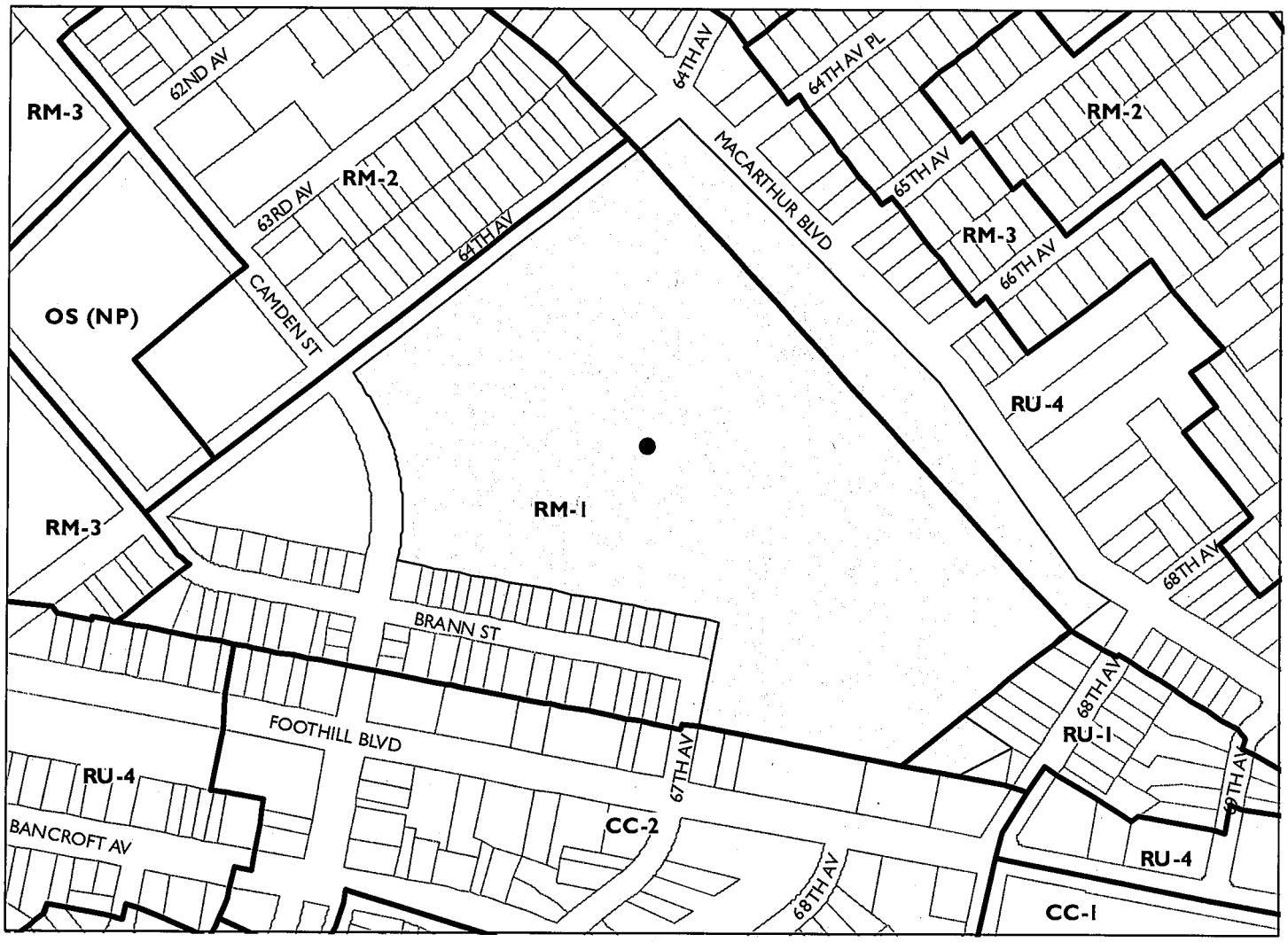
Case File Number: REV120011-R01 (Revision of case file REV120011) **October 1, 2014**

Location:	**6450 Camden Street (See map on reverse)**
Assessors Parcel Numbers:	**(039-3282-001-08)**
Proposal:	A revision of a previously granted Conditional Use Permit and Design Review that would co-locate the addition of three (3) new antennas at a site with existing antennas for a total of 18 antennas and associated equipment.
Applicant:	Sprint c/o Phil Gamick
Contact Person:	Phil Gamick
Phone Number:	(530)386-5253
Owner:	Evergreen Cemetery Association
Case File Number:	**REV120011-R01**
Planning Permits Required:	Design Review for the co-location to install three (3) new concealed telecommunication antennas and associated equipment at a Macro telecommunication facility in the RM-1 zone. Major Conditional Use Permit for the expansion of a Macro telecommunication facility within 100 feet of a residential zone.
General Plan:	Urban Open Space
Zoning:	RM-1 Mixed Housing Type Residential
Environmental Determination:	Exempt, Section 15301 of the State CEQA Guidelines; minor alterations to an existing facility Exempt, Section 15303 of the State CEQA Guidelines; new construction of small structures. Section 15183 of the State CEQA Guidelines; projects consistent with a community plan, general Plan or zoning.
Historic Status:	No Historic Record
Service Delivery District:	5
City Council District:	6
Date Filed:	6/16/14
Finality of Decision:	Appealable to City Council within 10 days
For Further Information:	Contact case planner **Michael Bradley** at **(510) 238-36935** or mbradley@oaklandnet.com

SUMMARY

The following staff report addresses the proposal for the addition to an unmanned wireless telecommunication facility located on the rooftop of an existing cemetery building, with the associated equipment cabinets located in a gated area on the ground next to the building. The project is for the addition of three (3) panel antennas with associated equipment at a site with 18 existing antennas. Given the number of antennas and the type of installation, this would be considered a "Macro" Telecommunications Facility. The facility is located within the center of a cemetery, on the roof of an existing cemetery building. The site is located in the RM-1 Mixed Housing Type Residential Zone. The General Plan designation for the site is Urban Open Space.

CITY OF OAKLAND PLANNING COMMISSION



Case File: REV120011-R01
Applicant: Sprint, Phil Gamick of Forza Telecom
Address: 6450 Camden Street
Zone: RM-1

TELECOMMUNICATIONS BACKGROUND

Limitations on Local Government Zoning Authority under the Telecommunications Act of 1996
Section 704 of the Telecommunications Act of 1996 (TCA) provides federal standards for the siting of "Personal Wireless Services Facilities." "Personal Wireless Services" include all commercial mobile services (including personal communications services (PCS), cellular radio mobile services, and paging); unlicensed wireless services; and common carrier wireless exchange access services. Under Section 704, local zoning authority over personal wireless services is preserved such that the FCC is prevented from preempting local land use decisions; however, local government zoning decisions are still restricted by several provisions of federal law.

Under Section 253 of the TCA, no state or local regulation or other legal requirement can prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.

Further, Section 704 of the TCA imposes limitations on what local and state governments can do. Section 704 prohibits any state and local government action which unreasonably discriminates among personal wireless providers. Local governments must ensure that its wireless ordinance does not contain requirements in the form of regulatory terms or fees which may have the "effect" of prohibiting the placement, construction, or modification of personal wireless services.

Section 704 also preempts any local zoning regulation purporting to regulate the placement, construction and modification of personal wireless service facilities on the basis, either directly or indirectly, on the environmental effects of radio frequency emissions (RF) of such facilities, which otherwise comply with FCC standards in this regard. See, 47 U.S.C. 332(c)(7)(B)(iv) (1996). This means that local authorities may not regulate the siting or construction of personal wireless facilities based on RF standards that are more stringent than those promulgated by the FCC.

Section 704 mandates that local governments act upon personal wireless service facility siting applications to place, construct, or modify a facility within a reasonable time. 47 U.S.C.332(c)(7)(B)(ii). See FCC Shot Clock ruling setting forth "reasonable time" standards for applications deemed complete.

Section 704 also mandates that the FCC provide technical support to local governments in order to encourage them to make property, rights-of-way, and easements under their jurisdiction available for the placement of new spectrum-based telecommunications services. This proceeding is currently at the comment stage.

For more information on the FCC's jurisdiction in this area, contact Steve Markendorff, Chief of the Broadband Branch, Commercial Wireless Division, Wireless Telecommunications Bureau, at (202) 418-0640 or e-mail "smarkend@fcc.gov".

PROJECT DESCRIPTION

The applicant (Sprint) is proposing to install three (3) new panel antennas, with three new RRH's and other associated equipment. The proposal for the equipment shelters to be located in a gated area on the ground next to the building. All proposed antennas and associated equipment will not be accessible to the public.

(See Attachment A)

PROPERTY DESCRIPTION

The subject property is a lot of approximately 25.02 Acres with a large cemetery building. The lot has frontage on Camden Street, 64th Avenue, MacArthur Boulevard. The subject property has a fully functioning cemetery on the site. Currently there are other telecommunication providers at the site.

GENERAL PLAN ANALYSIS

The subject property is located within the Urban Park and Open Space General Plan designation. The Urban Park and Open Space land use classification is intended to identify, enhance and maintain land for parks and open space. Its purpose is to maintain an urban park, school yard, and garden system which provides open space for outdoor recreation, psychological and physical well-being, and relief from the urban environment. The proposed addition to an existing unmanned wireless telecommunication facility will not adversely affect and detract from the civic, commercial or residential characteristics of the neighborhood, because the antennas will be mounted on the roof of a cemetery building located in the center of a 25.02 acre cemetery.

ZONING ANALYSIS

The subject property is located within the RM-1 Mixed Housing Type Residential Zone-1. The intent of the RM-1 zone is to create, maintain, and enhance residential areas characterized by a mix of single family homes, duplexes, and neighborhood businesses where appropriate. Consistent with the intent of the RM-1 Zone the proposed development will be compatible with, and will not adversely affect, the livability or appropriate development of abutting properties and the surrounding neighborhood, with consideration to be given to harmony in scale, bulk, coverage and density.

ENVIRONMENTAL DETERMINATION

The California Environmental Quality Act (CEQA) Guidelines lists the projects that qualify as categorical exemptions from environmental review. The proposed project is categorically exempt from the environmental review requirements pursuant to Section 15301, alterations to existing facilities, Section 15303, new construction of small structures and 15183, projects consistent with a community plan, general plan or zoning.

KEY ISSUES AND IMPACTS

1. Conditional Use Permit

Section 17.17.040 of the City of Oakland Planning Code requires a conditional use permit to install a Macro Telecommunication facility in the RM-1 zone. Furthermore, Section 17.134.020 defines a major and minor conditional use permit. Subsections (A)(3)(i) lists a Major Conditional Use Permit: "Any telecommunication facility in or within one hundred (100) feet of the boundary of any residential zone. The required findings for a major conditional use permit are listed and included in staff's evaluation as part of this report.

2. Project Site

Section 17.128.110 of the City of Oakland Telecommunication Regulations indicate that new wireless facilities shall generally be located on designated properties or facilities in the following order of preference:

A. Co-located on an existing structure or facility with existing wireless antennas.
B. City owned properties or other public or quasi-public facilities.
C. Existing commercial or industrial structures in non-residential zones.
D. Existing commercial or industrial structures in residential zones.
E. Other non-residential uses in residential zones.
F. Residential uses in non-residential zones.
G. Residential uses in residential zones.

*Facilities locating on an A, B or C ranked preference do not require a site alternatives analysis.

Since the proposed project involves the Co-location on an existing structure or facility with existing wireless antennas, the proposed project meets (A).

3. Project Design

Section 17.128.120 of the City of Oakland Telecommunications Regulations indicates that new wireless facilities shall generally be designed in the following order of preference:

A. Building or structure mounted antennas completely concealed from view.
B. Building or structure mounted antennas set back from roof edge, not visible from public right-of way.
C. Building or structure mounted antennas below roof line (facade mount, pole mount) visible from public right-of-way, painted to match existing structure.
D. Building or structure mounted antennas above roof line visible from public right of-way.
E. Monopoles.
F. Towers.

* Facilities designed to meet an A or B ranked preference do not require a site design alternatives analysis. Facilities designed to meet a C through F ranked preference, inclusive, must submit a site design alternatives analysis as part of the required application materials. A site design alternatives analysis shall, at a minimum, consist of:

a. Written evidence indicating why each higher preference design alternative can not be used. Such evidence shall be in sufficient detail that independent verification could be obtained if required by the City of Oakland Zoning Manager. Evidence should indicate if the reason an alternative was rejected was technical (e.g. incorrect height, interference from existing RF sources, inability to cover required area) or for other concerns (e.g. inability to provide utilities, construction or structural impediments).

City of Oakland Planning staff have reviewed and determined that the site selected is conforming to all other telecommunication regulation requirements. The project has met design criteria (A) since the antennas shall be mounted completely concealed behind an existing mechanical screen wall approximately 42 feet above the public right of way and will be setback from the edge of the building. The associated equipment shelters will have no visual impact since the equipment will be placed behind a gated area next to the building in the center of a 25.02 acre cemetery.

4. Project Radio Frequency Emissions Standards

Section 17.128.130 of the City of Oakland Telecommunication Regulations require that the applicant submit the following verifications including requests for modifications to existing facilities:
a. With the initial application, a RF emissions report, prepared by a licensed professional engineer or other expert, indicating that the proposed site will operate within the current acceptable thresholds as established by the Federal government or any such agency who may be subsequently authorized to establish such standards.
b. Prior to commencement of construction, a RF emissions report indicating the baseline RF emissions condition at the proposed site.
c. Prior to final building permit sign off, an RF emissions report indicating that the site is actually operating within the acceptable thresholds as established by the Federal government or any such agency who may be subsequently authorized to establish such standards.

The applicant states that the proposed project meets the radio frequency (RF) emissions standards as required by the regulatory agency. Submitted with the initial application was a RF emissions report, prepared by Hammett & Edison, Inc. (**attachment B**). The report states that the proposed project will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not cause a significant impact on the environment. Additionally, staff recommends that prior to the final building permit sign off, the applicant submits certified RF emissions report stating that the facility is operating within acceptable thresholds established by the regulatory federal agency.

CONCLUSION

City of Oakland planning staff believes that the proposed project and subject property can be developed to meet the established zoning and telecommunication regulations that were created and adopted to set certain criteria minimums and maximums for similar types of developments. Staff believes that the findings for approval can be made to support the Conditional Use Permit and Design Review.

RECOMMENDATIONS:

1. Affirm staff's environmental determination

2. Approve Conditional Use Permit and Design Review application REV120011-R01 subject to the attached findings and conditions of approval

Prepared by:

Michael Bradley
Planner I

Approved by:

Robert D. Merkamp
Development Planning Manager

Approved for forwarding to the
City Planning Commission

Darin Ranelletti, Deputy Director
Bureau of Planning

ATTACHMENTS:

A. Project Plans & Photo simulation
B. Hammett & Edison, Inc. RF Emissions Report

FINDINGS FOR APPROVAL

FINDINGS FOR APPROVAL:
This proposal meets all the required findings under Section 17.134.050, of the General Use Permit criteria; all the required findings under Section 17.136.050.(B), of the Non- Residential Design Review criteria; all the required findings under Section 17.128.070(B), of the telecommunication facilities (Macro) Design Review criteria; and all the required findings under Section 17.128.070.(C), of the telecommunication facilities (Macro) Conditional Use Permit criteria; and as set forth below and which are required to approve your application. Required findings are shown in **bold** type; reasons your proposal satisfies them are shown in normal type.

SECTION 17.134.050 – MAJOR CONDITIONAL USE PERMIT FINDINGS:

A. That the location, size, design, and operating characteristics of the proposed development will be compatible with, and will not adversely affect, the livability or appropriate development of abutting properties and the surrounding neighborhood, with consideration to be given to harmony in scale, bulk, coverage, and density; to the availability of civic facilities and utilities; to harmful effect, if any upon desirable neighborhood character; to the generation of traffic and the capacity of surrounding streets; and to any other relevant impact of the development.

The location, size, design and operational characteristics of the proposal will not adversely affect the livability or appropriate development of abutting properties and the surrounding neighborhood. Consideration was given to the harmony in scale, bulk, and coverage; to the availability of civic facilities and utilities; to harmful effect, if any, upon desirable neighborhood character; to the generation of traffic and the capacity of surrounding streets; and to any other relevant impact of the development. The proposed telecommunications antennas will be located behind mechanical screening wall on the roof of the existing building and will not adversely affect the operating characteristic or livability of the existing area. The facility will be unmanned and will not create additional vehicular traffic in the area.

B. That the location, design, and site planning of the proposed development will provide a convenient and functional living, working, shopping, or civic environment, and will be as attractive as the nature of the use and its location and setting warrant.

The location, design and site planning of the proposed development will not detract from the existing civic environment and will preserve the existing character of the site by screening the new telecom facilities out of view from the general public

C. That the proposed development will enhance the successful operation of the surrounding area in its basic community functions, or will provide an essential service to the community or region.

The proposed development will enhance the successful operation of the surrounding area in its basic community function and will provide an essential service to the community or region. This will be achieved by improving the functional use of the site by providing a regional

telecommunication facility for the community and will be available to police, fire, public safety organizations and the general public.

D. That the proposal conforms to all applicable design review criteria set forth in the DESIGN REVIEW PROCEDURE of Chapter 17.136 of the Oakland Planning Code.

The proposal conforms with all significant aspects of the design review criteria set forth in Chapter 17.136 of the Oakland Planning Code, as outlined below.

E. That the proposal conforms in all significant respects with the Oakland General Plan and with any other applicable plan or development control map which has been adopted by the City Council.

The subject property is located within the Urban Park and Open Space General Plan designation. The Urban Park and Open Space land use classification is intended to identify, enhance and maintain land for parks and open space. Its purpose is to maintain an urban park, school yard, and garden system which provides open space for outdoor recreation, psychological and physical well-being, and relief from the urban environment. The proposed unmanned wireless telecommunication facility will not adversely affect and detract from the civic, commercial or residential characteristics of the neighborhood, because the antennas will be mounted on the roof of a cemetery building located in the center of a 25.02 acre cemetery.

17.136.050(B) – NONRESIDENTIAL DESIGN REVIEW CRITERIA:

1. That the proposal will help achieve or maintain a group of facilities which are well related to one another and which, when taken together, will result in a well-composed design, with consideration given to site, landscape, bulk, height, arrangement, texture, materials, colors, and appurtenances; the relation of these factors to other facilities in the vicinity; and the relation of the proposal to the total setting as seen from key points in the surrounding area. Only elements of design which have some significant relationship to outside appearance shall be considered, except as otherwise provided in Section 17.136.060;

The proposal is the expansion of a macro telecommunications facility which includes three (3) new panel antennas, three (3) new RRH's and other associated equipment. The proposed antennas will be placed behind an existing mechanical screening wall and therefore will be consistent and well related to the surrounding area in scale, bulk, height, materials, and textures. The antennas will also be located on a cemetery building located in the center of a 25.02 acre lot and will not be visible from the street.

2. That the proposed design will be of a quality and character which harmonizes with, and serves to protect the value of, private and public investments in the area;

The design will be appropriate and compatible with current zoning and general plan land use designations. The proposal protects and preserves the surrounding neighborhood context by adding wireless telecommunication antennas to a residential area. The antennas will be concealed from public view and will not have any visual impact on the neighborhood.

3. That the proposed design conforms in all significant respects with the Oakland General Plan and with any applicable design review guidelines or criteria, district plan, or development control map which have been adopted by the Planning Commission or City Council.

The proposal conforms with the City of Oakland Comprehensive General Plan meeting specific General Plan policies and the Supplemental Report and Recommendations on Revisions to the Citywide Telecommunications Regulations. The proposal will conform to performance standards for noise set forth in Section 17.120.050 for decibels levels in residential areas for both day and nighttime use. The Project conforms to all macro-facility definitions set forth in Section 17.128.070 and meets all design review criteria to minimize all impacts throughout the neighborhood

17.128.070(B) DESIGN REVIEW CRITERIA FOR MACRO FACILITIES

B. Design Review Criteria for Micro Facilities. In addition to the design review criteria listed in Chapter 17.136, the following specific additional criteria must be met when design review is required before an application can be granted:

1. Antennas should be painted and/or textured to match the existing structure.

The antennas will be mounted behind an existing screening wall on the top of an existing cemetery building located in the center of a 25.02 acre lot and will not be visible from the street.

2. Antennas mounted on architecturally significant structures or significant architectural details of the building should be covered by appropriate casings which are manufactured to match existing architectural features found on the building.

The antennas will be mounted behind an existing screening wall on the top of an existing cemetery building located in the center of a 25.02 acre lot and will not be visible from the street.

3. Where feasible, antennas can be placed directly above, below or incorporated with vertical design elements of a building to help in camouflaging.

The antennas will be mounted behind an existing screening wall on the top of an existing cemetery building located in the center of a 25.02 acre lot and will not be visible from the street.

4. Equipment shelters or cabinets shall be screened from the public view by using landscaping, or materials and colors consistent with surrounding backdrop or placed underground or inside existing facilities or behind screening fences.

The equipment cabinets will be located inside a locked and screened gated area next to the existing building and will not be visible from public view.

5. Equipment shelters or cabinets shall be consistent with the general character of the area.

The equipment cabinets will be located inside a locked and screened gated area next to the existing building and will not be visible from public view.

6. For antennas attached to the roof, maintain a 1:1 ratio (example: ten feet high antenna requires ten feet setback from facade) for equipment setback; screen the antennas to match existing air conditioning units, stairs, or elevator towers; avoid placing roof mounted antennas in direct line with significant view corridors.

The proposed replacement antennas will be mounted on existing pole mounts that are setback back from the edge of the roof and are located behind an existing mechanical screening wall.

7. That all reasonable means of reducing public access to the antennas and equipment has been made, including, but not limited to, placement in or on buildings or structures, fencing, anti-climbing measures and anti-tampering devices.

The antennas will be mounted to the roof and will not be accessible to the public due to its location. The equipment cabinets will be located inside a locked gated area next to the existing building.

17.128.070(B) CONDITIONAL USE PERMIT CRITERIA FOR MACRO FACILITIES

C. Conditional Use Permit Criteria for Macro Facilities. In addition to the conditional use criteria listed in Chapter 17.134, the following specific additional criteria must be met before a conditional use permit can be granted:

1. The project must be demonstrated to have no visual impact.

The antennas will be mounted behind an existing screening wall on the top of an existing cemetery building located in the center of a 25.02 acre lot and will not be visible from the street.

2. The project must meet the special design review criteria listed in subsection B of this section.

The proposed project meets the special design review criteria listed above in section 17.128.070B.

CONDITIONS OF APPROVAL
REV120011-R01

STANDARD CONDITIONS:

1. Approved Use
Ongoing

a) The project shall be constructed and operated in accordance with the authorized use as described in the application materials, **REV120011-R01**, and the plans dated **May 29, 2014** and submitted on **June 16, 2014** and as amended by the following conditions. Any additional uses or facilities other than those approved with this permit, as described in the project description and the approved plans, will require a separate application and approval. Any deviation from the approved drawings, Conditions of Approval or use shall required prior written approval from the Director of City Planning or designee.

b) This action by the City Planning Commission ("this Approval") includes the approvals set forth below. This Approval includes: **The addition to a Macro telecommunications facility located on an existing building at 6450 Camden Street (APN: 039-3282-001-08), under Oakland Municipal Code 17.128, 17.136 and 17.134.**

2. Effective Date, Expiration, Extensions and Extinguishment
Ongoing

Unless a different termination date is prescribed, this Approval shall expire **two calendar years** from the approval date, unless within such period all necessary permits for construction or alteration have been issued, or the authorized activities have commenced in the case of a permit not involving construction or alteration. Upon written request and payment of appropriate fees submitted no later than the expiration date of this permit, the Director of City Planning or designee may grant a one-year extension of this date, with additional extensions subject to approval by the approving body. Expiration of any necessary building permit for this project may invalidate this Approval if the said extension period has also expired.

3. Scope of This Approval; Major and Minor Changes
Ongoing

The project is approved pursuant to the Oakland Planning Code only. Minor changes to approved plans may be approved administratively by the Director of City Planning or designee. Major changes to the approved plans shall be reviewed by the Director of City Planning or designee to determine whether such changes require submittal and approval of a revision to the approved project by the approving body or a new, completely independent permit.

4. Conformance with other Requirements
Prior to issuance of a demolition, grading, P-job, or other construction related permit

a) The project applicant shall comply with all other applicable federal, state, regional and/or local codes, requirements, regulations, and guidelines, including but not limited to those imposed by the City's Building Services Division, the City's Fire Marshal, and the City's Public Works Agency.

b) The applicant shall submit approved building plans for project-specific needs related to fire protection to the Fire Services Division for review and approval, including, but not limited to automatic extinguishing systems, water supply improvements and hydrants, fire department access, and vegetation management for preventing fires and soil erosion.

5. Conformance to Approved Plans; Modification of Conditions or Revocation
Ongoing

a) Site shall be kept in a blight/nuisance-free condition. Any existing blight or nuisance shall be abated within 60-90 days of approval, unless an earlier date is specified elsewhere.

b) The City of Oakland reserves the right at any time during construction to require certification by a licensed professional that the as-built project conforms to all applicable zoning requirements, including but not limited to approved maximum heights and minimum setbacks. Failure to construct the project in accordance with approved plans may result in remedial reconstruction, permit revocation, permit modification, stop work, permit suspension or other corrective action.

c) Violation of any term, conditions or project description relating to the Approvals is unlawful, prohibited, and a violation of the Oakland Municipal Code. The City of Oakland reserves the right to initiate civil and/or criminal enforcement and/or abatement proceedings, or after notice and public hearing, to revoke the Approvals or alter these conditions if it is found that there is violation of any of the conditions or the provisions of the Planning Code or Municipal Code, or the project operates as or causes a public nuisance. This provision is not intended to, nor does it, limit in any manner whatsoever the ability of the City to take appropriate enforcement actions.

6. Signed Copy of the Conditions
With submittal of a demolition, grading, and building permit

A copy of the approval letter and conditions shall be signed by the property owner, notarized, and submitted with each set of permit plans to the appropriate City agency for this project.

7. Indemnification
Ongoing

a) To the maximum extent permitted by law, the applicant shall defend (with counsel acceptable to the City), indemnify, and hold harmless the City of Oakland, the Oakland City Council, the City of Oakland Redevelopment Agency, the Oakland City Planning Commission and its respective agents, officers, and employees (hereafter collectively called City) from any liability, damages, claim, judgment, loss (direct or indirect)action, causes of action, or proceeding (including legal costs, attorneys' fees, expert witness or consultant fees, City Attorney or staff time, expenses or costs) (collectively called "Action") against the City to attack, set aside, void or annul, (1) an approval by the City relating to a development-related application or subdivision or (2) implementation of an approved development-related project. The City may elect, in its sole discretion, to participate in the defense of said Action and the applicant shall reimburse the City for its reasonable legal costs and attorneys' fees.

b) Within ten (10) calendar days of the filing of any Action as specified in subsection A above, the applicant shall execute a Letter of Agreement with the City, acceptable to the Office of the

City Attorney, which memorializes the above obligations. These obligations and the Letter of Agreement shall survive termination, extinguishment or invalidation of the approval. Failure to timely execute the Letter of Agreement does not relieve the applicant of any of the obligations contained in this condition or other requirements or Conditions of Approval that may be imposed by the City.

8. Compliance with Conditions of Approval
Ongoing
The project applicant shall be responsible for compliance with the recommendations in any submitted and approved technical report and all the Conditions of Approval set forth below at its sole cost and expense, and subject to review and approval of the City of Oakland.

9. Severability
Ongoing
Approval of the project would not have been granted but for the applicability and validity of each and every one of the specified conditions, and if any one or more of such conditions is found to be invalid by a court of competent jurisdiction this Approval would not have been granted without requiring other valid conditions consistent with achieving the same purpose and intent of such Approval.

10. Job Site Plans
Ongoing throughout demolition, grading, and/or construction
At least one (1) copy of the stamped approved plans, along with the Approval Letter and Conditions of Approval, shall be available for review at the job site at all times.

11. Special Inspector/Inspections, Independent Technical Review, Project Coordination and Management
Prior to issuance of a demolition, grading, and/or construction permit
The project applicant may be required to pay for on-call special inspector(s)/inspections as needed during the times of extensive or specialized plancheck review, or construction. The project applicant may also be required to cover the full costs of independent technical and other types of peer review, monitoring and inspection, including without limitation, third party plan check fees, including inspections of violations of Conditions of Approval. The project applicant shall establish a deposit with the Building Services Division, as directed by the Building Official, Director of City Planning or designee.

12. Days/Hours of Construction Operation
Ongoing throughout demolition, grading, and/or construction
The project applicant shall require construction contractors to limit standard construction activities as follows:

a) Construction activities are limited to between 7:00 AM and 7:00 PM Monday through Friday, except that pile driving and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 a.m. and 4:00 p.m. Monday through Friday.

b) Any construction activity proposed to occur outside of the standard hours of 7:00 am to 7:00 pm Monday through Friday for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case by case basis,

with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened and such construction activities shall only be allowed with the prior written authorization of the Building Services Division.

c) Construction activity shall not occur on Saturdays, with the following possible exceptions:

i. Prior to the building being enclosed, requests for Saturday construction for special activities (such as concrete pouring which may require more continuous amounts of time), shall be evaluated on a case by case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened. Such construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division.

ii. After the building is enclosed, requests for Saturday construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division, and only then within the interior of the building with the doors and windows closed.

d) No extreme noise generating activities (greater than 90 dBA) shall be allowed on Saturdays, with no exceptions.

e) No construction activity shall take place on Sundays or Federal holidays.

f) Construction activities include but are not limited to: truck idling, moving equipment (including trucks, elevators, etc) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.

14. Operational Noise-General
Ongoing
Noise levels from the activity, property, or any mechanical equipment on site shall comply with the performance standards of Section 17.120 of the Oakland Planning Code and Section 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the Planning and Zoning Division and Building Services.

PROJECT SPECIFIC CONDTIONS:

15. Radio Frequency Emissions
Prior to the final building permit sign off
The applicant shall submit a certified RF emissions report stating the facility is operating within the acceptable standards established by the regulatory Federal Communications Commission.

ATTACHMENT A

Sprint®

PROJECT NAME:	2.5 EQUIPMENT DEPLOYMENT
SITE NAME:	THE SEMINARY
CASCADE #:	SF35XC001-A
SITE ADDRESS:	6450 CAMDEN STREET OAKLAND, CA 94605
SITE TYPE:	ROOFTOP

SITE INFORMATION

Site Address:
6450 Camden Street
Oakland, CA 94605

Property Owner:
Ulysses Asset Sub II, LLC
10 Presidential Way
Woburn, MA 01801

Site Acquisition:
Forza Telecom
1330 North Broadway, Suite 202
Walnut Creek, Ca 94596
Planning contact: Sean Synder
Leasing contact: Carla Roco
email: planning2.5@forzatelecom.com
ph: (925) 452-6312

Power Agency
PG&E

Telco Agency
AT&T

Latitude(NAD83):
37° 46' 16.439" N
37.77123333

Longitude (NAD83):
-122° 10' 40.909" W
-122.17803055

Construction Type:
B

Occupancy Type:
U

Owner Applicant:
Sprint
12657 Alcosta Blvd, Suite 300
San Ramon, Ca 94583
contact: Linh Nguyen
ph: (714) 425-0333
email: linh.nguyen@sprint.com

Sprint Construction Manager:
Sprint
12657 Alcosta Blvd, Suite 300
San Ramon, Ca 94583
contact: Tony Pino
ph: (415) 760-4921
email: Nelson.Pino@sprint.com

RF Engineer:
Samsung
2603 Camino Ramon, Suite 350
San Ramon, Ca 94583
contact: Swapnil Tiwari
email: St.Tiwari@sta.samsung.com
ph: (408) 355-8208

County:
Alameda

Zoning Jurisdiction:
City of Oakland

Zoning District:
RM-1

APN:
039-3282-001-08

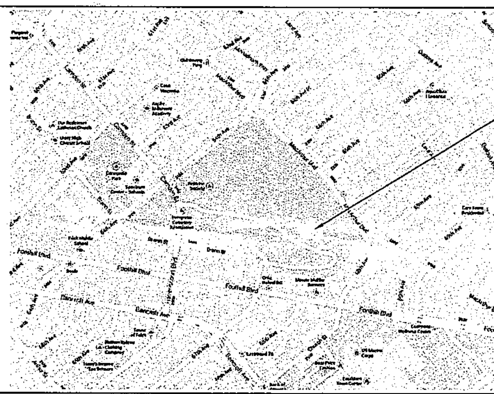
ACCESSIBILITY REQUIREMENTS

FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. ACCESSIBILITY ACCESS AND REQUIREMENTS ARE NOT REQUIRED, IN ACCORDANCE WITH CALIFORNIA STATE ADMINISTRATIVE CODE, PART 2, TITLE 24, SECTION 11038.1, EXCEPTION 1 & SECTION 11348.2.1, EXCEPTION 4.

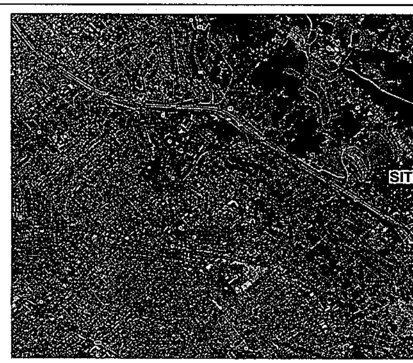
SPECIAL INSPECTIONS

1) POST INSTALLED EXPANSION ANCHORS

VICINITY MAP



LOCATION MAP



APPLICABLE CODES

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

1) 2010 CALIFORNIA ADMINISTRATIVE CODE, CHAPTER 10, PART 1, TITLE 24 CODE OF REGULATIONS- BEFORE JULY 1, 2014
2013 CALIFORNIA ADMINISTRATIVE CODE, CHAPTER 10, PART 1, TITLE 24 CODE OF REGULATIONS- AFTER JULY 1, 2014
2) 2013 CALIFORNIA BUILDING CODE (CBC) WITH CALIFORNIA AMENDMENTS, BASED ON THE 2012 IBC (PART 2, VOL 1-2)
3) 2013 CALIFORNIA RESIDENTIAL CODE (CRC) WITH APPENDIX H, PATIO COVERS, BASED ON THE 2012 IRC (PART 2.5)
4) 2010 CALIFORNIA GREEN BUILDINGS STANDARDS CODE (CALGREEN) (PART 11) (AFFECTED ENERGY PROVISIONS ONLY)- BEFORE JULY 1, 2014
2013 CALIFORNIA GREEN BUILDINGS STANDARDS CODE (CALGREEN) (PART 11) (AFFECTED ENERGY PROVISIONS ONLY)- AFTER JULY 1, 2014
5) 2013 CALIFORNIA FIRE CODE (CFC), BASED ON THE 2012 IFC, WITH CALIFORNIA AMENDMENTS (PART 9)
6) 2013 CALIFORNIA MECHANICAL CODE (CMC), BASED ON THE 2012 UMC (PART 4)
7) 2013 CALIFORNIA PLUMBING CODE (CPC), BASED ON THE 2012 UPC (PART 5)
8) 2013 CALIFORNIA ELECTRICAL CODE (CEC) WITH CALIFORNIA AMENDMENTS, BASED ON THE 2011 NEC (PART 3)
9) 2010 CALIFORNIA ENERGY CODE (CEC)- BEFORE JULY 1, 2014 (PART 6)
2013 CALIFORNIA ENERGY CODE (CEC)- AFTER JULY 1, 2014 (PART 6)
10) ANSI / EIA-TIA-222-G
11) 2012 NFPA 101, LIFE SAFETY CODE
12) 2013 NFPA 72, NATIONAL FIRE ALARM CODE
13) 2013 NFPA 13, FIRE SPRINKLER CODE

PROJECT DESCRIPTION

MODIFICATION TO EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

1. ADD NEW 2.5 EQUIPMENT INSIDE (E) MMBS CABINET
2. ADD NEW 2.5 EQUIPMENT INSIDE (E) BBU CABINET
3. RE-USE (E) HYBRID CABLES OR INSTALL NEW AS NEEDED
4. ADD 1 NEW 2.5 ANTENNA AT EACH OF 3 SECTORS A, B AND C
5. ADD 1 NEW 2.5 RRH AT EACH OF 3 SECTORS A, B AND C
6. ADD NEW COAX JUMPER LINES FROM RRHS TO NEW ANTENNAS

DRAWING INDEX

SHEET NO:	SHEET TITLE
T-1	TITLE SHEET & PROJECT DATA
GN-1	GENERAL NOTES 1
GN-2	GENERAL NOTES 2
A-1.1	OVERALL SITE PLAN
A-1.2	OVERALL ROOF PLAN
A-2.1	ENLARGED EQUIPMENT PLANS
A-2.2	ENLARGED ANTENNA PLANS
A-3.1	ELEVATIONS
A-3.2	ELEVATIONS
A-4	EQUIPMENT DETAILS
RF-1	ANTENNA SCHEDULE & PARTS LIST
E-1	SINGLE LINE DIAGRAM & POWER PANEL SCHEDULE
G-1	GROUNDING PLAN & NOTES
G-2	GROUNDING DETAILS

APPROVALS

APPROVALS	DATE
SITE ACQUISITION PLANNER–	
SITE ACQUISITION MANAGER–	
SPRINT CONSTRUCTION–	
SPRINT SITE ACQUISITION–	
RF ENGINEER–	
LANDLORD–	

DRIVING DIRECTIONS FROM SPRINT, 12657 ALCOSTA BLVD SAN RAMON, CA

1. HEAD SOUTHEAST ON ALCOSTA BLVD TOWARD HOSPITAL PL
2. TURN RIGHT ONTO BOLLINGER CANYON RD
3. MERGE ONTO I-680 S VIA THE RAMP TO SAN JOSE
4. TAKE THE EXIT ONTO I-580 W TOWARD DUBLIN BOULEVARD/OAKLAND
5. KEEP RIGHT TO STAY ON I-580 W, FOLLOW SIGNS FOR OAKLAND/SAN FRANCISCO
6. TAKE THE EXIT TOWARD SEMINARY AVE
7. TURN LEFT ONTO KUHNLE AVE
8. TAKE THE 1ST RIGHT ONTO SEMINARY AVE
9. TURN LEFT ONTO CAMDEN ST

DESTINATION WILL BE ON THE LEFT

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FORZATELECOM, Inc.
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Suite 202
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Borges Architectural Group
ARCHITECTURE PLANNING INTERIORS

PROJECT NO:	13065-105
DRAWN BY:	JVM
CHECKED BY:	B.K.W.

REV	DATE	DESCRIPTION
2	05/29/2014	100% CD REV 1
1	04/04/14	100% CD SUBMITTAL
0	02/18/14	90% CD SUBMITTAL

05/29/2014

100% CD Submittal

LICENSED ARCHITECT RICHARD SAUBUCETTI No. C11535 STATE OF C

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ATTACHMENT A

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, information on the construction drawings 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 RRH'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 - Antenna 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 (Sprint's 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 RRH
(iii) Manufacturer's name tag for all serialized equipment
(iv) Pull and distribution boxes intermediate between RRH'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 IS. In IS 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 09 900 - Painting

Quality Assurance:

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Comply with all environmental regulations for volatile organic compounds.

Materials:

A. Manufacturers: Benjamin Moore, Icl Devoe coatings, PPG, Sherwin Williams or approved equal. Provide premium grade, professional-quality products for coating systems

Paint Schedule:

A. Exterior antennae and antenna mounting hardware: One coat of primer and two finish coats. Paint for antennae shall be non-metallic based and contain no metallic particles. Provide colors and patterns as required to mask appearance of antennae on adjacent building surfaces and as acceptable to the owner. Refer to antenna manufacturer's instructions whenever possible.

B. Water Tanks: Touch up - prepare surfaces to be repaired. Follow industry standards and requirements of owner to match existing coating and finish.

Painting Application:

1. Inspect surfaces, report unsatisfactory conditions in writing; beginning work means acceptance of substrate.
2. Comply with manufacturer's instructions and recommendations for preparation, priming and coating work. Coordinate with work of other sections.
3. Match approved mock-ups for color, texture, and pattern. Re-coat or remove and replace work which does not match or shows loss of adhesion.
4. Clean up, touch up and protect work.

Touchup Painting:

1. Galvanizing damage and all bolts and nuts shall be touched up after tower erection with "Galvanox," "Dry Galv," or "Zinc-It."
2. fFeld touchup paint shall be done in accordance with the manufacturer's written instructions.
3. All metal components shall be handled with care to prevent damage to the components, their preservative treatment, or their protective coatings.

Section 11 700 - Antenna assembly, Remote Radio Units and cable installation

Summary:
This section specifies installation of antennas, RRH's, and cable equipment, installation, and testing of coaxial fiber cable.

Antennas and RRH's:
The number and type of antennas and RRH'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:
Furnish and install 1/2" coax jumper cables between the RRH's and antennas. Jumpers shall be type IDF 4, FLC 12-50, CR 540, or FXL 540. Super-Flex cables are not acceptable. Jumpers between the RRH's and antennas or lower top amplifiers shall consist of 1/2 inch foam dielectric, outdoor rated coaxial cable, min length for jumper shall be 10'-0".

Remote Electrical Tilt (RET) cables: insert spec

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: All cables shall be permanently fastened to the coax ladder at 4'-0" oc using non-magnetic stainless steel clips.
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.

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Architectural Group Borges

PROJECT NO:	13065-105
DRAWN BY:	JVM
CHECKED BY:	B.K.W.

REV	DATE	DESCRIPTION
2	05/29/2014	100% CD REV 1
1	04/04/14	100% CD SUBMITTAL
0	02/18/14	90% CD SUBMITTAL

05/29/2014
100% CD Submittal

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OAKLAND, CA 94605

SHEET TITLE
GENERAL NOTES 1

SHEET NUMBER
GN-1

Continue from GN-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: Substitutions will not be allowed.
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 installating equipment in existing cabinet or new cabinet as shown on drawings and as required by the applicable installation maps.

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

Supporting Devices:

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

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.

Supporting Devices:

A. Install supporting devices to fasten electrical components securely and permanently in accordance with NEC.

B. Coordinate with the building structural system and with other trades.

C. Unless otherwise indicated on the drawings, fasten electrical items and their supporting hardware securely to the structure in accordance with the following:

D. Ensure that the load applied by any fastener does not exceed 25 percent of the proof test load.

E. 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 systems. 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 Elco - 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:

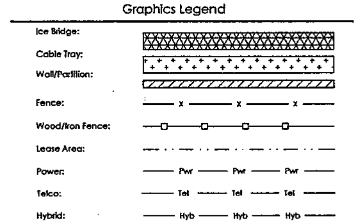
A. Existing exposed wiring and all exposed outlets, receptacles, switches, devices, boxes, and other equipment that are not to be utilized in the completed project shall be removed or de-energized and capped in the wall, ceiling, or floor so that they are concealed and safe. wall, ceiling, or floor shall 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.

Graphics Legend



Acronym Legend

BBU:	Battery Backup Unit	PPC:	Power Protection Cabinet
CAB:	Cabinet	PRI:	Legacy Primary Cabinet
CDMA:	Code Division Multiple Access	PWR:	Power
CMU:	Concrete Masonry Unit	RAD:	Radiation Center
(E):	Existing	RET:	Remote Electrical Tilt
GND:	Ground	RF:	Radio Frequency
GPS:	Global Positioning System	RFP:	Reinforced Fiberglass Panel
HVAC:	Heating Ventilation Air Conditioning	RRH:	Remote Radio Head
HYB:	Hybrid line	TEL:	Telco
MMBS:	Multi Modal Base Station	HFC:	Hydrogen Fuel Cell
(N):	New	HSM:	Hydrogen Storage Module
(P):	Proposed		

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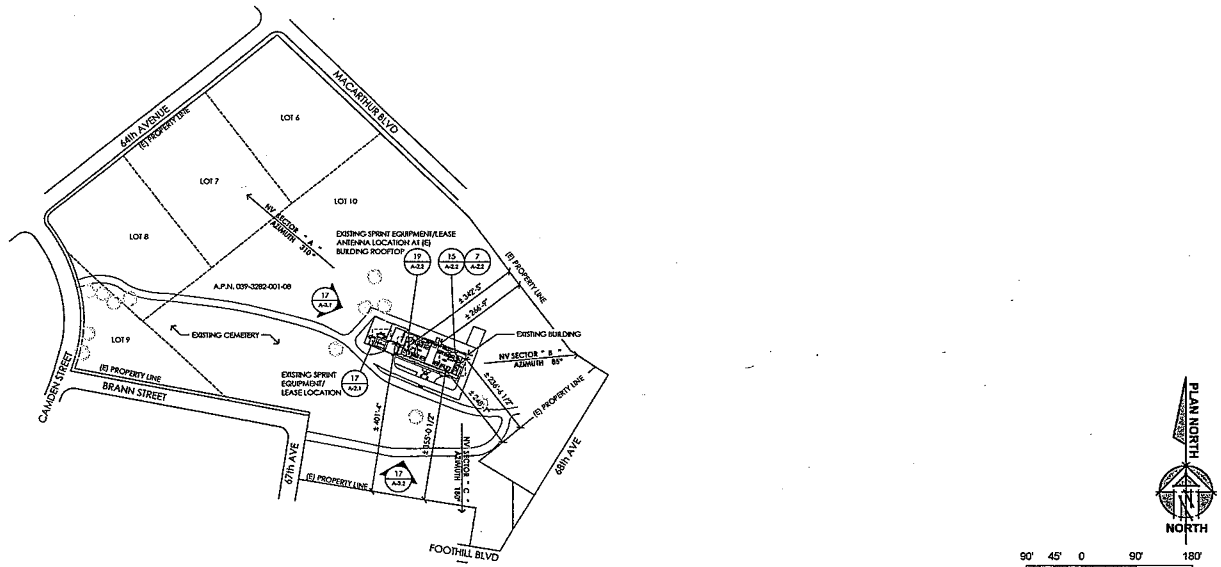
SHEET TITLE
GENERAL NOTES 2

SHEET NUMBER
GN-2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(E) PROPERTY LINE
MACARTHUR BLVD
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
NV SECTOR " A "
AZIMUTH 310°
EXISTING SPRINT EQUIPMENT/LEASE ANTENNA LOCATION AT (E) BUILDING ROOFTOP
A.P.N. 039-3282-001-08
EXISTING CEMETERY
EXISTING BUILDING
NV SECTOR " B "
AZIMUTH 85°
EXISTING SPRINT EQUIPMENT/ LEASE LOCATION
CAMDEN STREET
BRANN STREET
67th AVE
68th AVE
FOOTHILL BLVD
NV SECTOR " C "
AZIMUTH 180°
PLAN NORTH
NORTH
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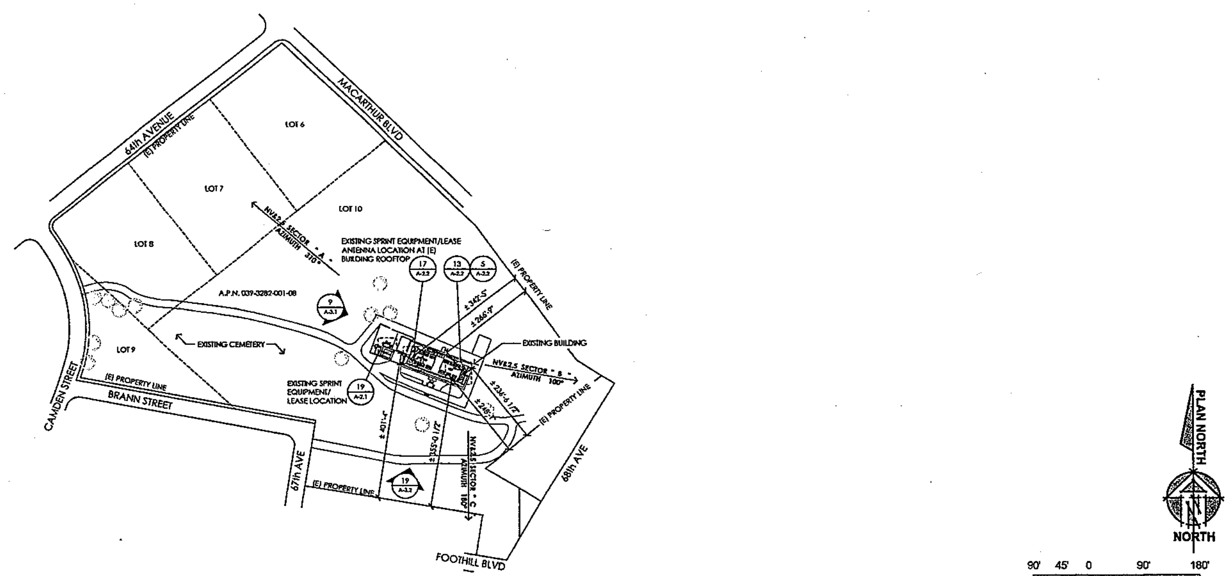
1"=90'-0"

19 EXISTING OVERALL SITE PLAN
1"=90'-0"


64th AVENUE
(E) PROPERTY LINE
MACARTHUR BLVD
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LOT 9
LOT 10
NV&2.5 SECTOR " A "
AZIMUTH 310°
EXISTING SPRINT EQUIPMENT/LEASE ANTENNA LOCATION AT (E) BUILDING ROOFTOP
A.P.N. 039-3282-001-08
EXISTING CEMETERY
EXISTING BUILDING
NV&2.5 SECTOR " B "
AZIMUTH 100°
EXISTING SPRINT EQUIPMENT/ LEASE LOCATION
CAMDEN STREET
BRANN STREET
67th AVE
68th AVE
FOOTHILL BLVD
NV&2.5 SECTOR " C "
AZIMUTH 180°
PLAN NORTH
NORTH
90' 45' 0 90' 180'
1"=90'-0"

17 PROPOSED OVERALL SITE PLAN
1"=90'-0"

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San Ramon, CA 94583

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1330 North Broadway
Suite 202
Walnut Creek, CA 94596

Borges

PROJECT NO:	13065-105
DRAWN BY:	JVM
CHECKED BY:	B.K.W.

REV	DATE	DESCRIPTION
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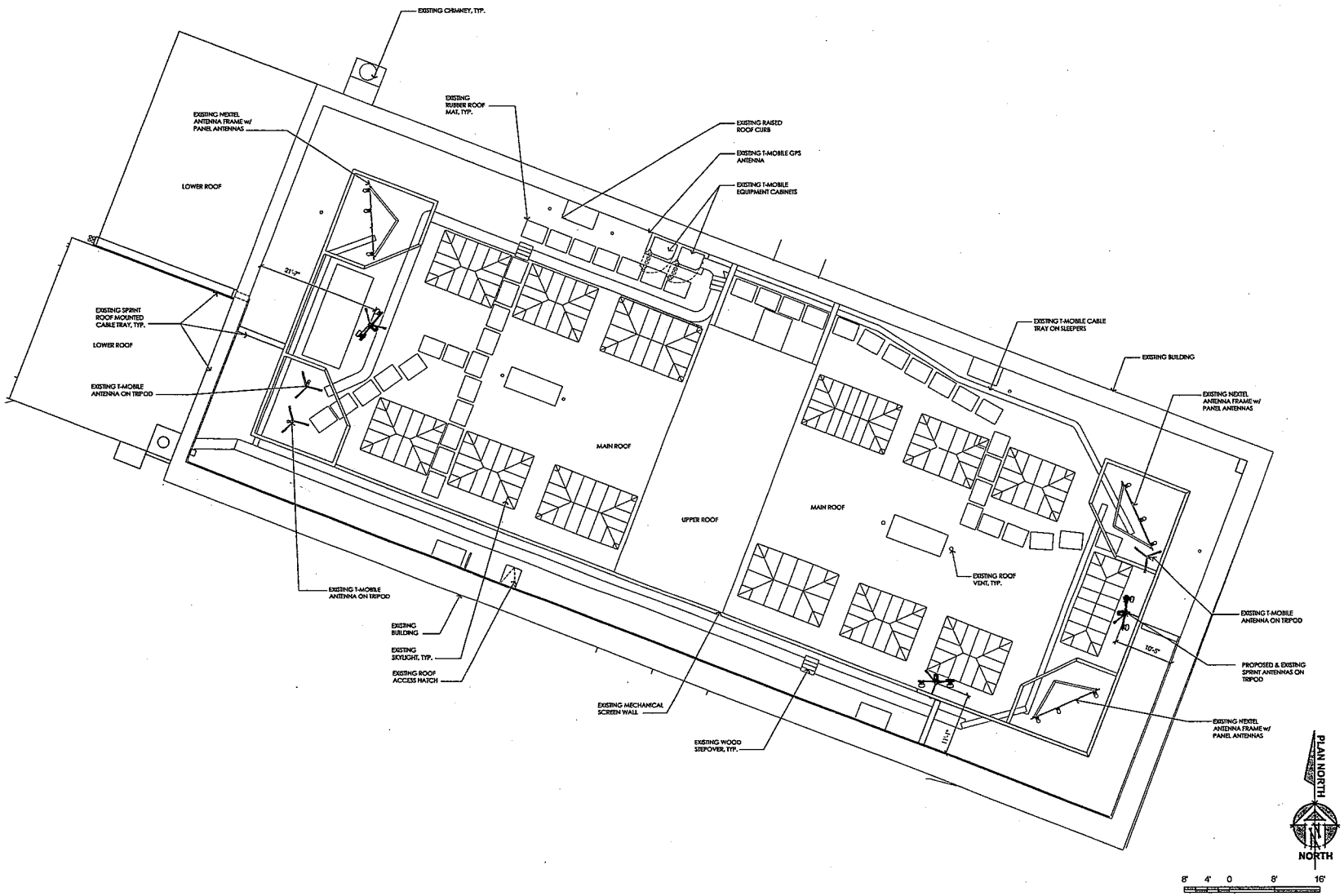
6450 CAMDEN STREET
OAKLAND, CA 94605

SHEET TITLE

OVERALL SITE PLAN

SHEET NUMBER

A-1.1



17 OVERALL ROOF PLAN
SCALE: 1/8" = 1'-0"

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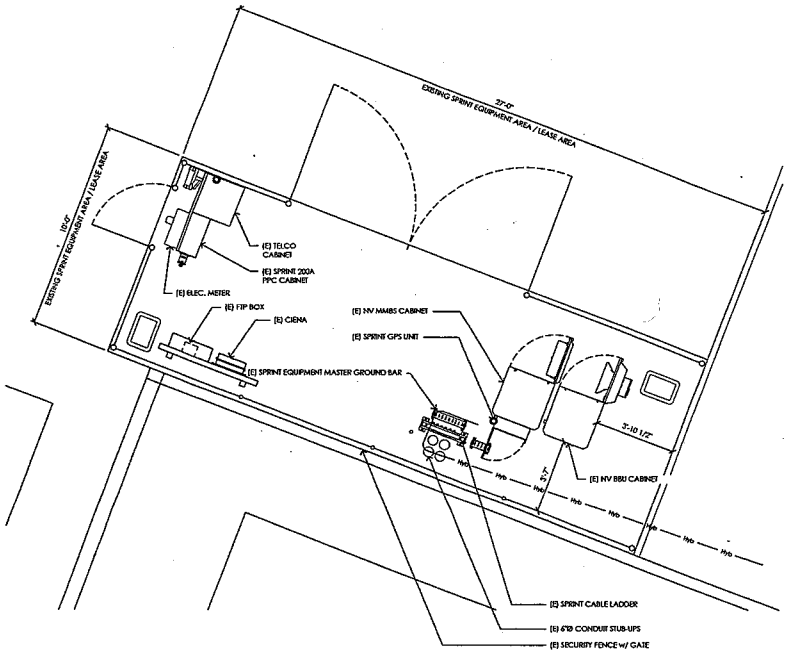
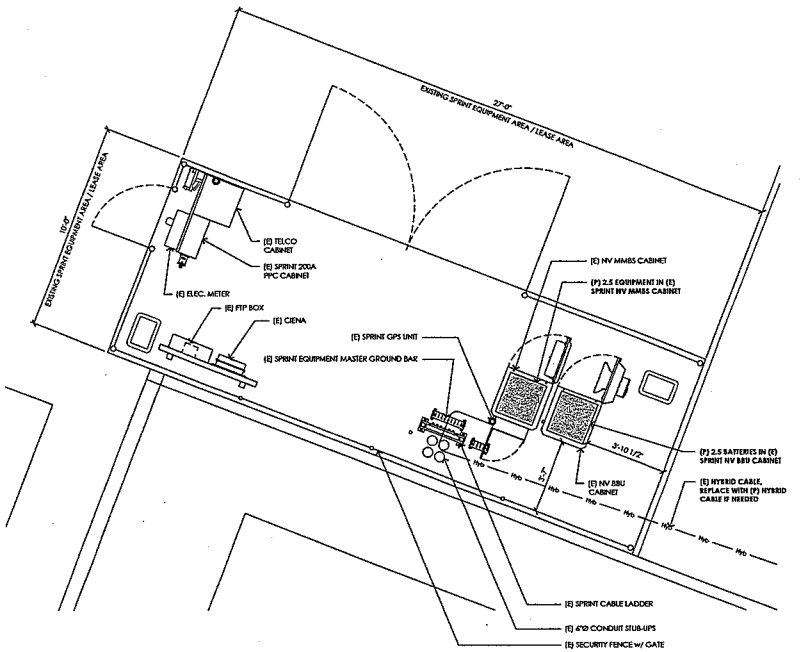
SHEET TITLE
OVERALL ROOF PLAN

SHEET NUMBER
A-1.2



17 EXISTING EQUIPMENT PLAN
3/8" = 1'-0"



9 PROPOSED EQUIPMENT PLAN
3/8" = 1'-0"

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ARCHITECTURAL GROUP

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LICENSED ARCHITECT BRIAN K. WILLIAMS No. C31355 REGISTERED PROFESSIONAL ARCHITECT STATE OF CALIFORNIA

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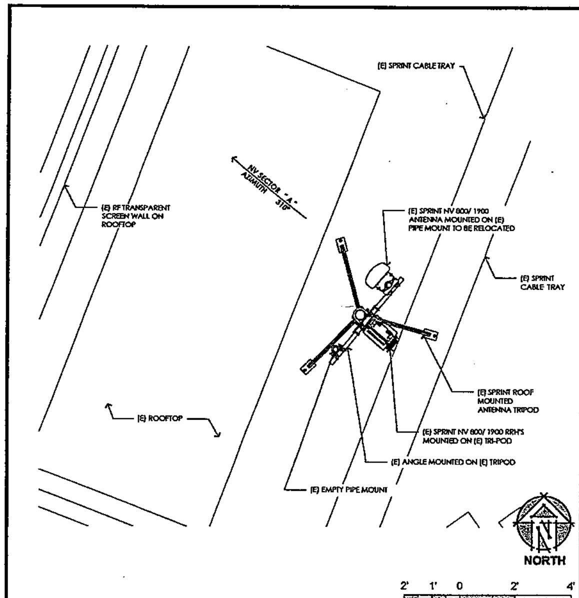
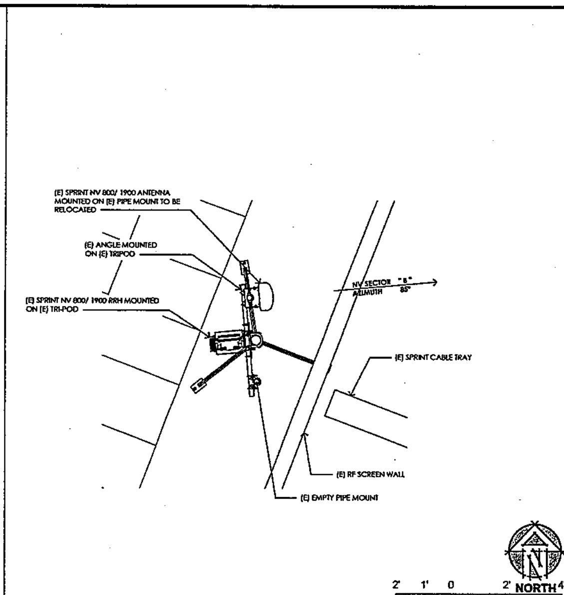
SHEET TITLE
ENLARGED EQUIPMENT PLANS

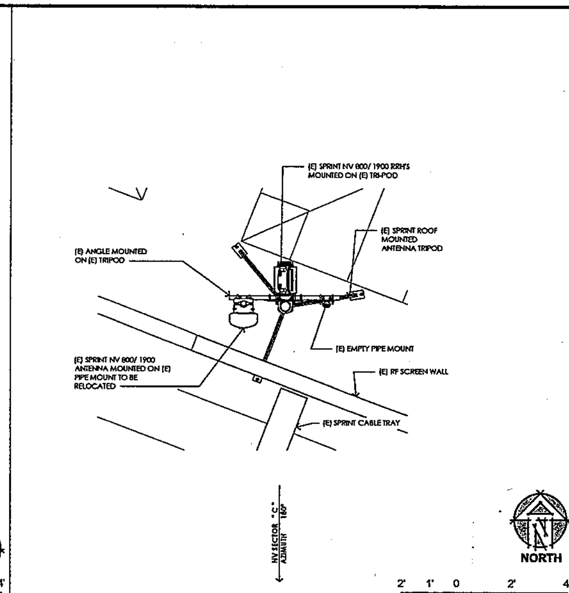
SHEET NUMBER
A-2.1


(E) SPRINT CABLE TRAY
NV SECTOR "A"
AZIMUTH 310°
(E) RF TRANSPARENT SCREEN WALL ON ROOFTOP
(E) SPRINT NV 800/ 1900 ANTENNA MOUNTED ON (E) PIPE MOUNT TO BE RELOCATED
(E) SPRINT CABLE TRAY
(E) SPRINT ROOF MOUNTED ANTENNA TRIPOD
(E) ROOFTOP
(E) SPRINT NV 800/ 1900 RRH'S MOUNTED ON (E) TRI-POD
(E) ANGLE MOUNTED ON (E) TRIPOD
(E) EMPTY PIPE MOUNT
NORTH
2' 1' 0 2' 4'
1/2"=1'-0"

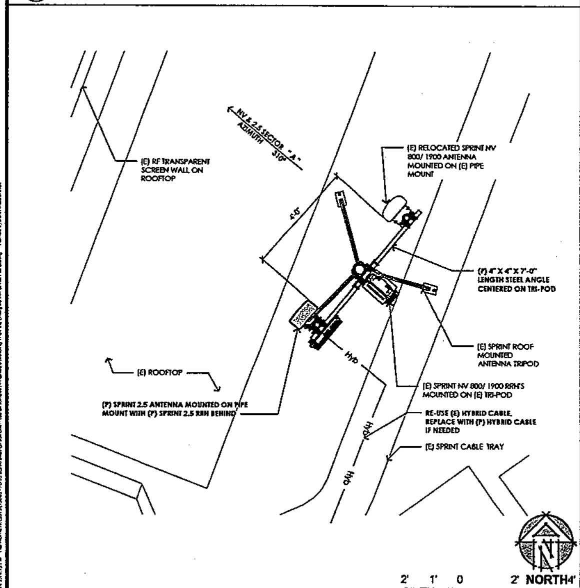
19 EXISTING ANTENNA LAYOUT- SECTOR A
1/2" = 1'-0"



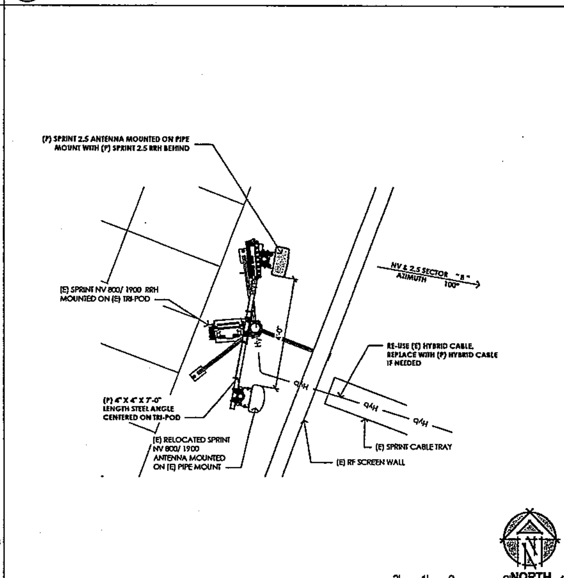
15 EXISTING ANTENNA LAYOUT- SECTOR B
1/2" = 1'-0"


(E) SPRINT NV 800/ 1900 RRH'S MOUNTED ON (E) TRI-POD
(E) SPRINT ROOF MOUNTED ANTENNA TRIPOD
(E) ANGLE MOUNTED ON (E) TRIPOD
(E) EMPTY PIPE MOUNT
(E) SPRINT NV 800/ 1900 ANTENNA MOUNTED ON (E) PIPE MOUNT TO BE RELOCATED
(E) RF SCREEN WALL
(E) SPRINT CABLE TRAY
NV SECTOR "C"
AZIMUTH 180°
NORTH
2' 1' 0 2' 4'
1/2"=1'-0"

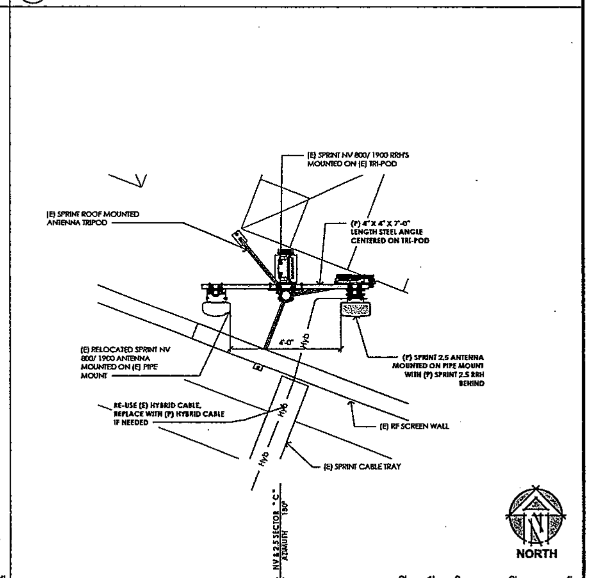
7 EXISTING ANTENNA LAYOUT- SECTOR C
1/2" = 1'-0"


NV & 2.5 SECTOR "A"
AZIMUTH 310°
(E) RF TRANSPARENT SCREEN WALL ON ROOFTOP
(E) RELOCATED SPRINT NV 800/ 1900 ANTENNA MOUNTED ON (E) PIPE MOUNT
(P) 4" X 4" X 7'-0" LENGTH STEEL ANGLE CENTERED ON TRI-POD
(E) SPRINT ROOF MOUNTED ANTENNA TRIPOD
(E) ROOFTOP
(P) SPRINT 2.5 ANTENNA MOUNTED ON PIPE MOUNT WITH (P) SPRINT 2.5 RRH BEHIND
(E) SPRINT NV 800/ 1900 RRH'S MOUNTED ON (E) TRI-POD
RE-USE (E) HYBRID CABLE, REPLACE WITH (P) HYBRID CABLE IF NEEDED
(E) SPRINT CABLE TRAY
NORTH
2' 1' 0 2' 4'
1/2"=1'-0"

17 PROPOSED ANTENNA LAYOUT- SECTOR A
1/2" = 1'-0"


(P) SPRINT 2.5 ANTENNA MOUNTED ON PIPE MOUNT WITH (P) SPRINT 2.5 RRH BEHIND
NV & 2.5 SECTOR "B"
AZIMUTH 100°
(E) SPRINT NV 800/ 1900 RRH MOUNTED ON (E) TRI-POD
RE-USE (E) HYBRID CABLE, REPLACE WITH (P) HYBRID CABLE IF NEEDED
(P) 4" X 4" X 7'-0" LENGTH STEEL ANGLE CENTERED ON TRI-POD
(E) RELOCATED SPRINT NV 800/ 1900 ANTENNA MOUNTED ON (E) PIPE MOUNT
(E) SPRINT CABLE TRAY
(E) RF SCREEN WALL
NORTH
2' 1' 0 2' 4'
1/2"=1'-0"

13 PROPOSED ANTENNA LAYOUT- SECTOR B
1/2" = 1'-0"


(E) SPRINT NV 800/ 1900 RRH'S MOUNTED ON (E) TRI-POD
(E) SPRINT ROOF MOUNTED ANTENNA TRIPOD
(P) 4" X 4" X 7'-0" LENGTH STEEL ANGLE CENTERED ON TRI-POD
(E) RELOCATED SPRINT NV 800/ 1900 ANTENNA MOUNTED ON (E) PIPE MOUNT
(P) SPRINT 2.5 ANTENNA MOUNTED ON PIPE MOUNT WITH (P) SPRINT 2.5 RRH BEHIND
RE-USE (E) HYBRID CABLE, REPLACE WITH (P) HYBRID CABLE IF NEEDED
(E) RF SCREEN WALL
(E) SPRINT CABLE TRAY
NV & 2.5 SECTOR "C"
AZIMUTH 180°
NORTH
2' 1' 0 2' 4'
1/2"=1'-0"

5 PROPOSED ANTENNA LAYOUT- SECTOR C
1/2" = 1'-0"

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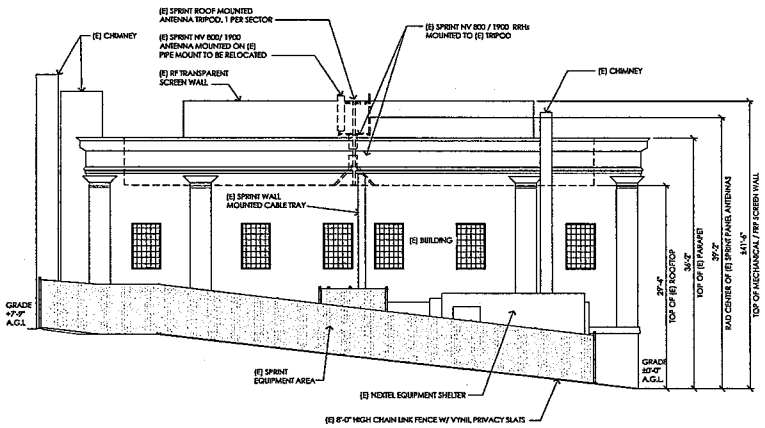
OAKLAND, CA 94605

SHEET TITLE
ENLARGED ANTENNA PLANS

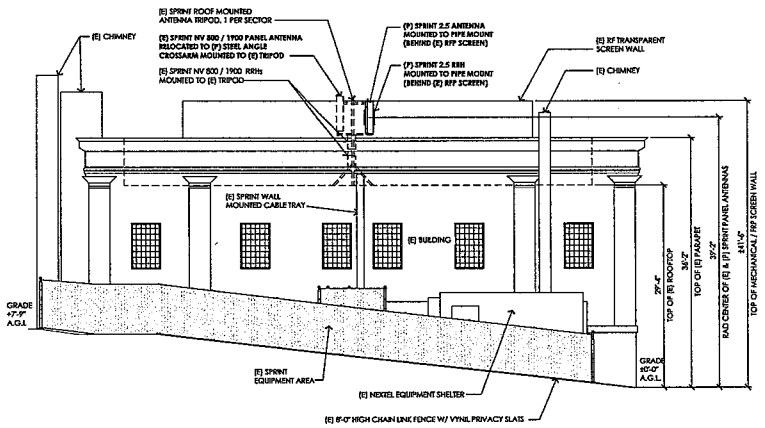
SHEET NUMBER
A-2.2



8' 4' 0 8' 16'

17 EXISTING NORTHWEST ELEVATION
1/8"= 1'-0"

1/8"=1'-0"



8' 4' 0 8' 16'

9 PROPOSED NORTHWEST ELEVATION
1/8" = 1'-0"

1/8"=1'-0"

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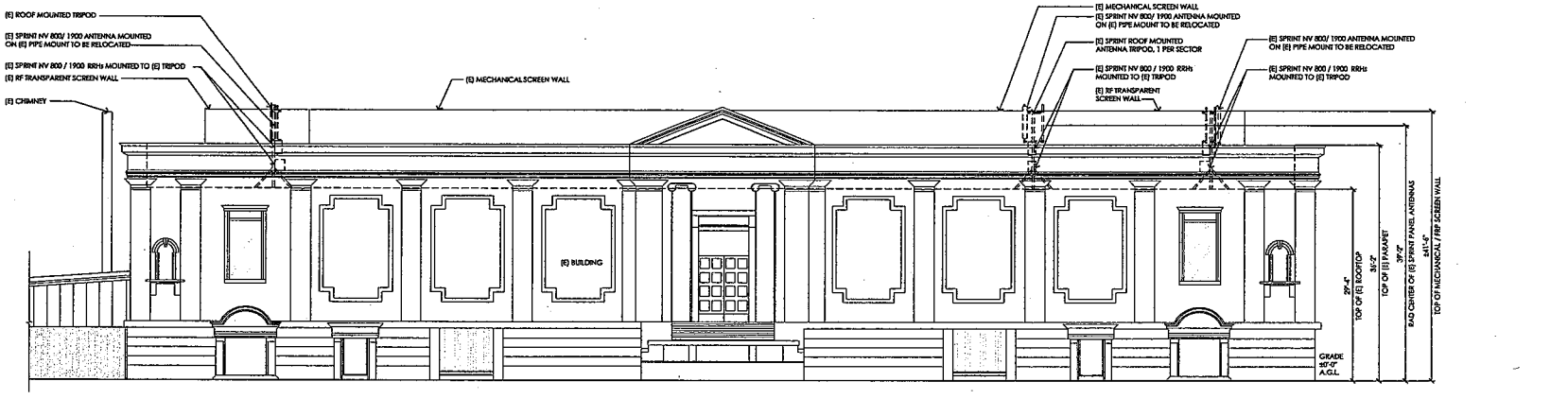
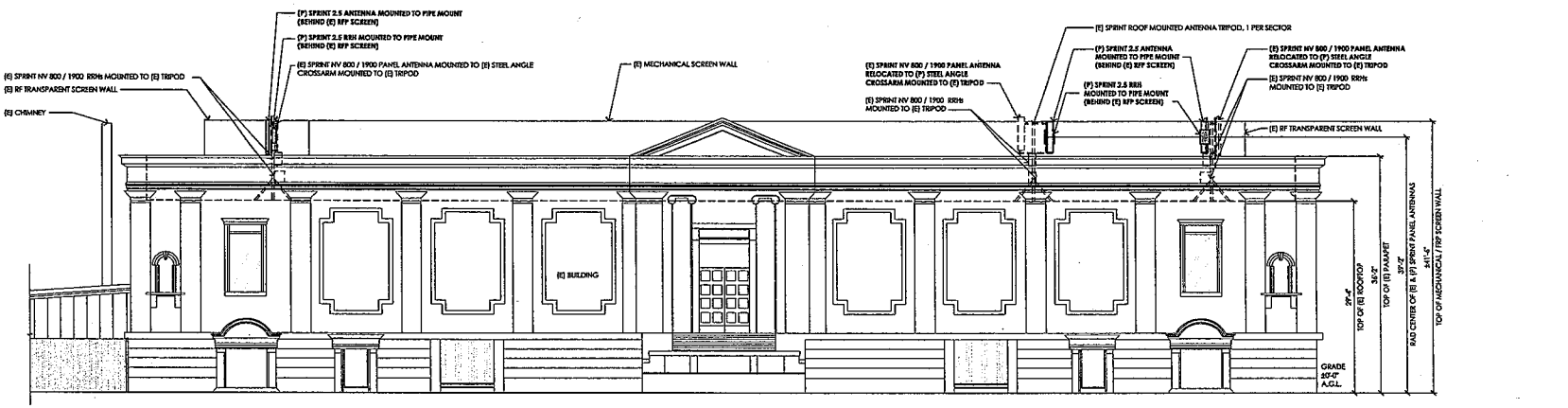
SHEET TITLE
ELEVATIONS

SHEET NUMBER
A-3.1



17 EXISTING SOUTHWEST ELEVATION
1/8" = 1'-0"



17 PROPOSED SOUTHWEST ELEVATION
1/8" = 1'-0"

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Licensed Architect Brian K. Williams No. C11535 Exp. 08-31-15 State of California

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The Seminary
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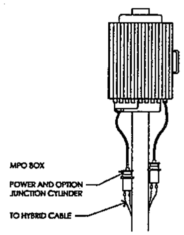
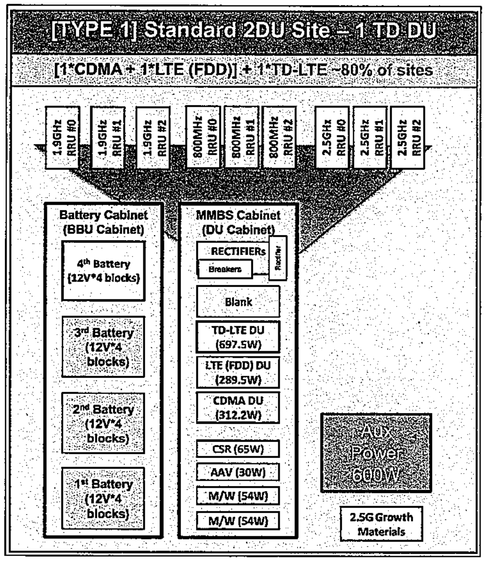
OAKLAND, CA 94605

SHEET TITLE
ELEVATIONS

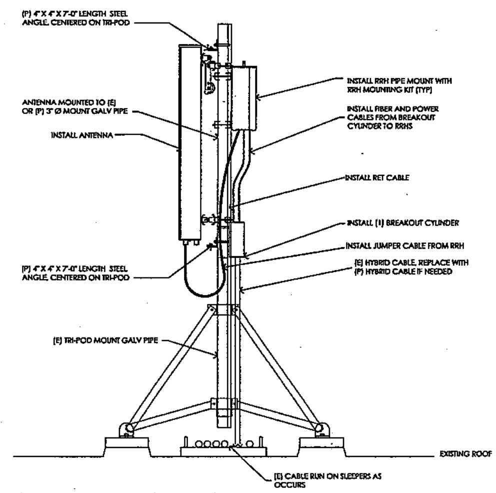
SHEET NUMBER
A-3.2



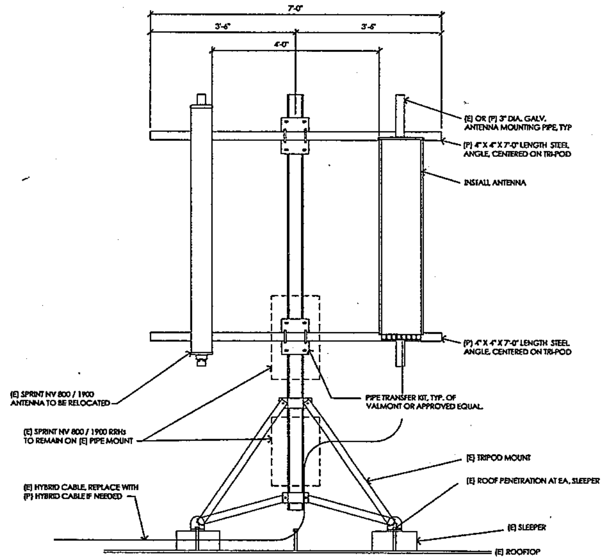
19 JUNCTION CYLINDER DETAIL
N.T.S.


[TYPE 1] Standard 2DU Site – 1 TD DU
[1*CDMA + 1*LTE (FDD)] + 1*TD-LTE ~80% of sites
1.9GHz RRU #0
1.9GHz RRU #1
1.9GHz RRU #2
800MHz RRU #0
800MHz RRU #1
800MHz RRU #2
2.5GHz RRU #0
2.5GHz RRU #1
2.5GHz RRU #2
Battery Cabinet (BBU Cabinet)
4th Battery (12V*4 blocks)
3rd Battery (12V*4 blocks)
2nd Battery (12V*4 blocks)
1st Battery (12V*4 blocks)
MMBS Cabinet (DU Cabinet)
RECTIFIERS
Breakers
Rectifier
Blank
TD-LTE DU (697.5W)
LTE (FDD) DU (289.5W)
CDMA DU (312.2W)
CSR (65W)
AAV (30W)
M/W (54W)
M/W (54W)
Aux Power 600W
2.5G Growth Materials

15 HW DIMENSIONING - TYPICAL 3 SECTOR- NV 2DU TYPE 1


(P) 4"X 4"X 7'-0" LENGTH STEEL ANGLE, CENTERED ON TRI-POD
ANTENNA MOUNTED TO (E) OR (P) 3" Ø MOUNT GALV PIPE
INSTALL ANTENNA
INSTALL RRH PIPE MOUNT WITH RRH MOUNTING KIT (TYP)
INSTALL FIBER AND POWER CABLES FROM BREAKOUT CYLINDER TO RRHS
INSTALL RET CABLE
INSTALL (1) BREAKOUT CYLINDER
INSTALL JUMPER CABLE FROM RRH
(E) HYBRID CABLE, REPLACE WITH (P) HYBRID CABLE IF NEEDED
(P) 4"X 4"X 7'-0" LENGTH STEEL ANGLE, CENTERED ON TRI-POD
(E) TRI-POD MOUNT GALV PIPE
EXISTING ROOF
(E) CABLE RUN ON SLEEPERS AS OCCURS

7 (P) ANTENNA & RRH MOUNTING (SIDE VIEW)
3/4" = 1'-0"


7'-0"
3'-6"
3'-6"
4'-0"
(E) OR (P) 3" DIA. GALV. ANTENNA MOUNTING PIPE, TYP
(P) 4"X 4"X 7'-0" LENGTH STEEL ANGLE, CENTERED ON TRI-POD
INSTALL ANTENNA
(P) 4"X 4"X 7'-0" LENGTH STEEL ANGLE, CENTERED ON TRI-POD
(E) SPRINT NV 800 / 1900 ANTENNA TO BE RELOCATED
PIPE TRANSFER KIT, TYP. OF VALMONT OR APPROVED EQUAL
(E) SPRINT NV 800 / 1900 RRHs TO REMAIN ON (E) PIPE MOUNT
(E) TRIPOD MOUNT
(E) HYBRID CABLE, REPLACE WITH (P) HYBRID CABLE IF NEEDED
(E) ROOF PENETRATION AT EA. SLEEPER
(E) SLEEPER
(E) ROOFTOP

17 (P) ANTENNA & RRH MOUNTING (FRONT VIEW)
3/4" = 1'-0"

CFC CHAPTER 6 COMPLIANCE

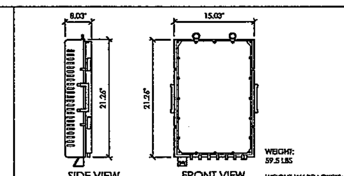
TOTAL ELECTROLYTE = 16 BATTERIES X 2.49 GAL/BATTERY = 39.84 GAL
(SINCE <50 GAL OF ELECTROLYTE, CFC CHAPTER 6, SECTION 608 NOT APPLICABLE)

BATTERY INFORMATION

(BATTERY ELECTROLYTE 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 WEIGHT = TOTAL ACID WEIGHT ÷ TOTAL ELECTROLYTE WEIGHT		TOTAL SULFURIC VOL (GAL) = TOTAL UNITS X SULFURIC VOL/UNIT		% SULFURIC ACID BY VOL = ACID VOLUME / UNIT ÷ ELECTROLYTE VOLUME/UNIT
40.8% = 11.2 LBS/27.25 LBS		23.2 GAL = 16 UNITS X 1.45 / UNIT		177.98 LBS = 16 UNITS X 11.12 LBS

9 BATTERY DATA CHART

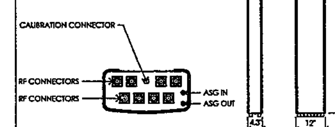


NOTES
GENERAL CONTRACTOR TO ENSURE THAT ALL RRH'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRH PACKAGES IN THE RAIN. REQUIRES 3" PIPE

2 2.5 RRHS
NOT TO SCALE

ANTENNA MAKE AND MODE

MANUFACTURER:	KMW
MODEL:	ET-X-WM-18-65-8P
RADOME MATERIAL:	XXX
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD.in(mm):	61"x12"x4.3"(IN)
WEIGHT:	36.4 lbs
CONNECTORS:	(2) XX FEMALE
ANTENNA MOUNTING KIT WEIGHT:	13.2 lbs



1 2.5 ANTENNA
NOT TO SCALE

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OAKLAND, CA 94605

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

RFDS Sheet

General Site Information

Site ID	SF35XC001	Equipment Vendor	Samsung
Market	SF Bay	Lattitude	37.7713333
Region	West	Longitude	-122.1785556
MLA	ATC	LL SITE ID	276275
Structure Type	ROOFTOP		
BTS Type	STANDARD		

Transmit	2496 Mhz - 2690 Mhz	Siterra SR Equipment type	Outdoor Macro	Incremental Power Draw needed by added Equipment
Receive	2496 Mhz - 2690 Mhz	Equipment Vendor	Samsung	0

Base Equipment

BBU Kit	UADU	Top Hat	
BBU Kit Qty	1	Top Hat Qty	
BBU Dimensions	3.5" x 17.1" x 15.2"	Top Hat Dimenstions	
Growth Cabinet		Top Hat Weight (lbs)	
Growth Cabinet Qty			
Growth Cabinet Dimensions			
Growth Cabinet Weight			

RF Path Information

RRH	RRH-V3	
RRH Qty	3	
RRH Dimensions	15.5" x 18.6" x 7.48"	Specs as provided by Sprint is 15.03" x 21.26" x 8.03"
RRH Weight. lbs.	54	Weight: 59.5 lbs
RRH Mount Weight. Lbs.	12.32	
Power and Fiber Cable	e Solution derived from existing	
Cable Qty	NA	
Weight per foot. Lbs.	NA	
Diameter. Inches.	NA	
Length Ft.	60	(calculated as antenna height plus 20%)
Coax Jumper		
Coax Jumper Qty	27	
Coax Jumper Length. Feet.	8	GC to field verify jumper length and quantity
Coax Jumper Weight	TBD	
Coax Jumper Diameter. Inches	0.5	
AISG Cable	Commscope ATCB-B01-006	
AISG Cable Qty	3	
AISG Diameter. Inches.	0.315	
AISG Cable length.	8	
Weight of entire AISG cable. Lbs.	1.3	

Antenna Sector Information

	Sector 1	Sector 2	Sector 3
Antenna make/model	KMW ET-X-WM-18-65-8P	KMW ET-X-WM-18-65-8P	KMW ET-X-WM-18-65-8P
Antenna qty	1	1	1
Antenna Dimensions. Inches	61" x 12" x 4"	61" x 12" x 4"	61" x 12" x 4"
Antenna Weight. Inches	36	36	36
Antenna Mounting Kit Weight. Lbs.	~11 lb estimate. TBD.	~11 lb estimate. TBD.	~11 lb estimate. TBD.
CL Height	50	50	50
Antenna Azimuth	310	100	180
Antenna Mechanical Downtilt	0	0	0
Antenna etilt	-2	-2	-2

Specs as provided by Sprint is 61"x12"x4.3"
Antenna Weight: 36.4 lbs
Antenna mounting kit weight: 13.2 lbs

Field verified (e) antenna rad center: 39'-2"

ANTENNA SCHEDULE & PARTS LIST | NO SCALE | A

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0	02/18/14	90% CD SUBMITTAL

05/29/2014
100% CD Submittal

SF35XC001-A
The Seminary
6450 CAMDEN STREET
OAKLAND, CA 94605

SHEET TITLE
ANTENNA SCHEDULE & PARTS LIST

SHEET NUMBER
RF-1

1. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL LOCAL AND STATE CODE, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.

2. CONTRACTOR SHALL COORDINATE WITH LOCAL POWER COMPANY FOR REQUIREMENTS OF POWER SERVICE LINE TO THE METER BASE. POWER SERVICE REQUIREMENT IS COMMERCIAL AC NOMINAL 120/208 VOLT OR 120/240 VOLT, SINGLE PHASE WITH 200 AMP RATING.

3. CONTRACTOR SHALL COORDINATE WITH LOCAL TELEPHONE COMPANY FOR REQUIREMENTS OF "T1" SERVICE LINE TO TERMINATE AT THE PPC CABINET.

4. CONTRACTOR SHALL FURNISH AND INSTALL ELECTRIC METER BASE AND 200A DISCONNECT SWITCH PER SITE PLAN AND DETAIL DRAWINGS. THE METER BASE SHOULD BE LOCATED IN A MANNER WHERE ACCESSIBLE BY THE LOCAL POWER COMPANY.

5. LOCAL POWER COMPANY SHALL PROVIDE 200 AMP ELECTRIC METER. CONTRACTOR SHALL COORDINATE INSTALLATION OF METER WITH LOCAL POWER COMPANY.

6. UNDERGROUND POWER AND TELCO SERVICE LINES SHALL BE ROUTED IN A COMMON TRENCH. ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 AND CONDUIT EXPOSED ABOVE GROUND SHALL BE RIGID GALVANIZED STEEL UNLESS OTHERWISE INDICATED.

7. ALL TELCO CONDUIT LINES SHALL BE 4" SCH. 40 PVC CONDUIT UNLESS OTHERWISE INDICATED. THE TELCO CONDUIT FROM THE PPC SHALL BE ROUTED AND TERMINATED AT DESIGNATED TELCO DEMARCATION OR 2-FEET OUTSIDE FENCED AREA. NEAR UTILITY POLE (IN FENCED AREA). OR END CAP OFF AND PROVIDE MARKER STAKE PAINTED BRIGHT ORANGE WITH DESIGNATION FOR TELCO SERVICE.

8. CONDUITS INSTALLED AT PCS EQUIPMENT ENDS PRIOR TO THE EQUIPMENT INSTALLATION SHALL BE STUBBED AND CAPPED AT 6" ABOVE GRADE OR PLATFORM. IF SERVICE LINES CAN'T BE INSTALLED INITIALLY, PROVIDE NYLON PULL CORD IN CONDUITS.

9. THE SPRINT CABINET, INCLUDING 200 AMP LOAD PANEL AND TELCO PANEL, SHALL BE PROVIDED BY OWNER AND INSTALLED BY THE CONTRACTOR. CONTRACTOR IS TO INSTALL BREAKER(S) NOT PROVIDED BY MANUFACTURER. SEE PANEL SCHEDULE ON THIS SHEET FOR BREAKER REQUIREMENTS.

10. LOCATION OF ELECTRIC METER AND DISCONNECT SWITCH TO BE COORDINATED BY ELECTRICAL CONTRACTOR AND FIELD CONSTRUCTION MANAGER.

11. #2 WIRE TO BE UTILIZED IN ELECTRIC SERVICE RUNS EXCEEDING 100'.

12. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.

13. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO ROUGH-IN.

14. THE CONDUIT RUNS AS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATION AND ROUTING SHALL BE PER EXISTING FIELD CONDITIONS.

15. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.

16. ALL CONDUITS SHALL BE MET WITH BENDS MADE IN ACCORDANCE WITH NEC TABLE 346-10. NO RIGHT ANGLE DEVICE OTHER THAN STANDARD CONDUIT ELBOWS WITH 12" MINIMUM INSIDE SWEEPS FOR ALL CONDUITS 2" OR LARGER.

17. ALL CONDUIT TERMINATIONS SHALL BE PROVIDED WITH PLASTIC THROAT INSULATING GROUNDING BUSHINGS.

18. ALL WIRE SHALL BE TYPE THWN, SOLID, ANNEALED COPPER UP TO SIZE #10 AWG (#8 AND LARGER SHALL BE CONCENTRIC STRANDED) 75 DEGREE C. (167 DEGREES F). 98% CONDUCTIVITY, MINIMUM #12.

19. ALL WIRES SHALL BE TAGGED AT ALL PULL BOXES, J-BOXES, EQUIPMENT BOXES AND CABINETS WITH APPROVED PLASTIC TAGS, ACTION CRAFT, BRADY, OR APPROVED EQUAL.

20. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.

21. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION TO CONFLICTS. VERIFY WITH MECHANICAL CONTRACTOR AND COMPLY AS REQUIRED.

22. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN NOT HAND WRITTEN.

23. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.

24. THE CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS, DOCUMENT ANY AND ALL WIRING AND EQUIPMENT CONDITIONS AND CHANGES WHILE COMPLETING THIS CONTRACT. SUBMIT AT SUBSTANTIAL COMPLETION.

25. ALL DISCONNECT SWITCHES AND OTHER CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM (NO EXCEPTIONS.)

26. ALL ELECTRICAL DEVICES AND INSTALLATIONS OF THE DEVICES SHALL COMPLY WITH (ADA) AMERICANS WITH DISABILITIES ACT AS ADOPTED BY THE APPLICABLE STATE.

27. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS OR RISERS THROUGH BUILDING, DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT CONSTRUCTION MANAGERS APPROVAL. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE PACKED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FILL FOR FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.

28. ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT (NEW AND EXISTING) SHALL BE FIELD VERIFIED WITH THE OWNER'S REPRESENTATIVE AND EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN OF CONDUIT AND WIRE. ALL EQUIPMENT SHALL BE PROPERLY CONNECTED ACCORDING TO THE NAMEPLATE DATA FURNISHED ON THE EQUIPMENT (THE DESIGN OF THESE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN AND SOME EQUIPMENT CHARACTERISTICS MAY VARY FROM DESIGN AS SHOWN ON THESE DRAWINGS).

29. LOCATION OF ALL OUTLET, BOXES, ETC., AND THE TYPE OF CONNECTION (PLUG OR DIRECT) SHALL BE CONFIRMED WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.

(17) ELECTRICAL NOTES
NOT TO SCALE

NOTE:
1. ALL (E) LOADS FROM SITE MUST BE INCORPORATED INTO THE (N) INTEGRATED LOAD CENTER
2. ALL (E) CIRCUITS SHALL BE RELOCATED TO PROPOSED LOAD CENTER UPON COMPLETION OF EQUIPMENT MIGRATION
3. CONDUIT ROUTING IS DIAGRAMMATICALLY SHOWN ON PLANS AND ARE ONLY APPROXIMATIONS. THE EXACT LOCATION AND ROUTING SHALL BE FIELD VERIFIED.
4. ALL ELECTRICAL EQUIPMENT AND CONTROLLING DEVICES SHALL BE PROVIDED WITH LAMI COLD NAMEPLATES, INDICATING THE CIRCUITS ORIGINATION AND ALL EQUIPMENT TERMINATIONS
5. CONTRACTOR SHALL SUPPLY BREAKERS, CONDUITS AND CIRCUIT CONDUCTORS, AS REQUIRED FOR A COMPLETED SYSTEM AND SHALL BE IN COMPLIANCE WITH MANUFACTURER SPECIFICATIONS.

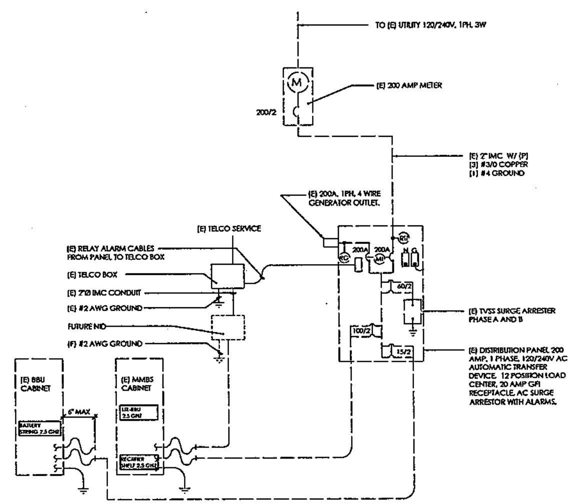
EXISTING ELECTRICAL PANEL SCHEDULE

(E) SPRINT PANEL

VOLTAGE: 120/240 V, 1 PHASE, 3 WIRE		MOUNTING: SURFACE				ENCLOSURE: NEMA 3R	
BUS: 200 AMPS		TYPE: 200/2 TRANSFER DEVICE				AIC RATING: 22,000	
LOAD	KVA	CB	NO	NO	CB	KVA	LOAD
SPARE	0.00	100	1	7	40	0.00	TVSS
		2	2	8	2		
NV MMBS CABINET	17.50	100	3	9	20 / 1	0.50	LIGHT
		2	4	10			SPACE
NV BBU CABINET	0.80	20	5	11	15 / 1	0.18	GFI
		2	6	12	10 / 1	0.12	TELCO FAN

CONNECTED LOAD 19.10
25% LIGHTING
25% LARGEST MOTOR 0.00
TOTAL CONNECTED LOAD 19.10 CONNECTED LOAD: 79.58 AMPERES

PANEL SCHEDULE
NOT TO SCALE



(13) ONE LINE DIAGRAM AND PANEL SCHEDULE
1" = 1'-0"

TYPICAL SYMBOLS

- LIGHSING FIXTURE, WALL MOUNTED
- NIGHT LIGHT - FIXTURES TAGGED "EM" TO HAVE EMERGENCY BATTERY BALLAST
- FLUORESCENT LIGHT FIXTURE, SEE FIXTURE SCHEDULE
- FLUORESCENT LIGHT FIXTURE, SEE FIXTURE SCHEDULE
- EXIT LIGHT FIXTURE. DIRECTIONAL ARROWS AS REQUIRED.
- EMERGENCY LIGHT. MOUNT AT 84" AFF.
- LIGHT FIXTURE TAG. SEE FIXTURE SCHEDULE.
- FIRE ALARM CONTROL PANEL
- FIRE PULL STATION AT +48"
- FIRE FLOW SWITCH
- FIRE TAMPER SWITCH
- JUNCTION BOX
- SINGLE POLE TOGGLE SWITCH, 20A, +48"
- TWO GANG TOGGLE SWITCH, 20A, +48" UON LETTERS DENOTE FIXTURES SERVED
- 2 POLE TOGGLE SWITCH, 20A, +48"
- 3 WAY TOGGLE SWITCH, 20A, +48"
- DIMMER SWITCH, 20A, +48"
- TIMER SWITCH 20A, @ +48"
- KEYED SWITCH, @ +48"
- PUSH BUTTON
- MOTION SENSOR SWITCH - SINGLE LEVEL LEVITON #6768 W +48"
- MOTION SENSOR SWITCH - DUAL LEVEL LEVITON #6772 W +48"
- CEILING HALLWAY MOUNTED OCCUPANT SENSING DEVICE, LEVITON #6787 W.
- CEILING MOUNTED OCCUPANT SENSING DEVICE "OS". LEVITON #16786 WITH POWER PACK "PP" LEVITON #6779-DT
- MOTION SENSOR SWITCH - CEILING MOUNTED
- POWER PACK FOR MOTION SENSORS
- FOURPLEX RECEPTACLE 15A, 125V, +18"AFF UON.
- DUPLEX RECEPTACLE OUTLET 20A, 125V, +18"AFF UON
- MOUNT OUTLET ABOVE COUNTER OR BACKSPLASH (VERIFY HEIGHT W/ARCHITECT)
- OUTLET MOUNTED IN FLOOR OR CEILING.
- SECURITY OUTLET WITH LOCKABLE COVER
- TELEPHONE OUTLET: +18"AFF UON, PROVIDE PULL WIRE OR 3/4" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE.
- COMBINATION COMM/DATA OUTLET: +18"AFF UON, PROVIDE PULL WIRE OR 3/4" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE.
- DATA OUTLET: +18" AFF UON, PROVIDE PULL WIRE OR 3/4: CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE.
- TELEPHONE / DATA OUTLET MOUNTED IN FLOOR OR CEILING.
- MICROPHONE OUTLET MOUNTED IN FLOOR OR CEILING.
- MAIN SWITCHBOARD
- LIGHTING OR DISTRIBUTION PANEL.
- SURFACE OR FLUSH TERMINAL CABINET
- DISTRIBUTION TRANSFORMER, MOUNTING AS NOTED
- DISCONNECT SWITCH SIZE & TYPE AS REQUIRED F=FUSED
- MOTOR SEE MECHANICAL PLANS AND SPECIFICATION
- EXHAUST FAN - SEE MECHANICAL PLANS AND SPECIFICATION
- MECHANICAL EQUIPMENT I.D. TAG - SEE MECHANICAL PLANS
- CIRCUIT CONCEALED IN CEILING OR WALL
- CIRCUIT CONCEALED IN FLOOR OR UNDERGROUND
- HOME RUN TO PANELBOARD OR TERMINAL CABINET
- DENOTES # OF #12 WIRES, NO MARKS = 2 #12, ½"C. CURVED HATCH DENOTES GROUND. OTHERS AS NOTED
- CONDUIT SEAL OFF
- TELEPHONE TERMINAL BOARD: SIZE AS SHOWN. FOURPLEX RECEPTACLE & 1 #6 CU TO GROUND.

NOTE: SYMBOLS INDICATED ABOVE MAY NOT NECESSARILY APPEAR AS PART OF THESE DRAWINGS IF NOT REQUIRED.

ABBREVIATIONS

BCW BARE COPPER WIRE
C CONDUIT
CEC CALIFORNIA ELECTRICAL CODE
(E) EXISTING
EG EQUIPMENT GROUND
FACP FIRE ALARM CONTROL PANEL
G GROUND FAULT CIRCUIT INTERRUPTER
IG ISOLATED GROUND
IMC INTERMEDIATE METAL CONDUIT
LFMC LIQUID TIGHT FLEXIBLE METAL CONDUIT
MCM MILLION CIRCULAR MILLS
MP&S SEE MECHANICAL PLANS & SPECIFICATIONS
(N) NEW
NEC NATIONAL ELECTRICAL CODE - NFPA 70
NEMA NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NL NIGHT LIGHT - FIXTURE TO BE UNSWITCHED
PFB PROVISION FOR FUTURE BREAKER
PVC POLYVINYL CHLORIDE CONDUIT
(R) RELOCATE AS INDICATED
(RV) REMOVE - RESTORE CONTINUITY TO REMAINING DEVICES.
TYP TYPICAL
UON UNLESS OTHERWISE NOTED
WP WEATHERPROOF
GFCI GROUND FAULT CIRCUIT INTERRUPTER

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Borges ARCHITECTURAL GROUP
ARCHITECTURE PLANNING INTERIORS

PROJECT NO:	13065-105
DRAWN BY:	JVM
CHECKED BY:	B.K.W.

REV	DATE	DESCRIPTION
2	05/29/2014	100% CD REV 1
1	04/04/14	100% CD SUBMITTAL
0	02/18/14	90% CD SUBMITTAL

05/29/2014
100% CD Submittal

LICENSED ARCHITECT RICHARD SABBOGETTI No. C11535 Ren. 09-30-15 STATE OF CALIFORNIA

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

SF35XC001-A
The Seminary
6450 CAMDEN STREET
OAKLAND, CA 94605

SHEET TITLE
SINGLE LINE DIAGRAM & POWER PANEL SCHEDULE

SHEET NUMBER
E-1

CADWELD CONNECTIONS OR APPROVED EQUAL		BURNDY CONNECTIONS OR APPROVED EQUAL
PARALLEL HORIZONTAL CONDUCTORS PARALLEL THROUGH CONNECTION OF HORIZONTAL CABLES TYPE PT	HORIZONTAL STEEL SURFACE TO FLAT STEEL SURFACE OR HORIZONTAL PIPE TYPE HS	BOND JUMPER FIELD FABRICATED GREEN STRANDED INSULATED TYPE 2-YA-2
THROUGH CABLE TO GROUND ROD THROUGH CABLE TO TOP OF GROUND ROD TYPE GT	VERTICAL STEEL SURFACE CABLE DOWN AT 45° TO VERTICAL STEEL SURFACE INCLUDING PIPE TYPE VS	COPPER LUGS TWO HOLE - LONG BARREL LENGTH TYPE YA-2
VERTICAL PIPE CABLE DOWN AT 45° TO RANGE OF VERTICAL PIPES TYPE VS		

TYPICAL CADWELD TYPE CONNECTIONS
NO SCALE

GROUNDING NOTES

1 ALL ELECTRICAL AND GROUNDING AT THE CELL SITE SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 780 (LATEST EDITION), AND MANUFACTURER SPECIFICATION.

2 IF THE AC PANEL IN THE POWER CABINET IS WIRED AS SERVICE ENTRANCE, THE AC SERVICE GROUND CONDUCTOR SHALL BE CONNECTED TO GROUND ELECTRODE SYSTEM. WHEN THE AC PANEL IN THE POWER CABINET IS CONSIDERED A SUB-PANEL, THE GROUND WIRE SHALL BE INSTALLED IN THE AC POWER CONDUIT. THE INSTALLATION SHALL BE PER LOCAL AND NATIONAL ELECTRIC CODE (NFPA-70).

3 EXOTHERMIC WELDING IS RECOMMENDED FOR GROUNDING CONNECTION WHERE PRACTICAL. OTHERWISE, THE CONNECTION SHALL BE MADE USING COMPRESSION TYPE-2 HOLES, LONG BARREL LUGS OR DOUBLE CRIMP CLAMP "C" CLAMP. THE COPPER CABLES SHALL BE COATED WITH ANTIOXIDANT (COPPER SHIELD) BEFORE MAKING THE CONNECTIONS. THE MANUFACTURER'S TORQUING RECOMMENDATIONS ON THE BOLT ASSEMBLY TO SECURE CONNECTIONS SHALL BE FOLLOWED.

4 THE ANTENNA CABLES SHALL BE GROUNDED AT THE TOP AND BOTTOM OF THE VERTICAL RUN FOR LIGHTING PROTECTION. THE ANTENNA CABLE SHIELD SHALL BE BONDED TO A COPPER GROUND BUSS AT THE LOWER MOST POINT OF A VERTICAL RUN JUST BEFORE IT BEGINS TO BEND TOWARD THE HORIZONTAL PLANE. WIRE RUNS TO GROUND SHALL BE KEPT AS STRAIGHT AND SHORT AS POSSIBLE. ANTENNA CABLE SHIELD SHALL BE GROUNDED JUST BEFORE ENTERING THE CELL CABINET. ANY ANTENNA CABLES OVER 200 FEET IN LENGTH SHALL ALSO BE EQUIPPED WITH ADDITIONAL GROUNDING AT MID-POINT.

5 ALL GROUNDING CONDUCTORS INSIDE THE BUILDING SHALL BE RUN IN CONDUIT RACEWAY SYSTEM, AND SHALL BE INSTALLED AS STRAIGHT AS PRACTICAL WITH MINOR BENDS TO AVOID OBSTRUCTIONS. THE BENDING RADIUS OF ANY #2 GROUNDING CONDUCTOR IS 8". PVC RACEWAY MAY BE FLEXIBLE OR RIGID PER THE FIELD CONDITIONS. GROUNDING CONDUCTORS SHALL NOT MAKE CONTACT WITH ANY METALLIC CONDUITS, SURFACES OR EQUIPMENT.

6 PROVIDE PVC SLEEVES WHERE GROUNDING CONDUCTORS PASS THROUGH THE BUILDING WALLS AND /OR CEILINGS.

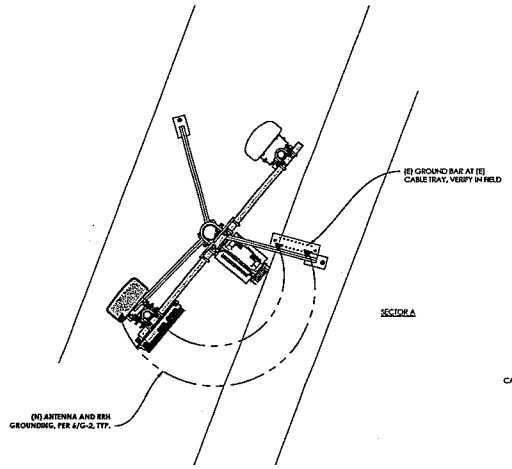
7. INSTALL GROUND BUSHINGS ON ALL METALLIC CONDUITS AND BOND TO THE EQUIPMENT GROUND BUSS IN THE PANEL BOARD.

8 GROUND ANTENNA BASES, FRAMES, CABLE RACKS AND OTHER METALLIC COMPONENTS WITH #2 GROUNDING CONDUCTORS AND CONNECT TO INSULATED SURFACE MOUNTED GROUND BARS. CONNECTION DETAILS SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR GROUNDING.

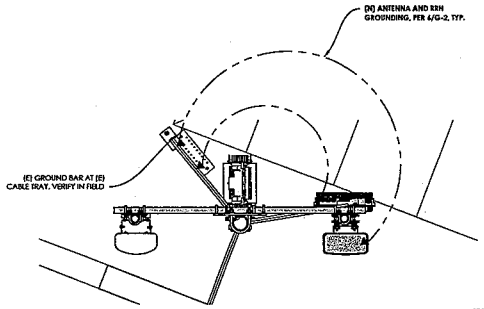
9. ALL PROPOSED GROUNDING CONDUCTORS SHALL BE ROUTED AND CONNECTED TO THE MAIN GROUND BAR OR EXISTING GROUND RING.

GROUNDING LEGEND

- EXISTING GROUND RING
- ● CADWELD CONNECTION (EXOTHERMIC WELD)
- ▲ MECHANICAL CONNECTION
- ⊗ GROUND ROD



SECTOR A



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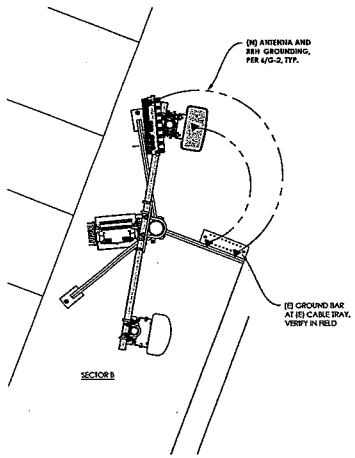

SECTOR B

17 ANTENNA GROUNDING PLAN
3/4" = 1'-0"

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Borges ARCHITECTURAL GROUP

PROJECT NO:	13065-105
DRAWN BY:	JVM
CHECKED BY:	B.K.W.

REV	DATE	DESCRIPTION
2	05/29/2014	100% CD REV 1
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05/29/2014

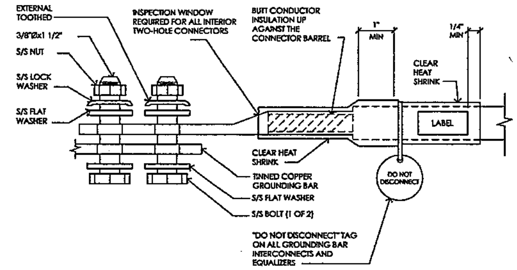
100% CD Submittal

LICENSED ARCHITECT No. C11035 STATE OF CALIFORNIA

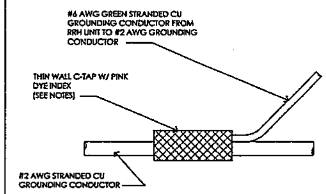
SF35XC001-A
The Seminary
6450 CAMDEN STREET
OAKLAND, CA 94605

SHEET TITLE
GROUNDING PLAN & NOTES

SHEET NUMBER
G-1

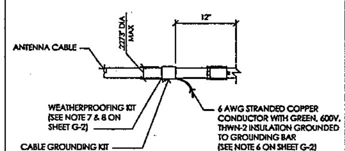

EXTERNAL TOOTHED
3/8"Ø x1 1/2"
S/S NUT
S/S LOCK WASHER
S/S FLAT WASHER
INSPECTION WINDOW REQUIRED FOR ALL INTERIOR TWO-HOLE CONNECTORS
BUTT CONDUCTOR INSULATION UP AGAINST THE CONNECTOR BARREL
1" MIN
1/4" MIN
CLEAR HEAT SHRINK
LABEL
CLEAR HEAT SHRINK
TINNED COPPER GROUNDING BAR
S/S FLAT WASHER
S/S BOLT (1 OF 2)
DO NOT DISCONNECT
"DO NOT DISCONNECT" TAG ON ALL GROUNDING BAR INTERCONNECTS AND EQUALIZERS

(12) TWO HOLE LUG
NOT TO SCALE

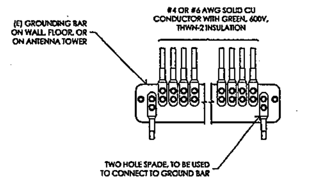


NOTE
CONTRACOR TO SURROUND COMPLETED CONNECTION W/ WEATHER PROOFING TAPE TO ENSURE WEATHER PROOF CONNECTION.

(4) C-TAP CONNECTION
NOT TO SCALE

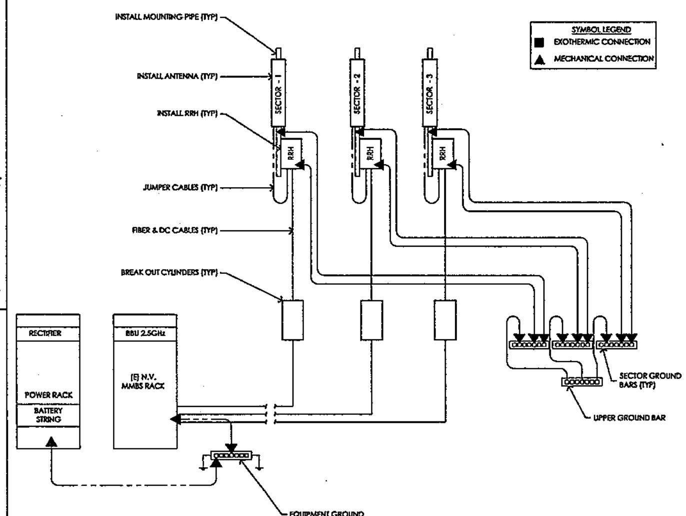


(11) CONNECTION OF GROUNDING KIT TO ANTENNA CABLE
NOT TO SCALE



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.

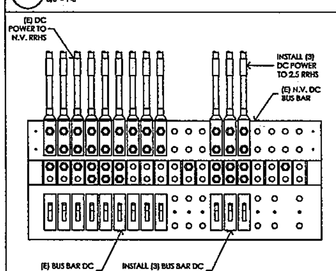
(10) GROUNDING CONDUCTOR TO GROUNDING BAR
3/8" = 1'-0"


INSTALL MOUNTING PIPE (TYP)
INSTALL ANTENNA (TYP)
INSTALL RRH (TYP)
JUMPER CABLES (TYP)
FIBER & DC CABLES (TYP)
BREAK OUT CYLINDERS (TYP)
SECTOR - 1
SECTOR - 2
SECTOR - 3
RRH
SYMBOL LEGEND
EXOTHERMIC CONNECTION
MECHANICAL CONNECTION
RECTIFIER
POWER RACK
BATTERY STRING
BBU 2.5GHz
(E) N.V. MMBS RACK
SECTOR GROUND BARS (TYP)
UPPER GROUND BAR
EQUIPMENT GROUND

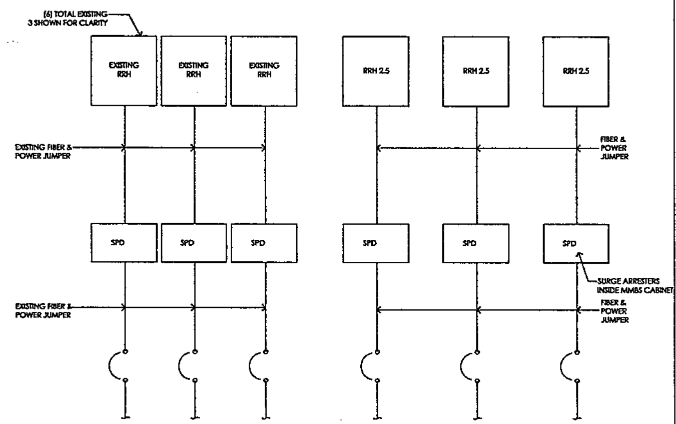
(6) GROUNDING RISER DIAGRAM
1/2" = 1'-0"

1. COMPRESSION CONNECTIONS (2), 2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUNDING BAR. ROUTE CONDUCTORS TO BURIED GROUNDING RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. EC SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "N", "I") WITH 1" HIGH LETTERS.
3. ALL HARDWARE 18-8 STAINLESS STEEL, INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8 INCH DIAMETER OR LARGER.
4. FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUNDING BAR AND BOLTED ON THE BACK SIDE. INSTALL BLACK HEAT-SHRINKING TUBE, 600 VOLT INSULATION, ON ALL GROUNDING TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE COMPRESSION CONNECTION.
6. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION, AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
7. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
8. WEATHERPROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
9. GROUND RESISTANCE NOT TO EXCEED 10 OHMS.
10. WHEN THE SCOPE OF WORK REQUIRES THE ADDITION OF A GROUNDING BAR TO AN EXISTING TOWER, THE SUBCONTRACTOR SHALL OBTAIN APPROVAL FROM THE TOWER OWNER PRIOR TO MOUNTING THE GROUNDING BAR TO THE TOWER.
11. EXTEND TWO (2) 2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING AND CONNECT TO THE PROPOSED TOWER. FOLLOW MANUFACTURERS RECOMMENDATIONS FOR GROUNDING CONNECTIONS TO THE TOWER. (APPLICABLE TO NEW TOWERS ONLY.)
12. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION, AND CONNECTION ORIENTATION. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUNDING BARS AS REQUIRED, PROVIDING 50% SPARE CONNECTION POINTS.

(5) GROUNDING NOTES
NOT TO SCALE



(9) DC POWER DISTRIBUTION
6" = 1'-0"


(6) TOTAL EXISTING 3 SHOWN FOR CLARITY
EXISTING RRH
EXISTING RRH
EXISTING RRH
RRH 2.5
RRH 2.5
RRH 2.5
EXISTING FIBER & POWER JUMPER
FIBER & POWER JUMPER
SPD
SPD
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SPD
SURGE ARRESTERS INSIDE MMBS CABINET
EXISTING FIBER & POWER JUMPER
FIBER & POWER JUMPER

(17) DC ONE LINE DIAGRAM
1/2" = 1'-0"

Sprint
12657 Alcosta Blvd., Suite 300
San Ramon, CA 94583

FORZA TELECOM, Inc.
1330 North Broadway
Suite 202
Walnut Creek, CA 94596

Borges ARCHITECTURAL GROUP

PROJECT NO:	13065-105
DRAWN BY:	JVM
CHECKED BY:	B.K.W.

REV	DATE	DESCRIPTION
2	05/29/2014	100% CD REV 1
1	04/04/14	100% CD SUBMITTAL
0	02/18/14	90% CD SUBMITTAL

05/29/2014
100% CD Submittal

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

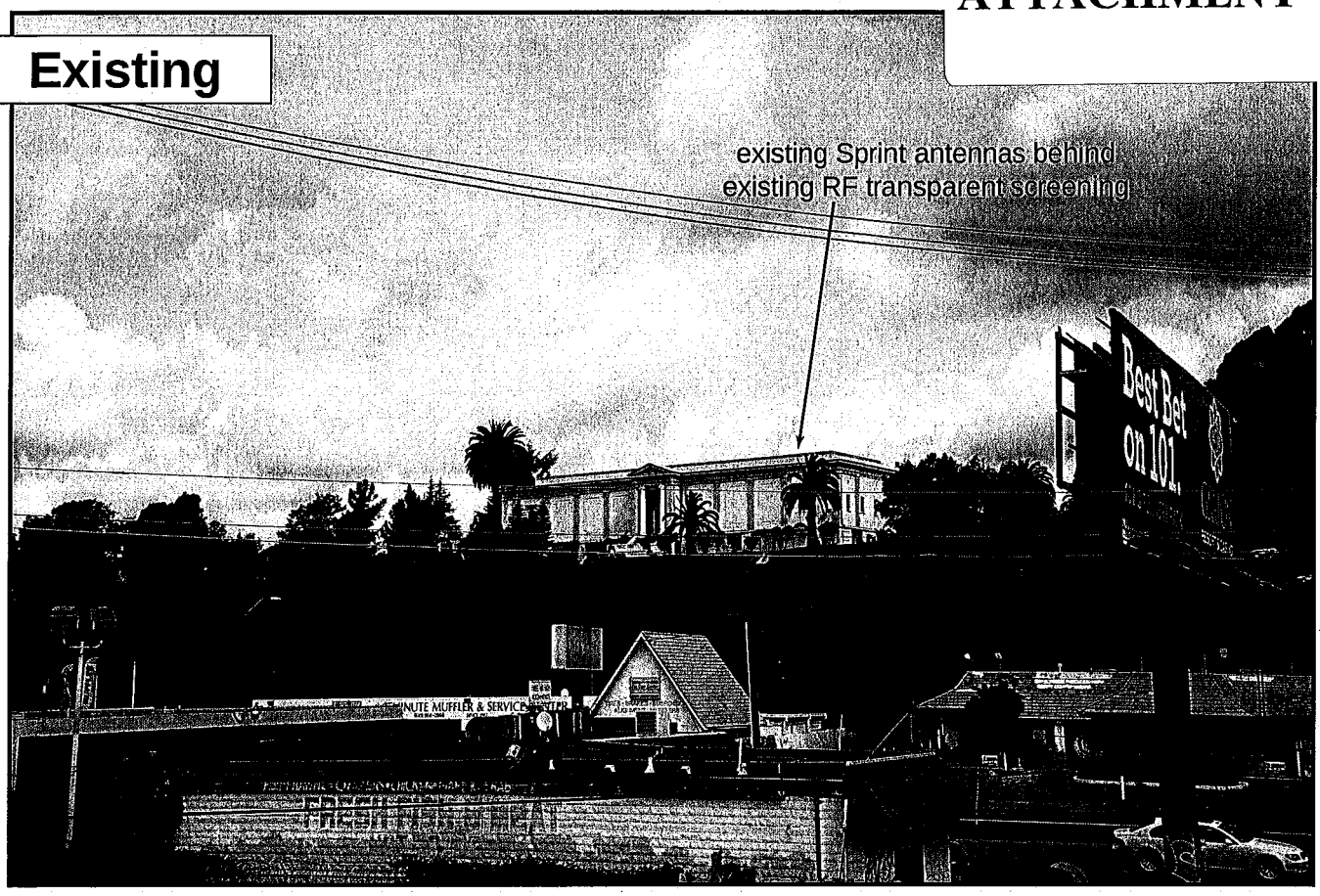
SF35XC001-A
The Seminary
6450 CAMDEN STREET
OAKLAND, CA 94605

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-2

ATTACHMENT A

Existing



Proposed

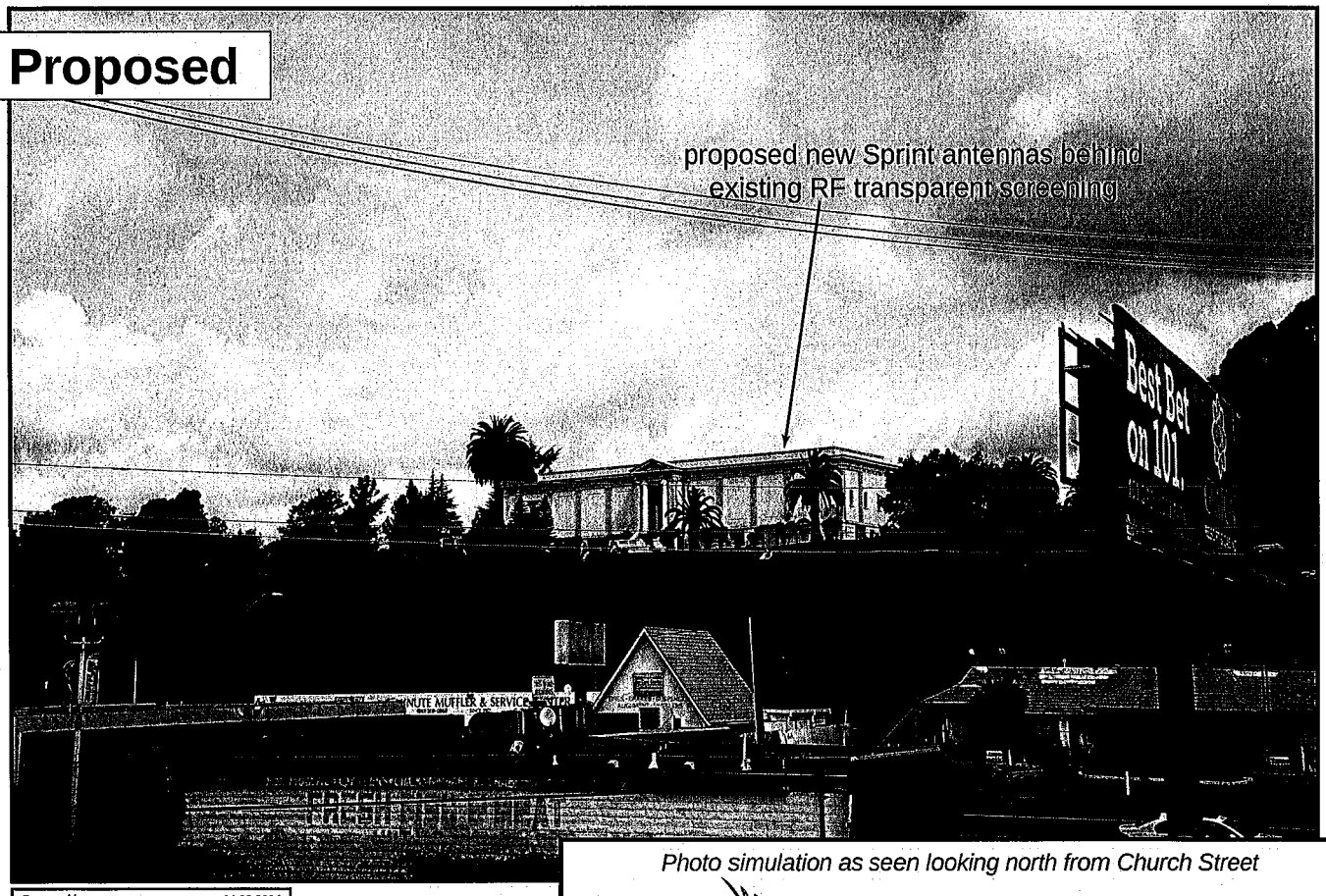


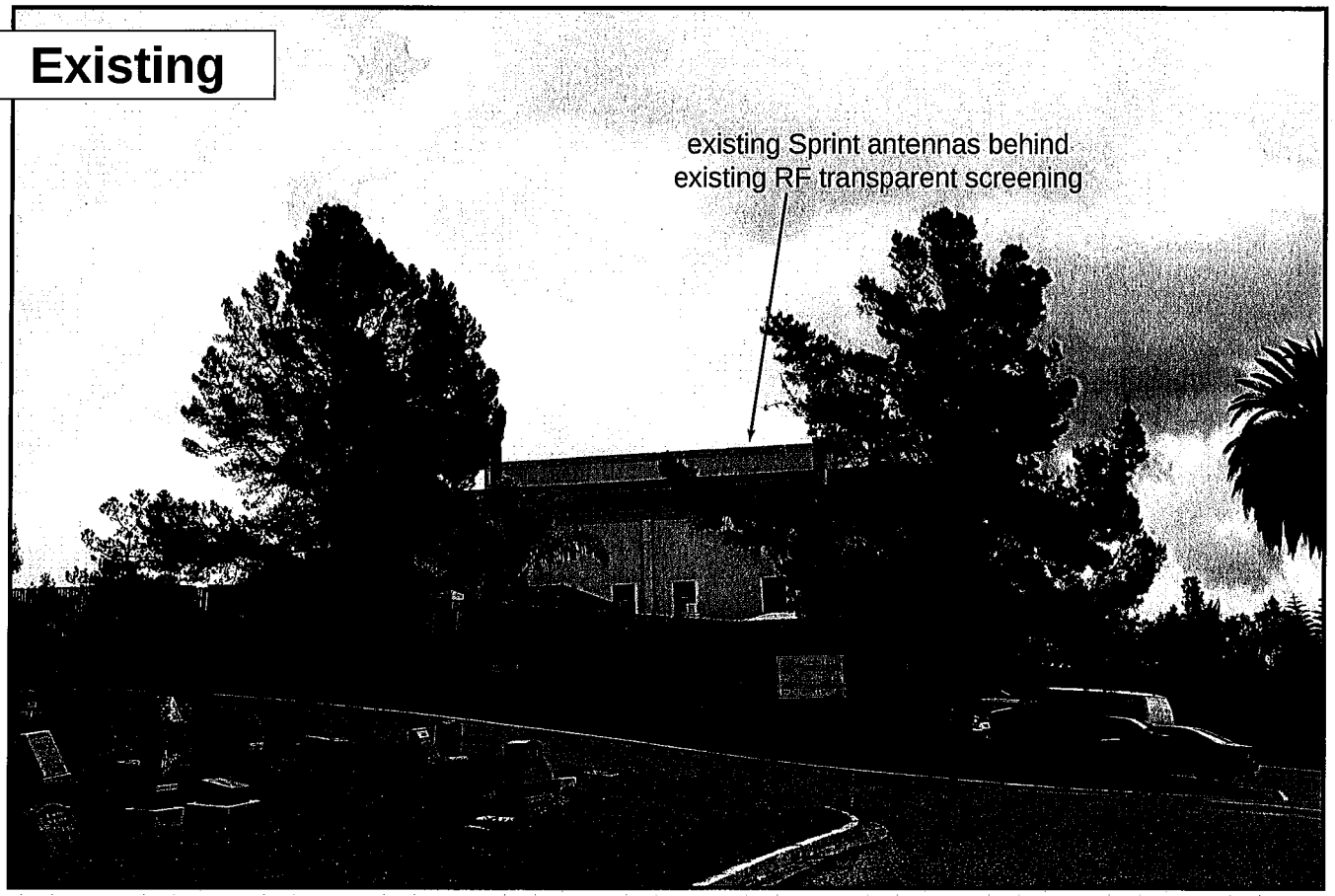
Photo simulation as seen looking north from Church Street

Sprint

SF35XC001-A The Seminary
6450 Camden Street, Oakland, CA 94605

Prepared by: 04.08.2014
ForzaTelecom
1330 N Broadway Ste. 202
Walnut Creek, CA 94596
Info@photosims.com

Existing



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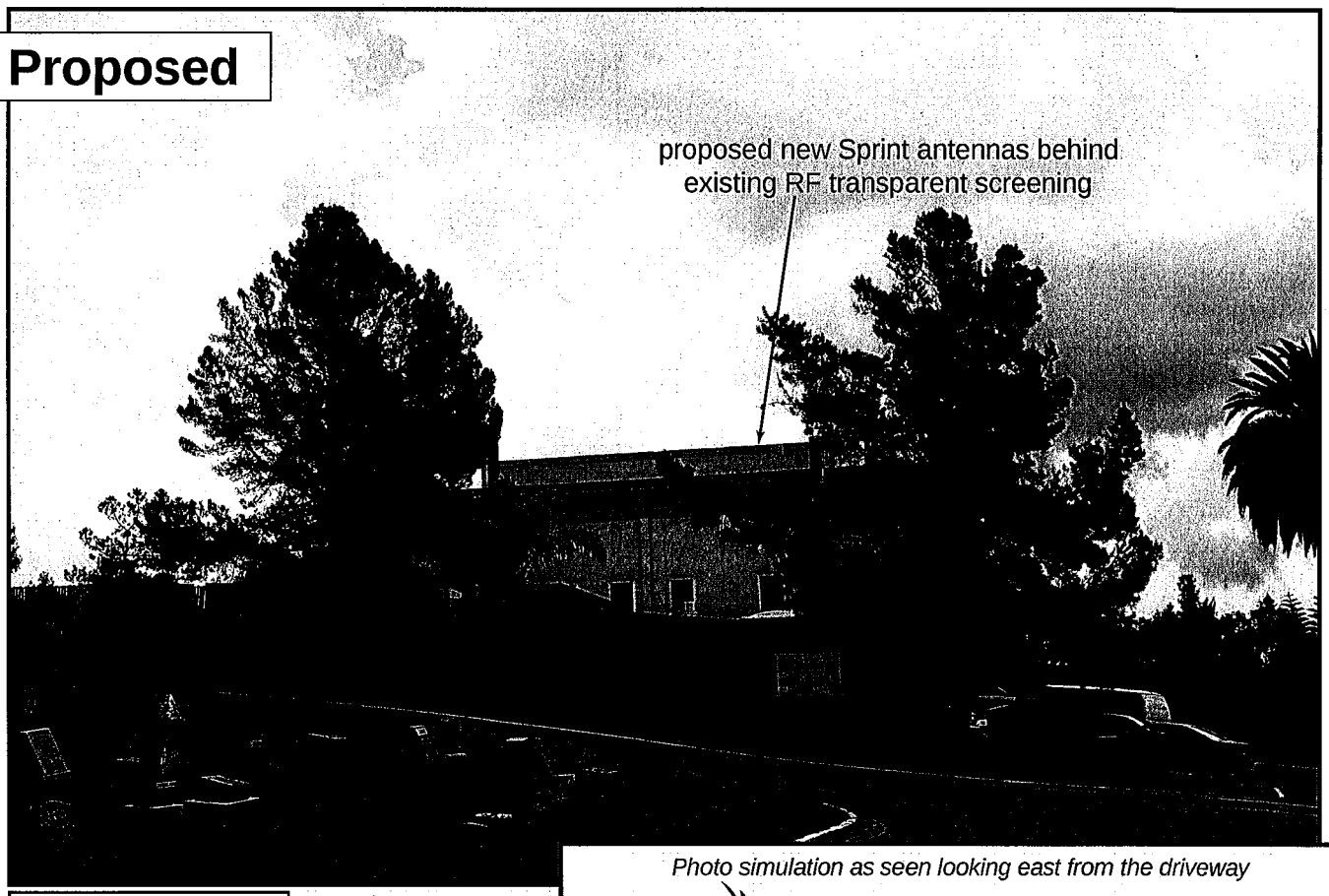

Photo simulation as seen looking east from the driveway

Sprint

SF35XC001-A The Seminary
6450 Camden Street, Oakland, CA 94605

Prepared by: 04.08.2014
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1330 N Broadway Ste. 202
Walnut Creek, CA 94596
Info@photosims.com

Sprint Nextel • Base Station No. SF35xc001A
6450 Camden Street • Oakland, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained by Sprint Nextel, a personal wireless telecommunications carrier, to evaluate proposed modifications to its existing base station (Site No. SF35xc001A) located at 6450 Camden Street in Oakland, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

Sprint Nextel proposes to install directional panel antennas above the roof of the Evergreen Cemetery building located at 6450 Camden Street in Oakland. The proposed operation will, together with the existing base station at the site, comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. A summary of the FCC's exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Wireless Service	Frequency Band	Occupational Limit	Public Limit
Microwave (Point-to-Point)	5,000–80,000 MHz	5.00 mW/cm^2	1.00 mW/cm^2
BRS (Broadband Radio)	2,600	5.00	1.00
WCS (Wireless Communication)	2,300	5.00	1.00
AWS (Advanced Wireless)	2,100	5.00	1.00
PCS (Personal Communication)	1,950	5.00	1.00
Cellular	870	2.90	0.58
SMR (Specialized Mobile Radio)	855	2.85	0.57
700 MHz	700	2.40	0.48
[most restrictive frequency range]	30–300	1.00	0.20

General Facility Requirements

Base stations typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables. A small antenna for reception of GPS signals is also required, mounted with a clear view of the sky. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the

antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. This means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

Computer Modeling Method

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation," dated August 1997. Figure 2 attached describes the calculation methodologies, reflecting the facts that a directional antenna's radiation pattern is not fully formed at locations very close by (the "near-field" effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the "inverse square law"). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

Site and Facility Description

Based upon information provided by Sprint Nextel, including construction drawings by Borges Architectural Group, Inc., dated February 18, 2014, that carrier presently has three Andrew directional panel antennas – two Model RR65-18-00DPL2 and one Model RR90-17-00DP – installed behind existing view screens above the roof of the two-story Evergreen Cemetery building located at 6450 Camden Street in Oakland. It is proposed to install three KMW Model ET-X-WM-18-65-8P directional panel antennas next to its existing antennas, mounted with up to 4° downtilt at an effective height of about 39 feet above the ground elevation at the front of the building, 10 feet above the roof, oriented in pairs toward 100°T, 180°T, and 310°T. The maximum effective radiated power in any direction would be 8,250 watts, representing simultaneous operation at 1,560 watts for BRS and 6,690 watts for PCS.

Presently located above the roof of the same building are similar antennas for use by T-Mobile. For the limited purpose of this study, the transmitting facilities of that carrier are assumed to be as follows:

Service	Maximum ERP	Antenna Model	Downtilt	Height
AWS PCS	4,400 watts 2,200	Ericsson AIR21	2°	39 ft

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Sprint Nextel operation by itself is calculated to be 0.038 mW/cm^2, which is 3.8% of the applicable public exposure

limit. The maximum calculated cumulative level at ground, for the simultaneous operation of both carriers, is 5.3% of the public exposure limit. The maximum calculated cumulative level at any nearby residence* is 5.2% of the public exposure limit. The maximum calculated cumulative level on the roof of the subject building in 87% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels.

Recommended Mitigation Measures

Due to their mounting locations, the Sprint Nextel antennas would not be accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training be provided to all authorized personnel who have access to the antennas, including employees and contractors of the wireless carriers as well as building maintenance staff. No access within 10 feet directly in front of the antennas themselves, such as might occur during maintenance work above the roof, should be allowed while the base station is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Posting explanatory signs† at the roof access hatch, on the screens in front of the antennas, and on the antennas themselves, such that the signs would be readily visible from any angle of approach to persons who might need to work within that distance, would be sufficient to meet FCC-adopted guidelines. Similar measures should already be in place for the other carrier at the site; the applicable keep-back distance for that carrier has not been determined as part of this study.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that the proposed operation of the Sprint Nextel base station located at 6450 Camden Street in Oakland, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations. Training of authorized personnel and posting explanatory signs is recommended to establish compliance with occupational exposure limitations.

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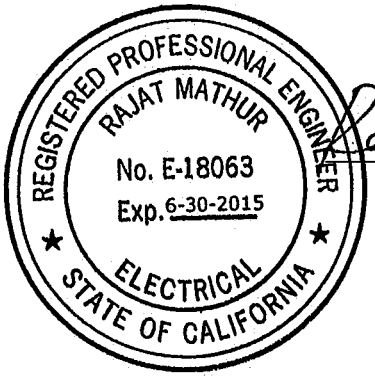
* Located at least 290 feet away, based on photographs from Google Maps.

† Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration No. E-18063, which expires on June 30, 2015. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



Rajat Mathur, P.E.
707/996-5200

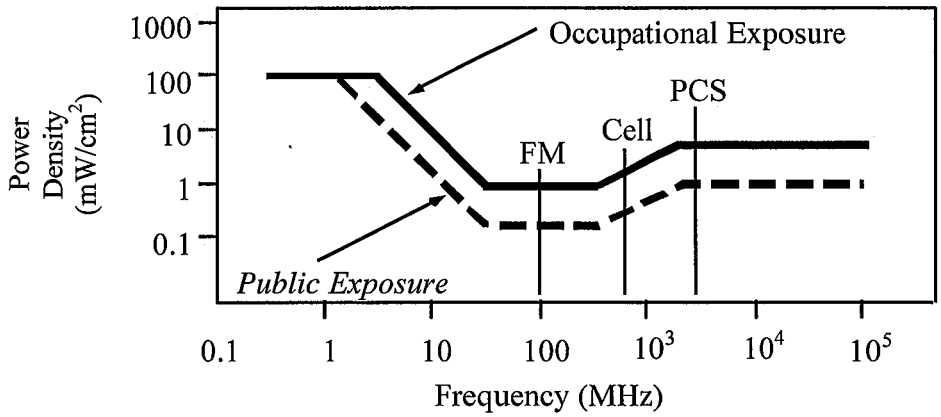
April 21, 2014

FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements ("NCRP"). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes similar limits. These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

Frequency	Electromagnetic Fields (f is frequency of emission in MHz)					
Applicable Range (MHz)	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm^2)	
0.3 – 1.34	614	*614*	1.63	*1.63*	100	*100*
1.34 – 3.0	614	*823.8/f*	1.63	*2.19/f*	100	*180/f^2*
3.0 – 30	1842/ f	*823.8/f*	4.89/ f	*2.19/f*	900/ f^2	*180/f^2*
30 – 300	61.4	*27.5*	0.163	*0.0729*	1.0	*0.2*
300 – 1,500	$3.54\sqrt{f}$	*$1.59\sqrt{f}$*	$\sqrt{f}/106$	*$\sqrt{f}/238$*	f/300	*f/1500*
1,500 – 100,000	137	*61.4*	0.364	*0.163*	5.0	*1.0*



Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required to obtain more accurate projections.

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The maximum permissible exposure limits adopted by the FCC (see Figure 1) apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

Near Field.

Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications base stations, as well as dish (aperture) antennas, typically used for microwave links. The antenna patterns are not fully formed in the near field at these antennas, and the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives suitable formulas for calculating power density within such zones.

For a panel or whip antenna, power density $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$, in mW/cm^2,

and for an aperture antenna, maximum power density $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$, in mW/cm^2,

where θ_{BW} = half-power beamwidth of the antenna, in degrees, and
P_{net} = net power input to the antenna, in watts,
D = distance from antenna, in meters,
h = aperture height of the antenna, in meters, and
η = aperture efficiency (unitless, typically 0.5-0.8).

The factor of 0.1 in the numerators converts to the desired units of power density.

Far Field.

OET-65 gives this formula for calculating power density in the far field of an individual RF source:

power density $S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}$, in mW/cm^2,

where ERP = total ERP (all polarizations), in kilowatts,
RFF = relative field factor at the direction to the actual point of calculation, and
D = distance from the center of radiation to the point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radiation sources. The program also allows for the description of uneven terrain in the vicinity, to obtain more accurate projections.