City of Brisbane
Planning Commission Agenda Report

TO: Planning Commission For the Meeting of 3/11/10

FROM: Tim Tune, Senior Planner, via William Prince, Community Development Director

SUBJECT: **385 Valley Drive;** Use Permit UP-3-10 and Variance V-1-10, Telecommunications Facility Including 3 Panel Antennas on 12 Ft. Tall Extension of PG&E Transmission Tower; Ana Gomez for Clearwire, applicant; California State Teachers Retirement System, owner; APN 005-172-040

REQUEST: The applicant proposes to install 3 antennas atop the existing eastern high-voltage transmission tower at 385 Valley Drive. These panel antennas, each approximately 3 1/2 ft. tall, 1 ft. wide and 4 1/2 in. thick, would be attached to a new 12 ft. tall and approximately 5 ft. wide extension of the existing tower, increasing its height to approximately 116 2/3 ft. The antennas would face northwest, northeast and southeast. Three microwave dishes, each approximately 1 ft. in diameter, would be mounted at the northwest, northeast and southwest corners of the top of the tower extension. A 10 ft. by 10 ft. area enclosed by a 6 ft. tall solid wood fence, containing an equipment cabinet and 3 radio remote units, would be located at the base of the tower. The proposal requires Use Permit and Variance approval from the Planning Commission, because the new extension would exceed 70 ft. in height.

RECOMMENDATION: Conditionally approve Use Permit UP-3-10 and Variance V-1-10 per the agenda report via adoption of Resolution UP-3-10/V-1-10, with Exhibit A containing the findings and conditions of approval.

ENVIRONMENTAL DETERMINATION: Additions to existing structures are categorically exempt from the provisions of the California Environmental Quality Act per Section 15301(e) of the State CEQA Guidelines. Minor structures appurtenant to existing industrial facilities are categorically exempt from the provisions of the California Environmental Quality Act per Section 15311 of the State CEQA Guidelines. The exceptions to these categorical exemptions referenced in Section 15300.2 do not apply.

Applicable Code Sections: Per BMC Section 17.32.032.G, wireless telecommunications facilities shall comply with the following development and operational standards:

1. Facilities shall be sited to minimize views from the public right-of-way and screened by buildings and/or trees where possible.
2. Facilities shall not create an overconcentration of poles or visible equipment so as to avoid excessive visual impacts in localized areas.

3. The height of antennae and support structures shall be limited to the minimum necessary to provide adequate coverage, while avoiding the proliferation of additional facilities. However, an antenna or its support structure shall not exceed 70 feet in height, unless a variance from this limitation is granted by the Planning Commission pursuant to Chapter 17.46 of this Title.
4. Where an equipment building accompanies the structure, it shall be designed, colored and textured to match adjacent buildings or screened from view. Landscaping may be required to screen views of the facility from the public right-of-way.
5. Underground vaults may be required in order to mitigate physical, aesthetic, or safety considerations which cannot otherwise be mitigated.
6. All facilities shall be designed to prevent unauthorized access.
7. All new wireless telecommunication facilities shall be designed and operated in conformance with applicable American National Standards Institute (ANSI) standards and in compliance with all applicable Federal Communications Commission (FCC) standards.
8. Support structures shall be either galvanized steel or painted to blend with their surroundings. Permitted dishes and antennae shall be galvanized steel or painted to match the existing building or support structure.

ANALYSIS AND FINDINGS: Per Brisbane Municipal Code Sections 17.32.032.D.1.f, 17.32.032.D.3, 17.32.032.F and 17.32.032.G.3, expansion of an existing telecommunications facility support structure over 70 ft. in height requires Use Permit and Variance approval by the Planning Commission.

Use Permit: In order to approve the Use Permit, the Planning Commission must determine whether the proposal is consistent with the general plan and whether the use applied for, under the circumstances, will not be detrimental to the health, safety, morals, comfort and general welfare of persons residing or working in the neighborhood, nor will it be injurious or detrimental to property or improvements in the neighborhood or the general welfare of the City per BMC Section 17.40.060.

General/Specific Plan Consistency— The General Plan's Trade Commercial land use designation allows semi-public facilities in Crocker Park, and General Plan Policy 282 encourages uses in Crocker Park that that provide services to benefit the community. Consistent with Policy 154, recommended Condition of Approval C is intended to advise the applicant of requirements for construction in the flood zone mapped in 1984. Note that General Plan Policy 144 states, "Recognize that there are facilities in the City the safety of which is regulated by County, State or Federal agencies." The subject use is regulated by the Federal Communications Commission, as referenced in BMC Section 17.32.032.G.7 (see above).

Not Detrimental or Injurious to Neighborhood or City—The visual impact of the proposed antennas on the new extension, which will increase the height of the existing tower by just over

5% should not be significant. The applicant has prepared photosimulations to illustrate how the proposal will look from Valley Drive and South Hill Drive. From the streets of Crocker Park, the antennas will be seen against the backdrop of the sky. From the Ridge, the backdrop is the slopes above Quarry Road. Per BMC Section 17.32.032.C.1.c, the proposed facility is just over 600 ft. from the R-1 District at the northwest corner of the Lipman Intermediate School parcel, a distance chosen by the City Council to assure no significant aesthetic impact upon residential neighborhoods (according to the 12/15/03 City Council Minutes). The ground-mounted equipment will be screened by a solid wood fence.

The Federal Communications Commission (FCC) has exclusive jurisdiction over radio frequency electromagnetic energy (RF) emissions under the Telecommunications Act of 1996. The FCC has adopted and enforces maximum permissible exposure limits. Federal law does not allow cities to prohibit wireless communications facilities on the basis of potential environmental effects of radio frequency emissions if the facility complies with FCC regulations. Per BMC Section 17.32.032.G.7, the proposed facilities are required to comply with applicable American National Standards Institute and FCC standards.

According to the submitted consulting engineer's statement, the proposed facility is conservatively projected to generate 0.0048% of the public exposure limit at the ground. Note that the proposed antennas' additional height reduces exposure levels at the ground. The combined effect of the proposed T-Mobile antennas with the existing Metro PCS antennas is calculated to be 0.094% of the limit for public exposure at ground level and 0.36% at the second floor of the nearest residence. According to the consulting engineers, there is no compounding effect from simultaneous exposure to power line and radio frequency fields. It should also be noted that these facilities are regulated by the FCC to operate only within licensed frequencies so as to avoid interference between antennas of different carriers.

Variance: In order to grant the Variance per BMC Section 17.46.010, the Planning Commission must find that, because of special circumstances applicable to the property, such as its size, shape, topography, location or surroundings, the strict application of the Zoning Ordinance would deprive the property of privileges enjoyed by other properties in the vicinity and same zoning district. In addition, any approval must be subject to such conditions as necessary to assure that the variance will not constitute a grant of special privilege inconsistent with the limitations upon other properties in the vicinity and same zoning district.

Special Circumstances Applicable to Subject Property—The Municipal Code encourages "antennas mounted on…existing structures…" "…which will not adversely impact surrounding uses and property and is compatible with the community" (BMC Sections 17.32.032.D.1.d and 17.32.032.A). This site, located between the northeast and southeast ridges of San Bruno Mountain, is occupied by a wholesaler/warehouse and 3 of PG&E's high voltage transmission towers. Two of these towers are already occupied by other carriers' existing wireless telecommunications facilities. Because "the antennas require line-of-sight paths for their signals

to propagate well and so are installed at some height above the ground" (page 2, Statement of Hammet & Edison, Inc.), extending the height of the tower is necessary to provide a wider service area (compare the attached coverage maps with the proposed facility at a height of 65 ft. vs. 116 ft.). Although there are existing towers at higher elevations on the Mountain, these are located within the Open Space District (where wireless telecommunications facilities are prohibited) or outside the City limits. Location of antennas on PG&E towers requires that 10 ft. of clearance be maintained from the high voltage power lines. In addition, height separation must be provided between the different carriers' antennas so as to avoid interference. Thus, the elevation of subject tower relative to the surrounding topography and the separation requirements of the proposed antennas from the PG&E power lines and the other existing antennas on the adjoining towers dictate the height of the proposed antennas above the 70 ft. standard set by BMC Section 17.32.032.G.3.

Privileges Enjoyed by Others in the Vicinity Deprived to Subject Property—The Planning Commission previously approved Use Permit UP-4-04 to allow Cingular Wireless (T-Mobile) to install 6 antennas atop the middle tower at 385 Valley Drive, increasing its height to 110 ft., 11 in., and UP-17-04 for Verizon's 2 antennas attached to an extension of the western tower, increasing its height to 133 ft., 2 in.

Conditions Necessary to Prevent a Grant of Special Privilege—The standard conditions of approval are recommended, consistent with BMC Section 17.32.032.G.

ATTACHMENTS:

Draft Resolution with Findings and Conditions of Approval
Applicant's Supporting Statements
Applicant's Plans, Photosimulations and Coverage Maps
Consulting Engineers' Statement
City's Wireless Communications Exclusion Zones Map

draft

RESOLUTION UP-3-10/V-1-10

A RESOLUTION OF THE PLANNING COMMISSION OF BRISBANE CONDITIONALLY APPROVING USE PERMIT UP-3-10 AND VARIANCE V-1-10 TO PERMIT A TELECOMMUNICATIONS FACILITY AT 385 VALLEY DRIVE

WHEREAS, Ana Gomez, the applicant, applied to the City of Brisbane for Use Permit and Variance approval to attach 3 panel antennas atop an extension of the existing eastern PG&E transmission tower at 385 Valley Drive, such applications being identified as UP-3-10 and V-1-10; and

WHEREAS, on March 11, 2010, the Planning Commission conducted a hearing of the applications, at which time any person interested in the matter was given an opportunity to be heard; and

WHEREAS, the Planning Commission reviewed and considered the agenda report relating to said applications, the plans and photographs, the written and oral evidence presented to the Planning Commission in support of and in opposition to the applications; and

WHEREAS, the Planning Commission finds that the proposed project is categorically exempt from the provisions of the California Environmental Quality Act; and

WHEREAS, the Planning Commission of the City of Brisbane hereby makes the findings attached herein as Exhibit A in connection with the Use Permit.

NOW THEREFORE, based upon the findings set forth hereinabove, the Planning Commission of the City of Brisbane, at its meeting of March 11, 2010, did resolve as follows:

> Use Permit Application UP-3-10 and Variance V-1-10 are approved per the conditions of approval attached herein as Exhibit A.

ADOPTED this eleventh day of March, 2010, by the following vote:

AYES:
NOES:
ABSENT:

_____
THERESA MATURO
Chairperson

ATTEST:

_____
WILLIAM PRINCE, Community Development Director

EXHIBIT A

Action Taken: Conditionally approve Use Permit UP-3-10 and Variance V-1-10 per the agenda report with attachments, via adoption of Resolution UP-3-10/V-1-10.

Findings:

Use Permit

1. Approval of the use permit is consistent with the general plan and any applicable specific plan adopted by the city council, in particular General Plan Policies 144, 154 & 282.

2. The establishment, maintenance and operation of the use applied for, under the circumstances, will not be detrimental to the health, safety, morals, comfort and general welfare of persons residing or working in the neighborhood, nor will it be injurious or detrimental to property or improvements in the neighborhood or the general welfare of the Cit, as detailed in the agenda report.

Variance

1. The variance shall be subject to such conditions as will assure that the adjustment hereby authorized shall not constitute a grant of special privilege inconsistent with the limitations upon other properties in the vicinity and district in which the subject property is located, as listed below.

2. Because of special circumstances applicable to subject property, specifically its low elevation relative to the surrounding hillsides, which limits service coverage unless the height of the existing tower can be increased, the strict application of this title is found to deprive subject property of privileges enjoyed by other properties in the vicinity and under identical zone classification, namely the previous Planning Commission approval of the antennas for Cingular Wireless (T-Mobile) atop the middle tower and western tower extension approved by the Planning Commission for Verizon.

Conditions of Approval:

A. Application for a Building Permit (via submittal of 4 sets of plans and payment of plan check fees) for the subject facilities shall be made and the project shall be completed to the satisfaction of the Building Official at final inspection prior to permanent operation of the facilities.

B. The proposed antennas and tower extension shall be galvanized steel or painted gray to match the existing tower structure.

C. Prior to issuance of a Building Permit, the applicant shall demonstrate compliance with Brisbane Municipal Code Sections 15.56.071 & 15.56.081 regarding construction in the floodplain.

D. Any existing landscaping between the equipment shelter and the adjoining parking lots to the north and south that is removed shall be replaced with water-conserving and non-invasive groundcover, subject to the approval of the Community Development Director. No additional iceplant or ivy shall be planted.

E. The facilities shall be designed and operated in conformance with applicable American National Standards Institute (ANSI) standards and in compliance with all applicable Federal Communications Commission (FCC) standards.

F. Minor modifications may be approved by the Planning Director in conformance will all requirements of the Municipal Code.

G. The facilities shall be removed, if the facilities are abandoned or if the Use Permit is revoked and becomes void.

H. The Use Permit shall run concurrently with the term of the applicant's lease and shall automatically lapse upon the expiration or earlier termination of such lease.

Ana Gomez
Agent for Clearwire
Agent Address:
P.O. Box 599
Daly City, CA 94017
(415) 990-5384
Agomezllc@sbcglobal.net

City of Brisbane
Community Development and Planning
50 Park Place
Brisbane, CA 94005

RE: Project Description

1/12/2010

To Whom It May Concern:

I am writing in reference to a proposed telecommunications facility installation by Clearwire at 385 Valley Drive, Brisbane, CA 94005.

The parcel currently contains three existing PG&E towers. Two of the towers already contain telecommunications sites. The third tower is currently unoccupied. This third tower measures 104'-8". Clearwire proposes to place a 12' extension on top of this tower to give it a total height of 116'-8". Applicant then proposes to (3) antennas, (3) RRUs, (3) microwave dishes and (1) GPS on this tower extension. The (3) 1' microwave dishes will have a rad center of 116'-1" while the (3) panel antennas will have a rad center of 112'-7".

Applicant requests the 12' extension in order to fully maximize the site location. The site is surrounded by a hillside and tall buildings. In addition, the site is located adjacent to existing telecommunications sites on two PG&E towers. If Applicant did not have the extension, the signals from Applicant's antennas and microwave dishes would be blocked by the adjacent towers. Also, PG&E, the tower landlord, requires a minimum 10' radial clearance from their tower arms to Applicant's tower mounted equipment. Without the 12' extension, Applicant would be unable to place tower mounted equipment over PG&E's lines. Instead, without the tower extension and in an effort to achieve the minimum 10' clearance required by PG&E, Applicant would need to place tower mounted equipment underneath PG&E's lowest tower arm. The lowest tower arm is located at 80' thus Applicant would be unable to go over 70', giving Applicant a rad center of about 65'. Under those circumstances, the Applicant's tower mounted equipment would be directly blocked by nearby buildings and adjacent towers. This would essentially render the site location useless for Applicant's needs.

In addition, Carrier also proposes to place one ground cabinet in a new lease area measuring 10' x 10'. This lease area will be located underneath the tower, between the tower legs. This equipment area will be surrounded by proposed locked 6' wooden fence.

Clearwire is new to our market. Carrier is trying to build a new network from scratch. Carrier proposes to use an existing pole so as to minimize impact to the community.

Respectfully,
Ana Gomez
Ana Gomez
Agent for Clearwire
(415) 990-5384

H.3.8.

SUPPORTING STATEMENTS

FINDINGS REQUIRED TO GRANT A VARIANCE

Brisbane Municipal Code Section 17.46.010

Applications for variances from the strict application of the terms of this title may be made and variances granted when the following circumstances are found to apply:

A. That any variance granted shall be subject to such conditions as will assure that the adjustment hereby authorized shall not constitute a grant of special privilege inconsistent with the limitations upon other properties in the vicinity and district in which the subject property is located.

B. That because of special circumstances applicable to subject property, including size, shape, topography, location or surroundings, the strict application of this title is found to deprive subject property of privileges enjoyed by other properties in the vicinity and under identical zone classification.

What special circumstances, such as size, shape or topography of the property, or its location or surroundings, apply to your site?

Site is on a commercial property surrounded by hills. However, the ground elevation is only 55'. In addition, the proposed tower is adjacent to two PG&E transmission towers with existing carriers. These towers are equivalent in height, or taller, than the tower Applicant proposes to use.

How do these special circumstances impact your site when the Zoning Ordinance is applied to the site?

If the zoning ordinance is applied to the site, this site would no longer be a feasible candidate for Applicant. The tower is 104'-8" with lines at the top. PG&E requires a minimum 10' radial clearance. The lowest PG&E lines are at 80'. With the 10' minimum separation, Applicant would need to be below 70' thus giving Applicant a maximum rad center of no more than 65'. At that height, Applicant's signal would be blocked by the neighboring PG&E towers, adjacent commercial buildings and the surrounding hills.

What privileges enjoyed by other properties in the vicinity and same zoning district would you be deprived of when the Zoning Ordinance is applied to your site, given its special circumstances?

Carriers on the adjacent towers were allowed to go at a higher rad center using a tower extension. If Applicant's request is denied, Applicant's signal will be blocked by the adjacent towers, buildings and surrounding hills.

What conditions of approval could be attached to the variance to assure that you comply with the intent of the Zoning Ordinance and other applicable regulations?

It can be requested that applicant mount antennas as closely as possible to the transmission tower and that the antennas be painted to match the existing tower, so as to minimize any potential visual impact.

clearwire®

CA-SFO0273C-PG&E VALLEY DRIVE

385 VALLEY DR
BRISBANE, CA 94005

PG&E INFO
SAP#: 40861550
TOWER#: 000/010
LINE NAME: MARTIN-SF AIRPORT 115 KV

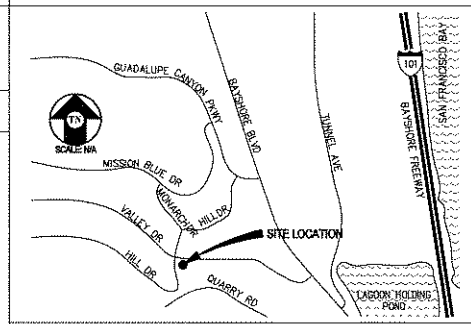
PROJECT DESCRIPTION

A (P) UNMANNED TELECOMMUNICATION FACILITY CONSISTING OF ADDING (3) (P) CLEARWIRE ANTENNAS & (3) (P) CLEARWIRE MICROWAVE DISHES MOUNTED ON A (P) PG&E TOWER 12' EXTENSION, & ADDING (1) (P) CLEARWIRE CABINET & (3) (P) CLEARWIRE RRUS INSIDE A (P) 10'X10' LICENSE AREA.

PROJECT INFORMATION

SITE NAME:	PG&E VALLEY DRIVE	SITE #:	CA-SFO0273C
COUNTY:	SAN MATEO	JURISDICTION:	CITY OF BRISBANE
APN:	005-172-040	POWER:	PG&E
SITE ADDRESS:	385 VALLEY DR BRISBANE, CA 94005		
CURRENT ZONING:	–		
CONSTRUCTION TYPE:	II		
OCCUPANCY TYPE:	U		
PROPERTY OWNER:	STATE TEACHER'S RETIREMENT SYSTEM PROPERTY MANAGED BY: KEVIN NESSE HARVEST PROPERTIES 6475 CHRISTIE AVE #550 EMERYVILLE, CA 94608-2262 (510) 594-2050		
TOWER OWNER:	PG&E 245 MARKET MC N10D SAN FRANCISCO, CA 94105		
APPLICANT:	CLEARWIRE 2999 OAK RD, SUITE 110 WALNUT CREEK, CA 94597		
LEASING CONTACT:	ATTN: ANA GOMEZ-ABARCA (415) 990-5384		
ZONING CONTACT:	ATTN: ANA GOMEZ-ABARCA (415) 990-5384		
CONSTRUCTION CONTACT:	ATTN: RAJESH RAIKAR (925) 250-1549		
LATITUDE: LONGITUDE:	N 37° 41' 15.67" NAD 83 W 122° 24' 38.26" NAD 83		
AMSL:	±52'		

VICINITY MAP



DRIVING DIRECTIONS

FROM: 2999 OAK RD, SUITE 110, WALNUT CREEK, CA 94597
TO: 385 VALLEY DR BRISBANE, CA 94005

1.	HEAD SOUTH ON OAK RD	305 FT
2.	TAKE THE 1ST RIGHT ONTO TREAT BLVD	0.1 MI
3.	CONTINUE STRAIGHT TO STAY ON TREAT BLVD	0.1 MI
4.	TURN RIGHT AT N MAIN ST	0.2 MI
5.	SHARP RIGHT TO MERGE ONTO I-680 S TOWARD CA-24 W	1.5 MI
6.	TAKE THE STATE ROUTE 24 EXIT TOWARD OAKLAND/LAFAYETTE	1.3 MI
7.	MERGE ONTO CA-24 W	12.3 MI
8.	TAKE THE EXIT TOWARD I-580 W	1.0 MI
9.	MERGE ONTO I-580 W	0.5 MI
10.	TAKE THE EXIT ON THE LEFT ONTO I-80 W TOWARD SAN FRANCISCO	8.6 MI
11.	MERGE ONTO US-101 S	5.3 MI
12.	TAKE EXIT 426 FOR SIERRA POINT PKWY	0.2 MI
13.	TURN LEFT TOWARD LAGOON RD	495 FT
14.	TAKE THE 1ST RIGHT ONTO LAGOON RD	0.4 MI
15.	TURN LEFT AT TUNNEL AVE	0.3 MI
16.	TURN RIGHT TO STAY ON TUNNEL AVE	30 FT
17.	TAKE THE 1ST RIGHT ONTO BAYSHORE BLVD	0.2 MI
18.	TAKE THE 1ST LEFT ONTO VALLEY DR DESTINATION WILL BE ON THE LEFT	0.6 MI

END AT: 385 VALLEY DR BRISBANE, CA 94005

ESTIMATED TIME: 35 MINUTES ESTIMATED DISTANCE: 32 MILES

CODE COMPLIANCE

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

1. 2007 CALIFORNIA ADMINISTRATIVE CODE (INCL. TITLES 24 & 25)
2. 2007 CALIFORNIA BUILDING CODE
3. 2007 CALIFORNIA ELECTRICAL CODE
4. 2007 CALIFORNIA MECHANICAL CODE
5. 2007 CALIFORNIA PLUMBING CODE
6. 2007 CALIFORNIA FIRE CODE
7. LOCAL BUILDING CODES
8. CITY/COUNTY ORDINANCES
9. ANSI/EIA-TIA-222-G

ALONG WITH ANY OTHER APPLICABLE LOCAL & STATE LAWS AND REGULATIONS

HANDICAP REQUIREMENTS

THIS FACILITY IS UNMANNED & NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS & REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH CALIFORNIA STATE ADMINISTRATIVE CODE, TITLE 24 PART 2, SECTION 1105B.3.4.2, EXCEPTION 1

SHEET INDEX

SHEET	DESCRIPTION	REV
T-1	TITLE SHEET	–
LS-1	SURVEY	–
A-1	OVERALL SITE PLAN & SITE PLAN	–
A-2	EQUIPMENT PLAN & DETAILS	–
A-3	ANTENNA PLANS & DETAILS	–
A-4	ELEVATIONS	–

APPROVAL

REALCOM CM
PG&E
SITE ACQ
CW CM
RF
BACKHAUL
LAND LORD

PG&E VALLEY DRIVE
CA-SFO0273C
385 VALLEY DR
BRISBANE, CA 94005

ISSUE STATUS

Δ	DATE	DESCRIPTION	BY
	10/28/09	ZD 90%	–
	01/18/10	ZD 100%	–
	–	–	–
	–	–	–
	–	–	–
	–	–	–

DRAWN BY: P. VIOLETT
CHECKED BY: L. HOUGHTBY
APPROVED BY: B. McCOMB
DATE: 01/18/10

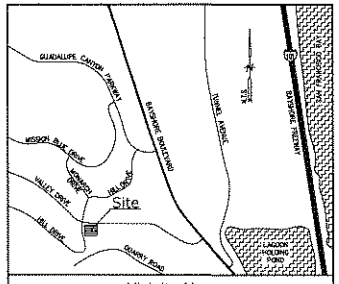
Streamline Engineering and Design, Inc.
11769 Atwood Rd, Suite 20 Auburn, CA 95603
Contact: Larry Houghtby Phone: 916-275-4180
E-Mail: larry@streamlineeng.com Fax: 530-823-8783

clearwire®
4400 CARILLON POINT
KIRKLAND, WA 98033

SHEET TITLE:
TITLE

SHEET NUMBER:
T-1

H.3.10.



Vicinity Map

Title Report

THIS SURVEY WAS COMPLETED WITHOUT THE BENEFIT OF A TITLE REPORT.
PREPARED BY:
ORDER NO.:
DATED:

Legal Description

PORTION OF LOT 3, BLOCK E OF TRACT MAP NO. 778 CROCKER INDUSTRIAL PARK UNIT No.1, UNINCORPORATED AREA, COUNTY OF SAN MATEO, STATE OF CALIFORNIA, FILED IN BOOK 51, PAGE 33, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY

Assessor's Parcel No.

005-172-040

Easements

NOT AVAILABLE

Access Easement/Lease Area

TO BE DETERMINED

Geographic Coordinates at Existing Tower

1983 DATUM: LATITUDE 37° 41' 15.87", LONGITUDE 122° 24' 38.26"
ELEVATION = 33.7 FEET ABOVE MEAN SEA LEVEL

CERTIFICATION:
THE LATITUDE AND LONGITUDE SHOWN ABOVE ARE ACCURATE TO WITHIN +/- 15 FEET HORIZONTALLY AND THAT THE ELEVATIONS SHOWN ABOVE ARE ACCURATE TO WITHIN +/- 3 FEET VERTICALLY. THE HORIZONTAL DATUM (GEOGRAPHIC COORDINATES) IS IN TERMS OF THE NORTH AMERICAN DATUM OF 1983 (NAD 83) AND IS EXPRESSED IN DEGREES (°), MINUTES (') AND SECONDS (") TO THE NEAREST HUNDREDTH OF A SECOND. THE VERTICAL DATUM (ELEVATIONS) IS IN TERMS OF THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND IS DETERMINED TO THE NEAREST TENTH OF A FOOT.

Basis of Bearings

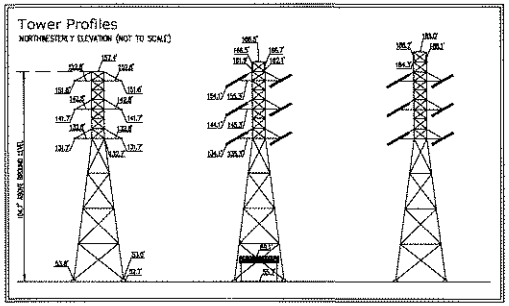
THE STATE PLANE COORDINATE SYSTEM OF 1983 (NAD 83), CALIFORNIA ZONE 3.

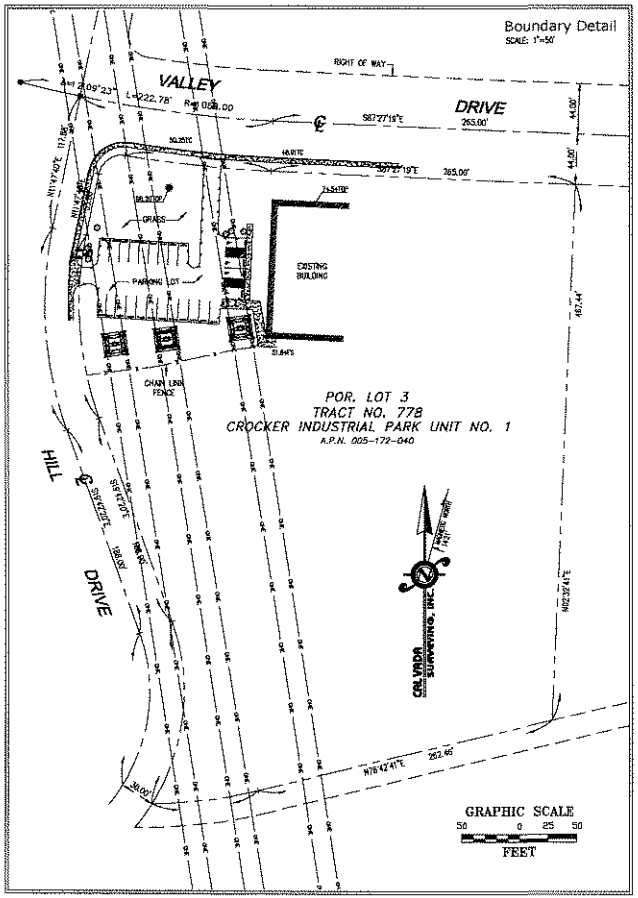
Bench Mark

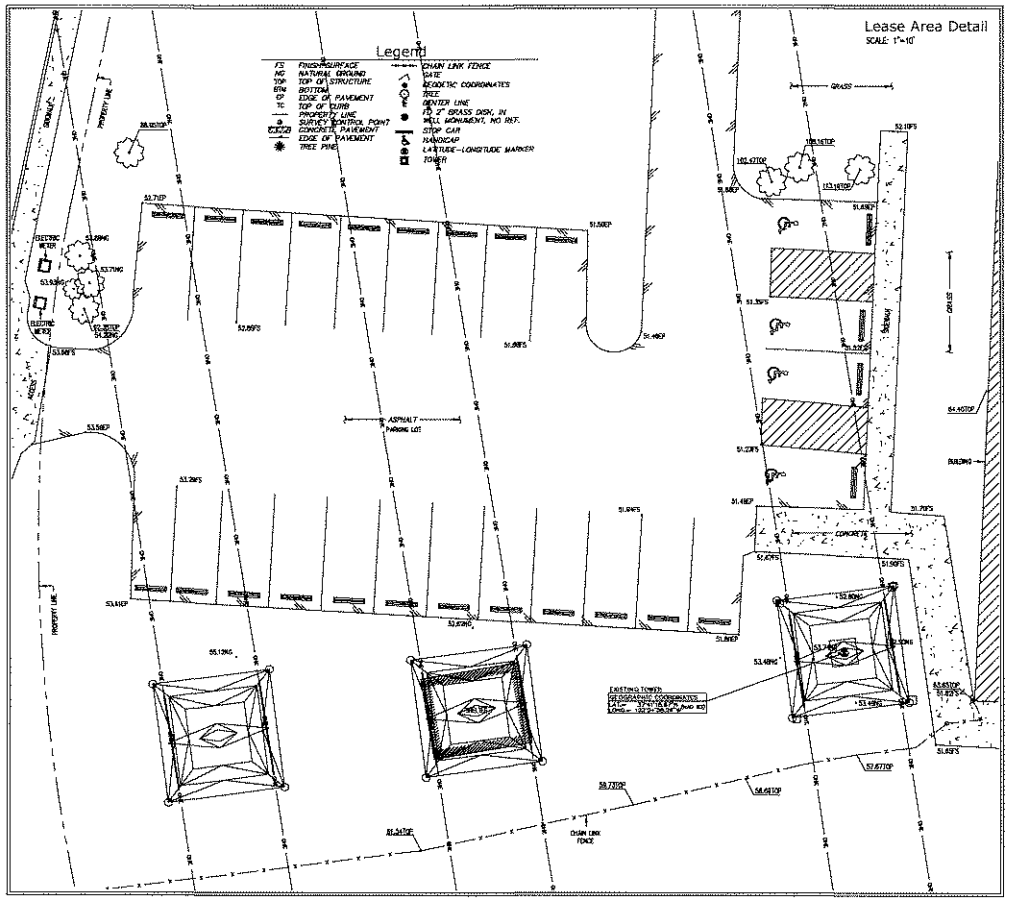
THE CALIFORNIA SPATIAL REFERENCE CENTER C.O.R.S "MAY". ELEVATION = 13.85 FEET (NAVD 88)

Date of Survey

OCTOBER 8, 2009







clear w're®
4400 CARILLON POINT
KIRKLAND, WA 98033

Streamline Engineering
DESIGN INC

CA-SFO0273
385 VALLEY DRIVE
BRISBANE, CA 94005
SAN MATEO COUNTY

CAL VADA
SURVEYING, INC.
JOB NO. 09793

REVISIONS

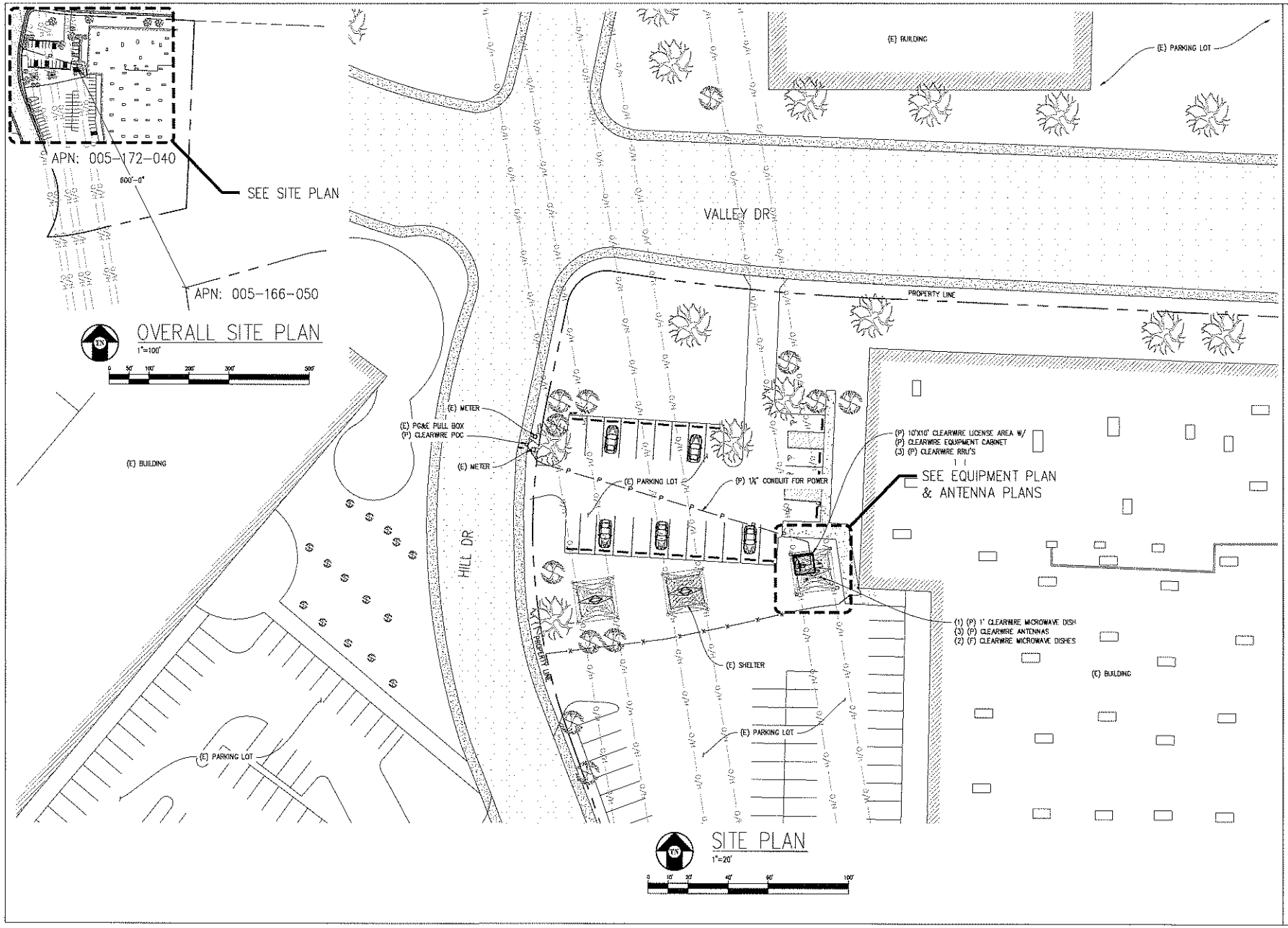
NO.	DATE	DESCRIPTION	INITIAL
	10/13/09	PRELIMINARY	AV/MI

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

SHEET TITLE
TOPOGRAPHIC SURVEY

SHEET NUMBER
LS-1
SHEET 1 OF 1

H.3.11.



H.3.12.

PG&E VALLEY DRIVE

CA-SFO0273C

385 VALLEY DR
BRISBANE, CA 94005

ISSUE STATUS

Δ	DATE	DESCRIPTION	BY
	10/28/09	ZD 90%	-
	01/18/10	ZD 100%	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

DRAWN BY:	P. VIOLETT
CHECKED BY:	L. HOUGHTBY
APPROVED BY:	B. McCOMB
DATE:	01/18/10

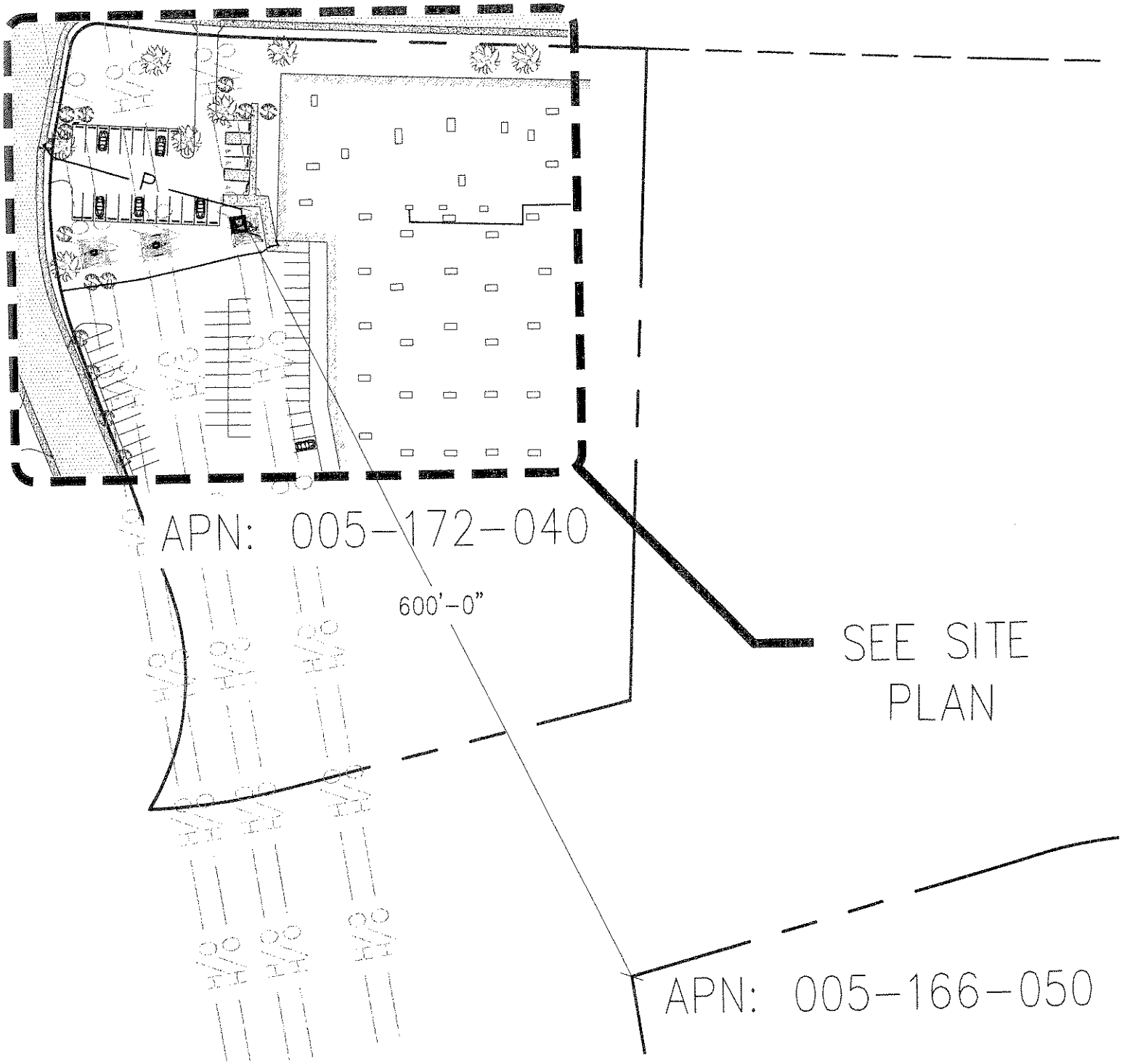
Streamline Engineering and Design, LLC
11788 Atwood Rd. Suite 20 Auburn, CA 95603
Contact: Larry Haughtby Phone 916-275-4190
E-Mail: larry@streamlineeng.com Fax: 530-823-5783

clearwire

4400 CARILLON POINT
KIRKLAND, WA 98033

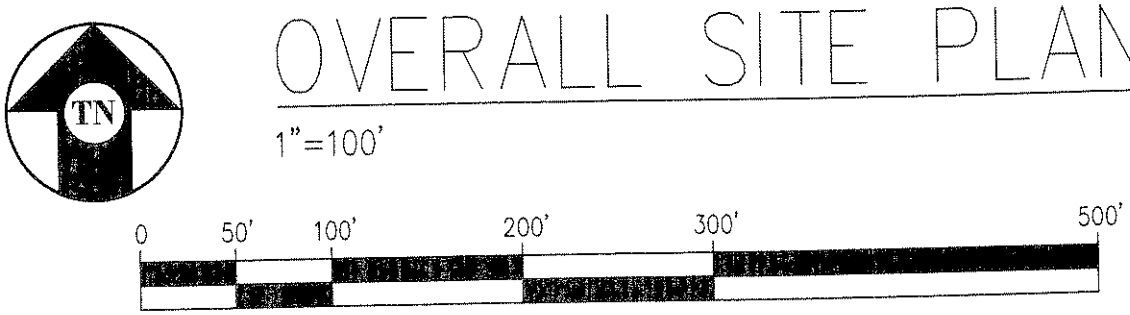
SHEET TITLE:
OVERALL SITE PLAN
& SITE PLAN

SHEET NUMBER:
A-1

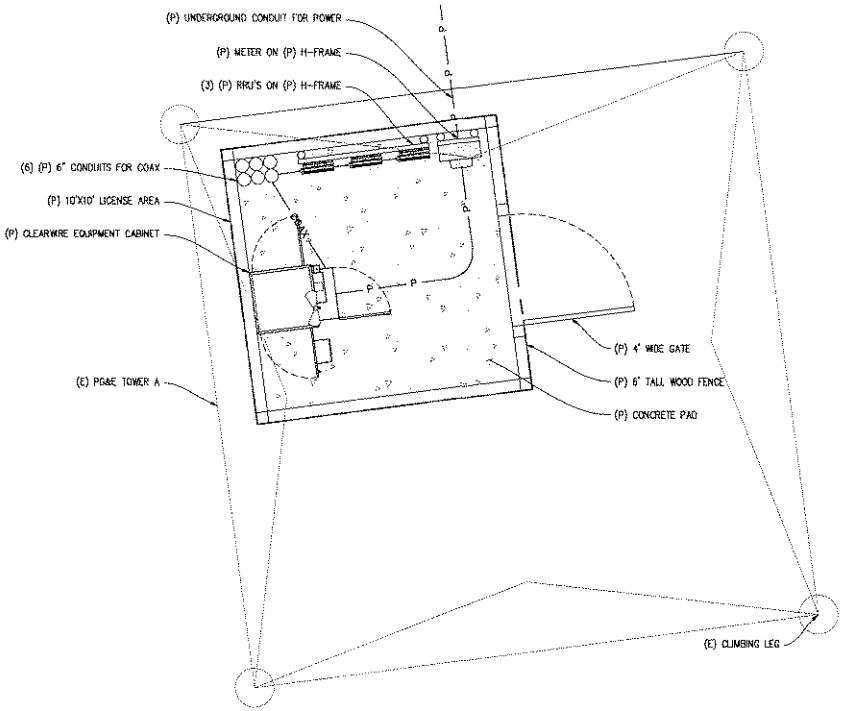


OVERALL SITE PLAN

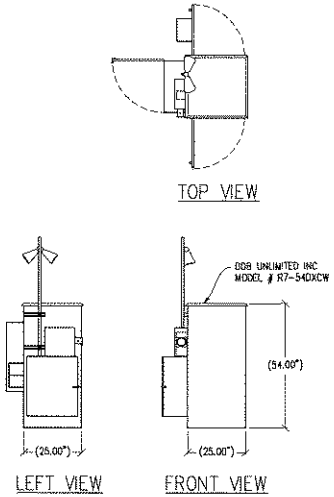
1"=100'



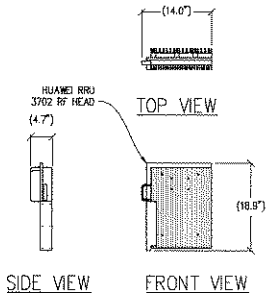
H.3.13.



EQUIPMENT PLAN
½"=1'



1 CABINET DETAIL
½"=1'



2 RRU RF HEAD DETAIL
1"=1'

PG&E VALLEY DRIVE

CA-SFO0273C
385 VALLY DR
BRISBANE, CA 94005

ISSUE STATUS

Δ	DATE	DESCRIPTION	BY
	10/28/09	ZD 90%	--
	01/18/10	ZD 100%	--
	--	--	--
	--	--	--
	--	--	--
	--	--	--

DRAWN BY:	P. VIOLETT
CHECKED BY:	L. HOUGHTBY
APPROVED BY:	B. McCOMB
DATE:	01/18/10

Streamline Engineering and Design, Inc.
11765 Atwood Rd. Suite 20 Auburn, CA 95603
Contact: Larry Houghtby Phone: 916-275-4190
E-Mail: larry@streamlineeng.com Fax: 530-823-3783

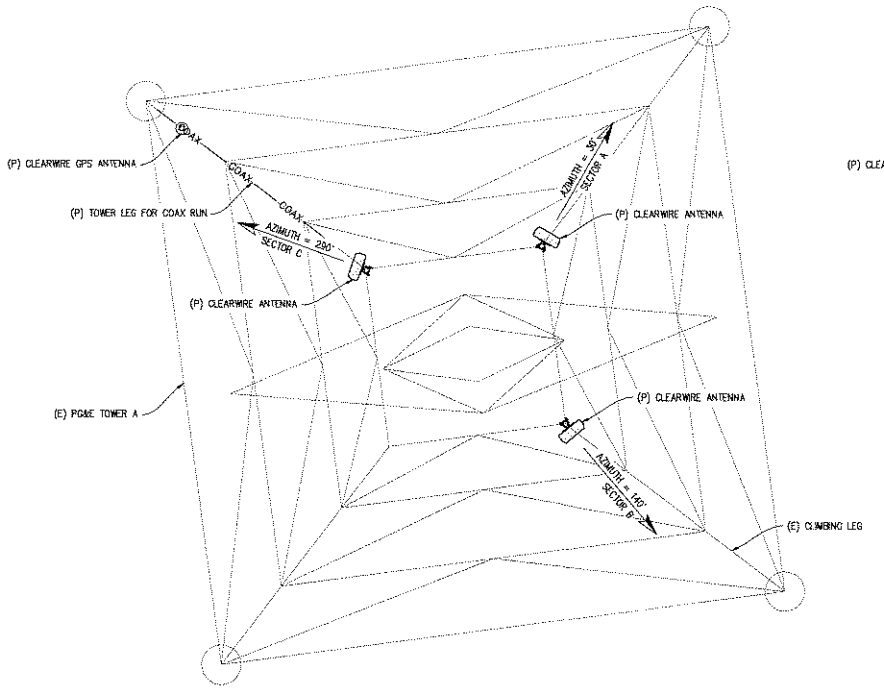
clearwire

4400 CARILLON POINT
KIRKLAND, WA 98033

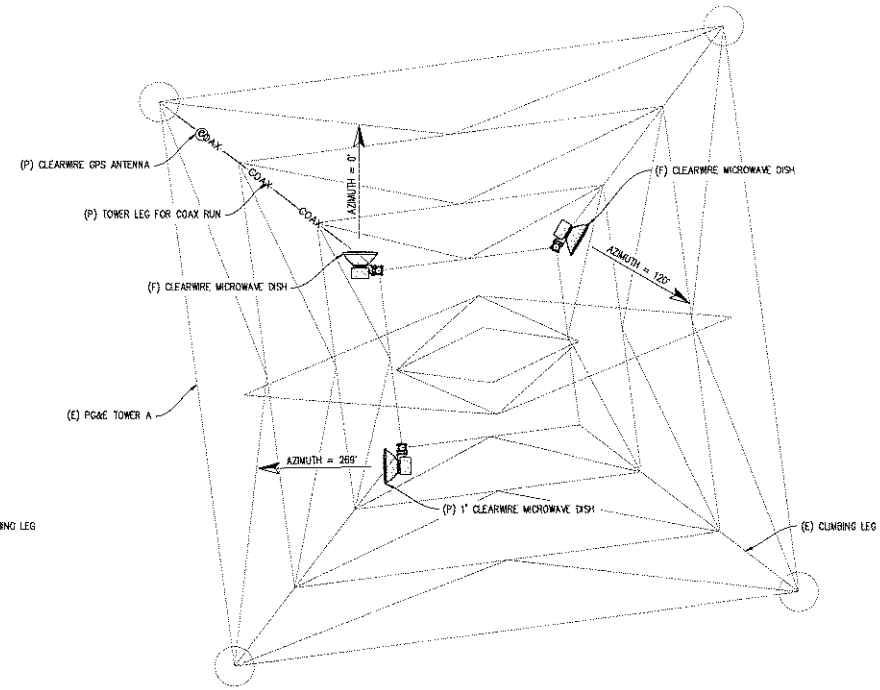
SHEET TITLE:
EQUIPMENT PLAN & DETAILS

SHEET NUMBER:
A-2

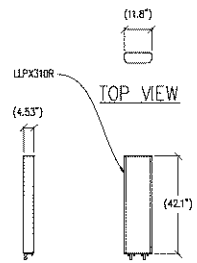
14.3.14.



ANTENNA PLAN
½"=1'



MICROWAVE DISH PLAN
½"=1'



1 ANTENNA DETAIL
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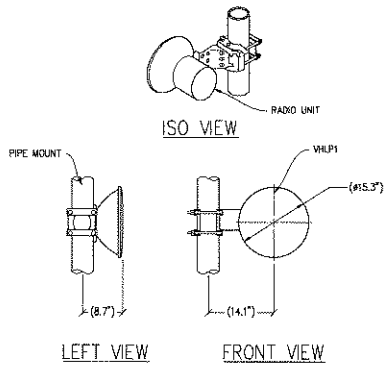


2 MICROWAVE ANTENNA DETAIL
1"=1'

H.3.15.

PG&E VALLEY DRIVE

CA-SFO0273C
385 VALLY DR
BRISBANE, CA 94005

ISSUE STATUS

Δ	DATE	DESCRIPTION	BY
	10/28/09	ZD 90%	--
	01/18/10	ZD 100%	--
	--	--	--
	--	--	--
	--	--	--
	--	--	--

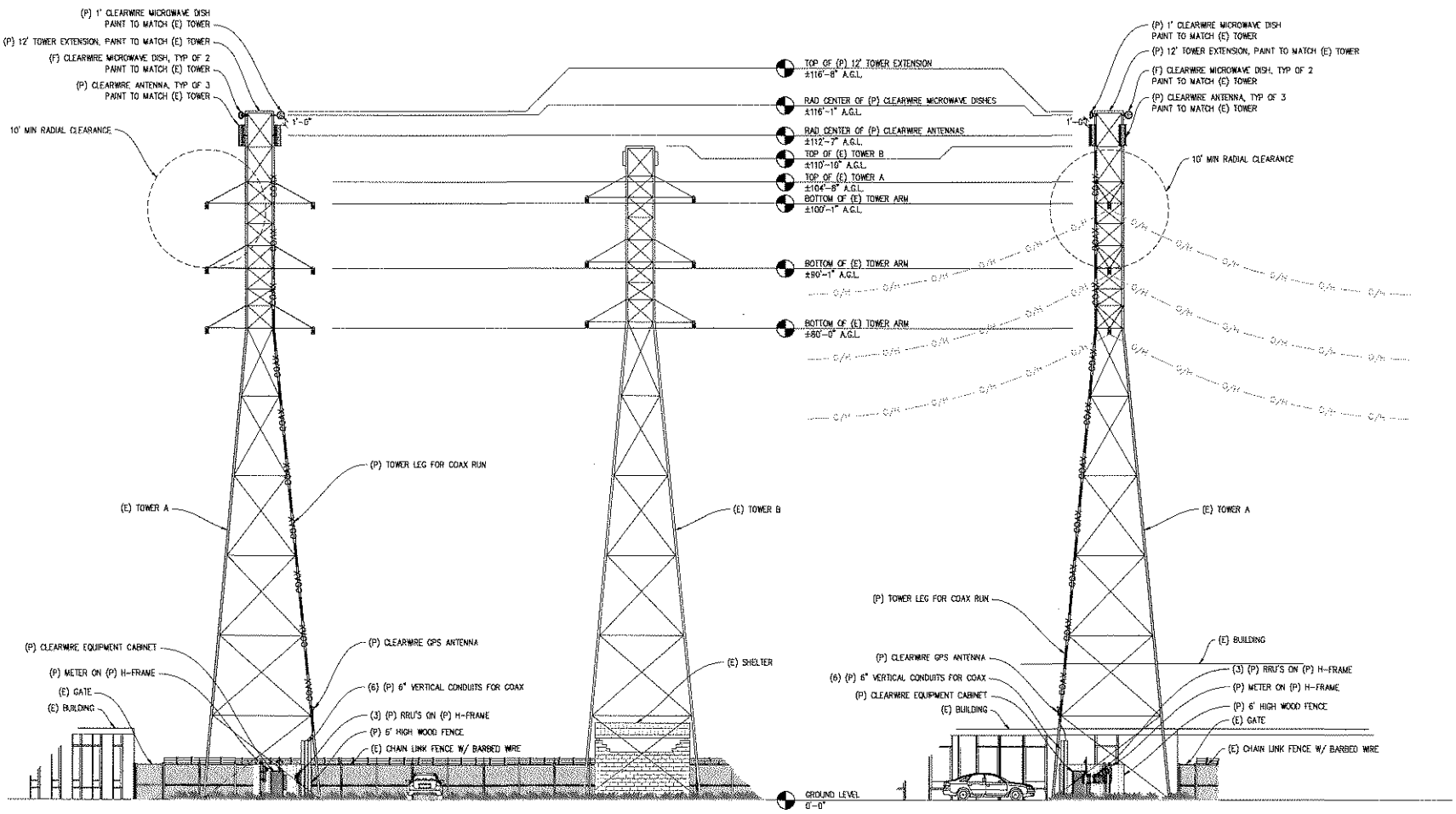
DRAWN BY: P. VIOLETT
CHECKED BY: L. HOUGHTBY
APPROVED BY: B. McCOMB
DATE: 01/18/10

Streamline Engineering and Design, Inc.
11769 Atwood Rd. Suite 20 Auburn, CA 95603
Contact: Larry Haughtby Phone: 916-275-4180
E-Mail: larry@streamlineeng.com Fax: 530-823-3783

clearwire
4400 CAPELLON POINT
KIRKLAND, WA 98033

SHEET TITLE:
ANTENNA PLANS & DETAILS

SHEET NUMBER:
A-3



NORTH ELEVATION
1/8"=1'

WEST ELEVATION
1/8"=1'

H.3.16.

PG&E VALLEY DRIVE

CA-SFO0273C
385 VALLEY DR
BRISBANE, CA 94005

ISSUE STATUS

Δ	DATE	DESCRIPTION	BY
	10/28/09	ZD 90%	--
	01/18/10	ZD 100%	--
	--	--	--
	--	--	--
	--	--	--
	--	--	--

DRAWN BY: P. VIOLETT
CHECKED BY: L. HOUGHTBY
APPROVED BY: G. McCOMB
DATE: 01/18/10

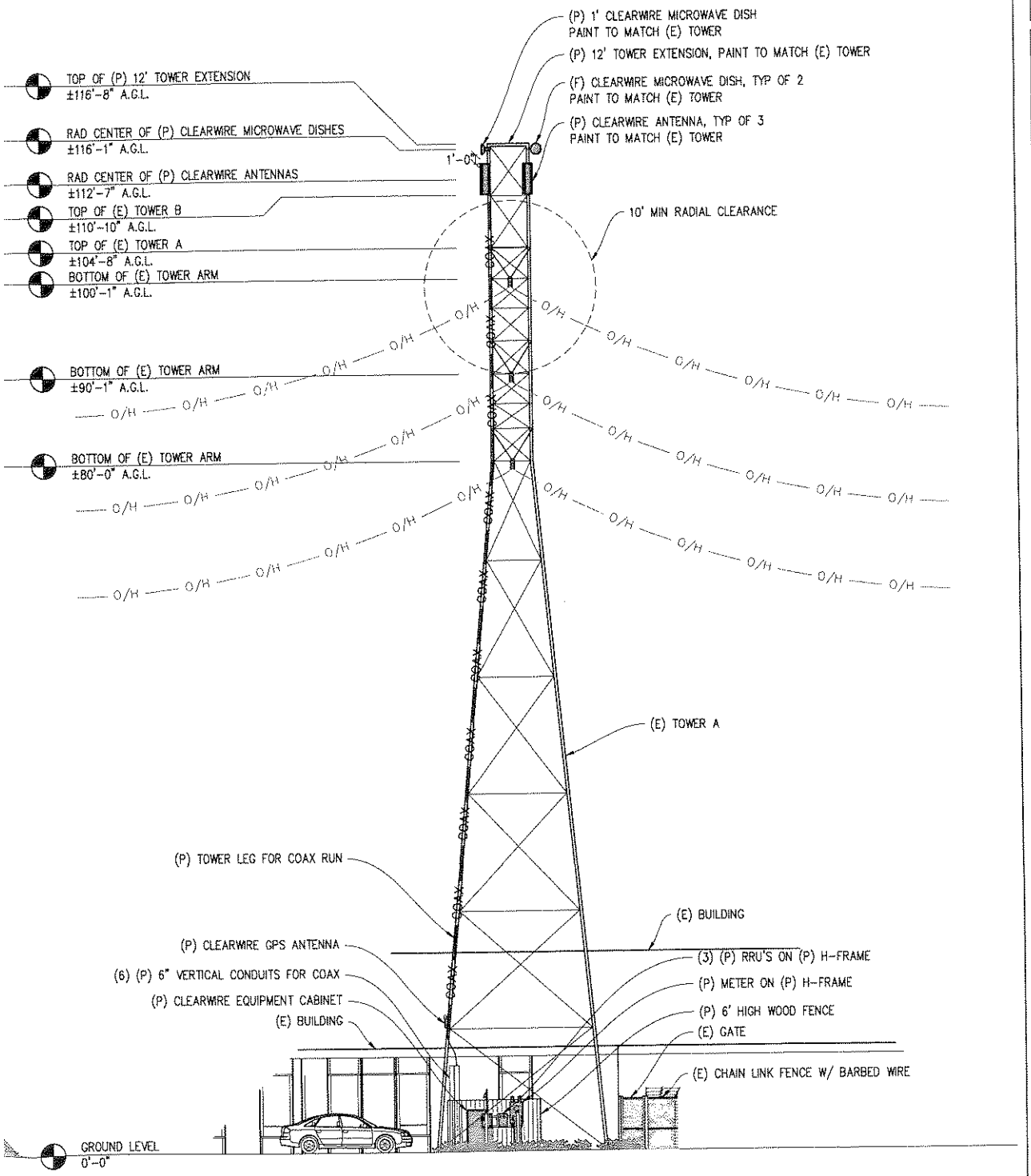
Streamline Engineering
11769 Atwood Rd, Suite 20 Auburn, CA 95603
Contact: Larry Houghtby Phone: 916-275-4190
E-Mail: larry@streamlineeng.com Fax: 530-823-8753

clearwire

4400 CARILLON POINT
KIRKLAND, WA 98033

SHEET TITLE:
ELEVATIONS

SHEET NUMBER:
A-4



WEST ELEVATION

1/8"=1'

PG&E VALLEY DRIVE

CA-SFO0273C

385 VALLY DR
BRISBANE, CA 94005

ISSUE STATUS

△	DATE	DESCRIPTION	BY
	10/28/09	ZD 90%	–
	01/18/10	ZD 100%	–
	–	–	–
	–	–	–
	–	–	–
	–	–	–

DRAWN BY:	P. VIOLETT
CHECKED BY:	L. HOUGHTBY
APPROVED BY:	B. McCOMB
DATE:	01/18/10

Streamline Engineering and Design, Inc.
11768 Atwood Rd, Suite 20 Auburn, CA 95603
Contact: Larry Houghtby Phone: 916-275-4180
E-Mail: larry@streamlineeng.com Fax: 530-823-8783

clearwire®

4400 CARILLON POINT
KIRKLAND, WA 98033

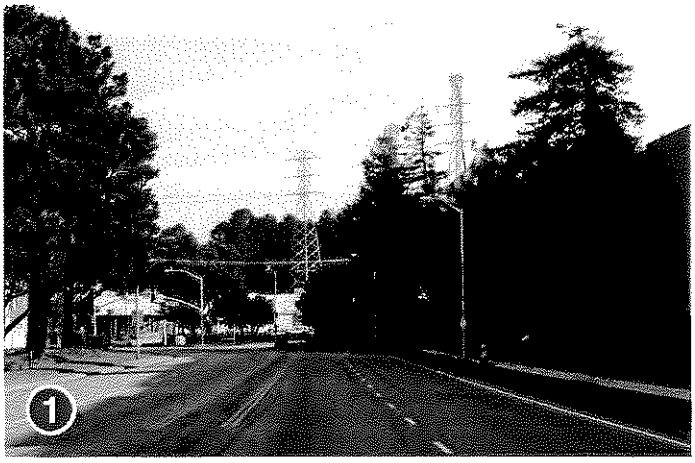
SHEET TITLE:

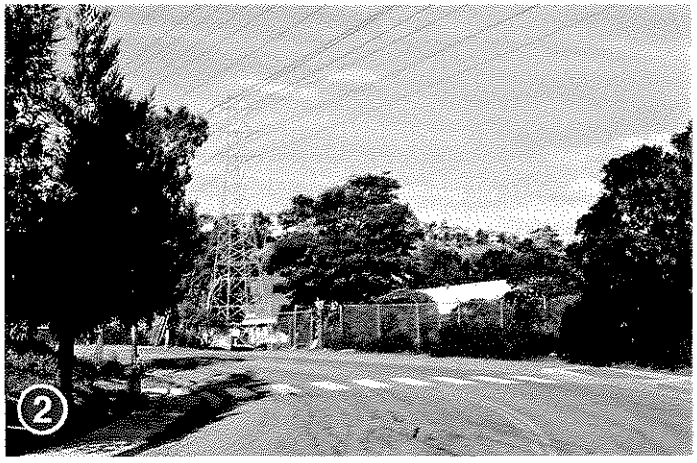
ELEVATIONS

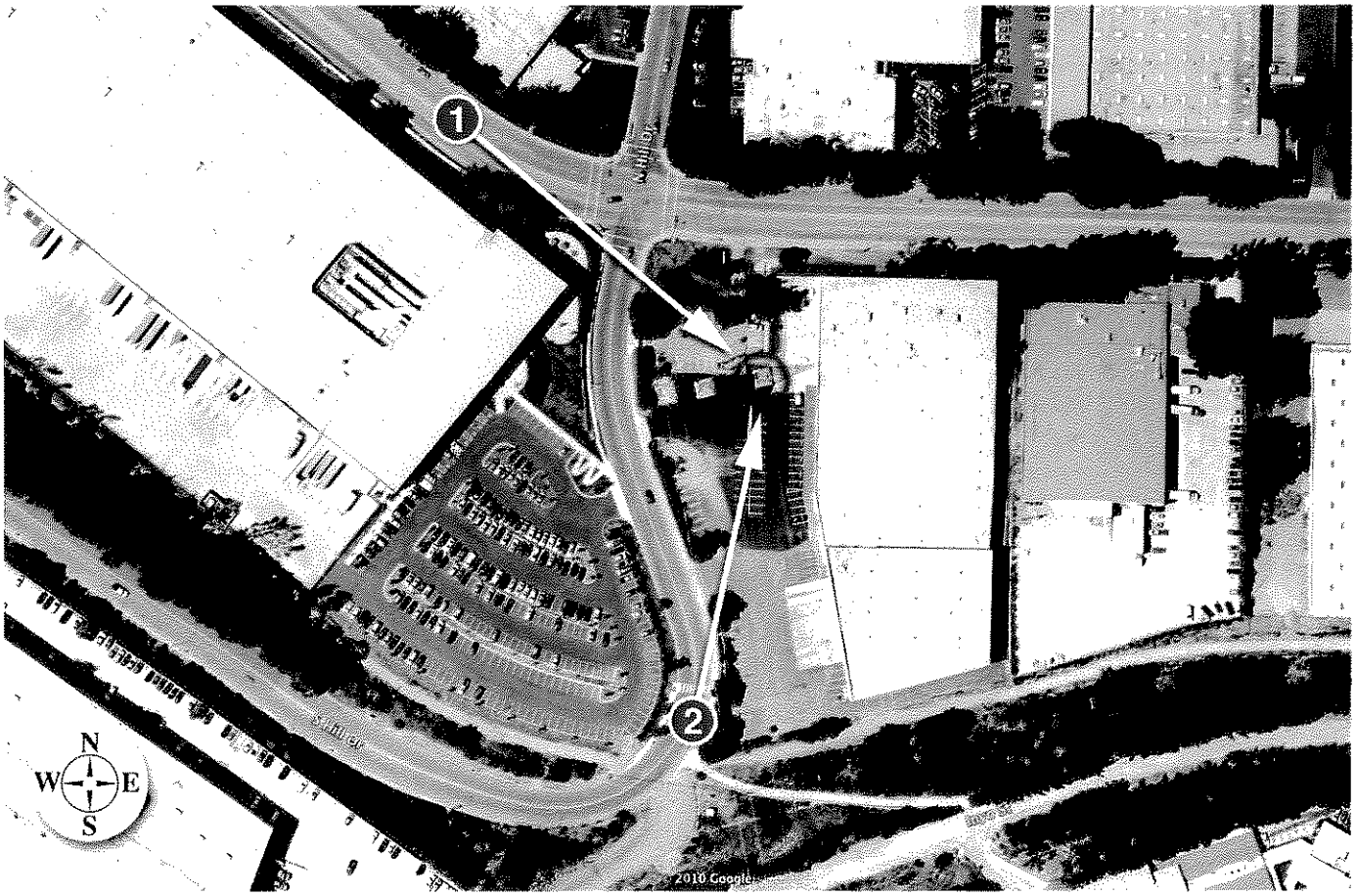
SHEET NUMBER:

A-4

H.3.17.







clearwire

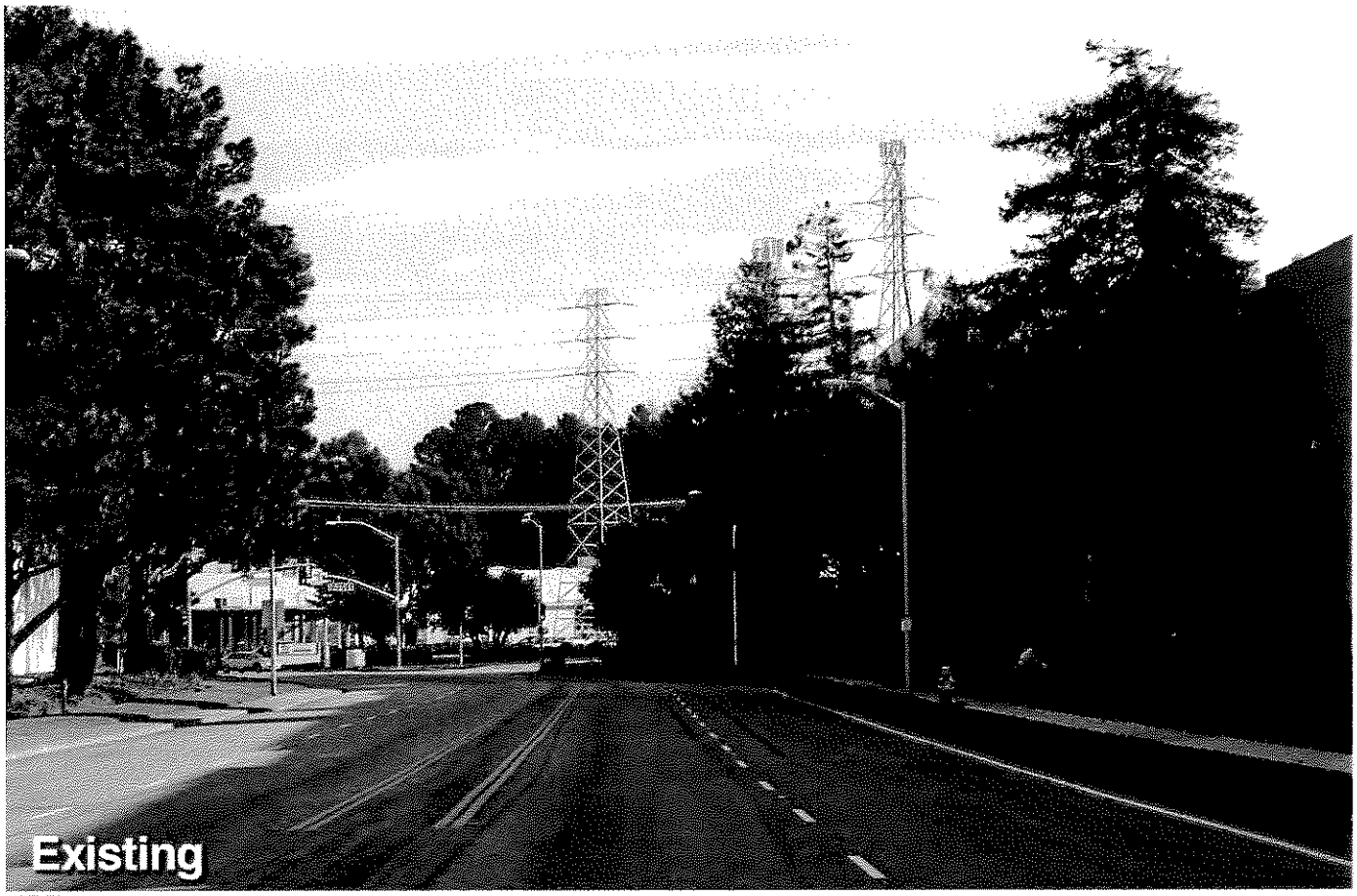
PG&E Tower **Site # CA-SFO0273B** **Aerial Map**

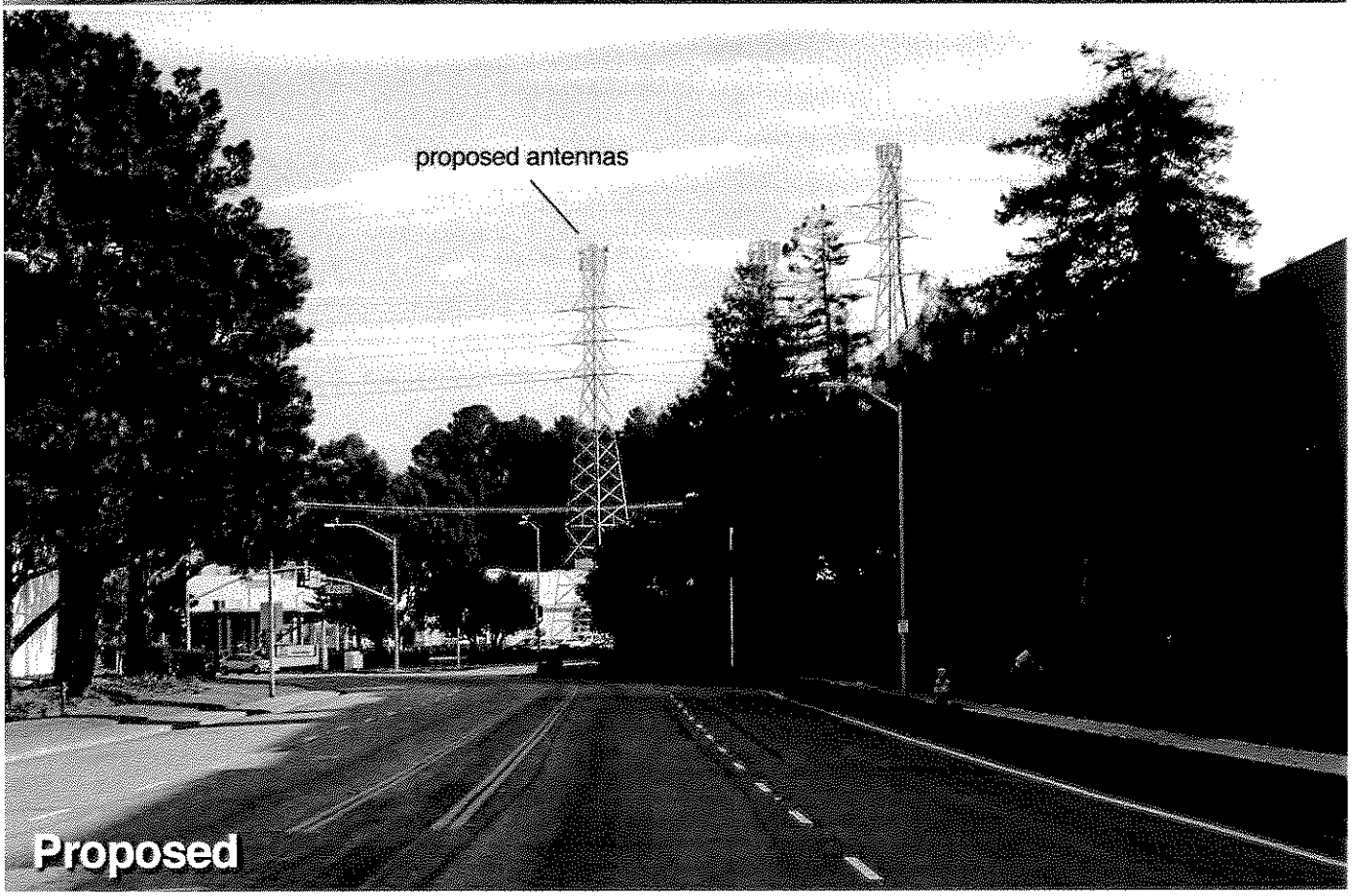
385 Valley Drive
Brisbane, CA 94005

12/15/09

Applied Imagination 510 914-0500

H.3.18.





clearwire

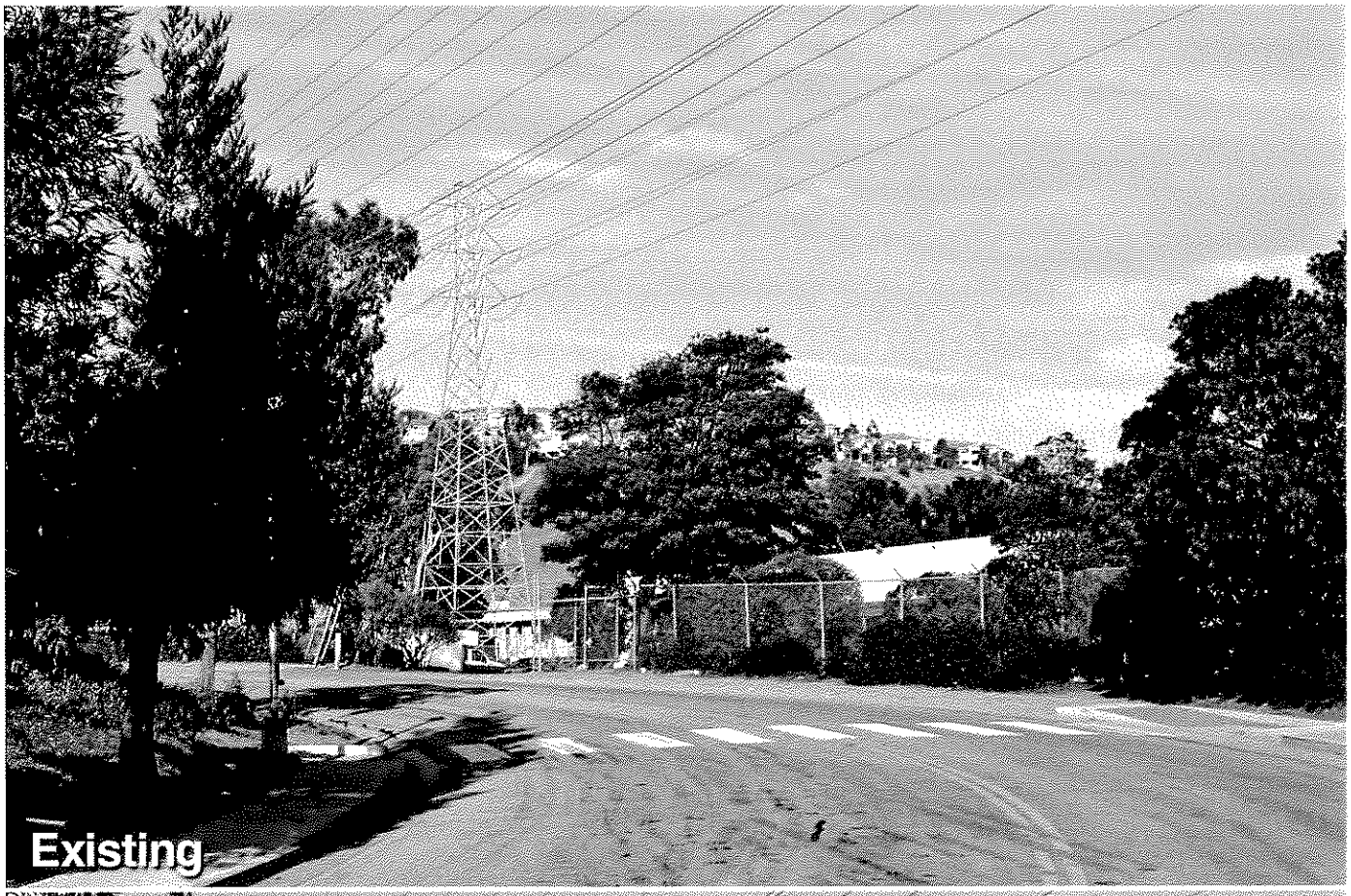
PG&E Tower **Site # CA-SFO0273B** **Looking East from Valley Drive**

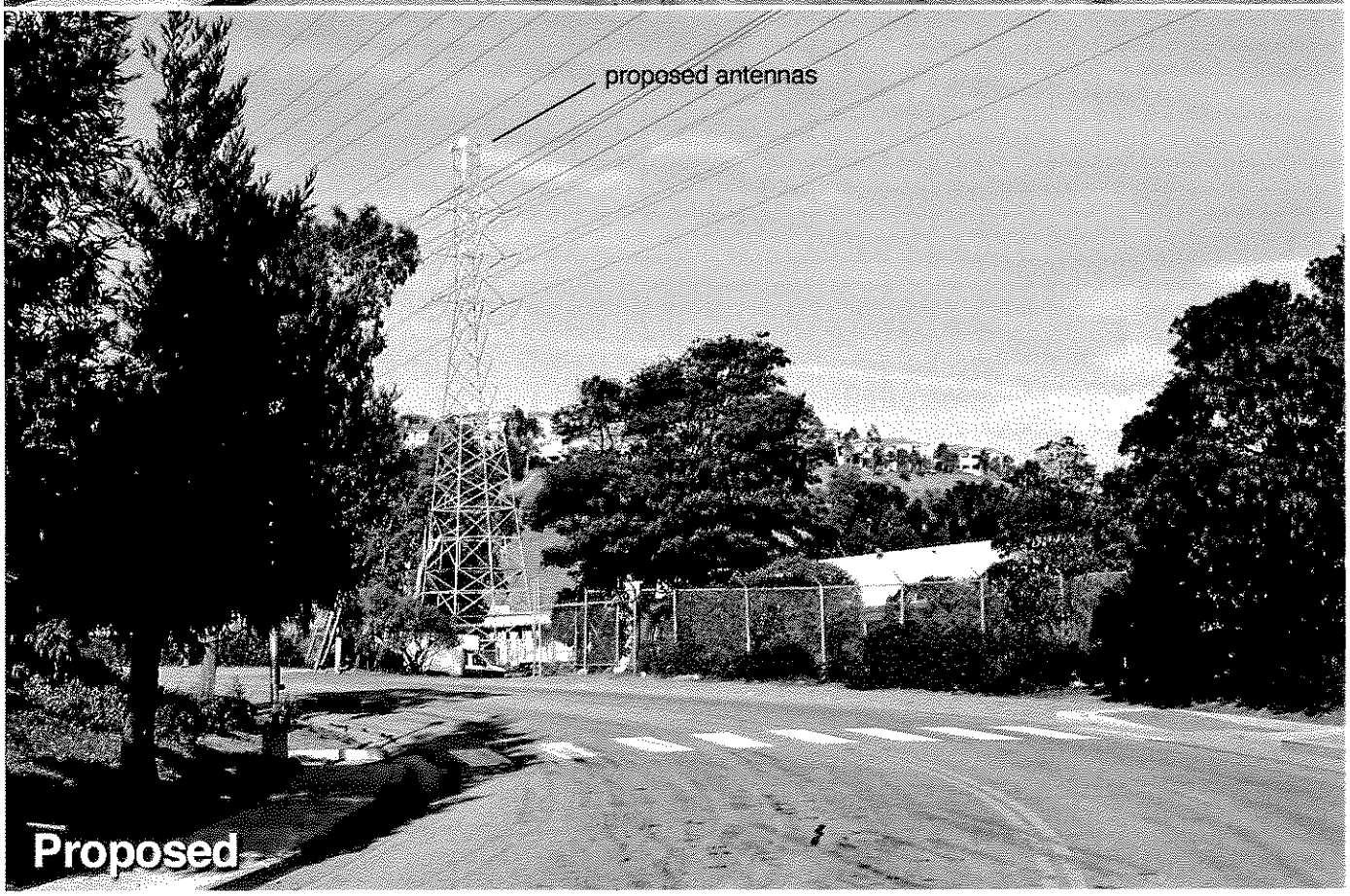
385 Valley Drive
Brisbane, CA 94005

12/15/09

Applied Imagination 510 914-0500

H.3.19.





clearwire

PG&E Tower **Site # CA-SFO0273B** **Looking North from South Hill Drive**

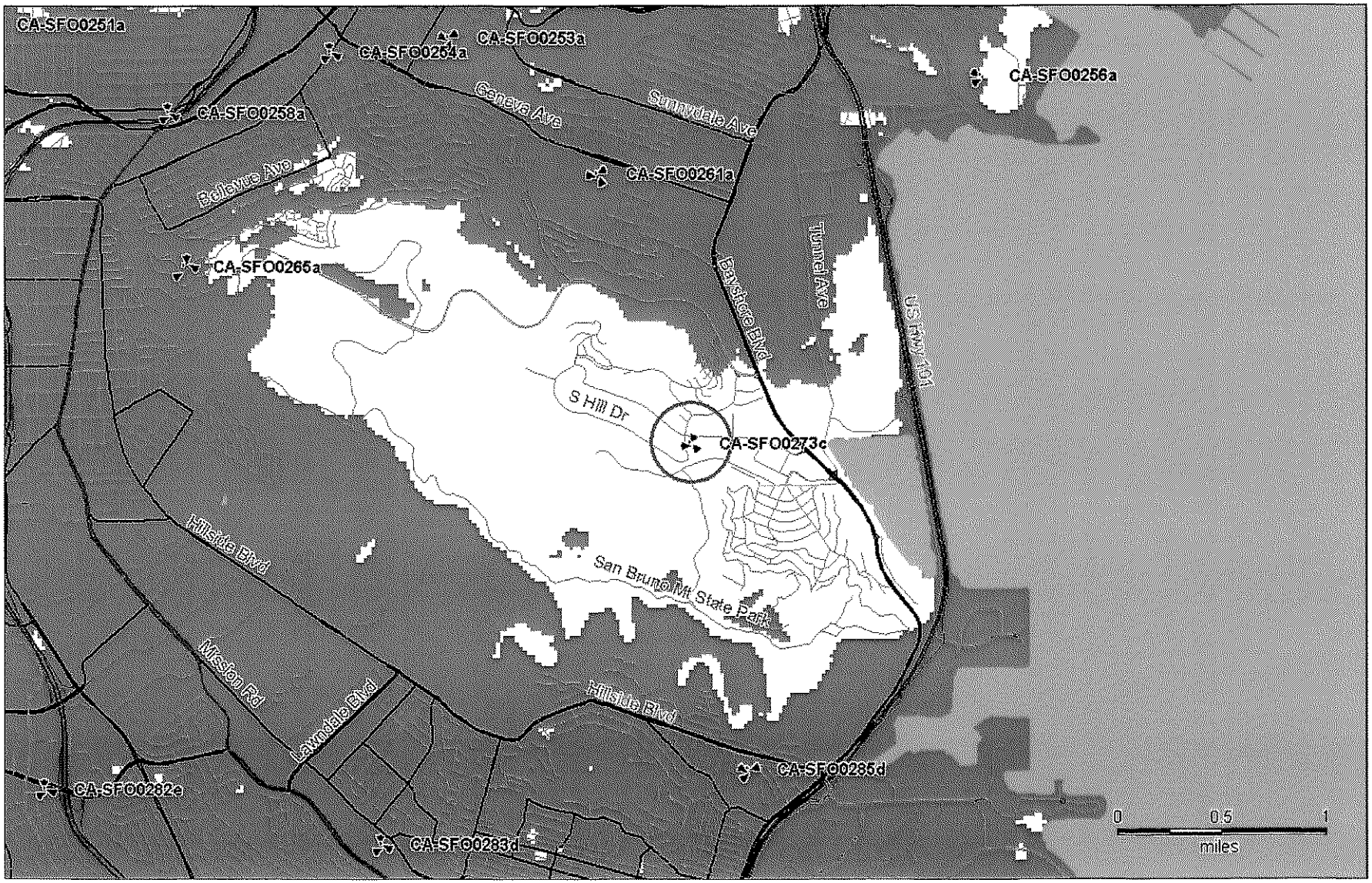
385 Valley Drive
Brisbane, CA 94005

12/15/09

Applied Imagination 510 914-0500

H.3.20.

Coverage of Proposed sites in Brisbane **without** site CA-SFO0273C

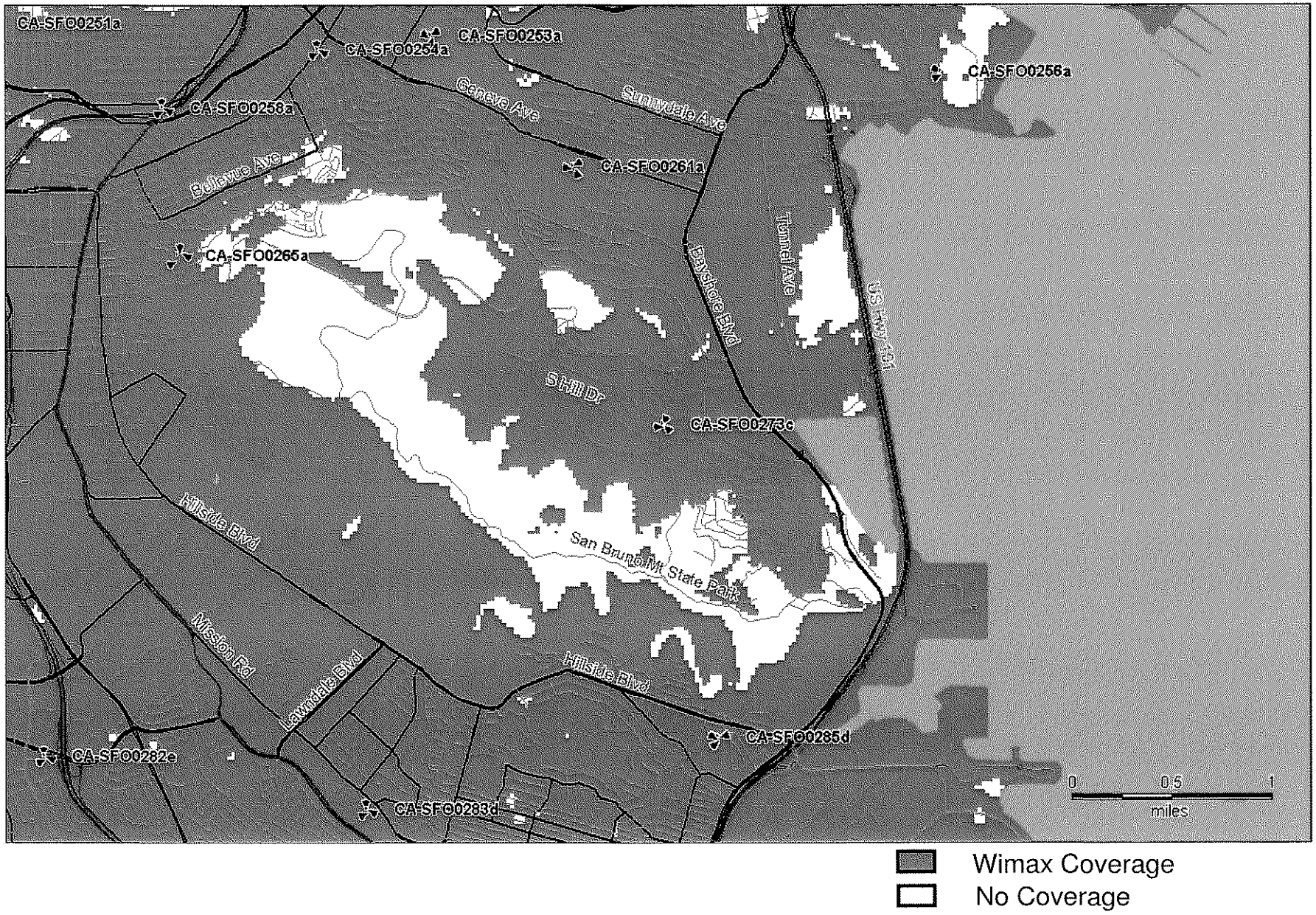


Wimax Coverage

No Coverage

H.3.21.

Coverage of Proposed sites in Brisbane **with** site CA-SFO0273C at **116ft**

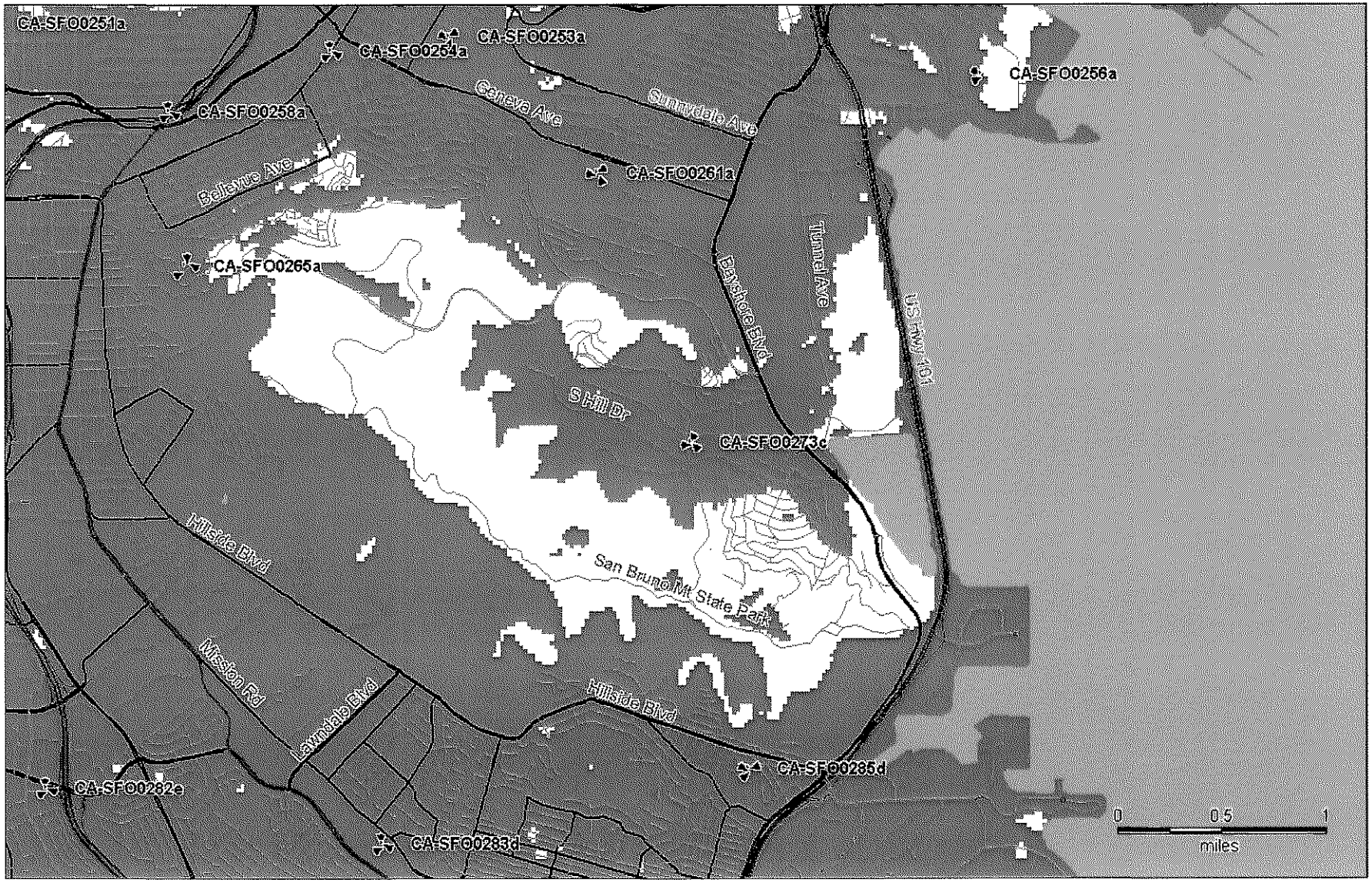


Wimax Coverage

No Coverage

H.3.22.

Coverage of Proposed sites in Brisbane **with** site CA-SFO0273C at **65ft**



Wimax Coverage

No Coverage

H.3.23.

Clearwire, LLC • Proposed Base Station (Site No. CA-SFO0273B)
385 Valley Drive • Brisbane, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Clearwire, LLC, a personal wireless service provider, to evaluate the base station (Site No. CA-SFO0273B) proposed to be located at 385 Valley Drive in Brisbane, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. In Docket 93-62, effective October 15, 1997, the FCC adopted the human exposure limits for field strength and power density recommended in 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 exposure limits. 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:

Personal Wireless Service	Approx. Frequency	Occupational Limit	Public Limit
Broadband Radio ("BRS")	2,600 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Advanced Wireless ("AWS")	2,100	5.00	1.00
Personal Communication ("PCS")	1,950	5.00	1.00
Cellular Telephone	870	2.90	0.58
Specialized Mobile Radio ("SMR")	855	2.85	0.57
Long Term Evolution ("LTE")	700	2.33	0.47
[most restrictive frequency range]	30–300	1.00	0.20

Power line frequencies (60 Hz) are well below the applicable range of these standards, and there is considered to be no compounding effect from simultaneous exposure to power line and radio frequency fields.

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 about 1 inch thick. 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. Along with the low power of such facilities, 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 Clearwire, including drawings by Streamline Engineering and Design, Inc., dated October 28, 2009, it is proposed to mount three Argus Model LLPX310R directional panel BRS antennas on a 12-foot extension above one of the tall PG&E power line towers sited near the single-story commercial building located at 385 Valley Drive in Brisbane. The antennas would be mounted with 2° downtilt at an effective height of about 112½ feet above ground and would be oriented at about 120° spacing, to provide service in all directions. The maximum effective radiated power in any direction would be 970 watts. Also proposed to be mounted on the tower are three microwave "dish" antennas, for interconnection of this site with others in the Clearwire network.

Presently located at the site are similar antennas for use by Verizon Wireless and T-Mobile, other wireless telecommunications carriers. For the limited purposes of this study, the transmitting facilities of those carriers are assumed to be as follows:

Clearwire, LLC • Proposed Base Station (Site No. CA-SFO0273B)
385 Valley Drive • Brisbane, California

Carrier	Service	Maximum ERP	Antenna Model	Height
Verizon	PCS	640 watts	Antel BXA185063/12	131 ft
	Cellular	1,200	Antel BXA80063/8	131
	LTE	400	Antel BXA70063/8	131
T-Mobile	PCS	2,000	Andrew TMBX-6516	109
	AWS	1,000		

Study Results

For a person anywhere at ground, the maximum ambient RF exposure level due to the proposed Clearwire operation by itself, including the contributions of the microwave antennas, is calculated to be 0.000048 mW/cm^2, which is 0.0048% of the applicable public limit. The maximum calculated cumulative level at ground, for the simultaneous operation of all three carriers, is 0.094% of the public exposure limit; the maximum calculated cumulative level at the second-floor elevation of any nearby building would be 0.36% 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.

No Recommended Mitigation Measures

Due to their mounting location, the Clearwire antennas would not be accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. It is presumed that PG&E already takes adequate precautions to ensure that there is no unauthorized access to its tower. To prevent exposures in excess of the occupational limit by authorized PG&E workers, it is expected that they will adhere to appropriate safety protocols adopted by that company.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that the base station proposed by Clearwire, LLC at 385 Valley Drive in Brisbane, 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.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2011. 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.

REGISTERED PROFESSIONAL ENGINEER
WILLIAM F. HAMMETT
E-13026
M-20676
Exp. 6-30-2011
ELECTRICAL
MECHANICAL
STATE OF CALIFORNIA

William F. Hammett, P.E.

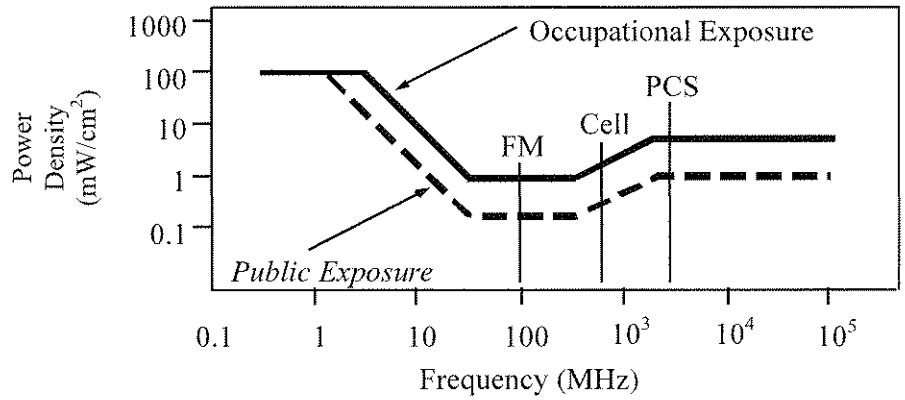
January 28, 2010

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/f²*
3.0 – 30	1842/ f	*823.8/f*	4.89/ f	*2.19/f*	900/ f²	*180/f²*
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.

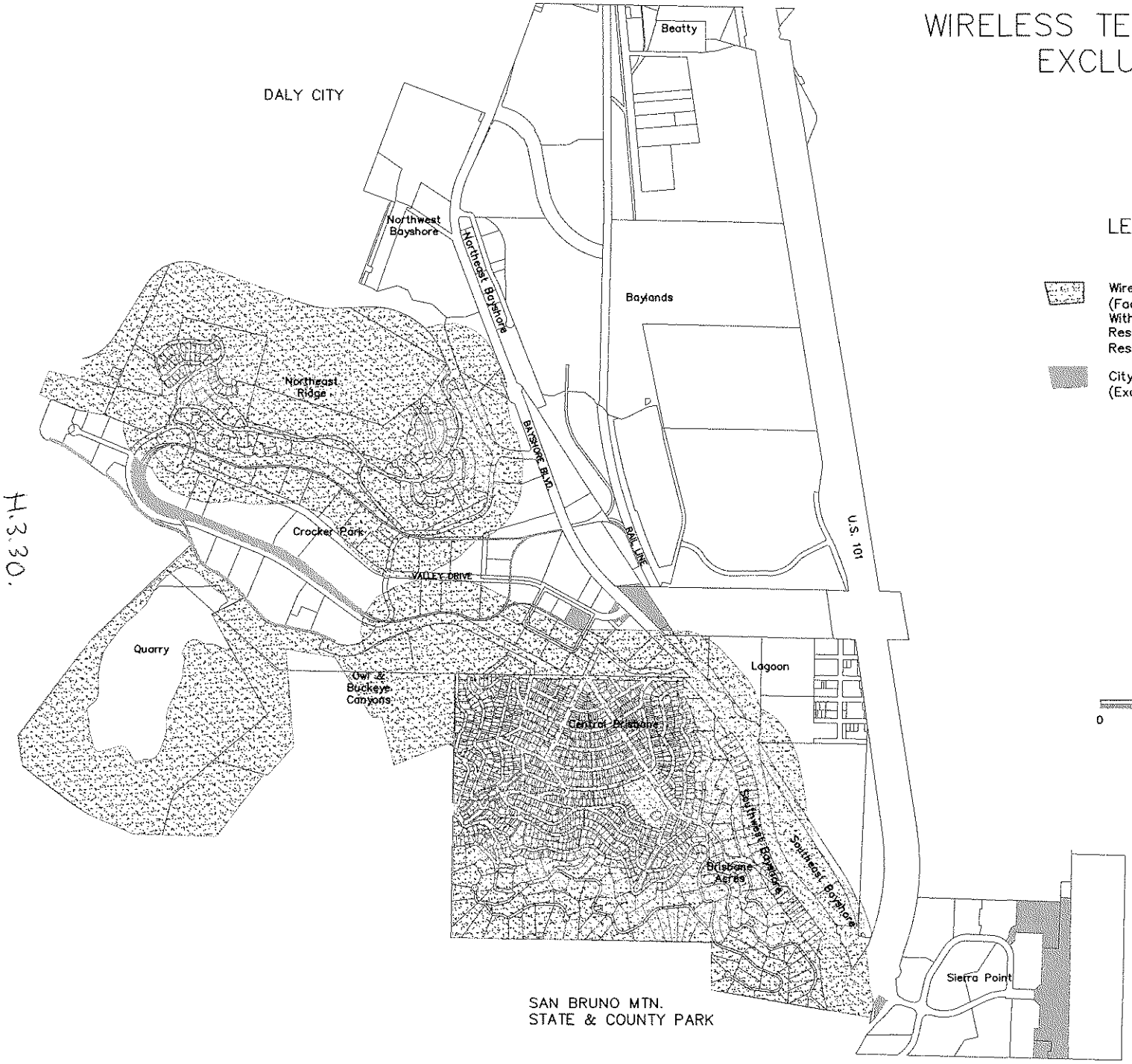
OET-65 gives this formula for calculating power density in the far field of an individual RF source:

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

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.

WIRELESS TELECOMMUNICATIONS EXCLUSION ZONES



LEGEND

Wireless Telecommunications Exclusion Zone (Facilities Not Allowed Within Open Space Areas or Within 600 ft. of Northeast Ridge or Central Brisbane Residential Districts, or 600 ft. of Southwest Bayshore Residences)

City or Redevelopment Agency Owned (Excluding Roadways)

SCALE

0 1000 2000 FT

N

Map Prepared: January 2010

H.3.30.