS:
51 ALHAMBRA AVE.
HALF MOON BAY, CA 94019

STAMP

LICENSED ARCHITECT
RICHARD SAMBUCETTI
No. C11535
Ren. 09-30-19
STATE OF CALIFORNIA

DRAWN BY: D.A.G. PROJECT NO.: T-16519-32

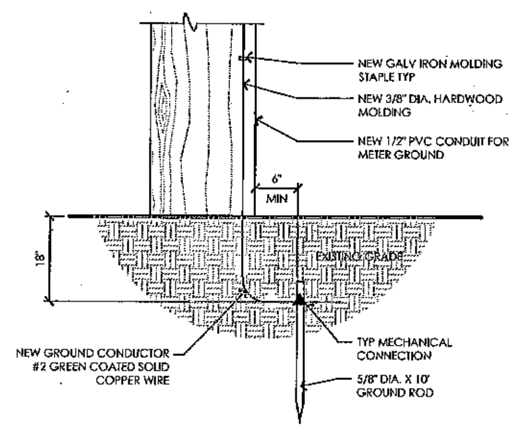
CHECK BY: B.K.W.

SHEET TITLE

SINGLE LINE DIAGRAM & PANEL SCHEDULE

SHEET NO.

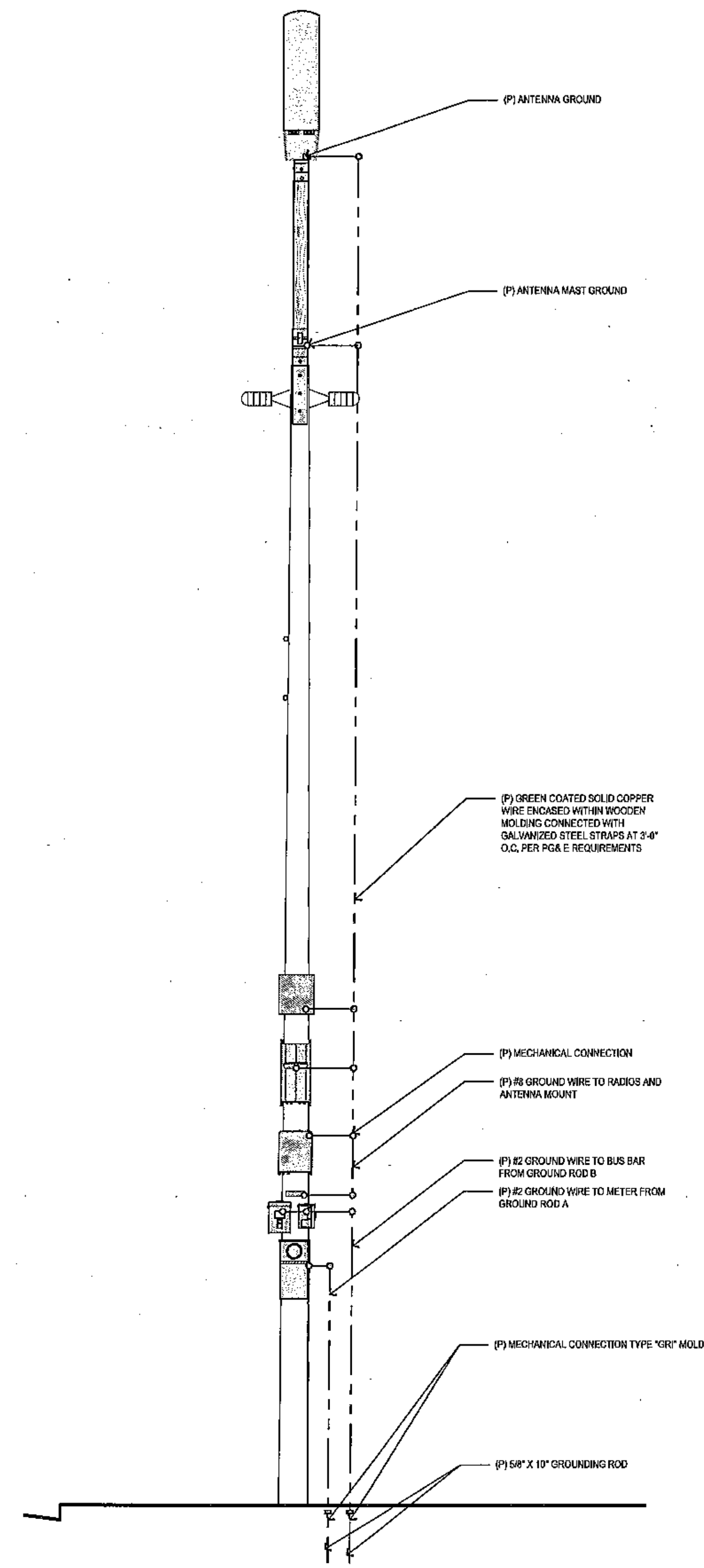
E-1



GROUND LEGEND

⊕	MECHANICAL CONNECTION
▭	EXOTHERMIC CADWELD
—(R)—	TYP 5/8" DIA. X 10' LONG COPPER CLAD GROUND ROD AT 10' O.C. MAX AND 18" MIN BELOW FINISH GRADE

15 GROUND DETAIL
1" = 1'-0"



5 GROUNDING PLAN
1/2" = 1'-0"

verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

modus-corp.com

240 STOCKTON STREET, 3RD FLOOR
SAN FRANCISCO, CA 94108

ARCHITECTURAL GROUP
Borges

borgesarch.com

1478 STONE POINT DRIVE, SUITE 350
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REV	DATE	DESCRIPTION
1	05/04/16	100% CD Submittal
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SITE NUMBER:

EG_002

SITE ADDRESS:
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HALF MOON BAY, CA 94019

STAMP

LICENSED ARCHITECT
RICHARD SAMBUCETTI
No. C11535
Ren. 09-30-19
STATE OF CALIFORNIA

DRAWN BY: D.A.G. PROJECT NO.: T-16519-32
CHECK BY: B.K.W.

SHEET TITLE
POLE GROUND & RISER DIAGRAM & DETAILS

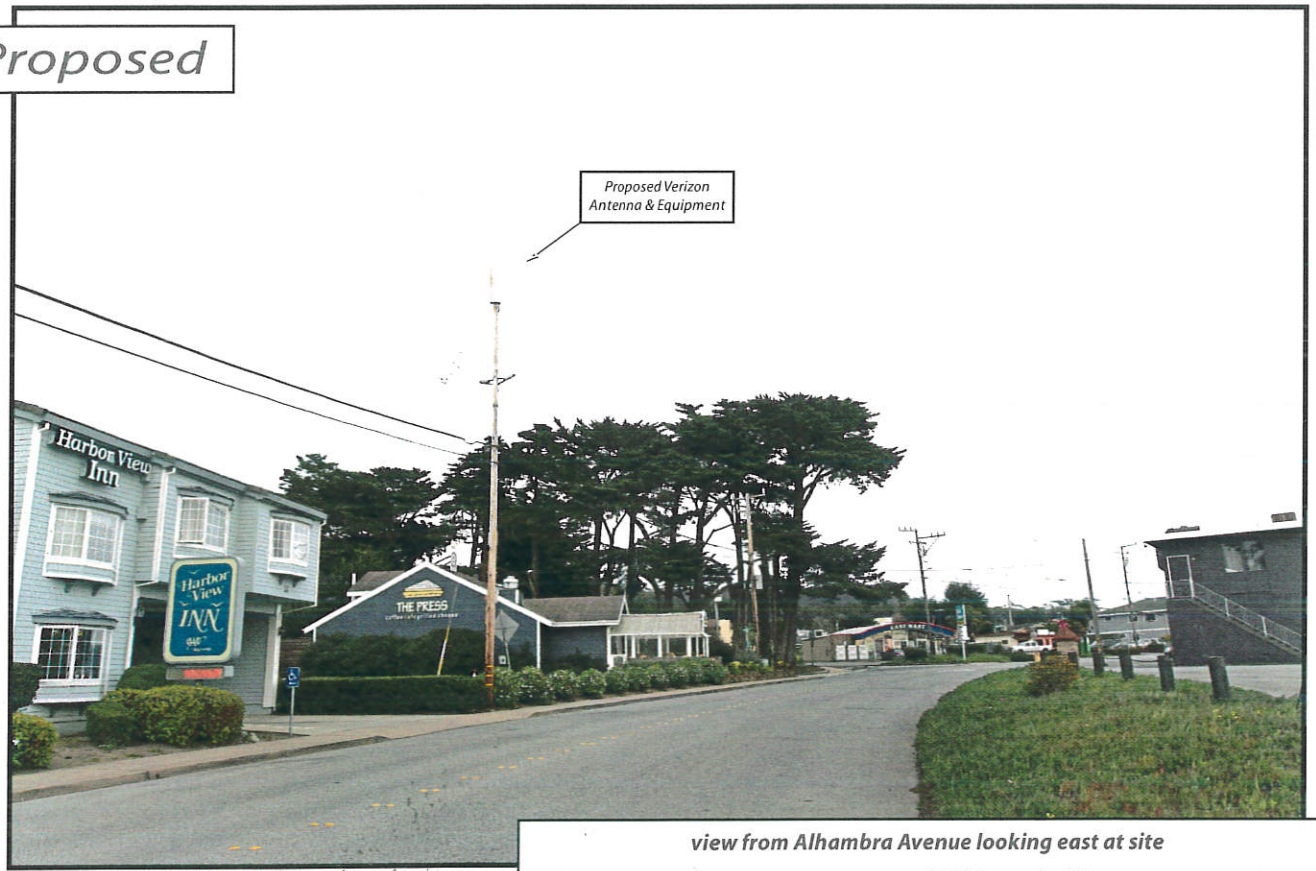
SHEET NO.
E-2

County of San Mateo - Planning and Building Department

ATTACHMENT F2

Existing

Proposed



AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

modus

verizon

view from Alhambra Avenue looking east at site

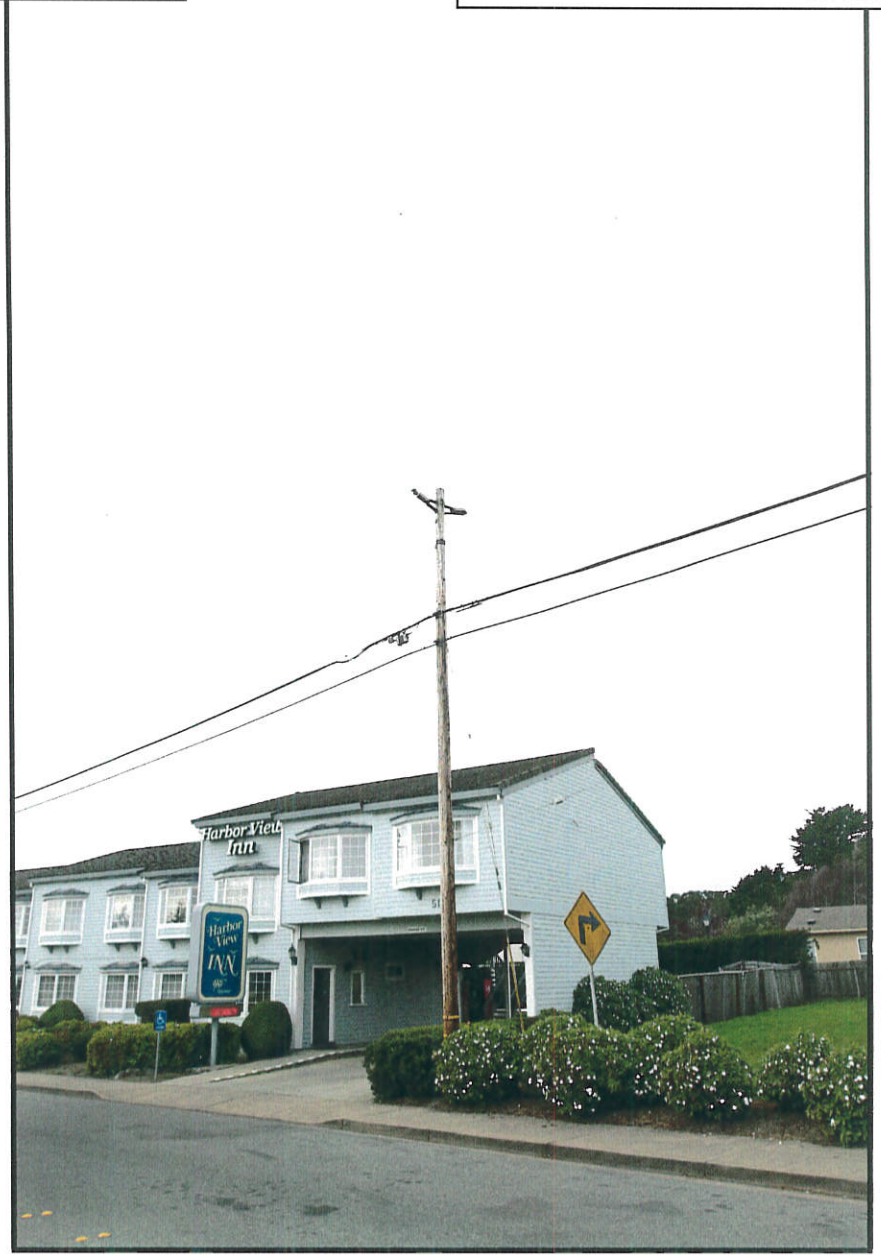
SF El Granada 002
51 Alhambra Avenue, Half Moon Bay, CA
Photosims Produced on 2-23-2018

view from Alhambra Avenue looking northwest at site

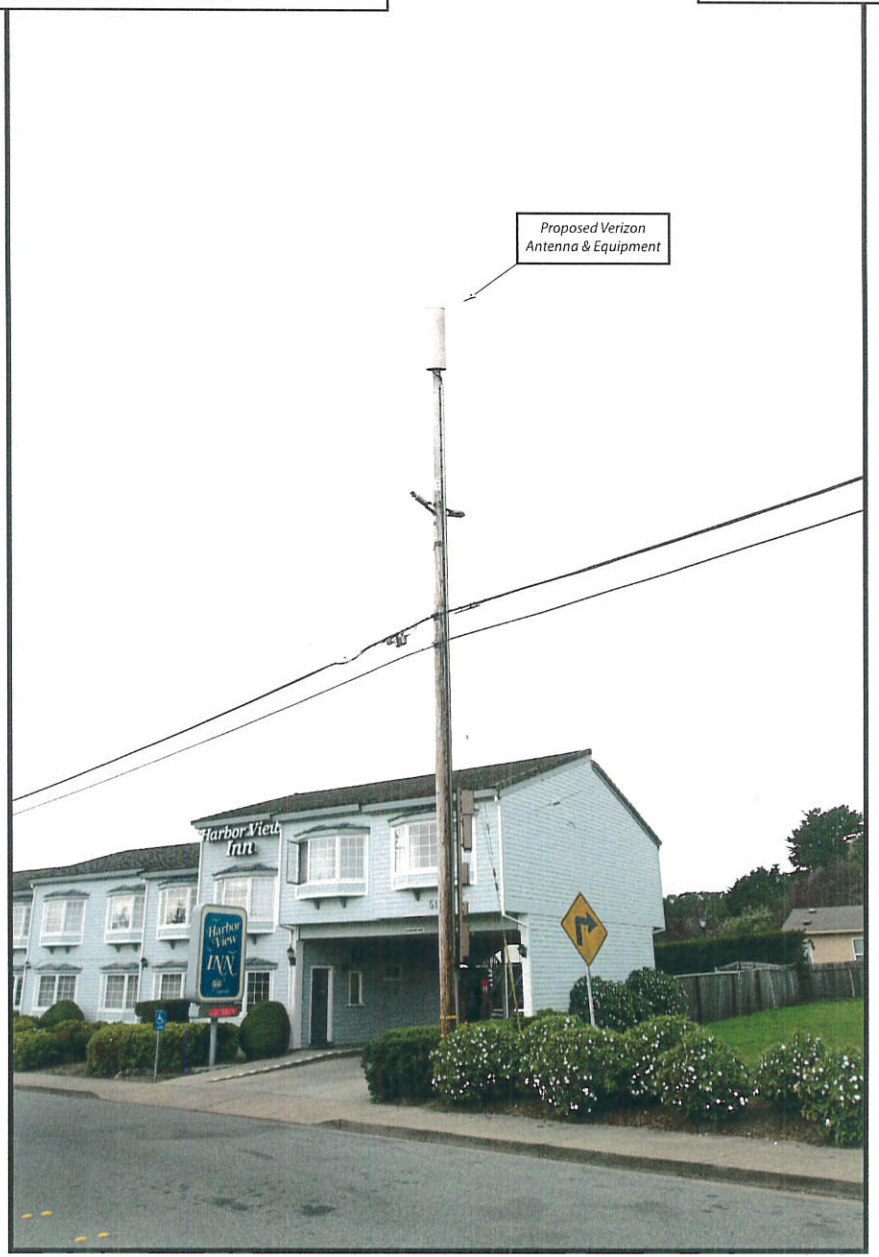
verizon

SF El Granada 002
51 Alhambra Avenue, Half Moon Bay, CA
Photosims Produced on 2-23-2018

Existing



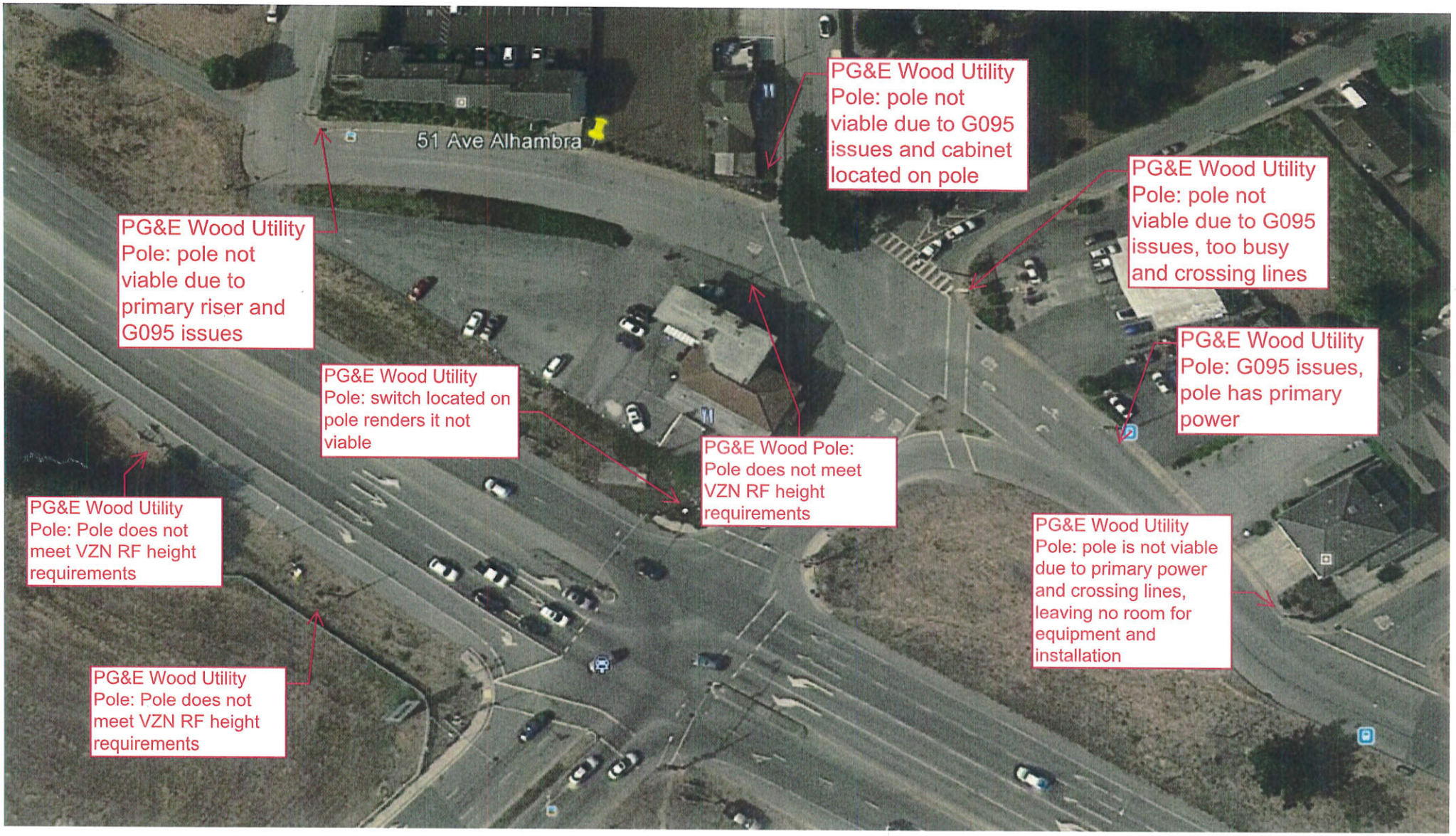
Proposed



AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

County of San Mateo - Planning and Building Department

ATTACHMENT F3



County of San Mateo - Planning and Building Department

ATTACHMENT F4

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

SF EL GRANADA 002
51 Avenue Alhambra
Half Moon Bay, California 94019
San Mateo County
37° 30' 21.75" N, -122° 28' 53.10" W NAD83

EBI Project No. 6218000821
February 28, 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 SF EL GRANADA 002 located at 51 Avenue Alhambra in Half Moon Bay, 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. The worst-case emitted power density may exceed the FCC's general public limit within approximately 13 feet of Verizon's proposed antennas at the antenna face level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 5 feet of Verizon's proposed antennas at the antenna face level. 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 **13.30** percent of the FCC's general public limit (**2.66** percent of the FCC's occupational limit).

Recommended control measures are outlined in Section 5.0 and are shown in the Signage Plan, which is located in Appendix B.

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 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) Bi-Sector wireless telecommunication antenna on a utility pole located at 51 Avenue Alhambra in Half Moon Bay, 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	700	2	60	80°	10.35	47.83	30	30	45.83
Amphenol CUUT070X12Fxyz0	1900	2	60	320°	13.95				
	2100	2	60		14.05				

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 signage 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.

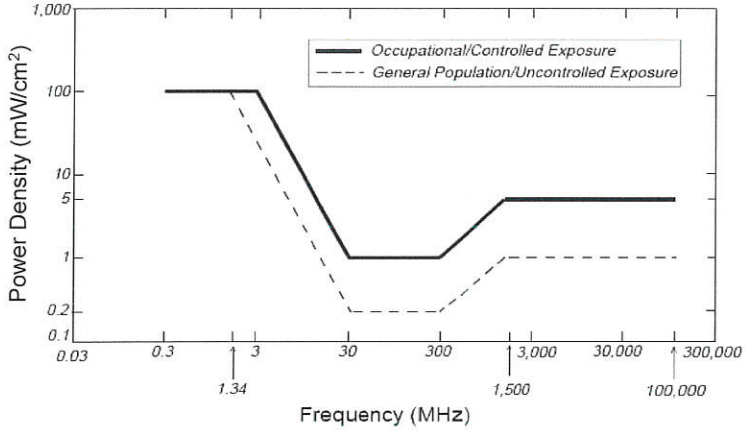
Table 1 and Figure 1 (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a 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)
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 and 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 6 radio configuration for the Bi-Sector antenna, 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 antennas that exceed the FCC's occupational or general public exposure limits at this site. The worst-case emitted power density may exceed the FCC's general public limit within approximately 13 feet of Verizon's Sector A antennas at the antenna face level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 5 feet of Verizon's Sector A antennas at the antenna face level. At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately 13.30 percent of the FCC's general public limit (2.66 percent of the FCC's occupational limit).

The Site Signage 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 on the street facing side of the utility pole, 9 feet below antenna bottom.

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 Signage plan, which is included as Appendix B. Individuals and workers accessing the roof should be provided with a copy of the attached Site Signage plan, made aware of the posted signage, and signify their understanding of the Site Signage plan.

Implementation of the signage recommended in the Site Signage 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 SF EL GRANADA 002 located at 51 Avenue Alhambra in Half Moon Bay, 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. The worst-case emitted power density may exceed the FCC's general public limit within approximately 13 feet of Verizon's proposed antennas at the antenna face level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 5 feet of Verizon's proposed antennas at the antenna face level. 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 Signage plan (attached); this plan includes procedures to shut down and lockout/tagout this wireless equipment in accordance with Verizon's standard operating protocol.

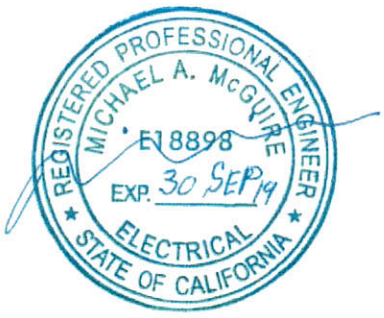
7.0 LIMITATIONS

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 1mar2018

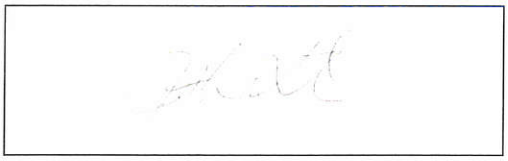
Michael McGuire
Electrical Engineer

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, Jonathan Ilgenfritz, state that:

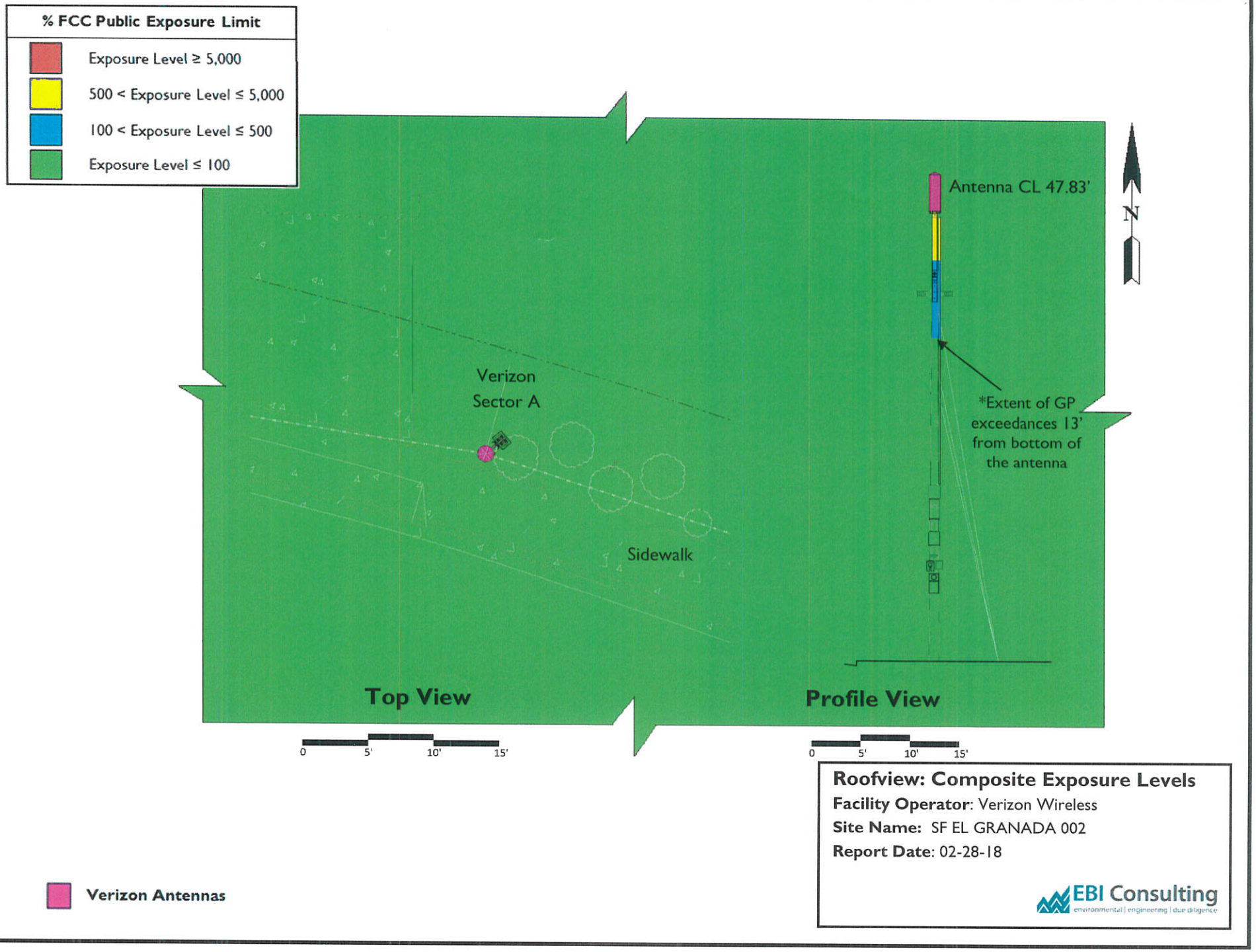
- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" 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.

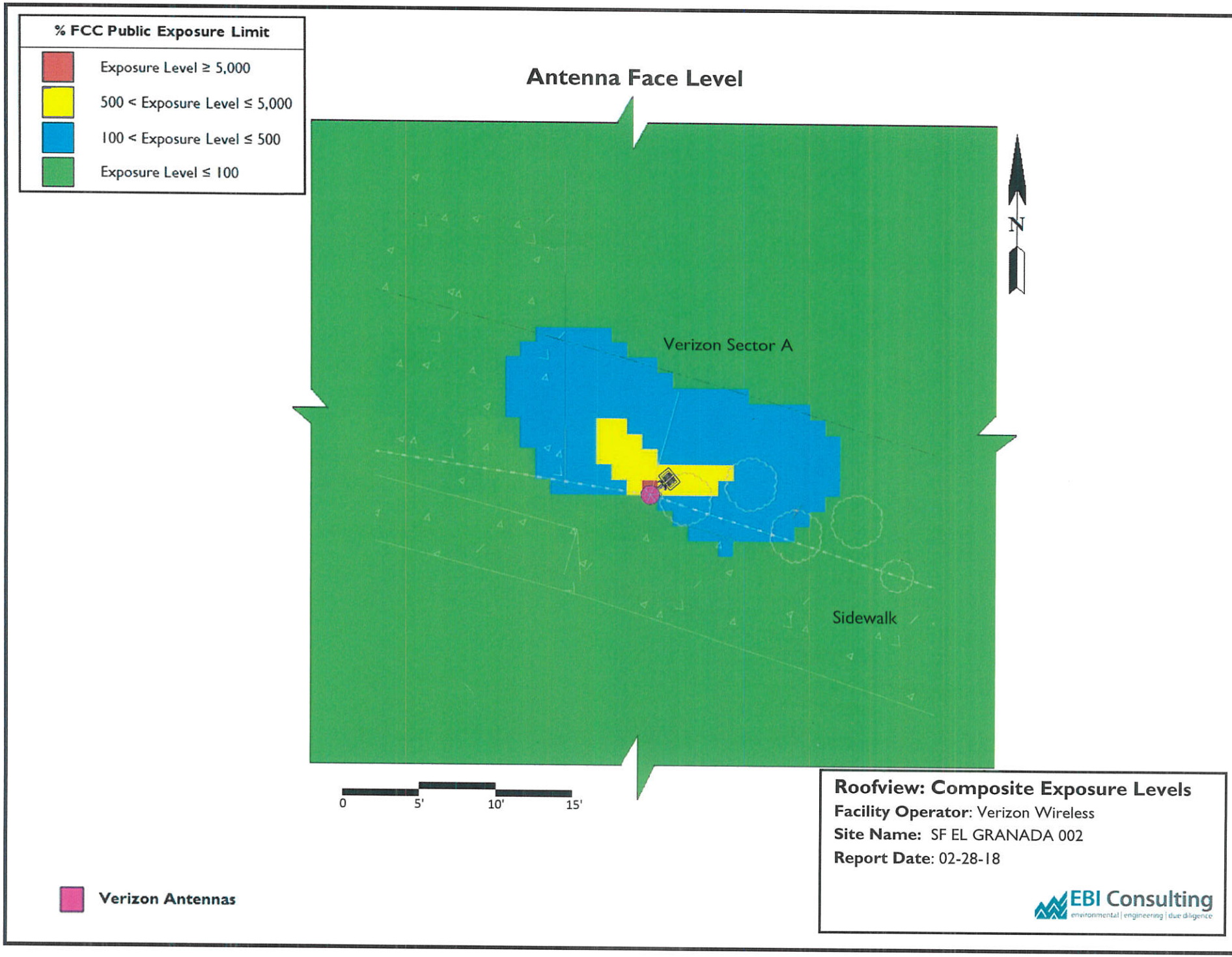


Appendix B

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
Verizon
Sector A
Sidewalk
Top View
0
5'
10'
15'
Antenna CL 47.83'
N
*Extent of GP exceedances 13' from bottom of the antenna
Profile View
0
5'
10'
15'
Roofview: Composite Exposure Levels
Facility Operator: Verizon Wireless
Site Name: SF EL GRANADA 002
Report Date: 02-28-18
EBI Consulting
environmental | engineering | due diligence
Verizon Antennas


% FCC Public Exposure Limit
Exposure Level ≥ 5,000
500 < Exposure Level ≤ 5,000
100 < Exposure Level ≤ 500
Exposure Level ≤ 100
Antenna Face Level
N
Verizon Sector A
Sidewalk
0
5'
10'
15'
Verizon Antennas
Roofview: Composite Exposure Levels
Facility Operator: Verizon Wireless
Site Name: SF EL GRANADA 002
Report Date: 02-28-18
EBI Consulting
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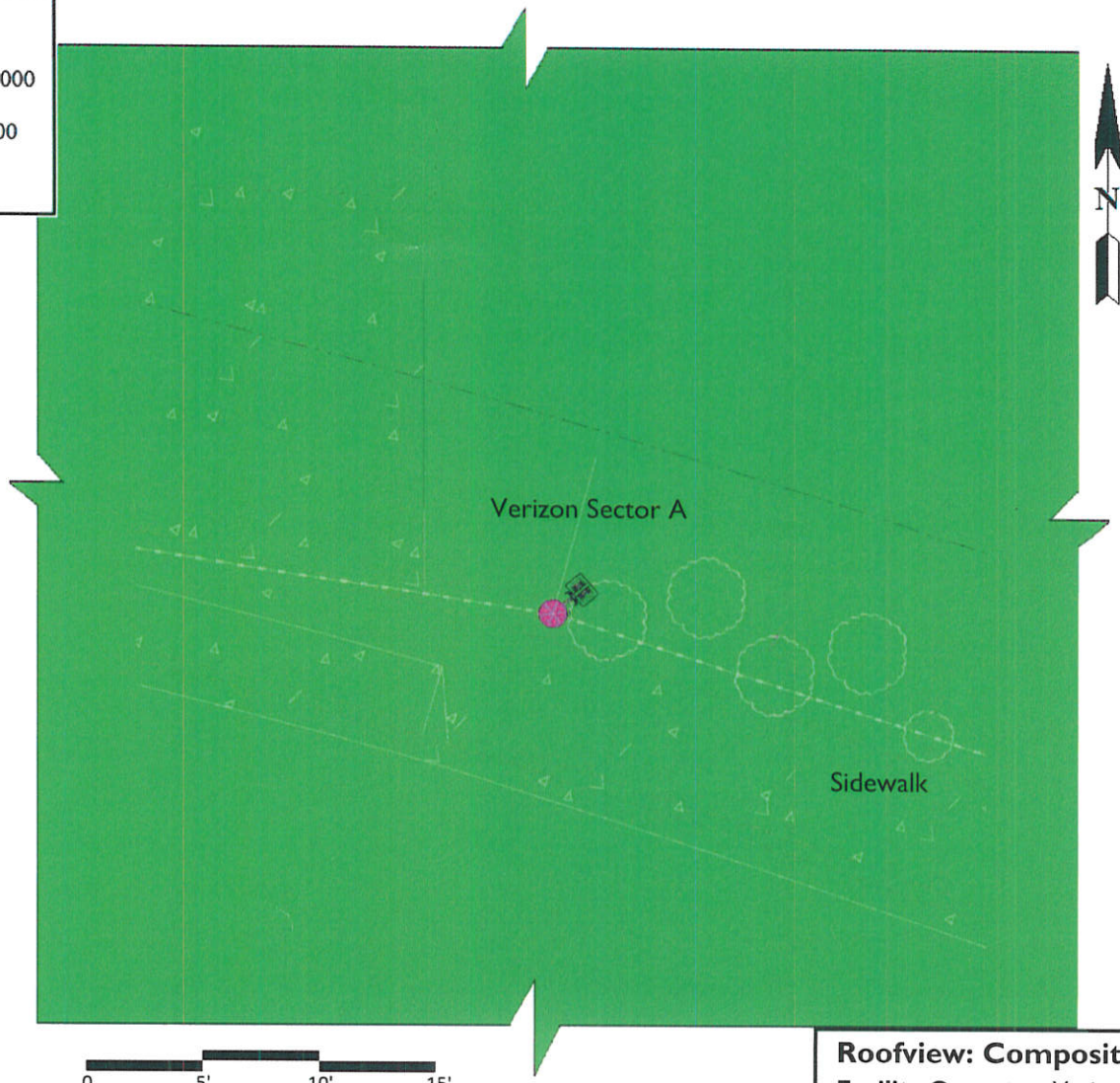
% FCC Public Exposure Limit	
	Exposure Level ≥ 5,000
	500 < Exposure Level ≤ 5,000
	100 < Exposure Level ≤ 500
	Exposure Level ≤ 100

Ground Level



Verizon Antennas

Roofview: Composite Exposure Levels

Facility Operator: Verizon Wireless

Site Name: SF EL GRANADA 002

Report Date: 02-28-18

EBI Consulting
environmental | engineering | due diligence


% FCC Public Exposure Limit
Exposure Level > 5
Exposure Level ≤ 5
N
Verizon Sector A
Sidewalk
0
5'
10'
15'
Verizon Antennas
Roofview: Verizon Exposure Levels
Facility Operator: Verizon Wireless
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EBI Consulting
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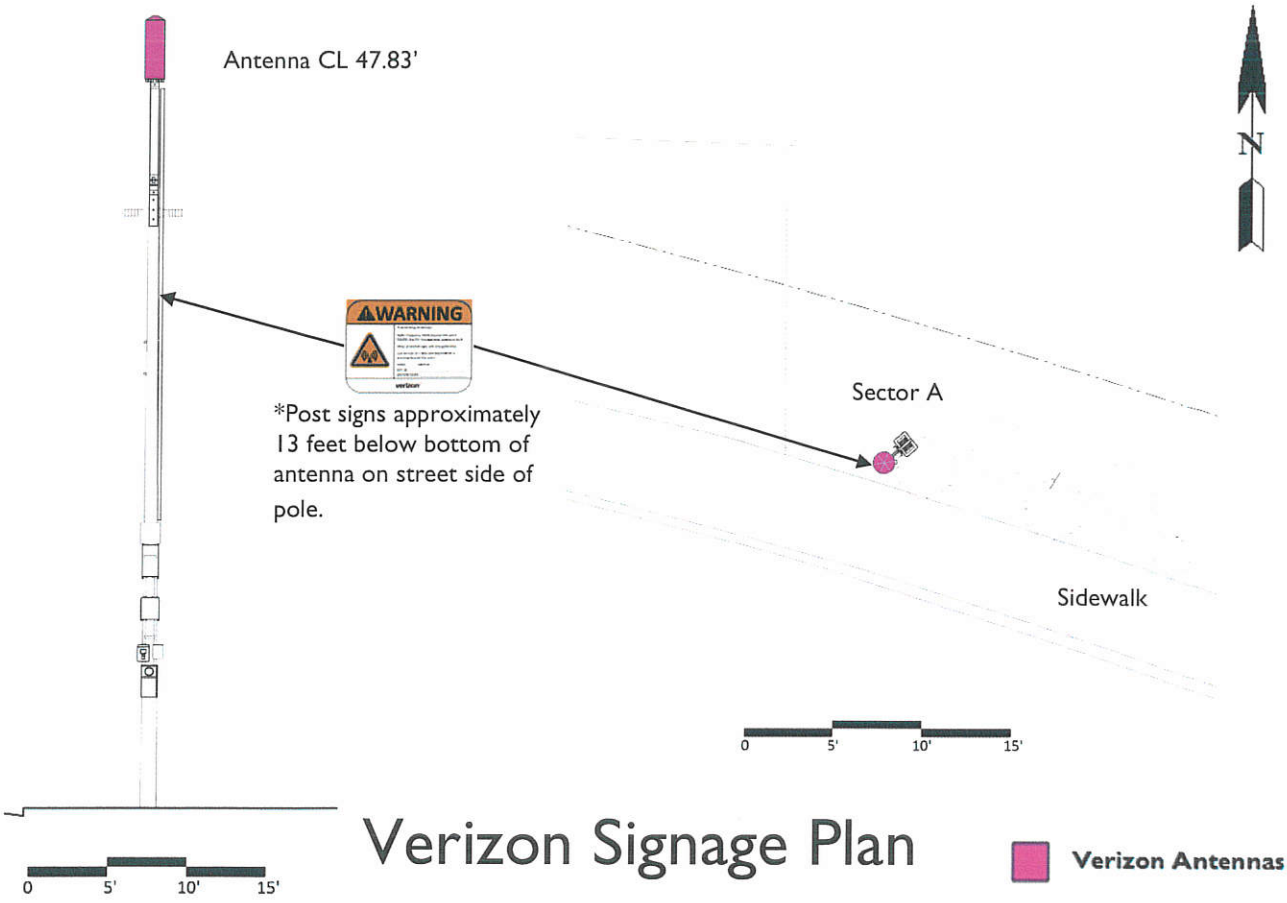

Verizon Signage Plan

Verizon Antennas

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.	Action not required.	Action not required.
	**NOC Information Sign** Informational sign with NOC Phone Number and Base Transceiver Station (BTS) Number	Action not required.	Action 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.	Action not required..	Action 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.	Action not required..	Action not required.
	**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).	Securely post one sign facing the street side of the utility pole approximately 13 feet below antenna.	1 sign is required.

Appendix C

Roofview® Export File

StartMapDefinition

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

List Of Areas
$AE$81:$ET$200

StartSettingsData

Standard	Method	Uptime	Scale Fact	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	47.7	Amphenol	CUUT070X12Fxyz0	30	30	45.8		4	10.35	82;80		ON•
VZW A1	LTE AWS	1900	60	1	0	0		1	47.7	Amphenol	CUUT070X12Fxyz0	30	30	45.8		4	13.95	75.4;80		ON•
VZW A1	LTE AWS	2100	60	1	0	0		1	47.7	Amphenol	CUUT070X12Fxyz0	30	30	45.8		4	14.05	73.7;80		ON•
VZW B1	LTE	700	60	1	0	0		1	47.7	Amphenol	CUUT070X12Fxyz0	30	30	45.8		4	10.35	82;320		ON•
VZW B1	LTE AWS	1900	60	1	0	0		1	47.7	Amphenol	CUUT070X12Fxyz0	30	30	45.8		4	13.95	75.4;320		ON•
VZW B1	LTE AWS	2100	60	1	0	0		1	47.7	Amphenol	CUUT070X12Fxyz0	30	30	45.8		4	14.05	73.7;320		ON•

StartSymbolData

Sym	Map Mark	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	