Agenda Item No. 8a.

Staff Report

Date: November 6, 2014

To: Mayor Elizabeth Brekhus and Councilmembers

From: Elise Semonian, Senior Planner

Subject: Sprint, Use Permit to Modify Cellular Equipment, 35 Sir Francis Drake – Public Works Building, File 1980

Recommendation
Council approve the application subject to the findings and conditions of approval below.

Project Summary

Owner:	Town of Ross
Applicant:	Judith M. Justice, Crown Castle, agent for Sprint
Location:	35 Sir Francis Drake Boulevard, Public Works garage building
A.P. Number:	73-191-16
Zoning:	Civic District (C-D)
General Plan:	Public Service
Flood Zone:	Zone AE (High Risk Area with a 1% annual chance of flooding)

Use permit to allow modifications to an existing unmanned wireless communication facility consisting of a 40-foot monopole and equipment. Sprint proposes to remove two panel antennas on the existing wood pole and install two new panel antennas, two remote radio units, and associated supporting equipment in the existing equipment enclosure. The project is proposed as an upgrade necessary to accommodate 4G coverage.

Background and discussion
The Town approved a use permit to allow Sprint to upgrade its wireless network for 4G service in May 2013. Sprint is requesting to modify its equipment on the existing monopole behind the public works building and in their cabinet adjacent to Sir Francis Drake. The Town has lease agreements with other carriers for additional antennas on the public safety building. Sprint indicates the equipment is low maintenance and only serviced if there is a technical problem with the site.

The project is governed by the Town regulations for the Civic District and the Federal Telecommunications Act. Under the Town regulations, antennas used for transmission purposes are conditionally permitted in the Civic District (RMC 18.25.034(b)). In order to approve a use permit, the Council must find "that the establishment, maintenance, or conducting of the use for which the use permit is sought will not, under the circumstances of the particular case, be detrimental to the health, safety, morals, comfort, convenience, or general welfare of persons residing or working in the neighborhood of the use and will not, under the circumstances of the particular case, be detrimental to the public welfare or injurious to property or improvements in the neighborhood." (RMC Sec. 18.44.030)

The existing pole is visible from few locations and the proposed equipment does not significantly alter the appearance of the pole as a cellular transmission pole.

The Federal Communications Commission (FCC) has developed Maximum Permissible Exposure Limits for general public exposures and occupational exposures to radio frequency (RF) and electromagnetic energy (EME). The applicant has provided a report that the facility will comply with RF-EME exposure levels with the existing and proposed equipment. The report identifies the public works building as the "Ross Fire Station" because this is the name in their system, since access to the pole is through the Ross Fire Station entrance. The AT&T equipment on the public safety building roof is over 200 feet away and too far to be considered in a cumulative study with the antennas on the pole.

In 2013, the Town retained an independent consultant to take RF-EME measurements at several locations, including the Public Works Superintendent's office, public safety buildings and the park across the street from Town Hall. The consultant concluded the proposed equipment, operating with existing equipment, will be less than 1% of the FCC's human exposure limits (see report attached). Based on the report provided and the prior measurements by the independent Town-retained consultant, staff is confident the proposed equipment, operating with all existing on site equipment, will be less than 1% of the FCC's human exposure limits.

Fiscal, resource and timeline impacts

If approved, the project would be subject to one-time fees for a building permit, and associated impact fees, which are based in part on the valuation of the work proposed. There would be no operating or funding impacts associated with the project.

Alternative actions

1.) Continue the application.
2.) Deny the project. If the Council would like to deny the project, staff recommends continuing the application to make findings and determine if that action would violate any terms of the lease agreement.

Environmental review (if applicable)

The project is categorically exempt from the requirement for the preparation of environmental documents under the California Environmental Quality Act (CEQA) under CEQA Guideline sections for existing facilities and conversion of small structures. No exception set forth in Section 15300.2 of the CEQA Guidelines (including but not limited to Subsection (a), which relates to impacts on environmental resources; (b), which relates to cumulative impacts; Subsection (c), which relates to unusual circumstances; or Subsection (f), which relates to historical resources, applies to the project.

Attachments

1. Draft Findings and Conditions of Approval
2. 2013 Town-retained consultant report on RF levels
3. Material submitted by applicant

Attachment 1

Based on the staff report, public testimony and materials submitted by the applicant, staff recommends that the Town Council approve the use permit to modify the Sprint equipment as proposed based on the following findings and subject to the following conditions of approval:

Findings

Based on the project plans, staff report and attachments, the Town Council finds:

1. The project is exempt from review under CEQA under 15303, New Construction or Conversion of Small Structures.

2. The proposed equipment will be located on an existing monopole and will not result in adverse visual effects to the surrounding neighborhood or along the Sir Francis Drake corridor.

3. This use will not, under the circumstances of this particular case, be detrimental to the public welfare, nor injurious to property or improvements in the neighborhood. A radio frequency (RF) study has been conducted and has found the existing and proposed RF levels to be within Federal standards.

4. This project will allow for enhanced cellular and wireless service in the neighborhood, community and surrounding areas.

Conditions of Approval

1. Except as otherwise provided in these conditions, the project shall comply with the plans approved by the Town Council dated August 6, 2014. Plans submitted for the building permit shall reflect any modifications required by the Town Council and these conditions.

2. The applicant shall obtain all necessary building permits prior to commencing construction.

3. Construction shall be completed by the construction completion date provided for property owners under Town of Ross Municipal Code Chapter 15.50.

4. The applicant shall obtain all necessary federal telecommunications permits prior to commencing construction.

5. All cabinet equipment shall be elevated above the base flood elevation or protected from flooding.

6. The applicant shall be responsible for the removal of all telecommunications equipment and antennas upon lease expiration or upon notification to the Town of the termination of the lease. Said removal shall include the removal of the pole at the Town of Ross' discretion and the removal of the enclosure and the restoration of the area to the condition prior unimproved condition. All removal activity required herein may be required to be completed within sixty (60) days of lease expiration.

7. This wireless communications facilities, operating alone and in conjunction with any other telecommunications facilities, shall not generate radiofrequency

electromagnetic fields (EMF) in excess of the standards for permissible human exposure as adopted by the Federal Communications Commission (FCC). A report shall be submitted to the planning department within 30 days of completion of the installation verifying that the RF-EME levels of the facility operating with other existing facilities comply with all FCC standards. Post-construction RF-EME reports shall be submitted to the Town of Ross every two (2) years following the date of the initial report to verify that actual levels of RF emitted by the facility, operating alone and in conjunction with other facilities, complies with the initial RF-EME report and do not exceed FCC standards for permissible human exposure.

8. Any person engaging in business within the Town of Ross must first obtain a business license from the Town and pay the business license fee. Prior to the issuance of a building permit, the owner or general contractor shall submit a complete list of contractors, subcontractors, architects, engineers and any other people providing project services within the Town, including names, addresses and phone numbers. All such people shall file for a business license. A final list shall be submitted to the Town prior to project final.

9. No changes from the approved plans or project description shall be permitted without prior Town approval. Red-lined plans showing any proposed changes shall be submitted to the Town Planner prior to the issuance of any building permits.

10. The applicants shall defend, indemnify, and hold the Town harmless along with its boards, commissions, agents, officers, employees, and consultants from any claim, action, or proceeding against the Town, its boards, commissions, agents, officers, employees, and consultants attacking or seeking to set aside, declare void, or annul the approval(s) of the project or because of any claimed liability based upon or caused by the approval of the project. The Town shall promptly notify the applicants and/or owners of any such claim, action, or proceeding, tendering the defense to the applicants and/or owners. The Town shall assist in the defense; however, nothing contained in this condition shall prohibit the Town from participating in the defense of any such claim, action, or proceeding so long as the Town agrees to bear its own attorney's fees and costs and participates in the defense in good faith.

JERROLD T. BUSHBERG Ph.D., DABMP, DABSNM, FAAPM
♦HEALTH AND MEDICAL PHYSICS CONSULTING♦

7784 Oak Bay Circle Sacramento, CA 95831
(800) 760-8414–jbushberg@hampc.com

Elise Semonian
Senior Planner
Town of Ross, Planning Department
31 Sir Francis Drake Boulevard
Ross, CA 94957-0320

April 13, 2013

Introduction

At your request, I have reviewed the document (see attachment one) entitled "EBI Consulting Radio Frequency Electromagnetic Energy (RF-EME) Compliance Report" dated October 13, 2011, prepared for Sprint Nextel in association with Sprint's application to modify their existing wireless telecommunications facility at 33 Sir Francis Drake Boulevard Ross, CA 94957-0320. In addition, I have made measurements of current cumulative RF-EME levels at the several locations surrounding the Ross Town Hall Sprint facility site. Site measurements were made to included all ambient sources of RF exposures including the contribution from other wireless facilities. This information was used to determine compliance with Federal Communications Commission (FCC) requirements for RF public exposure safety.

The proposed modifications and site design specifications are shown in attachment two. The current modification involves the removal of two panel antennas on the pole and three equipment cabinets in the ground and installation of two new panel antennas and four remote radio units (RRVs) below the antennas on the existing wood pole and the installation of two equipment cabinets on the ground in the existing equipment enclosure.

RF Exposure Measurement Methods & Results

The measurements were made in the afternoon on April 13, 2013 utilizing a Narda Industries model 8718B broadband exposure meter (serial number 6062) with an associated frequency shaped B8742D probe (serial number 08002). Measurements were made at Street Superintendent's office; the Fire Department sleeping trailer; the Fire Department recreation/meeting room above the fire truck bays, the Town park and closest residential property line adjacent to 29 Sir Francis Drake Boulevard and at the (see last page of attachment two).

All measurements were made in accordance with the manufacturer's recommendations as provided in their users guide for this instrument. This included an RF response check to assure that the meter and probe were responding appropriately to an RF energy source. This response check was performed immediately before and after the site measurements and, along with other operational parameters, were found to be operating normally as specified by the manufacturer. In addition, all environmental operating conditions, as specified by the manufacturer for this instrument, were satisfied. The probe and meter were calibrated by the

manufacturer with standards traceable to the U.S. National Institute of Standards and Technology (NIST) on March 16, 2013. In accordance with the manufacturer's recommendations, the next calibration will be due prior to March 16, 2014.

The Narda meter/probe combination senses fields within the frequency range from 300 kHz to 3 GHz and indicates exposure as a percentage of the FCC public maximum permissible exposure standard (MPE). The dynamic range of the instrument is between 0.6% and 600% of the MPE. For common wireless frequencies such as cellular and Personal Communication Systems (PCS), this response range equates to a power density range between 6 $\mu W/cm^2$ and 6 mW/cm^2. Reading obtained below 0.6% MPE are reported as the minimum range of the instrument (i.e., 0.6% MPE). The data supplied by the manufacturer sets the frequency response of the probe as ± 1 dB and calibration accuracy and isotropicity as ± 0.5 dB and ± 1 dB respectively. The probe is isotropic, meaning that it can directly measure the strength of complicated fields independent of the orientation, polarization, or arrival angle. Measurements were made from ground level to head height (~6 feet) above the ground. The probe was swept over approximately ± 3 feet to avoid destructive interference thus assuring the highest power density was being measured at a given location. A continuous observation of the exposure allowed the location of the maximum power densities to be determined. During the ambient level survey, the meter displayed RF exposure levels between 0.1611% and 0.5434% of the FCC public exposure safety standard. Thus the maximum environmental RF exposure measurement result, at all locations, was recorded as less than 0.6% of the FCC public exposure safety standard for continuous exposure. A chart of the electromagnetic spectrum and a comparison of RF power densities from various common sources is presented in figures two and three respectively in order to place RF exposures in perspective.

Peer Review of EBI Consulting RF-EME Compliance Report

I have reviewed the EBI report (Project No. 62111879) dated October 13, 2011. In addition to measuring existing RF exposure levels at several locations surrounding the proposed site the report provided an assessment of the worst-case (i.e., highest) potential RF exposure utilizing a conservative predictive modeling program. Their report states that following the installation of the proposed Sprint antennas, there will be no areas on any accessible ground-level walking/working surface that exceed the FCC's occupational or general public exposure limits. Furthermore the report states that the maximum power density at the nearest walking/working surfaces to the proposed Sprint antennas, would be 0.90 percent of the FCC's general public limit. EBI's on-site survey indicated that their were no spatially averaged power density readings at ground level greater than 0.84% of the FCC's general public maximum exposure limit. Making the conservative assumption that the location of the maximum RF exposure from the existing and planned wireless facilities were to overlap constructively, the maximum RF exposure would be less than 1.8% of the FCC's general public maximum exposure limit. The assumptions made and RF exposure analysis performed by EBI provide a reasonable (albeit conservative) estimate of the potential RF exposure environment surrounding the proposed facility.

RF Exposure Standards

The two most widely recognized standards for protection against RF field exposure are those published by the American National Standards Institute (ANSI) C95.1 and the National Council on Radiation Protection and measurement (NCRP) report #86.

The NCRP is a private, congressionally chartered institution with the charge to provide expert analysis of a variety of issues (especially health and safety recommendations) on radiations of all forms. The scientific analyses of the NCRP are held in high esteem in the scientific and regulatory community both nationally and internationally. In fact, the vast majority of the radiological health regulations currently in existence can trace their origin, in some way, to the recommendations of the NCRP.

All RF exposure standards are frequency-specific, in recognition of the differential absorption of RF energy as a function of frequency. The most restrictive exposure levels in the standards are associated with those frequencies that are most readily absorbed in humans. Maximum absorption occurs at approximately 80 MHz in adults. The NCRP maximum allowable continuous occupational exposure at this frequency is 1,000 $\mu W/cm^2$. This compares to 5,000 $\mu W/cm^2$ at the most restrictive of the PCS frequencies (~1,800 MHz) that are absorbed much less efficiently than exposures in the VHF TV band.

The traditional NCRP philosophy of providing a higher standard of protection for members of the general population compared to occupationally exposed individuals, prompted a two-tiered safety standard by which levels of allowable exposure were substantially reduced for "uncontrolled " (e.g., public) and continuous exposures. This measure was taken to account for the fact that workers in an industrial environment are typically exposed no more than eight hours a day while members of the general population in proximity to a source of RF radiation may be exposed continuously. This additional protection factor also provides a greater margin of safety for children, the infirmed, aged, or others who might be more sensitive to RF exposure. After several years of evaluating the national and international scientific and biomedical literature, the members of the NCRP scientific committee selected 931 publications in the peer-reviewed scientific literature on which to base their recommendations. The current NCRP recommendations limit continuous public exposure at PCS frequencies to 1,000 $\mu W/cm^2$, and to 200 $\mu W/cm^2$ for the most restrictive frequencies (e.g., VHF TV band).

The 1992 ANSI standard was developed by Scientific Coordinating Committee 28 (SCC 28) under the auspices of the Institute of Electrical and Electronic Engineers (IEEE). This standard, entitled "IEEE Standards for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz" (IEEE C95.1-1991), was issued in April 1992 and subsequently adopted by ANSI. A revision of this standard (C95.1 2005) was completed in October 2005 by SCC 39 the IEEE International Committee on Electromagnetic Safety. Their recommendations are similar to the NCRP recommendation for the maximum permissible exposure (MPE) to the public at cellular and PCS frequencies (410 $\mu W/cm^2$ and 950 $\mu W/cm^2$ for continuous exposure at 820 MHz and 1,900 MHz respectively) and incorporates the convention of providing for a greater margin of safety for public as compared with occupational exposure. Higher whole body exposures are allowed for brief periods provided that no 30 minute time-weighted average exposure exceeds these aforementioned limits.

On August 9, 1996, the Federal Communications Commission (FCC) established a RF exposure standard that is a hybrid of the current ANSI and NCRP standards. The maximum permissible exposure values used to assess environmental exposures are those of the NCRP (i.e., maximum public continuous exposure at PCS frequencies of 1,000 $\mu W/cm^2$). The FCC issued these standards in order to address its responsibilities under the National Environmental Policy Act (NEPA) to consider whether its actions will "significantly affect the quality of the human environment." In as far as there was no other standard issued by a federal agency such as the Environmental Protection Agency (EPA), the FCC utilized their rulemaking procedure to consider

which standards should be adopted. The FCC received thousands of pages of comments over a three-year review period from a variety of sources including the public, academia, federal health and safety agencies (e.g., EPA & FDA) and the telecommunications industry. The FCC gave special consideration to the recommendations by the federal health agencies because of their special responsibility for protecting the public health and safety. In fact, the maximum permissible exposure (MPE) values in the FCC standard are those recommended by EPA and FDA. The FCC standard incorporates various elements of the 1992 ANSI and NCRP standards which were chosen because they are widely accepted and technically supportable. There are a variety of other exposure guidelines and standards set by other national and international organizations and governments, most of which are similar to the current ANSI/IEEE or NCRP standard, figure one.

The FCC standards "Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation" (Report and Order FCC 96-326) adopted the ANSI/IEEE definitions for controlled and uncontrolled environments. In order to use the higher exposure levels associated with a controlled environment, RF exposures must be occupationally related (e.g., wireless telecomunications company RF technicians) and they must be aware of and have sufficient knowledge to control their exposure. All other environmental areas are considered uncontrolled (e.g., public) for which the stricter (i.e., lower) environmental exposure limits apply. All carriers were required to be in compliance with the new FCC RF exposure standards for new telecommunications facilities by October 15, 1997. These standards applied retroactively for existing telecommunications facilities on September 1, 2000.

Summary and Conclusion

All locations, as described above, were found to be in full compliance with the FCC safety standards for public RF exposure. Due to the fact that the maximum RF ambient outdoor locations measured did not exceed the lower limit of sensitivity of the instrument (i.e., 0.6% of the public MPE), the actual exposures may be considerably lower than reported here. However, this level of sensitivity is consistent with generally accepted RF public safety survey techniques and standard industry practice. It is important to realize that the FCC maximum allowable public exposures are not set at a threshold between safety and known hazard but rather at 50 times below a level that the majority of the scientific community believes may pose a health risk to human populations. Thus the previously mentioned maximum ambient exposure identified (i.e., 0.6% MPE) represents a "safety margin" from this threshold of potentially adverse health effects of at least 8,300 times.

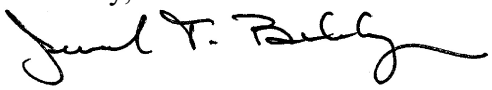
I have reviewed the EBI report (Project No. 62111879) dated October 13, 2011which included the results from their measurements of existing RF exposure levels at several locations surrounding the proposed site and an assessment of the maximum potential RF exposure from the proposed facility. Their report indicates that the maximum cumulative RF exposure (from existing and the proposed wireless facilities) would be less than 1.8% of the FCC's general public maximum exposure limit. The RF exposure analysis performed by EBI was consistent with my assessment and provides a reasonable (albeit conservative) estimate of the potential RF exposure environment surrounding the proposed facility.

Given the low levels of existing and anticipated radiofrequency field exposures and given the evidence on biological effects in a large data base, there is no scientific basis to conclude that harmful effects will attend the RF exposures associated with the operation of the Sprint wireless telecommunications facility. This conclusion is supported by a large numbers of scientists that have participated in standard setting activities

in the United States who are overwhelmingly agreed that RF radiation exposure below the FCC exposure limits has no demonstrably harmful effects on humans.

These findings are based on my professional evaluation of the scientific issues related to the health and safety of non-ionizing electromagnetic radiation and the results from the measurements of existing RF exposures and estimates of additional RF exposure from the proposed facility. The opinions expressed herein are based on my professional judgement and are not intended to necessarily represent the views of any other organization or institution. Please contact me if you require any additional information.

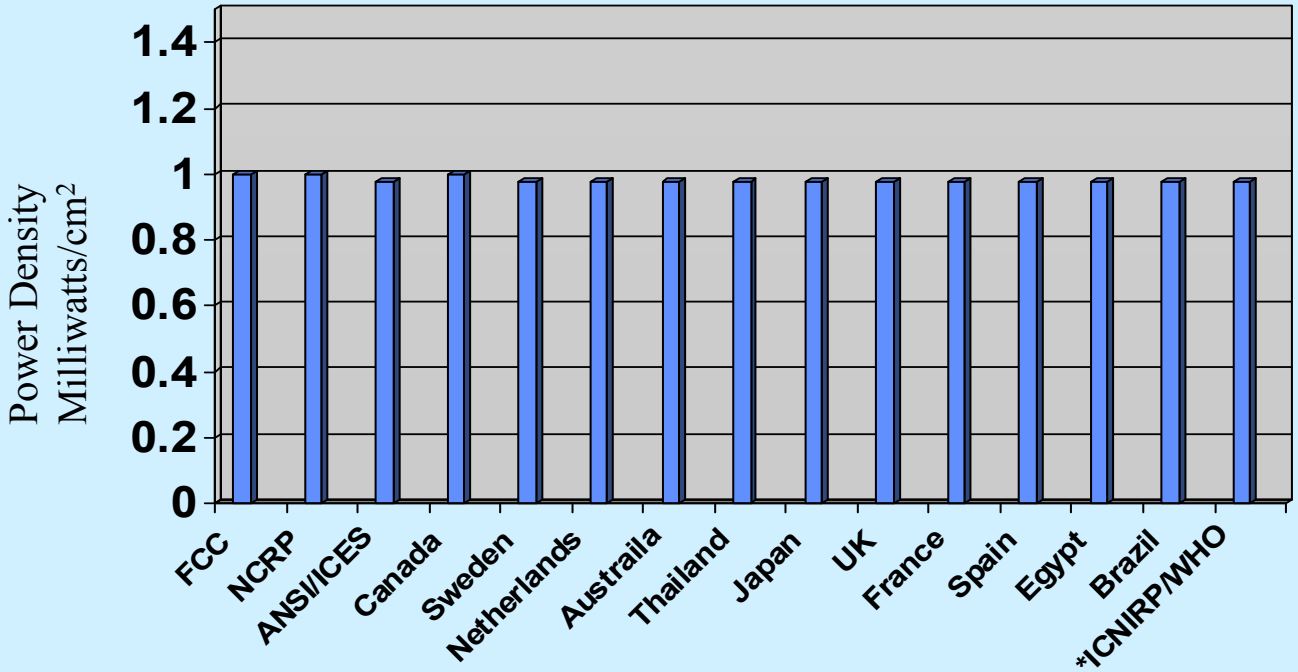
Sincerely,



Jerrold T. Bushberg Ph.D., DABMP, DABSNM
Diplomate, American Board of Medical Physics (DABMP)
Diplomate, American Board of Science in Nuclear Medicine (DABSNM)

Enclosures: Figures 1-3; Attachments 1-2; Statement of Experience.

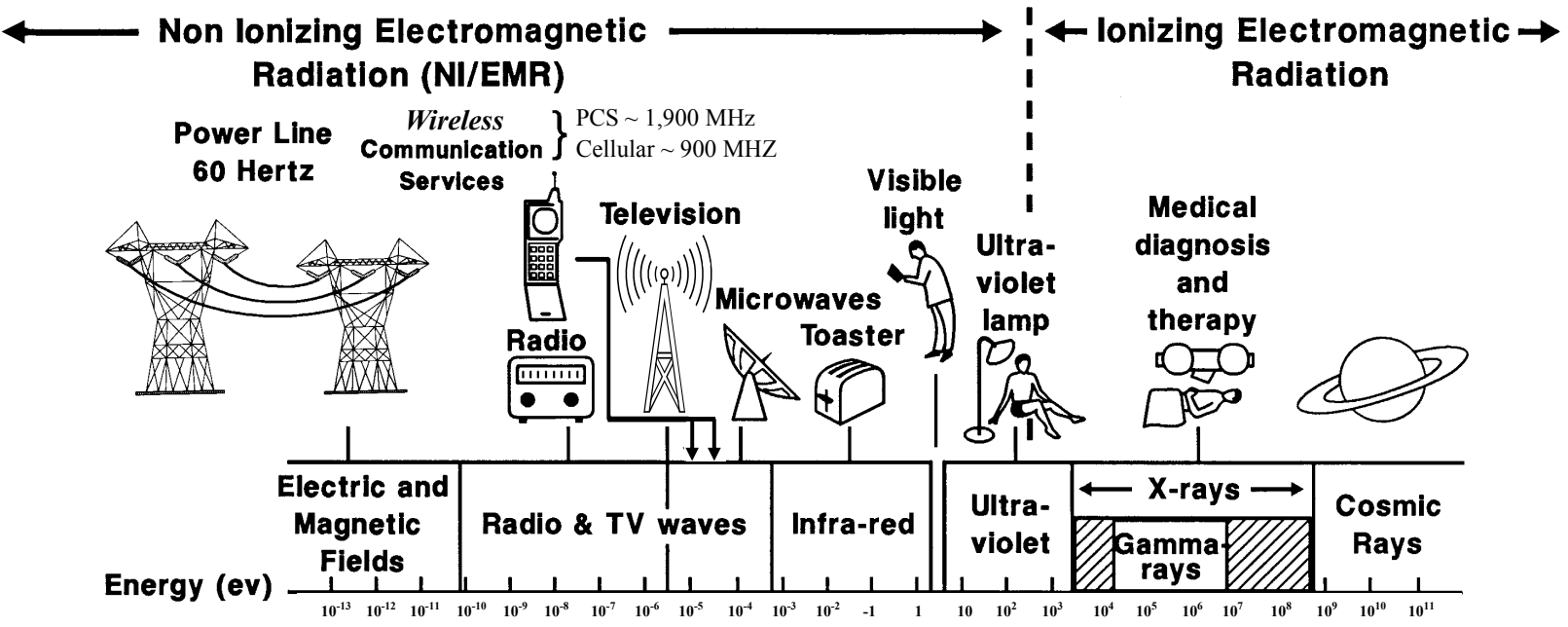
National and International Public RF Exposure Standards (PCS @ 1,950 MHz)



*International Commission on Non-Ionizing Radiation Protection (ICNIRP) Public Safety Exposure Standard. ICNIRP standard recommended by the World Health Organization (WHO). Members of the ICNIRP Scientific Committee were from:

- Australia
- Finland
- France
- Germany
- Hungary
- Italy
- Sweden
- Japan
- United Kingdom
- United States

Figure 1



The Electromagnetic Spectrum

Figure 2

Typical Exposure from Various Radio Frequency / Microwave Sources

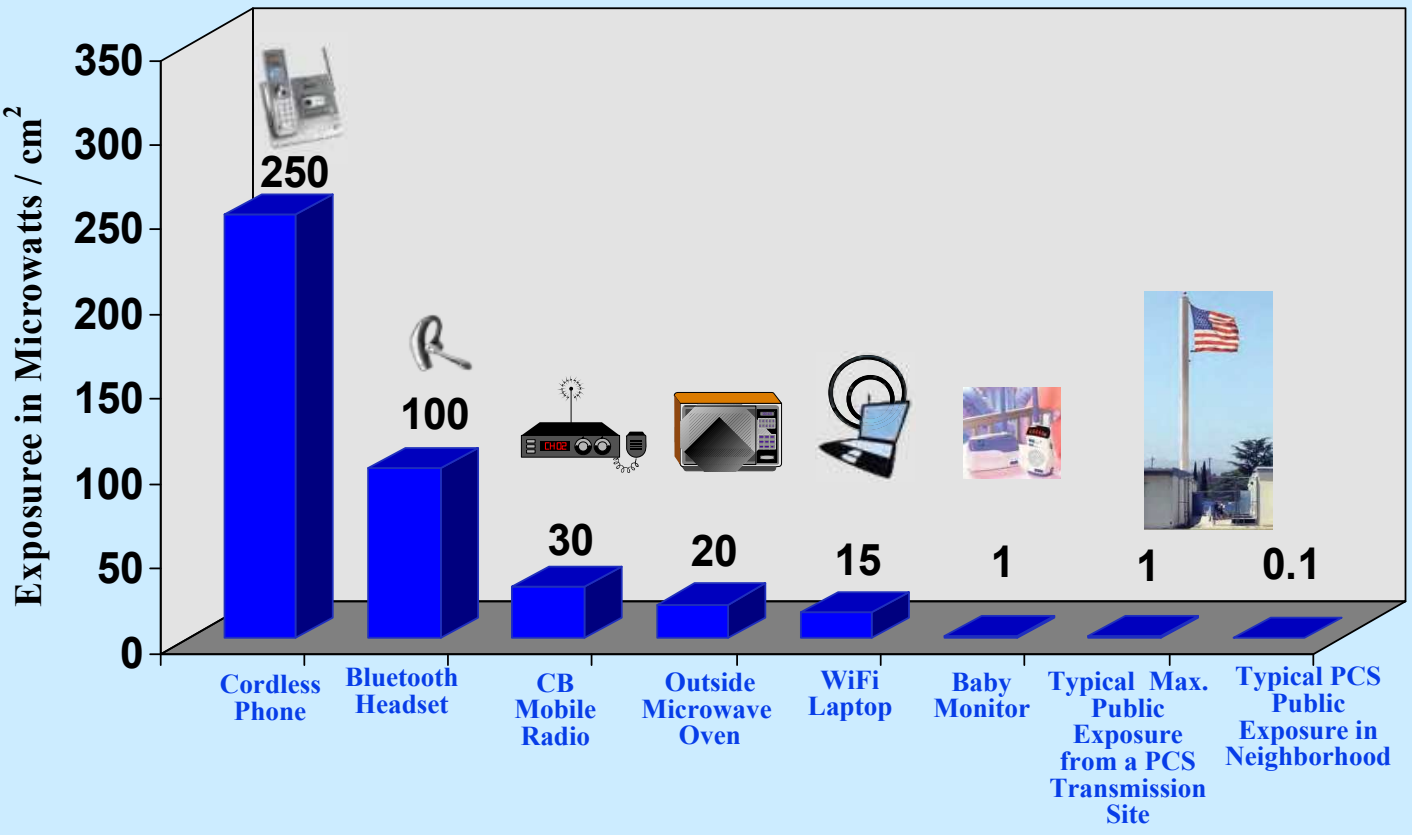


Figure 3

CROWN CASTLE
4301 Hacienda Drive, Ste. 410
Pleasanton, CA 94588

JUDITH M JUSTICE, MRED
Contract Real Estate Specialist
Tel (925) 737-1246

October 23, 2014

Via: FedEx Overnight

Town of Ross - Planning
Attn: Elise Semonian
31 Sir Francis Drake Boulevard
Ross, CA, 94957

RE: Planning Application
Project APN: 073-191-16
Project Address: 33 Sir Francis Drake Boulevard, Ross, CA, 94957
Crown Castle BUN and Site Name: 880475 Ross Fire Station
Crown Castle App ID: 247445

Elise:

Please find the enclosed Planning Application materials:

- (1) Completed Planning Application
- (1) Check #5830 in the amount of $1,598.77
- (1) Copy of Email submittal including
  - PDF of plans
  - PDF of updated RF Report
  - PDF of application and check copies

Please e-mail me confirmation of receipt of this submittal package and a receipt for the enclosed check. If you have any questions or need additional information, please call me at 925-737-1246 or e-mail at judith.justice.contractor@crowncastle.com.

Sincerely,

Judith M Justice
Contract Real Estate Specialist

880475 Ross Fire Station (Sprint 2.5) App ID 247445

Town of Ross
Planning Department
Post Office Box 320, Ross, CA 94957
Phone (415) 453-1453, Ext. 121 Fax (415) 453-1950
Web www.townofross.org Email esemonian@townofross.org

USE PERMIT APPLICATION
Basic Filing Fee: $1,329

Legal Owner of Parcel Town of Ross
Mailing Address PO Box 320
City Ross *State* CA *ZIP* 94957
Home Phone N/A *Business Phone* 415-453-1453
Fax N/A *Email* X 10

Assessor's Parcel Number 073-191-16
Parcel Address 33 Sir Francis Drake Blvd, Ross, CA, 94957

Applicant (If not owner) Sprint (project contact is Judith M Justice w/Crown Castle, agent for Sprint)
Mailing Address 4301 Hacienda Drive, Suite 410
City Pleasanton *State* CA *ZIP* 94588
Phone 925-737-1246
Fax N/A *Email* judith.justice.contractor@crowncastle.com

Existing and Proposed Conditions (For definitions please refer to attached fact sheet.)

NA - existing monopole at unmanned wireless telecom site; no proposed changes to any ground equipment or compound

~~Lot~~ Compound Size +/- 1 sq. ft.

Existing Coverage _____ sq. ft. *Existing Floor Area* _____ sq. ft.
Existing Lot Coverage _____.___% *Existing Floor Area Ratio* _____.___%
Proposed Coverage _____ sq. ft. *Proposed Floor Area* _____ sq. ft.
Proposed Lot Coverage _____.___% *Proposed Floor Area Ratio* _____.___%

Proposed Use

A Use Permit is hereby requested to permit the following:

Sprint proposes to swap (2) panel antennas and install the associated supporting equipment including (2) RRUs, (4) junction cylinders, and (4) Samsung batteries inside an existing battery cabinet. There is already an existing existing Use Permit for this existing telecom facility, and no changes in use are being proposed. This request is for an equipment upgrade necessary to accommodate 4G coverage.

Consultant Information

The following information is required for all project consultants.

Architect

Firm N/A
Project Architect _____
Mailing Address _____
City _____ *State* _____ *ZIP* _____
Phone _____ *Fax* _____
Email _____
Town of Ross Business License No. _____ *Expiration Date* _____

Landscape Architect

Firm N/A
Project Landscape Architect _____
Mailing Address _____
City _____ *State* _____ *ZIP* _____
Phone _____ *Fax* _____
Email _____
Town of Ross Business License No. _____ *Expiration Date* _____

Other - Engineer

Consultant Infinigy - Designer Contact is Andrew MacDonald
Mailing Address 26455 Rancho Parkway South
City Lake Forest *State* CA *ZIP* 92630
Phone 949-415-7334 x807 *Fax* 916-996-2039
Email AMacDonald@infinigy.com
Town of Ross Business License No. _____ *Expiration Date* _____

Mandatory Findings

Before granting any use permit, the Council must find that the establishment, maintenance, or conducting of the use for which the use permit is sought will not, under the circumstances of the particular case, be detrimental to the health, safety, morals, comfort, convenience, or general welfare of persons residing or working in the neighborhood of the use and will not, under the circumstances of the particular case, be detrimental to the public welfare or injurious to property or improvements in the neighborhood.

In granting any use permit under the provisions of this chapter, the Town Council shall designate such conditions in connection therewith, as will, in its opinion, secure substantially the objectives of protection to the public welfare and property or improvements as hereinbefore set forth.

Owner's Signature

I HEREBY CERTIFY under penalty of perjury that I have made every reasonable effort to ascertain the accuracy of the data contained in the statements, maps, drawings, plans, and specifications submitted with this application and that said information is true and correct to the best of my knowledge and belief. I further consent to any permit issued in reliance thereon being declared by the Town Council to be null and void in the event that anything contained therein is found to be erroneous because of an intentional or negligent misstatement of fact.

I HEREBY FURTHER CERTIFY and agree that if a use permit is granted by the Town Council, under the provisions of the Ross Municipal Code, I shall abide by the conditions set forth in such use permit, and all other applicable rules, regulations, ordinances, and laws governing such use and/or buildings; that if such use permit is for a guest house or servants' quarters, no rental use thereof will ever be made by applicant, or any successor owner, or occupant, of the property; and that this use permit application, if granted, may be recorded by the Town of Ross.

I HEREBY FURTHER CERTIFY that I have read the Use Permit Fact Sheet and understand the use permit processing procedures and application submittal requirement.

Signature of Owner _____ Date _____

Signature of Co-Owner or Applicant if not Owner JOHN MCJUSTICE Applicant's Agent Date 10/23/14

Town Email List

If you would like to receive copies of upcoming Town Council agendas and other items of interest to Ross residents please give us your email address below.

Email(s) _____

_____

Applicant will be billed for any additional Town Consultants' time in excess of base fee amounts. A completed application accompanied by the filing fee is necessary for consideration of the use permit request. In any case where a permit has not been used within one year after the date of granting thereof, then without further action by the Town Council the use permit shall be null and void.

5830

CROWN CASTLE - WTA PROPERTY
5350 N 48TH STREET, STE 305
CHANDLER, AZ 85226

DATE 10-23-2014 32-61-1110

PAY TO THE ORDER OF Town of Ross $ 1,598.77

one thousand five hundred ninety eight 77/100 DOLLARS Security Features Included. Details on Back.

CHASE
JPMorgan Chase Bank, N.A.
www.Chase.com

FOR 880475-288066 6220.37610 Sabrina Hunt MP

⑈005830⑈ ⑆111000614⑆ 464638134⑈

sitesafe
rf compliance experts

200 North Glebe Road, Suite 1000, Arlington, VA 22203-3728
703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com

Crown Castle on behalf of Sprint-Nextel
Site ID – 880475/ SF33XC617
Site Name – Ross (Fire Station)
Site Compliance Report

33 Sir Francis Drake Boulevard
Ross, CA 94957

Latitude: N37-57-48.60
Longitude: W122-33-24.40
Structure Type: Monopole

Report generated date: October 19, 2014
Report by: Tim Harris
Customer Contact: Donna Jo Quinn

Sprint-Nextel Will Be Compliant based on FCC Rules and Regulations.

Crown Castle on behalf of Sprint-Nextel
Ross (Fire Station) - 880475/ SF33XC617
Radio Frequency (RF) Site Compliance Report

33 Sir Francis Drake Boulevard, Ross, CA 94957
(Picture Provided Courtesy of Crown Castle)

200 N. Glebe Road • Suite 1000 • Arlington, VA 22203-3728
703.276.1100 • info@sitesafe.com

Table of Contents

1 Executive Summary

Crown Castle on behalf of Sprint-Nextel has contracted with Sitesafe, Inc. (Sitesafe), an independent Radio Frequency (RF) regulatory and engineering consulting firm, to determine whether the proposed communications site, 880475/ SF33XC617 - Ross (Fire Station), located at 33 Sir Francis Drake Boulevard, Ross, CA, is in compliance with Federal Communication Commission (FCC) Rules and Regulations for RF emissions.

This report contains a detailed summary of the RF environment at the site including:

- diagram of the site;
- inventory of the make / model of all antennas
- theoretical MPE based on modeling.

This report addresses exposure to radio frequency electromagnetic fields in accordance with the FCC Rules and Regulations for all individuals, classified in two groups, "Occupational or Controlled" and "General Public or Uncontrolled." This **site will be compliant** with the FCC rules and regulations, as described in OET Bulletin 65.

This document and the conclusions herein are based on the information provided by Sprint-Nextel.

If you have any questions regarding RF safety and regulatory compliance, please do not hesitate to contact Sitesafe's Customer Support Department at (703) 276-1100.

2 Regulatory Basis

2.1 FCC Rules and Regulations

In 1996, the Federal Communication Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

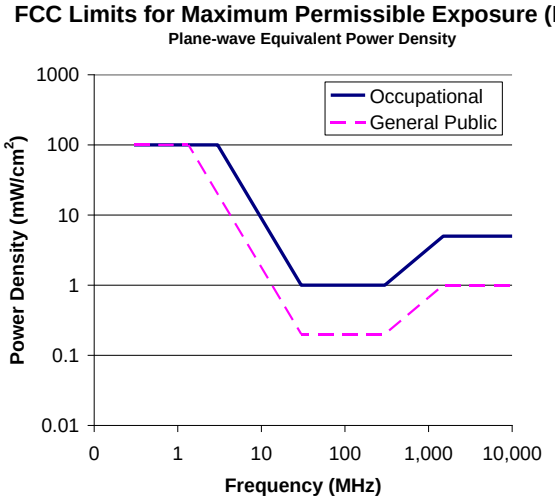
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

2.2 OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lock Out Tag Out procedure aimed to control the unexpected energization or start up of machines when maintenance or service is being performed.

3 Site Compliance

3.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, Sitesafe has determined that:

This **site will be compliant** with the FCC rules and regulations, as described in OET Bulletin 65.

The compliance determination is based on theoretical modeling, RF signage placement recommendations, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the Sprint-Nextel's proposed deployment plan could result in the site being rendered non-compliant.

3.2 Actions for Site Compliance

Based on common industry practice and our understanding of FCC and OSHA requirements, this section provides a statement of recommendations for site compliance. RF alert signage recommendations have been proposed based on theoretical analysis of MPE levels. Barriers can consist of locked doors, fencing, railing, rope, chain, paint striping or tape, combined with RF alert signage.

This site will be compliant with the FCC rules and regulations.

Sitesafe found one or more issues that led to our determination. The site will be made compliant if the following changes are implemented:

Base of Tower Location

No action required.

Sprint-Nextel Proposed Alpha Sector Location

No action required.

Sprint-Nextel Proposed Beta Sector Location

No action required.

4 Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3 foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram: Section 5 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

5 Analysis

5.1 RF Emissions Diagram

The RF diagram(s) below display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix B.

The key at the bottom of each diagram indicates if percentages displayed are referenced to FCC General Population Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Gray represents areas predicted to be at 5% of the MPE limits, or below.
- Green represents areas predicted to be between 5% and 100% of the MPE limits.
- Blue represents areas predicted to be between 100% and 500% of the MPE limits.
- Yellow represents areas predicted to be between 500% and 5000% of the MPE limits.
- Red areas indicated predicted levels greater than 5000% of the MPE limits.

General Population diagrams are specified when an area is accessible to the public; i.e. personnel that do not meet Occupational or RF Safety trained criteria, could gain access.

If trained occupational personnel require access to areas that are delineated as **Blue** or above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

The key at the bottom also indicates the level or height of the modeling with respect to the main level. The origin is typically referenced to the main rooftop level, or ground level for a structure without access to the antenna level. For example:

Average from 0 feet above to 6 feet above origin

and

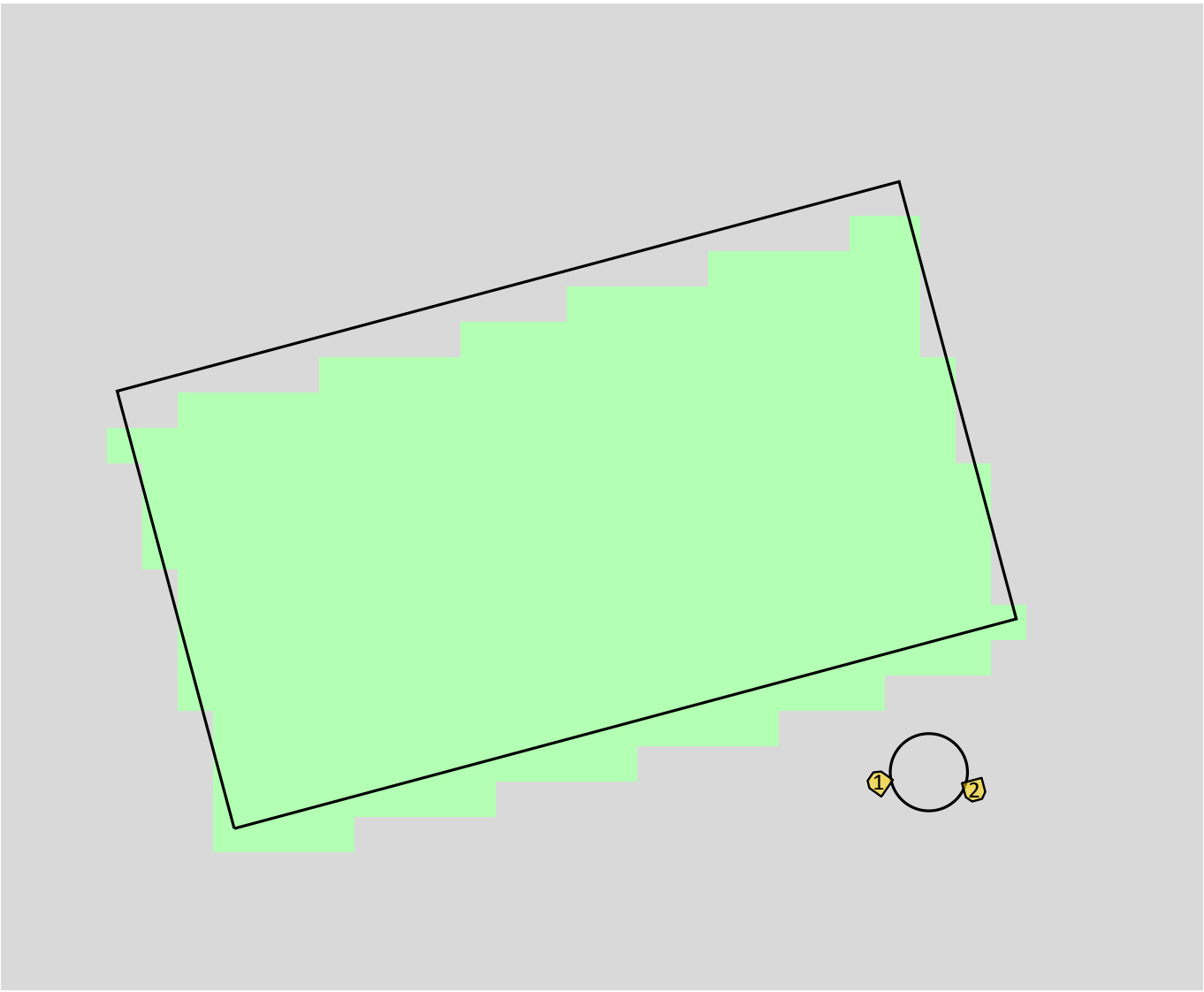
Average from 20 feet above to 26 feet above origin

The first indicates modeling at the main rooftop (or ground) level averaged over 6 feet. The second indicates modeling at a higher level (possibly a penthouse level) of 20 feet averaged over 6 feet.

Abbreviations used in the RF Emissions Diagrams

PH=##'	Penthouse at ## feet above main roof

RF Emissions Simulation For: Ross (Fire Station)



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

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

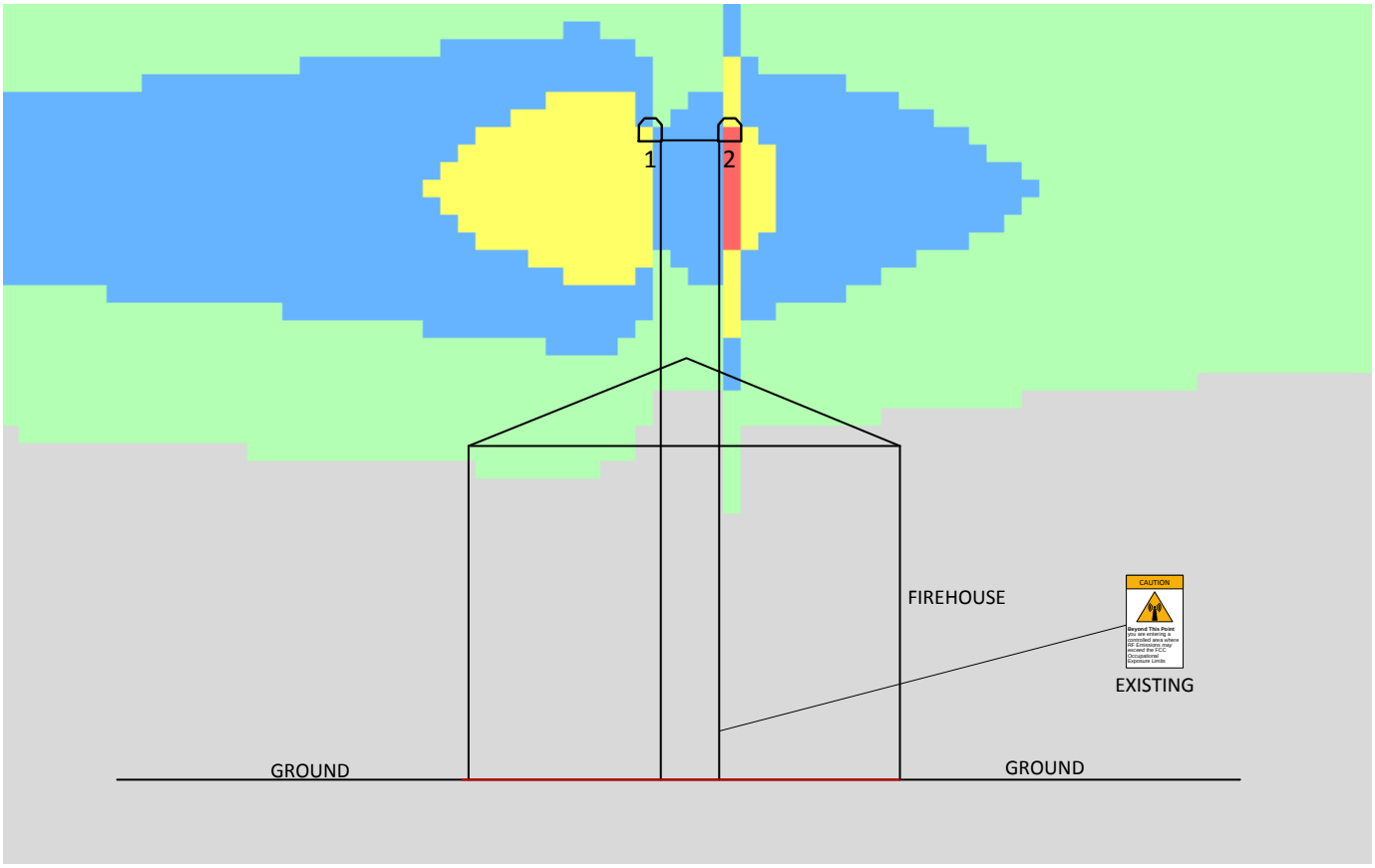
AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	SPRINT-NEXTEL	METROPCS	CRICKET COMMUNICATIONS	CLEARWIRE

(Feet)

0 2.5 5

www.sitesafe.com
Site Name:Ross (Fire Station)

RF Emissions Simulation For: Ross (Fire Station)



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

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

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

(Feet)

0 7.5 15

www.sitesafe.com
Site Name:Ross (Fire Station)

6 Antenna Inventory

The Antenna Inventory shows all transmitting antennas at the site. This inventory was provided by the customer, and was utilized by Sitesafe to perform theoretical modeling of RF emissions. The inventory coincides with the site diagrams in this report, identifying each antenna's location at 880475/ SF33XC617 - Ross (Fire Station). The antenna information collected includes the following information:

- Licensee or wireless operator name
- Frequency or frequency band
- Transmitter power – Effective Radiated Power ("ERP"), or Equivalent Isotropic Radiated Power ("EIRP") in Watts
- Antenna manufacturer make, model, and gain

For other carriers at this site, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information with regard to carrier, their FCC license and/or antenna information was not available nor could it be secured while on site. Equipment, antenna models and nominal transmit power were used for modeling, based on past experience with radio service providers.

The following antenna inventory, on this and the following page, were provided by the customer and were utilized to create the site model diagrams:

Table 3: Antenna Inventory												
Ant #	Operated By	TX Freq (MHz)	ERP (Watts)	Antenna Gain (dBd)	Az (Deg)	Antenna Model	Ant Type	Len (ft)	Horizontal Half Power Beamwidth (Deg)	Location		
										X	Y	Z
1	SPRINT-NEXTEL	862	7676.2	13.27	305	Andrew DHHTT65B-3XR	Panel	6	62	59.8'	33.2'	37'
1	SPRINT-NEXTEL	1930	7676.2	14.87	305	Andrew DHHTT65B-3XR	Panel	6	68	59.8'	33.2'	37'
1	SPRINT-NEXTEL (Proposed)	2496	304.9	14.87	305	Andrew DHHTT65B-3XR	Panel	6	60	59.8'	33.2'	37'
2	SPRINT-NEXTEL	862	7676.2	13.27	165	Andrew DHHTT65B-3XR	Panel	6	62	64.3'	32.8'	37'
2	SPRINT-NEXTEL	1930	7676.2	14.87	165	Andrew DHHTT65B-3XR	Panel	6	68	64.3'	32.8'	37'
2	SPRINT-NEXTEL (Proposed)	2496	304.9	14.87	165	Andrew DHHTT65B-3XR	Panel	6	60	64.3'	32.8'	37'

NOTE: X, Y and Z indicate relative position of the antenna to the origin location on the site, displayed in the model results diagram. Specifically, the Z reference indicates antenna height above the main site level unless otherwise indicated. ERP values provided by the client and used in the modeling may be greater than are currently deployed. For other carriers at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to carrier, their FCC license and/or antenna information was not available nor could it be secured while on site. Equipment, antenna models and nominal transmit power were used for modeling, based on past experience with radio service providers.

7 Engineer Certification

The professional engineer whose seal appears on the cover of this document hereby certifies and affirms that:

I am registered as a Professional Engineer in the jurisdiction indicated in the professional engineering stamp on the cover of this document; and

That I am an employee of Sitesafe, Inc., in Arlington, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio-frequency Radiation; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Tim Harris.

October 19, 2014

Appendix A – Statement of Limiting Conditions

Sitesafe will not be responsible for matters of a legal nature that affect the site or property.

Due to the complexity of some wireless sites, Sitesafe performed this analysis and created this report utilizing best industry practices and due diligence. Sitesafe cannot be held accountable or responsible for anomalies or discrepancies due to actual site conditions (i.e., mislabeling of antennas or equipment, inaccessible cable runs, inaccessible antennas or equipment, etc.) or information or data supplied by Sprint-Nextel, the site manager, or their affiliates, subcontractors or assigns.

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, observed during the survey of the subject property or that Sitesafe became aware of during the normal research involved in performing this survey. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data provided by a second party and physical data collected by Sitesafe, the physical data will be used.

Appendix B – Assumptions and Definitions

General Model Assumptions

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

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

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

Use of Generic Antennas

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

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.

Gain (of an antenna) – The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antennas as compared to an omni directional antenna.

General Population/Uncontrolled Environment – Defined by the FCC, as an area where RFR exposure may occur to persons who are **unaware** of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are **aware** of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of Radio Frequency radiation on Humans. The guideline was published in August 1997.

***OSHA* (Occupational Safety and Health Administration)** – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Radiation – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy an average sized human body will absorb while present in an electromagnetic field of energy.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix C – Rules & Regulations

Explanation of Applicable Rules and Regulations

The FCC has set forth guidelines in OET Bulletin 65 for human exposure to radio frequency electromagnetic fields. Specific regulations regarding this topic are listed in Part 1, Subpart I, of Title 47 in the Code of Federal Regulations. Currently, there are two different levels of MPE - General Public MPE and Occupational MPE. An individual classified as Occupational can be defined as an individual who has received appropriate RF training and meets the conditions outlined below. General Public is defined as anyone who does not meet the conditions of being Occupational. FCC and OSHA Rules and Regulations define compliance in terms of total exposure to total RF energy, regardless of location of or proximity to the sources of energy.

It is the responsibility of all licensees to ensure these guidelines are maintained at all times. It is the ongoing responsibility of all licensees composing the site to maintain ongoing compliance with FCC rules and regulations. Individual licensees that contribute less than 5% MPE to any total area out of compliance are not responsible for corrective actions.

OSHA has adopted and enforces the FCC's exposure guidelines. A building owner or site manager can use this report as part of an overall RF Health and Safety Policy. It is important for building owners/site managers to identify areas in excess of the General Population MPE and ensure that only persons qualified as Occupational are granted access to those areas.

Occupational Environment Explained

The FCC definition of Occupational exposure limits apply to persons who:

- are exposed to RF energy as a consequence of their employment;
- have been made aware of the possibility of exposure; and
- can exercise control over their exposure.

OSHA guidelines go further to state that persons must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.

In order to consider this site an Occupational Environment, the site must be controlled to prevent access by any individuals classified as the General Public. Compliance is also maintained when any non-occupational individuals (the General Public) are prevented from accessing areas indicated as Red or Yellow in the attached RF Emissions diagram. In addition, a person must be aware of the RF environment into which they are entering. This can be accomplished by an RF Safety Awareness class, and by appropriate written documentation such as this Site Compliance Report.

All Sprint-Nextel employees who require access to this site must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.

Appendix D – General Safety Recommendations

The following are *general recommendations* appropriate for any site with accessible areas in excess of 100% General Public MPE. These recommendations are not specific to this site. These are safety recommendations appropriate for typical site management, building management, and other tenant operations.

1. All individuals needing access to the main site (or the area indicated to be in excess of General Public MPE) should wear a personal RF Exposure monitor, successfully complete proper RF Safety Awareness training, and have and be trained in the use of appropriate personal protective equipment.

2. All individuals needing access to the main site should be instructed to read and obey all posted placards and signs.

3. The site should be routinely inspected and this or similar report updated with the addition of any antennas or upon any changes to the RF environment including:

- adding new antennas that may have been located on the site
- removing of any existing antennas
- changes in the radiating power or number of RF emitters

4. Post the appropriate **NOTICE**, **CAUTION,** or **WARNING** sign at the main site access point(s) and other locations as required. Note: Please refer to RF Exposure Diagrams in Appendix B, to inform <u>everyone</u> who has access to this site that beyond posted signs there may be levels in excess of the limits prescribed by the FCC. The signs below are examples of signs meeting FCC guidelines.

5. Ensure that the site door remains locked (or appropriately controlled) to deny access to the general public if deemed as policy by the building/site owner.

6. For a General Public environment the four color levels identified in this analysis can be interpreted in the following manner:

- Gray represents area at below 5% of the General Public MPE limits or below. This level is safe for a worker to be in at any time.
- Green represents areas predicted to be between 5% and 100% of the General Public MPE limits. This level is safe for a worker to be in at any time.

- Blue represents areas predicted to be between 100% and 500% of the General Public MPE limits. This level is safe for a worker to be in at any time.
- Yellow represents areas predicted to be between 500% and 5000% of the General Public MPE limits. This level is safe for a worker to be in.
- Red areas indicated predicted levels greater than 5000% of the General Public MPE limits. This level is not safe for the General Public to be in.

7. For an Occupational environment the four color levels identified in this analysis can be interpreted in the following manner:

- Areas indicated as Gray are at 5% of the Occupational MPE limits or below. This level is safe for a worker to be in at any time.
- Green represents areas predicted to be between 5% and 20% of the Occupational MPE limits. This level is safe for a worker to be in at any time.
- Yellow represents areas predicted to be between 20% and 100% of the Occupational MPE limits. Only individuals that have been properly trained in RF Health and Safety should be allowed to work in this area. This is not an area that is suitable for the General Public to be in.
- Red areas indicated predicted levels greater than 100% of the Occupational MPE limits. This level is not safe for the Occupational worker to be in for prolonged periods of time. Special procedures must be adhered to such as lock out tag out procedures to minimize the workers exposure to EME.

8. Use of a Personal Protective Monitor: When working around antennas, Sitesafe strong recommends the use of a Personal Protective Monitor (PPM). Wearing a PPM will properly forewarn the individual prior to entering an RF exposure area.

Keep a copy of this report available for all persons who must access the site. They should read this report and be aware of the potential hazards with regards to RF and MPE limits.

Additional Information

Additional RF information is available by visiting both www.Sitesafe.com and www.fcc.gov/oet/rfsafety. OSHA has additional information available at: http://www.osha-slc.gov/SLTC/radiofrequencyradiation.

Sprint

CROWN CASTLE

PROJECT:	2.5 EQUIPMENT DEPLOYMENT
SITE NAME:	ROSS (FIRE STATION)
SITE CASCADE:	SF33XC617
SITE NUMBER:	880475
SITE ADDRESS:	33 SIR FRANCIS DRAKE BLVD. ROSS, CA 94957
SITE TYPE:	MONOPOLE TOWER
MARKET:	SAN FRANCISCO BAY

SITE INFORMATION

PROPERTY OWNER:
TOWN OF ROSS
PO BOX 320
ROSS, CA 94957

LATITUDE (NAD83):
37° 57' 48.6" N
37.9635°

LONGITUDE (NAD83):
122° 33' 24.4" W
-122.556778°

COUNTY:
MARIN

ZONING JURISDICTION:
TOWN OR ROSS

APN:
073-191-16

ZONING DISTRICT:
TBD

POWER COMPANY:
PG&E
(800) 743-5000

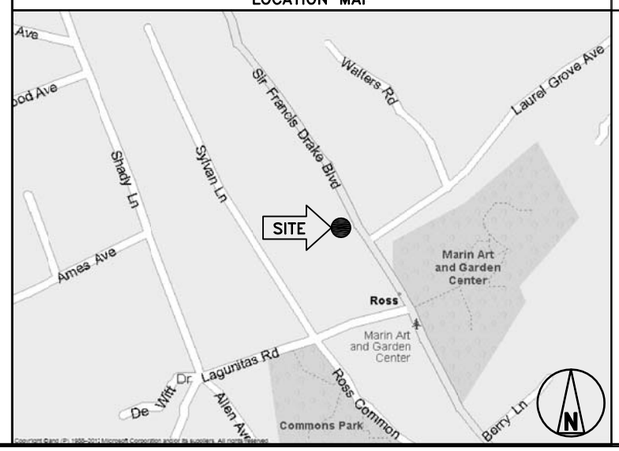
CROWN PM:
TONY TRAMPETTI
PHONE: 925-737-1099
TONY.TRAMPETTI.CONTRACTOR@CROWNCASTLE.COM

CROWN CONSTRUCTION:
TED CONGER
(925) 980-0098
TED.CONGER@CROWNCASTLE.COM

SPRINT PM:
ANTHONY POLETTI
(916) 717-4823
ANTHONY.POLETTI@SPRINT.COM

AREA MAP

LOCATION MAP



PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- INSTALL 2.5 DU CARD AND RECTIFIER INSIDE EXISTING MMBS CABINET
- INSTALL (4) BATTERIES IN EXISTING SPRINT BBU CABINET
- REPLACE (2) PANEL ANTENNAS
- INSTALL (2) RRUS

THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY SPRINT IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY SPRINT. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS PREPARED BY A LICENSED STRUCTURAL ENGINEER. STRUCTURAL ANALYSIS MUST INCLUDE BOTH TOWER AND MOUNT.

APPLICABLE CODES

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

1. INTERNATIONAL BUILDING CODE (2012 IBC)
2. TIA-222-G OR LATEST EDITION
3. NFPA 780 – LIGHTNING PROTECTION CODE
4. 2011 NATIONAL ELECTRIC CODE OR LATEST EDITION
5. ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS
6. CALIFORNIA CODE OF REGULATIONS
7. 2013 CALIFORNIA BUILDING CODE
8. 2013 CALIFORNIA MECHANICAL CODE
9. 2013 CALIFORNIA PLUMBING CODE
10. 2013 CALIFORNIA ELECTRICAL CODE
11. LOCAL AMENDMENTS TO THE ABOVE, WHERE APPLICABLE
12. CITY/COUNTY ORDINANCES
13. LIFE SAFETY CODE NFPA-101

811 Know what's below. Call before you dig. www.call811.com

DRAWING INDEX

SHEET NO:	SHEET TITLE	REV
T-1	TITLE SHEET & PROJECT DATA	0
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SP-2	SPRINT SPECIFICATIONS	0
A-1	SITE PLAN	0
A-2	TOWER ELEVATION	0
A-3	ANTENNA LAYOUT & MOUNTING DETAILS	0
A-4	EQUIPMENT & MOUNTING DETAILS	0
E-1	ELECTRICAL & GROUNDING	0
E-2	ELECTRICAL & GROUNDING DETAILS	0

DRIVING DIRECTIONS

A 12657 Alcosta Blvd, San Ramon, CA 94583

Depart Alcosta Blvd

459 ft
Make a U-turn at Hospital

0.7 mi
Turn left onto Crow Canyon Rd

0.5 mi
Take ramp right for I-680 North toward Sacramento

9.6 mi
Take ramp right for CA-24 toward Oakland / Lafayette

13.4 mi
Take ramp right for I-580 West toward Sacramento / San Francisco

2.0 mi
Keep straight onto I-80 E / I-580 W

3.9 mi
Keep right onto I-580 W
Toll road

11.6 mi
Take ramp right and follow signs for Sir Francis Drake Blvd

0.4 mi
Keep straight onto E Sir Francis Drake Blvd

1.4 mi
Bear right onto Sir Francis Drake Blvd
Pass Chevron on the left in 0.4 mi

2.8 mi
Arrive at 33 Sir Francis Drake Blvd, Ross, CA 94957
The last intersection is Lagunitas Rd
If you reach Laurel Grove Ave, you've gone too far

B 33 Sir Francis Drake Blvd, Ross, CA 94957

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
INFINIGY Design. Build. Deliver.
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 347-000

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
REGISTERED PROFESSIONAL ENGINEER
ANDREW B. MacDONALD
No. C63971
Exp. 9-30-14
CIVIL
STATE OF CALIFORNIA
9-22-14

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
FOR CONSTRUCTION	08/06/14	MAP	0
ISSUED FOR REVIEW	7/30/14	MAP	A

SITE NAME:
ROSS (FIRE STATION)

SITE CASCADE:
SF33XC617

SITE ADDRESS:
33 SIR FRANCIS DRAKE BLVD.
ROSS, CA 94957

SHEET DESCRIPTION:
TITLE SHEET
& PROJECT DATA

SHEET NUMBER:
T-1

THESE OUTLINE SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS, INCLUDING CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

SECTION 01 100 – SCOPE OF WORK

THE WORK:
SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF.

PRECEDENCE:
SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES INCLUDING THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, THE MORE STRINGENT REQUIREMENT SHALL TAKE PRECEDENCE.

SITE FAMILIARITY:
CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION.

ON-SITE SUPERVISION:
THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE:
THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.

A. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. PROVIDE ALL MATERIALS AND LABOR AS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONING SYSTEM. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.

B. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.

C. MARK THE FIELD SET OF DRAWINGS IN RED, DOCUMENTING ANY CHANGES FROM THE CONSTRUCTION DOCUMENTS.

METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION:
CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN THE FOLLOWING INSTALLATION AND COMMISSIONING MOPS.

A. TOP HAT
B. HOW TO INSTALL A NEW CABINET
C. BASE BAND UNIT IN EXISTING UNIT
D. INSTALLATION OF BATTERIES
E. INSTALLATION OF HYBRID CABLE
F. INSTALLATION OF RRU'S
G. CABLING
H. TS-0200 REV 4 – ANTENNA LINE ACCEPTANCE STANDARDS
I. SPRINT CELL SITE ENGINEERING NOTICE – EN 2012-001, REV 1.
J. COMMISSIONING MOPS

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

COMPANY FURNISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DRAWINGS.

CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT TO ENSURE IT IS PROTECTED AND HANDLED PROPERLY THROUGHOUT THE CONSTRUCTION DURATION.

CONTRACTOR RESPONSIBLE FOR RECEIPT OF SPRINT FURNISHED EQUIPMENT AT CELL SITE OR CONTRACTORS LOCATION. CONTRACTOR TO COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.

SECTION 01 300 – CELL SITE CONSTRUCTION CO.

NOTICE TO PROCEED:
NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF WORK ORDER.

SITE CLEANLINESS:
CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.

SECTION 01 400 – SUBMITTALS & TESTS

ALTERNATES:
AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINTS CONSTRUCTION MANAGER FOR APPROVAL. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED,

TESTS AND INSPECTIONS:

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.

B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. COAX SWEEPS AND FIBER TESTS PER TS-0200 REV 4 ANTENNA LINE ACCEPTANCE STANDARDS.
2. AGL, AZIMUTH AND DOWNTILT PROVIDE AN AUTOMATED REPORT UPLOADED TO SITERRA USING A COMMERCIAL MADE-FOR THE PURPOSE ELECTRONIC ANTENNA ALIGNMENT TOOL (AAT). INSTALLED AZIMUTH, CENTERLINE AND DOWNTILT MUST CONFORM WITH RF CONFIGURATION DATA
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.
4. ALL TESTING REQUIRED BY APPLICABLE INSTALLATION MOPS.

C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING;

1. AZIMUTH, DOWNTILT, AGL FROM SUNSIGHT INSTRUMENTS – ANTENNALIGN ALIGNMENT TOOL (AAT)
2. SWEEP AND FIBER TESTS
3. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
4. ALL AVAILABLE JURISDICTIONAL INFORMATION
5. PDF SCAN OF REDLINES PRODUCED IN FIELD
6. A PDF SCAN OF REDLINE MARK-UPS SUITABLE FOR USE IN ELECTRONIC AS-BUILT DRAWING PRODUCTION
7. LIEN WAIVERS
8. FINAL PAYMENT APPLICATION
9. REQUIRED FINAL CONSTRUCTION PHOTOS
10. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
11. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).
12. CLOSEOUT PHOTOGRAPHS:

a PROVIDE PHOTOGRAPHS OF FINAL PROJECT PER THE FOLLOWING LIST. ADDITIONAL PHOTOGRAPHS MAY BE REQUIRED TO SUPPORT ACCEPTANCE PROCESSES

(i) BACK MAIN HYBRID CABLE ROUTE (MINIMUM TWO PHOTOS)
(ii) OF EACH ANTENNA AND RRU
(iii) MANUFACTURERS NAME TAG FOR ALL SERIALIZED EQUIPMENT
(iv) PULL AND DISTRIBUTION BOXES INTERMEDIATE BETWEEN RRU'S AND MMBS (DOOR OPEN)
(v) MMBS CABINET WITH DOOR OPEN SHOWING MODIFICATIONS
(vi) POWER CABINET, DOORS OPEN, BATTERIES INSTALLED
(vii) BREAK OUT CYLINDERS
(viii) ASR SIGNAGE FOR SPRINT OWNED TOWERS
(ix) RADIATION EXPOSURE WARNING SIGNS
(x) PHOTOGRAPH FROM EACH SECTOR FROM APPROXIMATELY RAD CENTER OF ANY NEW ANTENNA AT HORIZON.

b LOAD PHOTOS TO SITERRA PROJECT LIBRARY I5. IN I5 CREATE NEW CATEGORY; 2.5 DEPLOYMENT, AND SECTION; PERMANENT CONSTRUCTION. LABEL PHOTOS WITH SITE CASCADE AND VIEW BEING DEPICTED. CAMERAS USED TO TAKE PHOTOGRAPHS SHALL GPS ENABLED SUCH THAT THE GPS COORDINATES ARE INCLUDED IN THE PHOTO MEDIA-FILE INFORMATION.

COMMISSIONING:
PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPS

INTEGRATION:
PERFORM ALL INTEGRATION ACTIVITIES AS REQUIRED BY APPLICABLE MOPS

SECTION 11 700 – ANTENNA ASSEMBLY, REMOTE RADIO UNITS AND CABLE INSTALLATION

SUMMARY:
THIS SECTION SPECIFIES INSTALLATION OF ANTENNAS, RRU'S, AND CABLE EQUIPMENT, INSTALLATION, AND TESTING OF COAXIAL FIBER CABLE.

ANTENNAS AND RRU'S:
THE NUMBER AND TYPE OF ANTENNAS AND RRU'S TO BE INSTALLED IS DETAILED ON THE CONSTRUCTION DRAWINGS.

HYBRID CABLE:
HYBRID CABLE WILL BE DC/FIBER AND FURNISHED FOR INSTALLATION AT EACH SITE. CABLE SHALL BE INSTALLED PER THE CONSTRUCTION DRAWINGS AND THE APPLICABLE MANUFACTURER'S REQUIREMENTS.

JUMPERS AND CONNECTORS:
INSTALL COAX JUMPER CABLES BETWEEN THE RRU'S AND ANTENNAS. JUMPERS FURNISHED BY SPRINT FOR INSTALLATION BY CONTRACTOR PER CURRENT SPRINT STANDARDS.

REMOTE ELECTRICAL TILT (RET) CABLES:

MISCELLANEOUS:
INSTALL SPLITTERS, COMBINERS, FILTERS PER RF DATA SHEET, FURNISHED BY SPRINT.

ANTENNA INSTALLATION:
THE CONTRACTOR SHALL ASSEMBLE ALL ANTENNAS ONSITE IN ACCORDANCE WITH THE INSTRUCTIONS SUPPLIED BY THE MANUFACTURER. ANTENNA HEIGHT, AZIMUTH, AND FEED ORIENTATION INFORMATION SHALL BE A DESIGNATED ON THE CONSTRUCTION DRAWINGS.

A. THE CONTRACTOR SHALL POSITION THE ANTENNA ON TOWER PIPE MOUNTS SO THAT THE BOTTOM STRUT IS LEVEL. THE PIPE MOUNTS SHALL BE PLUMB TO WITHIN 1 DEGREE.

B. ANTENNA MOUNTING REQUIREMENTS: PROVIDE ANTENNA MOUNTING HARDWARE AS INDICATED ON THE DRAWINGS.

HYBRID CABLES INSTALLATION:

A. THE CONTRACTOR SHALL ROUTE, TEST, AND INSTALL ALL CABLES AS INDICATED ON THE CONSTRUCTION DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

B. THE INSTALLED RADIUS OF THE CABLES SHALL NOT BE LESS THAN THE MANUFACTURER'S SPECIFICATIONS FOR BENDING RADII.

C. EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE CABLES DURING HANDLING AND INSTALLATION.

1. FASTENING MAIN HYBRID CABLES:

a. LATTICE AND GUYED TOWERS:
ALL CABLES SHALL BE PERMANENTLY FASTENED TO THE COAX LADDER AT 4'-0" OC USING NON-MAGNETIC STAINLESS STEEL CLIPS.

b. MONOPOLE:
ALL CABLES SHALL BE PERMANENTLY SUPPORTED WITH HOISTING GRIPS AT INTERVALS OF NO MORE THAN 200 FEET (ONE HOISTING GRIP PER COAX).

2. FASTENING INDIVIDUAL FIBER AND DC CABLES ABOVE BREAKOUT ENCLOSURE (MEDUSA), WITHIN THE MMBS CABINET AND ANY INTERMEDIATE DISTRIBUTION BOXES:

a. FIBER: SUPPORT FIBER BUNDLES USING ½" VELCRO STRAPS OF THE REQUIRED LENGTH @ 18" OC. STRAPS SHALL BE UV, OIL AND WATER RESISTANT AND SUITABLE FOR INDUSTRIAL INSTALLATIONS AS MANUFACTURED BY TEXTOL OR APPROVED EQUAL.

b. DC: SUPPORT DC BUNDLES WITH ZIP TIES OF THE ADEQUATE LENGTH. ZIP TIES TO BE UV STABILIZED, BLACK NYLON, WITH TENSILE STRENGTH AT 12,000 PSI AS MANUFACTURED BY NELCO PRODUCTS OR EQUAL.

3. FASTENING JUMPERS: SECURE JUMPERS TO THE SIDE ARMS OR HEAD FRAMES USING STAINLESS STEEL TIE WRAPS OR STAINLESS STEEL BUTTERFLY CLIPS.

4. CABLE INSTALLATION:

a. INSPECT CABLE PRIOR TO USE FOR SHIPPING DAMAGE, NOTIFY THE CONSTRUCTION MANAGER.

b. CABLE ROUTING: CABLE INSTALLATION SHALL BE PLANNED TO ENSURE THAT THE LINES WILL BE PROPERLY ROUTED IN THE CABLE ENVELOP AS INDICATED ON THE DRAWINGS. AVOID TWISTING AND CROSSOVERS.

c. HOIST CABLE USING PROPER HOISTING GRIPS. DO NOT EXCEED MANUFACTURES RECOMMENDED MAXIMUM BEND RADIUS.

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
INFINIGY Design. Build. Deliver.
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 347-000

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
REGISTERED PROFESSIONAL ENGINEER
ANDREW B. MacDONALD
No. C63971
Exp. 9-30-14
CIVIL
STATE OF CALIFORNIA
9-22-14

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
FOR CONSTRUCTION	08/06/14	MAP	0
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SITE NAME:
ROSS (FIRE STATION)

SITE CASCADE:
SF33XC617

SITE ADDRESS:
33 SIR FRANCIS DRAKE BLVD.
ROSS, CA 94957

SHEET DESCRIPTION:
SPRINT SPECIFICATIONS

SHEET NUMBER:
SP-1

CONTINUE FROM SP-1

5. GROUNDING OF TRANSMISSION LINES: ALL TRANSMISSION LINES SHALL BE GROUNDED AS INDICATED ON DRAWINGS.

6. HYBRID CABLE COLOR CODING: ALL COLOR CODING SHALL BE AS REQUIRED IN TS 0200 REV 4.

7. HYBRID CABLE LABELING: INDIVIDUAL HYBRID AND DC BUNDLES SHALL BE LABELED ALPHA-NUMERICALLY ACCORDING TO SPRINT CELL SITE ENGINEERING NOTICE – EN 2012-001, REV 1

WEATHERPROOFING EXTERIOR CONNECTORS AND HYBRID CABLE GROUND KITS:

A. ALL FIBER & COAX CONNECTORS AND GROUND KITS SHALL BE WEATHERPROOFED.

B. WEATHERPROOFED USING ONE OF THE FOLLOWING METHODS. ALL INSTALLATIONS MUST BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY BEST PRACTICES.

1. COLD SHRINK: ENCOMPASS CONNECTOR IN COLD SHRINK TUBING AND PROVIDE A DOUBLE WRAP OF 2" ELECTRICAL TAPE EXTENDING 2" BEYOND TUBING. PROVIDE 3M COLD SHRINK CXS SERIES OR EQUAL.

2. SELF-AMALGAMATING TAPE: CLEAN SURFACES. APPLY A DOUBLE WRAP OF SELF-AMALGAMATING TAPE 2" BEYOND CONNECTOR. APPLY A SECOND WRAP OF SELF-AMALGAMATING TAPE IN OPPOSITE DIRECTION. APPLY DOUBLE WRAP OF 2" WIDE ELECTRICAL TAPE EXTENDING 2" BEYOND THE SELF-AMALGAMATING TAPE.

3. 3M SLIM LOCK CLOSURE 716: OR OTHER SPRINT APPROVED WEATHER PROOFING ENCLOSURE.

4. OPEN FLAME ON JOB SITE IS NOT ACCEPTABLE

SECTION 11 800 – INSTALLATION OF MULTIMODAL BASE STATIONS (MMBS) AND RELATED EQUIPMENT

SUMMARY:

A. THIS SECTION SPECIFIES MMBS CABINETS, POWER CABINETS, AND INTERNAL EQUIPMENT INCLUDING BY NOT LIMITED TO RECTIFIERS, POWER DISTRIBUTION UNITS, BASE BAND UNITS, SURGE ARRESTORS, BATTERIES, AND SIMILAR EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR (OFCI).

B. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND PROVIDE ALL LABOR REQUIRED FOR INSTALLATION EQUIPMENT IN EXISTING CABINET OR NEW CABINET AS SHOWN ON DRAWINGS AND AS REQUIRE BY THE APPLICABLE INSTALLATION MOPS.

C. COMPLY WITH MANUFACTURERS INSTALLATION AND START-UP REQUIREMENTS

DC CIRCUIT BREAKER LABELING

A. LABEL CIRCUIT BREAKERS ACCORDING TO SPRINT CELL SITE ENGINEERING NOTICE – EN 2012-001, REV 1.

SECTION 26 100 – BASIC ELECTRICAL REQUIREMENTS

SUMMARY:
THIS SECTION SPECIFIES BASIC ELECTRICAL REQUIREMENTS FOR SYSTEMS AND COMPONENTS.

QUALITY ASSURANCE:

A. ALL EQUIPMENT FURNISHED UNDER DIVISION 26 SHALL CARRY UL LABELS AND LISTINGS WHERE SUCH LABELS AND LISTINGS ARE AVAILABLE IN THE INDUSTRY.

B. MANUFACTURERS OF EQUIPMENT SHALL HAVE A MINIMUM OF THREE YEARS EXPERIENCE WITH THEIR EQUIPMENT INSTALLED AND OPERATING IN THE FIELD IN A USE SIMILAR TO THE PROPOSED USE FOR THIS PROJECT.

C. MATERIALS AND EQUIPMENT: ALL MATERIALS AND EQUIPMENT SPECIFIED IN DIVISION 26 OF THE SAME TYPE SHALL BE OF THE SAME MANUFACTURER AND SHALL BE NEW, OF THE BEST QUALITY AND DESIGN, AND FREE FROM DEFECTS

D. ALL EQUIPMENT FURNISHED UNDER DIVISION 26 SHALL CARRY UL LABELS AND LISTINGS WHERE SUCH LABELS AND LISTINGS ARE AVAILABLE IN THE INDUSTRY.

E. MANUFACTURERS OF EQUIPMENT SHALL HAVE A MINIMUM OF THREE YEARS EXPERIENCE WITH THEIR EQUIPMENT INSTALLED AND OPERATING IN THE FIELD IN A USE SIMILAR TO THE PROPOSED USE FOR THIS PROJECT.

F. MATERIALS AND EQUIPMENT:
ALL MATERIALS AND EQUIPMENT SPECIFIED IN DIVISION 26 OF THE SAME TYPE SHALL BE OF THE SAME MANUFACTURER AND SHALL BE NEW, OF THE BEST QUALITY AND DESIGN, AND FREE FROM DEFECTS

SUPPORTING DEVICES:

A. MANUFACTURED STRUCTURAL SUPPORT MATERIALS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING:

1. ALLIED TUBE AND CONDUIT
2. B-LINE SYSTEM
3. SUNISTRUT DIVERSIFIED PRODUCTS
4. THOMAS & BETTS

B. FASTENERS: TYPES, MATERIALS, AND CONSTRUCTION FEATURES AS FOLLOWS:

1. EXPANSION ANCHORS: CARBON STEEL WEDGE OR SLEEVE TYPE.
2. POWER-DRIVEN THREADED STUDS: HEAT-TREATED STEEL, DESIGNED SPECIFICALLY FOR THE INTENDED SERVICE.
3. FASTEN BY MEANS OF WOOD SCREWS ON WOOD.
4. TOGGLE BOLTS ON HOLLOW MASONRY UNITS.
5. CONCRETE INSERTS OR EXPANSION BOLTS ON CONCRETE OR SOLID MASONRY.
6. MACHINE SCREWS, WELDED THREADED STUDS, OR SPRING-TENSION CLAMPS ON STEEL.
7. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE SHALL NOT BE PERMITTED.
8. DO NOT WELD CONDUIT, PIPE STRAPS, OR ITEMS OTHER THAN THREADED STUDS TO STEEL STRUCTURES.
9. IN PARTITIONS OF LIGHT STEEL CONSTRUCTION, USE SHEET METAL SCREWS.
10. INSTALL SUPPORTING DEVICES TO FASTEN ELECTRICAL COMPONENTS SECURELY AND PERMANENTLY IN ACCORDANCE WITH NEC.
11. COORDINATE WITH THE BUILDING STRUCTURAL SYSTEM AND WITH OTHER TRADES.
12. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTING HARDWARE SECURELY TO THE STRUCTURE IN ACCORDANCE WITH THE FOLLOWING:
    1. ENSURE THAT THE LOAD APPLIED BY ANY FASTENER DOES NOT EXCEED 25 PERCENT OF THE PROOF TEST LOAD.
    2. USE VIBRATION AND SHOCK-RESISTANT FASTENERS FOR ATTACHMENTS TO CONCRETE SLABS.

ELECTRICAL IDENTIFICATION:

A. UPDATE AND PROVIDE TYPED CIRCUIT BREAKER SCHEDULES IN THE MOUNTING BRACKET, INSIDE DOORS OF AC PANEL BOARDS WITH ANY CHANGES MADE TO THE AC SYSTEM.

B. BRANCH CIRCUITS FEEDING AVIATION OBSTRUCTION LIGHTING EQUIPMENT SHALL BE CLEARLY IDENTIFIED AS SUCH AT THE BRANCH CIRCUIT PANELBOARD.

SECTION 26 200 – ELECTRICAL MATERIALS AND EQUIPMENT

CONDUIT:

A. RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE USED FOR EXTERIOR LOCATIONS ABOVE GROUND AND IN UNFINISHED INTERIOR LOCATIONS AND FOR ENCASED RUNS IN CONCRETE. RIGID CONDUIT AND FITTINGS SHALL BE STEEL, COATED WITH ZINC EXTERIOR AND INTERIOR BY THE HOT DIP GALVANIZING PROCESS. CONDUIT SHALL BE PRODUCED TO ANSI SPECIFICATIONS C80.1, FEDERAL SPECIFICATION WW-C-581 AND SHALL BE LISTED WITH THE UNDERWRITERS' LABORATORIES. FITTINGS SHALL BE THREADED – SET SCREW OR COMPRESSION FITTINGS WILL NOT BE ACCEPTABLE. RGS CONDUITS SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND.

B. UNDERGROUND CONDUIT IN CONCRETE SHALL BE POLYVINYLCHLORIDE (PVC) SUITABLE FOR DIRECT BURIAL AS APPLICABLE. JOINTS SHALL BE BELLED, AND FLUSH SOLVENT WELDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE CARLON ELECTRICAL PRODUCTS OR APPROVED EQUAL.

C. TRANSITIONS BETWEEN PVC AND RIGID (RGS) SHALL BE MADE WITH PVC COATED METALLIC LONG SWEEP RADIUS ELBOWS.

D. EMT OR RIGID GALVANIZED STEEL CONDUIT MAY BE USED IN FINISHED SPACES CONCEALED IN WALLS AND CEILINGS. EMT SHALL BE MILD STEEL, ELECTRICALLY WELDED, ELECTRO-GALVANIZED OR HOT-DIPPED GALVANIZED AND PRODUCED TO ANSI SPECIFICATION C80.3, FEDERAL SPECIFICATION WW-C-563, AND SHALL BE UL LISTED. EMT SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND, OR APPROVED EQUAL. FITTINGS SHALL BE METALLIC COMPRESSION. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE.

E. LIQUID TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR FINAL CONNECTION TO EQUIPMENT. FITTINGS SHALL BE METALLIC GLAND TYPE COMPRESSION FITTINGS, MAINTAINING THE INTEGRITY OF CONDUIT SYSTEM. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL NOT EXCEED 6-FEET. LFMC SHALL BE PROTECTED AND SUPPORTED AS REQUIRE BY NEC. MANUFACTURERS OF FLEXIBLE CONDUITS SHALL BE CAROL, ANACONDA METAL HOSE OR UNIVERSAL METAL HOSE, OR APPROVED EQUAL.

F. MINIMUM SIZE CONDUIT SHALL BE 3/4 INCH (21MM).

HUBS AND BOXES:

A. AT ENTRANCES TO CABINETS OR OTHER EQUIPMENT NOT HAVING INTEGRAL THREADED HUBS PROVIDE METALLIC THREADED HUBS OF THE SIZE AND CONFIGURATION REQUIRED. HUB SHALL INCLUDE LOCKNUT AND NEOPRENE O-RING SEAL. PROVIDE IMPACT RESISTANT 105 DEGREE C PLASTIC BUSHINGS TO PROTECT CABLE INSULATION.

B. CABLE TERMINATION FITTINGS FOR CONDUIT

1. CABLE TERMINATORS FOR RGS CONDUITS SHALL BE TYPE CRC BY O-Z/GEDNEY OR EQUAL.
2. CABLE TERMINATORS FOR LFMC SHALL BE ETCO – CL2075; OR MADE FOR THE PURPOSE PRODUCTS BY ROXTEC.

C. EXTERIOR PULL BOXES AND PULL BOXES IN INTERIOR INDUSTRIAL AREAS SHALL BE PLATED CAST ALLOY, HEAVY DUTY, WEATHERPROOF, DUST PROOF, WITH GASKET, PLATED IRON ALLOY COVER AND STAINLESS STEEL COVER SCREWS, CROUSE-HINDS WAB SERIES OR EQUAL.

D. CONDUIT OUTLET BODIES SHALL BE PLATED CAST ALLOY WITH SIMILAR GASKETED COVERS. OUTLET BODIES SHALL BE OF THE CONFIGURATION AND SIZE SUITABLE FOR THE APPLICATION. PROVIDE CROUSE-HINDS FORM 8 OR EQUAL.

E. MANUFACTURER FOR BOXES AND COVERS SHALL BE HOFFMAN, SQUARE "D", CROUSE-HINDS, COOPER, ADALET, APPLETON, O-Z GEDNEY, RACO, OR APPROVED EQUAL.

SUPPLEMENTAL GROUNDING SYSTEM

A. FURNISH AND INSTALL A SUPPLEMENTAL GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS. SUPPORT SYSTEM WITH NON-MAGNETIC STAINLESS STEEL CLIPS WITH RUBBER GROMMETS. GROUNDING CONNECTORS SHALL BE TINNED COPPER WIRE, SIZES AS INDICATED ON THE DRAWINGS. PROVIDE STRANDED OR SOLID BARE OR INSULATED CONDUCTORS AS INDICATED.

B. SUPPLEMENTAL GROUNDING SYSTEM: ALL CONNECTIONS TO BE MADE WITH CAD WELDS, EXCEPT AT EQUIPMENT USE LUGS OR OTHER AVAILABLE GROUNDING MEANS AS REQUIRED BY MANUFACTURER; AT GROUND BARS USE TWO HOLE SPADES WITH NO OX.

C. STOLEN GROUND-BARS: IN THE EVENT OF STOLEN GROUND BARS, CONTACT SPRINT CM FOR REPLACEMENT INSTRUCTION USING THREADED ROD KITS.

EXISTING STRUCTURE:

A. EXISTING EXPOSED WIRING AND ALL EXPOSED OUTLETS, RECEPTACLES, SWITCHES, DEVICES, BOXES, AND OTHER EQUIPMENT THAT ARE NOT TO BE UTILIZED IN THE COMPLETED PROJECT SHALL BE REMOVED OR DE-ENERGIZED AND CAPPED IN THE WALL, CEILING, OR FLOOR SO THAT THEY ARE CONCEALED AND SAFE. WALL, CEILING, OR FLOOR SHALL BE PATCHED TO MATCH THE ADJACENT CONSTRUCTION.

CONDUIT AND CONDUCTOR INSTALLATION:

A. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

B. CONDUCTORS SHALL BE PULLED IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE.

SPRINT SUPPLIED MATERIALS:

(A) BBUS; (B) BATTERY CABINETS; (C) MMBTS CABINETS; (D) RRUS; (E) RETS; (F) ANTENNAS AND BRACKETS; (G) HFCS; (H) BATTERIES; (I) JUMPERS; AND (J) OEM SPECIFIC EQUIPMENT (CARD, SHELF, OR CABINET) THAT NEEDS TO BE INSTALLED IN OR NEXT TO MMBTS

CONTRACTOR SUPPLIED MATERIALS:

(A) CONDUIT IN LENGTHS LESS THAN OR EQUAL TO 5 FEET; (B) WIRE; (C) BREAKERS; (D) GROUNDING CABLE; (E) ANTENNA AND LINE INSTALLATION HARDWARE; (F) CONDUIT CLAMPS; (G) CONDUIT CONNECTORS; (H) WEATHERPROOFING MATERIALS; (I) GROUNDING KITS; (J) HOISTING GRIPS; (K) SNAP-IN HANGERS WITH GROMMETS; (L) BUTTERFLY HANGER KITS; (M) COAX BLOCKS AND HARDWARE; (N) ANGLE ADAPTERS, U BOLTS, AND OTHER MISCELLANEOUS HARDWARE; (O) CROSSOVER PLATES; (P) RET CABLES; (Q) PIPE MOUNTS, PIPE TO PIPE MOUNTS; (R) ICE BRIDGES IN LENGTHS LESS THAN OR EQUAL TO 5 FEET; (S) LIQUID TIGHT; (T) COMMON CONSUMABLES, INCLUDING BUT NOT LIMITED TO TAPES, SOLVENTS, ADHESIVES, LUGS, NUTS, BOLTS, WASHERS, ETC.; AND (U) SUCH OTHER MINOR MATERIALS NOT SPECIFICALLY MENTIONED IN THIS SECTION BUT WHICH ARE REASONABLE NECESSARY TO COMPLETE THE SERVICES.

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
INFINIGY Design. Build. Deliver.
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 347-000

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
REGISTERED PROFESSIONAL ENGINEER
ANDREW B. MacDONALD
No. C63971
Exp. 9-30-14
CIVIL
STATE OF CALIFORNIA
9-22-14

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
FOR CONSTRUCTION	08/06/14	MAP	0
ISSUED FOR REVIEW	7/30/14	MAP	A

SITE NAME:
ROSS (FIRE STATION)

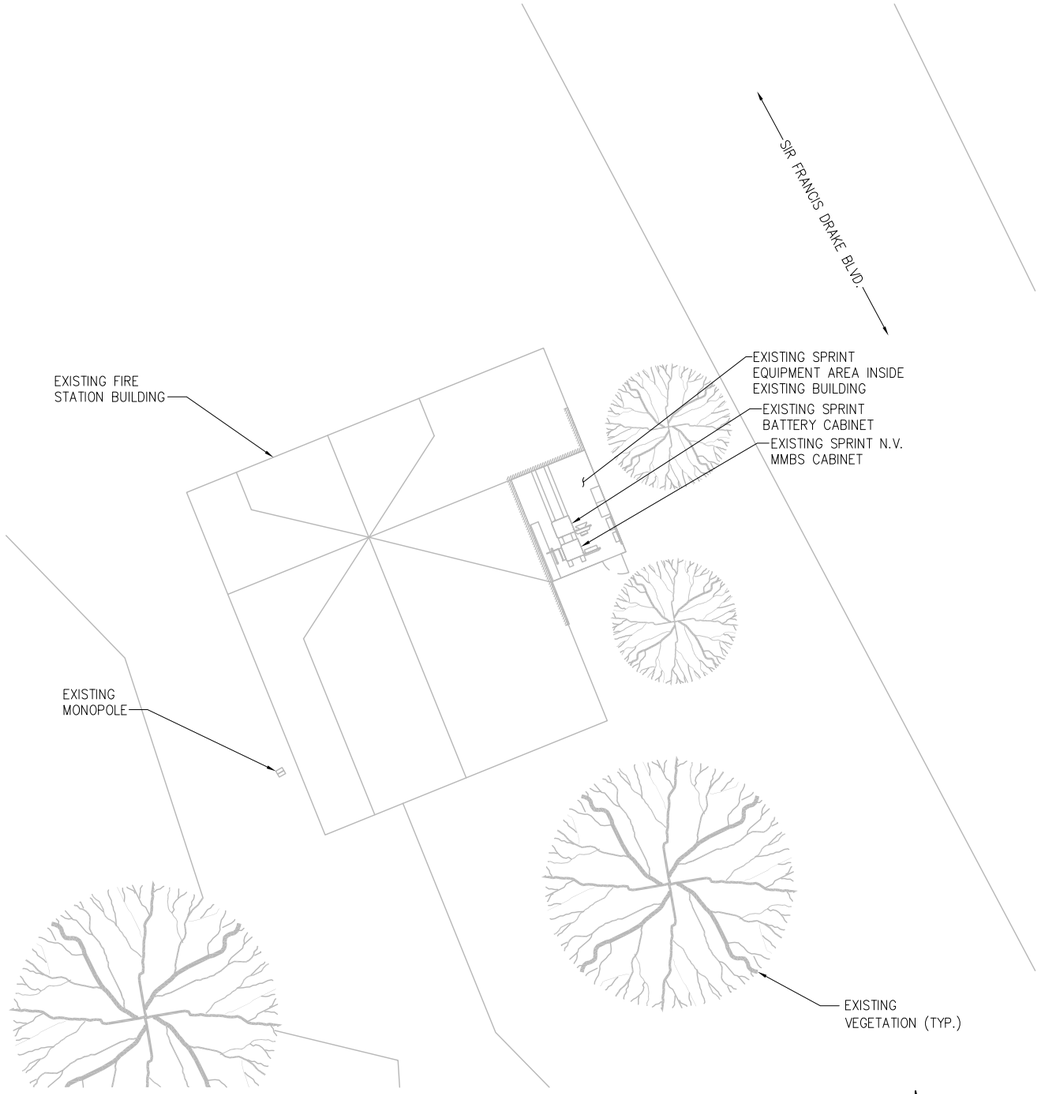
SITE CASCADE:
SF33XC617

SITE ADDRESS:
33 SIR FRANCIS DRAKE BLVD.
ROSS, CA 94957

SHEET DESCRIPTION:
SPRINT SPECIFICATIONS

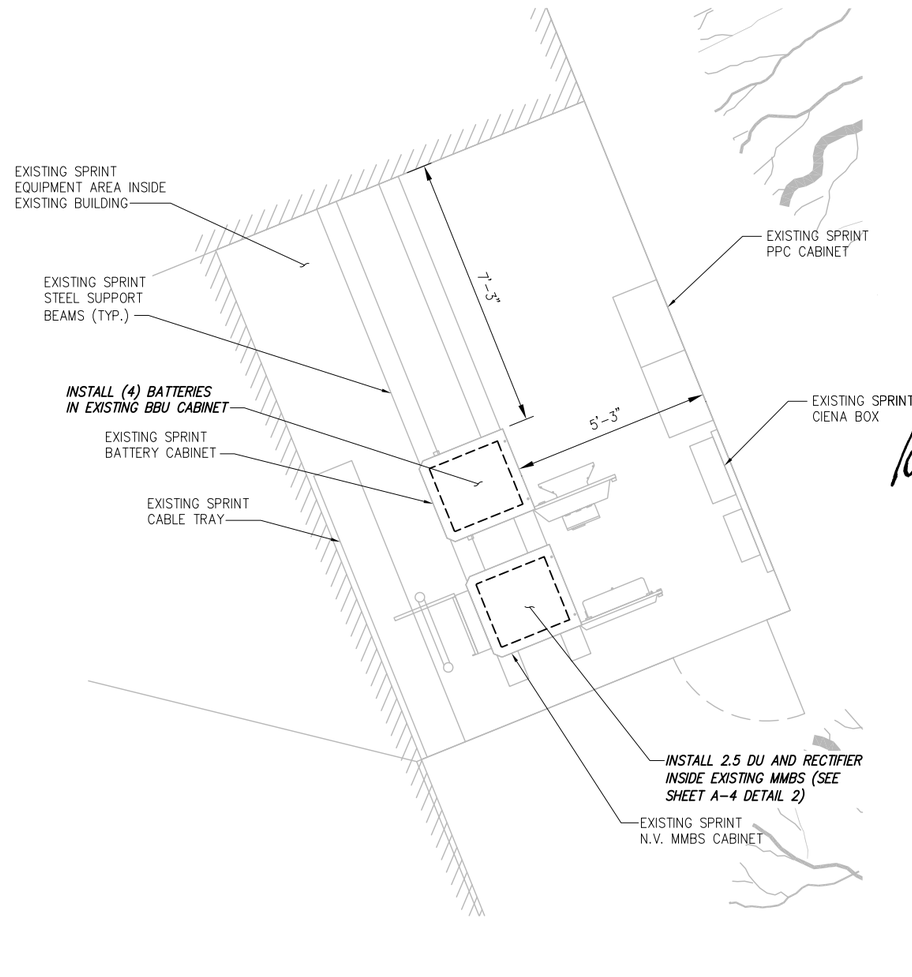
SHEET NUMBER:
SP-2

INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION AND ARE NOT THE RESULT OF A FIELD SURVEY.



OVERALL SITE PLAN

SCALE: AS NOTED | 1



SPRINT EQUIPMENT PLAN

SCALE: AS NOTED | 2

PLANS PREPARED FOR:

Sprint

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Overland Park, Kansas 66251

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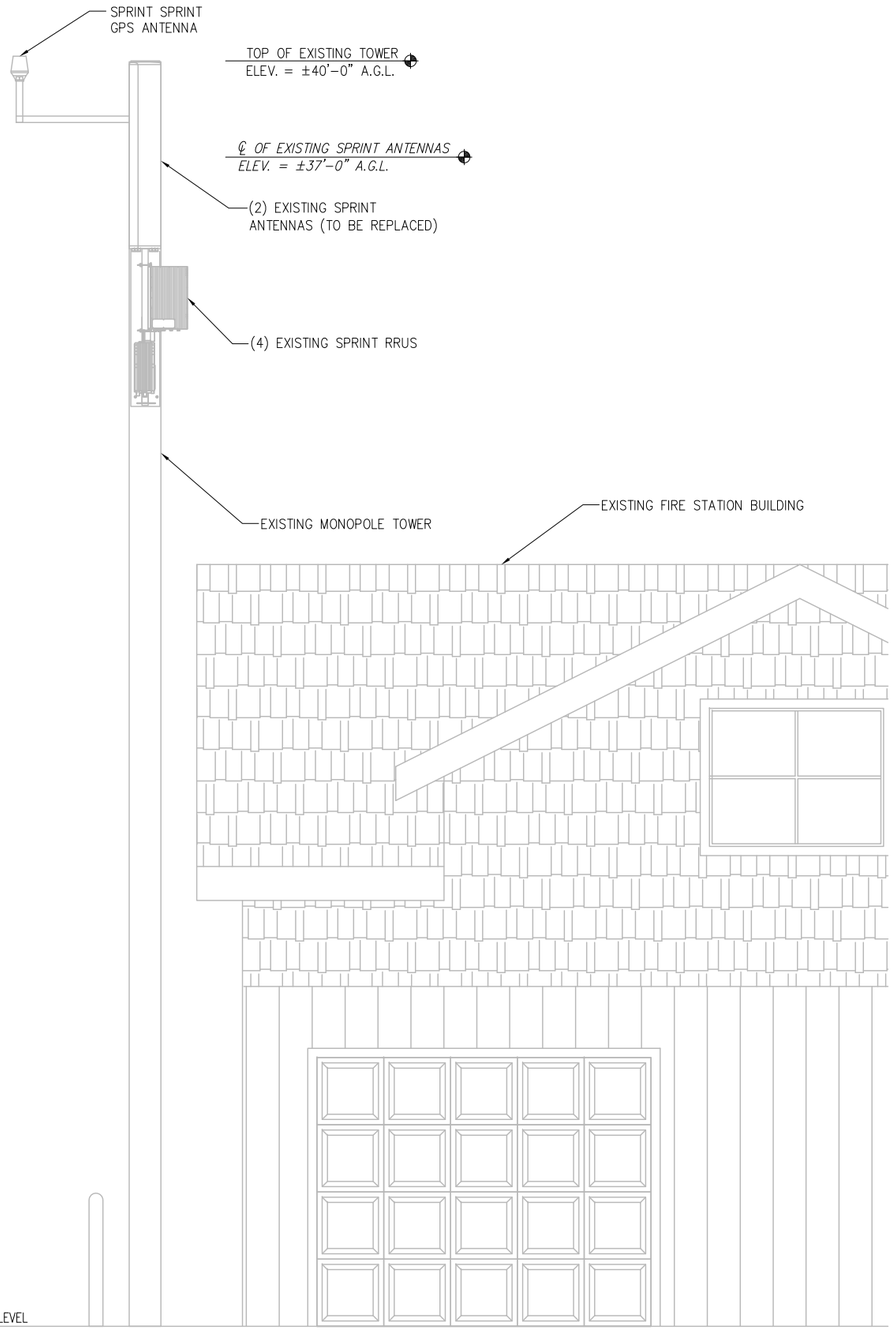
SHEET DESCRIPTION:

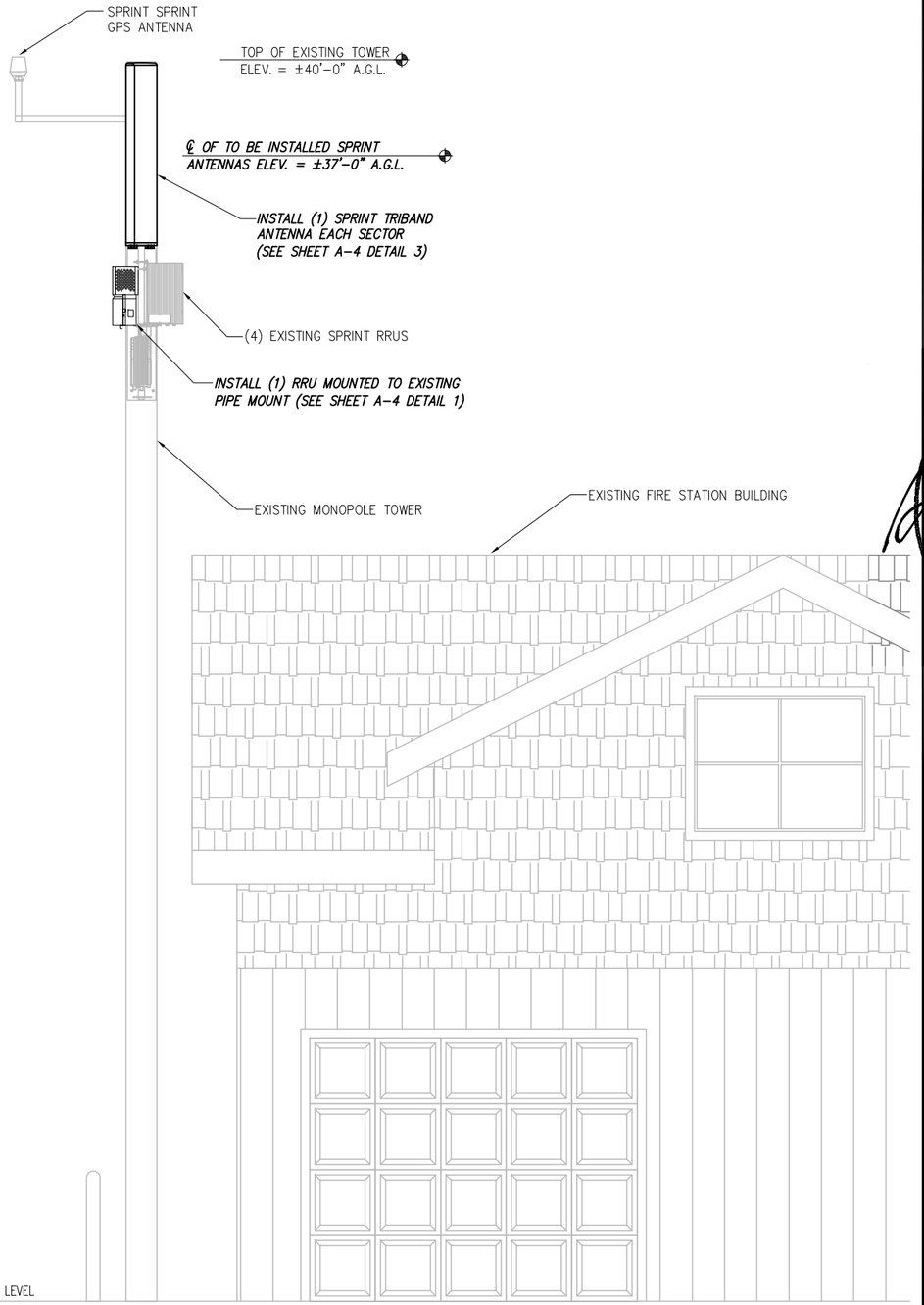
SITE PLAN

SHEET NUMBER:

A-1



EXISTING TOWER ELEVATION | NO SCALE | 1



PROPOSED TOWER ELEVATION | NO SCALE | 2

NOTE:
INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING TOWER OR MOUNT FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.

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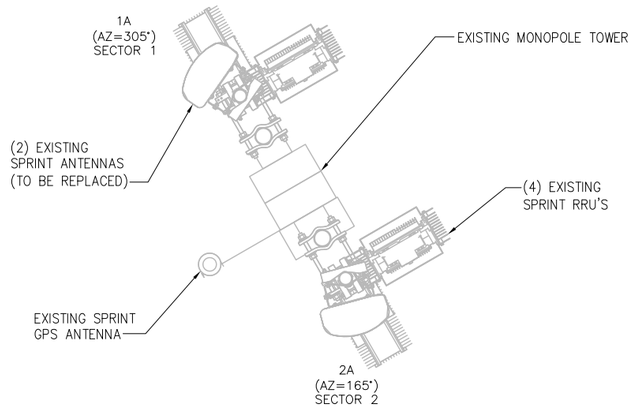
ROSS, CA 94957

SHEET DESCRIPTION:

TOWER ELEVATION

SHEET NUMBER:

A-2



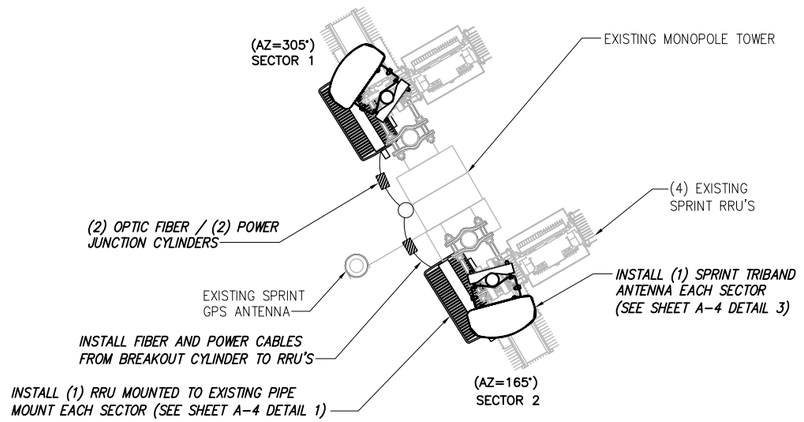
EXISTING ANTENNA & RRU LAYOUT — NO SCALE — 1

SECTOR	ANTENNA MODEL	ANTENNA SIZE	ANTENNA FREQUENCY (MHz)	AZIMUTH	RAD CENTER (A.G.L.)	RRU MODEL	FILTER MODEL
1	COMMSCOPE DHHTT65B-3XR	72"	800, 1900, 2500	305°	37'-0"	RRH-V3	N/A
2	COMMSCOPE DHHTT65B-3XR	72"	800, 1900, 2500	165°	37'-0"	RRH-V3	N/A

NOTES:

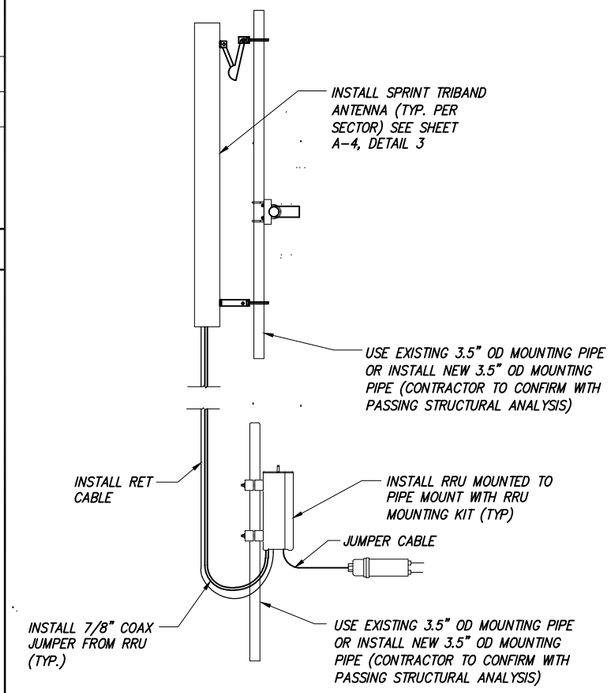
ANTENNA SCHEDULE — NO SCALE — 3

DETAIL NOT USED — NO SCALE — 5



THE CONFIGURATION PLANS ARE BASED ON PROVIDED INFORMATION AND ARE FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION.

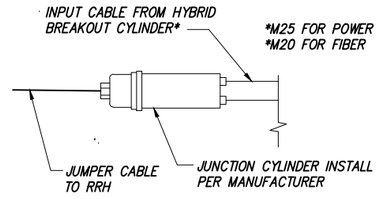
FINAL ANTENNA LAYOUT — NO SCALE — 2



NOTE:
THE DIAGRAM IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR IS TO REFER TO PASSING STRUCTURAL ANALYSIS FOR ANTENNA AND RRU MOUNTING DETAILS

NOTES:

1. CUT DC CONDUCTORS TO LENGTH.
2. COIL FIBER CABLE AND SECURE AT SIDE OF RRU.
3. DO NO EXCEED BEND RADIUS.



TYPICAL ANTENNA & RRU MOUNTING DETAILS — NO SCALE — 4

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ROSS, CA 94957

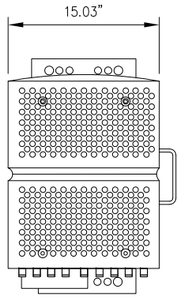
SHEET DESCRIPTION:

ANTENNA LAYOUT
& MOUNTING DETAILS

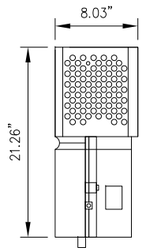
SHEET NUMBER:

A-3

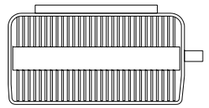
SAMSUNG RRH-V3



FRONT VIEW



SIDE VIEW

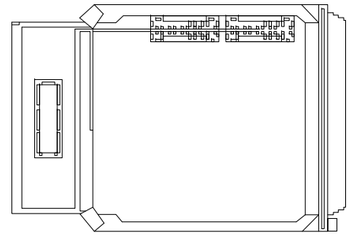


TOP VIEW

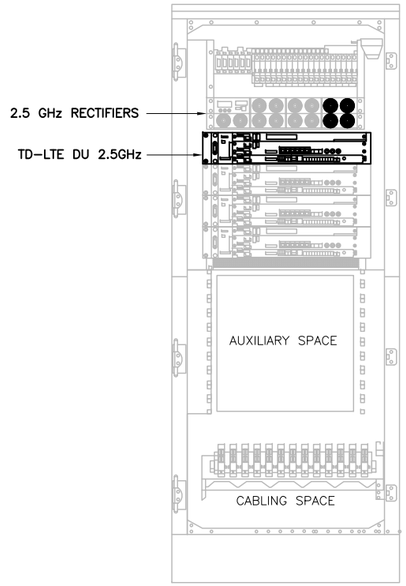
NOTES

COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRU'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRU PACKAGES IN THE RAIN.

2.5 RRU	NO SCALE	1



BOTTOM VIEW



FRONT VIEW

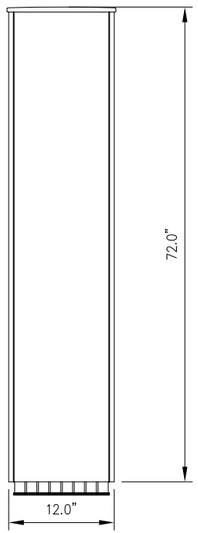
EXISTING MMBS WITH 2.5 EQUIPMENT	NO SCALE	2

ANTENNA: COMMSCOPE DHHTT65B-3XR

MATERIAL:	TBD
COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD.in:	72.0"x12.0"x7.1"
WEIGHT:	49.0 lbs
CONNECTORS:	(10) MINI DIN FEMALE (1) CALIBRATION PORT (N TYPE, FEMALE)

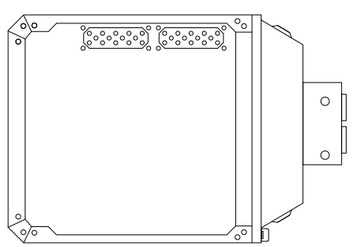
PLAN VIEW

SIDE VIEW

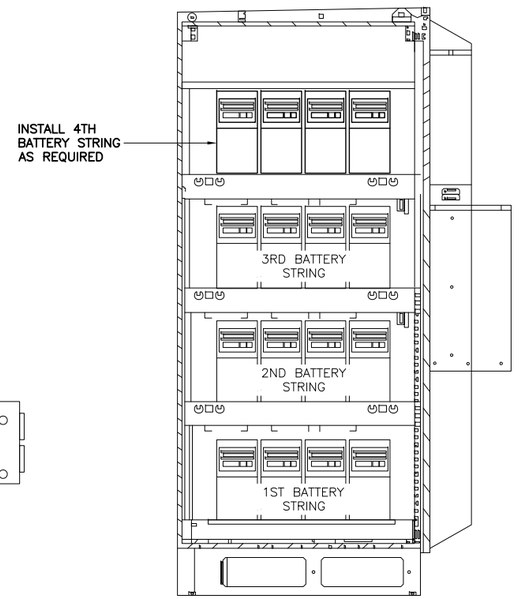


FRONT VIEW

2.5 ANTENNA	NO SCALE	3



BOTTOM VIEW



EXISTING BATTERY CABINET	NO SCALE	4

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SF33XC617

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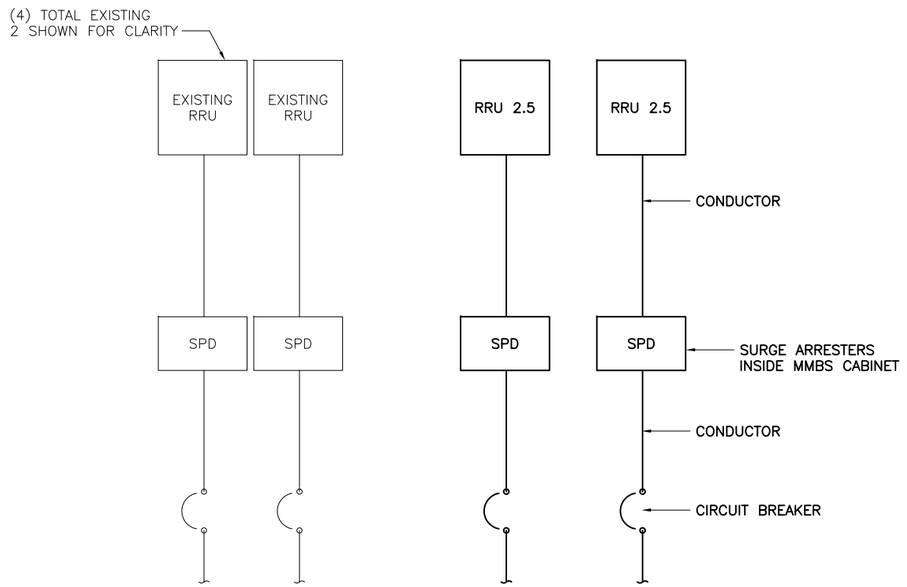
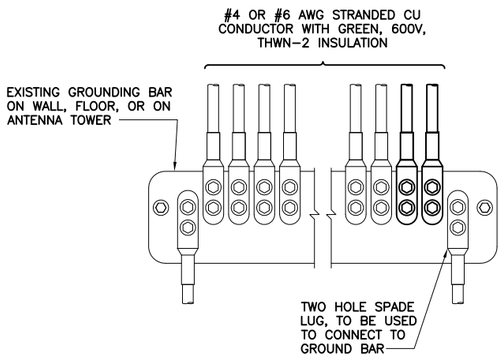
33 SIR FRANCIS DRAKE BLVD.
ROSS, CA 94957

SHEET DESCRIPTION:
EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:
A-4



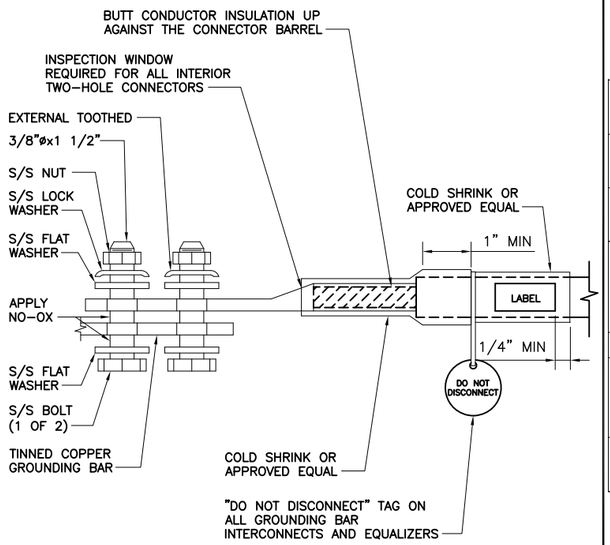
TYPICAL DC ONE-LINE DIAGRAM | NO SCALE | 1



NOTES

1. APPLY NO-OX TO LUG AND BAR CONTACT SURFACE. DO NOT COAT INLINE LUG.
2. IF STOLEN GROUND BARS ARE ENCOUNTERED, CONTACT SPRINT CM FOR REPLACEMENT THREADED ROD KIT.

INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR | NO SCALE | 2



TWO HOLE LUG | NO SCALE | 3

CFC CHAPTER 6 COMPLIANCE

TOTAL ELECTROLYTE = 16 BATTERIES X 2.49 GAL/BATTERY = 39.84 GAL
(SINCE<50 GAL OF ELECTROLYTE, CFC CHAPTER 6, SECTION 608 NOT APPLICABLE)

BATTERY INFORMATION

(BATTERY ELECTOLYTE DATA – 12V MONOBLOCKS)

BATTERY MODEL	TOTAL # OF BATTERY UNITS INSTALLED	TOTAL ELECTROLYTE VOLUME (GAL) PER UNIT	TOTAL ELECTROLYTE WEIGHT (LBS) PER UNIT	% SULFURIC ACID BY VOL = ACID VOLUME/UNIT / ELECTROLYTE VOLUME/UNIT
12DT190	16	2.49 GAL	27.35 LBS	58% = 1.45 GAL/2.49 GAL
% SULFURIC ACID BY WIEGHT = ACID WEIGHT/UNIT / ELECTROLYTE WEIGHT/UNIT		TOTAL SULFURIC ACID VOL (GAL) = TOTAL UNITS X SULFURIC ACID VOL/UNIT		TOTAL SULFURIC ACID WEIGHT (LBS) = TOTAL UNITS X SULFURIC ACID WEIGHT/UNIT
40.7% = 11.12 LBS/27.35 LBS		23.2 GAL = 16 UNITS X 1.45 GAL		177.92 LBS = 16 UNITS X 11.12 LBS

BATTERY INFORMATION | NO SCALE | 4

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SHEET DESCRIPTION:

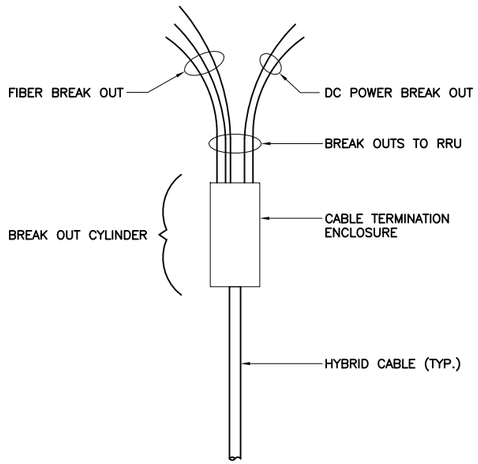
ELECTRICAL & GROUNDING

SHEET NUMBER:

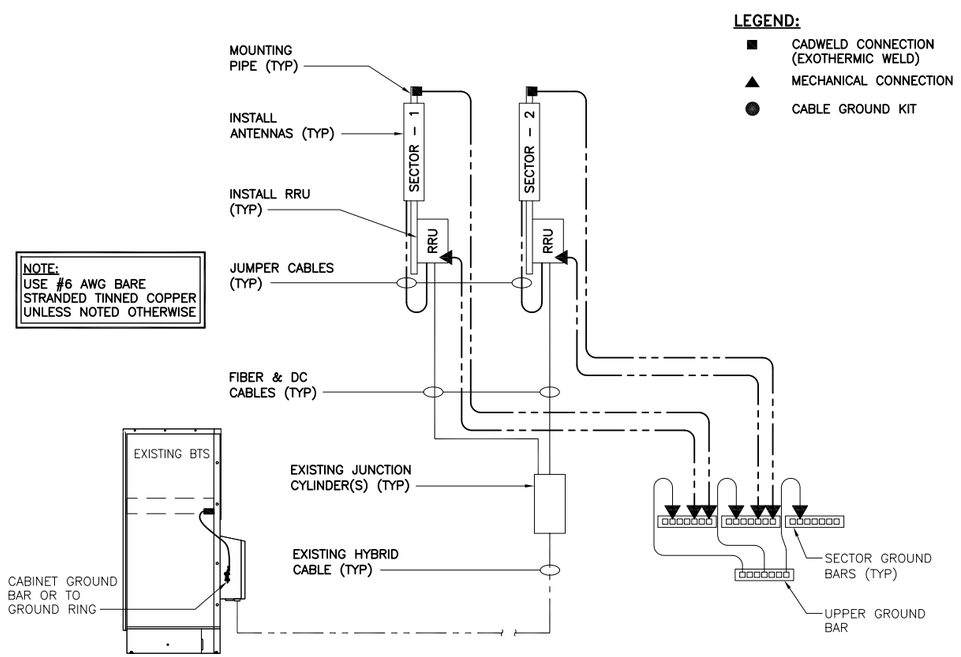
E-1

DETAIL NOT USED

NO SCALE | 1



HYBRID BREAK OUT DETAIL | NO SCALE | 2



GROUNDING RISER DIAGRAM | NO SCALE | 3

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E-2