Staff Report to the Zoning Administrator

Application Number: 151040

Applicant: Gary Gochberg, Nexius/Beacon Development LLC (for Verizon)
Owner: County of Santa Cruz
APN: N/A (in County Right-of-Way on Rio Del Mar Blvd. near Hwy. 1 interchange, Aptos)

Agenda Date: ***June 19, 2015 (continued from April 17, 2015 and May 15, 2015)***
Agenda Item #: 1
Time: After 9:00 a.m.

Project Description: Proposal to install a Verizon microcell WCF on an existing 29.3-ft. tall utility pole on Rio Del Mar Blvd. adjacent to (south of) the Watsonville direction onramp of the Rio Del Mar Hwy. 1 interchange in Aptos, adjacent to the dividing property line between APNs 044-023-07 and 044-023-03. Project consists of one 2 foot tall by 4.6-inch diameter canister antenna, mounted atop a 7 foot high pole extension at the top of the existing pole, and other related pole-mounted equipment.

Location: Project is located in County right-of-way on Rio Del Mar Blvd. adjacent to (south of) the Watsonville direction onramp of the Rio Del Mar Hwy. 1 interchange, adjacent to the dividing property line between APNs 044-023-07 and 044-023-03 (311 Bonito Dr. and 762 Rio Del Mar Blvd.) and across Rio Del Mar Blvd. from the Rio Del Mar Arco station.

Supervisorial District: 2nd District (District Supervisor: Zach Friend)

Permits Required: Requires a Level 5 Commercial Development Permit and a Coastal Development Permit.

Technical Reviews: N/A

Staff Recommendation:

- Determine that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- Approval of Application151040, based on the attached findings and conditions.

Exhibits

A.	Categorical Exemption (CEQA determination)	E.	Assessor's, Location, Zoning and General Plan Maps
B.	Findings	F.	RF Radiation Emissions Report
C.	Conditions	G.	Photo Simulations
D.	***Revised*** Project plans	***H.***	***Alternative Site Analysis***

County of Santa Cruz Planning Department
701 Ocean Street, 4th Floor, Santa Cruz CA 95060

Parcel Information

Parcel Size:	N/A (in County right-of-way)
Existing Land Use - Parcel:	N/A (in County right-of-way)
Existing Land Use - Surrounding:	Office Commercial and Service Commercial
Project Access:	Rio Del Mar Blvd.
Planning Area:	Aptos Planning Area
Land Use Designation:	C-O (Office Commercial)
Zone District:	PA-SP (Professional Administrative Office – Salamander Protection District)
Coastal Zone:	X Inside ___ Outside
Appealable to Calif. Coastal Comm.	___ Yes X No

Environmental Information

Geologic Hazards:	Not mapped/no physical evidence on site
Soils:	N/A
Fire Hazard:	Not a mapped constraint
Slopes:	N/A
Env. Sen. Habitat:	Within Salamander Protection Zone
Grading:	No grading proposed
Tree Removal:	No trees proposed to be removed
Scenic:	Mapped as a General Plan Designated Scenic Area
Drainage:	Existing drainage adequate
Archeology:	Not mapped/no physical evidence on site

Services Information

Urban/Rural Services Line:	X Inside ___ Outside
Water Supply:	N/A
Sewage Disposal:	N/A
Fire District:	Aptos-La Selva Beach Fire Protection District
Drainage District:	Zone 6

History

No applications have been previously filed for this portion of County right-of-way.

Project Setting

The proposed subject utility pole is located in County right-of-way along the south side of Rio Del Mar Blvd., immediately southwest of the Watsonville-direction on-ramp of Hwy. 1 from Rio Del Mar Blvd. in Aptos. The utility pole is adjacent to (immediately north of) the dividing property line between 311 Bonita Dr. and 762 Rio Del Mar Blvd. (APNs 044-023-07 and 044-023-03, respectively), which are both PA-SP (Professional-Administrative Office – Salamander

Protection District) zoned parcels (14,245 sq. ft. and 12,750 sq. ft. in size, respectively) containing office buildings. The office buildings will be approximately 70-feet and 24-feet, respectively, away from the proposed microcell WCF. The nearest residence to the subject pole is at 310 Bonita Dr., approximately 184-feet away, on a parcel zoned R-1-10-SP (Single Family Residential – Salamander Protection District).

Zoning & General Plan Consistency

The subject utility pole is located on a portion of County right-of-way located in the PA-SP (Professional-Administrative Office – Salamander Protection District) zone district, a designation which allows microcell WCF uses. The proposed microcell WCF is a conditionally permitted use within the zone district and the zoning is consistent with the site's (C-O) Office Commercial General Plan designation.

Design Review

The proposed microcell WCF complies with the requirements of the County Design Review Ordinance, in that the proposed project will be part of an existing utility pole, increasing its bulk slightly, but still being relatively visually inconspicuous, and thus will have minimal visual impact on surrounding land uses and the natural landscape.

Radio Frequency Emissions

The County is prohibited by federal law from denying WCF applications, such as this one, on the basis of the health and/or environmental effects of radio frequency (RF) radiation so long as the WCF complies with the FCC's RF radiation emission limits. A RF radiation emissions calculation report has been prepared for this project by a qualified consulting engineer. The proposed facility is calculated to result in a maximum ambient RF level of no more than 8.6% of the applicable FCC public exposure limit at the nearest publically accessible ground-level area, and 7.4% of that limit at the nearest habitable structure.

New Information and Project Revisions

In response to concerns from neighbors raised at the April 17, 2015 and May 15, 2015 public hearings before the Zoning Administrator, the applicant has submitted a revised antenna design (see Exhibit D) that removes the antenna sectors that were to face the adjacent habitable structures (to the east), so that the transmission beam is directed only toward the Deer Park Center to the west (which is the main coverage objective). Also in response to concerns raised at the previous hearings, the applicant has submitted an Alternative Site Analysis (Exhibit H), which shows that other possible WCF locations and utility poles in the vicinity are either infeasible (due to PG&E pole incompatibility) or would be far more visually obtrusive (unreasonably tall) if they were to meet the coverage objective.

Environmental Review

Staff has determined that the proposed project is Categorically Exempt from the requirements of the California Environmental Quality Act (CEQA) because it qualifies as "New Construction or

Conversion of a Small Structure" (Class 3, Section 15303). The CEQA Categorical Exemption form is attached as Exhibit A.

Conclusion

As proposed and conditioned, the project is consistent with all applicable codes and policies of the Zoning Ordinance and General Plan/LCP. Please see Exhibit "B" ("Findings") for a complete listing of findings and evidence related to the above discussion.

Staff Recommendation

- Determine that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- **APPROVAL** of Application Number151040, based on the attached findings and conditions.

Supplementary reports and information referred to in this report are on file and available for viewing at the Santa Cruz County Planning Department, and are hereby made a part of the administrative record for the proposed project.

The County Code and General Plan, as well as hearing agendas and additional information are available online at: www.co.santa-cruz.ca.us

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CALIFORNIA ENVIRONMENTAL QUALITY ACT
NOTICE OF EXEMPTION

The Santa Cruz County Planning Department has reviewed the project described below and has determined that it is exempt from the provisions of CEQA as specified in Sections 15061 - 15332 of CEQA for the reason(s) which have been specified in this document.

Application Number: 151040
Assessor Parcel Number: N/A (in County right-of-way)
Project Location: On south side of Rio Del Mar Blvd. near 762 Rio Del Mar Blvd. in Aptos

Project Description: Proposal to construct a Verizon microcell WCF on an existing utility pole, including a small cylindrical antenna enclosure mounted on top of the pole and other pole mounted equipment.

Person or Agency Proposing Project: Gary Gochberg, Nexius/Beacon Development LLC (for Verizon)

Contact Phone Number: (707) 364-5164

A. _____ The proposed activity is not a project under CEQA Guidelines Section 15378.
B. _____ The proposed activity is not subject to CEQA as specified under CEQA Guidelines Section 15060 (c).
C. _____ **Ministerial Project** involving only the use of fixed standards or objective measurements without personal judgment.
D. _____ **Statutory Exemption** other than a Ministerial Project (CEQA Guidelines Section 15260 to 15285).

E. __X__ **Categorical Exemption**

Specify type: Type 3 - New Construction or Conversion of Small Structure (Section 15303)

F. Reasons why the project is exempt:

Construction of a microcell wireless communication facility on an existing utility pole is not anticipated to generate any environmental impacts.

In addition, none of the conditions described in Section 15300.2 apply to this project.

_____ Date: _____
Frank Barron, Project Planner

EXHIBIT A

Coastal Development Permit Findings

1. That the project is a use allowed in one of the basic zone districts, other than the Special Use (SU) district, listed in section 13.10.170(D) as consistent with the General Plan and Local Coastal Program (LCP) LUP designation.

This finding can be made, in that the County right-of-way (ROW) site is zoned PA-SP (Professional-Administrative Office – Salamander Protection), a designation which allows microcell wireless communication facility (WCF) uses. The proposed microcell WCF is a principal permitted use within the zone district, and the zoning is consistent with the site's C-O (Office Commercial) General Plan/LCP designation.

2. That the project does not conflict with any existing easement or development restrictions such as public access, utility, or open space easements.

This finding can be made, in that no such easements or restrictions are known to encumber the project site.

3. That the project is consistent with the design criteria and special use standards and conditions of this chapter pursuant to section 13.20.130 et seq.

This finding can be made, in that the development is consistent with the surrounding neighborhood in terms of visual impact; the site is surrounded by lots developed to an urban density and transportation infrastructure (e.g., Hwy. 1); the colors will be natural in appearance and complementary to the site; and the development site is not on a prominent ridge, beach, or bluff top.

4. That the project conforms with the public access, recreation, and visitor-serving policies, standards and maps of the General Plan and Local Coastal Program land use plan, specifically Chapter 2: figure 2.5 and Chapter 7, and, as to any development between and nearest public road and the sea or the shoreline of any body of water located within the coastal zone, such development is in conformity with the public access and public recreation policies of Chapter 3 of the Coastal Act commencing with section 30200.

This finding can be made, in that the project site is not located between the shoreline and the first public road. Consequently, the microcell WCF will not interfere with public access to the beach, ocean, or any nearby body of water. Further, the project site is not identified as a priority acquisition site in the County Local Coastal Program.

5. That the proposed development is in conformity with the certified local coastal program.

This finding can be made, in that the structure is sited and designed to be visually compatible, in scale, and integrated with the character of the surrounding neighborhood. Additionally, microcell WCF uses are allowed uses in the PA-SP (Professional-Administrative – Salamander Protection) zone district. Developed parcels in the area contain commercial office buildings and other commercial structures, and the design submitted is not inconsistent with them.

EXHIBIT B

Development Permit Findings

1. That the proposed location of the project and the conditions under which it would be operated or maintained will not be detrimental to the health, safety, or welfare of persons residing or working in the neighborhood or the general public, and will not result in inefficient or wasteful use of energy, and will not be materially injurious to properties or improvements in the vicinity.

This finding can be made in that the project is located in a zone district that allows microcell wireless communication facility (WCF) uses and is not encumbered by physical constraints to development. Construction will comply with prevailing building technology, the California Building Code, and the County Building ordinance to insure the optimum in safety and the conservation of energy and resources. The proposed microcell WCF will not deprive adjacent properties or the neighborhood of light, air, or open space, in that the structure meets all currently required site standards that ensure access to these amenities.

2. That the proposed location of the project and the conditions under which it would be operated or maintained will be consistent with all pertinent County ordinances and the purpose of the zone district in which the site is located.

This finding can be made in that the proposed location of the microcell WCF and the conditions under which it would be operated/maintained will be consistent with all pertinent County ordinances, and not inconsistent with the purpose of the PA-SP (Professional Administrative Office – Salamander Protection) zone district, as one of the allowed uses of County right-of-way under this zoning designation are microcell WCFs.

3. That the proposed use is consistent with all elements of the County General Plan and with any specific plan which has been adopted for the area.

This finding can be made in that the proposed WCF use is not inconsistent with the use requirements specified for the (C-O) Office Commercial land use designation in the County General Plan. The proposed microcell WCF will not adversely impact the light, solar opportunities, air, and/or open space available to other structures or properties, and meets all current site and development standards for the zone district, in that the microcell WCF will not adversely shade adjacent properties, and will meet current height limits for WCFs in the zone district.

A specific plan has not been adopted for this portion of the County.

4. That the proposed use will not overload utilities and will not generate more than the acceptable level of traffic on the streets in the vicinity.

This finding can be made in that the proposed microcell WCF is to be constructed on an existing utility pole in County right-of-way. There will be no additional traffic generated by the proposed project, and it will not adversely impact existing roads or intersections in the surrounding area.

5. That the proposed project will complement and harmonize with the existing and proposed land uses in the vicinity and will be compatible with the physical design aspects, land use intensities, and dwelling unit densities of the neighborhood.

This finding can be made in that the proposed microcell structure is located in a commercial neighborhood containing a variety of structures of various architectural styles, and the proposed microcell WCF mounted upon an existing utility pole is not inconsistent with the land use style and intensity of the neighborhood.

6. The proposed development project is consistent with the Design Standards and Guidelines (sections 13.11.070 through 13.11.076), and any other applicable requirements of this chapter.

This finding can be made in that the proposed microcell WCF will be of an appropriate scale and type of design that will not detract from the aesthetic qualities of the surrounding properties and will not reduce or visually impact available open space in the surrounding area.

Wireless Communication Facility Use Permit Findings

1. The development of the proposed wireless communications facility as conditioned will not significantly affect any designated visual resources, environmentally sensitive habitat resources (as defined in the Santa Cruz County General Plan/LCP Sections 5.1, 5.10, and 8.6.6), and/or other significant County resources, including agricultural, open space, and community character resources; or there are no other environmentally equivalent and/or superior and technically feasible alternatives to the proposed wireless communications facility as conditioned (including alternative locations and/or designs) with less visual and/or other resource impacts and the proposed facility has been modified by condition and/or project design to minimize and mitigate its visual and other resource impacts.

This finding can be made in that the proposed WCF is of the microcell type which, due to its small size and co-location onto an existing utility pole, is one of the least visually obtrusive types of WCF. Moreover, its installation and use in a road right-of-way will not involve any grading or excavation and will not impact any sensitive habitat resources or other significant County resources, including agricultural, open space, and community character resources. Finally, there are no other environmentally equivalent and/or superior and technically feasible alternatives to the proposed microcell designs that have less visual and/or other resource impacts.

2. The site is adequate for the development of the proposed wireless communications facility and, for sites located in one of the prohibited and/or restricted areas set forth in Sections 13.10.661(B) and 13.10.661 (C), that the applicant has demonstrated that there are not environmentally equivalent or superior and technically feasible: (1) alternative sites outside the prohibited and restricted areas; and/or (2) alternative designs for the proposed facility as conditioned.

This finding can be made in that the proposed microcell WCF is to consist of antennas mounted upon an existing utility pole in the County right-of-way, an area where numerous utility poles are already located. Microcell WCF installations co-located on existing utility poles, such as these, are encouraged in the WCF Ordinance as the preferred WCF design, due to their relatively inconspicuous nature.

3. The subject property upon which the wireless communications facility is to be built is in compliance with all rules and regulations pertaining to zoning uses, subdivisions and any other applicable provisions of this title (County Code 13.10.660) and that all zoning violation abatement costs, if any, have been paid.

This finding can be made in that the existing infrastructure uses of the subject right-of-way are in compliance with the requirements of the zone districts and General Plan designations, in which they are located, and that there are no outstanding or unpaid zoning violation abatement costs.

4. The proposed wireless communication facility as conditioned will not create a hazard for aircraft in flight.

This finding can be made, in that the proposed microcell WCF will be located on an existing

approximately 29.3-foot tall existing utility pole, with a total proposed height of 38.3-feet with the pole height extender and antenna, the top of which is at a height too low to interfere with the observed height of aircraft from nearby airports.

5. The proposed wireless communication facility as conditioned is in compliance with all FCC and California PUC standards and requirements.

This finding can be made in that the maximum ambient RF levels at ground level due to the existing wireless communications facilities and the proposed operation are calculated to be 8.6% percent of the most restrictive applicable (FCC) limit.

6. For wireless communication facilities in the coastal zone, the proposed wireless communication facility as conditioned is consistent with the all applicable requirements of the Local Coastal Program.

This finding can be made in that the proposed microcell WCF is designed and located in a manner that will minimize potential impacts to scenic and biotic resources (e.g., there will be no grading/excavation or ground disturbance), and that the construction of the proposed facility will not impede access to the beach or other recreational resources.

Conditions of Approval

Exhibit D: Project Plans, 12 sheets, prepared by Precision Design and Drafting, Inc., dated 2/23/15

I. This permit authorizes the construction of a microcell wireless communications facility (WCF) on an existing utility pole. This approval does not confer legal status on any existing structure(s) or existing use(s) on the subject property that are not specifically authorized by this permit. Prior to exercising any rights granted by this permit including, without limitation, any construction or site disturbance, the applicant/owner shall:

A. Sign, date, and return to the Planning Department one copy of the approval to indicate acceptance and agreement with the conditions thereof.

B. Obtain a Building Permit from the Santa Cruz County Building Official.

1. Any outstanding balance due to the Planning Department must be paid prior to making a Building Permit application. Applications for Building Permits will not be accepted or processed while there is an outstanding balance due.

C. Obtain an Encroachment Permit from the Department of Public Works for all work performed in the County road right-of-way.

D. Submit proof that these conditions have been recorded in the official records of the County of Santa Cruz (Office of the County Recorder) within 30 days from the effective date of this permit.

II. Prior to issuance of a Building Permit the applicant/owner shall:

A. Submit final architectural plans for review and approval by the Planning Department. The final plans shall be in substantial compliance with the plans marked Exhibit "D" on file with the Planning Department. Any changes from the approved Exhibit "D" for this development permit on the plans submitted for the Building Permit must be clearly called out and labeled by standard architectural methods to indicate such changes. Any changes that are not properly called out and labeled will not be authorized by any Building Permit that is issued for the proposed development. The final plans shall include the following additional information:

1. One elevation shall indicate materials and colors as they were approved by this Discretionary Application. If specific materials and colors have not been approved with this Discretionary Application, in addition to showing the materials and colors on the elevation, the applicant shall supply a color and material board in 8 1/2" x 11" format for Planning Department review and approval.

EXHIBIT C

2. Details showing compliance with fire department requirements. If the proposed structure(s) are located within the State Responsibility Area (SRA) the requirements of the Wildland-Urban Interface code (WUI), California Building Code Chapter 7A, shall apply.

B. Submit four copies of the approved Discretionary Permit with the Conditions of Approval attached. The Conditions of Approval shall be recorded prior to submittal, if applicable.

C. Meet all requirements and pay any applicable plan check fee of the Central Fire Protection District.

III. All construction shall be performed according to the approved plans for the Building Permit. Prior to final building inspection, the applicant/owner must meet the following conditions:

A. All site improvements shown on the final approved Building Permit plans shall be installed.

B. All inspections required by the building permit shall be completed to the satisfaction of the County Building Official.

C. The project must comply with all recommendations of the approved soils reports.

D. Pursuant to Sections 16.40.040 and 16.42.080 of the County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this development, any artifact or other evidence of an historic archaeological resource or a Native American cultural site is discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner if the discovery contains human remains, or the Planning Director if the discovery contains no human remains. The procedures established in Sections 16.40.040 and 16.42.080, shall be observed.

IV. Post-Construction Radio-Frequency (RF) Radiation Measurement and Reporting

Monitoring of RF radiation to verify compliance with the FCC's RF emission standards is required for all new wireless communication facilities and for all wireless communication facilities proposing to undergo a major modification of power output (as defined in SCCC 13.10.660(D)). This requirement shall be met through submission of a report documenting RF measurements at the facility site within 90-days after the commencement of normal operations, and/or within 90-days after any major modification to power output of the facility. The RF measurements shall be made, at the applicant's expense, by a qualified third-party telecommunications or RF engineer, during typical peak-use periods, utilizing the

EXHIBIT C

Monitoring Protocol described in SCCC 13.10.660(D). The report shall list and describe each transmitter/antenna present at the facility, indicating the effective radiated power of each (for co-located facilities this would include the antennas of all other carriers at the site). The report shall include field measurements of RF emissions generated by the facility and also other emission sources, from various directions and particularly from adjacent areas with residential dwellings and any other areas accessible to the public where the highest RF levels would be experienced. The report shall compare the measured results to the FCC RF occupational and public exposure standards for such facilities. The report documenting the measurements and the findings with respect to compliance with the established FCC RF exposure standards, shall be submitted to the Planning Director (or project planner) within 90-days of commencement of facility operation. Failure to comply with this requirement may result in the initiation of permit revocation proceedings by the County.

V. Operational Conditions

A. In the event that future County inspections of the subject property disclose noncompliance with any Conditions of this approval or any violation of the County Code, the owner shall pay to the County the full cost of such County inspections, including any follow-up inspections and/or necessary enforcement actions, up to and including permit revocation.

VI. As a condition of this development approval, the holder of this development approval ("Development Approval Holder"), is required to defend, indemnify, and hold harmless the COUNTY, its officers, employees, and agents, from and against any claim (including attorneys' fees), against the COUNTY, it officers, employees, and agents to attack, set aside, void, or annul this development approval of the COUNTY or any subsequent amendment of this development approval which is requested by the Development Approval Holder.

A. COUNTY shall promptly notify the Development Approval Holder of any claim, action, or proceeding against which the COUNTY seeks to be defended, indemnified, or held harmless. COUNTY shall cooperate fully in such defense. If COUNTY fails to notify the Development Approval Holder within sixty (60) days of any such claim, action, or proceeding, or fails to cooperate fully in the defense thereof, the Development Approval Holder shall not thereafter be responsible to defend, indemnify, or hold harmless the COUNTY if such failure to notify or cooperate was significantly prejudicial to the Development Approval Holder.

B. Nothing contained herein shall prohibit the COUNTY from participating in the defense of any claim, action, or proceeding if both of the following occur:

1. COUNTY bears its own attorney's fees and costs; and

2. COUNTY defends the action in good faith.

EXHIBIT C

C. Settlement. The Development Approval Holder shall not be required to pay or perform any settlement unless such Development Approval Holder has approved the settlement. When representing the County, the Development Approval Holder shall not enter into any stipulation or settlement modifying or affecting the interpretation or validity of any of the terms or conditions of the development approval without the prior written consent of the County.

D. Successors Bound. "Development Approval Holder" shall include the applicant and the successor'(s) in interest, transferee(s), and assign(s) of the applicant.

Minor variations to this permit which do not affect the overall concept or density may be approved by the Planning Director at the request of the applicant or staff in accordance with Chapter 18.10 of the County Code.

Please note: This permit expires three years from the effective date listed below unless a building permit (or permits) is obtained for the primary structure described in the development permit (does not include demolition, temporary power pole or other site preparation permits, or accessory structures unless these are the primary subject of the development permit). Failure to exercise the building permit and to complete all of the construction under the building permit, resulting in the expiration of the building permit, will void the development permit, unless there are special circumstances as determined by the Planning Director.

Approval Date: _____

Effective Date: _____

Expiration Date: _____

Wanda Williams	Frank Barron, AICP
Deputy Zoning Administrator	Project Planner

Appeals: Any property owner, or other person aggrieved, or any other person whose interests are adversely affected by any act or determination of the Zoning Administrator, may appeal the act or determination to the Planning Commission in accordance with chapter 18.10 of the Santa Cruz County Code.

EXHIBIT C

verizonwireless

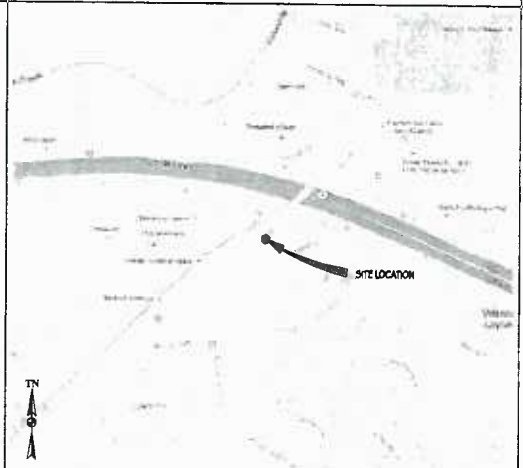
RIO DEL MAR SC1

(NEAR) 762 RIO DEL MAR BLVD
APTOS, CA 95003

SITE INFORMATION

OWNER:	JOINT POLE AUTHORITY
APPLICANT:	VERIZON WIRELESS 2785 MITCHELL DRIVE, SUITE #9 WALNUT CREEK, CA 94596
AGENT:	NEXIUS 1301 CENTRAL EXPRESSWAY SOUTH, SUITE #200 ALLEN, TX 75013 (703) 650-7777
APN:	ROW
SITE ADDRESS:	(NEAR) 762 RIO DEL MAR APTOS, CA 95003
JRITY:	SANTA CRUZ
TUDE:	36° 58' 27.77" N (36.974358) NAD 83
LONGITUDE:	121° 53' 13.24" W (-121.886701) NAD 83
GROUND ELEVATION:	±155.7' AMSL
ZONING:	PUBLIC ROW
ZONING JURISDICTION:	COUNTY OF SANTA CRUZ

VICINITY MAP



PROJECT TEAM

AGENT:

BOB GUNDERMANN
BEACON DEVELOPMENT
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PLEASANTON, CA 94566
(925) 899-1999
BOB@BEACONDEV.NET

PROJECT MANAGER:

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CONSTRUCTION MANAGER:

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ZACHARY.MANN@NEXIUS.COM

ARCHITECT/ENGINEER OF RECORD:

BRET McCOMB
PRECISION DESIGN & DRAFTING INC.
11768 ATWOOD ROAD, SUITE #20
AUBURN, CA 95603
(530) 823-6846
BRET@PDND.COM

VERIZON PROJECT MANAGER:

MAUREEN CRUZEN
(925) 279-6636
MAUREEN.CRUZEN@VERIZONWIRELESS.COM

PROJECT DESCRIPTION

THIS IS AN UNMANNED TELECOMMUNICATIONS FACILITY FOR VERIZON WIRELESS CONSISTING OF THE INSTALLATION & OPERATION OF ANTENNAS & ASSOCIATED EQUIPMENT OF AN (E) WOOD JPA POLE IN THE PUBLIC RIGHT OF WAY.

SCOPE OF WORK:

1. INSTALL (6) TELECOMMUNICATIONS EQUIPMENT CONSISTING OF (2) (6) RRH, (6) CHARLES CABINET, (6) CANISTER ANTENNA, (6) ELECTRICAL METER, & (6) UTILITY DISCONNECT MOUNTED ON (E) WOOD JPA POLE.
2. ALL EQUIPMENT TO BE PAINTED TO MEET JURISDICTION APPROVAL.
3. UTILITY LINES BETWEEN (E) POINT OF CONNECTION & (E) POLE TO BE OVERHEAD.
4. TRANSPORT: DARK FIBER

DRAWING INDEX

SHEET NO:	SHEET TITLE
T-1	TITLE SHEET
T-2	GENERAL NOTES, LEGEND, & ABBREVIATIONS
C-1	SITE SURVEY
A-1	SITE PLAN
A-2	EQUIPMENT PLAN & ANTENNA PLANS
A-3	ELEVATIONS
A-4	ELEVATIONS
A-5	DETAILS
A-6	DETAILS
E-1	ELECTRICAL SPECS, NOTES, & ABBREVIATIONS
E-2	ELECTRICAL GROUND DIAGRAMS
E-3	ELECTRICAL SINGLE-LINE DIAGRAM & DETAILS

CODE COMPLIANCE

CONSTRUCTION WORKS & MATERIALS MUST COMPLY WITH ALL APPLICABLE NATIONAL, STATE & LOCAL CODES AS ADOPTED BY LOCAL JURISDICTION, INCLUDING BUT NOT LIMITED TO:

1. 2015 CALIFORNIA ADMINISTRATIVE CODE (INCL. TITLES 24 & 25)
2. 2013 CALIFORNIA BUILDING CODE
3. 2013 CALIFORNIA ELECTRICAL CODE
4. 2013 CALIFORNIA MECHANICAL CODE
5. 2013 CALIFORNIA PLUMBING CODE
6. 2015 CALIFORNIA FIRE CODE
7. LOCAL BUILDING CODES
8. CITY/COUNTY ORDINANCES
9. ANSI/EIA-TIA-222-G

HANDICAP REQUIREMENTS

THIS FACILITY IS UNMANNED & NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS & REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH CALIFORNIA STATE ADMINISTRATIVE CODE, TITLE 24 PART 2, SECTION 11058.3.4.2, EXCEPTION 1

DRIVING DIRECTIONS

DIRECTIONS FROM VERIZON WIRELESS WALNUT CREEK OFFICE

FROM: 2785 MITCHELL DR, WALNUT CREEK, CA 94598
TO: (NEAR) 762 RIO DEL MAR BLVD, APTOS, CA 95003

1.	HEAD NORTHEAST ON MITCHELL DR TOWARD OAK GROVE RD	90 FT
2.	TURN RIGHT ONTO OAK GROVE RD	0.4 MI
3.	TAKE THE 2ND RIGHT ONTO YGNACIO VALLEY RD	3.4 MI
4.	YGNACIO VALLEY RD TURNS SLIGHTLY RIGHT & BECOMES HILLSIDE AVE	0.1 MI
5.	TURN LEFT ONTO THE INTERSTATE 680 S RAMP TO SAN JOSE	0.3 MI
6.	MERGE ONTO I-680 S	33.3 MI
7.	TAKE THE MISSION BLVD/STATE ROUTE 262 EXIT TOWARD I-880	0.2 MI
8.	KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR MISSION BLVD W & MERGE ONTO MISSION BLVD	0.9 MI
9.	KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR INTERSTATE 880 SAN JOSE & MERGE ONTO I-880 S	15.0 MI
10.	CONTINUE ONTO CA-17 S	26.3 MI
11.	TAKE THE CALIFORNIA 1 S EXIT TOWARD WATSONVILLE/MONTEREY	0.7 MI
12.	MERGE ONTO CA-1 S	6.3 MI
13.	TAKE THE RIO DEL MAR BLVD EXIT	0.3 MI
14.	TURN RIGHT ONTO RIO DEL MAR BLVD	

END AT: (NEAR) 762 RIO DEL MAR BLVD, APTOS, CA 95003

ESTIMATED TIME: 1 HR 33 MINS ESTIMATED DISTANCE: 86 MI

At all services & grounding trenches, provide "WARNING" tape at 12" below grade.

CALL
"CALL BEFORE YOU DIG"
811/800-227-2600
NATIONWIDE UNDERGROUND SERVICE ALERT

ADMINISTRATIVE REQUIREMENTS

CONTRACTOR SHALL VERIFY ALL PLANS & (E) DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME. IF USING 11" X 17" PLOT, DRAWINGS WILL BE HALF SCALE.

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

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11768 Atwood Rd. Suite 20 Auburn, CA 95603

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WWW.NEXIUS.COM

REGISTERED PROFESSIONAL ENGINEER
BRET A. McCOMB
C 69681
EXP 09-30-16
CIVIL
STATE OF CALIFORNIA

RIO DEL MAR SC1

(NEAR) 762 RIO DEL MAR BLVD
APTOS, CA 95003

ISSUE STATUS

△	DATE	DESCRIPTION
	01/29/15	CD 90%
	02/23/15	CD 100%

DRAWN BY:	EDC
CHECKED BY:	T. LAWRENCE / M. WEBB
APPROVED BY:	B. McCOMB
DATE:	02/23/15

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

-15-

EXHIBIT D

GENERAL CONSTRUCTION NOTES

1. PLANS ARE INTENDED TO BE DIAGRAMMATIC OUTLINE 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) [illegible], FOR UTILITY LOCATIONS, 48 HOURS 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 [illegible] REQUIREMENTS REGARDING EARTHQUAKE RESISTANCE, FOR, BUT NOT LIMITED TO, PIPING, 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 DRAWINGS 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 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 DRAIN AND/OR FIELD TILE ENCOUNTERED/DISRUPTED DURING CONSTRUCTION SHALL BE RETURNED TO ITS 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.
14. INCLUDE [illegible] ITEMS PER VERIZON WIRELESS SPECIFICATIONS.

GENERAL NOTES FOR EXISTING CELL SITES

1. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR 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. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR 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 SUBCONTRACTOR 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. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, [illegible] TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
6. SUBCONTRACTOR 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. SUBCONTRACTOR'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 DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
3. SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

-AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
-AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
-TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARD FOR STRUCTURAL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES
-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) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRICAL EQUIPMENT
-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 AND TELCORDIA BASED NETWORK EQUIPMENT BUILDING SYSTEM (NEBS) PHYSICAL PROTECTION
TELCORDIA GR-947 CENTRAL OFFICE POWER WIRING
TELCORDIA GR-1275 GENERAL INSTALLATION REQUIREMENTS
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 [illegible] MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

GENERAL TRENCHING NOTES

1. BACKFILL 40" MINIMUM COVER FOR ALL ELECTRICAL CONDUITS.
2. BACKFILL 30" MINIMUM COVER FOR ALL TELECOMMUNICATIONS CONDUITS.
3. MINIMUM 1" SAND BEDDING BELOW CONDUITS, AND 6" COVERING ON TOP OF CONDUITS REQUIRED.
4. ALL ELECTRICAL CONDUITS FROM POWER COMPANY FROM ANY POLE, TRANSFORMER OR OTHER LOCATIONS WILL BE SLURRY BACKFILLED.
5. IN STREET SLURRY TO GRADE AND SEAL WITH 1-1/2" FOR AC CAP.
6. IN DIRT SLURRY 18" FROM GRADE AND FILL 95% COMPACTION NATIVE SOIL FOR BALANCE.
7. WARNING TAPE TO BE PLACED IN TRENCH 12" ABOVE ALL CONDUITS AND #10 TRACING TAPE ABOVE [illegible].

GENERAL GROUNDING NOTES

1. 5/8" x 10' ROD, CAD WELD BELOW GRADE
2. GROUND TESTED AT 5 OHMS OR LESS.
3. #6 GROUND AND BOND WIRE.
4. GROUNDS 3' FROM POLE.
5. PLACE 3 #10 GA WIRES FROM TELCO BREAKER TO FIBER OR STORAGE BOX.
6. WOOD MOLDING STAPLED EVERY 3' AND AT EACH END.

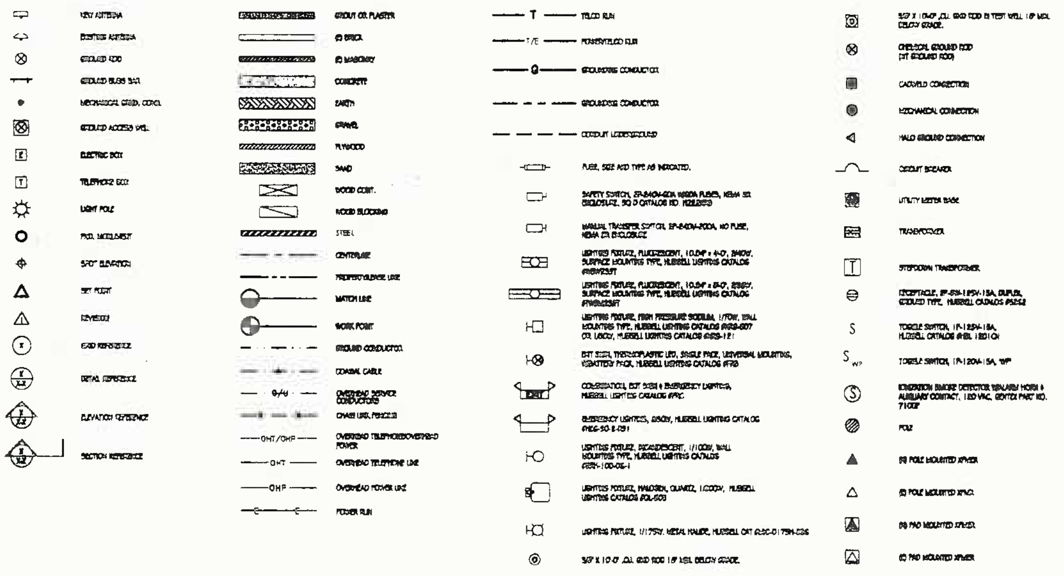
GENERAL CONDUIT NOTES

1. ALL CONDUITS WILL BE MANDRELLED AND EQUIPPED WITH 3/8" PULL ROPE.
2. SCHEDULE 40 CONDUIT FOR UNDERGROUND USE.
3. SCHEDULE 80 CONDUIT FOR RISER USE.
4. IF GALVANIZED STEEL CONDUIT FOR ANY CONDUIT UNDER 3', STUB UP 10' THEN CONVERT TO SCHEDULE 80.
5. CONVERT 4" CONDUIT TO 3" AT BASE OF POLE.
6. CONTRACTOR TO STUB UP POLE 10' w/ 3" POWER CONDUIT. POWER COMPANY TO CONVERT FROM 3" STUB SCHEDULE 80 TO 3" SCHEDULE 80 FROM TOP OF STUB UP.

TYPICAL R.O.W. POLE CONSTRUCTION NOTES

1. CABLE NOT TO IMPEDE 18" 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 CLIMBERS TO BE FILLED.
5. ON SHORT OFFSETS UNDER ANTENNA ARM, ALL CABLES MUST TRANSITION ON THE SIDE OR BOTTOM OF THE ARM NO CABLE ON TOP OF ARM.
6. USE 90° CONNECTOR AT CABLE CONNECTION FOR DOWN ANTENNAS.
7. USE CABLE CLAMPS TO SECURE CABLE TO ARMS, PLACE 3" FLEXIBLE CABLE UL 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 3' FROM TRANSMIT ANTENNA WHICH IS 36" AWAY FROM CENTER OF POLE.
10. FILL VOID AROUND CABLES AT CONDUIT OPENINGS WITH FOAM SEALANT TO PREVENT WATER INTRUSION.

SYMBOLS LEGEND



ABBREVIATIONS

A AMPERE
A.A. ANCHOR BOLT
ABV. ABOVE
ACCA ANTENNA CABLE COVER ASSEMBLY

[illegible]

---

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(703) 650-7777
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C 69691
EXP 09-30-16
CIVIL

RIO DEL MAR SC1

(NEAR) 762 RIO DEL MAR BLVD
APTOS, CA 95003

ISSUE STATUS

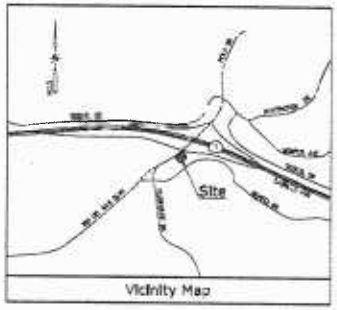
△	DATE	DESCRIPTION
	01/29/15	CD 90%
	02/25/15	CD 100%

DRAWN BY: EDC
CHECKED BY: T. LAWRENCE / M. WEISS
APPROVED BY: B. McCOMB
DATE: 02/25/15

SHEET TITLE
GENERAL NOTES, LEGEND, & ABBREVIATIONS

SHEET NUMBER
T-2

EXHIBIT D



Title Report

NOT APPLICABLE (RIGHT-OF-WAY)

Legal Description

NOT APPLICABLE (RIGHT-OF-WAY)

Assessor's Parcel No.

NOT APPLICABLE (RIGHT-OF-WAY)

Easements

NOT APPLICABLE (RIGHT-OF-WAY)

Geographic Coordinates at Existing Power Pole

NAD83 DATUM: LATITUDE 36° 58' 37.17"N, LONGITUDE 121° 53' 13.04"W
ELEVATION = 150.1± FEET ABOVE MEAN SEA LEVEL.

CERTIFICATION:
THE LATITUDE AND LONGITUDE SHOWN ABOVE ARE ACCURATE TO WITHIN +/- 15 FEET HORIZONTALLY AND THAT THE ELEVATIONS SHOWN ABOVE ARE ACCURATE TO WITHIN +/- 3 FEET VERTICALLY. THE HORIZONTAL DATUM (COORDINATES) IS IN TERMS OF THE NORTH AMERICAN DATUM OF 1983 (NAD 83) AND IS EXPRESSED IN DEGREES (°), MINUTES (') AND SECONDS ("), TO THE NEAREST HUNDREDTH OF A SECOND. THE VERTICAL DATUM (ELEVATIONS) IS IN TERMS OF THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND IS DETERMINED TO THE NEAREST TENTH OF A FOOT.

Basis of Bearings

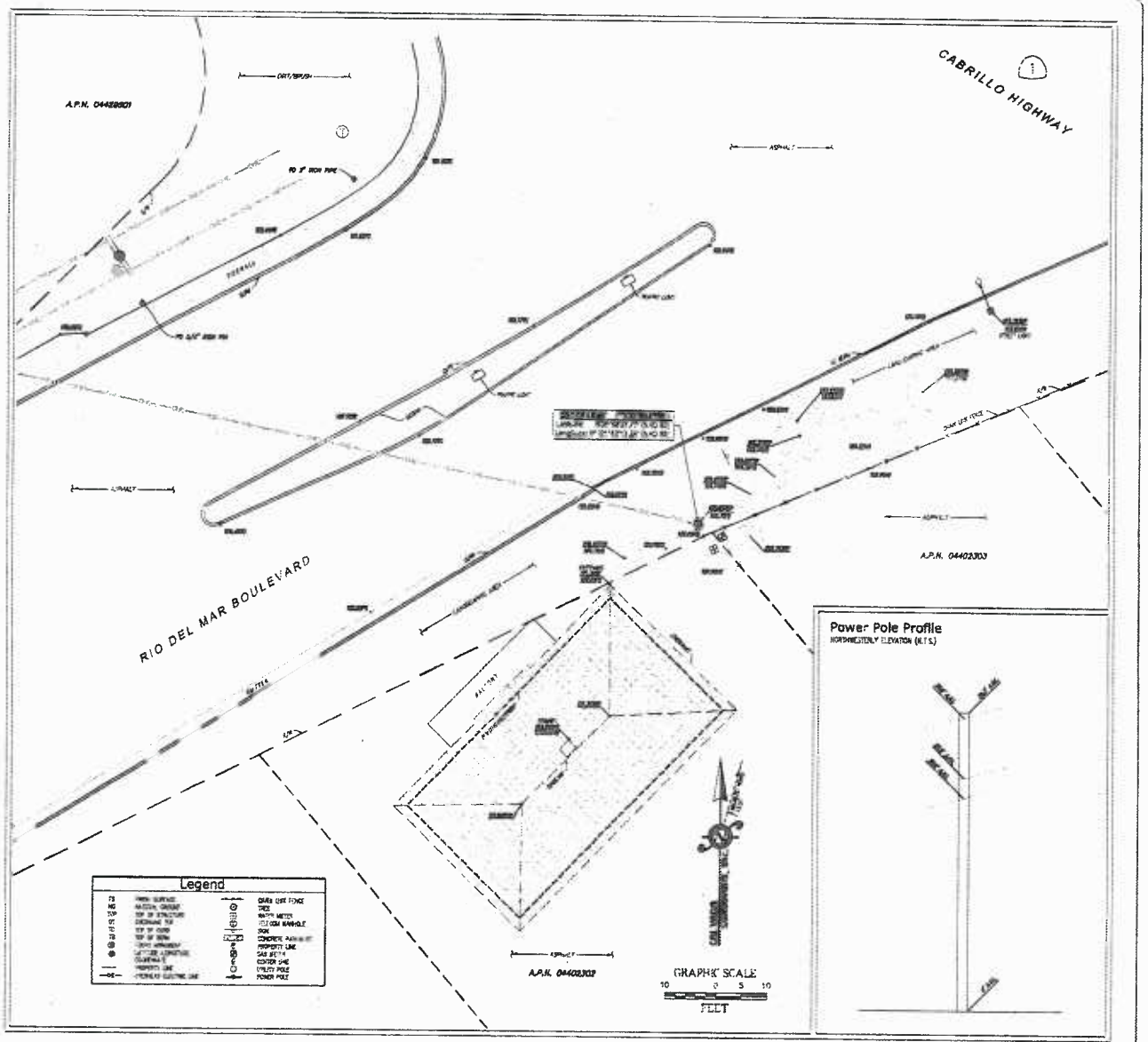
THE STATE PLANE COORDINATE SYSTEM OF 1983 (NAD 83), CALIFORNIA ZONE 3.

Bench Mark

THE CALIFORNIA SPATIAL REFERENCE CORS STATION, ELEVATION = 370.71 FEET (NAVD 88)

Date of Survey

JANUARY 20, 2015



PROPRIETARY INFORMATION

THE INFORMATION CONTAINED IN THIS SET OF CONSTRUCTION DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO VERIZON WIRELESS IS STRICTLY PROHIBITED.

CONSULTANT

CAL VADA SURVEYING, INC.

PREPARED FOR

verizonwireless

APPROVALS

R.F.	DATE
E&C AND ZONING	DATE
CM	DATE
VZW CM	DATE
OWNER APPROVAL	DATE

PROJECT NAME

RIO DEL MAR SC1

ADJACENT TO 762 RIO DEL MAR BLVD
LOS APTOS, CA 95003
SANTA CRUZ COUNTY

DATE	DESCRIPTION	BY
01/21/15	SUBMITTAL	AV

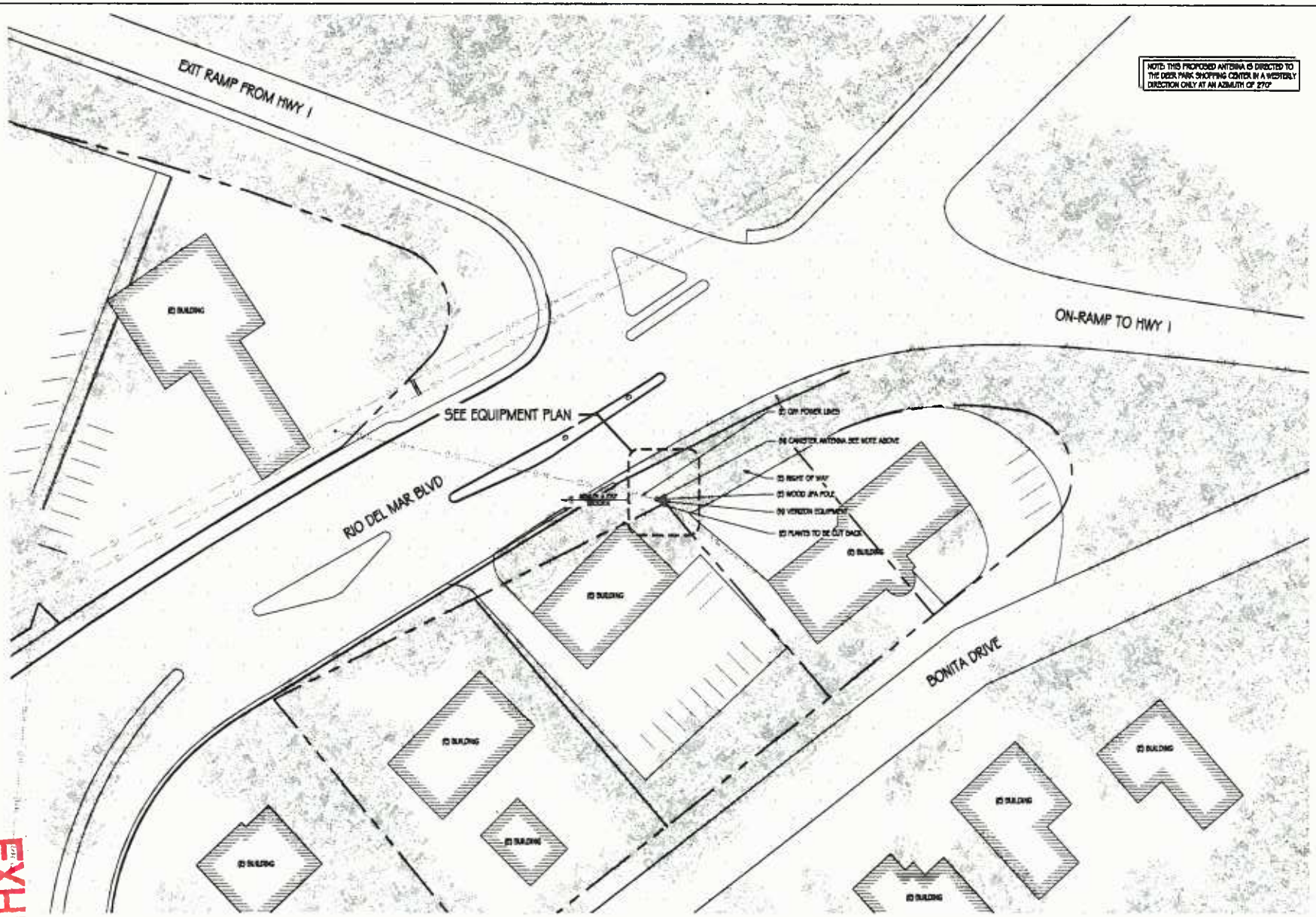
SHEET TITLE

TOPOGRAPHIC SURVEY

C-1

SHEET 1 OF 1

EXHIBIT D



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EXP 09-30-16
Civil
STATE OF CALIFORNIA

RIO DEL MAR SC1

(NEAR) 752 RIO DEL MAR BLVD
APTOS, CA 95003

ISSUE STATUS

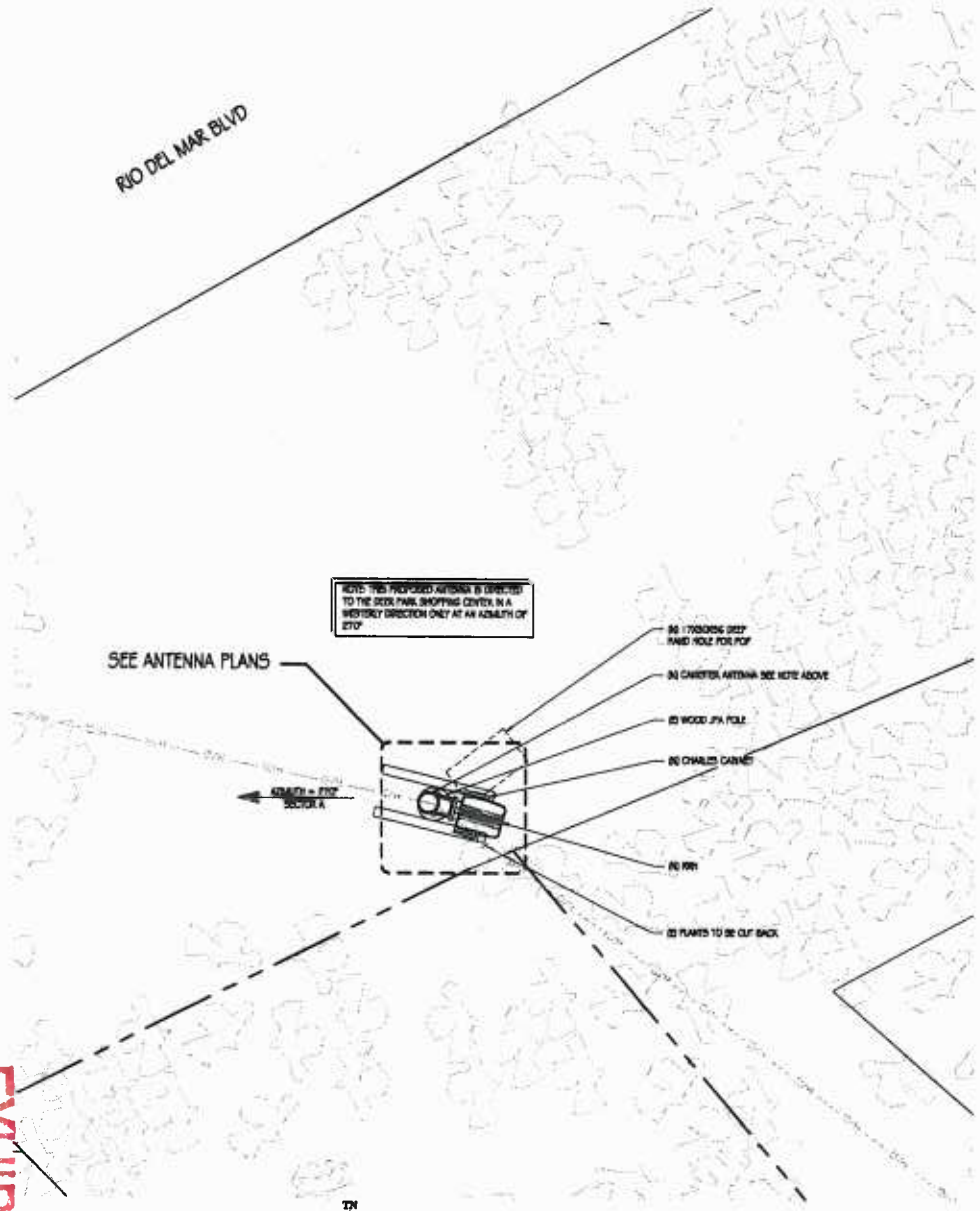
△	DATE	DESCRIPTION
	01/29/15	CD 90%
	02/23/15	CD 100%

DRAWN BY: EDC
CHECKED BY: T. LAWRENCE / M. WEBB
APPROVED BY: B. McCOMB
DATE: 02/23/15

SHEET TITLE:
SITE PLAN

SHEET NUMBER:
A-1

EXHIBIT D-1

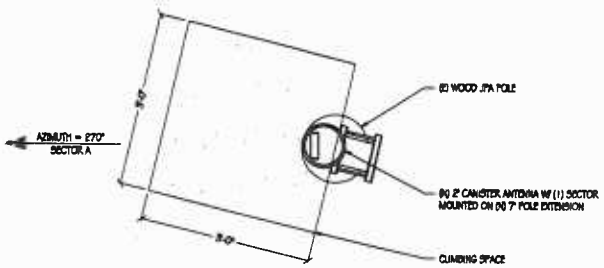


TN

EQUIPMENT PLAN

1/2"=1'

NOTE: THE AZIMUTH IS THE DETECTION THE ANTENNA IS POINTING

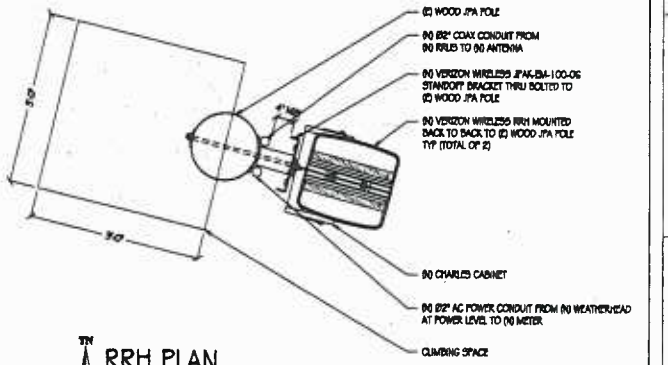


TN

ANTENNA PLAN

1"=1'

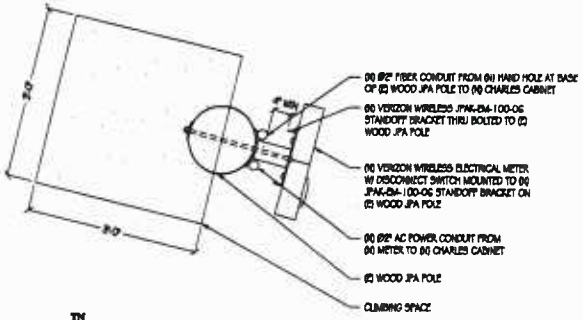
NOTE: THE AZIMUTH IS THE DETECTION THE ANTENNA IS POINTING



TN

RRH PLAN

1"=1'



TN

ELECTRICAL METER PLAN

1"=1'

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C 58691
EXP 09-30-16
CIVIL
STATE OF CALIFORNIA

RIO DEL MAR SC1

(NEAR) 762 RIO DEL MAR BLVD
APTOS, CA 95003

ISSUE STATUS

△	DATE	DESCRIPTION
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	08/23/15	CD 100%

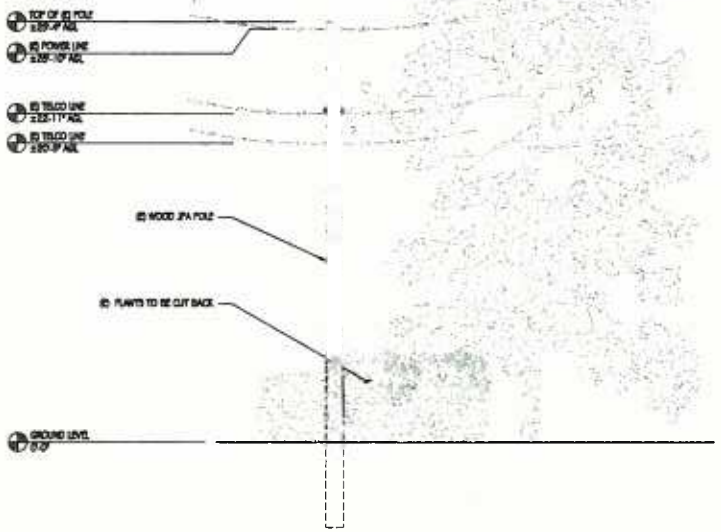
DRAWN BY:	EDC
CHECKED BY:	T. LAWRENCE / M. WEBB
APPROVED BY:	B. McCOMB
DATE:	08/23/15

SHEET TITLE:
EQUIPMENT & ANTENNA PLANS

SHEET NUMBER:
A-2

EXHIBIT D

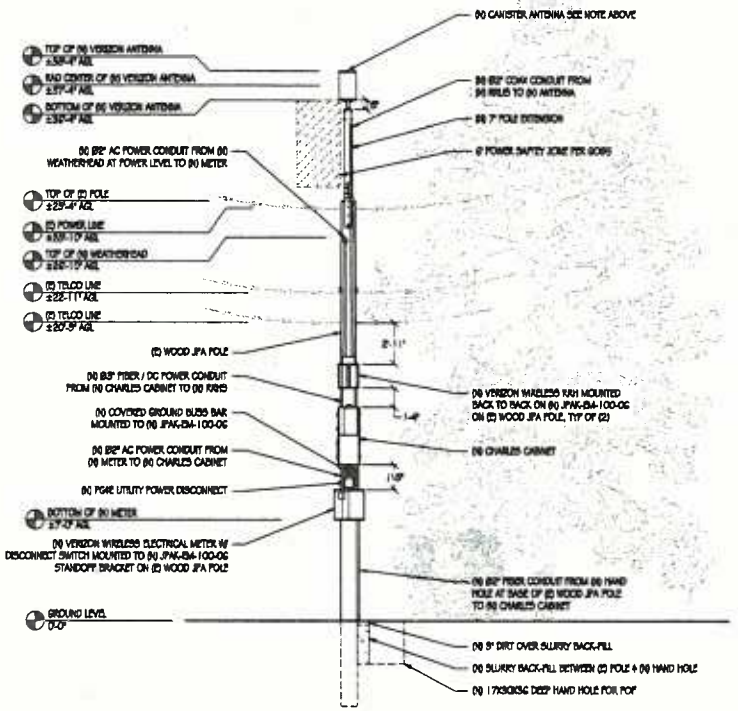
EXHIBIT D



EXISTING EAST ELEVATION

1/4"=1'-0"

NOTE: THIS PROPOSED ANTENNA IS DIRECTED TO THE DEER PARK SHOPPING CENTER IN A WESTERLY DIRECTION ONLY AT AN AZIMUTH OF 270°



NEW EAST ELEVATION

1/4"=1'-0"

NOTE: PAINT ALL (N) EQUIPMENT MESA BROWN

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WWW.NEXUS.CO

C 55601
EXP 06-30-16
CIVIL
STATE OF CALIFORNIA

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(NEAR) 762 RIO DEL MAR BLVD
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APPROVED BY:	B. McCOMB
DATE:	02/23/15

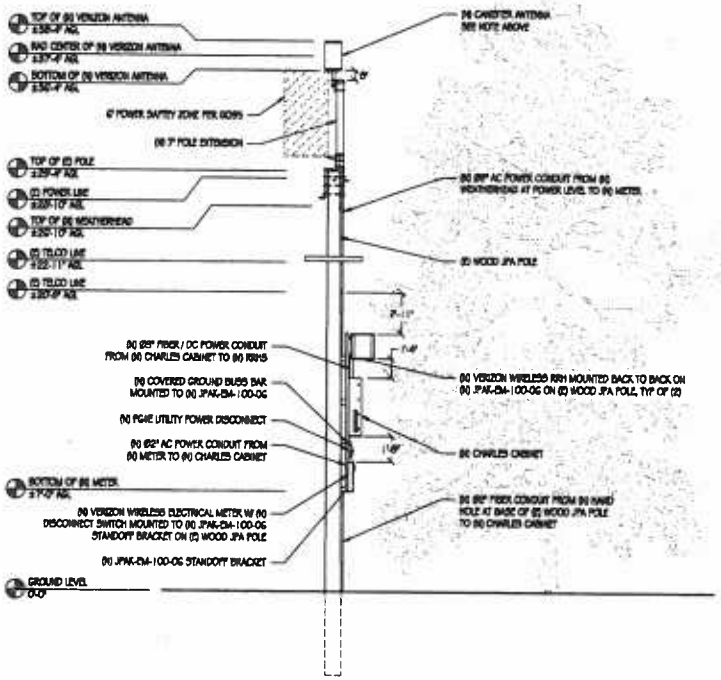
SHEET TITLE:
ELEVATIONS

SHEET NUMBER:
A-3

EXISTING SOUTH ELEVATION

1/4"=1'-0"

NOTE: THIS PROPOSED ANTENNA IS DIRECTED TO THE DEER PARK SHOPPING CENTER IN A WESTERLY DIRECTION ONLY AT AN AZIMUTH OF 270°



NEW SOUTH ELEVATION

1/4"=1'-0"

NOTE: PAINT ALL (N) EQUIPMENT MTEA BROWN

verizonwireless

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

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AUSTIN, TX 78703
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C 69601
EXP 06-30-16
Civil
STATE OF CALIFORNIA

RIO DEL MAR SC1

(NEAR) 7G2 RIO DEL MAR BLVD
APTOS, CA 95003

ISSUE STATUS

△	DATE	DESCRIPTION
	01/29/15	CD 90%
	02/23/15	CD 100%

DRAWN BY: EDC
CHECKED BY: T. LAWRENCE / M. WEISS
APPROVED BY: B. McCOMB
DATE: 02/23/15

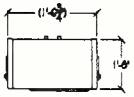
SHEET TITLE

ELEVATIONS

SHEET NUMBER

A-4

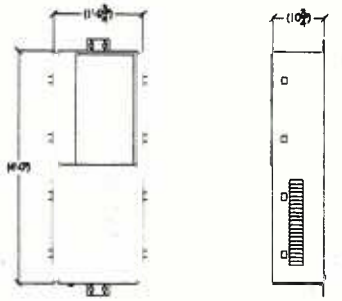
EXHIBIT D



TOP VIEW

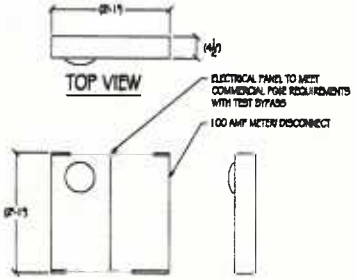
CHARLES UNIVERSAL BROADBAND ENCLOSURE (CUBE) - SC1042NAN3

TOTAL WEIGHT:	113 LBS (EMPTY), 280 LBS (W/ BATTERIES)
DIMENSIONS:	46X11X19"
EQUIP CHAMBER:	24X11X19"
BATT CHAMBER:	24X11X19"
THERMAL SPECS:	550W 48VDC HX
POWER:	GE SPS (2) 20A RECTIFIERS



FRONT VIEW SIDE VIEW

1 CABINET DETAIL

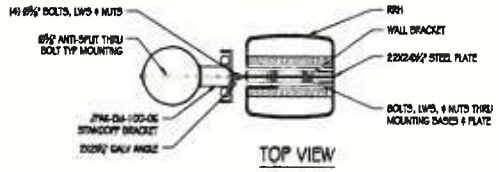


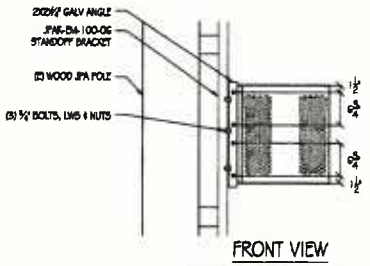
2 METER DETAIL

NOTES:

1. (N) VINYL SIGN TO BE PROVIDED BY VERIZON WIRELESS AND BE PLACED ON THE POLE 9' ABOVE GROUND LEVEL. COLOR TO BE DETERMINED PRIOR TO INSTALL.

3 FCC SIGN





4 RRH MOUNTING DETAIL

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

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(NEAR) 762 RIO DEL MAR BLVD
APTOS, CA 95003

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CHECKED BY:	T. LAWRENCE / M. WEISS
APPROVED BY:	B. McCOMB
DATE:	02/25/15

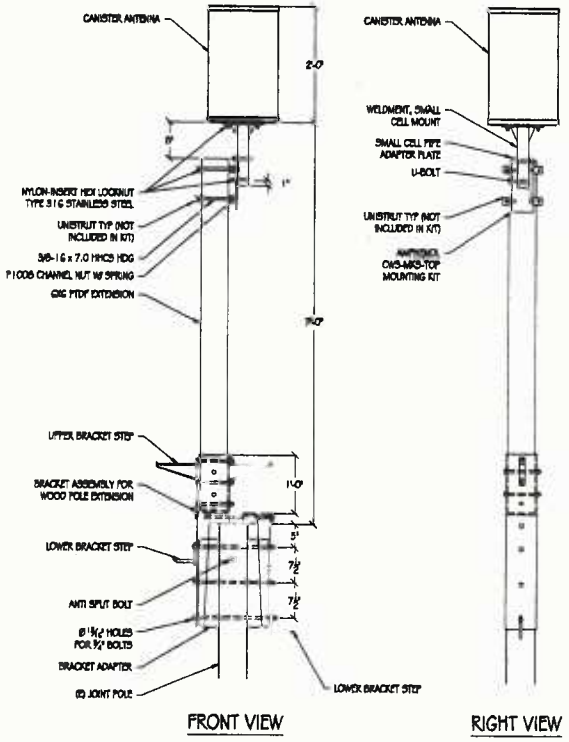
SHEET TITLE
DETAILS

SHEET NUMBER
A-5

EXHIBIT D

POLE-TOP EXTENSION NOTES:

1. THIS UNIT MEETS GENERAL ORDER (G.O.) 95 REQUIREMENTS FOR STRENGTH IN CLASS 6 POLES AND THEREFORE MAY BE USED TO SUPPORT EQUIPMENT ON THESE CLASSES OF POLES. IT MAY BE USED ON LARGER CLASS POLES, BUT MAY NOT BE USED TO SUPPORT EQUIPMENT ON THEM.
2. THE UNIT MAY BE GUYED.
3. THE BRACKET IS MADE TO FIT POLES WITH DIAMETERS OF 6"-11". THEREFORE, DEPENDING UPON THE ACTUAL POLE-TOP DIAMETER, TO FIT POLES OF CLASS 3 AND SMALLER, A BRACKET ADAPTER MAY BE REQUIRED.
4. UNITS ARE SUPPLIED WITH THE WOOD BAYONET ASSEMBLED.
5. A POLE STEP KIT IS REQUIRED.
6. ATTACH THE BRACKET ASSEMBLY ACROSS THE LINE DIRECTION WITH THE CROSS ARM.
7. ALL DETAILS SHOWN ON THIS PAGE ARE FOR REFERENCE ONLY. THE POLE-TOP EXTENSION AND ANTENNA MOUNTING SYSTEMS ARE PER UTILITY COMPANY STANDARDS AND ARE SUBJECT TO CHANGE AT THEIR DISCRETION. BOTH THE POLE-TOP EXTENSION AND ANTENNA MOUNTING SYSTEM SHALL BE INSTALLED BY THE UTILITY COMPANY.



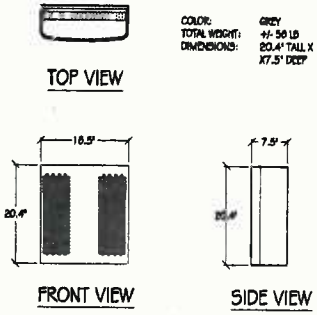
FRONT VIEW RIGHT VIEW

1 POLE-TOP EXTENSION DETAIL

1"=1'

ERICSSON RRUS-12

COLOR: GREY
TOTAL WEIGHT: +/- 56 LB
DIMENSIONS: 20.4" TALL X 18.5" WIDE X7.5" DEEP

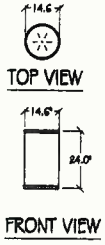


2 RRUS-12 DETAIL

1"=1'

AMPHENOL 696-960 / 1710-2170 MHZ

WIND AREA 2.40 SQ FT
WEIGHT 25 LBS
DIMENSIONS: Ø14.5" X 24" TALL
CONNECTOR: 12 PORTS / MINI DIN / FEMALE / BOTTOM



3 ANTENNA DETAIL

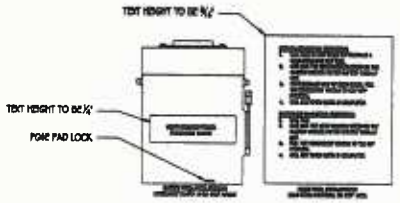
1/2"=1'

4 4" PVC BUSS BAR COVER

6"=1'

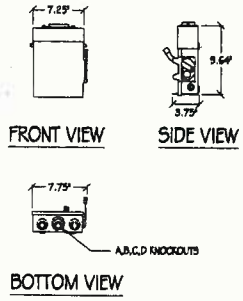
5 WEATHERHEAD DETAIL

1"=1'



6 DISCONNECT SIGNAGE

3"=1'



7 SERVICE DISCONNECT

3"=1'

verizonwireless
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ISSUE STATUS

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DRAWN BY: EDC
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DATE: 02/25/15
SHEET TITLE
DETAILS
SHEET NUMBER
A-6

EXHIBIT D-

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 ARCHITECT IN WRITING AND CEASE WORK ON PARTS OF THE CONTRACT WHICH ARE AFFECTED.

B. THE CONTRACTOR SHALL MAKE A SITE VISIT PRIOR TO BIDDING AND CONSTRUCTION TO VERIFY ALL EXISTING CONDITIONS AND SHALL NOTIFY THE ARCHITECT 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 SLD 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 ARCHITECT/ENGINEER.

F. 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.

G. 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.

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

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

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

2. EQUIPMENT LOCATION

A. 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 JUDGMENT 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 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.

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

D. 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 ARCHITECT/ENGINEER FOR THE PROPOSED CHANGES BEFORE PROCEEDING.

3. SHOP DRAWINGS

A. SUBMIT SIX (6) COPIES OF SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL WITHIN 35 DAYS OF AWARD OF CONTRACT. SHOP DRAWINGS SHALL BE SUBMITTED IN A COMPLETE BOUND MANUAL INCLUDING LIGHT FIXTURES, SERVICE MATERIALS, TRANSFER SWITCH, PANELBOARD, AND DISCONNECT SWITCHES. THE CONTRACTOR SHALL VERIFY DIMENSIONS OF EQUIPMENT TO ENSURE THAT THEY FIT IN THE DESIGNATED AREA AND COMPLY WITH REQUIREMENTS OF ALL APPLICABLE CODES FOR REQUIRED WORKING CLEARANCES ABOUT ELECTRICAL EQUIPMENT PRIOR TO SUBMITTING SHOP DRAWINGS FOR APPROVAL. DEPARTURE FROM THE ABOVE WILL RESULT IN RE-SUBMITTAL AND DELAYS.

4. SUBSTITUTIONS

A. NO SUBSTITUTIONS ARE ALLOWED

5. TESTS

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

6. 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.

7. 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 BE METALLICALLY JOINED TOGETHER TO PROVIDE SMALL 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 BUSS DETAILS. PROVIDE 480V SYSTEM COMPLETE WITH CONDUCTORS, GROUND 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 CONDUCTORS SHALL BE #2 STRANDED, GROUND THHN (GREEN) INSULATION.

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

H. PAINT AT ALL GROUND CONNECTIONS SHALL BE REMOVED.

I. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE OWNER FOR FUTURE INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE. SUBMIT TEST REPORTS AND FLUSHES TO SHOW SUCH. GIVE COMPLETE SET OF PRINTS SHOWING INSTALLED WORK.

8. 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.

9. PRODUCTS

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

B. CONDUIT:

B.A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED (GIC COATED WITH (GIC 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, (GIO CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAYER WRAPPED WITH 10MIL 50% OVERLAP PROTECTED PVC.

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

B.C. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "ANSI" OR "SQUEEZE" TYPE. SEAL TIGHT FLEXIBLE CONDUIT.

B.D. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL HAVE FULL SIZE GROUND WIRE.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.

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

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

B.G. CONDUITS RUN ON ROOFS SHALL BE INSTALLED ON 4 X 4 RED CHARLINS SLEEPERS, 6'-0" ON CENTER, SET IN NON-HARDENING MASTIC.

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. DUPLEX RECEPTACLES SHALL BE SPECIFICATION GRADE WITH WHITE FINISH (UNLESS NOTED BY ARCHITECT/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 #WTRD-S LIFT COVERPLATES.

F. TOGGLE SWITCHES SHALL BE #20 AMP, 120 VOLT AC, SPECIFICATION GRADE WHITE (UNLESS NOTED OTHERWISE) FINISH. MOUNT SWITCHES AT 44" ABOVE FINISHED FLOOR.

G. PANELBOARDS SHALL BE DEAD FRONT SAFETY TYPE WITH ANTI-BURN SOLDERLESS COMPRESSION APPROVED FOR COPPER CONDUCTORS, COPPER BUSS BARS, FULL SIZED NEUTRAL BUSS, GROUND BUSS AND EQUIPPED WITH QUICK-MAKE QUICK-BREAK, BOLT-ON TYPE THERMAL MAGNETIC CIRCUIT BREAKERS. MOUNT TOP OF THE PANELBOARDS AT 6'-0" ABOVE FINISHED FLOOR. PROVIDE TYPEWRITTEN CIRCUIT DIRECTORY.

H. 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.

I. GROUND RODS SHALL BE COPPER CLAD STEEL, 3/4" ROUND AND 10' LONG. COPPERWELD OR APPROVED EQUAL.

10. INSTALLATION

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

B. CUTTING, PATCHING, CHASED, 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 ARCHITECT/ENGINEER BEFORE CORING.

C. IN DRILLING HOLES INTO CONCRETE WHETHER FOR FASTENERS 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 ANY CIRCUMSTANCES.

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

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

11. PROJECT CLOSEOUT

A. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FULL 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 ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS.

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

1. SERVICE POWER SHALL BE 100A/1Ø, 3W, 120/240 OR 1 800/240V.
2. UTILITY RECEPTACLE IS A GFCI DUPLEX OUTLET INSTALLED IN THE DEMARCATION CP PIC.
3. PROVIDE A MIN. 36" WORK CLEARANCE IN FRONT OF PANEL/SERVICE EQUIP.
4. ALL BREAKERS IN THE ELEC. PANEL ARE RATED 10,000 RMS SYMMETRICAL AMPS, 240V MAX. 75° C.
5. ALL WIRING SHALL BE COPPER 75° C U.N.O.
6. CONDUIT REQUIREMENTS (TYP., U.N.O.): UNDERGROUND: PVC SCHED 40 OR 80 INDOOR: EMT (USE IN TRAFFIC AREAS) OUTDOOR (ABOVE GRADE): RGS.
7. APPLETON EMERGENCY GENERATOR PLUG AT SIZE A.S.E. CONTRACTOR TO VERIFY EXACT LOCATION WITH LANDLORD AND UTILITY COORDINATOR.
8. PLACE "FIRE TAPE" AND PULL ROPE IN THE CONDUITS AS REQUIRED.

A	AMPERE	EMC	ELECTRICAL METALLIC TUBING	MIN	MINIMUM	SCHC	SCHEDULE 80 PVC
ACCA	ANTENNA CABLE COVER ASSEMBLY	EMT	ELECTRICAL METALLIC TUBING	MLO	MAIN LUGS ONLY	S	SOLID
		ENCL	ENCLOSURE	MTD	MOUNTED	SAN	SOLID NEUTRAL
AIC	AMPERE INTERRUPTERS CAPACITY	EXIST	EXISTING	MTR	METER	SURF	SURFACE
		EF	EXHAUST FAN	MTS	MANUAL TRANSFER SWITCH	SW	SWITCH
APPROX	APPROXIMATELY	FA	FIRE ALARM	N	NEUTRAL	TR	TRANSFORMER
AT	AMPERE TRIP	FLUOR	FLUORESCENT	NIC	NOT IN CONTRACT	TYP	TYPICAL
AWG	AMERICAN WIRE GAGE	FT	FOOT/FEET	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.	UG	UNDERGROUND
BATT	BATTERY	FU	FUSE			U.L.	UNDERWRITERS LABORATORY INC.
BD	BOARD	G	GROUND	OH	OVERHEAD		
CB	CIRCUIT BREAKER	GEN	GENERATOR	P	POLE	U.N.O.	UNLESS NOTED OTHERWISE
CKBD	CHECKBOARD	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	PCS	PERSONAL COMMUNICATION SYSTEM	V	VOLT
CMDV	CABLE TRIMED COPPER WIRE GROUNDING	GND	GROUND			VAC	VOLT ALTERNATING CURRENT
DTS	CABLE TRANSMISSION SYSTEM	GPS	GLOBAL POSITIONING SYSTEM	PH	PHASE	W	WATT OR WIRE
E	CONDUIT	GR	GROUND	PNBD	PANELBOARD	X	
CAB	CABINET	HDRC	HARD DRAWN COPPER WIRE	PRC	POWER PROTECTION CABINET	W/O	WITHOUT
CB	CIRCUIT BREAKER	HPS	HIGH PRESSURE SODIUM	PVC	POLYVINYL CHLORIDE	WPE	WEATHERPROOF
CPT	CIRCUIT	LB	LOADTH	R	RECEIVER	XFMR	TRANSFORMER
CONT	CONTINUOUS	LPS	LOW PRESSURE SODIUM	RGS	RIGID	XLPE	CROSS-LINK POLYETHYLENE
D	DEMAND	MCB	MAIN CIRCUIT BREAKER	RCPT	RECEPTACLE		
EQ	EQUIPMENT	MDP	MAIN DISTRIBUTION PANEL	RGS	RIGID GALVANIZED STEEL		
EXR	EMERGENCY 15OL RECEPTACLE	MFR	MANUFACTURER	SAF	SAFETY		

—OHT/OHP—	OVERHEAD TELEPHONE/OVERHEAD POWER	HQ	LIGHTING FIXTURE, LITHONIA METAL HALIDE, HUBBELL CAT #MHC-D175H-ESC
—OHT—	OVERHEAD TELEPHONE LINE		5/8" X 10'-0" CU. CLD ROD TOP MIN. BELOW GRADE.
—OHP—	OVERHEAD POWER LINE		5/8" X 10'-0" CU. CLD ROD IN TEST WELL 18" MIN. BELOW GRADE.
—E—	POWER RUN		CHEMICAL GROUND ROD SST GROUND ROD
—T—	TELCO RUN		CADWELD CONNECTION
—T/E—	POWER/TELCO RUN		MECHANICAL CONNECTION
	GROUNDING CONDUCTOR		SOLID GROUND CONNECTION
	GROUNDING CONDUCTOR		CIRCUIT BREAKER
	CONDUIT UNDERGROUND		UTILITY METER BASE
	FUSE, SIZE AND TYPE AS INDICATED.		TRANSFORMER
	SAFETY SWITCH, EF-240V-60A NEMA FUSED, NEMA 3R ENCLOSURE, 30 R CHEMICAL RD. HEAVING	T	SHEDDOWN TRANSFORMER
	MANUAL TRANSFER SWITCH, EF 240V-200A, NO FUSE, NEMA 3R ENCLOSURE		RECEPTACLE, EF-5W-15RA-15A, DUPLEX, GROUND TYPE, HUBBELL CATALOG #5362
	LIGHTING FIXTURE, HALOGEN, QUARTZ, 1,000W, HUBBEL. LIGHTING CATALOG #QL-305	S	TOGGLE SWITCH, 1P-120V-15A, 1800 CH
		S_{WP}	TOGGLE SWITCH, 1P-120V-15A, WP
		S	SECONDARY SMOKE DETECTOR W/ALARM HORN & AUXILIARY CONTACT. 120 VAC. GENTEX PART NO. 7120F
			POLE

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Phone (925) 443-3948 www.pdinc.com
11178 Atlas Rd. Ste. B Atlas, CA 95501

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(972) 727-2330 FAX

C-58691
EXP 09-30-16
Civil
STATE OF CALIFORNIA

RIO DEL MAR SC1

(REAR) 762 RIO DEL MAR BLVD
APTOS, CA 95003

ISSUE STATUS

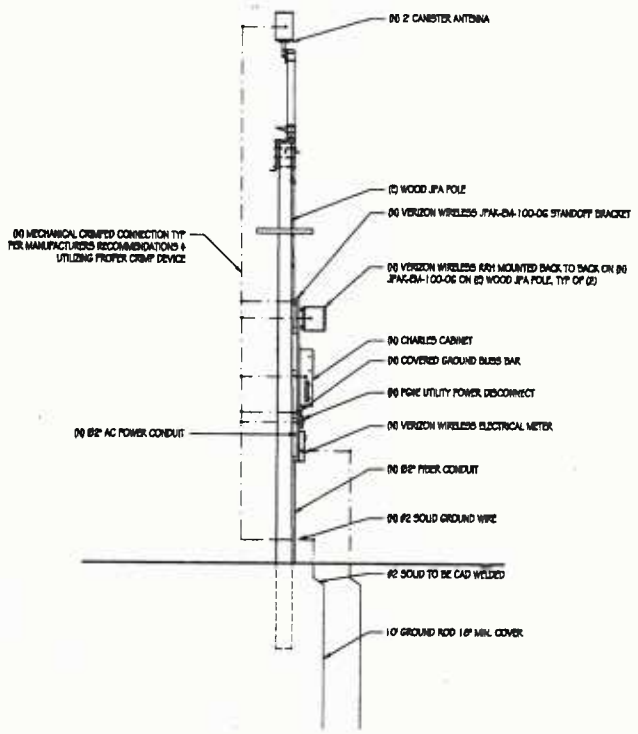
△	DATE	DESCRIPTION
	01/29/15	CD 90%
	02/23/15	CD 100%

DRAWN BY: EDC
CHECKED BY: T. LAWRENCE / M. WEEKS
APPROVED BY: B. McCOMB
DATE: 02/23/15

SHEET TITLE:
ELECTRICAL SPECS, NOTES & ABBREVIATIONS

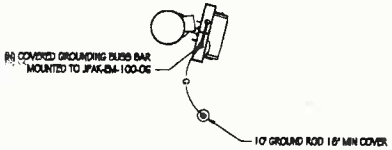
SHEET NUMBER:
E-1

EXHIBIT D



POLE GROUNDING DIAGRAM

1/4"=1'



TN

GROUNDING PLAN

1/2"=1'

verizonwireless

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

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CIVIL
STATE OF CALIFORNIA

RIO DEL MAR SC1

(NEAR) 762 RIO DEL MAR BLVD
APTOS, CA 95003

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	02/23/15	CD 100%

DRAWN BY: EDC
CHECKED BY: T. LAWRENCE / M. WEBB
APPROVED BY: B. McCOMB
DATE: 02/23/15

SHEET TITLE

ELECTRICAL GROUND DIAGRAMS

SHEET NUMBER

E-2

EXHIBIT D

POWER AND TELCO NOTES:

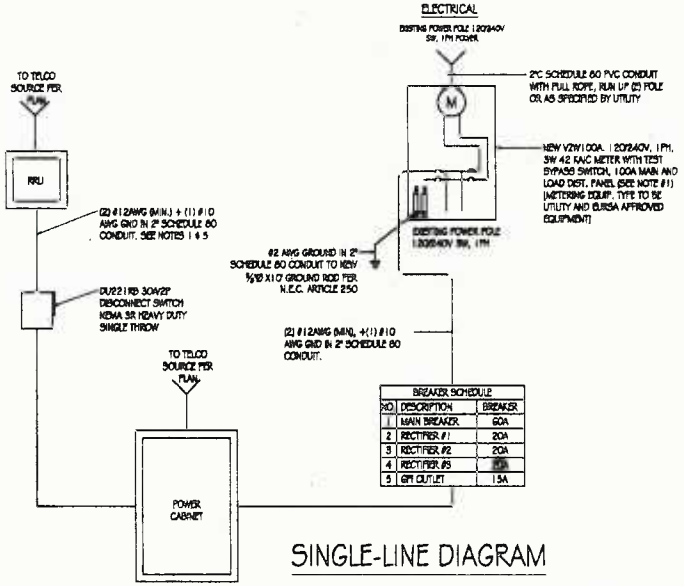
1. POWER AND TELCO POINTS OF CONNECTION AND ANY EASEMENTS ARE PRELIMINARY AND SUBJECT TO CHANGE BY THE UTILITY COMPANIES.
2. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK/MATERIALS REQUIREMENTS AND CONSTRUCT TO UTILITY ENGINEERING PLANS AND SPECIFICATIONS ONLY WHERE APPLICABLE PER PROJECT SCOPE OF WORK.
3. CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT, PULL WIRES, CABLE PULL BOXES, CONCRETE ENCASEMENT OF CONDUIT, TRANSFORMER PAD, BARRIERS, POLE RISER TRENCHING, BACK FILL, AND UTILITY FEES, AND INCLUDE REQUIREMENTS IN SCOPE.
4. CONTRACTOR SHALL LABEL ALL MAIN DISCONNECT SWITCHES AS REQUIRED BY CODE.

NOTES:

1. SUBCONTRACTOR SHALL PROVIDE METER WITH DIST. PANEL AND BREAKERS FOR POWER TO THE BTS UNITS AND THE BTSV UTILITY CABINET.
2. ALL SERVICE EQUIPMENT AND INSTALLATIONS SHALL COMPLY WITH THE N.E.C. AND UTILITY COMPANY AND LOCAL CODE REQUIREMENTS.
3. SUBCONTRACTOR SHALL PROVIDE ELECTRICAL SERVICE ENTRANCE EQUIPMENT WITH FAULT CURRENT RATINGS GREATER THAN THE AVAILABLE FAULT CURRENT FROM THE POWER UTILITY.
4. FIELD ROUTE CONDUIT TO CABINETS AS REQUIRED.
5. MAXIMUM ONE WAY CIRCUIT RUN NOT TO EXCEED 75 FEET.

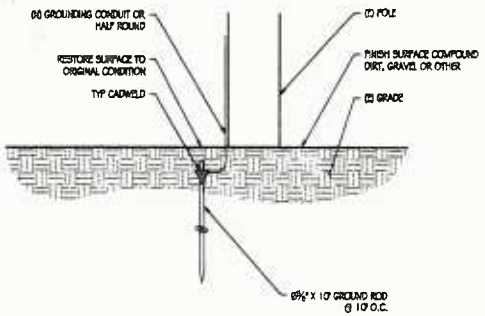
GENERAL ELECTRICAL NOTES:

1. PROVIDE ALL ELECTRICAL WORK & MATERIALS AS SHOWN ON THE DWGS, AS CALLED FOR HEREIN, & AS IS NECESSARY TO FURNISH A COMPLETE INSTALLATION.
2. THE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ADOPTED CALIFORNIA ELECTRICAL CODE, STATE OF CALIFORNIA TITLE24, ALL OTHER APPLICABLE CODES AND ORDINANCES & THE REQUIREMENTS OF THE FIRE MARSHALL. ALL EQUIPMENT & WIRING SHALL BEAR THE APPROVAL STAMP OF UNDERWRITERS LABORATORY (UL) OR AN APPROVED TESTING LABORATORY, PAYMENT FOR ALL INSPECTION FEES AND PERMITS ARE PART OF THIS CONTRACT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY AND GOOD CONDITION OF ALL MATERIALS & EQUIPMENT FOR THE ENTIRE INSTALLATION & UNIT COMPLETION OF WORK, ERECT & MAINTAIN APPROVED & SUITABLE BARRIERS, PROTECTIVE DEVICES & WARNING SIGNS, BE FULLY RESPONSIBLE FOR ANY LOSS OR INJURY TO PERSONS OR PROPERTY RESULTING FROM NEGLIGENCE AND/OR ENFORCEMENT OF ALL SAFETY PRECAUTIONS & WARNINGS.
4. COORDINATE THE ELECTRICAL INSTALLATION WITH ALL OTHER TRADES.
5. ALL SAW CUTTING, TRENCHING, BACK FILLING & PATCHING SHALL BE PART OF THIS CONTRACT.
6. FINALIZE ALL ELECTRICAL SERVICE ARRANGEMENTS, INCLUDING VERIFICATION OF LOCATIONS, DETAILS, COORDINATION OF THE INSTALLATION & PAYMENT OF ACCRUED CHARGES WITH LOCAL POWER COMPANY. VERIFY LOCATION FOR FACILITIES & DETAILS WITH POWER UTILITY, IN ADDITION TO THE REQUIREMENTS SHOWN IN THE CONTRACT DOCUMENTS. WORK SHALL COMPLY WITH CONSTRUCTION STANDARDS & SERVICE REQUIREMENTS OF THE RESPECTIVE UTILITIES, INCLUDING ANY SUPPLEMENTAL DWGS ISSUED & SHALL BE SUBJECT TO APPROVAL OF THESE UTILITIES.
7. ALL WIRING SHALL BE COPPER, INSULATION FOR BRANCH CIRCUIT CONDUCTORS SHALL BE TYPE THWN# CONDUCTORS LARGER AND #6 AWG MAY BE TYPE THWN# OR THWN.
8. PROVIDE CONDUIT SEALS FOR ALL CONDUITS PENETRATING WEATHERPROOFING OR WEATHERPROOF ENCLOSURE ENVELOPE. MASTIC SEAL ALL CONDUIT OPENING PENETRATIONS COMPLETELY WATERTIGHT.
9. UNLESS SHOWN OTHERWISE, FUSED DISCONNECT SWITCHES SHALL BE PROVIDED WITH LOW-PEAK, DUAL 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.
10. 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.



BREAKER SCHEDULE		
NO.	DESCRIPTION	BREAKER
1	MAIN BREAKER	60A
2	RECTIFIER #1	20A
3	RECTIFIER #2	20A
4	RECTIFIER #3	20A
5	GFI OUTLET	15A

SINGLE-LINE DIAGRAM

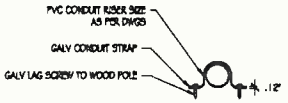


NOTES:

1. IF GROUND ROD IS INSTALLED ON SIDEWALK AREA, CORE DRILL SIDEWALK PRIOR TO INSTALLING INSPECTION WELL
2. EXPOSED CONCRETE TO HAVE BROOM FINISH

1 POLE GROUNDING DETAIL

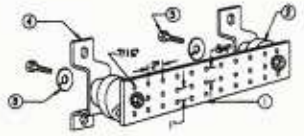
NTS



2 CONDUIT RISER DETAIL

NTS

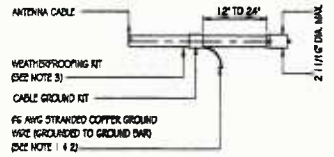
3 EXOTHERMIC WELD DETAILS



NOTES:

1. GALVANIZED STEEL 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. SD15-8 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.

4 GROUND BAR DETAIL



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE (TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.)

5 GND KIT DETAIL

NTS

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

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C 68491
EXP 09-30-16
Civil
STATE OF CALIFORNIA

RIO DEL MAR SC1

(NEAR) 762 RIO DEL MAR BLVD
APTOS, CA 95003

ISSUE STATUS

△	DATE	DESCRIPTION
	01/28/15	CD 50%
	02/23/15	CD 100%

DRAWN BY:	EDC
CHECKED BY:	T. LAWRENCE / M. WEBB
APPROVED BY:	B. McCOMB
DATE:	02/23/15

SHEET TITLE:
ELECTRICAL SINGLE-LINE DIAGRAM & DETAILS

SHEET NUMBER:
E-3

EXHIBIT D

FOR TAX PURPOSES ONLY

POR. APTOS RANCHO

S.W. 1/4 SEC. 17, T.11S., R.1E., M.D.B. & M.

Tax Area Code
69-273 69-277
69-280

44-02

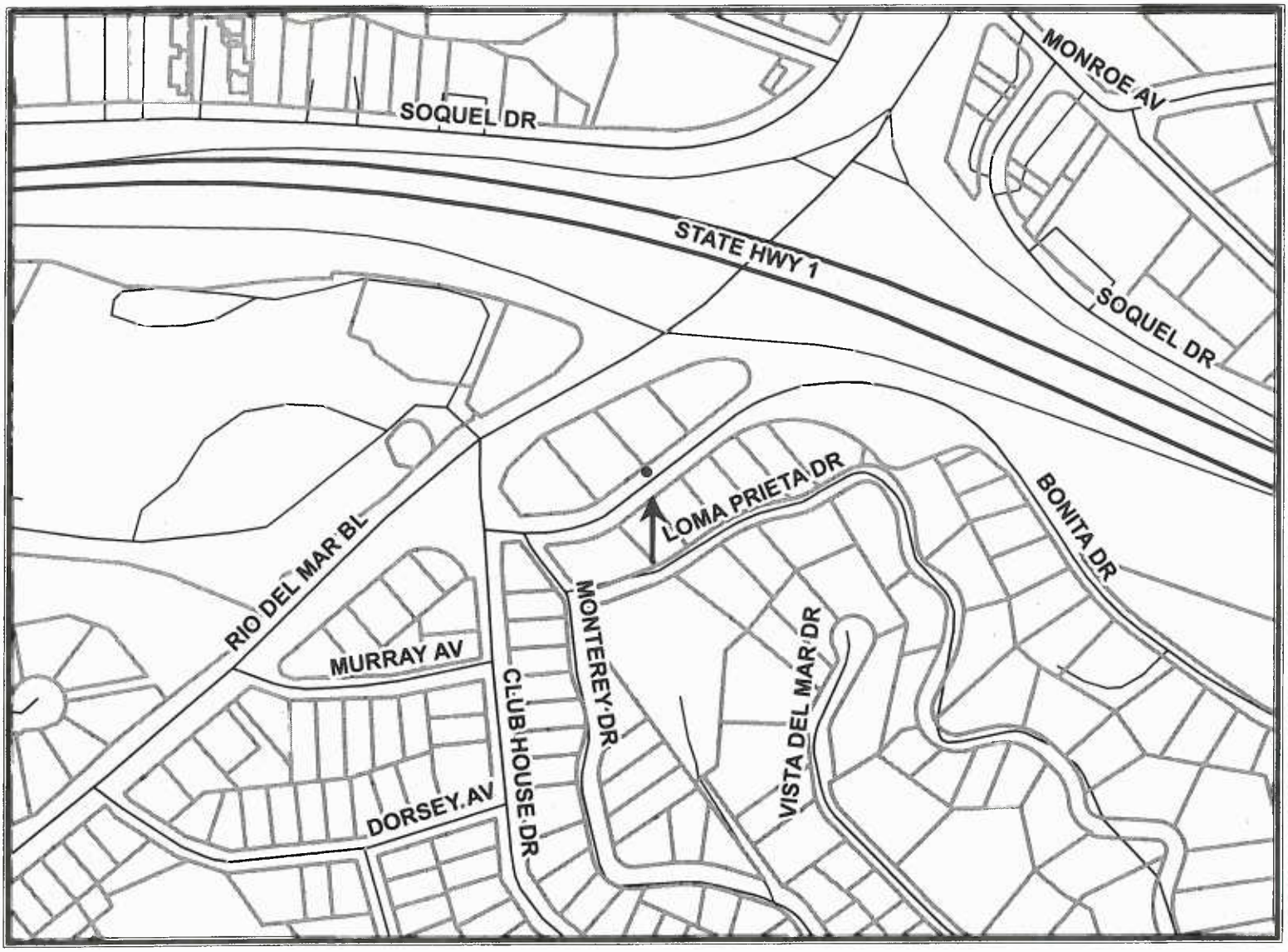
Note - Assessor's Parcel & Block Numbers Shown in Circles.

Assessor's Map No. 44-02
County of Santa Cruz, Calif.
Nov. 1999

Electronically redrawn 11/1/99 KSA
Rev. 5/29/01 mvm (changed page refs.)
Rev. 1/14/02 mvm (TCA)
Rev. 4/30/08 mc (2007-0085038, comb. 3-07)

EXHIBIT E

Location Map



0 255 510 1,020 1,530 2,040 Feet

LEGEND

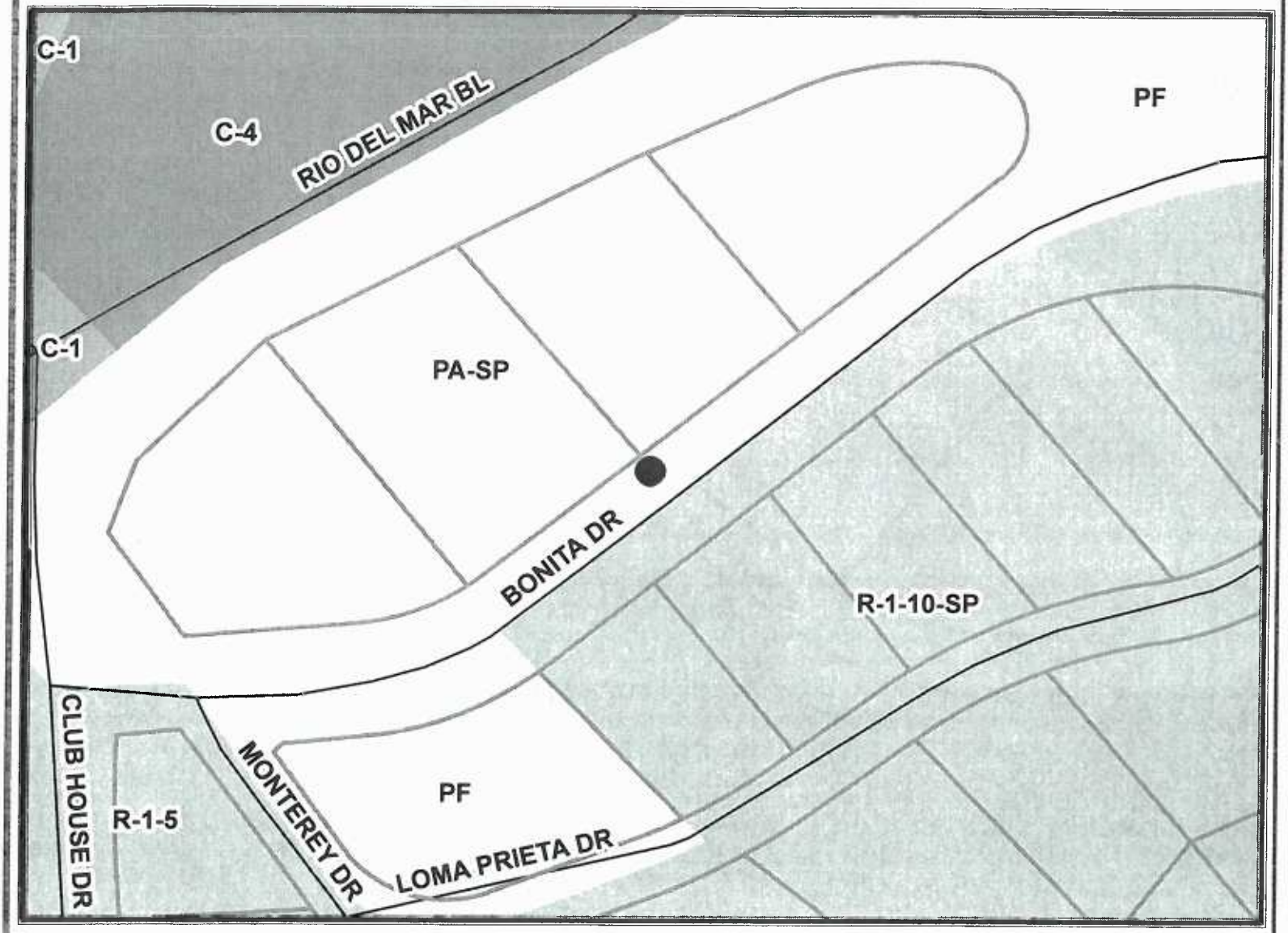
- subject cell site
- Assessors Parcels
- Street
- State Highways

N
W E
S

Map Created by
County of Santa Cruz
Planning Department
March 2015

EXHIBIT E

Zoning Map



0 65 130 260 390 520 Feet

LEGEND

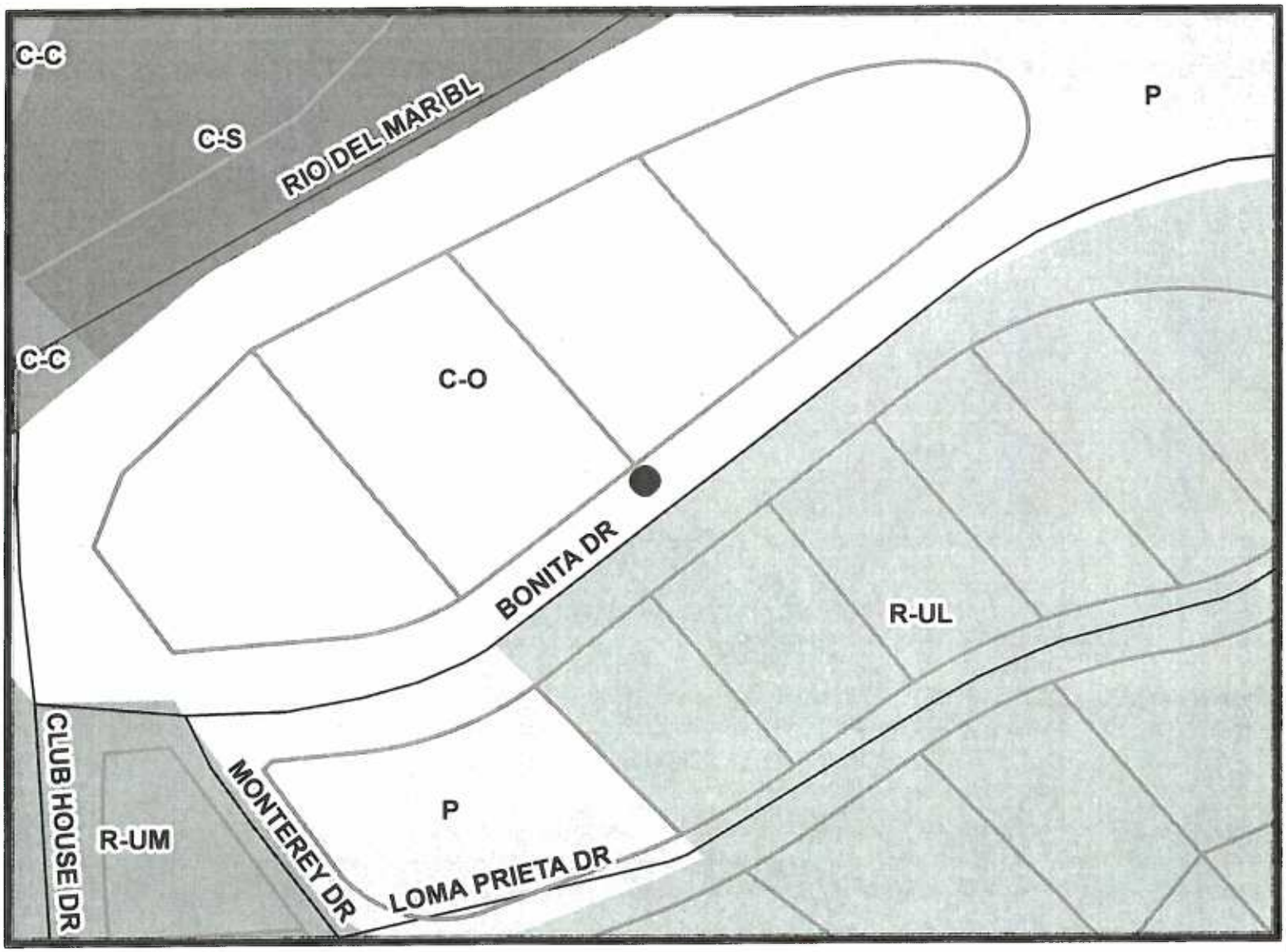
- subject cell site
- Assessors Parcels
- Street
- COMMERCIAL-PROF OFFICE
- PUBLIC FACILITY
- RESIDENTIAL-SINGLE FAMILY
- COMMERCIAL-NEIGHBORHOOD
- COMMERCIAL-SERVICE

N W E S

Map Created by
County of Santa Cruz
Planning Department
March 2015

EXHIBIT E

General Plan Designation Map



0 65 130 260 390 520 Feet

LEGEND

- subject cell site
- Assessors Parcels
- Street
- Commercial-Office
- Public Facilites
- Residential - Urban Low Density
- Residential - Urban Medium Density
- Commercial-Community
- Commercial-Service

N W E S

Map Created by
County of Santa Cruz
Planning Department
March 2015

EXHIBIT E

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

Site No. 284599
Rio Del Mar SC1
762 Rio Del Mar Boulevard
Aptos, California 95003
Santa Cruz County
36° 58' 27.77" N, -121° 53' 13.24" W NAD83

EBI Project No. 6215001119
February 26, 2015

Prepared for:

Verizon Wireless
c/o Nexius
San Francisco, CA

Prepared by:

EBI Consulting
environmental | engineering | due diligence

EXHIBIT F

TABLE OF CONTENTS

APPENDICES

EXHIBIT F

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 284599 located at 762 Rio Del Mar Boulevard in Aptos, California to determine RF-EME exposure levels from proposed Verizon wireless communications equipment at this site. As described in greater detail in Section 2.0 of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

Statement of Compliance

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

As presented in the sections below, based on worst-case predictive modeling, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site. At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately 8.60 percent of the FCC's general public limit (1.72 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.

MPE Modeled at Nearby Building Locations (Second Story)	% GP MPE	% Oc MPE
Building approx. 177 feet west of site	0.66617%	0.13323%
Building approx. 141 feet southwest of site	1.08355%	0.21671%
Building approx. 47 feet south of the site	7.39847%	1.47969%
Building approx. 89 feet east of the site	2.52569%	0.50314%

EXHIBIT F

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 one sector) on a pole located at 762 Rio Del Mar Boulevard in Aptos, 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
A1 Amphenol CWT360X06F	700 2100	2 2	60 60	Omni	0.4 5.3	36.3	30	30	35.3

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 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 pole with antenna locations.

EXHIBIT F

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)

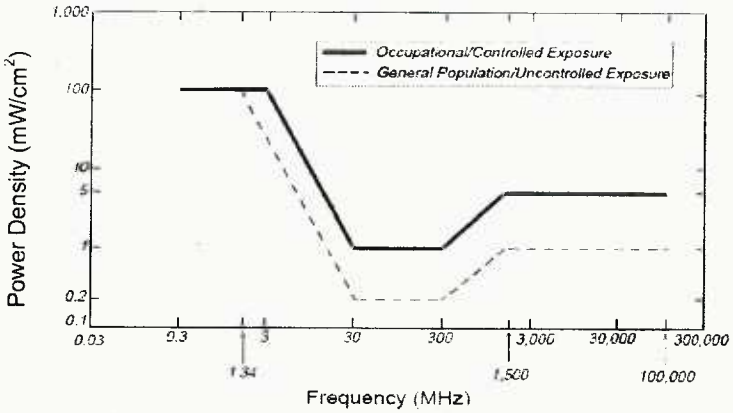
(A) Limits for Occupational/Controlled Exposure

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)
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.

EXHIBIT F

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

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

4.0 WORST-CASE PREDICTIVE MODELING

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

The modeling is based on worst-case assumptions for the number of antennas and transmitter power. The modeling assumes a maximum 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.

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 8.60 percent of the FCC's general public limit (1.72 percent of the FCC's occupational limit). The composite exposure level from all carriers on this site is approximately 8.60 percent of the FCC's general public limit (1.72 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 antenna 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 yellow Caution sign is recommended for installation 25 feet above ground level where RF emissions are predicted to exceed the general population level on the pole.

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 pole 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 284599 located at 762 Rio Del Mar Boulevard in Aptos, California to determine worst-case predicted RF-EME exposure levels from wireless communications equipment installed at this site. This report summarizes the results of RF-EME modeling in relation to relevant Federal Communications Commission (FCC) RF-EME compliance standards for limiting human exposure to RF-EME fields.

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

7.0 Limitations

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

EXHIBIT F

Appendix A

Certifications

EXHIBIT F

Reviewed and Approved by:

Herbert J. Stockinger, PE
Senior 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 building and related structures, as well as the impact of the antennas and broadcast equipment on the structural integrity of the building, are specifically excluded from EBI's scope of work.

Preparer Certification

I, Christopher 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 familiar with the FCC rules and regulations as well as OSHA regulations both in general and as they apply to RF-EME exposure.
- 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.

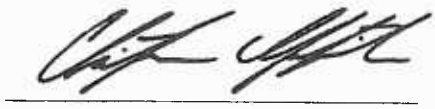


EXHIBIT F

Appendix B

Radio Frequency Electromagnetic Energy

Safety / Signage Plans

EXHIBIT F

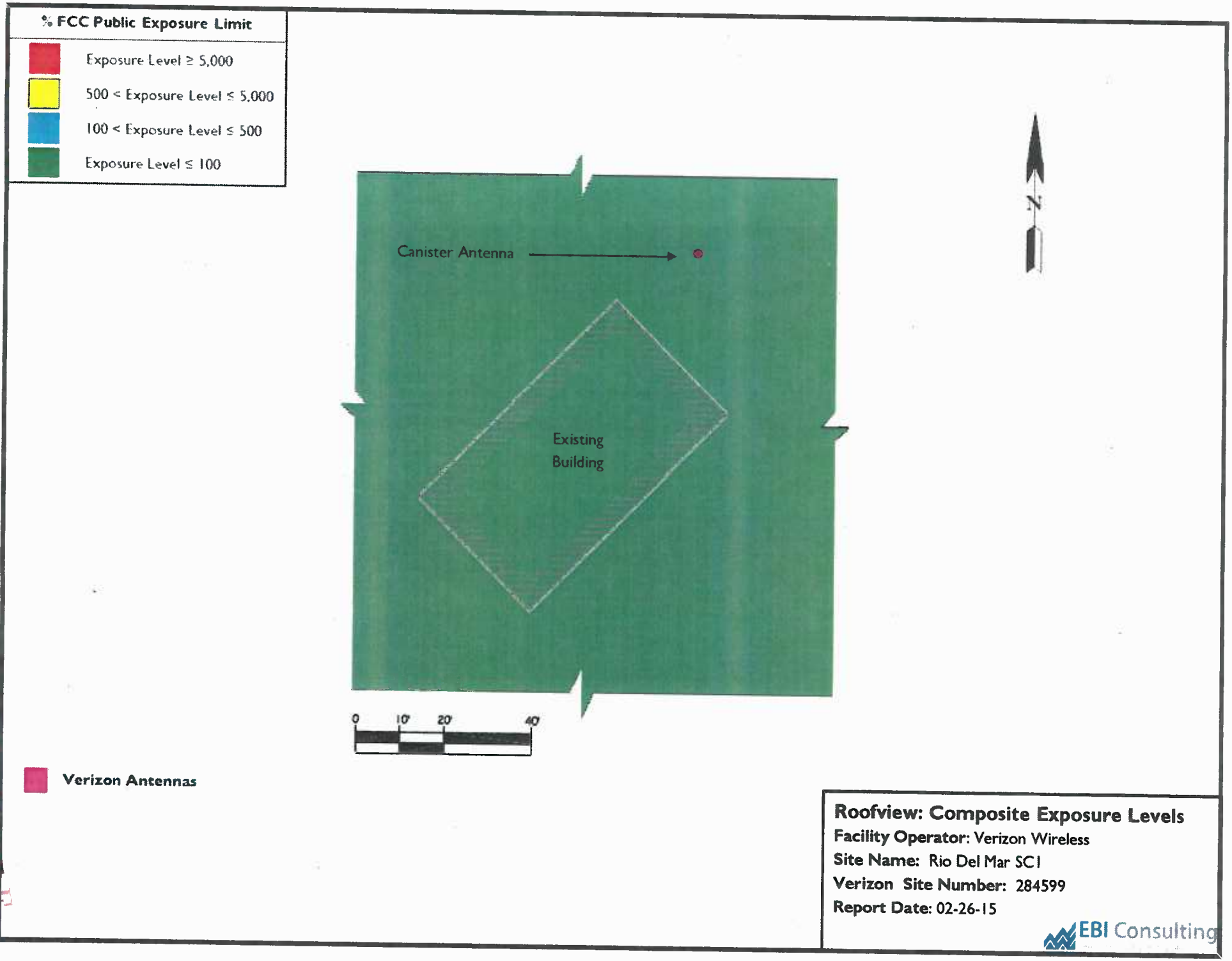
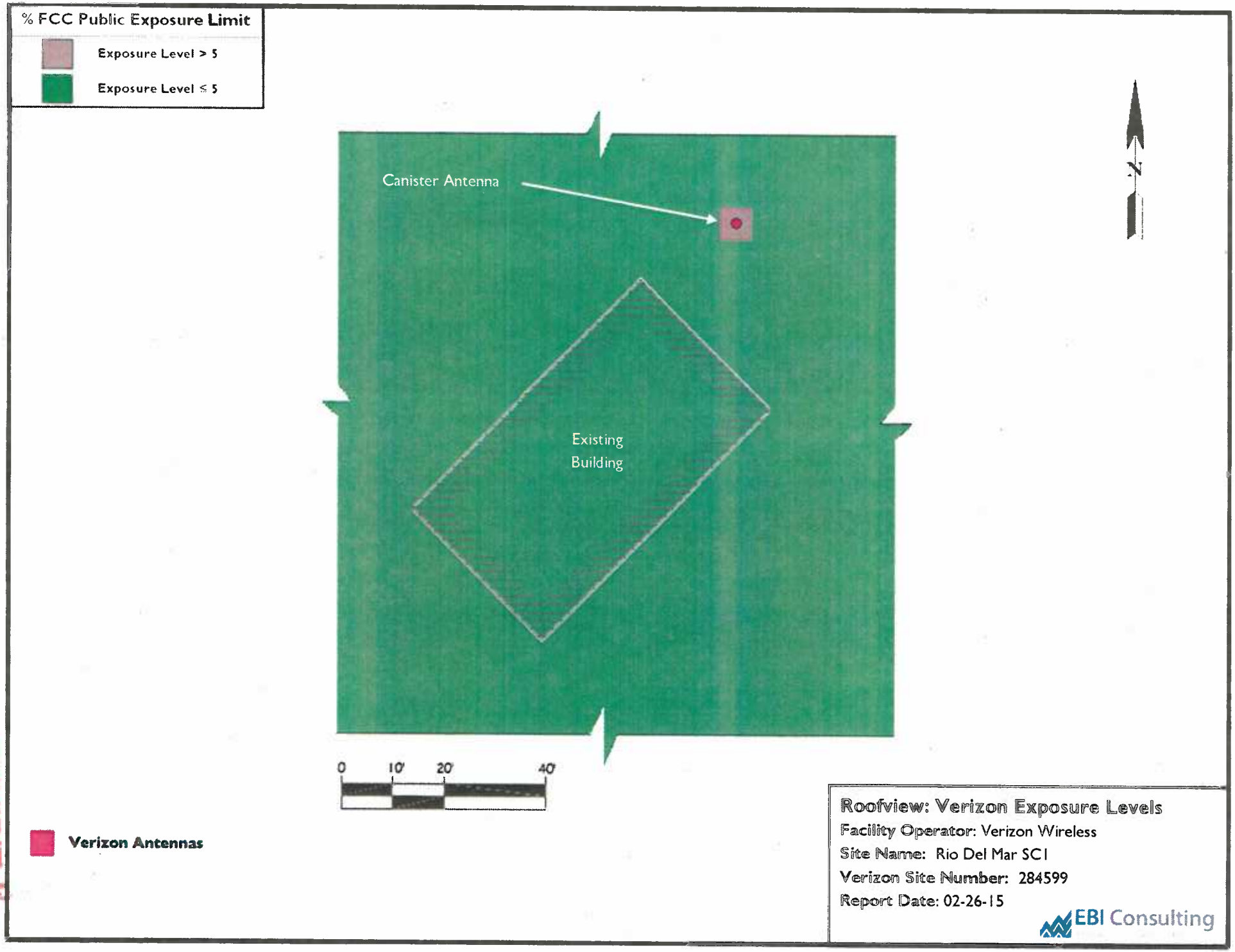
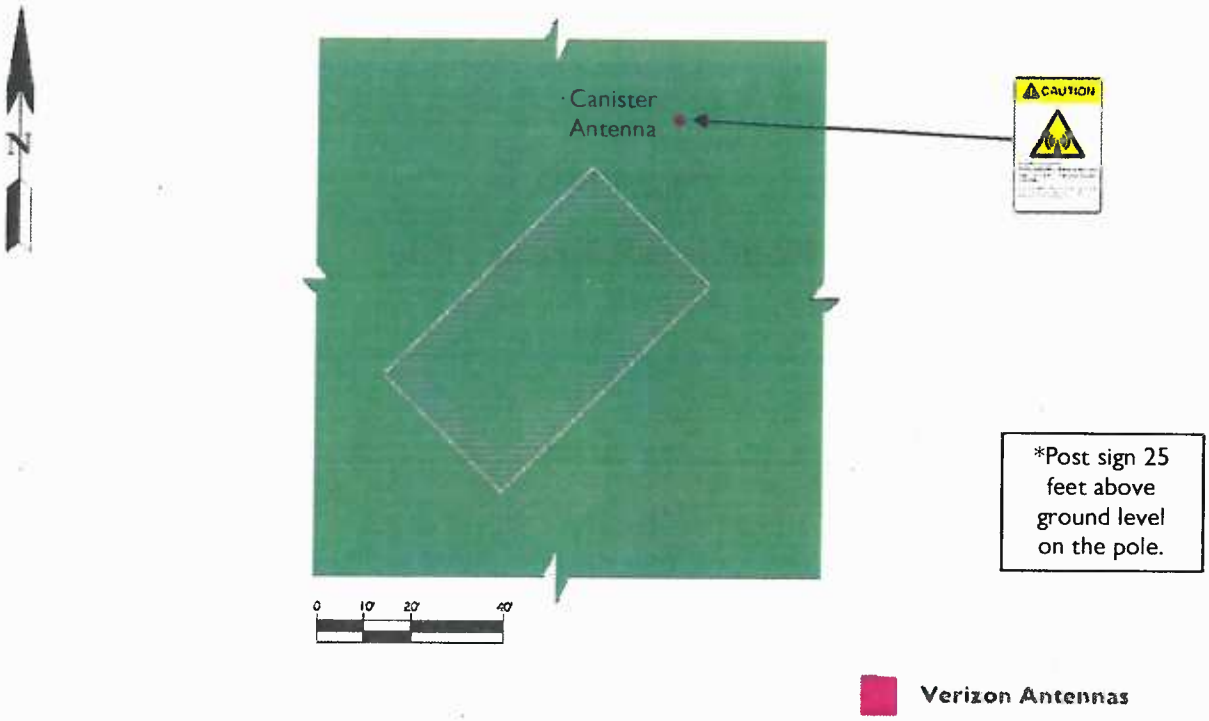

% FCC Public Exposure Limit
Exposure Level ≥ 5,000
500 < Exposure Level ≤ 5,000
100 < Exposure Level ≤ 500
Exposure Level ≤ 100
Canister Antenna
Existing Building
N
0
10'
20'
40'
Verizon Antennas
Roofview: Composite Exposure Levels
Facility Operator: Verizon Wireless
Site Name: Rio Del Mar SC1
Verizon Site Number: 284599
Report Date: 02-26-15
EBI Consulting

EXHIBIT E


% FCC Public Exposure Limit
Exposure Level > 5
Exposure Level ≤ 5
Canister Antenna
Existing
Building
N
0
10'
20'
40'
Verizon Antennas
Roofview: Verizon Exposure Levels
Facility Operator: Verizon Wireless
Site Name: Rio Del Mar SC1
Verizon Site Number: 284599
Report Date: 02-26-15
EBI Consulting

Verizon Signage Plan



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 the pole near the antenna in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.	1 on the pole 25 feet above ground level near the canister antenna

Signage Plan
Facility Operator: Verizon Wireless
Site Name: Rio Del Mar SC1
Verizon Site Number: 284599
Report Date: 02-26-15

EBI Consulting

Appendix C

Roofview® Export File

EXHIBIT F

Map, Settings, Antenna, and Symbol Data Table Exported from workbook -> RoofView 4 15.xls
Done on 2/26/2015 at 12:23:51 PM.
Use this format to prepare other data sets for the RoofView workbook file.
You may use as many rows in this TOP header as you wish.
The critical point are the cells in COLUMN ONE that read 'Start...' (eg. StartMapDefinition)
If used, these (4) headers are required to be spelled exactly, as one word (eg. StartMapDefinition)
The very next row will be considered the start of that data block.
The first row of the data block can be a header (as shown below), but this is optional.
When building a text file for import. Add the Map info first, then the Antenna data, followed by the symbol data.
All rows above the first marker line 'Start...' will be ignored, no matter how many there are.
This area is for you use for documentation.
End of help comments.

You can place as much text here as you wish as long as you don't place it below
the Start Map Definition row below the blue line
You may insert more rows using the Insert menu.
Should you need additional lines to document your project, simply insert additional rows
by highlighting the row number adjacent to the blue line below and then clicking on the Insert menu
and selecting rows.

tMapDefinition

Roof Max Y	Roof Max X	Map Max Y	Map Max X	Y Offset	X Offset	mber of Ar	envelope
50	50	70	90	20	20	1	:$151:$CB$:$151:$CB$200

rtSettingsData

Standard	Method	Uptime	Scale Factor	Low Thr	Low Color	Mid Thr	Mid Color	Hi Thr	Hi Color	Over Color	Ap Ht Mult	p Ht Method	List Of Areas
4	2	1	1	100	1	500	4	5000	2	3	1.5	1	$AE$151:$CB$200

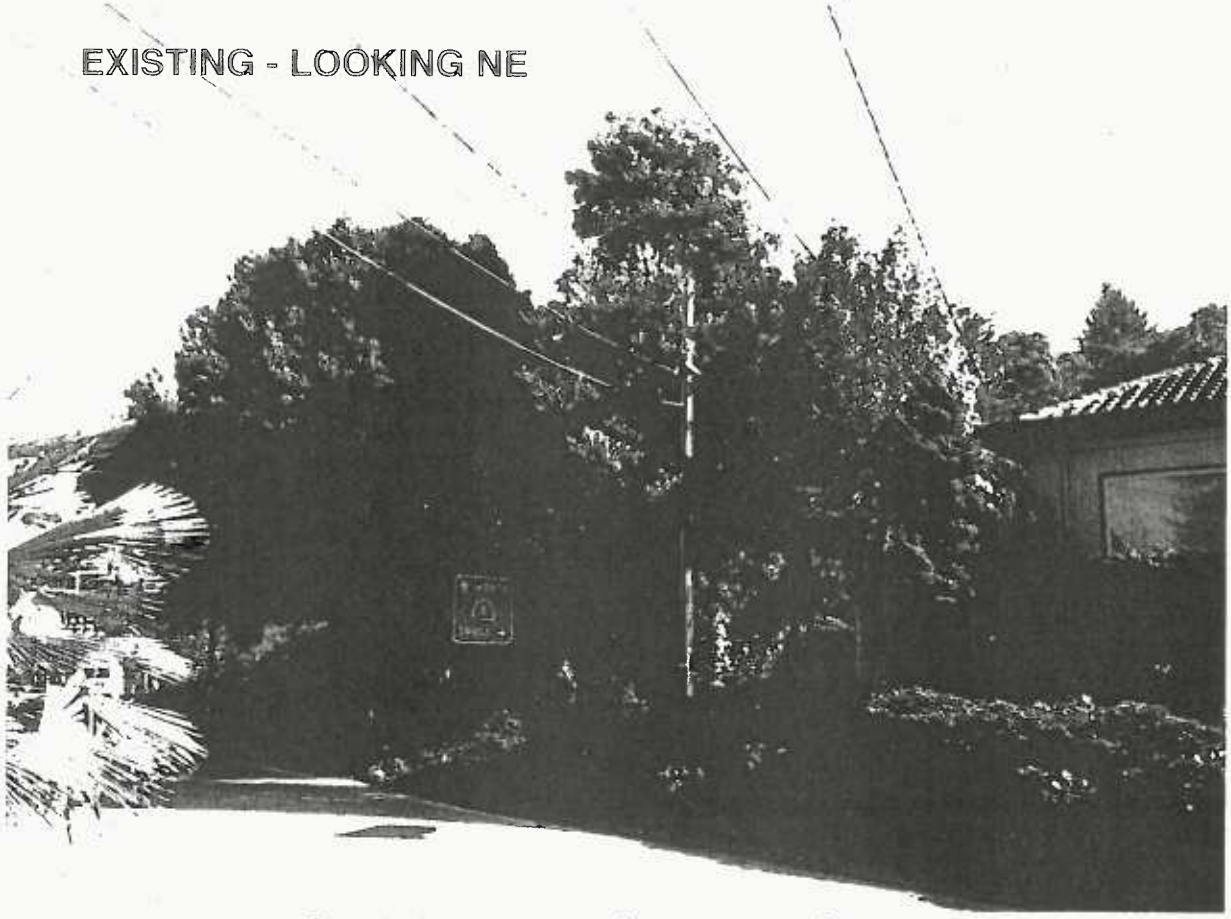
rtAntennaData Be sure to provide an ID (ant 1) for all antennas

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	2			0.35		110.7085713	Amphenol	CWT360X06F0Y-0-750	30	30	35.3		2	0.4	OMNI		ON
VZW A1	LTE	2100	60	2			0.35		110.7085713	Amphenol	CWT360X06FX0-0-2100	30	30	35.3		2	5.3	OMNI		ON

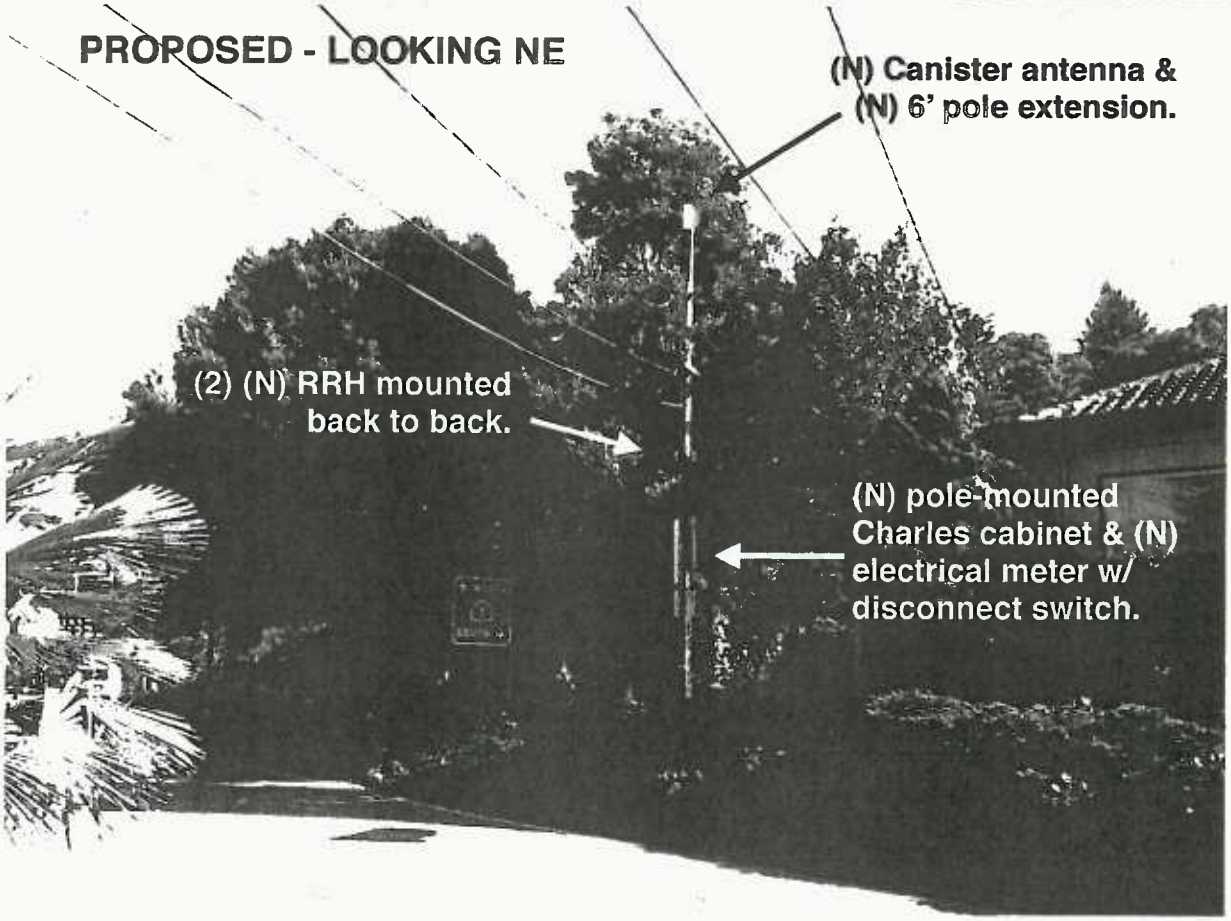
rtSymbolData

Sym	Map Marker	Roof X	Roof Y	Map Label	notes for this table only)
Sym		5	35	AC Unit	mple symbols
Sym		14	5	Roof Access	
Sym		45	5	AC Unit	
Sym		45	20	Ladder	

EXISTING - LOOKING NE



PROPOSED - LOOKING NE

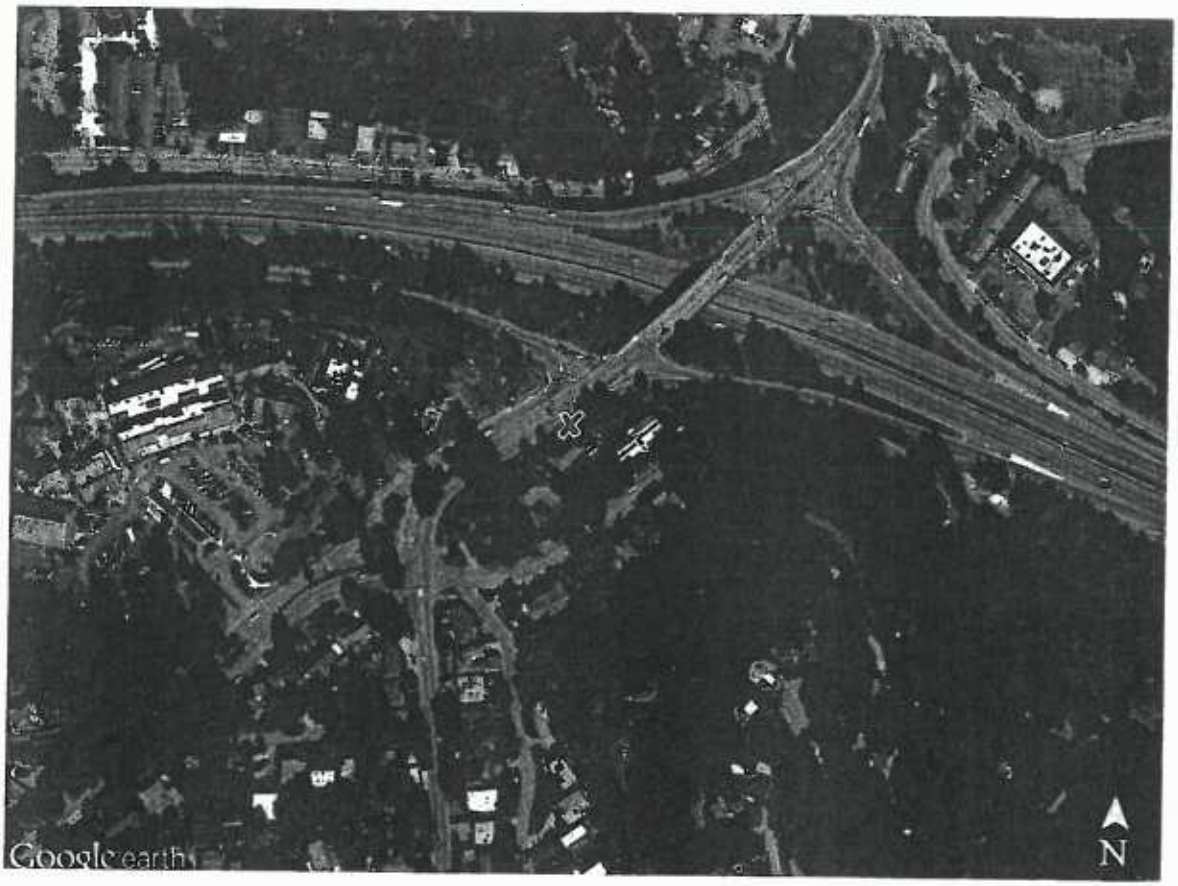


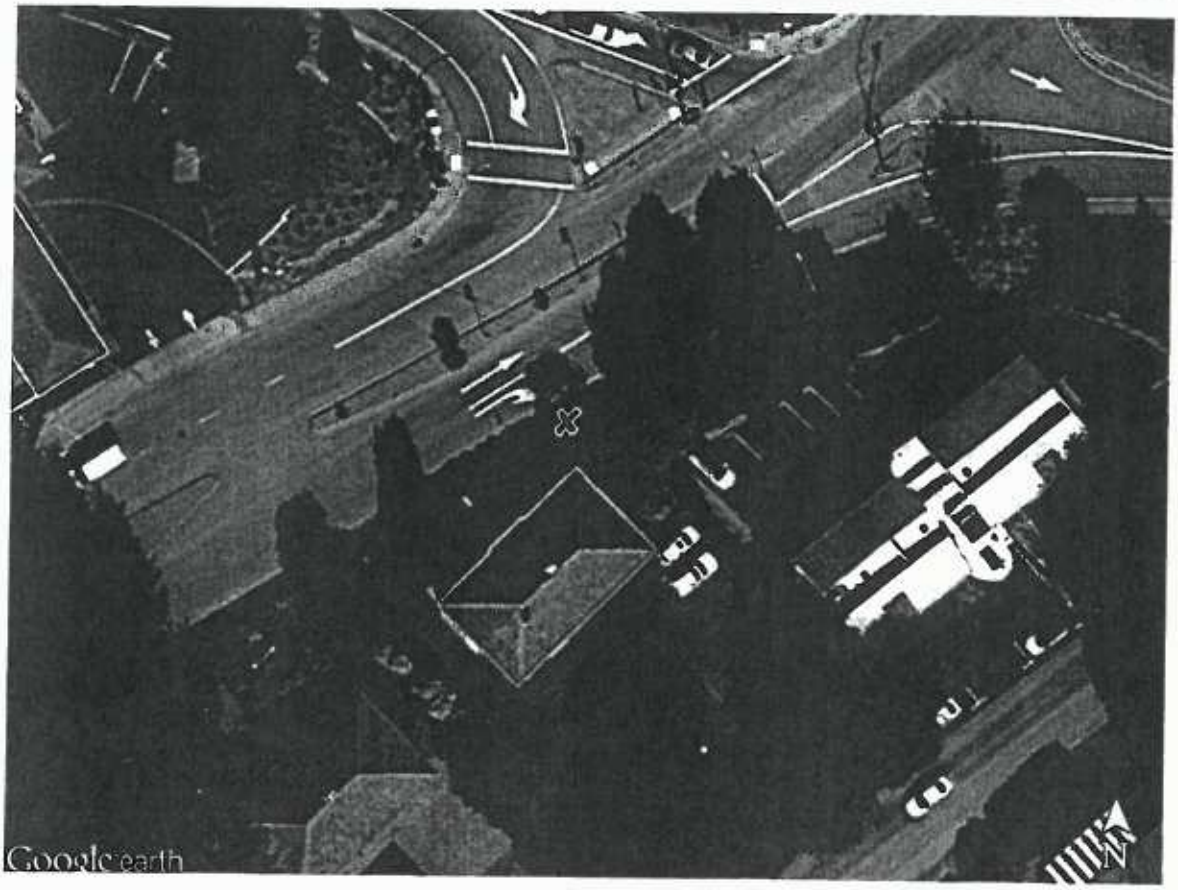
verizonwireless

RIO DEL MAR SC1
(Near) 762 Rio Del Mar Blvd.
Aptos, CA 95003

EXHIBIT G

OVERVIEW





ADL Simulations, Inc. ✦ (415) 559-2121 ✦ adlsimulations@gmail.com

NEXIUS

April 13, 2015

City of Santa Cruz
Attn: Frank Barron
Planning Department
701 Ocean St, 4th floor
Santa Cruz, CA 95060

RE: Application 151040 - Alternative Site Analysis:

Frank, please see corresponding map attached.

CA-A: Pole has a primary riser. Not allowed for collocation by PG&E.
CA-B: Pole has a primary riser. Not allowed for collocation by PG&E.
CA-C: Pole overloaded. Insufficient climbing space.
CA-D: Pole not recommended by PG&E. Not possible to use a pole top extension due to configuration of existing conduits and insufficient clearances for below the conductors.
CA-E: Poles are not viable candidates. Small cells are not intended for freeway coverage.
CA-F: Would need a 130' monopole to achieve coverage objective. See attached email from RF.
CA- G: Building with existing carriers. The rooftop of this building is approximately 30ft, as indicated for CA-F Verizon would need 130' to achieve coverage objective, therefore a 100' tower would need to be installed on the rooftop to meet the coverage objective given the elevation is the same as the proposed 130' monopole.

In addition to the reasons above for why these alternative sites aren't suitable, having a site shoot across the freeway itself is not a good idea in terms of how the network works. If a cell site to shoots across HWY 1 a normal user crossing this area in a vehicle will actually have a worse customer experience since the user devices will drop their connection from their current cell sites, and make a new connection to this cell site across Hwy 1. Having the small cell on the West side of Hwy 1 shooting directly at Deer Park Plaza will eliminate dropped calls on Hwy 1 and aesthetically is more pleasing.

Thank you,
Gary Gochberg
Agent for Verizon

EXHIBIT H


CA-E
CA-F
CA-G
CA-D
CA-C
CA-B
CA-A
JPA Pole Candidate
Rio Del Mar Blvd
Loma Prieta Dr
Clubhouse Dr
Murray Ave
Bonita Dr
Cabrillo Hwy
Soquel Dr
Huntington
Morrison Ave
Polo Dr
© 2015 Google
1993
Imagery Date: 2/23/2014 36°58'28.41" N 121°53'11.03" W elev 152 ft