Staff Report to the Zoning Administrator

Application Number: 141210

Applicant: David Downs, GTW Mobilnet of California (for Verizon)
Owner: Glaum Enterprises
APN: 051-201-05

Agenda Date: 6/19/2015
Agenda Item #: 2
Time: After 9:00 a.m.

Project Description: Proposal to install 9 panel antennas at the 58 foot level of an existing 107 foot tall PG&E transmission line lattice tower, including ground mounted equipment in a fenced lease area on a 29.9 acre parcel. The proposed tower is located on a portion of the parcel with Existing Parks and Recreation zoning. Requires a Commercial Development Permit.

Location: The property is located on the south side of Marsh Lane, approximately ¼ mile south of Lakeview Road within the Salispuedes Planning area.

Supervisorial District: 4 District (District Supervisor: Caput)

Permits Required: Commercial Development Permit
Technical Reviews: None

Staff Recommendation:

- Determine that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- Approval of Application 141210, based on the attached findings and conditions.

Exhibits

A.	Categorical Exemption (CEQA determination)		by Site Safe, August 29, 2014
B.	Findings	G.	Visual Simulations
C.	Conditions	H.	Noise Study, prepared by Bollard Acoustical Consultants, dated March 13, 2015
D.	Project plans		
E.	Assessor's, Location, Zoning and General Plan Maps		
F.	Radio Frequency Report, prepared		

Parcel Information

Parcel Size:	29.9 acres
Existing Land Use - Parcel:	Agriculture
Existing Land Use - Surrounding:	Agriculture

Project Access:	Marsh Lane
Planning Area:	Salsipuedes
Land Use Designation:	O-L, AG (Lakes/Reservoirs/Lagoons), (Agriculture)
Zone District:	PR-GH, PR, CA (Existing Parks and Recreation-Geologic Hazard, Existing Parks and Recreation, Commercial Agriculture)
Coastal Zone:	__ Inside _x_ Outside
Appealable to Calif. Coastal Comm.	__ Yes _x_ No

Environmental Information

Geologic Hazards:	100 year flood zone
Soils:	N/A
Fire Hazard:	Not a mapped constraint
Slopes:	Site is flat
Env. Sen. Habitat:	Mapped biotic resources- none identified on proposed site
Grading:	No grading proposed
Tree Removal:	No trees proposed to be removed
Scenic:	Not a mapped resource
Drainage:	Existing drainage adequate
Archeology:	Mapped, though archaeological report concluded that there is no presence of resources on site.

Services Information

Urban/Rural Services Line:	__ Inside _x_ Outside
Water Supply:	Pajaro Valley Water Management Agency
Sewage Disposal:	Septic
Fire District:	Pajaro Valley Fire Protection District
Drainage District:	Flood Zone 7

Project Setting

The subject property is a parcel of approximately 29 acres and is located on the eastern edge of Tynan Lake and the south side of Marsh Road. The property contains an agricultural farm situated on the northeast portion of the site and a 107 foot tall existing PG&E transmission line tower is located on the western edge of the site adjacent to the lake.

The property has three zoning designations that are associated with the water body, lake edge, and agricultural activity on the eastern portion of the site. The property is zoned PR-GH, PR, CA (Existing Parks and Recreation-Geologic Hazard, Existing Parks and Recreation, Commercial Agriculture) zone district. These zoning corresponds with the O-L, AG (Lakes/Reservoirs/Lagoons and Agriculture) General Plan Land Use Plan designations.

The portion of the property containing the existing PG&E tower and proposed equipment pad is zoned PR (Parks and Recreation). There is an existing unpaved access road to the tower.

Zoning & General Plan Consistency

Pursuant to County Code Section 13.10.661 (A) (Wireless Communications Ordinance), all new wireless communication facilities are required to obtain a commercial development permit with approval by the Zoning Administrator.

The proposed wireless facility is a permitted use with a Zoning Administrator Approval within the Parks and Recreation zone district and the zoning is consistent with the site's (O-L, AG) Lakes/Reservoirs/Lagoons/Agriculture General Plan designation and subject to the wireless regulations enumerated in County Code Section 13.10.661-668.

The proposed site is not located in a prohibited or restricted wireless area as set forth in Sections 13.10.661(B) and 13.10.661(C). Thus, an alternative site analysis or alternative designs are not required. However, the applicant provided an alternative analysis evaluating various sites as part of their application to establish the most suitable site meeting their cellular objectives.

The wireless ordinance section 13.10.661(F) requires that wireless facilities are required to be located in the least visually obtrusive location that is technically feasible. The antennas are proposed at approximately the 57 foot elevation on the existing107 foot tower. All PR zone district setbacks are required to be 30 feet. The existing tower and proposed project meet all required setbacks.

Setback Table

	Front	Side	Rear
(PR zone district)			
Required	30'	30'	30'
Proposed	700'+	100'+	1100' +

The height of the proposed equipment on the tower will not exceed the allowed height enumerated in County Code Section 13.10.510(D) (2). This section allows a maximum height of 78 feet for wireless facilities located within the Public Facility zone district, as required by the wireless facility policy interpretation WFC-01.

The proposed wireless facility complies with the requirements of the visual protection regulations of the Wireless Ordinance and the County Design Review Ordinance in that the proposed project has been designed to integrate the equipment onto the existing tower. Visual simulations (Exhibit G) are attached that provide an image of the existing and proposed appearance of the project site. Visual impacts of the proposed equipment and equipment pad are significantly less than visual impacts proposed by a new tower or monopine elsewhere on the site or in the service area. The proposed project will thus minimize visual impacts of the proposed wireless equipment, meeting the ordinance objective to reduce visual impacts as much as technically feasible.

Biotic

Although the site is mapped for biotic resources, the location of the proposed equipment enclosure is disturbed. For this reason, Environmental Planning staff did not identify the presence of biotic resources. Therefore, a biotic report was not required for this project.

Radio Frequency (RF) Exposure

County Code Section 13.10.661 (D) requires compliance with the Federal Communications Commission (FCC) rules, regulations and standards by requiring that facilities comply with the radio-frequency (RF) emissions standards set forth by the FCC. A non-ionizing electromagnetic radiation (NIER) report is attached as Exhibit F. The report concludes that the maximum cumulative level at the ground will be less than 5 percent of the applicable radio frequency exposure levels established by the Federal Communications Commission (FCC).

The antennas are not accessible to the general public due to their location on the tower so no mitigation measures are necessary to comply with the FCC public exposure guidelines. Occupational safety measures are conditioned to be provided in compliance with the FCC occupational exposure guidelines for work required near the antennas. The proposed project is consistent with the FCC regulations as proposed and conditioned.

Section 47 USC 332(c)(7)(B)(iv) of the Telecommunications Act of 1996 forbids jurisdictions from regulating the placement, construction, or modification of Wireless Communications Facilities based on the environmental effects of RF emissions if these emissions comply with FCC standards. The RF emissions of the proposed wireless communication facility comply with FCC standards.

Noise

A noise study (Exhibit H) was submitted confirming that the proposed HVAV and generator will not exceed the general plan maximum daytime noise threshold as predicted noise levels are expected to be a maximum of 60 decibels at the property line, which is 10 decibels below the maximum 70 decibel threshold. Levels at the nearest residences are further decreased below the standard as they a substantial distance from the proposed generator. The nighttime noise standard may comply with the maximum 45 decibel level with 6 foot solid masonry fencing proposed around the lease area. However, the project has not been required to include solid masonry fencing since the generator would only be operated during an emergency, these noise levels would be considered temporary and not subject to this standard.

Environmental Review

The California Environmental Quality Act (CEQA) provides exemptions for classes of projects which do not have a significant effect on the environment. Commercial structures not exceeding 10,000 square feet and not involving the use of significant amounts of hazardous substances and not located in a sensitive habitat are exempt per Section 15303, Class 3. Although the project site is mapped as containing biotic resources associated with the lake, the tower and pad location are situated almost 100 feet back from the edge of the lake and were otherwise not observed to contain of any sensitive resources. A preliminary determination has been made that the project is exempt from the California Environmental Quality Act and a notice of exemption has been 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 Number **141210,** 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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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 wireless facility is located on an existing 107 foot tall PG&E utility tower and although the equipment enclosure will be located on the ground within a mapped biotic resource and archaeological resource area, neither resource was not determined to be present on the property. Furthermore, the additional of antennas on the tower will not result in a significant impact to the existing tower. The ground mounted equipment is proposed to be within a wood fenced enclosure and screened from surrounding uses.

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 pursuant to County Code Section 13.10.662(C), co-located facilities located within an allowed zone district are not required to provide an alternatives analysis. As described by ordinance section 13.10.660 (D), co-location is defined to include placement of wireless facilities on existing utility towers such as the existing 107 foot tall PG&E tower.

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 proposed wireless facility is an allowed use in compliance with the requirements of the Existing Parks and Recreation zone district and General Plan designation, in which it is located. The improvements are proposed at the 58 foot height level of the tower and this does not exceed the maximum 78 foot height permitted for wireless facilities within the Parks and Recreation Zone District.

No zoning violation abatement fees are applicable to the subject property.

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 wireless communications facility will be located at the 58 foot level on an existing PG&E electricity tower, which is approximately 107 foot tall feet in height, and this elevation is too low to interfere with an aircraft in flight.

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 less than 5 percent of the most restrictive applicable 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 does not apply in that the proposed project site is not located within the coastal zone.

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: 141210
Assessor Parcel Number: 051-201-05
Project Location: 80 Marsh Lane, Watsonville, CA 95076

Project Description: Proposal to install 9 panel antennas at the 58 foot level of an existing 107 foot tall PG&E transmission line lattice tower, including ground mounted equipment in a fenced lease area, on a 29.9 acre agriculture zoned parcel. Requires a Commercial Development Permit.

Person or Agency Proposing Project: David Downs, GTW Mobilnet of California (for Verizon)

Contact Phone Number: (916) 917-9746

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: Class 3 - New Construction or Conversion of Small Structures (Section 15303)

F. Reasons why the project is exempt:

Small addition and foundation repair to existing single family dwelling

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

_____ Date:_____
Sheila McDaniel, Project Planner

EXHIBIT A

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 an area designated for wireless facilities 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 improvements will not deprive adjacent properties or the neighborhood of light, air, or open space, in that the structure will meet all current setbacks 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 improvements and the conditions under which it would be operated or maintained will be consistent with all pertinent County ordinances and the purpose of the PR (Existing Parks and Recreation) zone district in that the proposed improvements meet all current site standards for the zone district including setbacks, maximum antenna height, etc.

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 wireless facility is consistent with the use and density requirements specified for the Agriculture (AG) land use designation in the County General Plan.

The proposed wireless project 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.

The proposed wireless project will be compatible with adjacent uses due to its small size and location on an existing utility tower properly proportioned to the parcel size and the character of the neighborhood as specified in General Plan Policy 8.5.2 (commercial compatibility with other uses) in that proposed antennas and equipment enclosure will comply with the site standards for the PR zone district (including setbacks, height) and will result in a structure consistent with a design that could be approved on any similarly sized parks and recreation lot in the vicinity.

The project is not located within a special community or town plan.

The proposed HVAC and generator propose a maximum of 42-60 decibel daytime level and

comply with the maximum 70 decibel daytime General Plan threshold. The project proposes a 47-60 nighttime decibel level. The study concludes that the project can comply with the maximum 45 decibel night time General Plan Noise threshold with proposed solid enclosure fencing. However, because the generator is only intended to be used in an emergency, this would be considered temporary noise not subject to the General Plan standard.

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 existing tower and proposed antennas and equipment enclosure is to be constructed on an existing developed lot. The expected level of traffic generated by the proposed project is not anticipated to affect the traffic volumes associated with these existing uses because the only traffic generated by the proposal will be one utility truck periodically visiting the site for routine maintenance and thus will not adversely impact the 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 antennas and equipment shelter are located in a rural area with limited development, and the proposed improvements are consistent with the land use intensity and density of the neighborhood and will result in no appreciable change in the character of the area or result in significant visual impacts from the existing PG&E tower.

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 improvements will be of an appropriate scale and type of design that will minimize visual impacts to surrounding properties and open space in the surrounding area by provision of improvements on an existing PG&E tower. The proposed equipment shelter will be screened from surrounding property by proposed fencing. Only limited views of the proposed fenced enclosure are possible across the lake from rural agricultural property and then the improvements are against a backdrop of existing mature vegetation softening the views.

Conditions of Approval

Exhibit D: Project Plans, prepared by MST Architects, dated May 12, 2014

I. This permit authorizes the installation of 9 panel antennas at the 58 foot level of an existing 107 foot tall PG&E transmission line lattice tower, including ground mounted equipment in a fenced lease area. 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. 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.

D. The applicant shall obtain approval from the California Public Utilities Commission and the Federal Communications Commission to install and operate this facility.

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 that colors match the color sample on file in the Planning Department, as applicable.

2. Detailed grading and drainage plan completed by a licensed civil engineer for the access road (from Marsh Lane to the equipment pad) and turnaround, as required by Environmental Planning. A grading permit shall be obtained if required.

EXHIBIT C

3. 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.

4. Meet all requirements of and pay Zone 7 drainage fees to the County Department of Public Works, Storm water Management. Drainage fees will be assessed on the net increase in impervious area.

5. Any new electric and telecommunications lines shall be placed underground.

6. A lighting plan. All lighting must be manual and must not be visible from neighboring properties.

7. Details showing compliance with the FCC occupational exposure guidelines and safety measures.

B. Obtain an Environmental Health Clearance for this project from the County Department of Environmental Health Services. To ensure that the storage of hazardous materials on the site does not result in adverse environmental impacts, the applicant shall submit a Hazardous Materials Management Plan for review and approval by the County Department of Environmental Health Services, if required.

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

D. Submit a written statement signed by an authorized representative of the school district in which the project is located confirming payment in full of all applicable developer fees and other requirements lawfully imposed by the school 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 wireless communication facility may not be connected to a power source or operated until a final inspection and clearance from the Santa Cruz County Planning Department has been received.

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. 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.

B. The exterior finish and materials of the wireless communication facility must be maintained on an annual basis to continue to blend with the existing utilities infrastructure. Additional paint and/or replacement materials shall be installed as necessary to blend the wireless communication facility with the existing utilities infrastructure.

C. The operator of the wireless communication facility must submit within 90 days of commencement of normal operations (or within 90 days of any major modification of power output of the facility) a written report to the Santa Cruz County Planning Department documenting the measurements and findings with respect to compliance with the established Federal Communications Commission (FCC) Non-Ionizing Electromagnetic Radiation (NEIR) exposure standard. The wireless communication facility must remain in continued compliance with the NEIR standard established by the FCC at all times. Failure to submit required reports or to remain in continued compliance with the NEIR standard established by the FCC will be a violation of the terms of this permit.

D. If, as a result of future scientific studies and alterations of industry-wide standards resulting from those studies, substantial evidence is presented to Santa Cruz County that radio frequency transmissions may pose a hazard to human health and/or safety, the Santa Cruz County Planning Department shall set a public hearing and in its sole discretion, may revoke or modify the conditions of this permit.

E. If future technological advances would allow for reduced visual impacts resulting from the proposed telecommunication facility, the operator of the wireless communication facility must make those modifications which would allow for reduced visual impact of the proposed facility as part of the normal replacement schedule. If, in the future, the facility is no longer needed, the operator of the wireless communication facility must abandon the facility and be responsible for the removal of all permanent structures and the restoration of the site as needed to re-establish the area consistent with the character of the surrounding natural

landscape.

V. 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.

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	Sheila McDaniel
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.

ZD DRAWING SIGN-OFF

DATE: TIME: % CWC-PLEASE RETURN BY:

	SIGNATURE	DATE
COMPLETE Wireless Consulting, Inc.		
SITE ACQUISITION:		
PLANNING:		
CONSTRUCTION:		
MANAGEMENT:		

	SIGNATURE	DATE
verizon WIRELESS		
CONSTRUCTION:		
REAL ESTATE:		
RF ENGINEER:		
EQUIPMENT ENGINEER:		
MW ENG./TRANSPORT:		

OTHER (IF APPLICABLE)

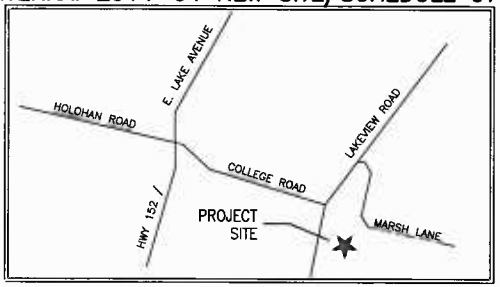
SIGNATURE	DATE

verizon WIRELESS

2785 Mitchell Drive, Walnut Creek, CA 94598

HWY 129 & LAKEVIEW

100 MARSH LANE
WATSONVILLE, CA 95076
APN: 051-201-05
LOCATION #: 280013
PG&E PROJECT INFORMATION
SITE NUMBER: VZN-280013
SITE NAME: HWY 129/LAKEVIEW
SAP TOWER NUMBER: 40771613
LINE NAME & VOLTAGE: MOSS LANDING-GREEN VALLEY #1 115kV
TOWER NUMBER: 011/064
SITERRA: 2014-04 NEW SITE/SCHEDULE 9734



WATSONVILLE, CA

LOCATION PLAN

DIRECTIONS

GET ON I-680 S FROM YGNACIO VALLEY RD
FOLLOW I-680 S AND US-101 S TO TENNANT AVE IN MORGAN HILL
TAKE THE TENNANT AVE EXIT FROM US-101 S
TAKE WATSONVILLE RD AND CA-152 W/HECKER PASS RD
TO MARSH LN IN INTERLAKEN
TURN RIGHT ONTO TENNANT AVE
TURN LEFT ONTO BUTTERFIELD BLVD
CONTINUE ONTO WATSONVILLE RD
TURN RIGHT TO STAY ON WATSONVILLE RD
TURN RIGHT ONTO CA-152 W/HECKER PASS RD
TURN LEFT ONTO CARLTON RD
TURN RIGHT ONTO LAKEVIEW RD
TAKE THE 1ST LEFT ONTO MARSH LN
DESTINATION WILL BE ON THE RIGHT

INDEX OF DRAWINGS

PROJECT DIRECTORY

APPLICANT:
VERIZON WIRELESS
2785 MITCHELL DRIVE
WALNUT CREEK, CA 94598

PROPERTY OWNER:
PACIFIC GAS & ELECTRIC
245 MARKET ST. 10TH FLOOR N10D
SAN FRANCISCO, CA 94105

ARCHITECT:
MANUEL S. TSIHLAS
MST ARCHITECTS, INC.
801 ALHAMBRA BLVD., SUITE 2
SACRAMENTO, CA 95816
916-341-0405
manuel@mstarchitects.com

CONSTRUCTION MANAGER:
SERJIO CABRERA
COMPLETE WIRELESS CONSULTING, INC.
2009 V STREET
SACRAMENTO, CA 95818
916-217-9219
scabrera@completewireless.net

PROJECT SUMMARY

ASSESSOR'S PARCEL NUMBER:	051-201-05
JURISDICTION:	CITY OF WATSONVILLE
OCCUPANCY:	S-2 (UNMANNED TELECOMMUNICATIONS FACILITY) U (TOWER)
TYPE OF CONSTRUCTION:	V-B
ZONING:	PARKS & RECREATION (PR)

CODE COMPLIANCE

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

1. 2013 CALIFORNIA ADMINISTRATIVE CODE (CAC) (INCL. TITLE 24 & 25)
2. 2013 CALIFORNIA BUILDING CODE (CBC)
3. 2013 CALIFORNIA RESIDENTIAL BUILDING CODE
4. 2013 CALIFORNIA ELECTRICAL CODE (CEC)
5. 2013 CALIFORNIA MECHANICAL CODE (CMC)
6. 2013 CALIFORNIA PLUMBING CODE (CPC)
7. 2013 CALIFORNIA ENERGY CODE (CENC)
8. 2013 CALIFORNIA HISTORICAL BUILDING CODE
9. 2013 CALIFORNIA FIRE CODE (CFC)
10. 2013 CALIFORNIA EXISTING BUILDING CODE
11. 2013 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGreen CODE)
12. 2013 CALIFORNIA REFERENCE STANDARDS CODE
13. LOCAL COUNTY OR CITY ORDINANCES
14. PRE-FABRICATED EQUIPMENT SHELTER IS STATE OF CALIFORNIA INSPECTED AND APPROVED, NOT FOR LOCAL INSPECTION.

ACCESSIBILITY REQUIREMENTS: THIS FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. ACCESSIBILITY NOT REQUIRED IN ACCORDANCE WITH THE 2013 CBC 11B-203.5, AND 11B-202.4 EXCEPTION 7.

PROJECT DESCRIPTION

- A 649 SQUARE FOOT LEASE AREA LICENSE.
- A WOOD FENCE @ LEASE AREA PERIMETER.
- A PRE-FABRICATED EQUIPMENT SHELTER.
- UNDERGROUND POWER & TELCO UTILITIES.
- STANDBY DIESEL GENERATOR.
- (9) ANTENNAS W/ASSOCIATED TOWER MOUNTED EQUIPMENT MOUNTED ON AN EXISTING 107.0' PG&E TRANSMISSION TOWER.

PROJECT MILESTONES

05/12/2014	90% ZONING DOCUMENTS
06/14/2014	100% ZONING DOCUMENTS
XX/XX/XXXX	90% CONSTRUCTION DOCUMENTS
XX/XX/XXXX	100% CONSTRUCTION DOCUMENTS

COMPLETE Wireless Consulting, Inc.

MST ARCHITECTS

HWY 129 & LAKEVIEW
100 MARSH LANE
WATSONVILLE, CA 95076
verizon WIRELESS

SHEET TITLE: TITLE SHEET, LOCATION PLAN, PROJECT DATA

Revisions:
1 --
2 --
3 --
4 --
5 --

File: 162.1138_T11.dwg
Drawn By: JCZ
Checked By: MST
Scale: AS NOTED
Date: 05/12/2014

Job No. 162.1138

T1.1

VERIZON WIRELESS
HWY 129 & LAKEVIEW LICENSE AREA

ALL THAT CERTAIN LICENSE AREA BEING A PORTION OF PARCEL OF LAND DESCRIBED IN DOCUMENT NUMBER 2005-0049417 OFFICIAL RECORDS OF SANTA CRUZ COUNTY, STATE OF CALIFORNIA AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

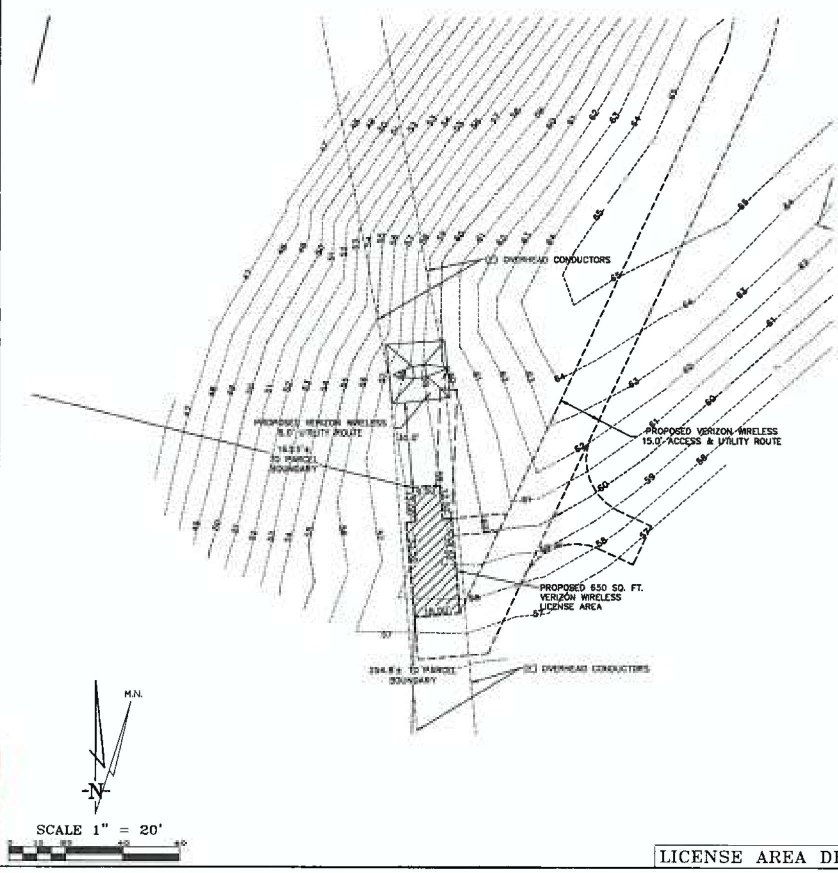
BEGINNING AT A POINT HAVING CALIFORNIA STATE PLANE ZONE 3 COORDINATES OF NORTH 1800729.39, EAST 6203237.63; THENCE FROM SAID POINT OF BEGINNING SOUTH 05°03'51" EAST 12.00 FEET; THENCE NORTH 84°56'09" EAST 3.25 FEET; THENCE SOUTH 05°03'51" EAST 33.50 FEET; THENCE SOUTH 84°56'09" WEST 16.00 FEET; THENCE NORTH 05°03'51" WEST 33.50 FEET; THENCE NORTH 84°56'09" EAST 3.25 FEET; THENCE NORTH 05°03'51" WEST 12.00 FEET; THENCE NORTH 84°56'09" EAST 9.50 FEET TO THE POINT OF BEGINNING.

TOGETHER WITH A ROUTE FOR UTILITY PURPOSES SIX FEET IN WIDTH THE CENTERLINE OF WHICH IS DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE BOUNDARY OF THE ABOVE DESCRIBED LICENSE AREA WHICH BEARS SOUTH 05°03'51" EAST 12.00 FEET AND NORTH 84°56'09" EAST 0.23 FEET; FROM THE NORTHEAST MOST CORNER THEREOF; THENCE FROM SAID POINT OF BEGINNING NORTH 02°20'05" EAST 46.0 FEET MORE OR LESS TO AN EXISTING ELECTRICAL TRANSMISSION TOWER; THENCE ON SAID TOWER AS NECESSARY FOR THE PLACEMENT OF CELLULAR ANTENNAS AND APPURTENANCES.

ALSO TOGETHER WITH A ROUTE FOR ACCESS AND UTILITY PURPOSES, FIFTEEN FEET IN WIDTH, THE CENTERLINE OF WHICH IS DESCRIBED AS FOLLOWS: BEGINNING AT A POINT WHICH BEARS SOUTH 05°03'51" EAST 7.50 FEET FORM THE SOUTHWEST CORNER OF THE ABOVE DESCRIBED LICENSE AREA; THENCE FROM SAID POINT OF BEGINNING SOUTH 84°56'09" EAST 20.35 FEET; THENCE NORTH 25°14'44" EAST 222.50FEET; THENCE NORTH 13°43'36" EAST 422.42 FEET; THENCE NORTH 32°54'01" EAST 91.36 FEET; THENCE NORTH 11°35'46" EAST 93.20 FEET TO A POINT HEREAFTER REFERRED TO AS POINT "A"; THENCE CONTINUING NORTH 11°35'46" EAST 3.00 FEET MORE OR LESS TO THE TWENTY FOOT RIGHT OF WAY AS DESCRIBED IN THE AFOREMENTIONED DOCUMENT; THENCE ALONG SAID RIGHT OF WAY TO THE PUBLIC RIGHT OF WAY COMMONLY KNOWN AS LAKEVIEW ROAD, AND AS NECESSARY FOR REQUIREMENTS OF FIRE SAFE TURN AROUND REQUIREMENTS.

ALSO TOGETHER WITH A ROUTE FOR ACCESS AND UTILITY PURPOSES, SIX FEET IN WIDTH, THE CENTERLINE OF WHICH IS DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE BOUNDARY OF THE ABOVE DESCRIBED LICENSE AREA WHICH BEARS SOUTH 05°03'51" EAST 12.00 FEET, NORTH 84°56'09" EAST 3.25 FEET AND SOUTH 05°03'51" EAST 3.00 FEET FROM THE NORTHEAST MOST CORNER THEREOF; THENCE FROM SAID POINT OF BEGINNING NORTH 84°56'09" EAST 26.5 FEET.

ALSO TOGETHER WITH A ROUTE FOR ACCESS AND UTILITY PURPOSES, SIX FEET IN WIDTH, THE CENTERLINE OF WHICH IS DESCRIBED AS FOLLOWS: BEGINNING AT THE ABOVE DESCRIBED POINT A AND RUNNING THENCE NORTH 76°056'00" EAST 25.0 FEET MORE OR LESS AS NECESSARY FOR CONNECTION OF UTILITY SERVICE.



LICENSE AREA DETAIL

Project Name: Hwy 129 & Lakeview

Project Site Location: 100 Marsh Lane
Watsonville, CA 95076
Santa Cruz County

Date of Observation: 04-24-14

Equipment/Procedure Used to Obtain Coordinates: Trimble Pathfinder GeoXT post processed with Pathfinder Office software.

Type of Antenna Mount: Existing Transmission Tower

Coordinates (Centerline Lease Area)
Latitude: N 36°56'02.33" (NAD83) N 36°56'02.50" (NAD27)
Longitude: W 121°43'34.85" (NAD83) W 121°43'31.03" (NAD27)

ELEVATION of Ground at Structure (NAVD88) 59' AMSL
Height of Structure: 107' AGL

DATE OF SURVEY: 04-24-14

SURVEYED BY OR UNDER DIRECTION OF: KENNETH D. GEIL, RCE 14803

LOCATED IN THE COUNTY OF SANTA CRUZ, STATE OF CALIFORNIA

BEARINGS SHOWN ARE BASED UPON MONUMENTS FOUND AND RECORD INFORMATION. THIS IS NOT A BOUNDARY SURVEY.

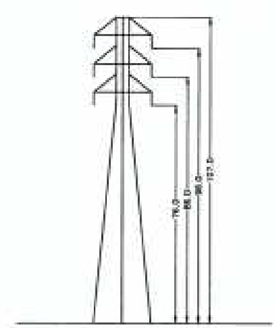
ELEVATIONS SHOWN ON THIS PLAN ARE BASED UPON U.S.G.S. N.A.V.D. 88 DATUM. ABOVE MEAN SEA LEVEL UNLESS OTHERWISE NOTED.

N.G.V.D. 1929 CORRECTION: SUBTRACT 2.72' FROM ELEVATIONS SHOWN.

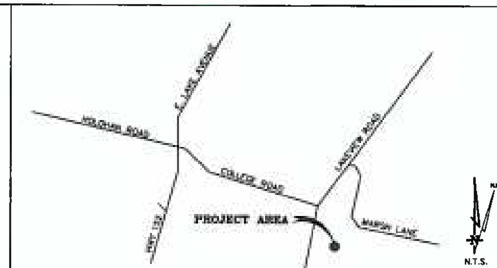
CONTOUR INTERVAL: 1 FT.

ASSESSOR'S PARCEL NUMBER: 051-201-05

LANDLORD(S): PACIFIC GAS & ELECTRIC
245 MARKET ST. 10TH FLOOR N10D
SAN FRANCISCO, CA 94105



TOWER DIAGRAM

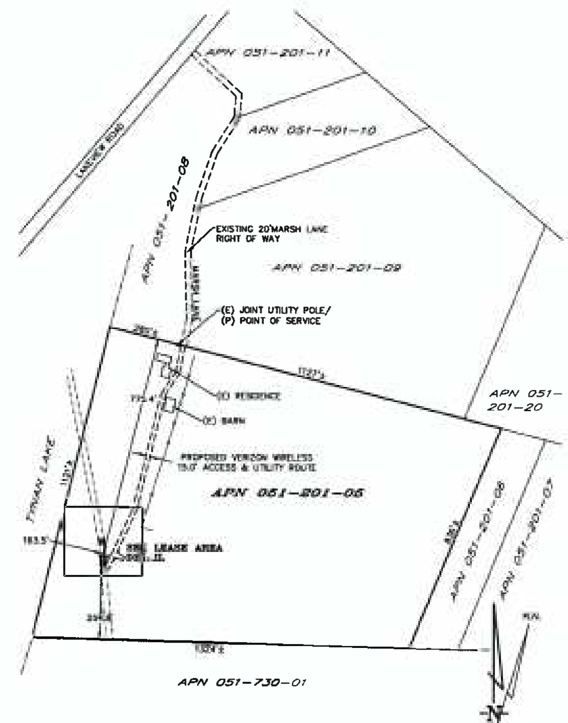


WATSONVILLE, CA

VICINITY MAP

THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OF SERVICE, ARE THE EXCLUSIVE PROPERTY OF GEIL ENGINEERING AND THEIR USE AND PUBLICATION SHALL BE RESTRICTED TO THE ORIGINAL SITE AND CARRIER FOR WHICH THEY ARE PREPARED. REUSE, REPRODUCTION OR PUBLICATION BY ANY METHOD, IN WHOLE OR IN PART, IS PROHIBITED EXCEPT BY WRITTEN PERMISSION FROM GEIL ENGINEERING. TITLE TO THESE PLANS AND/OR SPECIFICATIONS SHALL REMAIN WITH GEIL ENGINEERING WITHOUT PREJUDICE AND VISUAL CONTACT WITH THEM SHALL CONSTITUTE PRIMA FACIE EVIDENCE OF ACCEPTANCE OF THESE RESTRICTIONS.

TITLE HAS NOT BEEN REVIEWED FOR THIS PROJECT. BOUNDARY SHOWN IS BASED ON MONUMENTATION FOUND AND RECORD INFORMATION. THIS IS NOT A BOUNDARY SURVEY. THIS IS A SPECIALIZED TOPOGRAPHIC MAP WITH PROPERTY LINES AND EASEMENTS BEING A GRAPHIC DEPICTION BASED ON INFORMATION GATHERED FROM VARIOUS SOURCES OF RECORD AND AVAILABLE MONUMENTATION FOUND DURING THE FIELD SURVEY. NO EASEMENTS WERE RESEARCHED OR PLOTTED. PROPERTY LINES AND LINES OF TITLE WERE NOT INVESTIGATED NOR SURVEYED. NO PROPERTY MONUMENTS WERE SET.



OVERALL PROJECT AREA

verizon wireless

GEIL ENGINEERING

Hwy 129 & Lakeview
100 Marsh Lane
Watsonville, CA 95076

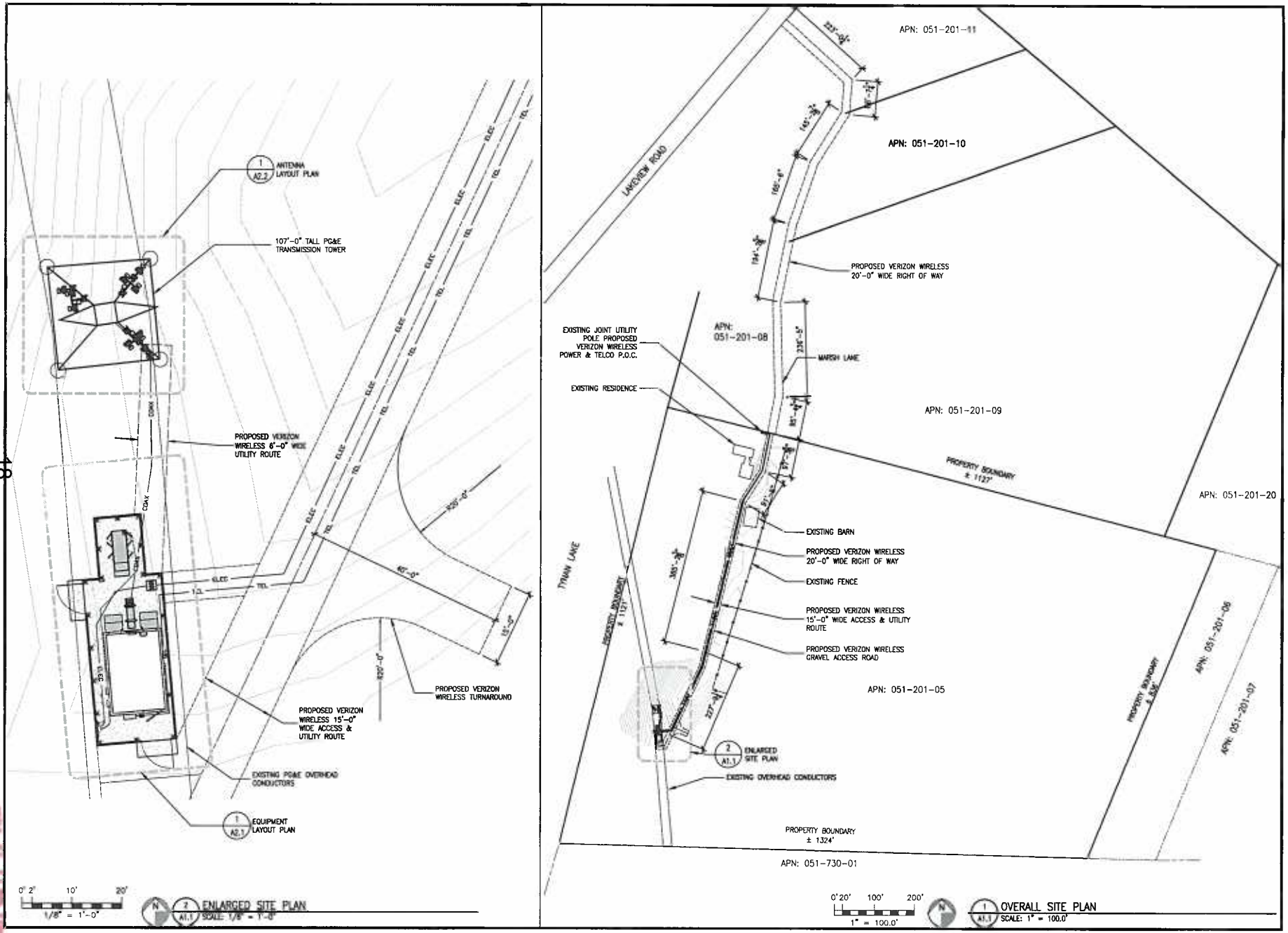
PLOT PLAN AND
SITE TOPOGRAPHY

DEPT	APPROVED	DATE
A&C		
RF		
INT		
EE/OUT		

05-04-14 DG	Preliminary Drawing	
05-13-14 DG	rev. lease area	
06-11-14 DG	rev. license area	

C-1

EXHIBIT D



MST ARCHITECTS

COMPLETE Wireless Engineering, Inc.

HWY 129 & LAKEVIEW
100 MARSH LANE WATSONVILLE, CA 95076

verizon WIRELESS

SHEET TITLE: OVERALL SITE PLAN

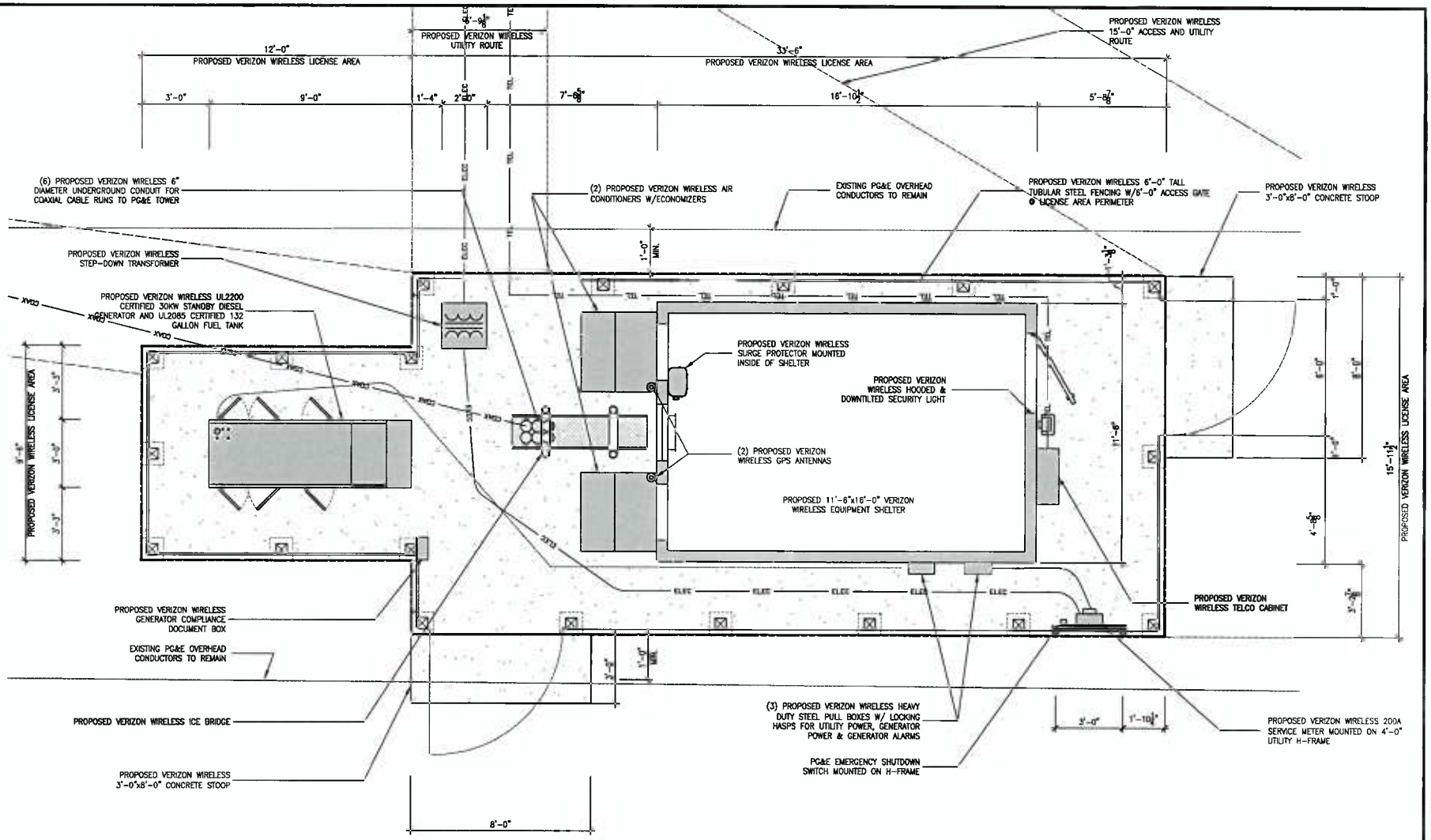
File: 182.1138A11.dwg
Drawn By: TST
Checked By: MST
Scale: AS NOTED
Date: 05/12/2014

Job No. 182.1138

A1.1

18

EXHIBIT D



MST ARCHITECTS

COMPLETE WIRELESS CONSULTING, INC.

HWY 129 & LAKEVIEW
100 MARSH LANE
WATSONVILLE, CA 95076

verizon WIRELESS

SHEET TITLE: ENLARGED EQUIPMENT PLAN

Revisions:
1 --
2 --
3 --
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File: 162.1138A21.dwg
Drawn By: XXX
Checked By: MST
Scale: AS NOTED
Date: 05/12/2014

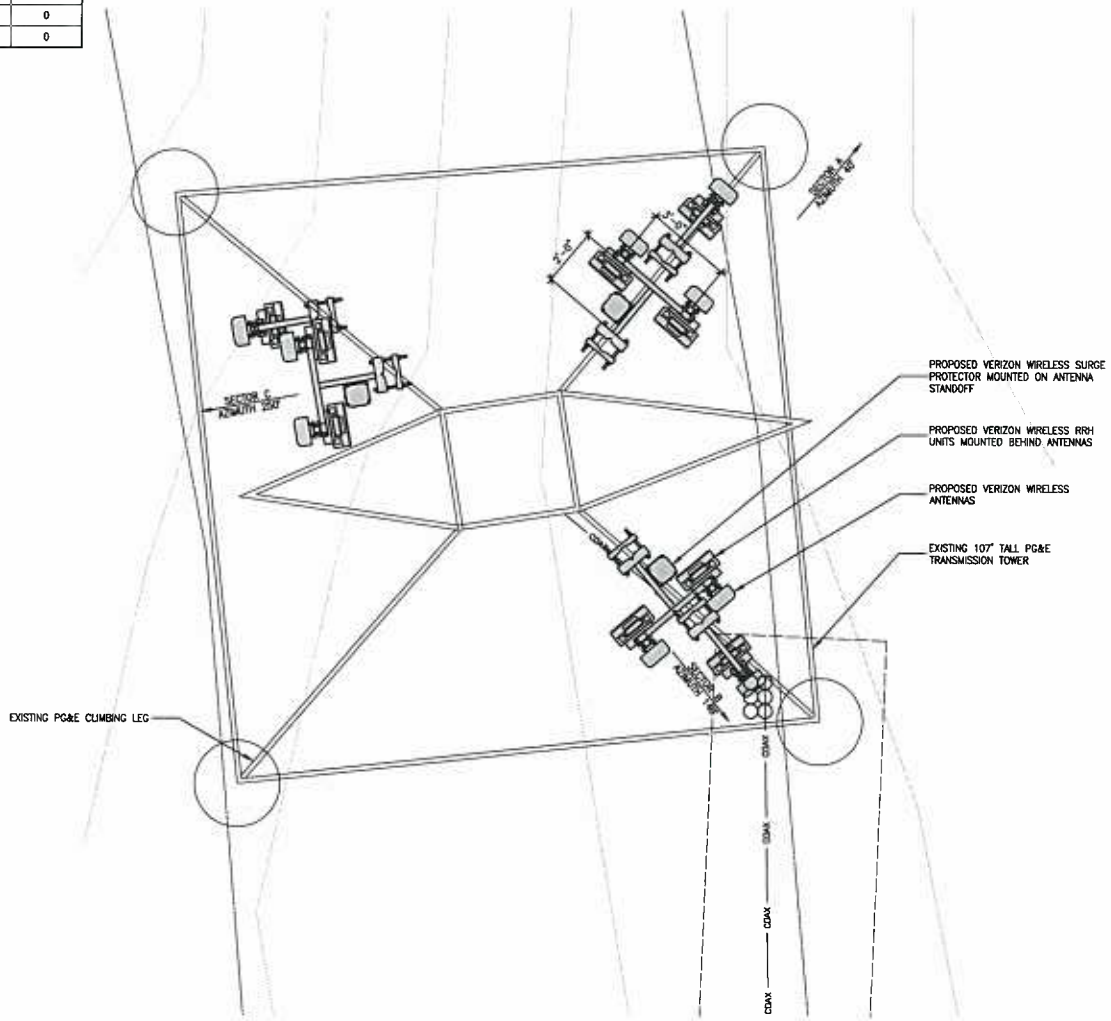
Job No. 162.1138

A2.1

19

EXHIBIT D

EQUIPMENT SCHEDULE					
EQUIPMENT	DESCRIPTION	QUANTITY			TOTAL
		SECTOR A	SECTOR B	SECTOR C	
ANTENNA	TO BE DETERMINED	3	3	3	9
RRH	RRUS12 W/A2	4	4	4	12
TMA OR DIPLEXER	N/A	0	0	0	0
SURGE PROTECTOR/HYBRID	RAYCAP DC3315 / HYBRID TRUNK CABLE	3/3			3/3
COAXIAL CABLE	7/8" DIAMETER COAX	0	0	0	0
RET CABLE	N/A	0			0



0' 1' 5' 10'
1/2" = 1'-0"

1 ENLARGED ANTENNA LAYOUT PLAN
A2.1 SCALE: 1/2" = 1'-0"

MST ARCHITECTS

HWY 129 & LAKEVIEW
100 MARSH LANE WATSONVILLE, CA 95076

verizon WIRELESS

SHEET TITLE: ANTENNA LAYOUT PLAN

Revisions:
1 --
2 --
3 --
4 --
5 --

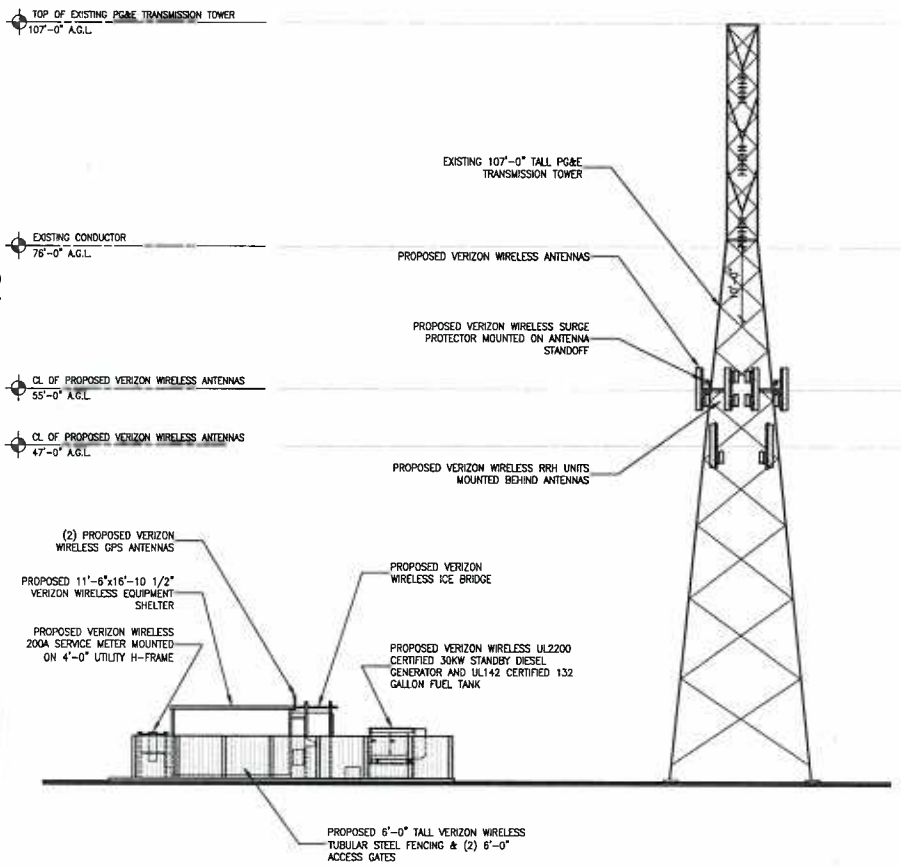
File: 162.1138A22.dwg
Drawn By: KRY
Checked By: MST
Scale: AS NOTED
Date: 05/13/2014

Job No. 162.1138

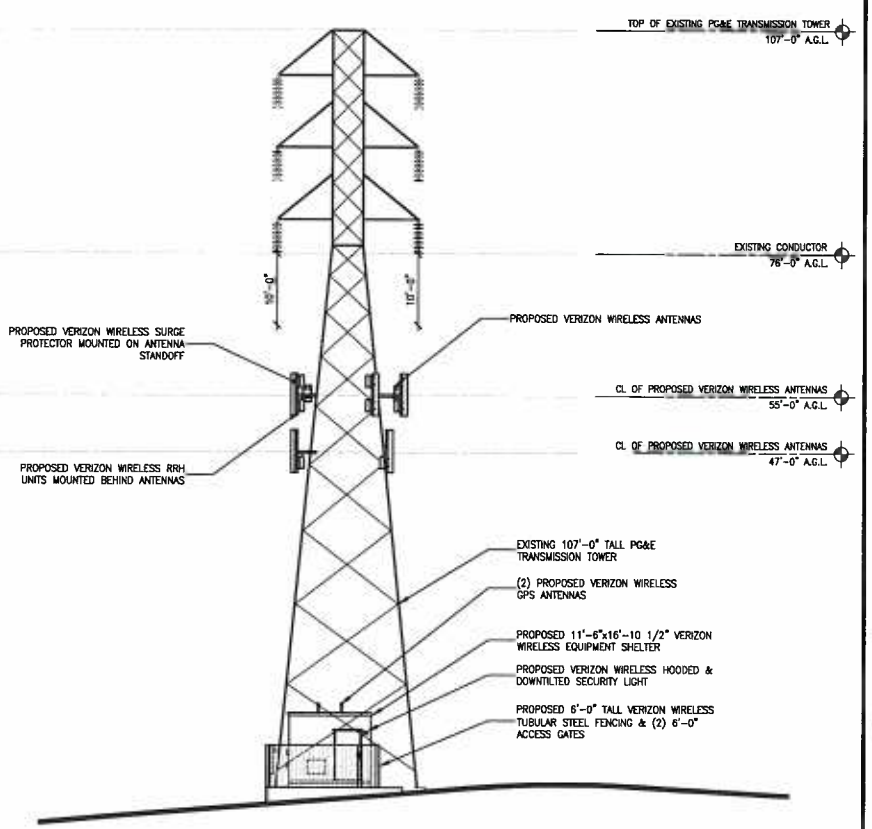
A2.2

20

EXHIBIT D



3 A3.1 EAST ELEVATION
SCALE: 1/8" = 1'-0"



1 A3.1 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

MST ARCHITECTS
COMPLETE Wireless Consulting, Inc.

HWY 129 & LAKEVIEW
100 MARSH LANE
WATSONVILLE, CA 95076

verizon WIRELESS

SHEET TITLE: PROJECT ELEVATIONS

Revisions:
1 —
2 —
3 —
4 --
5 —

File: 162.1138A31.dwg
Drawn By: KRI
Checked By: MST
Scale: AS NOTED
Date: 05/12/2014

Job No. 162.1138

A3.1

21

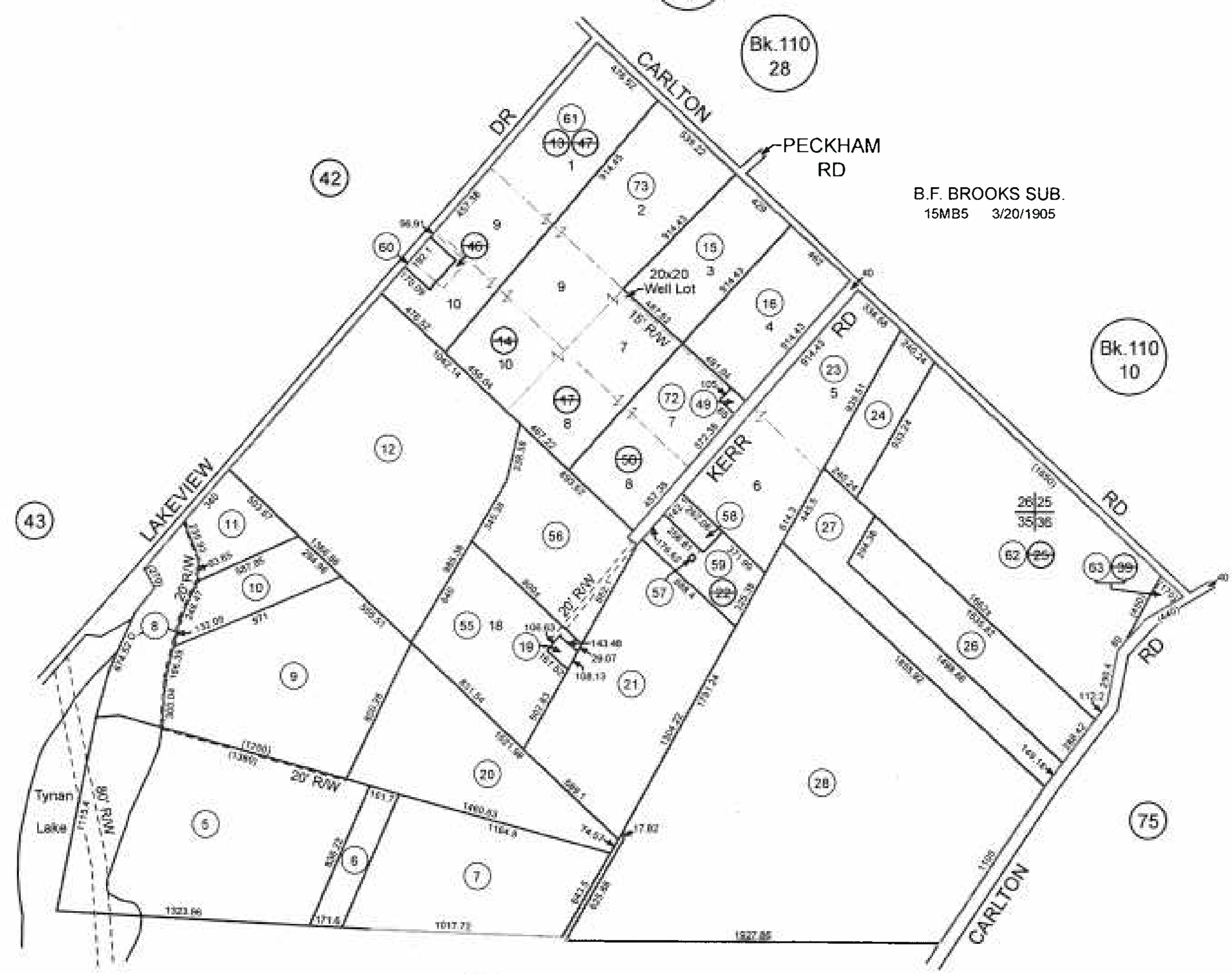
EXHIBIT D

POR. SALSIPUEDES RANCHO

POR. SECS. 25, 26, 35 & 36 T.11S., R.2E., M.D.B. & M.

Tax Area Code
69-258

51-20



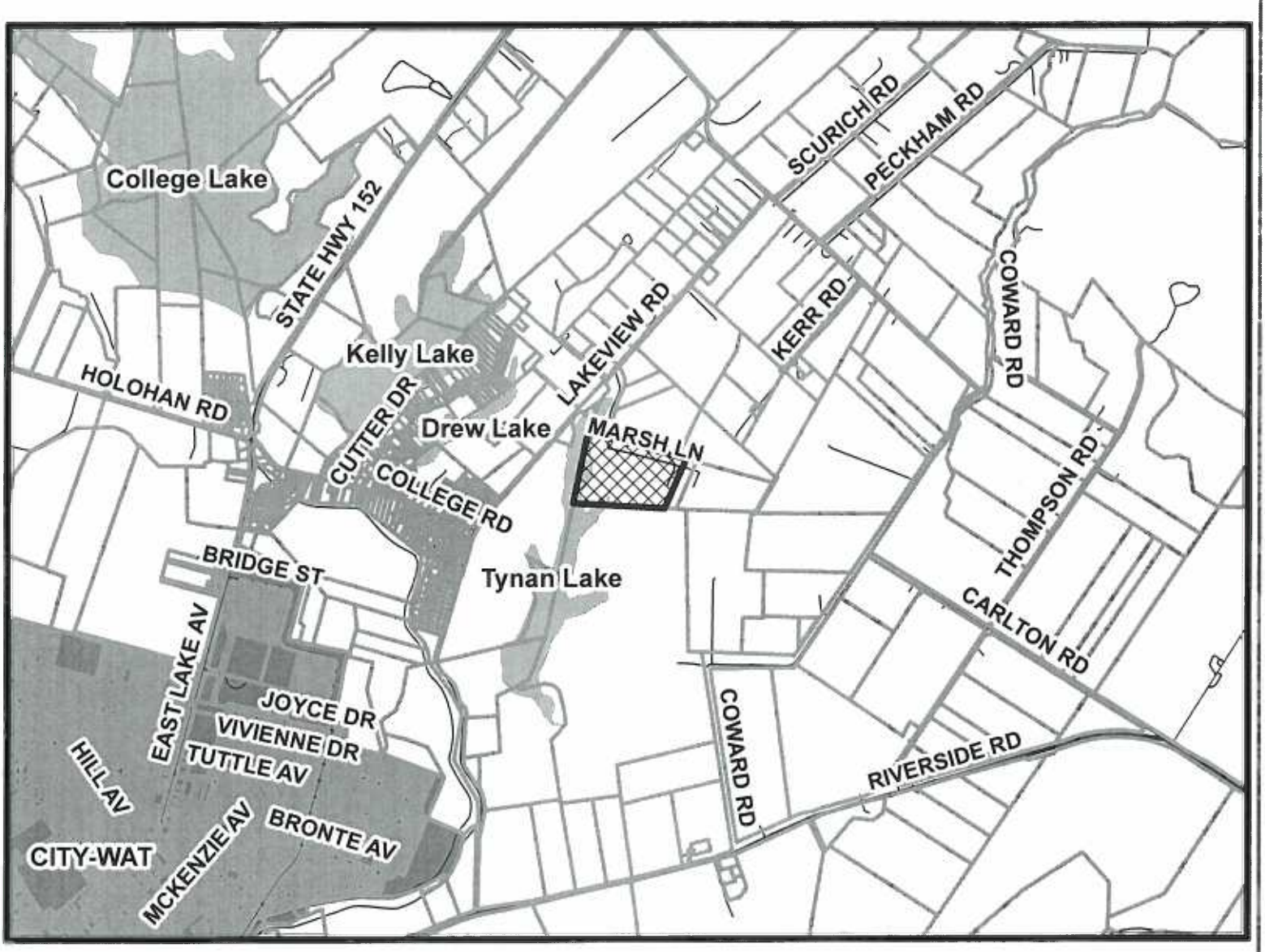
Note - Assessor's Parcel & Block
Numbers are Shown in Circles.

Assessor's Map No. 51-20
County of Santa Cruz, Calif.
June 2000

FOR TAX PURPOSES ONLY

Electronically redrawn 6/23/00 KSA
Rev. 6/23/00 KSA (Por. to Pgs. 73-75)
Rev. 6/7/01 mvm (changed page refs.)
Rev. 3/15/04 CB (Cor. bndy to 1-05 & 06)
Rev. 10/27/08 CB (Spatial Adjustment)
Rev. 12/16/13 mc (Cor. to dims, 1-19, 20, 21, 55 & 56)

Location Map



0 2,050 4,100 8,200 12,300 16,400 Feet

LEGEND

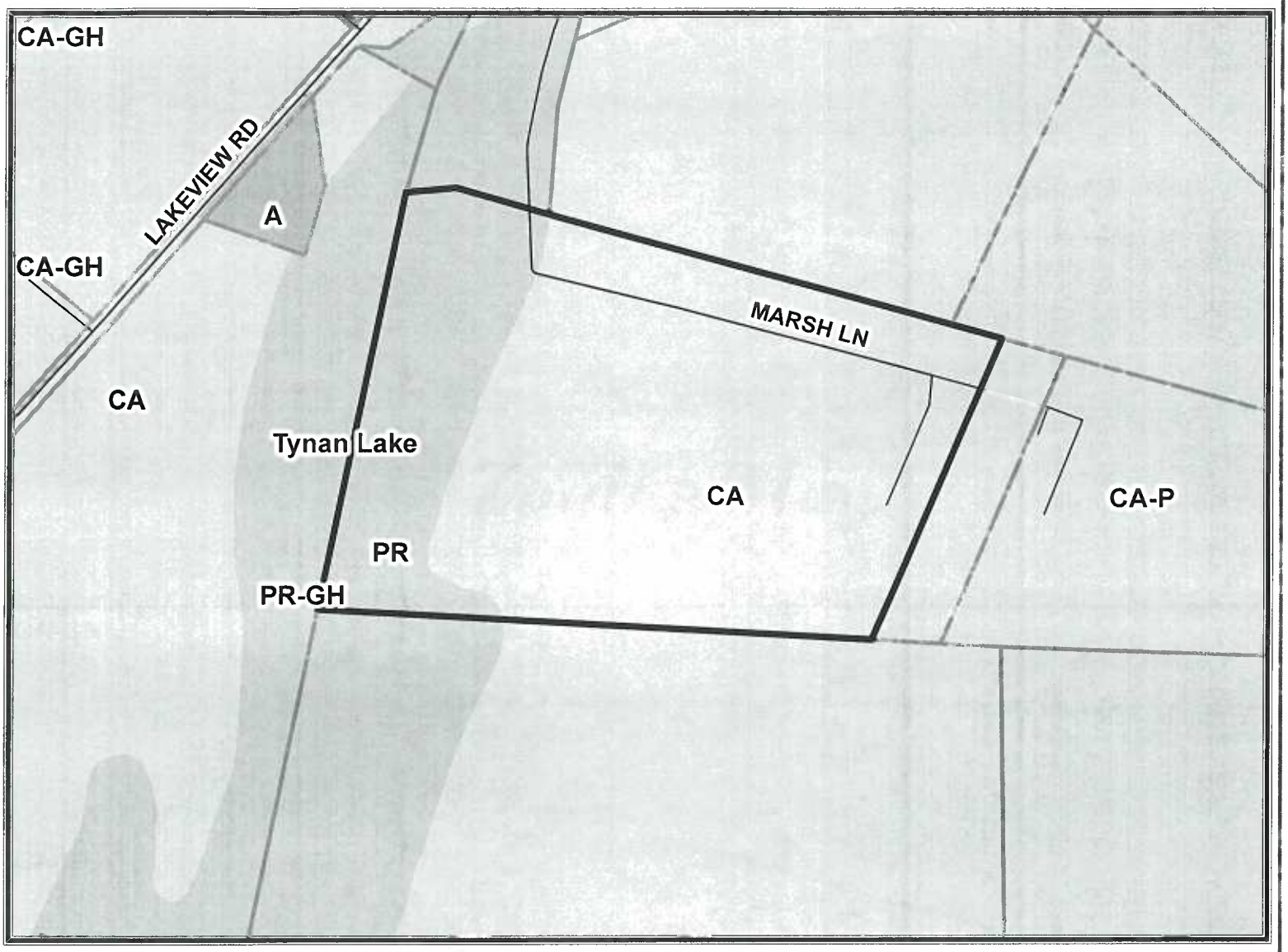
- APN: 051-201-05
- Assessors Parcels
- Street
- State Highways
- CITY OF WATSONVILLE
- Lakes

N W E S

Map Created by
County of Santa Cruz
Planning Department
November 2014

EXHIBIT E

Zoning Map



0 337.5 675 1,350 2,025 2,700 Feet

LEGEND

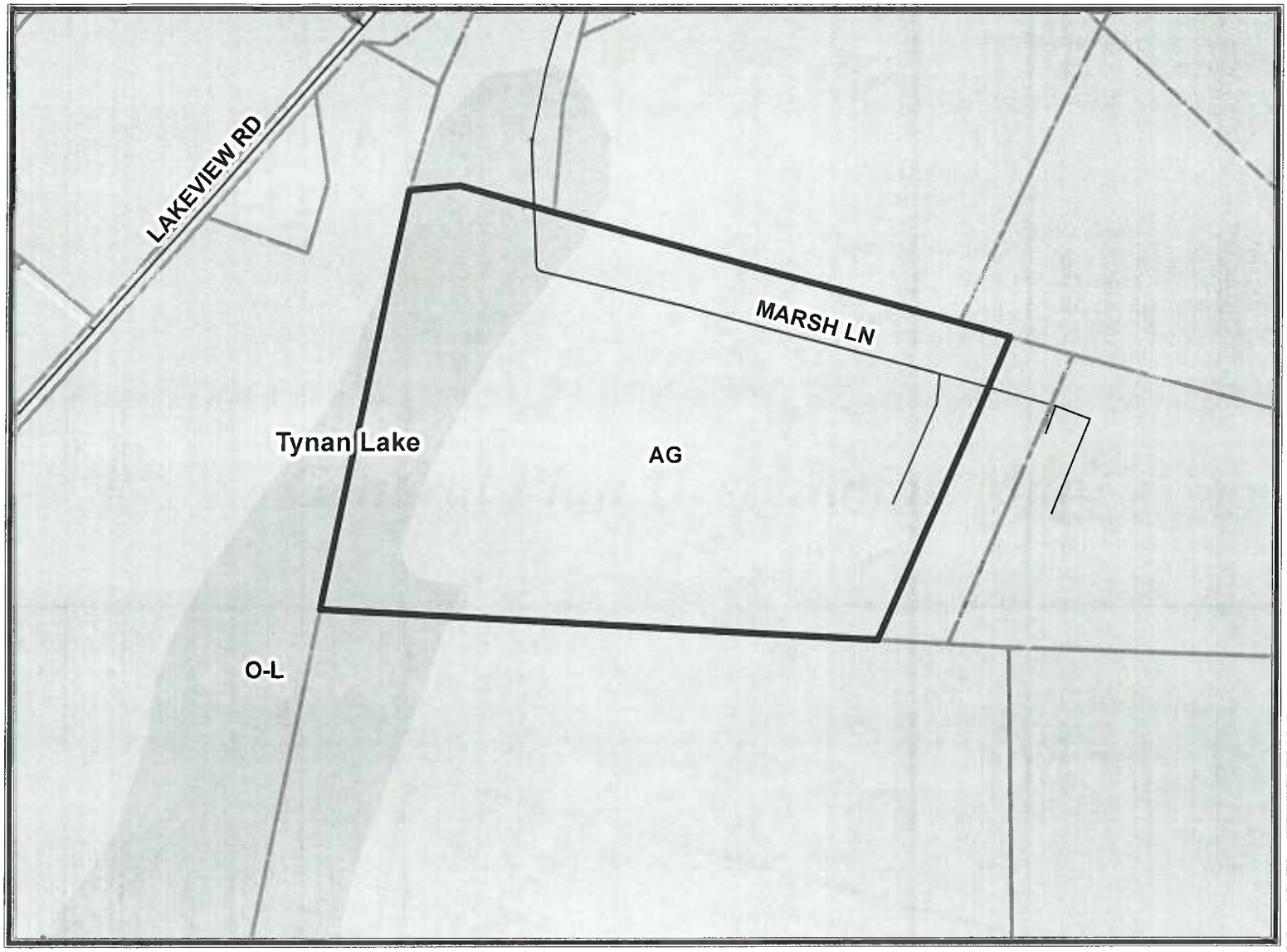
- APN: 051-201-05
- Assessors Parcels
- Street
- AGRICULTURE COMMERCIAL
- PARK
- AGRICULTURE

N W E S

Map Created by
County of Santa Cruz
Planning Department
November 2014

EXHIBIT E

General Plan Designation Map



0 337.5 675 1,350 2,025 2,700 Feet

LEGEND

- APN: 051-201-05
- Assessors Parcels
- Street
- Agriculture
- Lake

N
W E
S

Map Created by
County of Santa Cruz
Planning Department
November 2014

EXHIBIT E

Sitesafe, Inc.
200 N. Glebe Rd, Suite 1000, Arlington, VA 22203-3728
703-276-1100 info@sitesafe.com www.sitesafe.com

280013 - Hwy 129 & Lakeview
Radio Frequency (RF) Site Compliance Report

100 Marsh Lane, Watsonville, CA 95076

REGISTERED PROFESSIONAL ENGINEER
MATTHEW J. BUTCHER
E 18612
ELECTRICAL
STATE OF CALIFORNIA

Registration Expires December 31, 2014

Matthew J Butcher
Registered Professional Engineer
State of California License E 18612

EXHIBIT F

Sitesafe, Inc.
200 N. Glebe Rd, Suite 1000, Arlington, VA 22203-3728
703-276-1100 info@sitesafe.com www.sitesafe.com

Radio Frequency Exposure Pre-Installation FCC Compliance Assessment

Site Specific Information			
Site Name	**Hwy 129 & Lakeview**	**Categorically Excluded?**	**No**
Street Address	**100 Marsh Lane**	**5% Contributor To Areas Requiring Mitigation?**	**No**
City, State, Zip	**Watsonville, CA 95076**		
Multi-Licensee Facility	**No**	**Verizon's Max % MPE (Predictive – Occupational)**	**<1% Occupational**
Structure Type	**Power Line**	**Verizon's Max % MPE (Measured –Occupational)**	**N/A**
Broadcast Equipment	**No**	**Assessment Date**	**August 29, 2014**
# of Access Points	**1**	**Assessment Purpose**	**NEW SITE BUILD**
Compliance Status		**MITIGATION REQUIRED**	

X	Verizon's Worst-case RF power density levels are BELOW the MPE for General Population/Uncontrolled Environments in accessible areas.
☐	Verizon's Worst-case RF power density levels are ABOVE the MPE for General Population/Uncontrolled Environments but BELOW the MPE for Occupational/Controlled environments.
☐	Verizon's Worst-case RF power density levels are ABOVE the MPE for Occupational/Controlled Environments but BELOW 10x the MPE for Occupational/Controlled environments.
☐	Verizon's Worst-case RF power density levels are ABOVE 10x the MPE for Occupational/Controlled environments.

Compliance Requirements						
	Guidelines	**Notice**	**Caution**	**Warning**	**NOC Information**	**Barrier/Marker**
Gate 1	[#]	[#]	[#]	[#]	X [1]	
Gate 2	[#]	[#]	[#]	[#]	[#]	
Access Points	X [1]	[#]	X [1]	[#]	[#]	
Alpha	[#]	[#]	[#]	[#]	[#]	
Beta	[#]	[#]	[#]	[#]	[#]	
Gamma	[#]	[#]	[#]	[#]	[#]	

Additional Compliance Requirements(s):			
Access to the electric transmission tower to remain locked/restricted to the general public.			
Consultant Legal Name	Sitesafe, Inc.	**Phone/Fax**	703-276-1100
Address	200 North Glebe Road, Suite 1000 Arlington, VA 22203-3728		

EXHIBIT F

Contents

EXHIBIT F

Sitesafe, Inc.
200 N. Glebe Rd, Suite 1000, Arlington, VA 22203-3728
703-276-1100 info@sitesafe.com www.sitesafe.com

1. Executive Summary

Verizon Wireless has contracted with Sitesafe, Inc., an independent Radio Frequency consulting firm, to conduct a Radio Frequency Exposure (RFE) Compliance **Pre-Installation Assessment** of the Hwy 129 & Lakeview cell site. The following report contains a detailed summary of the Radio Frequency environment as it relates to Federal Communications Commission (FCC) and Occupational Safety & Health Administration (OSHA) Rules and Regulations for all individuals.

The **Verizon Wireless antenna data** was provided by:

Name	Lucy M Sarkisyan
Title	Assistant Planner
Date	August 29, 2014
Region	West

This **Pre-Installation** compliance assessment and report has been prepared and **reviewed** by:

	Preparer	**Reviewer**
Name	Kevin Smith	(See PE signature on title page)
Title	EME Report Writer	Professional Engineer
Date	8/29/2014	8/29/2014

This report utilizes the following **for predictive modeling of the ambient RF environment**:
MPE Modeling Program: SitesafeTC
Required Modeling Assumptions: 100% Duty Cycle and Maximum Total Power Output.

Additional Modeling Assumptions:

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The site has been modeled with these assumptions to show the maximum RF energy density. Sitesafe believes this to be a worst-case analysis, based on best available data. Areas modeled to predict emissions greater than 100% of the applicable MPE level may not actually occur, but are shown as a worst-case prediction that could be realized real time. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Thus, at any time, if power density measurements were made, we believe the real-time measurements would indicate levels below those depicted in the RF emission diagram(s) in this report. By modeling in this way, Sitesafe has conservatively shown exclusion areas – areas that should not be entered without the use of a personal monitor, carriers reducing power, or performing real-time measurements to indicate real-time exposure levels.

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest

Sitesafe, Inc.
200 N. Glebe Rd, Suite 1000, Arlington, VA 22203-3728
703-276-1100 info@sitesafe.com www.sitesafe.com

Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

EXHIBIT F

2. Existing Site Characteristics

a. Structure

Physical Description	Electric Transmission Tower
Site Latitude (NAD 83)	N36-56-05.40
Site Longitude (NAD 83)	W121-43-28.15
Site Elevation (AMSL)	59 feet
Structure Height (AGL)	107 feet
Overall Structure Height	107 feet

b. Accessibility

Site not visited.

c. Verizon Wireless Signage

Existing Signage						
	Guidelines	**Notice**	**Caution**	**Warning**	**NOC Information**	**Barrier/Marker**
Gate 1	[#]	[#]	[#]	[#]	[#]	
Gate 2	[#]	[#]	[#]	[#]	[#]	
Access Points	[#]	[#]	[#]	[#]	[#]	
Alpha	[#]	[#]	[#]	[#]	[#]	
Beta	[#]	[#]	[#]	[#]	[#]	
Gamma	[#]	[#]	[#]	[#]	[#]	
	Existing Signage Adheres to VZW Signage & Demarcation Policy?					No

EXHIBIT F

d. Antenna Inventory

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Ant Gain (dBd)	Total ERP (Watts)	X	Y	Z (AGL)
1	VERIZON WIRELESS (PROPOSED/FUTURE USE)	Andrew LNX-6514DS-VTM	Panel	850	40	65	6.1	13.75	0	119.3'	155.5'	55'
2	VERIZON WIRELESS (PROPOSED)	Andrew LNX-6514DS-VTM	Panel	751	40	65	6.1	13.73	1880	121.7'	153.5'	55'
3	VERIZON WIRELESS (PROPOSED)	Andrew HBXX-6517DS-VTM	Panel	1900	40	66	6.2	16.2	4113	124.1'	151.5'	55'
3	VERIZON WIRELESS (PROPOSED)	Andrew HBXX-6517DS-VTM	Panel	2100	40	65	6.2	16.72	4407	124.1'	151.5'	55'
4	VERIZON WIRELESS (PROPOSED/FUTURE USE)	Andrew LNX-6514DS-VTM	Panel	850	140	65	6.1	13.75	0	124.8'	145.5'	55'
5	VERIZON WIRELESS (PROPOSED)	Andrew LNX-6514DS-VTM	Panel	751	140	65	6.1	13.73	1880	122.4'	143.6'	55'
6	VERIZON WIRELESS (PROPOSED)	Andrew HBXX-6517DS-VTM	Panel	1900	140	66	6.2	16.2	4113	120'	141.5'	55'
6	VERIZON WIRELESS (PROPOSED)	Andrew HBXX-6517DS-VTM	Panel	2100	140	65	6.2	16.72	4407	120'	141.5'	55'
7	VERIZON WIRELESS (PROPOSED/FUTURE USE)	Andrew LNX-6514DS-VTM	Panel	850	250	65	6.1	13.75	0	111.9'	146.1'	55'
8	VERIZON WIRELESS (PROPOSED)	Andrew LNX-6514DS-VTM	Panel	751	250	65	6.1	13.73	1880	111.3'	149.1'	55'
9	VERIZON WIRELESS (PROPOSED)	Andrew HBXX-6517DS-VTM	Panel	1900	250	66	6.2	16.2	4113	110.8'	152.3'	55'
9	VERIZON WIRELESS (PROPOSED)	Andrew HBXX-6517DS-VTM	Panel	2100	250	65	6.2	16.72	4407	110.8'	152.3'	55'

NOTE: X, Y and Z indicate relative position of the antenna to the origin location on the site, displayed in the model results diagram. **Specifically, the Z reference indicates the antenna radiation center height above the ground level.** Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience.

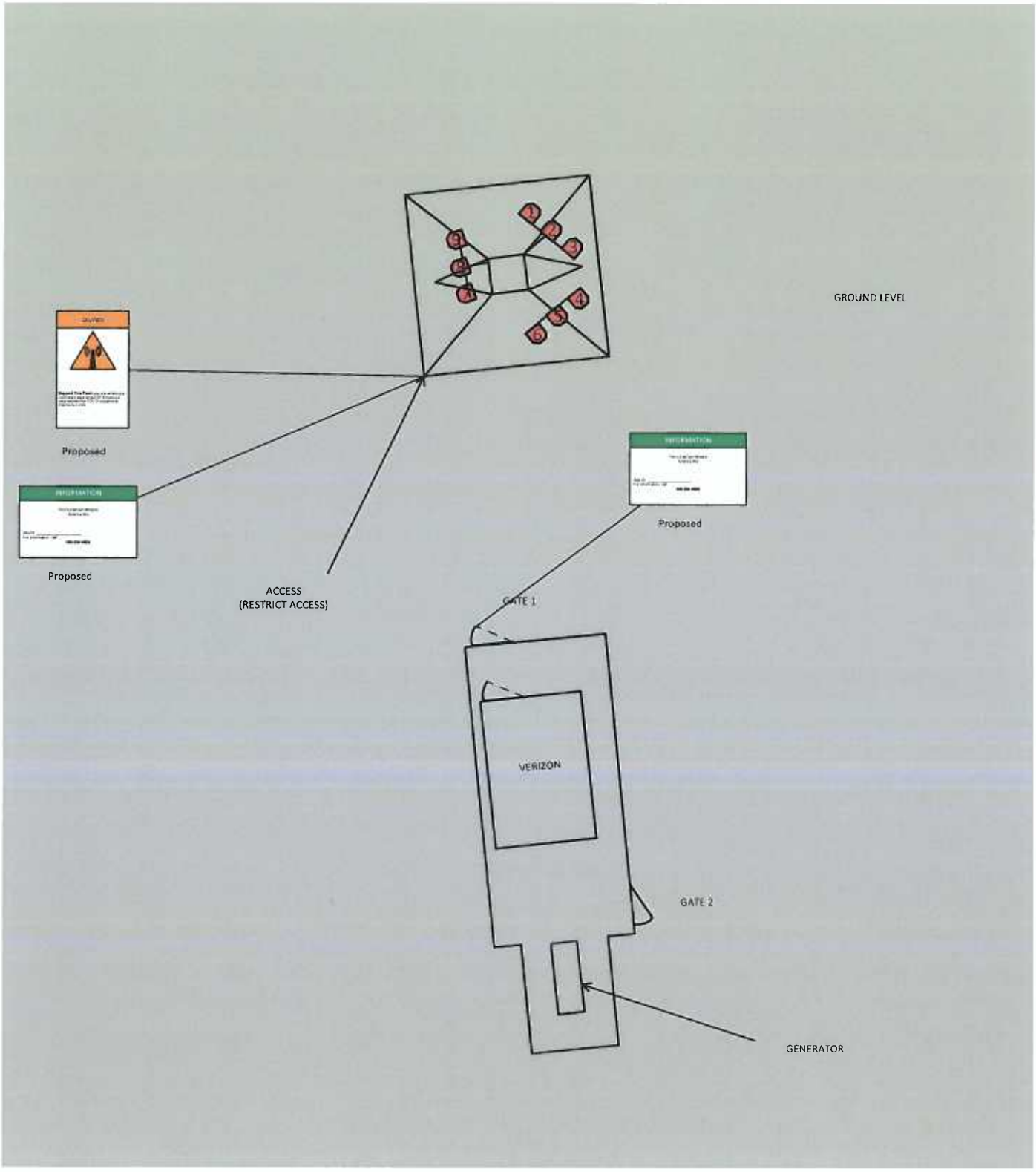
Site	280013 - HWY 129/LAKEVIEW					EME DATA SHEET
County	Santa Cruz	Site (VzW) Contact	#N/A	#N/A	Actual/Max ERP:	Actual
Address	100 Marsh Lane	RF (VzW) Contact	#N/A	#N/A	ERP Variation:	
City	Watsonville, CA 95076	Date 8/15/2014	NOC Label	15-08-9150-HWY 129/LAKEVIEW	Spectrum:	Current

Pre-construction

ID			Block			Physical Antenna Configuration								Power Calculations						Channels and ERP			
Sector ID	Band	Technology	Channel Block Owned	LTE Bandwidth Used	LTE Bandwidth Owned	#	Tx Antenna Make & Model	Centerline	Length	Face Orientation	Beam Orientation	Horizontal Beamwidth	Mechanical Tilt	Electrical Tilt	Antenna Gain (dBd)	Line Loss (dB)	Transmitter Make & Model	Voice Trans Max Output Pwr	Data Trans Max Output Pwr	Data Simultaneous Trans	Voice Channels	Data Channels	ERP (W)	ERP Method
ALPHA	850	1x				0	ANDREW SBNHH-1D65B	55 ft	72 in	40°	40°	65	0	2	12.6	1.6	ALU Cellular Modcell 4.0	20.0 W	20.0 W	1	#	#		Actual
	PCS	1x																					
	700	LTE	Upr C	10	10	1	ANDREW SBNHH-1D65B	55 ft	72 in	40°	40°	68	0	2	12.3	0.4	Ericsson eNB		60.0 W	2	0	0	1880 W	Max
	PCS	LTE	C5	10	5	1	ANDREW SBNHH-1D65B	55 ft	72 in	40°	40°	55	0	2	15.9	0.6	Ericsson eNB		60.0 W	2	0	0	4113 W	Max
	AWS	LTE	B	10	10	1	ANDREW SBNHH-1D65B	55 ft	72 in	40°	40°	60	0	2	16.2	0.6	Ericsson eNB		60.0 W	2	0	0	4407 W	Max
BETA	850	1x				0	ANDREW SBNHH-1D65B	55 ft	72 in	140°	140°	65	0	2	12.6	1.6	ALU Cellular Modcell 4.0	20.0 W	20.0 W	1	0	0		Actual
	PCS	1x																					
	700	LTE	Upr C	10	10	1	ANDREW SBNHH-1D65B	55 ft	72 in	140°	140°	68	0	2	12.3	0.4	Ericsson eNB		60.0 W	2	0	0	1880 W	Max
	PCS	LTE	C5	10	5	1	ANDREW SBNHH-1D65B	55 ft	72 in	140°	140°	55	0	2	15.9	0.6	Ericsson eNB		60.0 W	2	0	0	4113 W	Max
	AWS	LTE	B	10	10	1	ANDREW SBNHH-1D65B	55 ft	72 in	140°	140°	60	0	2	16.2	0.6	Ericsson eNB		60.0 W	2	0	0	4407 W	Max
GAMMA	850	1x				0	ANDREW SBNHH-1D65B	55 ft	72 in	250°	250°	65	0	6	12.6	1.6	ALU Cellular Modcell 4.0	20.0 W	20.0 W	1	0	0		Actual
	PCS	1x																					
	700	LTE	Upr C	10	10	1	ANDREW SBNHH-1D65B	55 ft	72 in	250°	250°	68	0	6	12.3	0.4	Ericsson eNB		60.0 W	2	0	0	1880 W	Max
	PCS	LTE	C5	10	5	1	ANDREW SBNHH-1D65B	55 ft	72 in	250°	250°	55	0	3	15.9	0.6	Ericsson eNB		60.0 W	2	0	0	4113 W	Max
	AWS	LTE	B	10	10	1	ANDREW SBNHH-1D65B	55 ft	72 in	250°	250°	60	0	3	16.2	0.6	Ericsson eNB		60.0 W	2	0	0	4407 W	Max
SECTOR 4	850	1x																					
	PCS	1x																					
	700	LTE																					
	PCS	LTE																					
	AWS	LTE																					
SECTOR 5	850	1x																					
	PCS	1x																					
	700	LTE																					
	PCS	LTE																					
	AWS	LTE																					
SECTOR 6	850	1x																					
	PCS	1x																					
	700	LTE																					
	PCS	LTE																					
	AWS	LTE																					

EXHIBIT F

Verizon Wireless Contribution
RF Emissions Simulation For: Hwy 129 & Lakeview



% of FCC Public Exposure Limit
Spatial average 0' - 6'

>= 5000 | >= 500 | >= 100 | >= 5 | < 5

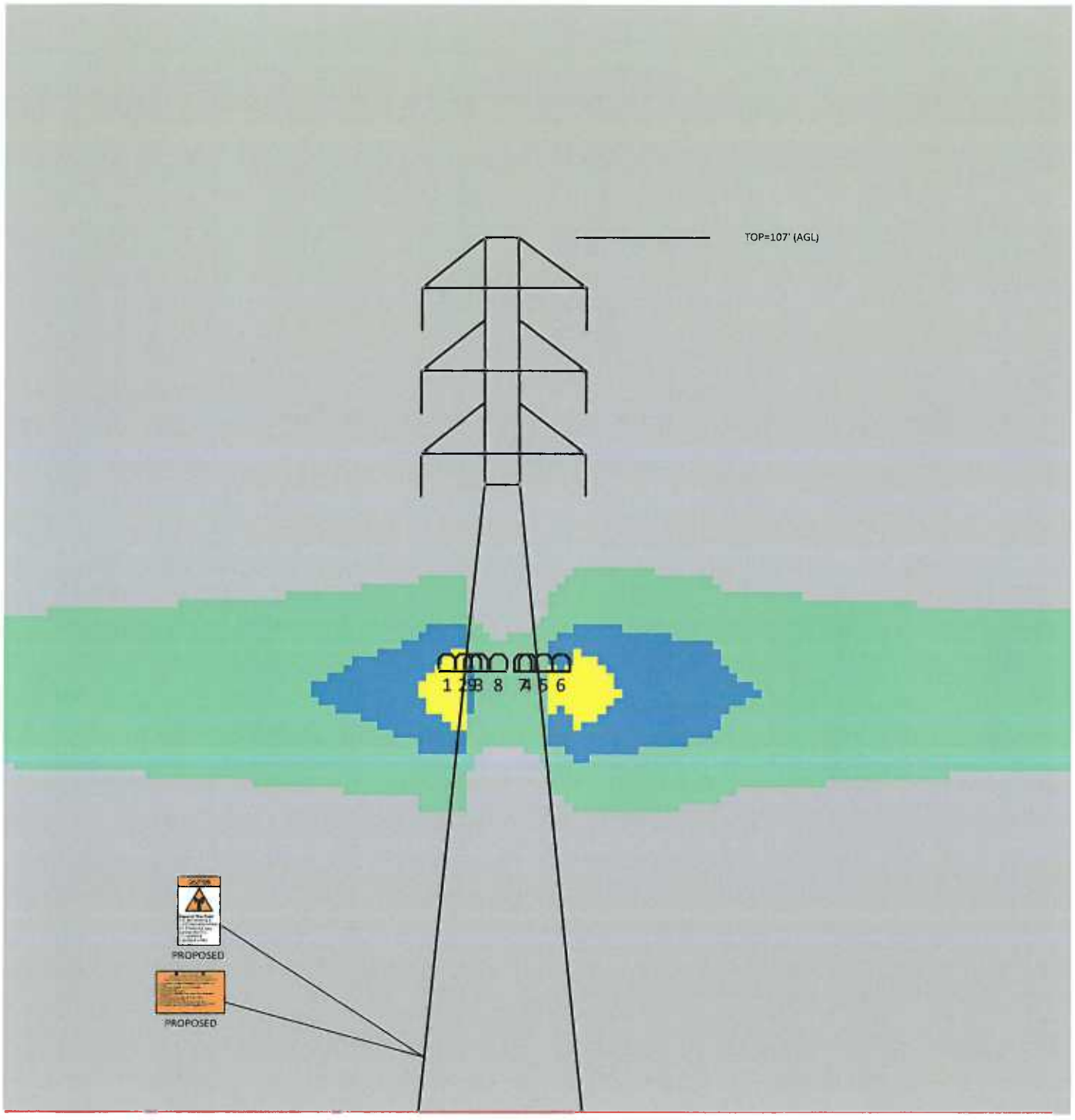
(Feet)

0 10 20

www.sitesafe.com
Site Name:Hwy 129 & Lakeview

AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	SPRINT NEXTEL	METROPCS	CRICKET COMMUNICATIONS	CLEARWIRE

Elevation View
RF Emissions Simulation For: Hwy 129 & Lakeview



% of FCC Public Exposure Limit
Spatial average 0' - 6'

(Feet)
0 10 20
www.sitesafe.com
Site Name:Hwy 129 & Lakeview

>= 5000 >= 500 >= 100 >= 5 < 5

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT-NEXTEL | METROPCS | CRICKET COMMUNICATIONS | CLEARWIRE

Sitesafe Inc. assumes no responsibility for modeling results not verified by Sitesafe personnel.
Contact Sitesafe Inc. for modeling assistance at (703) 276-1100
SitesafeTC Version: 1.0.0.0
8/29/2014 2:28:55 PM

EXHIBIT F

4. Conclusion

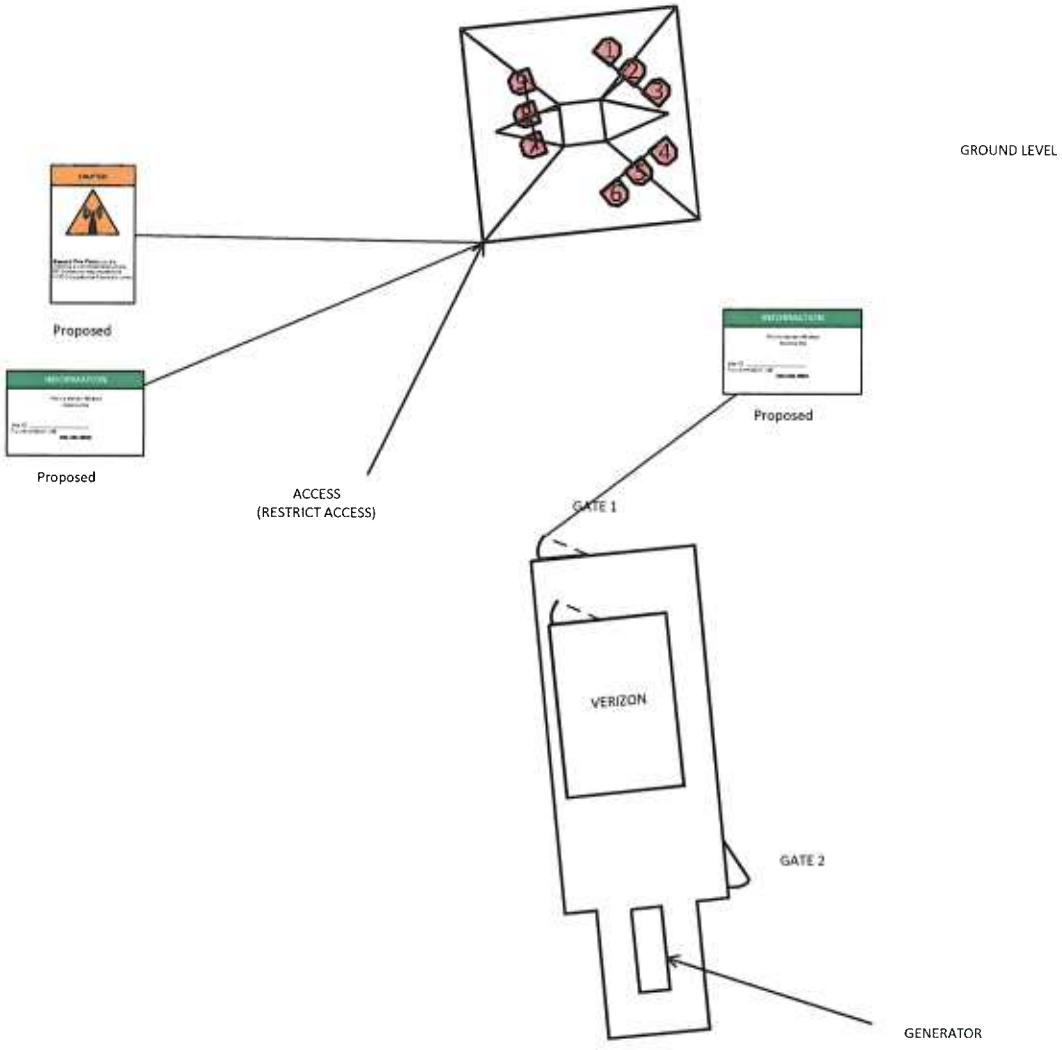
a. Conclusion Narrative

Description of MPE-Limit Exceeding Areas:

Verizon Wireless's proposed operations will be compliant with FCC Rules and Regulations.

The Max MPE predicted is <1% Occupational at Verizon Wireless at the site.

Signage and Barrier Diagram



(Feet)

0 10 20

www.sitesafe.com
Site Name:Hwy 129 & Lakeview

AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	SPRINT-NEXTEL	METROPCS	CRICKET COMMUNICATIONS	CLEARWIRE

EXHIBIT F

Sitesafe, Inc.
200 N. Glebe Rd, Suite 1000, Arlington, VA 22203-3728
703-276-1100 info@sitesafe.com www.sitesafe.com

Compliance Requirements						
	Guidelines	Notice	Caution	Warning	NOC Information	Barrier/Marker
Gate 1	[#]	[#]	[#]	[#]	X [1]	
Gate 2	[#]	[#]	[#]	[#]	[#]	
Access Points	X [1]	[#]	X [1]	[#]	[#]	
Alpha	[#]	[#]	[#]	[#]	[#]	
Beta	[#]	[#]	[#]	[#]	[#]	
Gamma	[#]	[#]	[#]	[#]	[#]	

Signage/Barrier Installation Detail

Gate 1

- Install a Yellow Caution Sign (Install sign on the climbing leg).
- Install a 10-Step Guideline Sign (Install sign on the climbing leg).

Gate 2

- No action required

Access Leg

- Lock/Restrict Access to the Electric Transmission Tower
- Install a NOC Information Sign (Install sign on the gate 1, the sign should be visible from the tower location.
-

Verizon Wireless Alpha Sector

- No action required

Verizon Wireless Beta Sector

- No action required

Verizon Wireless Gamma Sector

- No action required

Sitesafe, Inc.
200 N. Glebe Rd, Suite 1000, Arlington, VA 22203-3728
703-276-1100 info@sitesafe.com www.sitesafe.com

5. Appendix A: RF Consultant Certifications

a. Preparer Certification

I, Kevin Smith, the preparer of this report, am familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I am also familiar with the Verizon Wireless Signage & Demarcation Policy. I have reviewed this Radio Frequency Exposure Assessment report and believe it to be both true and accurate to the best of my knowledge.

Kevin Smith

b. Reviewer Certification

The professional engineer whose seal appears on the cover of this document, the reviewer and approver of this report, am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I am also fully aware of and familiar with the Verizon Wireless Signage & Demarcation Policy. I have reviewed this Radio Frequency Exposure Assessment report and believe it to be both true and accurate to the best of my knowledge.

6. Appendix B: Reference Information

a. FCC Rules & Regulations

The Federal Communications Commission (FCC) has established safety guidelines relating to RF exposure from cell sites. The FCC developed those standards, known as Maximum Permissible Exposure (MPE) limits, in consultation with numerous other federal agencies, including the Environmental Protection Agency, the Food and Drug Administration, and the Occupational Safety and Health Administration. The standards were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects. The FCC explains that its standards "incorporate prudent margins of safety." The following represents explanations of the most applicable information:

Two Classifications for Exposure Limits

Occupational – Applies to situations in which persons are "exposed as a consequence of their *employment*" and are "*fully aware* of the potential for exposure and can *exercise control* over their exposure".	General Population – Applies to situations in which persons 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". Generally speaking, those without significant and documented RF Safety & Awareness training would be in the General Population classification.

Environment Classification

Controlled – Applies to environments that are restricted or "controlled" in order to prevent access from members of the General Population classification.	Uncontrolled – Applies to environments that are unrestricted or "uncontrolled" that allow access from members of the General Population classification.

Limits for Occupational/Controlled Exposure		
Frequency Range (MHz)	**Power Density (S) (mW/cm^2)**	**Averaging Time $\|E\|^2$, $\|H\|^2$, or S (minutes)**
300-1500	f/300	6
1500-100,000	5	6
Limits for General Population/Uncontrolled Exposure		
Frequency Range (MHz)	**Power Density (S) (mW/cm^2)**	**Averaging Time $\|E\|^2$, $\|H\|^2$, or S (minutes)**
300-1500	f/1500	30
1500-100,000	1	30
f = frequency in MHz		

Significant Contribution to the RF Environment

Any carrier contributing an aggregate MPE percentage of 5 or more (to the applicable RF Environment Classification) is defined as a significant contributor. This means that if any area is determined to be out of compliance with FCC rules, all significant contributors are jointly responsible for correcting any deficiencies.

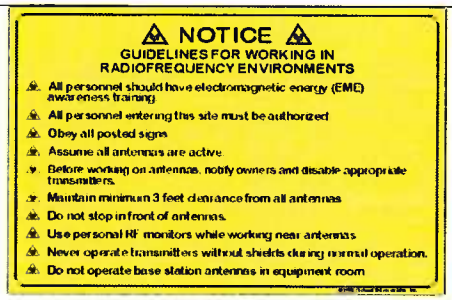
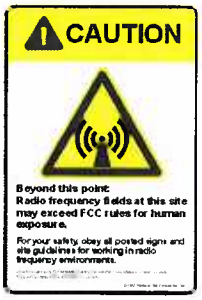
b. Occupational Safety and Health Administration (OSHA) Requirements

A formal adopter of FCC Standards, OSHA stipulates that those in the Occupational classification must complete training in the following: RF Safety, RF Awareness, and Utilization of Personal Protective Equipment. OSHA also provides options for Hazard Prevention and Control:

Hazard Prevention	Control
• Utilization of good equipment • Enact control of hazard areas • Limit exposures • Employ medical surveillance and accident response	• Employ Lockout/Tag out • Utilize personal alarms & protective clothing • Prevent access to hazardous locations • Develop or operate an administrative control program

c. RF Signage

Areas or portions of any transmitter site may be susceptible to high power densities that could cause personnel exposures in excess of the FCC guidelines. These areas must be demarcated by conspicuously posted signage that identifies the potential exposure. Signage MUST be viewable regardless of the viewer's position.

GUIDELINES	NOTICE	CAUTION	WARNING
This sign will inform anyone of the basic precautions to follow when entering an area with transmitting radiofrequency equipment.	This sign indicates that RF emissions may exceed the FCC General Population MPE limit.	This sign indicates that RF emissions may exceed the FCC Occupational MPE limit.	This sign indicates that RF emissions may exceed at least 10x the FCC Occupational MPE limit.
			

INFORMATION SIGN	
Information signs are used as a means to provide contact information for any questions or concerns. They will include specific cell site identification information and the Verizon Wireless Network Operations Center phone number.	

d. Physical

Physical barriers are control measures that require awareness and participation of personnel. Physical barriers are employed as an additional administration control to complement RF signage and physically demarcate an area in which RF exposure levels may exceed the FCC General Population limit.

e. Indicative Markers

Indicative markers are visible control measures that require awareness and participation of personnel, as they cannot physically prevent someone from entering an area of potential concern. Indicative markers are employed as an additional administration control to complement RF signage and visually demarcate an area in which RF exposure levels may exceed the FCC General Population limit.

Hwy 129 & Lakeview

100 Marsh Lane
Watsonville, CA 95076

verizonwireless

Photosimulation of the view looking northeast from Lakeview Blvd.

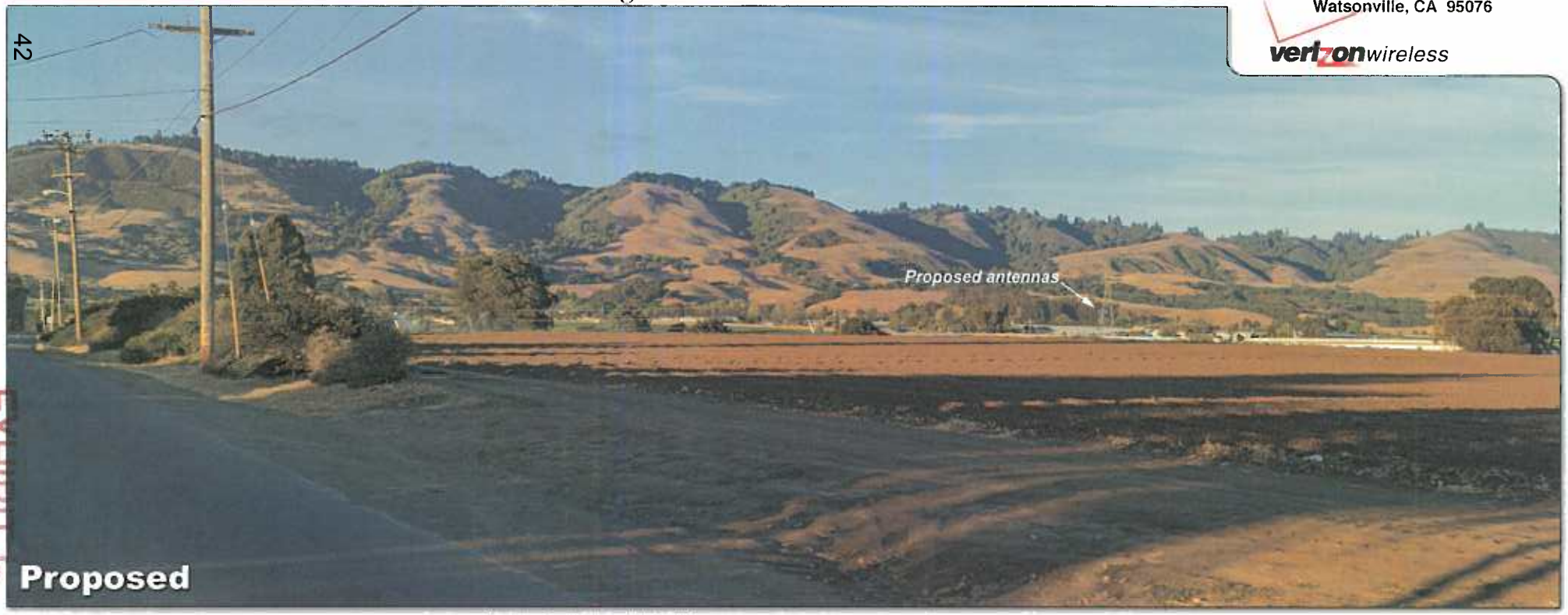


EXHIBIT 4

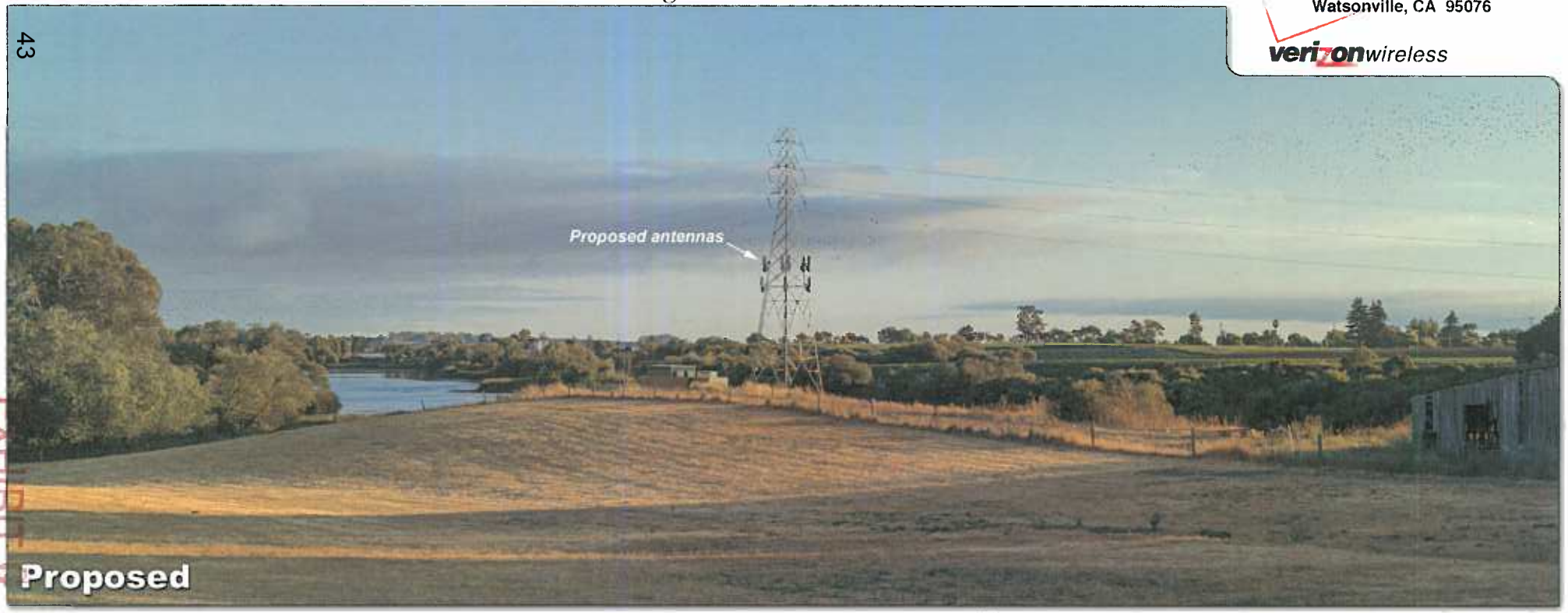
Hwy 129 & Lakeview

100 Marsh Lane
Watsonville, CA 95076

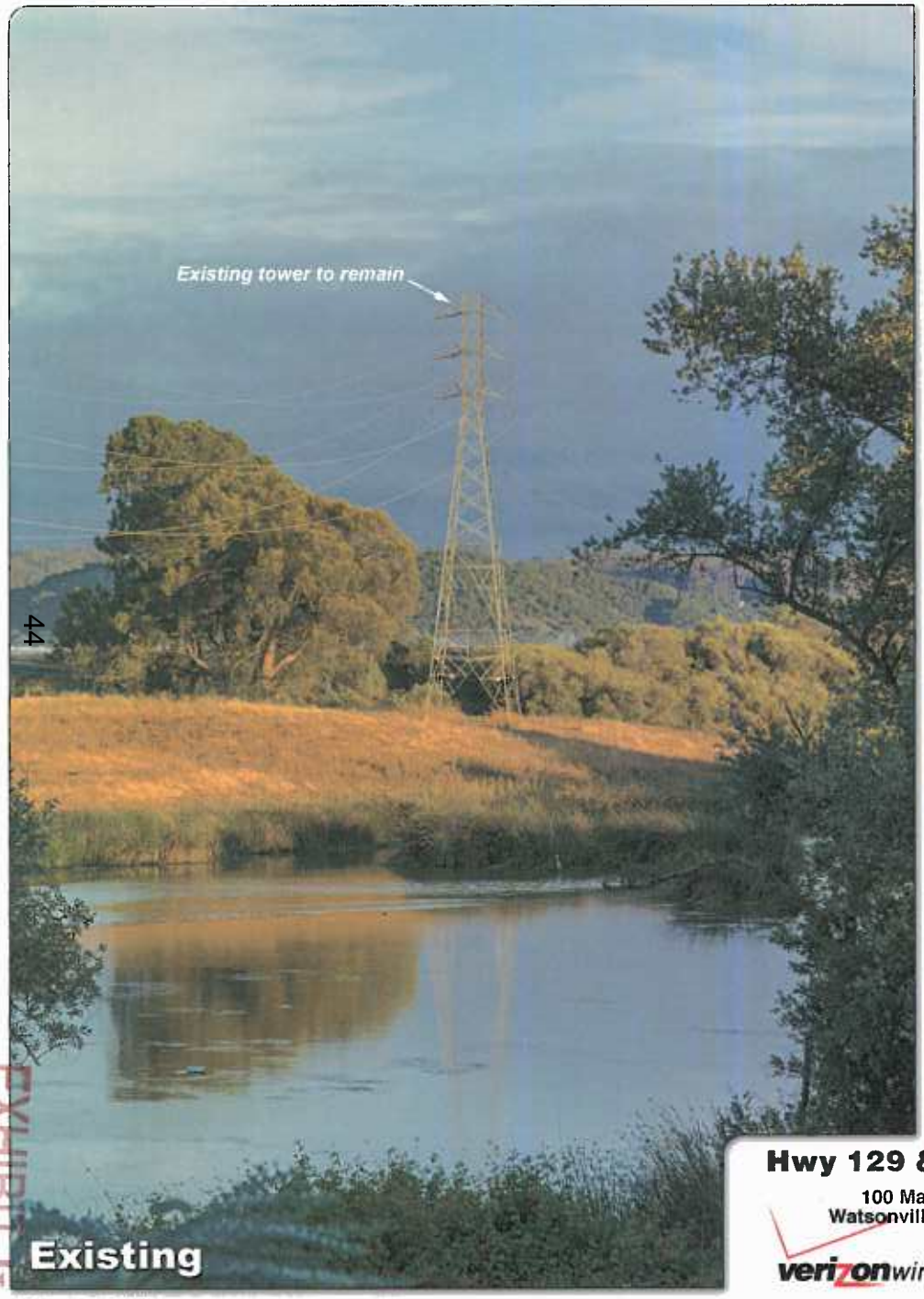
verizonwireless

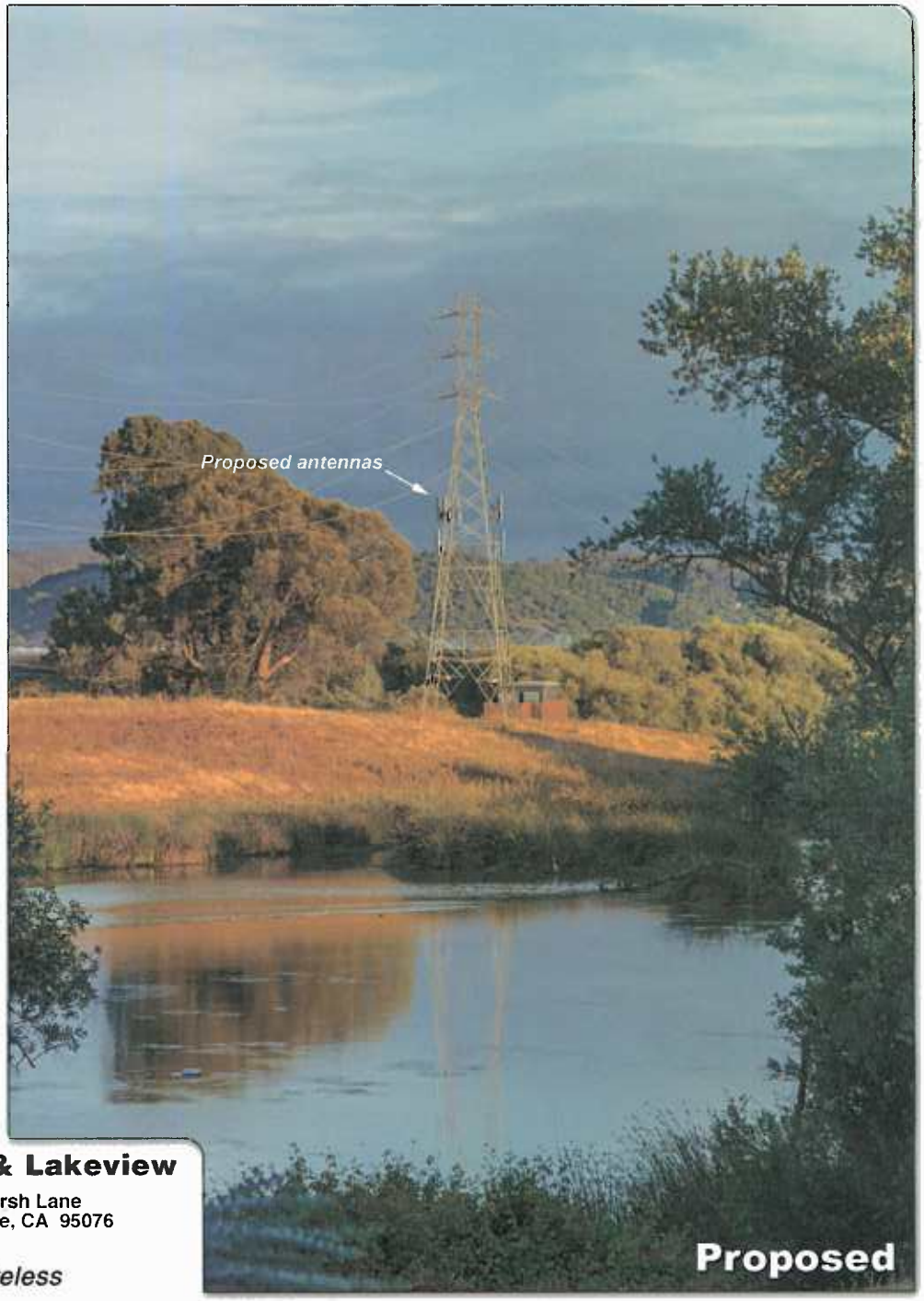
Photosimulation of the view looking west from Marsh Lane.

43



Photosimulation of the view looking south from the nearest point along Lakeview Blvd.





Hwy 129 & Lakeview

100 Marsh Lane
Watsonville, CA 95076

verizonwireless

EXHIBIT G

Hwy 129 & Lakeview

100 Marsh Lane
Watsonville, CA 95076

verizonwireless

Aerial photograph showing the viewpoints for the photosimulations.

45

EXHIBIT G

Hwy 129 & Lakeview

North

East

EXHIBIT G

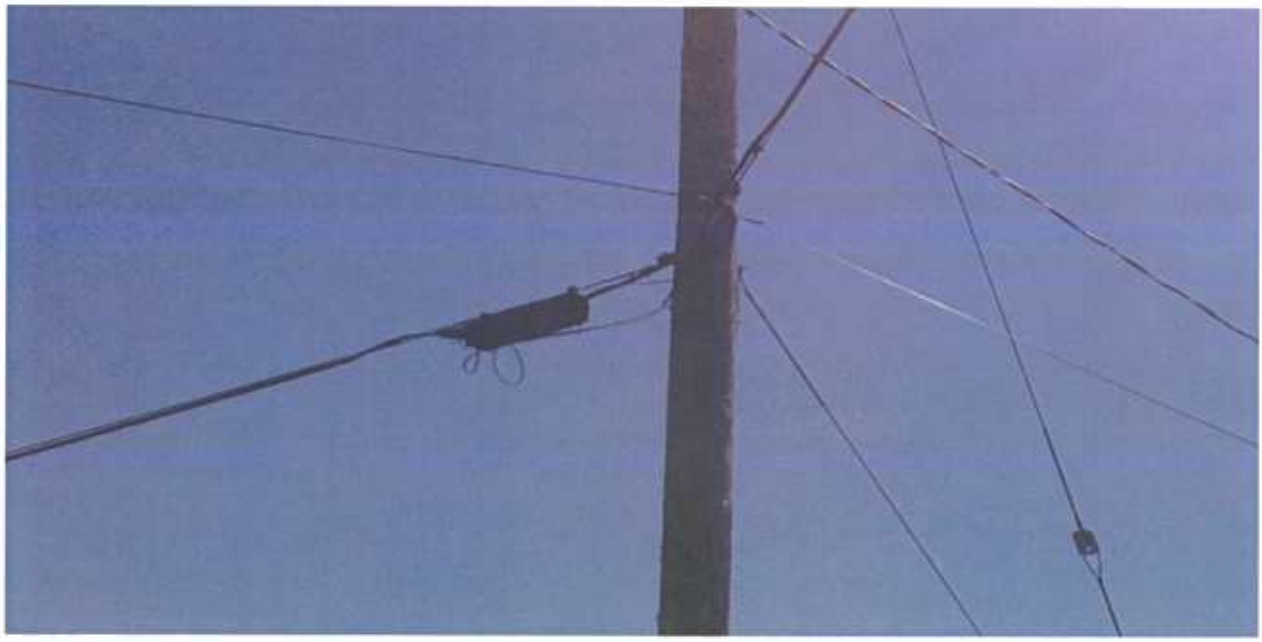
Hwy 129 & Lakeview

South

West

EXHIBIT G

Power



Telco

EXHIBIT G

Lease Area

Access

Tower

EXHIBIT G

Environmental Noise Analysis

Hwy 129 & Lakeview Cellular Facility

Santa Cruz County, California

BAC Job # 2015-005

Prepared For:

Complete Wireless Consulting

Attn: Danielle Hanover
2009 V Street
Sacramento, CA. 95818

Prepared By:

Bollard Acoustical Consultants, Inc.

Paul Bollard, President

March 13, 2015

BOLLARD
Acoustical Consultants

3551 Bankhead Road < Loomis, CA 95650 < Phone: (916) 663-0500 < Fax: (916) 663-0501 < BACNOISE.COM

Introduction

The Hwy 129 & Lakeview Verizon Wireless Unmanned Telecommunications Facility Project (project) proposes adding antennas to an existing PG&E tower and proposes the addition of a pre-fabricated equipment shelter, and emergency diesel standby generator inside a fenced area located at 100 Marsh Lane in Watsonville (Santa Cruz County), California. The external HVAC units of the equipment shelter and the emergency diesel standby generator have been identified as primary noise sources associated with the project. Please see Figure 1 for the general site location. The studied site design is dated February 18, 2015.

Bollard Acoustical Consultants, Inc. has been contracted by Complete Wireless Consulting, Inc. to complete an environmental noise assessment regarding the proposed project cellular equipment operations. Specifically, the following addresses daily noise production and exposure associated with operation of the project emergency generator and external HVAC equipment.

Please refer to Appendix A for definitions of acoustical terminology used in this report.

Criteria for Acceptable Noise Exposure

Santa Cruz County General Plan Noise Element

The Santa Cruz County General Plan Noise Element provides regulations regarding noise levels produced by stationary (non-transportation) noise sources. The primary objective of the Noise Element is to prescribe policies that lead to the preservation and enhancement of the quality of life for the residents of Santa Cruz County by securing and maintaining an environment free from hazardous and annoying noise. These standards are summarized below in Table 1.

Table 1
Maximum Allowable Noise Exposure for Stationary Noise Sources
Santa Cruz County Noise Element of the General Plan

Noise Level Descriptor	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
Hourly L_{eq}, dB	50	45
Maximum Level (L_{max}), dB	70	65

Source: Santa Cruz County Noise Element of the General Plan

Santa Cruz County Code

Section 13.10.663 of the Santa Cruz County Code states that backup generators shall only be operated during power outages and for testing and maintenance purposes. If the facility is located within 100 feet of a residential dwelling unit, noise attenuation measures shall be included to reduce noise levels at the facility to a maximum exterior noise level of 60 dB L_{dn} at the property line and a maximum interior noise level of 45 L_{dn} within the nearby residence.

Figure 1
Highway 129 & Lakeview Cellular Facility - Santa Cruz County, California
Project Area and Nearest Noise-Sensitive Receivers

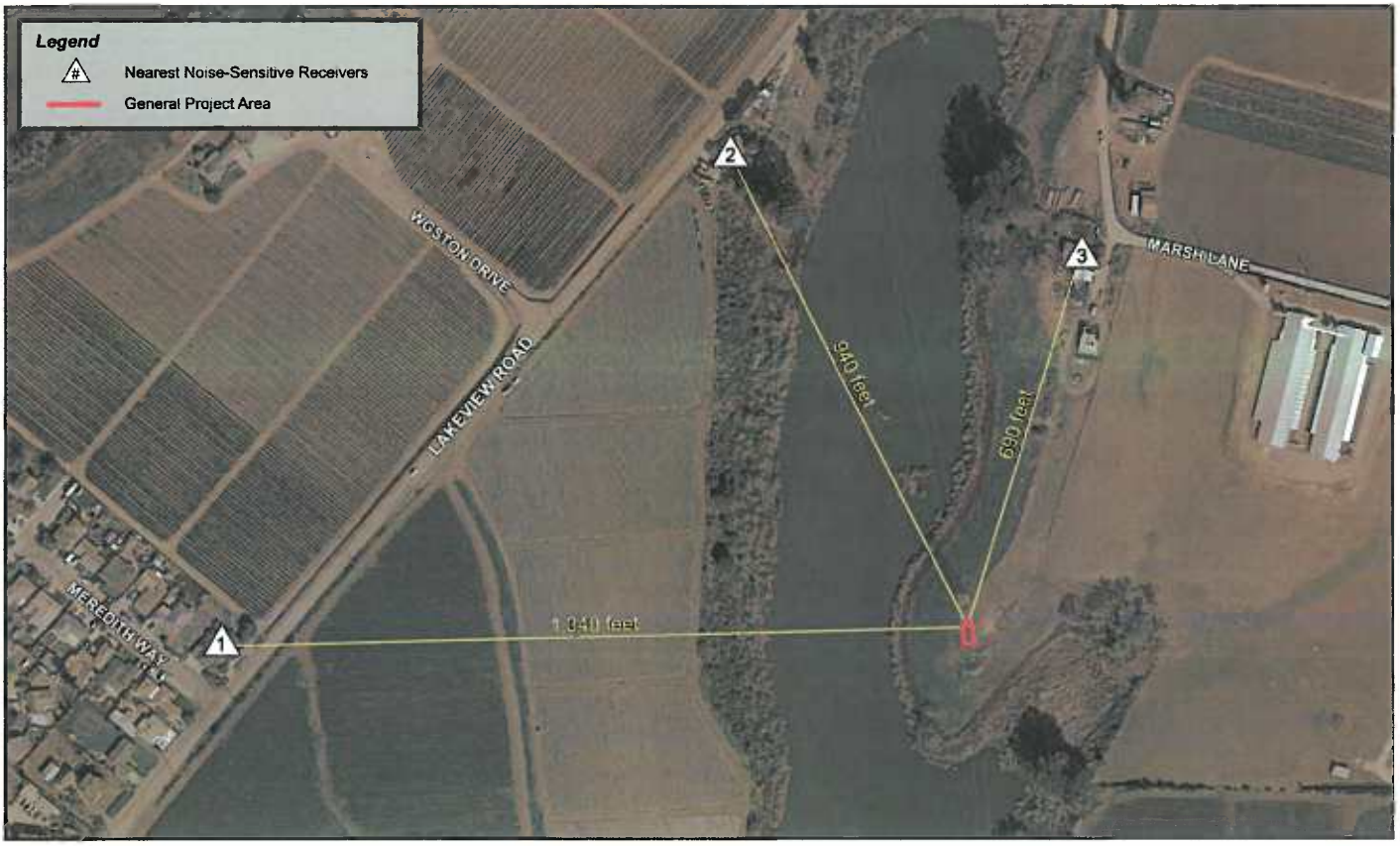


EXHIBIT H

As shown in Figure 1, the proposed cellular facility is located approximately 690 feet away from the nearest residence. Because the proposed cellular facility would be located over 100 feet away from the nearest residence, the noise level criteria presented in Section 13.10.663 of the Santa Cruz County Code would not be applicable to this project. However, the project noise emissions would still be required to comply with the County of Santa Cruz General Plan Noise Element noise level criteria, presented previously in Table 1.

Discussion of Noise Standard Interpretation Relative to Cellular Facility Projects

Both the County General Plan Noise Element and Noise Ordinance apply the County's noise standards at the property line of the noise-sensitive receiving use. In cases where there are residences located in close proximity to the property lines, application of the noise standards at the project property lines ensures that adequate protection will be in place to ensure the residents are not adversely affected by noise.

Cellular projects are different than most noise-generating projects in that the cellular companies make efforts to locate their proposed equipment as far away from residences as practical, including the residence on the property being leased for the cellular equipment. The result is frequently that the cellular equipment is located far from residences but very close to residential property lines.

The high-frequency noise generated by cellular equipment cabinet cooling fans (the only source of noise associated with the equipment cabinets), dissipates rapidly over distance. As a result, if equipment cabinets are located adjacent to a property line, it's not uncommon for the fan noise to exceed property line noise standards even though the noise has dissipated rapidly within 50 to 100 feet from the cabinets. In addition, cellular cabinet fans frequently cycle off when temperatures drop during nighttime hours and cooling requirements are greatly diminished.

The other noise source associated with cellular projects is the emergency generator. The generator's function is to maintain communications during power outages. As a result, the only time the generator operates is during relatively infrequent power outages and for a period of 15 minutes during daytime hours twice a month to ensure the generator will be functional should a power outage occur.

With a level 2 acoustic enclosure, a typical cellular facility generator emits a noise level of 68 dB at a reference distance of 23 feet. If the generator is located within 10 feet of a residential property line, a condition which is not uncommon, the noise level while operating is approximately 75 dB at that property line. A level of 75 dB will exceed most nighttime property line noise standards even though the nearest residences may be hundreds of feet away and there is no noise-sensitivity at the property line.

Because the noise generation of cellular cabinet HVAC fans is low and dissipates rapidly, and cellular facility generators would only operate during nighttime hours to maintain vital communications during power outages, it is BAC's professional opinion that noise impacts associated with cellular facilities are more appropriately evaluated in the immediate vicinity of residences rather than at lines. In addition, because cellular facility generators operate for extended periods at night only emergency power outages, the noise created by emergency generator operations would appropriately be exempted from local noise provisions. Finally, it is BAC's professional opinion that noise

during routine, twice-monthly, daytime generator testing should be evaluated relative to local daytime maximum noise level standards.

BAC does not dictate noise policy, or interpretation of noise policy, to city or county planning departments. As a result, this analysis assesses noise impacts at residential property lines as required by the local noise standards. However, noise impacts are also evaluated in the immediate vicinity of existing residences where the actual noise sensitivity is greatest. The preceding discussion is provided to encourage planning departments to consider latitude in interpreting their noise standards in cases where cellular facilities are proposed near residential property lines but considerable distances from the nearest residences.

Project Noise Generation

Sources and Reference Noise Levels

Noise exposure from the proposed project HVAC units is expected to be approximately 67 dB (L_{eq}) at a distance of 10 feet from the equipment. This reference noise level of 67 dB at 10 feet is based on a Bard WA3S1 Wall-Mount Step Capacity Air Conditioner, which is reportedly similar to the type of equipment being proposed at the project site.

The generator which is proposed at this site would only operate during emergencies (power outages) and brief daytime periods for periodic maintenance/lubrication. A Generac Industrial Power Systems Model SD030 is proposed for use at this facility to maintain cellular service during emergency power outages. The noise emissions of this generator vary depending on the type of enclosure provided with the generator. The following reference noise levels at a measurement distance of 23 feet from the operating generator are provided by the equipment manufacturer (see Appendix B):

- Open Set 82 dBA
- Standard Enclosure 77 dBA
- Level 1 Acoustic Enclosure 70 dBA
- Level 2 Acoustic Enclosure 68 dBA

The project emergency generator would be tested during daytime hours only, and even then only for brief periods of time. The emergency generator would only operate at night during power outages. It is expected that nighttime operation of the project emergency generator would be exempt from the County's exterior noise exposure criteria due to the need for continuous cellular service provided by the project equipment. The generator was assumed to be equipped with the standard enclosure, resulting in a reference noise level of 77 dB at 23 feet.

Predicted Facility Noise Levels at Nearby Sensitive Receptors

As indicated in Figure 1, the cellular facility maintains a separation of 690-1,340 feet from the nearest existing residences, identified as receivers 1-3. In addition, the project equipment maintains a separation of 165 feet from the nearest property line to the west. Assuming standard spherical spreading loss (-6 dB per doubling of distance), project-equipment noise exposure at the closest receivers was calculated and the results of those calculations are presented in Table 2.

Table 2
Summary of Project-Related Noise Exposure at Nearest Residences and Property Line
Highway 129 & Lakeview Verizon Wireless Telecommunications Facility Project

Nearest Receiver[1]	Distance from Cellular Equipment (feet)	Predicted Noise Levels (dBA)	
		HVAC	Generator[2]
1	1,340	24	42
2	940	28	45
3	690	30	47
Property Line	165	43	60

Notes:
1 Receiver locations are shown on Figure 1.
2 Generator equipped with Standard Enclosure utilized for project noise calculations (77 dB at 23 feet).

HVAC Noise Assessment

Because the proposed HVAC units could potentially be in operation during nighttime hours, the operation of the HVAC units would be subject to the County's hourly average nighttime noise level standard of 45 dB L_{eq}. As shown in Table 2, the predicted HVAC noise levels of 24-30 dB L_{eq} at the nearest existing residences would satisfy the Santa Cruz County average nighttime noise level standard of 45 dB L_{eq}. In addition, at the nearest property line to the west, predicted HVAC noise levels of 43 dB L_{eq} would also satisfy the County's nighttime noise level standard. As a result, no further consideration of noise mitigation measures would be warranted for this aspect of the project.

Generator Noise Assessment Relative to County's Daytime Maximum (70 dB L_{max}) Standard

Because the project generator would only operate during daytime hours for brief periods required for testing and maintenance, and because generator noise is assumed to be exempt during emergency operations, noise from generator could be subject to the County's maximum daytime noise level standard of 70 dB L_{max}. As shown in Table 2, the predicted generator noise levels of 42-60 dB L_{max} would satisfy the Santa Cruz County maximum daytime noise level standard of 70 dB L_{max}. As a result, no additional noise mitigation measures would be warranted for this aspect of the project if the County's maximum daytime noise standard is applicable.

Generator Noise Assessment Relative to County's Nighttime Average (45 dB L_{eq}) Standard

The County has indicated that they prefer generator noise be assessed relative to their nighttime average noise level standard of 45 dB L_{eq}. As shown in Table 2, the predicted generator noise levels of 42-45 dB L_{eq} at receivers 1 and 2 would satisfy the Santa Cruz County average nighttime noise level standard of 45 dB L_{eq}. However, predicted generator noise levels of 47 dB L_{eq} and 60 dB L_{eq} at receiver 3 and at the nearest property line to the west, respectively, would exceed the average nighttime noise level standard. A discussion of potential mitigation measures to meet the County's property line noise level standard can be found in the mitigation section of this report.

Impacts at Property Line and Associated Mitigation Measures

The proposed project equipment is located approximately 165 feet east of the nearest property line. According to the Santa Cruz County GIS Online Maps, the lot to the west (APN 051-741-07) is zoned Commercial Agriculture and contains an existing residence that is located over 2,000 feet away from the proposed project equipment. As discussed previously, application of the County's noise level standards at the nearest property line would result in an exceedance of the Santa Cruz County General Plan noise level standards.

Generator Mitigation

If the County applies the noise standards at the property line, mitigation would be required. To mitigate these identified exceedances to a state of compliance with the County's noise level standards, the effectiveness of constructing a noise barrier along the facility boundary, between the facility equipment and the property line, was evaluated. In addition, an upgrade in the generator enclosure, from the standard enclosure to the level 2 acoustic enclosure, was considered. This evaluation concluded that a level 2 acoustic enclosure for the generator and a 6-foot tall barrier constructed along the proposed cellular facility boundary would reduce project generator noise exposure to a state of compliance with the Santa Cruz County noise level standards. The location of the recommended noise barrier is illustrated on Figure 2.

If a solid barrier is to be constructed, it could consist of either of masonry or precast concrete panels. If suspended acoustic curtains are installed, an acoustical vinyl product with a minimum STC (Sound Transmission Class) rating of 28 should be considered. An example of such a product can be found at www.fencefabricsonline.com/#!noise-reducing-fence-cover/c1m3a. Appendix C illustrates the use of an acoustical vinyl curtain at a photovoltaic inverter facility.

Figure 2

Highway 129 & Lakeview Cellular Facility - Santa Cruz County, California
Recommended Noise Barrier Location

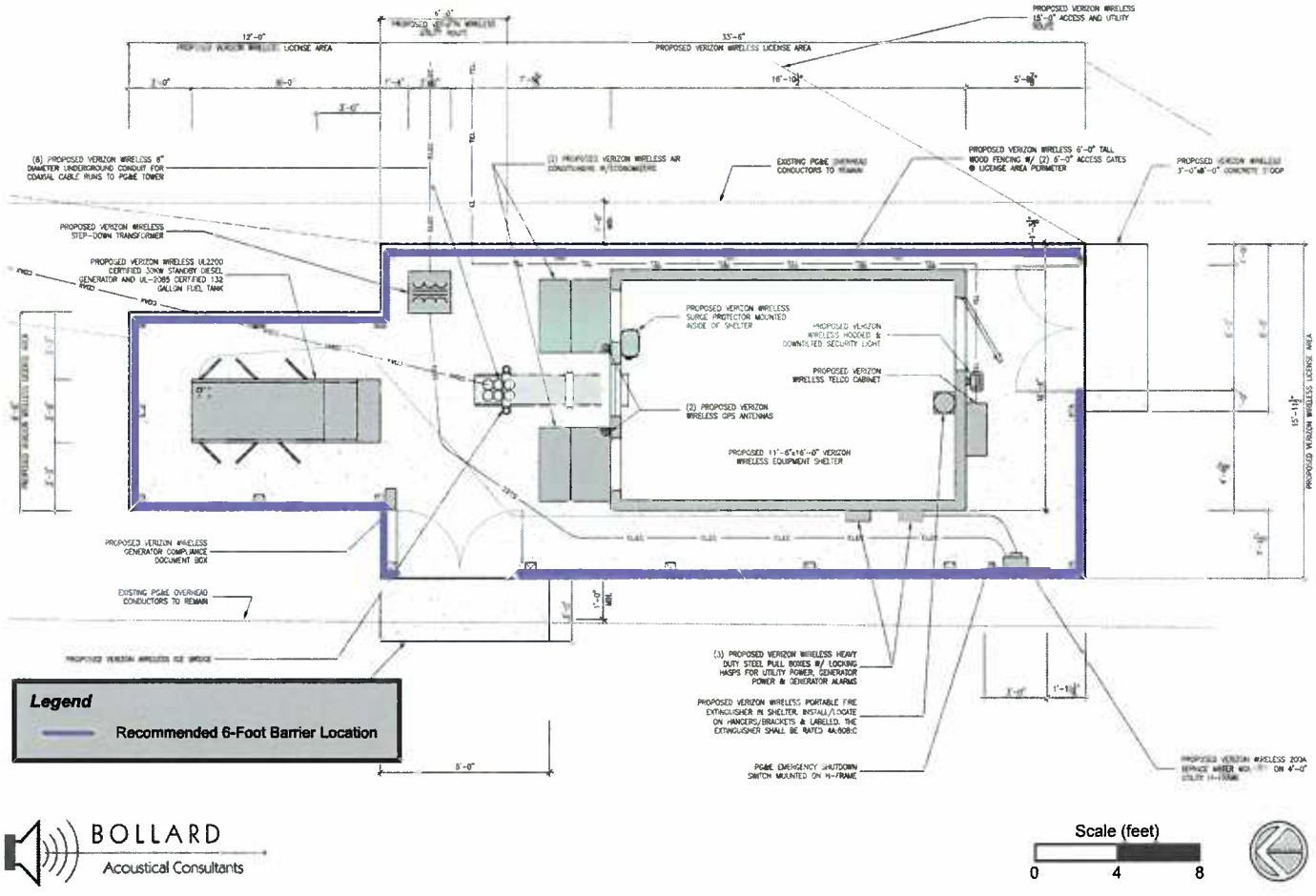


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EXHIBIT H

Conclusions

Predicted Noise Levels at Residences (Outdoor Activity Areas)

Based on the equipment noise level data and analyses presented above, project-related equipment noise exposure is expected to satisfy the recommended interpretation of the Santa Cruz County noise exposure limits at the closest residential receivers. Specifically, the proposed HVAC units would be in compliance with the nighttime 45 dB L_{eq} noise level standard and the generator (Generac SD030 equipped with standard enclosure) would be in compliance with the daytime 70 dB L_{max} noise level standard. As a result, no additional noise mitigation measures would be warranted for this project when the County's noise level standards are applied at the nearest residences and the twice-monthly daytime generator testing is subject to the County's 70 dB L_{max} standard.

Predicted Noise Levels at Nearest Property Line

Project-related equipment noise exposure is expected to satisfy the Santa Cruz County nighttime 45 dB L_{eq} noise level standard at the nearest property line provided that the following noise mitigation measures are incorporated into the project design:

1A. A 6-foot tall solid noise barrier should be constructed at the location shown on Figure 2.

OR

1B. Line the proposed facility chain link fence with an acoustical curtain product having a minimum STC rating of 28 (see Appendix C).

AND

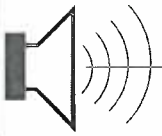
2. The proposed project generator, Generac Industrial Power Systems Model SD030, should be equipped with the optional Level 2 Acoustic Enclosure that results in a reference noise level of 68 dB at 23 feet.

This concludes our environmental noise assessment for the proposed Highway 129 & Lakeview Cellular Facility in Santa Cruz County, California. Please contact BAC at (916) 663-0500 or paulb@bacnoise.com with any questions or requests for additional information.

Appendix A

Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the Maximum level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.
SEL	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.



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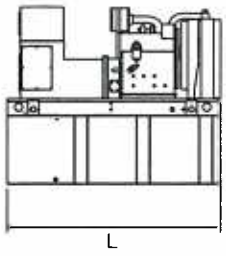
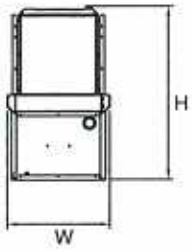
GENERAC | INDUSTRIAL POWER

SD030

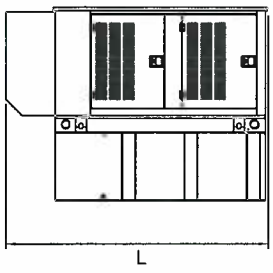
dimensions, weights and sound levels

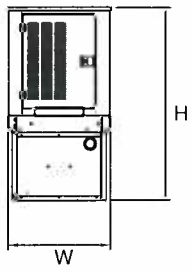




OPEN SET

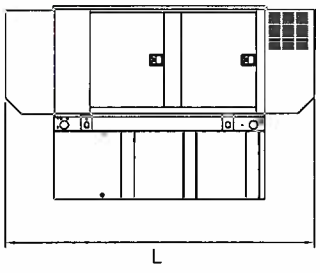
RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBA*
NO TANK	-	76	38	46	2060	82
20	54	76	38	59	2540	
48	132	76	38	71	2770	
77	211	76	38	83	2979	
109	300	93	38	87	3042	

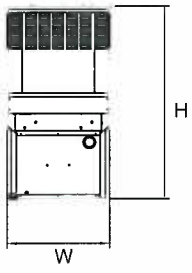




STANDARD ENCLOSURE

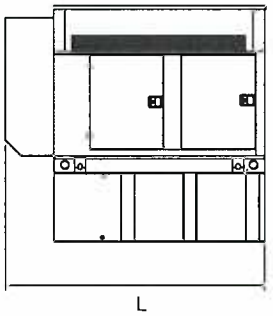
RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBA*
NO TANK	-	95	38	50	2362	77
20	54	95	38	63	2842	
48	132	95	38	75	3072	
77	211	95	38	87	3281	
109	300	95	38	91	3344	

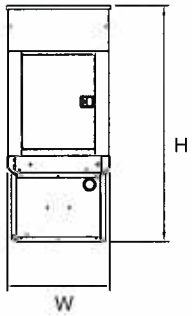




LEVEL 1 ACOUSTIC ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBA*
NO TANK	-	113	38	50	2515	70
20	54	113	38	63	2995	
48	132	113	38	75	3225	
77	211	113	38	87	3434	
109	300	113	38	91	3497	





LEVEL 2 ACOUSTIC ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBA*
NO TANK	-	95	38	62	2520	68
20	54	95	38	75	3000	
48	132	95	38	87	3230	
77	211	95	38	99	3439	
109	300	95	38	103	3502	

*All measurements are approximate and for estimation purposes only. Weights are without fuel in tank. Sound levels measured at 23ft (7m) and does not account for ambient site conditions.

Tank Options

○	MDEQ	OPT
○	Florida DERM/DEP	OPT
○	Chicago Fire Code	OPT
○	IFC Certification	CALL
○	ULC	CALL

Other Custom Options Available from your Generac Industrial Power Dealer

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

EXHIBIT H

Appendix C

Photovoltaic Inverter Facility

Chain Link Fence Lined with Acoustical Vinyl Product

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EXHIBIT 4