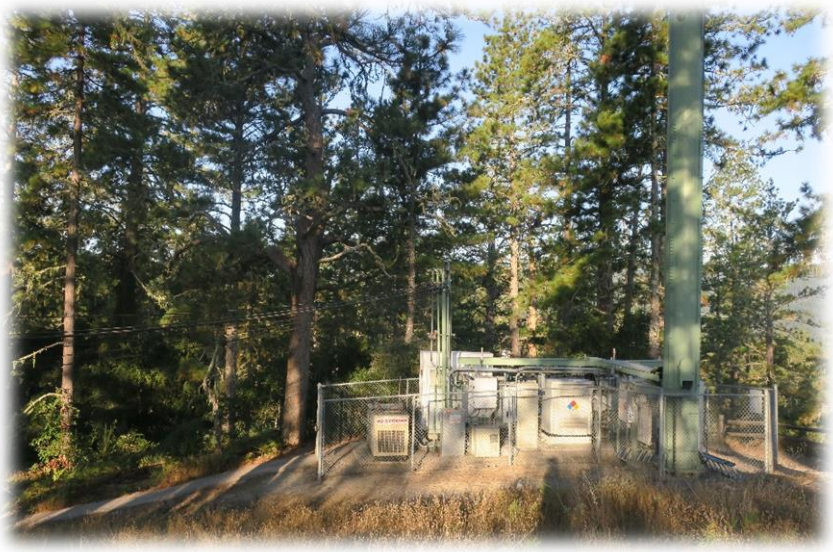
Low-Effect Habitat Conservation Plan for the

Verizon Wireless

Telecommunications Facility Expansion Project

Felton, Santa Cruz County, California



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December 2019

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Executive Summary

Verizon Wireless is seeking an incidental take permit, under Section 10(a)(1)(B) of the Federal Endangered Species Act, to cover take of the Mount Hermon June beetle (*Polyphylla barbata*) and Zayante band-winged grasshopper (*Trimerotropis infantilis*), and to address adverse impacts to Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*). The permit is requested to cover take of the two insects and adverse impacts to the endangered plant that will result from expansion of an existing telecommunications facility to support new equipment cabinets and a generator to power new antennas, which will be installed on an existing monopole. The new equipment is needed to supply cellular service to Verizon Wireless's customers.

The expanded facility will be installed in the northern portion of the County of Santa Cruz's 28-acre parcel of land located at 3650 Graham Hill Road between the City of Scotts Valley and Felton, an unincorporated town within the County of Santa Cruz in central coastal California (APN: 061-371-16; Figure 1). It will be sited immediately adjacent with (connected to) the existing telecommunications facility, which is located in an area leased by the County for both telecommunications and water facilities.

The total project area, which includes the vehicle parking, materials staging, and equipment access area, will be 2,986 sf (0.069 acres; Figure 2). Of this area, 242 sf will support the 22.7 foot-by-10.8-foot steel platform that will be mounted on piers, to elevate it above the ground to minimize soil covering. An additional 10 sf will support a vertically oriented propane tank, which was similarly chosen to minimize soil disturbance. The 825 sf adjacent to the facility will be disturbed during work to install the equipment. Finally, 1,897 sf will be used for vehicle parking, materials staging, and access to the project site (Table 2).

Of the 2,986 sf (0.069 acres) in the project area, 615 sf (0.014 acres) will be permanently impacted by construction of the platform, installation of the propane tank, construction of the small paved pathway that will be installed to connect the platform, and frequent trampling within a five-foot-perimeter of the platform to maintain the facility. An additional 271 sf will be temporarily disturbed by crews during construction to access the site off the paved path to trench in the pipe that will connect the propane tank to the generator. This area of temporary habitat disturbance will be restored following construction (Table 2).

A three-year permit term is requested to address incidental take of the Mount Hermon June beetle and Zayante band-winged grasshopper, and impacts to the Ben Lomond spineflower, during construction of the facility and on-site restoration. Construction is anticipated to occur within a six-month period but may require up to three years if construction delays are encountered. The permit will also cover take associated with implementation of restoration activities at the site.

Due to the small size of the facility, the project is not anticipated to significantly impact the persistence of the listed species within the County's 28-acre parcel or the larger sandhills habitat patch in which it is located (Figure 6).

This HCP's conservation strategy includes the following measures designed to minimize the project's impacts:

1. The new equipment will be mounted to an elevated platform, as opposed to a concrete pad, to facilitate emergence of Mount Hermon June beetles and reduce impacts associated with grading.
2. Prior to construction, a qualified biologist will collect any seed of Ben Lomond spineflower from within the project impact area, for use in restoration of the area as outlined below.
3. The project will be conducted outside of the adult activity period for the Mount Hermon June beetle (May-August) and Zayante band-winged grasshopper (June-October), if at all possible. If soil-disturbing activities occur during the Mount Hermon June beetle flight season, tarps will be used to cover exposed soil, in order to prevent dispersing male beetles from burrowing into the construction site.
4. A qualified biologist will be on site during all ground-disturbing activities, to capture any Mount Hermon June beetle observed in the construction area and relocate them outside to intact sandhills habitat that supports appropriate soils and vegetation. The biologist will also herd out of harm's way and Zayante band-winged grasshoppers observed in the project area.
5. The project will not entail installation of outdoor lights, which can disrupt the behavior of nocturnal insects including Mount Hermon June beetle.
6. Landscaping elements that degrade habitat for the three covered species, including weed matting, landscape rock, and turf grass, will be avoided.
7. Following completion of the project, Verizon Wireless will restore the 271-sf (0.006-acre) area of temporary habitat impacts around the facility. The restoration will be implemented following a restoration plan prepared by a U.S. Fish and Wildlife (USFWS)-approved biologist. The plan will include measures to limit soil erosion that are compatible with the listed species, sowing seed of native plant species collected on site, including the seed salvaged from Ben Lomond spineflower, and planting native plants from site-collected propagules, including Ben Lomond buckwheat which will be replaced at a ratio of 3:1 for the plants impacted in the project area.

To mitigate for the unavoidable impacts to the listed species, Verizon Wireless will purchase 0.042-acre conservation credits to mitigate the project's permanent impacts to 0.014 acres of Mount Hermon June beetle habitat. This 3:1 ratio reflects the moderate quality of the habitat as well as unavoidable impacts to individuals in the area of permanent habitat loss. To mitigate the temporary loss of an additional 0.006 acres of Mount Hermon June beetle habitat, and unavoidable impacts to individuals in this area, Verizon Wireless will purchase an additional 0.006 acres of sandhills habitat. This 1:1 ratio is appropriate, as the habitat that will be temporarily impacted will be restored.

Verizon Wireless will fund all elements of the plan's conservation strategy including purchase of the conservation credits, which will occur prior to implementation of any covered activities. A qualified biologist will conduct monitoring to ensure compliance with the conservation strategy, and to evaluate success toward the biological goals and objectives. Monitoring results will be

provided to the USFWS in a project report provided by January 31 following each year that the permit is active.

Section 1

Introduction and Background

1.1 Overview and Background

This Habitat Conservation Plan (HCP) for expansion of an existing telecommunications facility at the County of Santa Cruz parcel 061-371-16 at 3650 Graham Hill Road near Felton, California has been prepared pursuant to the requirements of Section 10(a)(1)(B) of the Federal Endangered Species Act of 1973, as amended (Act). The HCP is intended to provide the basis for issuance of a Section 10(a)(1)(B) permit to Verizon Wireless, the project proponent, to authorize incidental take of the Mount Hermon June beetle (*Polyphylla barbata*) and Zayante band-winged grasshopper (*Trimerotropis infantilis*), and impacts to Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*)—three federally listed endangered species that are known or likely to occur within the project area. Installation of the new equipment will involve ground-disturbing activities, including excavation, vegetation removal, and covering of open soil with impervious surfaces, as well as staging of equipment and materials; these activities will impact individuals of, as well as permanently remove habitat for, the three federally endangered species.

1.2 Permit Holder/Permit Duration

Verizon Wireless requests an incidental take permit to cover take of the two federally-listed endangered insects and adverse impacts to the federal endangered plan for three years commencing on the date of permit approval. Project construction is anticipated to require six months; however, seasonal restrictions and unforeseen logistical issues with construction may delay the project. Moreover, the permit is requested to cover take associated with restoration activities at the site. For this reason, a three-year take permit is requested.

1.3 Permit Boundary/Covered Lands

A permit is requested to authorize the incidental take of Mount Hermon June beetle and Zayante band-winged grasshopper, and cover impacts to the Ben Lomond spineflower within the project area: an approximately 2,986-square-foot (0.069-acre) area located in the northern tip of the 28-acre parcel (APN: 061-371-16) situated at 3650 Graham Hill Road, Felton, central Santa Cruz County, central coastal California. The project site is located within the Felton United States Geological Survey (USGS) topographic quadrangle, near the center of Section 23 of Township 10S, Range 2W of the Mount Diablo Base and Meridian (Figure 1).

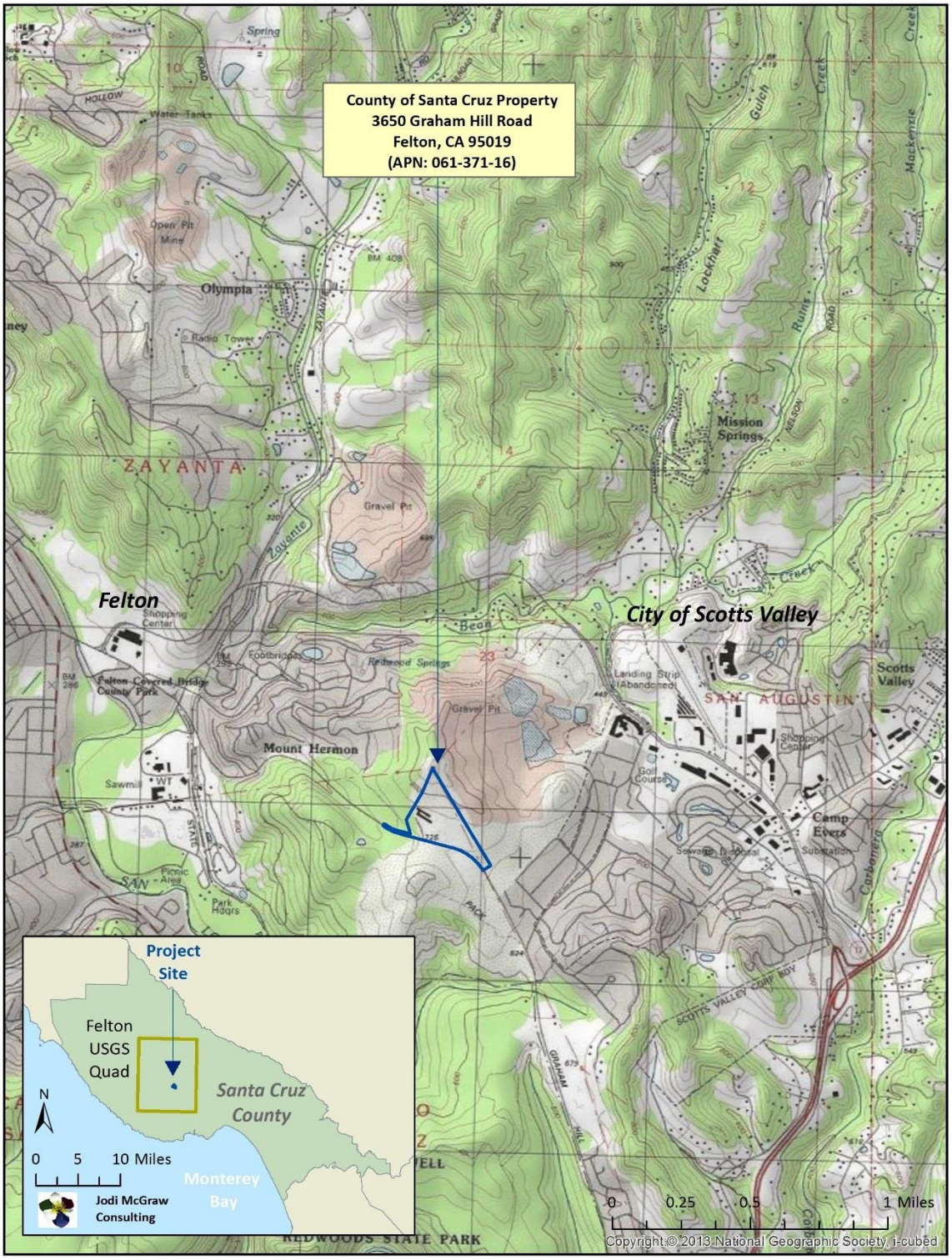

Figure 1: Location of proposed telecommunications facility project within the Felton US Geological Survey Quadrangle, central Santa Cruz County.

1.4 Species to be Covered by Permit

The following species are referred to as a "covered species" related to the Incidental Take Permit if it is issued.

Covered Species	Federal Status/State Status
Mount Hermon June beetle (*Polyphylla barbata*)	Federally Endangered
Zayante band-winged grasshopper (*Trimerotropis infantilis*)	Federally Endangered
Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*)	Federally Endangered

Take coverage is requested for the two federally listed insects which are known to occur within the project area, which also supports the federally listed plant which will be adversely impacted by the project.

The following additional federally-endangered species occur in the general region but will not be impacted by the project and therefore will not covered under the requested Incidental Take Permit nor will they be further addressed in this HCP. The project area does not support Ben Lomond wallflower, though the species does occur within the Hanson Quarry Western Perimeter Habitat Set-Aside east of the project area (McGraw 2017b; Appendix B).

The project area does not feature suitable breeding habitat for the California red-legged frog and is also highly unlikely to disperse into the project area. The species was not observed during the course of pre-project surveys or construction monitoring conducted in winter 2015 as part of the San Lorenzo Valley Water District's Regional Intertie Project (Arnold and Bandel 2014, J. McGraw, unpublished data).

Additional List Species	Federal Status/State Status
Ben Lomond wallflower (*Erysimum teretifolium*)	Endangered/Endangered
California red-legged frog (*Rana draytonii*)	Threatened/Species of Special Concern

1.5 Regulatory Framework

1.5.1 Federal Endangered Species Act

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Pursuant to section 11(a) and (b) of the Act, any person who knowingly violates section 9 of the Act or any permit, certificate, or regulation related to section 9, may be subject to civil penalties of up to $25,000 for each violation or criminal penalties up to $50,000 and/or imprisonment of up to one year.

Individuals and State and local agencies proposing an action that is expected to result in the incidental take of federally listed species are encouraged to apply for an incidental take permit under section 10(a)(1)(B) of the Act to be in compliance with the law. Such permits are issued by the Service when take is not the intention of and is incidental to otherwise legal activities. An application for an incidental take permit must be accompanied by a HCP. The regulatory standard under section 10 of the Act is that the effects of authorized incidental take must be minimized and mitigated to the maximum extent practicable. Under Act section 10, a proposed project also must not appreciably reduce the likelihood of the survival and recovery of the species in the wild, and adequate funding for a plan to minimize and mitigate impacts must be ensured.

Section 7 of the Act requires Federal agencies to ensure that their actions, including issuing permits, do not jeopardize the continued existence of listed species or destroy or adversely modify listed species' critical habitat. "Jeopardize the continued existence of…" pursuant to 50 CFR 402.2, means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. Issuance of an incidental take permit under section 10(a)(1)(B) of the Act by the Service is a Federal action subject to section 7 of the Act. As a Federal agency issuing a discretionary permit, the Service is required to consult with itself (i.e., conduct an internal consultation). Delivery of the HCP and a section 10(a)(1)(B) permit application initiates the section 7 consultation process within the Service.

The requirements of section 7 and section 10 substantially overlap. Elements unique to section 7 include analyses of impacts on designated critical habitat, analyses of impacts on listed plant species, if any, and analyses of indirect and cumulative impacts on listed species. Cumulative effects are effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area, pursuant to section 7(a)(2) of the Act. The action area is defined by the influence of direct and indirect impacts of covered

activities. The action area may or may not be solely contained within the HCP boundary. These additional analyses are included in this HCP to meet the requirements of section 7 and to assist the Service with its internal consultation.

1.5.2 The Section 10(a)(1)(B) Process - Habitat Conservation Plan Requirements and Guidelines

The Section 10(a)(1)(B) process for obtaining an incidental take permit has three primary phases: (1) the HCP development phase; (2) the formal permit application processing phase; and (3) the post-issuance phase.

During the HCP development phase, the project applicant prepares a plan that integrates the proposed project or activity with the protection of listed species. An HCP submitted in support of an incidental take permit application must include the following information:

- impacts likely to result from the proposed taking of the species for which permit coverage is requested;
- measures that will be implemented to monitor, minimize, and mitigate impacts; funding that will be made available to undertake such measures; and procedures to deal with unforeseen circumstances;
- alternative actions considered that would not result in take; and
- additional measures USFWS may require as necessary or appropriate for purposes of the plan.

The HCP development phase concludes and the permit processing phase begins when a complete application package is submitted to the appropriate permit-issuing office. A complete application package consists of: 1) an HCP, 2) an Implementing Agreement (IA), 3) a permit application, and 4) a $100 fee from the applicant. An implementing agreement is not required for an HCP that qualifies as a low-effect HCP. The Service prepares an Intra-Service Section 7 Biological Opinion; and also prepares a Set of Findings, which evaluates the Section 10(a)(1)(B) permit application in the context of permit issuance criteria (see below). An Environmental Action Statement, Environmental Assessment, or Environmental Impact Statement serves as the Service's record of compliance with the National Environmental Policy Act (NEPA). The Service must publish a Notice of Availability of the HCP package in the Federal Register to allow for public comment. The draft NEPA document, HCP, and IA (if applicable) are made available for public review during this 30-day to 90-day comment period. A Section 10(a)(1)(B) incidental take permit is granted upon a determination by the Service that all requirements for permit issuance have been met. Statutory and regulatory criteria for issuance of the permit, pursuant to section 10(a)(2)(b) of the Act and 50 CFR 17.22 (b)(2) and 17.32 (b)(2) specify that:

- the taking will be incidental;
- the impacts of incidental take will be minimized and mitigated to the maximum extent practicable;

- adequate funding for the HCP and procedures to handle unforeseen circumstances will be provided;
- the taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild;
- the applicant will provide additional measures that the Service requires as being necessary or appropriate; and
- the Service has received assurances, as may be required, that the HCP will be implemented.

During the post-issuance phase, the Permittee and other responsible entities implement the HCP, and USFWS monitors the Permittee's compliance with the HCP as well as the long-term progress and success of the HCP. The public is notified of permit issuance by means of the Federal Register.

1.5.3 National Environmental Policy Act

The purpose of the National Environmental Policy Act (NEPA) is two-fold: to ensure that Federal agencies examine environmental impacts of their actions (in this case deciding whether to issue an incidental take permit) and to utilize public participation. NEPA serves as an analytical tool on direct, indirect, and cumulative impacts of the proposed project alternatives to help the Service decide whether to issue an incidental take permit (ITP or section 10(a)(1)(B) permit). NEPA analysis must be done by the Service for each HCP as part of the incidental take permit application process.

1.5.4 National Historic Preservation Act

All Federal agencies are required to examine the cultural impacts of their actions (e.g., issuance of a permit). This may require consultation with the State Historic Preservation Office (SHPO) and appropriate American Indian tribes. All incidental take permit applicants are requested to submit a Request for Cultural Resources Compliance form to the Service. To complete compliance, the applicants may be required to contract for cultural resource surveys and possibly mitigation.

1.5.5 California Endangered Species Act (CESA)

The California Endangered Species Act (CESA) provides for the designation of native species or subspecies of fish, wildlife, and plants as endangered or threatened (CESA Section 2062-2067). The Mount Hermon June beetle, Zayante band-winged grasshopper, and Ben Lomond spineflower are not listed under CESA. Ben Lomond wallflower does not occur in the project area.

1.5.6 California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) (Pub. Res. Code §21000 seq.) requires state and local governmental agencies to complete an environmental review of

discretionary projects that could impact environmental resources. CEQA differs from NEPA in that it requires that significant environmental impacts of proposed projects be reduced to a less-than significant level through adoption of feasible avoidance, minimization, or mitigation measures unless overriding considerations are identified and documented.

1.5.7 County of Santa Cruz Sensitive Habitat Ordinance

The County oversees a Sensitive Habitat Protection Ordinance, which is designed to minimize disturbance in sensitive habitats and to protect these areas for their genetic, scientific, and educational values. The County defines a “sensitive habitat” as “any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments” (County of Santa Cruz 1994). Sensitive habitats include, but are not limited to, areas where sensitive species live, areas necessary for the survival of sensitive species, and any location where disturbance is likely to lower population numbers. Based on the findings of a biotic review, the County may require the project proponent to avoid, minimize, and mitigate impacts to the sensitive habitat by: (1) limiting the portion of sensitive habitat to be disturbed; (2) deeding an easement to protect undisturbed portions of this habitat; (3) restoring portions of degraded sensitive habitat; and/or (4) restricting land uses.

Sites that are occupied by the listed species are protected under the Sensitive Habitat Protection Ordinance. The County has sole authority to determine whether project proponents have complied with this Ordinance. However, the conservation strategy presented here includes avoidance, minimization, and compensations measures designed to protect Zayante Sandhills habitat and should fulfill the requirements of the Sensitive Habitat Protection Ordinance.

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Section 2

Project Description/ Activities Covered by Permit

2.1 Project Description

Verizon Wireless is seeking to expand the existing telecommunications facility within the County of Santa Cruz's Juvenile Probation Center parcel (APN 061-371-16), which is located at 3650 Graham Hill Road between the two of Felton and the City of Scotts Valley (Figures 1 and 2).The proposed project includes installation of new antennas on the existing monopole, construction of a 22.6 foot-by-10.8-foot platform southeast of and immediately adjacent to the existing fenced enclosure, and mounting equipment cabinets and a generator on the platform. In addition, the project will entail creating a small (5-foot by 20-foot) paved walkway and stairs to access the platform from the existing paved walkway, and installing a propane tank to supply the generator (On Air 2017; Appendix A).

The project activities will occur within a 2,986-sf (0.069-acre) area that includes the platform, adjacent areas where crews will work, the path used to access the site, and the existing parking area south of the Probation Tank, which will be used for parking and material staging (Figure 2).

2.2 Activities Covered by Permit

An incidental take permit is requested to cover impacts to the listed species that may occur during implementation of the telecommunications facility expansion project. The following is the sequence of anticipated steps to complete the project, showing the estimated duration of each.

1. **Install Antennas (1 week):** Attach three new six-foot panel antennas with three remote radio units (RRUs) per sector (nine total each) plus two raycaps to the existing monopole located inside the existing fenced facility.
2. **Install Piers (2 weeks):** Install the steel piers upon which the platform will be mounted. Grading is not anticipated to occur and instead, the piers will be installed at grade.
3. **Construct the Platform (1 week):** Assemble the 22.6' x 10.8' platform on the piers.
4. **Install Equipment and Generator (1 week):** Mount the equipment cabinets and the new 30kW generator to the platform.
5. **Install Propane Tank and Walkway (1 week):** Install the new propane tank, by grading a pad and digging a 1-foot wide by 12-foot-long trench to pipe the gas to the generator on the platform. Pave the 5-foot-by 20-foot walkway between the existing walkway and platform.
6. **Drop Electricity and Dark Fiber Lines (2 weeks):** Work with PG&E and AT&T to have electrical and telecommunications lines dropped from the existing utility pole east of the facility to the new equipment.

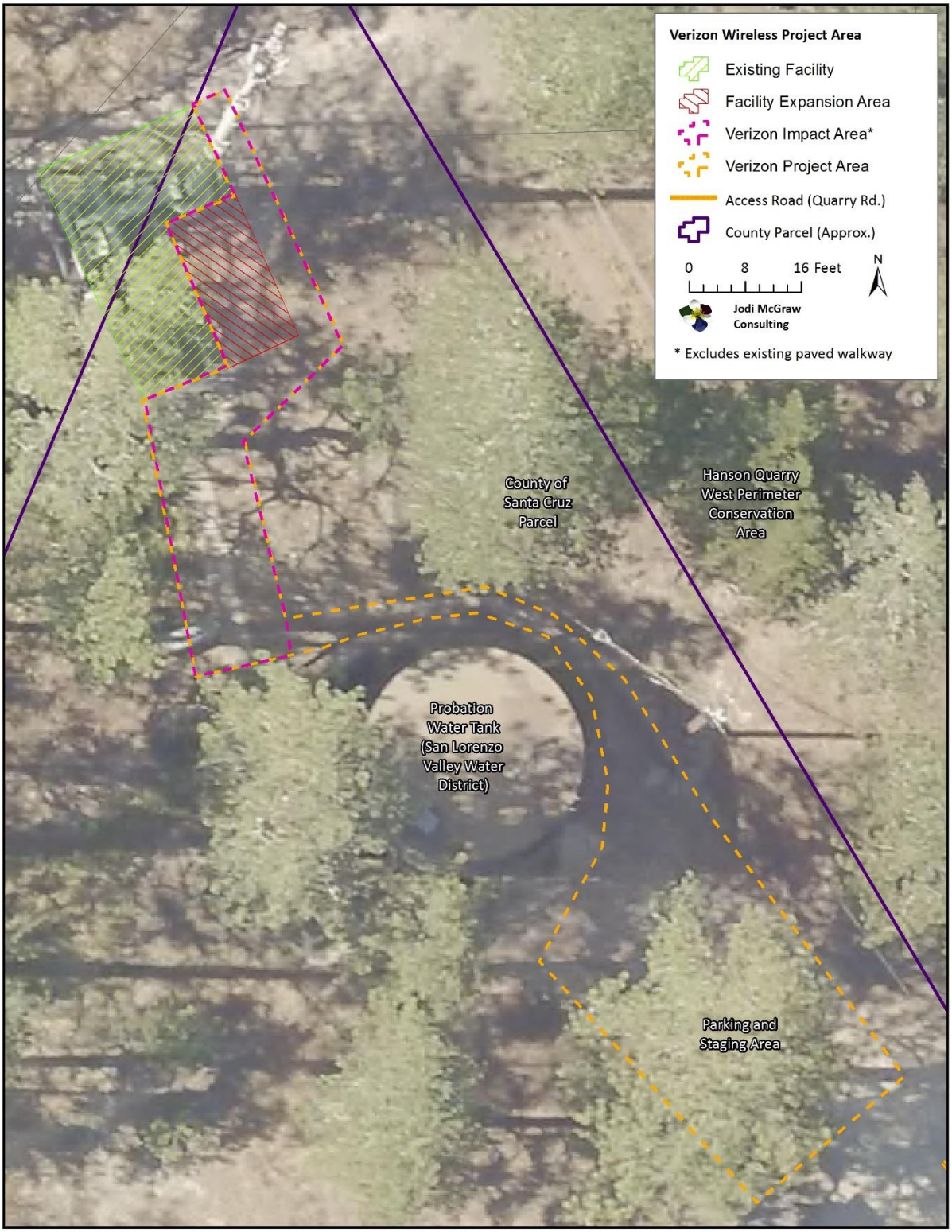

Figure 2: Location of proposed telecommunications facility expansion area adjacent to existing facility, showing impact area and project area within the County of Santa Cruz parcel at 3650 Graham Hill Road, Felton, Santa Cruz County, California.

The incidental take permit is also requested to cover take of the listed insects and impacts to the Ben Lomond spineflower that may occur during on-site restoration (Section 5.2.2.1). These activities are anticipated to include:

1. Collecting and dispersing seed, including that of Ben Lomond spineflower, if any is present aboveground in the site prior to implementation of the project;
2. Installing container plants along with any amendments (e.g., fertilizer and mulch) to promote their success; and
3. Irrigating plantings to promote plant survivorship and growth.

The covered activities are further described in Section 4.1, which assess their impacts on the covered species.

Section 3
Environmental Setting/ Biological Resources

3.1 Environmental Setting

3.1.1 Climate

Located in central Santa Cruz County, the project area experiences a Mediterranean climate, characterized by cool, wet winters and hot, dry summers. Summer temperatures range from 45°F to 95°F, with an average of 68°F. Winter temperatures range from 36°F to 65°F, with an average of 51°F.

Annual precipitation is 44 inches, with most falling as rain. The rainy season is from October to May, with the majority of the rainfall occurring between December and March.

3.1.2 Topography/Geology

The project site is located on a south-facing slope of Mount Hermon. A portion of the project area has been previously graded to install the existing water tank and a telecommunications facility upslope, including to install parking area. The project site is located at approximately 880 feet above mean sea level, just 30 feet below the peak of Mount Hermon.

The soil in the area of the proposed project is a light to medium, grey to grey brown, loose sand soil characteristic of the Zayante series, which is an excessively well-drained, low-nutrient soil derived from the weathering of marine sediments and sandstones of the Santa Margarita Formation (U.S. Department of Agriculture 1980). Exposed soil within portions of the proposed project disturbance envelope footprint has been modified by land uses. Specifically, the parking area has been compacted and features base rock in the upper horizon. Similarly, the path around the water tank features a board walk to address inundation resulting from the leaking water tanks.

3.1.3 Hydrology/Streams, Rivers, Drainages

The project site is located on the western portion of the Lower San Lorenzo River Subwatershed near the border of the Bean Creek Subwatershed of the San Lorenzo Watershed, The San Lorenzo River is located 1.1 miles west of the project area; Bean Creek is located 0.6 miles north of the project area.

The project area is within upland habitat and not within a flood zone or alluvial fan.

3.1.4 Existing Land Use

The proposed project will occur within a portion of the County of Santa Cruz's 28-acre parcel, which the County leases for water and telecommunications facilities. The parcel is partially developed and features the following improvements (Figure 2):

- **Juvenile Hall:** a facility constructed beginning in 1968, which currently consists of 18,039 ft^2 of buildings, an approximately 0.5-acre fenced yard north of the buildings, and approximately 2 acres of asphalt and gravel parking lots used by facility staff and visitors, as well as people using the baseball field.
- **Michael Gray Field:** an approximately 1.5-acre baseball field used by the community, which was developed in 1986.
- **A telecommunications facility:** a 550-sf fenced enclosure near the top of Mount Hermon contains a monopole supporting cellular telecommunications, as well as emergency services antennas, and associated power and telecommunications equipment boxes; a propane tank that supplies the equipment is located outside of the fenced enclosure.
- **Public Water Facility:** The San Lorenzo Valley Water District operates three water wells in addition the existing 30-foot diameter, 100,000-gallon redwood tank located near the existing telecommunications facility.
- **Access Roads**: An approximately 0.27 mile long, ten-foot wide paved road labeled in some databases as "Quarry Road" provides access to the parking area on the south side of the existing water tank (Figure 2). This road is used by personnel to access the telecommunications facilitate north of the tank as well as those operating the water facilities. Additionally, a 0.24 mile long, 10 to 20-foot wide gravel road connects the District's wells on the eastern and western portions of the parcel to the paved access road (Quarry Road).

The 2,986-square-foot project area includes the parking area, the access path around the water tank on the east side, a five-foot area on either side of the asphalt path to the existing fenced telecommunications facility, and a swath of land to the east of the proposed expansion area (Figure 2).

3.1.5 Plant Communities

The project parcel supports native sandhills communities characteristic of the sandhills ecosystem which occurs on Zayante soils in central Santa Cruz County.

- **Ponderosa Pine Forest:** This community, which is the predominate type within the County parcel, is characterized by relatively dense canopy of ponderosa pine, coast live oak (*Quercus agrifolia*), and pacific madrone (*Arbutus menziesii*). The tree understory is comprised primarily of shrubs including silverleaf manzanita *(Arctostaphylos silvicola*), Santa Cruz Mountains manzanita (*A. crustacea* ssp. *crinita*), coffee berry (*Frangula californica*), poison oak (*Toxicodendron diversilobum*), and sticky monkeyflower (*Mimulus aurantiacus*); herbs including bracken fern (*Pteridium aquilinum* var. *pubescens*) and cudweed (*Pseudognaphalium beneolens*) occur in canopy gaps.

- **Silverleaf manzanita chaparral with ponderosa pine:** Located downslope of the tank replacement area, this community is dominated by silverleaf manzanita and features scattered Santa Cruz Mountains manzanita and sticky monkeyflower; native herbaceous plants occur in the canopy gaps and include Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*) and holly leaf navarretia (*Navarretia atractyloides*).

- **Sand Parkland:** The area surrounding the telecommunications facility supports open sand parkland, which is characterized by a relatively sparse stand (<30% canopy cover) of ponderosa pine, a lack of woody shrubs, and a diverse suite of native herbaceous plants and subshrubs including silver bush lupine (*Lupinus albifrons* var. *albifrons*), Ben Lomond buckwheat (*Eriogonum nudum* var. *decurrens*), common sandaster (*Corethrogyne filaginifolia*), sessile false goldenaster (*Heterotheca sessiliflora* ssp. *echioides*), and Ben Lomond spineflower. This community also supports a suite of non-native annual grasses and forbs that includes smooth cat's ears (*Hypochaeris glabra*), ripgut brome (*Bromus diandrus*), rattlesnake grass (*Briza maxima*), sheep's sorrel (*Rumex acetosella*).

The drainage from the existing water tank gives rise to a human-created wetland that supports species adapted to higher soil moisture including flat tall flatsedge (*Cyperus eragrostis*), spreading rush (*Juncus patens*) fringed willow-leaf herb (*Epilobium ciliatum* ssp. *ciliatum*), and Canadian horseweed (*Erigeron canadensis*), as well as a grove of juvenile Pacific madrone trees, which line the channel.

3.1.6 Adjacent Land Use

The County parcel is located atop Mount Hermon. On its eastern border is the Hanson Quarry Property, which features a relatively narrow conservation area that separates the County parcel from the approximately 185-acre sand quarry further east. Across Graham Hill Road to the south is the 1,750-acre Henry Cowell State Park. To the east, the parcel is contiguous with open space land managed by the Mount Hermon Association as part of its private conference center (Figure 1).

The community of Mount Hermon and the neighborhood known as Whispering Pines, both of which feature relatively high-density residential development, are located just 0.5 miles northwest and 0.3 miles southeast of the proposed project area, respectively. These communities, which were developed in early and middle portions of the last century, are included in the “Mount Hermon” and “Whispering Pines” planning units in the *Interim Programmatic Habitat Conservation Plan for the Endangered Mount Hermon June Beetle and Ben Lomond Spineflower* (USFWS et al. 2011).

3.2 Covered Species

Take coverage is requested forthe Mount Hermon June beetle and Zayante band-winged grasshopper; adverse impacts to Ben Lomond spineflower are also addressed in this plan. Ben Lomond wallflower is found in the Hanson Quarry West Perimeter Habitat Set Aside to the east of the project area, but is not known to occur in the County parcel (McGraw 2017b; Appendix B).

3.2.1 Mount Hermon June beetle (Polyphylla barbata)

Status and Distribution

The Mount Hermon June beetle is a member of the family Scarabaeidae (Insecta: Coleoptera; Figure 3). The Mount Hermon June beetle was listed as federally endangered on January 24, 1997 (USFWS 1997). Critical habitat has not been designated for this species.

The Mount Hermon June beetle occurs in association with Zayante sand soil in central Santa Cruz County. Outcroppings of Zayante soils support a unique ecosystem known as the Zayante (or Santa Cruz) Sandhills (Sandhills). Within the Sandhills, the Mount Hermon June beetle has been recorded from approximately 150 locations in the vicinity of Mount Hermon, Felton, Ben Lomond, Zayante, Scotts Valley, and Bonny Doon (Arnold 2004, USFWS et al. 2011).

While the entire known range of the Mount Hermon June beetle encompasses 10,000 acres, suitable habitat for the endangered insect is only known to occur within approximately 2,800 acres (McGraw 2004b) of that area. The amount of habitat which is presently occupied by the Mount Hermon June beetle is unknown.

Habitat Characteristics

The Mount Hermon June beetle occurs in the various plant assemblages or communities of the Sandhills, including those broadly categorized as coast range ponderosa pine forest and northern maritime chaparral. The endangered beetle has also been observed in areas where native Sandhills plant species have been removed, including those that are disturbed through development or feature ornamental or other

Figure 3: Mount Hermon June beetle adult male (left) and larva (right). Photographs by Jodi McGraw.

non-native plant species (Arnold 2004). Mount Hermon June beetle also inhabits ecotones between Sandhills communities and non-Sandhills vegetation, including coast live oak woodland and mixed evergreen forests (J. McGraw pers. obs.).

Occurrence within the Project Area

Mount Hermon June beetles have been recorded on the County parcel on numerous occasions; the species occurs at relatively high abundance within the sand parkland community on the northern portion of the parcel (Arnold 2004, McGraw 2006, 2010, 2011, 2012, 2013; USFWS 2009).

Given the numerous documented occurrences of Mount Hermon June beetle with the project parcel, and the occurrence of Zayante soils, which provide suitable habitat for the species, within the proposed project area, the species is assumed to inhabit all open soil not covered by impervious surfaces, such as the asphalt road.

Abundance of the Mount Hermon June beetle is anticipated to be low in the rocked parking area south of the tank, where plant cover is low, limiting the availability of plant roots and mycorrhizae on which the larvae feed. Nonetheless, *Polyphylla* larvae have been recovered from areas lacking aboveground plant cover during monitoring of prior projects (McGraw 2015b).

Mount Hermon June beetle abundance may also be low in the portions of the project footprint that are inundated as a result of leaks and drainage from the water tank, as the saturated soils may not provide appropriate habitat conditions for this fossorial species.

The telecommunications facility expansion area is largely denuded as a result of foot traffic associated with maintenance of the existing facility and recreation; the site receives relatively frequent use by hikers and dog walkers. Nonetheless, the unpaved soil around the facility is likely to support Mount Hermon June beetle, as it features relatively loose sand soil, scattered patches of herbaceous plants, and the roots of ponderosa pine that surround the facility. As a result of its relatively high density of Mount Hermon June beetles, the sand parkland habitat southwest of the project area is often used as a 'reference' or 'control' site in presence/absence surveys designed to evaluate occupancy in other sites. During such surveys, adult male Mount Hermon June beetles are recovered at high abundance in black light traps located in this area (McGraw 2009a, 2010, 2011a, 2012, 2013, 2014b, 2015a).

Life History

The Mount Hermon June beetle is univoltine (i.e., has only one generation per year). The majority of the life cycle of the Mount Hermon June beetle occurs beneath the soil surface. Though little research has been conducted on below-ground stages of the life cycle of the Mount Hermon June beetle (e.g., eggs, larvae, pupae, and portions of the adult stage), information can be cautiously inferred from other species of *Polyphylla* that are well-studied, including the tenlined June beetle (*Polyphylla decemlineata*).

The life cycle of the Mount Hermon June beetle is estimated to require two to three years. After mating during the summer, adult females lay eggs beneath the soil surface on, or in close proximity to, host plant roots. Eggs hatch into larvae that feed on roots of host plants. As the larvae grow, they molt from first to second, and finally third instars. Third instar larvae pupate below the soil surface, and eventually male and female adults emerge from pupae. Adult emergence and seasonal activity often begins in May and continues through about mid-August (activity period). However, seasonal activity may vary from year to year depending on weather conditions (Arnold 2004).

Mount Hermon June beetles are polyphagous, or generalist feeders. Frass pellets of *Polyphylla* larva obtained from Mount Hermon June beetle mating locations contained tissue from flowering plants, ferns, and fungi (Hill and O'Malley 2009).

During the summer, adult Mount Hermon June beetles are active between approximately 7:00 p.m. and 10:00 p.m., with peak activity usually between 8:45 p.m. and 9:30 p.m. At dusk, adult males emerge from the soil, fly up through herbs and shrubs, and then fly low to the ground in search of flightless females, which emerge from the soil but remain on the surface of the ground and can be found by males which sense their pheromones. After mating occurs on the soil surface, females burrow underground where they presumably lay eggs.

A seasonal capture-recapture study suggested that adult males live no longer than eight days and that most males have home ranges of less than a few acres (Arnold 2001). The maximum dispersal distance documented for adult male Mount Hermon June beetles is 923 feet (Arnold 2000). Similar data on lifespan and dispersal of females are lacking at this time because they are so infrequently observed.

The Mount Hermon June beetle can be distinguished from three congeners (species of the same genus) which also occur in central Santa Cruz County by the presence of relatively dense, long, erect hairs that are scattered over the elytra (leathery forewings), and short erect hairs on the pygidium (last abdominal segment) (Young 1967,1988). Adult males are typically 20 millimeters (mm) long and 9.7 mm wide, while the slightly larger females are approximately 22 mm long and 12 mm wide (Hill and O'Malley 2009).

3.2.2 Zayante band-winged grasshopper (*Trimerotropis infantilis*)

Status

The Zayante band-winged grasshopper is a member of the family Acrididae (Insecta: Orthoptera; Figure 4). The species was listed as federally endangered on January 24, 1997 (USFWS 1997). Critical habitat has was designated for this species in 2001 (USFWS 2001).

Description and Life History

The Zayante band-winged grasshopper is a small (0.5-0.9 inch), pale grey to light brown grasshopper (that features pale yellow hindwings, pale blue tibiae and a band across the eyes (Figure 4). This univoltine species features a one-year lifecycle in which it undergoes hemimetabolous (incomplete) metamorphosis. During the adult flight season, which is between May and October (USFWS 2001), grasshoppers mate and lay eggs which overwinter in the soil.

Figure 4: Zayante band-winged grasshopper. Photograph by Jodi McGraw.

Little information is availability about the timing and factors influencing egg hatching. Nymphs have been observed as early as April, suggesting eggs hatch in early spring. The timing of the flight season appears to be influenced by temperature; McGraw (2014) found that the peak of the flight season in the Quail Hollow Quarry Conservation areas was negatively correlated with mean average daily temperature between November 1 and October 31.

Nymphs (immatures) develop through five instars during the spring and early summer. Adults are observed as early as May (USFWS 2001), although adult activity typically peaks in July and August (Arnold 2004). Adults remain active until the first hard rainfall event, which typically occurs in October or early November (Arnold 2004).

Distribution and Habitat Characteristics

The Zayante band-winged grasshopper occurs in the sandhills ecosystem, which occurs on Zayante sand soil in central Santa Cruz County. Zayante band-winged grasshoppers are known from approximately 20 historic locations, though are currently thought to occur in just five primary areas in the vicinity of Mount Hermon, Felton, Ben Lomond, Zayante, and Scotts Valley (Arnold 2004, USFWS 2009).The amount of habitat which is presently occupied by the Zayante band-winged grasshopper is unknown; however, given the limited distribution of open sandhills habitat, it is likely less than 500 acres.

Within the sandhills, the species is primarily associated with open, sunlit areas that are sparsely vegetated, including open sand parkland habitat. The species is most commonly observed within the five sand parkland plant associations (i.e. vegetation types) within the Sandhills, where it feeds on silver bush lupine (*Lupinus albifrons* var. *albifrons*) and golden aster (*Heterotheca sessiliflora* ssp. *echioides*), as well as grasses (Poaceae; Chu 2002). However, Zayante band-winged grasshopper is also observed within the other associations, which occur as a complex mosaic within the sandhills.

Critical Habitat

In 2001, the Service designated 10,560 acres in central Santa Cruz County within the known distribution of the Zayante band-winged grasshopper as critical habitat for the Zayante band-winged grasshopper. The primary constituent elements of critical habitat for the Zayante band-winged grasshopper are the presence of Zayante soils, the occurrence of Zayante Sandhills habitat and the associated plant species, and certain microhabitat conditions, including areas that receive large amounts of sunlight, widely scattered tree and shrub cover, bare or sparsely vegetated ground, and loose sand (USFWS 2001).

This proposed project occurs within the boundaries of designated critical habitat for the Zayante band-winged grasshopper. Areas of sand parkland that surround the tank constitute critical habitat for this species.

Occurrence within the Project Area

The Zayante band-winged grasshopper occurs in the sand parkland habitat atop Mount Hermon (McGraw 2011b), and in the adjacent Western Perimeter Set Aside of the Hanson Quarry, to the east of the Project Area. A 2011 presence/absence survey of

the County parcel failed to detect the species; however, it was observed in adjacent sand parkland habitat 200 feet north of the water tank. Additionally, the species was reportedly observed sunning in the graveled portion of the access road that lies between the existing probation water tank and the Quarry Road (Arnold and Bandel 2014).

3.3.3 Ben Lomond spineflower (Chorizanthe pungens var. hartwegiana)

Description and Conservation Status

The Ben Lomond spineflower is a small annual herb of the buckwheat family (Polygonaceae). It can grow up to 10 inches high, but more typically grows no more than a few inches above ground. Flower clusters and associated structures are pink with small distinct heads. Whorls of bracts below the flowers are 0.06 to 0.09 inch long and have pink margins (Figure 5).

The Ben Lomond spineflower was listed as federally endangered on February 4, 1994 (USFWS 1994).Critical habitat has not been designated for the Ben Lomond spineflower.

Figure 5: Ben Lomond spineflower inflorescence (left) and patch of plants (right). Photographs by Jodi McGraw.

The Ben Lomond spineflower is endemic to the Sandhills and restricted to sandy soils of the Zayante series. Specifically, the Ben Lomond spineflower requires sandy soils in open, sparsely vegetated areas (McGraw and Levin 1998, McGraw 2004a,b). The core of current and historical populations of the species occurs in the vicinity of Mount Hermon, Felton, Ben Lomond, Zayante, Scotts Valley, and Bonny Doon. Population sizes vary widely from year to year due to interannual variability in climate, particularly rainfall (McGraw 2004b). No information is available regarding the current or historical number of populations. However, a very rough estimate of total potential habitat is

approximately 900 to 2,000 acres (USFWS 2007).

Life History

The Ben Lomond spineflower is a short-lived annual species. Seeds germinate in late fall after the first substantial rains. Plants form a basal rosette of leaves in the winter, bolt in late February and early March, flower March-May, then seed between June and July. (McGraw and Levin 1998, McGraw 2004a, McGraw 2004b). In open habitat, the Ben Lomond spineflower can reach seedling densities of hundreds to thousands per square meter (Kluse and Doak 1999; McGraw 2004b). When in bloom, the Ben Lomond spineflower often appears as a spreading mat of small, showy, pink flowers.

Occurrences within the Project Area

The Ben Lomond spineflower occurs patchily and at overall low frequency and abundance within the County parcel, where it is found in canopy gaps in the silverleaf manzanita chaparral and areas of sparse herbaceous plant cover in the sand parkland. A survey of the project area during September 2017 failed to locate Ben Lomond spineflower above ground; however, seed of the annual plant may be present in the soil (i.e., seed bank; McGraw 2017b; Appendix B). These relatively frequent soil disturbance in the project area may preclude establishment, survivorship, and/or reproduction of Ben Lomond spineflower, which is adapted to lower-levels of disturbance (McGraw 2004a, 2004b).

3.3 Other Sandhills Endangered Species in Region

The Sandhills communities support other special-status plant and animal species (Table 1). Santa Cruz kangaroo rat (*Dipodomys venustus venustus*) occurs within County's parcel and the Western Perimeter Set Aside of the Hanson Quarry (Biosearch Associates 2013). This nocturnal small mammal was observed in two traps located 150' north of Graham Hill Road, along the paved access road on the eastern portion of the project area (Biosearch Associates 2013). Impacts to this species during construction will be avoided by conducting construction during daylight hours and fencing around the project footprint to prevent impacts to adjacent habitat.

Ben Lomond buckwheat occurs scattered throughout the project area including in the proposed telecommunications expansion area. Silverleaf manzanita is widespread on the County's parcel though does not occur within the disturbance envelope of the proposed project. The species lines the Quarry Road and occurs adjacent to, though not within, the section of dirt road proposed for staging.

The Ben Lomond wallflower does not occur within the project area nor elsewhere on the County-owned parcel. The species occurs within the Hanson Quarry West Perimeter Set Aside located east of the project area (J. McGraw, pers. obs.). The existing chain link

fence between the sites will protect the state-listed plant from impacts associated with the tank replacement project.

Table 1. Special-Status Species in the Project Area and Parcel

Common Name	Status	Project Parcel	Project Area
Santa Cruz kangaroo rat (*Dipodomys venustus venustus*)	California Species of Special Concern	Inhabits sand chaparral and ponderosa pine forest; may disperse within sand parkland	Suitable habitat present
Mount Hermon June beetle (*Polyphylla barbata*)	Federally Endangered	Inhabits all habitats	Suitable habitat present
Zayante band-winged grasshopper (*Trimerotropis infantilis*)	Federally Endangered	Inhabits open sand parkland in northern tip of parcel and adjacent parcel to north	Suitable habitat present
Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*)	Federally Endangered; List 1B.1[1]	Known to occur in sand parkland and sand chaparral	Suitable habitat present; species may be present in seed bank
Santa Cruz wallflower (*Erysimum teretifolium*)	Federally Endangered; California Endangered; List 1B.1	Not present (aboveground) in parcel but found on adjacent parcel to the east; seed bank may be present within the parcel	Suitable habitat present; species may be present in seed bank
silverleaf manzanita (A*rctostaphylos silvicola*)	List 1B.3	Occurs throughout the sand chaparral and ponderosa pine forest with scattered individuals occurring in sand parkland	Suitable habitat present; species may be present in seed bank
Ben Lomond buckwheat *(Eriogonum nudum* var. *decurrens*)	List 1B.1	Occurs throughout the sand parkland with scattered individuals in sand chaparral and ponderosa pine forest	Suitable habitat present and multiple adults individuals present in project area

[1] Most rare, threatened, or endangered plants in California and elsewhere (CNPS 2017)

Section 4

Potential Biological Impacts/ Take Assessment

4.1 Direct and Indirect Impacts

4.1.1 Direct Impacts

The telecommunications facility expansion project has the potential to cause take of Mount Hermon June beetle and Zayante band-winged grasshopper and impacts to the Ben Lomond spineflower by causing mortality of individuals and both permanent and temporary habitat loss. The project plans (ON Air 2017; Appendix B) and a geographic information system were used to calculate the following (Table 2):

1. **Footprint**: The area of the project improvements and activities;
2. **Adjacent Disturbance:** The area adjacent to the project footprint that will be disturbed (covered, displaced, etc.) during construction;
3. **Total Disturbance Envelope:** The footprint plus the adjacent disturbance.
4. **Non-Habitat within the Disturbance Envelope:** The area within the Total Disturbance Envelope that does not consist of habitat, because it is already covered by existing, impervious surfaces, including the existing tank and adjacent pavement;
5. **Total Habitat Disturbed:** The Total Disturbance Envelope minus the Non-Habitat within the Disturbance Envelope;
6. **Temporary Habitat Disturbance:** The area of habitat that will be disturbed, but will *not* be permanently impacted through covering with impervious surfaces or chronic disturbance, and instead will be restored following implementation of the project; and
7. **Permanent Habitat Disturbance:** The Total Habitat Disturbed minus that area of Temporary Habitat Disturbance.

<u>Permanent Habitat Loss</u>

Expansion of the telecommunications facility will result in the permanent loss of 615 sf (0.014 acre) of habitat (Table 2). This is the area of existing open soil below the platform, where most plants will unable to establish due to shading. It also includes the area within 5 feet of the platform on the east side of the paved walkway. The portion of this area between the existing paved walkway and the platform will be paved to a 5 foot-width, and feature small staircase to access the platform. The remainder will be chronically disturbed as part of work to maintain the site. This area provides breeding habitat for the Mount Hermon June beetle and project

Table 2: Temporary and permanent impacts in the project area (Figure 2).

Column Identifier	Project Area (sf)		Habitat Disturbed (sf)		
	1	2	3	4	5
Project Component	Footprint	Non-Habitat within Disturbance Envelope	Total (1-2)	Temporary	Permanent (5-6)
Telecommunications Facility	242	0	242	0	242
Propane Tank and Trench	22	3	19	19	0
Adjacent Area to Be Disturbed	825	200	625	252	373
Parking/Staging Area and Paved Access[1]	1,897	1,897	0	0	0
Total	**2,986**	**2,100**	**886**	**271**	**615**

[1] The parking/staging area and access routes will be paved and mitigated by the San Lorenzo Valley Water District prior to implementation of this project.

implementation will result in the capture and relocation, injury, or mortality of any individual Mount Hermon June beetles that are utilizing this area.

This area also provides suitable habitat for dispersal and feeding of Zayante band-winged grasshopper, though the latter species is unlikely to breed in this area due to the existing chronic disturbance. Direct impacts to individuals of this species will be minimized by having a biologist on site during ground-disturbing activities to herd Zayante band-winged grasshoppers that are observed in the project area out of harm's way. However, the project may result in some harm associated within this minimization measure. Though not occupied by the Ben Lomond spineflower aboveground, the species has some potential of persisting in the seed bank, where dormant seed could be impacted through excavation and covering of the soil surface.

The 615 sf (0.014 acres) of habitat that will be permanently lost has been modified by prior land use activities, including installation and operation of the existing telecommunications facility. These activities reduced the abundance of plants and thus the food supply for the listed insects, though the habitat therein remains suitable. Nonetheless, the habitat supports native plants including Ben Lomond buckwheat, silver bush lupine, and other native species that occur in the sandhills and may be important for the listed species.

Temporary Habitat Loss

Vegetation removal and soil disturbance are anticipated to cause temporary habitat loss within 271 sf (0.006 acres). This includes the area west of the existing paved walkway including around the future propane tank and the associated trench to connect the tank to the generator.

The habitat that will be temporarily lost is similar to that which will be permanently impacted, in that it likely supports breeding Mount Hermon June beetle and is potentially suitable for dispersal and feeding of Zayante band-winged grasshopper. The area may also feature the seed bank of Ben Lomond spineflower. As noted above, project implementation will result in the capture and relocation, injury, or mortality of any individual Mount Hermon June beetles that are utilizing the area of temporary habitat loss. A biologist will be on site during ground-disturbing activities to relocate any Mount Hermon June beetles detected during the project. Direct impacts Zayante band-winged grasshopper will be minimized by having a biologist on site during ground-disturbing activities to herd Zayante band-winged grasshoppers that are observed in the project area out of harm's way; however, the project may result in some harm associated within this minimization measure. Ben Lomond spineflower seed in the seed bank could be impacted by excavation of the soil.

Following construction, the 271-sf area of habitat that is temporarily disturbed will by sowing seed of native plant species collected on site, including any seed salvaged from Ben Lomond spineflower during the summer prior to construction. The area will also be planted with Ben Lomond buckwheat at a ratio of 3:1 for every plant removed by the project. Mount Hermon June beetles are anticipated to recolonize the disturbed soil following restoration, which is similarly anticipated to restore the plant community structure and species composition of the sand parkland habitat that supports Zayante band-winged grasshopper. Thus, the impacts to habitat for listed species in this area are anticipated to be temporary.

The parking area and access path from the road are paved. Therefore, these use of these areas will not result in of habitat loss.

4.1.2 Indirect Effects

Indirect impacts are effects caused by covered activities that may occur at a different time or in a different place than the direct impacts. The project is designed to minimize indirect effects for the Mount Hermon June beetle, Zayante band-winged grasshopper, and Ben Lomond spineflower. If the project is conducted during the Mount Hermon June beetle flight season (May-August), any exposed soil created will be covered with tarps before 7 p.m. each night, to prevent dispersing males from burrowing into soil within the project area and then being impacted by ongoing construction. Verizon Wireless will not install outdoor lights, which might otherwise facilitate emergency maintenance of the facility at night and deter trespass and vandalism. Avoiding installation of outdoor night lights will prevent disruption of the species' breeding behavior, since male Mount Hermon June beetles are attracted to lights.

4.2 Anticipated Take of Covered Species

4.2.1 Mount Hermon June Beetle

The proposed telecommunications facility expansion project will result in the capture and relocation, injury, or mortality of Mount Hermon June beetles that occur within the 886-sf (0.020 acres) of suitable habitat that will be covered by the platform and associated improvements, or disturbed during project construction (Table 2). If it is implemented outside of the flight season (i.e. between September and April), the project would primarily affect eggs, larva, and pupae. Impacts to individuals will be reduced by having a biologist on site to capture and relocate any

life stages of the Mount Hermon June beetle observed during construction, though some of these individuals may suffer morbidity or mortality due to capture and relocation.

The project will also permanently remove 242 sf (0.006 acres) of habitat for the Mount Hermon June beetle, by covering the open soil with the platform, which greatly limit if not eliminate plant growth, or with asphalt and stairs used to access the platform from the existing path. Based on the low cover of plants within the project disturbance area, the habitat is of moderate value for this species.

Following restoration, the Mount Hermon June beetle is anticipated to recolonize portions of the 271 sf (0.006 acre) area of temporary habitat disturbance resulting from construction activities, including grading and trenching. The restoration will incorporate native plant species upon which the Mount Hermon June beetle feeds

4.2.2 Zayante Band-Winged Grasshopper

The telecommunications facility expansion could impact Zayante band-winged grasshoppers dispersing within the 886 sf (0.020 acre) of potentially suitable habitat, which exclude the paved staging and access areas. The biologist on site will herd any Zayante band-winged grasshoppers out of harm's way, thus reducing impacts to individuals, though some could be harmed or killed during the project.

The project will also permanently remove 615 sf (0.014 acre) of dispersal habitat for the Zayante band-winged grasshopper atop Mount Hermon. Due to the moderate tree canopy and only low frequency of observations of the species in this project area, relative to adjoining habitat with more open-canopy conditions where the species is more frequently observed, the habitat that will be removed by this project is not considered to be breeding habitat for Zayante band-winged grasshopper.

The Zayante band-winged grasshopper may able to utilize the 271 sf (0.006 acres) of habitat that will be temporarily disturbed then restored following completion of the project, as the restoration will be designed to re-create the plant community structure and species composition of open sand parkland habitat, in which this species primarily occurs.

4.2.3 Ben Lomond Spineflower

The telecommunications facility enhancement project will impact Ben Lomond spineflower seeds that may occur within the 886-sf (0.020-acre) disturbance envelope surrounding the existing facility. Though no individuals of the annual plant were observed in a survey conducted in September 2017 (McGraw 2017b; Appendix B), the project disturbance envelope may contain dormant seed of this species within the soil (i.e., a soil seed bank). Therefore, the project is anticipated to impact up to 886 sf (0.020 acre) of habitat that could be occupied by Ben Lomond spineflower.

To limit the impacts on Ben Lomond spineflower, seed of any aboveground plants will be salvaged prior to construction. The collected seed will be dispersed into suitable habitat as part of work to restore the 271-sf (0.006-acre) area of temporary habitat disturbance following

completion of the project. Given the species' adaptation to disturbance, Ben Lomond spineflower populations are anticipated to be greater following completion of this project if seed is available for inclusion in the restoration.

4.3 Effects on Critical Habitat

This proposed telecommunications facility expansion project occurs within the boundaries of designated critical habitat for the Zayante band-winged grasshopper. The 886 sf (0.020 acres) of open soil habitat surrounding the tank constitutes critical habitat for this species. Therefore, the proposed project will permanently remove 615 sf (0.0.014 acres) of critical habitat for the Zayante band-winged grasshopper. An additional 271 sf (0.006 acre) of critical habitat will be temporarily removed but then actively restored as part of the proposed project.

The staging area and access area currently feature habitat that is of lower habitat value as it is covered by base rock; however, the habitat remains suitable. As noted above, this habitat will be permanently paved and mitigated through implementation of the Probation Tank replacement project anticipated to occur prior to the telecommunications facility expansion project (McGraw 201a). Therefore, this area will not feature the open, sparsely vegetated, loose sand soil that represents the primary constituent elements of critical habitat for the Zayante band-winged grasshopper.

Critical habitat has not been designated for the Mount Hermon June beetle, Ben Lomond spineflower, or Ben Lomond wallflower.

4.4 Anticipated Impacts of the Taking

Neither the mortality of the listed species occupying up to the 886 sf (0.020 acre) of suitable habitat proposed to be disturbed during project construction, nor the permanent removal of 615 sf (0.014 acre) of habitat due to expansion of the telecommunications facility are anticipated to affect the viability of the three listed species within the Mount Hermon area, or persistence of the species throughout their range. Moreover, the project is extremely unlikely to influence successful recovery of the endangered species. This assessment is made based on two interrelated factors including:

1. The small area of habitat that will be removed; and
2. The existing development within the project area.

Although historic land use has modified the habitat surrounding the telecommunications facility, it likely supports persisting populations of the endangered Mount Hermon June beetle, which lives 99% of its live cycle below ground. Likewise, Ben Lomond spineflower likely features a below-ground seed bank from which populations can re-establish following disturbances which recreate suitable habitat (McGraw 2004a,b). The Zayante band-winged grasshopper can utilize areas of disturbance as well, particularly if the disturbances creates and maintain open, sunlit conditions characterized by sparse plant cover.

Nonetheless, occurrence of the project area within an existing utility easement area featuring water and telecommunications facilities greatly limits opportunities for permanent conservation

through acquisition or conservation easements. The facilities located atop Mount Hermon are important for water supply and cellular telephone as well as emergency telecommunications.

Habitat outside of developed portion of the County parcel is of very high conservation value. It supports six of the seven endemic Sandhills species (Table 2). The site is utilized as a control or reference site for presence/absence surveys, as Mount Hermon June beetles are often observed at the site during the flight season. These surveys suggest that the density of Mount Hermon June beetle within the parcel is high, even relative to other conservation areas featuring high-quality sandhills habitat (McGraw 2009a, 2010, 2011a, 2012, 2013, 2014b, and 2015a). Given the apparently large population, the relatively large size of the parcel, the intact nature of the habitat, and its location adjacent to other protected habitat (Henry Cowell State Park and Hanson Quarry Conservation Area), maintaining remaining habitat within and adjacent to the County parcel can promote persistence of the Mount Hermon June beetle, as well as other special-status species (Table 2). These sandhills species face numerous threats from on-going activities associated with development and associated land use, including: landscaping, irrigation, and mowing; night lighting; existing infrastructure, including buildings, recreational areas (swimming pool and play fields), and paths (USFWS et al. 2011).

4.5 Cumulative Impacts

In contrast with the analysis of cumulative impacts under section 7, section 10 of the Act and HCPs analyze cumulative impacts as incremental impacts of the action on the environment when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. The geographic area for analysis should be defined by the manifestation of direct or indirect impacts as a result of covered activities. Cumulative impacts under section 10 of the Act can result from individually minor but collectively significant actions taking place over a period of time.

The impacts of the proposed project on the persistence of the endangered Mount Hermon June beetle are very low, owing not only to the small size of the project, but also its occurrence in a partially developed portion of the County's parcel. Other activities on the site, including maintenance and operations of the San Lorenzo Valley Water District's water facilities (tanks and wells), and the County Juvenile Detention Facility in the southern portion of the parcel, may continue to reduce habitat for the species. Notably, the County recently received a permit to construct a multi-use facility within the existing fenced yard of the detention facility. This project is anticipated to impact 8,225 sf (0.189 acres) of habitat for Mount Hermon June beetle on site, though will not affect the other federally endangered species. As part of the County's habitat conservation plan for the project, the County proposes to mitigate impacts to the Mount Hermon June beetle by controlling invasive plants, including Portuguese broom (*Cytisus striatus*) and French broom (*Genista monspessulana*) within a 4.4-acre area of the parcel, including much of the area between the facility and the Probation Water Tank (McGraw 2015c). If implemented, that project will enhance habitat for Mount Hermon June beetle, as well as Ben Lomond spineflower and Zayante band-winged grasshopper within the County parcel.

The San Lorenzo Valley Water District recently received a permit to replace the existing redwood water tank with a 500,000-steel water tank (McGraw 2017a). Though the District will compensate for the impacts of this project off-site, at the Olympia Wellfield, the District will

restore the area of temporary habitat disturbance around the tank. Verizon Wireless will need to coordinate with the District to ensure that this proposed project doesn't undo the restoration.

Given its adjacency to protected lands, including Henry Cowell State Park and the Hanson Quarry West Perimeter Set Aside (Figure 2), it is unlikely that facility development within the County parcel will extirpate the Mount Hermon June beetle from the patch of sandhills habitat on which it occurs. Likewise, impacts to Ben Lomond spineflower are unlikely to impact the population, which instead is anticipated to increase as a result of revegetation efforts implemented as part of the project. Finally, expansion of the telecommunications facility is unlikely to affect persistence of the Zayante band-winged grasshopper in the sand parkland atop Mount Hermon. As a result, the cumulative impacts of this project on the persistence of the three federally listed species are anticipated to be small.

Section 5

Conservation Program/Measures to Minimize and Mitigate for Impacts

5.1 Biological Goals and Objectives

Section 10(a)(2)(A) of the Act requires that an HCP specify the measures that the permittee will take to minimize and mitigate to the maximum extent practicable the impacts of the taking of any federally listed animal species as a result of activities addressed by the plan.

As part of the "Five Point" Policy adopted by the Service in 2000, HCPs must establish biological goals and objectives (65 *Federal Register* 35242, June 1, 2000). The purpose of the biological goals is to ensure that the operating conservation program in the HCP is consistent with the conservation and recovery goals established for the species. The goals are also intended to provide to the applicant an understanding of why these actions are necessary.

These goals were developed based upon the species' biology, threats to the species, the potential effects of the Covered Activities, and the scope of the HCP.

Goal 1: Avoid and minimize take of the Mount Hermon June beetle, Zayante band-winged grasshopper, and Ben Lomond spineflower within the project site.

Objective 1.1: Collect seed of Ben Lomond spineflower plants within the project disturbance enveloped the summer preceding the project, and use the seed to restore the affected area post-project.

Objective 1.2: Install new telecommunications equipment on a platform elevated above the soil surface, to enable Mount Hermon June beetles to emerge from the soil.

Objective 1.3: Monitor construction activities to: 1) capture and relocate any Mount Hermon June beetles observed during construction to intact habitat away from the construction activities, and 2) to herd out of harm's way any Zayante band-winged grasshoppers observed in the project disturbance envelope.

Objective 1.4: Minimize removal of native Sandhills plant species.

Objective 1.5: Avoid landscaping with turf grass, weed matting, aggregate, and mulch.

Objective 1.6: Avoid installing new night lighting which would disrupt Mount Hermon June beetle breeding during the flight season.

Goal 2: Restore habitat within the 0.006-acre area of temporary disturbance around the expanded telecommunications facility, to re-establish native plants including Ben Lomond spineflower, and restore habitat for the Mount Hermon June beetle and Zayante band-winged grasshopper.

Objective 2.1: Develop and implement a plan to restore habitat in the 0.006-acre area of temporary impact, by controlling erosion and establishing native plants from site-collected propagules, including the Ben Lomond spineflower and Ben Lomond buckwheat salvaged from the impact area prior to project implementation, and host plants for the Mount Hermon June beetle and Zayante band-winged grasshopper.

Goal 3: Protect and manage habitat for the Mount Hermon June beetle, Zayante band-winged grasshopper, and Ben Lomond spineflower, at an off-site location of high long-term conservation value to the species.

Objective 3.1: Purchase 2,731 square feet (0.063 acres) of conservation credits for the endangered insects at the Zayante Sandhills Conservation Bank, or other Service-approved conservation bank providing credits for the listed insects.

5.2 Avoidance, Minimization, and Mitigation Measures

Section 10 of the Act requires that all applicants submit HCPs that "minimize and mitigate" the impacts of take authorized by an incidental take permit, and that issuance of the permit will not "appreciably reduce the likelihood of the survival and recovery of the species in the wild." In general, HCPs should include mitigation programs that are based on sound biological rationale, practicable, and commensurate with the impacts of the project on species for which take is requested. Additionally, the Service encourages applicants to develop HCPs that contribute to the recovery of a listed species. If the proposed project is expected to result in permanent habitat loss, then the mitigation strategy must include compensatory mitigation consisting of the permanent preservation of suitable habitat or similar measures.

In accordance with these guidelines and the requirements of the Endangered Species Act, the Conservation Program of this HCP is intended to achieve its biological goals and objectives and to ensure and that the impacts of covered activities on the covered species are minimized and mitigated to the maximum extent practicable.

5.2.1 Measures to Minimize Impacts to the Covered Species

The following measures are designed to minimize impacts resulting from expansion of the telecommunications facility on the covered species by reducing impacts on individuals and habitat adjacent to the project area and existing development.

5.2.1.1: Salvage seed of the Ben Lomond spineflower and utilize it in restoration of the site.

During the summer prior to construction, a qualified biologist will collect any seed of Ben Lomond spineflower available within the project impact area. The seed will be

stored off site in appropriate climate-controlled conditions for use in the larger effort to restore temporarily disturbed habitat surrounding the tank (Measure 5.2.2.1).

5.2.1.2: Fence the perimeter of the project footprint to prevent inadvertent impacts to adjacent habitat.

Prior to initiation of ground-disturbing activities, the perimeter of the project footprint will be fenced using orange construction fencing, to ensure that all ground-disturbance is confined to the impact area. The Project Biologist will monitor the site to ensure that the fence remains intact and that crews are limiting project activities to the project disturbance envelope.

5.2.1.3: If ground disturbing activities are conducted during the flight season of the Mount Hermon June beetle, any exposed soil will be covered nightly to avoid impacts to dispersing mates.

Adult male Mount Hermon June beetles actively search for mates and breed during the evenings for approximately 12-14 weeks sometime between May 1 and August 30. During this period, males and females may burrow into duff and soils at relatively shallow depths for protection during the daytime hours. Every attempt will be made to conduct soil disturbing aspects of the project between September and April, to avoid the adult flight season. If construction occurs during any part of the flight season, tarps, visqueen, or similar impermeable material will be used to cover exposed soil each night by 7:00 p.m. This will prevent adult males from burrowing into the exposed area and then being impacted by subsequent soil disturbance (digging, grading, or covering).

5.2.1.4: Train all construction personnel regarding the covered species.

Prior to initiation of any ground-disturbance, a qualified biologists will conduct a pre-construction training that will be attended by all on-site construction personnel, to facilitate their implementation of species protection measures. The training will include a fact sheet that will provide information about the ecology and threats to the covered species, as well as other special-status species occurring in the project area, including the Santa Cruz kangaroo rat, Ben Lomond buckwheat, and silverleaf manzanita. The fact sheet will include pictures of each species and outline the avoidance and minimization measures that personnel must implement during the course of the project to protect them.

5.2.1.5: Monitor all ground-disturbing activities to reduce impacts to the covered species.

A qualified biologists will be on-site during all ground-disturbing activities when Mount Hermon June beetles or Zayante band-winged grasshoppers have the potential to be impacted by the project. Work crews will be instructed during the pre-construction training to cease activities that can impact the listed insects, until the biologist can safely remove them from the area. The biologist will herd out of harm's way any Zayante band-winged grasshoppers that are found in the project

area. The biologist will capture and relocate any Mount Hermon June beetle to the intact habitat surrounding the impact area. Adults or larvae that found during monitoring of soil disturbance will be re-buried at the approximate depth at which they were unearthed. If an adult Mount Hermon June beetle is found on the soil surface, then it will be relocated to a portion of the project site outside of the impact area and left on the soil surface in a location protected by vegetation.

5.2.1.6: Avoid outdoor lighting.

Adult Mount Hermon June beetles are distracted by light during the night, which can disrupt breeding activity. The existing water tank and telecommunications facility lack night lights; instead, the nearest lights are 700 feet south at the Juvenile Detention Facility. Recognizing that installing night lights for emergency maintenance and to deter trespass and vandalism could disrupt breeding by Mount Hermon June beetles atop Mount Hermon, Verizon Wireless will not install any lights on the expanded telecommunications facility as part of this project.

5.2.1.7: Avoid ground cover that degrade habitat for the listed species.

Mount Hermon June beetles emerge from under the soil surface to attract and locate mates. Zayante band-winged grasshoppers utilize areas of generally open, loose sandy soil lacking dense vegetation. The Ben Lomond spineflower is inhibited be competition from dense vegetation and also litter or other material that covers the soil surface. Accordingly, Verizon Wireless will not install any landscaping elements that impact these species, such as turf grass, dense ground cover plants (e.g. ivy), weed matting, aggregate, and mulch.

5.2.2 Measure to Mitigate Unavoidable Impacts

5.2.2.1: Restore temporarily disturbed habitat within the Telecommunications Expansion Project Area.

Following completion of the project, the estimated 271-sf (0.006-acre) area surrounding the expanded telecommunications facility that will not feature the platform or walkway, or other unsuitable substrate and that will be temporarily disturbed during construction activities (e.g., access and trenching for the propane line) will be restored.

The objective of the restoration will be to re-create the native plant structure and species composition of the sand parkland community within the area, which provides suitable habitat for three of the four covered species. The restoration methods will be described in a plan developed near the end of project implementation to address the post-project conditions including soils, hydrology, and existing vegetation. These will be evaluated to identify the specific restoration treatments, which are anticipated to include: 1) erosion control treatments that are compatible with the listed species, as needed, to stabilize the soil, 2) collection and dispersal of site-collected seed, to maintain the genetic integrity of the community on site, and 3) propagation and outplanting of native plants including Ben Lomond buckwheat.

The restoration will incorporate the seed of the Ben Lomond spineflower that will be collected from the impact area prior to construction (Measure 5.2.2.1). Ben Lomond spineflower seed will be dispersed into portions of the restoration area that feature appropriate soil and open canopy conditions. The restoration will also include Ben Lomond buckwheat, a special-status species endemic to the sandhills, which in the telecommunications facility expansion area.

The restoration will be designed by a USFWS-approved biologist to promote establishment of native plant species that are host plants or provide important habitat for the listed insects. These include silver bush lupine (*Lupinus albifrons* var. *albifrons*) and sessile false goldenaster (*Heterotheca sessiliflora* ssp. *echioides*), which are utilized by the Zayante band-winged grasshopper (Chu 2002), and broad range of native flowering plants and ferns (e.g. bracken fern, *Pteridium aquilinum* var. *pubescens*), which were identified as food plants for Mount Hermon June beetle larvae (Hill and O'Malley 2009).

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5.2.2.2: Mitigate the direct impacts to individuals and permanent and temporary loss of habitat within 886 sf (0.020 acre) by purchasing 0.062 acres of conservation credits at the Zayante Sandhills Conservation Bank.

To compensate for the unavoidable impacts to the listed species, Verizon Wireless will purchase 0.063-acre (2,731 sf) conservation credits from the Zayante Sandhills Conservation Bank, which protects and restores habitat for the three sandhills species to be impacted by the project (Table 1, Figure 6; McGraw 2017b; Appendix B). Appendix C provides the agreement for the Zayante Sandhills Conservation Bank to sell Verizon Wireless credits for this project (Appendix C).

Because the Zayante Sandhills Conservation Bank was set up to sell credits on a per-species basis, rather than for sandhills habitat which might support multiple, co-occurring species, Verizon Wireless will purchase separate credits to compensate for the take of the two federally-listed endangered insect species. Separate credits will not be purchased to compensate for adverse impacts to the Ben Lomond spineflower, which will benefit from the purchase of conservation credits to fund the protection and management of suitable habitat for this species within the Zayante Sandhills Conservation Bank Ben Lomond Sandhills Preserve.

As outlined in Table 3, Verizon Wireless will purchase 0.042-acre conservation credits to mitigate the project's permanent impacts to 0.014 acres of Mount Hermon June beetle habitat. This 3:1 ratio reflects the moderate quality of the habitat as well as unavoidable impacts to individuals in the area of permanent habitat loss. To mitigate the temporary loss of an additional 0.006 acres of Mount Hermon June beetle habitat, and unavoidable impacts to individuals in this area, Verizon Wireless will set aside an additional 0.006 acres of sandhills habitat. This 1:1 ratio is appropriate, as the habitat that will be temporarily impacted will be restored.

Table 3: Off-site mitigation for unavoidable impacts to the covered species, showing the habitat impacts, proposed multiplier, which indicates the ratio at which mitigation is being provided relative to the impacts, and the resulting mitigation area.

		Habitat Impacts			Compensatory Mitigation	
Species	Type	Square Feet	Acres	Multiplier	Square Feet	Acres
Mount Hermon June Beetle	Permanent habitat loss	615	0.014	3	1,845	0.042
	Temporary habitat loss	271	0.006	1	271	0.006
Zayante band-winged grasshopper	Permanent loss of dispersal habitat	615	0.014	1	615	0.014
	Temporary loss of dispersal habitat[1]	271	0.006	0	0	0.000
	Total	**1,772**	**0.041**		**2,731**	**0.063**

[1] The area of temporary habitat loss for Zayante band-winged grasshopper will not be mitigated separately from that of Mount Hermon June beetle, as take of individuals ZBWG will not occur in this area, which will also be restored to conditions that are superior to pre-project conditions.

[1] The area of temporary habitat loss for Ben Lomond spineflower will not be mitigated separately from that of Mount Hermon June beetle, as aboveground seeds of this species will be salvaged and used to establish the species within the restoration area after the project, which will feature superior habitat conditions to those pre-project.

To mitigate the permanent loss of 0.014 acres of potential dispersal habitat for the Zayante band-winged grasshopper in the project area, Verizon Wireless will purchase an additional 0.014 acres of conservation credits. This 1:1 ratio is appropriate given that the habitat to be lost due to construction is of relatively low quality for Zayante band-winged grasshopper and is likely only used for dispersal by the species (Section 4.2.2); moreover, avoidance measures are anticipated to prevent take of individuals during construction (Section 5.2.1.5).

The loss of temporary habitat for Zayante band-winged grasshopper will not be mitigated separately from that of Mount Hermon June beetle, as take of individual grasshoppers is unlikely to occur in this area, which will also be restored to conditions that are superior to pre-project conditions. Based on these acreages and ratios, a total of 2,731 sf (0.063 acres) of conservation credits will be purchased to promote populations of the covered species to be impacted by the project (Table 3).

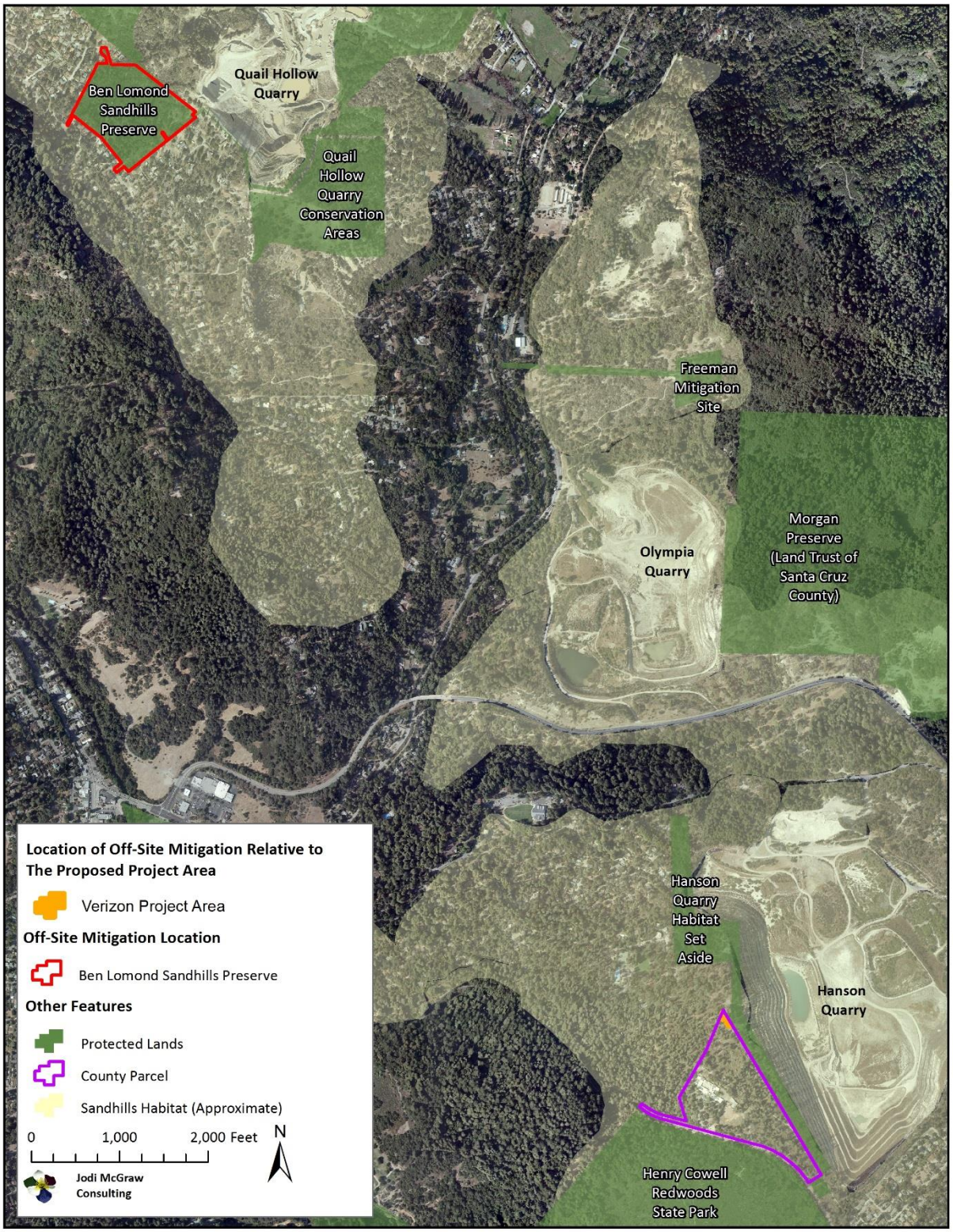

Figure 6: Location of the off-site mitigation area, the Zayante Sandhills Conservation Bank's Ben Lomond Preserve, with respect to Verizon Wireless Project area in the northern tip of the County of Santa Cruz parcel (APN: 061-371-16).

5. MONITORING

Monitoring tracks compliance with the terms and conditions of the HCP and permit. This project will include compliance monitoring to track the permit holder's compliance with the requirements specified in the HCP and permit, as described below. It will also include biological effectiveness monitoring to evaluate replanting within the areas of temporary habitat loss. Effectiveness monitoring for habitat protection and management will be the responsibility of the operator of the conservation bank from which the conservation credits will be purchased.

5.4.1 Construction and Compliance Monitoring

Pre-construction Orientation: Prior to construction, a qualified biologist will conduct a construction crew training, in which individuals involved in construction will be provided a brief presentation about the biology of the covered species and will be shown pictures of the species during their various life stages (Figures 3-5) to aid their detection during construction. Construction personnel will be directed to cease work and immediately contact a biologist permitted to capture and relocate the Mount Hermon June beetle (larva or adults), or herd the Zayante band-winged grasshopper out of harm's way, should either species be observed within the project site.

Construction Monitoring: A qualified biologist will be present on-site during ground-disturbing activities to salvage and relocate any Mount Hermon June beetle or herd out of harm's way any Zayante band-winged grasshoppers. The biologist will also help Verizon Wireless ensure that the project impacts are confined to the designated project areas, and that open soil is covered nightly during the flight season to prevent Mount Hermon June beetles from entering the soil.

5.4.2 Effects Monitoring

To quantify the incidental take at the end of the project, a qualified biologist will calculate the area of soil disturbance and thus incidental take, and count the number of Mount Hermon June beetles and Zayante band-winged grasshoppers that are observed during construction. The biologist will also count the number of Ben Lomond spineflower plants in the impact area, prior to salvage of seed the summer before construction begins.

5.4.3 Access to Project Site

The permit holder shall allow representatives from the Service access to the project site to monitoring compliance with the terms and conditions of the HCP, and the effects of the project.

5.5 Reporting

By January 31 following each year of the permit, a qualified biologist will submit a report to the US Fish and Wildlife Service in order to document the status of the project. The report will include:

1. A brief summary of project activities accomplished during the reporting year (e.g. this includes development/construction activities, and other covered activities);

2. Project impacts;
3. Description of take that occurred (based on disturbance envelope);
4. Observations of any of the covered species;
5. Brief description of conservation strategy implemented;
6. Compliance monitoring results;
7. Description of any changed or unforeseen circumstances that occurred and how they were addressed;
8. Funding expenditures, balance, and accrual; and
9. Description of any minor or major amendments.

Reporting of habitat management and monitoring will be conducted by the operator of the conservation bank from which Verizon Wireless will purchase conservation credits (e.g., the Zayante Sandhills Conservation Bank). The applicant understands that if the Service does not receive the report, the applicant's permit will not be in compliance and will not be renewed.

Section 6

Plan Implementation

6.1 Plan Implementation

The project will be implemented by the applicant, Verizon Wireless, and its contractors. Precise timing of the project will depend on when the incidental take permit is issued, with efforts made to avoid or minimize ground-disturbing activities during the flight season (Section 5.2.1).

6.2 Changed Circumstances

6.2.1 Summary of Circumstances

Section 10 regulations (69 *Federal Register* 71723, December 10, 2004 as codified in 50 Code of Federal Regulations (C.F.R.), Sections 17.22(b)(2) and 17.32(b)(2)) require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the HCP. In addition, the HCP No Surprises Rule [50 CFR 17.22 (b)(5) and 17.32 (b)(5)] describes the obligations of the permittee and the Service. The purpose of the No Surprises Rule is to provide assurance to the non-Federal landowners participating in habitat conservation planning under the ESA that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

Changed circumstances are defined in 50 CFR 17.3 as changes in circumstances affecting a species or geographic area covered by an HCP that can reasonably be anticipated by plan developers and the Service and for which contingency plans can be prepared (e.g., the new listing of species, a fire, or other natural catastrophic event in areas prone to such event). If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and these additional measures were already provided for in the plan's operating conservation program (e.g., the conservation management activities or mitigation measures expressly agreed to in the HCP), then the permittee will implement those measures as specified in the plan. However, if additional conservation management and mitigation measures are deemed necessary to respond to changed circumstances and such measures were not provided for in the plan's operating conservation program, the Service will not require these additional measures absent the consent of the permittee, provided that the HCP is being "properly implemented" (properly implemented means the commitments and the provisions of the HCP have been or are fully implemented).

Foreseeable changed circumstances within the project area of this HCP include:

- the new listing of a species; and
- the discovery of another federally-listed species (Table 1) within the project area.

6.2.2 Newly Listed Species

If a new species that is not covered by the HCP but that may be affected by activities covered by the HCP is listed under the Federal ESA during the term of the section 10 permit, the section 10 permit will be reevaluated by the Service and the HCP covered activities may be modified, as necessary, to insure that the activities covered under the HCP are not likely to jeopardize or result in the take of the newly-listed species or adverse modification of any newly designated critical habitat. Verizon Wireless shall implement the modifications to the HCP covered activities identified by the Service as necessary to avoid the likelihood of jeopardy to or take of the newly listed species or adverse modification of newly designated critical habitat. Verizon Wireless shall continue to implement such modifications until such time as Verizon Wireless has applied for and the Service has approved an amendment of the Section 10(a)(1)(B) permit, in accordance with applicable statutory and regulatory requirements, to cover the newly listed species or until the Service notifies Verizon Wireless in writing that the modifications to the HCP covered activities are no longer required to avoid the likelihood of jeopardy of the newly listed species or adverse modification of newly designated critical habitat.

The occurrence of a newly listed species at the project site during the course of the requested three-year permit term is unlikely due to the small size of the project area and the land use history of the site.

6.2.3 Discovery of other currently listed species at the project site

In the event that one or more other already-listed endangered species are found at the site, the applicant will cease project activities that would likely result in incidental take of newly-discovered listed species, and apply for a permit amendment. It is very unlikely that other listed species will be discovered at the project site, due to the short duration of the project permit.

6.3 Unforeseen Circumstances

Unforeseen circumstances are defined in 50 CFR 17.3 as changes in circumstances that affect a species or geographic area covered by the HCP that could not reasonably be anticipated by plan developers and the Service at the time of the HCP's negotiation and development and that result in a substantial and adverse change in status of the covered species. The purpose of the No Surprises Rule is to provide assurances to non-Federal landowners participating in habitat conservation planning under the Act that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

In case of an unforeseen event, the permittee shall immediately notify the Service staff who have functioned as the principal contacts for the proposed HCP or their designee. In determining whether such an event constitutes an unforeseen circumstance, the Service shall consider, but not be limited to, the following factors: size of the current range of the affected species; percentage of range adversely affected by the HCP; percentage of range conserved by the HCP; ecological significance of that portion of the range affected by the HCP; level of knowledge about the affected species and the degree of specificity of the species' conservation program under the HCP; and whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of the affected species in the wild.

If the Service determines that additional conservation and mitigation measures are necessary to respond to the unforeseen circumstances where the HCP is being properly implemented, the additional measures required of the permittee must be as close as possible to the terms of the original HCP and must be limited to modifications within any conserved habitat area or to adjustments within lands or waters that already set-aside in the HCP's operating conservation program. Additional conservation and mitigation measures shall involve the commitment of additional land or financial compensation or restrictions on the use of land or other natural resources otherwise available for development or use under original terms of the HCP only with the consent of the permittee.

6.4 Amendments

6.4.1 Minor Amendments

Minor amendments are changes that do not affect the scope of the HCP's impact and conservation strategy, change amount of take, add new species, and change significantly the boundaries of the HCP. Examples of minor amendments include correction of spelling errors or minor corrections in boundary descriptions. The minor amendment process is accomplished through an exchange of letters between the permit holder and the Service's Field Office.

6.4.2 Major Amendments

Major amendments to the HCP and permit are changes that do affect the scope of the HCP and conservation strategy, increase the amount of take, add new species, and change significantly the boundaries of the HCP. Major amendments often require amendments to the Service's decision documents, including the NEPA document, the biological opinion, and findings and recommendations document. Major amendments will often require additional public review and comment.

6.5 Suspension/Revocation

The Service may suspend or revoke their permit if Verizon Wireless fails to implement the HCP in accordance with the terms and conditions of the permits or if suspension or revocation is

otherwise required by law. Suspension or revocation of the Section 10(a)(1)(B) permit, in whole or in part, by the Service shall be in accordance with 50 CFR 13.27-29, 17.32 (b)(8).

6.6 Permit Renewal

The applicant requests a three-year permit to cover take/impacts of the project. The permit term will cover the timeline for the construction project, which is anticipated to require six months but could require three years if construction delays are encountered.

Upon expiration, the Section 10(a)(1)(B) permit may be renewed without the issuance of a new permit, provided that the permit is renewable, and that biological circumstances and other pertinent factors affecting covered species are not significantly different than those described in the original HCP. To renew the permit, the property owner shall submit to the Service, in writing:

- a request to renew the permit; reference to the original permit number;
- certification that all statements and information provided in the original HCP and permit application, together with any approved HCP amendments, are still true and correct, and inclusion of a list of changes;
- a description of any take that has occurred under the existing permit;
- a description of any portions of the project still to be completed, if applicable, or what activities under the original permit the renewal is intended to cover; and
- evidence that annual reports have been timely submitted.

If the Service concurs with the information provided in the request, it shall renew the permit consistent with permit renewal procedures required by Federal regulation (50 CFR 13.22). If the property owners file a renewal request and the request is on file with the issuing Service office at least 30 days prior to the permits expiration, the permit shall remain valid while the renewal is being processed, provided the existing permit is renewable. However, the property owner may not take listed species beyond the quantity authorized by the original permit. If the property owner fails to file a renewal request within 30 days prior to permit expiration, the permit shall become invalid upon expiration. Verizon Wireless must have complied with all annual reporting requirements to qualify for a permit renewal. The conservation bank operators must similarly have complied with all annual reporting requirements for Verizon Wireless's permit to be renewed.

6.7 Permit Transfer

If the proposed permit holder, Verizon Wireless, transfers the tank to another party during the period of the permit and that party agrees to implement the project and comply with the terms of the HCP, the permit can be transferred to the new project proponent. The new project proponent will commit to all requirements regarding the take authorization and mitigation

obligations of this HCP unless otherwise specified in the Assumption Agreement and agreed to in advance with the Service.

Section 7

Funding

7.1 Costs of HCP Implementation

Costs to implement the conservation strategy described in this plan are estimated in Table 4.

7.2 Funding Source(s)

As the applicant and project proponent, Verizon Wireless will pay for all costs associated with implementing the HCP (Table 4). Verizon Wireless understands that failure to provide adequate funding and consequent failure to implement the terms of this HCP in full could result in temporary permit suspension or permit revocation.

Verizon Wireless will purchase a total 2,731 sf (0.063 acres) of conservation credits from the Zayante Sandhills Conservation Bank or other Service-approved conservation bank selling credits for the covered insects. Credits will be purchased after Verizon Wireless receives the incidental take permit but before the inception of the project activities (Section 2).

Table 4: Estimated costs to implement the conservation strategy

Measure	Strategy	Units		Costs ($)	
		Type	Number	Per Unit	Total
Minimization Measure 5.2.1.1	Salvage Ben Lomond spineflower seed within the project disturbance envelope and store it for use in restoration	Biologist Labor Hours	6	105	630
Minimization Measure 5.2.1.2	Fence the perimeter of the project footprint using orange construction fencing (ESA fence)	100' roll of ESA Fence	20	30	600
Minimization Measure 5.2.1.3	Cover open soil in previously impervious portion(s) of project area with tarps to prevent burrowing during flight season	Tarps or other Impermeable Material	10	5	50
Minimization Measure 5.2.1.4	Biologist will conduct pre-construction trainings for project personnel	Biologist Labor Hours	8	115	920
Minimization Measure 5.2.1.5	Biologist will monitor ground-disturbing activities	Biologist Labor Hours	120	115	13,800
Effects Monitoring and Reporting	Biologist will assess project impacts and prepare three annual reports (12 hours in year 1, 8 hours in years 2 and 3)	Biologist Labor Hours	28	115	3,220
Mitigation Measure 5.2.2.1: On-site Restoration	Restore 271 sf of temporarily disturbed habitat using active revegetation	Work to Prepare and Implement Plan of ~ 3 Years	1	6,000	6,000
Mitigation Measure 5.2.2.2: Off-Site Mitigation	Purchase conservation credits at the Zayante Sandhills Conservation Bank	conservation credits	2,731	8.74	23,868
				Total Costs	**49,088**

Section 8

Alternatives

8.1 Summary

Section 10(a)(2)(A)(iii) of the Endangered Species Act of 1973, as amended, [and 50 CFR 17.22(b)(1)(iii) and 17.32(b)(1)(iii)] requires that alternatives to the taking of species be considered and reasons why such alternatives are not implemented be discussed.

8.2 Alternative 1: No Action Alternative

Under the No Action Alternative, Verizon Wireless would not expand the telecommunications facility and an incidental take permit would not be requested or issued. Existing land use would continue in the proposed project area. The habitat adjacent to the existing telecommunications facility would not be disturbed by construction activities, although it would still be impacted by land uses including maintenance of the existing telecommunications facility and recreation.

Under the No Action Alternative, the conservation measures proposed in this HCP would not be implemented. Accordingly, the 0.063 acres (2,731 sf) conservation credits would not be purchased at the Zayante Sandhills Conservation Bank. This would reduce funds available for preservation, management, and monitoring of the high-quality preserve established to protect the covered species. In addition, Verizon would not be able to enhance the telecommunications service it provides to its customers. For these reasons, the no-action alternative has been rejected.

8.3 Alternative 2: Redesign Project (Reduced Take)

Under this alternative, the platform would be reduced by 50% (i.e., 12.5’ x 10.8’) the small strip of land to access it from the existing paved walkway would not be paved. This would reduce the area of permanent and temporary impacts by just over 50%. However, as illustrated in the plans, the platform would be of insufficient size to accommodate the existing equipment cabinets with room for crews to operate and maintain them; moreover, the smaller platform would not allow for expansion of the cabinets to adapt the equipment over time, as needed to address new technology.

Under this option, Verizon Wireless purchase fewer conservation credits from the Zayante Sandhills Conservation Bank; as a result, a smaller area of high-quality habitat would be protected and managed. This redesign would present a significant burden to Verizon Wireless and potentially the community it serves, without significantly reducing the project impacts on the listed species. For these reasons, this redesign alternative has been rejected.

8.4 Alternative 3: Proposed Action (Permit Issuance)

Under the proposed action alternative, Verizon Wireless will expand the existing telecommunications facility atop Mount Hermon to add a new 22.6’ x 10.8’ elevated platform on

which it will mount new cellular telecommunications equipment and a generator that will power it in emergencies. Verizon Wireless will also install a vertical propane tank, which reduce the equipment's footprint, and mount new antennas to the existing monopole located in the adjacent, existing fenced facility.

The proposed action will require the issuance of a Section 10(a)(1)(B) permit in order that the project can be implemented in compliance with the federal Endangered Species Act. The project could cause mortality to individuals potentially occurring within the 886-sf area that will be disturbed, and permanently remove 615 sf (0.014 acres) of habitat that is suitable for Mount Hermon June beetle, Ben Lomond spineflower, and dispersing Zayante band-winged grasshopper.

Verizon Wireless worked to minimize the impacts associated with the proposed project, by using a platform elevated on piers above the soil, which will enable Mount Hermon June beetles to emerge from the soil below, selecting a vertically oriented propane tank (rather than a typical horizontal tank), and avoiding installation of any night lighting, which would disrupt adult Mount Hermon June beetle breeding during the flight season (On Air 2017; Appendix A). Additionally, Verizon Wireless will implement avoidance and minimization measures designed to further limit impacts during tank installation (Section 5).

Moreover, the conservation measures proposed in the HCP will provide for greater benefits to the covered species than would result from the No Action alternative. Specifically, under the Proposed Action, Verizon Wireless will purchase 0.063-acre (2,731 sf) conservation credits in the Zayante Sandhills Conservation Bank, thus ensuring the preservation, management, and monitoring of the covered species in the Ben Lomond Sandhills Preserve—a relatively large, contiguous, and high-quality habitat. The Proposed Action thus provides greater conservation benefits than the No Action and Redesigned Project Alternative, while best meeting the needs of the applicant. Therefore, the Proposed Action is the preferred alternative.

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Appendix A
Project Plans

These 95% plans were developed by On Air for the Verizon Wireless Telecommunications Facility Expansion Project.

VERIZON WIRELESS EQUIPMENT ENGINEER:	VERIZON WIRELESS REAL ESTATE:
SIGNATURE DATE	SIGNATURE DATE
VERIZON WIRELESS CONSTRUCTION:	VERIZON WIRELESS RF ENGINEER:
SIGNATURE DATE	SIGNATURE DATE
PROPERTY OWNER:	ON AIR LLC – LEASING
SIGNATURE DATE	SIGNATURE DATE
ON AIR LLC – CONSTRUCTION	ON AIR LLC – ZONING
SIGNATURE DATE	SIGNATURE DATE

verizon

GRAHAM RD / MT HERMAN RD

3650 GRAHAM HILL ROAD, SANTA CRUZ, CA 95018
LOCATION NUMBER: 249643

At all services & grounding trenches, provide " WARNING" tape at 12" below grade.
CALL "CALL BEFORE YOU DIG" 811
NATIONWIDE UNDERGROUND SERVICE ALERT

CROWN CASTLE BUN: 855803
CROWN CASTLE SITE NAME: MT HERMAN

PROJECT DESCRIPTION

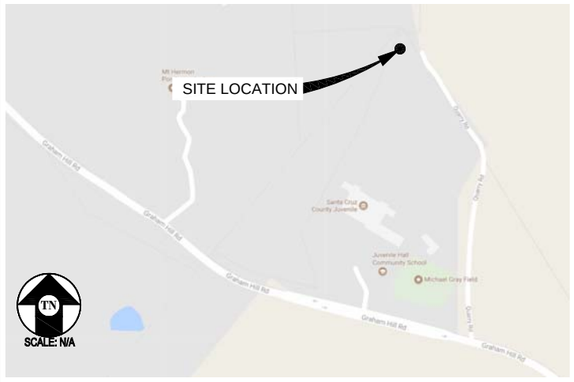
A (N) VERIZON WIRELESS UNMANNED TELECOMMUNICATION FACILITY CONSISTING OF INSTALLING:

- (9) (N) ANTENNAS ON AN (E) CROWN CASTLE MONOPOLE
- (9) (N) RRU UNITS W/ A2 MODULES
- (2) (N) SURGE SUPPRESSORS, (1) @ EQUIPMENT & (1) @ ANTENNAS
- A (N) 30KW PROPANE GENERATOR
- A (N) 250 GALLON VERTICAL PROPANE TANK
- A (N) 10'-9"X22'-7" (243 SQ FT) EQUIPMENT LEASE AREA
- A (N) GPS ANTENNA

PROJECT INFORMATION

SITE NAME:	GRAHAM RD / MT HERMAN RD	SITE #:	249643
COUNTY:	SANTA CRUZ	JURISDICTION:	SANTA CRUZ COUNTY
APN:	061-371-16	POWER:	PG&E
SITE ADDRESS:	3650 GRAHAM HILL ROAD SANTA CRUZ, CA 95018	TELEPHONE:	TBD
CURRENT ZONING:	–		
CONSTRUCTION TYPE:	V-B		
OCCUPANCY TYPE:	U, (UNMANNED COMMUNICATIONS FACILITY)		
PROPERTY OWNER:	COUNTY OF SANTA CRUZ 1543½ PACIFIC AVENUE SANTA CRUZ, CA 95060		
APPLICANT:	VERIZON WIRELESS 2785 MITCHELL DRIVE, BLDG 9 WALNUT CREEK, CA 94598		
SITE ACQUISITION COMPANY:	ON AIR LLC 465 1ST AVE, STE 101 SONOMA, CA 95476		
LEASING CONTACT:	ATTN: CHRIS FOWLER (650) 888-0809 CSFOWLER@ATT.NET		
ZONING CONTACT:	ATTN: CHRIS FOWLER (650) 888-0809 CSFOWLER@ATT.NET		
CONSTRUCTION CONTACT:	ATTN: MOHAMMAD BASEER (510) 414-7075 MBASEER@ONAIRLLC.COM		

VICINITY MAP



DRIVING DIRECTIONS

FROM: 2785 MITCHELL DRIVE, BLDG 9, WALNUT CREEK, CA 94598
TO: 3650 GRAHAM HILL ROAD, SANTA CRUZ, CA 95018

1. DEPART MITCHELL DR TOWARD N WIGET LN	0.3 MI
2. TURN LEFT ONTO N WIGET LN	0.3 MI
3. TURN RIGHT ONTO YGNACIO VALLEY RD	3.0 MI
4. TAKE RAMP LEFT FOR I-680 SOUTH TOWARD SAN JOSE	33.7 MI
5. AT EXIT 12, TAKE RAMP RIGHT FOR MISSION BLVD WEST TOWARD WARM SPRINGS DISTRICT	1.1 MI
6. TAKE RAMP LEFT FOR I-880 SOUTH TOWARD SAN JOSE	13.0 MI
7. ROAD NAME CHANGES TO CA-17 S	22.9 MI
8. AT EXIT 3, TAKE RAMP RIGHT AND FOLLOW SIGNS FOR MT HERMON ROAD	0.2 MI
9. TURN RIGHT ONTO MT HERMON RD	3.5 MI
10. TURN LEFT ONTO GRAHAM HILL RD	0.8 MI
11. TURN LEFT ONTO SUMMIT AVE	0.1 MI
12. TURN RIGHT TO STAY ON SUMMIT AVE	387 FT
13. TURN RIGHT ONTO FOREST RD	0.1 MI
14. BEAR RIGHT ONTO THE BUCKEYE	341 FT
15. TURN LEFT ONTO MANZANITA AVE	0.1 MI
16. TURN RIGHT ONTO PINE AVE	0.2 MI
17. TURN RIGHT ONTO RIDGE WAY	0.3 MI
18. ARRIVE AT RIDGE WAY ON THE RIGHT	

END AT: 3650 GRAHAM HILL ROAD, SANTA CRUZ, CA 95018

ESTIMATED TIME: 1 HOUR 41 MINUTES ESTIMATED DISTANCE: 79.8 MILES

CODE COMPLIANCE

ALL WORK & MATERIALS SHALL BE PERFORMED & 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:

2016 CALIFORNIA ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.
2016 CALIFORNIA BUILDING CODE (CBC), PART 2, VOLUME 1&2, TITLE 24 C.C.R.
(2015 INTERNATIONAL BUILDING CODE AND 2016 CALIFORNIA AMENDMENTS)
2016 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R.
(2014 NATIONAL ELECTRICAL CODE AND 2016 CALIFORNIA AMENDMENTS)
2016 CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE 24 C.C.R.
(2015 UNIFORM MECHANICAL CODE AND 2016 CALIFORNIA AMENDMENTS)
2016 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R.
(2015 UNIFORM PLUMBING CODE AND 2016 CALIFORNIA AMENDMENTS)
2016 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 C.C.R.
2016 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R.
(2015 INTERNATIONAL FIRE CODE AND 2016 CALIFORNIA AMENDMENTS)
2016 CALIFORNIA GREEN BUILDING STANDARDS CODE, PART 11, TITLE 24 C.C.R.
2016 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R.
ANSI/EIA-TIA-222-G

ALONG WITH ANY OTHER APPLICABLE LOCAL & STATE LAWS AND REGULATIONS

DISABLED ACCESS REQUIREMENTS

THIS FACILITY IS UNMANNED & NOT FOR HUMAN HABITATION. DISABLED ACCESS & REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH CALIFORNIA STATE BUILDING CODE, TITLE 24 PART 2, SECTION 11B-203.4

SHEET INDEX

SHEET	DESCRIPTION	REV
T-1	TITLE SHEET	–
T-2	CONDITIONS OF APPROVAL	–
C-1	TOPOGRAPHIC SURVEY	–
A-1	OVERALL SITE PLAN	–
A-2	SITE PLAN	–
A-3	ENLARGED SITE PLAN	–
A-4	EQUIPMENT PLAN & DETAILS	–
A-5	ANTENNA PLAN & DETAILS	–
A-6	ELEVATIONS	–
A-7	ELEVATIONS	–
S-1	STRUCTURAL NOTES	–
S-2	STRUCTURAL DETAILS	–
S-3	STRUCTURAL DETAILS	–
E-1	ELECTRICAL PLAN	–
E-2	GROUNDING PLAN & DETAILS	–

GRAHAM RD / MT HERMAN RD
249643
3650 GRAHAM HILL ROAD
SANTA CRUZ, CA 95018

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

Streamline Engineering and Design, Inc.
8445 Sierra College Blvd, Suite E Granite Bay, CA 95661
Contact: Kevin Sorensen Phone: 916-660-1939
E-Mail: kevin@streamlineeng.com Fax: 916-660-1941

PRELIMINARY: NOT FOR CONSTRUCTION

KEVIN R. SORENSEN
S4469

ISSUE STATUS

△	DATE	DESCRIPTION	REV.
	09/05/17	CD 90%	M.S.
	10/12/17	CLIENT REV	C.C.
	–	–	–
	–	–	–
	–	–	–
	–	–	–

DRAWN BY: M. STICKEL
CHECKED BY: J. GRAY
APPROVED BY: –
DATE: 10/12/17

SHEET TITLE:
TITLE

SHEET NUMBER:
T-1

Staff Report & Development Permit
Level 3 – Minor Variation

Application Number: **171137** APN: **061-371-16**
Applicant: **Christopher Fowler** Owner: **County of Santa Cruz**
Site Address: **3570, 3600, 3650 Graham Hill Road**

Proposal & Location

Proposal to co-locate at an existing wireless communications facility. Project includes an expansion of the lease area by approximately 243 square feet to accommodate a new platform and shelter for equipment and to install nine new antennas and associated equipment on an existing monopole. Requires a Minor Variation to Commercial Development permits 96-0626 and 06-0443.

Property located on the north side of Graham Hill Road (3670 Graham Hill Road) approximately 1/2 mile north of Lockewood Lane.

Analysis

This application is a proposal to change the scope of approved Commercial Development Permits 96-0626 & 06-0443 (for a wireless communications facility) to allow the installation of additional antennas and associated equipment. This change requires a Minor Variation to Commercial Development Permits 96-0626 & 06-0443.

The installation of additional antennas and associated equipment at this site does not result in a substantial expansion in the physical dimensions of the facility and will not result in an increased visual impact of the facility due to the location of the facility on the property, setback from the roadway, and presence of mature trees on the property. The Radio Frequency (RF) emissions from the facility will continue to comply with all Federal Communications Commission (FCC) RF emissions requirements, per the RF report submitted with the application.

All findings remain valid as approved for Commercial Development Permits 96-0626 & 06-0443. Based on the findings for permit number 96-0626 & 06-0443, which are hereby incorporated by reference, Planning Department staff recommends approval of the requested Minor Variation including the conditions contained in this permit.

If you have any questions about this project, please contact Randall Adams at:
(831) 454-3218 or randall.adams@santacruzcounty.us

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

Report Prepared By: Randall Adams
Santa Cruz County Planning Department
701 Ocean Street, 4th Floor
Santa Cruz CA, 95060

Report Reviewed By: Wanda Williams
Assistant Director
Santa Cruz County Planning Department

Mail to: Christopher Fowler
14960 Karl Avenue
Monte Sereno, Ca 95030

Note: This decision is final unless it is appealed.

See permit conditions for information regarding appeals. You may exercise your permit after signing below and meeting any conditions which are required to be met prior to exercising the permit. If you file an appeal of this decision, permit issuance will be stayed and the permit cannot be exercised until the appeal is decided.

Please note: This permit will expire unless exercised prior to the expiration date. (See the Conditions of Approval below for the expiration date of this permit.)

Appeals

In accordance with Section 18.10 et seq of the Santa Cruz County Code, the applicant may appeal an action or decision taken on a Level III project such as this one. All appeals shall be made in writing and shall state the nature of the application, your interest in the matter and the basis upon which the decision is considered to be in error. Appeals must be made no later than fourteen (14) calendar days following the date of action from which the appeal is being taken and must be accompanied by the appropriate appeal filing fee.

Conditions of Approval

Exhibit A. Project plans, "Site Number 249607", prepared by Verizon Wireless, revised 2/17/17.

I. This permit authorizes the installation of additional antennas and associated equipment, as indicated on the approved Exhibit "A" for this permit. 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. All conditions of permit number 96-0626 & 06-0443 are incorporated herein by reference and are also conditions of this approval.

B. Obtain Building Permit(s) 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.

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

1. One elevation shall indicate materials and colors as they were approved by this Discretionary Application. Colors and materials shall match the existing equipment and camouflage already in place at the facility.

2. The lease area shown on Sheet C-1 is incorrect. Please revise the proposed lease location to be consistent with Sheet A-1.

3. Details showing compliance with fire department requirements.

B. Meet all requirements of the Environmental Planning section of the Planning Department.

1. An update to the Biotic Report is required for this application.

C. Meet all requirements and pay any applicable plan check fee of CalFire (County Fire Department).

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. 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. This project qualifies as an "eligible facility" (allowed under Section 6409(a) of the Spectrum Act) for a one time physical expansion of an existing wireless communications facility. Future additions to, or expansions of, this facility may be limited as a result.

B. 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.

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.

In accordance with Chapter 18.10 of the County Code, 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.

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: 7/28/17
Effective Date: 8/11/17
Expiration date: 8/11/20

GRAHAM RD / MT HERMAN RD

249643
3650 GRAHAM HILL ROAD
SANTA CRUZ, CA 95018

verizon

2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94598

Streamline Engineering and Design, Inc.
8445 Sierra College Blvd, Suite E Granite Bay, CA 95661
Contact: Kevin Sorensen Phone: 916-660-1930
E-Mail: kevin@streamlineeng.com Fax: 916-660-1941

PRELIMINARY: NOT FOR CONSTRUCTION

KEVIN R. SORENSEN
S4469

ISSUE STATUS

△	DATE	DESCRIPTION	REV.
	09/05/17	CD 90%	M.S.
	10/12/17	CLIENT REV	C.C.
	–	–	–
	–	–	–
	–	–	–
	–	–	–

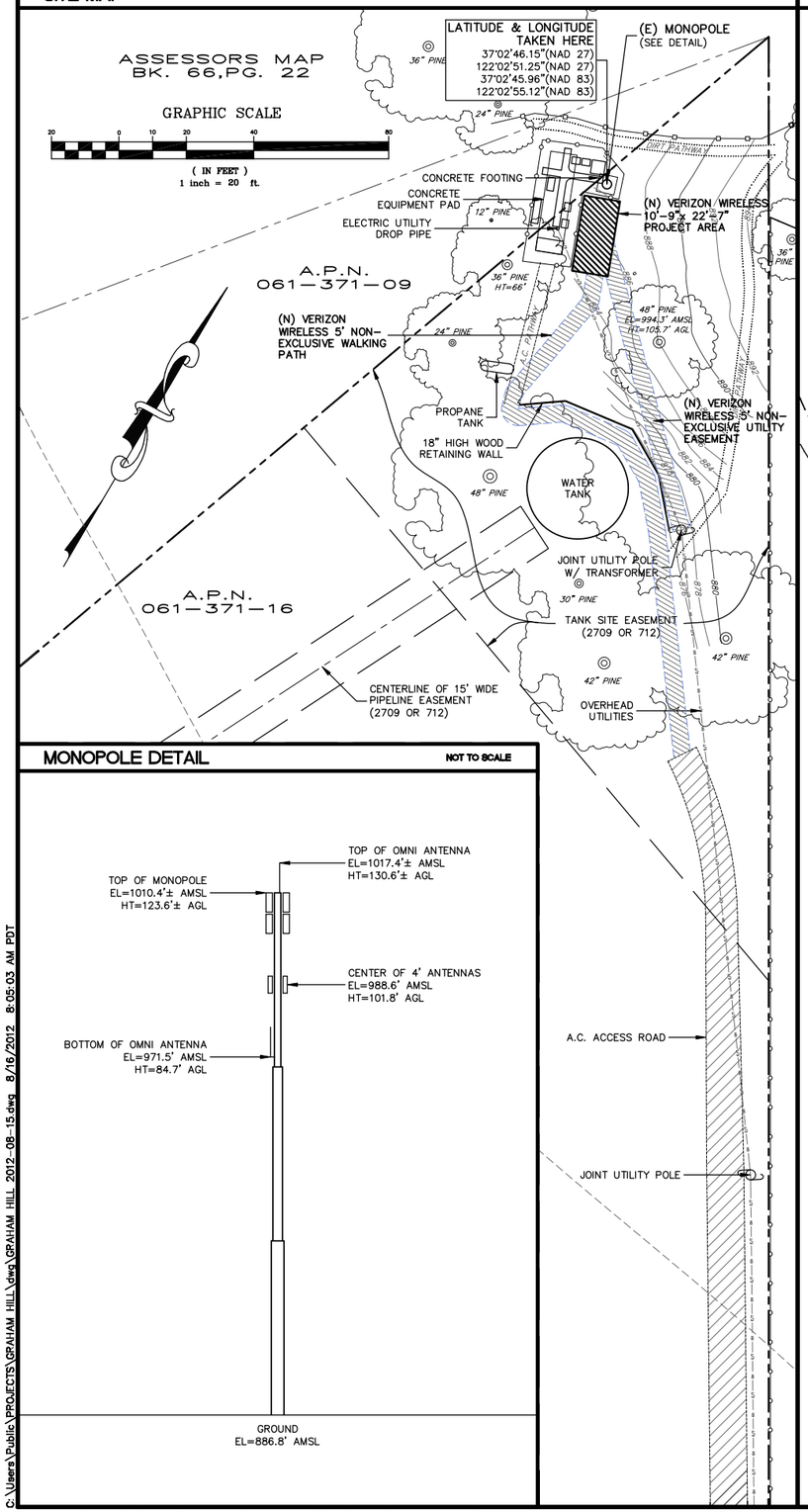
DRAWN BY: M. STICKEL
CHECKED BY: J. GRAY
APPROVED BY: –
DATE: 10/12/17

SHEET TITLE:
CONDITIONS OF APPROVAL

SHEET NUMBER:
T-2

SITE MAP

SCALE 1"=20'

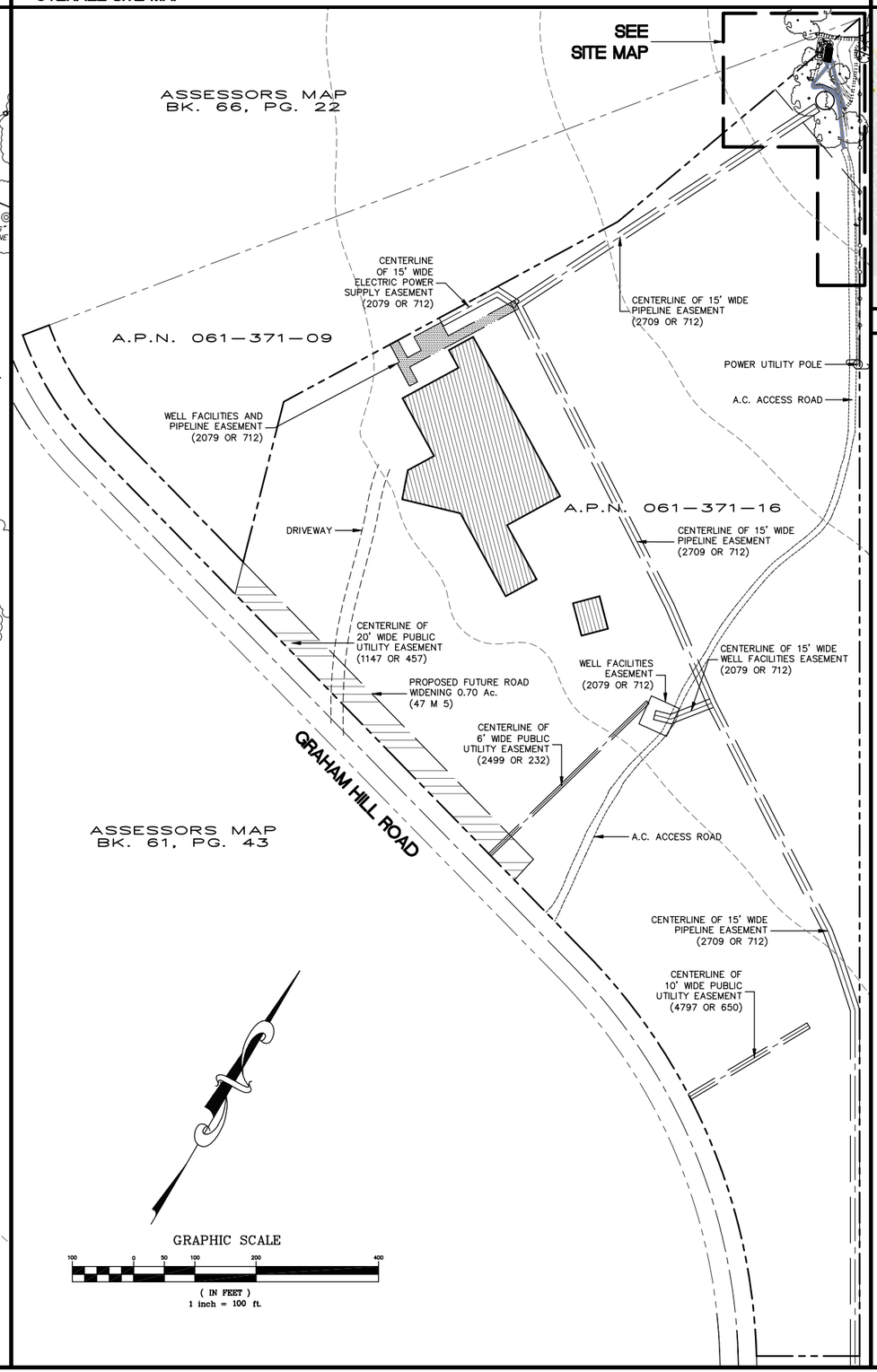


MONOPOLE DETAIL

NOT TO SCALE

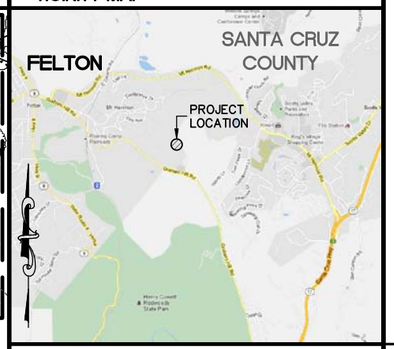
OVERALL SITE MAP

SCALE 1"=100'



VICINITY MAP

NOT TO SCALE



GENERAL NOTES

PROPERTY INFORMATION

OWNER: COUNTY OF SANTA CRUZ
ADDRESS: 1543½ PACIFIC AVENUE
SANTA CRUZ, CA 95060

SITE: GRAHAM HILL
3650 GRAHAM HILL ROAD
UNINCORPORATED SANTA CRUZ, CA

ASSESSOR'S PARCEL NUMBER: 061-371-16

EXISTING GROUND ELEVATION: ELEV=886.8'±AMSL

LESSOR'S LEGAL DESCRIPTION

LEGAL DESCRIPTION IS FOUND IN FIRST AMERICAN TITLE INSURANCE COMPANY TITLE REPORT FILE NUMBER NCS-544192-SAC4, DATED MAY 7, 2012.

TITLE REPORT

TITLE REPORT WAS AVAILABLE AT THE TIME OF FIELD SURVEY. TITLE REPORT PROVIDED BY FIRST AMERICAN TITLE INSURANCE COMPANY TITLE REPORT FILE NUMBER NCS-544192-SAC4, DATED MAY 7, 2012.

BASIS OF BEARING

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

BENCHMARK

ELEVATIONS BASED UPON GPS DERIVED ORTHOMETRIC HEIGHTS, APPLYING GEOID 99 SEPARATIONS (NAVD88).

FLOOD ELEVATION

FLOOD PLAIN ELEVATION OF PROJECT AREA IN ZONE X, AN AREA NOT SUBJECT TO FLOODING BY THE 100-YEAR FLOOD PLAIN.

SURVEY DATE

06/13/12

SURVEYOR'S NOTES

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

UTILITY NOTES

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

LEGEND

———	PROPERTY LINE
-o-o-o-o-	CHAIN LINK FENCE
-o-o-o-o-	WOOD RAIL FENCE
AGL	ABOVE GROUND LEVEL
AMSL	ABOVE MEAN SEA LEVEL

Foresight
Land Surveying & Civil Engineering
Jim Schuricht
ph 925-389-8180
email: foresight@comcast.net

REVISIONS

NO.	DATE	DESCRIPTION
1	06/22/12	ISSUED FOR REVIEW
2	07/02/12	REV. PER REDLINES
3	07/25/12	REV. PER REDLINES
4	08/16/12	REV. PER REDLINES
5	09/07/17	ADD (N) PROJECT

PLS# 249643
GRAHAM HILL
3650 GRAHAM HILL ROAD
UNINCORPORATED SANTA CRUZ, CA

DRAWN:	DATE: 10/12/17
JOB NO.	1207
SHEET NO.	C-1

C:\Users\Public\PROJECTS\GRAHAM HILL\dwg\GRAHAM HILL 2012-08-15.dwg 8/16/2012 8:05:03 AM PDT

BOUNDARY SHOWN IS BASED ON RECORD INFORMATION AND FOUND MONUMENTATION.
THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINES SHOWN ARE APPROXIMATE.

PROJECT GENERAL NOTES

1. THIS FACILITY IS AN UNOCCUPIED WIRELESS TELECOMMUNICATION FACILITY.
2. PLANS ARE NOT TO BE SCALED AND ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS NOTED OTHERWISE.
3. THE SCOPE OF WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
4. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTORS SHALL VISIT THE JOB SITE AND BE RESPONSIBLE FOR ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS, AND CONFIRM THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PAY FOR PERMIT FEES, AND TO OBTAIN SAID PERMITS AND TO COORDINATE INSPECTIONS.
6. THE CONTRACTOR SHALL RECEIVE, IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
7. CALL BEFORE YOU DIG. CONTRACTOR IS REQUIRED TO CALL 811 (NATIONWIDE "CALL BEFORE YOU DIG" HOTLINE) AT LEAST 72 HOURS BEFORE DIGGING.
8. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
9. THE GENERAL CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST SKILLS AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. CONTRACTOR SHALL ALSO COORDINATE ALL PORTIONS OF THE WORK UNDER THE CONTRACT; INCLUDING CONTACT AND COORDINATION WITH THE CONSTRUCTION MANAGER AND WITH THE LANDLORD'S AUTHORIZED REPRESENTATIVE.
10. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, PAVING, CURBS, GALVANIZED SURFACES, ETC., AND UPON COMPLETION OF WORK, REPAIR ANY DAMAGE THAT OCCURRED DURING CONSTRUCTION TO THE SATISFACTION OF THE PROJECT MANAGER.
11. KEEP GENERAL AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DIRT, DEBRIS AND RUBBISH. REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
12. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED, OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
13. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND ALL OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK SHALL BE PROTECTED AT ALL TIMES.
14. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
15. THE CONTRACTOR SHALL PROVIDE A TOILET FACILITY DURING ALL PHASES OF CONSTRUCTION.
16. SUFFICIENT MONUMENTATION WAS NOT RECOVERED TO ESTABLISH THE POSITION OF THE BOUNDARY LINES SHOWN HEREON. THE BOUNDARY REPRESENTED ON THIS MAP IS BASED ON COMPILED RECORD DATA AND BEST FIT ONTO EXISTING IMPROVEMENTS. IT IS POSSIBLE FOR THE LOCATION OF THE SUBJECT PROPERTY TO SHIFT FROM THE PLACEMENT SHOWN HEREON WITH ADDITIONAL FIELD WORK AND RESEARCH. THEREFORE ANY SPATIAL REFERENCE MADE OR SHOWN BETWEEN THE RELATIONSHIP OF THE BOUNDARY LINES SHOWN HEREON AND EXISTING GROUND FEATURES, EASEMENTS OR LEASE AREA IS INTENDED TO BE APPROXIMATE AND IS SUBJECT TO VERIFICATION BY RESOLVING THE POSITION OF THE BOUNDARY LINES.
17. THE CONTRACTOR TO VERIFY THE LATEST/CURRENT RF DESIGN.
18. WHERE APPLICABLE, CONTRACTOR SHALL PROVIDE SEPARATE PLANS, SPECIFICATIONS, FEES AND PERMITS FOR ANY REVISION TO ANY FIRE SPRINKLER AND/OR ALARM SYSTEM ON THE PREMISES AS MAY BE NEEDED TO COMPLETE THE WORK DEPICTED HEREIN, USING A C-10 LICENSED SUBCONTRACTOR FOR ALL SUCH WORK.

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

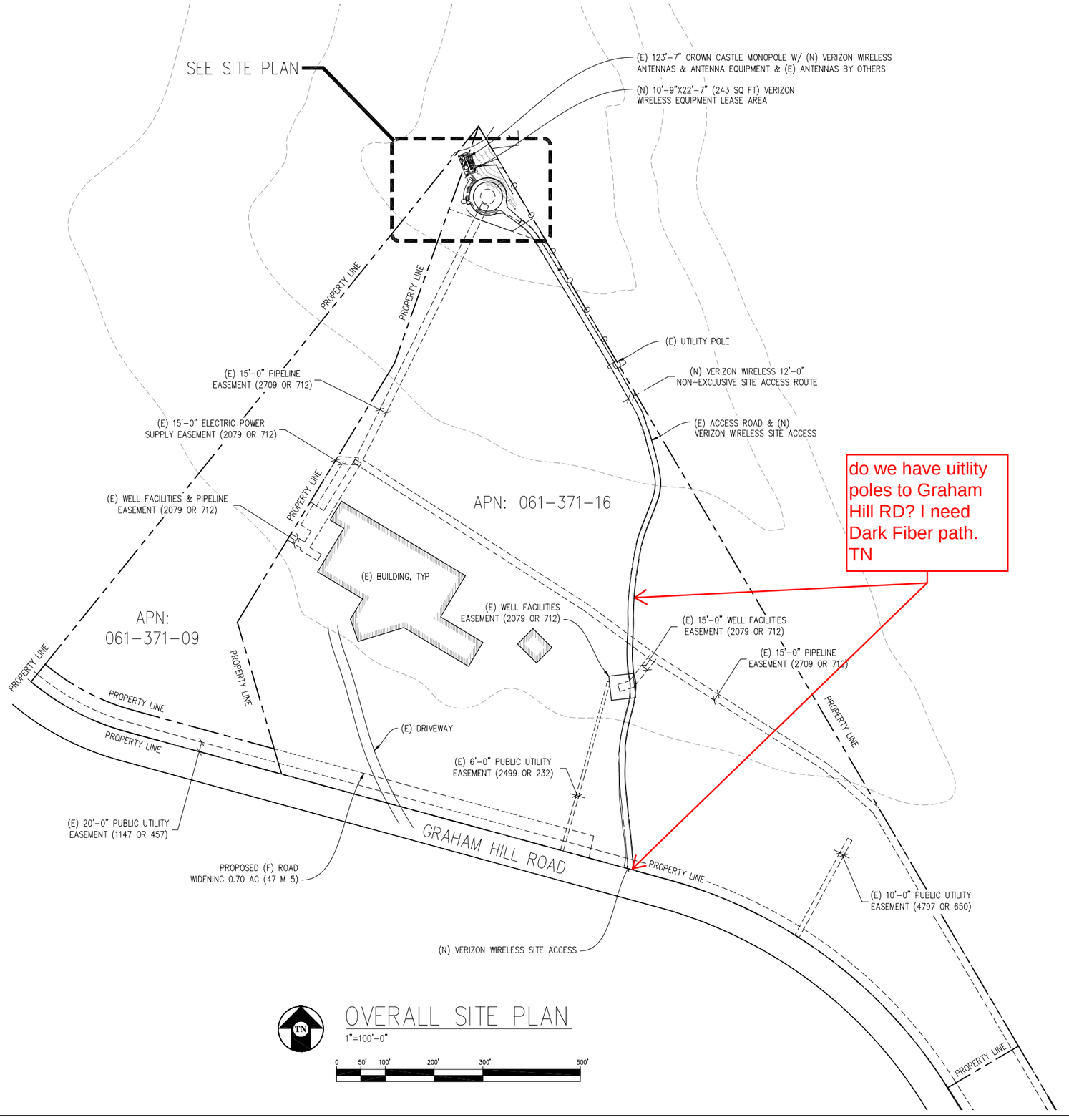
CALL
"CALL BEFORE YOU DIG"
811
NATIONWIDE UNDERGROUND SERVICE ALERT

NOTICE

ONLY BOBCAT & BOOM-LIFT TRUCKS ALLOWED FOR ANTENNA INSTALL BECAUSE OF ENVIRONMENTAL SENSITIVITY AT THE SITE

NOTICE

STRUCTURAL ANALYSIS OF (E) MONOPOLE COMPLETED BY GPD GROUP, INC. DATED DECEMBER 13, 2016. STREAMLINE ENGINEERING & DESIGN INC. IS NOT RESPONSIBLE FOR THE EVALUATION OF THE EXISTING POLE, BASE PLATE, ANCHOR BOLTS, FOUNDATION OR ANTENNA/RRU MOUNT FRAMING & CONNECTIONS FOR THE EXISTING AND NEW LOADING CONDITIONS.



OVERALL SITE PLAN

1"=100'-0"

0 50' 100' 200' 300' 500'

GRAHAM RD / MT HERMAN RD

249643
3650 GRAHAM HILL ROAD
SANTA CRUZ, CA 95018

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

Streamline Engineering and Design, Inc.
8445 Sierra College Blvd, Suite E Granite Bay, CA 95661
Contact: Kevin Sorensen Phone: 916-660-15940
E-Mail: kevin@streamlineeng.com Fax: 916-660-15941

PRELIMINARY: NOT FOR CONSTRUCTION

KEVIN R. SORENSEN
S4469

ISSUE STATUS

△	DATE	DESCRIPTION	REV.
	09/05/17	CD 90%	M.S.
	10/12/17	CLIENT REV	C.C.
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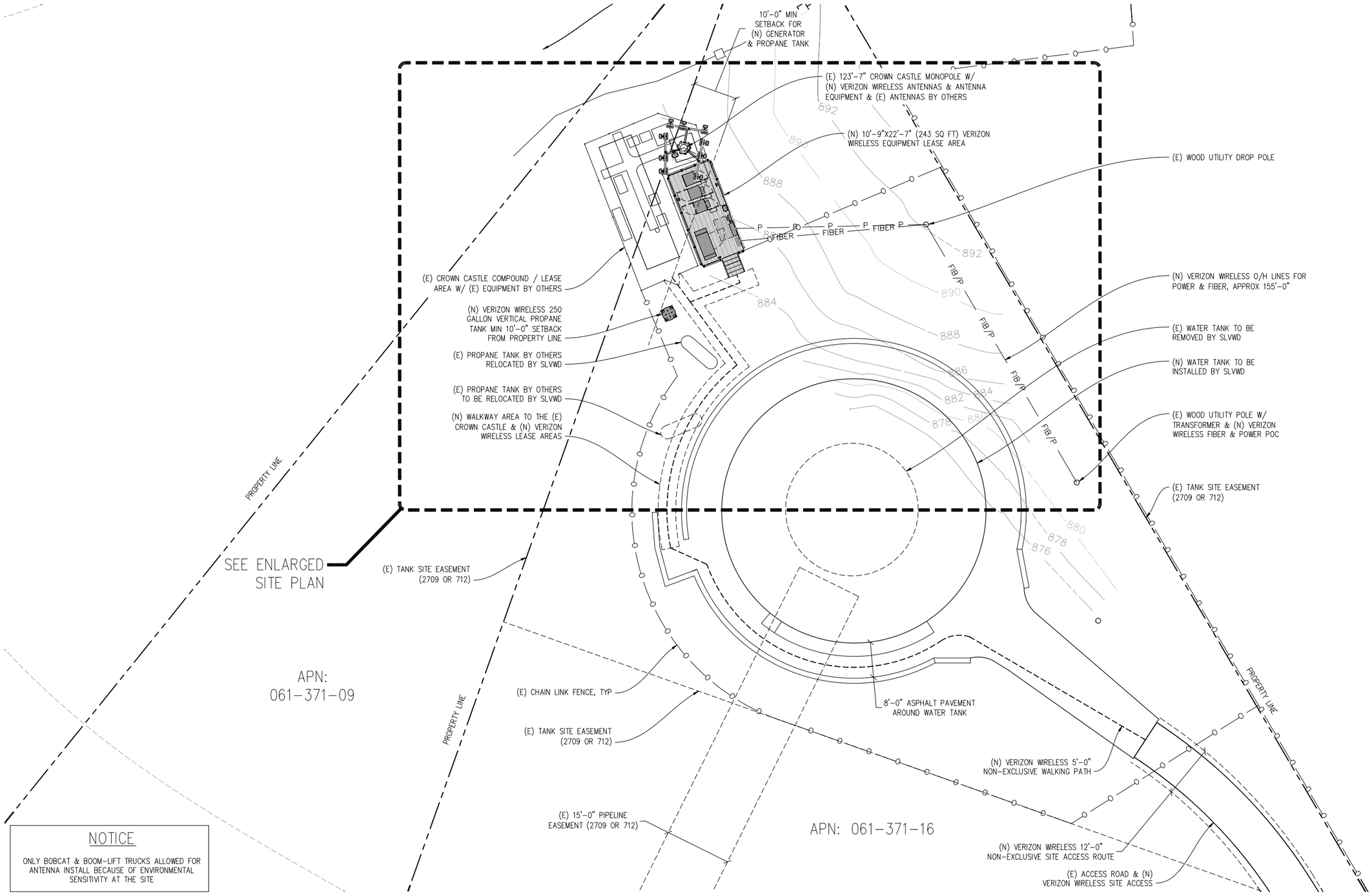
DRAWN BY:	M. STICKEL
CHECKED BY:	J. GRAY
APPROVED BY:	–
DATE:	10/12/17

SHEET TITLE:
OVERALL SITE PLAN

SHEET NUMBER:
A-1



SITE PLAN

1"=10'-0"

0 5' 10' 20' 30' 50'

NOTICE

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GRAHAM RD / MT HERMAN RD

249643

3650 GRAHAM HILL ROAD
SANTA CRUZ, CA 95018

verizon

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WALNUT CREEK, CA 94598

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E-Mail: kevin@streamlineeng.com Fax: 916-660-1940

PRELIMINARY: NOT FOR CONSTRUCTION

KEVIN R. SORENSEN
S4469

ISSUE STATUS

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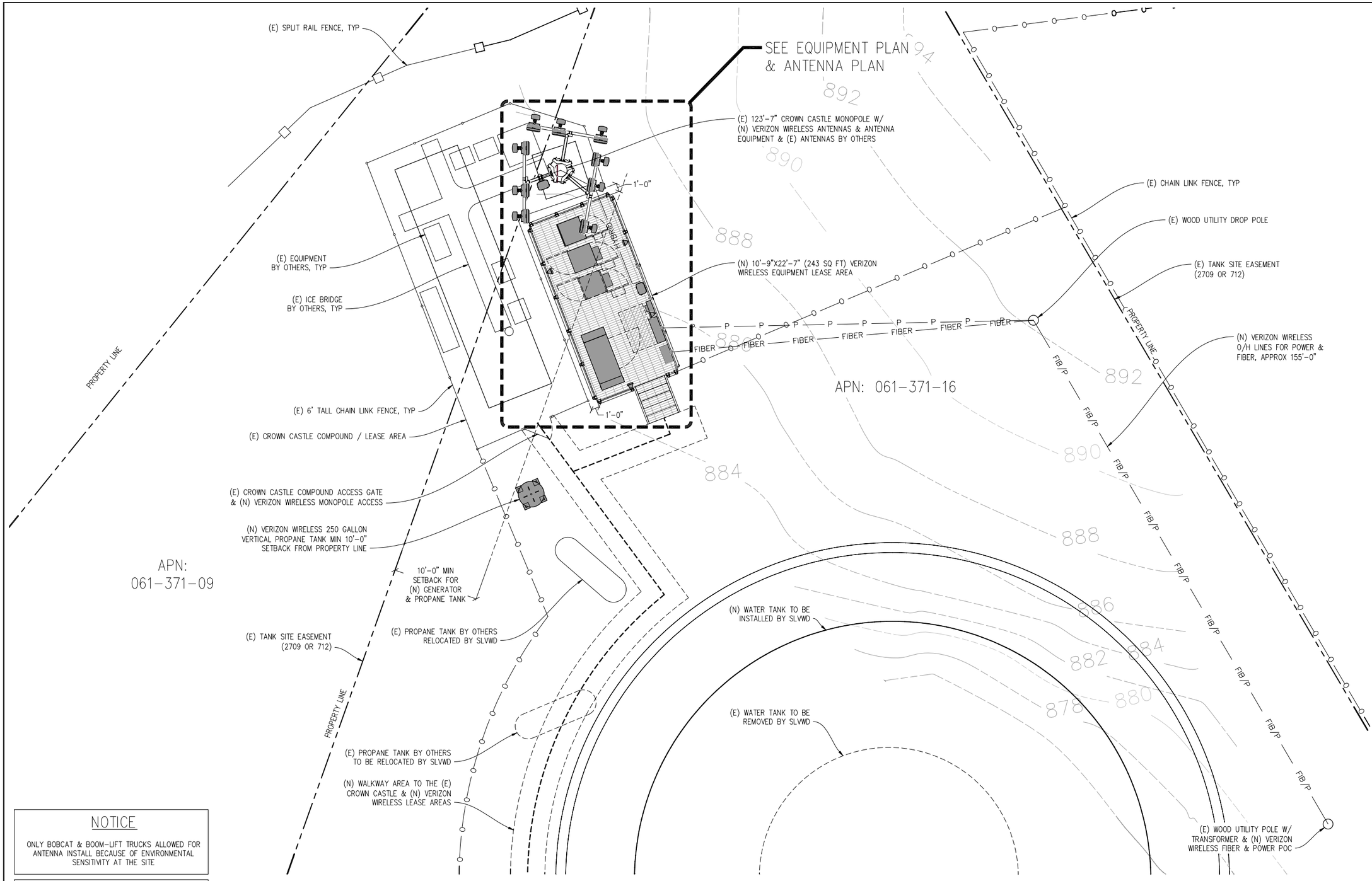
DRAWN BY:	M. STICKEL
CHECKED BY:	J. GRAY
APPROVED BY:	–
DATE:	10/12/17

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

A-2



ENLARGED SITE PLAN

1"=5'-0"

0 1' 2' 3' 4' 5' 10' 15' 25'

NOTICE

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KEVIN R. SORENSEN
S4469

ISSUE STATUS

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DRAWN BY: M. STICKEL

CHECKED BY: J. GRAY

APPROVED BY: –

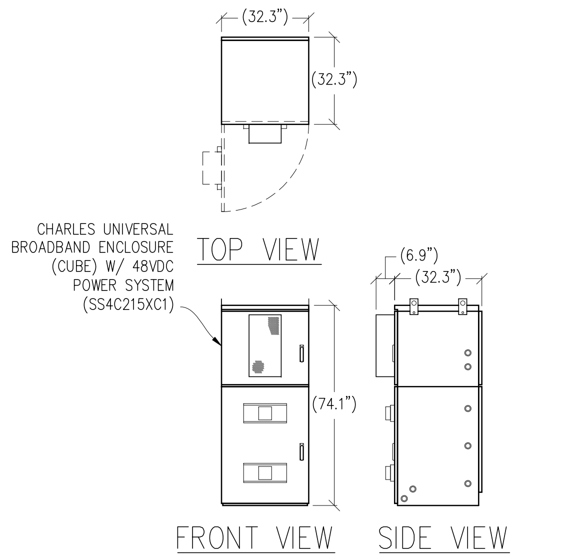
DATE: 10/12/17

SHEET TITLE:

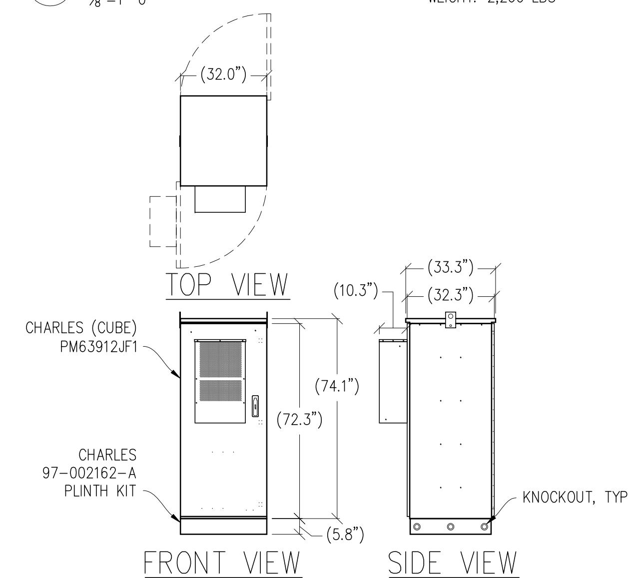
ENLARGED SITE PLAN

SHEET NUMBER:

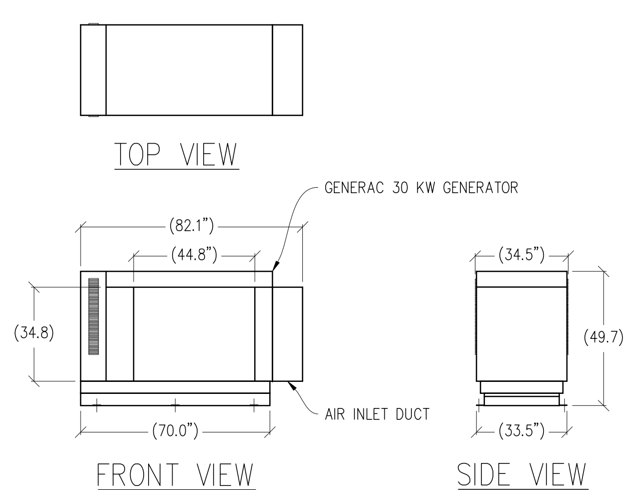
A-3



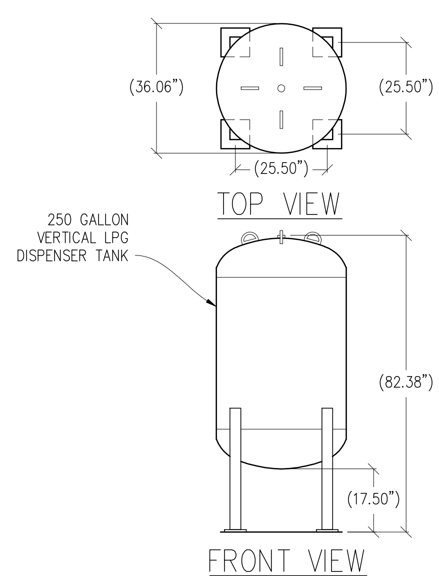
1 POWER CABINET DETAIL
3/8"=1'-0" WEIGHT: 2,260 LBS



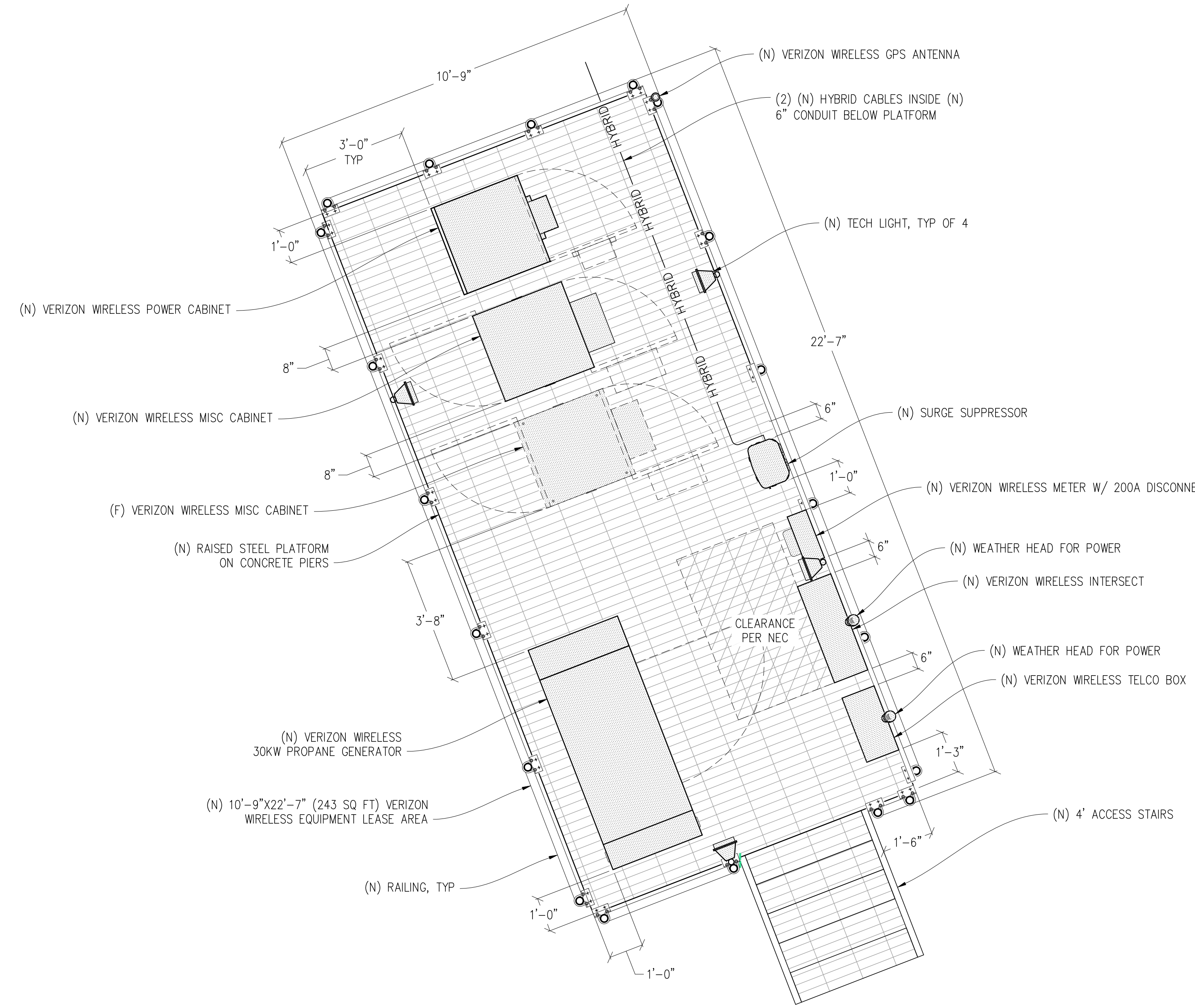
2 MISC CABINET DETAIL
3/8"=1'-0" WEIGHT: 500 LBS

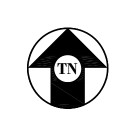


3 30KW GENERATOR DETAIL
3/8"=1'-0"

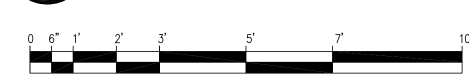


4 FUEL TANK DETAIL
1/2"=1'-0"





EQUIPMENT PLAN
1/2"=1'-0"



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E-Mail: kevin@streamlineeng.com Fax: 916-660-1941

PRELIMINARY: NOT FOR CONSTRUCTION

KEVIN R. SORENSEN
S4469

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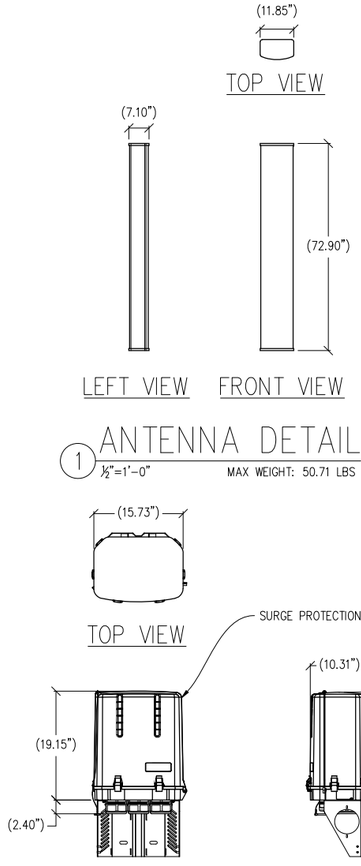
	–	–	–

DRAWN BY: M. STICKEL
CHECKED BY: J. GRAY
APPROVED BY: –
DATE: 10/12/17

SHEET TITLE:
EQUIPMENT PLAN & DETAILS

SHEET NUMBER:
A-4

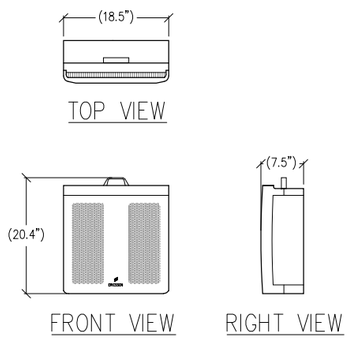


1 ANTENNA DETAIL

½"=1'-0" MAX WEIGHT: 50.71 LBS

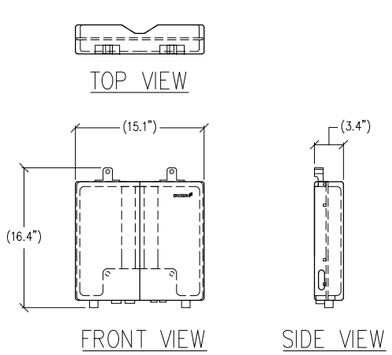
2 SURGE PROTECTION BOX

1"=1'-0" MAX WEIGHT: 32.0 LBS



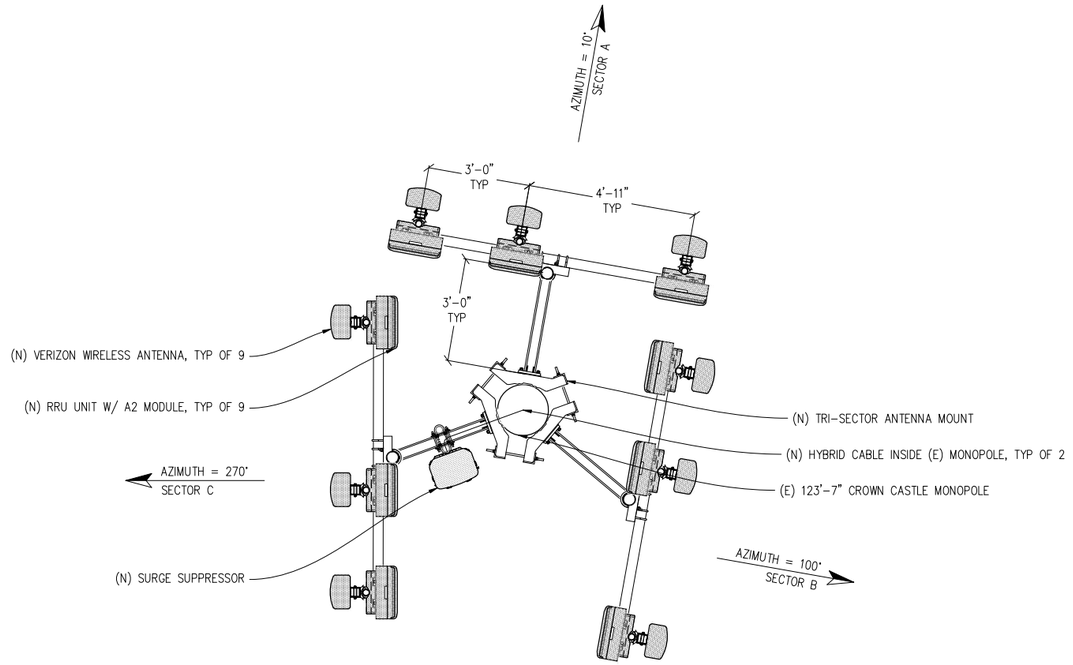
3 RRU DETAIL

1"=1'-0" MAX WEIGHT: 50 LBS



4 A2 MODULE DETAIL

1½"=1'-0" MAX WEIGHT: 22 LBS



ANTENNA PLAN

½"=1'-0"

NOTE: ALL (N) VERIZON WIRELESS ANTENNAS, ANTENNA MOUNTS, ANTENNA EQUIPMENT, & EXPOSED CABLES TO BE PAINTED TO MATCH (E) CROWN CASTLE MONOPOLE

NOTICE

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PRELIMINARY: NOT FOR CONSTRUCTION

KEVIN R. SORENSEN
S4469

ISSUE STATUS

△	DATE	DESCRIPTION	REV.
	09/05/17	CD 90%	M.S.
	10/12/17	CLIENT REV	C.C.
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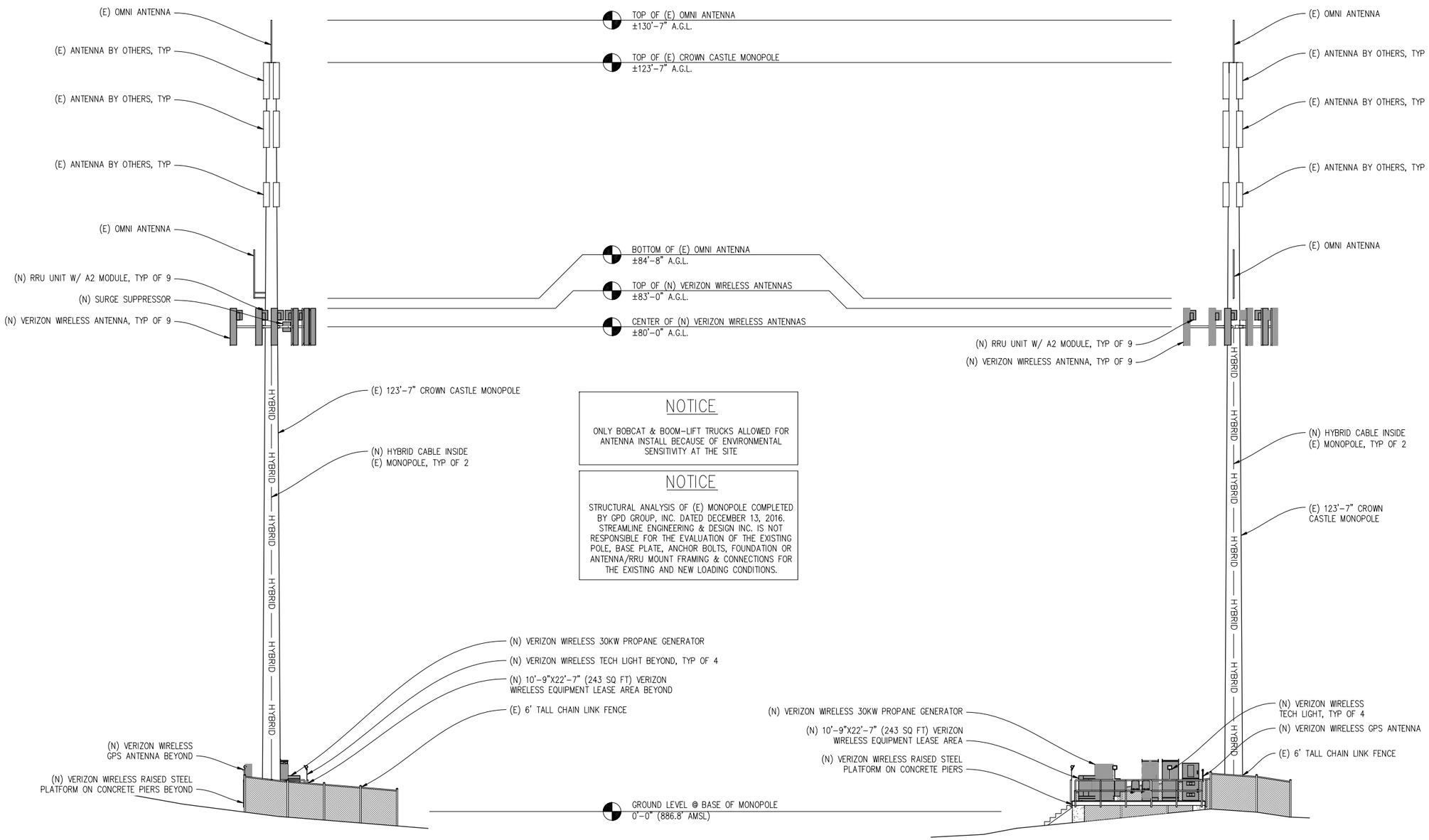
DRAWN BY:	M. STICKEL
CHECKED BY:	J. GRAY
APPROVED BY:	–
DATE:	10/12/17

SHEET TITLE:

ANTENNA PLAN & DETAILS

SHEET NUMBER:

A-5



NOTICE

ONLY BOBCAT & BOOM-LIFT TRUCKS ALLOWED FOR ANTENNA INSTALL BECAUSE OF ENVIRONMENTAL SENSITIVITY AT THE SITE

NOTICE

STRUCTURAL ANALYSIS OF (E) MONOPOLE COMPLETED BY GPD GROUP, INC. DATED DECEMBER 13, 2016. STREAMLINE ENGINEERING & DESIGN INC. IS NOT RESPONSIBLE FOR THE EVALUATION OF THE EXISTING POLE, BASE PLATE, ANCHOR BOLTS, FOUNDATION OR ANTENNA/RRU MOUNT FRAMING & CONNECTIONS FOR THE EXISTING AND NEW LOADING CONDITIONS.

NOTE: ALL (N) VERIZON WIRELESS ANTENNAS, ANTENNA MOUNTS, ANTENNA EQUIPMENT, & EXPOSED CABLES TO BE PAINTED TO MATCH (E) CROWN CASTLE MONOPOLE

NORTH ELEVATION

⅛"=1'-0"

NOTE: EQUIPMENT BY OTHERS OMITTED FOR CLARITY

EAST ELEVATION

⅛"=1'-0"

NOTE: EQUIPMENT BY OTHERS OMITTED FOR CLARITY

GRAHAM RD / MT HERMAN RD

249643

3650 GRAHAM HILL ROAD
SANTA CRUZ, CA 95018

verizon

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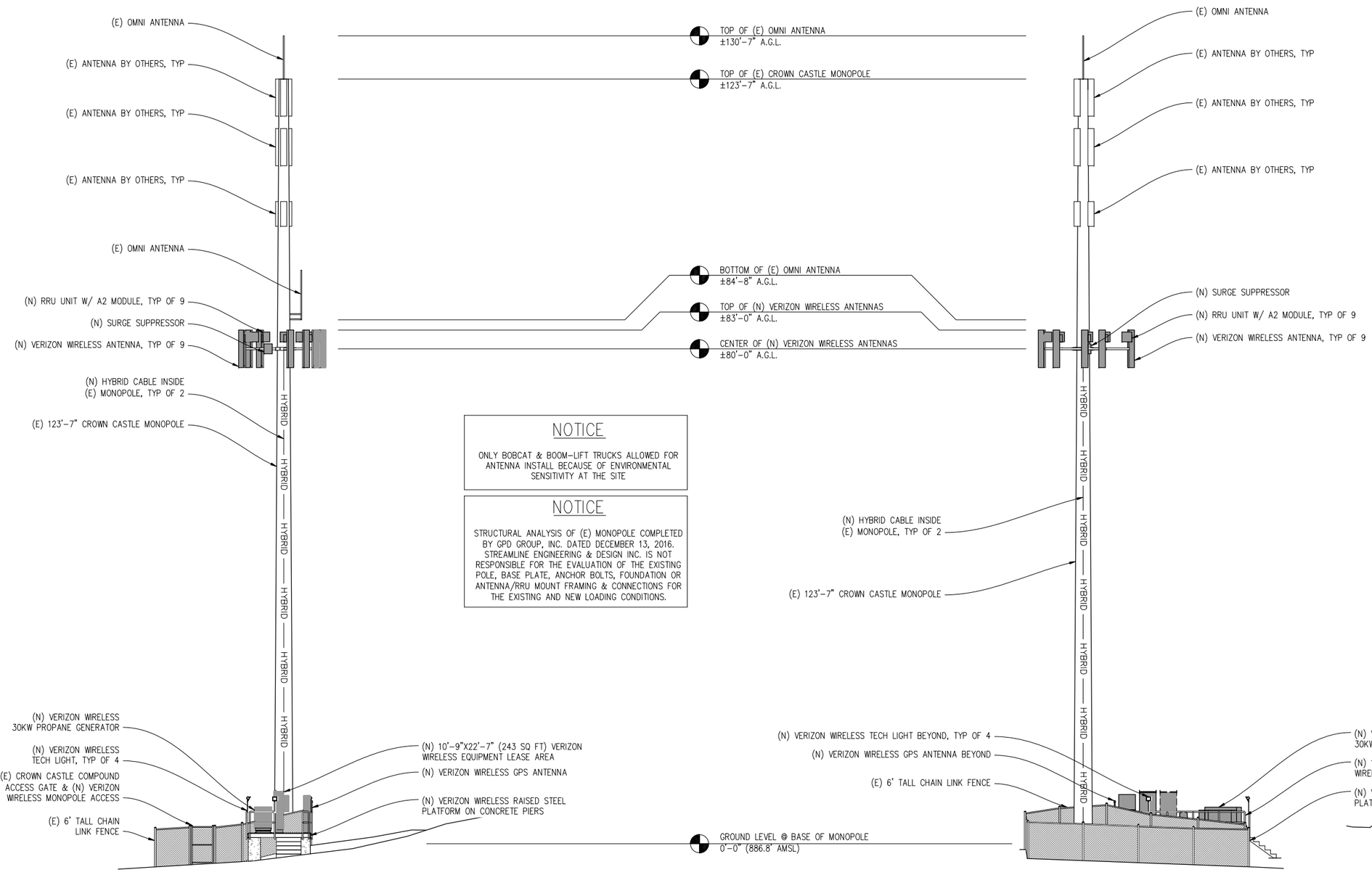
ELEVATIONS

SHEET NUMBER:

A-6



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SOUTH ELEVATION

⅛"=1'-0"

NOTE: EQUIPMENT BY OTHERS OMITTED FOR CLARITY

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WEST ELEVATION

⅛"=1'-0"

NOTE: EQUIPMENT BY OTHERS OMITTED FOR CLARITY

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ELEVATIONS

SHEET NUMBER:

A-7

CONSTRUCTION NOTES

1. EXISTING BUILDING CONSTRUCTION CONDITIONS INDICATED ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO PROCEEDING WITH CONSTRUCTION OR ORDERING OF MATERIALS. IF EXISTING CONDITIONS DO NOT ALLOW FOR DETAILS OF CONSTRUCTION AS SHOWN ON THESE DRAWINGS, NOTIFY ENGINEER OF RECORD FOR RESOLUTION PRIOR TO PROCEEDING. CONTRACTOR SHALL EXPOSE AND REVIEW EXISTING CONDITIONS IN A TIMELY MANNER SUCH THAT ALTERNATE DESIGNS OR DETAILS, IF REQUIRED, MAY BE GENERATED WITHOUT DELAY TO THE PROJECT.
2. DURING CONSTRUCTION, THE CONTRACTOR SHALL NOT ALTER, DAMAGE OR REMOVE ANY PART OF THE EXISTING STRUCTURE UNLESS SPECIFICALLY DETAILED ON THESE DRAWINGS.
3. THE INTENT OF THESE DRAWINGS IS THAT THE WORK OF THE ADDITION, ALTERATION, REHABILITATION, OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH THE 2016 CBC. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NONCOMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH THE 2016 CBC, A CHANGE ORDER, OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE PREPARED AND SUBMITTED TO AND APPROVED BY THE BUILDING DEPARTMENT PRIOR TO PROCEEDING WITH THE WORK.
4. ALL WORK AND MATERIALS SHOWN ARE NEW UNLESS INDICATED AS EXISTING (E).
5. IT MAY BE NECESSARY TO REMOVE ARCHITECTURAL FINISHES, PLUMBING PIPES AND FIXTURES, ELECTRICAL CONDUIT, FIXTURES, PANELS, BOXES, TELEPHONE OR FIRE ALARM WIRING AND FIXTURES OR OTHER NON-STRUCTURAL ITEMS TO INSTALL STRUCTURAL WORK AND MATERIALS SHOWN ON THESE DRAWINGS. SUCH ITEMS SHALL BE REMOVED, REPAIRED AND/OR REPLACED TO MATCH PRE-CONSTRUCTION CONDITIONS AT THE CONTRACTORS EXPENSE.
6. ALL WEATHER PROOFING. INCLUDING BUT NOT LIMITED TO TORCH DOWN, CAULKING, Z-FLASHING OR ANY OTHER MATERIAL THAT MAY BE ALTERED DURING INSTALLATION SHALL BE REPAIRED REPLACED AND/OR MODIFIED TO ENSURE THE BUILDING AT THE INSTALLATION SITE IS WEATHER PROOF.
7. ANY PROPOSED SUBSTITUTIONS FOR STRUCTURAL MEMBERS, HARDWARE, ANCHOR TYPES, OR DETAILING INDICATED IN THESE DRAWINGS SHALL BE SUBMITTED TO AND REVIEWED BY THE ENGINEER OF RECORD PRIOR TO ORDERING MATERIALS. SUCH REVIEW SHALL BE BILLED ON A TIME AND MATERIALS BASIS TO THE CONTRACTOR WITH NO GUARANTEE THAT THE SUBSTITUTION WILL BE ALLOWED.
8. CONTRACTOR SHALL ENSURE ALL ROOF AREAS HAVE POSITIVE SLOPE TO ALL EXISTING ROOF DRAINS. PROVIDE ADDITIONAL CRICKETS OR BUILD UP ROOFING AS REQUIRED TO PROVIDE POSITIVE DRAINAGE AROUND ALL NEW CONSTRUCTION INCLUDING ANY CURBS, SLEEPERS, SUPPORT BASES, ETC.

STRUCTURAL STEEL NOTES

1. ALL STEEL CONSTRUCTION INCLUDING FABRICATION, ERECTION AND MATERIALS SHALL COMPLY WITH ALL REQUIREMENTS OF THE 2010 AISC SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS AND THE 2016 CBC.
2. ALL STRUCTURAL STEEL SHALL BE ASTM A36 UNLESS OTHERWISE NOTED. ALL WF (WIDE FLANGE) & WT (TEE) SHAPES TO BE ASTM A992 (F_Y=50,000 PSI) UNLESS NOTED OTHERWISE. ALL STRUCTURAL TUBING (TS OR HSS) SHALL BE ASTM A500 GRADE B (F_Y=46,000 PSI). ALL STEEL PIPE SHALL BE ASTM A53 (TYPE E OR S, GRADE B (F_Y=35,000 PSI)) SCHEDULE 40 WITH OUTSIDE DIAMETERS GIVEN UNLESS OTHERWISE NOTED.
3. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES UNLESS OTHERWISE NOTED AND SHALL CONFORM TO AISC & AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC SPECIFICATION. PAINTED SURFACES SHALL BE TOUCHED UP.
4. ALL WELDING SHALL BE PERFORMED BY QUALIFIED, CERTIFIED WELDERS.
5. BOLTS SHALL BE GALVANIZED ASTM F3125/F3125M MINIMUM. BOLTED CONNECTIONS SHALL BE BEARING TYPE. SEE PLANS FOR LOCATION, NUMBER, & SIZE OF BOLTS. SPECIAL INSPECTION NOT REQUIRED U.O.N.
6. THREADED RODS SHALL BE ASTM F1554, GR 36 U.O.N. BOLTED CONNECTIONS SHALL BE BEARING TYPE. SEE PLANS FOR LOCATION, NUMBER, & SIZE OF BOLTS.
7. ALL HOLES FOR BOLTED CONNECTIONS SHALL BE 1/16" LARGER THAN THE NOMINAL BOLT DIAMETER. USE STANDARD AISC GAGE AND PITCH FOR BOLTS EXCEPT AS NOTED OTHERWISE. HOLES FOR ANCHOR BOLTS IN BASE PLATES MAY BE AISC "OVERSIZE" HOLES WHERE ACCOMPANIED BY OVERSIZED HARDENED HOT DIPPED GALVANIZED WASHERS.
8. ALL SHOP FABRICATED STEEL STRUCTURAL MEMBERS FOR EXTERIOR USE SHALL BE HOT DIP GALVANIZED PER ASTM A123 AFTER FABRICATION & PAINTED PER CUSTOMER SPECIFICATIONS AS REQUIRED. STEEL FOR INTERIOR USE SHALL BE SHOP COAT OR GALVANIZED & PAINTED PER PLAN.
9. ALL FIELD FABRICATED GALVANIZED STEEL THAT IS CUT, GROUND, DRILLED, WELDED OR DAMAGED SHALL BE TREATED WITH "ZINC RICH" COLD GALVANIZING SPRAY OR COATING. NO RAW STEEL SHALL BE EXPOSED.
10. AT ALL WEB STIFFENER PLATES LEAVE ¾"ø (OR K, WHICHEVER IS LARGER) HOLE @ WEB/FLANGE INTERSECTION UNLESS NOTED OTHERWISE.
11. BOLTS AT ANTENNA & RRU MOUNT TO BE ASTM F3125/F3125M A194M U.O.N.
12. ALL NUTS SHALL BE ASTM A563/A563M ALL WASHERS SHALL BE ASTM F436/F436M.
13. ALL STRUT MEMBERS USED IN EXTERIOR APPLICATIONS SHALL BE HOT DIPPED GALVANIZED PER ASTM A123 OR ASTM A153.
14. ALL STAINLESS STEEL BOLTED CONNECTIONS SHALL BE ASTM F593-17 AND STAINLESS STEEL NUTS SHALL BE ASTM F594-09 (2015).

LIGHT GAUGE METAL FRAMING

1. ALL LIGHT GAUGE METAL FRAMING SHALL BE PER THE REQUIREMENTS OF THE 2016 CBC AND THE NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS OF THE AMERICAN IRON AND STEEL INSTITUTE (AISI S100-07/S2-10 PER CBC CHAPTER 35)
2. ALL METAL FRAMING SHALL BE FORMED FROM GALVANIZED STEEL CONFORMING TO ASTM A653 OR ASTM A1011 WITH MINIMUM YIELD STRENGTH OF 33KSI FOR 43 MILS (18GA) AND LIGHTER 50KSI FOR 54 MILS (16 GA) AND HEAVIER, U.O.N. FULLY ENCLOSED WORK OF 14GA OR THICKER MAY BE ASTM A653 SHOP COAT.
3. GALVANIZED COATING MUST MEET THE ASTM C955 SPECIFICATION.
4. METAL TRACKS SHALL BE THE SAME GAUGE AS FRAMING WHICH IT SUPPORTS, UNLESS NOTED OTHER WISE WITH MINIMUM FLANGE WIDTH OF 1¼" AND MINIMUM PROPERTIES AS SHOWN IN THE LIGHT GAUGE METAL FRAMING SCHEDULE.
5. ALL WELDING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CBC AND THE STRUCTURE WELDING CODE-SHEET STEEL OF THE AMERICAN WELDING SOCIETY (AWS D1.3-08 PER CBC CHAPTER 35).
6. FACTORY PUNCH-OUTS FOR STUDS TO BE LOCATED ONLY ALONG THE CENTERLINE OF THE WEBS OF THE MEMBERS AND HAVE A MINIMUM CENTER-TO-CENTER SPACING OF 24". PUNCH-OUTS TO HAVE A MAXIMUM WIDTH=HALF THE MEMBER DEPTH (D/2) OR 2½", WHICHEVER IS LESS, AND A MAXIMUM LENGTH=4½". LIGHT GAUGE FRAMING MEMBERS SHALL BE CUT SUCH THAT THE MINIMUM DISTANCE BETWEEN THE END OF THE MEMBER AND THE NEAR EDGE OF THE WEB PUNCH-OUT=10".
7. ALL HEADER, JOIST & BEAM MEMBERS SHALL BE UN-PUNCHED.
8. ALL SCREWS SHALL BE TEKS/TRAXX SELF-DRILLING SCREWS BY ITW BUILDX, OR APPROVED EQUIVALENT. INSTALL PER MANUFACTURES INSTRUCTIONS AND RECOMMENDATIONS FOR MAXIMUM RATED LOADING CAPACITIES.
9. ALL SCREWS SHALL BE HOT DIPPED GALVANIZED.

TRENCHING NOTES

1. CALL BEFORE YOU DIG. CONTRACTOR IS REQUIRED TO CALL 811 (NATIONWIDE "CALL BEFORE YOU DIG" HOTLINE) AT LEAST 72 HOURS BEFORE DIGGING.
2. VERIFY ALL TRENCHING REQUIREMENTS WITH SERVING UTILITIES.
3. RESTORE GRADE TO ORIGINAL CONDITION OR BETTER.
4. RETURN FILL TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM STANDARDS.
5. RESTORE CUT CONCRETE OR ASPHALT TO ORIGINAL CONDITION OR BETTER.

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

CALL
"CALL BEFORE YOU DIG"
811
NATIONWIDE UNDERGROUND SERVICE ALERT

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FINAL STRUCTURAL NOTES TO BE COMPLETED UPON APPROVAL OF 90% CDS

GRAHAM RD / MT HERMAN RD

249643
3650 GRAHAM HILL ROAD
SANTA CRUZ, CA 95018

verizon

2785 MITCHELL DRIVE, BLDG 9
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DRAWN BY: M. STICKEL

CHECKED BY: J. GRAY

APPROVED BY: -

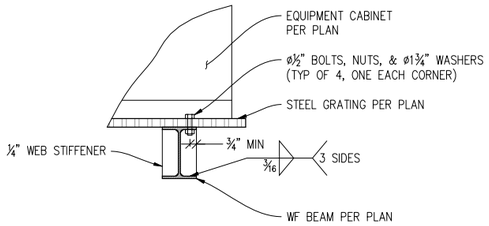
DATE: 10/12/17

SHEET TITLE:

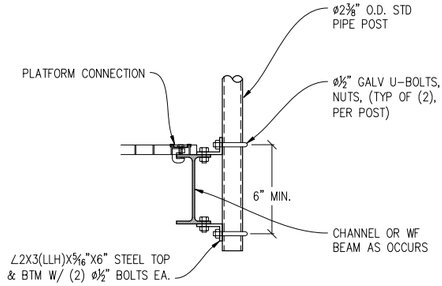
STRUCTURAL NOTES

SHEET NUMBER:

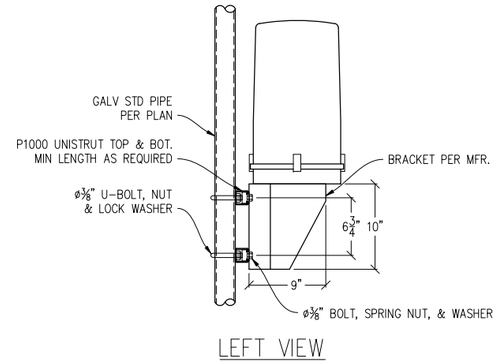
S-1



1 CABINET TO WF BEAM
1½"=1'-0"

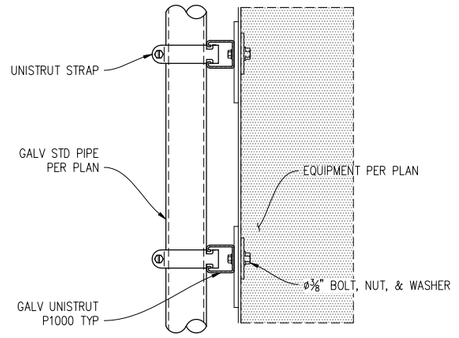


2 POST SUPPORT DETAIL
1½"=1'

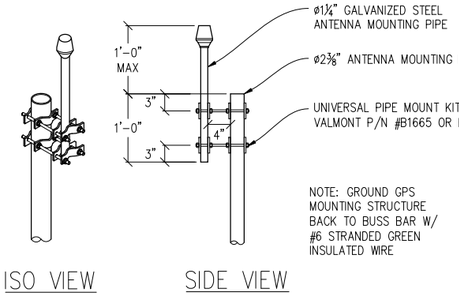


LEFT VIEW

SURGE H-FRAME MOUNT DETAIL
3 1½"=1'-0"

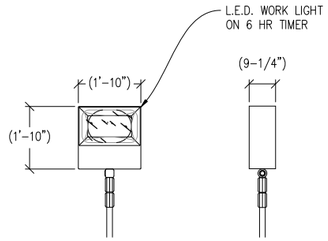


4 EQUIPMENT MOUNTING DETAIL
3"=1'-0"



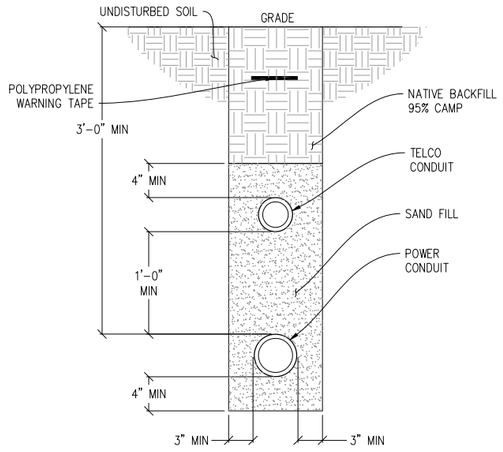
ISO VIEW SIDE VIEW

5 GPS ANTENNA DETAIL
1"=1'-0"



FRONT VIEW SIDE VIEW

6 TECH LIGHT DETAIL
½"=1'-0"



7 CONDUIT TRENCH DETAIL
1½"=1'-0"

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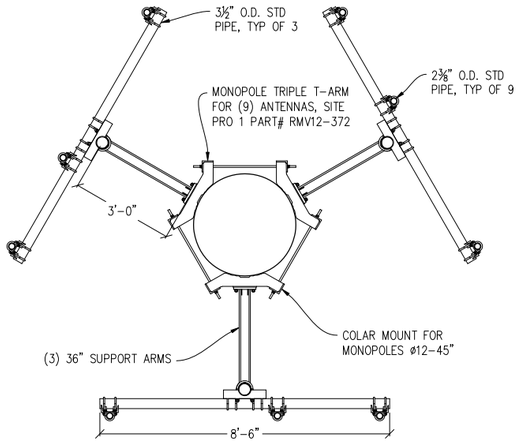
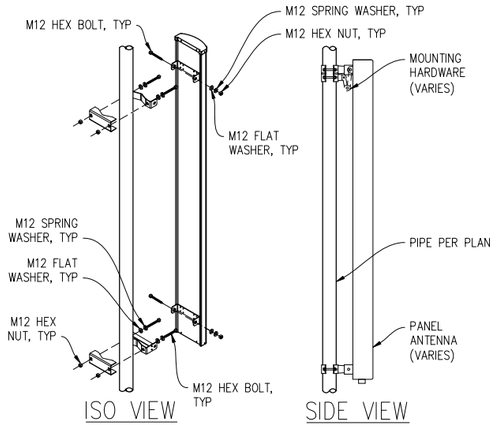


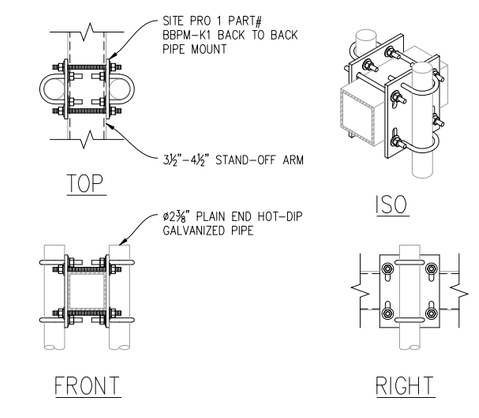
1 T-ARM ANT MOUNT DETAIL

½"=1'-0"



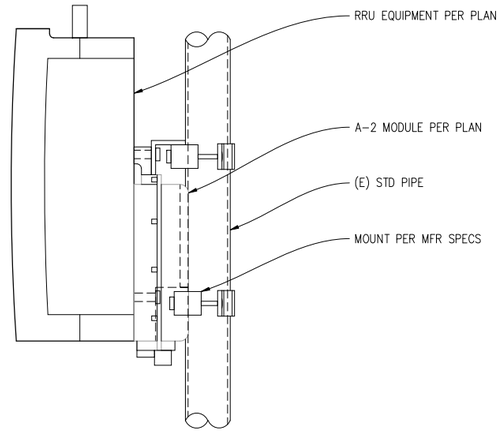
2 ANTENNA MOUNT DETAIL

1"=1'-0"



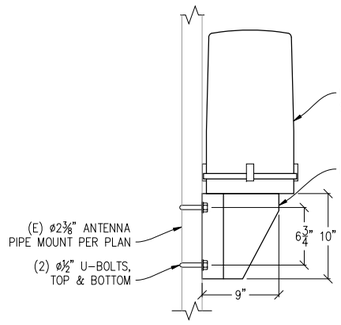
3 BACK TO BACK PIPE MOUNT

1½"=1'-0"



4 RRU+A2 MOUNTING DETAIL

3"=1'-0"



LEFT VIEW

5 SURGE PIPE MOUNT DETAIL

1½"=1'-0"

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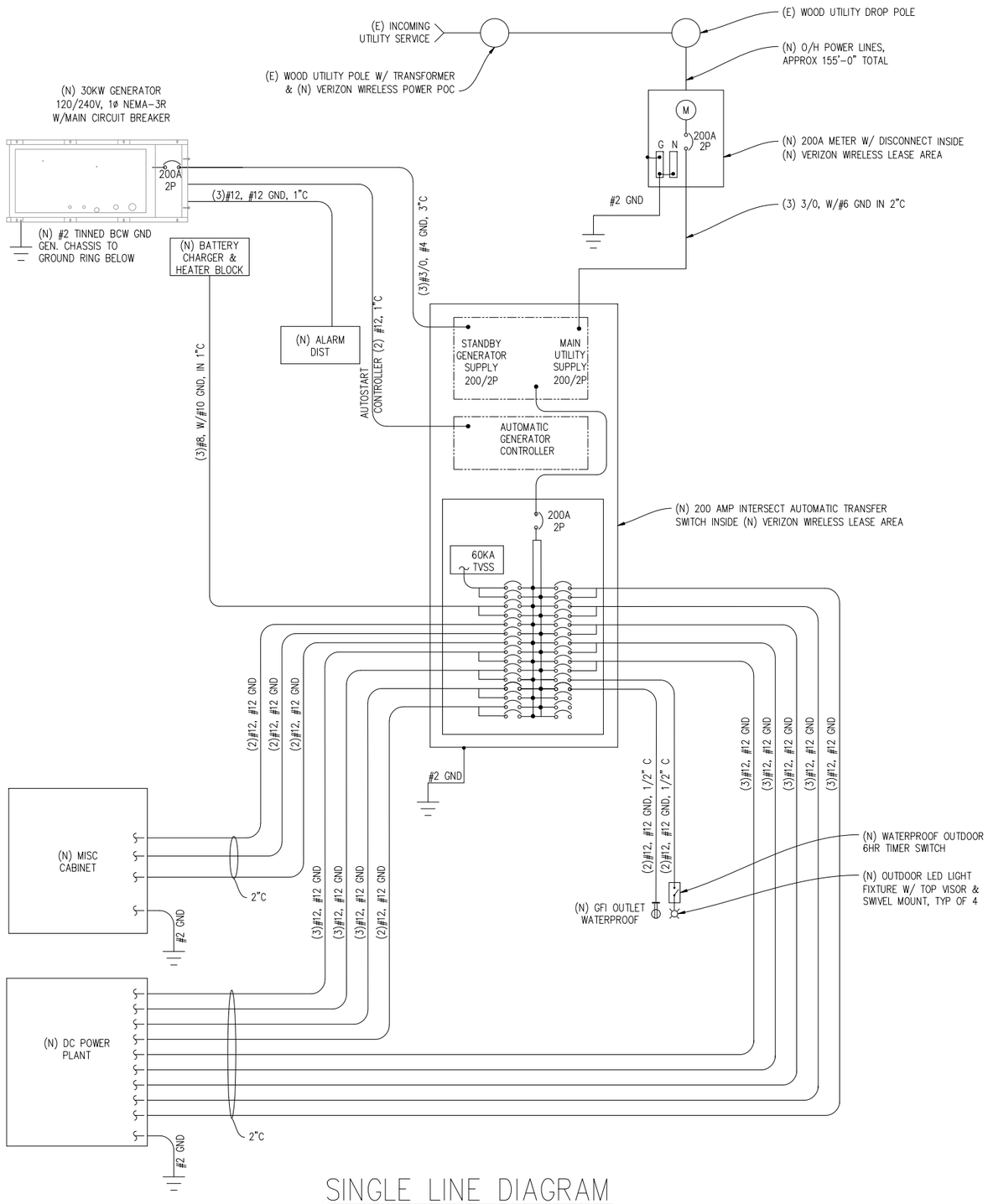
S-3



SINGLE LINE DIAGRAM

ELECTRIC LEGEND

- (MI) MECHANICAL INTERLINK
- (M) METER
- CIRCUIT BREAKER
- SERVICE GROUND
- WIRED CONNECTION
- TIMER SWITCH, WATERPROOF
- OUTDOOR LIGHT
- GFI OUTLET, WATERPROOF

ELECTRICAL NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE 2016 CEC AS WELL AS ALL ADOPTED STANDARDS, APPLICABLE STATE AND LOCAL CODES.
2. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, CONDUCTORS, PULL BOXES, TRANSFORMER PADS, POLE RISERS, AND PERFORM ALL TRENCHING AND BACKFILLING REQUIRED IN THE PLANS.
3. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER PLAN SPECIFICATIONS.
4. ALL CIRCUIT BREAKERS, FUSES, AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTION RATING NOT LESS THAN THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED WITH A MINIMUM OF 10,000 A.I.C. OR AS REQUIRED.
5. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
6. ELECTRICAL WIRING SHALL BE COPPER #12 AWG MIN WITH TYPE THHN, THWN-2 OR THW-2, INSULATION RATED FOR 90°C DRY OR 70°C WET.
7. ALL OUTDOOR EQUIPMENT SHALL HAVE NEMA 3R ENCLOSURE.
8. ALL BURIED WIRE SHALL RUN THROUGH SCHEDULE 40 PVC CONDUIT UNLESS OTHERWISE NOTED.
9. A GROUND WIRE IS TO BE PULLED IN ALL CONDUITS.
10. WHERE ELECTRICAL WIRING OCCURS OUTSIDE A STRUCTURE AND HAS THE POTENTIAL FOR EXPOSURE TO WEATHER, WIRING SHALL BE IN WATERTIGHT GALVANIZED RIGID STEEL OR FLEXIBLE CONDUIT.
11. WHERE PLANS CALL FOR A NEW ELECTRICAL SERVICE, PRIOR TO SUBMITTING BID, CONTRACTOR SHALL VERIFY PLAN DETAILS WITH THE UTILITY'S SERVICE PLAN & REQ'MTS INCLUDING SERVICE VOLTAGE, METER LOCATION, MAIN DISCONNECTING MEANS, AND AIC REQ'MT, AND SHALL OBTAIN CLARIFICATION FROM THE PROJECT ENGINEER ON ANY DEVIATIONS FOUND IN THESE PLANS.
12. WHERE THESE PLANS SHOW A DC POWER PLANT, THE INSTALLATION OPERATING AT LESS THAN 50 VDC UNGROUNDED, 2-WIRE, SHALL COMPLY WITH ARTICLE 720, AS FOLLOWS:
    - A. POWER PLANT SHALL BE SUPPLIED BY THE WIRELESS CARRIER AS A PULL-TAG ITEM AND INSTALLED BY THE CONTRACTOR.
    - B. CONDUCTORS SHALL NOT BE SMALLER THAN #12 AWG COPPER MIN, CONDUCTORS FOR BRANCH CIRCUITS SUPPLYING MORE THAN ONE APPLIANCE SHALL BE 10 AWG CU MIN; CONTRACTOR SHALL SIZE CONDUCTORS BASED ON MFGR'S DATA FOR THE APPLIANCES SERVED.
    - C. THERE ARE NO DC RECEPTACLES OR LUMINARIES ALLOWED ON THIS PROJECT. ALL CIRCUITS SHALL ORIGINATE AT AN INTEGRATED DOUBLE LUG TAP OR SOCKET TERMINATION ON AN INTEGRATED DC CIRCUIT BREAKER AT AN INDIVIDUAL RECTIFIER MODULE AND TERMINATE AT THE SPECIALIZED LUG ON THE RESPECTIVE APPLIANCE AS A SINGLE RUN OF WIRE WITHOUT SPLICES. ALL DC WIRING SHALL BE LABELED AT THE DC PLANT WITH THE APPLIANCE SERVED AND THE DC VOLTAGE.
    - D. ALL CABLING SHALL BE INSTALLED IN A NEAT AND WORKMAN LIKE MANNER AND SUPPORTED BY BUILDING STRUCTURE, EG. (N) CABLE TRAY OVERHEAD, IN SUCH A MANNER THAT THE CABLE WILL NOT BE DAMAGED BY NORMAL USE.

NEW PANEL SCHEDULE

NAMEPLATE : PANEL A			SC LEVEL : 10,000				VOLTS: 120V/240V, 1ø		
LOCATION : OUTSIDE							BUS AMPS: 200A		
MOUNTING : H-FRAME							MAIN CB: 200A		
ØA	ØB							ØA	ØB
LOAD VA	LOAD VA	LOAD DESCRIPTION	BKR AMP/ POLE	CIRCUIT NO		BKR AMP/ POLE	LOAD DESCRIPTION	LOAD VA	LOAD VA
30		SURGE ARRESTOR	60/2	1	2	20/2	(N) DC POWER PLANT	1200	
	30	" "	" "	3	4	" "	" "		1200
3840		(N) BATTERY CHARGER & HTR	40/2	5	6	20/2	" "	1200	
	3840	" "	" "	7	8	" "	" "		1200
800		(N) MISC CABINET	15/1	9	10	20/2	" "	1200	
	800	" "	15/1	11	12	" "	" "		1200
1200		" "	20/1	13	14	20/2	" "	1200	
	1200	(N) DC POWER PLANT	20/2	15	16	" "	" "		1200
1200		" "	" "	17	18	20/2	" "	1200	
	1200	" "	20/2	19	20	" "	" "		1200
1200		" "	" "	21	22	20/1	TECH LIGHT	600	
	1200	" "	20/2	23	24	20/1	GFI RECEPTACLE		300
1200		" "	" "	25	26	–	BLANK		
	1200	" "	20/2	27	28	–	" "		
1200		" "	" "	29	30	–	" "		
10670	9470	PHASE TOTALS					PHASE TOTALS	6600	6300
TOTAL VA =	33040	TOTAL AMPS =	138						

GRAHAM RD / MT HERMAN RD

249643

3650 GRAHAM HILL ROAD
SANTA CRUZ, CA 95018

verizon

2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA 94598

Streamline Engineering and Design, Inc.
8445 Sierra College Blvd, Suite E Granite Bay, CA 95661
Contact: Kevin Sorensen Phone: 916-660-1930
E-Mail: kevin@streamlineeng.com Fax: 916-660-1941

PRELIMINARY: NOT FOR CONSTRUCTION

KEVIN R. SORENSEN
S4469

ISSUE STATUS

△	DATE	DESCRIPTION	REV.
	09/05/17	CD 90%	M.S.
	10/12/17	CLIENT REV	C.C.
	–	–	–
	–	–	–
	–	–	–
	–	–	–

DRAWN BY: M. STICKEL

CHECKED BY: J. GRAY

APPROVED BY: –

DATE: 10/12/17

SHEET TITLE:

ELECTRICAL PLAN

SHEET NUMBER:

E-1

GROUNDING NOTES

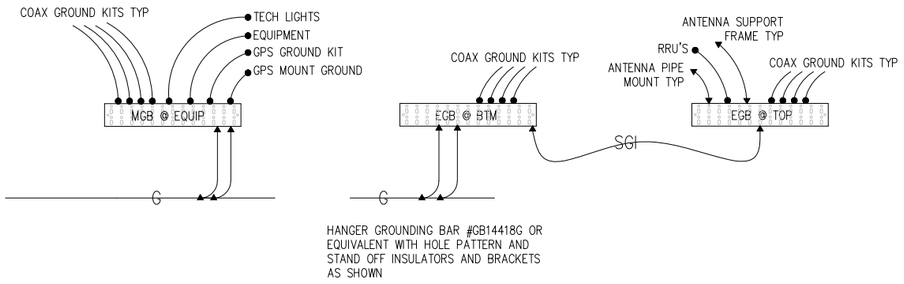
1. GROUNDING SHALL COMPLY WITH CEC ARTICLE 250.
2. USE #2 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
3. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
4. EXPOSED GROUNDING CONNECTIONS SHALL BE MADE WITH BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR EXOTHERMIC WELDS AS SPECIFIED IN THE PLANS.
5. CONNECTIONS TO EQUIPMENT SHALL BE MADE USING STAINLESS STEEL HARDWARE.
6. APPLY BUTYL & ELECTRICAL TAPE OVER COLD SHRINK AT ALL LOCATIONS FOR WEATHER PROOFING OVER COAX GROUND KITS.
7. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS WITH STAR WASHERS AND NO-OX OR EQUIVALENT PLACED BETWEEN CONNECTOR AND GROUND BAR.
8. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLES. ALWAYS MAKE A 12" RADIUS BEND, HOWEVER, #6 WIRE CAN BE BENT AT A 6" RADIUS WHEN NECESSARY.
9. THE SYSTEM GROUND RESISTANCE MUST BE 10 OHMS OR LESS. TO ACHIEVE THIS LEVEL OF RESISTANCE THE CONTRACTOR SHALL PURSUE ONE OF THE FOLLOWING FOUR OPTIONS:

   A. CONNECT TO EXISTING GROUNDING SYSTEMS
   B. CONNECT TO BUILDING STEEL COLUMNS
   C. INSTALL A NEW GROUNDING SYSTEM

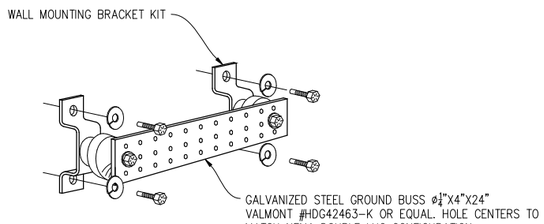
   UPON COMPLETION OF THE GROUNDING INSTALLATION THE CONTRACTOR SHALL EMPLOY AN OWNER APPROVED 3RD PARTY TO CONDUCT A "FALL OF POTENTIAL" TEST AND SUBMIT A REPORT OF SUCH TEST FOR APPROVAL TO EITHER THE OWNER OR CONSTRUCTION MANAGER.

GROUNDING LEGEND

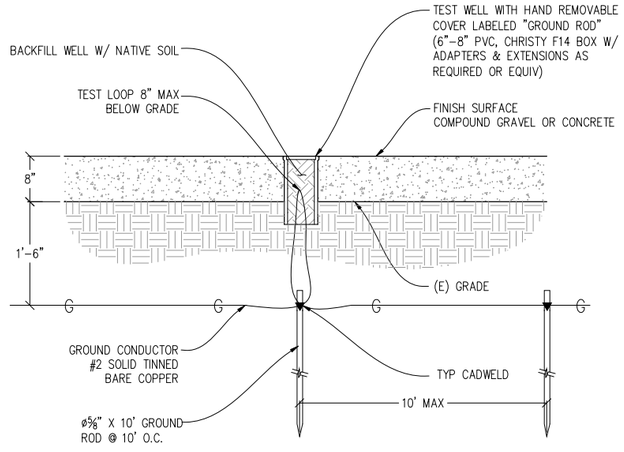
- MECHANICAL CONNECTION
- EXOTHERMIC CADWELD
- TYP. CADWELD INSPECTION WELL
- TYP ⅝" DIA. X 10'-0" LONG COPPER CLAD GROUND ROD @ 10' O.C. MAX & 18" MIN BELOW FINISH GRADE
- GATE GROUNDING STRAP
- TYP #2 TINNED BCW UNDERGROUND GND RING @ 18" MIN BELOW FINISH GRADE
- GROUND WIRE #2 STRANDED GREEN INSULATED WIRE



HANGER GROUNDING BAR #GB14418G OR EQUIVALENT WITH HOLE PATTERN AND STAND OFF INSULATORS AND BRACKETS AS SHOWN

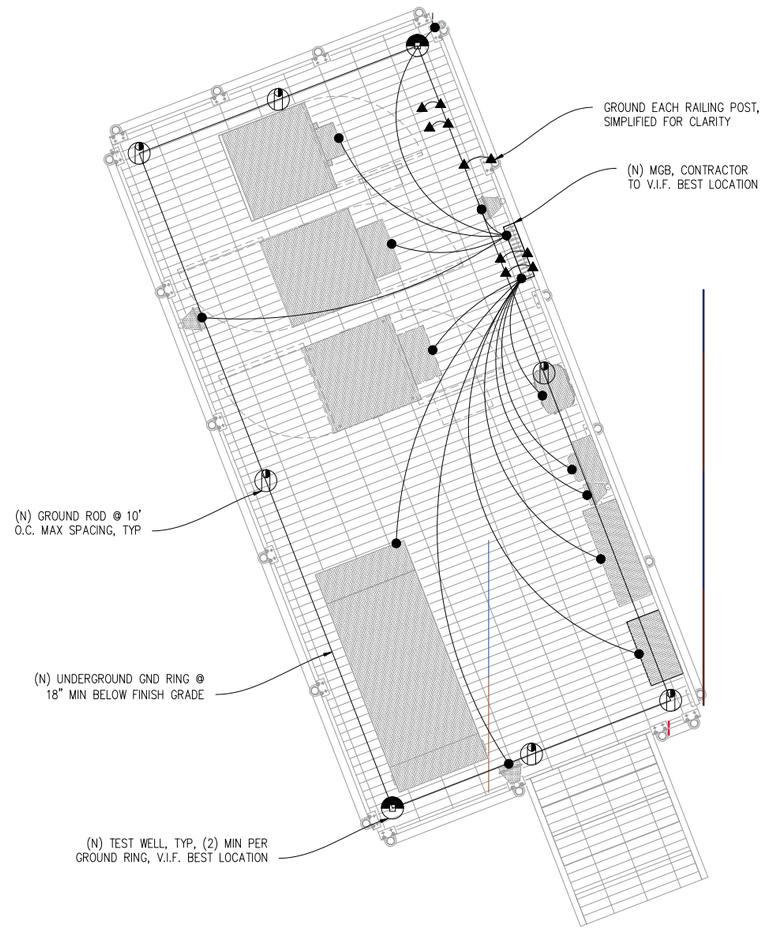


1 GROUND BUSS DETAIL
NOT TO SCALE



2 TEST WELL & GROUND ROD DETAIL
1"=1'-0"

NOTE: THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF DRIVEN GROUND RODS. THE GROUND RODS SHALL BE ⅝" X 10' COPPER CLAD STEEL SPACED AT 10' INTERVALS MAX. RODS SHALL BE INTERCONNECTED WITH #2 SOLID TINNED BARE COPPER GROUND WIRE BURIED A MINIMUM 18" BELOW GRADE. AN ONSITE INSPECTION BY THE OWNER SHALL BE REQUIRED PRIOR TO ANY BACKFILL.



GROUNDING PLAN
½"=1'-0"

0 6" 1' 2' 3' 5' 7' 10'

GRAHAM RD / MT HERMAN RD

249643
3650 GRAHAM HILL ROAD
SANTA CRUZ, CA 95018

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

Streamline Engineering and Design Inc.
8445 Sierra College Blvd, Suite E Granite Bay, CA 95661
Contact: Kevin Sorensen Phone: 916-660-1940
E-Mail: kevin@streamlinesng.com Fax: 916-660-1941

PRELIMINARY: NOT FOR CONSTRUCTION

KEVIN R. SORENSEN
S4469

ISSUE STATUS

△	DATE	DESCRIPTION	REV.
	09/05/17	CD 90%	M.S.
	10/12/17	CLIENT REV	C.C.
	–	–	–
	–	–	–
	–	–	–
	–	–	–

DRAWN BY: M. STICKEL
CHECKED BY: J. GRAY
APPROVED BY: –
DATE: 10/12/17

SHEET TITLE:
GROUNDING PLAN & DETAILS

SHEET NUMBER:
E-2

Appendix B
Habitat Assessment

Jodi McGraw Consulting
www.jodimcgrawconsulting.com
PO Box 221 • Freedom, CA • 95019
phone/fax: (831) 768-6988
jodi@jodimcgrawconsulting.com

September 5, 2017

Chris Fowler
Principal
On Air, LLC
14960 Karl Avenue
Monte Sereno, CA 95030
csfowler@att.net

RE: Habitat Assessment for Verizon's "Graham Rd/Mt. Herman Rd" Project (PSL #249643), Santa Cruz, CA (APN: 061-371-16)

Dear Mr. Fowler:

I am writing to provide you with a report of the habitat assessment that I conducted on August 30, 2017 at the telecommunications facility atop Mount Hermon. The facility is located in the northern tip of a 28-acre parcel owned by the County of Santa Cruz County (APN: 061-371-16), which is located at 3650 Graham Hill Road in Felton, California.

Purpose

Based on our conversations and my review of the plans for the "Graham Rd./ Mt. Herman Rd. Project" (On Air 2016), I understand that you are assisting your client, Verizon Wireless, with permitting and construction of a proposed project to install new cellular telecommunications equipment at the site. The proposed project entails the installation of new antennas on the existing monopole, construction of a platform in an approximately 23-foot-by-11-foot area southeast of and immediately adjacent to the existing fenced enclosure, and then mounting equipment cabinets and a generator on the platform. You are also evaluating whether a new fuel tank will be installed on the platform for the generator, which the plans currently envision will be powered by the existing propane tank (On Air 2016).

The purpose of my assessment was to evaluate whether the parcel and project area provide habitat for, and occurrences of, special-status plants and animals including: Ben Lomond spineflower (*Chorizanthe pungens* var. *pungens*), Santa Cruz wallflower (*Erysimum teretifolium*), silverleaf manzanita (*Arctostaphylos silvicola*), Ben Lomond buckwheat (*Eriogonum nudum* var. *decurrens*), Mount Hermon June Beetle (*Polyphylla barbata*), Zayante Band-Winged Grasshopper (*Trimerotropis infantilis*), and Santa Cruz kangaroo rat (*Dipodomys venustus venustus*). These species occur within Sandhills communities found on Zayante coarse sand soil in central Santa Cruz County (McGraw 2004).

For purposes of the assessment, the project area consists of the portion of the parcel where construction activities would occur, including the development footprint where the new platform would be constructed, as well as the access route between the parking area just south of the wooden water tank, and the telecommunications facility. Additional information about the parcel is provided for context.

Existing Conditions

Land Use

The County's 28-acre parcel features public facilities including: the County of Santa Cruz Juvenile Hall, Michael Gray Field (a baseball field), public water facilities managed by the San Lorenzo Valley Water District, which include three wells and a water tank, the telecommunications facility, and paved and dirt roads providing access to the telecommunications facility and water facilities from Graham Hill Road. The remainder of the parcel features intact habitat, as described below.

The existing telecommunications facility is located near the northern tip of the parcel and consists of a 550-square-foot, "L"-shaped, fenced enclosure with telecommunications equipment boxes, a generator, and a monopole.

Soils

The parcel is mapped by the Soil Conservation Service as featuring Zayante soils on 5 to 30% slopes. These soils are poorly developed, deep, coarse, sand soils derived from the weathering of uplifted marine sediments and sandstones (USDA 1980). My observations of the soil in the proposed project area revealed the occurrence of light grey, relatively coarse, loose sand soil that is characteristic of Zayante soils.

Vegetation

The parcel supports three plant communities found within the Santa Cruz Sandhills—the ecosystem that occurs on Zayante soils in central Santa Cruz County (McGraw 2004). Most of the parcel supports a mosaic of two communities: sand chaparral, which is characterized by dense stands of native shrubs including silverleaf manzanita with scattered trees including ponderosa pine (*Pinus ponderosa*) and coast live oak (*Quercus agrifolia*); and ponderosa pine forest, which supports scattered ponderosa pine and emergent Douglas fir (*Pseudotsuga menziesii*), and hardwood trees including coast live oak and tan oak (*Notholithocarpus densiflorus*), with native shrubs including silverleaf manzanita and coffee berry (*Frangula californica*) and poison oak (*Toxicodendron diversilobum*) in the subcanopy.

The northern portion of the parcel including the project area features sand parkland, which is characterized by scattered ponderosa pines (*Pinus ponderosa*) with a diverse understory of native herbaceous plants and subshrubs, including silver bush lupine (*Lupinus albifrons* var. *albifrons*), sand aster (*Corethrogyne filaginifolia* var. *filaginifolia*), and Ben Lomond buckwheat, as well as moderate to dense cover of exotic annual grasses and forbs. The 23-by-11-foot project area is largely denuded, as a result of chronic trampling associated with hiking/dog walking, as well as operations and maintenance of the existing telecommunications facility.

At the time of my assessment, the development footprint featured scattered sand aster, silver bush lupine, Ben Lomond buckwheat, and the undescribed species of *Pseudognaphalium* found in the sand parkland community of the sandhills (McGraw 2004).

Sandhills habitat including the sand parkland, sand chaparral, and ponderosa pine forest communities, is protected under the Santa Cruz County Sensitive Habitat Ordinance as described in the *Implications* section below.

Special-Status Species

The project features suitable habitat for seven special-status species that are endemic to the Santa Cruz Sandhills (Table 1).

Table 1. Special-Status Species in the Project Area and Parcel

Common Name	Status	Project Parcel	Project Area
Santa Cruz kangaroo rat (*Dipodomys venustus venustus*)	California Species of Special Concern	Inhabits sand chaparral and ponderosa pine forest; may disperse within sand parkland	Suitable habitat present
Mount Hermon June beetle (*Polyphylla barbata*)	Federally Endangered	Inhabits all habitats	Suitable habitat present
Zayante band-winged grasshopper (*Trimerotropis infantilis*)	Federally Endangered	Inhabits open sand parkland in northern tip of parcel and adjacent parcel to north	Suitable habitat present
Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*)	Federally Endangered; List 1B.1[1]	Known to occur in sand parkland and sand chaparral	Suitable habitat present; species may be present in seed bank
Santa Cruz wallflower (*Erysimum teretifolium*)	Federally Endangered; California Endangered; List 1B.1	Not present (aboveground) in parcel but found on adjacent parcel to the east; seed bank may be present within the parcel	Suitable habitat present; species may be present in seed bank
silverleaf manzanita (A*rctostaphylos silvicola*)	List 1B.3	Occurs throughout the sand chaparral and ponderosa pine forest with scattered individuals occurring in sand parkland	Suitable habitat present; species may be present in seed bank
Ben Lomond buckwheat *(Eriogonum nudum* var. *decurrens*)	List 1B.1	Occurs throughout the sand parkland with scattered individuals in sand chaparral and ponderosa pine forest	Suitable habitat present and multiple adults individuals present in project footprint

[1] Most rare, threatened, or endangered plants in California and elsewhere (CNPS 2017)

The Santa Cruz kangaroo rat inhabits the sand chaparral and ponderosa pine forest within the parcel (Biosearch Associates 2013) and may utilize the more open sand parkland habitat as well. The species was observed along the paved access road during monitoring of the SLVWD's Regional Intertie Project during 2015 (J. McGraw, pers. obs. 2015).

Suitable habitat for the fossorial Mount Hermon June beetle occurs throughout the project area and the species is known to occur at high density within the sand parkland community, which is used as a reference site for surveys for this species. Though the development envelope is largely denuded, the species has been

observed at high density in areas lacking aboveground vegetation, where larva presumably feed on (tree) roots that extend from adjacent vegetated areas.

The project area including disturbance envelop features open sand parkland habitat that is suitable for the Zayante band winged grasshoppers, which have been observed in the sand parkland habitat on the adjacent Mount Hermon parcel (J. McGraw, pers obs.) and were also reported from around the water tank (Arnold and Bandel 2014).

The sand soil habitat in the project area is suitable for all four plants (Table 1). During my assessment, I observed the Ben Lomond buckwheat in and adjacent to the development area. The other three species have potential to occur in the soil seed bank within and adjacent the project area.

Implications

The project area features sandhills habitat that is suitable for seven endemic sandhills species. This habitat and the rare species it supports are protected by local and federal regulations.

The County of Santa Cruz Sensitive Habitat Ordinance protects sandhills habitat as well as habitat that supports rare species, including the endemic sandhills species. The Sensitive Habitat Ordinance requires that disturbance of sensitive habitat and rare species be avoided; where it cannot be avoided, it must be minimized and mitigated.

The federal Endangered Species Act protects federally-endangered species, including the Mount Hermon June beetle, Zayante band-winged grasshopper, Ben Lomond spineflower, and Ben Lomond wallflower. The federal Endangered Species Act makes it illegal to 'take' (kill, harm, harass, etc.) endangered animals including the Mount Hermon June beetle and Zayante band-winged grasshopper. However, the U.S. Fish and Wildlife Service (USFWS), which administers the Act, can permit take of endangered species that might occur incidentally during otherwise lawful projects, such as development, by issuing what is known as an 'incidental take permit' (ITP).

In order to receive a federal ITP, project proponents must complete a Habitat Conservation Plan (HCP), which outlines how they will mitigate the project's negative effects on the endangered species. Mitigation must include steps to avoid, minimize, and repair impacts at the project site, as well as efforts to compensate for them by benefiting similar habitat elsewhere on site or at a suitable off-site location. The mitigation provided in the HCP can often also satisfy requirements of the County's Sensitive Habitat Ordinance.

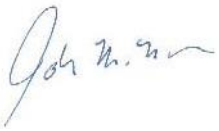
Per my proposal submitted to On Air on August 14, 2017, I can assist On Air and its client, Verizon Wireless, by preparing an HCP for the subject project.

I have provided below the contact information for agency personnel knowledgeable about the local and federal regulations, in case you or representatives of Verizon Wireless would like to discuss the implications of this assessment for the project with the USFWS, which administers the Endangered Species Act, and the County of Santa Cruz Planning Department, which administers the Sensitive Habitat Ordinance.

Table 2: Contact information for agency representatives knowledgeable about regulations influencing development of Sandhills habitat

U.S. Fish and Wildlife Service	County of Santa Cruz
Chad Mitcham	Matt Johnston
Biologist	Environmental Coordinator
US Fish and Wildlife Service	County of Santa Cruz
2493 Portola Road, Suite B	701 Ocean Street
Ventura, CA 93003	Santa Cruz, CA 95060
831-768-7794	(831) 454-3114
Chad_Mitcham@fws.gov	PLN458@co.santa-cruz.ca.us

Sincerely,



Jodi M. McGraw, Ph.D.

References

Arnold, R. A. and J. Bandel. 2014. Low-effect habitat conservation plan for the endangered Mount Hermon June beetle, the endangered Zayante band-winged grasshopper, and the threatened California red-legged frog for the Scotts Valley Multi-Agency Regional Intertie Project in Santa Cruz County, CA. Prepared for the San Lorenzo Valley Water District. February 2014. 63 pages.

Biosearch Associates. 2013. Santa Cruz kangaroo rat habitat assessment and surveys for Probation Department Juvenile Hall Recreation Facility. Letter from David Laabs to Melissa Allen. June 10, 2013. 9 pages.

California Native Plant Society. 2017. Inventory of rare and endangered plants of California. Sacramento, CA. Accessed on-line at: http://www.rareplants.cnps.org/

McGraw, J. M. 2004. Sandhills conservation and management plan: a strategy for preserving native biodiversity in the Santa Cruz Sandhills. Report submitted to the Land Trust of Santa Cruz County, Santa Cruz, CA.

On Air. 2016. Project Plans for Verizon Wireless Graham Rd/Mt Herman [sic] Rd. PSL #249643, Crown Castle BU 855803. January 28, 2016. 7 pages.

USFWS. 1997. Endangered and threatened wildlife and plants; determination of endangered status for two insects from the Santa Cruz Mountains of California. Federal Register **62**:3616-3628.

U.S. Department of Agriculture. 1980. Soil Survey of Santa Cruz County. Soil Conservation Service, United States Department of Agriculture and University of California.

Appendix C
Conservation Credit Sales Agreement

This appendix contains the draft conservation credit sales agreement prepare by the Zayante Sandhills Conservation Bank to sell Verizon Wireless conservation credits for the Mount Hermon June beetle and Zayante band-winged grasshopper.

Zayante Sandhills Conservation Bank

AGREEMENT FOR SALE OF ZAYANTE SANDHILL HABITAT CONSERVATION CREDITS

U.S. Fish & Wildlife Service File No. _____

This Agreement is entered into this 11/10/2017, by and between PCO, LLC (Bank Operator), dba Zayante Sandhills Conservation Bank (ZSCB) and _Verizon Wireless_ (Project Proponent).

RECITALS

A. The Bank Operator has developed the Zayante Sandhills Conservation Bank located in Santa Cruz County, California; and

B. The Bank Operator has developed the Ben Lomond Sandhill Preserve of the ZSCB which was approved by the U.S. Fish and Wildlife Service on April 25, 2007;and

C. The Bank has received approval from the U.S. Fish and Wildlife Service (Service) to offer Sandhill Habitat credits for sale as compensation for the loss of the endangered: Mount Hermon June beetle (*Polyphylla barbata*); Zayante Band Winged grasshopper (*Trimerotropis infantilis*); the endangered Santa Cruz (Ben Lomond) Wallflower (*Erysimum teretifolium*); and the endangered Ben Lomond Spineflower (*Chorizanthe pungens* var. *hartwegiana*); and

D. Project Proponent is seeking to implement the project described on Exhibit "A" attached hereto (Project), which would unavoidably and adversely impact Mount Hermon June beetle (species) Mount Hermon June beetle, and seeks to compensate for the loss of Sandhill habitat by purchasing compensatory credits from Bank; and

E. Project Proponent has been authorized by the Service, Service File No. _ _____, to purchase from the Bank Mount Hermon June beetle credits; and

F. Project Proponent desires to purchase from Bank and Bank desires to sell to Project Proponent 2116 ft^2 (credits) Mount Hermon June beetle species credits;

NOW, THEREFORE THE PARTIES AGREE AS FOLLOWS:

1. Bank hereby sells to Project Proponent and Project Proponent hereby purchases from Bank 2116 ft^2 (credits) Mount Hermon June beetle (species) credits for the total purchase price of $ 18,493.84 . The Bank will then deliver to Project Proponent an executed Bill of Sale in the manner and form as attached hereto and marked Exhibit "B". The purchase price for said credits shall be paid by cashier's check or, at the option of Bank, wire transfer of funds according to written instructions by Bank to Project Proponent.

2. The sales and transfer herein is not intended as a sale or transfer to Project Proponent of a security, license, lease, easement, or possessory or non-possessory interest in real property, nor the granting of any interest of the foregoing.

3. Project Proponent shall have no obligation whatsoever by reason of the purchase of the compensatory credits, to support, pay for, monitor, report on, sustain, continue in perpetuity, or otherwise be obligated or liable for the success or continued expense or maintenance in perpetuity of the credits sold, or the Bank. Pursuant to the Zayante Sandhills Conservation Bank Conservation Agreement, Bank shall monitor and make reports to the appropriate agency or agencies on the status of any compensatory credits sold to Project Proponent. Bank shall be fully and completely responsible for satisfying any and all conditions placed on the Bank or the compensatory credits, by all state or federal jurisdictional agencies.

4. The compensatory credits sold and transferred to Project Proponent shall be non-transferable and non-assignable, and shall not be used as compensatory mitigation for any other Project or purpose, except as set forth herein.

5. Project Proponent must exercise his/her/its right to purchase within 30 days of the date of this Agreement. Unless exercised, after the 30-day period this Agreement will be considered null and void.

6. Upon purchase of Mount Hermon June beetle (species credits) specified in paragraph E above, the Bank shall complete the payment receipt form attached hereto as Exhibit "C", and shall submit the completed payment receipt to the Service.

IN WITNESS WHEREOF, the parties have executed this Agreement the day and year first above written.

PCO, LLC dba Zayante Sandhills Conservation Bank

By Bank Operator (signature) _____

Date _____

Project Proponent (Name) Verizon Wireless

By Project Proponent (signature) _____

Date _____

APPROVED

U.S. Fish & Wildlife Service: this Agreement fulfills the Mount Hermon June beetle mitigation requirement, as specified under Service File No. _____ dated _____20___.

UNITED STATES FISH & WILDLIFE SERVICE

By _____

Title _____

Date _____

Exhibit "A"

Description of Project to be Mitigated

U.S. Fish & Wildlife Service File No. _____,

Exhibit "B"

Zayante Sandhills Conservation Bank Contract No. _____

U.S. Fish & Wildlife Service File No. _____

Santa Cruz County File No. _____ or

Scotts Valley File No._____

In consideration of $ 18,493.84 , receipt of which is hereby acknowledged, Zayante Sandhills Conservation Bank does hereby bargain, will and transfer to Project Proponent Verizon Wireless , the number of 2116 ft^2 credits in The Zayante Sandhills Conservation Bank in Santa Cruz County, developed and approved by the U.S. Fish and Wildlife Service.

The Zayante Sandhills Conservation Bank (PCO, LLC) represents and warrants that it has good title to the credits, has good right to sell the same, and that they are free and clear of all claims, liens, or encumbrances.

The Zayante Sandhills Conservation Bank (PCO, LLC) covenants and agrees with Project Proponent to warrant and defend the sale of the credits hereinbefore described against all and every person whomsoever lawfully claiming or to claim the same.

Zayante Sandhills Conservation Bank

By Bank operator (signature) _____

Date _____

Exhibit "C"

Zayante Sandhills Conservation Bank

Type of Credits Mount Hermon June beetle

PAYMENT RECEIPT

PROJECT PROPONENT INFORMATION:

Name Verizon Wireless

Address

Telephone

Contact Chris Fowler csfowler@att.net

PROJECT INFORMATION:

Project Location 3650 Graham Hill Road, Felton, CA 95018

Address/County Santa Cruz County

Project Description

U.S. Fish & Wildlife Service File

Species/Habitat Affected: Mount Hermon June beetle

Number of Credits Purchased 2116 ft^2

Credit Purchase Price $ 18,493.84

PAYMENT INFORMATION:

Payee PCO,LLC dba, Zayante Sandhills Conservation Bank

Payer Verizon Wireless

Payment Amount $ 18,493.84

Method of Payment Cash _____ Check No. _____ Money Order No. _____

Received by _____ Date _____

Name Paul Burrowes Title Mgr.

Zayante Sandhills Conservation Bank

AGREEMENT FOR SALE OF ZAYANTE SANDHILL HABITAT CONSERVATION CREDITS

U.S. Fish & Wildlife Service File No. _____

This Agreement is entered into this 11/10/2017, by and between PCO, LLC (Bank Operator), dba Zayante Sandhills Conservation Bank (ZSCB) and _Verizon Wireless_ (Project Proponent).

RECITALS

A. The Bank Operator has developed the Zayante Sandhills Conservation Bank located in Santa Cruz County, California; and

B. The Bank Operator has developed the Ben Lomond Sandhill Preserve of the ZSCB which was approved by the U.S. Fish and Wildlife Service on April 25, 2007;and

C. The Bank has received approval from the U.S. Fish and Wildlife Service (Service) to offer Sandhill Habitat credits for sale as compensation for the loss of the endangered: Mount Hermon June beetle (*Polyphylla barbata*); Zayante Band Winged grasshopper (*Trimerotropis infantilis*); the endangered Santa Cruz (Ben Lomond) Wallflower (*Erysimum teretifolium*); and the endangered Ben Lomond Spineflower (*Chorizanthe pungens* var. *hartwegiana*); and

D. Project Proponent is seeking to implement the project described on Exhibit "A" attached hereto (Project), which would unavoidably and adversely impact Zayante Band Winged grasshopper (species) Zayante Band Winged grasshopper, and seeks to compensate for the loss of Sandhill habitat by purchasing compensatory credits from Bank; and

E. Project Proponent has been authorized by the Service, Service File No. _ _____, to purchase from the Bank Zayante Band Winged grasshopper credits; and

F. Project Proponent desires to purchase from Bank and Bank desires to sell to Project Proponent 615 ft^2 (credits) Zayante Band Winged grasshopper species credits;

NOW, THEREFORE THE PARTIES AGREE AS FOLLOWS:

1. Bank hereby sells to Project Proponent and Project Proponent hereby purchases from Bank 615 ft^2 (credits) Zayante Band Winged grasshopper (species) credits for the total purchase price of $ 2,687.55 . The Bank will then deliver to Project Proponent an executed Bill of Sale in the manner and form as attached hereto and marked Exhibit "B". The purchase price for said credits shall be paid by cashier's check or, at the option of Bank, wire transfer of funds according to written instructions by Bank to Project Proponent.

2. The sales and transfer herein is not intended as a sale or transfer to Project Proponent of a security, license, lease, easement, or possessory or non-possessory interest in real property, nor the granting of any interest of the foregoing.

3. Project Proponent shall have no obligation whatsoever by reason of the purchase of the compensatory credits, to support, pay for, monitor, report on, sustain, continue in perpetuity, or otherwise be obligated or liable for the success or continued expense or maintenance in perpetuity of the credits sold, or the Bank. Pursuant to the Zayante Sandhills Conservation Bank Conservation Agreement, Bank shall monitor and make reports to the appropriate agency or agencies on the status of any compensatory credits sold to Project Proponent. Bank shall be fully and completely responsible for satisfying any and all conditions placed on the Bank or the compensatory credits, by all state or federal jurisdictional agencies.

4. The compensatory credits sold and transferred to Project Proponent shall be non-transferable and non-assignable, and shall not be used as compensatory mitigation for any other Project or purpose, except as set forth herein.

5. Project Proponent must exercise his/her/its right to purchase within 30 days of the date of this Agreement. Unless exercised, after the 30-day period this Agreement will be considered null and void.

6. Upon purchase of Zayante Band Winged grasshopper (species credits) specified in paragraph E above, the Bank shall complete the payment receipt form attached hereto as Exhibit "C", and shall submit the completed payment receipt to the Service.

IN WITNESS WHEREOF, the parties have executed this Agreement the day and year first above written.

PCO, LLC dba Zayante Sandhills Conservation Bank

By Bank Operator (signature) _____

Date _____

Project Proponent (Name) _Verizon Wireless_

By Project Proponent (signature) _____

Date _____

APPROVED

U.S. Fish & Wildlife Service: this Agreement fulfills the Zayante Band Winged grasshopper mitigation requirement, as specified under Service File No. _____ dated _____20___.

UNITED STATES FISH & WILDLIFE SERVICE

By _____

Title _____

Date _____

Exhibit "A"

Description of Project to be Mitigated

U.S. Fish & Wildlife Service File No. _____,

Exhibit "B"

Zayante Sandhills Conservation Bank Contract No. _____

U.S. Fish & Wildlife Service File No. _____

Santa Cruz County File No. _____ or

Scotts Valley File No._____

In consideration of $ 2,687.55 , receipt of which is hereby acknowledged, Zayante Sandhills Conservation Bank does hereby bargain, will and transfer to Project Proponent Verizon Wireless , the number of 615 ft^2 credits in The Zayante Sandhills Conservation Bank in Santa Cruz County, developed and approved by the U.S. Fish and Wildlife Service.

The Zayante Sandhills Conservation Bank (PCO, LLC) represents and warrants that it has good title to the credits, has good right to sell the same, and that they are free and clear of all claims, liens, or encumbrances.

The Zayante Sandhills Conservation Bank (PCO, LLC) covenants and agrees with Project Proponent to warrant and defend the sale of the credits hereinbefore described against all and every person whomsoever lawfully claiming or to claim the same.

Zayante Sandhills Conservation Bank

By Bank operator (signature) _____

Date _____

Exhibit "C"

Zayante Sandhills Conservation Bank

Type of Credits Zayante Band Winged grasshopper

PAYMENT RECEIPT

PROJECT PROPONENT INFORMATION:

Name Verizon Wireless

Address

Telephone _____

Contact Chris Fowler csfowler@att.net

PROJECT INFORMATION:

Project Location 3650 Graham Hill Road, Felton, CA 95018

Address/County Santa Cruz County

Project Description ___

U.S. Fish & Wildlife Service File_____

Species/Habitat Affected: Zayante Band Winged grasshopper

Number of Credits Purchased 615 ft^2

Credit Purchase Price $ 2,687.55

PAYMENT INFORMATION:

Payee PCO,LLC dba, Zayante Sandhills Conservation Bank

Payer Verizon Wireless

Payment Amount $ 2,687.55

Method of Payment Cash _____ Check No. _____ Money Order No. _____

Received by _____ Date _____

Name Paul Burrowes _____ Title Mgr.