

February 14, 2013  
BENICIA PLANNING COMMISSION  
REGULAR MEETING AGENDA  
City Hall Council Chambers  
Thursday, February 14, 2013  
7:00 P.M.

**I. OPENING OF MEETING**

- A. Pledge of Allegiance
- B. Roll Call of Commissioners
- C. Reference to Fundamental Rights of Public - A plaque stating the Fundamental Rights of each member of the public is posted at the entrance to this meeting room per Section 4.04.030 of the City of Benicia's Open Government Ordinance.

**II. ADOPTION OF AGENDA**

**III. OPPORTUNITY FOR PUBLIC COMMENT**

This portion of the meeting is reserved for persons wishing to address the Commission on any matter not on the agenda that is within the subject jurisdiction of the Planning Commission. State law prohibits the Commission from responding to or acting upon matters not listed on the agenda.

Each speaker has a maximum of five minutes for public comment. If others have already expressed your position, you may simply indicate that you agree with a previous speaker. If appropriate, a spokesperson may present the views of your entire group. Speakers may not make personal attacks on council members, staff or members of the public, or make comments which are slanderous or which may invade an individual's personal privacy.

- A. WRITTEN
- B. PUBLIC COMMENT

**IV. CONSENT CALENDAR**

Consent Calendar items are considered routine and will be enacted, approved or adopted by one motion unless a request for removal for discussion or explanation is received from the Planning Commission or a member of the public by submitting a speaker slip for that item.

\* Any Item identified as a Public Hearing has been placed on the Consent Calendar because it has not generated any public interest or dissent. However, if any member of the public wishes to comment on a Public Hearing item, or would like the item placed on the regular agenda, please notify the Community Development Staff either prior to, or at the Planning Commission meeting, prior to the reading of the Consent Calendar.

A. [Approval of minutes of November 29, 2012 Special Meeting](#)

B. [USE PERMIT TO MODIFY AN EXISTING SPRINT WIRELESS TELECOMMUNICATIONS FACILITY AT 191 MILITARY EAST](#)

**PROPOSAL:**

Sprint is requesting to add a microwave dish to an existing wireless telecommunication facility at Davies Square shopping center located at 191 Military East. The dish will improve capacity, reliability, and overall speed of the existing facility.

**Recommendation:**

**Approve a Use Permit to modify an existing wireless telecommunication facility to add a microwave dish within the existing clock tower at 191 Military East, based on the findings, and subject to the conditions listed in the draft resolution.**

**V. REGULAR AGENDA ITEMS**

**VII. COMMUNICATIONS FROM STAFF**

**At the request of Commissioner Smith, staff will give a presentation on the tools Planning Commissioners should use in decision-making. Topics will include the role of the Planning Commission, an overview of the General Plan, Zoning Ordinance, CEQA, findings, making a motion and the appeal process.**

**VIII. COMMUNICATIONS FROM COMMISSIONERS**

**IX. ADJOURNMENT**

**Public Participation**

**The Benicia Planning Commission welcomes public participation.**

**Pursuant to the Brown Act, each public agency must provide the public with an opportunity to speak on any matter within the subject matter jurisdiction of the agency and which is not on the agency's agenda for that meeting. The Planning Commission allows speakers to speak on agendized and non-agendized matters under public comment. Comments are limited to no more than 5 minutes per speaker. By law, no action may be taken on any item raised during the public comment period although informational answers to questions may be given and matters may be referred to staff for placement on a future agenda of the Planning Commission.**

**Should you have material you wish to enter into the record, please submit it to the Commission Secretary.**

**Disabled Access**

**In compliance with the Americans with Disabilities Act (ADA), if you need special assistance to participate in this meeting, please contact the ADA Coordinator, at (707) 746-4211.**

**Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting.**

**Meeting Procedures**

**All items listed on this agenda are for Commission discussion and/or action. In accordance with the Brown Act, each item is listed and includes, where appropriate, further description of the item and/or a recommended action. The posting of a recommended action does not limit, or necessarily indicate, what action the Commission may take.**

**The Planning Commission may not begin new public hearing items after 11 p.m. Public hearing items, which remain on the agenda, may be continued to the next regular meeting of the Commission, or to a special meeting.**

**Pursuant to Government Code Section 65009; if you challenge a decision of the Planning Commission in court, you may be limited to raising only those issues you or someone else raised at the Public Hearing described in this notice, or in written correspondence delivered to the Planning Commission at, or prior to, the Public Hearing. You may also be limited by the ninety (90) day statute of limitations in which to file and serve a petition for administrative writ of mandate challenging any final City decisions regarding planning or zoning.**

Appeals of Planning Commission decisions that are final actions, not recommendations, are considered by the City Council. Appeals must be filed in the Community Development Department in writing, stating the basis of appeal with the appeal fee within 10 business days of the date of action.

#### Public Records

The agenda packet for this meeting is available at the City Clerk's Office, the Benicia Public Library and the Community Development Department during regular working hours. The Community Development Department is open Monday through Friday (except legal holidays), 8:30 a.m. to 5 p.m. (closed from noon to 1 p.m.). Technical staff is available from 8:30 - 9:30 a.m. and 1:00 - 2:00 p.m. only. If you have questions/comments outside of those hours, please call 746-4280 to make an appointment. To the extent feasible, the packet is also available on the City's web page at [www.ci.benicia.ca.us](http://www.ci.benicia.ca.us) under the heading "Agendas and Minutes." Public records related to an open session agenda item that are distributed after the agenda packet is prepared are available before the meeting at the Community Development Department's office located at 250 East L Street, Benicia, or at the meeting held in the City Hall Council Chambers. If you wish to submit written information on an agenda item, please submit to Amy Million, Commission Secretary, as soon as possible so that it may be distributed to the Planning Commission.

 [Approval of Minutes of November 29, 2012](#)

 [Use Permit 12PLN-00041 - 191 Military East](#)

DRAFT



**BENICIA PLANNING COMMISSION  
SPECIAL MEETING MINUTES**

**CITY HALL COUNCIL CHAMBERS  
Thursday, November 29, 2012  
7:00 p.m.**

**I. OPENING OF MEETING**

**A. Pledge of Allegiance**

**B. Roll Call of Commissioners**

Present: Commissioners Cohen-Grossman, Dean, Oakes, Smith  
(arrived 7:15 p.m.), Sprague, Chair Sherry  
Absent: Commissioner Syracuse (excused)

Staff Present: Charlie Knox, Community Development Director  
Amy Million, Principal Planner  
Lisa Porras, Senior Planner/Recording Secretary  
Mario Guiliani, Economic Development Manager  
Kat Wellman, Contract Attorney

**C. Reference to Fundamental Rights of Public**

**II. ADOPTION OF AGENDA**

On motion of Commissioner Oakes to move item VI.C to VI.A, seconded by Commissioner Dean, the agenda was adopted by the following vote:

Ayes: Commissioners Cohen-Grossman, Dean, Oakes, Sprague, Chair  
Sherry  
Noes: None  
Absent: Commissioners Smith and Syracuse  
Abstain: None

**III. OPPORTUNITY FOR PUBLIC COMMENT**

**A. WRITTEN**

Mr. Knox noted that we did receive one comment letter from Bob Berman in regard to Items VI. B and VI. C in addition to those comments already included in the staff report.

**B. PUBLIC COMMENT**

None.

**IV. CONSENT CALENDAR**

On motion of Commissioner Oakes, seconded by Commissioner Dean, noting the correction of the typo of love/work in item IV. A, the consent calendar was approved by the following vote:

Ayes: Commissioners Cohen-Grossman, Dean, Oakes, Sprague, Chair Sherry  
Noes: None  
Absent: Commissioners Smith and Syracuse  
Abstain: Commissioner Cohen-Grossman (Items IV. A. and B)

- A. Approval of minutes from Joint PC/HPRC Workshop, September 13, 2012**
- B. Approval of minutes from October 11, 2012**
- C. 257 Essex Way – Annual bird death report**
- D. Planning Commission hearing calendar for 2013**

**V. PRESENTATION**

Ms. Porras gave a presentation on Benicia's two Priority Development Areas as they relate to the goals of SB375 and as preferred areas for transportation funding.

The Commissions and staff discussed the difference between Employment Investment Area vs. the Downtown PDA and the location of the 12 PDAs in Solano County and potential funding sources for PDAs.

Mr. Knox replied that employment investment areas focus on job retention and creation with an emphasis on transit-based mobility (housing is typically found outside the area, but in close proximity) whereas traditional PDAs are those with an emphasis on infill housing development with connectivity to transit. Ms. Porras responded that the majority of PDAs in Solano County are found in Fairfield, but that there are PDAs in other smaller jurisdictions within the County such as Suisun, Dixon, and Rio Vista.

**VI. REGULAR AGENDA ITEMS**

- A. WATERFRONT PARK MASTER PLAN – SELECT ONE MEMBER OF THE PLANNING**

**COMMISSION TO SERVE AS A REPRESENTATIVE ON THE COMMUNITY ADVISORY COMMITTEE**

Ms. Porras provided an overview of the item and described the number of workshops and meeting that would be required of the Planning Commission's representative.

Public comment opened.

Jon Van Landschoot asked that the representative please commit to the 6 required meetings.

Public comment closed.

Commissioner Cohen-Grossman stated that she would serve as the Commission's representative.

On motion of Commissioner Dean, seconded by Commissioner Oakes, the appointment of Commissioner Cohen-Grossman to the Waterfront Enhancement and Master Plan Committee was adopted by the following vote:

Ayes:	Commissioners Cohen-Grossman, Oakes, Smith, Sprague, Vice-Dean, and Chair Sherry
Noes:	None
Absent:	Commissioner Syracuse
Abstain:	None

**B. USE PERMIT – REQUEST TO MODIFY THE EXISTING BILLBOARD SIGN (CBS)  
**12PLN-13 – Use Permit**  
**4850 Park Road, Public Right-of-Way adjacent to APN 080-060-360****

Ms. Million presented the project, which was followed by a supplemental presentation given by Economic Development Manager Mario Guiliani.

Commissioner Cohen-Grossman asked why the Economic Development Board (EDB) recommended approval poste-haste. Mr. Guiliani responded that the EDB wanted to add emphasis to their recommendation, expressing their belief of project readiness.

The Commission directed several comments and questions to staff in regard to the sign ordinance committee, CEQA and the original use permit. Commissioner Cohen-Grossman questioned the proposed design. Mr. Guiliani replied that it was for aesthetic reasons and structural concerns – the existing structure cannot support the CBS proposal.

In response to a question a question from Commissioner Oakes, Mr. Knox clarified that Commission's approval for the two proposed signs would not commit the Commission to approving other signs in the future (3 others would be possible).

The Commissioners and staff briefly discussed the preliminary lease terms.

Public comment opened.

Kimball Goodman, chair of the EDB stated the recommendation from the EDB was unanimous. Mr. Goodman noted the EBD's position that the billboards will boost tourism, address the city's budget shortfalls with added revenues, and increase community involvement with public and non-profit signage.

Ed Ruszel, property owner on Bayshore Road, questioned the original use permit, mitigation of visual impacts and the process for how the City decides what public messages are displayed on the billboards.

Eric Hoagland, resident and business owner, stated that EDBs mission is to encourage business to come to Benicia. If if these signs are not approved it sends a wrong message – a message not to do business in Benicia.

Craig Andres, co-owner of Insight Glass (adjacent to the billboard), stated he has been in business in Benicia for 26 years and has produced economic benefits to the City. Mr. Andres stated that he recommended that Nationwide sign be removed when it became inoperable and believed that the City previously told him it would be removed. He further stated that his employees are there from 6 am until 6 pm, Insight Glass is home to his employees and their view of the straight.

Chris Terry stated he requested a sign on his East 2<sup>nd</sup> Street business and that all of his proposals were denied. Only one sign was approved and it is not noticeable.

Jon Van Landschoot, resident, stated he concurs with Commissioner Smith that the approval would set a precedent. People on the Sign Ordinance Committee are concerned about these types of signs, which he believes signs cause accidents. Billboards may soon be outdated with new technology able to cut in on radio and make an announcement based on location. This technology can replace electronic billboards. If the City goes forward they should limit it to just 1 LED sign. The lease agreement should be for 3 to 5 years because technology will change.

Donnell Rubay, resident, pointed out that the sign proposed is not the same as the one that is there and if we approve these the City should forget about the Sign Ordinance Committee since its purpose would be moot. She doubts that signs will benefit tourism. There should be more outreach and more discussion at the very least.

Public Comment closed.

Commissioner Dean asked Ms. Million and Mr. Guiliani to respond to the questions that were raised. Ms. Million replied that:

- use permits rest with the land (property) not the applicant
- the existing size of the sign area is 700 sq. ft. and the proposed sign area is less than that (Ms. Million referred to page A-1 of the application).
- the City notified all property owners within 300 ft. on Nov. 19, 2012 when the notices were sent out.

Mr. Guiliani replied that:

- because the billboard would be on City property, the City can regulate content beyond First Amendment rights. City and Community oriented content can be managed through Economic Development; all requests that would promote a city purpose or goal would be accepted.
- There is no contract between the City and Insight Glass with respect to the Nationwide sign.

The Commission and staff discussed what latitude the City has on signs on private property versus City property.

Commissioner Dean asked Commissioner Smith if she had a sense on where the Sign Ordinance Committee stood on this issue. Ms. Smith replied that she did not because it will continue to be discussed at the next meeting. Commissioner Dean requested more information on the original use permit. Mr. Guiliani replied that the sign was just for Nationwide, but that 30% of content for the proposed CBS billboard would be for community-based notices.

Commissioner Smith stated her position that the proposal is for a different use and should be subject to CEQA. Commissioner Smith referred the Commission to Gateways as defined in the General Plan and expressed that the viewsheds had not been analyzed.

Commissioners stated concerns about the CEQA exemption and the project conflicting with General Plan gateway policies.

The Commission asked Ms. Wellman to clarify the action. Ms. Wellman explained that the Planning Commission approves the Use Permit and the Council addresses the lease agreement.

Commissioner Oakes made a motion to approve the resolution with direction to staff to present the increased review of CEQA, general plan objectives as outlined by Commissioner Smith to the City Council.

The Commissioners discussed the CEQA exemption, general plan objectives and findings necessary for approval of a use permit.

Commissioner Smith asked Mr. Andres, the owner of Insight Glass, if he would be opposed to the billboard if it were moved. Mr. Andres expressed that he would still be opposed.

Commissioner Oakes withdrew his motion.

Commissioners expressed that they were dissatisfied with findings 1, 3, and 4.

**RESOLUTION NO 12-8 OF THE PLANNING COMMISSION OF THE CITY OF BENICIA APPROVING A USE PERMIT TO MODIFY AN EXISTING BILLBOARD AT 4850 PARK ROAD (12PLN-00013)**

On another motion of Commissioner Oakes, seconded by Commissioner Smith, noting the changes to the conditions of approval to reference the lease agreement as recommended by staff, the above resolution was approved by the following vote:

Ayes: Commissioners Cohen-Grossman, Oakes, Sprague  
Noes: Commissioners Smith and Dean  
Abstain: Chair Sherry  
Absent: Commissioner Syracuse

**C. USE PERMIT – REQUEST TO MODIFY TWO EXISTING BILLBOARD SIGNS (CLEAR CHANNEL)**

**12PLN-35 – Use Permit**

**3300 Park Road and 3190 Bayshore Road, APNs: 080-080-530, 200, 710**

Ms. Million provided an overview of the project.

Dana Dean, on behalf of applicant presented the project and showed a video of LED examples next to lighted vinyl billboards in various cities.

Ms. Dean stated the signs are not flashing or blinking, instead they are sliding images and static in appearance. They are regulated to be moved at a

minimum of 8 second intervals. Ms. Dean cited the benefits, emergency signage and public notification opportunities. She referred to General Plan Goals 2.5, 2.7, 2.1.3, 3.3, 3.5, and 3.6, which in her view support the proposed project.

Commissioner Smith asked what the distance was between the two billboards. Ms. Dean responded that the minimum distance per Caltrans is 1,000 ft. (on the same side of the freeway) and the actual distance is 1,300 ft.

Public comment opened.

Kimball Goodman, EDB chair, stated that the EDB recommends approval of the Clear Channel billboards.

Ed Ruszel, owner of property on Bayshore Road, stated this approval would consist of two signs approved at the same time. They are very close to the freeway, opposes these signs, not aesthetic.

Public comment closed.

Commissioner Smith asked staff about the project phasing and the Sign Ordinance modification. She questioned the particulars of the community benefits package.

Staff stated that the details of the benefits are in the lease agreement.

Commissioner Smith stated she had ex-parte communications with Dana Dean on this project. She further asked staff if this was a gateway. Mr. Knox replied that where a gateway begins and where it ends is not defined in the General Plan. Commissioner Smith further asked if the City could establish standards for increased distance between billboards. Staff replied yes.

**RESOLUTION NO 12-9 OF THE PLANNING COMMISSION OF THE CITY OF BENICIA APPROVING A USE PERMIT TO MODIFY AN EXISTING BILLBOARD AT 3300 PARK ROAD AND 3190 BAYSHORE ROAD (12PLN-00035)**

On a motion of Commissioner Oakes, seconded by Commissioner Smith, noting the amendments for lease agreement and references to the Mitigation Monitoring Reporting Program recommended by staff, the above resolution was approved by the following vote:

Ayes:	Commissioners Cohen-Grossman, Oakes, Smith, Sprague
Noes:	Commissioner Dean
Abstain:	Chair Sherry
Absent:	Commissioner Syracuse

**VII. COMMUNICATIONS FROM STAFF**

Ms. Porras announced that the regular Commission hearing of December 13, 2012 would be canceled.

**VIII. COMMUNICATIONS FROM COMMISSIONERS**

None.

**IX. ADJOURNMENT**

Vice-Chair Dean adjourned the meeting at 10:48 PM.

**AGENDA ITEM  
PLANNING COMMISSION MEETING: FEBRUARY 14, 2013  
CONSENT CALENDAR**

**DATE** : January 2, 2013

**TO** : Planning Commission

**FROM** : Amy Million, Principal Planner

**SUBJECT** : **USE PERMIT FOR 191 MILITARY EAST, MODIFICATIONS TO AN EXISTING SPRINT WIRELESS COMMUNICATION FACILITY**

**PROJECT** : 12PLN-00041 – Use Permit  
191 Military East; APN: 0088-111-090

**RECOMMENDATION:**

Approve a Use Permit to modify an existing wireless telecommunication facility to add a microwave dish within the existing clock tower at 191 Military East, based on the findings, and subject to the conditions listed in the draft resolution.

**EXECUTIVE SUMMARY:**

Sprint is requesting to add a microwave dish to an existing wireless telecommunication facility at Davies Square shopping center located at 191 Military East. The dish will improve capacity, reliability, and overall speed of the existing facility.

**GENERAL PLAN:**

Relevant General Plan Policies and Programs:

- Goal #2.43: Allow installation of telecommunications equipment and distribution networks that maintain and protect health, safety, and quality of life and avoid visual clutter

**BUDGET INFORMATION:**

No budget impacts are anticipated.

**ENVIRONMENTAL ANALYSIS:**

Staff has determined that this project is categorically exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15301, which exempts minor modifications to existing facilities that involve negligible or no expansion of use. No expansion of the use is proposed.

**BACKGROUND:**

Applicant: Alyse Mathis, Streamline Engineering & Design for Sprint  
Owner: Mak Family Trust  
General Plan Designation/Zoning: General Commercial  
Existing use: Commercial Retail & Wireless telecommunication facility  
Adjacent zoning and uses:  
North: General Commercial, Davis Square II  
South: Public/Semi Public, Benicia Senior Center  
East: Single Family Residential, Church  
West: General Commercial, Solano Square

On September 12, 1996, Sprint obtained use permit approval to install the existing facility (UP96-11). The approval included the installation of 9 panel antennas, 1 GPS antenna, and 5 associated equipment cabinets. Condition of Approval #4 of this approval states:

*This permit is good only for the proposed 9 panel antennas, 1 GPS antenna, and 5 equipment cabinets. Any additional transmitting or receiving device, or increases in the power level (operating wattage) shall require subsequent use permit approval.*

Subsequently, Sprint installed 6 of the 9 panel antennas, 1 GPS antenna and 5 equipment cabinets.

On September 11, 2011, Sprint obtained building permit approval to replace 2 equipment cabinets, 6 panel antennas, relocate 1 GPS antenna and install 9 new Remote Radio Units (RRU), 9 new filters and new cabling. This modification is consistent with the original approval based on the proposal not increasing the power level or including additional transmitting or receiving devices.

The current request to add a new microwave dish requires a new use permit per Condition of Approval #4 stated above. The new microwave dish will transmit and receive data for the facility's backhaul system (telephone) and minimally increase the power level.

**SUMMARY:**

A. Project Description and Location

The subject parcel is located on the northwest corner of Military East and East Second Street in Davies Square. The facility is located in the existing clock tower on the southwest corner of the building. The associated equipment cabinets are located adjacent to the building on the west side in an enclosure. No changes are proposed to the equipment area as part of this project. All work will be located within the building and not visible from the exterior.

## B. Project Analysis

### Zoning Ordinance Consistency:

The site is within the General Commercial Zoning District which allows the installation of wireless telecommunication facilities with Use Permit approval. Wireless communication facilities are regulated under Benicia Municipal Code Section 17.70.250, which sets forth development standards in accordance with federal law and state rules and regulations for antenna and wireless communication transmission.

The proposed microwave dish will be located within the existing clock tower on the southwest corner of the building. There will be no increase to the building footprint or height as part of this project. All associated work will be located inside, not visible from the exterior and therefore Design Review approval for the proposed modification is not required. This project is consistent with the General Commercial Zoning District development regulations, and is also consistent with the standards for wireless facilities.

### General Plan Consistency:

General Plan Goal 2.43 is to *"allow installation of telecommunications equipment and distribution networks that maintain and protect health, safety, and quality of life and avoid visual clutter."* The installation of the proposed microwave dish is consistent with this goal because it will increase the capacity, reliability and speed of the existing Sprint facility which is critical for communication especially in emergency situations.

### Public Health and Safety:

The Federal Communications Commission (FCC) sets the standards relevant to human exposure limits to Radio Frequency- Electromagnetic emissions. The addition of the new microwave dish will increase the electromagnetic field levels of the facility by less than 1% of the FCC's limit for human exposure. The cumulative level will be a maximum of 4.9% of the FCC's general public limit for human exposure<sup>1</sup>. Therefore, the proposed facility installation will not create any nuisance or be detrimental to the health, safety or general welfare of persons residing or working in the neighborhood.

## C. Conclusion

Based on the foregoing analysis, staff recommends that the Planning Commission approve the Use Permit to modify the existing wireless communication facility by installation of a microwave dish at 191 Military East, based on the findings, and subject to the conditions listed in the draft resolution and as discussed during the public hearing.

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<sup>1</sup> Radio Frequency –Electromagnetic Energy (RF-EME) Compliance Report prepared by EBI Consulting dated December 17, 2012

**FURTHER ACTION:**

The Planning Commission's action will be final unless appealed to the City Council within ten business days.

Attachments:

- Draft Resolution
- Use Permit UP96-11
- RF-EME Report prepared by EBI Consulting dated December 17, 2012
- Project Plans

# **DRAFT RESOLUTION**

**RESOLUTION NO. 13-**

**A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF BENICIA  
APPROVING A USE PERMIT TO MODIFY AN EXISTING WIRELESS  
TELECOMMUNICATION FACILITY AT 191 MILITARY EAST (12PLN-00041)**

**WHEREAS**, on September 12, 1996, Sprint PCS was granted Use Permit approval (UP96-11) to install a wireless telecommunication facility consisting of 9 panel antennas, 1 GPS antenna and 5 associated equipment cabinets at 191 Military East; and

**WHEREAS**, the applicant, Alyse Mathis with Streamline Engineering & Design on behalf of Sprint and property owner, Mak Family Trust, have requested Use Permit approval to modify the existing wireless telecommunications facility; and

**WHEREAS**, the Planning Commission at a regular meeting on February 14, 2013, conducted a public hearing and reviewed the proposed project.

**NOW, THEREFORE, BE IT RESOLVED** that the Planning Commission of the City of Benicia hereby approves the wireless communications facility based on the following findings:

- a) The Planning Commission finds that the proposed development is consistent with the objectives and provisions of Title 17 of the Benicia Municipal Code and the purposes of the General Commercial (CG) zoning district. *The purpose of General Commercial is to provide opportunities for a full range of businesses and wireless telecommunication facilities are permitted with a use permit. The proposed project is consistent with the development regulations of Title 17 and the purpose of the district.*
- b) The proposed location of the wireless communications facility and the proposed conditions of approval will be consistent with the General Plan and with Title 17 of the Benicia Municipal Code and will not be detrimental to the public health, safety, or welfare of persons residing or working in or adjacent to the neighborhood of the proposed use, nor detrimental to properties or improvements in the vicinity or to the general welfare of the city. *The proposed facility has demonstrated compliance with the FCC regulations for human exposure to radio frequency-electromagnetic energy and is consistent with the Benicia Municipal Code and the General Plan.*
- c) The proposed use will comply with the provisions of Title 17 (Benicia Zoning Ordinance), including specific conditions required for use in the district in which it will be located. *The proposed wireless communications facility complies with the Benicia Municipal Code, Title 17 and all applicable conditions required in the General Commercial zoning district.*

- d) The proposed location of the project and the conditions under which it would be operated and maintained will not be detrimental to the health, safety, or welfare of persons residing or working in the neighborhood or the general public, and will not be materially injurious to properties or improvements in the vicinity *because the proposed modifications to the wireless facility complies with the prevailing FCC standards and regulations for limiting public exposure to radio frequency energy. In addition, the existing facility and proposed microwave dish are not accessible by the general public.*
- e) Development of the proposed facility as conditioned will not significantly affect any designated visual resources, environmentally sensitive resources, community character resources; or, that there are no other environmentally equivalent and/or superior and technically feasible alternatives to the proposed wireless communications facility as conditioned *because the existing antennas and proposed microwave dish are completely concealed within the existing cupola. This project will not have an visual impact on the site or surrounding area.*
- f) The proposed facility is in compliance with all FCC regulations *because the proposed modifications to the wireless facility complies with the prevailing FCC standards and regulations for limiting public exposure to radio frequency-electromagnetic energy.*
- g) The proposed location and design of the project and the conditions under which it would be operated or maintained will be consistent with all elements of the Benicia General Plan *because the use is consistent with the goals and policies set forth in the General Plan including Goal: 2.43: allow installation of telecommunications equipment and distribution networks that maintain and protect health, safety, and quality of life and avoid visual clutter and the General Commercial designation and the City's Zoning Ordinance.*
- h) The proposed project will complement and harmonize with the existing and proposed land uses in the vicinity and will be visually compatible with the physical design aspects *because the proposed project will provide an increase in wireless communication services for Sprint customers and is visually compatible because it is not visible from the exterior as it is contained within the existing building envelope.*

**BE IT FURTHER RESOLVED** the Benicia Planning Commission hereby approves the proposed project subject to the following conditions:

1. The plans and maps submitted for approval and development of the site shall be in substantial compliance with the plans dated received September 19, 2012 and marked Exhibit A, prepared by Black & Veatch, consisting of six sheets on file in the Community Development Department.
2. This approval shall supersede Use Permit 96-11.

3. This approval shall expire two years from the date of approval, unless made permanent by the issuance of a building permit and the commencement of work that is diligently pursued to completion. Alternatively, the time period may be extended, by the Community Development Director, if the application for time extension is received prior to the end of the initial two year deadline and there has been no change in the City's development policies, which affect the site and there is no change in the physical circumstances nor new information about the project site which would warrant reconsideration of the approval.
4. The project shall adhere to all applicable ordinances, standard plans, and specifications of the City of Benicia.
5. Antennas, support structures and related equipment shall be removed within 90 calendar days of the discontinuation of the use of a wireless communication facility and the site shall be restored to its previous condition. The applicant shall notify the Community Development Department in writing of the intent to remove the facility within 30 days prior to discontinuance.
6. The operator of a wireless communication facility must correct interference problems experienced by any person or entity with respect to equipment such as television, radio, computer, and telephone reception or transmission that are caused by the facility. The operator shall be responsible for all labor and equipment costs for determining the source of the interference and all costs associated with eliminating the interference.
7. The applicant or permittee shall defend, indemnify, and hold harmless the City of Benicia or its agents, officers, and employees from any claim, action, or proceeding against the City of Benicia or its agents, officers, or employees to attack, set aside, void, or annul an approval of the Planning Commission, City Council, Community Development Director, or any other department, committee, or agency of the City concerning a development, variance, permit or land use approval which action is brought within the time period provided for in any applicable statute; provided, however, that the applicant's or permittee's duty to so defend, indemnify, and hold harmless shall be subject to the City's promptly notifying the applicant or permittee of any said claim, action, or proceeding and the City's full cooperation in the applicant's or permittee's defense of said claims, actions, or proceedings.

\* \* \* \* \*

On motion of Commissioner \_\_\_\_\_, seconded by Commissioner \_\_\_\_\_, the above Resolution was adopted at a regular meeting of the Planning Commission of the City of Benicia on February 14, 2013 by the following vote:

Ayes:

Noes:

Absent:

Abstain:

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Rod Sherry  
Planning Commission Chair

**USE PERMIT UP96-11**

**SPRINT SPECTRUM PCS SITE - Davies' Square I**

UP 96-11, Use Permit

191 Military East, APN: 88-111-09

A motion was made by Vice Chairman Kalian and seconded by Commissioner Renfrow that the Planning Commission approve the use permit application (UP 96-10) of Sprint Spectrum to install 9 panel antennas and one GPS antenna on an extension of the stairwell of the Davies Square I building:

**Findings:**

- a) The proposed location of the use is in accord with the objectives of the Zoning Ordinance and the purposes of the district in which the site is located.
- b) The proposed location of the use and the proposed conditions under which it would be operated or maintained will be consistent with the General Plan, particularly with the Scenic Highways Element, and will not be detrimental to the public health, safety, or welfare of persons residing or working in or adjacent to the neighborhood of the use, nor detrimental to properties or improvements in the vicinity or to the general welfare of the City.
- c) The proposed conditional use will comply with the provisions of the Zoning Ordinance, including any specific condition required for the proposed conditional use in the district in which it would be located.

**Conditions:**

- 1) This approval shall expire two years from the date of approval, unless made permanent by the commencement of use.
- 2) This project shall adhere to all applicable ordinances, plans, and specifications of the City of Benicia.
- 3) Any alteration of the approved plans, including substitution of materials, and the type of GPS antenna, shall be requested in writing and approved by the Planning Department or Planning Commission prior to changes being made in the field.
- 4) This permit is good only for the proposed 9 panel antennas, 1 GPS antenna, and five equipment cabinets. Any additional transmitting or receiving device, or increases in the power level (operating wattage) shall require subsequent use permit approval.

- 5) A working clock, facing Military East, shall be installed on the stairwell addition as a part of this project. The design, materials, and location of which shall be approved by the Planning Director.
- 6) The exterior of the stairwell extension shall be surfaced, trimmed and painted to match the existing building, prior to issuance of a certificate of occupancy for the building extension.
- 7) The applicant shall paint the stairwell addition as often as needed to maintain its appearance.
- 8) The applicant or permittee shall defend, indemnify, and hold harmless the City of Benicia or its agents, officers, and employees from any claim, action, or proceeding against the City of Benicia or its agents, officers, or employees to attack, set aside, void, or annul an approval of the Planning Commission, City Council, Planning Director, Design Review Commission or any other department, committee, or agency of the City concerning a development, variance, permit or land use approval which action is brought within the time period provided for in any applicable statute; provided, however, that the applicant's or permittee's duty to so defend, indemnify, and hold harmless shall be subject to the City's promptly notifying the applicant or permittee of any said claim, action, or proceeding and the City's full cooperation in the applicant's or permittee's defense of said claims, actions, or proceedings.

A roll call vote was taken as follows:

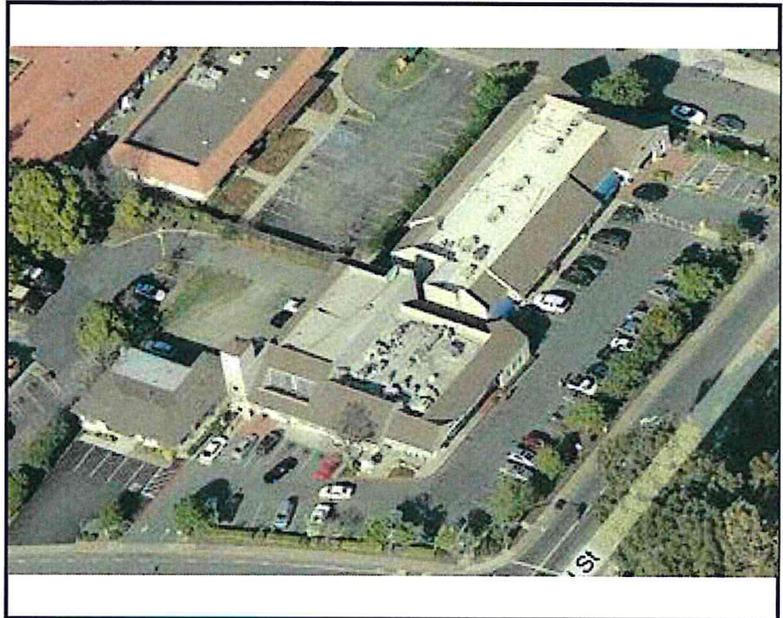
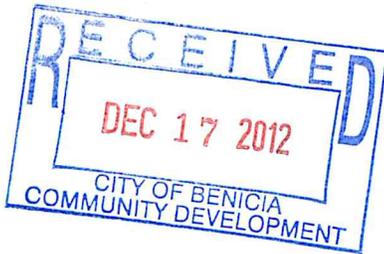
Ayes: Gonsalves, Hannafin, Horowitz, Kalian, Renfrow, Burek

Noes: None

Excused: Steele

# **RF-EME REPORT**

# Radio Frequency – Electromagnetic Energy (RF-EME) Compliance Report



Prepared for:  
Sprint Nextel  
c/o Black & Veatch Corporation  
2999 Oak Rd. Suite 910  
Walnut Creek, CA 94597

Site No. FN04XC114  
Downtown Benicia  
191 Military East  
Benicia, California 94510  
Solano County  
38.053611; -122.152222 NAD83  
Site Type: rooftop

EBI Project No. 62111758  
December 17, 2012



## **EXECUTIVE SUMMARY**

### **Purpose of Report**

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by Sprint Nextel to conduct radio frequency electromagnetic (RF-EME) modeling for Sprint Site FN04XC114 located at 191 Military East in Benicia, California to determine RF-EME exposure levels from existing and proposed Sprint wireless communications equipment at this site. As described in greater detail in Section 11.0 of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

This report contains a detailed summary of the RF EME analysis for the site.

This document addresses the compliance of Sprint's proposed transmitting facilities independently.

## **1.0 LOCATION OF ALL EXISTING ANTENNAS AND FACILITIES AND EXISTING RF LEVELS**

This project involves the existing six (6) Sprint wireless telecommunication antennas in a cupola located at 191 Military East in Benicia, California. There are three Sectors (A, B, and C) at the site, with two (2) antennas per sector.

Sprint proposes the installation of one (1) microwave dish on the rooftop.

Based on drawings, there were no collocated carriers on the rooftop.

## **2.0 LOCATION OR ALL APPROVED (BUT NOT INSTALLED) ANTENNAS AND FACILITIES AND EXPECTED RF LEVELS FROM THE APPROVED FACILITIES**

There are no antennas or facilities that are approved and not installed based on information provided to EBI and Sprint at the time of this report.

## **3.0 NUMBER AND TYPES OF WTS WITHIN 100 FEET OF THE PROPOSED SITE AND ESTIMATES OF CUMULATIVE EMR EMISSIONS AT THE PROPOSED SITE**

There are no other Wireless Telecommunication Service (WTS) sites observed within 100 feet of the proposed site.

## **4.0 LOCATION AND NUMBER OF THE SPRINT ANTENNAS AND BACK-UP FACILITIES PER BUILDING AND NUMBER AND LOCATION OF OTHER TELECOMMUNICATION FACILITIES ON THE PROPERTY**

Sprint proposes the existing six (6) Sprint wireless telecommunication antennas in a cupola located at 191 Military East in Benicia, California. There are three Sectors (A, B, and C) at the site, with two (2) antennas per sector. In each sector, there is one antenna transmitting in the 800 MHz and the 1900 MHz frequency ranges and one antenna transmitting in the 1600 MHz frequency range. The Sector A antennas are oriented 345° from true north. The Sector B antennas are oriented 120° from true north. The Sector C antennas are oriented 241° from true north. The bottoms of the Sector C and A2 antennas are 32 feet above ground level. The bottoms of the Sector A1 antenna are 7.4 feet above the main roof. The bottoms of the Sector B antennas are 14.6 feet above a lower roof.

In addition to the antennas outlined above, Sprint also proposes the installation of one (1) microwave dish on the rooftop. The microwave dish will be oriented 175.5° from true north. The dish will be 16.6 feet above roof level.

Based on drawings, there were no collocated carriers on the rooftop.

## **5.0 POWER RATING FOR ALL EXISTING AND PROPOSED BACKUP EQUIPMENT SUBJECT TO THE APPLICATION**

The operating power for modeling purposes was assumed to be 20 Watts per transmitter for the 800 MHz antenna and there is one (1) transmitter operating at this frequency. The operating power for the purpose of modeling was assumed to be 20 Watts per transmitter and one (1) transmitter operating in the 1600 MHz frequency range. Additionally, for modeling purposes it was assumed to be 20 Watts per transmitter and five (5) transmitters operating at the 1900 MHz.

## **6.0 TOTAL NUMBER OF WATTS PER INSTALLATION AND THE TOTAL NUMBER OF WATTS FOR ALL INSTALLATIONS ON THE BUILDING**

The effective radiated power (ERP) for the 800 MHz transmitter combined on site is 497 Watts. The ERP for the 1600 MHz transmitters combined on site is 787 Watts. The ERP for the 1900 MHz transmitters combined on site is 4,955 Watts.

The ERP for the microwave dish will be 33.41 watts.

## **7.0 PREFERRED METHOD OF ATTACHMENT OF PROPOSED ANTENNA WITH PLOT OR ROOF PLAN INCLUDING: DIRECTIONALITY OF ANTENNAS, HEIGHT OF ANTENNAS ABOVE NEAREST WALKING SURFACE, DISCUSS NEARBY INHABITED BUILDINGS**

Based on the information provided to EBI, the information indicates that the proposed antennas are to be mounted inside of the building's cupola, operating in the directions, frequencies, and heights mentioned in section 4.0 above. The site is surrounded by both commercial and residential use properties.

## **8.0 ESTIMATED AMBIENT RADIO FREQUENCY FIELDS FOR THE PROPOSED SITE**

Based on worst-case predictive modeling, there are no predicted areas on any accessible rooftop or ground-level walking/working surface related to the existing Sprint antennas that exceed the FCC's occupational or general public exposure limits at this site. At the nearest walking/working surfaces to the existing Sprint panel antennas, the maximum power density is 90.70 percent of the FCC's general public limit (18.14 percent of the FCC's occupational limit). At ground level, the maximum power density generated by the Sprint antennas is 4.90 percent of the FCC's general public limit (0.98 percent of the FCC's occupational limit). The inputs used in the modeling are summarized in the RoofView® export file presented in Appendix B.

Microwave dish antennas are designed for point-to-point operations at the elevations of the installed equipment rather than ground level coverage. RoofView® is not suitable for modeling them. However, formulas for OET Bulletin 65 were used to calculate a worst-case prediction of the maximum power density (MPE) at ground level and nearest walking surfaces for the Sprint microwave dishes. Power density estimates used for the microwave dish proposed for installation at this site are included in Appendix B. At the nearest walking/working surfaces to the Sprint microwave dish, the maximum power density generated by the Sprint microwave dish is approximately 0.14543 percent of the FCC's general population limit (0.029 percent of the FCC's occupational limit).

## **9.0 SIGNAGE AT THE FACILITY IDENTIFYING ALL WTS EQUIPMENT AND SAFETY PRECAUTIONS FOR PEOPLE NEARING THE EQUIPMENT AS MAY BE REQUIRED BY THE APPLICABLE FCC ADOPTED STANDARDS (DISCUSS SIGNAGE FOR THOSE WHO SPEAK LANGUAGES OTHER THAN ENGLISH)**

Signs are the primary means for control of access to areas where RF exposure levels may potentially exceed the MPE. It is recommended that additional signage be installed for the new antennas making people aware of the antennas locations. Also workers elevated above the roof or ground level should be made aware of the antennas locations. There are no fields in front of the proposed antennas and therefore barriers are not recommended.

Additionally, there are areas where workers elevated above the ground or rooftop may be exposed to power densities greater than the general population and occupational limits. Workers and the general public should be informed about the presence and locations of antennas and their associated fields.

Additionally, access to this site is unknown.

## 10.0 STATEMENT ON WHO PRODUCED THIS REPORT AND QUALIFICATIONS

Please see the certifications attached in Appendix A below.

## 11.0 FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

The FCC has established Maximum Permissible Exposure (MPE) limits for human exposure to Radiofrequency Electromagnetic (RF-EME) energy fields, based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general public/uncontrolled exposure limits for members of the general public.

**Occupational/controlled exposure limits** apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general public/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

**General public/uncontrolled exposure limits** apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Table I and Figure I (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

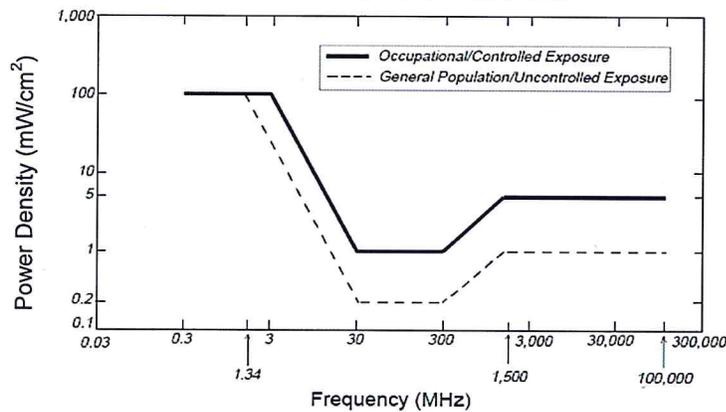
The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm<sup>2</sup>). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm<sup>2</sup>) and an uncontrolled MPE of 1 mW/cm<sup>2</sup> for equipment operating in the 1600 MHz and 1900 MHz frequency ranges. For the Sprint equipment operating at 800 MHz, the FCC's occupational MPE is 2.66 mW/cm<sup>2</sup> and an uncontrolled MPE of 0.53 mW/cm<sup>2</sup>. These limits are considered protective of these populations.

Table I: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time [E] <sup>2</sup> , [H] <sup>2</sup> , or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f <sup>2</sup> )*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time [E] <sup>2</sup> , [H] <sup>2</sup> , or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)

\* Plane-wave equivalent power density

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)  
 Plane-wave Equivalent Power Density



Based on the above, the most restrictive thresholds for exposures of unlimited duration to RF energy for several personal wireless services are summarized below:

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm <sup>2</sup>	1.00 mW/cm <sup>2</sup>
Cellular Telephone	870 MHz	2.90 mW/cm <sup>2</sup>	0.58 mW/cm <sup>2</sup>
Specialized Mobile Radio	855 MHz	2.85 mW/cm <sup>2</sup>	0.57 mW/cm <sup>2</sup>
Most Restrictive Freq. Range	30-300 MHz	1.00 mW/cm <sup>2</sup>	0.20 mW/cm <sup>2</sup>

MPE limits are designed to provide a substantial margin of safety. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

Personal Communication (PCS) facilities used by Sprint in this area operate within a frequency range of 800-1900 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

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

### **Statement of Compliance**

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

### **12.0 LIMITATIONS**

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

### **13.0 SUMMARY AND CONCLUSIONS**

EBI has prepared this Radiofrequency Emissions Compliance Report for the proposed Sprint telecommunications equipment at the site located at 191 Military East in Benicia, California.

EBI has conducted theoretical modeling to estimate the worst-case power density from Sprint antennas to document potential MPE levels at this location and ensure that site control measures are adequate to meet FCC and OSHA requirements. As presented in the preceding sections, based on worst-case predictive modeling, there are no modeled exposures on any accessible rooftop or ground-level walking/working surface related to proposed equipment in the area that exceed the FCC's occupational and general public exposure limits at this site. As such, the proposed Sprint project is in compliance with FCC rules and regulations.

Signage is recommended at the site as presented in Section 9.0. Posting of the signage brings the site into compliance with FCC rules and regulations.

## **Appendix A**

### **Certifications**

## Preparer Certification

I, Alison Martin, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am familiar with the FCC rules and regulations as well as OSHA regulations both in general and as they apply to RF-EME exposure.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.

*Alison Martin*

---

**Appendix B**  
**Roofview® Export File**

**MapDefinition**

Roof Max X: 180, Max Y: 170, Max X Offset: 10, Max Y Offset: 10, mber of Antennas: 1, J\$41:\$FX\$2\$41:\$FX\$210

**SettingsData**

Standard Method: 2, Uptime: 3, Scale Factor: 1, Low Thr: 100, Low Color: 1, Mid Thr: 500, Mid Color: 4, Hi Thr: 5000, Hi Color: 2, Over Color: 3, Ap Ht Mult: 1.5, p Ht Method: 1

**AntennaData** to provide an ID (ant 1) for all antennas

ID	Name	Freq (MHz)	Trans Power	Trans Count	Coax Len	Coax Type	Mid Thr	Mid Color	Hi Thr	Hi Color	Over Color	Ap Ht Mult	p Ht Method	(ft) X	(ft) Y	(ft) Z	Type	(ft) Apher	dBd Gain	BWdth Pt Dir	Uptime Profile	ON flag
SPT A1	Sprint	800	20	1	3	1/2 LDF	0.5	17,53194081	Input Power	Calc Power	Mfg	Model	1	16	14	7.4	ET-X-TS-90-14-90-17-IR-SP	6	11.9	90:345	ON*	
SPT A1	Sprint	1900	20	2	3	1/2 LDF	0.5	35,06388161	Input Power	Calc Power	KMW	ET-X-TS-90-14-90-17-IR-SP	16	14	7.4	ET-X-TS-90-14-90-17-IR-SP	6	14.9	90:345	ON*		
SPT A2	Sprint	1600	20	3	3	1/2 LDF	0.5	52,59582242	Input Power	Calc Power	KMW	ET-X-TS-90-14-90-17-IR-SP	16	14	7.4	ET-X-TS-90-14-90-17-IR-SP	6	14.9	90:345	ON*		
SPT B1	Sprint	800	20	1	3	1/2 LDF	0.5	17,53194081	Input Power	Calc Power	KMW	H2-X-LU-90-16-IR	11	14	32	H2-X-LU-90-16-IR	6	13.9	90:345	ON*		
SPT B1	Sprint	1900	20	2	3	1/2 LDF	0.5	35,06388161	Input Power	Calc Power	KMW	ET-X-TS-90-14-90-17-IR-SP	14	5	14.6	ET-X-TS-90-14-90-17-IR-SP	6	11.9	90:120	ON*		
SPT B2	Sprint	1900	20	3	3	1/2 LDF	0.5	52,59582242	Input Power	Calc Power	KMW	ET-X-TS-90-14-90-17-IR-SP	14	5	14.6	ET-X-TS-90-14-90-17-IR-SP	6	14.9	90:120	ON*		
SPT C1	Sprint	800	20	1	3	1/2 LDF	0.5	17,53194081	Input Power	Calc Power	KMW	H2-X-LU-90-16-IR	18	10	14.6	H2-X-LU-90-16-IR	6	13.9	90:120	ON*		
SPT C1	Sprint	1900	20	2	3	1/2 LDF	0.5	35,06388161	Input Power	Calc Power	KMW	ET-X-TS-90-14-90-17-IR-SP	8	7	32	ET-X-TS-90-14-90-17-IR-SP	6	11.9	90:241	ON*		
SPT C2	Sprint	1900	20	3	3	1/2 LDF	0.5	52,59582242	Input Power	Calc Power	KMW	ET-X-TS-90-14-90-17-IR-SP	8	7	32	ET-X-TS-90-14-90-17-IR-SP	6	14.9	90:241	ON*		
SPT C2	Sprint	1600	20	1	3	1/2 LDF	0.5	17,53194081	Input Power	Calc Power	KMW	H2-X-LU-90-16-IR	12	4	32	H2-X-LU-90-16-IR	6	13.9	90:241	ON*		

**SymbolData**

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

List Of Areas  
 S0\$41:\$FX\$210

**Estimation of Power Density from Microwave Dishes**

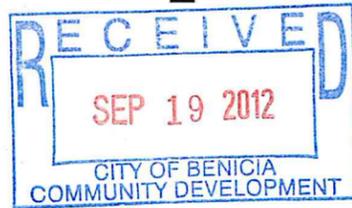
Site Number: 0

Total Number of Microwave Dishes: 1  
 Are the antennas installed on a roof or a tower? Roof  
 Nearest Walking Surface: Roof

Model/Description	Frequency (MHz)	AGL/ARL (ft)	ERP (Watts)	Gain (dBd)	Diameter (ft)	Power Density Inside Column (mW/cm <sup>2</sup> )	Power Density Ground (mW/cm <sup>2</sup> )	Gen Pop Limit (mW/cm <sup>2</sup> )	Occ Limit (mW/cm <sup>2</sup> )	Uncontrolled Outside Column (% MPE)	Controlled Outside Column (% MPE)	Min Dist from Antenna (ft)
MW1 VHLP1-23	22300	16.6	33.41	33.15	1	0.145432	0.001454	1.000000	5.000000	0.14543%	0.029%	2
<b>TOTAL</b>							<b>0.00145432</b>			<b>0.14543%</b>	<b>0.03%</b>	<b>2</b>

# **PROJECT PLANS**

# Sprint



**SITE NAME:** DOWNTOWN BENICIA

**SITE NUMBER:** FN04XC114-C  
**MARKET NAME:** SF BAY  
**NETWORK VISION MM LAUNCH**

**SITE ADDRESS:** 191 MILITARY EAST  
 BENICIA, CA 94510  
 SOLANO COUNTY

**SITE TYPE:** EXISTING CUPOLA MOUNTED ANTENNAS



**SITE INFORMATION**

**SITE ADDRESS:**  
 191 MILITARY EAST  
 BENICIA, CA 94510

**PROPERTY OWNER:**  
 PAUL H. MAK AND LILY T. MAK, TRUSTEES OF THE MAK FAMILY TRUST  
 C/O CARDOZA PROPERTIES, INC.  
 101 ELLINWOOD DRIVE  
 PLEASANT HILL, CA 94523

**APPLICANT REPRESENTATIVE:**  
 ALYSE MATHIS  
 STREAMLINE ENGINEERING & DESIGN, INC.  
 8445 SIERRA COLLEGE BLVD. STE. E  
 GRANITE BAY, CA 95746  
 PH: (916) 660-1930  
 EMAIL: ALYSE@STREAMLINEENG.COM

**CONSTRUCTION MANAGER:**  
 EARLE EARLEY  
 OVERLAND CONTRACTING  
 2999 OAK ROAD SUITE 490  
 WALNUT CREEK, CA 94597  
 EARLEY@OVERLANDCONTRACTING.COM  
 PHONE: (408) 636-3717

**EQUIPMENT SUPPLIER:**  
 SAMSUNG TELECOMMUNICATIONS AMERICA (STA)  
 1301 EAST LOOKOUT DRIVE  
 RICHARDSON, TX 75082-4124  
 PHONE: (972) 761-7000

**COUNTY:**  
 SOLANO

**APN:**  
 0088-111-090

**ZONING:**  
 GC-GENERAL COMMERCIAL

**ELEVATION:**  
 ±70' A.M.S.L.

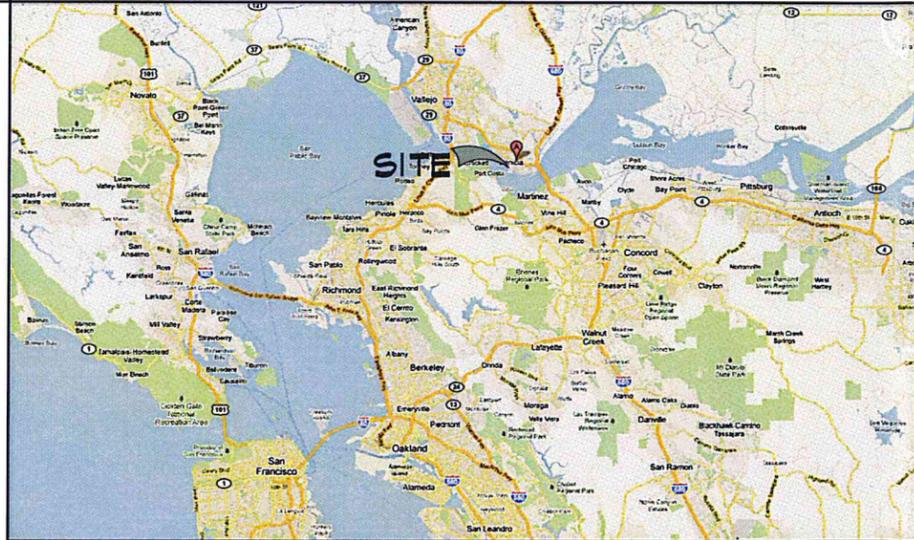
**LATITUDE (NAD83):**  
 38° 3' 14.7744" N  
 38.054104

**LONGITUDE (NAD83):**  
 122° 9' 12.2538" W  
 -122.153404

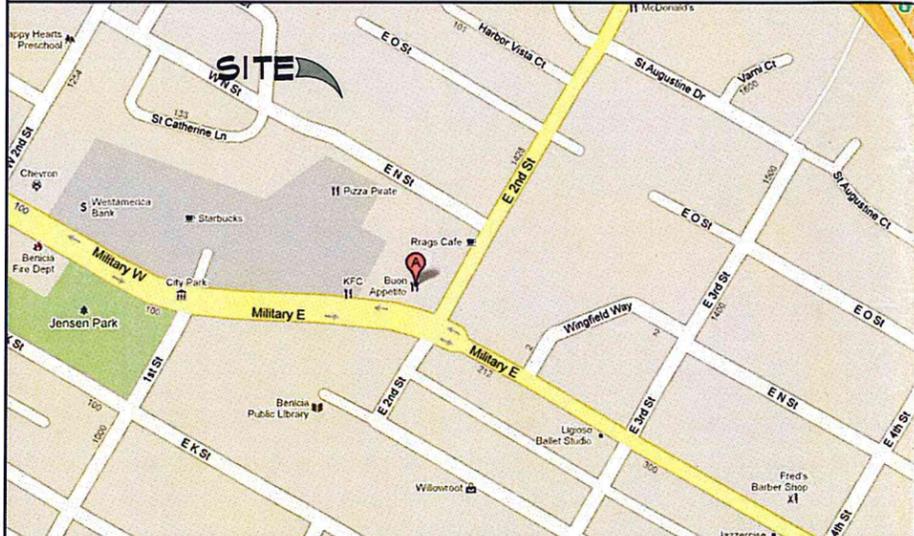
**POWER COMPANY:**  
 PG&E

**TELCO COMPANY:**  
 AT&T

**AREA MAP**



**LOCATION MAP**



**APPLICABLE CODES**

ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:  
 2010 CALIFORNIA BUILDING CODE  
 2010 CALIFORNIA MECHANICAL CODE  
 2010 CALIFORNIA PLUMBING CODE  
 2010 CALIFORNIA ELECTRICAL CODE  
 IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL

**DRAWING INDEX**

T-1	TITLE SHEET
GN-1	GENERAL NOTES
A-1	SITE PLAN & ENLARGED SITE PLAN
A-2	MICROWAVE ANTENNA LAYOUTS, SCHEDULE & INSTALLATION DIAGRAMS
A-3	ELEVATIONS
D-1	MICROWAVE DETAILS

**PROJECT NO:** -  
**DRAWN BY:** NC  
**CHECKED BY:** DW

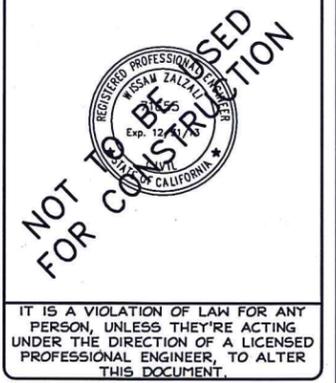
REV	DATE	DESCRIPTION
0	07/25/2012	100% ZD'S FOR ZAP
B	07/20/2012	100% ZD'S FOR REDLINE
A	06/14/2012	90% ZD'S FOR REDLINE

**PROJECT DESCRIPTION**

THE PROPOSED PROJECT SHALL INCLUDE:  
 NEW INSTALLATION OF (1) MICROWAVE ANTENNA TO BE MOUNTED WITHIN THE EXISTING CUPOLA  
 INSTALLATION OF ASSOCIATED EQUIPMENT/CABLING AT THE PROPOSED SITE  
 INSTALL (1) NEW ODU ON THE NEW MICROWAVE ANTENNA  
 INSTALL NEW MICROWAVE ANTENNA CABLING TO THE MICROWAVE DISH ANTENNA ALONG THE EXISTING ANTENNA CABLING PATHWAY

**ENGINEER OF RECORD**

ZALZALI & ASSOCIATES INC.  
 2070 BUSINESS CENTER DR. STE 290  
 IRVINE, CA 92612  
 ENGINEER: MISSAM ZALZALI (P.E.# C71655)  
 PHONE: (949) 604-9559  
 PM: DEAN WALKER  
 PHONE: (714) 230-5714  
 www.zalzalilandassociates.com



FN04XC114-C  
 DOWNTOWN BENICIA  
 191 MILITARY EAST  
 BENICIA, CA 94510

**DRIVING DIRECTIONS FROM NEAREST AIRPORT**

FROM SAN FRANCISCO INTERNATIONAL AIRPORT:  
 TAKE US 101 NORTH TO I-80 EAST TO BEYOND MERGE WITH I-580 CONTINUE I-80 EAST TO I-780 SOUTH TO THE EAST SECOND STREET EXIT TOWARDS CENTRAL BENICIA. TURN LEFT OFF THE EXIT RAMP ONTO EAST SECOND STREET, THEN TURN RIGHT ONTO MILITARY EAST STREET. SITE IS LOCATED AT THE CORNER OF E. 2ND ST. AND MILITARY E. ST.  
 #191 MILITARY EAST

**SHEET TITLE**  
 TITLE SHEET

**SHEET NUMBER**  
**T-1**

**GENERAL CONSTRUCTION NOTES**

- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL BUILDING CODE, THE LATEST EDITION AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
- CONTRACTOR SHALL CONSTRUCT SITE IN ACCORDANCE WITH THESE DRAWINGS AND CONSTRUCTION SPECIFICATIONS 80-T114-1 REV H. THE SPECIFICATION IS THE RULING DOCUMENT AND ANY DISCREPANCIES BETWEEN THE SPECIFICATION AND THESE DRAWINGS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION
- CONTRACTOR SHALL VISIT THE JOB SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OF FIELD CONDITIONS
- PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT AND APPURTENANCES, AND LABOR NECESSARY TO EFFECT ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS. OWNER PROVIDED MATERIALS WILL INCLUDE THE FOLLOWING, UNLESS NOTED OTHERWISE:
  - TRANSMITTER
  - RF FILTER
  - MFTS RACK
  - AUXILIARY EQUIPMENT IN MFTS RACK
  - PUMP ASSEMBLY
  - HEAT EXCHANGER
  - HOSE AND HOSE MANIFOLDS (ANY COPPER OR STEEL SECTIONS PROVIDE BY CONTRACTOR)
  - UHF ANTENNA AND MOUNTING BRACKETS, GPS ANTENNAS AND KU ANTENNAS
  - UHF COAX AND HANGERS
  - 480-208 & 208-400 ELECTRICAL TRANSFORMERS (RE: E-2 FOR SPECIALIZED TRANSFORMERS PROVIDED BY CONTRACTOR)
  - AUTOMATIC TRANSFER SWITCH AND GENERATOR
  - EQUIPMENT SHELTER (SHELTERS FURNISHED IN FACTORY W/ HVAC EQUIPMENT AND ELECTRICAL DISTRIBUTION PANEL)
  - INTEGRATED LOAD CENTER
- DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE WORK.
- DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
- CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING, AND SHALL RECEIVE IN WRITING AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST CONSTRUCTION SKILLS AND ATTENTION. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.
- CONTRACTOR SHALL COORDINATE HIS WORK WITH THE SUPERINTENDENT OF BUILDINGS & GROUNDS AND SCHEDULE HIS ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
- INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
- MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SURFACES, EQUIPMENT, IMPROVEMENTS, PIPING ETC. AND IMMEDIATELY REPAIR ANY DAMAGE THAT OCCURS DURING CONSTRUCTION.
- IN DRILLING HOLES INTO CONCRETE WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, PIPE RUNS, ETC., MUST BE CLEARLY UNDERSTOOD THAT REINFORCING STEEL SHALL NOT BE DRILLED INTO, CUT OR DAMAGED UNDER ANY CIRCUMSTANCES (UNLESS NOTED OTHERWISE). LOCATIONS OF REINFORCING STEEL ARE NOT DEFINITELY KNOWN AND THEREFORE MUST BE SEARCHED FOR BY APPROPRIATE METHODS AND EQUIPMENT.
- REPAIR ALL EXISTING WALL SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND IN WITH ADJACENT SURFACES.
- SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH U.L. LISTED AND FIRE CODE APPROVED MATERIALS.
- KEEP CONTRACT AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DIRT, DEBRIS, AND RUBBISH. EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OF THE OWNER SHALL BE REMOVED. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
- MINIMUM BEND RADIUS OF ANTENNA CABLES SHALL BE IN ACCORDANCE WITH CABLE MANUFACTURERS RECOMMENDATIONS.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO APPLICABLE REGULATORY AUTHORITIES
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION SHALL BE IN CONFORMANCE WITH JURISDICTIONAL OR STATE AND LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL AND COORDINATED WITH LOCAL REGULATORY AUTHORITIES.
- ALL CONSTRUCTION IS TO ADHERE TO SPRINT'S INTEGRATED CONSTRUCTION STANDARDS UNLESS CALIFORNIA CODE IS MORE STRINGENT.

**ELECTRICAL NOTES**

- ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ANY/ALL ELECTRICAL WORK INDICATED. ANY/ALL CONSTRUCTION SHALL BE IN ACCORDANCE W/DRAWINGS AND ANY/ALL APPLICABLE SPECIFICATIONS. IF ANY PROBLEMS ARE ENCOUNTERED BY COMPLYING WITH THESE REQUIREMENTS, CONTRACTOR SHALL NOTIFY 'CONSTRUCTION MANAGER' AS SOON AS POSSIBLE, AFTER THE DISCOVERY OF THE PROBLEMS, AND SHALL NOT PROCEED WITH THAT PORTION OF WORK, UNTIL THE 'CONSTRUCTION MANAGER' HAS DIRECTED THE CORRECTIVE ACTIONS TO BE TAKEN.
- ELECTRICAL CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ANY/ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATION INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. ALL EXISTING CONDITIONS OF ELECTRICAL EQUIP., LIGHT FIXTURES, ETC., THAT ARE PART OF THE FINAL SYSTEM, SHALL BE VERIFIED BY THE CONTRACTOR, PRIOR TO THE SUBMITTING OF HIS BID. FAILURE TO COMPLY WITH THIS PARAGRAPH WILL IN NO WAY RELIEVE CONTRACTOR OF PERFORMING ALL WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL CODES AND LOCAL ORDINANCES OF THE LOCAL POWER & TELEPHONE COMPANIES HAVING JURISDICTION AND SHALL INCLUDE BUT NOT BE LIMITED TO:
  - NATIONAL FIRE CODES
  - UL - UNDERWRITERS LABORATORIES
  - NEC - NATIONAL ELECTRICAL CODE
  - NEMA - NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
  - OSHA - OCCUPATIONAL SAFETY AND HEALTH ACT
  - SBC - STANDARD BUILDING CODE
- DO NOT SCALE ELECTRICAL DRAWINGS, REFER TO SITE PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, AND CONFIRM WITH 'CONSTRUCTION MANAGER' ANY SIZES AND LOCATIONS WHEN NEEDED.
- EXISTING SERVICES: CONTRACTOR SHALL NOT INTERRUPT EXISTING SERVICES WITHOUT WRITTEN PERMISSION OF THE OWNER.
- CONTRACTOR SHALL PAY FOR ANY/ALL PERMITS, FEES, INSPECTIONS AND TESTING. CONTRACTOR IS TO OBTAIN PERMITS AND APPROVED SUBMITTALS PRIOR TO THE WORK BEGINNING OR ORDERING EQUIPMENT.
- THE TERM 'PROVIDE' USED IN CONSTRUCTION DOCUMENTS AND SPECIFICATIONS, INDICATES THAT THE CONTRACTOR SHALL FURNISH AND INSTALL.
- CONTRACTOR SHALL CONFIRM WITH LOCAL UTILITY COMPANY ANY/ALL REQUIREMENTS SUCH AS THE: LUG SIZE RESTRICTIONS, CONDUIT ENTRY, SIZE OF TRANSFORMERS, SCHEDULED DOWNTIME FOR THE OWNERS' CONFIRMATION, ETC... ANY/ALL CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER, PRIOR TO BEGINNING ANY WORK.
- MINIMUM WIRE SIZE SHALL BE #12 AWG, NOT INCLUDING CONTROL WIRING, UNLESS NOTED OTHERWISE. ALL CONDUCTORS SHALL BE COPPER WITH THIN INSULATION.
- OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET/DAMP LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.
- IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF THE CONSTRUCTION. CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
- ELECTRICAL SYSTEM SHALL BE AS COMPLETELY AND EFFECTIVELY GROUNDED, AS REQUIRED BY SPECIFICATIONS, SET FORTH BY SPRINT.
- ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS, WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND SUBJECT TO REGULATORY INSPECTION AND APPROVAL BY CONSTRUCTION MANAGER.
- ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.
- CONTRACTOR SHALL GUARANTEE ANY/ALL MATERIALS AND WORK FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE.
- THE CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ANY ADDITIONAL CHARGE AND SHALL INCLUDE THE REPLACEMENT OR THE REPAIR OF ANY OTHER PHASE OF THE INSTALLATION, WHICH MAY HAVE BEEN DAMAGED THEREIN.
- ADEQUATE AND REQUIRED LIABILITY INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LOSS AND ANY/ALL PROPERTY DAMAGE FOR THE DURATION OF WORK.
- PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WIRES, BOXES, COVER PLATES AND DEVICES FOR ALL OUTLETS AS INDICATED.
- DITCHING AND BACK FILL: CONTRACTOR SHALL PROVIDE FOR ALL UNDERGROUND INSTALLED CONDUIT AND/OR CABLES INCLUDING EXCAVATION AND BACKFILLING AND COMPACTION. REFER TO NOTES AND REQUIREMENTS 'EXCAVATION, AND BACKFILLING.
- MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SHALL APPEAR ON THE LIST OF U.L. APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF THE NEC, NEMA AND IEC.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR MANUFACTURERS CATALOG INFORMATION OF ANY/ALL LIGHTING FIXTURES, SWITCHES AND ALL OTHER ELECTRICAL ITEMS FOR APPROVAL BY THE CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
- ANY CUTTING OR PATCHING DEEMED NECESSARY FOR ELECTRICAL WORK IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY AND SHALL BE INCLUDED IN THE COST FOR WORK AND PERFORMED TO THE SATISFACTION OF THE 'CONSTRUCTION MANAGER' UPON FINAL ACCEPTANCE.
- THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS WITH ONLY TYPEWRITTEN DIRECTORIES. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- DISCONNECT SWITCHES SHALL BE H.P. RATED HEAVY-DUTY, QUICK-MAKE AND QUICK-BREAK ENCLOSURES, AS REQUIRED BY EXPOSURE TYPE.
- ALL CONNECTIONS SHALL BE MADE WITH A PROTECTIVE COATING OF AN ANTI-OXIDE COMPOUND SUCH AS 'NO-OXIDE A' BY DEARBORNE CHEMICAL CO. COAT ALL WIRE SURFACES BEFORE CONNECTING. EXPOSED COPPER SURFACES, INCLUDING GROUND BARS, SHALL BE TREATED - NO SUBSTITUTIONS.
- RACEWAYS: CONDUIT SHALL BE SCHEDULE 40 PVC MEETING OR EXCEEDING NEMA TC2 - 1990. CONTRACTOR SHALL PLUG AND CAP EACH END OF SPARE AND EMPTY CONDUITS AND PROVIDE TWO SEPARATE PULL STRINGS - 200 LBS TEST POLYETHYLENE CORD. ALL CONDUIT BENDS SHALL BE A MINIMUM OF 2 FT. RADIUS. RGS CONDUITS WHEN SPECIFIED, SHALL MEET UL-6 FOR GALVANIZED STEEL. ALL FITTINGS SHALL BE SUITABLE FOR USE WITH THREADED RIGID CONDUIT. COAT ALL THREADS WITH 'BRITE ZINC' OR 'GOLD GALV'.
- SUPPORT OF ALL ELECTRICAL WORK SHALL BE AS REQUIRED BY NEC.
- CONDUCTORS: CONTRACTOR SHALL USE #8 CONDUCTIVITY COPPER WITH TYPE THIN INSULATION, 800 VOLT, COLOR CODED. USE SOLID CONDUCTORS FOR WIRE UP TO AND INCLUDING NO. 8 AWG. USE STRANDED CONDUCTORS FOR WIRE ABOVE NO. 8 AWG.
- CONNECTORS FOR POWER CONDUCTORS: CONTRACTOR SHALL USE PRESSURE TYPE INSULATED TWIST-ON CONNECTORS FOR NO. 10 AWG AND SMALLER. USE SOLDERLESS MECHANICAL TERMINAL LUGS FOR NO. 8 AWG AND LARGER.

- SERVICE: 240/120V, SINGLE PHASE, 3 WIRE CONNECTION AVAILABLE FROM UTILITY COMPANY. OWNER OR OWNERS AGENT WILL APPLY FOR POWER.
- TELEPHONE SERVICE: CONTRACTOR SHALL PROVIDE EMPTY CONDUITS WITH PULL STRINGS AS INDICATED ON DRAWINGS.
- ELECTRICAL AND TELCO RACEWAYS TO BE BURIED A MINIMUM OF 2' DEPTH.
- CONTRACTOR SHALL PLACE TWO LENGTHS OF WARNING TAPE AT A DEPTH OF 12" BELOW GROUND AND DIRECTLY ABOVE ELECTRICAL AND TELCO SERVICE CONDUITS. CAUTIONS TAPE TO READ 'CAUTION BURIED ELECTRIC' OR 'BURIED TELECOMM'.
- ALL BOLTS SHALL BE STAINLESS STEEL

**GROUNDING NOTES**

- COMPRESSION CONNECTIONS (2), 2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUNDING BAR. ROUTE CONDUCTORS TO BURIED GROUNDING RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
- EC SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ('P', 'A', 'N', 'I') WITH 1" HIGH LETTERS.
- 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.
- 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.
- NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUNDING BAR AND BOLTED ON THE BACK SIDE.
- NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION, AND CONNECTION ORIENTATION, PROVIDE AS REQUIRED.
- 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.
- 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.

**ENVIRONMENTAL NOTES**

- ALL WORK PERFORMED SHALL BE DONE IN ACCORDANCE WITH ISSUED PERMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF FINES AND PROPER CLEAN UP FOR AREAS IN VIOLATION.
- CONTRACTOR AND/OR DEVELOPER SHALL BE RESPONSIBLE FOR CONSTRUCTION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS DURING CONSTRUCTION FOR PROTECTION OF ADJACENT PROPERTIES, ROADWAYS AND WATERWAYS AND SHALL BE MAINTAINED IN PLACE THROUGH FINAL JURISDICTIONAL INSPECTION & RELEASE OF SITE.
- CONTRACTOR SHALL INSTALL/CONSTRUCT ALL NECESSARY SEDIMENT/SILT CONTROL FENCING AND PROTECTIVE MEASURES WITHIN THE LIMITS OF SITE DISTURBANCE PRIOR TO CONSTRUCTION.
- NO SEDIMENT SHALL BE ALLOWED TO EXIT THE PROPERTY. THE CONTRACTOR IS RESPONSIBLE FOR TAKING ADEQUATE MEASURES FOR CONTROLLING EROSION. ADDITIONAL SEDIMENT CONTROL FENCING MAY BE REQUIRED IN ANY AREAS SUBJECT TO EROSION.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSITIVE DRAINAGE ON THE SITE AT ALL TIMES WITH SILT AND EROSION CONTROL MEASURES MAINTAINED ON THE DOWNSTREAM SIDE OF SITE DRAINAGE. ANY DAMAGE TO ADJACENT PROPERTY AS A RESULT OF EROSION WILL BE CORRECTED AT THE CONTRACTORS EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY INSPECTIONS AND ANY REPAIRS OF ALL SEDIMENT CONTROL MEASURES INCLUDING SEDIMENT REMOVAL AS NECESSARY.
- CLEARING OF VEGETATION AND TREE REMOVAL SHALL BE ONLY AS PERMITTED AND BE HELD TO A MINIMUM. ONLY TREES NECESSARY FOR CONSTRUCTION OF THE FACILITIES SHALL BE REMOVED.
- SEEDING AND MULCHING AND/OR SODDING OF THE SITE WILL BE ACCOMPLISHED AS SOON AS POSSIBLE AFTER COMPLETION OF THE PROJECT FACILITIES AFFECTING LAND DISTURBANCE.
- CONTRACTOR SHALL PROVIDE ALL EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED BY LOCAL, COUNTY AND STATE CODES AND ORDINANCES TO PROTECT EMBANKMENTS FROM SOIL LOSS AND TO PREVENT ACCUMULATION OF SOIL AND SILT IN STREAMS AND DRAINAGE PATHS LEAVING THE CONSTRUCTION AREA. THIS MAY INCLUDE SUCH MEASURES AS SILT FENCES, STRAW BALE SEDIMENT BARRIERS, AND CHECK DAMS.
- RIP RAP OF SIZES INDICATED SHALL CONSIST OF CLEAN, HARD, SOUND, DURABLE, UNIFORM IN QUALITY STONE FREE OF ANY DETRIMENTAL QUANTITY OF SOFT, FRIABLE, THIN, ELONGATED OR LAMINATED PIECES, DISINTEGRATED MATERIAL, ORGANIC MATTER, OIL, ALKALI, OR OTHER DELETERIOUS SUBSTANCES

**STEEL NOTES**

- ALL STEEL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION. STEEL SECTIONS SHALL BE IN ACCORDANCE WITH ASTM AS INDICATED BELOW:
  - W-SHAPES: ASTM A992, 50 KSI
  - ANGLES, BARS CHANNELS: ASTM A36, 36 KSI
  - HSS SECTIONS: ASTM 500, 46 KSI
  - PIPE SECTIONS: ASTM A53-E, 35 KSI
- ALL EXTERIOR EXPOSED STEEL AND HARDWARE SHALL BE HOT DIPPED GALVANIZED.
- ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
- BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE 3/4"Ø CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
- FIELD MODIFICATIONS ARE TO BE COATED WITH ZINC ENRICHED PAINT.



**BLACK & VEATCH**



ZALZALI & ASSOCIATES INC.  
2070 BUSINESS CENTER DR. SUITE 200  
IRVINE, CA 92612

PROJECT NO:	-
DRAWN BY:	NC
CHECKED BY:	DW

REV	DATE	DESCRIPTION
0	07/25/2012	100% ZD'S FOR ZAP
B	07/20/2012	100% ZD'S FOR REDLINE
A	06/14/2012	90% ZD'S FOR REDLINE

**NOT TO BE USED FOR CONSTRUCTION**

REGISTERED PROFESSIONAL ENGINEER  
MOSAM ZALZALI  
No. 55555  
Exp. 12/31/12  
STATE OF CALIFORNIA

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

**FN04XC114-C  
DOWNTOWN BENICIA  
191 MILITARY EAST  
BENICIA, CA 94510**

SHEET TITLE  
**GENERAL NOTES**

SHEET NUMBER  
**GN-1**

NOTES:  
PROPERTY LINES SHOWN ARE  
PRELIMINARY AND DONE WITHOUT  
THE BENEFIT OF A SITE SURVEY.



PROJECT NO:	-
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REV	DATE	DESCRIPTION
O	07/25/2012	100% ZD'S FOR ZAP
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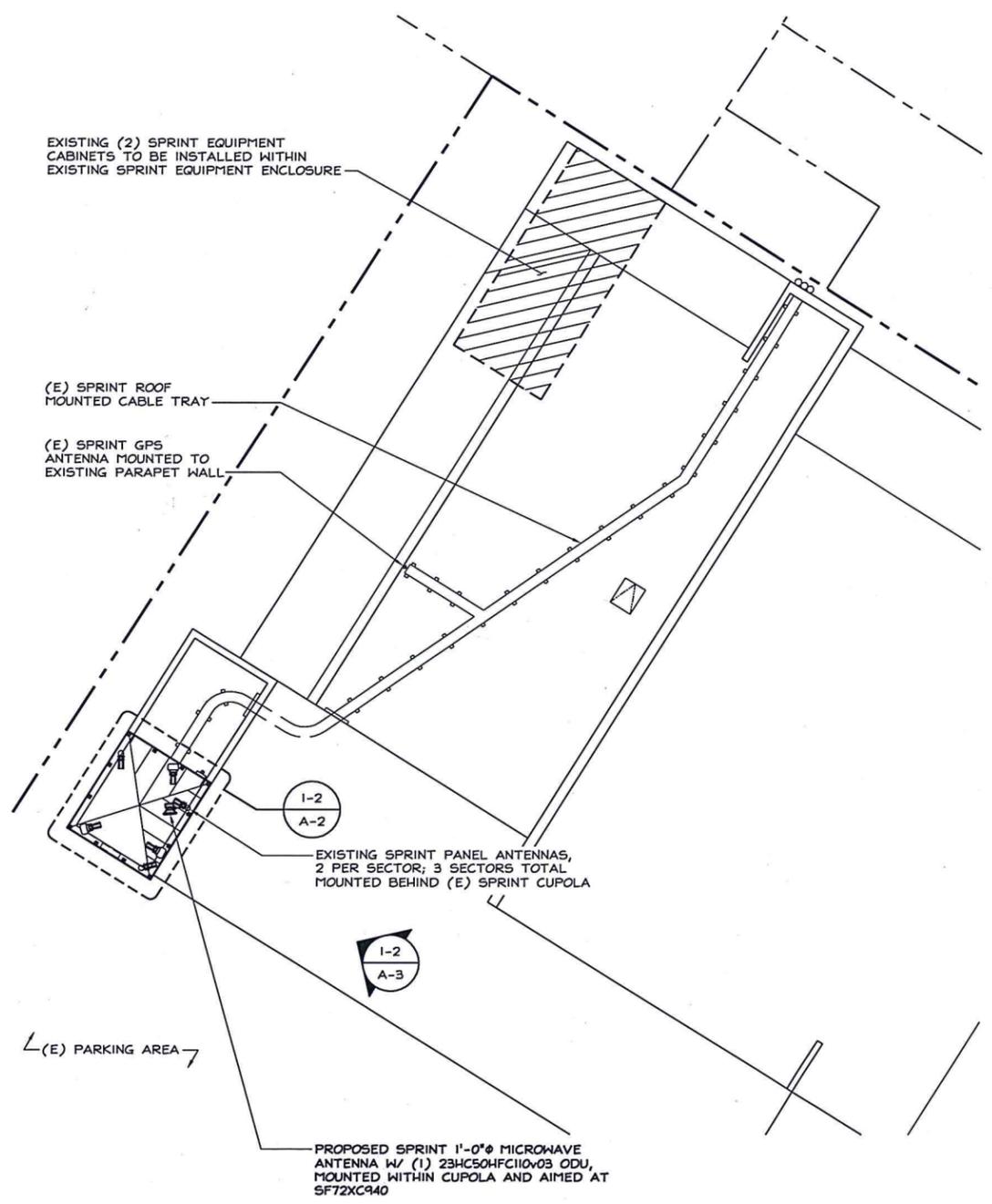


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FN04XC114-C  
DOWNTOWN BENICIA  
191 MILITARY EAST  
BENICIA, CA 94510

SHEET TITLE  
SITE PLAN AND  
ENLARGED SITE PLAN

SHEET NUMBER  
**A-1**

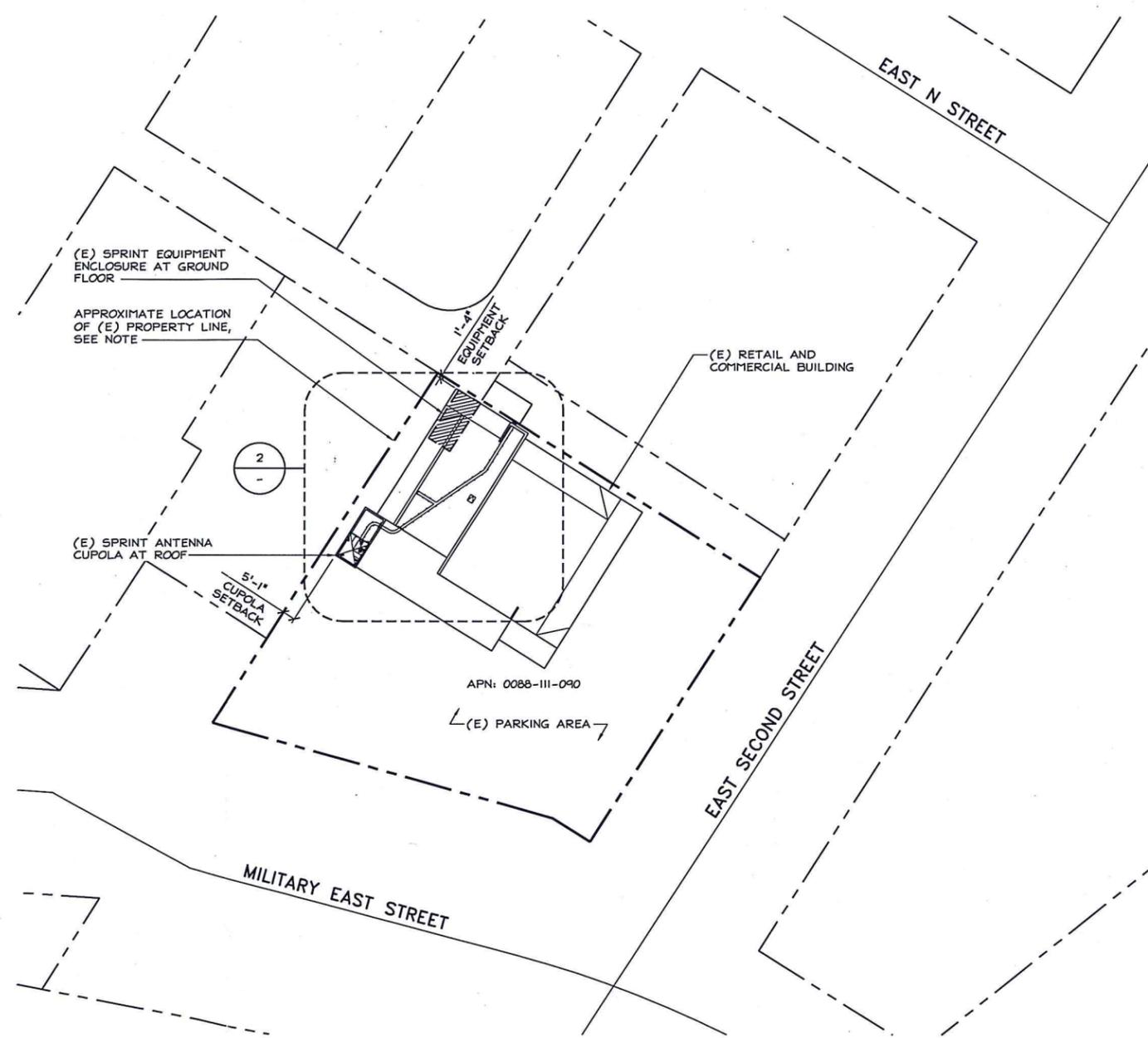


24"x36" SCALE: 1/8" = 1'-0"  
11"x17" SCALE: 1/16" = 1'-0"



2

SITE PLAN



24"x36" SCALE: 1" = 30'-0"  
11"x17" SCALE: 1" = 60'-0"



1

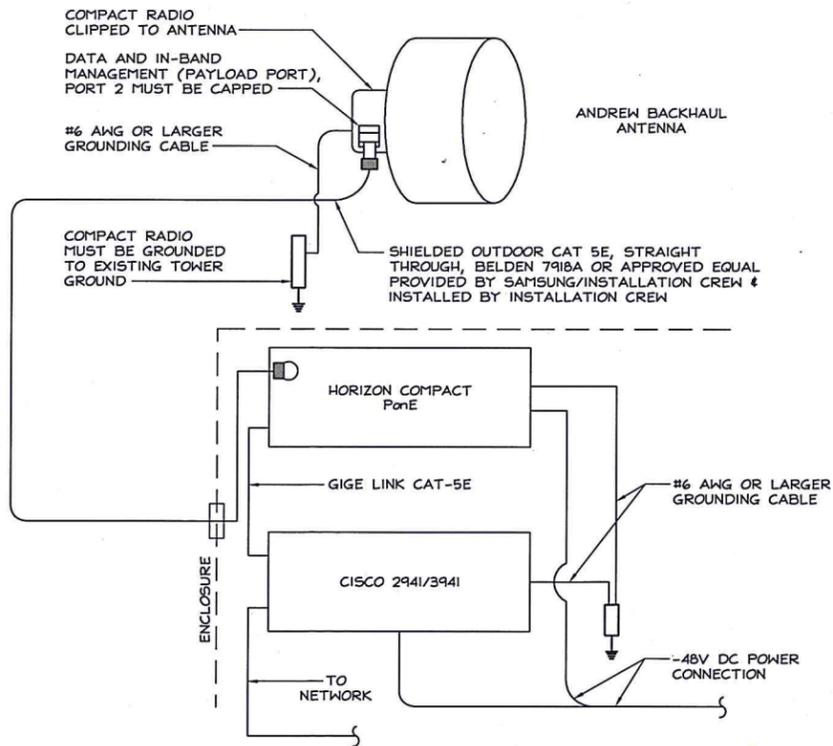
ENLARGED SITE PLAN

LINK ID	AZIMUTH	TYPE	QTY.	RECEIVE SITE	MANUFACTURER	MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT (LBS.)	RAD CENTER
SF01140	175.5°	MICROWAVE DISH	1	SF72XC940	ANDREW	(#1) VHLPI-23	15.3'	15.3'	8.7'	14.21	35'-0"
	/	MW ODU	1	-	DRAGONWAVE HORIZON	23HC50HFC110v03	9.3'	9.3'	4.75'	11.5	/

### MICROWAVE ANTENNA SCHEDULE

24"x36" SCALE: NTS  
11"x17" SCALE: NTS

3



### MICROWAVE INSTALLATION DIAGRAM

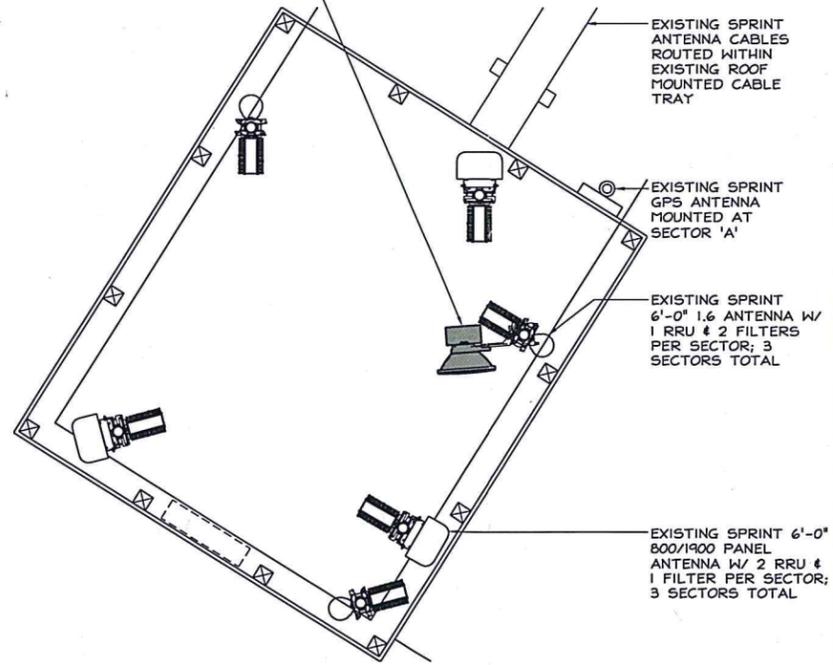
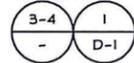
24"x36" SCALE: NTS  
11"x17" SCALE: NTS

4

#### NOTES:

- PROPOSED SPRINT MW ANTENNA, & ASSOCIATED HARDWARE/CABLING SHALL BE CONCEALED BEHIND RF TRANSPARENT SCREENING, OR WHERE EXPOSED, SHALL BE PAINTED/FINISHED PER JURISDICTIONAL REQUIREMENT
- PROPOSED SPRINT ANTENNAS, AND ASSOCIATED HARDWARE/CABLING SHALL BE SUBJECT TO STRUCTURAL ANALYSIS/APPROVAL

PROPOSED SPRINT 1'-0" MICROWAVE ANTENNA W/ (1) 23HC50HFC110v03 ODU, MOUNTED WITHIN CUPOLA AND AIMED AT SF72XC940



MW ANTENNA  
AZIMUTH  
175.5°



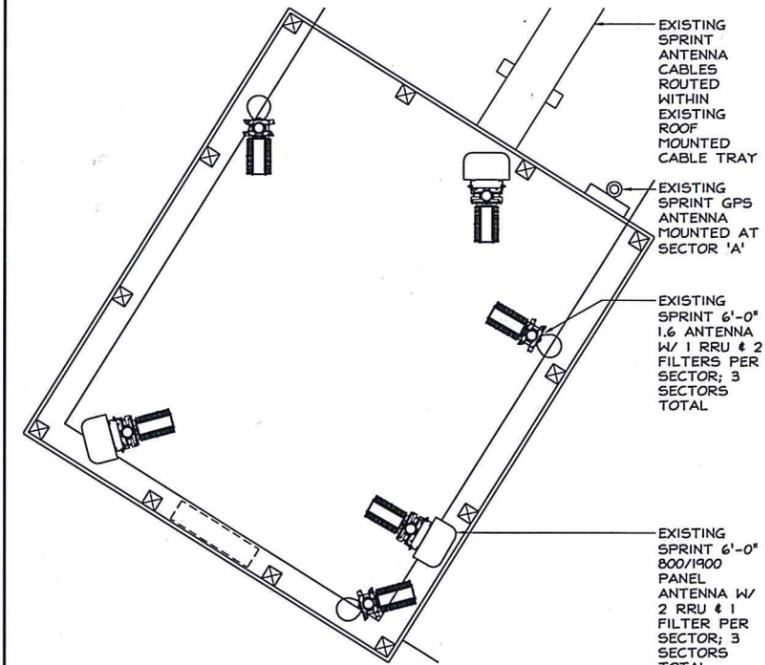
### PROPOSED MW ANTENNA LAYOUT

24"x36" SCALE: 1/2"=1'-0"  
11"x17" SCALE: 1/4"=1'-0"

2

#### NOTES:

- EXISTING SPRINT ANTENNAS, & ASSOCIATED HARDWARE/CABLING HAVE BEEN CONCEALED BEHIND RF TRANSPARENT SCREENING, OR WHERE EXPOSED, HAS BEEN PAINTED/FINISHED PER JURISDICTIONAL REQUIREMENT



### EXISTING ANTENNA LAYOUT

24"x36" SCALE: 1/2"=1'-0"  
11"x17" SCALE: 1/4"=1'-0"

1



BLACK & VEATCH



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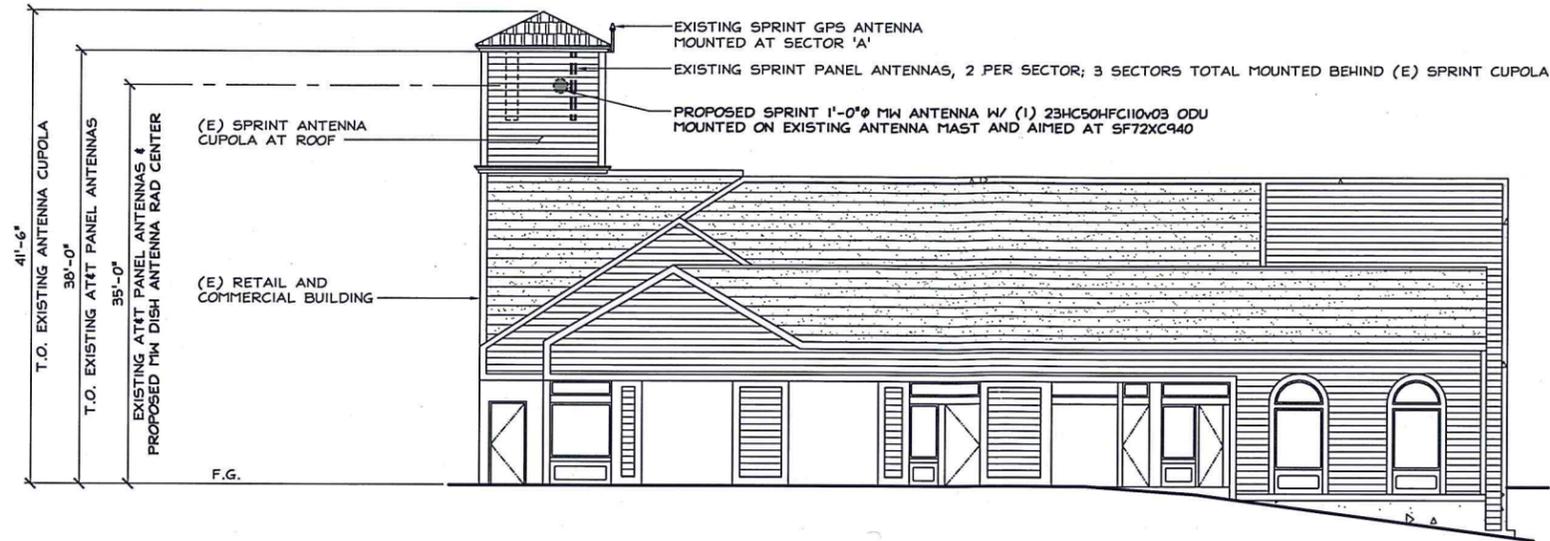
SHEET TITLE  
MICROWAVE ANTENNA  
LAYOUTS, SCHEDULE &  
INSTALLATION DIAGRAM

SHEET NUMBER

A-2

**NOTES:**

1. PROPOSED SPRINT ANTENNAS, ASSOCIATED EQUIPMENT AND HARDWARE SHALL BE CONCEALED BEHIND RF TRANSPARENT SCREENING

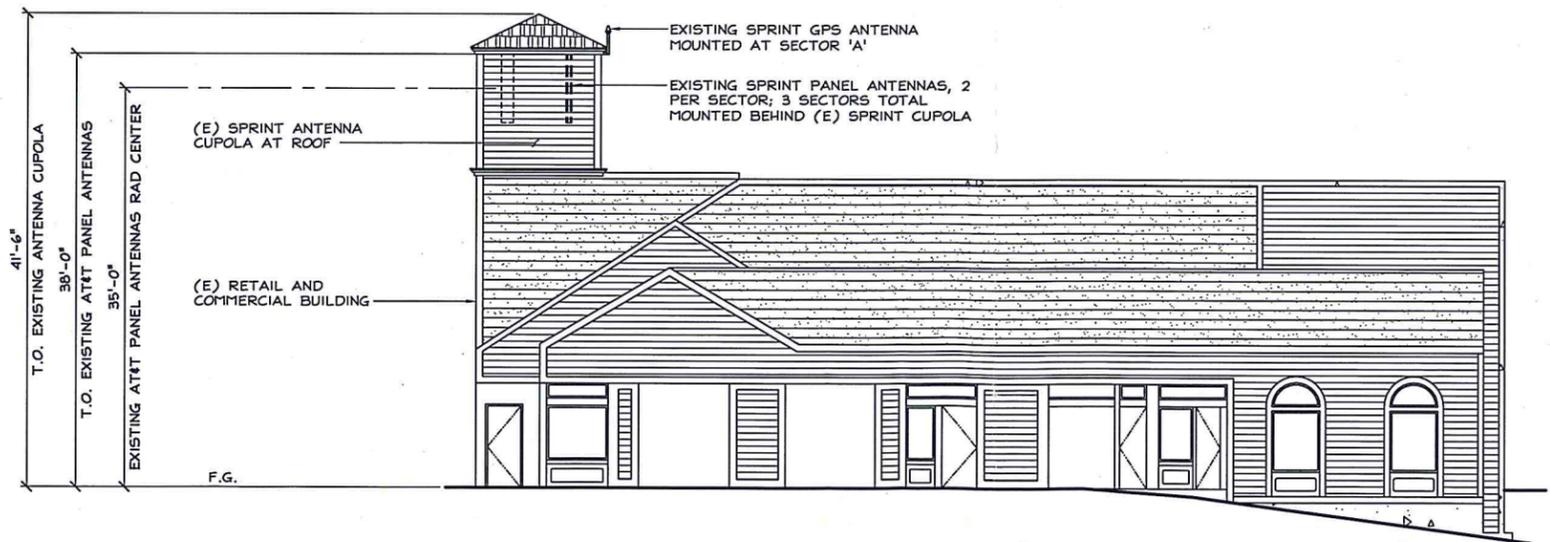


**PROPOSED SOUTHEAST ELEVATION**

24"x36" SCALE: 1/8" = 1'-0"  
11"x17" SCALE: 1/16" = 1'-0"



2



**EXISTING SOUTHEAST ELEVATION**

24"x36" SCALE: 1/8" = 1'-0"  
11"x17" SCALE: 1/16" = 1'-0"



1



PROJECT NO:	-
DRAWN BY:	NC
CHECKED BY:	DW

REV	DATE	DESCRIPTION
O	07/25/2012	100% ZD'S FOR ZAP
B	07/20/2012	100% ZD'S FOR REDLINE
A	06/14/2012	90% ZD'S FOR REDLINE

**NOT TO BE USED FOR CONSTRUCTION**

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

FN04XC114-C  
DOWNTOWN BENICIA  
191 MILITARY EAST  
BENICIA, CA 94510

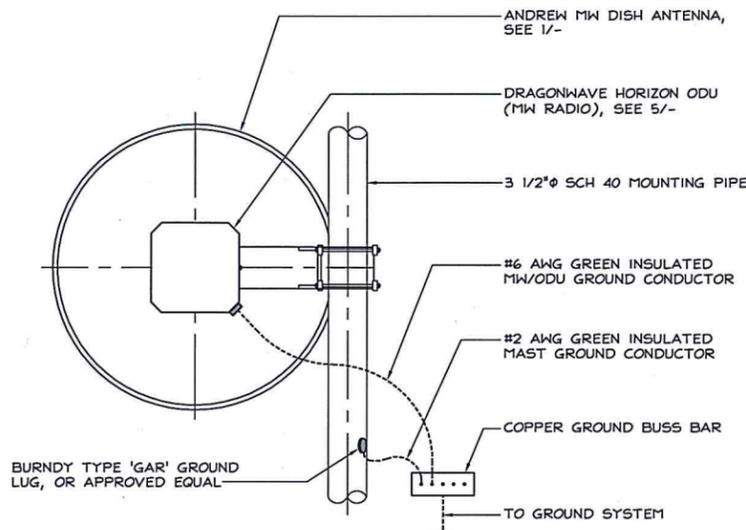
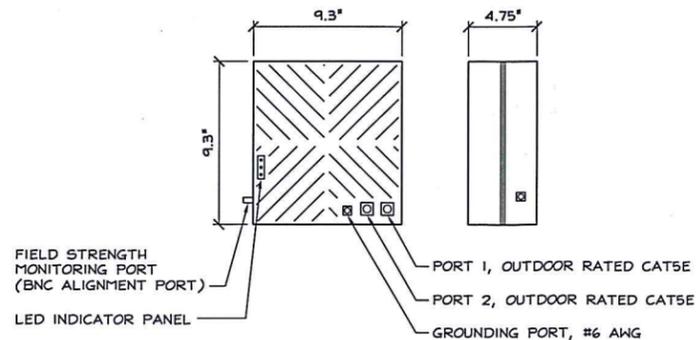
SHEET TITLE  
ELEVATIONS

SHEET NUMBER  
**A-3**

**HORIZON COMPACT OUTDOOR RADIO UNIT**

RADIO DIMENSIONS: 12cm X 23.6cm X 23.6cm (4.75"x9.3"x9.3")  
 RADIO NET WEIGHT: 5.2Kg (11.5Lbs)

ANTENNA FINE ADJUSTMENT  
 FINE AZIMUTH ±45°  
 FINE ELEVATION ±22°  
 CABLING: SHIELDED, OUTDOOR RATED CATSE CABLE



PROJECT NO:	-
DRAWN BY:	NC
CHECKED BY:	DW

REV	DATE	DESCRIPTION
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FN04XC114-C  
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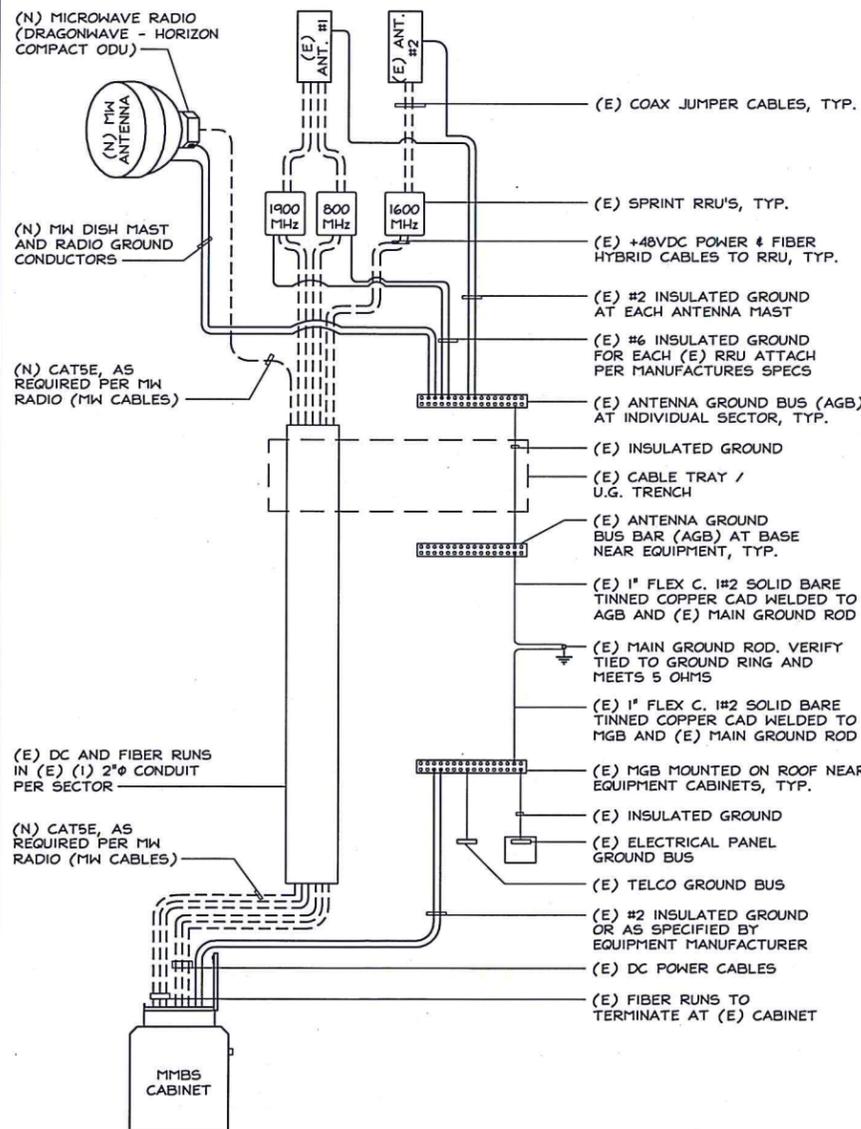
SHEET TITLE  
 MICROWAVE DETAILS

SHEET NUMBER  
**D-1**

NOT USED

24"x36" SCALE: NTS  
 11"x17" SCALE: NTS

7



PROPOSED PLUMBING DIAGRAM

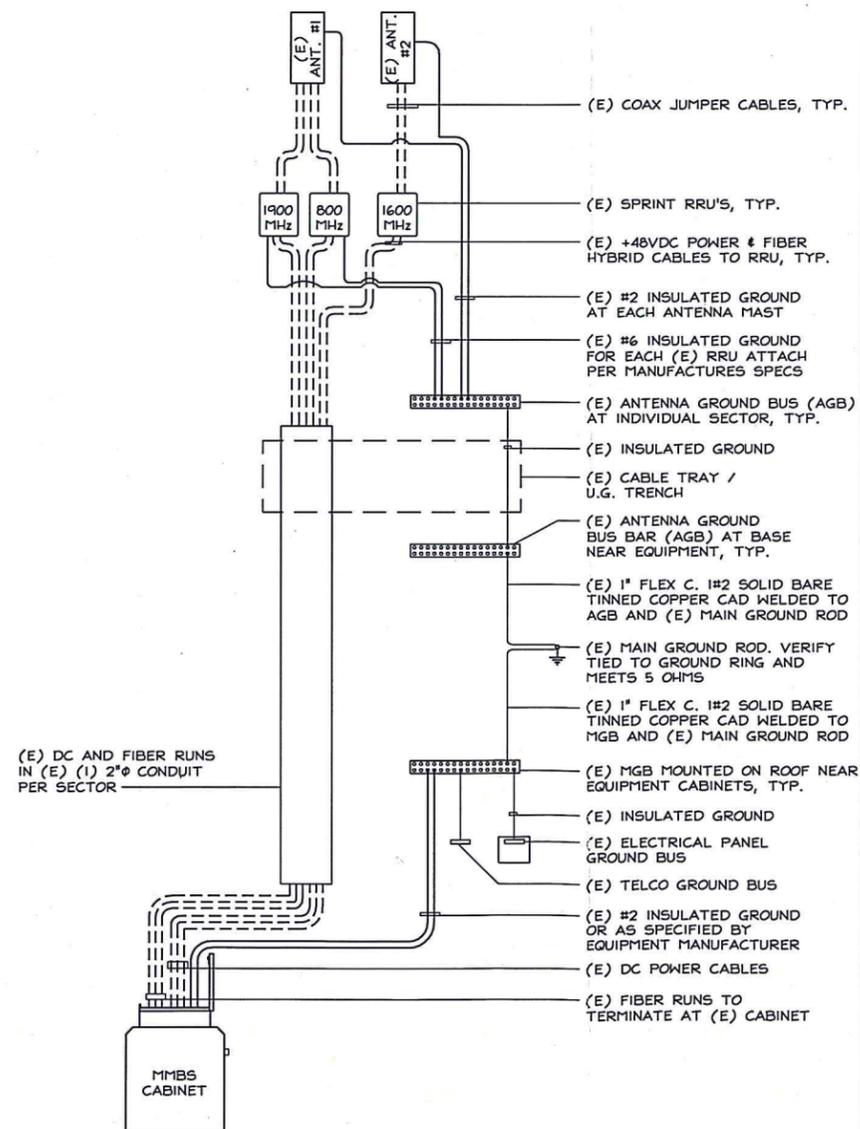
24"x36" SCALE: NTS  
 11"x17" SCALE: NTS

6

MICROWAVE ANTENNA ODU DETAIL

24"x36" SCALE: NTS  
 11"x17" SCALE: NTS

5



EXISTING PLUMBING DIAGRAM

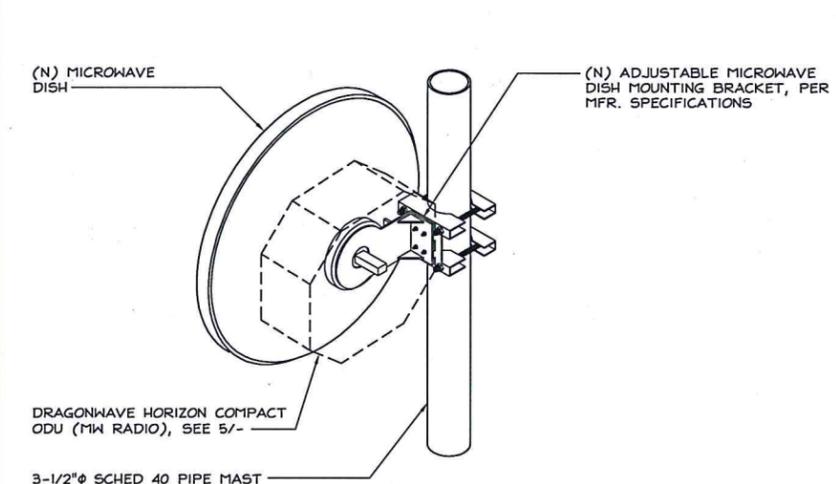
24"x36" SCALE: NTS  
 11"x17" SCALE: NTS

4

MICROWAVE/ODU GROUNDING

24"x36" SCALE: NTS  
 11"x17" SCALE: NTS

3



MW ANTENNA / RADIO MOUNTING

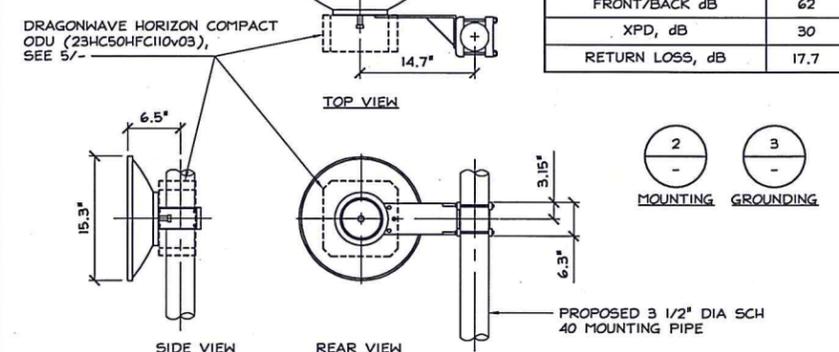
24"x36" SCALE: NTS  
 11"x17" SCALE: NTS

2

**ANDREW ANTENNA VHLP1-23**

DIMENSIONS, HxWxD: 388x358x219mm (15.3"x14.7"x6.5")  
 WEIGHT, WITH PRE-MOUNTED BRACKETS: 28 lbs (13kg)  
 ANTENNA FINE ADJUSTMENT  
 FINE AZIMUTH ±15°  
 FINE ELEVATION ±15°

ELECTRICAL SPECIFICATIONS	
FREQUENCY BAND, GHz	21.2-23.6
BOTTOM BAND GAIN, dBi	34.7
MID BAND GAIN, dBi	35.3
TOP BAND GAIN, dBi	35.9
BEAMWIDTH, DEGREES	3.0
FRONT/BACK dB	62
XPD, dB	30
RETURN LOSS, dB	17.7



MICROWAVE ANTENNA SPECIFICATIONS

24"x36" SCALE: NTS  
 11"x17" SCALE: NTS

1

24"x36" SCALE: NTS  
 11"x17" SCALE: NTS