



**CITY OF SUNNYVALE
REPORT
Planning Commission**

October 26, 2009

SUBJECT: **2009-0507 - Clearwire LLC** [Applicant] / **Sunnyvale Village Associates** [Owner] : Application for a project located at **333 W El Camino Real** in an O/ECR (Office /El Camino Real Precise Plan) Zoning District (APN: 209-29-068)

Motion **Special Development Permit** to allow the installation of three panel antennas, three microwave dishes, a GPS antenna, and a radio cabinet on the rooftop of an existing office building.

REPORT IN BRIEF

Existing Site Conditions Three-Story Office Building

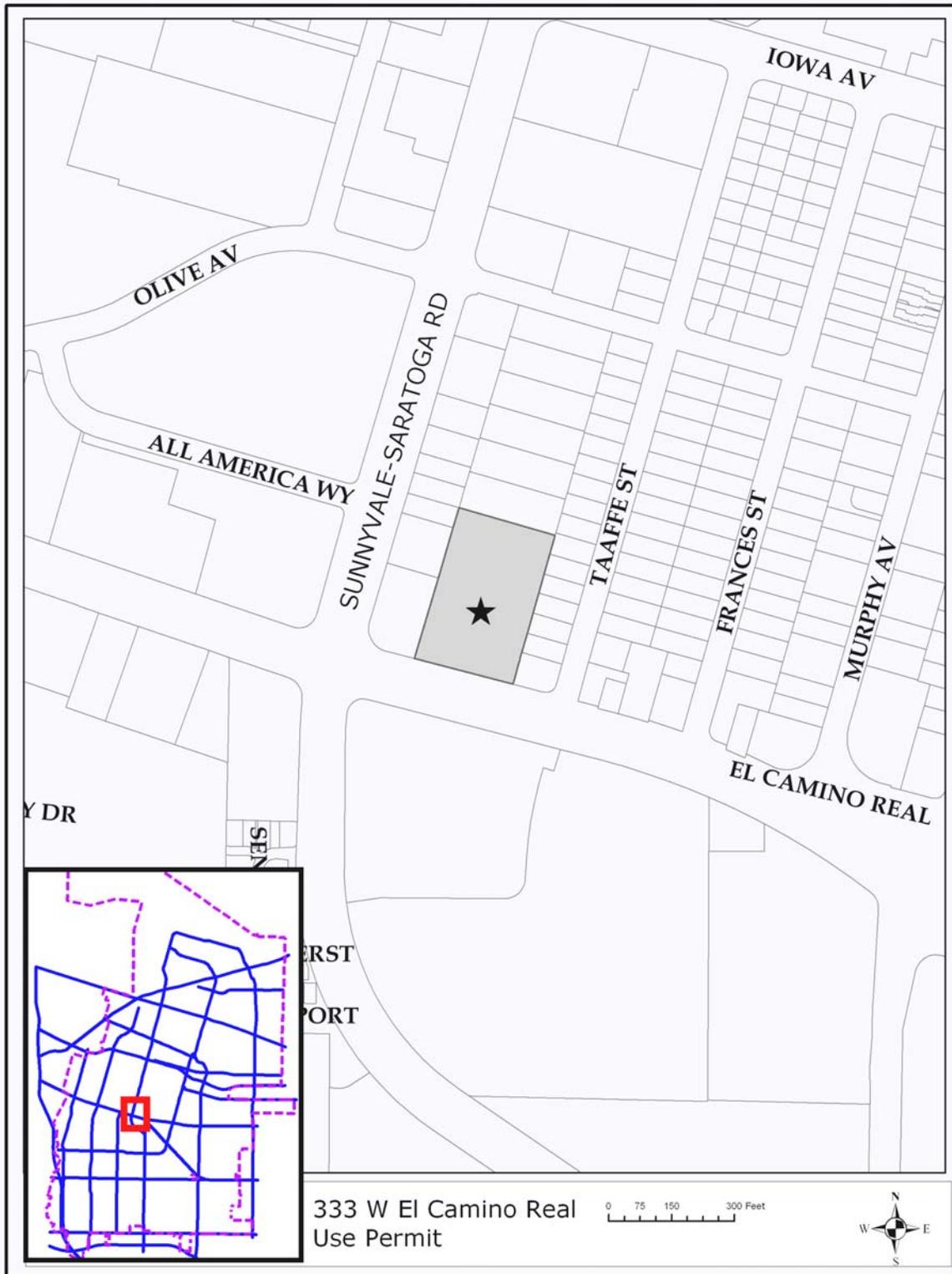
Surrounding Land Uses

North	Commercial and Residential
South	Commercial Shopping Center (Cherry Orchard)
East	Commercial
West	Public Facility (across South Mathilda Avenue)

Issues Aesthetics

Environmental Status A Class 1 Categorical Exemption relieves this project from California Environmental Quality Act provisions and City Guidelines.

Staff Recommendation Approve with Conditions



PROJECT DATA TABLE

	EXISTING	PROPOSED	REQUIRED/ PERMITTED
General Plan	Office	Same	Office
Zoning District	O/ECR	Same	O/ECR
Lot Size (acres)	2.04	Same	8,000 min.
No. of Buildings On-Site	1	Same	---
Building Height (ft.)	49' 6"	Same	Per SDP
Equipment Enclosure Height	N/A	59'	
No. of Stories	3	Same	Per SDP

ANALYSIS**Description of Proposed Project**

The proposed project is to allow a fourth telecommunication facility (Clearwire) on top of an existing office building. Existing facilities include MetroPCS, Sprint and Verizon Wireless. According to Sunnyvale Municipal Code (SMC) Section 19.54.080, telecommunications projects in office zoning districts involving three or more facilities or carriers on a single site require a major Special Development Permit (SDP); therefore, Planning Commission review is required for this project.

Background

Previous Actions on the Site: The following table summarizes previous planning applications related to the subject site.

File Number	Brief Description	Hearing/Decision	Date
2009-0775	Waiver of Screening for rooftop equipment for Verizon Wireless	MPP/Approved	10/13/09
2009-0381	Special Development Permit to allow additional antennas to an existing facility (Verizon)	Administrative Hearing /Approved	6/24/09

File Number	Brief Description	Hearing/Decision	Date
2001-0543	Special Development Permit to allow telecommunications facility (Metro PCS)	Planning Commission / Approved	10/22/01
1998-1355	Special Development Permit to allow telecommunications facility (replace existing) for GTE Mobile	Administrative Hearing / Approved	1/27/99
1997-0041	Special Development Permit to allow telecommunications facility (Sprint)	Administrative Hearing / Approved	3/26/97
1990-0221	Special Development Permit to allow telecommunications facility (GTE Mobile)	Planning Commission / Approved	9/13/90
1981-0040	Special Development Permit to allow a 4-story office building	Planning Commission / Approved	10/27/81

A total of three wireless facilities currently occupy the site including MetroPCS, Verizon Wireless and Sprint (formerly GTE, as shown above). As noted above, a waiver of screening for an emergency generator that supports the existing Verizon Wireless telecommunication facility was recently approved at the site. The equipment has not been installed at this time but would project 6” to 1’ above the existing parapet. The subject application does not include a proposal to install an emergency generator.

Environmental Review

A Class 1 Categorical Exemption relieves this project from California Environmental Quality Act provisions and City Guidelines. Class 1 Categorical Exemptions include minor additions to existing facilities.

Special Development Permit

Site Layout and Design: The three-story office building lies along El Camino Real and is accessed by two driveways, one from El Camino Real and South Mathilda Avenue through the neighboring property to the west. Parking is located to the west and north of the building. The proposed equipment will be located on the roof towards the north end of the building which is approximately 138’ away from the property line along El Camino Real and approximately 99’ from the neighboring property to the west (approx. 250’ from

Mathilda Avenue). The facility is located approximately 232' feet from the property to residential properties to the north and 128' to the east.

The antennas are to be installed within an 8' x 8' (64 s.f.) mechanical screen enclosure which will be painted to match the existing screening that lies on top of the building. The intent of the architectural feature is to mimic an elevator penthouse. The enclosure projects 9' 6" above the building and screens the three 4' tall panel antennas, three 2' x 2' microwave dishes, and one 1' tall RF head. The GPS antenna would be located outside the enclosure nearby but behind the existing parapet wall. Associated equipment to support the antenna installation is proposed to be located within the basement of the building where other telecommunication carriers' equipment lies. The previous approved and constructed Sprint, Verizon Wireless and MetroPCS antennas are located on top or within the façade of the building. (Reference the Site Plans and Elevations in Attachment C for more detail.)

Parking/Circulation: No additional parking is required for the proposed use. The site can be accessed by the existing driveway on El Camino Real.

Radio Frequency (RF) Emissions Exposure: The Federal Communications Commission (FCC) is the final authority on safety of telecommunications facilities. If the facility meets FCC standards, the City is not permitted to make additional judgments on health and safety issues. An RF report was prepared by Hammett & Edison, Inc., which concludes that the individual exposure level for all new Clearwire equipment will be 0.072% of the limit for general public exposure and 1% for all carriers on-site for anywhere on the ground. The study also states that the microwave dishes make no significant contribution to the RF exposure (Attachment E, RF Study). The project complies with Federal requirements; therefore the proposed application can be considered on design and location criteria only.

Visual Impacts and Project Alternatives: The applicant has designed the telecommunication facility to be within an equipment enclosure similar to what would be commonly utilized for screening of air conditioning or other equipment. Although the enclosure will be partially visible, the antennas will not be visible from neighboring properties or El Camino Real and Mathilda Avenue (Attachment D, Photosimulations).

The site was chosen based on its ideal location for coverage and co-location capability. Earlier designs included a taller enclosure and locations near the center of the building which would be more visible from El Camino Real and Mathilda Avenue.

Compliance with Development Standards/Guidelines: As previously discussed, the project complies with Federal requirements for RF exposure. The

project is also subject to the Sunnyvale wireless telecommunications regulations contained in SMC Section 19.54. The proposed project meets applicable height and setback requirements for the zoning district.

In addition, the Code requires that the facility be designed with sensitivity to the surrounding area. The following design standards apply to this project:

19.54.40 (b) - All facilities shall be designed to minimize the visual impact to the greatest extent feasible, considering technological requirements, by means of placement, screening, and camouflage, to be compatible with existing architectural elements and building materials, and other site characteristics. The applicant shall use the smallest and least visible antennas possible to accomplish the owner/operator's coverage objectives.

- Similar to the required treatment of other rooftop equipment, the antennas are installed within an enclosure that is painted to match the building. The new equipment would extend approximately 9' from the building parapet. The enclosure has been designed to be the smallest size possible to match the scale of the building while also allowing for the antennas to function optimally.

19.54.40 (c) - SMC 19.54.040 - Colors and materials for facilities shall be chosen to minimize visibility. Facilities shall be painted or textured using colors to match or blend with the primary background

- The applicant proposes to paint the enclosure to match the existing building.

19.54.40 (l) - In order of preference, ancillary support equipment for facilities shall be located either within a building, in a rear yard or on a screened roofs top area. Support equipment pads, cabinets, shelters and buildings require architectural, landscape, color, or other camouflage treatment for minimal visual impact.

- All proposed ancillary equipment would be placed within the basement of the office building where other facilities' equipment lies. The equipment will not be visible from the street frontage or neighboring properties.

Fiscal Impact

No fiscal impacts other than normal fees and taxes are expected.

Public Contact

447 notices were sent to surrounding property owners and residents adjacent to subject site in addition to standard noticing practice. Staff has not received any written comments related to the proposed project.

Notice Public Hearing	Staff Report	Agenda
<ul style="list-style-type: none"> • Published in the <i>Sun</i> newspaper • Posted on the site • 447 notices mailed to the property owners and residents within 300 ft. of the project site 	<ul style="list-style-type: none"> • Posted on the City of Sunnyvale's Website • Provided at the Reference Section of the City of Sunnyvale's Public Library 	<ul style="list-style-type: none"> • Posted on the City's official notice bulletin board • City of Sunnyvale's Website

Conclusion

Findings and General Plan Goals: As conditioned, staff was able to make the required Findings based on the justifications for the Special Development Permit. Recommended Findings and General Plan Goals are located in Attachment A.

Conditions of Approval: Recommended Conditions of Approval are located in Attachment B.

Alternatives

1. Approve the Special Development Permit with attached conditions.
2. Approve the Special Development Permit with modifications.
3. Deny the Special Development Permit.

Recommendation

Alternative 1.

Prepared by:

Ryan M. Kuchenig
Project Planner

Approved by:

Steve Lynch
Senior Planner

Attachments:

- A. Recommended Findings
- B. Recommended Conditions of Approval
- C. Site and Architectural Plans
- D. Photosimulations
- E. RF Study
- F. Letter from the Applicant

Recommended Findings - Special Development Permit

Goals and Policies that relate to this project are:

Telecommunications Policy Goal B: *Promote universal access to telecommunications services for all Sunnyvale citizens.*

Telecommunications Policy

Action Statement A.1.e: Support retention of local zoning authority for cellular towers, satellite dish antennas, and other telecommunications equipment, facilities and structures.

The Wireless Telecommunications Policy promotes retention of local zoning authority when reviewing telecommunications facilities. The zoning code requires that the location of telecommunication facilities be designed with sensitivity to the surrounding areas. The proposed facility is compliant with all wireless telecommunication development standards:

- *The project, in addition to existing facilities on-site, meets all FCC RF emissions standards.*
- *The facility will be repainted to better match the design building and reduce its current visibility.*
- *Associated equipment is not visible and is located within a basement enclosure in an existing parking garage.*

Land Use and Transportation Element Action Statement N1.1 – *Limit the intrusion of incompatible uses and inappropriate development into city neighborhoods.*

Land Use and Transportation Element Policy N1.3 – *Support a full spectrum of conveniently located commercial public and quasi-public uses that add to the positive image of the city.*

1. The proposed use attains the objectives and purposes of the General Plan of the City of Sunnyvale as the project. *[Finding met]*

The proposed project will allow for increased telecommunications coverage, while meeting federal emissions requirements for human exposure. Although the site is adjacent to residential uses and a transportation corridor, the proposed facility is adequately screened and would allow co-location with three other facilities. The project minimizes the need build a telecommunications facility on a more sensitive nearby location.

2. The proposed use ensures that the general appearance of proposed structures, or the uses to be made of the property to which the application refers, will not impair either the orderly development of, or the existing uses being made of, adjacent properties. *[Finding met]*

The proposed facility, as screened within an enclosure, adequately blends in with the architecture of the office building and minimally visible to neighboring properties. As conditioned and required by Code, the facility is required to meet all applicable local and federal standards for telecommunications facilities.

Standard Requirements

The following is a list of standard requirements. This list is intended to assist the applicant and public in understanding basic related requirements, and is not intended as an exhaustive list. These requirements cannot be waived or modified.

- A. **Testing Within 15 Days:** The applicant shall test any wireless telecommunications site installed in the City of Sunnyvale within 15 days of operating the tower. The test shall confirm that any Emergency 911 wireless call made through the wireless telecommunications site shall provide Enhanced 911 capability (including phase 2 information when available from the caller's device) and direct the call to the City of Sunnyvale Department of Public Safety dispatcher, ensuring phase 2 information is transferred. If the call is to be directed elsewhere pursuant to State and Federal law the applicant shall ensure that the Enhanced 911 information transfers to that dispatch center. This capability shall be routinely tested to ensure compliance as long as the approved wireless telecommunications site is in service.
- B. **Permit Expiration:** The Special Development Permit for the use shall expire if the use is discontinued for a period of one year or more.
- C. **Permit Lapse if not Exercised (Ordinance 2895-09):** The Special Development Permit shall be valid for three (3) years from the date of approval by the final review authority (as adopted by City Council on April 21, 2009, RTC 09-094). Extensions of time may be considered, for a maximum of two one year extensions, if applied for and approved prior to the expiration of the permit approval. If the approval is not exercised within this time frame, the permit is null and void.
- D. **Building Permits:** Obtain Building Permits.
- E. **Certification:** Before January 31 of each even numbered year following the issuance of any authorizing establishment of a wireless telecommunication facility, an authorized representative for each wireless carrier providing service in the City of Sunnyvale shall provide written certification to the City executed under penalty of perjury that (i) each facility is being operated in accordance with the approved local and federal permits and includes test results that confirm the facility meets city noise requirements and federal RF emissions standards; (ii) each facility complies with the then-current general and design standards and is in compliance with the approved plans; (iii) whether the facility is currently being used by the owner or operator; and (iv) the basic contact and site information supplied by the owner or operator is current.
- F. **Renewal:** Every owner or operator of a wireless telecommunication facility shall renew the facility permit at least every ten (10) years from

the date of initial approval. If a permit or other entitlement for use is not renewed, it shall automatically become null and void without notice or hearing ten (10) years after it is issued, or upon cessation of use for more than a year and a day, whichever comes first. Unless a new use permit or entitlement of use is issued, within one hundred twenty (120) days after a permit becomes null and void all improvements, including foundations and appurtenant ground wires, shall be removed from the property and the site restored to its original pre-installation condition within one hundred eighty (180) days of nonrenewal or abandonment.

- G. **Comply with Applicable Regulations:** The facility must comply with any and all applicable regulations and standards promulgated or imposed by any state or federal agency, including but not limited to the Federal Communications Commission and Federal Aviation Agency.
- H. **RF Emissions:** Certification must be provided that the proposed facility will at all times comply with all applicable health requirements and standards pertaining to RF emissions.
- I. **Business License:** The owner or operator of the facility shall obtain and maintain current at all times a business license as issued by the city.
- J. **Maintain Current Information:** The owner or operator shall maintain, at all times, a sign mounted on the outside fence showing the operator name, site number and emergency contact telephone number. The owner or operator of the facility shall also submit and maintain current at all times basic contact and site information on a form to be supplied by the city. The applicant shall notify city of any changes to the information submitted within thirty (30) days of any change, including change of the name or legal status of the owner or operator. This information shall include, but is not limited to the following:
 - i. Identity, including name, address and telephone number, and legal status of the owner of the facility including official identification numbers and FCC certification, and if different from the owner, the identity and legal status of the person or entity responsible for operating the facility.
 - ii. Name, address and telephone number of a local contact person for emergencies.
 - iii. Type of service provided.
- K. **Good Repair:** All facilities and related equipment, including lighting, fences, shields, cabinets, and poles, shall be maintained in good repair, free from trash, debris, litter and graffiti and other forms of vandalism, and any damage from any cause shall be repaired as soon as reasonably possible so as to minimize occurrences of dangerous conditions or visual blight. Graffiti shall be removed from any facility or equipment as soon as

practicable, and in no instance more than forty-eight (48) hours from the time of notification by the city.

- L. **Minimize Noise:** The facility shall be operated in such a manner so as to minimize any possible disruption caused by noise. Although not approved at this time, backup generators shall only be operated during periods of power outages, and shall not be tested on weekends or holidays, or between the hours of 10:00 p.m. and 7:00 a.m. on weekday nights. At no time shall equipment noise from any source exceed an exterior noise level of 60 dB at the property line.
- M. **Responsibility to Maintain:** The owner or operator of the facility shall routinely and regularly inspect each site to ensure compliance with the standards set forth in the Telecommunications Ordinance.
- N. **Hold Harmless:** The wireless telecommunication facility provider shall defend, indemnify, and hold harmless the city or any of its boards, commissions, agents, officers, and employees from any claim, action or proceeding against the city, its boards, commission, agents, officers, or employees to attack, set aside, void, or annul, the approval of the project when such claim or action is brought within the time period provided for in applicable state and/or local statutes. The city shall promptly notify the provider(s) of any such claim, action or proceeding. The city shall have the option of coordinating in the defense. Nothing contained in this stipulation shall prohibit the city from participating in a defense of any claim, action, or proceeding if the city bears its own attorney's fees and costs, and the city defends the action in good faith.
- O. **Liability:** Facility lessors shall be strictly liable for any and all sudden and accidental pollution and gradual pollution resulting from their use within the city. This liability shall include cleanup, intentional injury or damage to persons or property. Additionally, lessors shall be responsible for any sanctions, fines, or other monetary costs imposed as a result of the release of pollutants from their operations. Pollutants include any solid, liquid, gaseous or thermal irritant or contaminant, including smoke, vapor, soot, fumes, acids, alkalis, chemicals, and waste. Waste includes materials to be recycled, reconditioned or reclaimed.
- P. **No Interference with City Communication Systems:** The facility operator shall be strictly liable for interference caused by the facility with city communication systems. The operator shall be responsible for all labor and equipment costs for determining the source of the interference, all costs associated with eliminating the interference, (including but not limited to filtering, installing cavities, installing directional antennas, powering down systems, and engineering analysis), and all costs arising from third party claims against the city attributable to the interference.

- Q. **No Threat to Public Health:** The facility shall not be sited or operated in such a manner that it poses, either by itself or in combination with other such facilities, a potential threat to public health. To that end, the subject facility and the combination of on-site facilities shall not produce at any time power densities in any inhabited area that exceed the FCC's Maximum Permissible Exposure (MPE) limits for electric and magnetic field strength and power density for transmitters or any more restrictive standard subsequently adopted or promulgated by the federal government.
- R. **RF Emissions Studies:** The applicant shall submit to the Director of Community Development Radio Frequency Emissions at least two reports of field measurements showing: 1.) The ambient level of RF emissions before construction of the facility and 2.) The actual level of emissions after the facility is in place and operating at or near full capacity

Recommended Conditions of Approval - Special Development Permit

In addition to complying with all applicable City, County, State and Federal Statutes, Codes, Ordinances, Resolutions and Regulations, Permittee expressly accepts and agrees to comply with the following conditions of approval of this Permit:

1. **Project Conformance:** Project shall be in conformance with the plans approved at the public hearing(s). Minor changes may be approved by the Director of Community Development; major changes may be approved at a public hearing.
2. **Execute Permit Document:** Execute a Special Development Permit document prior to issuance of the building permit.
3. **Conditions of Approval on Plans:** The Conditions of Approval shall be reproduced on a page of the plans submitted for a Building permit for this project.

clearwire®

SUNNYVALE FINANCIAL PLAZA

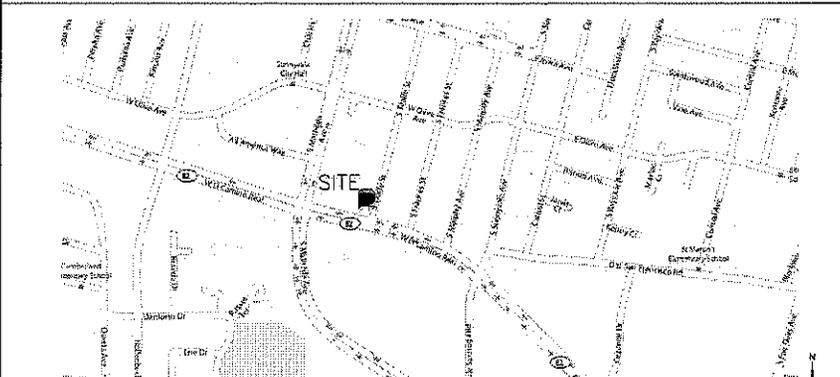
CA-SJC0060A

333 EL CAMINO REAL SUNNYVALE, CA 94087

SIGNATURE BLOCK

ZONING MANAGER	DATE
SITE ACC. MANAGER	DATE
RF MANAGER	DATE
CONSTRUCTION MANAGER	DATE
MICROWAVE MANAGER	DATE

VICINITY MAP - N.T.S.



CODE COMPLIANCE

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

- | | |
|--|---|
| 1. CALIFORNIA ADMINISTRATIVE CODE (INCL TITLE 24 & 25) | 6. ANSI/EIA-222-F LIFE SAFETY CODE NFPA-101 |
| 2. 2007 CALIFORNIA BUILDING CODE | 7. 2007 CALIFORNIA PLUMBING CODE |
| 3. CITY/COUNTY ORDINANCES | 8. 2007 CALIFORNIA ELECTRICAL CODE |
| 4. BUILDING OFFICIALS AND CODE ADMINISTRATORS (BOCA) | 9. LOCAL BUILDING CODE |
| 5. MECHANICAL 2007 CALIFORNIA CODE | |

PROJECT SUMMARY

PROPERTY OWNER: SUNNYVALE VILLAGE ASSOCIATION 333 EL CAMINO REAL SUNNYVALE, CA 94087 CONTACT: EMO V. BUGHII PHONE: .	ARCHITECT: DELTA GROUPS ENGINEERING, INC. 5635 WEST LAS POSITAS, SUITE 403 PLEASANTON, CA 94588 NAME: FRANÇOIS ONG CONTACT: HAROLD TRIAS PHONE: (925) 468-0115
APPLICANT: CLEARWIRE 2999 OAK ROAD, SUITE 110 WALNUT CREEK, CA 94597 CONTACT: TOM DERKAS PHONE: (925) 202-3333	STRUCTURAL ENGINEER: DELTA GROUPS ENGINEERING, INC. 5635 WEST LAS POSITAS, SUITE 403 PLEASANTON, CA 94588 CONTACT: ALBERT TENG PHONE: (949) 622-0333
LEASING MANAGER: GOODMAN NETWORKS 2803 CAMINO RAMON, BISHOP RANCH 3 2ND FLOOR SAN RAMON, CA 94503 CONTACT: DAVID SNYPES PHONE: (530) 208-8097	CONSTRUCTION MANAGER: GOODMAN NETWORKS 2803 CAMINO RAMON, BISHOP RANCH 3 2ND FLOOR SAN RAMON, CA 94503 CONTACT: MITCHELL SMITH PHONE: (925) 595-9353
ZONING MANAGER: GOODMAN NETWORKS 2803 CAMINO RAMON, BISHOP RANCH 3 2ND FLOOR SAN RAMON, CA 94503 CONTACT: GORDON BELL PHONE: (530) 847-1932	

BUILDING/ SITE DATA LEGEND

LATITUDE: 37° 22' 08.00" N (NAD83)
LONGITUDE: 122° 02' 08.00" W (NAD83)
ELEVATION: 103' AMSL (NGVD 29)
A.P.N.: 209-29-068
ZONING: O, ADMINISTRATION & OFFICE
PROPOSED USE: B
TYPE OF CONSTRUCTION: VN
LEASE AREA: 9 SQ. FT.
HANDICAP REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, HANDICAPPED ACCESS NOT REQUIRED.
TITLE 24 REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. TITLE 24 IS EXEMPT.

PROJECT DESCRIPTION

INSTALLATION OF A WIRELESS COMMUNICATIONS FACILITY, INCLUDING THE INSTALLATION OF (1) EQUIPMENT CABINET (3) MICROWAVE DISHES AND (3) PANEL ANTENNAS WITHIN A NEW MECHANICAL SCREEN WALL ENCLOSURE, AND (1) GPS.

DRIVING DIRECTIONS

FROM: CLEARWIRE REGIONAL OFFICE 2999 OAK ROAD, SUITE 110 WALNUT CREEK, CA 94597 TO: 333 EL CAMINO REAL SUNNYVALE, CA 94087 DISTANCE: 50.77 MILES

1. START AT 2999 OAK RD, WALNUT CREEK GOING TOWARD TREAT BLVD
2. TURN RIGHT ON TREAT BLVD
3. TURN RIGHT ON N MAIN ST
4. TURN RIGHT TO TAKE RAMP ONTO I-680 S TOWARD OAKLAND/SAN JOSE
5. TAKE EXIT #12/MISSION BLVD ONTO MISSION BLVD(CA-262 W) TOWARD MISSION BLVD WEST/WARM SPRINGS DISTRICT (I-680)/UC EXTENSION
6. TAKE LEFT RAMP ONTO I-680 S TOWARD SAN JOSE
7. TAKE THE MTN VIEW EXIT ONTO CA-237 W
8. TAKE EXIT #38/SUNNYVALE (US-101 S)/MATHILDA AVE
9. TURN LEFT ON N MATHILDA AVE
10. TURN LEFT ON W OLIVE AVE
11. TURN RIGHT ON S MURPHY AVE
12. TURN RIGHT ON W EL CAMINO REAL(CA-82 N)
13. ARRIVE AT 333 W EL CAMINO REAL, SUNNYVALE, ON THE RIGHT

clearwire

4400 CARLTON POINT
KIRKLAND, WA 98033

PROJECT INFORMATION:

SUNNYVALE FINANCIAL PLAZA
CA-SJC0060A
 333 EL CAMINO REAL
 SUNNYVALE, CA 94087
 SANTA CLARA COUNTY

CURRENT ISSUE DATE:

10/02/09

ISSUED FOR:

ZONING (100%)

REV.: DATE: DESCRIPTION: BY:

REV.	DATE	DESCRIPTION	BY
1	10/02/09	ZONING (100%)	JK
2	9/3/09	ZONING (100%)	CL
3	8/20/09	ZONING (100%)	JK
4	8/19/09	ZONING (100%)	JK
5	8/6/09	ZONING (100%)	JK
6	7/30/09	ZONING (100%)	JK
7	6/30/09	ZONING (100%)	CL
8	6/5/09	ZONING (90%)	JS

PLANS PREPARED BY:

DELTA GROUPS ENGINEERING, INC.
 CONSULTING ENGINEERS
 5635 WEST LAS POSITAS, SUITE 403
 PLEASANTON, CA 94588
 TEL: (925) 468-0115 FAX: (925) 468-0350

CONSULTANT:

SEAL OF APPROVAL:

ATTACHED
 Page 1
 TITLE SHEET

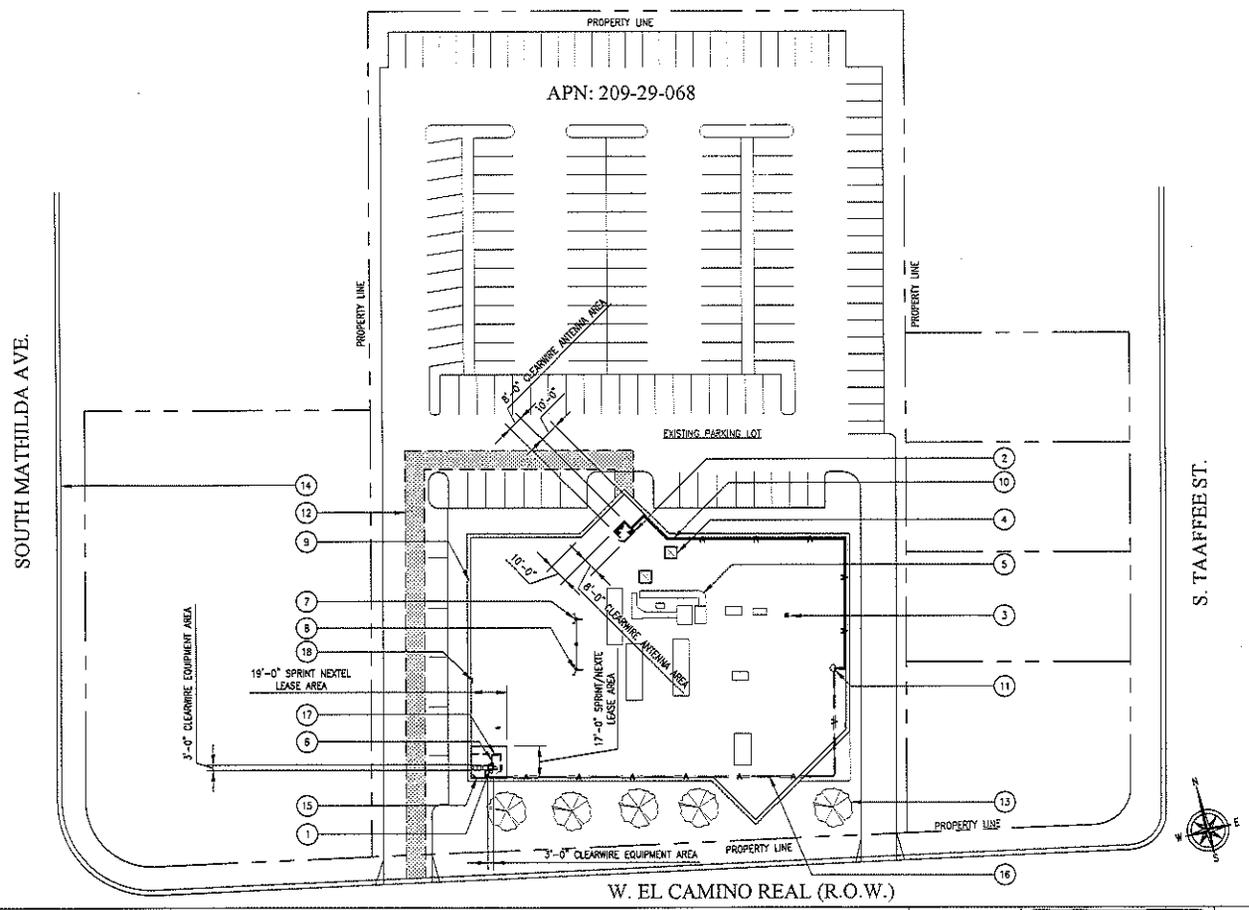
SHEET NUMBER:

T1 8
 PG9CL027

KEY NOTES:

- 1 PROPOSED 3'-0" X 3'-0" CLEARWIRE EQUIPMENT AREA (9 SQ. FT. TOTAL) INSIDE EXISTING SPRINT/NEXTEL LEASE AREA LOCATED AT BASEMENT-LEVEL
- 2 PROPOSED CLEARWIRE PANEL ANTENNAS AND MICROWAVES WITHIN A PROPOSED IN A 8'-0" X 8'-0" MECHANICAL SCREEN ENCLOSURE (64.0 SQ. FT. TOTAL)
- 3 EXISTING SPRINT/NEXTEL PANEL ANTENNA (TYP.)
- 4 EXISTING SKYLIGHT (TYP.)
- 5 EXISTING HVAC EQUIPMENT (TYP.)
- 6 PROPOSED CLEARWIRE ELECTRICAL ROUTING - TO LOCATION OF EXISTING SPRINT/NEXTEL POWER PANEL (POWER P.O.C.) - LOCATED AT BASEMENT-LEVEL
- 7 FUTURE PANEL ANTENNAS (BY VERIZON WIRELESS)
- 8 EXISTING PANEL ANTENNAS (BY VERIZON WIRELESS)
- 9 EXISTING BUILDING OUTLINE
- 10 PROPOSED CLEARWIRE ANTENNA COAX AND FIBER CABLE ROUTING WITHIN PROPOSED 12" WIDE CABLE TRAY - MOUNTED TO EXISTING PARAPET WALL
- 11 EXISTING SPRINT/NEXTEL ROOFTOP DOGHOUSE
- 12 PROPOSED 10'-0" WIDE ACCESS EASEMENT
- 13 EXISTING LANDSCAPE: 30'-11 HIGH (TYP. OF 5)
- 14 EXISTING CONCRETE SIDEWALK (TYP.)
- 15 EXISTING 19'-0" X 17'-0" EQUIPMENT AREA (323 SQ. FT. TOTAL)
- 16 PROPOSED CLEARWIRE COAX AND FIBER CABLE ROUTING WITHIN EXISTING SPRINT/NEXTEL CABLE TRAY - MOUNTED TO EXISTING WALL
- 17 EXISTING SPRINT/NEXTEL POWER PANEL - CLEARWIRE POWER (P.O.C.)
- 18 EXISTING PANEL ANTENNAS (BY METROPCS)

NOTES:
 1. DO NOT SCALE DRAWINGS. ALL DIMENSIONS OF AND BETWEEN EXISTING BUILDINGS/STRUCTURES, OR RELATIVE DISTANCES AS SHOWN BETWEEN EXISTING BUILDINGS/STRUCTURES, PROPERTY LINES, EASEMENTS AND THE TRUE NORTH ARE TO BE CONFIRMED BY A SURVEYOR.
 2. POWER ROUTING DESIGN IS PRELIMINARY AND MUST BE VERIFIED WITH LOCAL UTILITY COMPANIES.



OVERALL SITE PLAN

SCALE: 1 inch = 30 ft. 1

clearw're

4400 CARILLON POINT
KIRKLAND, WA 98033

PROJECT INFORMATION:
SUNNYVALE FINANCIAL PLAZA
CA-SJC0060A
 333 EL CAMINO REAL
 SUNNYVALE, CA 94087
 SANTA CLARA COUNTY

CURRENT ISSUE DATE:
10/02/09

ISSUED FOR:
ZONING (100%)

REV. DATE: DESCRIPTION: BY:

10/02/09	ZONING (100%)	JK
9/3/09	ZONING (100%)	CL
8/20/09	ZONING (100%)	JK
8/19/09	ZONING (100%)	JK
8/6/09	ZONING (100%)	JK
7/30/09	ZONING (100%)	JK
6/30/09	ZONING (100%)	CL
6/5/09	ZONING (90%)	JS

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DELTA GROUPS ENGINEERING, INC.
 CONSULTING ENGINEERS
 5635 WEST LAS POSTAS, SUITE 403
 PLEASANTON, CA 94558
 TEL: (925) 466-0115 FAX: (925) 466-0355

CONSULTANT:

SEAL OF APPROVAL:

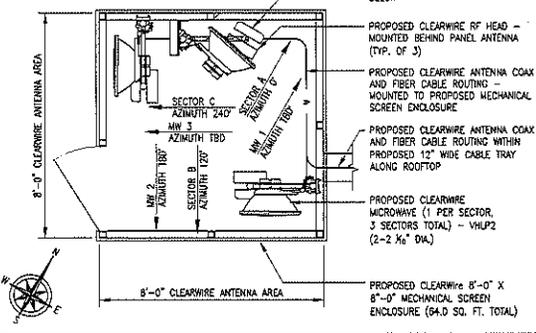
SHEET TITLE:
OVERALL SITE PLAN

SHEET NUMBER:
A1 of **8**

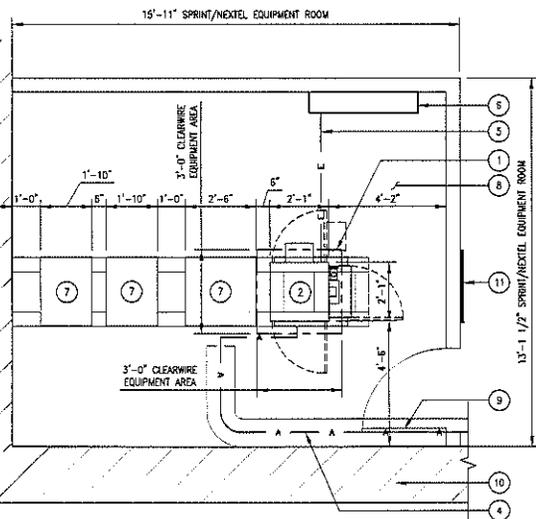
PROJ. NO.: **PG9CL027**

Page 2
 ACTIVITY
 15

NOTES:
MECHANICAL SCREEN ENCLOSURE TO BE PAINTED AND TEXTURED TO MATCH EXISTING



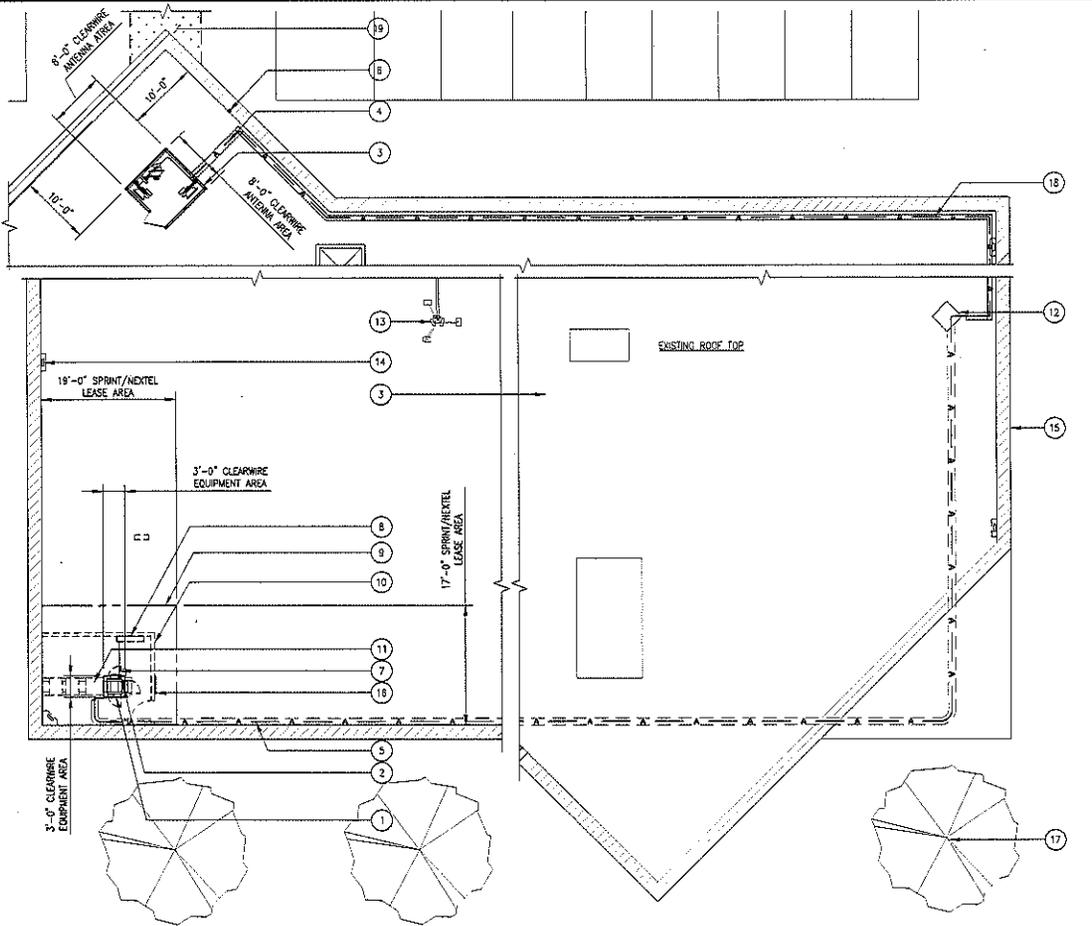
ANTENNA LAYOUT SCALE: 3/8" inch = 1 ft. 2



KEY NOTES:

- 1. PROPOSED 3'-0"x3'-0" CLEARWIRE EQUIPMENT AREA (9 SQ. FT. TOTAL)
- 2. PROPOSED CLEARWIRE EQUIPMENT CABINET - MOUNTED ON TOP OF EXISTING STEEL EQUIPMENT PLATFORM
- 3. EXISTING SPRINT/NEXTEL EMERGENCY SIGNAGE
- 4. PROPOSED CLEARWIRE ANTENNA COAX AND FIBER CABLE ROUTING WITHIN EXISTING SPRINT/NEXTEL 12" WIDE CLEARWIRE CABLE TRAY - MOUNTED TO EXISTING WALL
- 5. PROPOSED CLEARWIRE ELECTRICAL CABLE ROUTING
- 6. EXISTING SPRINT/NEXTEL POWER PANEL - CLEARWIRE POWER (P.O.C)
- 7. EXISTING SPRINT/NEXTEL EQUIPMENT CABINET
- 8. EXISTING SPRINT/NEXTEL EQUIPMENT AREA
- 9. EXISTING SPRINT/NEXTEL ACCESS ENTRY DOOR
- 10. EXISTING BUILDING WALL
- 11. EXISTING SPRINT/NEXTEL EMERGENCY CONTACT SIGNAGE

EQUIPMENT LAYOUT SCALE: 1/2" inch = 1 ft. 3



KEY NOTES:

- 1. PROPOSED 3'-0"x3'-0" CLEARWIRE EQUIPMENT AREA (9 SQ. FT. TOTAL) INSIDE EXISTING SPRINT/NEXTEL LEASE AREA - LOCATED AT BASEMENT-LEVEL
- 2. PROPOSED CLEARWIRE EQUIPMENT CABINET - MOUNTED ON TOP OF EXISTING STEEL EQUIPMENT PLATFORM (LOCATED AT BASEMENT-LEVEL)
- 3. PROPOSED CLEARWIRE PANEL ANTENNAS AND MICROWAVES WITHIN A PROPOSED 6'-0" X 8'-0" MECHANICAL SCREEN ENCLOSURE (64.0 SQ. FT. TOTAL)
- 4. PROPOSED CLEARWIRE COAX AND FIBER CABLE ROUTING WITHIN PROPOSED 12" WIDE CABLE TRAY ALONG ROOFTOP
- 5. PROPOSED CLEARWIRE COAX AND FIBER CABLE ROUTING WITHIN EXISTING SPRINT/NEXTEL CABLE TRAY - MOUNTED TO EXISTING WALL (SEE CONTINUATION 1/A-1)
- 6. PROPOSED CLEARWIRE GPS - MOUNTED BEHIND EXISTING BUILDING PARAPET WALL
- 7. PROPOSED CLEARWIRE ELECTRICAL CABLE ROUTING - LOCATED AT BASEMENT-LEVEL
- 8. EXISTING SPRINT/NEXTEL POWER PANEL - POWER (P.O.C)
- 9. EXISTING 19'-0" X 17'-0" EQUIPMENT AREA (323 SQ. FT. TOTAL)
- 10. EXISTING SPRINT/NEXTEL EQUIPMENT AREA
- 11. EXISTING SPRINT/NEXTEL EQUIPMENT CABINET (TYP.) - LOCATED AT BASEMENT-LEVEL
- 12. EXISTING SPRINT/NEXTEL ROOFTOP DOORHOUSE
- 13. EXISTING PANEL ANTENNAS (BY VERIZON WIRELESS)
- 14. EXISTING PANEL ANTENNAS (BY METROPCS)
- 15. EXISTING BUILDING PARAPET WALL
- 16. EXISTING SPRINT/NEXTEL EMERGENCY CONTACT SIGNAGE
- 17. EXISTING LANDSCAPE: 30'-11" HIGH (TYP. OF)
- 18. PROPOSED CLEARWIRE COAX AND FIBER CABLE ROUTING WITHIN PROPOSED 12" WIDE CABLE TRAY - MOUNTED TO EXISTING PARAPET - SEE CONTINUATION ON SHEET 1/A-1
- 19. PROPOSED 10'-0" WIDE ACCESS EASEMENT

EQUIPMENT AREA PLAN SCALE: 1/8" inch = 1 ft. 1

clearw're

1400 CARLLON POINT
KIRKLAND, WA 98033

PROJECT INFORMATION:

SUNNYVALE FINANCIAL PLAZA
CA-SJC0060A
333 EL CAMINO REAL
SUNNYVALE, CA 94087
SANTA CLARA COUNTY

CURRENT ISSUE DATE:
10/02/09

ISSUED FOR:
ZONING (100%)

REV.	DATE	DESCRIPTION	BY
10/02/09		ZONING (100%)	JK
9/3/09		ZONING (100%)	CL
8/20/09		ZONING (100%)	JK
8/19/09		ZONING (100%)	JK
8/6/09		ZONING (100%)	JK
7/30/09		ZONING (100%)	JK
6/30/09		ZONING (100%)	CL
6/5/09		ZONING (90%)	JS

PLANS PREPARED BY:
DELTA GROUPS ENGINEERING, INC.
CONSULTING ENGINEERS
5635 WEST LAS POSITAS, SUITE 403
PLEASANTON, CA 94508
TEL: (925) 468-0115 FAX: (925) 468-0355

CONSULTANT:

SEAL OF APPROVAL:

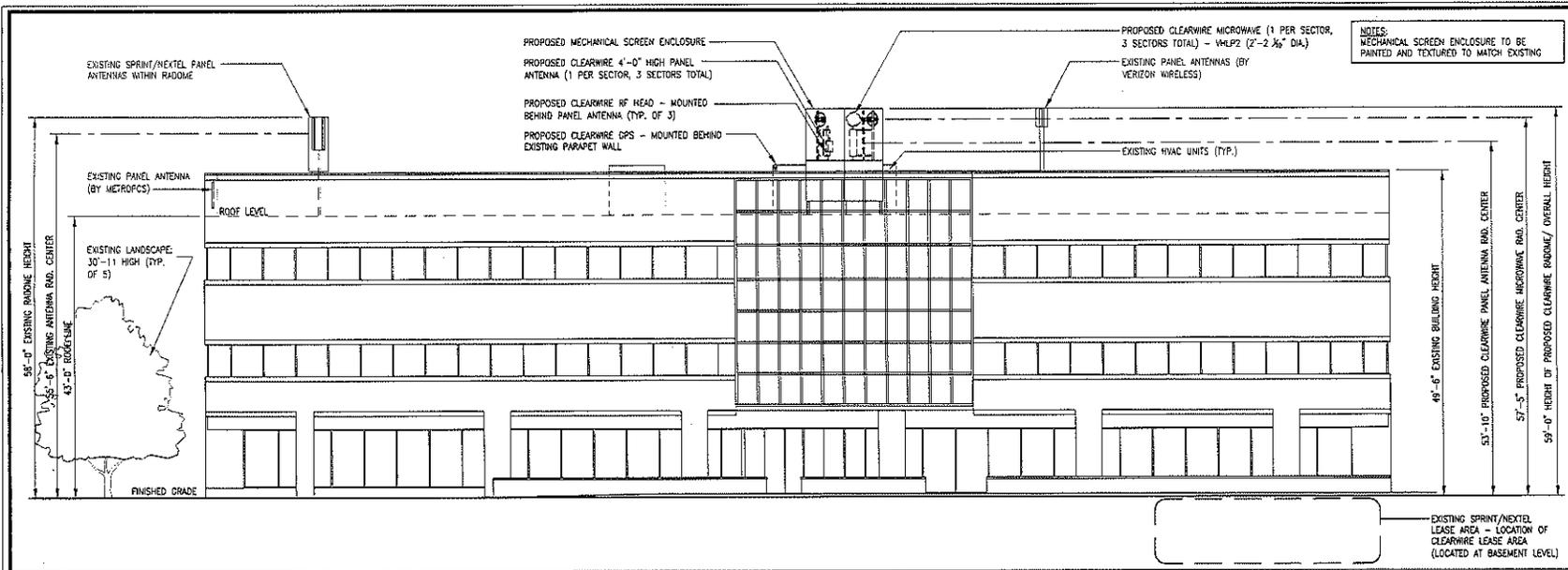
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EQUIPMENT AREA PLAN, ANTENNA LAYOUT, & EQUIPMENT LAYOUT

SHEET NUMBER: A2 PREVISION: 8

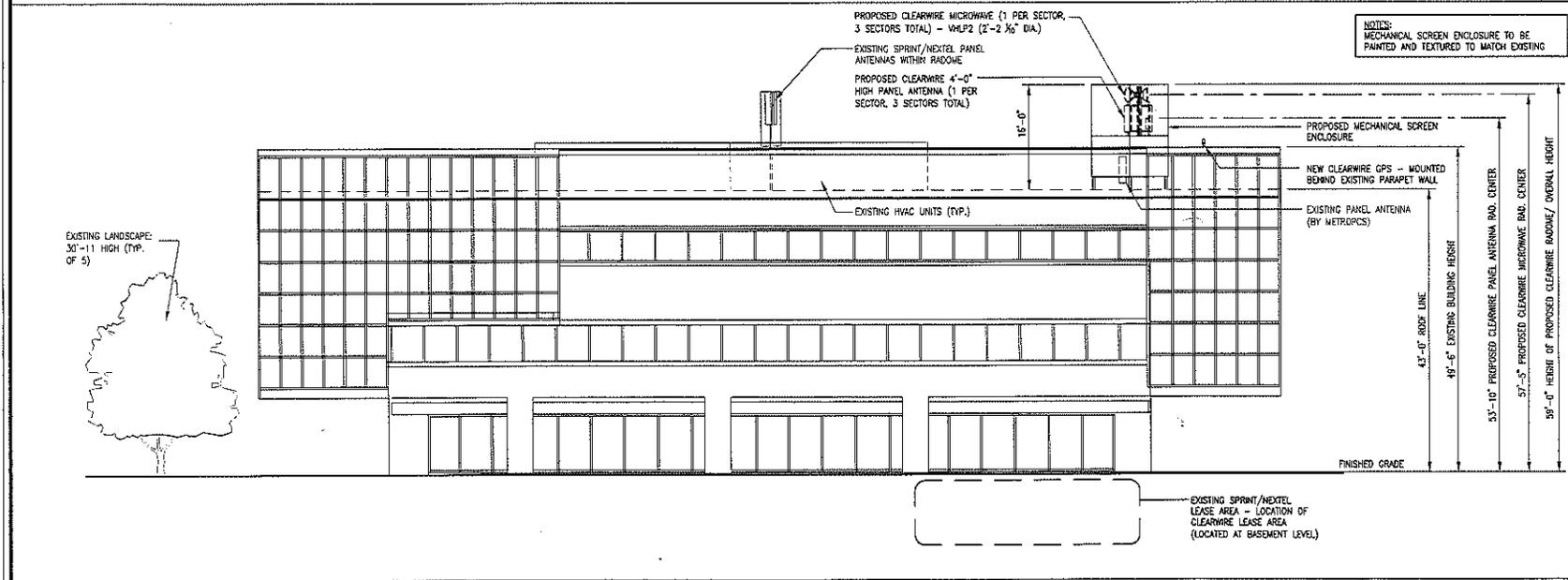
PO9CL027

ATTACHMENT

Page 3 of 5



NORTH ELEVATION



EAST ELEVATION

clearw're

4400 CARILLON POINT
KIRKLAND, WA 98033

PROJECT INFORMATION:

SUNNYVALE FINANCIAL PLAZA

CA-SJC0060A

333 EL CAMINO REAL
SUNNYVALE, CA 94087
SANTA CLARA COUNTY

CURRENT ISSUE DATE:

10/02/09

ISSUED FOR:

ZONING (100%)

REV. DATE DESCRIPTION BY:

REV.	DATE	DESCRIPTION	BY
10/02/09		ZONING (100%)	JK
9/3/09		ZONING (100%)	CL
8/20/09		ZONING (100%)	JK
8/19/09		ZONING (100%)	JK
8/6/09		ZONING (100%)	JK
7/30/09		ZONING (100%)	JK
6/30/09		ZONING (100%)	CL
6/5/09		ZONING (90%)	JS

PLANS PREPARED BY:

DELTA GROUPS ENGINEERING, INC. CONSULTING ENGINEERS

5635 WEST LAS POSITAS, SUITE 403
PLEASANTON, CA 94588
TEL: (925) 468-0115 FAX: (925) 468-0355

CONSULTANT'S

ATTACHMENT
Page 4 of 10

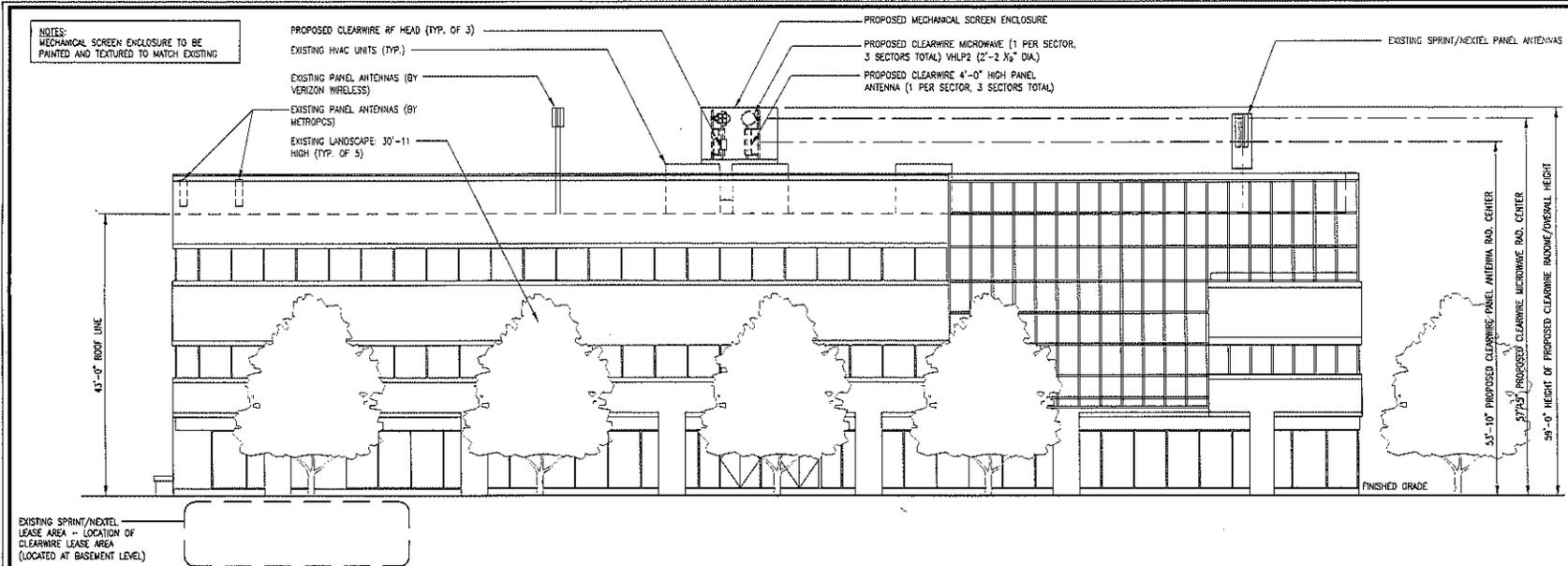
SEAL OF APPROVAL

SHEET TITLE:
NORTH & EAST ELEVATIONS

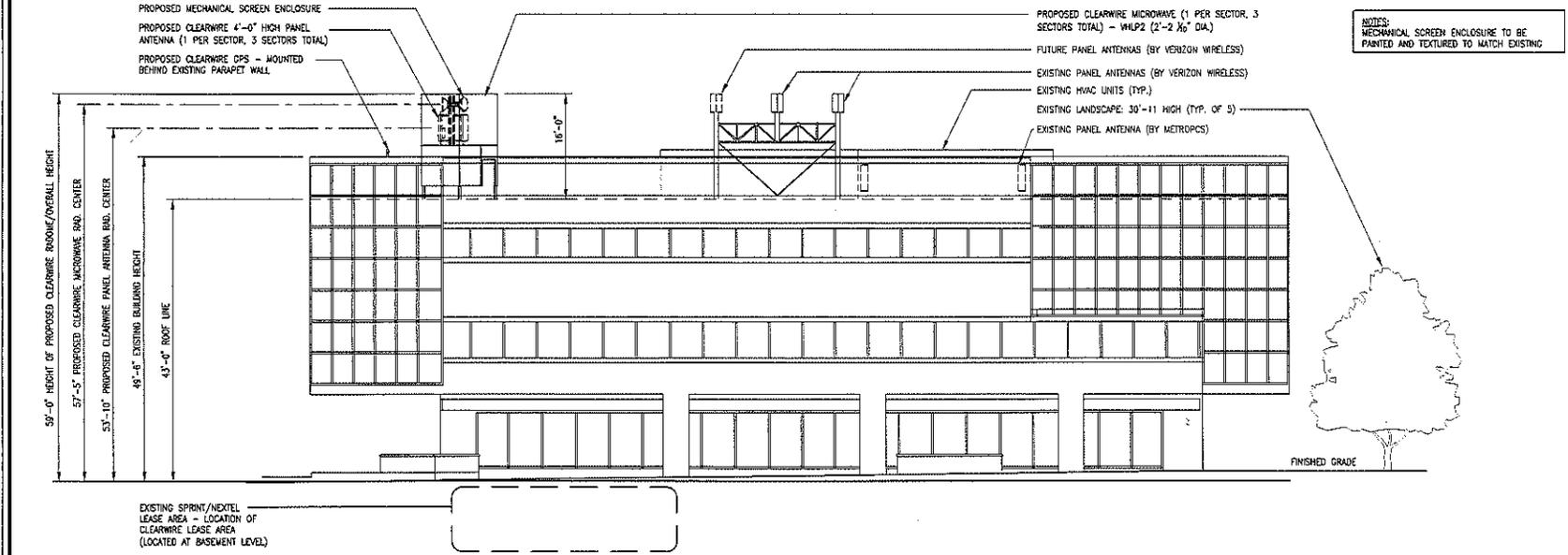
SHEET NUMBER: A3

REVISION: 8

P09CL027



SOUTH ELEVATION



WEST ELEVATION

clearw're
 4400 GARILLON POINT
 KIRKLAND, WA 98033

PROJECT INFORMATION:
SUNNYVALE FINANCIAL PLAZA
 CA-SJC0060A
 333 EL CAMINO REAL
 SUNNYVALE, CA 94087
 SANTA CLARA COUNTY

CURRENT ISSUE DATE:
 10/02/09

ISSUED FOR:
 ZONING (100%)

REV.	DATE	DESCRIPTION	BY
10/02/09	10/02/09	ZONING (100%)	JK
9/3/09	9/3/09	ZONING (100%)	CL
8/20/09	8/20/09	ZONING (100%)	JK
8/19/09	8/19/09	ZONING (100%)	JK
8/6/09	8/6/09	ZONING (100%)	JK
7/30/09	7/30/09	ZONING (100%)	JK
6/30/09	6/30/09	ZONING (100%)	CL
6/5/08	6/5/08	ZONING (80%)	JS

PLANS PREPARED BY:

DELTA GROUPS ENGINEERING, INC.
 CONSULTING ENGINEERS
 8433 WEST LAS POSITAS, SUITE 403
 PLEASANTON, CA 94589
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CONSULTANT
 Page 5 of 5
ATTACHMENT

SEAL OF APPROVAL
 5 of 5

SHEET TITLE:
 SOUTH & WEST ELEVATIONS

SHEET NUMBER: **A4** REVISION: **8**
 POSCL027

Existing

existing antennas



clear wireless broadband

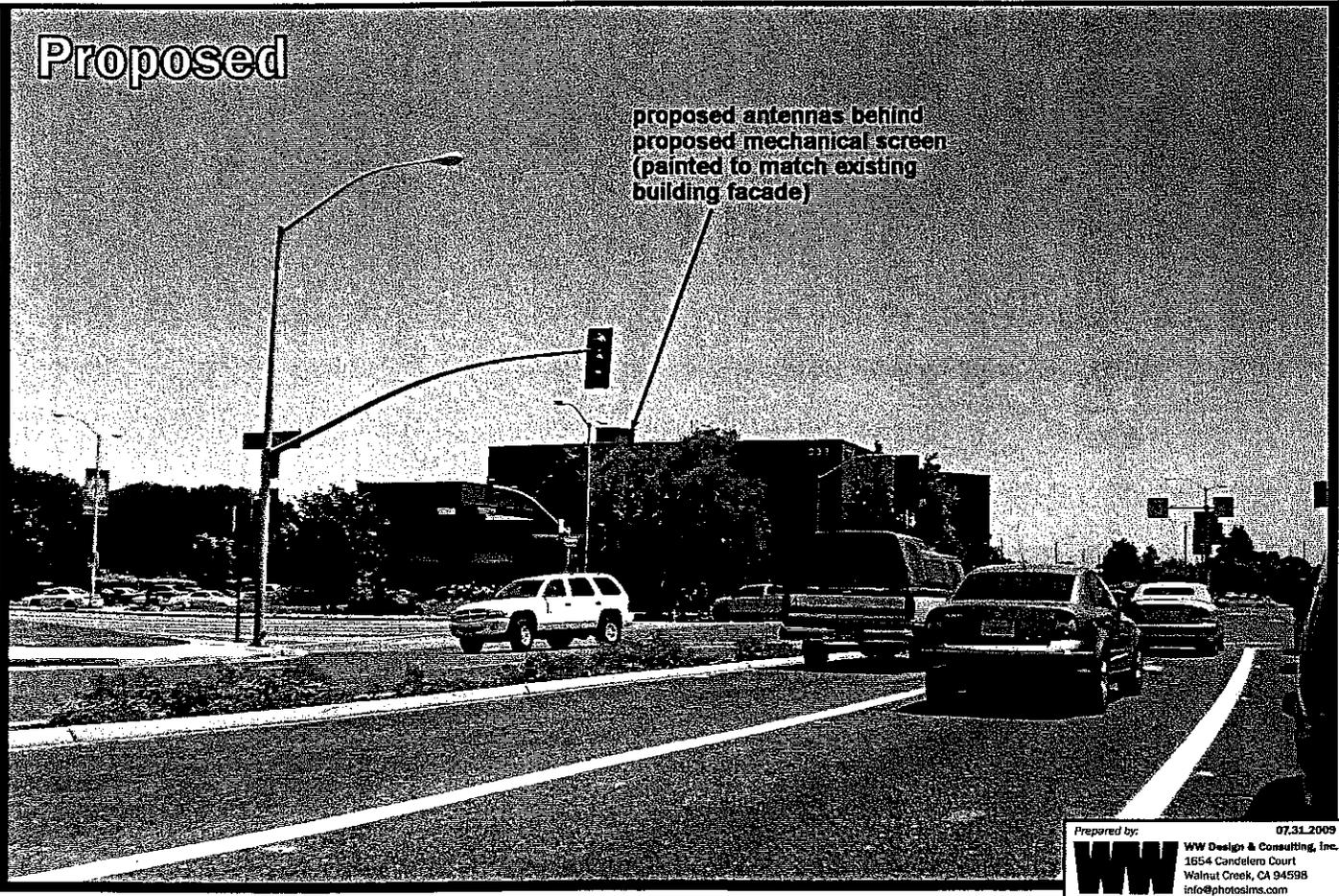
CA-SJC0060

**Sunnyvale
Financial Plaza**

333 El Camino Real
Sunnyvale, CA 94087

Proposed

proposed antennas behind
proposed mechanical screen
(painted to match existing
building facade)



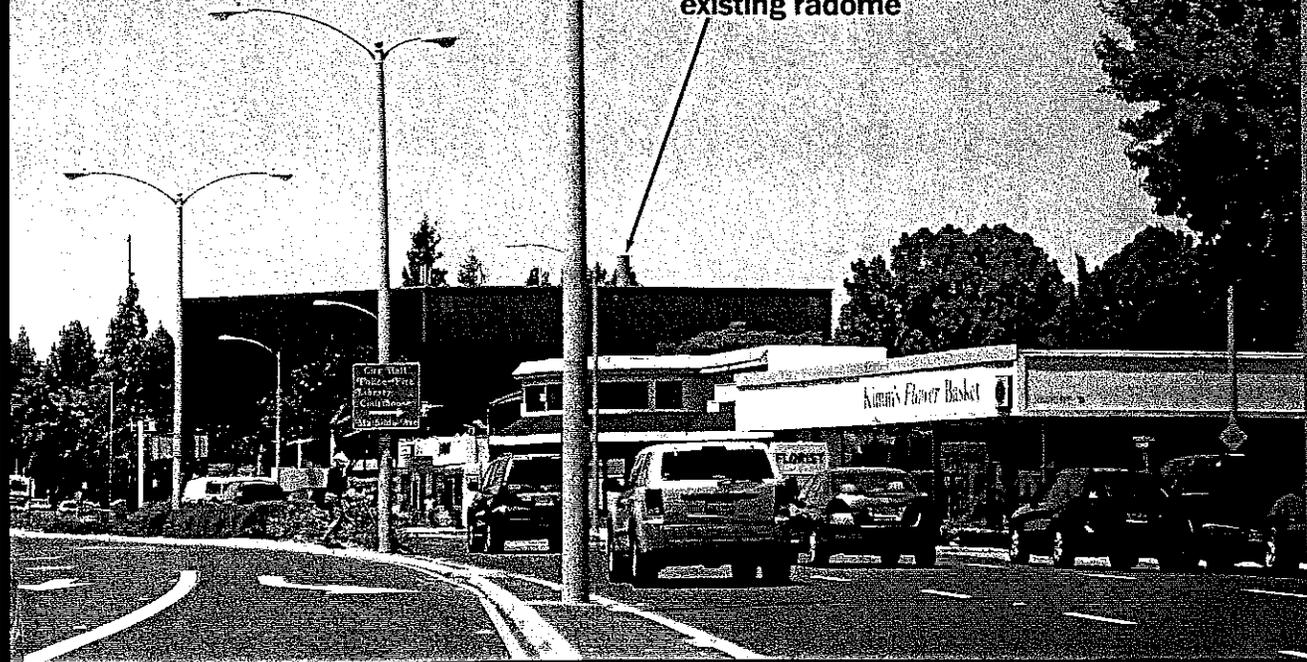
Photosimulation of the proposed telecommunication facility as seen looking east along El Camino Real

Existing

ATTACHMENT D

Page 2 of 2

existing radome



clearwire
wireless broadband

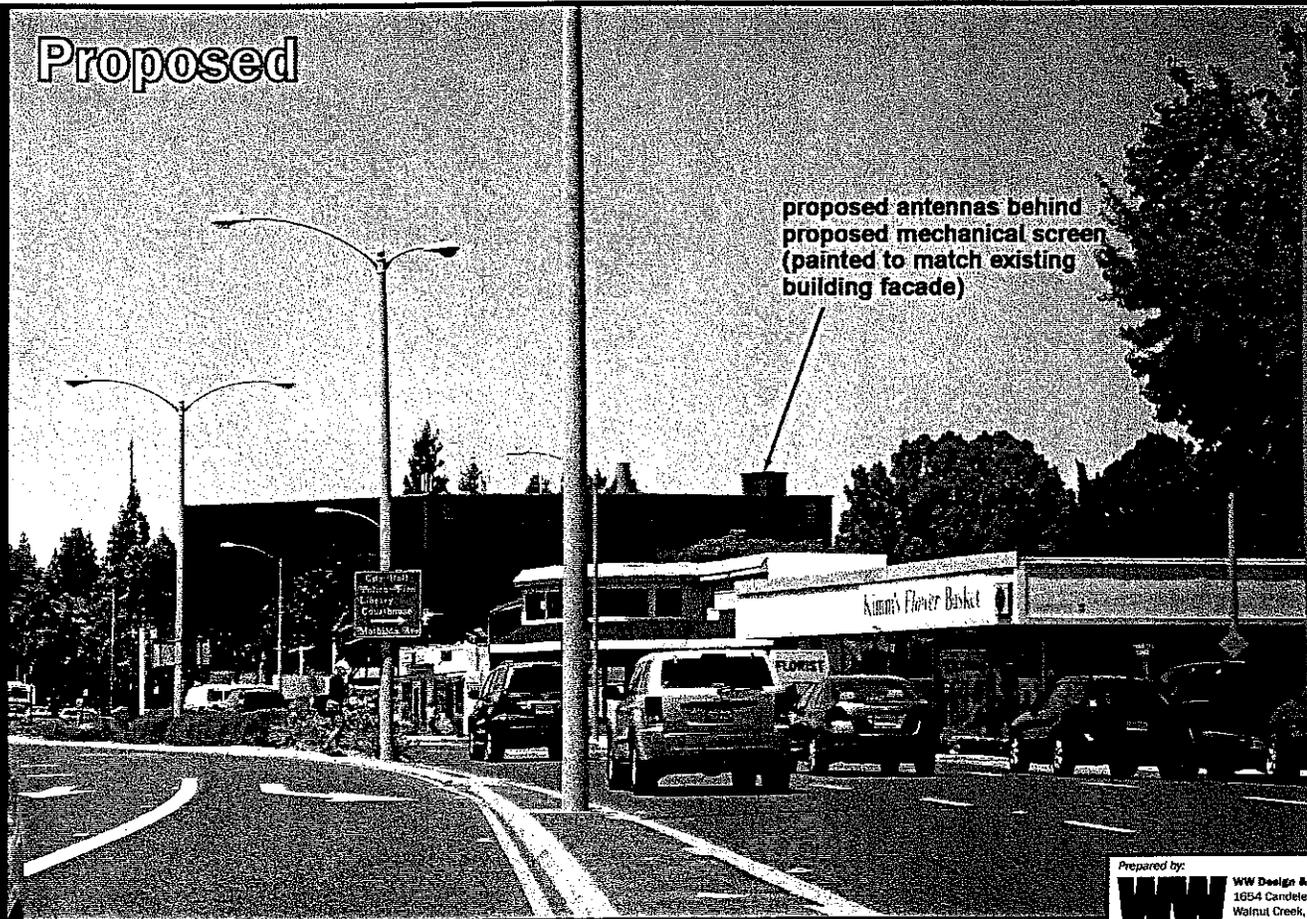
CA-SJC0060

**Sunnyvale
Financial Plaza**

333 El Camino Real
Sunnyvale, CA 94087

Proposed

proposed antennas behind
proposed mechanical screen
(painted to match existing
building facade)



Photosimulation of the proposed telecommunication facility as seen looking west along El Camino Real

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-SJC0060) proposed to be located at 333 West El Camino Real in Sunnyvale, 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

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 Delta Groups Engineering, Inc., dated June 5, 2009, it is proposed to mount three Argus Model LLPX310R directional panel antennas inside a cylindrical enclosure, configured to resemble a vent, to be placed above the roof of the three-story office building located at 333 West El Camino Real in Sunnyvale. The antennas would be mounted with 2° downtilt at an effective height of about 57 feet above ground, 14 feet above the roof, and would be oriented at about 120° spacing, to provide service in all directions. The maximum effective radiated power in any direction would be about 970 watts. Also proposed to be mounted inside the enclosure are three microwave "dish" antennas, for interconnection of this site with others in the Clearwire network.

Presently located on the same building are similar antennas for use by Sprint Nextel, Verizon Wireless, and MetroPCS, other wireless telecommunications carriers. For the limited purpose of this study, the transmitting facilities of those carriers are assumed to be as follows:

Carrier	Service	Maximum ERP	Antenna Model	Height
Sprint Nextel	PCS	1,500 watts	Andrew RR90-17	56 ¹ / ₂ ft
Verizon	PCS Cellular	1,500 1,500	} Andrew 731DG65	58 ¹ / ₂
Metro	PCS	1,890		



Study Results

For a person anywhere at ground, the maximum ambient level of RF exposure due to the proposed Clearwire operation by itself would be 0.00072 mW/cm², which is 0.072% of the applicable public limit. The maximum calculated cumulative level anywhere at ground, for the simultaneous operation of all four carriers, is 1.0% of the applicable public limit; the maximum calculated cumulative level at the second-floor elevation of any nearby building* is 1.5% of the applicable public limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels. The microwave antennas would be in point-to-point service and are so directional that they make no significant contribution to RF exposure conditions at ground.

Recommended Mitigation Measures

Due to their mounting locations, 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. To prevent occupational exposures in excess of the FCC guidelines, no access within 2 feet in front of the Clearwire antennas themselves, such as might occur during building maintenance activities, should be allowed while the site is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Posting explanatory warning signs† at roof access locations and on the antenna enclosures, such that the signs would be readily visible from any angle of approach to persons who might need to work within that distance, would be sufficient to meet FCC-adopted guidelines. Similar measures should already be in place for the other carriers at the site; applicable keep-back distances have not been determined as part of this study.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that the base station proposed by Clearwire, LLC at 333 West El Camino Real in Sunnyvale, 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. Posting of explanatory signs is recommended to establish compliance with occupational exposure limitations.

* Located at least 30 feet away, based on aerial photographs from Google Maps.

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



Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration 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.



William F. Hammett

William F. Hammett, P.E.

July 27, 2009

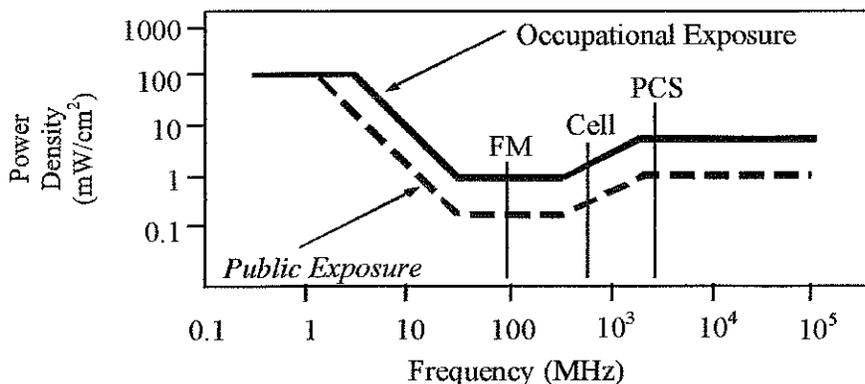


FCC Radio Frequency Protection Guide

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 Applicable Range (MHz)	Electromagnetic Fields (f is frequency of emission in MHz)					
	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm ²)	
0.3 – 1.34	614	<i>614</i>	1.63	<i>1.63</i>	100	<i>100</i>
1.34 – 3.0	614	<i>823.8/f</i>	1.63	<i>2.19/f</i>	100	<i>180/f²</i>
3.0 – 30	1842/f	<i>823.8/f</i>	4.89/f	<i>2.19/f</i>	900/f ²	<i>180/f²</i>
30 – 300	61.4	<i>27.5</i>	0.163	<i>0.0729</i>	1.0	<i>0.2</i>
300 – 1,500	3.54√f	<i>1.59√f</i>	√f/106	<i>√f/238</i>	f/300	<i>f/1500</i>
1,500 – 100,000	137	<i>61.4</i>	0.364	<i>0.163</i>	5.0	<i>1.0</i>



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.



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/cm²,

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/cm²,

where θ_{BW} = half-power beamwidth of the antenna, in degrees, and

P_{net} = net power input to the antenna, in watts,

D = distance from antenna, in meters,

h = aperture height of the antenna, in meters, and

η = aperture efficiency (unitless, typically 0.5-0.8).

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

Far Field.

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

power density $S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}$, in mW/cm²,

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 ($1.6 \times 1.6 = 2.56$). 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.





September 8, 2009

City of Sunnyvale
Planning Division
456 W. Olive Avenue
Sunnyvale, CA 94088

RE: **ClearWire Site CA-SJC0060:** Application for a ~~Major~~ Use Permit for a Wireless Communications Facility at 333 W. El Camino Real, Sunnyvale, CA, APN 209-29-068 (Revised Project Description Letter)

This letter is hereby submitted in conjunction with an application for a minor use permit for an unmanned wireless communications facility located on the rooftop of a commercial building and within an existing mechanical room at a property located at 333 W. El Camino Real in the City of Sunnyvale. The proposed facility is part of a wireless communications network for ClearWire Technologies.

I. Applicant Information

Lessee/Applicant

ClearWire Technologies
12657 Alcosta Blvd., Ste. 300
San Ramon, CA 94583
Attn: Gary Carpenter
Phone: (808) 741-7200

Agent for Applicant

bci Communications, Inc (Attn:Gordon Bell)
4020 Sierra Springs Drive
Pollock Pines, CA 95726
Phone: (530) 647-1932
Fax: (805) 456-3958
Email: gbell61639@aol.com

Property Owner

Sunnyvale Village Assoc./Biagini Properties, Inc
333 W. El Camino Real
Sunnyvale, CA 94087
Attn: Emo Biagini

II. Project Description

Project Location

The proposed project is located at 333 W. El Camino Real in the City of Sunnyvale. The proposed communications facility will be located the rooftop of the existing building. The project site is located on Assessor's Parcel 209-29-068. Geographic coordinates (NAD 83)

for the proposed facility are Latitude: 37°22' 09.37"; Longitude: -122° 02' 09.31", at an elevation of approximately 103' AMSL (above mean sea level). The aerial photo below shows project location and surrounding land uses.

Fig. 1. Aerial Photo Showing Project Location and Surrounding Land Uses



Project Components

The proposed project would consist of the installation of antennas and radio equipment on the rooftop of the building as shown on the attached plans. The proposed project components would consist of the following elements to be contained within a 9.0 (3' x 3') square foot lease area:

- Radio equipment cabinet (approx. 2' x 2') to be installed on a steel platform mounted on the rooftop
- Three (3) panel antennas and three (3) microwave dishes to be mounted inside a new architectural feature to be placed at the rear of the building. The feature would be an 11' x 11' x 16" (H) [121 sq.ft.] stealth screen structure. The structure would actually protrude approximately 7 1/2" above the parapet (parapet is approximately 6'5" above the rooftop). The screen structure will enclose the antennas and will be designed to match (painted, textured, and detailed) the building architecture so as to mimic an elevator penthouse. This feature is located at the rear of the building 10 feet from the edge of the roof.

- Associated fiber/coax cable to be run from the radio cabinets on the rooftop to the antennas inside conduit/cable tray. Power would be pulled from existing electrical service in the basement of the building.

Access is provided by existing driveways on El Camino Real and Mathilda Avenue.

Collocation

The existing building already supports existing communications facilities on the rooftop and may be capable of handling additional antennas should other wireless communications companies be interested in collocation on the rooftop.

Network Technology

Clearwire offers a robust suite of advanced voice, high-speed Internet services to consumers and businesses. The company is building the first Mobile WiMax 4G network in the San Francisco Bay area bringing together an unprecedented combination of speed and mobility. Clearwire is licensed by the FCC to operate the Mobile WiMax Network in the 2.5-2.7GHz frequency range in San Francisco market. Clearwire will be using microwave backhaul for the Mobile WiMax network.

The Clearwire network is designed upon utilization of microwave backhaul throughout the network of hundreds of sites in the Bay area. This is a 100 percent backhaul solution, with no hardline connections within the system. What this means is that the majority of the sites transport a signal to at least three other sites with "hubs" located at the center of some of the rings to transport an initial signal. Because sites are inextricably linked by these microwave connections, it is imperative that the MW dishes obtain maximum height over the surrounding clutter and topography to ensure a point-to-point connection with other sites in the system.

In terms of Clearwire's relationship to other carriers and their networks, it should be known that Clearwire is a subsidiary of Sprint/Nextel (Sprint owns 51%), but the systems are not integrated. Clearwire's network is an entirely new network. Eventually, Clearwire's subscribers may have roaming agreements with Sprint/Nextel where Clearwire is not present, but the systems are not integrated to support each other. Because of the ownership relationship, Clearwire's footprint is very similar to Sprint's in the Bay area because we know that it is possible to utilize Sprint/Nextel's shelters, mounting brackets, coax cable trays, etc. with the appropriate collocation agreement with Sprint/Nextel. We also know we're more likely to have willing landlords were Sprint/Nextel is already located.

Public Services

Public services such as fire and law enforcement are not required given that the facilities are designed to be vandalism resistant (fenced and located on the rooftop) and are uninhabitable.

The project does not require school or transit facilities, as it is an unmanned wireless communications facility.

Operations

The site is an unmanned facility that will not generate any noise, dust, or odors. It is expected that a service technician may visit the site for routine maintenance once every month to two months if needed. Ample parking is available in the parking lot for this transient visit.

III. Land Use

Zoning

The project parcel is zoned O, Administrative and Office. The project site is bounded on the south and west by similar commercial uses. Land north and east of the project site is zoned multi-family residential and used for such at the current time.

Environmental Setting

The project is located on a relatively level, commercially-zoned parcel that has been entirely developed with commercial office building, parking lot, and landscaping as well as existing wireless communications facilities on the rooftop. The project is located entirely on the rooftop of the existing building and will not have any environmental impacts on area resources. The proposed antennas will not be visible from surrounding public viewsheds given proposed stealthing measures, and as such the project will not have an impact on any scenic resources.

IV. Conclusion

In conclusion, the proposed project is a compatible use with the surrounding land uses as proven by the fact that an existing facility is located on and behind the building. The proposed project will provide valuable communications services to area residents and businesses. Should you have any questions regarding this application, please feel free to call me at (530) 647-1932.

Sincerely,

bcSites, Inc.

Gordon J. Bell
Gordon J. Bell
Zoning Specialist
Encl.