CITY OF SUNNYVALE REPORT
ZONING ADMINISTRATOR HEARING

August 10, 2011

File Number: 2011-7431 **Permit Type:** Special Development Permit

Location: 100 Mathilda Pl. (near W. Washington Ave.) (APN: 209-07-024)

Applicant/Owner: Broadcom / SPF Mathilda LLC

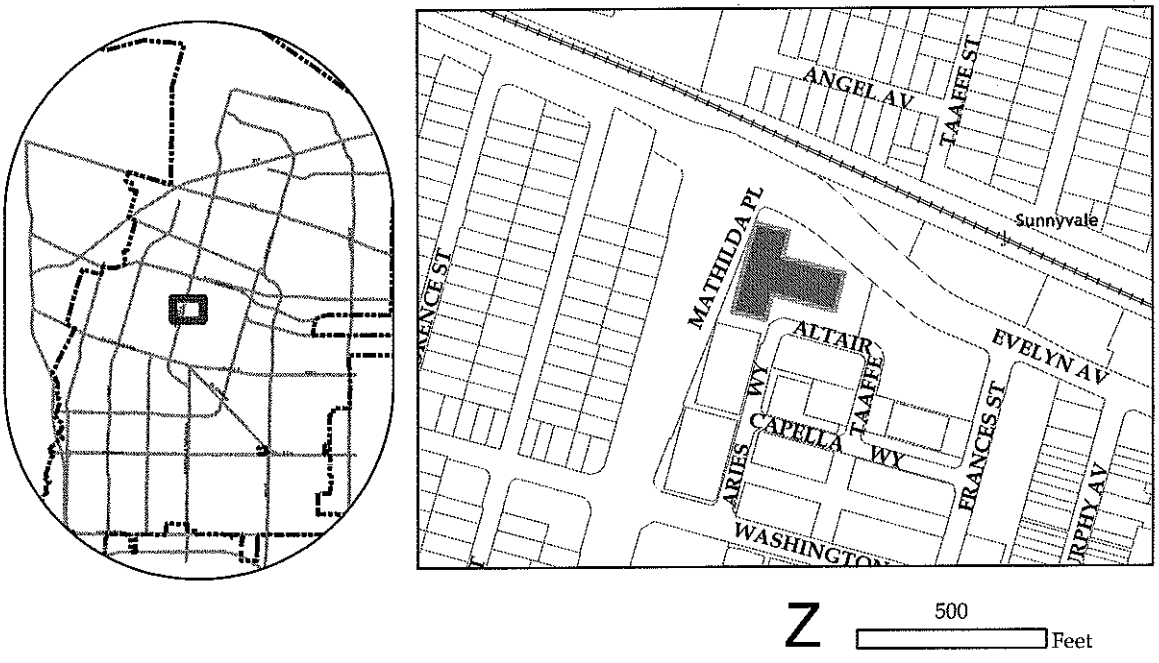
Staff Contact: Noren Caliva, Associate Planner, (408) 730-7637

Project Description: To allow a third wireless installation (Broadcom) including four panel antennas screened behind an existing roof parapet with associated equipment on top of a six story office building.

Reason for Permit: A Special Development Permit is required for a wireless installation colocation of two or more facilities or users on an existing site.

Issues: Aesthetics

Recommendation: Approve with Conditions



PROJECT DESCRIPTION

	Existing	Proposed
General Plan:	Downtown Specific Plan	Same
Zoning District:	DSP – Block 1	Same
Building Height:	105'	Same

Previous Planning Projects related to Subject Application: The first wireless telecommunication carrier (T-Mobile) was approved on this building in 2009, which included 16 facade-mounted antennas incorporated into existing architectural elements on the building. The second carrier (Clearwire) was subsequently approved in 2010 with 3 antennas and 6 microwave dishes, also incorporated into the architectural elements of the building and roof screens.	**Yes**
Neighborhood Preservation Complaints	**No**
Deviations from Standard Zoning Requirements	**No**

Use Description: The proposed project is to allow a third wireless installation on top of the existing six-story office building. The installation is for Broadcom's own business needs and not for commercial purposes, as Broadcom will not be providing wireless service to the public. No deviations from the Sunnyvale Municipal Code are requested.

Site Layout & Design: The building is located on the southeast corner of Mathilda Place and W. Evelyn Avenue, and is visible from the Mathilda Avenue overpass. A total of four panel antennas will be placed behind the existing mechanical screen wall towards the center of the building, located next to antennas that have been installed by T-Mobile and Clearwire. One antenna will face the north property line, two will face the east and one will face the south. The wall material used for screening will be RF (radio frequency) transparent and designed to match the existing color and texture of the screen wall.

Additionally, three global positioning system (GPS) antennas and cabling will be placed behind the screen wall. Associated equipment cabinets used to power the antennas will be placed inside a storage room within the building which Broadcom occupies.

Radio Frequency (RF) Emissions Exposure: The Federal Communications Commission (FCC) is the final authority on safety of telecommunications facilities. If the FCC has determined the facility to be in compliance with federal standards, the City is not permitted to make additional judgments on health and safety issues. The application can be reviewed by the City for compliance with design and location criteria only. The attached RF Emissions report

(Attachment E) finds that the individual and cumulative RF emissions comply with FCC standards.

Public Contact: 44 notices were sent to surrounding property owners and neighborhood associations adjacent to subject site in addition to standard noticing practice. No letters were received.

Environmental Determination: A Categorical Exemption Class 1 (minor modifications to existing facilities) relieves this project from CEQA provisions.

FINDINGS – SPECIAL DEVELOPMENT PERMIT

In order to approve the Special Development Permit, the following findings must be made:

1. The proposed use attains the objectives and purposes of the General Plan of the City of Sunnyvale.

   There are three policies and action statements that relate to the proposed application.

   Council Policy Manual: Policy 7.2.16 Telecommunications

   Policy Statement 1.A.5 Support retention of local zoning authority for cellular towers, satellite dish antennas, and other telecommunications equipment, facilities and structures.

   Policy Statement 1.C Encourage high quality service and service standards for all telecommunications providers.

   General Plan: Land Use and Transportation

   Policy LT-4.13 Promote an attractive and functional commercial environment.

   The proposed project is consistent with the objectives of the General Plan and Council Policy Manual in that the proposed project takes advantage of a colocation opportunity, while maintaining the architectural character of the existing office building. Standard conditions of approval will ensure that the standards for community appearance are also maintained.

   Staff was able to make this finding.

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 the orderly development of, or the existing uses being made of, adjacent properties.

   All new equipment will be fully screened behind the mechanical screen wall, and will not be visible from any street frontages or buildings.

   Staff was able to make this finding.

ALTERNATIVES:

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

RECOMMENDATION

Alternative 1.

Reviewed by:

Shaunn Mendrin
Senior Planner
Prepared by: Noren Caliva, Associate Planner

Attachments:

A. Standard Requirements and Recommended Conditions of Approval
B. Site and Architectural Plans
C. Photosimulations
D. Letter from the Applicant including Justifications
E. RF Emissions Report

RECOMMENDED
CONDITIONS OF APPROVAL AND
STANDARD DEVELOPMENT REQUIREMENTS
August 10, 2011

Planning Application 2011-7431
100 Mathilda Place
Special Development Permit to allow a third wireless installation (Broadcom) including four panel antennas screened behind an existing roof parapet with associated equipment on top of a six story office building.

The following Conditions of Approval [COA] and Standard Development Requirements [SDR] apply to the project referenced above. The COAs are specific conditions applicable to the proposed project. The SDRs are items which are codified or adopted by resolution and have been included for ease of reference, they may not be appealed or changed. The COAs and SDRs are grouped under specific headings that relate to the timing of required compliance. Additional language within a condition may further define the timing of required compliance. Applicable mitigation measures are noted with "Mitigation Measure" and placed in the applicable phase of the project.

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 and Standard Development Requirements of this Permit:

GC: THE FOLLOWING GENERAL CONDITIONS OF APPROVAL AND STANDARD DEVELOPMENT REQUIREMENTS SHALL APPLY TO THE APPROVED PROJECT.

GC-1. CONFORMANCE WITH APPROVED PLANNING APPLICATION:
All building permit drawings and subsequent construction and operation shall substantially conform with the approved planning application, including: drawings/plans, materials samples, building colors, and other items submitted as part of the approved application. Any proposed amendments to the approved plans or Conditions of Approval are subject to review and approval by the City. The Director of Community Development shall determine whether revisions are considered major or minor. Minor changes are subject to review and approval by the Director of Community Development. Major changes are subject to review at a public hearing. [COA] [PLANNING]

GC-2. 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.[SDR] [PLANNING]

GC-3. PERMIT EXPIRATION:
The permit shall be null and void two years from the date of approval by the final review authority at a public hearing if the approval is not exercised, unless a written request for an extension is received prior to expiration date and is approved by the Director of Community Development. [SDR] (PLANNING)

GC-4. 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. [SDR] [PLANNING]

GC-5. 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. [SDR] [PLANNING]

GC-6. 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. [SDR] [PLANNING]

GC-7. NO THREAT TO PUBLIC HEALTH:
The facility shall not be sited or operated in such a manner that is 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. [SDR] [PLANNING]

GC-8. CONFORMANCE WITH PREVIOUS PLANNING PERMITS:
The subject site shall comply with all conditions of approval and requirements of previously-approved planning applications 2009-0681 (T-Mobile) and 2009-0520 (Clearwire). [PLANNING] [COA]

BP: THE FOLLOWING CONDITIONS SHALL BE ADDRESSED ON THE CONSTRUCTION PLANS SUBMITTED FOR ANY DEMOLITION PERMIT, BUILDING PERMIT, GRADING PERMIT, AND/OR ENCROACHMENT PERMIT AND SHALL BE MET PRIOR TO THE ISSUANCE OF SAID PERMIT(S).

GC-1. CONDITIONS OF APPROVAL:
Final plans shall include all Conditions of Approval included as part of the approved application starting on sheet 2 of the plans. [COA] [PLANNING]

GC-2. RESPONSE TO CONDITIONS OF APPROVAL:
A written response indicating how each condition has or will be addressed shall accompany the building permit set of plans. [COA] [PLANNING]

GC-3. DESIGN:
All new mechanical roof screen materials shall match the color and texture of the existing. [COA] [PLANNING]

GC-4. BLUEPRINT FOR A CLEAN BAY:
The building permit plans shall include a "Blueprint for a Clean Bay" on one full sized sheet of the plans. [SDR] [PLANNING]

PF: THE FOLLOWING CONDITIONS SHALL BE ADDRESSED ON THE CONSTRUCTION PLANS AND/OR SHALL BE MET PRIOR TO RELEASE OF UTILITIES OR ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

PF-1. 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. [COA] [PLANNING]

PF-2. NOISE STUDIES:
The applicant shall submit to the Director of Community Development Noise Analysis at least two reports of field measurements showing: 1.) The noise measurement before construction of the facility and 2.) The actual noise measurement after the facility is in place and operating at or near full capacity. [COA] [PLANNING]

AT: THE FOLLOWING CONDITIONS SHALL BE COMPLIED WITH AT ALL TIMES THAT THE USE PERMITTED BY THIS PLANNING APPLICATION OCCUPIES THE PREMISES.

AT-1. 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.. [SDR] [PLANNING]

AT-2. 10 YEAR 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. [SDR] [PLANNING]

AT-3. MINIMIZE NOISE:
The facility shall be operated in such a manner so as to minimize any possible disruption caused by noise. 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. [SDR] [PLANNING]

AT-4. 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. [SDR] [PLANNING]

AT-5. 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:

a) 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.

b) Name, address and telephone number of a local contact person for emergencies.

c) Type of service provided. [SDR] [PLANNING]

AT-6. 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. [SDR] [PLANNING]

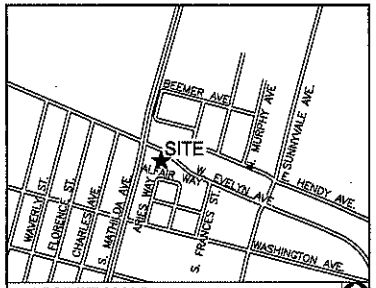
AT-7. RESPONSIBILITY TO MAINTAIN:
The owner or operator of the facility shall routinely and regularly inspect each site to ensure compliance with the standards set forth in the Telecommunications Ordinance. [SDR] [PLANNING]

AT-8. 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. [SDR] [PLANNING]

BROADCOM

100 MATHILDA

100 MATHILDA PLACE
SUNNYVALE, CA 94086
COUNTY OF SANTA CLARA



VICINITY MAP

DIRECTIONS FROM SAN FRANCISCO AIRPORT:

- HEAD NORTHWEST 0.4 MI
- KEEP RIGHT AT THE FORK 0.2 MI
- TAKE THE RAMP ONTO US-101 S 25.0 MI
- TAKE EXIT 398A TO MERGE ONTO N MATHILDA AVE TOWARD SUNNYVALE 1.7 MI
- TURN LEFT AT W WASHINGTON AVE 299 FT
- TAKE THE 1ST LEFT ONTO ARIES WAY 0.1 MI

DRIVING DIRECTIONS

DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE FORMATTED TO BE FULL-SIZE AT 24"X36". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE DESIGNER/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICES TO PREVENT STORM WATER POLLUTION DURING CONSTRUCTION.

GENERAL CONTRACTOR NOTES

THE PROJECT INVOLVES THE INSTALLATION OF:

- (4) PANEL ANTENNAS/ RF HEADS AND (3) GPS ANTENNAS MOUNTED BEHIND EXISTING MECHANICAL SCREEN WALL AT EXISTING BUILDING ROOFTOP.
- FIBER AND ANTENNA COAXIAL TRANSMISSION LINE FROM EXISTING 3RD FLOOR MOUNTED EQUIPMENT CABINETS TO ANTENNAS.

PROJECT DESCRIPTION

APPLICANT/LESSEE
BROADCOM
190 MATHILDA PLACE
SUNNYVALE, CA 94085
CONTACT: FRANK SANDOVAL
PHONE: (858) 774-2117

ZONING MANAGER
DAYNA AGUIRRE
MODUS, INC.
(925) 784-7888

CONSTRUCTION MANAGER
ADAM CRONEY
SITE SERVICES, LLC
(925) 382-6755

PROPERTY INFORMATION

LANDLORD:	SUNNYVALE CITY CENTER 1
ADDRESS:	100 MATHILDA AVENUE SUNNYVALE, CA 94086
CONTACT:	JEFF HUSTON
PHONE:	(408) 453-7400
AREA OF CONSTRUCTION:	N/A
OCCUPANCY TYPE:	B
CONSTRUCTION TYPE:	TYPE II (SPRINKLERED)
CURRENT ZONING:	DSP
LAT:	37° 22' 42.56" N (NAD 83)
LONG:	-122° 01' 57.80" W
A.P.N.:	209-07-024
HANDICAP REQUIREMENTS:	FACILITY IS UN-MANNED AND NOT FOR HUMAN HABITATION. DISABLED ACCESS NOT REQUIRED.

PROJECT DATA

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 THE LATEST EDITIONS OF THE FOLLOWING CODES.

- 2010 CALIFORNIA BUILDING CODE, TITLE 24 PART 2
- 2010 CALIFORNIA ADMINISTRATIVE CODE, TITLE 24 PART 1
- 2010 CALIFORNIA ELECTRICAL CODE, TITLE 24 PART 3
- 2010 CALIFORNIA MECHANICAL CODE, TITLE 24 PART 4
- 2010 CALIFORNIA PLUMBING CODE, TITLE 24 PART 5
- 2010 CALIFORNIA ENERGY CODE, TITLE 24 PART 6
- 2010 CALIFORNIA FIRE CODE, TITLE 24 PART 9
- ANSI/TIA-222-G
- 2009 NFPA 101, LIFE SAFETY CODE
- 2010 NFPA 72, NATIONAL FIRE ALARM CODE
- 2010 NFPA 13, SPRINKLER CODE
- CITY/ COUNTY ORDINANCES

CODE COMPLIANCE

DESIGNER
MODUS, INC.
115 SANSOME STREET, SUITE 1400B
SAN FRANCISCO, CA 94104
CONTACT: ERIK CORKERY
CONTACT NUMBER: (415) 902-4165
FAX NUMBER: (415) 358-4994

STRUCTURAL ENGINEER
JEFFREY VAN DYKE
1470 FELTA ROAD
HEALDSBURG, CA 95448
CONTACT NUMBER: (707) 696-3721

PROJECT TEAM

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TITLE	SIGNATURE	DATE
PROJECT MANAGER		
LEASING		
ZONING		
CONSTRUCTION		
UTILITIES		
NET OPS		
LANDLORD		
RF ENGINEER		

SIGNATURE BLOCK

CBRE
115 SANSOME STREET, SUITE 1400B
SAN FRANCISCO, CA 94104

BROADCOM
190 S. MATHILDA AVENUE
SUNNYVALE, CA 94086

100 MATHILDA
100 MATHILDA PLACE
SUNNYVALE, CA 94086

MARK	DATE
1	04/19/11
2	04/28/11
3	05/03/11
4	07/15/11

CHK'D BY: RC
COPYRIGHT: 201
SHEET TITLE

ATTACHMENT 13
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ABBREVIATIONS

&	AND	CONC. FL.	CONCRETE FLOOR	FIG	FIGURE	MSB	MAIN SWITCHBOARD	RET	RETURN	VERT	VERTICAL
"L"	ANGLE	COND	CONDENSER	FIN	FINISH	MTD	MOUNTED	REV	REVISION	VEST	VESTIBULE
@	AT	COND	CONDITION	FIXT	FIXTURE	MTG	MOUNTING	RFG	ROOFING	VIN	VINYL
/	BY	CONN	CONNECT	FLASH	FLASHING	MTG. HT.	MOUNTING HEIGHT	RGTR	REGISTER	VOL	VOLUME
℄	CENTERLINE	CONST	CONSTRUCTION	FLEX	FLEXIBLE	MTL	METAL	RM	ROOM	W	WEST
°	DEGREE	CONT	CONTINUOUS	FLG	FLOORING	MUL	MULLION	RR	RAILROAD	W	WIDE
ø	DIAMETER	CONTR	CONTRACT	FLR	FLOOR	MULT	MULTIPLE	S	SINK	W. CAB.	WALL CABINET
=	EQUAL	CONTR	CONTRACTOR	FLOUR	FLOURESCENT	MUT	MUNTIN	S	SOUTH	W. GL.	WIRE GLASS
(E)	EXISTING	COR	CORRIDOR	FPRF	FIREPROOF(ING)	N	NORTH	S.A.D.	SEE ARCHITECTURAL DRAWINGS	W.C.	WATER CLOSET
'	FEET	CORR	CORRUGATED	FR	FRAME	N.C.	NONCORROSIVE			WF	WIDE FLANGE
"	INCH(ES)	CPG	COPING	FT	FEET	N.I.C.	NOT IN CONTRACT	S.B.	SPLASH BLOCK	W.H.	WALL HYDRANT
#	NUMBER	CPR	COPPER	FTG	FOOTING	N.S.	NONSLIP	S.C.	SOLID CORE	W.H.	WATER HEATER
/	PER	CPT	CARPET	FUR	FURRED	N.T.S.	NOT TO SCALE	S.D.	STORM DRAIN	W.L.	WATER LINE
%	PERCENT	CR	CRUSHED	FURN	FURNACE	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	S.F.	SQUARE FOOT	W.R.	WATER-RESISTANT
℄	PLATE	CSG	CASING	FUT	FUTURE			S.F.	STORE FRONT	W.S.	WEATHER STRIPPING
±	PLUS/ MINUS	CSK	COUNTERSINK	G.B.	GRAB BAR	NO	NUMBER	S.G.	SEMIGLOSS	W.T.W.	WALL TO WALL
A.B.	ANCHOR BOLT	CSMT	CASEMENT	G.C.	GENERAL CONTRACTOR	NOM	NOMINAL	S.G.D.	SLIDING GLASS DOOR	WWF	WELDED WIRE FABRIC
ACOUST	ACOUSTICAL	CTG	COATING	G.F.	GRANULAR FILL	NORM	NORMAL	S.H.	SHOWER HEAD	WWM	WELDED WIRE MESH
A.E.	ARHITECT/ ENGINEER	CTR	CENTER	G.I.	GALVANIZED IRON	NRC	NOISE REDUCTION COEFFICIENT	S.Y.	SQUARE YARD	W/	WITH
ALT.	ALTERNATE	CU	CUBIC	G.R.	GUARDRAIL			SC	SCALE	W/O	WITHOUT
ASSOC.	ASSOCIATION	CY	CUBIC YARD(S)	G.S.	GALVANIZED STEEL	O. TO O.	OUT TO OUT	SCH	SCHEDULE	WD	WOOD
ASSY.	ASSEMBLY	D.C.A.	DRAINAGE CONDUCTOR	G.W.B.	GYPSUM WALL BOARD	O.C.	ON CENTER(S)	SEAL	SEALANT	WHSE	WAREHOUSE
AUTO	AUTOMATIC	D.F.	DRINKING FOUNTAIN	GA	GAGE	O.D.	OUTSIDE DIAMETER	SECT	SECTION	WNDW	WINDOW
AVER	AVERAGE	DF	DOUGLAS FIR	GA	GAUGE	O.F.C.I.	OWNER FURNISH, CONTRACTOR INSTALLED	SEP	SEPERATION	WP	WATERPROOF
AWG	AMERICAN WIRE GAUGE	D.H.	DOUBLE HUNG	GAL	GALLON			SERV	SERVICE	WSCT	WAINSCOT
B.A.	BOTH FACES	D.L.	DEAD LOAD	GALV	GALVANIZED	O.F.O.I.	OWNER FURNISH, OWNER INSTALL	SF. GL.	SAFETY GLASS	WT	WEIGHT
B.M.	BENCH MARK	D.O.	DOOR OPENING	GD	GUARD			SH	SHELF	X	BY (AS IS 6'X8')
B.O.	BOTTOM OF	D.S.P.	DRY STANDPIPE	GEN	GENERAL	O.F.S.	OUTSIDE FACE OF STUD	SHT	SHEET	Y.P.	YIELD POINT
B.O.	BY OTHERS	D.W.	DRYWALL	HDG	HOT DIPPED GALVANIZED	O/	OVER	SHTHG	SHEATHING	Y.S.	YIELD STRENGTH
B.P.	BASE PLATE	DBL	DOUBLE	HEX	HEXAGONAL	O2	OXYGEN	SHWR	SHOWER	YD	YARD
B.U.	BUILT-UP	DEG	DEGREE	HOSP	HOSPITAL	OA	OVERALL	SIM	SIMILAR		
B.U.R.	BUILT-UP ROOFING	DEMO	DEMOLITION	INFO	INFORMATION	OBS	OBSOLETE	SKL	SKYLIGHT		
B.W.	BOTH WAYS	DEPT	DEPARTMENT	INSL	INSULATION	OFF	OFFICE	SL	SLAB		
BATT	BATTERY	DET	DETAIL	INST	INSTALL	OH	OVERHEAD	SOF	SOFFIT		
BB	BASEBOARD	DIA	DIAMETER	INTERM	INTERMEDIATE	OPNG	OPENING	SPC	SPACER		
BD	BOARD	DIAG	DIAGONAL	INV	INVERT	OPP	OPPOSITE	SPCG	SPACING		
BDRM	BEDROOM	DIM	DIMENSION(S)	ISOL	ISOLATE	OPPH	OPPOSITE HAND	SPEC	SPECIFICATION		
BEL	BELOW	DISP	DISPENSER	JAN	JANITORS CLOSET	ORIG	ORIGINAL	SPECS	SPECIFICATIONS		
BET	BETWEEN	DIST	DISTANCE	JCT	JUNCTION	ORN	ORNAMENT	SPKR	SPEAKER		
BEV	BEVELED	DISTR	DISTRIBUTED	JNT	JOINT	OVHG	OVERHANG	SQ	SQUARE		
BEY	BEYOND	DIV	DIVIDER	JST	JOIST	OWN.	OWNER FURNISHED	SQ. IN.	SQUARE INCH		
BITUM	BITUMINOUS	DN	DOWN	K. PL.	KICK PLATE	PART. BD.	PARTICLE BOARD	SS	STAINLESS STEEL		
BLDG	BUILDING	DOC	DOCUMENTS	K.D.	KNOCK DOWN	PCF	POUND PER CUBIC FOOT	ST	STREET		
BLK	BLOCK	DP	DAMPPROOFING	K.O.	KNOCK OUT	PD	PANIC BAR	STAG	STAGGERED		
BLKG	BLOCKING	DR	DOOR	KIT	KITCHEN	P.C.P.	PORTLAND CEMENT PLASTER	STC	SOUND TRANSMISSION CLASS		
BLVD	BOULEVARD	DS	DOWNSPOUT	KW	KILOWATT	P.L.	PROPERTY LINE	STD	STANDARD		
BM	BEAM	DW	DISHWASHER	L	LENGTH	P. LAM.	PLASTIC LAMINATED	STIFF	STIFFENER		
BOT	BOTTOM	DWG	DRAWING	L	LONG	PT	PRESSURE TREATED	STIR	STIRRUP		
BRG	BEARING	E	EAST	L.B.	LAG BOLT	PAR	PARALLEL	STL	STEEL		
BRK	BRICK	E. TO E.	END TO END	L.F.	LINEAR FOOT	PART. BD.	PARTICLE BOARD	STOR	STORAGE		
BRKT	BRACKET	E.B.	EXPANSION BOLT	L.G.	LEAD GLASS	PCF	POUND PER CUBIC FOOT	STR	STRUCTURAL		
BSMT	BASEMENT	E.C.	ELECTRICAL CONDUIT	LAM	LAMINATE	PD	PEDESTAL	SUB	SUBSTITUTE		
BTH	BATHROOM	E.C.	ELECTRICAL CONTRACTOR	LAV	LAVATORY	PERF	PERFORATED	SUP	SUPPLY		
BTN	BATTEN	E.F.	EACH FACE	LB	POUND	PERM	PERMANENT	SUPP	SUPPLEMENT		
BVL	BEVEL	EGR	EMERGENCY GENERATOR RECEPTACLE	LOC	LOCATION	PERP	PERPENDICULAR	SUR	SURFACE		
C	CHANNEL	EJ.	EXPANSION JOINT	LT	LIGHT	PH	PHASE	SUSP	SUSPENDED		
C	COURSE	E.P.	ELECTRICAL PANEL	LVR	LOUVER	PKWY	PARKWAY	SUSP.	SUSPENDED CEILING		
C. TO C.	CENTER TO CENTER	E.W.	EACH WAY	M	THOUSAND	PL	PLATE	SYM.	SYMMETRICAL		
C.B.	CATCH BASIN	EA	EACH	M.B.	MACHINE BOLT	PLAS	PLASTER	SW	SWITCH		
C.F.C.I	CONTRACTOR FURNISH/ CONTRACTOR INSTALL	EIFS	EXTERIOR INSULATION AND FINISH SYSTEM	M.C.	MECHANICAL CONTRACTOR	PLAT	PLATFORM	SWBD	SWITCHBOARD		
C.G.	CORNER GUARD	EL	ELEVATION	MAX	MAXIMUM	PLF	PLATFORM	SYM	SYMMETRICAL		
C.I.	CAST IRON	ELAST	ELASTOMERIC	MB	MACHINE BOLT	PLYWD	PLYWOOD	SYS	SYSTEM		
C.I.P.	CAST IRON PIPE	ELB	ELBOW	MECH	MECHANICAL	PNL	PANEL	T	TREAD		
C.J.	CONSTRUCTION JOINT	ELEC	ELECTRICAL	MED	MEDIUM	PNT	PAINT	T&B	TOP AND BOTTOM		
C.J.	CONTROL JOINT	ELEV	ELEVATOR	MEMB	MEBRANE	PORT	PORTABLE	T&G	TONGUE AND GROOVE		
C.L.	CENTERLINE	EMER	EMERGENCY	MEZZ	MEZZANINE	PPC	POWER PROTECTION CABINET	T.Y.	TOWEL BAR		
C.L.F.	CHAINLINK FENCE	ENC	ENCLOSURE	MFR	MANUFACTURER			T.G.	TEMPERED GLASS		
C.M.P.	CORRUGATED METAL PIPE	ENGR	ENGINEER	MGR	MANAGER	PREFAB	PREFABRICATED	T.O.	TOP OF		
C.O.	CLEAN OUT	ENT	ENTRANCE	MIN	MINIMUM	PREFIN	PREFINISHED	T.O.C.	TOP OF CURB		
C.R.	COLD ROLLED	EQ	EQUAL	MIR	MIRROR	PREP	PREPARATION	T.O.M.	TOP OF MASONRY		
C.R.S.	COLD ROLLED STEEL	EQUIP	EQUIPMENT	MISC	MISCELLANEOUS	PROJ	PROJECT	T.O.W.	TOP OF WALL		
C.T.	CERAMIC TILE	EST	ESTIMATE	MK	MARK	PROP	PROPERTY	T.P.	TOP OF PAVEMENT		
C.W.	COLD WATER	EXC	EXCAVATE	MLDG	MOULDING	PSF	POUNDS PER SQUARE FOOT	TS	TUBE STEEL		
C.W.	CONCRETE WALK	EXH	EXHAUST	MOD	MODULAR	PSI	POUNDS PER SQUARE INCH	TECH	TECHNICAL		
C/O	CASED OPENING	EXIST	EXISTING	MTL	METAL			TELCO	TELEPHONE COMPANY		
CAB	CABINET	EXP	EXPANSION	MULL	MULLION			TEMP	TEMPERATURE		
CALK	CAULK	EXPD	EXPOSED	N	NORTH	PT	PART	TEMP	TEMPORARY		
CEM	CEMENT	EXT	EXTENSION	N.C.	NONCORROSIVE	PT	POINT	TERM	TERMINATE		
CEM.	CEMENTITIOUS	EXT	EXTERIOR	N.I.C.	NOT IN CONTRACT	PTD	PAINTED	TERR	TERRACE		
PLAS	CEMENT PLASTER	EZBTO	BATTERY CABINET	N.S.	NONSLIP	PVC	POLYVINYL CHLORIDE	THD	THREAD		
CER	CERAMIC	F	FACE	N.T.S.	NOT TO SCALE	PVMT	PAVEMENT	THK	THICK		
CIR	CIRCLE	F. HYD.	FIRE HYDRANT	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	PWR	POWER	THR	THRESHOLD		
CIR	CIRCUMFERENCE	F. TO F.	FACE TO FACE	NO	NUMBER	QTY	QUANTITY	THRU	THROUGH		
CL. GL.	CLEAR GLASS	F.A.	FIRE ALARM	NOM	NOMINAL	R	RADIUS	TLT	TOILET		
CL.		F.B.	FLAT BAR	NORM	NORMAL	R.C.	RETURN AIR	TRANS	TRANSFORMER		
W. GL.	CLEAR WIRE GLASS	F.D.	FLOOR DRAIN	O. TO O.	OUT TO OUT	R.D.	RUBBER BASE	T'STAT	THERMOSTAT		
CLG	CEILING	F.D.C.	FIRE DEPARTMENT CONNECTION	O.C.	ON CENTER(S)	R.D.	ROOF DRAIN	TYP.	TYPICAL		
CLKG	CAULKING	F.E.	FIRE EXTINGUISHER	O.D.	OUTSIDE DIAMETER	R.H.	RIGHT HAND	U.N.O.	UNLESS NOTED OTHERWISE		
CLO	CLOSET	F.E.C.	FIRE EXTINGUISHER CABINET	O.F.C.I.	OWNER FURNISH, CONTRACTOR INSTALLED	R.H.R	RIGHT HAND REVERSE				
CLR	CLEAR			O.F.O.I.	OWNER FURNISH, OWNER INSTALL	R.O.	ROUGH OPENING	U.O.N.	UNLESS OTHERWISE NOTED		
CLR	CLEARANCE	F.F.	FINISH FLOOR	O.F.S.	OUTSIDE FACE OF STUD	R.W.C.	RAIN WATER LEADER				
CLRM	CLASSROOM	F.H.	FIRE HOSE	OC	ON CENTER(S)	RAD	RADIUS	UC	UNDERCUT		
CMU	CONCRETE MASONRY UNIT	F.H.	FLAT HEAD	OD	OUTSIDE DIAMETER	RD	ROAD	UG	UNDERGROUND		
		F.H.C.	FIRE HOSE CABINET	OH	OVERHEAD	RE	REFER	UL	UNDERWRITERS LABORATORIES INCORPORATED		
CNTR	COUNTER	F. JT.	FLUSH JOINT	OPNG	OPENING	RECOMM	RECOMMENDATION				
CO	COMPANY	F.O.	FACE OF	OPP	OPPOSITE	RECP	RECEPTACLE				
CO2	CARBON DIOXIDE	F.O.C.	FACE OF CONCRETE	ORIG	ORIGINAL	RECT	RECTANGLE	ULT	ULTIMATE		
COL	COLUMN	F.O.F.	FACE OF FINISH	ORN	ORNAMENT	REF	REFERENCE	UNEX	UNEXCAVATED		
COMB	COMBINATION	F.O.M.	FACE OF MASONRY	OVHG	OVERHANG	REFG	REFRIGERATOR	UNF	UNFINISHED		
COMP	COMPUTER	F.O.S.	FACE OF STUDS	OWN.	OWNER FURNISHED	REINF	REINFORCEMENT	V	VOLT		
COMPR	COMPRESSED	FAB	FABRICATE	P	PAGE	REPR	REPAIR	V.B.	VALVE BOX		
COMPR	COMPRESSOR	FBD	FIBERBOARD	P.B.	PANIC BAR	REPRO	REPRODUCE	V.I.F.	VERIFY IN FIELD		
COMPT	COMPARTMENT	FD	FIRE DAMPER	P.C.P.	PORTLAND CEMENT PLASTER	REQ	REQUIRE	V.T.R.	VENT THROUGH ROOF		
CON	CONFERENCE	FDN	FOUNDATION	PAR	PARALLEL	REQD	REQUIRED	VAR	VARIABLE		
CONC	CONCRETE			PCF	POUND PER CUBIC FOOT	RESIL	RESILIENT	VENT	VENTILATE		

3

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 CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

-2010 BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.

-2010 CALIFORNIA BUILDING CODE(CBC), PART 2, TITLE 24, C.C.R.
(2009 INTERNATIONAL BUILDING CODE AND 2010 CALIFORNIA AMENDMENTS)

-2010 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R.
(2008 NATIONAL ELECTRICAL CODE AND 2010 CALIFORNIA AMENDMENTS)

-2010 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R.
(2009 INTERNATIONAL MECHANICAL CODE AND 2010 CALIFORNIA AMENDMENTS)

-2010 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R.
(2009 INTERNATIONAL PLUMBING CODE AND 2010 CALIFORNIA AMENDMENTS)

-2010 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R.
(2009 INTERNATIONAL FIRE CODE AND 2010 CALIFORNIA AMENDMENTS)

-2010 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R.

-TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHALL REGULATIONS

APPLICABLE CODES 1

SYMBOLS 2

ROOM — ROOM NAME
000 — ROOM NUMBER
01 — DOOR TAG
1 — WINDOW TAG
SECTION REFERENCE
SECTION NUMBER
SHEET NUMBER
DETAIL REFERENCE
DETAIL NUMBER
SHEET NUMBER
ELEVATION REFERENCE
ELEVATION NUMBER
SHEET NUMBER
INTERIOR ELEVATION REFERENCE
SHEET NUMBER
ELEVATION NUMBER
X — WALL TAG
000 — EQUIPMENT TAG
COLUMN TAG
1 — REVISION NUMBER
REVISION CLOUD
±0.0000 — SPOT ELEVATION
X — GRID REFERENCE
MATCH LINE — MATCH LINE
BREAK LINE
PIPE BREAK MARK
CENTERLINE
PROPERTY/ LEASE LINE

EARTH
CRUSHED STONE/ GRAVEL
SAND
CONCRETE
PRECAST CONCRETE
BRICK
CONCRETE MASONRY UNIT
DIMENSIONAL LUMBER (CONTINUOUS)
WOOD BLOCKING (DISCONTINUOUS)
FINISHED WOOD
PLYWOOD
GLULAM
STEEL
BATT INSULATION
RIGID INSULATION
FOAM/SPRAY INSULATION
GYPSUM WALLBOARD
CEMENT PLASTER AND WIRE MESH
GLASS/ GLAZING

115 SANSOME STREET, SUITE 1400
SAN FRANCISCO, CA 94104

BROADCOM
190 S. MATHILDA AVENUE
SUNNYVALE, CA 94086

100 MATHILDA

100 MATHILDA PLACE
SUNNYVALE, CA 94086

MARK	DATE
1	04/19/
2	04/28/
3	05/03/
4	07/19/

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ATTACHMENT 13
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SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ENGINEER OR ENGINEER OF RECORD, WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND THAT THEY HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE DEFERRED AND SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

- ☐ SOILS COMPLIANCE PRIOR TO FOUNDATION INSPECTION
- ☐ CONCRETE OVER 2500 PSI AT 28 DAYS
- ☐ CONCRETE PLACEMENT AT SLAB ON GRADE
- ☐ WRITTEN CERTIFICATION FOR PROPER PLACEMENT OF REINFORCEMENTS AT SLAB ON GRADE
- ☐ FOUNDATION EXCAVATION AND FILL INCLUDING UTILITY TRENCHES
- ☐ CERTIFICATION OF BUILDING PAD, FOUNDATION AND FILL BY THE GEOTECHNICAL ENGINEER OF THE RECORD
- ☐ VERIFICATIONS OF MILL REPORT
- ☐ IDENTIFICATION OF STEEL AND AT JOB SITE
- ☐ ADHESIVE BOLTS IN CONCRETE OR MASONRY
- ☐ ANCHOR BOLTS INSTALLATION AND PLACEMENT IN CONCRETE
- ☐ HIGH STRENGTH BOLTING
- ☐ EXPANSION ANCHOR INSTALLATION
- ☐ SPRAYED –ON– FIREPROOFING
- ☐ STRUCTURAL MASONRY
- ☐ PRESTRESSED CONCRETE
- ☐ ALL FIELD WELDING
- ☐ REINFORCING PLACEMENT
- ☐ DESIGNER SPECIFIED (SEE SHEET#___)
- ☐ OTHER_____

SPECIAL INSPECTION REQUIREMENTS | 3

24. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 2500 PSI STRENGTH AT 28 DAYS, UNLESS NOTED OTHERWISE. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
25. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.
26. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY DESIGNER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
27. THE EXISTING SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH THE OWNER. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
28. IF THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
29. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2–A OR 2–A/10–BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF THE WORK AREA DURING CONSTRUCTION.
30. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICES TO PREVENT STORM WATER POLLUTION DURING CONSTRUCTION.
31. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL EQUIPMENT AND MATERIALS WHICH MUST INTERFACE AND COORDINATE WITH OTHERS, WHETHER DETAILED OR NOT.
32. THE CONTRACTOR SHALL OBTAIN OSHA PERMITS FOR ANY VERTICAL EXCAVATION OVER 5'–0" DEEP INTO WHICH PERSONS MUST DECEND.
33. ALL DISSIMILAR METALLIC MATERIALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO PREVENT GALVANIC ACTION.
34. ALL WOOD IN CONTACT WITH MASONRY OR CONCRETE SHALL BE PRESSURE TREATED WITH AN APPROVED PRESERVATIVE.

1. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
6. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
11. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
12. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

SITE WORK GENERAL NOTES | 2

1. CONTRACTOR SHALL VERIFY AND COORDINATE ALL NEW AND EXISTING CONDITIONS AND DIMENSIONS AT JOB SITE FOR COMPARISON WITH DRAWINGS AND SPECIFICATIONS PRIOR TO BIDDING AND START OF AND DURING CONSTRUCTION. IF ANY DISCREPANCIES, INCONSISTENCIES OR OMISSIONS ARE FOUND, THE DESIGNER/ ENGINEER SHALL BE NOTIFIED, IN WRITING FOR CLARIFICATION PRIOR TO PROCEEDING WITH WORK.
2. DO NOT SCALE DRAWINGS. CONTRACTOR SHALL SHALL RELY ON WRITTEN DIMENSIONS AS GIVEN. THE CONTRACTOR SHALL NOTIFY THE DESIGNER/ ENGINEER FOR CLARIFICATIONS. ALL DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND COORDINATED WITH ALL OF THE WORK OF ALL TRADES, IF DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE DESIGNER/ ENGINEER IN WRITING FOR CLARIFICATION BEFORE COMMENCEMENT OR RESUMPTION OF WORK.
3. ABBREVIATIONS THROUGHOUT THE PLANS ARE THOSE IN COMMON USE. NOTIFY THE DESIGNER/ ENGINEER OF ANY ABBREVIATIONS IN QUESTION.
4. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
5. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE CODE AND REGULATIONS.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE DESIGNER/ENGINEER.
9. LEGAL EXITS SHALL NOT BE BLOCKED AT ANYTIME.
10. TEMPORARY PEDESTRIAN PROTECTION SHALL BE PROVIDED AS REQUIRED BY LOCAL CODES.
11. ALL CONDUIT/ DUCT PENETRATIONS THROUGH PARTITIONS AND CEILING SHALL BE PROVIDED WITH NECESSARY FIRE PENETRATION SEALANT AS REQUIRED BY CODE FOR FIRE–RATED PENETRATIONS.
12. THE DESIGNER/ ENGINEER SHALL BE CONSULTED IN ANY/ ALL CASES WHERE CUTTING INTO AN EXISTING STRUCTURAL PORTION OF ANY BUILDING IS NECESSARY. PRIOR TO PROCEEDING WITH WORK, REINFORCEMENT AND/ OR SUPPORT SATISFACTORY TO THE DESIGNER/ ENGINEER SHALL BE PROVIDED BY THE CONTRACTOR PRIOR TO CUTTING INTO ANY STRUCTURAL PORTIONS OF ANY BUILDING.
13. CONTRACTOR SHALL VERIFY ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONSTRUCTION MANAGER.
14. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
15. CLEAN UP AND DISPOSAL–REMOVE DEBRIS, RUBBISH AND WASTE MATERIAL FROM THE OWNER'S PROPERTY TO A LAWFUL/ LEGAL DISPOSAL AREA AND PAY ALL HAULING AND DUMPING COSTS. CONFORM TO PERTAINING FEDERAL, STATE AND LOCAL LAWS, REGULATIONS AND ORDERS UPON COMPLETION OF WORK ALL CONSTRUCTION AREAS SHALL BE LEFT CLEAN AND FREE FROM DEBRIS. CLEAN ALL STAINS, PAINT SPOTS, DROPPINGS, AND OTHER BLEMISHES.
16. THE CONTRACTOR SHALL PROTECT ALL FINISH WORK AND SURFACES FROM DAMAGE DURING THE COURSE OF CONSTRUCTION AND SHALL REPLACE AND/ OR REPAIR ALL DAMAGED SURFACES CAUSED BY THE CONTRACTOR OR SUBCONTRACTOR PERSONNEL TO THE SATISFACTION OF THE OWNER.
17. PRIOR TO INSPECTION OF THE EXISTING FACILITY, THE CONTRACTOR MUST RECEIVE PERMISSION FOR SITE ACCESS FROM THE OWNER OR THE DESIGNATED REPRESENTATIVE.
18. WHEN IT IS NECESSARY TO INTERRUPT ANY EXISTING UTILITY SERVICE TO MAKE CORRECTIONS AND/ OR CONNECTION, A MINIMUM OF 48 HOURS ADVANCE NOTICE SHALL BE GIVEN TO THE OWNER. INTERRUPTIONS IN UTILITY SERVICES SHALL BE OF THE SHORTEST POSSIBLE DURATION AND SHALL BE APPROVED IN ADVANCE BY THE OWNER.
19. ALL CONTRACTORS PERFORMING WORK ON THE PREMISES SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING A REASONABLE AND PRUDENT SAFETY PROGRAM INCLUDING BUT NOT LIMITED TO THE ISOLATION OF WORK AREAS AND THE PROMPT REMOVAL OF ANY DEBRIS OR TOOLS WHICH MAY ENDANGER VISITORS OR STAFF OF THE OWNER OR TENANT.
20. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES BELOW GRADE AND RELATED SERVICE CONNECTIONS WITH THE RESPECTIVE UTILITY COMPANIES.
21. THE CONTRACTOR SHALL COORDINATE THE REMOVAL, ABANDONMENT, AND/ OR RELOCATION OF EXISTING UTILITIES ABOVE OR BELOW GRADE WITH THE RESPECTIVE UTILITY COMPANIES.
22. THE CONTRACTOR SHALL PERFORM ALL WORK WITHIN PUBLIC RIGHTS–OF–WAY ACCORDING TO LOCAL JURISDICTIONAL STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL OBTAIN PERMITS FROM APPROPRIATE AGENCIES.
23. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

GENERAL NOTES | 1

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SAN FRANCISCO, CA 94104

BROADCOM
150 S. MATHILDA AVENUE
SUNNYVALE, CA 94086

100 MATHILDA

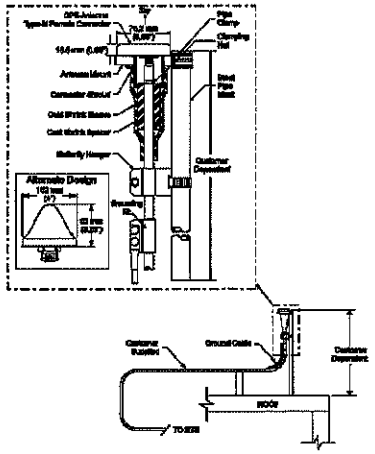
100 MATHILDA PLACE
SUNNYVALE, CA 94086

MARK	
1	04/
2	04/
3	05/
4	07/

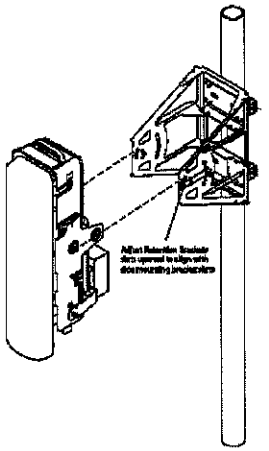
CHK'D BY:

SHEET TITLE

ATTACHMENT K
Page 3 of 12



GPS ANTENNA SPECIFICATIONS | SCALE: N.T.S | 3



DIMENSIONS	
DIMENSION	
HEIGHT	25"
WIDTH	9"
DEPTH	1.6"
WEIGHT	
ANTENNA	±51 LBS.

ANTENNA/ RF HEAD SPECIFICATIONS | SCALE: N.T.S | 1

ANTENNA CONFIGURATION SCHEDULE

ANTENNA SECTOR	# OF ANTENNAS	AZIMUTH	RAD CENTER	ANTENNA MAKE/ MODEL	MECHANICAL TILT	ELECTRICAL TILT	MAIN CABLE LENGTH	CABLE SIZE	TOP JUMPER LENGTH	BOTTOM JUMPER LENGTH	CABLE # AND PORT #	COLOR CODE	COMMENTS
ALPHA	1	330°	±100'-4"	MOTOROLA DAP RF	1° DOWN	N/A	±24' FROM ROOF PENETRATION TO RF HEAD	FIBER	±7'	±7'	1	RED	
BETA	1	70°	±100'-4"	MOTOROLA DAP RF	1° DOWN	N/A	±40' FROM ROOF PENETRATION TO RF HEAD	FIBER	±7'	±7'	2	BLUE	
GAMMA	1	130°	±100'-4"	MOTOROLA DAP RF	1° DOWN	N/A	±43' FROM ROOF PENETRATION TO RF HEAD	FIBER	±7'	±7'	3	YELLOW	
DELTA	1	193°	±100'-4"	MOTOROLA DAP RF	1° DOWN	N/A	±72' FROM ROOF PENETRATION TO RF HEAD	FIBER	±7'	±7'	4	GREEN	
GPS	1	N/A	N/A	ANDREW	N/A	N/A	±45' FROM ROOF PENETRATION TO RF HEAD	1/2" Ø	N/A	N/A	1	N/A	
GPS	1	N/A	N/A	ANDREW	N/A	N/A	±48' FROM ROOF PENETRATION TO RF HEAD	1/2" Ø	N/A	N/A	2	N/A	
GPS	1	N/A	N/A	ANDREW	N/A	N/A	±48' FROM ROOF PENETRATION TO RF HEAD	1/2" Ø	N/A	N/A	3	N/A	

NOTE: THE INFORMATION PROVIDED ABOVE MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING ANY EQUIPMENT.

ANTENNA CONFIGURATION SCHEDULE | SCALE: N.T.S | 2

115 SANSOME STREET, SUITE 1400B
SAN FRANCISCO, CA 94104

BROADCOM
190 S. MATHILDA AVENUE
SUNNYVALE, CA 94086

100 MATHILDA

100 MATHILDA PLACE
SUNNYVALE, CA 94086

MARK	DAT
1	04/1
2	04/2
3	05/2
4	07/1

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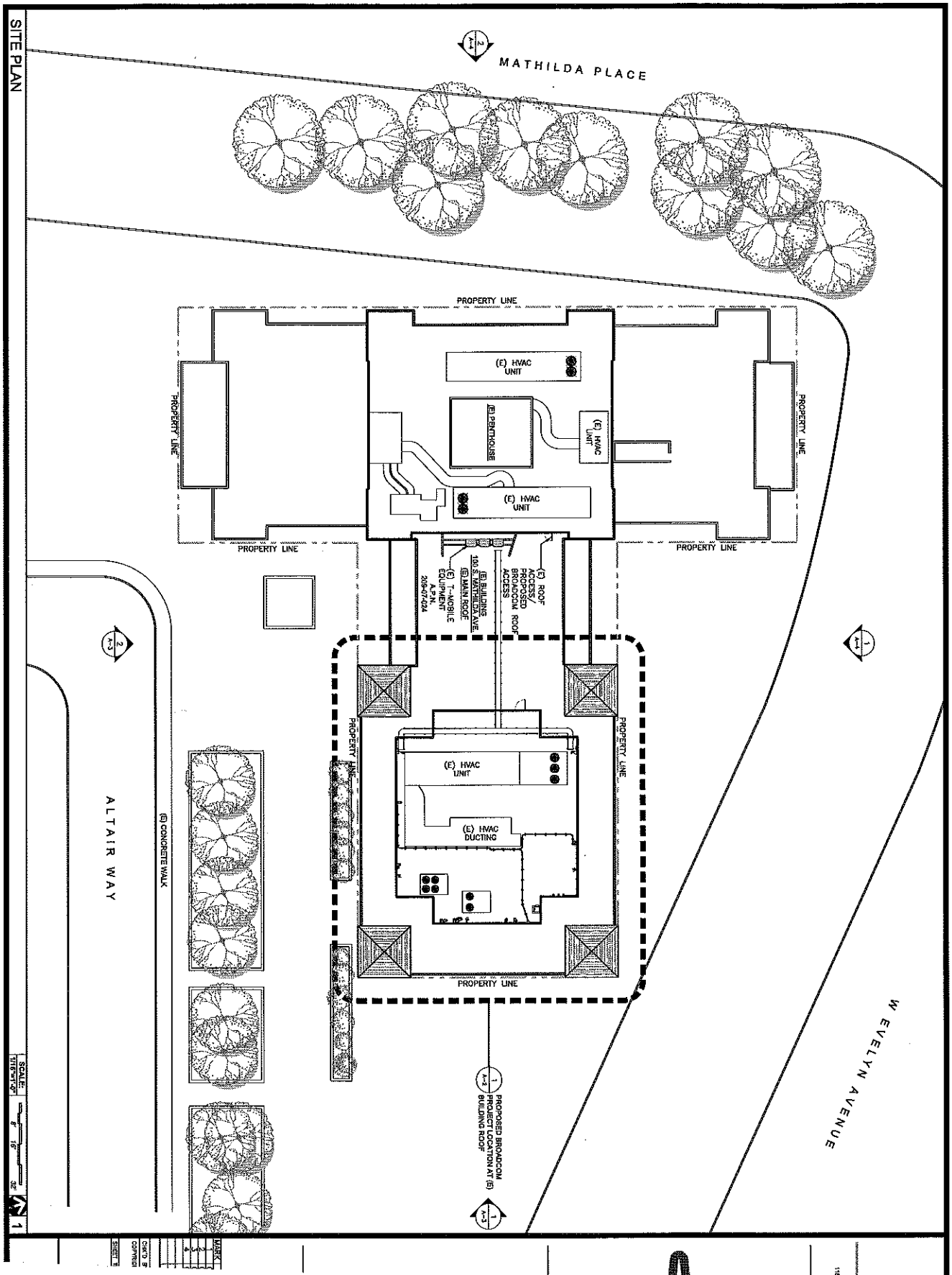
ATTACHMENT 5
Page 17 of 17



100 MATHILDA

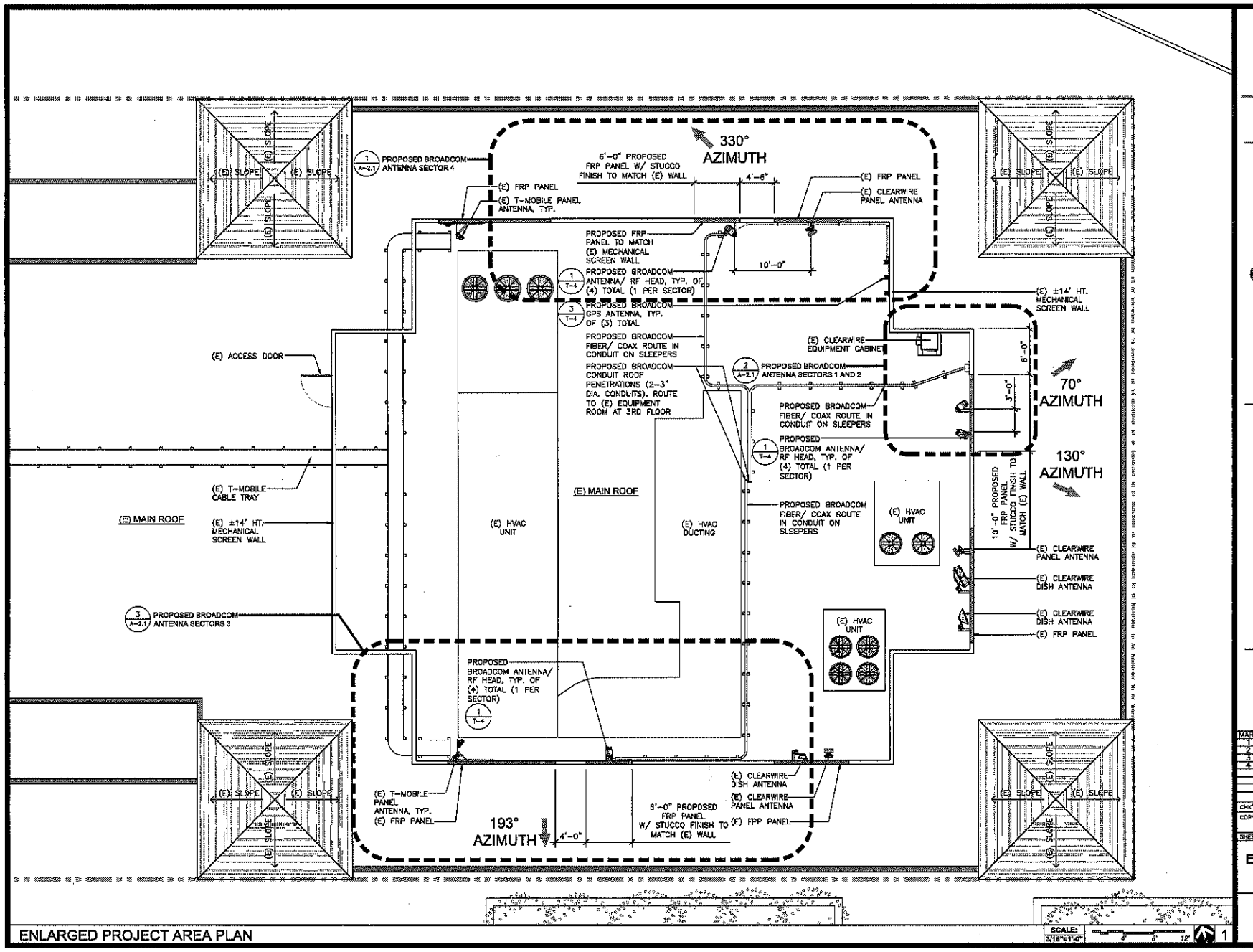
100 MATHILDA PLACE
SUNNYVALE, CA 94086

BROADCOM

100 S. MATHILDA AVENUE
SUNNYVALE, CA 94086

115 SANSOME STREET, SUITE 1400B
SAN FRANCISCO, CA 94104

ATTACHMENT 5 Page 57 of 57



ENLARGED PROJECT AREA PLAN

SCALE: 3/16"=1'-0"

115 SANSOME STREET, SUITE 1400B
SAN FRANCISCO, CA 94104

BROADCOM
190 S. MATHILDA AVENUE
SUNNYVALE, CA 94086

100 MATHILDA

100 MATHILDA PLACE
SUNNYVALE, CA 94086

MARK	
1	04/
2	04/
3	05/
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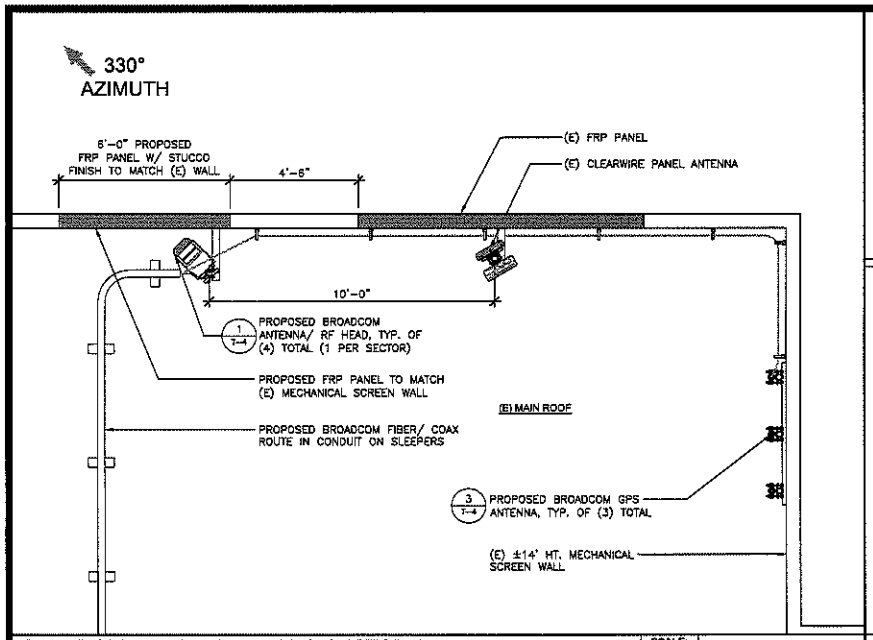
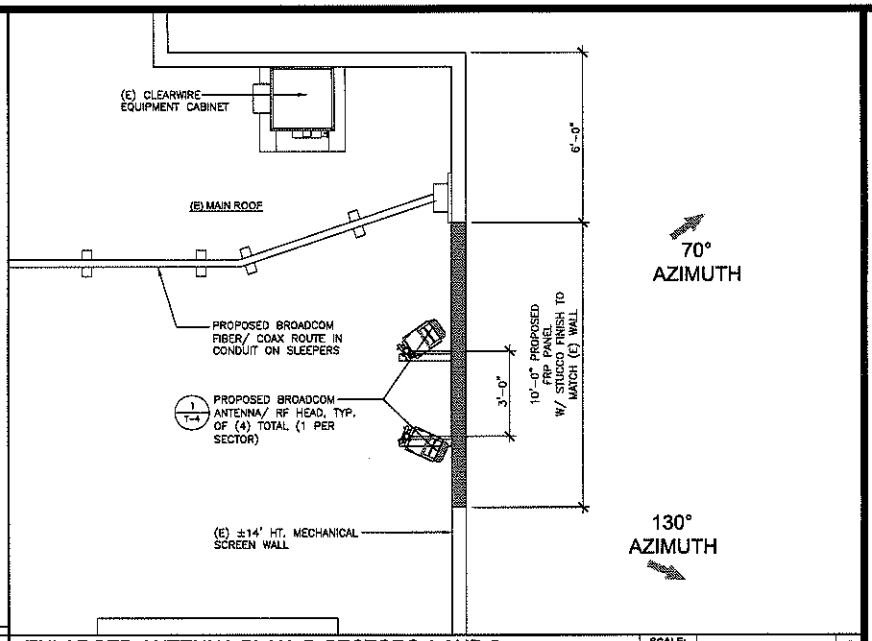
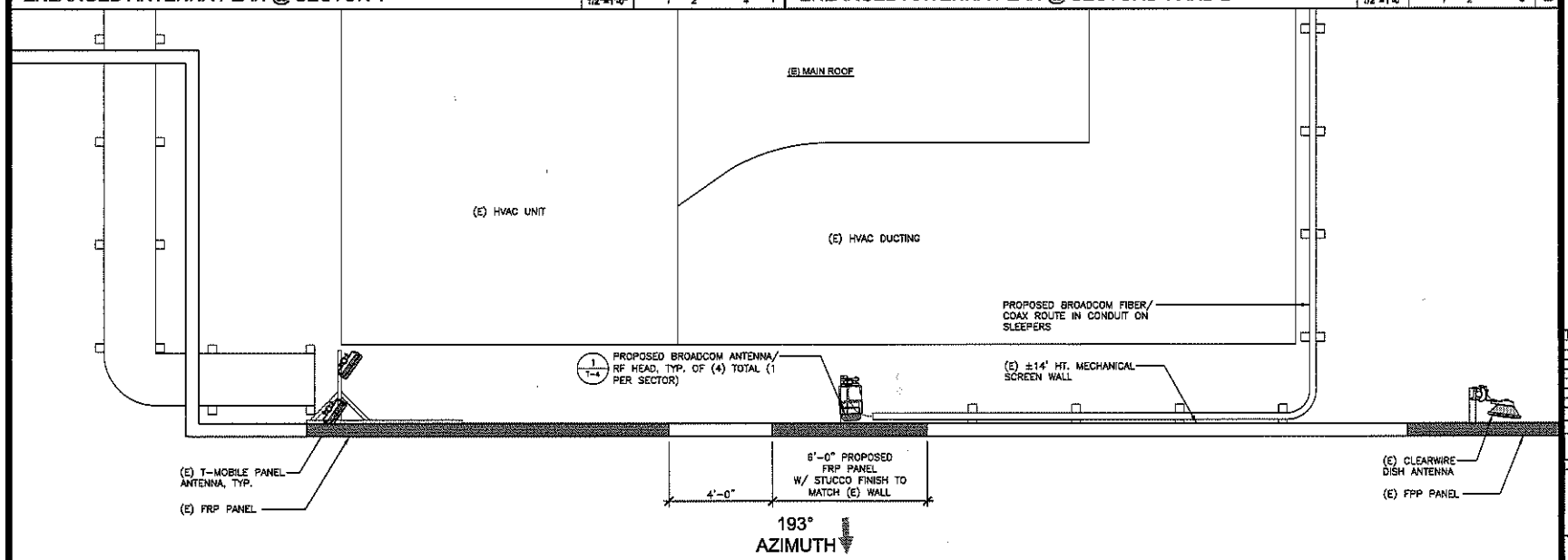
ATTACHMENT 13
Page 6 of 9



ENLARGED ANTENNA PLAN @ SECTOR 4 — SCALE: 1/2"=1'-0" — 1



ENLARGED ANTENNA PLAN @ SECTORS 1 AND 2 — SCALE: 1/2"=1'-0" — 2



ENLARGED ANTENNA PLAN @ SECTOR 3 — SCALE: 1/2"=1'-0" — 3

115 SANSOME STREET, SUITE 1400B
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BROADCOM
190 S. MATHILDA AVENUE
SUNNYVALE, CA 94086

100 MATHILDA
100 MATHILDA PLACE
SUNNYVALE, CA 94086

MARK	DA
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2	04/2
3	05/0
4	07/1

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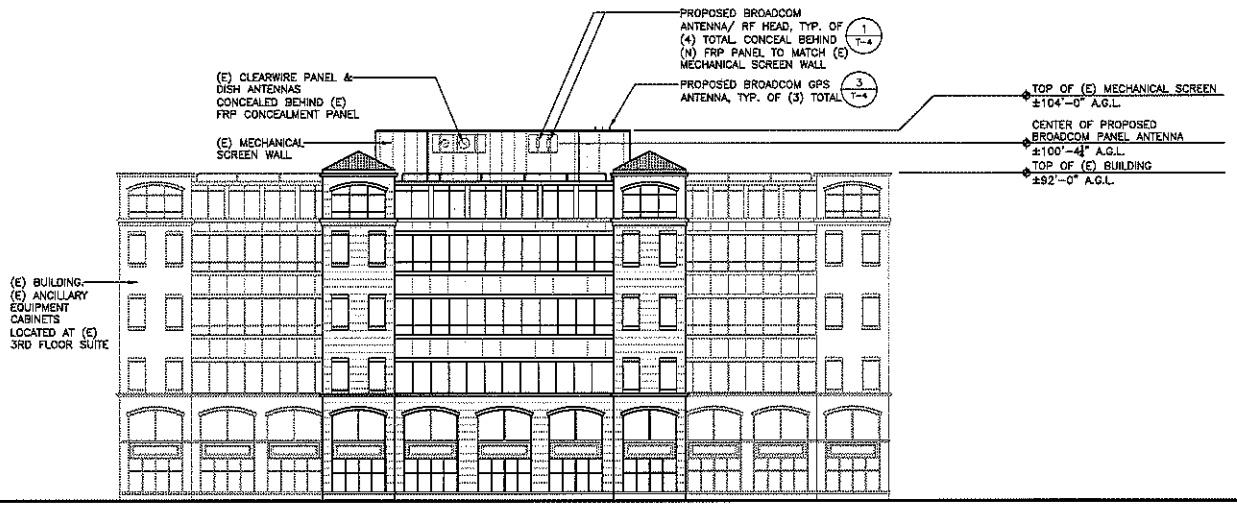
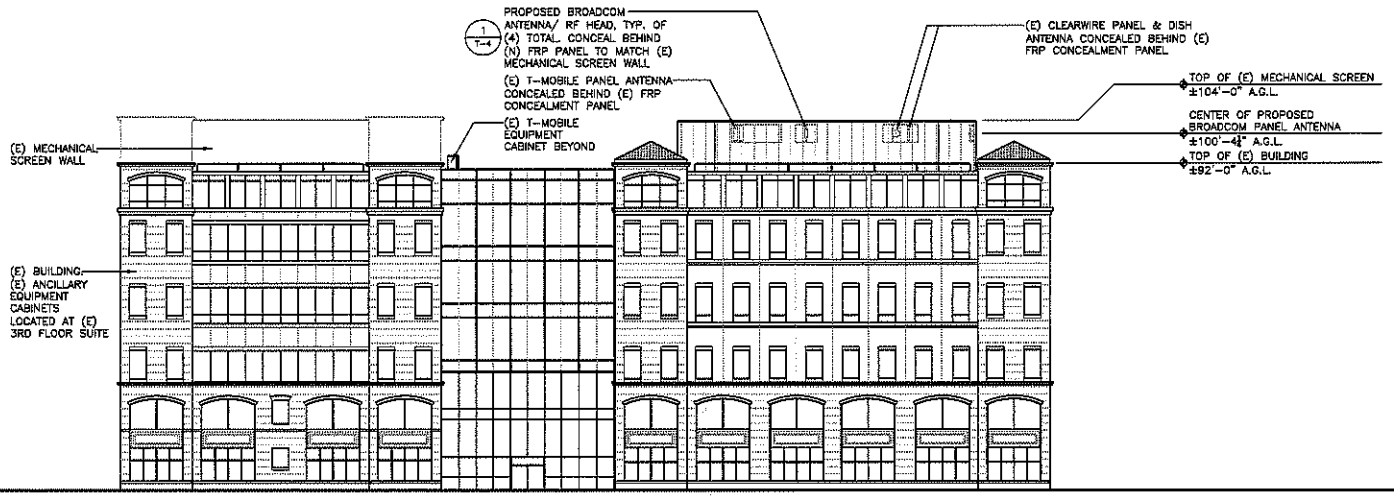
ATTACHMENT 15
Page 7 of 17



EAST ELEVATION

SCALE: 1/16"=1'-0" 0' 8' 16' 32' 1



SOUTH ELEVATION

SCALE: 1/16"=1'-0" 0' 8' 16' 32' 2

116 SANSOME STREET, SUITE 1400B
SAN FRANCISCO, CA 94104

BROADCOM
190 S. MATHILDA AVENUE
SUNNYVALE, CA 94086

100 MATHILDA

100 MATHILDA PLACE
SUNNYVALE, CA 94086

MARK	DA
1	04/1
2	04/2
3	05/2
4	07/1

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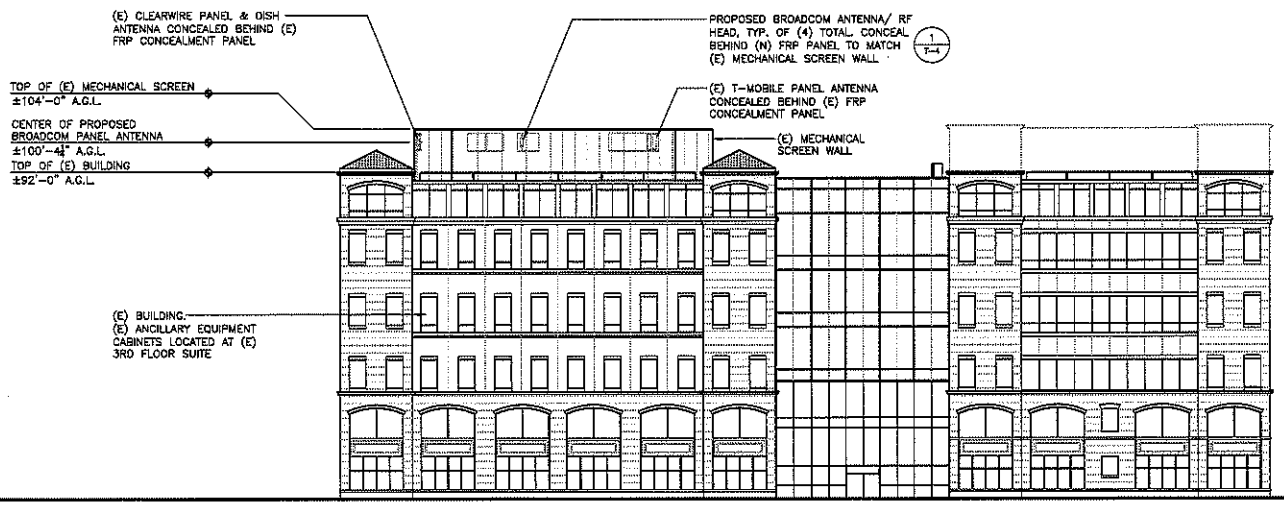
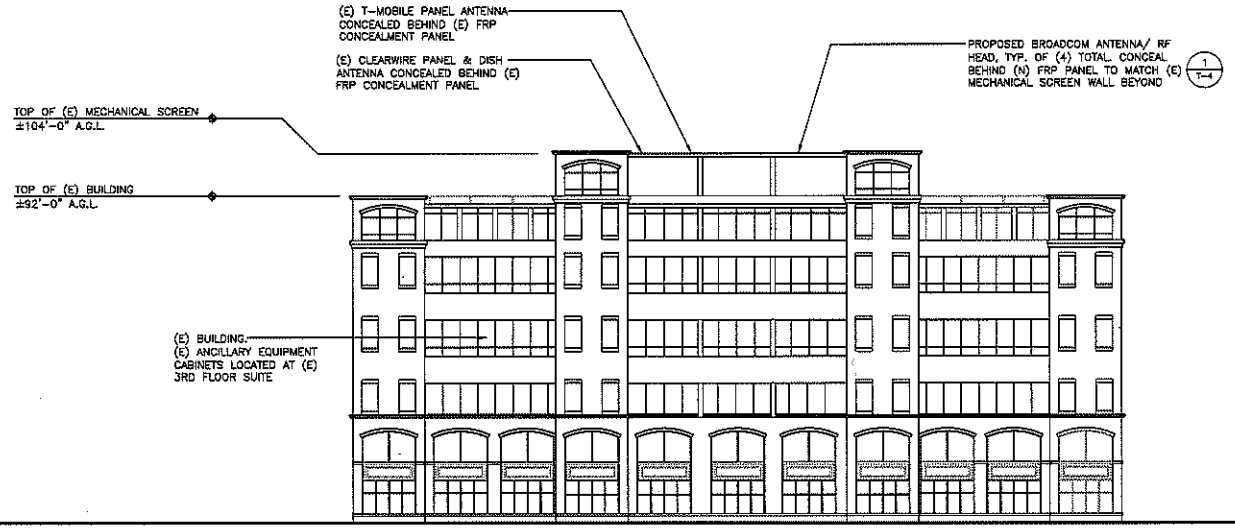
ATTACHMENT 8
Page 8 of 9



NORTH ELEVATION

SCALE: 1/16"=1'-0" 8' 16' 32' 1



WEST ELEVATION

SCALE: 1/16"=1'-0" 8' 16' 32' 2

115 SANSOME STREET, SUITE 1400B
SAN FRANCISCO, CA 94104

BROADCOM
190 S. MATHILDA AVENUE
SUNNYVALE, CA 94086

100 MATHILDA

100 MATHILDA PLACE
SUNNYVALE, CA 94086

MARK	DAT
1	04/1
2	04/2
3	05/2
4	07/1

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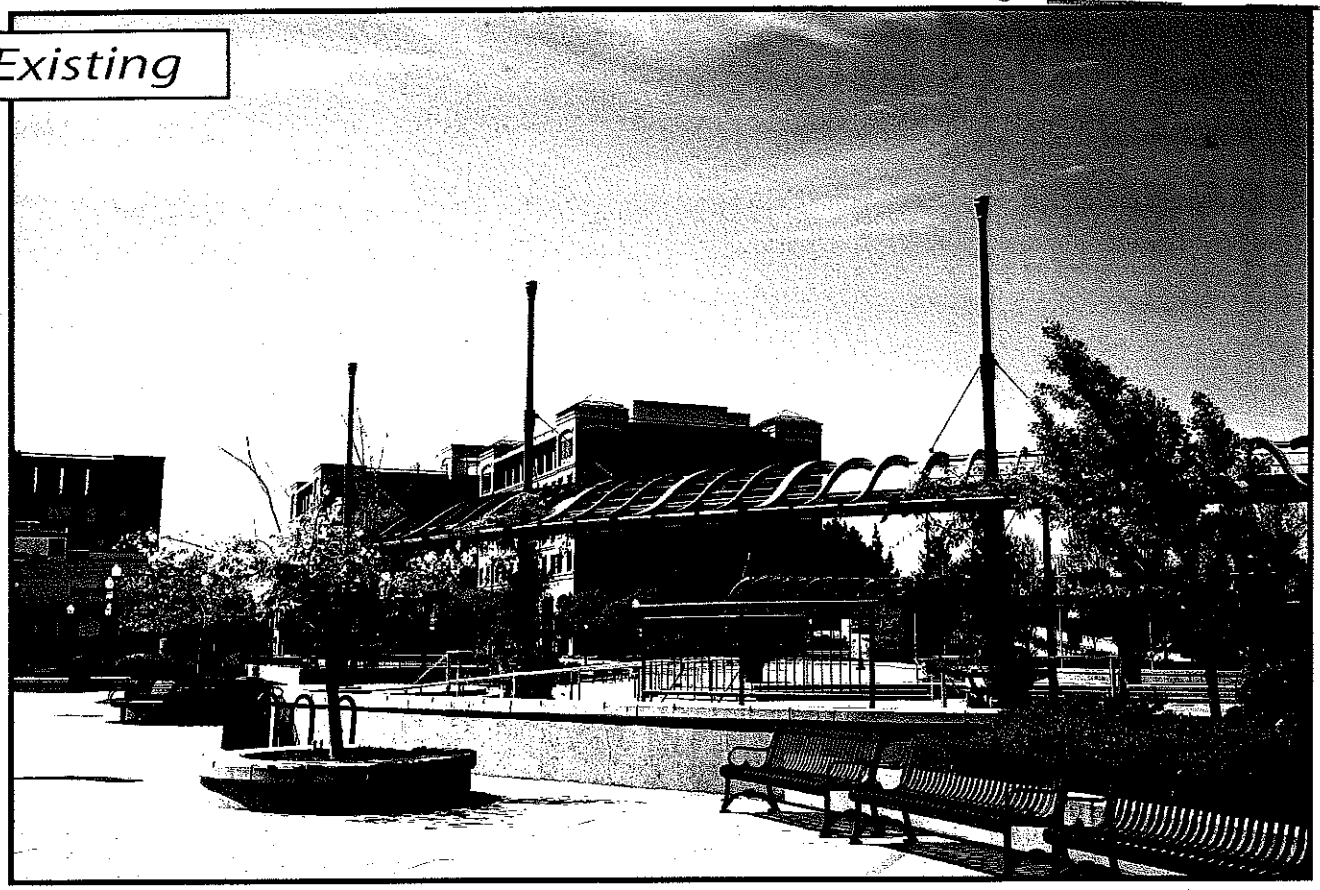
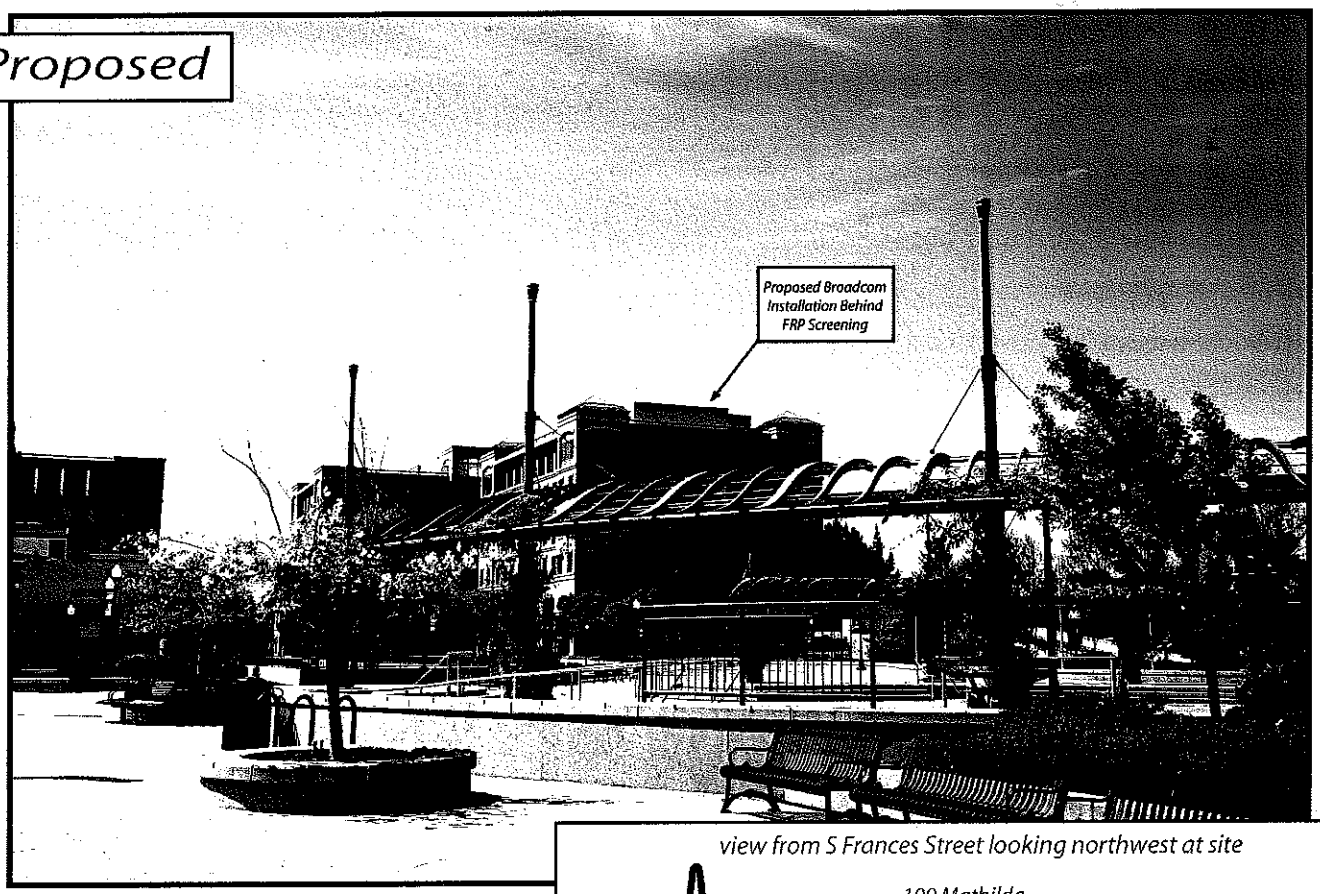
ATTACHMENT 5
Page 6 of 9

Existing



Proposed



view from S Frances Street looking northwest at site

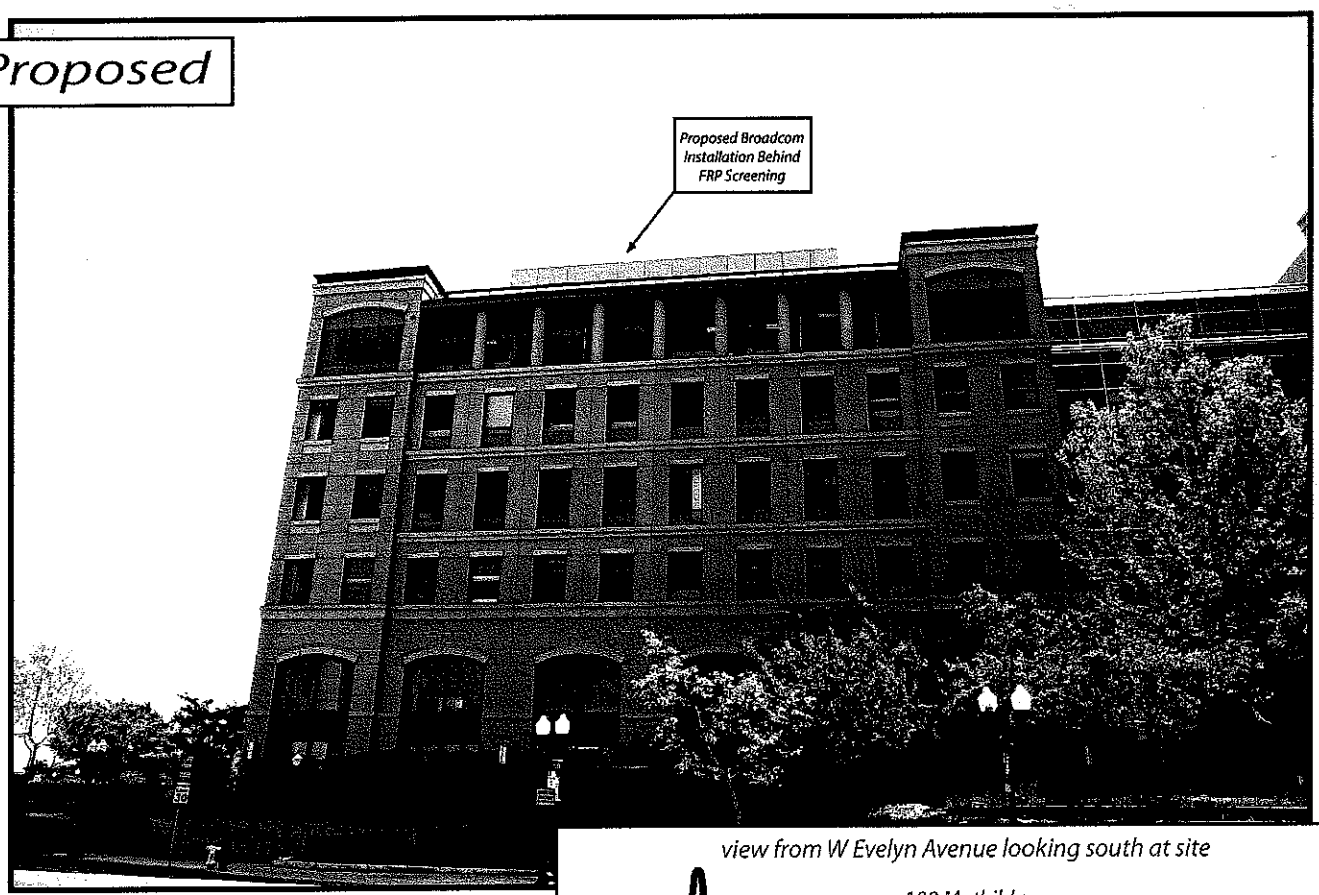
BROADCOM.

100 Mathilda
100 Mathilda Place, Sunnyvale, CA

AdvanceSim
Photo Simulation Solutions
Contact: 925.302.8607

Existing

Proposed



view from W Evelyn Avenue looking south at site

BROADCOM.

100 Mathilda
100 Mathilda Place, Sunnyvale, CA

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

Address: 100 Mathilda Place, Sunnyvale, CA 94086
APN : 209-07-024
Zone : DSP-3 (Downtown Specific Plan)

Project Description

Broadcom is proposing to construct, operate and maintain a wireless telecommunications facility on an existing six-story office building. Broadcom is proposing to replace the existing screening walls with fiberglass screens, painted and textured to match. The antennas will be placed behind the new and existing fiberglass screens. The proposed facility will consist of four (4) panel antennas and three (3) GPS antennas. Associated equipment cabinets will be placed on the roof top, screened by existing screen walls as well.

Safety and Compliance

The proposed facility will not be detrimental to the character of development, as it will not be staffed, having no impact on parking or traffic. After construction of the facility, the site will be serviced once a month, during a routine scheduled maintenance window by a service technician. Furthermore, the facility will generate no noise, odor, smoke or any other adverse impacts to adjacent land uses. Broadcom technology does not interfere with any other forms of private or public communications systems. In addition, the proposed wireless telecommunications facility will operate in full compliance with all local, state and federal regulations including the Telecommunications Act of 1996.

Unlike other land uses, which can be spatially determined through the General Plan, the location of wireless telecommunication facilities is based on technical requirements which include service area, geographical elevations, alignment with surrounding sites and customer demand components. Placement within the urban geography is dependent on these requirements. Consequently, wireless telecommunication facilities have been located adjacent to and within all major land use categories including residential, commercial, industrial, open space, etc. proving to be compatible in all locations.

Site Selection/Co-location/Height Justification

In an effort to minimize the number of new facilities in an area, Broadcom strives to find opportunities to co-locate on existing buildings, utility poles or existing wireless structures. For this particular site, Broadcom identified the subject building which provides adequate height and is considered a co-location as T-Mobile is at the same location. In addition, Broadcom recognizes that the City of Sunnyvale Telecommunications Ordinance siting recommendations prefer both rooftops and co-locations, which Broadcom is able to achieve. No other locations were considered seriously as this location is the least obtrusive. No additional height or mass to the existing building is required.

USE PERMIT/SPECIAL DEVELOPMENT PERMIT JUSTIFICATIONS

One of the two following findings must be made in order to approve a Use Permit or Special Development Permit application.

The Sunnyvale Municipal code states that at least one of the following two justifications must be met before granting the Use Permit or Special Development Permit. Please provide us information on how your project meets **at least one** of the following criteria.

1. The proposed use attains the objectives and purposes of the General Plan of the City of Sunnyvale as the project ...

OR

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 as ...

THE PROPOSED WIRELESS FACILITY WILL REQUIRE ONLY A MINOR MODIFICATION TO AN EXISTING BUILDING. THE PROPOSED ANTENNAS WILL BE HIDDEN FROM VIEW, BEHIND FIBERGLASS SCREENS: TEXTURED AND PAINTED TO MATCH THE EXISTING. THIS PROPOSAL WILL NOT HAVE ANY ADVERSE IMPACTS ON THE OVERALL DEVELOPMENT OF THIS PARTICULAR BUILDING AS WELL AS THE SURROUNDING PROPERTIES.

If you need assistance in answering either of these justifications, contact the Planning Division staff at the One-Stop Permit Center.

Theoretical RF Emissions Compliance Report

MPE Site Compliance Report

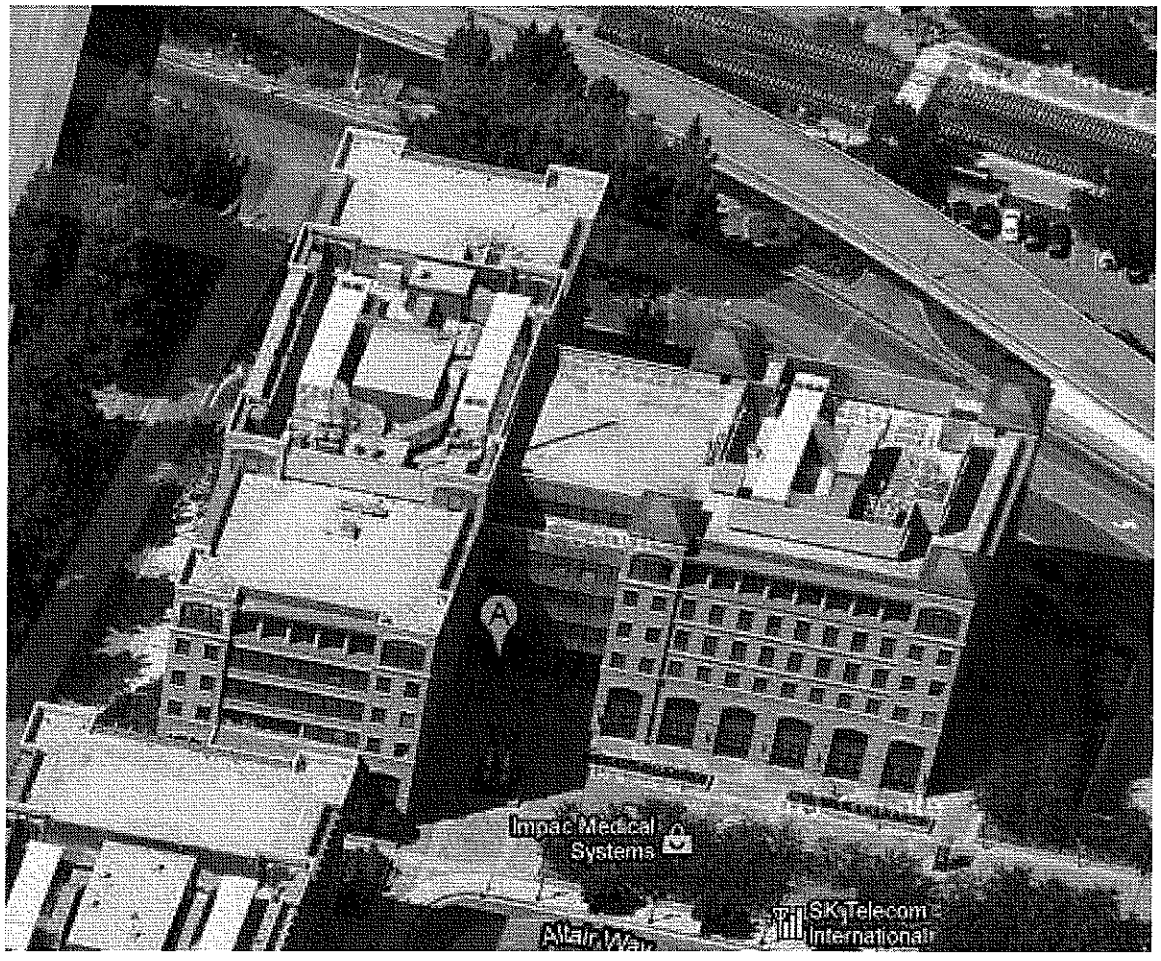
Submitted to:
Ryan Crowley
Modus Consulting Services
115 Sansome Street, Suite 1400B
San Francisco, CA 94104
415.986-2850
rcrowley@modus-corp.com
www.modus-corp.com

for the benefit of Broadcom

Site ID: 100 Mathilda

100 Mathilda Place
Sunnyvale, CA 94086

May 4, 2011



Prepared By:
Waterford Consultants, LLC

18331 Turnberry Drive
Round Hill, VA 20141
(703) 596-1022
www.waterfordconsultants.com

Theoretical RF Emissions Compliance Report

Site ID: 100 Mathilda
100 Mathilda Place
Sunnyvale, CA 94086

ENGINEERING STATEMENT CONFIRMING COMPLIANCE
With Radiofrequency Radiation Exposure Limits

Compliance Statement
Subject site COMPLIES with Radiofrequency Radiation Exposure Limits of 47 C.F.R. § § 1.1307(b)(3) and 1.1310

Technical Framework: Basis for Compliance Statement
Criteria for evaluation are listed in Table 1 of 47 C.F.R. § 1.1310. Calculations using input data provided to Waterford by client or client's representative numerically confirm the subject site can operate at a 100% duty cycle without creating situations that exceed MPE limits in areas of uncontrolled access. Because the subject facility is commercial infrastructure, general public access to the immediate vicinity of the equipment is likely to diminish the quality of wireless service available to the community. For that reason, whether signage is, or is not required as a safety precaution, Waterford recommends placement of RF safety signage at the subject site for the purpose of improving network reliability by discouraging public access.

Power density decreases significantly over a short distance from any antenna. Specifically with respect to directional panel antennas, the design, oriented in azimuth and elevation as documented, reasonably precludes potential to exceed MPE limits at any location other than directly in front of the antenna. Areas in front of the antenna that are restricted by barriers, would require climbing or are otherwise beyond the reach of a standing individual of average height are not considered accessible. Analysis or measurement of instantaneous energy levels is performed for use as proof of compliance with FCC rules and regulations applicable to non-occupational persons, those individuals who are not authorized to access portions of the antenna support structure above ground level. To assess time-average exposure for occupational personal working within secured areas of the site, on the supporting structure, or in the immediate proximity of the antenna equipment is a separate study requiring detailed ergonomic information.

Regulatory Framework
The FCC requires licensees to assure that persons are not exposed to radiofrequency electromagnetic energy power densities in excess of the applicable MPE (Maximum Permissible Exposure) limit. These rules apply to both Occupational Personnel and the General Population. Applicable FCC rules are found at 47 C.F.R. § § 1.1307(b)(3) and 1.1310. The FCC rules define two

tiers of permissible exposure differentiated by the situation in which the exposure takes place and/or the status of the individuals who are subject to exposure.

> ***General Population / uncontrolled*** exposure limits apply to those situations in which persons may not be aware of the presence of electromagnetic energy, where exposure is not employment-related, or where persons cannot exercise control over their exposure.
>
> ***Occupational / controlled*** exposure limits apply to situations in which persons are exposed as a consequence of their employment, have been made fully aware of the potential for exposure, and can exercise control over their exposure.

Maximum Permissible Exposure ("MPE") is defined in OET 65 as being 100% of the exposure limit for the situation or tier of permissible exposure. The time integral exposure to radiofrequency electromagnetic energy (RF), expressed in milliwatt-minutes per square centimeter, is the same value for both tiers. Anyone may be granted safe access for periods of thirty minutes or less to areas exhibiting less than or equal to 100% of the General Population MPE Limit. For persons who have been properly trained and meet the definition of being Occupational Personnel, access to areas at the Occupational MPE limit may be granted for six minutes.

For any area in excess of 100% Occupational MPE, access controls must be put in place and maintained to prevent the general population from gaining access. Subject to other site security requirements, Occupational Personnel trained in RF safety and equipped with personal protective equipment designed for safe work in the vicinity of RF may be granted access. Controls such as physical barriers to entry imposed by locked doors, locked passageways, or other access control mechanisms may be supplemented by alarms that alert the individual and notify site management of a breach in access control. Controls may include administrative policies and procedures requiring personal protective equipment (e.g. RF attenuating eyewear), proof of RF training to obtain site access cards, presentation of appropriate RF awareness training certifications to security personnel or other measures designed to prevent uncontrolled access.

FCC regulations regarding Radiofrequency radiation exposure, expressed in 47 CFR § 1.1310 are further clarified with respect to the value of 5% of exposure limits for the subject transmitters in the following section of 47 CFR § 1.1307 (b):

> (3) In general, when the guidelines specified in § 1.1310 are exceeded in an accessible area due to the emissions from multiple fixed transmitters, actions necessary to bring the area into compliance are the shared responsibility of all licensees whose transmitters produce, at the area in question, power

> density levels that exceed 5% of the power density exposure limit applicable to their particular transmitter or field strength levels that, when squared, exceed 5% of the square of the electric or magnetic field strength limit applicable to their particular transmitter. Owners of transmitter sites are expected to allow applicants and licensees to take reasonable steps to comply with the requirements contained In § 1.1307(b) and, where feasible, should encourage co-location of transmitters and common solutions for controlling access to areas where the RF exposure limits contained in § 1.1310 might be exceeded.

Following these FCC requirements, predictive modeling was performed that indicates power density levels from client transmitters do not exceed 5% of the power density MPE limit applicable to their transmitters.

Qualifications of Waterford

With more than 40 team-years of experience, Waterford Consultants, LLC [Waterford] provides technical consulting services to clients in the Radio Communications and antenna siting industry. Waterford retains professional engineers who are placed in responsible charge of the processes for analysis.

Waterford is familiar with 47 C.F.R. § § 1.1307(b)(3) and 1.1310 along with the general Rules, Regulations and policies of the FCC. Waterford work processes incorporate all specifications of *FCC Office of Engineering and Technology, Bulletin 65* ("OET65"), from the website: www.fcc.gov/oet/rfsafety, and follow criteria detailed in 47 CFR § 1.1310 *"Radiofrequency radiation exposure Limits".*

Within the technical and regulatory framework detailed above, Waterford created sophisticated computer modeling tools that operate on data provided by Waterford clients through the Waterford web portal.

In developing these tools, Waterford chose each program step according to recognized and generally accepted good engineering practices. Permissible exposure limits are band specific, and the Waterford computerized modeling tools correctly calculate permissible exposure based on the band(s) specified in the input data. Only clients and client representatives are authorized to provide input data through the Waterford web portal. In securing that authorization, clients and client representatives attest to the accuracy of all input data.

Waterford Consultants, LLC attests to the accuracy of the engineering calculations computed by those modeling tools. Furthermore, Waterford attests that the results of those engineering calculations are correctly summarized in this report.

Certification

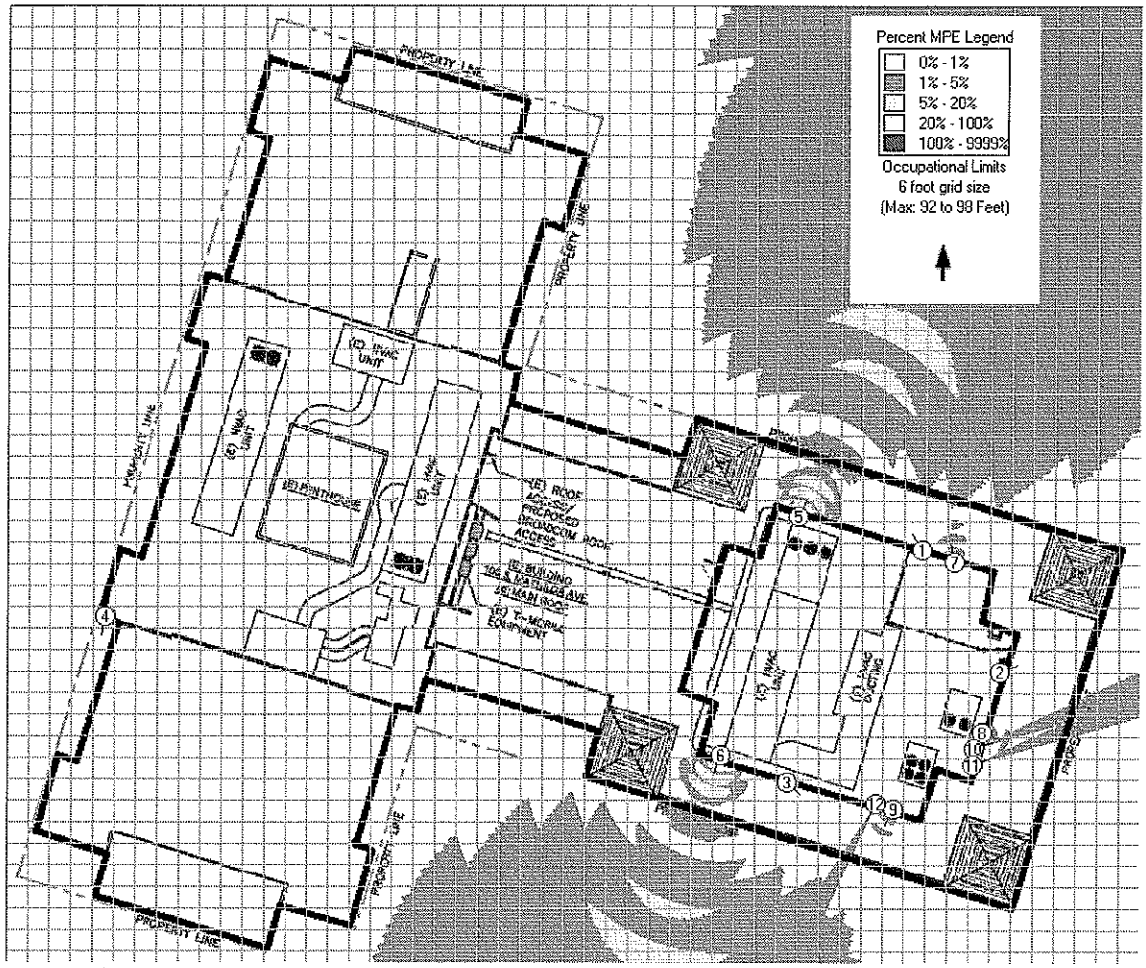
I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the law.

Ted Alan Abrams
Registered Professional Engineer
May 4, 2011

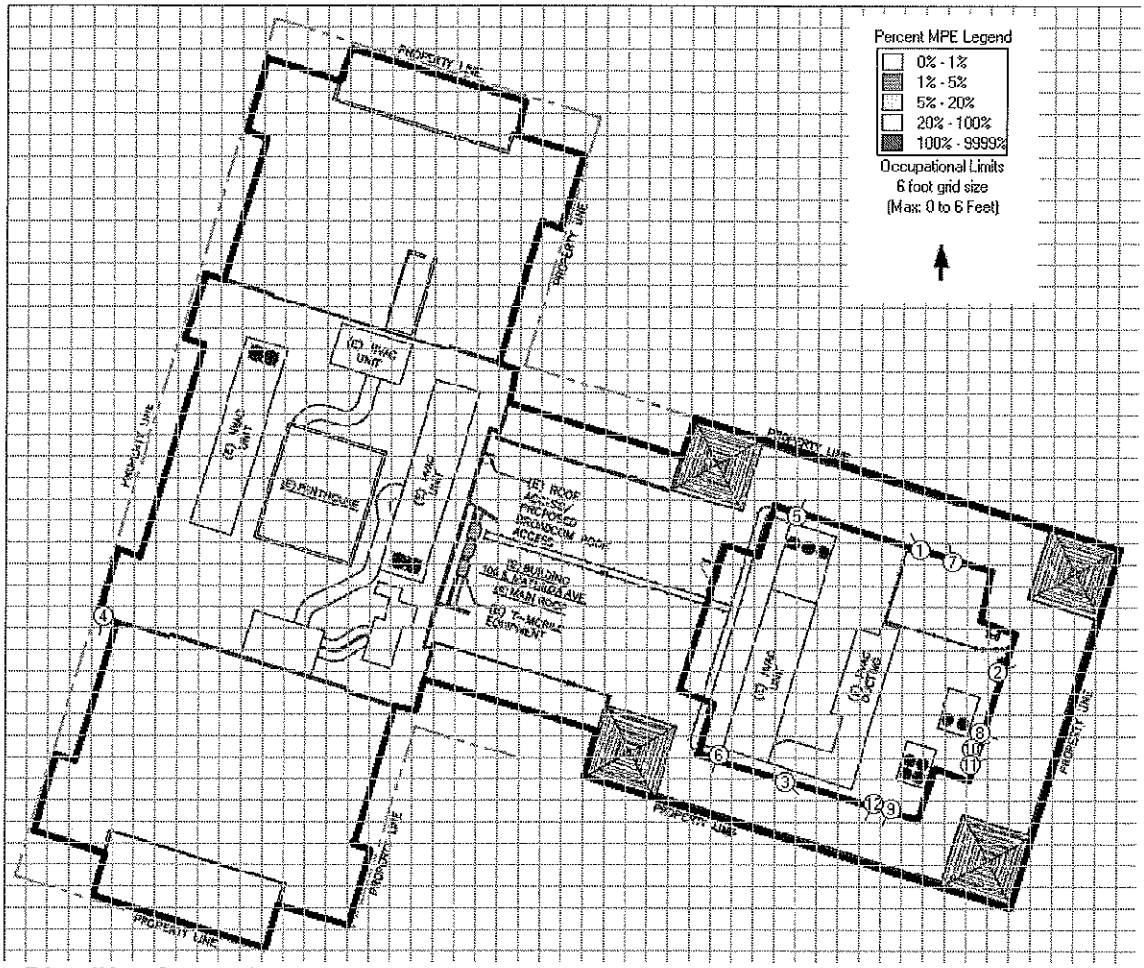
Appendix A
Theoretical RF Power Density Plots

The following plots show the maximum predicted power density levels in the reference plane indicated as a percentage of the Occupational Limit. Please note that 20% of the Occupational Limit corresponds to 100% of the General Population Limit.

The reference plane for the plot is the main roof level, as indicated in the caption. For example, "Max 10 to 16 Feet" refers to the maximum predicted power density level between 10 and 16 feet above the main roof level. Plots are produced for each accessible level. Levels that are not accessible will not be shown. Only accessible areas in a plot are relevant. Areas not accessible or in free space, off the edge of a roof or equipment penthouse, do not affect compliance.



Plot #1: Main roof level. The plot shows the maximum predicted power density levels between 0 and 6 feet above the roof as a percentage of the Occupational Limit.



Plot #2: Ground level. The plot shows the maximum predicted power density levels between 0 and 6 feet above the ground as a percentage of the Occupational Limit.

Appendix B
Antenna Inventory

Antenna and operating information for Broadcom has been supplied by Broadcom or its representatives. Waterford Consultants, LLC has estimated operating parameters for other carriers as shown in the table below.

#	Carrier	Antenna Model	Power (Watts ERP)	Frequency in MHz	Height ft(Center)	Azimuth
1	Broadcom	Motorola DAP RF	40	3400	100.4	330
2	Broadcom	Motorola DAP RF	40	3400	100.4	70
3	Broadcom	Motorola DAP RF	40	3400	100.4	130
4	Broadcom	Motorola DAP RF	40	3400	100.4	193
5	T-Mobile	Panel Antenna	12000	1900	100.4	30
6	T-Mobile	Panel Antenna	12000	1900	100.4	200
7	Clearwire	Panel Antenna	631	2400	100.4	350
8	Clearwire	Panel Antenna	631	2400	100.4	110
9	Clearwire	Panel Antenna	631	2400	100.4	350
10	Clearwire	Microwave	10048	18000	100.4	70
11	Clearwire	Microwave	10048	18000	100.4	70
12	Clearwire	Microwave	10048	18000	100.4	210

NOTE: Frequencies presented in the table are not intended to be a frequency inventory. The frequencies represent the approximate band of operation, and are used in the calculations of the MPE limit. Frequencies are purposely presented at the lower values for the band of operation, as the lower frequencies result in a more conservative calculation of the MPE limit.