Exhibit 1

ITEM 7-A

CITY OF ALAMEDA
Memorandum

To: Honorable President and
Members of the Planning Board

From: Deborah Diamond
Planner

Date: April 13, 2015

Re: **PLN14-0731 – 1777 Shoreline Drive.** Public hearing to consider an application for Design Review approval for a new enclosure on the rooftop of an apartment building to house 12 new panel antennae and other associated equipment for an AT&T wireless telecommunication facility. The project is located within an R-3-PD (Garden Residential Planned Development) zoning district.

PLN14-0729 – 1538 Saint Charles Street. Public hearing to consider an application for Design Review approval for a new enclosure on the rooftop of an apartment building to house nine new panel antennae and other associated equipment for an AT&T wireless telecommunication facility. The project is located within an R-4 (Neighborhood Residential) zoning district.

Both projects are categorically exempt from the California Environmental Quality Act pursuant to CEQA Guidelines Section 15301, which allows permitting and licensing of existing public or private structures involving negligible or no expansion of use beyond that which exists.

BACKGROUND

On December 8, 2014, Cortel Inc., agent for AT&T, submitted an application for installation of nine new wireless communications antennas on the roof of an apartment building located at 1538 Saint Charles Street (Exhibit 1). The following day, the applicant submitted a second application for 12 new antennas on the rooftop of a residential building at 1777 Shoreline Drive (Exhibit 2). Both applications are to replace wireless service from antennas that are being discontinued by the Alameda Unified School District at two public school sites, Wood Middle School and Maya Lin Elementary, due to the school district's decision to eliminate all such facilities from School District owned properties.

Above-ground utility installations, such as the proposed antennas, are permitted by right in the R-3-PD and the R-4 zoning districts. The subject applications involve exterior modifications to existing buildings and therefore require Design Review approval

pursuant to Alameda Municipal Code (AMC) Section 30-37.2. On February 12, 2015, letters were sent to neighboring properties informing them of the applications and soliciting comments. Based upon a review of the applications and a review of local, state and federal regulations, planning staff prepared to recommend to the Zoning Administrator approval of both applications.

On February 23, 2015, the Planning Board called the two applications for review in response to neighbors raising concerns about the proposed antennas. The main objection to the applications is a concern about the health effects of human exposure to radio frequency (RF) electromagnetic fields, particularly exposure of children, since the proposed location at 1777 Shoreline is adjacent to Wood Middle School.

ANALYSIS

Wireless communications antenna requirements are evolving as the use of mobile technology changes and increases. Early generation of cell phones were focused on use in cars, and thus antennas were placed near freeways. As cell phones have evolved and public demand for mobile service has increased, wireless infrastructure has expanded into all areas including residential neighborhoods. Wireless service providers are constantly attempting to meet increased demand by installing and upgrading infrastructure to provide better, faster and more reliable service.

Federal Regulations

The Federal Telecommunications Act of 1996 established the Federal Communications Commission (FCC) as the primary governmental authority over mobile phone RF consideration. Under Federal Law, local government authority is limited to the placement, construction and modification of wireless facilities. In particular, local government has no authority to address health effects of antenna installation or otherwise regulate exposure to RF radiation. The FCC has established the following rules pertaining to local government review of wireless telecommunication facilities:

RF Emissions and Health Concerns: The regulation of RF emissions is under the exclusive jurisdiction of the FCC. The FCC mandates that wireless facility providers conduct radio frequency electromagnetic (RF) modeling for each site to ensure compliance with FCC exposure limitations.

Collocations: Section 6409 of the "Middle Class Tax Relief Act of 2012" states that:

> "a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station."

This means that a local government must approve applications involving "collocation" of new antennas with antennas that already exist on a structure.

Siting of New Facilities: Federal rules also prevent municipalities from enacting regulations that have the effect of restricting wireless service, or discriminating among service providers. For example, unreasonable discrimination has been found when local authorities prohibit installations in locations where identical facilities were previously permitted. Local governments potentially run afoul of this provision if its enforcement of local requirements creates a "significant gap" in service coverage. The FCC would find a "significant gap" to exist if the particular provider seeking to install facilities has a gap in its own service network, even if other companies provide service in an area.

Processing Time: In 2009, the FCC established "Shot Clock" provisions for municipal land use planning authorities to insure timely processing of wireless applications. This resulted in a 90-day review limit for collocation applications and 150-day review for siting applications other than collocation. The review time for collocations was further reduced by the FCC to 60 days on October 17, 2014.

In summary, Federal Law limits the City's review of wireless facilities to: 1) the physical placement of the facility, and 2) the appearance of the structure(s) supporting the wireless facility. The potential health effects of RF cannot be the basis for any City land use or planning decision regarding the placement or appearance of a wireless facility.

It should be noted that the Alameda Unified School District or the City of Alameda City Council may decide not to make its lands or properties available for lease to wireless providers based upon concerns about the potential health effects of RF. The Federal Laws described above relate solely to the City of Alameda land use authority to regulate the construction of facilities on private property. A school district or a city government can, as a property owner, make independent decisions about how it may or may not want to lease property to a wireless provider.

City of Alameda Regulations:

Pursuant to the Alameda Municipal Code (AMC), proposals to erect new or modify existing wireless facilities on private property require Design Review approval consistent with AMC Section 30-36 and 30-37. To approve a design review application, the Planning Board must find that:

1. The proposed design is consistent with the General Plan, Zoning Ordinance, and the City of Alameda Design Review Manual.

2. The project will be compatible and harmonious with the design and use of the surrounding area.

3. The proposed design of the structure and exterior materials are visually compatible with the surrounding development.

Consistent with federal regulations and the requirements of AMC section 30-36, Design Review, the staff review of the rooftop installations focused primarily on the physical design of the proposals. Please see Exhibit 3 for photo simulations and technical reports.

PLN14-0731 – 1777 Shoreline Drive. This application is a proposal to install a new telecommunications facility on the rooftop of the rear building at the Shoreline Apartments complex. AT&T indicates this wireless installation is necessary to close a coverage gap in its service. A RF-EME Compliance Report was prepared for this project and it concludes that the proposed wireless facility is within FCC standards.

The location and appearance of the proposed telecommunications facility is consistent with zoning regulations and the City's design guidelines for new construction to match the existing building. Such facilities are permitted in the R-3 zoning district.

The antenna would be mounted on a rack adjacent to an existing elevator housing. The screening structure will extend 11 feet from the top of the roof and to a height of 38'6". The height limit for the R-3-PD district is 35 feet but, pursuant to AMC Section 38-5.8, utility structures and necessary mechanical appurtenances may be built up to 25 feet above the height limit.

The proposed facility consists of 12 antennas concealed within a stealthing structure. The stealthing structure would be painted to match the building color, incorporating the same blue band at the top. Equipment cabinets and ancillary equipment will be installed adjacent to the ground-level garage. Cables from the equipment cabinets to the antenna will be on the exterior of the north (rear) elevation and will be boxed in and painted to match the building. Design review for a similar rooftop installation on another building in the same apartment complex belonging to another carrier was previously approved by the City of Alameda under Design Review Section 30-36.

For the above reasons, staff recommends approval of the facilities proposed at 1777 Shoreline Drive.

PLN14-0729 – 1538 Saint Charles Street. This application is also a proposal to install a new telecommunications facility on the rooftop of a residential building. AT&T has applied to install nine new antennas and equipment cabinets at 1538 Saint Charles Street. A rooftop wireless installation for T-Mobile already exists on the same roof, making this a collocation of wireless facilities. AT&T indicates this wireless installation is necessary to close a coverage gap in its service. A RF-EME Compliance Report was prepared for this project and it concludes that the proposed wireless facility is within FCC standards. Pursuant to Federal Law, the subject application does qualify as a "collocation" proposal because another facility already exists on the roof of this building.

The location and appearance of the proposed telecommunications facility is consistent with zoning regulations and the City's design guidelines for new construction to match the existing building.

The screening structure will extend 10 feet from the top of the roof and to a height of 50'3". Pursuant to AMC Section 38-5.8, utility structures and necessary mechanical appurtenances may be built up to 25 feet above the 35-foot height limit in the subject zoning district.

The proposed antennas would be located on the roof on the east side (rear) of the building, concealed within a stealthing structure which would be painted to match the existing building color. The cabinets and ancillary equipment will be installed inside the ground-level garage. Cables from the equipment cabinets will be on the exterior of the north (rear) elevation and will be boxed in and painted to match the building.

For the above reasons, staff recommends approval of the telecommunications facilities proposed at 1538 Saint Charles Street.

ENVIRONMENTAL REVIEW

Both applications are categorically exempt from the California Environmental Quality Act pursuant to CEQA Guidelines Section 15301 which allows minor alterations to existing public or private structures involving negligible or no expansion of use beyond that which exists.

PUBLIC NOTICE AND COMMENTS

On February 12, 2015, a Design Review notice was sent to properties within 100 feet of each project boundary. Ten people provided written comments in opposition of the applications; seven for the location at 1777 Shoreline Drive, one for the location at Saint Charles Street, and two for both locations.

For the Planning Board hearing, property owners and residents within 300 feet of each project boundary were notified of the public hearing and given the opportunity to review and comment on the proposals. Notices were reissued after the item was continued from the March 23, 2015 Planning Board meeting. All public correspondence is attached to this report (Exhibit 4).

RECOMMENDATIONS

Approve resolutions of Design Review approval for both applications, as follows:

1. Approval of Design Review application PLN14-0731 – 1777 Shoreline Drive, with conditions stated in the draft resolution (Exhibit 5).

2. Approval of Design Review application PLN14-0729 – 1538 Saint Charles Street, with conditions stated in the draft resolution (Exhibit 6).

Respectfully Submitted,

Deborah Diamond
Planner

Exhibits:

1. Project Plans, 1777 Shoreline Drive
2. Project Plans, 1538 Saint Charles Street
3. Photo Simulations and Technical Reports
4. Correspondence
5. Draft Resolution 1777 Shoreline Drive
6. Draft Resolution 1538 Saint Charles Street

Exhibit 1

SITE NUMBER: CCU3969

SITE NAME: GRAND ST & OTIS DR

SEARCH RING NAME:
GRAND ST & OTIS DR

1777 SHORELINE DRIVE

ALAMEDA, CA 94501

COUNTY: ALAMEDA COUNTY

SITE TYPE: ROOFTOP

FA #: 13323785

PROJECT DESCRIPTION

NEW SITE BUILD UNMANNED TELECOMMUNICATIONS FACILITY.

1. BRING POWER / TELCO / FIBER TO SITE LOCATION.
2. INSTALL AT&T OUTDOOR EQUIPMENT IN A LEASE AREA (OUTDOOR AT GRADE)
3. PROPOSED STEALTH (17'-6" BY 17'-0") PLACE ON TOP OF (E) ELEVATOR SHAFT.
4. INSTALL (2) PROPOSED GPS UNITS ON ROOFTOP PARAPET WALL.
5. INSTALL (12) PROPOSED ANTENNAS (4) PER SECTOR IN PROPOSED STEALTH ON ROOFTOP.
6. INSTALL (21) PROPOSED RRH & (6) A2 UNITS IN PROPOSED STEALTH ON ROOFTOP.
7. INSTALL (4) PROPOSED DC6'S IN PROPOSED STEALTH ON ROOFTOP.
8. INSTALL PROPOSED CABLE TRAY ON VERTICAL WALL FROM EQUIPMENT AREA TO ROOF, AND THEN INSTALL PROPOSED 4x4x24" SLEEPERS FOR (2) PROPOSED 3"Ø & (1) PROPOSED 2"Ø CONDUIT ON ROOFTOP.

PROJECT INFORMATION

Property Information:
Site Name: OTIS RELO
Site Number: CCU3969

Site Address: 1777 SHORELINE DRIVE
ALAMEDA, CA 94501

A.P.N. Number: 074-1250-004-01
Current Use: RESIDENTIAL BUILDING

Proposed Use: RESIDENTIAL BUILDING/
UNMANNED TELECOM FACILITY

Jurisdiction: CITY OF ALAMEDA
Zoning Designation: R-3-PD (GARDEN
RESIDENTIAL & RESIDENTIAL DISTRICT)

Latitude (NAD 83): N 37° 45' 35.35" (37.75982°)
Longitude (NAD 83): W 122° 15' 44.11" (122.26225°)

Ground Elevation (NAVD 88): 14.8 FT. A.M.S.L.
(AT SOUTHEASTERLY CORNER OF (E) BLDG)

Property Owner:
BANTRY BAY PROPERTIES
724 LEWELLING BLVD, SUITE #100
SAN LEANDRO, CA 94579

Property Managing Company:
BANTRY BAY PROPERTIES
ATTN: DAN SULLIVAN
724 LEWELLING BLVD, SUITE #100
SAN LEANDRO, CA 94579

Power Agency:
ALAMEDA MUNICIPAL POWER
2000 GRAND STREET
ALAMEDA, CA 94501

Telephone Agency:
AT&T

RFDS DATED 10-23-14, V1
(preliminary)

PROJECT TEAM

Applicant / Lessee:
AT&T MOBILITY
2600 Camino Ramon, 4 West
San Ramon, CA 94583
contact: MONICA MILLER
email: mm595e@att.com
cell: (925) 277-6219

Construction Mgr.:
ERICSSON
contact: TODD MERRILL
6140 Stoneridge Mall
Pleasanton, CA 94588
email: todd.merrill@ericsson.com
ph: (530) 605-5765

Site Acquisition:
CORTEL, Inc.
contact: ALEX ORNER
email: alex.orner@cortel-llc.com
cell: (415) 601-3194

Architect / Engineer:
CORTEL, Inc.
contact: SEUNGKUN OH
email: seungkun.oh@cortel-llc.com
ph: (786) 503-3851

Zoning Mgr.:
CORTEL, Inc.
contact: ALEX ORNER
email: alex.orner@cortel-llc.com
cell: (415) 601-3194

RF Engineer:
AT&T MOBILITY
contact: MICHAEL QUINTO
email: mq3253@att.com
ph: (925) 277-6335

SHEET INDEX

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

OCCUPANCY AND CONSTRUCTION TYPE

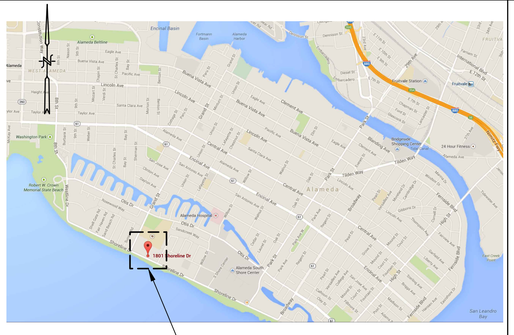
OCCUPANCY : U (UNMANNED)

CONSTRUCTION TYPE: V-B

HANDICAP REQUIREMENTS

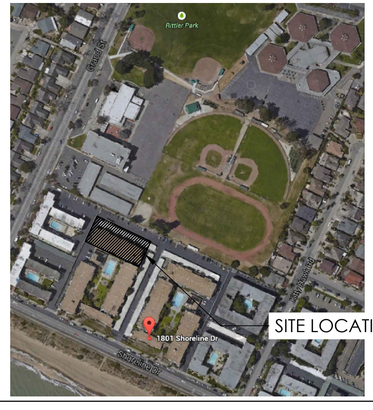
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAP ACCESS IS NOT REQUIRED PER CBC2013, SECTION 11B-203.4 (LIMITED ACCESS SPACE)

VICINITY MAP



SITE LOCATION
(SEE ZOOM IN RIGHT)

VICINITY MAP - ZOOMED



SITE LOCATION

APPROVALS

APPROVED BY:	INITIALS:	DATE:
AT&T:		
VENDOR:		
R.F.:		
LEASING / LANDLORD:		
ZONING:		
CONSTRUCTION:		
POWER / TELCO:		
PG&E:		

DIRECTIONS FROM AT&T

DIRECTIONS FROM AT&T'S OFFICE AT 5001 EXECUTIVE PARKWAY, SAN RAMON, CA

1. Head northeast on Executive Pkwy toward Camino Ramon
2. Turn right onto Camino Ramon
3. Take right onto Bollinger Canyon Rd
4. Merge onto I-680 S via the ramp to San Jose
5. Merge onto I-680 S
6. Take I-580 W and I-880 N to Davis St in San Leandro.
7. Take the Davis Street exit from I-880 N
8. Sharp left onto Davis St
9. Turn right onto Doolittle Dr
10. Doolittle Dr turns slightly left and becomes Otis Dr
11. Turn left onto Broadway
12. Broadway turns slightly right and becomes Shoreline Dr

GENERAL CONTRACTOR NOTES

DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE FORMATTED TO BE FULL SIZE AT 24" x 36". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOBSITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME.

DIGALERT
800-227-2600
Call 2 Full Working Days In Advance

PREPARED FOR
at&t Mobility
5001 Executive Parkway
San Ramon, California 94583

Vendor:
Cortel
14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:
CCU3969

AT&T SITE NO:	CCU3969
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

REV	DATE	DESCRIPTION
2	01/09/15	ZD 100%
1	11/26/14	ZD 100%
0	11/16/14	ZD 100%

Licensor:

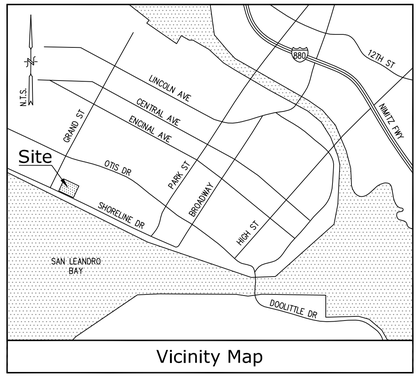
Issued For:

CCU3969
GRAND ST & OTIS DR

1777 SHORELINE DRIVE
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1



Vicinity Map

Title Report

PREPARED BY: STEWART TITLE GUARANTY COMPANY
ORDER NO.: 01180-128718
DATED: OCTOBER 2, 2014

Legal Description

PARCEL ONE:
PARCEL 2A, AS SHOWN ON "RECORD OF SURVEY, LOT 2, TRACT 2055, SOUTH SHORE UNIT NO. 1, IN THE CITY OF ALAMEDA", FILED JUNE 12, 1961 IN THE OFFICE OF THE COUNTY RECORDER OF SAID ALAMEDA COUNTY, AND OF RECORD IN BOOK 4 OF SURVEYS BY LICENSED SURVEYORS, AT PAGE 19.

PARCEL TWO:
PARCEL 2B, AS SHOWN ON "RECORD OF SURVEY, LOT 2, TRACT 2055, SOUTH SHORE UNIT NO. 1, IN THE CITY OF ALAMEDA", FILED JUNE 12, 1961 IN THE OFFICE OF THE COUNTY RECORDER OF SAID ALAMEDA COUNTY, AND OF RECORD IN BOOK 4 OF SURVEYS BY LICENSED SURVEYORS, AT PAGE 19.

PARCEL THREE:
A NON-EXCLUSIVE RECIPROCAL EASEMENT FOR INGRESS AND EGRESS FOR PEDESTRIANS AND VEHICLES AND DRAINAGE PURPOSES OVER THE FOLLOWING DESCRIBED PARCEL OF LAND: A STRIP OF LAND WITH THE UNIFORM WIDTH OF 8 FEET, THE NORTHWESTERLY LINE OF WHICH IS DESCRIBED AS FOLLOWS:
BEGINNING AT THE MOST SOUTHERLY CORNER OF LOT 2, AS SAID LOT IS SHOWN ON MAP OF TRACT 2055, FILED MAY 13, 1959, MAP BOOK 39, PAGE 69, ALAMEDA COUNTY RECORDS; THENCE ALONG THE SOUTHEASTERN LINE OF SAID LOT 2, NORTH 26° 11' 02" EAST 154 FEET.

Assessor's Parcel Nos.

074-1250-004-01 AND 074-1250-004-02

Easements

(1) EASEMENTS FOR PUBLIC UTILITIES AS SHOWN ON TRACT NO. 1866, FILED OCTOBER 30, 1957 IN BOOK 38, PAGE 50 OF MAPS. (PLOTTED HEREON)

(2) EASEMENTS FOR PUBLIC UTILITIES AS SHOWN ON TRACT NO. 2055, FILED MAY 13, 1959 IN BOOK 39, PAGE 69 OF MAPS. (PLOTTED HEREON)

(3) EASEMENT FOR SANITARY AND STORM SEWERS RECORDED JUNE 3, 1959 IN BOOK 9047, PAGE 207 AS INST. NO. AQ65621, O.R. (PLOTTED HEREON)

(4) EASEMENT FOR A POWER LINE RECORDED SEPTEMBER 1, 1959 IN BOOK 9138, PAGE 465 AS INST. NO. AQ103786, O.R. (PLOTTED HEREON)

(5) EASEMENTS FOR PUBLIC UTILITIES AS SHOWN ON RECORD OF SUVEY FILED JUNE 12, 1961 IN BOOK 4, PAGE 19 OF SURVEYS. (PLOTTED HEREON)

(6) EASEMENT FOR PEDESTRIAN AND VEHICULAR INGRESS AND EGRESS RECORDED AUGUST 8, 1961 IN BOOK 383, PAGE 68 AS INST. NO. AS96474, O.R. (PLOTTED HEREON)

(8) DOCUMENT ENTITLED "GRANTS OF RECIPROCAL EASEMENTS" RECORDED MAY 1, 1973 IN BOOK 3404, PAGE 453 AS INST. NO. 73-58192, O.R. (PLOTTED HEREON)

12. EASEMENT TO COMCAST OF ALAMEDA INC. FOR OPERATION OF A BROADBAND COMMUNICATION SYSTEM RECORDED DECEMBER 6, 2005 AS INST. NO. 2005520474, O.R. (BLANKET IN NATURE)

16. EASEMENT TO COMCAST OF ALAMEDA INC. FOR OPERATION OF A BROADBAND COMMUNICATION SYSTEM RECORDED JULY 19, 2013 AS INST. NO. 2013247762, O.R. (BLANKET IN NATURE)

Access Route/Lease Area/Utility Route

AS SHOWN.

Geographic Coordinates at Center of Sectors

1983 DATUM: LATITUDE 37° 45' 35.35"N LONGITUDE 122° 15' 44.11"W
ELEVATION = 14.8 FEET ABOVE MEAN SEA LEVEL

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

Basis of Bearings

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

Bench Mark

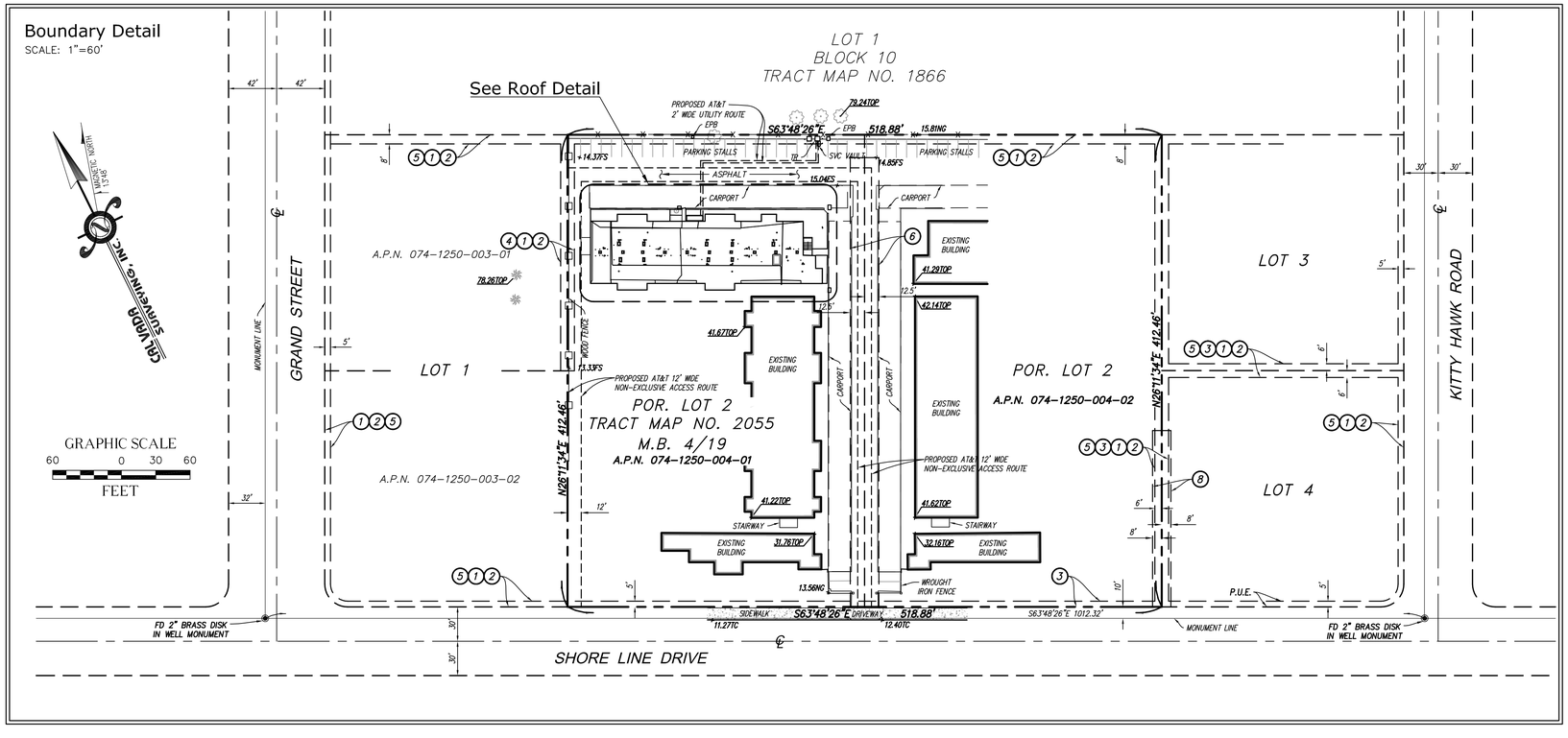
THE CALIFORNIA SPATIAL REFERENCE CENTER C.O.R.S "P224", ELEVATION = 1443.77 (NAVD 88).

Date of Survey

OCTOBER 16, 2014

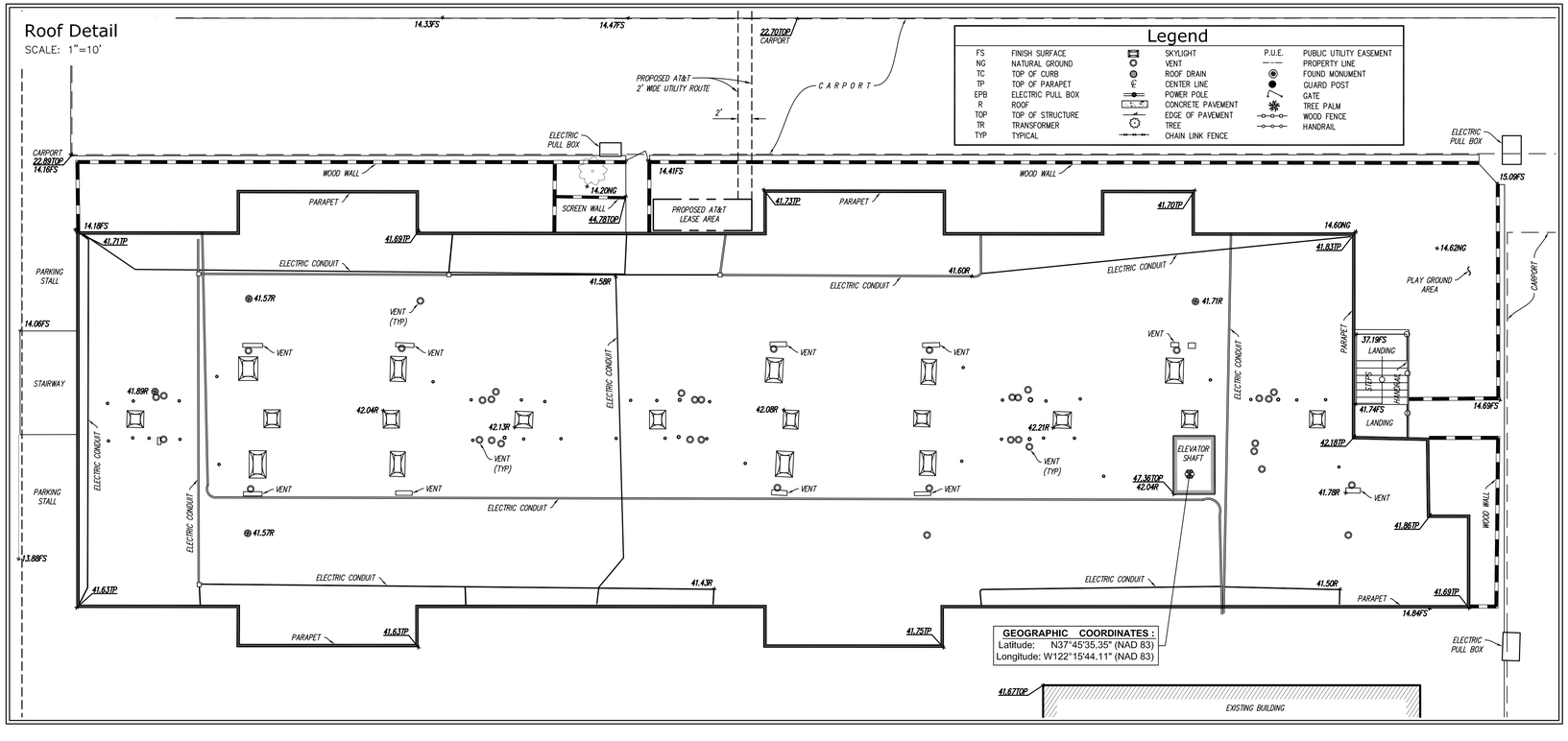
Boundary Detail

SCALE: 1"=60'



Roof Detail

SCALE: 1"=10'



at&t
5001 Executive Parkway, 4W850N
San Ramon, CA 94583

A&E DEVELOPMENT:

Cortel, LLC
14621 Arroyo Hondo
San Diego, CA 92127

CONSULTANT:

CALVADA SURVEYING, INC.
411 Jenks Cir., Suite 205, Corona, CA 92880
Phone: 951-280-9960 Fax: 951-280-9746
Toll Free: 800-CALVADA www.calvada.com

JOB NO. 141026

LICENSURE:

LICENSED LAND SURVEYOR
Armando D. Duporti
L.S. 7780
Exp. 12-31-15
STATE OF CALIFORNIA

REVISION:

REVISION:	DATE: / BY:	DESCRIPTION:
	10/21/14	SUBMITTAL
	AV	
1	11/17/14	TITLE REPORT-FINAL
	RAS	
2	1/15/15	CLIENT COMMENTS
	RG	

SITE INFORMATION:

SITE NUMBER
CCU3969

SITE NAME
Grand St. & Otis Dr.
1777 SHORELINE DRIVE
ALAMEDA, CA 94501
ALAMEDA COUNTY

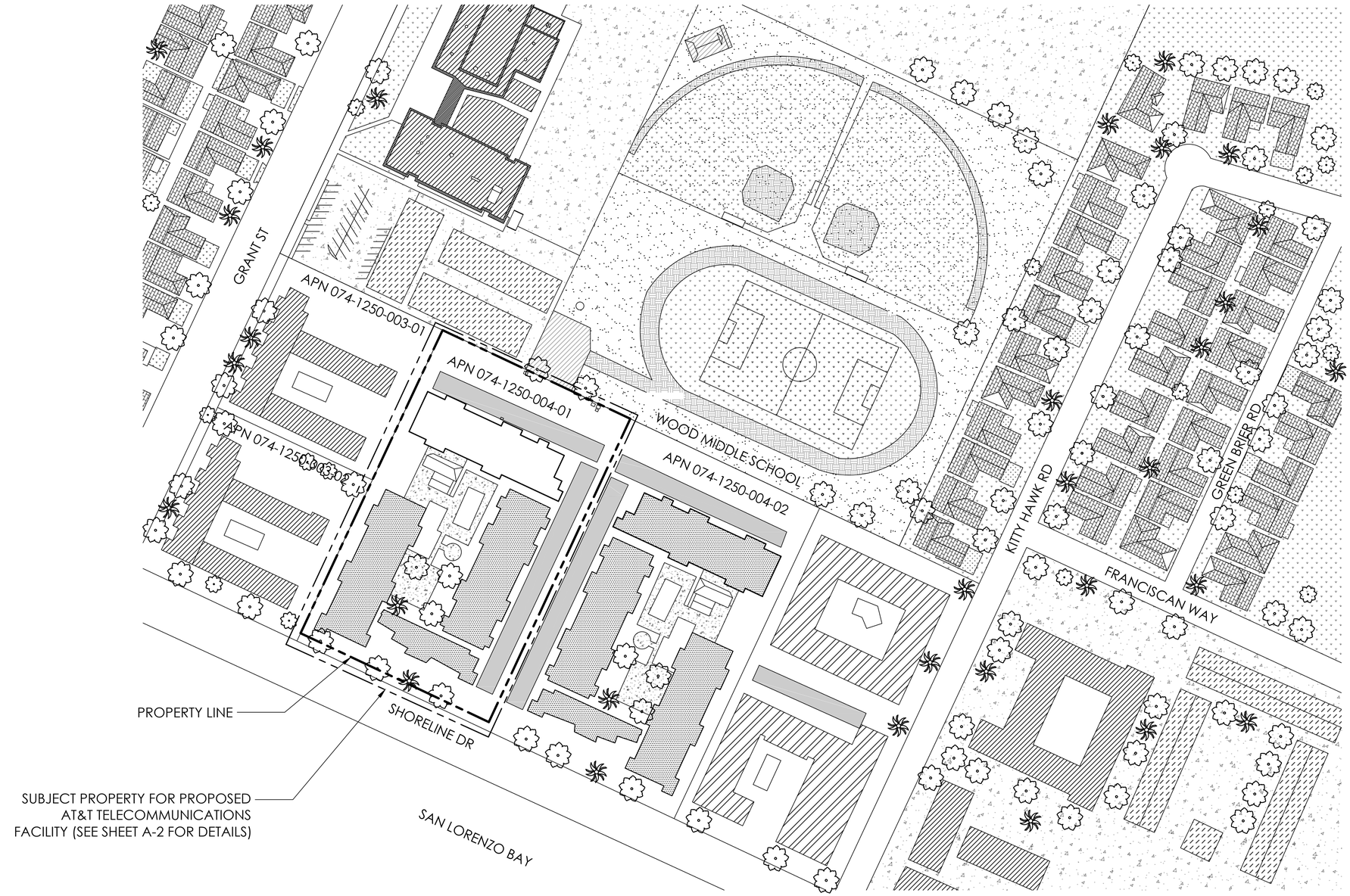
SHEET TITLE:

TOPOGRAPHIC SURVEY

SHEET NUMBER:

LS-1

SHEET 1 OF 1



OVERALL SITE PLAN VIEW
1/64" = 1'-0"

PREPARED FOR

at&t Mobility

5001 Executive Parkway
San Ramon, California 94583

Vendor:

Cortel

14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:

CCU3969

AT&T SITE NO:	CCU3969
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

REV	DATE	DESCRIPTION
2	01/09/15	ZD 100%
1	11/26/14	ZD 100%
0	11/16/14	ZD 100%

Licensor:

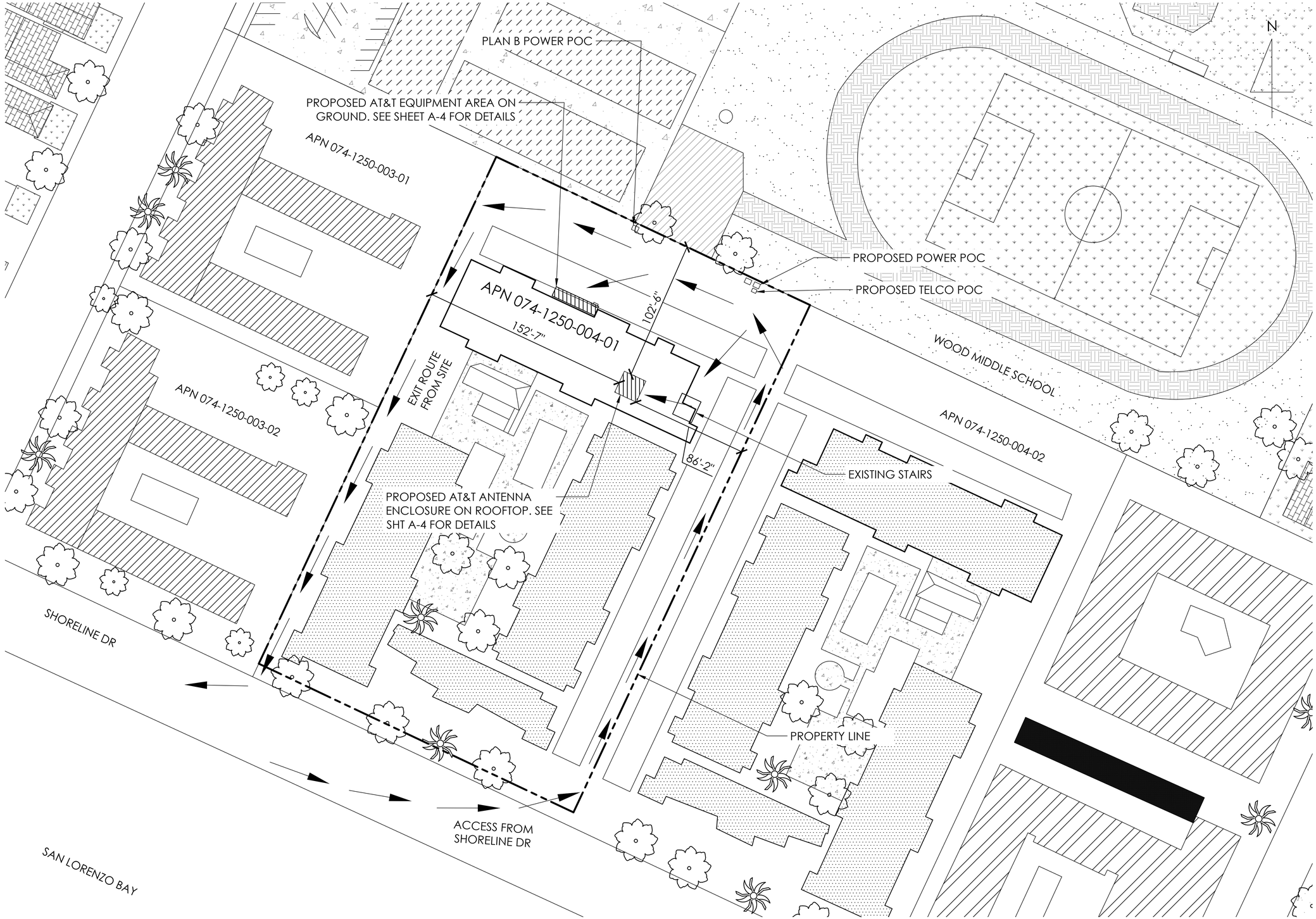
Issued For:

CCU3969
GRAND ST & OTIS DR

1777 SHORELINE DRIVE
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
OVERALL SITE PLAN

SHEET NUMBER:
A-1



ENLARGED SITE PLAN VIEW
1/32" = 1'-0"

PREPARED FOR

at&t Mobility

5001 Executive Parkway
San Ramon, California 94583

Vendor:

Cortel

14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:

CCU3969

AT&T SITE NO:	CCU3969
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

REV	DATE	DESCRIPTION
2	01/09/15	ZD 100%
1	11/26/14	ZD 100%
0	11/16/14	ZD 100%

Licensor:

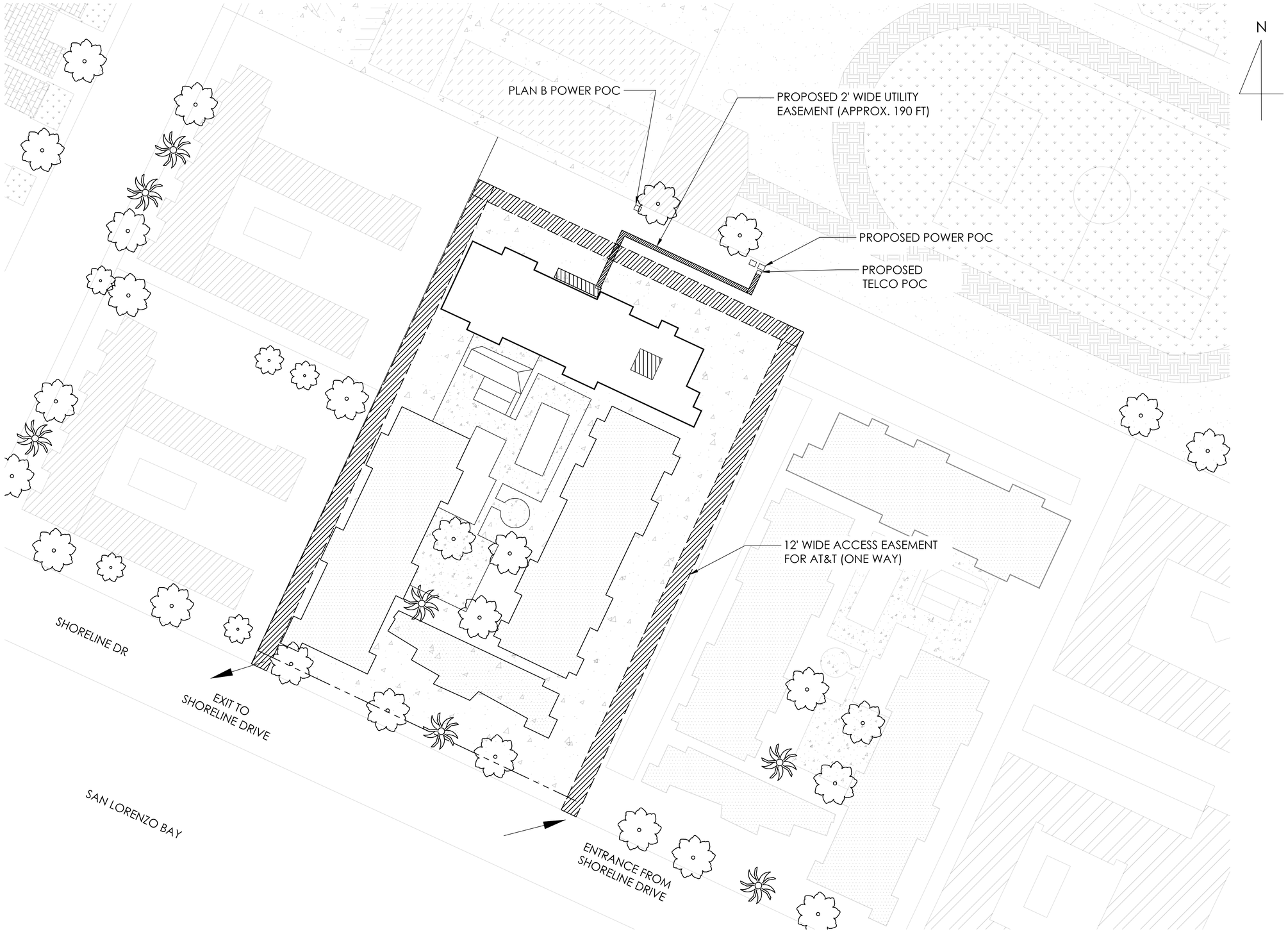
Issued For:

CCU3969
GRAND ST & OTIS DR

1777 SHORELINE DRIVE
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
ENLARGED SITE PLAN

SHEET NUMBER:
A-2



EASEMENT PLAN VIEW
1/32" = 1'-0"

PREPARED FOR

at&t Mobility

5001 Executive Parkway
San Ramon, California 94583

Vendor:

Cortel

14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:

CCU3969

AT&T SITE NO:	CCU3969
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

REV	DATE	DESCRIPTION
2	01/09/15	ZD 100%
1	11/26/14	ZD 100%
0	11/16/14	ZD 100%

Licensor:

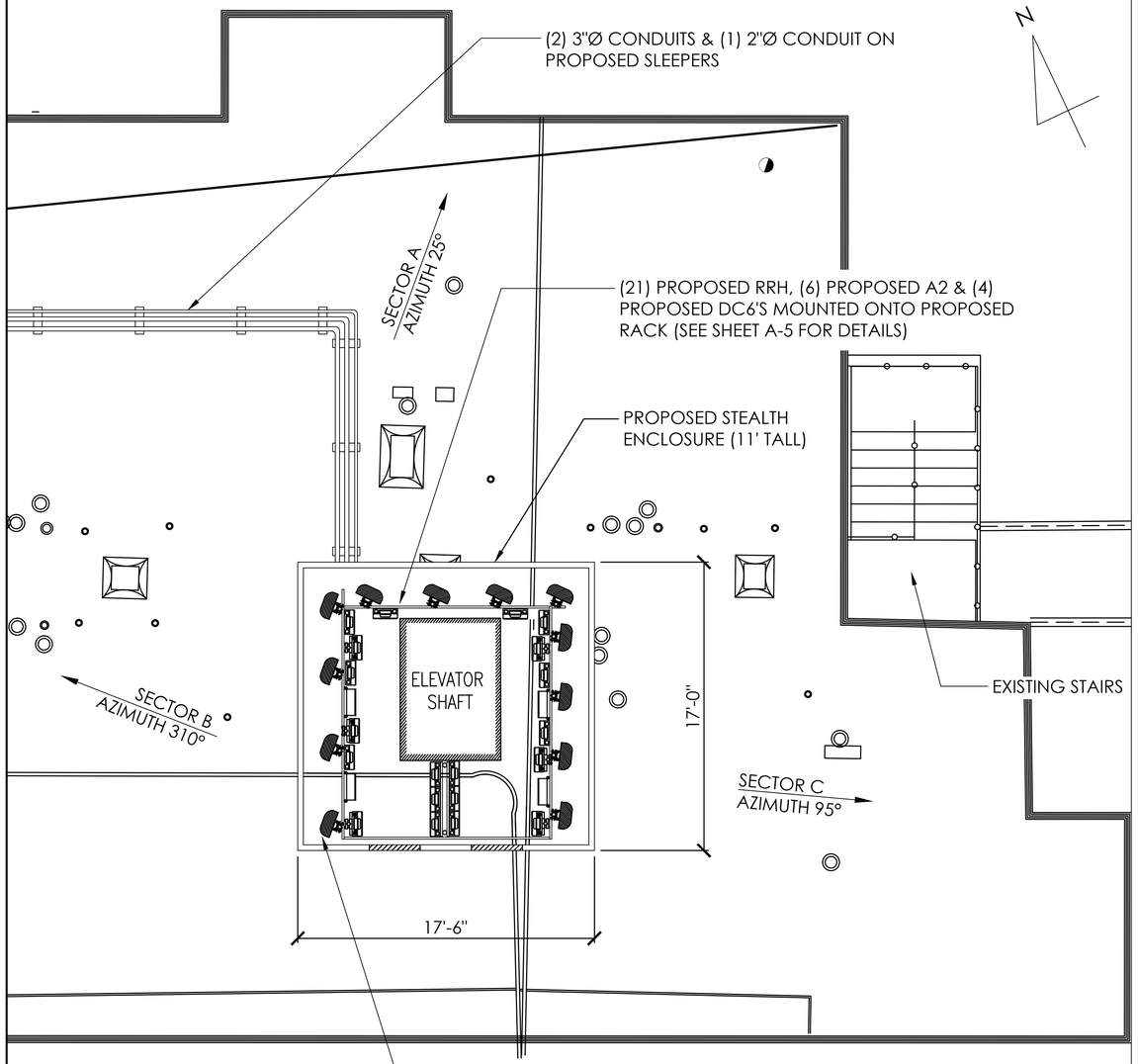
Issued For:

CCU3969
GRAND ST & OTIS DR

1777 SHORELINE DRIVE
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
EASEMENT LAYOUT

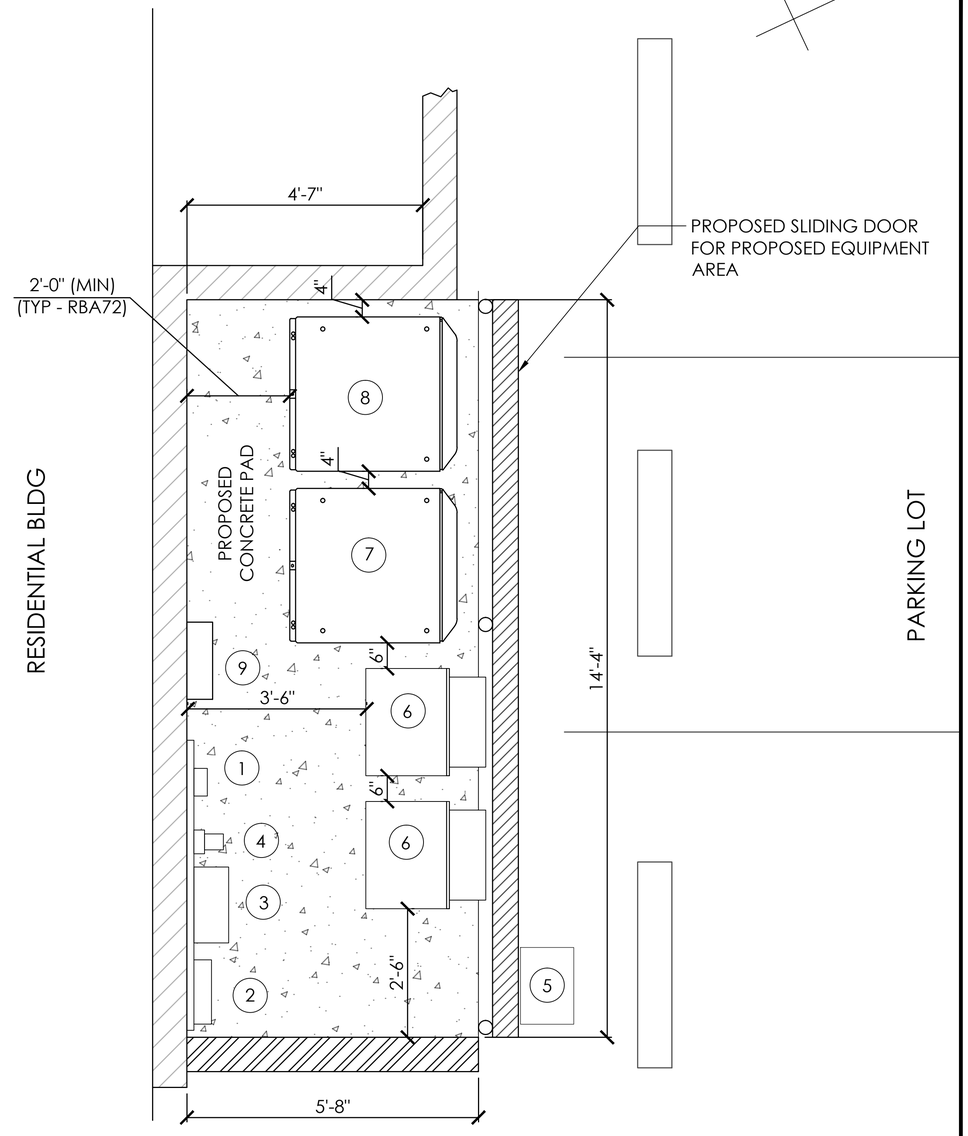
SHEET NUMBER:
A-3



PROPOSED ANTENNA PLAN VIEW
1/4" = 1'-0"

NOTE:
1. EXISTING ELEVATOR SHAFT SHALL NOT BE TOUCHED
2. FOR ANTENNA SPACING & SPACING BETWEEN ANTENNA FACE AND SCREENING WALL, REFER TO SHT A-5
3. PROPOSED ROOFTOP ENCLOSURE SHALL MATCH THE EXISTING BUILDING COLOR AND TEXTURE WITH A BLUE BAND ON TOP
4. PROPOSED CABLE TRAY SHALL BE PAINTED TO MATCH THE EXISTING BUILDING COLOR

NOTE:
1. PROPOSED SLIDING DOOR SHALL MATCH CURRENT WALL IN COLOR AND TEXTURE



PROPOSED OUTDOOR EQUIPMENT AREA PLAN VIEW
3/4" = 1'-0"

1. PROPOSED ALAMEDA POWER METER
2. PROPOSED AT&T AC POWER PANEL
3. PROPOSED AT&T 18x18x8 TELCO BOX
4. PROPOSED CAM FOR GEN PLUG
5. EXISTING ELECTRICAL PORT
6. (2) PROPOSED AT&T PURCELL CABINET (STACKED)
7. PROPOSED AT&T RBA 72 POWER PLANT
8. PROPOSED AT&T RBA72-36 BATTERY CABINET
9. PROPOSED AT&T CABLE TRAY UP TO ROOF (1.5' WIDE)

PREPARED FOR
at&t Mobility
5001 Executive Parkway
San Ramon, California 94583

Vendor:
Cortel
14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:
CCU3969

AT&T SITE NO:	CCU3969
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

REV	DATE	DESCRIPTION
2	01/09/15	ZD 100%
1	11/26/14	ZD 100%
0	11/16/14	ZD 100%

Licensor:

Issued For:

CCU3969
GRAND ST & OTIS DR

1777 SHORELINE DRIVE
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
PROPOSED ANTENNA & EQUIPMENT AREA PLAN VIEW

SHEET NUMBER:
A-4

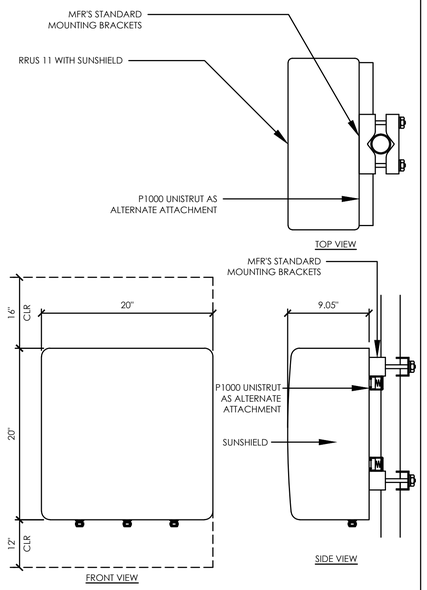
ERICSSON 700D/E RRH

MODEL: KRC161408/1

COLOR: WHITE

DIMENSIONS: 20" TALL X 20" WIDE X 9.05" DEEP (INCLUDING SUNSHIELD)

WIEGHT: +/- 71.5LBS. (INCLUDING MOUNTING HARDWARE)



19 ERICSSON 700 D/E REMOTE RADIO UNIT
1 1/2"=1'-0"

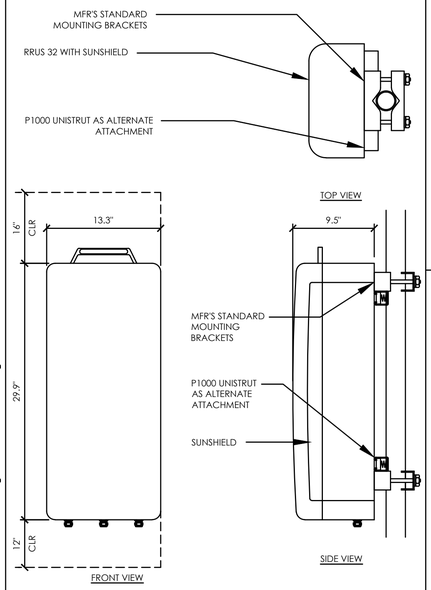
ERICSSON WCS RRU-32

MODEL: KRC161 423/1

COLOR: WHITE

DIMENSIONS: 29.9" TALL X 13.3" WIDE X 9.5" DEEP (INCLUDING SUNSHIELD)

WIEGHT: +/- 77LBS. (INCLUDING MOUNTING HARDWARE)



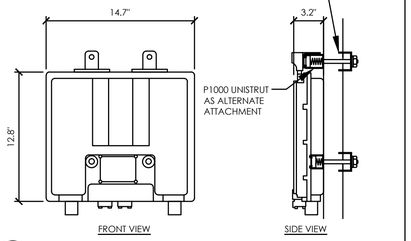
15 ERICSSON WCS RRUS-32 REMOTE RADIO UNIT
1 1/2"=1'-0"

ERICSSON RRUS A2 REMOTE RADIO UNIT

COLOR: WHITE

DIMENSIONS: 12.8" TALL X 14.7" WIDE X 3.2" DEEP

WEIGHT: +/- 15 LBS. (INCLUDING MOUNTING HARDWARE)



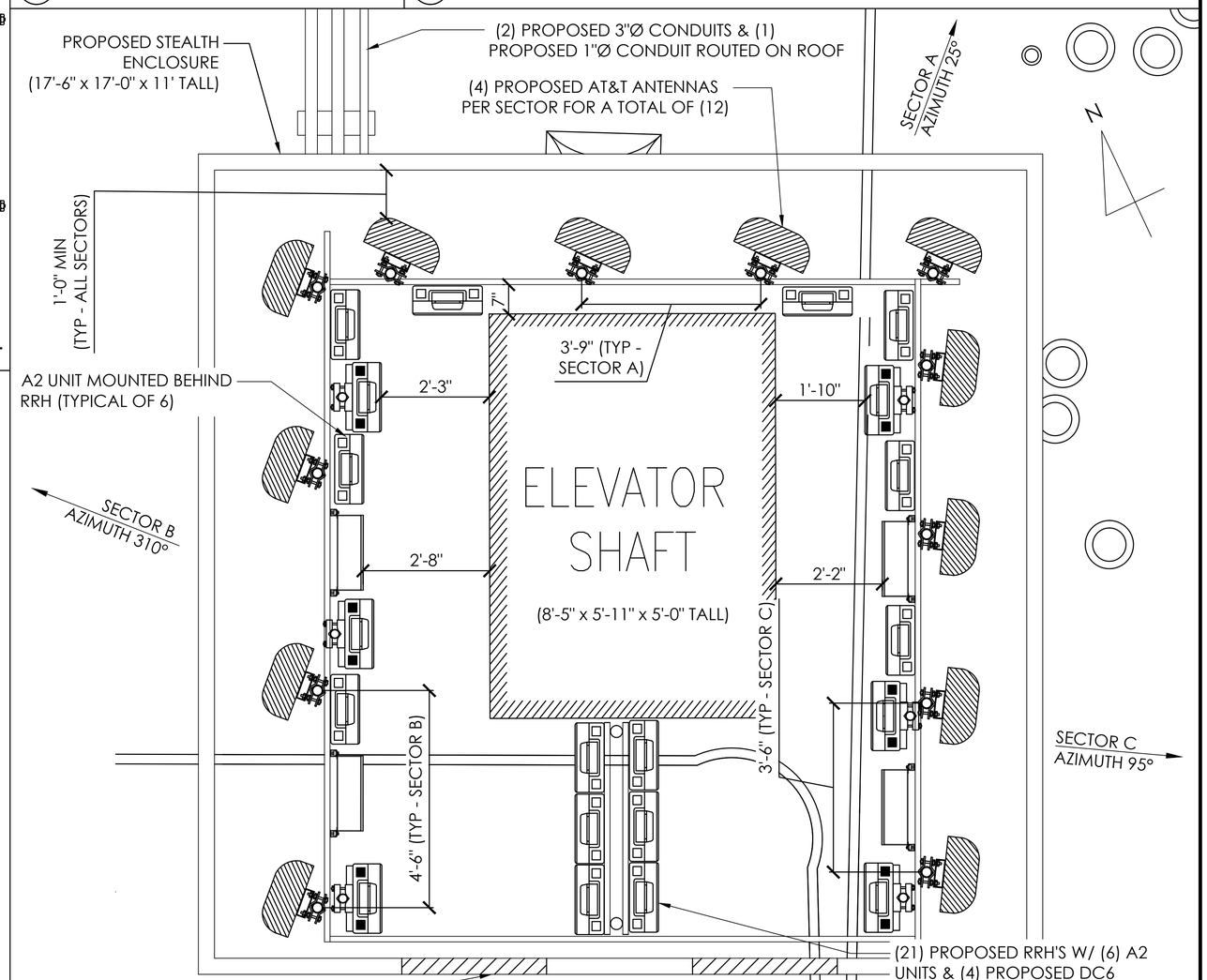
12 ERICSSON RRUS A2 REMOTE RADIO UNIT
1 1/2"=1'-0"

RF SCHEDULE

SECTOR		ANTENNA MODEL NO.	AZIMUTH	RAD CENTER	RRH	TMA	FIBER LENGTH	COAX LENGTH	COAX DIA.	NO.
ALPHA	A1	HPA-45R-BUU-H6-K	25°	± 35'-6"	RRH-11, RRH-12 & A2	N/A	± 140'-0"	± 6'-0"	1/2"	6
	A2	HPA-45R-BUU-H6-K	25°	± 35'-6"	RRH-12 & A2	N/A	± 140'-0"	± 6'-0"	1/2"	4
	A3	HPA-45R-BUU-H6-K	25°	± 35'-6"	RRH-11, RRH-11	N/A	± 140'-0"	± 6'-0"	1/2"	4
	A4	HPA-45R-BUU-H6-K	25°	± 35'-6"	RRH-11, RRH-32	N/A	± 140'-0"	± 6'-0"	1/2"	6
BETA	B1	HPA-45R-BUU-H6-K	310°	± 35'-6"	RRHS-11, RRH-12 & A2	N/A	± 140'-0"	± 6'-0"	1/2"	6
	B2	HPA-45R-BUU-H6-K	310°	± 35'-6"	RRH-12 & A2	N/A	± 140'-0"	± 6'-0"	1/2"	4
	B3	HPA-45R-BUU-H6-K	310°	± 35'-6"	RRH-11, RRH-11	N/A	± 140'-0"	± 6'-0"	1/2"	4
	B4	HPA-45R-BUU-H6-K	310°	± 35'-6"	RRH-11, RRH-32	N/A	± 140'-0"	± 6'-0"	1/2"	6
GAMMA	C1	HPA-45R-BUU-H6-K	95°	± 35'-6"	RRH-11, RRH-12 & A2	N/A	± 140'-0"	± 6'-0"	1/2"	6
	C2	HPA-45R-BUU-H6-K	95°	± 35'-6"	RRH-12 & A2	N/A	± 140'-0"	± 6'-0"	1/2"	4
	C3	HPA-45R-BUU-H6-K	95°	± 35'-6"	RRH-11, RRH-11	N/A	± 140'-0"	± 6'-0"	1/2"	4
	C4	HPA-45R-BUU-H6-K	95°	± 35'-6"	RRH-11, RRH-32	N/A	± 140'-0"	± 6'-0"	1/2"	6

RF DATA SHEET V1.00 DATED 10/23/2014

8 RF SCHEDULE
NOT TO SCALE



ENLARGED PROPOSED ANTENNA PLAN VIEW
3/4" = 1'-0"

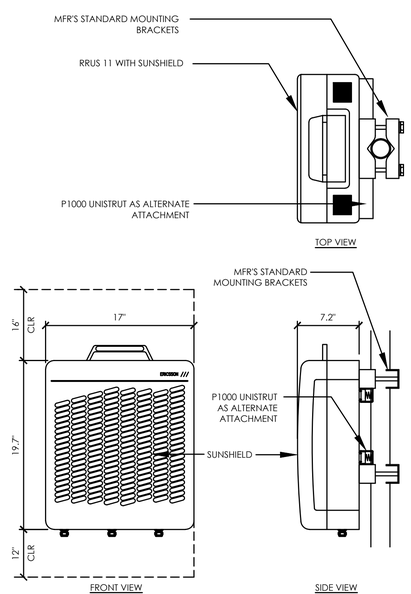
NOTE:
1. PROPOSED ROOFTOP ENCLOSURE SHALL MATCH THE EXISTING BUILDING COLOR AND TEXTURE WITH A BLUE BAND ON TOP
2. PROPOSED CABLE TRAY SHALL MATCH EXISTING BUILDING COLOR

ERICSSON RRUS 11 REMOTE RADIO UNIT

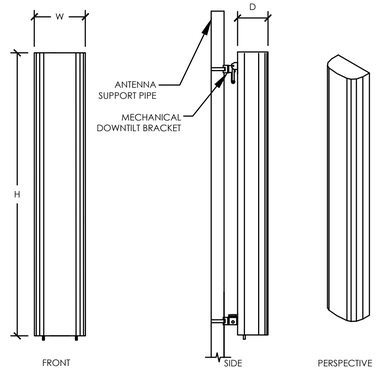
COLOR: WHITE

DIMENSIONS: 19.7" TALL X 17" WIDE X 7.2" DEEP (INCLUDING SUNSHIELD)

WIEGHT: +/- 50 LBS. (INCLUDING MOUNTING HARDWARE)



17 ERICSSON RRUS-11 REMOTE RADIO UNIT
1 1/2"=1'-0"



ANTENNA = (CCI) HPA-45R-BUU-H6-K

WIND AREA = 9.45 SQ.FT.

WEIGHT = 80.0 LBS (36.24 KG)

DIMENSIONS = 72.0" (H) x 18.9" (W) x 8.3" (D)

13 HEX ANTENNA SPEC
3/4"=1'-0"

PREPARED FOR

at&t Mobility

5001 Executive Parkway
San Ramon, California 94583

Vendor:

Cortel

14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:

CCU3969

AT&T SITE NO:	CCU3969
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

REV	DATE	DESCRIPTION
2	01/09/15	ZD 100%
1	11/26/14	ZD 100%
0	11/16/14	ZD 100%

Licensor:

Issued For:

CCU3969
GRAND ST & OTIS DR

1777 SHORELINE DRIVE
ALAMEDA, CA 94501
ALAMEDA COUNTY

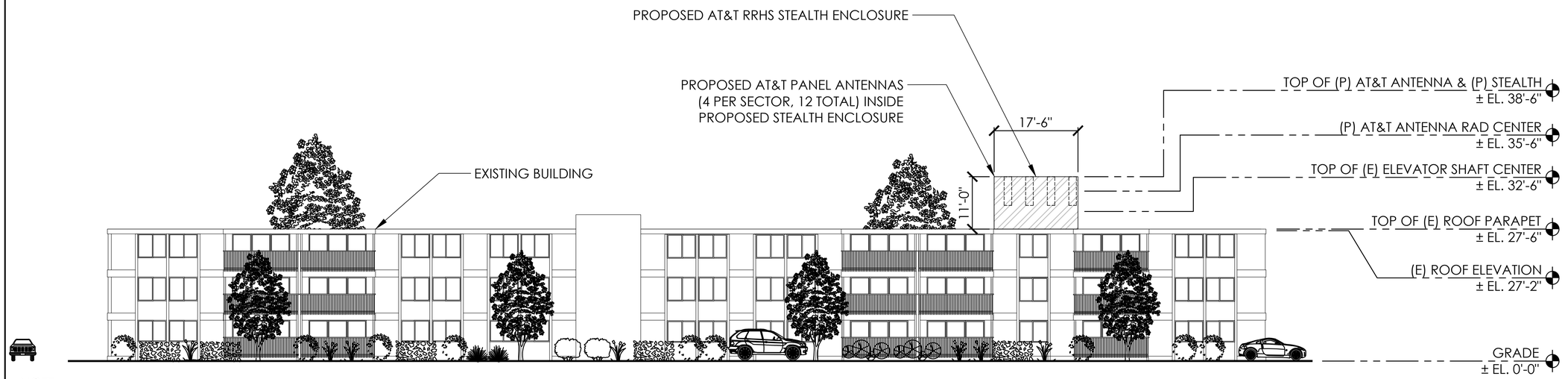
SHEET TITLE:

ENLARGED PROPOSED ANTENNA PLAN VIEW

SHEET NUMBER:

A-5

EXISTING SOUTH-WEST ELEVATION VIEW
3/32" = 1'-0"



NOTE:
1. EXISTING ELEVATOR SHAFT SHALL NOT BE TOUCHED
2. PROPOSED ROOFTOP ENCLOSURE SHALL MATCH THE EXISTING BUILDING COLOR AND TEXTURE WITH A BLUE BAND ON TOP
3. PROPOSED SLIDING DOOR FOR EQUIPMENT SHELTER SHALL MATCH CURRENT WALL IN COLOR AND TEXTURE
4. PROPOSED CABLE TRAY SHALL BE PAINTED TO MATCH THE EXISTING BUILDING COLOR

PROPOSED SOUTH-WEST ELEVATION VIEW
3/32" = 1'-0"

PREPARED FOR

at&t Mobility

5001 Executive Parkway
San Ramon, California 94583

Vendor:

Cortel

14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:

CCU3969

AT&T SITE NO:	CCU3969
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

REV	DATE	DESCRIPTION
2	01/09/15	ZD 100%
1	11/26/14	ZD 100%
0	11/16/14	ZD 100%

Licensor:

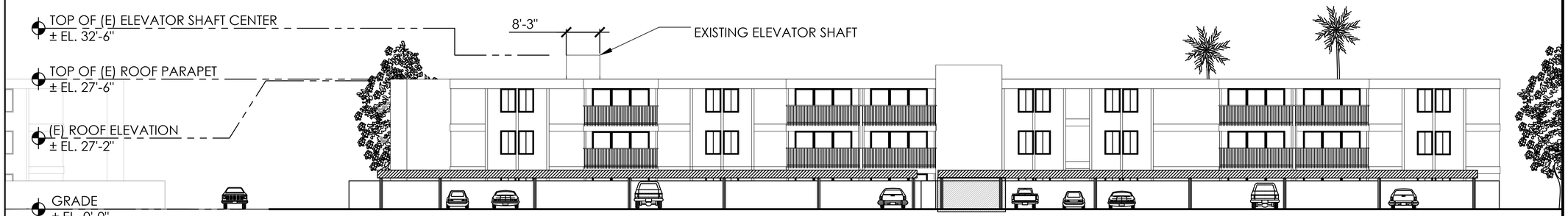
Issued For:

CCU3969
GRAND ST & OTIS DR

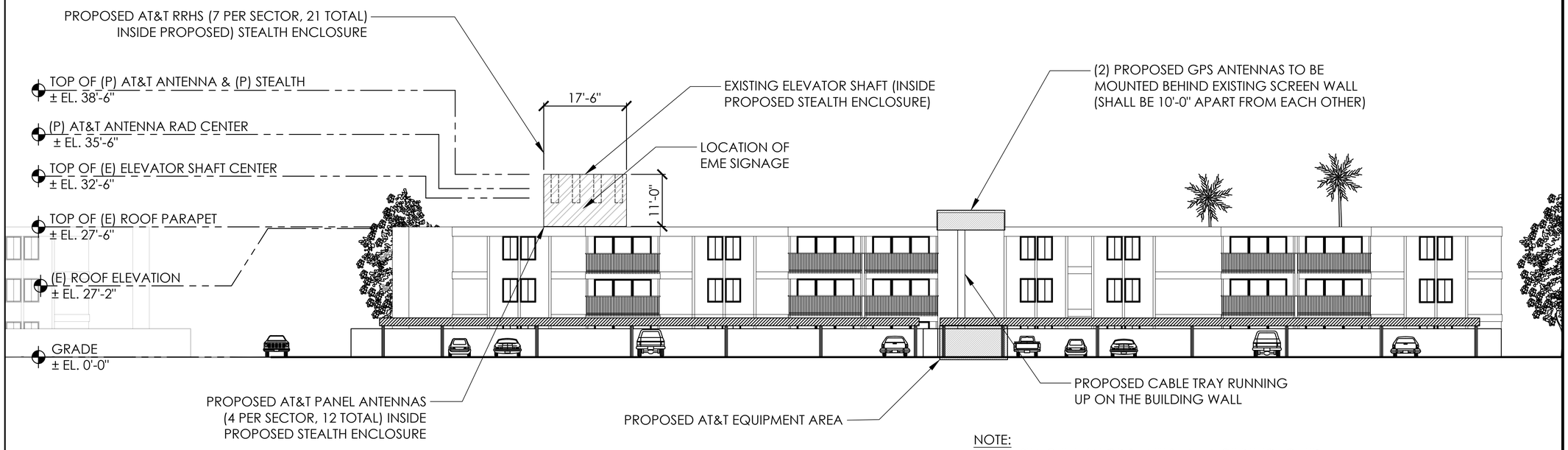
1777 SHORELINE DRIVE
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
EXISTING & PROPOSED SOUTH-WEST ELEVATION VIEW

SHEET NUMBER:
A-6



EXISTING NORTH-EAST ELEVATION VIEW
3/32" = 1'-0"



PROPOSED NORTH-EAST ELEVATION VIEW
3/32" = 1'-0"

NOTE:
1. EXISTING ELEVATOR SHAFT SHALL NOT BE TOUCHED
2. PROPOSED ROOFTOP ENCLOSURE SHALL MATCH THE EXISTING BUILDING COLOR AND TEXTURE WITH A BLUE BAND ON TOP
3. PROPOSED SLIDING DOOR FOR EQUIPMENT SHELTER SHALL MATCH CURRENT WALL IN COLOR AND TEXTURE
4. PROPOSED CABLE TRAY SHALL BE PAINTED TO MATCH THE EXISTING BUILDING COLOR

PREPARED FOR

at&t Mobility

5001 Executive Parkway
San Ramon, California 94583

Vendor:

Cortel

14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:

CCU3969

AT&T SITE NO:	CCU3969
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

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1	11/26/14	ZD 100%
0	11/16/14	ZD 100%

Licensor:

Issued For:

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GRAND ST & OTIS DR

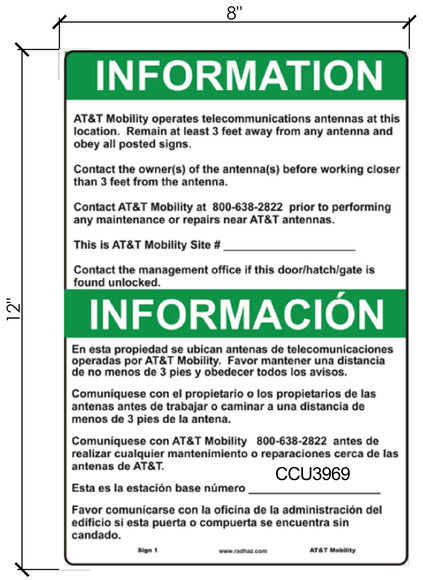
1777 SHORELINE DRIVE
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:

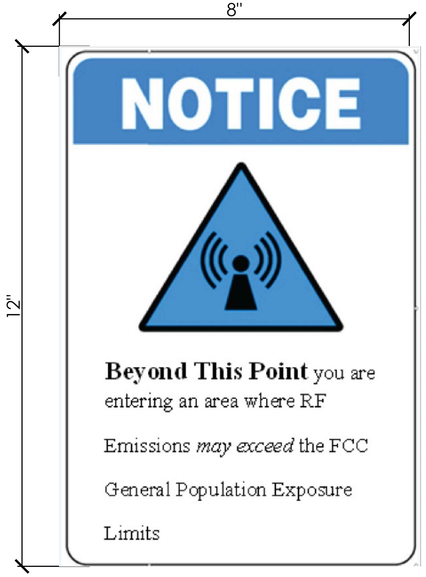
EXISTING & PROPOSED
NORTH-EAST ELEVATION VIEW

SHEET NUMBER:

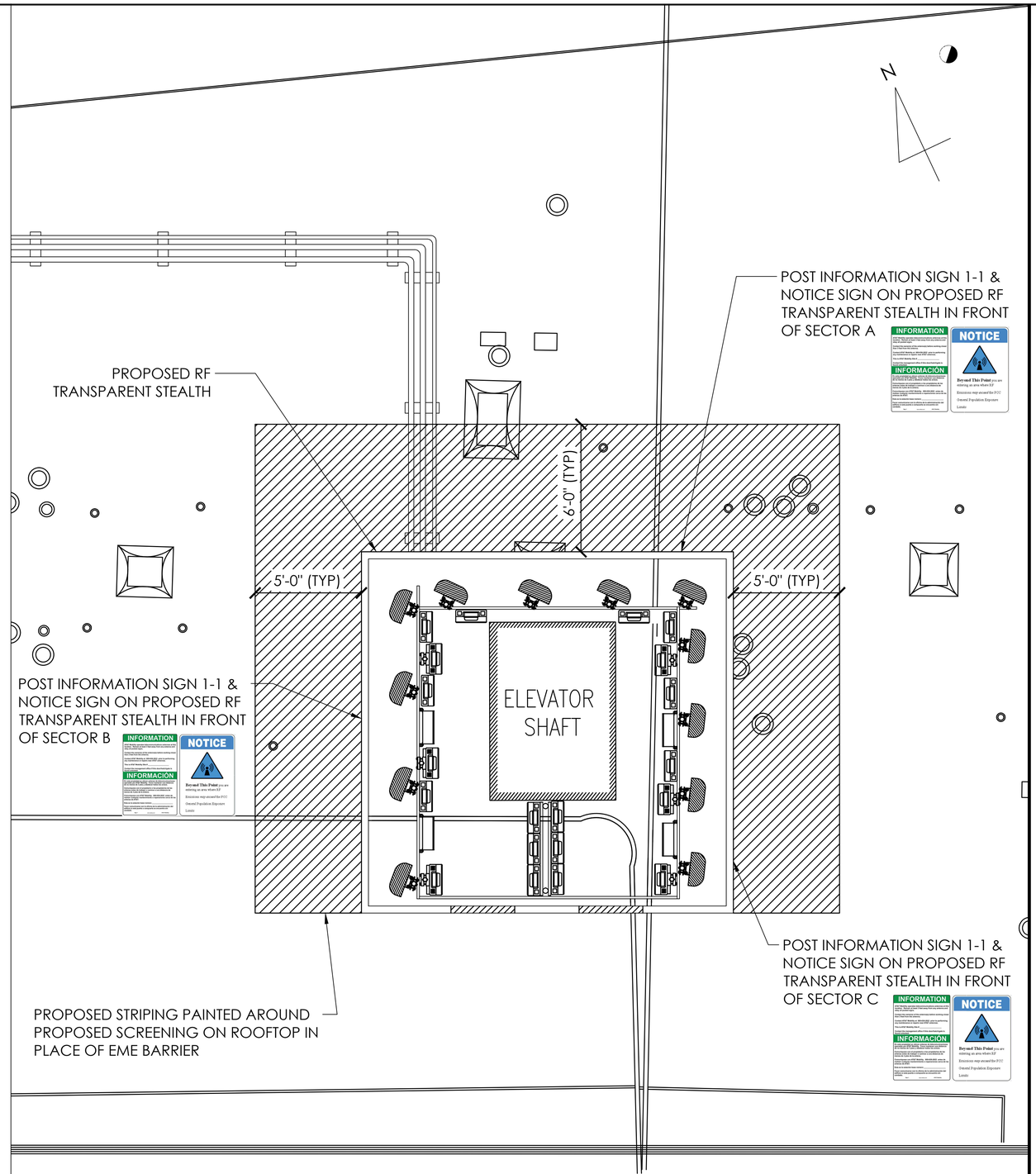
A-7



A INFORMATION SIGN 1-1
SCALE: 1/2" = 1'



B NOTICE SIGN
SCALE: 1/2" = 1'



EME SIGNAGE LOCATION PLAN VIEW
3/8" = 1'-0"

PREPARED FOR
at&t Mobility
5001 Executive Parkway
San Ramon, California 94583

Vendor:
Cortel
14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:
CCU3969

AT&T SITE NO:	CCU3969
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

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1	11/26/14	ZD 100%
0	11/16/14	ZD 100%

Licensor:

Issued For:

CCU3969
GRAND ST & OTIS DR

1777 SHORELINE DRIVE
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
EME SIGNAGE LOCATION PLAN VIEW

SHEET NUMBER:
A-8

SITE NUMBER: CCU3085

SITE NAME: CENTRAL & ST CHARLES RELO

SEARCH RING NAME:
CENTRAL & ST CHARLES RELO

1538 ST CHARLES ST

ALAMEDA, CA 94501

COUNTY: ALAMEDA COUNTY

SITE TYPE: ROOFTOP

FA #: 13323784

PROJECT DESCRIPTION

NEW SITE BUILD UNMANNED TELECOMMUNICATIONS FACILITY.

1. BRING POWER / TELCO / FIBER TO SITE LOCATION.
2. INSTALL AT&T INDOOR EQUIPMENT IN A LEASE AREA (INDOOR GROUND FLOOR)
3. PROPOSED STEALTH ENCLOSURE (15'-0" BY 14'-6" BY 10' TALL) TO BE PLACED ON ROOFTOP.
4. INSTALL (1) PROPOSED GPS UNIT ON ROOFTOP
5. INSTALL (9) PROPOSED ANTENNAS (3) PER SECTOR IN PROPOSED STEALTH ON ROOFTOP.
6. INSTALL (21) PROPOSED RRH & (3) A2 UNITS IN PROPOSED STEALTH ON ROOFTOP.
7. INSTALL (4) PROPOSED DC6'S IN PROPOSED STEALTH ON ROOFTOP.

PROJECT INFORMATION

Property Information:
Site Name: CENTRAL & ST CHARLES RELO
Site Number: CCU3085

Site Address: 1538 ST CHARLES ST
ALAMEDA, CA 94501

A.P.N. Number: 072-0375-020
Current Use: RESIDENTIAL BUILDING

Proposed Use: RESIDENTIAL BUILDING/UNMANNED TELECOM FACILITY

Jurisdiction: CITY OF ALAMEDA
Zoning Designation: R-4 (NEIGHBORHOOD RESIDENTIAL)

Latitude: NAD 83 N 37° 46' 27.54" (37.77432°)
Longitude: NAD 83 W 122° 15' 55.48" (-122.26541°)

Ground Elevation: 25.9 FT. AMSL
(LOCATION TAKEN AT NORTH-EAST CORNER OF THE BLDG)

Property Owner:
FEREIDOON HASHEMI AND SOHI ROUHOLAMIN HASHEMI
C/O THE LAPHAM CO., INC.,
4744 TELEGRAPH AVENUE
OAKLAND, CA 94609

Property Managing Company:
THE LAPHAM CO., INC.
4744 TELEGRAPH AVENUE
OAKLAND, CA 94609

Power Agency:
ALAMEDA POWER
2000 GRAND ST
ALAMEDA, CA 94501

Telephone Agency:
AT&T

RFDS DATED 10-22-14, V1 (preliminary)

PROJECT TEAM

Applicant / Lessee:
AT&T MOBILITY
5001 Executive Parkway
San Ramon, CA 94583
contact: MONICA MILLER
email: mm595e@att.com
cell: (925) 277-6219

Construction Mgr.:
ERICSSON
contact: TODD MERRILL
6140 Stoneridge Mall
Pleasanton, CA 94588
email: todd.merrill@ericsson.com
ph: (530) 605-5765

Site Acquisition:
CORTEL, Inc.
contact: ALEX ORNER
email: alex.orner@cortel-llc.com
cell: (415) 601-3194

Architect / Engineer:
CORTEL, Inc.
contact: SEUNGKUN OH
email: seungkun.oh@cortel-llc.com
ph: (786) 503-3851

Zoning Mgr.:
CORTEL, Inc.
contact: ALEX ORNER
email: alex.orner@cortel-llc.com
cell: (415) 601-3194

RF Engineer:
AT&T MOBILITY
contact: MICHAEL QUINTO
email: mq3253@att.com
ph: (925) 277-6335

SHEET INDEX

		REV
T-1	TITLE SHEET	4
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A-8	EME SIGNAGE LOCATION PLAN VIEW	4

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

OCCUPANCY AND CONSTRUCTION TYPE

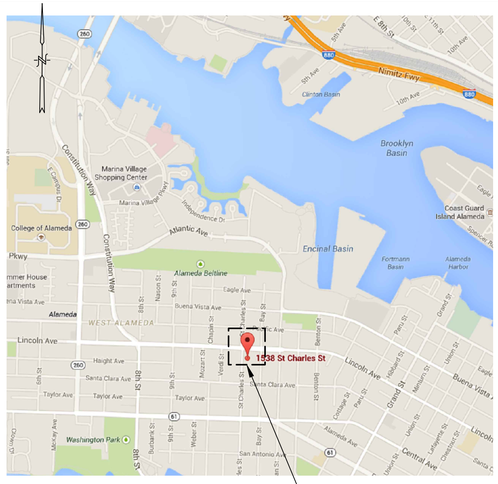
OCCUPANCY : U (UNMANNED)

CONSTRUCTION TYPE: V-B

HANDICAP REQUIREMENTS

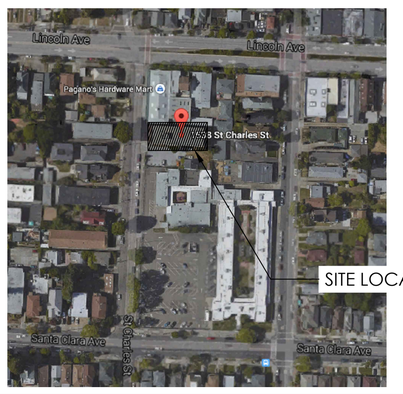
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAP ACCESS IS NOT REQUIRED PER CBC2013, SECTION 118-203.4 (LIMITED ACCESS SPACE)

VICINITY MAP



SITE LOCATION
(SEE ZOOM IN RIGHT)

VICINITY MAP - ZOOMED



SITE LOCATION

APPROVALS

APPROVED BY:	INITIALS:	DATE:
AT&T:		
VENDOR:		
R.F.:		
LEASING / LANDLORD:		
ZONING:		
CONSTRUCTION:		
POWER / TELCO:		
PG&E:		

DIRECTIONS FROM AT&T

DIRECTIONS FROM AT&T's OFFICE AT 5001 EXECUTIVE PARKWAY, SAN RAMON, CA

1. Head northeast on Executive Pkwy toward Camino Ramon
2. Turn right onto Camino Ramon
3. Take right onto Bollinger Canyon Rd
4. Merge onto I-680 S via the ramp to San Jose
5. Merge onto I-680 S
6. Take I-580 W toward Dublin Blvd/Oakland.
7. Keep left at the fork to continue on i-238 n, follow signs for I-880
8. Take the exit toward High St/Alameda
9. Merge onto Coliseum Way
10. Turn left onto High St and then right onto Howard St
11. Turn left onto Alameda Ave and then left onto Tilden Way
12. Continue onto Lincoln Ave
13. Turn left onto St Charles St

GENERAL CONTRACTOR NOTES

DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE FORMATTED TO BE FULL SIZE AT 24" x 36". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOBSITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME.

DIGALERT
800-227-2600
Call 2 Full Working Days in Advance

PREPARED FOR
at&t Mobility
5001 Executive Parkway
San Ramon, California 94583

Vendor:
Cortel
14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:
CCU3085

AT&T SITE NO:	CCU3085
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

REV	DATE	DESCRIPTION
4	01/22/15	ZD 100%
3	01/09/15	ZD 100%
2	12/22/14	ZD 100%
1	11/26/14	ZD 100%
0	11/16/14	ZD 100%

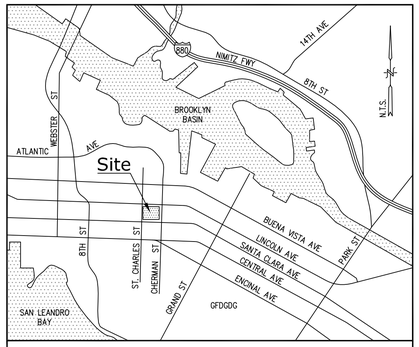
Licensor:

Issued For:

CCU3085
CENTRAL & ST CHARLES RELO
1538 ST CHARLES ST
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1



Vicinity Map

Title Report

PREPARED BY: STEWART TITLE GUARANTY COMPANY
ORDER NO.: 01180-128707
DATED: OCTOBER 02, 2014

Legal Description

LOT 74, MAP OF THE ENCINAL PARK TRACT, FILED JUNE 25, 1879, BOOK 185 OF DEEDS, PAGE 160, ALAMEDA COUNTY RECORDS, STATE OF CALIFORNIA.

Assessor's Parcel No.

072-0375-020

Easements

NO EASEMENTS FROM TITLE REPORT

Geographic Coordinates at Proposed Antennas

1983 DATUM: LATITUDE 37° 46' 27.54"N LONGITUDE 122° 15' 55.48"W
ELEVATION = 25.9 FEET ABOVE MEAN SEA LEVEL

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

Basis of Bearings

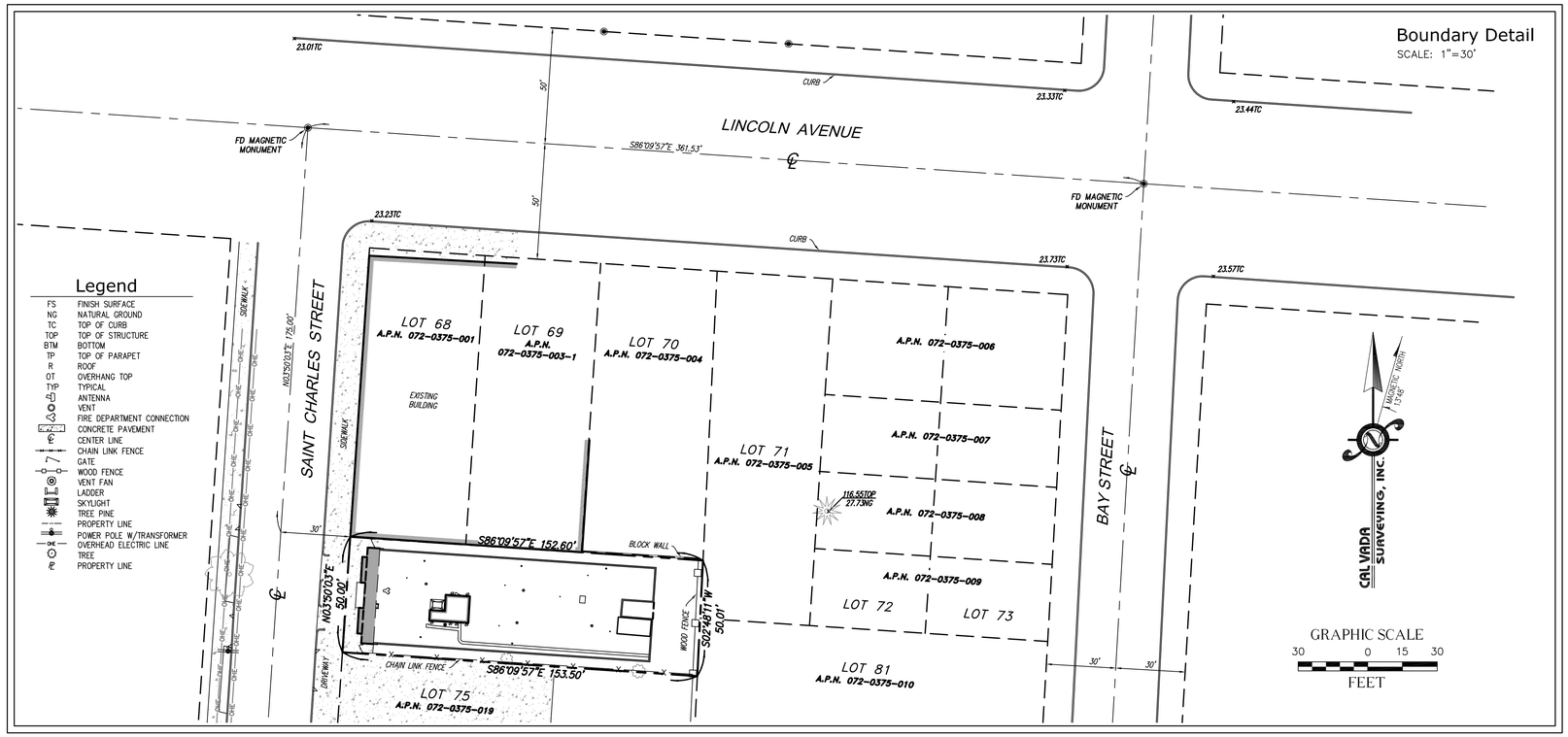
THE STATE PLANE COORDINATE SYSTEM OF 1983 (NAD 83), CALIFORNIA ZONE 3.

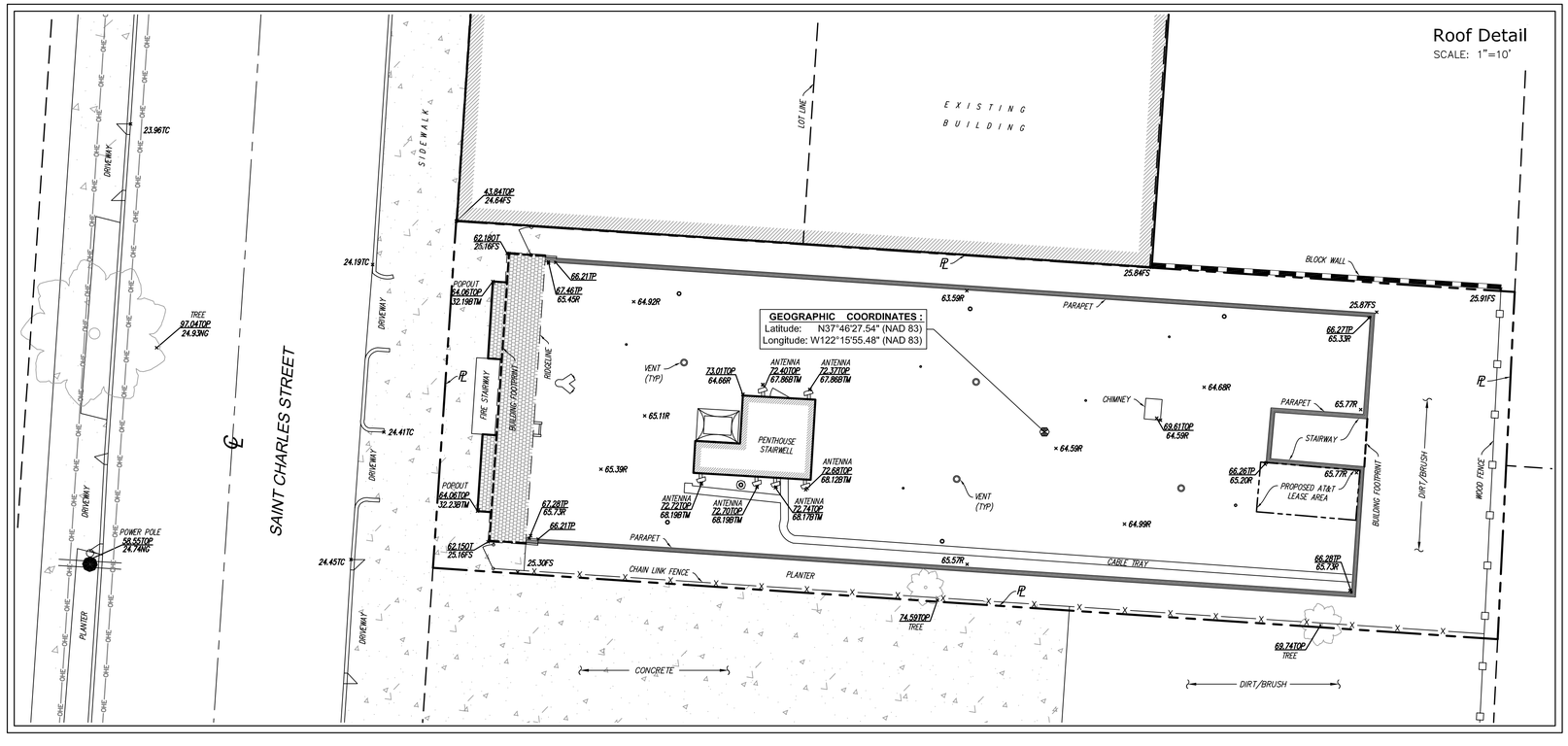
Bench Mark

THE CALIFORNIA SPATIAL REFERENCE CENTER C.O.R.S "P224", ELEVATION = 1443.77 (NAVD 88).

Date of Survey

OCTOBER 16, 2014





at&t
5001 EXECUTIVE PARKWAY, 4W850N
SAN RAMON, CA 94583

A&E DEVELOPMENT:

Cortel, LLC
14621 Arroyo Hondo
San Diego, CA 92127

CONSULTANT:

CALVADA SURVEYING, INC.
411 Jenks Cir., Suite 205, Corona, CA 92880
Phone: 951-280-9960 Fax: 951-280-9746
Toll Free: 800-CALVADA www.calvada.com

JOB NO. 141025

LICENSURE:

LICENSED LAND SURVEYOR
Armando D. Duprat
L.S. 7780
Exp. 12-31-15
STATE OF CALIFORNIA

REVISION:

REVISION:	DATE: / BY:	DESCRIPTION:
	10/22/14	SUBMITTAL
	AV	
1	11/14/14	TITLE REPORT - FINAL
	MN	
2	01/14/15	GEOGRAPHIC COORDINATES UPDATED
	MN	

SITE INFORMATION:

SITE NUMBER
CCU3085

SITE NAME
ST. CHARLES & LINCOLN AVE
1538 ST. CHARLES ST.
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
TOPOGRAPHIC SURVEY

SHEET NUMBER:
LS-1
SHEET 1 OF 1

N

OVERALL SITE PLAN VIEW
1/64" = 1'-0"

PREPARED FOR

at&t Mobility

5001 Executive Parkway
San Ramon, California 94583

Vendor:

Cortel

14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:

CCU3085

AT&T SITE NO:	CCU3085
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

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Issued For:

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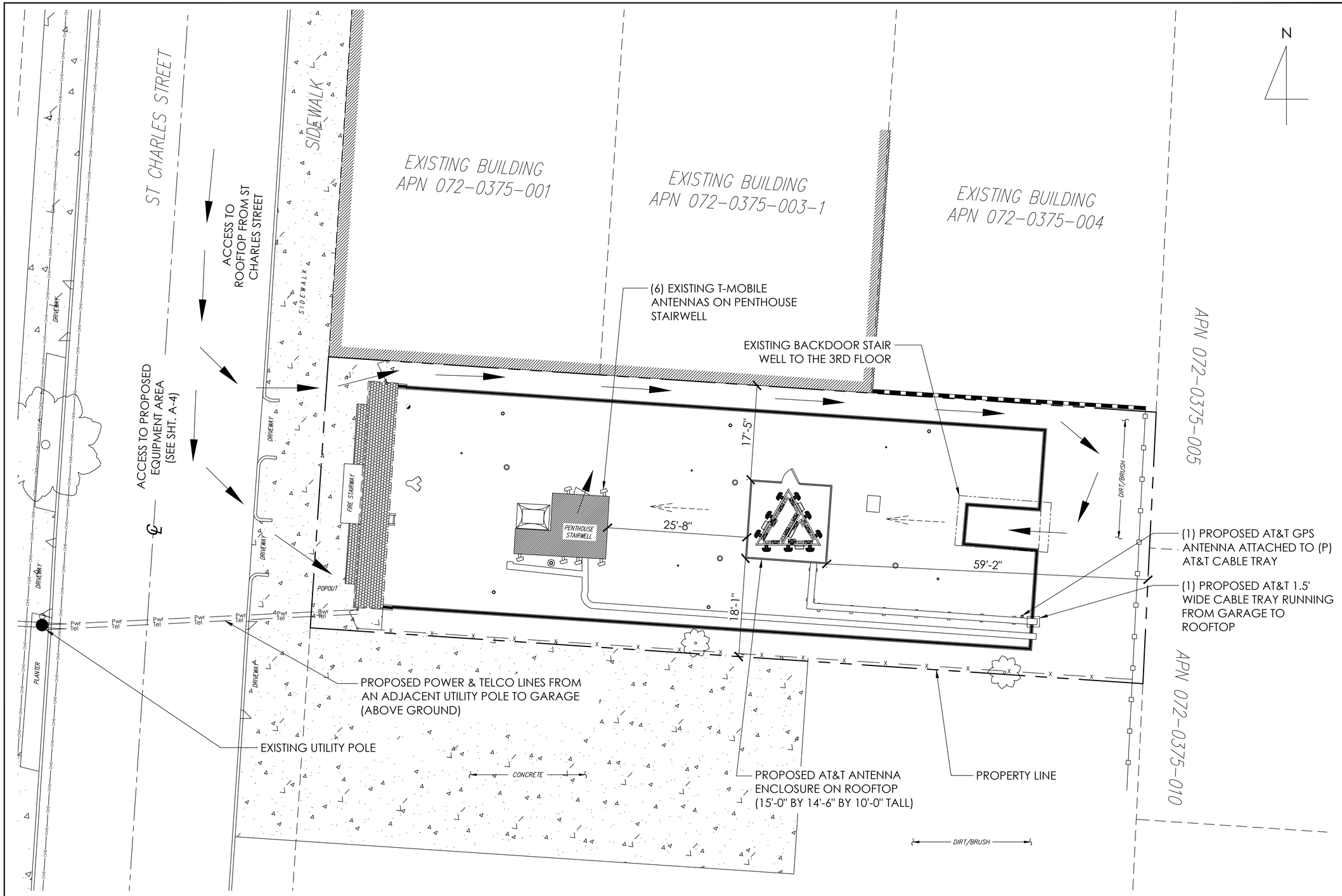
CENTRAL & ST CHARLES RELO
1538 ST CHARLES ST
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
OVERALL SITE PLAN

SHEET NUMBER:
A-1



NOTE:
1. EXIT ROUTE FROM ROOFTOP & EQUIPMENT AREA IS IDENTICAL TO ACCESS ROUTE
2. EXISTING BACKDOOR STAIRWELL IS ONLY CONNECTED TO THE 3RD FLOOR. PERSONNEL NEED TO WALK THRU THE 3RD FLOOR CORRIDOR AND USE STAIRS TO REACH TO ROOFTOP
3. PROPOSED CABLE TRAY TO BE PAINTED TO MATCH EXISTING BUILDING COLOR

ENLARGED SITE PLAN VIEW
1/8" = 1'-0"

PREPARED FOR
at&t Mobility
5001 Executive Parkway
San Ramon, California 94583

Vendor:
Cortel
14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:
CCU3085

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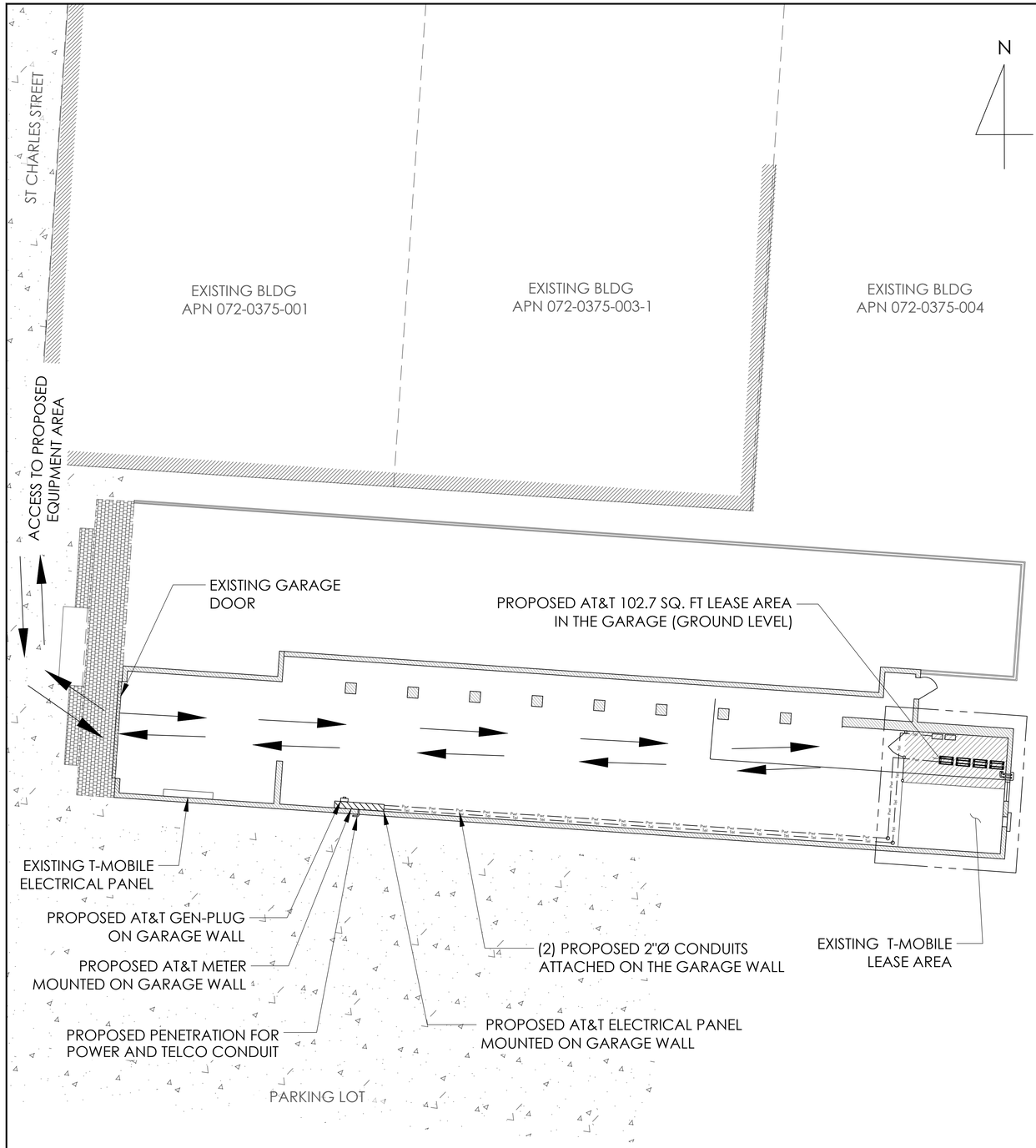
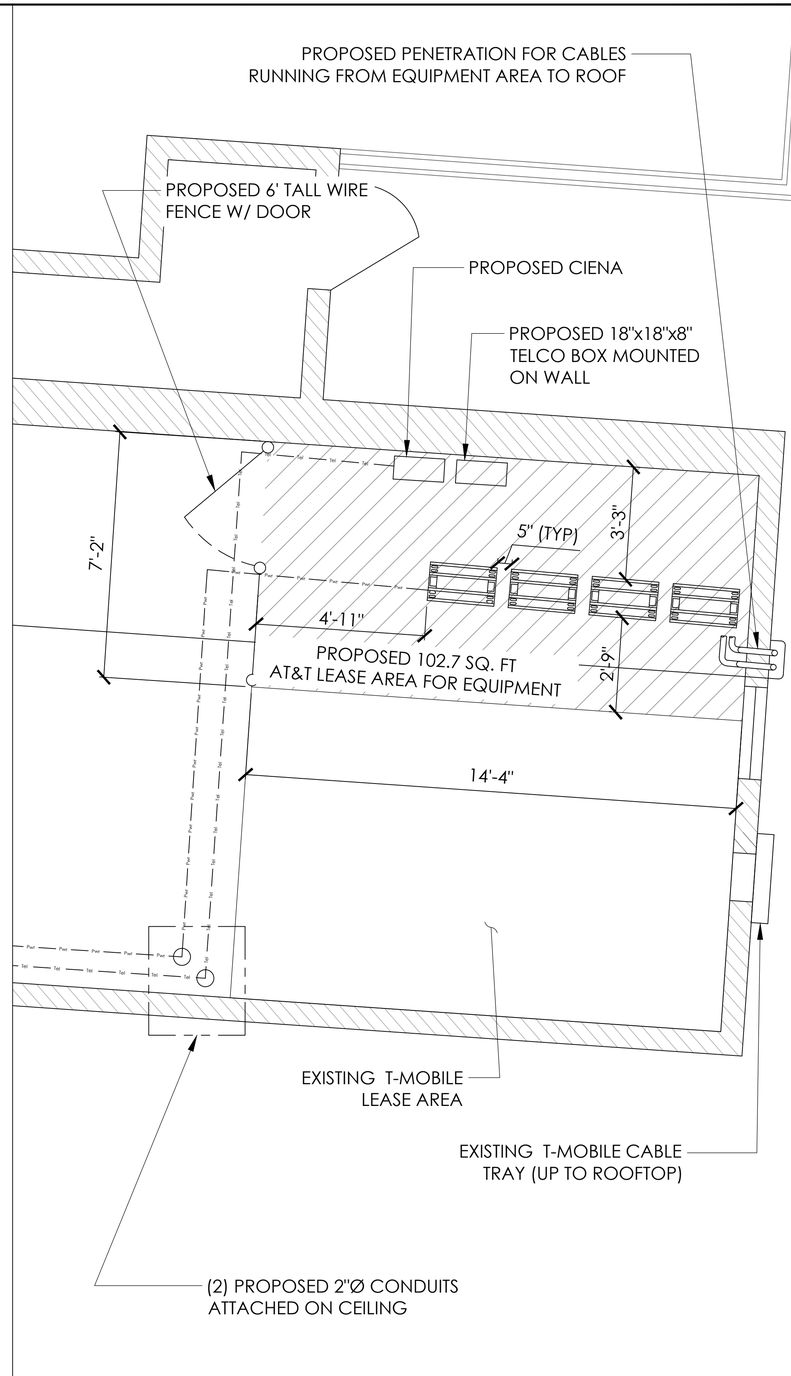
1538 ST CHARLES ST
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
ENLARGED SITE PLAN

SHEET NUMBER:
A-2



EQUIPMENT AREA PLAN VIEW
1/8" = 1'-0"



ENLARGED EQUIPMENT AREA PLAN VIEW
1/2" = 1'-0"

PREPARED FOR

at&t Mobility

5001 Executive Parkway
San Ramon, California 94583

Vendor:

Cortel

14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:

CCU3085

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1538 ST CHARLES ST
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
PROPOSED EQUIPMENT AREA PLAN VIEW

SHEET NUMBER:
A-3

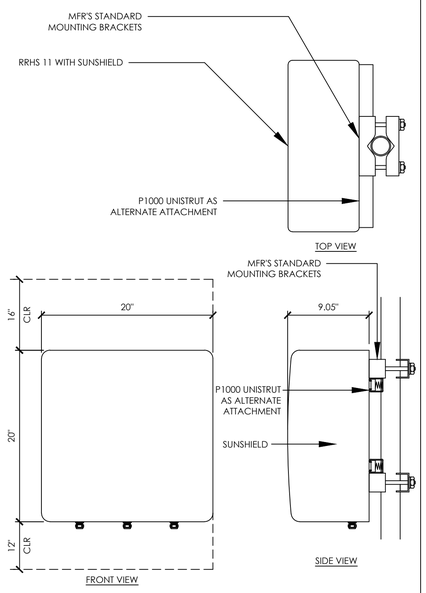
ERICSSON 700D/E RRH

MODEL: KRC161408/1

COLOR: WHITE

DIMENSIONS: 20" TALL X 20" WIDE X 9.05" DEEP (INCLUDING SUNSHIELD)

WIEGHT: +/- 71.5LBS. (INCLUDING MOUNTING HARDWARE)



19 ERICSSON 700 D/E REMOTE RADIO UNIT
1 1/2"=1'-0"

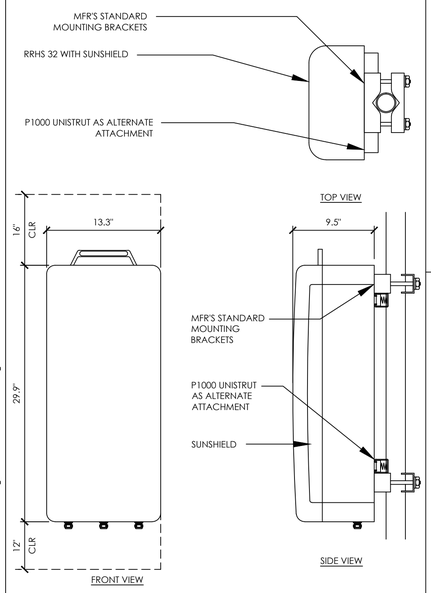
ERICSSON WCS RRH-32

MODEL: KRC161 423/1

COLOR: WHITE

DIMENSIONS: 29.9" TALL X 13.3" WIDE X 9.5" DEEP (INCLUDING SUNSHIELD)

WIEGHT: +/- 77LBS. (INCLUDING MOUNTING HARDWARE)



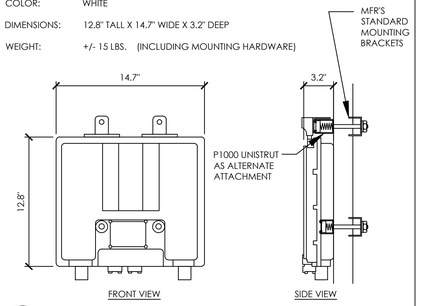
15 ERICSSON WCS RRHS-32 REMOTE RADIO UNIT
1 1/2"=1'-0"

ERICSSON RRHS A2 REMOTE RADIO UNIT

COLOR: WHITE

DIMENSIONS: 12.8" TALL X 14.7" WIDE X 3.2" DEEP

WEIGHT: +/- 15 LBS. (INCLUDING MOUNTING HARDWARE)



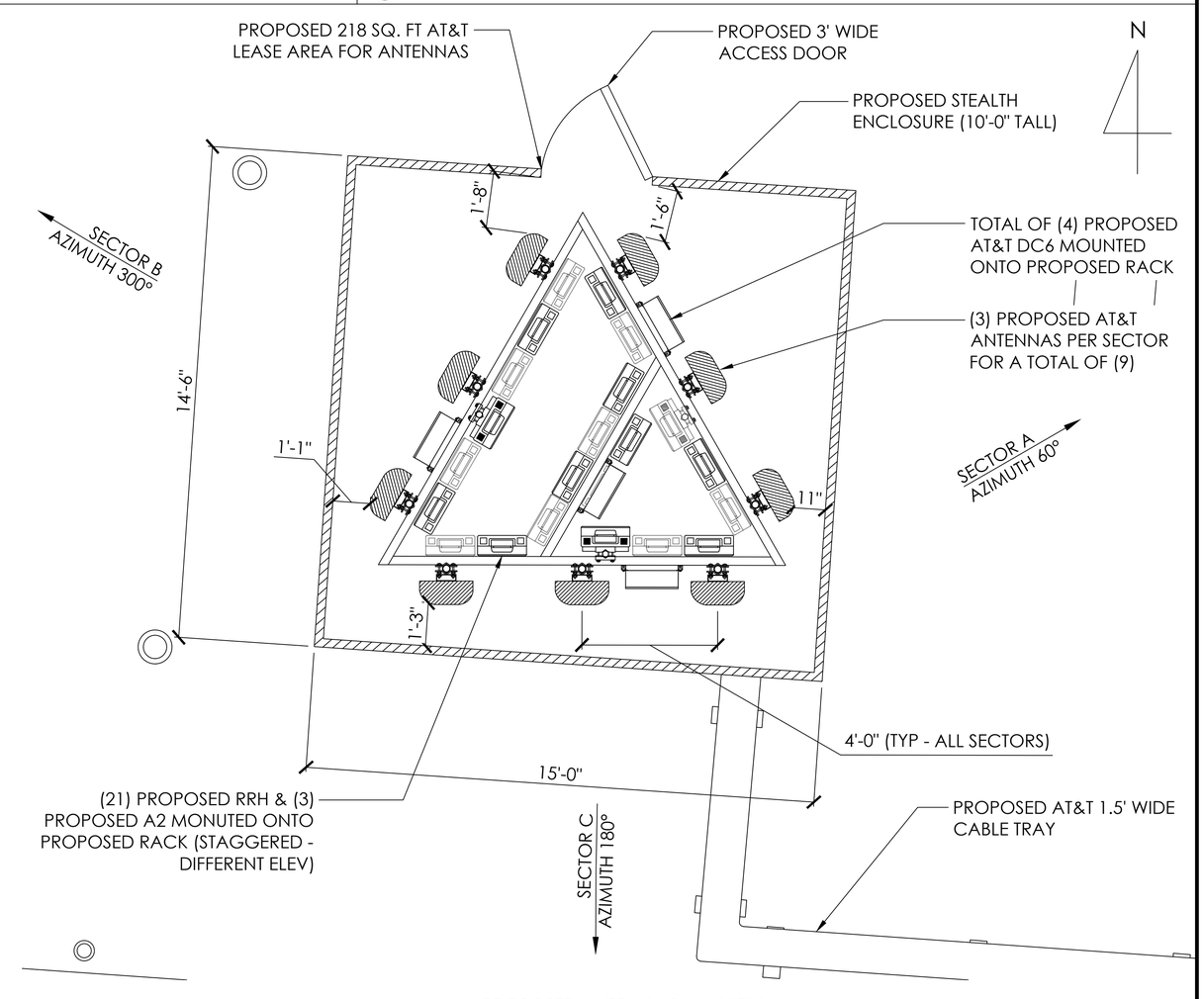
12 ERICSSON RRHS A2 REMOTE RADIO UNIT
1 1/2"=1'-0"

RF SCHEDULE

SECTOR		ANTENNA MODEL NO.	AZIMUTH	RAD CENTER	RRH	TMA	FIBER LENGTH	COAX LENGTH	COAX DIA.	NO.
ALPHA	A1	SBNHH-1D65B	60°	± 44'-10"	(2) RRH & A2	N/A	± 100'-0"	± 6'-0"	1/2"	6
	A2	SBNHH-1D65B	60°	± 44'-10"	(3) RRH	N/A	± 100'-0"	± 6'-0"	1/2"	4
	A3	SBNHH-1D65B	60°	± 44'-10"	(2) RRH	N/A	± 100'-0"	± 6'-0"	1/2"	2
	A4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BETA	B1	SBNHH-1D65B	300°	± 44'-10"	(2) RRH & A2	N/A	± 100'-0"	± 6'-0"	1/2"	6
	B2	SBNHH-1D65B	300°	± 44'-10"	(3) RRH	N/A	± 100'-0"	± 6'-0"	1/2"	4
	B3	SBNHH-1D65B	300°	± 44'-10"	(2) RRH	N/A	± 100'-0"	± 6'-0"	1/2"	2
	B4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GAMMA	C1	SBNHH-1D65B	180°	± 44'-10"	(2) RRH & A2	N/A	± 100'-0"	± 6'-0"	1/2"	6
	C2	SBNHH-1D65B	180°	± 44'-10"	(3) RRH	N/A	± 100'-0"	± 6'-0"	1/2"	4
	C3	SBNHH-1D65B	180°	± 44'-10"	(2) RRH	N/A	± 100'-0"	± 6'-0"	1/2"	2
	C4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RF DATA SHEET V1.03.00 DATE: TBD

8 RF SCHEDULE
NOT TO SCALE



PROPOSED ANTENNA PLAN VIEW
1/2" = 1'-0"

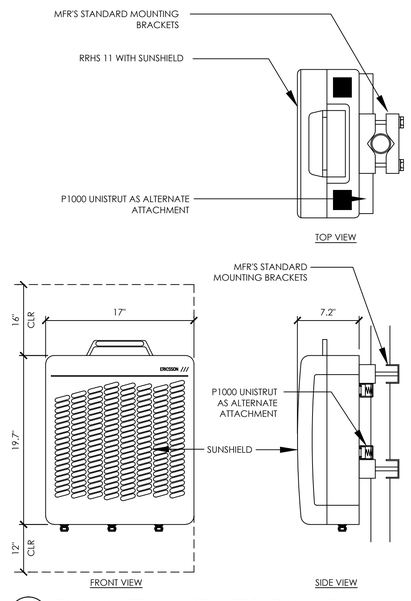
NOTE:
1. TEXTURE AND COLOR OF THE PROPOSED PENTHOUSE SHALL MATCH THE EXISTING PENTHOUSE
2. PROPOSED AT&T CABLE TRAY TO BE PAINTED TO MATCH EXISTING BUILDING COLOR

ERICSSON RRUS 11 REMOTE RADIO UNIT

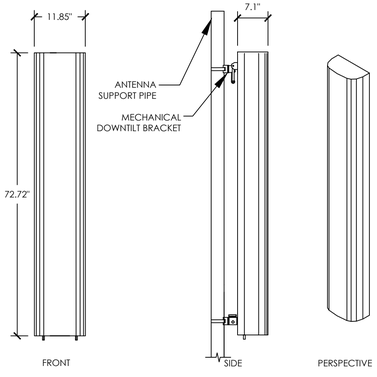
COLOR: WHITE

DIMENSIONS: 19.7" TALL X 17" WIDE X 7.2" DEEP (INCLUDING SUNSHIELD)

WIEGHT: +/- 50 LBS. (INCLUDING MOUNTING HARDWARE)



17 ERICSSON RRHS-11 REMOTE RADIO UNIT
1 1/2"=1'-0"



ANTENNA = SBNHH-1D65B

WIND AREA = 5.98 SQ.FT.

WEIGHT = 50.71 LBS (23.0 KG)

DIMENSIONS = 72.72" (H) x 11.85" (W) x 7.1" (D)

13 HEX ANTENNA SPEC
3/4"=1'-0"

PREPARED FOR

at&t Mobility

5001 Executive Parkway
San Ramon, California 94583

Vendor:

Cortel

14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:

CCU3085

AT&T SITE NO:	CCU3085
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

REV	DATE	DESCRIPTION
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Licensor:

Issued For:

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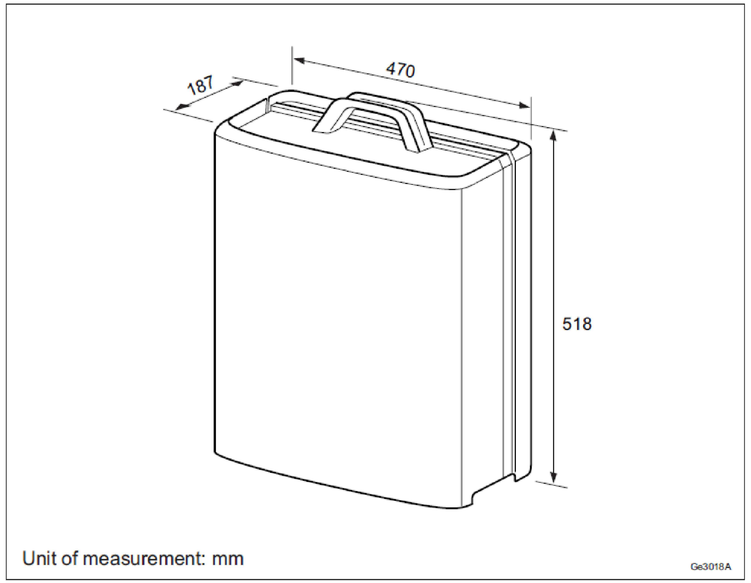
CENTRAL & ST CHARLES RELO
1538 ST CHARLES ST
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:

PROPOSED ANTENNA PLAN VIEW

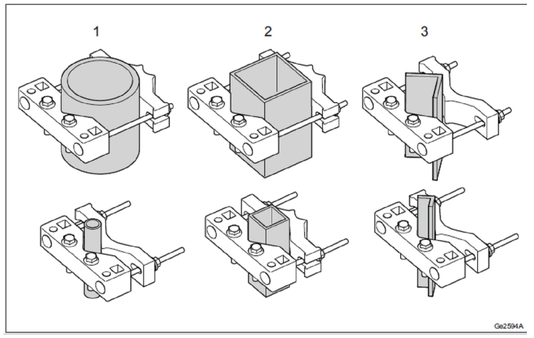
SHEET NUMBER:

A-4



Description	Value
Width	458 mm
Depth	159 mm
Weight	
RRH 12 B1, RRH 12 B2, RRH 12 B4, and RRH 12 B7	22.4 kg
RRH 12 B3, RRH 12 B5, and RRH 12 B8	26.3 kg
Color	
Gray	
(1) RRH 12 B2 supports only horizontal mounting for 2x20 W and 2x40 W power levels. (2) RRH 12 B7 supports only 2x20 W, and 2x40 W power levels. (3) Information about IBW can be found in RBS Configurations	

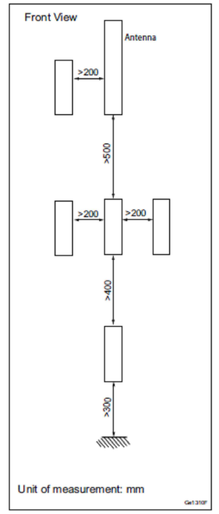
RRH-12 SPECIFICATION
N.T.S.



Cross Section	Minimum dimension (mm)	Maximum dimension (mm)
1. Circular	Ø25(1)	Ø120
2. Square	40x40	80x80
3. 90°	20x20(2)	55x55

(1) For triple unit installation, the minimum pole dimension is Ø50 mm
(2) For triple unit installation, the minimum pole dimension is 45x45 mm

RRH-12 MOUNTING DEVICES
N.T.S.



RRH-12 OUTDOOR SPACING REQUIREMENTS
N.T.S.

PREPARED FOR
at&t Mobility
5001 Executive Parkway
San Ramon, California 94583

Vendor:
Cortel
14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:
CCU3085

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PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

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0	11/16/14	ZD 100%

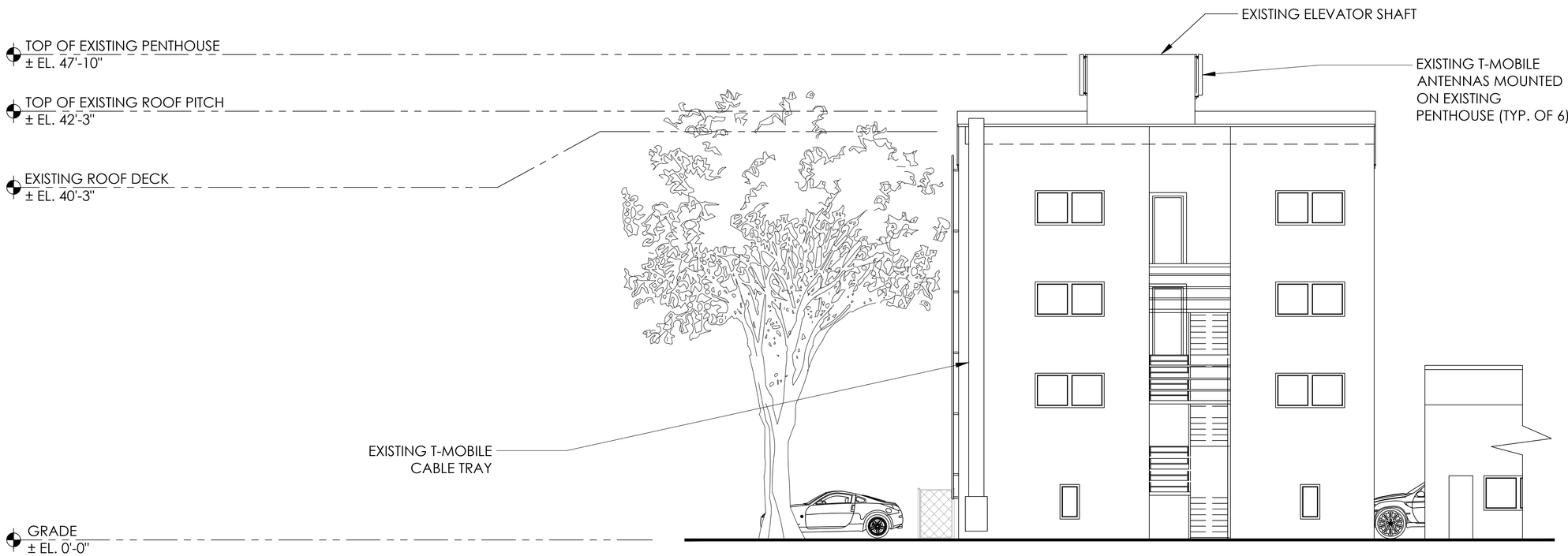
Licensor:

Issued For:

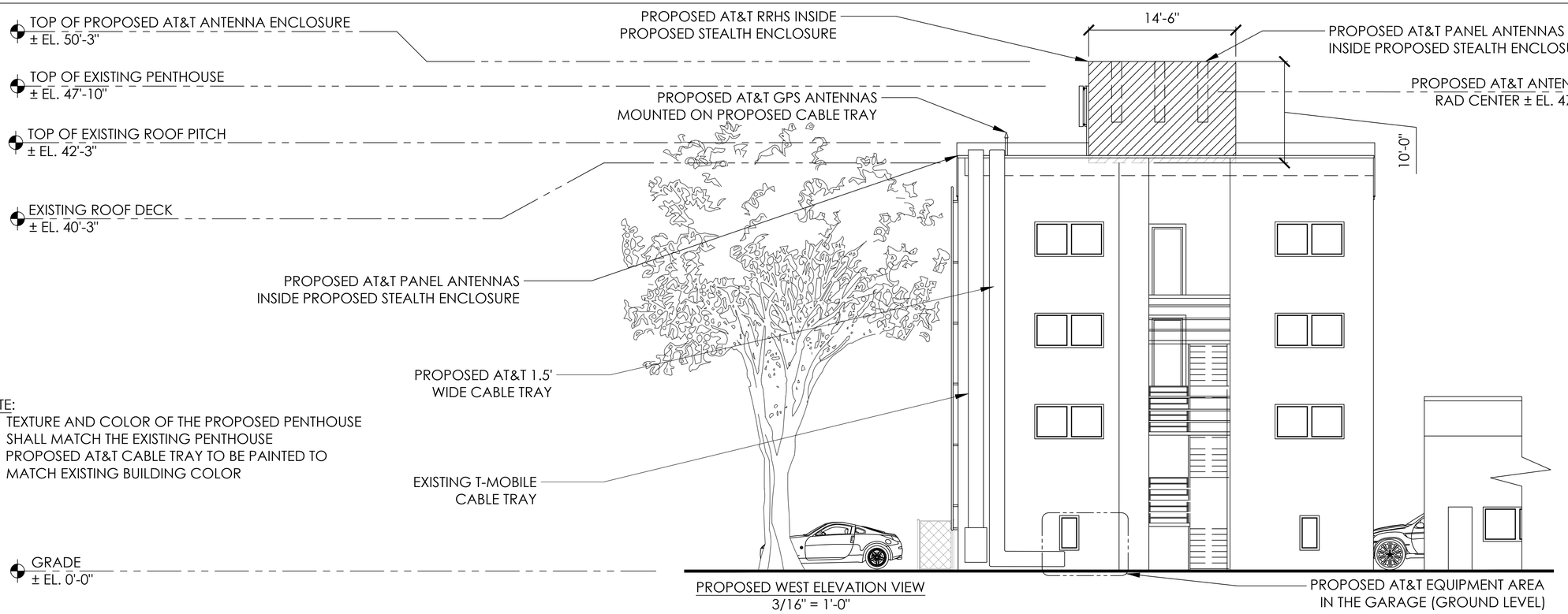
CCU3085
CENTRAL & ST CHARLES RELO
1538 ST CHARLES ST
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
PROPOSED ANTENNA PLAN VIEW

SHEET NUMBER:
A-4.1



EXISTING WEST ELEVATION VIEW
3/16" = 1'-0"



NOTE:
1. TEXTURE AND COLOR OF THE PROPOSED PENTHOUSE SHALL MATCH THE EXISTING PENTHOUSE
2. PROPOSED AT&T CABLE TRAY TO BE PAINTED TO MATCH EXISTING BUILDING COLOR

PROPOSED WEST ELEVATION VIEW
3/16" = 1'-0"

PREPARED FOR

at&t Mobility

5001 Executive Parkway
San Ramon, California 94583

Vendor:

Cortel

14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:

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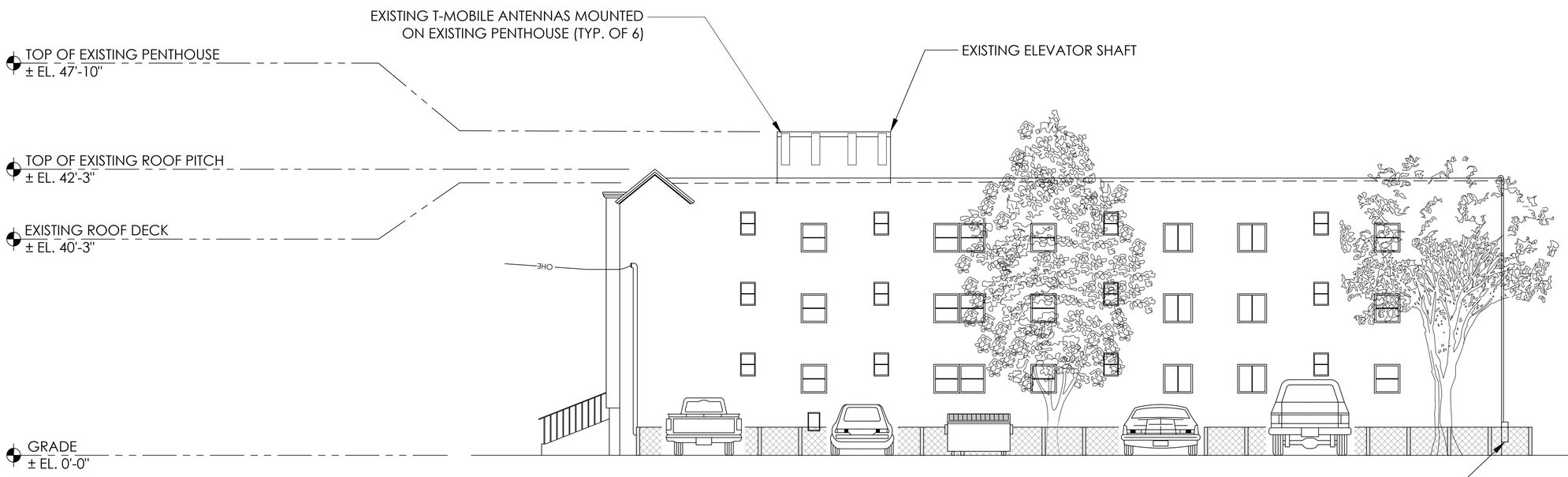
CENTRAL & ST CHARLES RELO
1538 ST CHARLES ST
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:

EXISTING & PROPOSED WEST ELEVATION VIEW

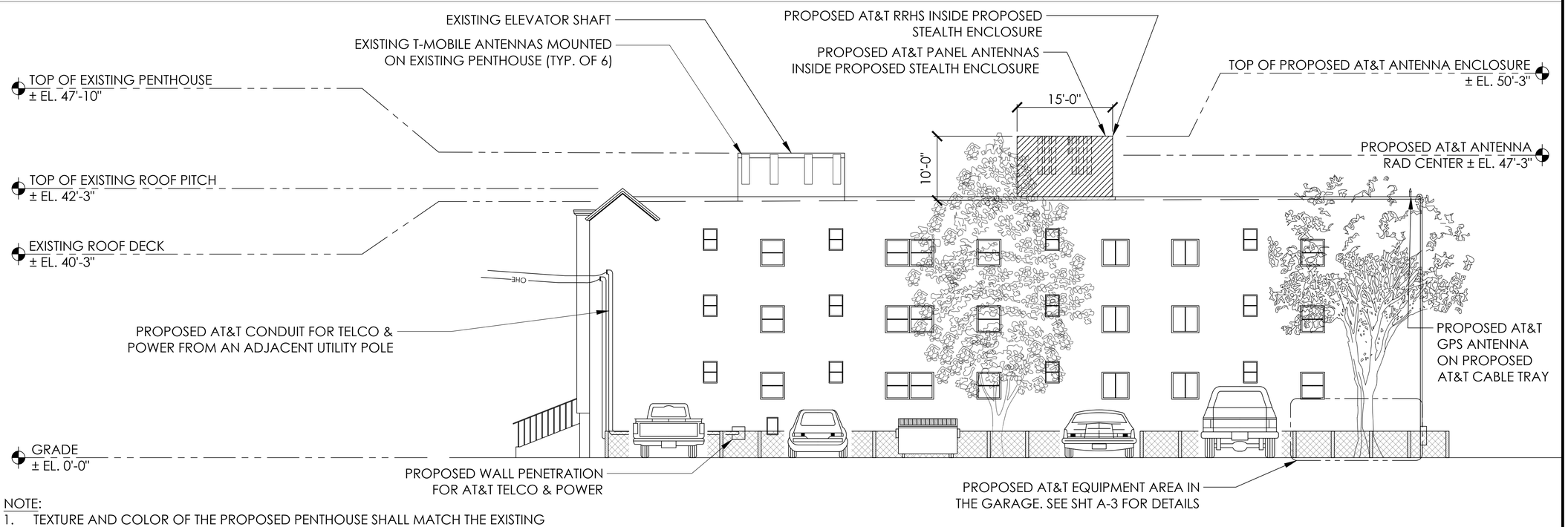
SHEET NUMBER:

A-5



NOTE:
1. ROOF LINE SLOPES (EAST END APPROX. 1' HIGHER)

EXISTING SOUTH ELEVATION VIEW
1/8" = 1'-0"



NOTE:
1. TEXTURE AND COLOR OF THE PROPOSED PENTHOUSE SHALL MATCH THE EXISTING PENTHOUSE
2. PROPOSED AT&T CONDUIT FOR TELCO & POWER TO BE PAINTED TO MATCH EXISTING BUILDING COLOR

PROPOSED SOUTH ELEVATION VIEW
1/8" = 1'-0"

PREPARED FOR
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5001 Executive Parkway
San Ramon, California 94583

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San Diego, CA 92127

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2	12/22/14	ZD 100%
1	11/26/14	ZD 100%
0	11/16/14	ZD 100%

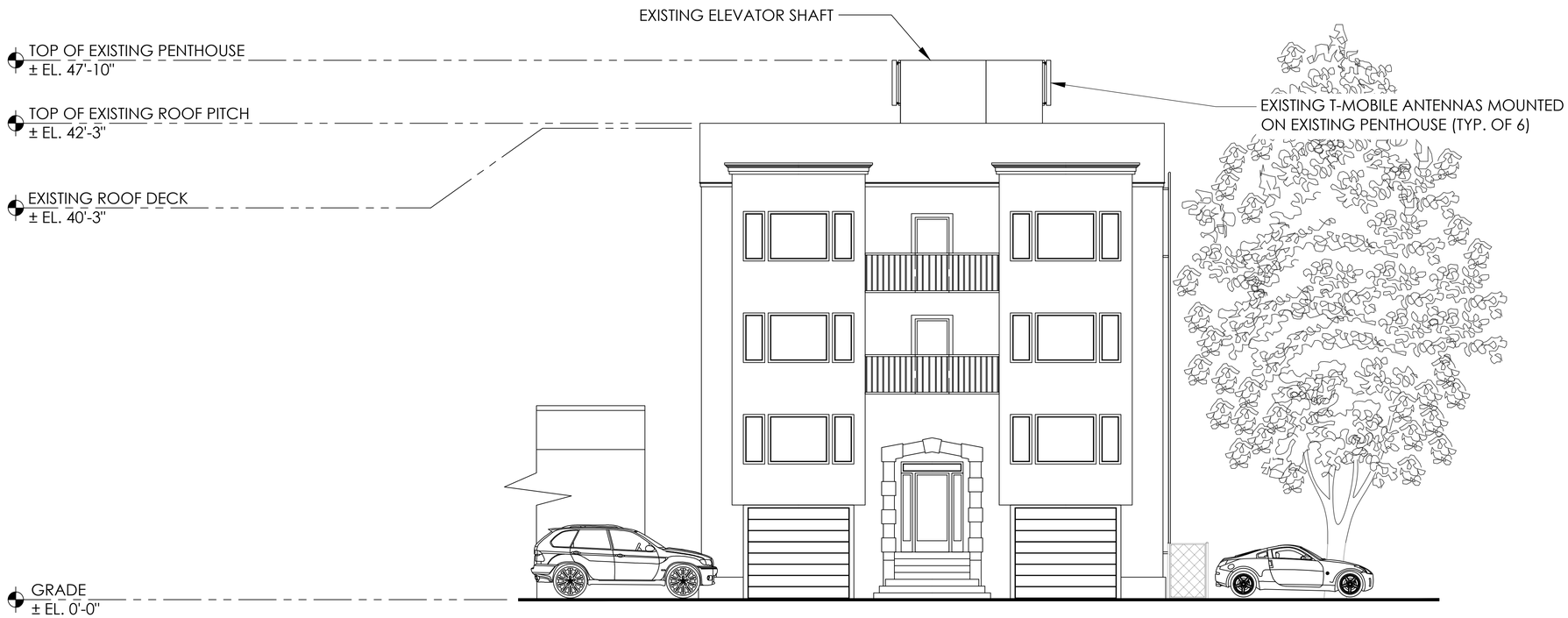
Licensor:

Issued For:

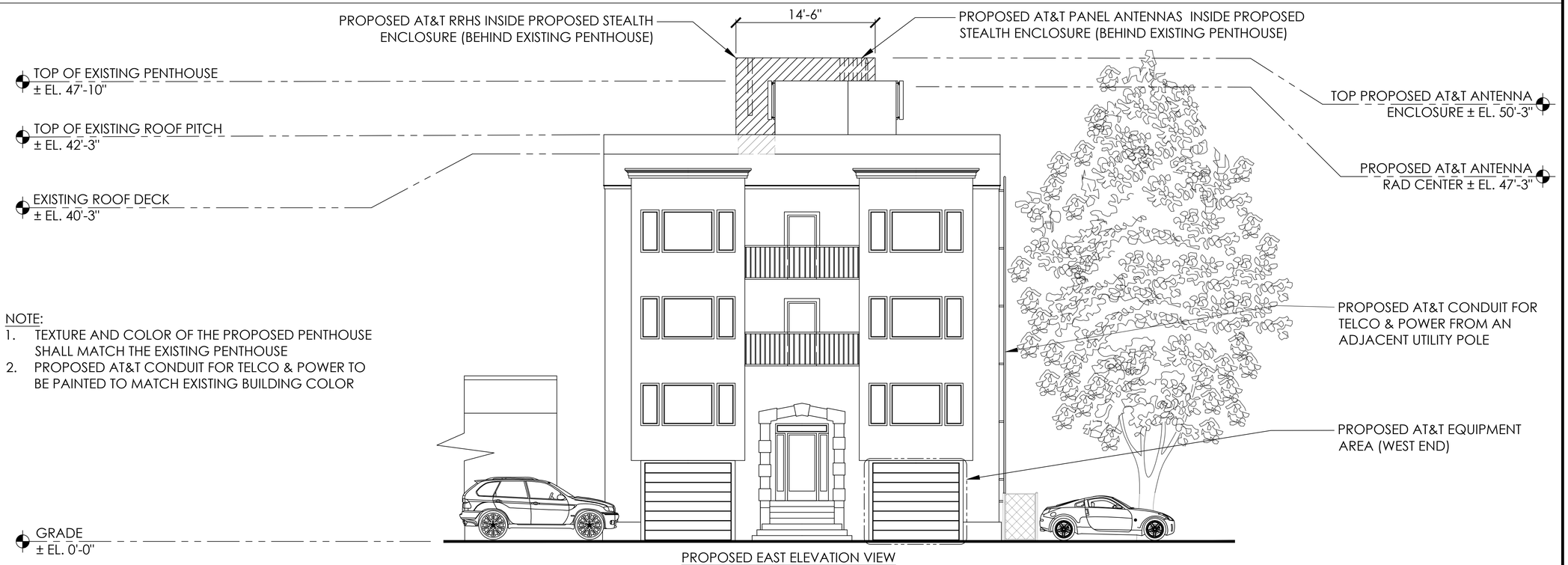
CCU3085
CENTRAL & ST CHARLES RELO
1538 ST CHARLES ST
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
EXISTING & PROPOSED SOUTH ELEVATION VIEW

SHEET NUMBER:
A-6



EXISTING EAST ELEVATION VIEW
3/16" = 1'-0"



NOTE:
1. TEXTURE AND COLOR OF THE PROPOSED PENTHOUSE SHALL MATCH THE EXISTING PENTHOUSE
2. PROPOSED AT&T CONDUIT FOR TELCO & POWER TO BE PAINTED TO MATCH EXISTING BUILDING COLOR

PROPOSED EAST ELEVATION VIEW
3/16" = 1'-0"

PREPARED FOR

at&t Mobility

5001 Executive Parkway
San Ramon, California 94583

Vendor:

Cortel

14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:

CCU3085

AT&T SITE NO:	CCU3085
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

REV	DATE	DESCRIPTION
4	01/22/15	ZD 100%
3	01/09/15	ZD 100%
2	12/22/14	ZD 100%
1	11/26/14	ZD 100%
0	11/16/14	ZD 100%

Licensor:

Issued For:

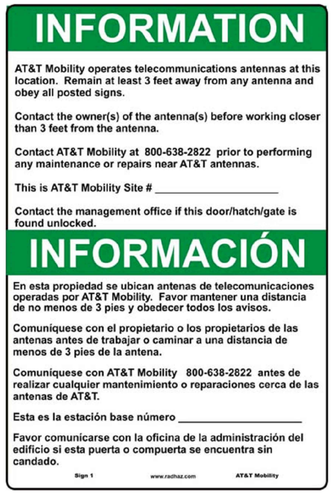
CCU3085
CENTRAL & ST CHARLES RELO
1538 ST CHARLES ST
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:

EXISTING & PROPOSED EAST ELEVATION VIEW

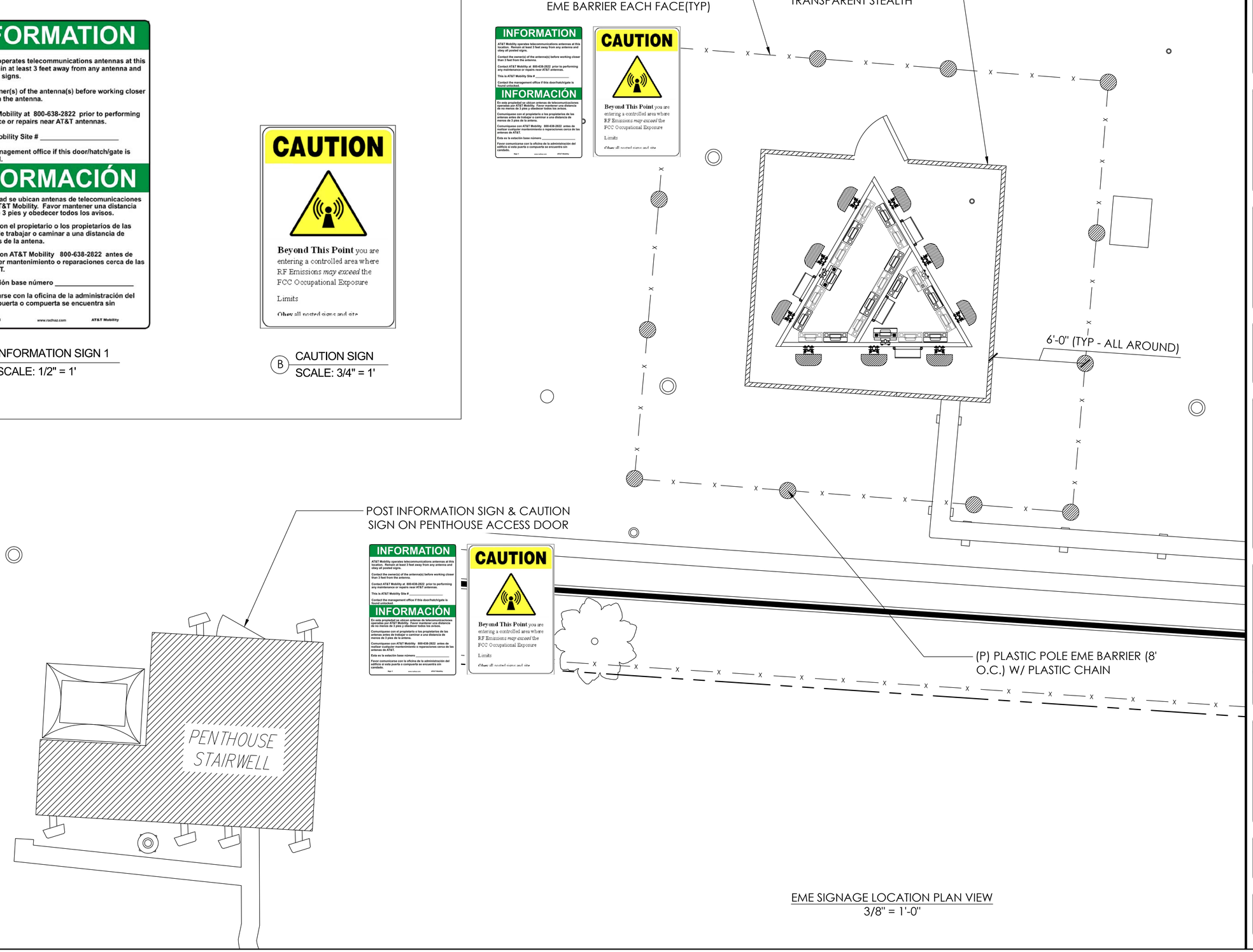
SHEET NUMBER:

A-7



A INFORMATION SIGN 1
SCALE: 1/2" = 1'

B CAUTION SIGN
SCALE: 3/4" = 1'



EME SIGNAGE LOCATION PLAN VIEW
3/8" = 1'-0"

PREPARED FOR
at&t Mobility
5001 Executive Parkway
San Ramon, California 94583

Vendor:
Cortel
14621 Arroyo Hondo
San Diego, CA 92127

AT&T Site ID:
CCU3085

AT&T SITE NO:	CCU3085
PROJECT CODE:	-------
DRAWN BY:	SO
CHECKED BY:	JF

REV	DATE	DESCRIPTION
4	01/22/15	ZD 100%
3	01/09/15	ZD 100%
2	12/22/14	ZD 100%
1	11/26/14	ZD 100%
0	11/16/14	ZD 100%

Licensor:

Issued For:

CCU3085
CENTRAL & ST CHARLES RELO
1538 ST CHARLES ST
ALAMEDA, CA 94501
ALAMEDA COUNTY

SHEET TITLE:
EME SIGNAGE LOCATION PLAN VIEW

SHEET NUMBER:
A-8

EXISTING

PROPOSED: Install (9) new panel antennas + RRUs inside proposed stealth on rooftop

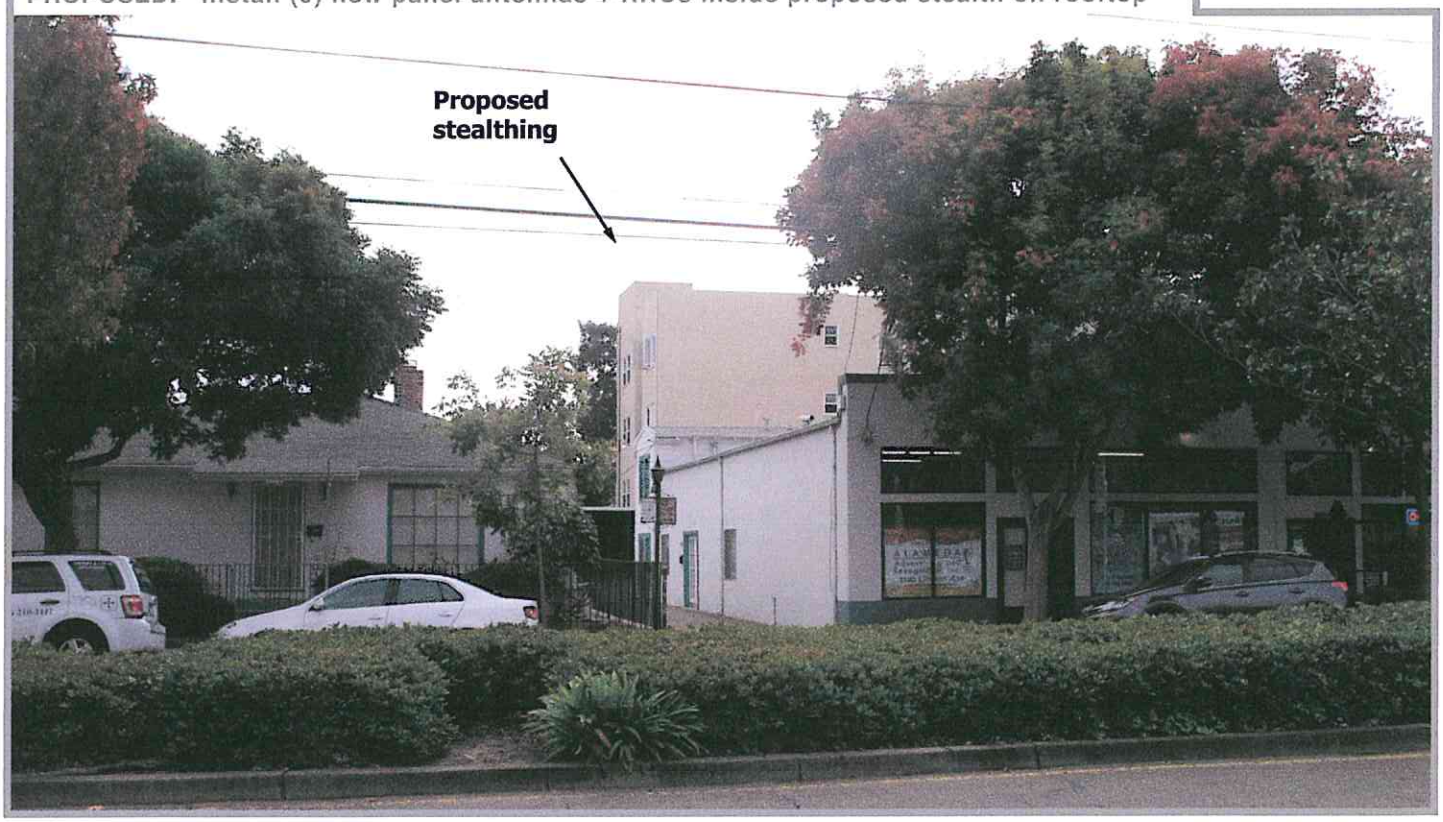
Cortel Photosims

at&t

CCU3085
1538 St Charles St
Alameda CA 94501

EXISTING

PROPOSED: Install (9) new panel antennas + RRUs inside proposed stealth on rooftop



Cortel
Photosims

View 2 of 3

at&t

CCU3085
1538 St Charles St
Alameda CA 94501

EXISTING

PROPOSED: Install (9) new panel antennas + RRUs inside proposed stealth on rooftop

Cortel Photosims

View 3 of 3

at&t

CCU3085
1538 St Charles St
Alameda CA 94501

Cortel Photosims

View Chart

at&t

CCU3085
1538 St Charles St
Alameda CA 94501

EXISTING

PROPOSED: Install (12) new panel antennas + RRUs inside proposed stealth on rooftop

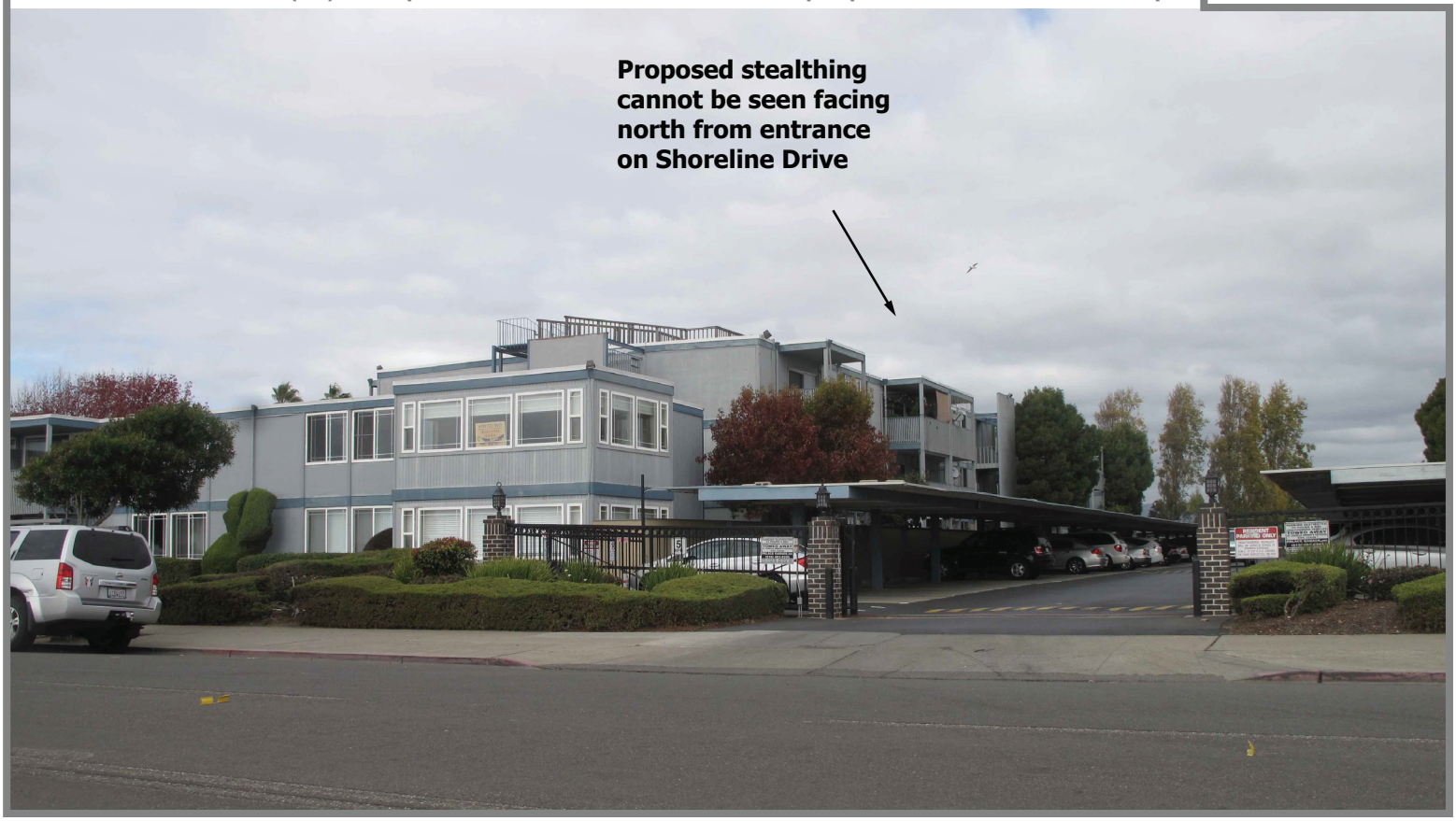
Cortel Photosims

at&t

CCU3969
1777 Shoreline Dr
Alameda CA 94501

EXISTING

PROPOSED: Install (12) new panel antennas + RRUs inside proposed stealth on rooftop



Cortel Photosims

at&t

CCU3969
1777 Shoreline Dr
Alameda CA 94501

EXISTING

PROPOSED: Install (12) new panel antennas + RRUs inside proposed stealth on rooftop

Cortel Photosims

at&t

CCU3969
1777 Shoreline Dr
Alameda CA 94501

VIEWS

Cortel Photosims

View Chart

at&t

CCU3969
1777 Shoreline Dr
Alameda CA 94501

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

USID# 167230
Site No. CCU3085
Central & St. Charles Relo
1538 St. Charles Street
Alameda, California 94501
Alameda County
37.774297; -122.265256 NAD83
Rooftop

EBI Project No. 62146280
November 25, 2014

Prepared for:

AT&T Mobility, LLC
c/o Cortel, LLC
3265 Baker Street
Sacramento, CA 94123

Prepared by:

EBI Consulting
environmental | engineering | due diligence

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by AT&T Mobility, LLC to conduct radio frequency electromagnetic (RF-EME) modeling for AT&T Site CCU3085 located at 1538 St. Charles Street in Alameda, California to determine RF-EME exposure levels from proposed AT&T wireless communications equipment at this site. As described in greater detail in Section 2.0 of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

This report contains a detailed summary of the RF EME analysis for the site, including the following:

- Antenna Inventory
- Site Plan with antenna locations
- Antenna inventory with relevant parameters for theoretical modeling
- Graphical representation of theoretical MPE fields based on modeling
- Graphical representation of recommended signage and/or barriers

This document addresses the compliance of AT&T's transmitting facilities independently and in relation to all collocated facilities at the site.

Statement of Compliance

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

Per AT&T's corporate policy, the FCC's general population limits are applicable to all rooftop sites, regardless of the level of access control. As presented in the sections below, based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 16 feet of ATT's proposed antennas at the main roof level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 4 feet of ATT's proposed antennas at the main roof level. Additionally, there are areas where elevated workers may be exposed to power densities greater than the occupational limits. The worst-case emitted power density may exceed the FCC's occupational limit within approximately 5 feet of AT&T's proposed antennas at the antenna face level. Workers and the general public should be informed about the presence and locations of antennas and their associated fields.

AT&T Recommended Signage/Compliance Plan

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, requires that:

1. All sites must be analyzed for RF exposure compliance;
2. All sites must have that analysis documented; and
3. All sites must have any necessary signage and barriers installed.

Site compliance recommendations have been developed based upon protocols presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, additional guidance provided by AT&T, EBI's understanding of FCC and OSHA requirements, and common industry practice. Barrier locations have been identified (when required) based on guidance presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012. The following signage is recommended at this site:

- Green INFO 1 sign posted on or next to the access door to the rooftop and on the barrier near the antennas.
- Yellow CAUTION sign posted on the barrier near the antennas.

The signage proposed for installation at this site complies with AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document and therefore complies with FCC and OSHA requirements. Barriers are recommended on this site. More detailed information concerning site compliance recommendations is presented in Section 5.0 and Appendix E of this report.

1.0 SITE DESCRIPTION

This project involves the proposed installation of up to nine (9) wireless telecommunication antennas on a rooftop in Alameda, California. There are three Sectors (A, B, and C) proposed at the site, with three (3) proposed antennas per sector. For modeling purposes, it is assumed that there will be one (1) LTE antenna in each sector transmitting in the 700 and 1900 MHz frequency ranges, one (1) UMTS/LTE antenna in each sector transmitting in the 850, 1900, and 2100 MHz frequency ranges, and one (1) LTE antenna in each sector transmitting in the 700 and 2300 MHz frequency ranges. The Sector A antennas will be oriented 20° from true north. The Sector B antennas will be oriented 240° from true north. The Sector C antennas will be oriented 120° from true north. The bottoms of the antennas will be approximately 1.56 feet above the main rooftop. Appendix B presents an antenna inventory for the site.

Access to this site is accomplished via a stairwell penthouses located on the main roof. It is unknown if the roof access door is locked and, as such, the general public is assumed to be able to access the rooftop.

Modeling results were generated based on information from the following materials:

- RFDS – SAN-FRANCISCO-SACRAMENTO_SAN-FRANCISCO_CCU3085_2015-New-Site_New dated 10/22/2014
- CDs – CCU3085 90ZD Rev A dated 11/4/2014

2.0 FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

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

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

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

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

Table 1 and Figure 1 (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by

frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm^2). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm^2) and an uncontrolled MPE of 1 mW/cm2 for equipment operating in the 1900 MHz frequency range. For the AT&T equipment operating at 850 MHz, the FCC's occupational MPE is 2.83 mW/cm^2 and an uncontrolled MPE of 0.57 mW/cm^2. For the AT&T equipment operating at 700 MHz, the FCC's occupational MPE is 2.33 mW/cm^2 and an uncontrolled MPE of 0.47 mW/cm^2. These limits are considered protective of these populations.

Table 1: Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure

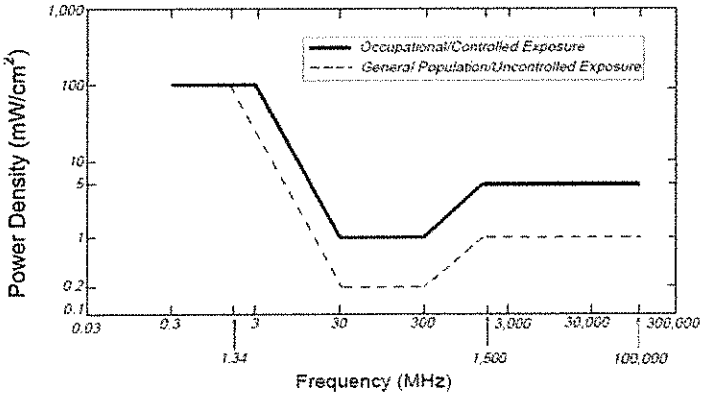
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $[E]^2$, $[H]^2$, or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6

(B) Limits for General Public/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $[E]^2$, $[H]^2$, or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)
* Plane-wave equivalent power density

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



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

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Cellular Telephone	870 MHz	2.90 mW/cm^2	0.58 mW/cm^2
Specialized Mobile Radio	855 MHz	2.85 mW/cm^2	0.57 mW/cm^2
Long Term Evolution (LTE)	700 MHz	2.33 mW/cm^2	0.47 mW/cm^2
Most Restrictive Freq. Range	30-300 MHz	1.00 mW/cm^2	0.20 mW/cm^2

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

Personal Communication (PCS) facilities used by AT&T in this area operate within a frequency range of 700-1900 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

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

3.0 AT&T RF Exposure Policy Requirements

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, requires that:

1. All sites must be analyzed for RF exposure compliance;
2. All sites must have that analysis documented; and
3. All sites must have any necessary signage and barriers installed.

Pursuant to this guidance, worst-case predictive modeling was performed for the site. This modeling is described below in Section 4.0. Lastly, based on the modeling and survey data, EBI has produced a Compliance Plan for this site that outlines the recommended signage and barriers. The recommended Compliance Plan for this site is described in Section 5.0.

4.0 Worst-Case Predictive Modeling

In accordance with AT&T's RF Exposure policy, EBI performed theoretical modeling using RoofView® software to estimate the worst-case power density at the site rooftop-level resulting from operation of the antennas. RoofView® is a widely-used predictive modeling program that has been developed by Richard Tell Associates to predict both near field and far field RF power density values for roof-top and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. The models utilize several operational

specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

For this report, EBI utilized antenna and power data provided by AT&T and compared the resultant worst-case MPE levels to the FCC's occupational/controlled exposure limits outlined in OET Bulletin 65. The assumptions used in the modeling are based upon information provided by AT&T and information gathered from other sources. T-Mobile also has antennas on the rooftop. Information about these antennas was included in the modeling analysis.

Per AT&T's corporate policy, the FCC's general population limits are applicable to all rooftop sites, regardless of the level of access control. Based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 16 feet of AT&T's antennas on the main roof level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 4 feet of AT&T's antennas on the main roof level. Additionally, there are areas where elevated workers may be exposed to power densities greater than the occupational limits. The worst-case emitted power density may exceed the FCC's occupational limit within approximately 5 feet of AT&T's proposed antennas at the antenna face level. Workers and the general public should be informed about the presence and locations of antennas and their associated fields.

At the nearest walking/working surfaces to the AT&T antennas, the maximum power density generated by the AT&T antennas is approximately 1,174.00 percent of the FCC's general public limit (234.80 percent of the FCC's occupational limit). The composite exposure level from all carriers on this site is approximately 1,188.80 percent of the FCC's general public limit (237.76 percent of the FCC's occupational limit) at the nearest walking/working surface to each antenna. Based on worst-case predictive modeling, there are no areas at ground level related to the proposed AT&T antennas that exceed the FCC's occupational or general public exposure limits at this site. At ground level, the maximum power density generated by the antennas is approximately 4.10 percent of the FCC's general public limit (0.82 percent of the FCC's occupational limit).

There were also worst-case predicted exposures above the general public and occupational MPE in front of the T-Mobile antennas. Modeling indicates that the AT&T contribution to these areas is 5% or less of the general public MPE and, as such, under FCC regulations, AT&T is not responsible for these predicted exceedances.

The inputs used in the modeling are summarized in the RoofView® export file presented in Appendix C. A graphical representation of the RoofView® modeling results is presented in Appendix D. It should be noted that RoofView® is not suitable for modeling microwave dish antennas; however, these units are designed for point-to-point operations at the elevations of the installed equipment rather than ground-level coverage. Based on AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, microwave antennas are considered compliant if they are higher than 20 feet above any accessible walking/working surface. There are no microwaves installed at this site.

5.0 RECOMMENDED SIGNAGE/COMPLIANCE PLAN

Signs are the primary means for control of access to areas where RF exposure levels may potentially exceed the MPE. As presented in the AT&T guidance document, the signs must:

- Be posted at a conspicuous point;
- Be posted at the appropriate locations;
- Be readily visible; and
- Make the reader aware of the potential risks prior to entering the affected area.

The table below presents the signs that may be used for AT&T installations.

Informational Signs		Alerting Signs	
	INFO 1		NOTICE
	INFO 2		CAUTION - ROOFTOP
	INFO 3		CAUTION - TOWER
	INFO 4		WARNING

Based upon protocols presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, and additional guidance provided by AT&T, the following signage is recommended on the site:

Recommended Signage:

- Green INFO 1 sign posted on or next to the access door to the rooftop and on the barrier near the antennas.
- Yellow CAUTION sign posted on the barrier near the antennas.

Barriers should be installed 13 feet by 9 feet in front of the AT&T Sector C antennas at the main roof level. Barriers are not recommended within 6 feet of the edge of the rooftop due to OSHA standards and the low parapet height,. However, EBI recommends that AT&T and the landlord take additional measures to ensure that persons accessing the rooftop (for example, roofers or other maintenance workers) are informed of areas where RF levels exceed the FCC general public and occupational limit and made aware that these areas must be avoided to maintain compliance with FCC requirements. It is recommended that the landlord distribute this report to anyone accessing the roof and ask for confirmation that it has been read and understood. In cases where the roof access is assumed to be unrestricted, we also recommend the illumination of the signs. Barriers should be constructed of weather-resistant plastic or wood fencing. Barriers may consist of railing, rope, chain, or weather-resistant plastic if no other types are permitted or are feasible. Painted stripes should only be used as a last resort and only in regions where there is little chance of snowfall. If painted stripes are selected as barriers, it is recommended that the stripes and signage be illuminated. The signage and any barriers are graphically represented in the Signage Plan presented in Appendix E. It is important to note that this Signage Plan is specific for AT&T antennas only, and does not address RF emissions of other carrier antennas.

6.0 SUMMARY AND CONCLUSIONS

EBI has prepared this Radiofrequency Emissions Compliance Report for the proposed AT&T telecommunications equipment at the site located at 1538 St. Charles Street in Alameda, California.

EBI has conducted theoretical modeling to estimate the worst-case power density from AT&T antennas and other carrier antennas to document potential MPE levels at this location and ensure that site control measures are adequate to meet FCC and OSHA requirements, as well as AT&T's corporate RF safety policies. As presented in the preceding sections, based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 16 feet of ATT's proposed antennas at the main roof level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 4 feet of ATT's proposed antennas at the main roof level. Additionally, there are areas where elevated workers may be exposed to power densities greater than the occupational limits. The worst-case emitted power density may exceed the FCC's occupational limit within approximately 5 feet of AT&T's proposed antennas at the antenna face level. Workers and the general public should be informed about the presence and locations of antennas and their associated fields.

Signage is recommended at the site as presented in Section 5.0 and Appendix E. Posting of the signage and installation of the recommended barriers brings the site into compliance with FCC rules and regulations and AT&T's corporate RF safety policies. Workers or members of the general public accessing areas directly in front of the other carrier antennas should contact the carrier and/or landlord to determine appropriate setbacks or measures to safely occupy those areas.

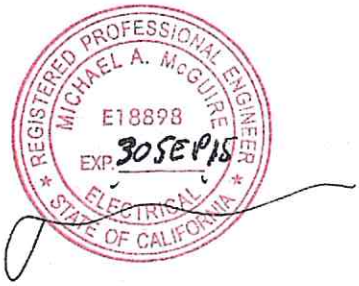
7.0 LIMITATIONS

This report was prepared for the use of AT&T Mobility, LLC to meet requirements outlined in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by EBI are based solely on the information provided by the client. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to EBI so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

Appendix A

Certifications

Reviewed and Approved by:



sealed 25nov2014

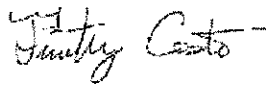
Michael McGuire
Electrical Engineer

Note that EBI's scope of work is limited to an evaluation of the Radio Frequency – Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the building and related structures, as well as the impact of the antennas and broadcast equipment on the structural integrity of the building, are specifically excluded from EBI's scope of work.

Preparer Certification

I, Timothy Costa, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am familiar with the FCC rules and regulations as well as OSHA regulations both in general and as they apply to RF-EME exposure.
- I have been trained in on the procedures outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document (dated September 21, 2012) and on RF-EME modeling using RoofView® modeling software.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.



Appendix B

Antenna Inventory

Antenna Number	Operator	Antenna Type	TX Freq (MHz)	ERP (Watts)	Gain (dBd)	Antenna Model	Azimuth (deg.)	Length (feet)	Horizontal Beamwidth (Degrees)	X	Y	Z
ATT A1	AT&T	Panel	LTE 700	420	12.4	Andrew SBNHH-1D65B	20	6.1	68	140	58	1.6
ATT A1	AT&T	Panel	LTE 1900	1331	15.8	Andrew SBNHH-1D65B	20	6.1	66	140	58	1.6
ATT A2	AT&T	Panel	UMTS 850	194	12.2	Andrew SBNHH-1D65B	20	6.1	66	135	60	1.6
ATT A2	AT&T	Panel	UMTS 850	585	12.2	Andrew SBNHH-1D65B	20	6.1	66	135	60	1.6
ATT A2	AT&T	Panel	LTE 2100	1426	16.1	Andrew SBNHH-1D65B	20	6.1	63	135	60	1.6
ATT A2	AT&T	Panel	UMTS 1900	666	15.8	Andrew SBNHH-1D65B	20	6.1	66	135	60	1.6
ATT A3	AT&T	Panel	LTE 700	560	12.4	Andrew SBNHH-1D65B	20	6.1	68	130	63	1.6
ATT A3	AT&T	Panel	LTE 2300	1216	16.2	Andrew SBNHH-1D65B	20	6.1	58	130	63	1.6
ATT B1	AT&T	Panel	LTE 700	420	12.4	Andrew SBNHH-1D65B	240	6.1	68	129	59	1.6
ATT B1	AT&T	Panel	LTE 1900	1331	15.8	Andrew SBNHH-1D65B	240	6.1	66	129	59	1.6
ATT B2	AT&T	Panel	UMTS 850	194	12.2	Andrew SBNHH-1D65B	240	6.1	66	130	54	1.6
ATT B2	AT&T	Panel	UMTS 850	585	12.2	Andrew SBNHH-1D65B	240	6.1	66	130	54	1.6
ATT B2	AT&T	Panel	LTE 2100	1426	16.1	Andrew SBNHH-1D65B	240	6.1	63	130	54	1.6
ATT B2	AT&T	Panel	UMTS 1900	666	15.8	Andrew SBNHH-1D65B	240	6.1	66	130	54	1.6
ATT B3	AT&T	Panel	LTE 700	560	12.4	Andrew SBNHH-1D65B	240	6.1	68	131	49	1.6
ATT B3	AT&T	Panel	LTE 2300	1216	16.2	Andrew SBNHH-1D65B	240	6.1	58	131	49	1.6
ATT C1	AT&T	Panel	LTE 700	420	12.4	Andrew SBNHH-1D65B	120	6.1	68	135	46	1.6
ATT C1	AT&T	Panel	LTE 1900	1331	15.8	Andrew SBNHH-1D65B	120	6.1	66	135	46	1.6
ATT C2	AT&T	Panel	UMTS 850	194	12.2	Andrew SBNHH-1D65B	120	6.1	66	137	51	1.6

Antenna Number	Operator	Antenna Type	TX Freq (MHz)	ERP (Watts)	Gain (dBd)	Antenna Model	Azimuth (deg.)	Length (feet)	Horizontal Beamwidth (Degrees)	X	Y	Z
ATT C2	AT&T	Panel	UMTS 850	585	12.2	Andrew SBNHH-1D65B	120	6.1	66	137	51	1.6
ATT C2	AT&T	Panel	LTE 2100	1426	16.1	Andrew SBNHH-1D65B	120	6.1	63	137	51	1.6
ATT C2	AT&T	Panel	UMTS 1900	666	15.8	Andrew SBNHH-1D65B	120	6.1	66	137	51	1.6
ATT C3	AT&T	Panel	LTE 700	560	12.4	Andrew SBNHH-1D65B	120	6.1	68	140	56	1.6
ATT C3	AT&T	Panel	LTE 2300	1216	16.2	Andrew SBNHH-1D65B	120	6.1	58	140	56	1.6
TMO A1	T-Mobile	Panel	1900	2394	16	Unknown	340	5.0	65	61	74	2.6
TMO A2	T-Mobile	Panel	2100	4258	16	Unknown	340	5.0	65	54	75	2.6
TMO B1	T-Mobile	Panel	1900	2394	16	Unknown	220	5.0	65	44	61	2.6
TMO B2	T-Mobile	Panel	2100	4258	16	Unknown	220	5.0	65	53	61	2.6
TMO C1	T-Mobile	Panel	1900	2394	16	Unknown	160	5.0	65	56	61	2.6
TMO C2	T-Mobile	Panel	2100	4258	16	Unknown	160	5.0	65	60	60	2.6

1. Note there are only 3 AT&T antennas per sector at this site. For clarity, the different frequencies for each antenna are entered on separate lines.
2. Note that EBI uses an assumed set of antenna specifications and powers for unknown and other carrier antennas for modeling purposes.

Appendix C

Roofview® Export File

StartMapDefinition

Roof Max Y	Roof Max X	Map Max Y	Map Max X	Y Offset	X Offset	Number of Areas	Envelope	List Of Areas
180	180	190	190	20	20	1	$AE$21:HB	$AE$21:$HB$200

StartSettingsData

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

StartAntennaData — It is advisable to provide an ID (ant 1) for all antennas

ID	Name	(MHz) Freq	Trans Power	Trans Count	Coax Len	Coax Type	Other Loss	Input Power	Calc Power	Mfg	Model	(ft) X	(ft) Y	(ft) Z	Type	(ft) Aper	dBd Gain	BWdth Pt Dir	Uptime Profile	ON flag
ATT A1	LTE	700	30	2	200	1/2 LDF	0.5		24.44282	Andrew	SBNHH-1D65B	140	58	1.555		6.05	12.35	68;20		ON
ATT A1	LTE	1900	60	2	200	1/2 LDF	0.5		35.41451	Andrew	SBNHH-1D65B	140	58	1.555		6.05	15.75	66;20		ON
ATT A2	UMTS	850	40	1	200	1/2 LDF	0.5		11.80484	Andrew	SBNHH-1D65B	135	60	1.555		6.05	12.15	66;20		ON
ATT A2	UMTS	850	40	1	200	1/2 LDF	0.5		11.80484	Andrew	SBNHH-1D65B	135	60	1.555		6.05	12.15	66;20		ON
ATT A2	LTE	2100	60	2	200	1/2 LDF	0.5		35.41451	Andrew	SBNHH-1D65B	135	60	1.555		6.05	16.05	63;20		ON
ATT A2	UMTS	1900	60	1	200	1/2 LDF	0.5		17.70726	Andrew	SBNHH-1D65B	135	60	1.555		6.05	15.75	66;20		ON
ATT A3	LTE	700	40	2	200	1/2 LDF	0.5		32.59042	Andrew	SBNHH-1D65B	130	63	1.555		6.05	12.35	68;20		ON
ATT A3	LTE	2300	25	4	200	1/2 LDF	0.5		29.51209	Andrew	SBNHH-1D65B	130	63	1.555		6.05	16.15	58;20		ON
ATT B1	LTE	700	30	2	200	1/2 LDF	0.5		24.44282	Andrew	SBNHH-1D65B	129	59	1.555		6.05	12.35	68;240		ON
ATT B1	LTE	1900	60	2	200	1/2 LDF	0.5		35.41451	Andrew	SBNHH-1D65B	129	59	1.555		6.05	15.75	66;240		ON
ATT B2	UMTS	850	40	1	200	1/2 LDF	0.5		11.80484	Andrew	SBNHH-1D65B	130	54	1.555		6.05	12.15	66;240		ON
ATT B2	UMTS	850	40	1	200	1/2 LDF	0.5		11.80484	Andrew	SBNHH-1D65B	130	54	1.555		6.05	12.15	66;240		ON
ATT B2	LTE	2100	60	2	200	1/2 LDF	0.5		35.41451	Andrew	SBNHH-1D65B	130	54	1.555		6.05	16.05	63;240		ON
ATT B2	UMTS	1900	60	1	200	1/2 LDF	0.5		17.70726	Andrew	SBNHH-1D65B	130	54	1.555		6.05	15.75	66;240		ON
ATT B3	LTE	700	40	2	200	1/2 LDF	0.5		32.59042	Andrew	SBNHH-1D65B	131	49	1.555		6.05	12.35	68;240		ON
ATT B3	LTE	2300	25	4	200	1/2 LDF	0.5		29.51209	Andrew	SBNHH-1D65B	131	49	1.555		6.05	16.15	58;240		ON
ATT C1	LTE	700	30	2	200	1/2 LDF	0.5		24.44282	Andrew	SBNHH-1D65B	135	46	1.555		6.05	12.35	68;120		ON
ATT C1	LTE	1900	60	2	200	1/2 LDF	0.5		35.41451	Andrew	SBNHH-1D65B	135	46	1.555		6.05	15.75	66;120		ON
ATT C2	UMTS	850	40	1	200	1/2 LDF	0.5		11.80484	Andrew	SBNHH-1D65B	137	51	1.555		6.05	12.15	66;120		ON
ATT C2	UMTS	850	40	1	200	1/2 LDF	0.5		11.80484	Andrew	SBNHH-1D65B	137	51	1.555		6.05	12.15	66;120		ON
ATT C2	LTE	2100	60	2	200	1/2 LDF	0.5		35.41451	Andrew	SBNHH-1D65B	137	51	1.555		6.05	16.05	63;120		ON
ATT C2	UMTS	1900	60	1	200	1/2 LDF	0.5		17.70726	Andrew	SBNHH-1D65B	137	51	1.555		6.05	15.75	66;120		ON
ATT C3	LTE	700	40	2	200	1/2 LDF	0.5		32.59042	Andrew	SBNHH-1D65B	140	56	1.555		6.05	12.35	68;120		ON
ATT C3	LTE	2300	25	4	200	1/2 LDF	0.5		29.51209	Andrew	SBNHH-1D65B	140	56	1.555		6.05	16.15	58;120		ON
TMO A1	T-Mobile	1900	30	4				3	60.14247	Unknown	Unknown	61	74	2.58		5	16	65;340		ON
TMO A2	T-Mobile	2100	30	4				0.5	106.9501	Unknown	Unknown	54	75	2.58		5	16	65;340		ON
TMO B1	T-Mobile	1900	30	4				3	60.14247	Unknown	Unknown	44	61	2.58		5	16	65;220		ON
TMO B2	T-Mobile	2100	30	4				0.5	106.9501	Unknown	Unknown	53	61	2.58		5	16	65;220		ON
TMO C1	T-Mobile	1900	30	4				3	60.14247	Unknown	Unknown	56	61	2.58		5	16	65;160		ON
TMO C2	T-Mobile	2100	30	4				0.5	106.9501	Unknown	Unknown	60	60	2.58		5	16	65;160		ON

StartSymbolData

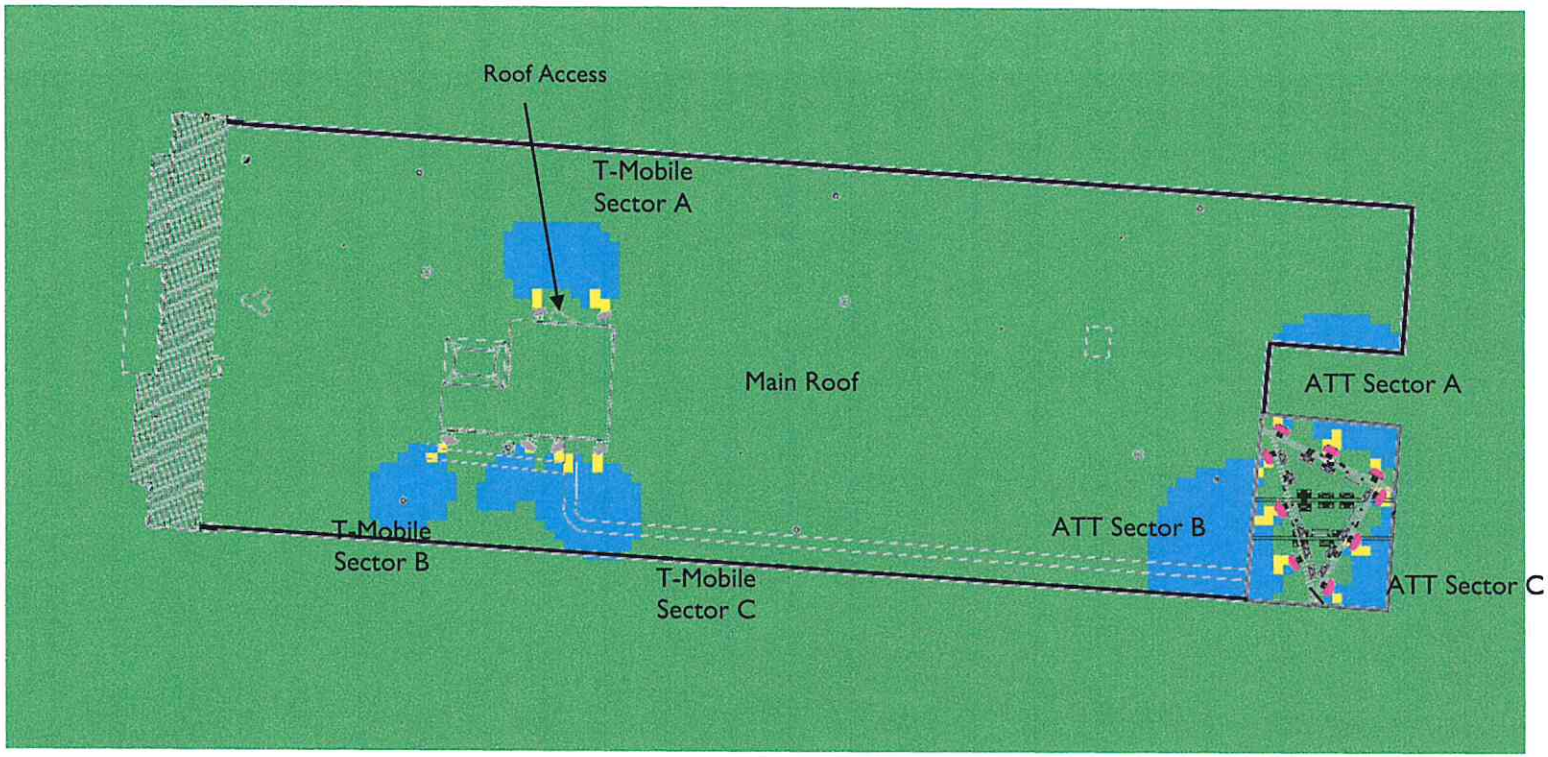
Sym	Map Marker	Roof X	Roof Y	Map Label	Description (notes for this table only)
Sym		5	35	AC Unit	Sample symbols
Sym		14	5	Roof Access	
Sym		45	5	AC Unit	
Sym		45	20	Ladder	

Appendix D

Roofview® Graphics

AT&T Antennas

Other Carrier Antennas



% FCC Public Exposure Limit
Exposure Level ≥ 5,000
500 < Exposure Level ≤ 5,000
100 < Exposure Level ≤ 500
Exposure Level ≤ 100

Roofview: Composite Exposure Levels

Facility Operator: AT&T Mobility

Site Name: Central & St. Charles Relo

AT&T Site Number: CCU3085

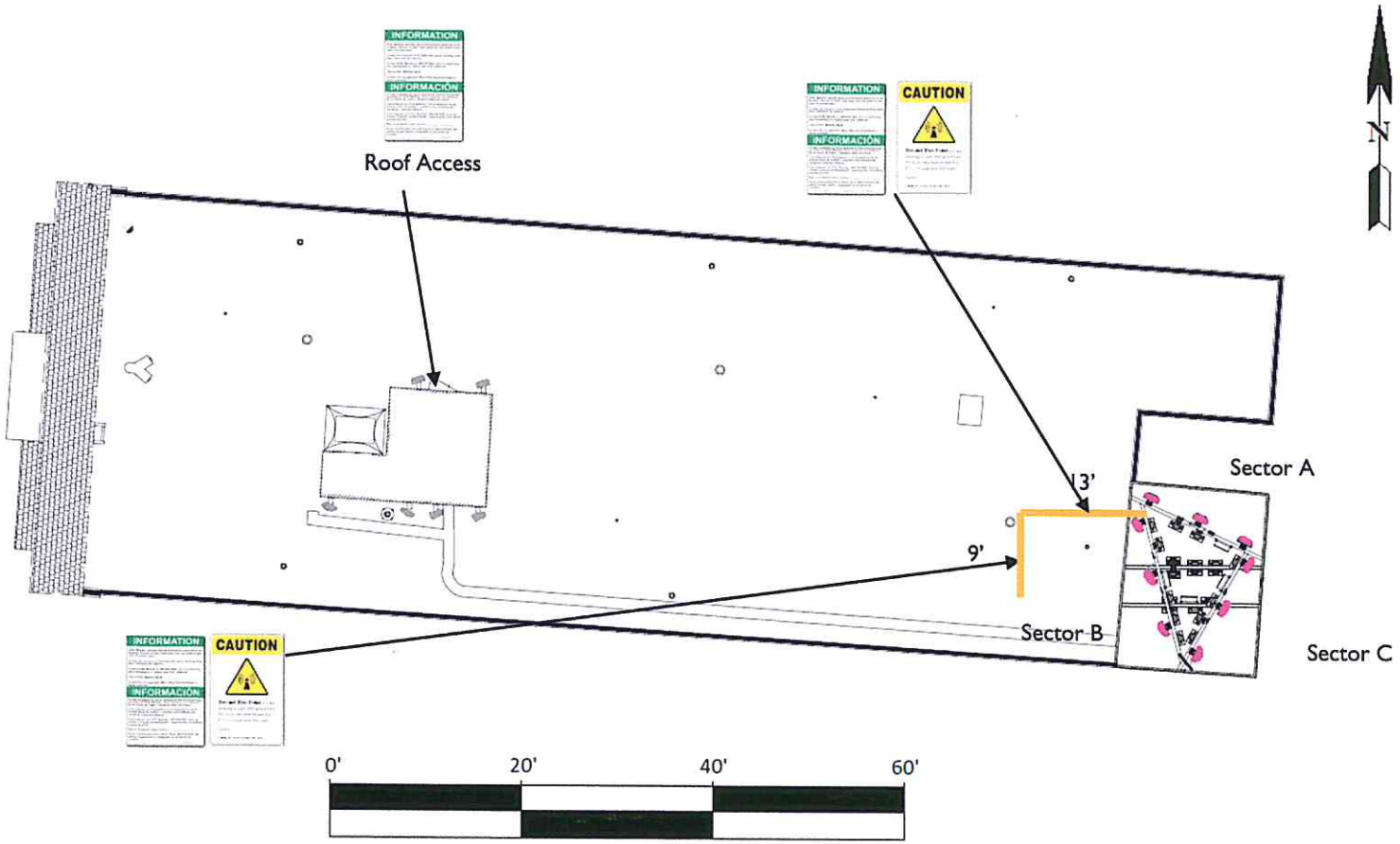
USID Number: 167230

Report Date: November 25, 2014

EBI Consulting
environmental | engineering | due diligence

Appendix E

Compliance/Signage Plan



AT&T Antennas **Other Carrier Antennas**

Sign Identification Legend			
	Denotes AT&T Information Sign 1		Denotes AT&T NOTICE Sign
	Denotes AT&T Information Sign 2		Denotes AT&T CAUTION Sign
at&t	Denotes AT&T Information Sign 3		Denotes AT&T CAUTION Tower Sign
	Denotes AT&T Information Sign 4		Denotes AT&T WARNING Sign

Recommended Hard Barrier

Compliance/Signage Plan

Facility Operator: AT&T Mobility
Site Name: Central & St. Charles Relo
AT&T Site Number: CCU3085
USID Number: 167230
Report Date: November 25, 2014

EBI Consulting
environmental | engineering | due diligence

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

USID# 167231
Site No. CCU3969
Otis Relo
1801 Shoreline Drive
Alameda, California 94501
Alameda County
37.759922; -122.262347 NAD83
Rooftop

EBI Project No. 62146129
November 13, 2014

Prepared for:

AT&T Mobility, LLC
c/o Cortel, LLC
3265 Baker Street
Sacramento, CA 94123

Prepared by:

EBI Consulting
environmental | engineering | due diligence

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by AT&T Mobility, LLC to conduct radio frequency electromagnetic (RF-EME) modeling for AT&T Site CCU3969 located at 1801 Shoreline Drive in Alameda, California to determine RF-EME exposure levels from proposed AT&T wireless communications equipment at this site. As described in greater detail in Section 2.0 of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

This report contains a detailed summary of the RF EME analysis for the site, including the following:

- Antenna Inventory
- Site Plan with antenna locations
- Antenna inventory with relevant parameters for theoretical modeling
- Graphical representation of theoretical MPE fields based on modeling
- Graphical representation of recommended signage and/or barriers

This document addresses the compliance of AT&T's transmitting facilities independently and in relation to all collocated facilities at the site.

Statement of Compliance

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

Per AT&T's corporate policy, the FCC's general population limits are applicable to all rooftop sites, regardless of the level of access control. As presented in the sections below, based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 6 feet of ATT's proposed antennas at the main roof level. Modeling also indicates that the worst-case emitted power density will not exceed the FCC's occupational limit at the main roof level.

AT&T Recommended Signage/Compliance Plan

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, requires that:

1. All sites must be analyzed for RF exposure compliance;
2. All sites must have that analysis documented; and
3. All sites must have any necessary signage and barriers installed.

Site compliance recommendations have been developed based upon protocols presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, additional guidance provided by AT&T, EBI's understanding of FCC and OSHA requirements, and common

industry practice. Barrier locations have been identified (when required) based on guidance presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012. The following signage is recommended at this site:

- Green INFO 1 sign posted on or next to every access to the rooftop and on the barrier near each of the three sectors of antennas.
- Blue NOTICE sign posted on the barrier near each of the three sectors of antennas.

The signage proposed for installation at this site complies with AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document and therefore complies with FCC and OSHA requirements. Barriers are recommended on this site. More detailed information concerning site compliance recommendations is presented in Section 5.0 and Appendix E of this report.

1.0 SITE DESCRIPTION

This project involves the proposed installation of twelve (12) wireless telecommunication antennas on a rooftop in Alameda, California. There are three Sectors (A, B, and C) proposed at the site, with four (4) proposed antennas per sector. For modeling purposes, it is assumed that there will be one (1) UMTS antenna in each sector transmitting in the 850 MHz frequency range, one (1) LTE antenna in each sector transmitting in the 700 and 1900 MHz frequency ranges, one (1) LTE antenna in each sector transmitting in the 700 and 2300 MHz frequency ranges, and one (1) LTE antenna in each sector transmitting in the 2100 MHz frequency range. The Sector A antennas will be oriented 25° from true north. The Sector B antennas will be oriented 310° from true north. The Sector C antennas will be oriented 95° from true north. The bottoms of the antennas will be 5.3 feet above the main roof level. Appendix B presents an antenna inventory for the site.

Access to this site is unknown. To be conservative and to comply with AT&T's corporate policy, the modeling results are reported as though the general public is able to access the rooftop.

Modeling results were generated based on information from the following materials:

- RFDS – CCU3969_2015-New-Site_New_mq3253_3701A004AY_13323785_167231_10-23-2014_Planned-Submit-for-Approval_v1.00[1] dated 10/23/2014
- CDs – CCU3969 90 ZD Rev A dated 11/9/2014

2.0 FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

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

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

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

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

Table 1 and Figure 1 (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm^2). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm^2) and an uncontrolled MPE of 1 mW/cm2 for equipment operating in the 1900 MHz frequency range. For the AT&T equipment operating at 850 MHz, the FCC's occupational MPE is 2.83 mW/cm^2 and an uncontrolled MPE of 0.57 mW/cm^2. For the AT&T equipment operating at 700 MHz, the FCC's occupational MPE is 2.33 mW/cm^2 and an uncontrolled MPE of 0.47 mW/cm^2. These limits are considered protective of these populations.

Table 1: Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure

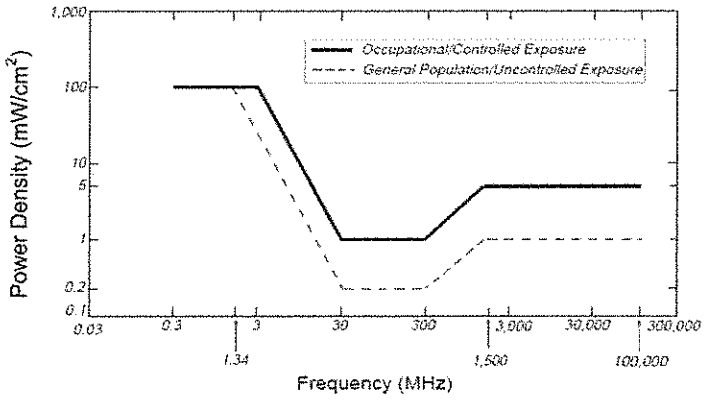
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $[E]^2$, $[H]^2$, or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6

(B) Limits for General Public/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $[E]^2$, $[H]^2$, or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)
* Plane-wave equivalent power density

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)



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

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm²	1.00 mW/cm²
Cellular Telephone	870 MHz	2.90 mW/cm²	0.58 mW/cm²
Specialized Mobile Radio	855 MHz	2.85 mW/cm²	0.57 mW/cm²
Long Term Evolution (LTE)	700 MHz	2.33 mW/cm²	0.47 mW/cm²
Most Restrictive Freq, Range	30-300 MHz	1.00 mW/cm²	0.20 mW/cm²

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

Personal Communication (PCS) facilities used by AT&T in this area operate within a frequency range of 700-1900 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

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

3.0 AT&T RF Exposure Policy Requirements

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, requires that:

1. All sites must be analyzed for RF exposure compliance;
2. All sites must have that analysis documented; and
3. All sites must have any necessary signage and barriers installed.

Pursuant to this guidance, worst-case predictive modeling was performed for the site. This modeling is described below in Section 4.0. Lastly, based on the modeling and survey data, EBI has produced a Compliance Plan for this site that outlines the recommended signage and barriers. The recommended Compliance Plan for this site is described in Section 5.0.

4.0 Worst-Case Predictive Modeling

In accordance with AT&T's RF Exposure policy, EBI performed theoretical modeling using RoofView® software to estimate the worst-case power density at the site rooftop-level resulting from operation of the antennas. RoofView® is a widely-used predictive modeling program that has been developed by Richard Tell Associates to predict both near field and far field RF power density values for roof-top and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

For this report, EBI utilized antenna and power data provided by AT&T and compared the resultant worst-case MPE levels to the FCC's occupational/controlled exposure limits outlined in OET Bulletin 65. The assumptions used in the modeling are based upon information provided by AT&T and information gathered from other sources. There are no other wireless carriers with equipment installed at this site.

Per AT&T's corporate policy, the FCC's general population limits are applicable to all rooftop sites, regardless of the level of access control. Based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 6 feet of AT&T's Sector A antennas and 5 feet of AT&T's Sector B and C antennas on the main roof level.

At the nearest walking/working surfaces to the AT&T antennas, the maximum power density generated by the AT&T antennas is approximately 406.40 percent of the FCC's general public limit (81.28 percent of the FCC's occupational limit). Based on worst-case predictive modeling, there are no areas at ground level related to the proposed AT&T antennas that exceed the FCC's occupational or general public exposure limits at this site. At ground level, the maximum power density generated by the antennas is approximately 11.90 percent of the FCC's general public limit (2.38 percent of the FCC's occupational limit).

The inputs used in the modeling are summarized in the RoofView® export file presented in Appendix C. A graphical representation of the RoofView® modeling results is presented in Appendix D. It should be noted that RoofView® is not suitable for modeling microwave dish antennas; however, these units are designed for point-to-point operations at the elevations of the installed equipment rather than ground-level coverage. Based on AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, microwave antennas are considered compliant if they are higher than 20 feet above any accessible walking/working surface. There are no microwaves installed at this site.

5.0 RECOMMENDED SIGNAGE/COMPLIANCE PLAN

Signs are the primary means for control of access to areas where RF exposure levels may potentially exceed the MPE. As presented in the AT&T guidance document, the signs must:

- Be posted at a conspicuous point;
- Be posted at the appropriate locations;
- Be readily visible; and
- Make the reader aware of the potential risks prior to entering the affected area.

The table below presents the signs that may be used for AT&T installations.

Informational Signs		Alerting Signs	
	INFO 1		NOTICE
	INFO 2		CAUTION - ROOFTOP
	INFO 3		CAUTION - TOWER
	INFO 4		WARNING

Based upon protocols presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, and additional guidance provided by AT&T, the following signage is recommended on the site:

Recommended Signage:

- Green INFO 1 sign posted on or next to every access to the rooftop and on the barrier near each of the three sectors of antennas.
- Blue NOTICE sign posted on the barrier near each of the three sectors of antennas.

Barriers should be installed 20 feet by 24 feet approximately 5 feet in front of Sector B and C antennas and 6 feet in front of the Sector A antennas surrounding the FRP screen. Barriers should be constructed of weather-resistant plastic or wood fencing. Barriers may consist of railing, rope, chain, or weather-resistant plastic if no other types are permitted or are feasible. Painted stripes should only be used as a last resort and only in regions where there is little chance of snowfall. If painted stripes are selected as barriers, it is recommended that the stripes and signage be illuminated. The signage and any barriers are graphically represented in the Signage Plan presented in Appendix E.

6.0 SUMMARY AND CONCLUSIONS

EBI has prepared this Radiofrequency Emissions Compliance Report for the proposed AT&T telecommunications equipment at the site located at 1801 Shoreline Drive in Alameda, California.

EBI has conducted theoretical modeling to estimate the worst-case power density from AT&T antennas to document potential MPE levels at this location and ensure that site control measures are adequate to meet FCC and OSHA requirements, as well as AT&T's corporate RF safety policies. As presented in the preceding sections, based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 6 feet of ATT's proposed antennas at the main roof level. Modeling also indicates that the worst-case emitted power density will not exceed the FCC's occupational limit at the main roof level.

Signage is recommended at the site as presented in Section 5.0 and Appendix E. Posting of the signage and installation of the recommended barriers brings the site into compliance with FCC rules and regulations and AT&T's corporate RF safety policies.

7.0 LIMITATIONS

This report was prepared for the use of AT&T Mobility, LLC to meet requirements outlined in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by EBI are based solely on the information provided by the client. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to EBI so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

Appendix A

Certifications

Reviewed and Approved by:

sealed 13nov2014

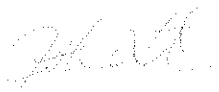
Michael McGuire
Electrical Engineer

Note that EBI's scope of work is limited to an evaluation of the Radio Frequency – Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the building and related structures, as well as the impact of the antennas and broadcast equipment on the structural integrity of the building, are specifically excluded from EBI's scope of work.

Preparer Certification

I, Jonathan Ilgenfritz, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am familiar with the FCC rules and regulations as well as OSHA regulations both in general and as they apply to RF-EME exposure.
- I have been trained in on the procedures outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document (dated September 21, 2012) and on RF-EME modeling using RoofView® modeling software.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.



Appendix B

Antenna Inventory

Antenna Number	Operator	Antenna Type	TX Freq (MHz)	ERP (Watts)	Gain (dBd)	Antenna Model	Azimuth (deg.)	Length (feet)	Horizontal Beamwidth (Degrees)	X	Y	Z
ATT A1	AT&T	Panel	LTE 700	806	12.0	CCI HPA-45R-BUU-H6-K	25	6.0	66	30	34	5.3
ATT A1	AT&T	Panel	LTE 1900	3021	14.8	CCI HPA-45R-BUU-H6-K	25	6.0	61	30	34	5.3
ATT A2	AT&T	Panel	LTE 2100	3237	15.1	CCI HPA-45R-BUU-H6-K	25	6.0	62	27	34	5.3
ATT A3	AT&T	Panel	UMTS 850	1242	12.7	CCI HPA-45R-BUU-H6-K	25	6.0	65	23	34	5.3
ATT A4	AT&T	Panel	LTE 700	815	12.0	CCI HPA-45R-BUU-H6-K	25	6.0	66	19	34	5.3
ATT A4	AT&T	Panel	LTE 2300	2825	15.3	CCI HPA-45R-BUU-H6-K	25	6.0	57	19	34	5.3
ATT B1	AT&T	Panel	LTE 700	806	12.0	CCI HPA-45R-BUU-H6-K	310	6.0	66	16	34	5.3
ATT B1	AT&T	Panel	LTE 1900	3021	14.8	CCI HPA-45R-BUU-H6-K	310	6.0	61	16	34	5.3
ATT B2	AT&T	Panel	LTE 2100	3237	15.1	CCI HPA-45R-BUU-H6-K	310	6.0	62	16	29	5.3
ATT B3	AT&T	Panel	UMTS 850	1242	12.7	CCI HPA-45R-BUU-H6-K	310	6.0	65	16	24	5.3
ATT B4	AT&T	Panel	LTE 700	815	12.0	CCI HPA-45R-BUU-H6-K	310	6.0	66	16	20	5.3
ATT B4	AT&T	Panel	LTE 2300	2825	15.3	CCI HPA-45R-BUU-H6-K	310	6.0	57	16	20	5.3
ATT C1	AT&T	Panel	LTE 700	806	12.0	CCI HPA-45R-BUU-H6-K	95	6.0	66	31	20	5.3
ATT C1	AT&T	Panel	LTE 1900	3021	14.8	CCI HPA-45R-BUU-H6-K	95	6.0	61	31	20	5.3
ATT C2	AT&T	Panel	LTE 2100	3237	15.1	CCI HPA-45R-BUU-H6-K	95	6.0	62	31	24	5.3
ATT C3	AT&T	Panel	UMTS 850	1242	12.7	CCI HPA-45R-BUU-H6-K	95	6.0	65	31	27	5.3
ATT C4	AT&T	Panel	LTE 700	815	12.0	CCI HPA-45R-BUU-H6-K	95	6.0	66	31	31	5.3
ATT C4	AT&T	Panel	LTE 2300	2825	15.3	CCI HPA-45R-BUU-H6-K	95	6.0	57	31	31	5.3

1. Note there are only 4 AT&T antennas per sector at this site. For clarity, the different frequencies for each antenna are entered on separate lines.

Appendix C

Roofview® Export File

StartMapDefinition

Roof Max Y	Roof Max X	Map Max Y	Map Max X	Y Offset	X Offset	Number of envelope		List Of Areas
120	100	150	120	20	20	1	$AE$81:$D $AE$81:$DZ$200	$AE$81:$DZ$200

StartSettingsData

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

StartAntennaData It is advisable to provide an ID (ant 1) for all antennas

ID	Name	(MHz) Freq	Trans Power	Trans Count	Coax Len	Coax Type	Other Loss	Input Power	Calc Power	Mfg	Model	(ft) X	(ft) Y	(ft) Z	Type	(ft) Aper	dBd Gain	BWdth Pt Dir	Uptime Profile	ON flag
ATT A1	LTE	700	30	2	10	1/2 LDF	0.5		51.42227071	CCI	HPA-45R-BUU-H6-K	30	34	5.3		6	11.95	66;359		ON
ATT A1	LTE	1900	60	2	10	1/2 LDF	0.5		101.2001709	CCI	HPA-45R-BUU-H6-K	30	34	5.3		6	14.75	61;359		ON
ATT A2	LTE	2100	60	2	10	1/2 LDF	0.5		101.2001709	CCI	HPA-45R-BUU-H6-K	27	34	5.3		6	15.05	62;359		ON
ATT A3	UMTS	850	40	2	10	1/2 LDF	0.5		67.46678062	CCI	HPA-45R-BUU-H6-K	23	34	5.3		6	12.65	65;359		ON
ATT A4	LTE	700	30	2	10	1/2 LDF	0.5		51.42227071	CCI	HPA-45R-BUU-H6-K	19	34	5.3		6	12	66;359		ON
ATT A4	LTE	2300	25	4	10	1/2 LDF	0.5		84.33347578	CCI	HPA-45R-BUU-H6-K	19	34	5.3		6	15.25	57;359		ON
ATT B1	LTE	700	30	2	10	1/2 LDF	0.5		51.42227071	CCI	HPA-45R-BUU-H6-K	16	34	5.3		6	11.95	66;284		ON
ATT B1	LTE	1900	60	2	10	1/2 LDF	0.5		101.2001709	CCI	HPA-45R-BUU-H6-K	16	34	5.3		6	14.75	61;284		ON
ATT B2	LTE	2100	60	2	10	1/2 LDF	0.5		101.2001709	CCI	HPA-45R-BUU-H6-K	16	29	5.3		6	15.05	62;284		ON
ATT B3	UMTS	850	40	2	10	1/2 LDF	0.5		67.46678062	CCI	HPA-45R-BUU-H6-K	16	24	5.3		6	12.65	65;284		ON
ATT B4	LTE	700	30	2	10	1/2 LDF	0.5		51.42227071	CCI	HPA-45R-BUU-H6-K	16	20	5.3		6	12	66;284		ON
ATT B4	LTE	2300	25	4	10	1/2 LDF	0.5		84.33347578	CCI	HPA-45R-BUU-H6-K	16	20	5.3		6	15.25	57;284		ON
ATT C1	LTE	700	30	2	10	1/2 LDF	0.5		51.42227071	CCI	HPA-45R-BUU-H6-K	31	20	5.3		6	11.95	66;69		ON
ATT C1	LTE	1900	60	2	10	1/2 LDF	0.5		101.2001709	CCI	HPA-45R-BUU-H6-K	31	20	5.3		6	14.75	61;69		ON
ATT C2	LTE	2100	60	2	10	1/2 LDF	0.5		101.2001709	CCI	HPA-45R-BUU-H6-K	31	24	5.3		6	15.05	62;69		ON
ATT C3	UMTS	850	40	2	10	1/2 LDF	0.5		67.46678062	CCI	HPA-45R-BUU-H6-K	31	27	5.3		6	12.65	65;69		ON
ATT C4	LTE	700	30	2	10	1/2 LDF	0.5		51.42227071	CCI	HPA-45R-BUU-H6-K	31	31	5.3		6	12	66;69		ON
ATT C4	LTE	2300	25	4	10	1/2 LDF	0.5		84.33347578	CCI	HPA-45R-BUU-H6-K	31	31	5.3		6	15.25	57;69		ON

StartSymbolData

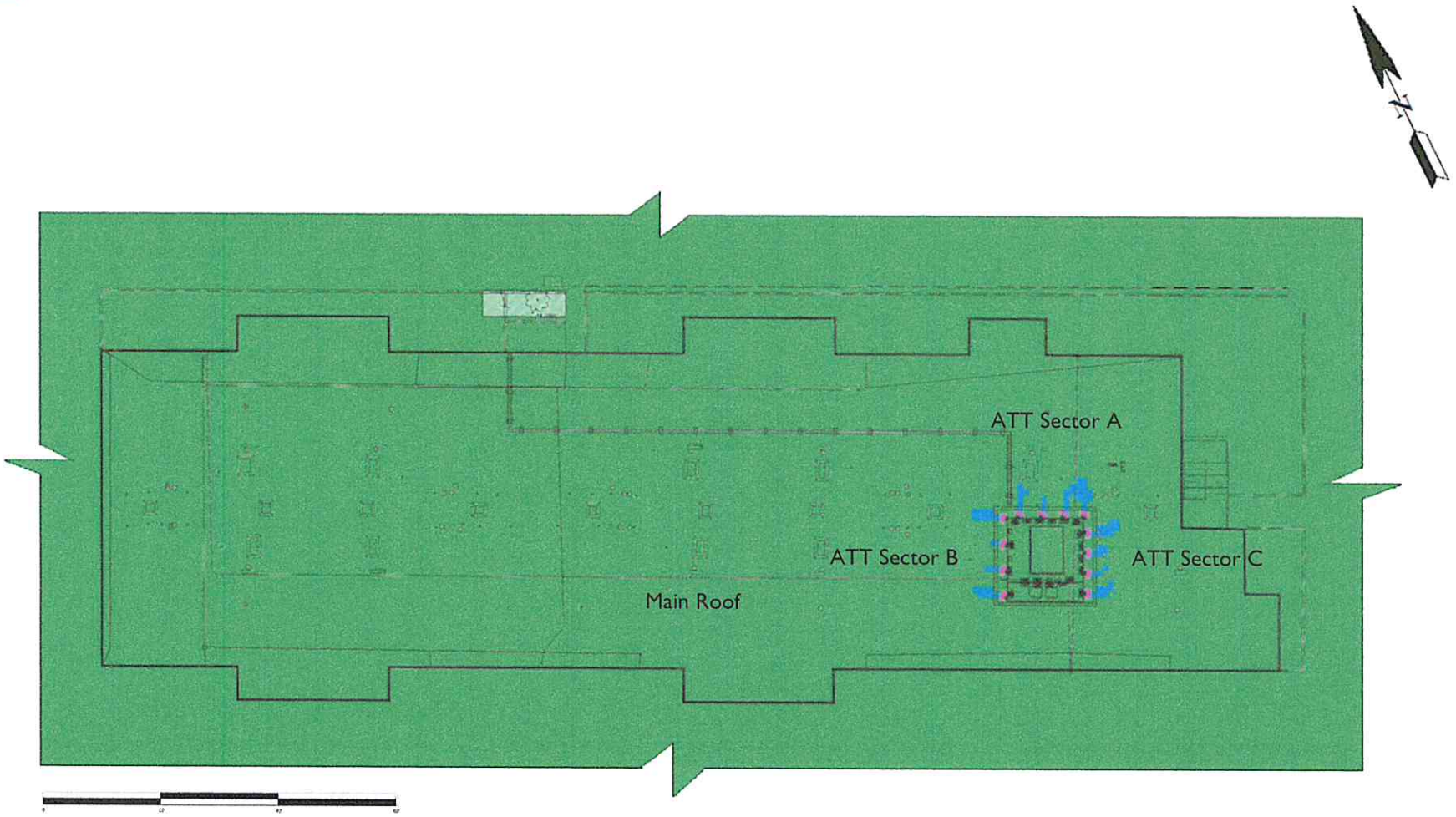
Sym	Map Mark	Roof X	Roof Y	Map Label	Description (notes for this table only)
Sym		5	35	AC Unit	Sample symbols
Sym		14	5	Roof Access	
Sym		45	5	AC Unit	
Sym		45	20	Ladder	

Note: Antenna azimuths have been adjusted for modeling purposes. Actual antenna azimtuhs for Sector A-B-C are 25-310-95.

Appendix D

Roofview® Graphics

AT&T Antennas



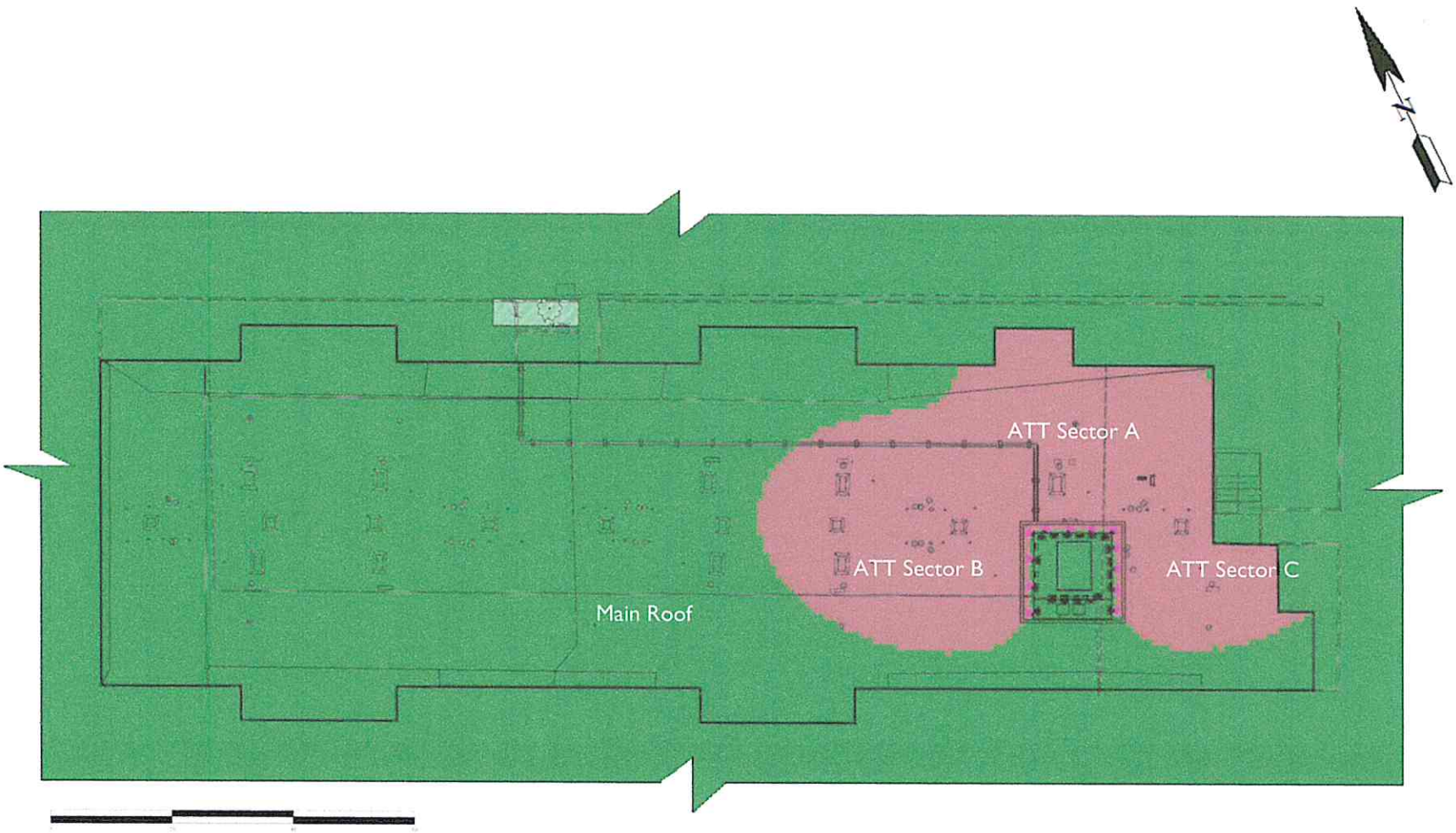
% FCC Public Exposure Limit	
	Exposure Level ≥ 5,000
	500 < Exposure Level ≤ 5,000
	100 < Exposure Level ≤ 500
	Exposure Level ≤ 100

Roofview: Composite Exposure Levels

Facility Operator: AT&T Mobility
Site Name: Otis Relo
AT&T Site Number: CCU3969
USID Number: 167231
Report Date: November 13, 2014

EBI Consulting

AT&T Antennas



% FCC Public Exposure Limit	
	Exposure Level > 5
	Exposure Level ≤ 5

Note that the areas shown in brown are where AT&T antennas contribute more than 5% of the FCC's general exposure RF limit. These do not overlap any areas in front of other carrier antennas exceeding the FCC's general exposure RF limit because there are no other carriers as shown in Figure 1. Under FCC regulations, AT&T is therefore not responsible for any predicted exceedances of another carrier's antennas.

Roofview: AT&T Exposure Levels

Facility Operator: AT&T Mobility
Site Name: Otis Relo
AT&T Site Number: CCU3969
USID Number: 167231
Report Date: November 13, 2014

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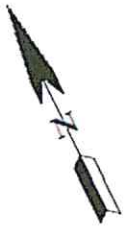
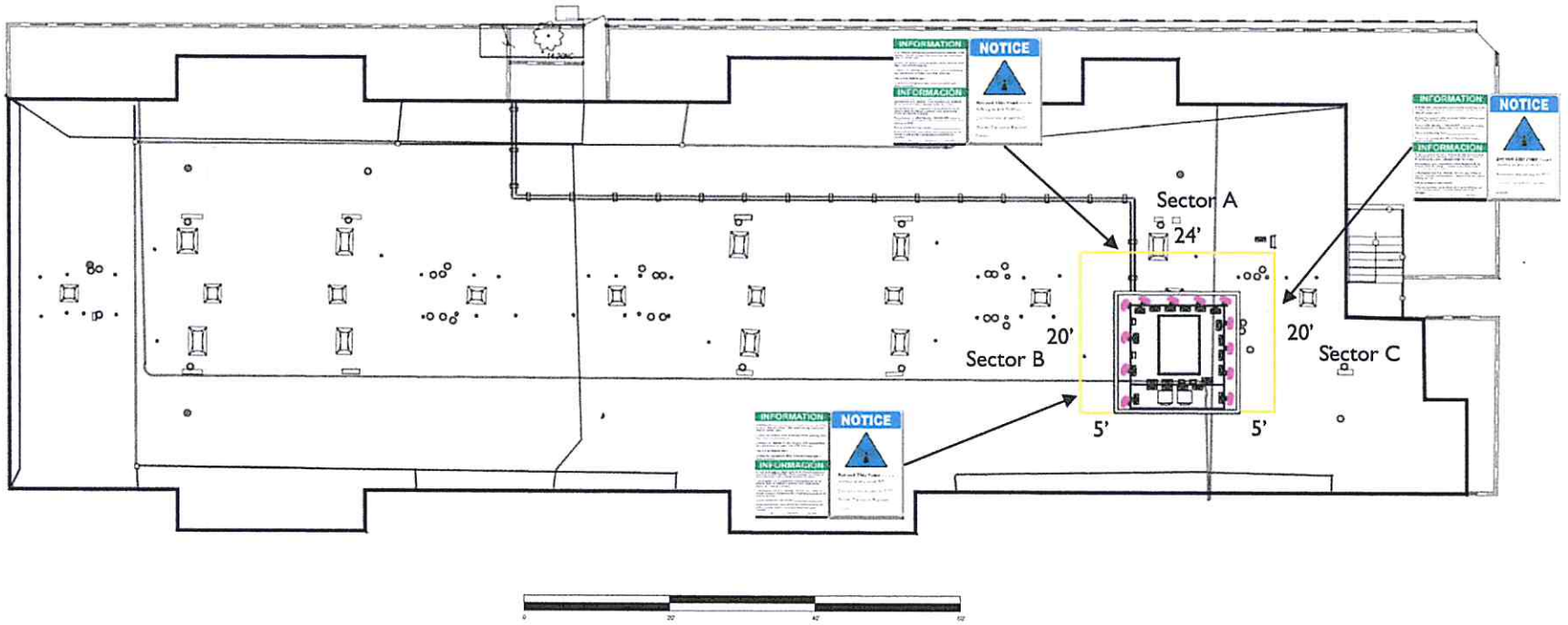
Appendix E

Compliance/Signage Plan

To be posted at every access to the site.





AT&T Antennas

Sign Identification Legend			
	Denotes AT&T Information Sign 1		Denotes AT&T NOTICE Sign
	Denotes AT&T Information Sign 2		Denotes AT&T CAUTION Sign
at&t	Denotes AT&T Information Sign 3		Denotes AT&T CAUTION Tower Sign
	Denotes AT&T Information Sign 4		Denotes AT&T WARNING Sign

Recommended Hard Barrier

Compliance/Signage Plan
Facility Operator: AT&T Mobility
Site Name: Otis Relo
AT&T Site Number: CCU3969
USID Number: 167231
Report Date: November 13, 2014

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(925) 977-3300

To: BB&K Clients and Other Interested Parties

From: Gerard L. Lederer
James R. Hobson
Matthew K. Schettenhelm

Date: October 24, 2014

Re: FCC Adopts New Wireless-Service-Facility Rules

This memorandum summarizes a Report and Order, FCC 14-153 ("Wireless Infrastructure Order" or "Order") of the Federal Communications Commission ("FCC") that both modifies the rules that govern the agency's own review of wireless facilities, and adopts new rules to limit how State and local governments may review these facilities. To comply with the FCC's new rules, many local governments will need to modify their ordinances and adjust their practices. Local governments that disagree with the FCC's rules may also file for reconsideration or file an appeal in federal court. We will be working with a number of communities on these issues, and, if possible, will develop collaborative efforts on reconsideration, appeal, and ordinance-revision efforts. Please contact us with any questions about these issues. We will also be hosting a webinar to discuss the Order and next steps in detail on November 4th.

We first address the FCC's new rules concerning the practices of States and local governments under headings V and VI (which match the headings in the Commission's order). In these sections, the Commission:

- interpreted and implemented the "collocation" provisions of Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012; and

- clarified and extended a declaratory ruling of 2009 applying to Section 332(c)(7)(B)(ii) and (v) of the Communications Act.

We then summarize the FCC's rules concerning its own review of wireless facilities under headings III and IV below. The Commission:

- adopted new or modified rules for environmental and historic preservation review of small wireless facilities, including Distributed Antenna Systems ("DAS"); and

- codified an exception to advance notice of the placement of temporary towers under the Antenna Structure Regulation ("ASR") requirements.

V. Implementation of Section 6409(a).

The FCC adopts new rules that govern how a State or local government may regulate requests to modify existing wireless towers and base stations. The rules pose a number of serious problems. We analyze each section below.

The FCC implements Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012, 47 U.S.C. § 1455(a), which reads:

> a) Facility modifications.
>
> (1) In general. Notwithstanding section 704 of the Telecommunications Act of 1996 (Public Law 104-104) or any other provision of law, a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.
>
> (2) Eligible facilities request. For purposes of this subsection, the term "eligible facilities request" means any request for modification of an existing wireless tower or base station that involves--
>
> (A) collocation of new transmission equipment;
>
> (B) removal of transmission equipment; or
>
> (C) replacement of transmission equipment.
>
> (3) Applicability of environmental laws. Nothing in paragraph (1) shall be construed to relieve the Commission from the requirements of the National Historic Preservation Act or the National Environmental Policy Act of 1969.

1. Definition of Terms in Section 6409(a)[1]

a. Scope of Covered Services[2]

The Commission determined that Section 6409(a) applies to facilities used in connection with "any Commission-authorized wireless communications service." This includes broadcast facilities. The Commission rejected local governments' view that the statute is best read to apply only to personal wireless service and public-safety communications.

---

[1] Order ¶145.
[2] Order ¶146.

Analysis: The FCC's determination will ensure that Section 6409(a) and the Commission's rules apply broadly. Providers will be able to use Section 6409(a) to modify a facility regardless of the service it provides. This differs from 47 U.S.C. § 332(c)(7), which applies only to "personal wireless service" facilities.

b. Transmission Equipment[3]

The FCC defines "transmission equipment" broadly as equipment that facilitates transmission of any Commission-authorized wireless service. It includes, but is not limited to, radio transceivers, antennas, coaxial or fiber-optic cable, and regular and backup power supply.

Analysis: The rule will allow providers to use Section 6409(a)'s approval process to collocate, remove, and replace a broad array of equipment. Local governments should note that the definition applies not just to antennas, but also to fiber, and to regular and backup-power supplies. Local governments had argued that backup-power supplies are not "transmission equipment" because they do not transmit communications. The FCC rejected that view.

c. Existing Wireless Tower or Base Station[4]

The FCC defines "tower" narrowly as "[a]ny structure built for the sole or primary purpose" of supporting any Commission-licensed or authorized antennas and their associated facilities. It defines "base station" broadly to include not only the equipment that communicates with user equipment (regardless of the technological configuration, and encompassing DAS and small cells), but also the "structure" that supports or houses that equipment. The Commission clarified, however, that a structure would qualify as an existing "base station" only if at the time of the application, the structure already supports or houses communications equipment. Other structures that do not host communications equipment are not "base stations." The Commission also clarified that to qualify as a "base station," the facility must have been "approved under the applicable zoning or siting process" or have "received another form of affirmative State or local regulatory approval," such as an authorization from state PUC.

Analysis: The definition of "tower" is a small victory for local governments. Its "primary" purpose must be to host antennas. This would exclude utility poles, light poles, and water towers. Note, however, that the term is not limited to traditional cell towers. For example, if a DAS provider placed a pole solely to host its facilities, the pole would constitute a tower.

The Commission's "base station" definition, however, is a disappointment. On the positive side, the definition is not so broad as to include any structure that *might* host a wireless-service facility. It also does not extend to structures that host facilities without proper state or local approval. It follows that unless a local government chooses not to subject wireless facilities in

[3] Order ¶155.
[4] Order ¶161.

certain areas to zoning review, it may review every facility that hosts wireless equipment through a full zoning process at least once (unless the facility has a state approval).

But the good news ends there. Local governments have already approved many wireless facilities. Under the FCC's approach, *all* those facilities are "base stations," subject to Section 6409(a)'s approval process, which requires approval unless the modification is a "substantial change." Likewise, going forward, any wireless equipment that the local government approves is also a "base station" and therefore subject to the Section 6409(a) process. Local governments had argued that Congress intended Section 6409(a)'s process to apply to a much smaller class of facilities. We argued that a "base station" means either: (i) only communications equipment *at* a "wireless tower"; or (ii) if communications equipment can be distinct from a tower, only communications equipment, not the underlying structure that supports it. The Commission's approach rejects both. Couple with the FCC's approach to "substantially change the physical dimensions" discussed later, the broad definition of "base station" makes it more difficult for local governments to approve any wireless facility, because it can be modified later through the streamlined Section 6409(a) process.

d. Collocation, Replacement, Removal, Modification[5]

The FCC then addressed what modifications Section 6409(a) permits a provider to make to a "wireless tower" or "base station." The Commission ruled that "collocation" includes the *first* placement of transmission equipment on a "wireless tower" or "base station." This differs from local governments' view that "collocation" occurs only if the tower or base station already hosts other equipment with which the new equipment would be *co*-located. (This is effectively the result for modifications to "base stations," but that is not because of the "collocation" definition but because the FCC defined "base station" to include only those structures that already host wireless equipment.) The FCC also found that if the collocation, replacement, or removal of transmission equipment makes structural enhancements to (i.e., "hardening" of) the wireless tower or base station "necessary," Section 6409(a) applies to that hardening activity. The Commission ruled that Section 6409(a) does not permit a provider to replace the structure on which the equipment is located.

Analysis: The FCC's "collocation" definition will extend Section 6409(a)'s approval process only slightly, to requests to modify "towers" that do not currently host any wireless equipment. Its approach to "hardening" of the underlying "tower" or "base station" is likely acceptable, because it is only permitted in cases where it is "necessary"—although local governments and industry may find that they dispute what changes qualify. And the Commission's finding that total replacement of the underlying structure falls outside of Section 6409(a) is a positive. Local governments may continue to apply their standard procedures to such requests.

[5] Order ¶176.

e. Substantial Change and Other Conditions and Limitations[6]

The FCC then turned to defining "substantially change the physical dimensions" of a tower or base station. The Commission adopted an "objective standard." Under its rule, a modification substantially changes the physical dimensions of a wireless tower or base station if it meets any of the following criteria:

(i) Increases in Height

(i) for towers other than towers in the public rights-of-way:

a. it increases the height of the tower by:

i. more than 10% or

ii. the height of one additional antenna array with separation from the nearest existing antenna not to exceed 20 feet, whichever is greater;

(ii) for other eligible support structures:

a. it increases the height of the structure by:

i. more than 10% or

ii. more than **10 feet**, whichever is greater.

The baselines to measure changes in height are:

- *for deployments that are or will be separated horizontally*: measured from the original support structure;
- *for all others*: measured from the dimensions of the tower or base station, inclusive of originally approved appurtenances and any modifications that were approved prior to February 22, 2012, the date that Congress passed Section 6409(a).

(ii) Increases in Width

(i) for towers other than towers in the public rights-of-way:

a. it involves adding an appurtenance to the body of the tower that would protrude from the edge of the tower

i. more than **20 feet**, or

[6] Order ¶182.

ii. more than the width of the tower structure at the level of the appurtenance, whichever is greater;

(ii) for other eligible support structures:

a. it involves adding an appurtenance to the body of the structure that would protrude from the edge of the structure by more than **6 feet**;

(iii) Additional Equipment Cabinets

(i) for any eligible support structure:

a. it involves installation of more than the standard number of new equipment cabinets for the technology involved, but **not to exceed four cabinets**; or,

(ii) for towers in the public rights-of-way and base stations,

a. it involves installation of **any new equipment cabinets** on the ground if there are no pre-existing ground cabinets associated with the structure, or else involves installation of ground cabinets that are more than 10% larger in height or overall volume than any other ground cabinets associated with the structure;

(iv) Excavation/Deployment Beyond Site

(i) it entails "any excavation or deployment outside the current site."

a. The Commission defines "site" as:

i. For towers other than towers in the public rights-of-way,

1. the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site, and,

ii. for other eligible support structures,

1. further restricted to that area in proximity to the structure and to other transmission equipment already deployed on the ground.

(v) Concealment Elements

A modification is a substantial change if it would "defeat the concealment elements of" the wireless tower or base station.

(vi) Other Conditions on the Wireless Tower or Base Station

A modification is also a substantial change if it does not comply with conditions—other than those conditions related to height, width, equipment cabinets, excavation/deployment, or concealment elements—associated with the siting approval of the construction or modification of the eligible support structure or base station equipment.

* * *

The FCC also ruled that facility modification remains subject to "building codes and other non-discretionary structural and safety codes." Specifically, local governments may require a covered request "to comply with generally applicable building, structural, electrical, and safety codes or with other laws codifying objective standards reasonably related to health and safety."

Analysis: The FCC's definition of "substantially change the physical dimensions" is a missed opportunity and a major disappointment. Local governments had argued that the Commission's standard must consider modification requests in context. They argued, for example, that if a 1-foot extension would reach into a street or sidewalk, it would constitute a "substantial change in physical dimensions" even though it may be a physically small change. They also argued that the FCC could not adopt fixed definitions because the statute looks to whether the particular facility in question (which may be very small) changes "substantially." They further argued that local governments should be able to establish what later modifications to a particular site would be "substantial." Local governments claimed that only this approach would not discourage them from granting initial approvals that might change in unexpected and problematic ways later.

The FCC elected to stick with what it called a test based on "specific, objective" factors. Under its standard, a provider may automatically extend any "base station" (any utility pole, light pole, building, or other structure that currently hosts wireless equipment) 10 feet in height and 6 feet in width, provided that it also matches any concealment elements. Local governments must now expect that any 10-foot-tall wireless facility that they have already approved or will approve may automatically become a 20-foot facility.

The FCC also effectively declined to allow local governments to use conditions to establish, site-by-site, what later height, width, and cabinet-addition modifications to a particular tower or base station would be "substantial." Under the FCC's approach, inconsistency with a local condition would constitute a "substantial change" only if the condition does not conflict with the Commission's approach to height, width, cabinets, etc. The FCC noted examples of local conditions that might be relevant to the substantial-change analysis as including conditions related to "fencing, access to the site, [and] drainage."

There are some positives. The FCC's recognition that any modification that would "defeat the concealment elements of" a wireless tower or base station qualifies as a "substantial change" is an important step. The FCC does not clarify, however, how formally a local government must

establish "concealments elements" or what modifications would cause those elements to be "defeated." This could lead to disputes. Another positive change is the Commission's approach to equipment cabinets associated with right-of-way towers and base stations. The Commission properly recognized that if there is no current equipment cabinet associated with the structure, a provider's request to add a cabinet would constitute a "substantial change." And the FCC properly recognized that local governments may apply health and safety codes.

2. Application Review Process, Including Timeframe for Review[7]

The FCC ruled that a local government may require a party seeking approval under Section 6409(a) to submit an application so that the local government can determine whether its request is covered by the statute. The FCC clarified, however, that a local government may require only that documentation that is reasonably related to determining whether the request falls under the statute. A local government may not require documentation "proving the need for the proposed modification or presenting the business case for it."

The FCC established that a local government must act on a Section 6409(a) request within 60 days. That period may be tolled by the parties' agreement or if the local government notifies the applicant within 30 days that specific information in the application is incomplete. After the applicant makes a supplemental filing, the local government then has an additional 10-days to notify the applicant that the application remains incomplete because the specific information that the local government had identified remains incomplete (the local government may not toll the 60-day clock by notifying the applicant of other missing information). The FCC also clarified that its 60-day clock runs regardless of local moratoria.

Analysis: The FCC's 60-day period is shorter than the FCC's previously established 90-day shot clock for collocations of personal-wireless-service facilities. It could put local-government staff under considerable pressure. In addition, the FCC's statement that local governments may not adopt moratoria underscores that local governments should act promptly to revise their ordinances.

3. Remedies[8]

The FCC finds that because Section 6409(a) states that a local government "may not deny, and shall approve" a qualifying request, a local government must act either to approve or deny an application within the 60-day period. If the local government fails to take any action during that period, the request is deemed granted at the time the applicant notifies the local government of the deemed grant in writing. The FCC explains that a local government may challenge a deemed grant in court "when it believes the underlying application did not meet the criteria in Section 6409(a) for mandatory approval, would not comply with apply with applicable building codes or

[7] Order ¶205.
[8] Order ¶222.

other non-discretionary structural and safety codes, or for other reasons is not appropriately 'deemed granted.'" The FCC indicates that it will not be involved in adjudicating disputes.

Analysis: The FCC does not seriously address the constitutional concerns with a federal agency deeming, by rule, that a local government has granted a regulatory approval that it has not. Local governments continue to have a serious argument that the rules violates the Tenth Amendment. And even if the Constitution permits such a rule, it's not clear that Section 6409(a) does. Section 6409(a) requires that a local government "may not deny, and shall approve" a covered request. The FCC's rule would, in some cases, declare that a local government has approved a request that falls outside the statute. The remedy is difficult to square with the FCC's earlier statement that "only requests that do in fact meet the provision's requirements are entitled to mandatory approval."

4. Non-application to States or Municipalities in Their Proprietary Capacities[9]

The FCC explained that Section 6409(a) and its rules do not apply when local governments act in a proprietary capacity, *i.e.,* when they enter into lease and license agreements to allow parties to place antennas and other wireless service facilities on local-government property.

Analysis: The FCC's approach is consistent with its proposal in the Notice of Proposed Rulemaking. Given that the record reflected near unanimity on this point, any other conclusion would have been a surprise.

5. Effective Date[10]

The FCC decided that because local governments "may need time to make modifications to their laws and procedures" to conform with the order, the rules would not take effect until 90 days after Federal Register publication.

Analysis: Local governments should consider acting promptly to update ordinances.

VI. SECTION 332(C)(7) AND THE 2009 DECLARATORY RULING[11]

1. Completeness of Applications[12]

The FCC clarified that its Section 332(c)(7) shot clock begins to run "when an application is first submitted, not when it is deemed complete." It also clarified that after an applicant responds to an incompleteness notice, a local government may then only toll the shot clock if it notifies the applicant within 10 days that the request information remains incomplete. The local government

[9] Order ¶237.
[10] Order ¶241.
[11] Order ¶243.
[12] Order ¶254.

must "specify the code provision, ordinance, application instruction, or otherwise publically-stated procedures that require the information to be submitted."

Analysis: This procedure tracks that which the Commission established for Section 6409(a).

2. Moratoria[13]

The FCC ruled that its Section 332(c)(7) shot clocks run "regardless of any moratorium." The FCC said that it finds "no reason to conclude that the need for [changes in codes] should freeze all applications." The agency noted that a local government would have an opportunity to justify any delays in court. It declined to rule that moratoria of particular length are *per se* unreasonable, indicating that courts can resolve such disputes.

Analysis: Local moratoria have always been risky; the FCC's guidance here heightens that risk.

3. Application to DAS and Small Cells[14]

The FCC clarified that "to the extent DAS or small-cell facilities, including third-party facilities such as neutral host DAS deployments, are or will be for the provision of personal wireless services," their applications are subject to the Section 332(c)(7) shot clocks. The FCC declined to create a longer shot clock for these facilities.

Analysis: Local governments should process DAS and small-cell deployments that will be used for the provision of personal wireless service facilities no differently than other wireless facility requests under Section 332(c)(7).

4. Definition of Collocation[15]

The FCC declined to apply its new definition of "collocation" under Section 6409(a) to define "collocation" under Section 332(c)(7). For purposes of Section 332(c)(7), a "collocation" will continue to be a request to place an antenna on an existing structure that does not lead to a "substantial increase in . . . size." For purposes of Section 6409(a), a "collocation" remains a collocation even if it would substantially increase the size of the underlying facility.

Analysis: This preserves the status quo under Section 332(c)(7). It highlights that local governments must take care to distinguish Section 6409(a) and other applications.

[13] Order ¶263.
[14] Order ¶268.
[15] Order ¶273.

5. Preferences for Deployments on Municipal Property[16]

The FCC declined PCIA's invitation that it rule that a local government's preferences for siting on local-government property violate Section 332(c)(7). The FCC found insufficient evidence in the record to support a rule.

Analysis: The FCC elected to leave the issue to the courts.

6. Remedies[17]

The FCC declined to adopt a "deemed granted" remedy under Section 332(c)(7). However, it indicated that when a local government fails to act within its shot clocks and there is no compelling need for additional time, courts should treat such circumstances "as significant factors weighing in favor" of injunctive relief.

Analysis: This preserves the status quo.

III. NEPA and NHPA Review of Small Wireless Facilities

As with other federal agencies, the FCC is obliged to carry out the provisions of the National Environmental Policy Act ("NEPA"), 42 U.S.C.§§ 4321 et seq., and the National Historic Preservation Act ("NHPA"), 16 U.S.C.§ 470f. Examples of FCC rules carrying out these obligations may be found at 47 C.F.R.§ 1.1307 and the related Section 1.1306 dealing with "categorical exclusions" from Section 1.1307. In the Order, the FCC is chiefly concerned with extending these exclusions to encourage installation of wireless cells and systems considered "small" and thus unlikely to have significant environmental or historical preservation impact.

<u>However, none of these exclusions, new or old, is immune from FCC review for environmental assessment ("EA") under Section 1.1307(c) and (d), on complaint or on the FCC's own motion.</u>

NEPA Categorical Exclusions

ANTENNAS . At Note 1 of Section 1.1306, the current exclusion refers to antennas mounted on existing buildings or antenna towers. The FCC asked what was to be included besides the antennas themselves.

- Answer: All on-site equipment associated with the antennas, "including transceivers, cables, wiring, converters, power supplies, equipment cabinets and other comparable equipment."

What about building interiors?

[16] Order ¶278.
[17] Order ¶281.

- Answer: Mounting an antenna "on" a building is the same as installing it "in" the building, unless the building is entitled to historic preservation as elsewhere defined.

  How about other structures, such as utility poles and water towers?

- Answer: The exemption should extend to "other man-made structures" unless barred under historic preservation considerations at Section 1.1307(a)(4).

  RIGHTS OF WAY New categorical exclusion (Section 1.1306, Note 4) for placements above-ground in utility and communications rights of way, but only if:

  1. ROW is so designated by government or tribe; and

  2. in active use for the designated purpose; and

  3. no substantial increase in size compared to structures already in ROW in the same vicinity, "substantial increase" meaning:

     - Exceeds height of existing support structures in vicinity by more than 10% or 20 feet, whichever is greater; or

     - Adds more than four new equipment cabinets or more than one new equipment shelter; or

     - Involves a new appurtenance protruding from the edge of the structure by more than 20 feet or more than the width of the structure at the level of the appurtenance, whichever is greater (except for weather protection or cable connection); or

     - Involves construction "outside the site," as defined (e.g. Order, ¶ 63).

  4. This new exclusion is separate from and additional to a current categorical exclusion at Section 1.1306, Note 1, for installation of wire or cable along "existing aerial and underground corridors." The new exclusion does not apply underground.

NHPA Categorical Exclusions

These may be based on, but are independent of, two "programmatic agreements" found at 47 C.F.R. Part 1, Appendix B, "Nationwide Programmatic Agreement for the Collocation of Wireless Antennas," and Appendix C, "Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process." The Order (¶ 86) defers potential additional streamlining of wireless placements affecting historic preservation to the completion of an open programmatic agreement proceeding. It helps to understand the new exclusions if readers familiarize themselves with Appendices B and C cited above.

UTILITY STRUCTURES Defined as utility poles or electric transmission towers in active use by a utility as defined at 47 U.S.C.§ 224, but does not include light poles, lamp posts or other structures whose primary purpose is to provide public lighting. The exclusion is subject no new ground disturbance and to size limits:

- Open or closed antenna volumes not exceeding three cubic feet for any one antenna and not exceeding six cubic feet cumulatively, with a cumulative limit of 17 cubic feet for associated equipment, these limits to include any existing equipment already mounted on the structure with three specific non-inclusions:

  - Vertical cable runs connecting power and other services; and

  - Ancillary equipment installed by other entities (e.g. power meters) outside the new applicant's ownership or control; and

  - Comparable non-included equipment from pre-existing wireless deployments on the structure.

  BUILDINGS AND OTHER NON-TOWER STRUCTURES To apply only to collocations where there is at least one pre-existing antenna in the "same vicinity" as the new antenna, as defined at ¶¶ 98-101 of the Order. The concept of vicinity is related to the extent to which the new installation would create additional intrusions on the viewscape. The prior measure of 45 years as an age eligible for historic preservation is deleted. 47 C.F.R. Part 1, Appendix B, section V.

- The size limit on the new installation is more restrictive than found in the NEPA exclusions: Three feet in height or width, no new equipment cabinets visible from the street or adjacent public spaces.

- New installation to comply with all zoning and historic preservation conditions applied to existing antenna(s) in the same vicinity, such as concealment requirements.

- No new ground disturbance, meaning that any excavation related to new installation must be at least two feet less wide or deep than for the prior installation.

- New installations must not lie within inside, or within 250 feet of the boundary of, a historic district; nor be located on structure that is designated as a National Historic Landmark or listed or eligible for listing in the National Register; not be the subject of a pending complaint alleging harmful effect on historic properties.

- Interior installations generally are granted the same exclusions as above.

IV. Environmental Notification Exemption for Registration of Temporary Towers

This codifies a previous waiver from notice requirements only for temporary towers not subject to environmental assessment under Section 1.1307 and (1) to be placed for no more than 60 days; (2) do not require construction notice to the Federal Aviation Administration ("FAA"), or marking or lighting under FAA regulations; (3) extend no higher than 200 feet above ground level; and (4) involve no or minimal ground excavation. See Order, ¶¶ 106-134.

EXISTING

PROPOSED: Install (9) new panel antennas + RRUs inside proposed stealth on rooftop

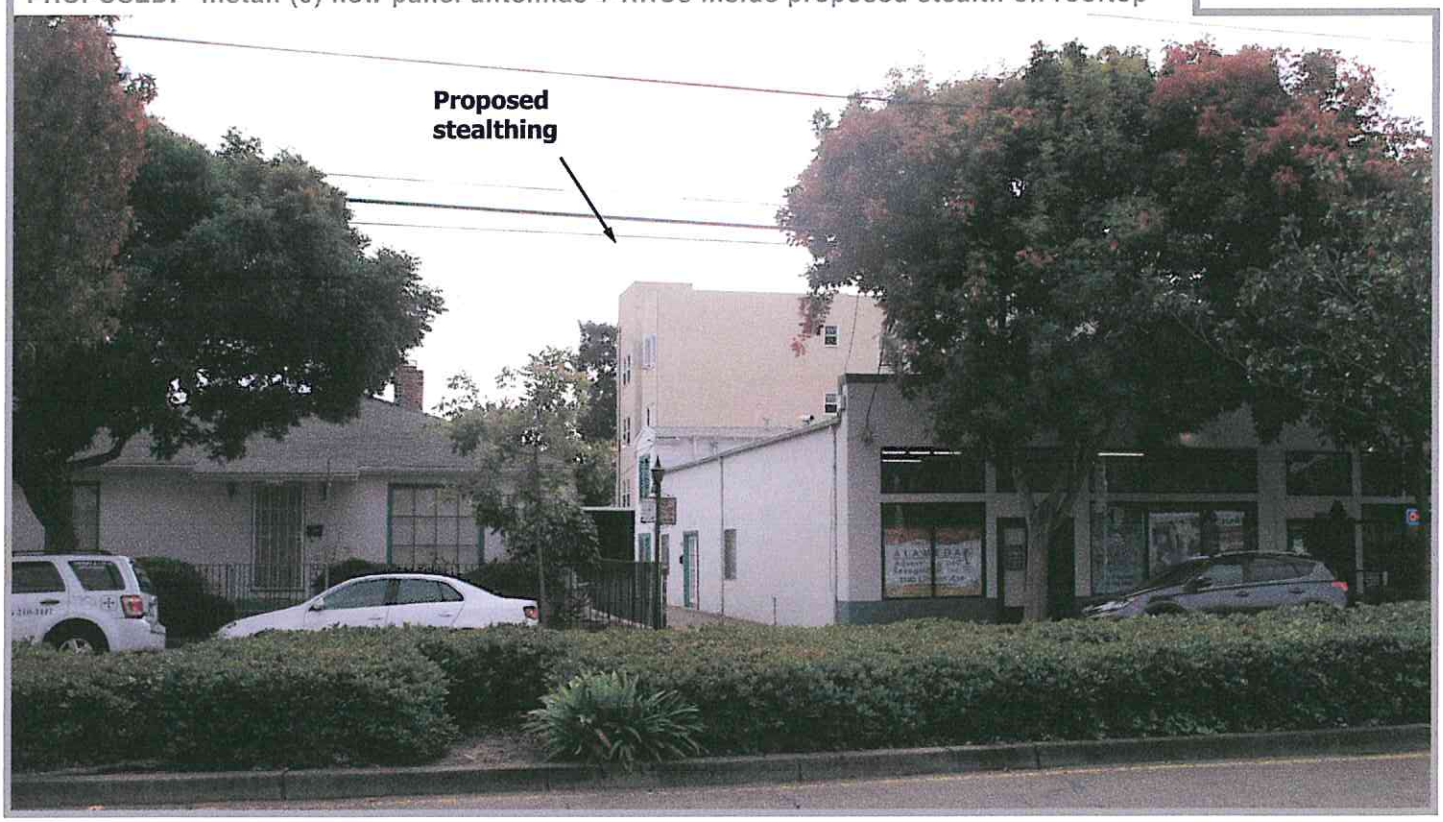
Cortel Photosims

at&t

CCU3085
1538 St Charles St
Alameda CA 94501

EXISTING

PROPOSED: Install (9) new panel antennas + RRUs inside proposed stealth on rooftop



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Photosims

View 2 of 3

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View 3 of 3

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View Chart

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

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Site No. CCU3085
Central & St. Charles Relo
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Alameda, California 94501
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Rooftop

EBI Project No. 62146280
November 25, 2014

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EBI Consulting
environmental | engineering | due diligence

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APPENDICES

EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by AT&T Mobility, LLC to conduct radio frequency electromagnetic (RF-EME) modeling for AT&T Site CCU3085 located at 1538 St. Charles Street in Alameda, California to determine RF-EME exposure levels from proposed AT&T wireless communications equipment at this site. As described in greater detail in Section 2.0 of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

This report contains a detailed summary of the RF EME analysis for the site, including the following:

- Antenna Inventory
- Site Plan with antenna locations
- Antenna inventory with relevant parameters for theoretical modeling
- Graphical representation of theoretical MPE fields based on modeling
- Graphical representation of recommended signage and/or barriers

This document addresses the compliance of AT&T's transmitting facilities independently and in relation to all collocated facilities at the site.

Statement of Compliance

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

Per AT&T's corporate policy, the FCC's general population limits are applicable to all rooftop sites, regardless of the level of access control. As presented in the sections below, based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 16 feet of ATT's proposed antennas at the main roof level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 4 feet of ATT's proposed antennas at the main roof level. Additionally, there are areas where elevated workers may be exposed to power densities greater than the occupational limits. The worst-case emitted power density may exceed the FCC's occupational limit within approximately 5 feet of AT&T's proposed antennas at the antenna face level. Workers and the general public should be informed about the presence and locations of antennas and their associated fields.

AT&T Recommended Signage/Compliance Plan

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, requires that:

1. All sites must be analyzed for RF exposure compliance;
2. All sites must have that analysis documented; and
3. All sites must have any necessary signage and barriers installed.

Site compliance recommendations have been developed based upon protocols presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, additional guidance provided by AT&T, EBI's understanding of FCC and OSHA requirements, and common industry practice. Barrier locations have been identified (when required) based on guidance presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012. The following signage is recommended at this site:

- Green INFO 1 sign posted on or next to the access door to the rooftop and on the barrier near the antennas.
- Yellow CAUTION sign posted on the barrier near the antennas.

The signage proposed for installation at this site complies with AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document and therefore complies with FCC and OSHA requirements. Barriers are recommended on this site. More detailed information concerning site compliance recommendations is presented in Section 5.0 and Appendix E of this report.

1.0 SITE DESCRIPTION

This project involves the proposed installation of up to nine (9) wireless telecommunication antennas on a rooftop in Alameda, California. There are three Sectors (A, B, and C) proposed at the site, with three (3) proposed antennas per sector. For modeling purposes, it is assumed that there will be one (1) LTE antenna in each sector transmitting in the 700 and 1900 MHz frequency ranges, one (1) UMTS/LTE antenna in each sector transmitting in the 850, 1900, and 2100 MHz frequency ranges, and one (1) LTE antenna in each sector transmitting in the 700 and 2300 MHz frequency ranges. The Sector A antennas will be oriented 20° from true north. The Sector B antennas will be oriented 240° from true north. The Sector C antennas will be oriented 120° from true north. The bottoms of the antennas will be approximately 1.56 feet above the main rooftop. Appendix B presents an antenna inventory for the site.

Access to this site is accomplished via a stairwell penthouses located on the main roof. It is unknown if the roof access door is locked and, as such, the general public is assumed to be able to access the rooftop.

Modeling results were generated based on information from the following materials:

- RFDS – SAN-FRANCISCO-SACRAMENTO_SAN-FRANCISCO_CCU3085_2015-New-Site_New dated 10/22/2014
- CDs – CCU3085 90ZD Rev A dated 11/4/2014

2.0 FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

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

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

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

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

Table 1 and Figure 1 (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by

frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm^2). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm^2) and an uncontrolled MPE of 1 mW/cm2 for equipment operating in the 1900 MHz frequency range. For the AT&T equipment operating at 850 MHz, the FCC's occupational MPE is 2.83 mW/cm^2 and an uncontrolled MPE of 0.57 mW/cm^2. For the AT&T equipment operating at 700 MHz, the FCC's occupational MPE is 2.33 mW/cm^2 and an uncontrolled MPE of 0.47 mW/cm^2. These limits are considered protective of these populations.

Table 1: Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure

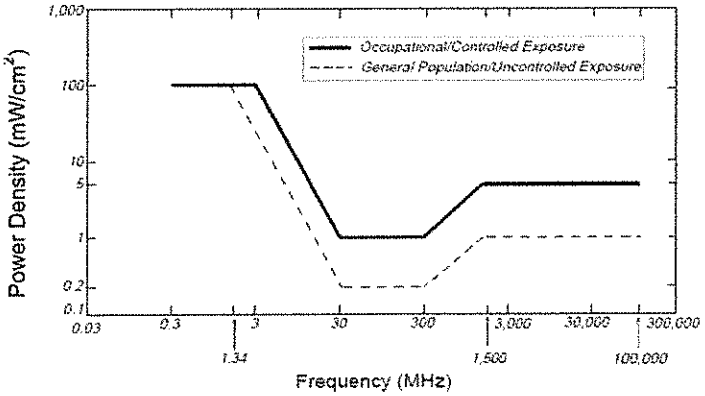
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $[E]^2$, $[H]^2$, or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6

(B) Limits for General Public/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $[E]^2$, $[H]^2$, or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)
* Plane-wave equivalent power density

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



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

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Cellular Telephone	870 MHz	2.90 mW/cm^2	0.58 mW/cm^2
Specialized Mobile Radio	855 MHz	2.85 mW/cm^2	0.57 mW/cm^2
Long Term Evolution (LTE)	700 MHz	2.33 mW/cm^2	0.47 mW/cm^2
Most Restrictive Freq. Range	30-300 MHz	1.00 mW/cm^2	0.20 mW/cm^2

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

Personal Communication (PCS) facilities used by AT&T in this area operate within a frequency range of 700-1900 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

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

3.0 AT&T RF Exposure Policy Requirements

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, requires that:

1. All sites must be analyzed for RF exposure compliance;
2. All sites must have that analysis documented; and
3. All sites must have any necessary signage and barriers installed.

Pursuant to this guidance, worst-case predictive modeling was performed for the site. This modeling is described below in Section 4.0. Lastly, based on the modeling and survey data, EBI has produced a Compliance Plan for this site that outlines the recommended signage and barriers. The recommended Compliance Plan for this site is described in Section 5.0.

4.0 Worst-Case Predictive Modeling

In accordance with AT&T's RF Exposure policy, EBI performed theoretical modeling using RoofView® software to estimate the worst-case power density at the site rooftop-level resulting from operation of the antennas. RoofView® is a widely-used predictive modeling program that has been developed by Richard Tell Associates to predict both near field and far field RF power density values for roof-top and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. The models utilize several operational

specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

For this report, EBI utilized antenna and power data provided by AT&T and compared the resultant worst-case MPE levels to the FCC's occupational/controlled exposure limits outlined in OET Bulletin 65. The assumptions used in the modeling are based upon information provided by AT&T and information gathered from other sources. T-Mobile also has antennas on the rooftop. Information about these antennas was included in the modeling analysis.

Per AT&T's corporate policy, the FCC's general population limits are applicable to all rooftop sites, regardless of the level of access control. Based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 16 feet of AT&T's antennas on the main roof level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 4 feet of AT&T's antennas on the main roof level. Additionally, there are areas where elevated workers may be exposed to power densities greater than the occupational limits. The worst-case emitted power density may exceed the FCC's occupational limit within approximately 5 feet of AT&T's proposed antennas at the antenna face level. Workers and the general public should be informed about the presence and locations of antennas and their associated fields.

At the nearest walking/working surfaces to the AT&T antennas, the maximum power density generated by the AT&T antennas is approximately 1,174.00 percent of the FCC's general public limit (234.80 percent of the FCC's occupational limit). The composite exposure level from all carriers on this site is approximately 1,188.80 percent of the FCC's general public limit (237.76 percent of the FCC's occupational limit) at the nearest walking/working surface to each antenna. Based on worst-case predictive modeling, there are no areas at ground level related to the proposed AT&T antennas that exceed the FCC's occupational or general public exposure limits at this site. At ground level, the maximum power density generated by the antennas is approximately 4.10 percent of the FCC's general public limit (0.82 percent of the FCC's occupational limit).

There were also worst-case predicted exposures above the general public and occupational MPE in front of the T-Mobile antennas. Modeling indicates that the AT&T contribution to these areas is 5% or less of the general public MPE and, as such, under FCC regulations, AT&T is not responsible for these predicted exceedances.

The inputs used in the modeling are summarized in the RoofView® export file presented in Appendix C. A graphical representation of the RoofView® modeling results is presented in Appendix D. It should be noted that RoofView® is not suitable for modeling microwave dish antennas; however, these units are designed for point-to-point operations at the elevations of the installed equipment rather than ground-level coverage. Based on AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, microwave antennas are considered compliant if they are higher than 20 feet above any accessible walking/working surface. There are no microwaves installed at this site.

5.0 RECOMMENDED SIGNAGE/COMPLIANCE PLAN

Signs are the primary means for control of access to areas where RF exposure levels may potentially exceed the MPE. As presented in the AT&T guidance document, the signs must:

- Be posted at a conspicuous point;
- Be posted at the appropriate locations;
- Be readily visible; and
- Make the reader aware of the potential risks prior to entering the affected area.

The table below presents the signs that may be used for AT&T installations.

Informational Signs		Alerting Signs	
	INFO 1		NOTICE
	INFO 2		CAUTION - ROOFTOP
	INFO 3		CAUTION - TOWER
	INFO 4		WARNING

Based upon protocols presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, and additional guidance provided by AT&T, the following signage is recommended on the site:

Recommended Signage:

- Green INFO 1 sign posted on or next to the access door to the rooftop and on the barrier near the antennas.
- Yellow CAUTION sign posted on the barrier near the antennas.

Barriers should be installed 13 feet by 9 feet in front of the AT&T Sector C antennas at the main roof level. Barriers are not recommended within 6 feet of the edge of the rooftop due to OSHA standards and the low parapet height,. However, EBI recommends that AT&T and the landlord take additional measures to ensure that persons accessing the rooftop (for example, roofers or other maintenance workers) are informed of areas where RF levels exceed the FCC general public and occupational limit and made aware that these areas must be avoided to maintain compliance with FCC requirements. It is recommended that the landlord distribute this report to anyone accessing the roof and ask for confirmation that it has been read and understood. In cases where the roof access is assumed to be unrestricted, we also recommend the illumination of the signs. Barriers should be constructed of weather-resistant plastic or wood fencing. Barriers may consist of railing, rope, chain, or weather-resistant plastic if no other types are permitted or are feasible. Painted stripes should only be used as a last resort and only in regions where there is little chance of snowfall. If painted stripes are selected as barriers, it is recommended that the stripes and signage be illuminated. The signage and any barriers are graphically represented in the Signage Plan presented in Appendix E. It is important to note that this Signage Plan is specific for AT&T antennas only, and does not address RF emissions of other carrier antennas.

6.0 SUMMARY AND CONCLUSIONS

EBI has prepared this Radiofrequency Emissions Compliance Report for the proposed AT&T telecommunications equipment at the site located at 1538 St. Charles Street in Alameda, California.

EBI has conducted theoretical modeling to estimate the worst-case power density from AT&T antennas and other carrier antennas to document potential MPE levels at this location and ensure that site control measures are adequate to meet FCC and OSHA requirements, as well as AT&T's corporate RF safety policies. As presented in the preceding sections, based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 16 feet of ATT's proposed antennas at the main roof level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 4 feet of ATT's proposed antennas at the main roof level. Additionally, there are areas where elevated workers may be exposed to power densities greater than the occupational limits. The worst-case emitted power density may exceed the FCC's occupational limit within approximately 5 feet of AT&T's proposed antennas at the antenna face level. Workers and the general public should be informed about the presence and locations of antennas and their associated fields.

Signage is recommended at the site as presented in Section 5.0 and Appendix E. Posting of the signage and installation of the recommended barriers brings the site into compliance with FCC rules and regulations and AT&T's corporate RF safety policies. Workers or members of the general public accessing areas directly in front of the other carrier antennas should contact the carrier and/or landlord to determine appropriate setbacks or measures to safely occupy those areas.

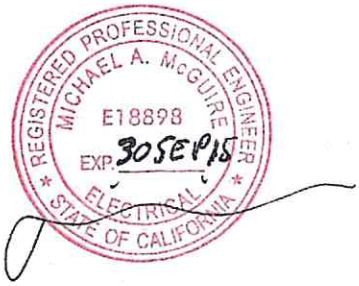
7.0 LIMITATIONS

This report was prepared for the use of AT&T Mobility, LLC to meet requirements outlined in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by EBI are based solely on the information provided by the client. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to EBI so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

Appendix A

Certifications

Reviewed and Approved by:



sealed 25nov2014

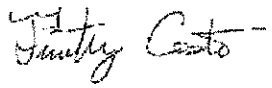
Michael McGuire
Electrical Engineer

Note that EBI's scope of work is limited to an evaluation of the Radio Frequency – Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the building and related structures, as well as the impact of the antennas and broadcast equipment on the structural integrity of the building, are specifically excluded from EBI's scope of work.

Preparer Certification

I, Timothy Costa, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am familiar with the FCC rules and regulations as well as OSHA regulations both in general and as they apply to RF-EME exposure.
- I have been trained in on the procedures outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document (dated September 21, 2012) and on RF-EME modeling using RoofView® modeling software.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.



Appendix B

Antenna Inventory

Antenna Number	Operator	Antenna Type	TX Freq (MHz)	ERP (Watts)	Gain (dBd)	Antenna Model	Azimuth (deg.)	Length (feet)	Horizontal Beamwidth (Degrees)	X	Y	Z
ATT A1	AT&T	Panel	LTE 700	420	12.4	Andrew SBNHH-1D65B	20	6.1	68	140	58	1.6
ATT A1	AT&T	Panel	LTE 1900	1331	15.8	Andrew SBNHH-1D65B	20	6.1	66	140	58	1.6
ATT A2	AT&T	Panel	UMTS 850	194	12.2	Andrew SBNHH-1D65B	20	6.1	66	135	60	1.6
ATT A2	AT&T	Panel	UMTS 850	585	12.2	Andrew SBNHH-1D65B	20	6.1	66	135	60	1.6
ATT A2	AT&T	Panel	LTE 2100	1426	16.1	Andrew SBNHH-1D65B	20	6.1	63	135	60	1.6
ATT A2	AT&T	Panel	UMTS 1900	666	15.8	Andrew SBNHH-1D65B	20	6.1	66	135	60	1.6
ATT A3	AT&T	Panel	LTE 700	560	12.4	Andrew SBNHH-1D65B	20	6.1	68	130	63	1.6
ATT A3	AT&T	Panel	LTE 2300	1216	16.2	Andrew SBNHH-1D65B	20	6.1	58	130	63	1.6
ATT B1	AT&T	Panel	LTE 700	420	12.4	Andrew SBNHH-1D65B	240	6.1	68	129	59	1.6
ATT B1	AT&T	Panel	LTE 1900	1331	15.8	Andrew SBNHH-1D65B	240	6.1	66	129	59	1.6
ATT B2	AT&T	Panel	UMTS 850	194	12.2	Andrew SBNHH-1D65B	240	6.1	66	130	54	1.6
ATT B2	AT&T	Panel	UMTS 850	585	12.2	Andrew SBNHH-1D65B	240	6.1	66	130	54	1.6
ATT B2	AT&T	Panel	LTE 2100	1426	16.1	Andrew SBNHH-1D65B	240	6.1	63	130	54	1.6
ATT B2	AT&T	Panel	UMTS 1900	666	15.8	Andrew SBNHH-1D65B	240	6.1	66	130	54	1.6
ATT B3	AT&T	Panel	LTE 700	560	12.4	Andrew SBNHH-1D65B	240	6.1	68	131	49	1.6
ATT B3	AT&T	Panel	LTE 2300	1216	16.2	Andrew SBNHH-1D65B	240	6.1	58	131	49	1.6
ATT C1	AT&T	Panel	LTE 700	420	12.4	Andrew SBNHH-1D65B	120	6.1	68	135	46	1.6
ATT C1	AT&T	Panel	LTE 1900	1331	15.8	Andrew SBNHH-1D65B	120	6.1	66	135	46	1.6
ATT C2	AT&T	Panel	UMTS 850	194	12.2	Andrew SBNHH-1D65B	120	6.1	66	137	51	1.6

Antenna Number	Operator	Antenna Type	TX Freq (MHz)	ERP (Watts)	Gain (dBd)	Antenna Model	Azimuth (deg.)	Length (feet)	Horizontal Beamwidth (Degrees)	X	Y	Z
ATT C2	AT&T	Panel	UMTS 850	585	12.2	Andrew SBNHH-1D65B	120	6.1	66	137	51	1.6
ATT C2	AT&T	Panel	LTE 2100	1426	16.1	Andrew SBNHH-1D65B	120	6.1	63	137	51	1.6
ATT C2	AT&T	Panel	UMTS 1900	666	15.8	Andrew SBNHH-1D65B	120	6.1	66	137	51	1.6
ATT C3	AT&T	Panel	LTE 700	560	12.4	Andrew SBNHH-1D65B	120	6.1	68	140	56	1.6
ATT C3	AT&T	Panel	LTE 2300	1216	16.2	Andrew SBNHH-1D65B	120	6.1	58	140	56	1.6
TMO A1	T-Mobile	Panel	1900	2394	16	Unknown	340	5.0	65	61	74	2.6
TMO A2	T-Mobile	Panel	2100	4258	16	Unknown	340	5.0	65	54	75	2.6
TMO B1	T-Mobile	Panel	1900	2394	16	Unknown	220	5.0	65	44	61	2.6
TMO B2	T-Mobile	Panel	2100	4258	16	Unknown	220	5.0	65	53	61	2.6
TMO C1	T-Mobile	Panel	1900	2394	16	Unknown	160	5.0	65	56	61	2.6
TMO C2	T-Mobile	Panel	2100	4258	16	Unknown	160	5.0	65	60	60	2.6

1. Note there are only 3 AT&T antennas per sector at this site. For clarity, the different frequencies for each antenna are entered on separate lines.
2. Note that EBI uses an assumed set of antenna specifications and powers for unknown and other carrier antennas for modeling purposes.

Appendix C

Roofview® Export File

StartMapDefinition

Roof Max Y	Roof Max X	Map Max Y	Map Max X	Y Offset	X Offset	Number of Areas	Envelope	List Of Areas
180	180	190	190	20	20	1	$AE$21:HB	$AE$21:$HB$200

StartSettingsData

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

StartAntennaData — It is advisable to provide an ID (ant 1) for all antennas

ID	Name	(MHz) Freq	Trans Power	Trans Count	Coax Len	Coax Type	Other Loss	Input Power	Calc Power	Mfg	Model	(ft) X	(ft) Y	(ft) Z	Type	(ft) Aper	dBd Gain	BWdth Pt Dir	Uptime Profile	ON flag
ATT A1	LTE	700	30	2	200	1/2 LDF	0.5		24.44282	Andrew	SBNHH-1D65B	140	58	1.555		6.05	12.35	68;20		ON
ATT A1	LTE	1900	60	2	200	1/2 LDF	0.5		35.41451	Andrew	SBNHH-1D65B	140	58	1.555		6.05	15.75	66;20		ON
ATT A2	UMTS	850	40	1	200	1/2 LDF	0.5		11.80484	Andrew	SBNHH-1D65B	135	60	1.555		6.05	12.15	66;20		ON
ATT A2	UMTS	850	40	1	200	1/2 LDF	0.5		11.80484	Andrew	SBNHH-1D65B	135	60	1.555		6.05	12.15	66;20		ON
ATT A2	LTE	2100	60	2	200	1/2 LDF	0.5		35.41451	Andrew	SBNHH-1D65B	135	60	1.555		6.05	16.05	63;20		ON
ATT A2	UMTS	1900	60	1	200	1/2 LDF	0.5		17.70726	Andrew	SBNHH-1D65B	135	60	1.555		6.05	15.75	66;20		ON
ATT A3	LTE	700	40	2	200	1/2 LDF	0.5		32.59042	Andrew	SBNHH-1D65B	130	63	1.555		6.05	12.35	68;20		ON
ATT A3	LTE	2300	25	4	200	1/2 LDF	0.5		29.51209	Andrew	SBNHH-1D65B	130	63	1.555		6.05	16.15	58;20		ON
ATT B1	LTE	700	30	2	200	1/2 LDF	0.5		24.44282	Andrew	SBNHH-1D65B	129	59	1.555		6.05	12.35	68;240		ON
ATT B1	LTE	1900	60	2	200	1/2 LDF	0.5		35.41451	Andrew	SBNHH-1D65B	129	59	1.555		6.05	15.75	66;240		ON
ATT B2	UMTS	850	40	1	200	1/2 LDF	0.5		11.80484	Andrew	SBNHH-1D65B	130	54	1.555		6.05	12.15	66;240		ON
ATT B2	UMTS	850	40	1	200	1/2 LDF	0.5		11.80484	Andrew	SBNHH-1D65B	130	54	1.555		6.05	12.15	66;240		ON
ATT B2	LTE	2100	60	2	200	1/2 LDF	0.5		35.41451	Andrew	SBNHH-1D65B	130	54	1.555		6.05	16.05	63;240		ON
ATT B2	UMTS	1900	60	1	200	1/2 LDF	0.5		17.70726	Andrew	SBNHH-1D65B	130	54	1.555		6.05	15.75	66;240		ON
ATT B3	LTE	700	40	2	200	1/2 LDF	0.5		32.59042	Andrew	SBNHH-1D65B	131	49	1.555		6.05	12.35	68;240		ON
ATT B3	LTE	2300	25	4	200	1/2 LDF	0.5		29.51209	Andrew	SBNHH-1D65B	131	49	1.555		6.05	16.15	58;240		ON
ATT C1	LTE	700	30	2	200	1/2 LDF	0.5		24.44282	Andrew	SBNHH-1D65B	135	46	1.555		6.05	12.35	68;120		ON
ATT C1	LTE	1900	60	2	200	1/2 LDF	0.5		35.41451	Andrew	SBNHH-1D65B	135	46	1.555		6.05	15.75	66;120		ON
ATT C2	UMTS	850	40	1	200	1/2 LDF	0.5		11.80484	Andrew	SBNHH-1D65B	137	51	1.555		6.05	12.15	66;120		ON
ATT C2	UMTS	850	40	1	200	1/2 LDF	0.5		11.80484	Andrew	SBNHH-1D65B	137	51	1.555		6.05	12.15	66;120		ON
ATT C2	LTE	2100	60	2	200	1/2 LDF	0.5		35.41451	Andrew	SBNHH-1D65B	137	51	1.555		6.05	16.05	63;120		ON
ATT C2	UMTS	1900	60	1	200	1/2 LDF	0.5		17.70726	Andrew	SBNHH-1D65B	137	51	1.555		6.05	15.75	66;120		ON
ATT C3	LTE	700	40	2	200	1/2 LDF	0.5		32.59042	Andrew	SBNHH-1D65B	140	56	1.555		6.05	12.35	68;120		ON
ATT C3	LTE	2300	25	4	200	1/2 LDF	0.5		29.51209	Andrew	SBNHH-1D65B	140	56	1.555		6.05	16.15	58;120		ON
TMO A1	T-Mobile	1900	30	4				3	60.14247	Unknown	Unknown	61	74	2.58		5	16	65;340		ON
TMO A2	T-Mobile	2100	30	4				0.5	106.9501	Unknown	Unknown	54	75	2.58		5	16	65;340		ON
TMO B1	T-Mobile	1900	30	4				3	60.14247	Unknown	Unknown	44	61	2.58		5	16	65;220		ON
TMO B2	T-Mobile	2100	30	4				0.5	106.9501	Unknown	Unknown	53	61	2.58		5	16	65;220		ON
TMO C1	T-Mobile	1900	30	4				3	60.14247	Unknown	Unknown	56	61	2.58		5	16	65;160		ON
TMO C2	T-Mobile	2100	30	4				0.5	106.9501	Unknown	Unknown	60	60	2.58		5	16	65;160		ON

StartSymbolData

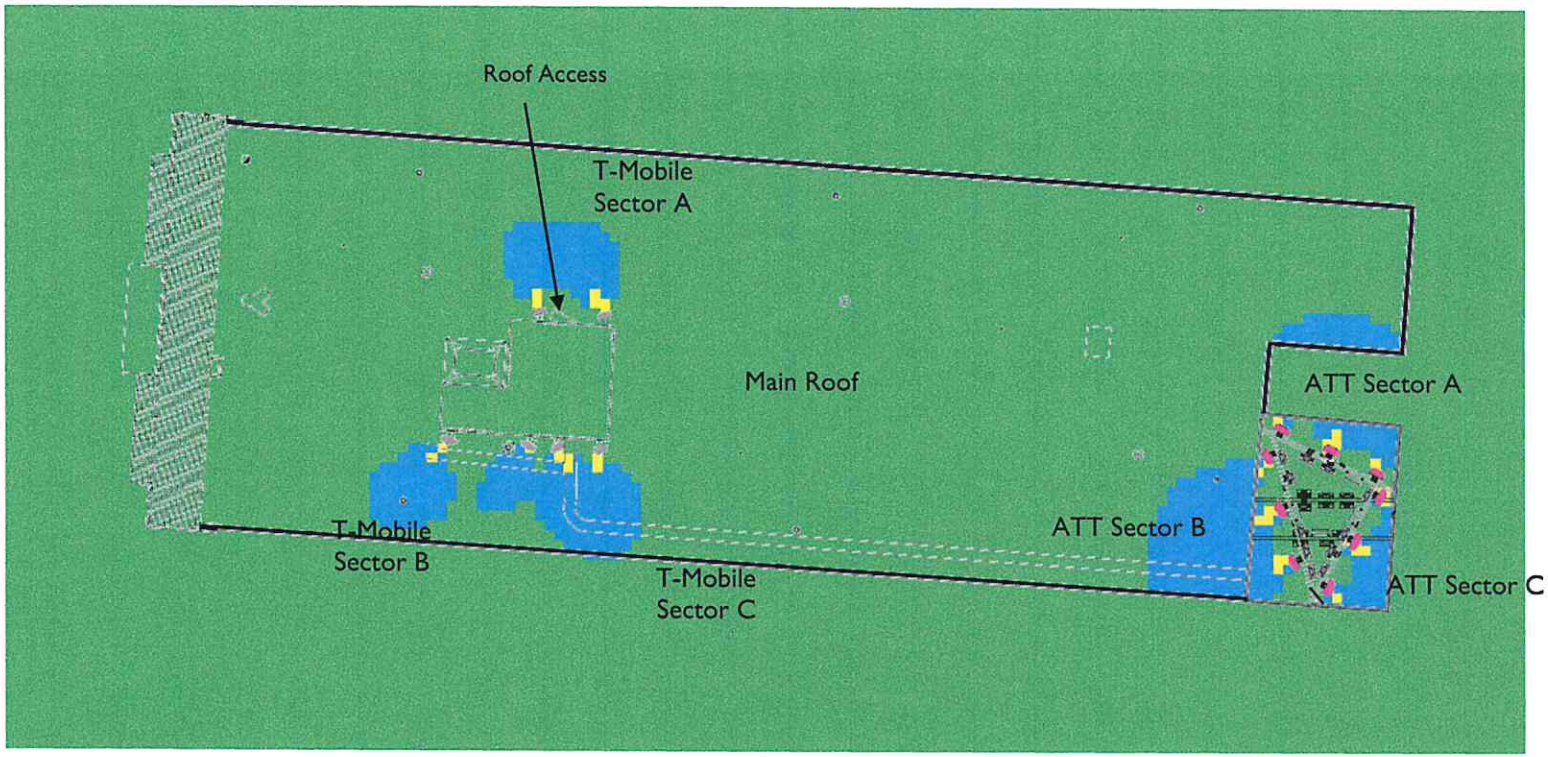
Sym	Map Marker	Roof X	Roof Y	Map Label	Description (notes for this table only)
Sym		5	35	AC Unit	Sample symbols
Sym		14	5	Roof Access	
Sym		45	5	AC Unit	
Sym		45	20	Ladder	

Appendix D

Roofview® Graphics

AT&T Antennas

Other Carrier Antennas



% FCC Public Exposure Limit
Exposure Level ≥ 5,000
500 < Exposure Level ≤ 5,000
100 < Exposure Level ≤ 500
Exposure Level ≤ 100

Roofview: Composite Exposure Levels

Facility Operator: AT&T Mobility

Site Name: Central & St. Charles Relo

AT&T Site Number: CCU3085

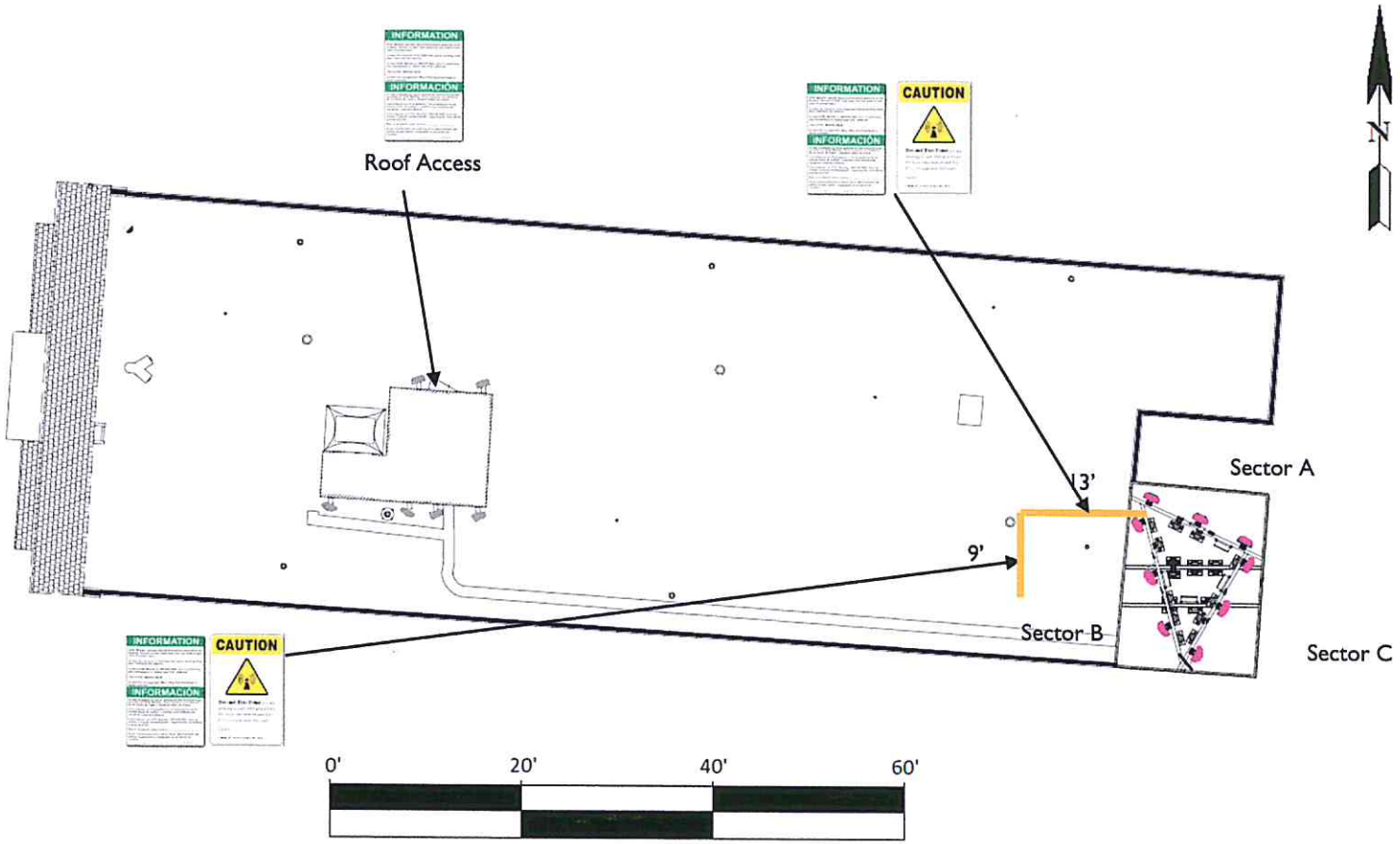
USID Number: 167230

Report Date: November 25, 2014

EBI Consulting
environmental | engineering | due diligence

Appendix E

Compliance/Signage Plan



AT&T Antennas **Other Carrier Antennas**

Sign Identification Legend			
	Denotes AT&T Information Sign 1		Denotes AT&T NOTICE Sign
	Denotes AT&T Information Sign 2		Denotes AT&T CAUTION Sign
at&t	Denotes AT&T Information Sign 3		Denotes AT&T CAUTION Tower Sign
	Denotes AT&T Information Sign 4		Denotes AT&T WARNING Sign

Recommended Hard Barrier

Compliance/Signage Plan

Facility Operator: AT&T Mobility
Site Name: Central & St. Charles Relo
AT&T Site Number: CCU3085
USID Number: 167230
Report Date: November 25, 2014

EBI Consulting
environmental | engineering | due diligence

EXISTING

PROPOSED: Install (12) new panel antennas + RRUs inside proposed stealth on rooftop

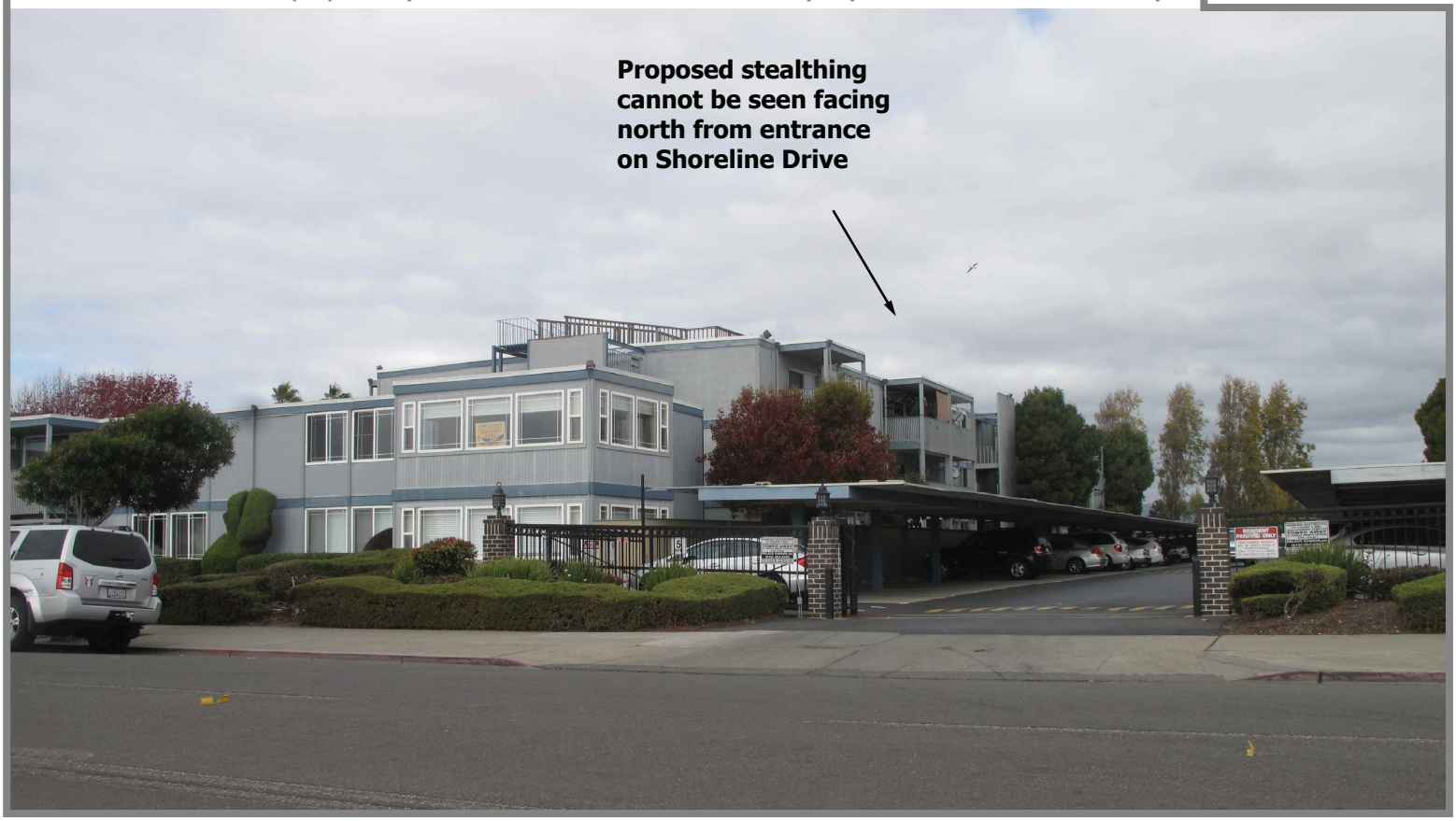
Cortel Photosims

at&t

CCU3969
1777 Shoreline Dr
Alameda CA 94501

EXISTING

PROPOSED: Install (12) new panel antennas + RRUs inside proposed stealth on rooftop



Cortel Photosims

at&t

CCU3969
1777 Shoreline Dr
Alameda CA 94501

EXISTING

PROPOSED: Install (12) new panel antennas + RRUs inside proposed stealth on rooftop

Cortel Photosims

at&t

CCU3969
1777 Shoreline Dr
Alameda CA 94501

VIEWS

Cortel Photosims

View Chart

at&t

CCU3969
1777 Shoreline Dr
Alameda CA 94501

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

USID# 167231
Site No. CCU3969
Otis Relo
1801 Shoreline Drive
Alameda, California 94501
Alameda County
37.759922; -122.262347 NAD83
Rooftop

EBI Project No. 62146129
November 13, 2014

Prepared for:

AT&T Mobility, LLC
c/o Cortel, LLC
3265 Baker Street
Sacramento, CA 94123

Prepared by:

EBI Consulting
environmental | engineering | due diligence

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by AT&T Mobility, LLC to conduct radio frequency electromagnetic (RF-EME) modeling for AT&T Site CCU3969 located at 1801 Shoreline Drive in Alameda, California to determine RF-EME exposure levels from proposed AT&T wireless communications equipment at this site. As described in greater detail in Section 2.0 of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

This report contains a detailed summary of the RF EME analysis for the site, including the following:

- Antenna Inventory
- Site Plan with antenna locations
- Antenna inventory with relevant parameters for theoretical modeling
- Graphical representation of theoretical MPE fields based on modeling
- Graphical representation of recommended signage and/or barriers

This document addresses the compliance of AT&T's transmitting facilities independently and in relation to all collocated facilities at the site.

Statement of Compliance

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

Per AT&T's corporate policy, the FCC's general population limits are applicable to all rooftop sites, regardless of the level of access control. As presented in the sections below, based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 6 feet of ATT's proposed antennas at the main roof level. Modeling also indicates that the worst-case emitted power density will not exceed the FCC's occupational limit at the main roof level.

AT&T Recommended Signage/Compliance Plan

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, requires that:

1. All sites must be analyzed for RF exposure compliance;
2. All sites must have that analysis documented; and
3. All sites must have any necessary signage and barriers installed.

Site compliance recommendations have been developed based upon protocols presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, additional guidance provided by AT&T, EBI's understanding of FCC and OSHA requirements, and common

industry practice. Barrier locations have been identified (when required) based on guidance presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012. The following signage is recommended at this site:

- Green INFO 1 sign posted on or next to every access to the rooftop and on the barrier near each of the three sectors of antennas.
- Blue NOTICE sign posted on the barrier near each of the three sectors of antennas.

The signage proposed for installation at this site complies with AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document and therefore complies with FCC and OSHA requirements. Barriers are recommended on this site. More detailed information concerning site compliance recommendations is presented in Section 5.0 and Appendix E of this report.

1.0 SITE DESCRIPTION

This project involves the proposed installation of twelve (12) wireless telecommunication antennas on a rooftop in Alameda, California. There are three Sectors (A, B, and C) proposed at the site, with four (4) proposed antennas per sector. For modeling purposes, it is assumed that there will be one (1) UMTS antenna in each sector transmitting in the 850 MHz frequency range, one (1) LTE antenna in each sector transmitting in the 700 and 1900 MHz frequency ranges, one (1) LTE antenna in each sector transmitting in the 700 and 2300 MHz frequency ranges, and one (1) LTE antenna in each sector transmitting in the 2100 MHz frequency range. The Sector A antennas will be oriented 25° from true north. The Sector B antennas will be oriented 310° from true north. The Sector C antennas will be oriented 95° from true north. The bottoms of the antennas will be 5.3 feet above the main roof level. Appendix B presents an antenna inventory for the site.

Access to this site is unknown. To be conservative and to comply with AT&T's corporate policy, the modeling results are reported as though the general public is able to access the rooftop.

Modeling results were generated based on information from the following materials:

- RFDS – CCU3969_2015-New-Site_New_mq3253_3701A004AY_13323785_167231_10-23-2014_Planned-Submit-for-Approval_v1.00[1] dated 10/23/2014
- CDs – CCU3969 90 ZD Rev A dated 11/9/2014

2.0 FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

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

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

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

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

Table 1 and Figure 1 (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm^2). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm^2) and an uncontrolled MPE of 1 mW/cm2 for equipment operating in the 1900 MHz frequency range. For the AT&T equipment operating at 850 MHz, the FCC's occupational MPE is 2.83 mW/cm^2 and an uncontrolled MPE of 0.57 mW/cm^2. For the AT&T equipment operating at 700 MHz, the FCC's occupational MPE is 2.33 mW/cm^2 and an uncontrolled MPE of 0.47 mW/cm^2. These limits are considered protective of these populations.

Table 1: Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure

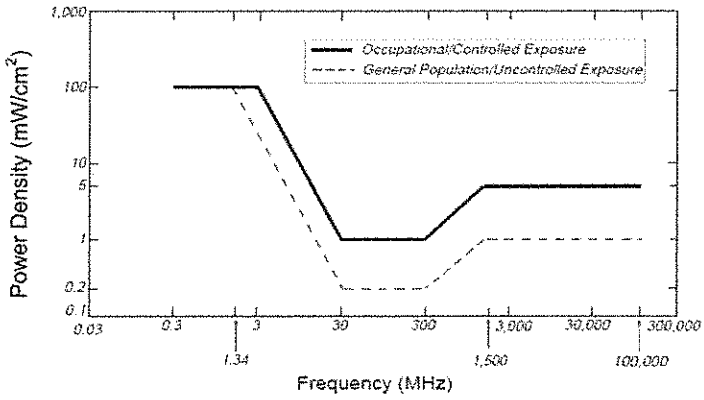
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $[E]^2$, $[H]^2$, or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6

(B) Limits for General Public/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $[E]^2$, $[H]^2$, or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)
* Plane-wave equivalent power density

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)



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

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm²	1.00 mW/cm²
Cellular Telephone	870 MHz	2.90 mW/cm²	0.58 mW/cm²
Specialized Mobile Radio	855 MHz	2.85 mW/cm²	0.57 mW/cm²
Long Term Evolution (LTE)	700 MHz	2.33 mW/cm²	0.47 mW/cm²
Most Restrictive Freq, Range	30-300 MHz	1.00 mW/cm²	0.20 mW/cm²

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

Personal Communication (PCS) facilities used by AT&T in this area operate within a frequency range of 700-1900 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

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

3.0 AT&T RF Exposure Policy Requirements

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, requires that:

1. All sites must be analyzed for RF exposure compliance;
2. All sites must have that analysis documented; and
3. All sites must have any necessary signage and barriers installed.

Pursuant to this guidance, worst-case predictive modeling was performed for the site. This modeling is described below in Section 4.0. Lastly, based on the modeling and survey data, EBI has produced a Compliance Plan for this site that outlines the recommended signage and barriers. The recommended Compliance Plan for this site is described in Section 5.0.

4.0 Worst-Case Predictive Modeling

In accordance with AT&T's RF Exposure policy, EBI performed theoretical modeling using RoofView® software to estimate the worst-case power density at the site rooftop-level resulting from operation of the antennas. RoofView® is a widely-used predictive modeling program that has been developed by Richard Tell Associates to predict both near field and far field RF power density values for roof-top and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

For this report, EBI utilized antenna and power data provided by AT&T and compared the resultant worst-case MPE levels to the FCC's occupational/controlled exposure limits outlined in OET Bulletin 65. The assumptions used in the modeling are based upon information provided by AT&T and information gathered from other sources. There are no other wireless carriers with equipment installed at this site.

Per AT&T's corporate policy, the FCC's general population limits are applicable to all rooftop sites, regardless of the level of access control. Based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 6 feet of AT&T's Sector A antennas and 5 feet of AT&T's Sector B and C antennas on the main roof level.

At the nearest walking/working surfaces to the AT&T antennas, the maximum power density generated by the AT&T antennas is approximately 406.40 percent of the FCC's general public limit (81.28 percent of the FCC's occupational limit). Based on worst-case predictive modeling, there are no areas at ground level related to the proposed AT&T antennas that exceed the FCC's occupational or general public exposure limits at this site. At ground level, the maximum power density generated by the antennas is approximately 11.90 percent of the FCC's general public limit (2.38 percent of the FCC's occupational limit).

The inputs used in the modeling are summarized in the RoofView® export file presented in Appendix C. A graphical representation of the RoofView® modeling results is presented in Appendix D. It should be noted that RoofView® is not suitable for modeling microwave dish antennas; however, these units are designed for point-to-point operations at the elevations of the installed equipment rather than ground-level coverage. Based on AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, microwave antennas are considered compliant if they are higher than 20 feet above any accessible walking/working surface. There are no microwaves installed at this site.

5.0 RECOMMENDED SIGNAGE/COMPLIANCE PLAN

Signs are the primary means for control of access to areas where RF exposure levels may potentially exceed the MPE. As presented in the AT&T guidance document, the signs must:

- Be posted at a conspicuous point;
- Be posted at the appropriate locations;
- Be readily visible; and
- Make the reader aware of the potential risks prior to entering the affected area.

The table below presents the signs that may be used for AT&T installations.

Informational Signs		Alerting Signs	
	INFO 1		NOTICE
	INFO 2		CAUTION - ROOFTOP
	INFO 3		CAUTION - TOWER
	INFO 4		WARNING

Based upon protocols presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated September 21, 2012, and additional guidance provided by AT&T, the following signage is recommended on the site:

Recommended Signage:

- Green INFO 1 sign posted on or next to every access to the rooftop and on the barrier near each of the three sectors of antennas.
- Blue NOTICE sign posted on the barrier near each of the three sectors of antennas.

Barriers should be installed 20 feet by 24 feet approximately 5 feet in front of Sector B and C antennas and 6 feet in front of the Sector A antennas surrounding the FRP screen. Barriers should be constructed of weather-resistant plastic or wood fencing. Barriers may consist of railing, rope, chain, or weather-resistant plastic if no other types are permitted or are feasible. Painted stripes should only be used as a last resort and only in regions where there is little chance of snowfall. If painted stripes are selected as barriers, it is recommended that the stripes and signage be illuminated. The signage and any barriers are graphically represented in the Signage Plan presented in Appendix E.

6.0 SUMMARY AND CONCLUSIONS

EBI has prepared this Radiofrequency Emissions Compliance Report for the proposed AT&T telecommunications equipment at the site located at 1801 Shoreline Drive in Alameda, California.

EBI has conducted theoretical modeling to estimate the worst-case power density from AT&T antennas to document potential MPE levels at this location and ensure that site control measures are adequate to meet FCC and OSHA requirements, as well as AT&T's corporate RF safety policies. As presented in the preceding sections, based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 6 feet of ATT's proposed antennas at the main roof level. Modeling also indicates that the worst-case emitted power density will not exceed the FCC's occupational limit at the main roof level.

Signage is recommended at the site as presented in Section 5.0 and Appendix E. Posting of the signage and installation of the recommended barriers brings the site into compliance with FCC rules and regulations and AT&T's corporate RF safety policies.

7.0 LIMITATIONS

This report was prepared for the use of AT&T Mobility, LLC to meet requirements outlined in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by EBI are based solely on the information provided by the client. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to EBI so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

Appendix A

Certifications

Reviewed and Approved by:

sealed 13nov2014

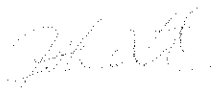
Michael McGuire
Electrical Engineer

Note that EBI's scope of work is limited to an evaluation of the Radio Frequency – Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the building and related structures, as well as the impact of the antennas and broadcast equipment on the structural integrity of the building, are specifically excluded from EBI's scope of work.

Preparer Certification

I, Jonathan Ilgenfritz, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am familiar with the FCC rules and regulations as well as OSHA regulations both in general and as they apply to RF-EME exposure.
- I have been trained in on the procedures outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document (dated September 21, 2012) and on RF-EME modeling using RoofView® modeling software.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.



Appendix B

Antenna Inventory

Antenna Number	Operator	Antenna Type	TX Freq (MHz)	ERP (Watts)	Gain (dBd)	Antenna Model	Azimuth (deg.)	Length (feet)	Horizontal Beamwidth (Degrees)	X	Y	Z
ATT A1	AT&T	Panel	LTE 700	806	12.0	CCI HPA-45R-BUU-H6-K	25	6.0	66	30	34	5.3
ATT A1	AT&T	Panel	LTE 1900	3021	14.8	CCI HPA-45R-BUU-H6-K	25	6.0	61	30	34	5.3
ATT A2	AT&T	Panel	LTE 2100	3237	15.1	CCI HPA-45R-BUU-H6-K	25	6.0	62	27	34	5.3
ATT A3	AT&T	Panel	UMTS 850	1242	12.7	CCI HPA-45R-BUU-H6-K	25	6.0	65	23	34	5.3
ATT A4	AT&T	Panel	LTE 700	815	12.0	CCI HPA-45R-BUU-H6-K	25	6.0	66	19	34	5.3
ATT A4	AT&T	Panel	LTE 2300	2825	15.3	CCI HPA-45R-BUU-H6-K	25	6.0	57	19	34	5.3
ATT B1	AT&T	Panel	LTE 700	806	12.0	CCI HPA-45R-BUU-H6-K	310	6.0	66	16	34	5.3
ATT B1	AT&T	Panel	LTE 1900	3021	14.8	CCI HPA-45R-BUU-H6-K	310	6.0	61	16	34	5.3
ATT B2	AT&T	Panel	LTE 2100	3237	15.1	CCI HPA-45R-BUU-H6-K	310	6.0	62	16	29	5.3
ATT B3	AT&T	Panel	UMTS 850	1242	12.7	CCI HPA-45R-BUU-H6-K	310	6.0	65	16	24	5.3
ATT B4	AT&T	Panel	LTE 700	815	12.0	CCI HPA-45R-BUU-H6-K	310	6.0	66	16	20	5.3
ATT B4	AT&T	Panel	LTE 2300	2825	15.3	CCI HPA-45R-BUU-H6-K	310	6.0	57	16	20	5.3
ATT C1	AT&T	Panel	LTE 700	806	12.0	CCI HPA-45R-BUU-H6-K	95	6.0	66	31	20	5.3
ATT C1	AT&T	Panel	LTE 1900	3021	14.8	CCI HPA-45R-BUU-H6-K	95	6.0	61	31	20	5.3
ATT C2	AT&T	Panel	LTE 2100	3237	15.1	CCI HPA-45R-BUU-H6-K	95	6.0	62	31	24	5.3
ATT C3	AT&T	Panel	UMTS 850	1242	12.7	CCI HPA-45R-BUU-H6-K	95	6.0	65	31	27	5.3
ATT C4	AT&T	Panel	LTE 700	815	12.0	CCI HPA-45R-BUU-H6-K	95	6.0	66	31	31	5.3
ATT C4	AT&T	Panel	LTE 2300	2825	15.3	CCI HPA-45R-BUU-H6-K	95	6.0	57	31	31	5.3

1. Note there are only 4 AT&T antennas per sector at this site. For clarity, the different frequencies for each antenna are entered on separate lines.

Appendix C

Roofview® Export File

StartMapDefinition

Roof Max Y	Roof Max X	Map Max Y	Map Max X	Y Offset	X Offset	Number of envelope		List Of Areas
120	100	150	120	20	20	1	$AE$81:$D $AE$81:$DZ$200	$AE$81:$DZ$200

StartSettingsData

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

StartAntennaData It is advisable to provide an ID (ant 1) for all antennas

ID	Name	(MHz) Freq	Trans Power	Trans Count	Coax Len	Coax Type	Other Loss	Input Power	Calc Power	Mfg	Model	(ft) X	(ft) Y	(ft) Z	Type	(ft) Aper	dBd Gain	BWdth Pt Dir	Uptime Profile	ON flag
ATT A1	LTE	700	30	2	10	1/2 LDF	0.5		51.42227071	CCI	HPA-45R-BUU-H6-K	30	34	5.3		6	11.95	66;359		ON
ATT A1	LTE	1900	60	2	10	1/2 LDF	0.5		101.2001709	CCI	HPA-45R-BUU-H6-K	30	34	5.3		6	14.75	61;359		ON
ATT A2	LTE	2100	60	2	10	1/2 LDF	0.5		101.2001709	CCI	HPA-45R-BUU-H6-K	27	34	5.3		6	15.05	62;359		ON
ATT A3	UMTS	850	40	2	10	1/2 LDF	0.5		67.46678062	CCI	HPA-45R-BUU-H6-K	23	34	5.3		6	12.65	65;359		ON
ATT A4	LTE	700	30	2	10	1/2 LDF	0.5		51.42227071	CCI	HPA-45R-BUU-H6-K	19	34	5.3		6	12	66;359		ON
ATT A4	LTE	2300	25	4	10	1/2 LDF	0.5		84.33347578	CCI	HPA-45R-BUU-H6-K	19	34	5.3		6	15.25	57;359		ON
ATT B1	LTE	700	30	2	10	1/2 LDF	0.5		51.42227071	CCI	HPA-45R-BUU-H6-K	16	34	5.3		6	11.95	66;284		ON
ATT B1	LTE	1900	60	2	10	1/2 LDF	0.5		101.2001709	CCI	HPA-45R-BUU-H6-K	16	34	5.3		6	14.75	61;284		ON
ATT B2	LTE	2100	60	2	10	1/2 LDF	0.5		101.2001709	CCI	HPA-45R-BUU-H6-K	16	29	5.3		6	15.05	62;284		ON
ATT B3	UMTS	850	40	2	10	1/2 LDF	0.5		67.46678062	CCI	HPA-45R-BUU-H6-K	16	24	5.3		6	12.65	65;284		ON
ATT B4	LTE	700	30	2	10	1/2 LDF	0.5		51.42227071	CCI	HPA-45R-BUU-H6-K	16	20	5.3		6	12	66;284		ON
ATT B4	LTE	2300	25	4	10	1/2 LDF	0.5		84.33347578	CCI	HPA-45R-BUU-H6-K	16	20	5.3		6	15.25	57;284		ON
ATT C1	LTE	700	30	2	10	1/2 LDF	0.5		51.42227071	CCI	HPA-45R-BUU-H6-K	31	20	5.3		6	11.95	66;69		ON
ATT C1	LTE	1900	60	2	10	1/2 LDF	0.5		101.2001709	CCI	HPA-45R-BUU-H6-K	31	20	5.3		6	14.75	61;69		ON
ATT C2	LTE	2100	60	2	10	1/2 LDF	0.5		101.2001709	CCI	HPA-45R-BUU-H6-K	31	24	5.3		6	15.05	62;69		ON
ATT C3	UMTS	850	40	2	10	1/2 LDF	0.5		67.46678062	CCI	HPA-45R-BUU-H6-K	31	27	5.3		6	12.65	65;69		ON
ATT C4	LTE	700	30	2	10	1/2 LDF	0.5		51.42227071	CCI	HPA-45R-BUU-H6-K	31	31	5.3		6	12	66;69		ON
ATT C4	LTE	2300	25	4	10	1/2 LDF	0.5		84.33347578	CCI	HPA-45R-BUU-H6-K	31	31	5.3		6	15.25	57;69		ON

StartSymbolData

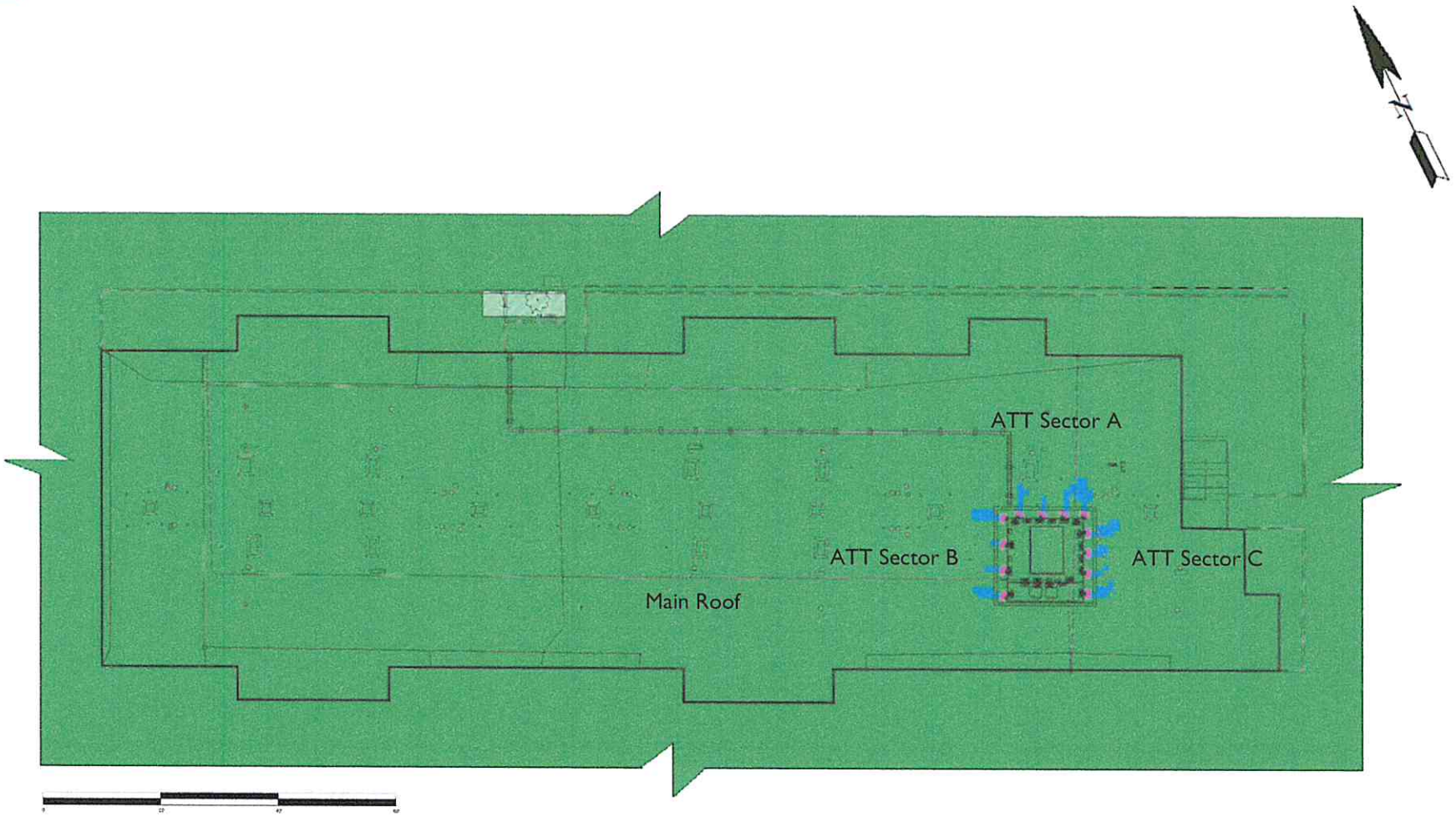
Sym	Map Mark	Roof X	Roof Y	Map Label	Description (notes for this table only)
Sym		5	35	AC Unit	Sample symbols
Sym		14	5	Roof Access	
Sym		45	5	AC Unit	
Sym		45	20	Ladder	

Note: Antenna azimuths have been adjusted for modeling purposes. Actual antenna azimtuhs for Sector A-B-C are 25-310-95.

Appendix D

Roofview® Graphics

AT&T Antennas



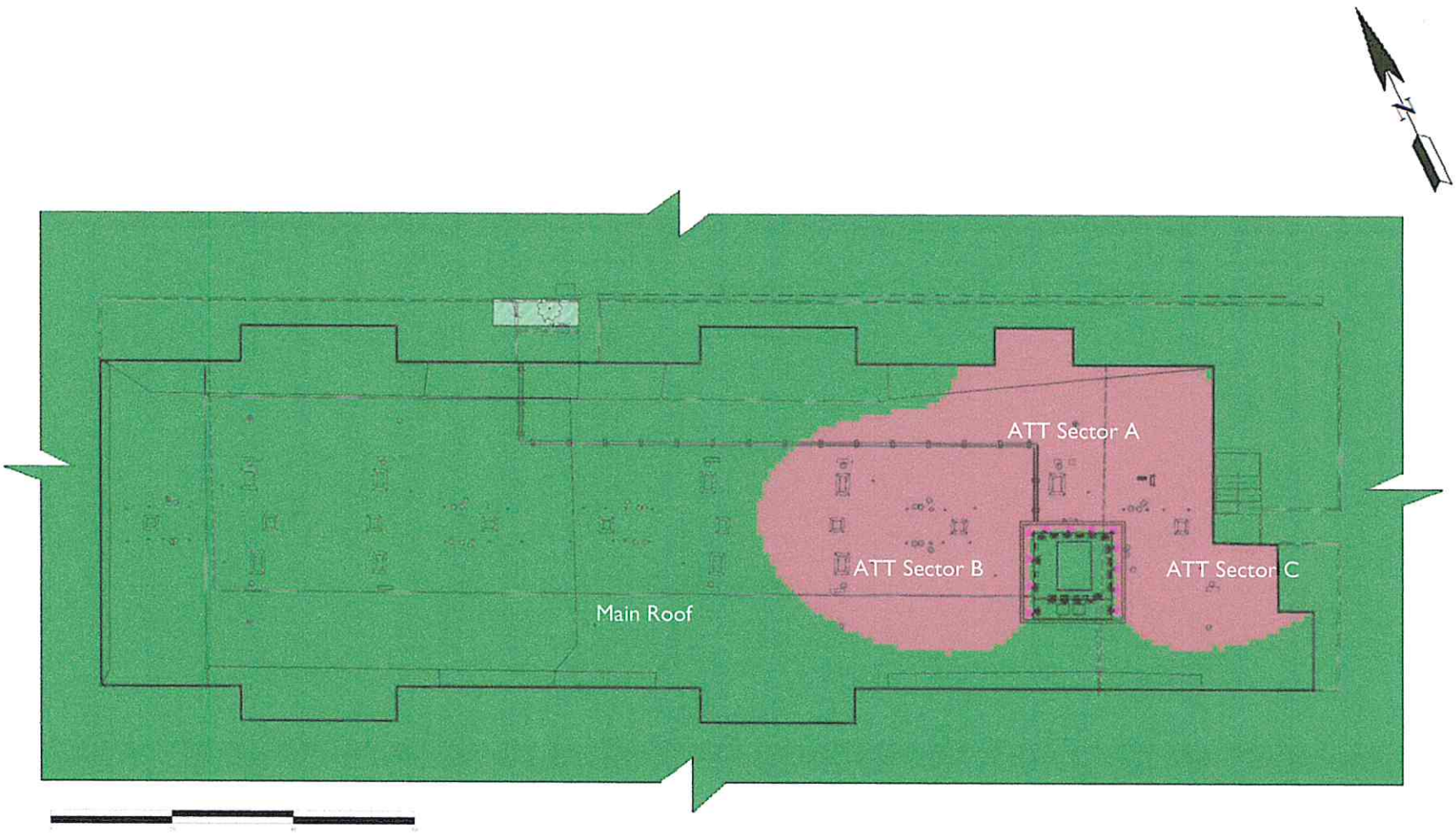
% FCC Public Exposure Limit	
	Exposure Level ≥ 5,000
	500 < Exposure Level ≤ 5,000
	100 < Exposure Level ≤ 500
	Exposure Level ≤ 100

Roofview: Composite Exposure Levels

Facility Operator: AT&T Mobility
Site Name: Otis Relo
AT&T Site Number: CCU3969
USID Number: 167231
Report Date: November 13, 2014

EBI Consulting

AT&T Antennas



% FCC Public Exposure Limit	
	Exposure Level > 5
	Exposure Level ≤ 5

Note that the areas shown in brown are where AT&T antennas contribute more than 5% of the FCC's general exposure RF limit. These do not overlap any areas in front of other carrier antennas exceeding the FCC's general exposure RF limit because there are no other carriers as shown in Figure 1. Under FCC regulations, AT&T is therefore not responsible for any predicted exceedances of another carrier's antennas.

Roofview: AT&T Exposure Levels

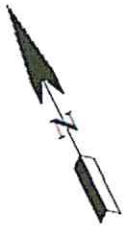
Facility Operator: AT&T Mobility
Site Name: Otis Relo
AT&T Site Number: CCU3969
USID Number: 167231
Report Date: November 13, 2014

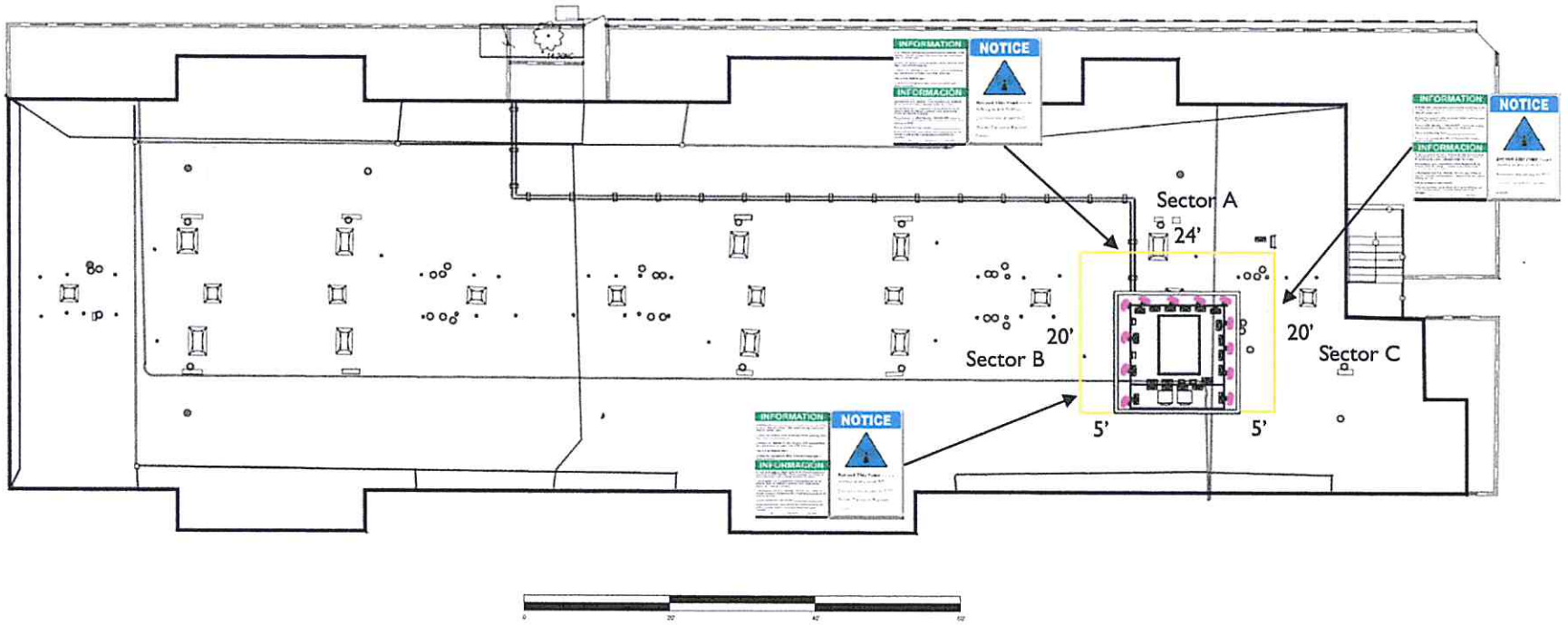
EBI Consulting
environmental | engineering | due diligence

Appendix E

Compliance/Signage Plan

To be posted at every access to the site.





AT&T Antennas

Sign Identification Legend			
	Denotes AT&T Information Sign 1		Denotes AT&T NOTICE Sign
	Denotes AT&T Information Sign 2		Denotes AT&T CAUTION Sign
at&t	Denotes AT&T Information Sign 3		Denotes AT&T CAUTION Tower Sign
	Denotes AT&T Information Sign 4		Denotes AT&T WARNING Sign

Recommended Hard Barrier

Compliance/Signage Plan
Facility Operator: AT&T Mobility
Site Name: Otis Relo
AT&T Site Number: CCU3969
USID Number: 167231
Report Date: November 13, 2014

EBI Consulting
environmental | engineering | due diligence

March 12, 2015

Deborah Diamond
Community Development Department
2263 Santa Clara Ave
Alameda, CA 94501

RE: **AT&T Telecom Facility**
AT&T Site ID: CCU3085 (FA 13323784)
Property Address: 1538 St. Charles Street, Alameda, CA 94501
Project Number: PLN14-0729

Dear Ms. Diamond:

Please find the enclosed documents as supplemental material for the AT&T application for the proposed new telecommunications facility at 1538 St. Charles Street (PLN14-0729).

- Revised RF Exposure Study
- Alternative Site Analysis
- RF Statement, with Propagation Maps

This application seeks permission to collocate AT&T's proposed wireless telecommunications facility on the same rooftop as an existing wireless telecommunications facility, so the FCC's 90-day shot clock applies. AT&T filed the application on December 8, 2014. The shot clock was tolled from the city's December 16, 2014 incomplete letter until AT&T's complete response on February 2, 2015. Thus, the city must take final action on AT&T's application no later than April 25, 2015 (Day 90). Please let us know as soon as possible if you calculate a different shot clock deadline.

Should you have any questions before, please feel free to contact me at 415-601-3194 or by e-mail at alex.orner@cortel-llc.com.

Sincerely,

Alex Orner, Site Acquisition Specialist
Cortel, Inc.
Authorized Representative for AT&T
415-601-3194 (cell)
alex.orner@cortel-llc.com

AT&T Mobility • Proposed Base Station (Site No. CCU3085)
1538 St. Charles Street • Alameda, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of AT&T Mobility, a personal wireless telecommunications carrier, to evaluate the base station (Site No. CCU3085) proposed to be located at 1538 St. Charles Street in Alameda, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

AT&T proposes to install directional panel antennas above the roof of the residential building located at 1538 St. Charles Street in Alameda. The proposed operation will, together with the existing base stations at the site and nearby, comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

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

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

General Facility Requirements

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

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

Computer Modeling Method

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

Site and Facility Description

The site at 1538 St. Charles Street in Alameda was visited by Mr. Brian Palmer, a qualified engineer employed by Hammett & Edison, Inc., during normal business hours on March 9, 2015. Six directional panel antennas, reportedly for use by T-Mobile, were observed on the stairwell penthouse above the roof of the four-story residential building located at that address. Observed on top of a light pole in a parking lot about 400 feet to the south were antennas for use by Sprint. The maximum power density level observed for a person at ground near the site was 2.7% of the most restrictive public limit, for the combined operation of existing RF services at the site as installed and operating at that time. The measurement equipment used was a Narda Type NBM-520 Broadband Field Meter with Type EF-0391 Isotropic Broadband Electric Field Probe (Serial No. D-0698); the meter and probe were under current calibration by the manufacturer.

Based upon information provided by AT&T, including zoning drawings by Cortel, Inc., dated January 22, 2015, it is proposed to install nine Andrew Model SBNHH-1D65B directional panel antennas within a view screen enclosure to be constructed near the center of the roof of the building. The antennas would be mounted with up to 8° downtilt at an effective height of about 47 feet above ground, 7 feet above the roof, and would be oriented in groups of three toward 60°T, 180°T, and 300°T, to provide service in all directions. The maximum effective radiated power in any direction would be 16,780 watts, representing simultaneous operation at 3,600 watts for WCS, 4,330 watts for AWS, 5,970 watts for PCS, 1,000 watts for cellular, and 1,880 watts for 700 MHz service.

For the limited purpose of this study, the transmitting facilities of the existing carriers are assumed to be as follows:

Operator	Service	Maximum ERP	Antenna Model	Downtilt	Height
T-Mobile	AWS	4,400 watts	Ericsson AIR21	2°	46 ft
	PCS	2,200	Ericsson AIR21	2	46
Sprint	BRS	1,500	DHHTT65B-3XR	6	43
	PCS	5,500	DHHTT65B-3XR	2	43
	SMR	430	DHHTT65B-3XR	2	43

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed AT&T operation by itself is calculated to be 0.049 mW/cm^2, which is 5.0% of the applicable public exposure limit. The maximum calculated cumulative level at ground, for the simultaneous operation of all those carriers, is 8.1% of the public exposure limit. The maximum calculated cumulative level at any nearby building* is 9.5% of the public limit. The maximum calculated cumulative level at the second-floor elevation of any nearby residence† is 7.8% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels. Levels are calculated to exceed the applicable exposure limits on the roof of the subject building, in front of the antennas.

Recommended Mitigation Measures

It is recommended that the roof access door be fitted with an alarmed "panic bar," so that the antennas on the roof are not accessible to unauthorized persons. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training be provided to all authorized personnel who have access to the roof, including employees and contractors of the wireless carriers and of the property owner. No access within 10 feet directly in front of the antennas themselves, such as might occur during maintenance work on the roof, should be allowed while the base stations are in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Marking yellow demarcation lines with paint on the roof, to identify areas calculated to exceed the FCC occupational limit, and posting explanatory signs‡ at the roof access door, next to the demarcation lines, and at the antennas, as shown in Figure 3, would be sufficient to meet FCC-adopted guidelines. Similar measures may already be in place for T-Mobile.

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* Located at least 17 feet away, based on the drawings.

† Located at least 50 feet away, based on photographs from Google Maps.

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

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the base station proposed by AT&T Mobility at 1538 St. Charles Street in Alameda, California, can comply with the prevailing standards for limiting human exposure to radio frequency energy and, therefore, need not for this reason cause a significant impact on the environment. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations. Locking the roof access door is recommended to establish compliance with public exposure limits; training authorized personnel, painting demarcation lines, and posting explanatory signs are recommended to establish compliance with occupational exposure limits.

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, 2015. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

William F. Hammett, P.E.
707/996-5200

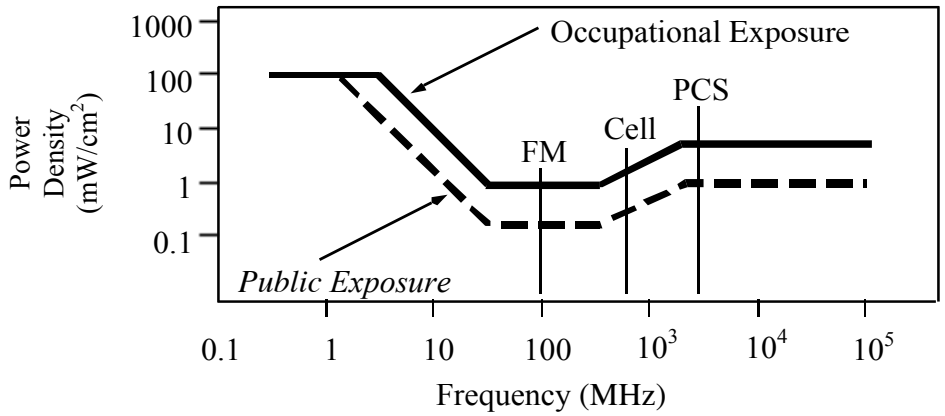
March 12, 2015

FCC Radio Frequency Protection Guide

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

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

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



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

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

Near Field.

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

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

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

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

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

Far Field.

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

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

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

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

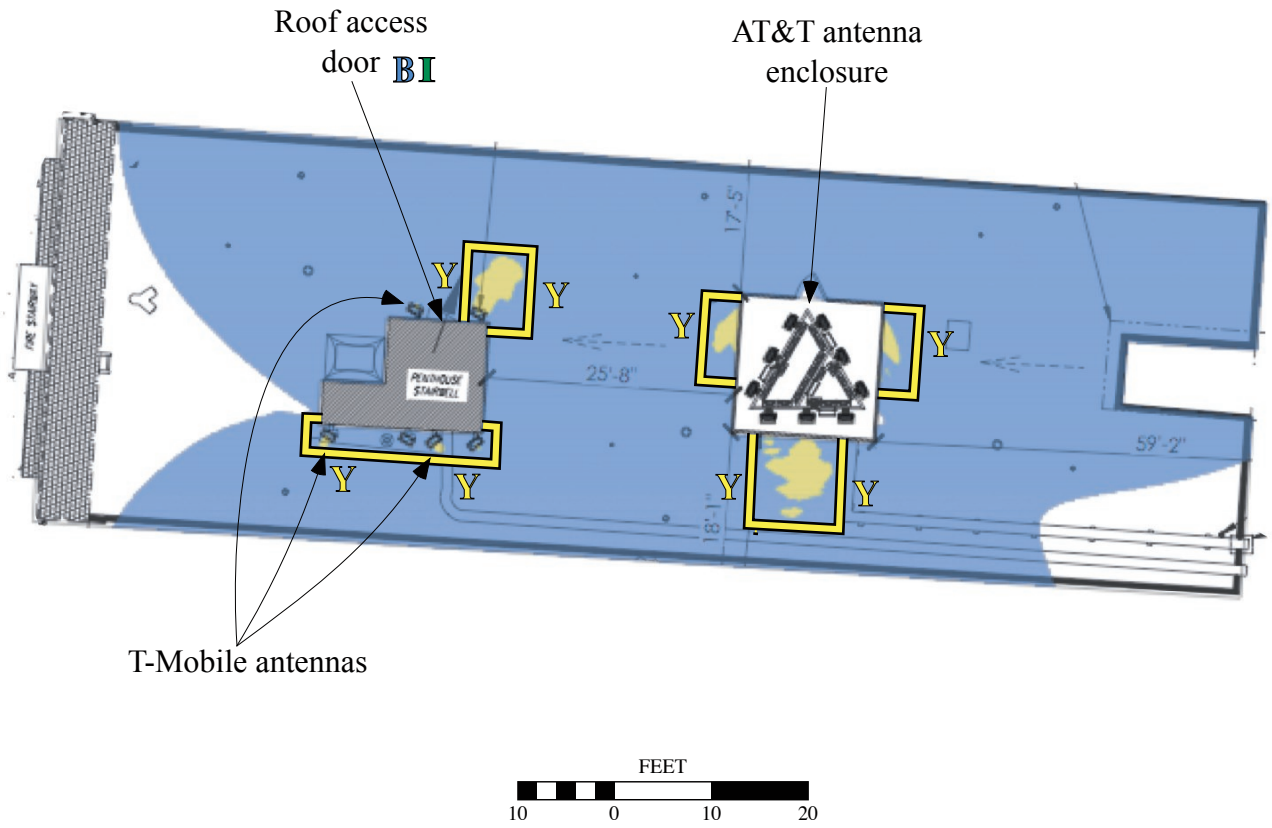
AT&T Mobility • Proposed Base Station (Site No. CCU3085)
1538 St. Charles Street • Alameda, California

Calculated RF Exposure Levels on Roof
for Proposed AT&T plus Existing T-Mobile

Recommended Mitigation Measures

- Lock all roof access locations
- Mark boundaries (if shown)
- Post explanatory signs
- Provide training

North



Notes:
Base drawing from Cortel, Inc., dated January 22, 2015.
Calculations performed according to OET Bulletin 65, August 1997.
Training should be provided to all persons with access to the roof.

Legend:	Less Than Public	Exceeds Public	Exceeds Occupational	Exceeds 10x Occupational
Shaded color	N/A			
Boundary marking	N/A			
Sign type	I - Green INFORMATION	B - Blue NOTICE	Y - Yellow CAUTION	O - Orange WARNING

Alternative Sites Analysis

AT&T Mobility

Wireless Communications Facility
at
1538 Saint Charles Street
Alameda, CA

Site ID: CCU3085

Introduction

New Cingular Wireless PCS, LLC d/b/a AT&T Mobility ("AT&T") has a significant gap in its service coverage in this portion of Alameda. AT&T proposes to collocate a stealth wireless communications facility ("WCF") on the roof of this apartment building property ("Proposed Facility") as a means to fill this gap in coverage. The Proposed Facility consists of nine panel antennas (three sectors of three antennas) mounted on the roof an fully concealed behind a 10' tall stealth enclosure designed as a faux penthouse to match the building's exiting penthouse, with the related equipment to be housed within a 102.7 square foot enclosure adjacent to T-Mobile's existing wireless telecommunication equipment in the garage. The Proposed Facility will be located about 25-26 feet from T-Mobile's existing WCF on this roof. The Proposed Facility is designed to minimize visual impacts, blend within the existing environment, and obscure the antennas. The Proposed Facility is the least intrusive means to fill the significant gap of the alternatives investigated by AT&T as explained below.

Objective

AT&T Mobility has identified a significant gap in its service coverage in Alameda, in an area roughly bordered by Buena Vista Avenue to the north, Benton Street to the east, Central Avenue to the south, and Wood Street to the west. The Proposed Facility will improve coverage to the surrounding residential neighborhoods with over 400 homes and a significant commercial area along Lincoln Avenue and vicinity, a parks, schools, places of worship and various other points of interest in the immediate vicinity. The service coverage in this portion of Alameda is described in the accompanying Radio Frequency Statement. The most recent traffic data available from Google Earth Pro for this area indicates that the average traffic along Central Avenue near Bay Street was 10,100 vehicles per day in 2012.

Methodology and Zoning Criteria

The location of a WCF to fill a significant gap in coverage is dependent upon topography, zoning, existing structures, collocation opportunities, available utilities, access, and a willing landlord. Wireless communication is line-of-sight technology that requires WCFs to be in relatively close proximity to the wireless handsets to be served.

AT&T seeks to fill a significant gap in service coverage using the least intrusive means under the values of the community as expressed in the Alameda Municipal Code ("Code"). Thus, AT&T is guided by Chapter 30-21 of the Code regarding use permits. AT&T also looks to the city's prior approvals of WCFs as guidance for acceptable installations. For example, there is an existing T-Mobile WCF on this same rooftop as the Proposed Facility. Finally, AT&T recently was required to vacate its existing site on the nearby school that serves this area. The gap in coverage results from the need to decommission that site. Thus, AT&T has sought non-school sites in the area to replace the necessary service coverage.

Analysis

AT&T investigated potential alternative designs of and alternative sites for facilities to fill the identified coverage gap in this portion of Alameda. The following is a map showing the locations of the Proposed Facility and the alternative sites that AT&T investigated. The alternatives are discussed in the analysis that follows.

Location of Candidate Sites

Proposed Facility – 1538 Saint Charles Street

Existing:

Proposed:

Conclusion: Based upon location, a willing landlord and the superior coverage as shown in the proposed coverage map included in AT&T's Radio Frequency Statement, the Proposed Facility is the least intrusive means for AT&T to meet its service coverage objective.

This four-story apartment building just south of Lincoln Avenue currently houses an approved T-Mobile WCF that consists of visible antennas on the side of a rooftop penthouse. AT&T proposes to collocate the Proposed Facility on this rooftop by installing a faux penthouse to completely screen its antennas, with equipment located in a garage adjacent to T-Mobile's equipment. The Proposed Facility will be completely screened and the faux penthouse will blend in with the building and surroundings. The Proposed Facility is the least intrusive means to fill the significant gap of the alternatives investigated by AT&T.

Alternative No. 1 – Mastick Senior Center, 1155 Santa Clara Avenue

Conclusion: More intrusive than Proposed Facility

This senior residential property houses a Sprint monopole. This is a feasible option, but the Proposed Facility offers a better opportunity for minimal stealth construction and design consistent with the city Code.

Alternative No. 2 – Pagano's Hardware, 1100 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This store is a relatively short building. A WCF here would not close AT&T's significant service coverage gap due to the low height and because the adjacent four-story apartment building (where the Proposed Facility is to be located) would block radio frequency signals. In addition, this building does not offer a collocation opportunity.

Alternative No. 3 – Vines Cafe & Gallery, 1113 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This commercial building is relatively short and the roof would not accommodate a WCF. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 4 – Lee Chiropractic, 1204 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

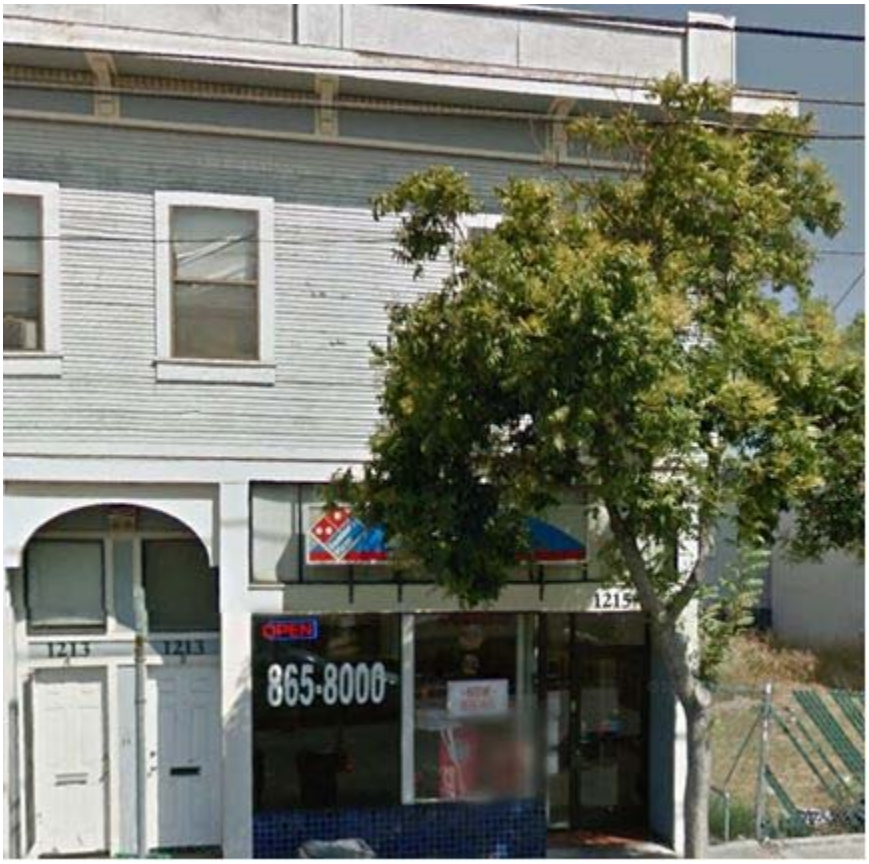
This two-story office building is relatively short, and it does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 5 – Intensity Martial Arts, 1209 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This two-story commercial use does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 6 – Domino's Pizza, 1215 Lincoln Avenue



Conclusion: Not feasible; more intrusive than Proposed Facility

This two-story commercial use does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 7 – The Market Spot, 1200 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This two-story market does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 8 –Faith Bible Church, 1206 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This short church does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 9 – Bay Stamp & Engraving, 1222 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This two-story building does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a rooftop WCF on this property would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 10 – Alameda Chapel, 1001 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This is a very short church building. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 11 – Seventh Day Adventist Church, 1515 Verdi Street

Conclusion: Not available; more intrusive than Proposed Facility

This church is located near the edge of the service coverage objective to the southwest of the Proposed Facility. This property is not available because Seventh Day Adventists churches do not lease space for WCFs. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Conclusion

The Proposed Facility is the least intrusive means by which AT&T can close its significant service coverage objective in this portion of Alameda.

AT&T Mobility Radio Frequency Statement
1538 St .Charles Street, Alameda, CA
Site ID: CCU3085

STATEMENT OF MICHAEL QUINTO

I am the AT&T radio frequency engineer assigned to the proposed wireless communications facility at 1538 St .Charles Street, Alameda, CA (the "Property"). Based on my personal knowledge of the Property and with AT&T's wireless network, as well as my review of AT&T's records with respect to the Property and its wireless communications facilities in the surrounding area, I have concluded that the work associated with this permit request is needed to close a significant service coverage gap in an area roughly bordered by Buena Vista Avenue to the north, Benton Street to the east, Central Avenue to the south, and Wood Street to the west. The service coverage gap will exist once AT&T decommissions its existing wireless communications facility at Wood Middle School. To remedy this service coverage gap, AT&T will need to construct a new wireless communications facility.

The service coverage gap will be caused by inadequate infrastructure in the area. As explained further in Exhibit 1, AT&T's existing facilities cannot adequately serve its customers in the desired area of coverage, let alone address rapidly increasing data usage. The site will not only close the gap in coverage and help address rapidly increasing data usage driven by smart phone and tablet usage, but it will also include 4G LTE service coverage. This site is part of an effort to fully deploy 4G LTE technology in the area.

AT&T uses industry standard propagation tools to identify the areas in its network where signal strength is too weak to provide reliable in-building service quality. This information is developed from many sources including terrain and clutter databases, which simulate the environment, and propagation models that simulate signal propagation in the presence of terrain and clutter variation. AT&T designs and builds its wireless network to ensure customers receive reliable in-building service quality. In-building service is critical as customers increasingly use their mobile phones as their primary communication device (approximately 44% of American households are now wireless only) and rely on their mobile phones to do more (E911, GPS, web access, text, etc.).

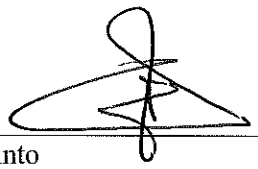
Exhibit 2 is a map of the existing UMTS 3G service coverage (without the proposed installation at the Property) in the area at issue. It includes service coverage provided by existing AT&T sites. The green shaded areas depict areas within a signal strength range that provide acceptable in-building service coverage. In-building coverage means customers are able to place or receive a call on the ground floor of a building. The yellow shaded areas depict areas within a signal strength range that provide acceptable in-vehicle service coverage. In these areas, an AT&T customer should be able to successfully place or

receive a call within a vehicle. The blue shading depicts areas within a signal strength range in which a customer might have difficulty receiving a consistently acceptable level of service. The quality of service experienced by any individual customer can differ greatly depending on whether that customer is indoors, outdoors, stationary, or in transit. Any area in the yellow or blue category is considered inadequate service coverage and constitutes a service coverage gap.

Exhibit 3 to this Statement is a map that predicts service coverage based on signal strength in the vicinity of the Property if antennas are placed as proposed in the application. As shown by this map, placement of the equipment at the Property closes the significant UMTS 3G service coverage gap.

In addition to these 3G wireless service gap issues, AT&T is in the process of deploying its 4G LTE service in Alameda with the goal of providing the most advanced personal wireless experience available to residents of the county. 4G LTE is capable of delivering speeds up to 10 times faster than industry-average 3G speeds. LTE technology also offers lower latency, or the processing time it takes to move data through a network, such as how long it takes to start downloading a webpage or file once you've sent the request. Lower latency helps to improve the quality of personal wireless services. What's more, LTE uses spectrum more efficiently than other technologies, creating more space to carry data traffic and services and to deliver a better overall network experience. Attached Exhibits 4 and 5 are LTE maps that illustrate how the proposed site closes the significant service coverage gap in LTE service coverage. Moreover, it is important to note that as existing customers migrate to 4G LTE, the LTE technology will provide the added benefit of reducing 3G data traffic, which can contribute to the significant service coverage gap on the UMTS (3G) network during peak usage periods.

I have a Bachelor of Science Degree in electronics and communications engineering and have worked as an engineering expert in the wireless communications industry for over 14 years.



Michael Quinto
AT&T Mobility Services LLC
Network, Planning & Engineering
RAN Design & RF Engineering

March 11, 2015

EXHIBIT 1

Prepared by AT&T Mobility

AT&T's digital wireless technology converts voice or data signals into a stream of digits to allow a single radio channel to carry multiple simultaneous signal transmissions. This technology allows AT&T to offer services such as secured transmissions and enhanced voice, high-speed data, texting, video conferencing, paging and imaging capabilities, as well as voicemail, visual voicemail, call forwarding and call waiting that are unavailable in analog-based systems. With consumers' strong adoption of smartphones, customers now have access to wireless broadband applications, which consumers utilize at a growing number.

Mobile data traffic in the United States grew by 75,000 percent over a six-year span, from 2001-2006. And in the seven years that followed, mobile data traffic on AT&T's national wireless network increased more than 50,000 percent *(from January 2007 through December 2013).* AT&T expects total mobile data volume to ***grow 8x-10x over the next five years***. To put this estimate in perspective, all of AT&T Mobility's mobile traffic during 2010 would be equal to only six or seven weeks of mobile traffic volume in 2015. The FCC noted that U.S. mobile data traffic grew almost 300% in 2011, and driven by 4G LTE smartphones and tablets, traffic is projected to grow an additional 16-fold by 2016.

Mobile devices using AT&T's technology transmit a radio signal to antennas mounted on a tower, pole, building, or other structure. The antenna feeds the signal to electronic devices housed in a small equipment cabinet, or base station. The base station is connected by microwave, fiber optic cable, or ordinary copper telephone wire to the Radio Network Controller, subsequently routing the calls and data throughout the world.

The operation of AT&T's wireless network depends upon a network of wireless communications facilities. The range between wireless facilities varies based on a number of factors. The range between AT&T mobile telephones and the antennas in and nearby Alameda, for example, is particularly limited as a result of challenges such as blockage from buildings, trees, and other obstructions as well as the limited capacity of existing facilities.

To provide effective, reliable, and uninterrupted service to AT&T customers in their cars, public transportation, home, and office, without interruption or lack of access, coverage must overlap in a grid pattern resembling a honeycomb.

In the event that AT&T is unable to construct or upgrade a wireless communications facility within a specific geographic area, so that each site's coverage reliably overlaps with at least one adjacent facility, AT&T will not be able to provide adequate personal wireless service to its customers within that area. Some consumers will experience an abrupt loss of service. Others will be unable to obtain reliable service, particularly if they are placing a call inside a building.

Service problems occur for customers even in locations where the coverage maps on AT&T's "Coverage Viewer" website appear to indicate that coverage is available. As the legend to the Coverage Viewer maps indicates, these maps depict a high-level *approximation* of coverage, which may not show gaps in coverage; *actual* coverage in an area may differ substantially from map graphics, and may be affected by such things as terrain, foliage, buildings and other construction, motion, customer equipment, and network traffic. The legend states that AT&T does not guarantee coverage and its coverage maps are not intended to show actual

customer performance on the network, nor are they intended to show future network needs or build requirements inside or outside of AT&T's existing coverage areas.

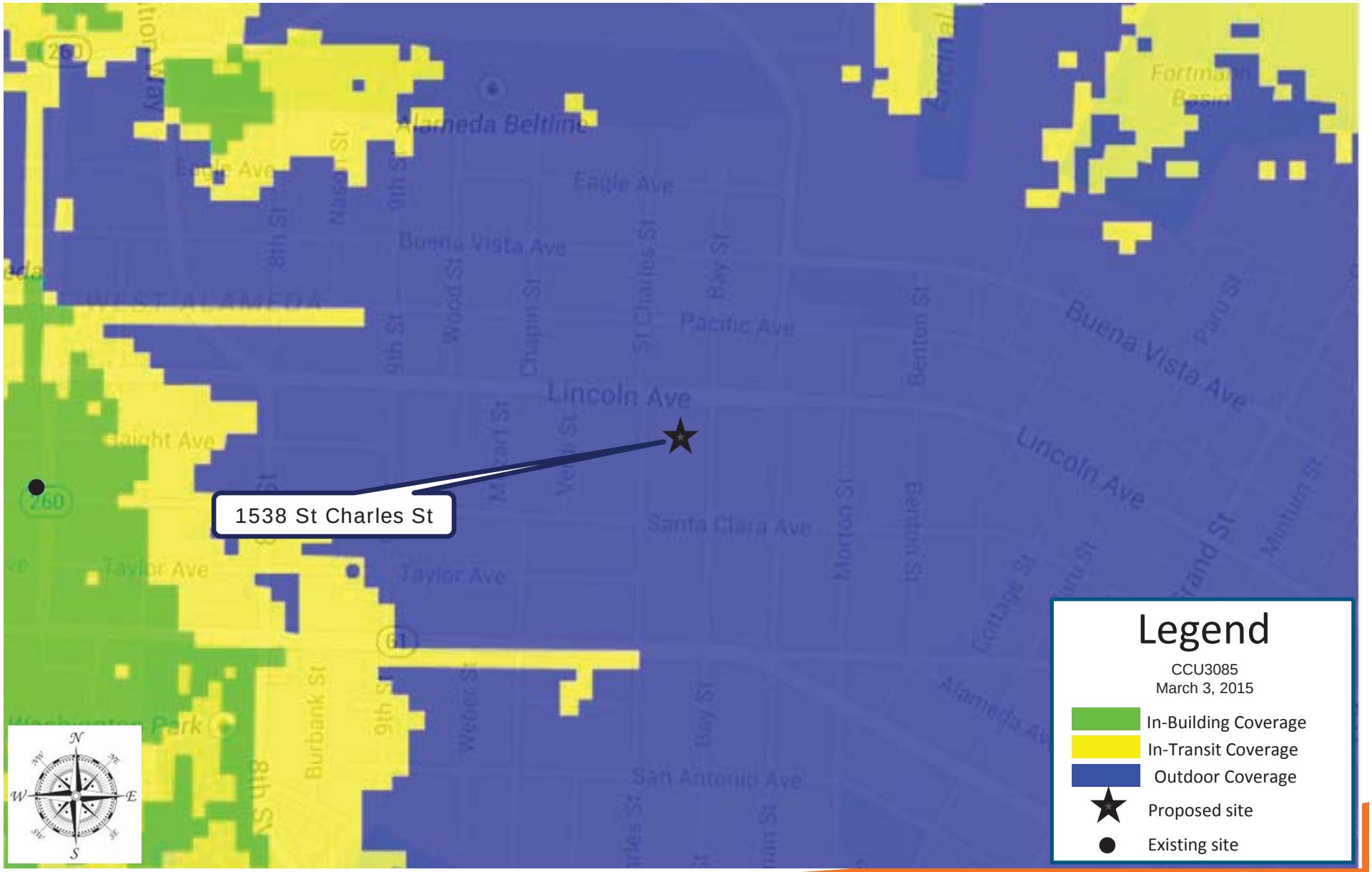
It is also important to note that the signal losses and service problems described above can and do occur for customers even at times when certain other customers in the same vicinity may be able to initiate and complete calls on AT&T's network (or other networks) on their wireless phones. These problems also can and do occur even when certain customers' wireless phones indicate "all bars" of signal strength on the handset.

The bars of signal strength that individual customers can see on their wireless phones are an imprecise and slow-to-update estimate of service quality. In other words, a customer's wireless phone can show "four bars" of signal strength, but that customer can still, at times, be unable to initiate voice calls, complete calls, or download data reliably and without service interruptions.

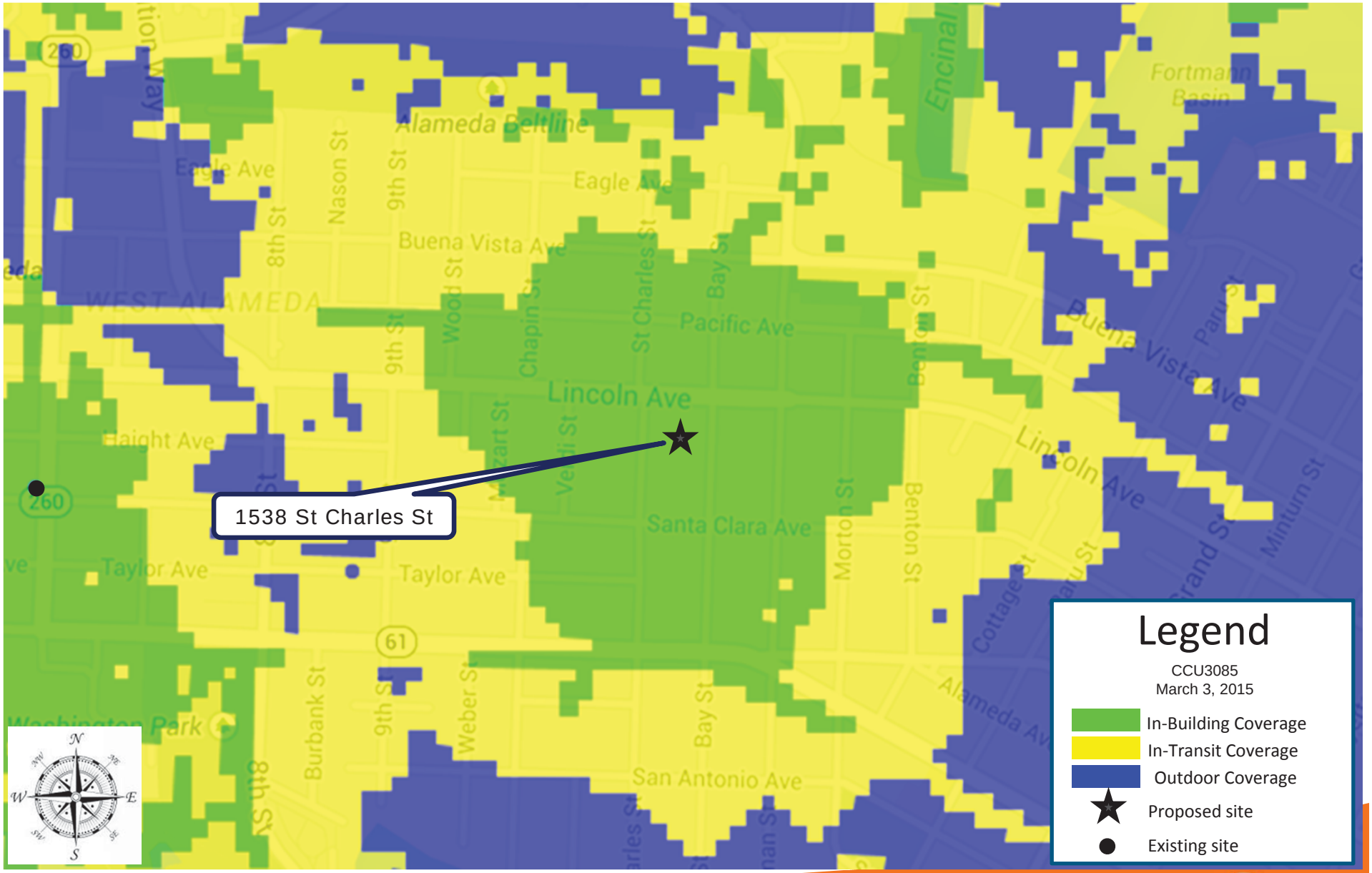
To determine where new or upgraded telecommunications facilities need to be located for the provision of reliable service in any area, AT&T's radio frequency engineers rely on far more complete tools and data sources than just signal strength from individual phones. AT&T creates maps incorporating signal strength that depict existing service coverage and service coverage gaps in a given area.

To rectify this significant gap in its service coverage, AT&T needs to locate a wireless facility in the immediate vicinity of the Property.

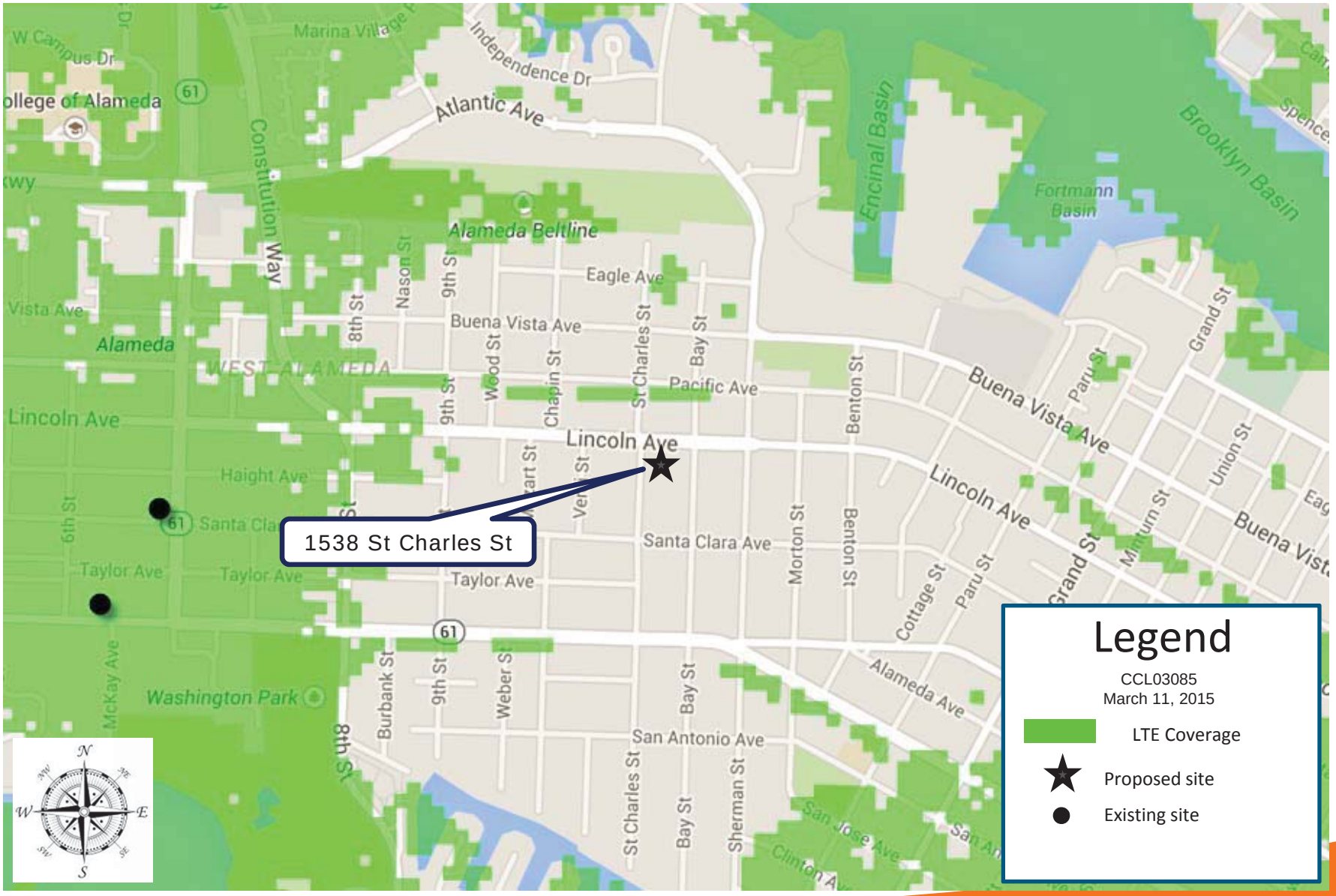
Without CCU3085 Coverage



With CCU3085 Coverage



Without CCL03085 Coverage



With CCL03085 Coverage

March 12, 2015

Deborah Diamond
Community Development Department
2263 Santa Clara Ave
Alameda, CA 94501

RE: **AT&T Telecom Facility**
AT&T Site ID: CCU3969 (FA 13323785)
Property Address: 1777 Shoreline Drive, Alameda, CA 94501
Project Number: PLN14-0731

Dear Ms. Diamond:

Please find the enclosed documents as supplemental material for the AT&T application for the proposed new telecommunications facility at 1777 Shoreline Drive (PLN14-0731).

- Revised RF Exposure Study
- Alternative Site Analysis
- RF Statement, with Propagation Maps

This application is subject to the FCC's 150-day shot clock. AT&T filed the application on December 9, 2014. The shot clock was tolled from the city's December 16, 2014 incomplete letter until AT&T's complete response on February 2, 2015. Thus, the city must take final action on AT&T's application no later than June 25, 2015 (Day 150). Please let us know as soon as possible if you calculate a different shot clock deadline.

Should you have any questions before, please feel free to contact me at 415-601-3194 or by e-mail at alex.orner@cortel-llc.com.

Sincerely,

Alex Orner, Site Acquisition Specialist
Cortel, Inc.
Authorized Representative for AT&T
415-601-3194 (cell)
alex.orner@cortel-llc.com

AT&T Mobility • Proposed Base Station (Site No. CCU3969)
1777 Shoreline Drive • Alameda, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of AT&T Mobility, a personal wireless telecommunications carrier, to evaluate the base station (Site No. CCU3969) proposed to be located at 1777 Shoreline Drive in Alameda, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

AT&T proposes to install directional panel antennas above the roof of the residential building located at 1777 Shoreline Drive in Alameda. The proposed operation will, together with the existing base station nearby, comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

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

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

General Facility Requirements

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

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

Computer Modeling Method

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

Site and Facility Description

The apartment complexes on Shoreline Drive in Alameda were visited by Mr. Brian Palmer, a qualified engineer employed by Hammett & Edison, Inc., during normal business hours on March 9, 2015. Four directional panel antennas for use by T-Mobile were observed high on the face of the three-story apartment building at the rear of the complex located at 1801 Shoreline Drive. The maximum power density level observed for a person at ground near the site was 1.7% of the most restrictive public limit, for the combined operation of the existing RF services at the site as installed and operating at that time. The measurement equipment used was a Narda Type NBM-520 Broadband Field Meter with Type EF-0391 Isotropic Broadband Electric Field Probe (Serial No. D-0698); the meter and probe were under current calibration by the manufacturer.

Based upon information provided by AT&T, including zoning drawings by Cortel, Inc., dated January 9, 2015, that carrier proposes to install twelve CCI Model HPA-45R-BUU-H6 directional panel antennas behind view screens to be constructed on the elevator penthouse above the roof of the three-story apartment building at the rear of the complex located at 1777 Shoreline Drive. The antennas would be mounted with up to 4° downtilt at an effective height of about 35½ feet above ground, 9 feet above the roof, and would be oriented in groups of four toward 25°T, 95°T, and 310°T. The maximum effective radiated power in any direction would be 16,190 watts, representing simultaneous operation at 3,860 watts for WCS, 4,650 watts for AWS, 4,360 watts for PCS, 1,000 watts for cellular, and 2,320 watts for 700 MHz service.

For the limited purpose of this study, the transmitting facilities of T-Mobile are assumed to be as follows:

Service	Maximum ERP	Antenna Model	Downtilt	Height
AWS	4,400 watts	Ericsson AIR21	2°	30 ft
PCS	2,200	Ericsson AIR21	2	30

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed AT&T operation by itself is calculated to be 0.048 mW/cm^2, which is 5.5% of the applicable public exposure limit. The maximum calculated cumulative level at ground, for the simultaneous operation of both carriers, is 7.2% of the public exposure limit. The maximum calculated cumulative level at the top-floor elevation of any nearby residence* is 28% of the public exposure limit. The maximum calculated cumulative level at any nearby school building† is 6.3% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels. Levels are calculated to exceed the applicable public exposure limit on the roof of the subject building, in front of the antennas.

Recommended Mitigation Measures

It is recommended that the outdoor roof access stairs continue to be kept locked, so that the AT&T antennas are not accessible to unauthorized persons. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training be provided to all authorized personnel who have access to the roof, including employees and contractors of AT&T and of the property owner. No access within 28 feet directly in front of the antennas themselves, such as might occur during maintenance work above the roof, should be allowed while the base station is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Marking a blue demarcation line at the stair landing below the top of the stairs, to indicate that certain areas above that point are calculated to exceed the FCC public limit, and posting explanatory signs‡ at the roof access stairs and on the screens in front of the antennas, as shown in Figure 3, 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.

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* Located at least 100 feet away, based on photographs from Google Maps.
† Located at least 130 feet away, based on photographs from Google Maps.
‡ Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the base station proposed by AT&T Mobility at 1777 Shoreline Drive in Alameda, California, can comply with the prevailing standards for limiting human exposure to radio frequency energy and, therefore, need 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. Locking the roof access stairs is recommended to establish compliance with public exposure limits; training authorized personnel, marking roof areas, and posting explanatory signs are recommended to establish compliance with occupational exposure limits.

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, 2015. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

William F. Hammett, P.E.
707/996-5200

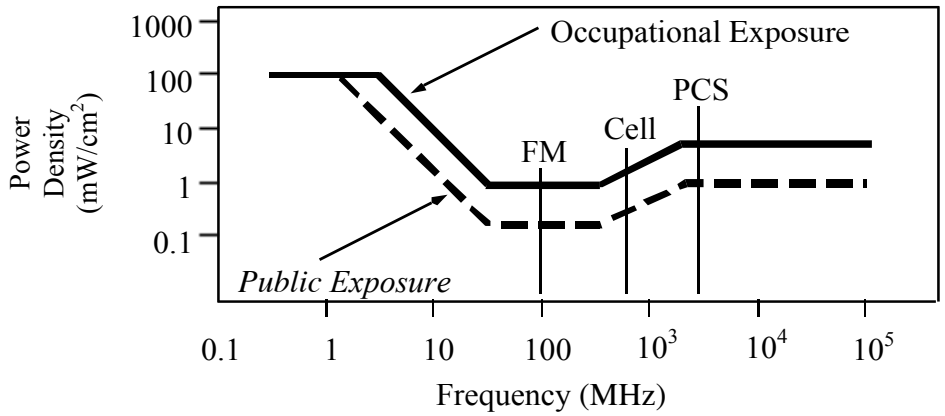
March 12, 2015

FCC Radio Frequency Protection Guide

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

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

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



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

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

Near Field.

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

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

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

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

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

Far Field.

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

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

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

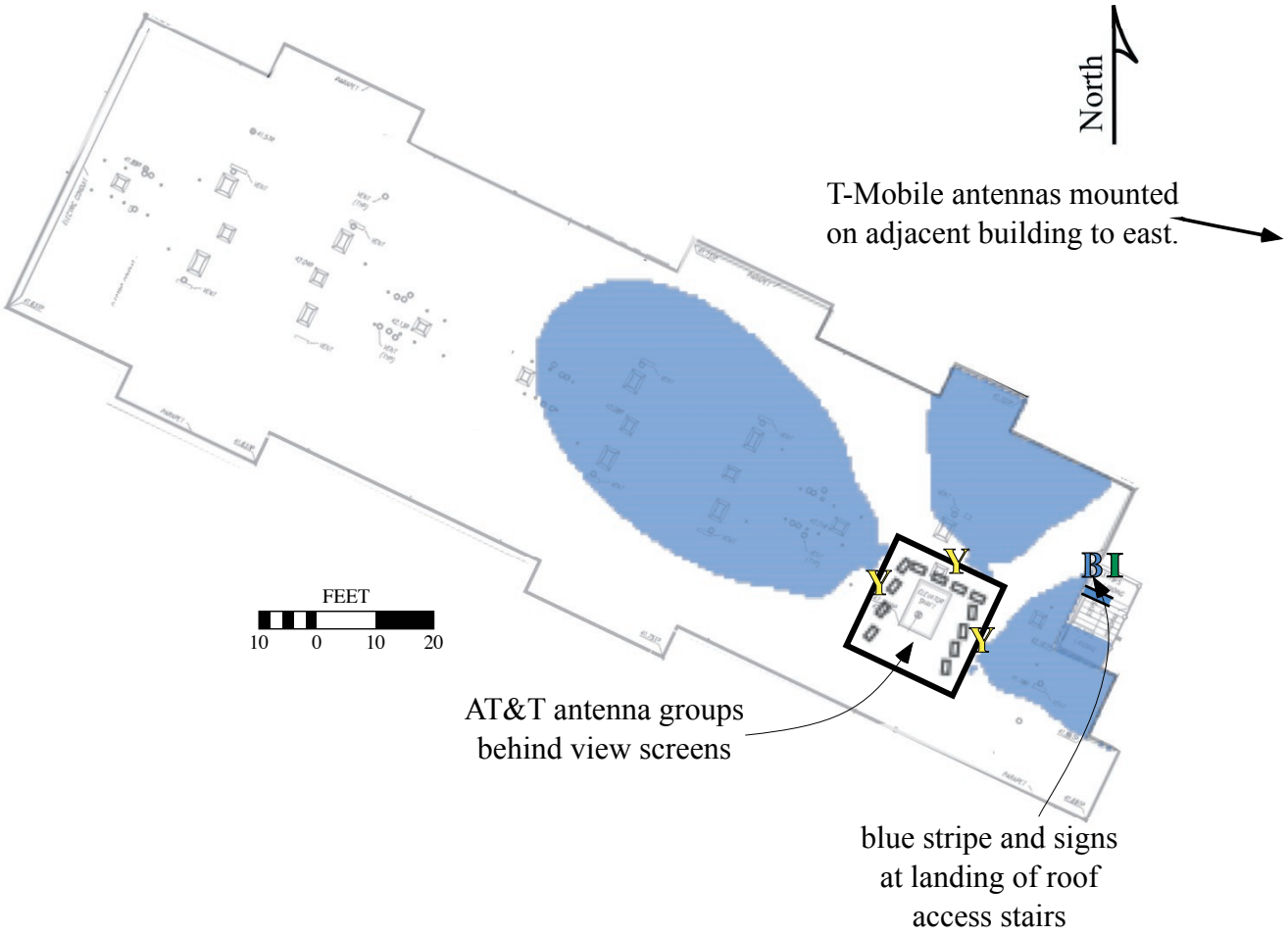
The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units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

AT&T Mobility • Base Station No. CCU3969
1777 Shoreline Drive Street • Alameda, California

Calculated RF Exposure Levels on Roof

Recommended Mitigation Measures

- Lock all roof access locations
- Mark boundaries (if shown)
- Post explanatory signs
- Provide training



Notes:
Base drawing from Cortel, Inc., dated January 9, 2015.
Calculations performed according to OET Bulletin 65, August 1997.
Training should be provided to all persons with access to the roof.

Legend:	Less Than Public	Exceeds Public	Exceeds Occupational	Exceeds 10x Occupational
Shaded color	N/A			
Boundary marking	N/A			
Sign type	I - Green INFORMATION	B - Blue NOTICE	Y - Yellow CAUTION	O - Orange WARNING

Alternative Sites Analysis

AT&T Mobility

Wireless Communications Facility
at
1777 Shoreline Drive
Alameda, CA

Site ID: CCU3969

Introduction

New Cingular Wireless PCS, LLC d/b/a AT&T Mobility ("AT&T") has a significant gap in its service coverage in this portion of Alameda. AT&T proposes to install a stealth wireless communications facility ("WCF") on the roof of this apartment building ("Proposed Facility") as a means to fill this gap in coverage. The Proposed Facility consists of twelve panel antennas (three sectors of four antennas) mounted around an existing elevator shaft and surrounded by a stealth enclosure designed to match the character of the existing structure, with the related equipment to be housed in cabinets at ground level concealed behind a CMU wall designed to match the building. The Proposed Facility is designed to minimize visual impacts, blend within the existing environment, and obscure the antennas. The Proposed Facility is the least intrusive means to fill the significant gap of the alternatives investigated by AT&T as explained below.

Objective

AT&T Mobility has identified a significant gap in its service coverage in Alameda, in an area roughly bordered by Dayton Avenue to the north, Willow Street to the east, the Pacific Ocean to the south, and Shell Gate Road to the west. The Proposed Facility will improve coverage to the surrounding residential neighborhoods with over 380 homes, a park, schools and various other points of interest in the immediate vicinity. The service coverage in this portion of Alameda is described in the accompanying Radio Frequency Statement. The most recent traffic data available from Google Earth Pro for this area indicates that the average traffic along Otis Drive near Grand Street was 7,156 vehicles per day in 2012.

Methodology and Zoning Criteria

The location of a WCF to fill a significant gap in coverage is dependent upon topography, zoning, existing structures, collocation opportunities, available utilities, access, and a willing landlord. Wireless communication is line-of-sight technology that requires WCFs to be in relatively close proximity to the wireless handsets to be served.

AT&T seeks to fill a significant gap in service coverage using the least intrusive means under the values of the community as expressed in the Alameda Municipal Code ("Code"). Thus, AT&T is guided by Chapter 30-21 of the Code regarding use permits. AT&T also looks to the city's prior approvals of WCFs as guidance for acceptable installations. For example, there is an existing T-Mobile WCF on the rooftop of the adjacent building from the Proposed Facility. Finally, AT&T recently was required to vacate its existing site on the nearby school that serves this area. The gap in coverage results from the need to decommission that site. Thus, AT&T has sought non-school sites in the area to replace the necessary service coverage.

Analysis

AT&T investigated potential alternative designs of and alternative sites for facilities to fill the identified coverage gap in this portion of Alameda. There are very few available alternatives in this portion of the city due to the number of single-family homes and lack of commercial properties. The following map shows the locations of the Proposed Facility and the alternative sites that AT&T investigated. The alternatives are discussed in the analysis that follows.

Location of Candidate Sites

Proposed Facility – 1777 Shoreline Drive

Existing:

Proposed:

Conclusion: Based upon location, a willing landlord and the superior coverage as shown in the proposed coverage map included in AT&T's Radio Frequency Statement, the Proposed Facility is the least intrusive means for AT&T to meet its service coverage objective.

This apartment building is located along Shoreline Drive. The adjacent building in the same complex houses an approved T-Mobile WCF. AT&T proposes to locate its Proposed Facility on this rooftop by installing a wall around the existing elevator shaft to completely screen its antennas. The result will be an unnoticeable WCF with a very minor change to the appearance of the rooftop. The related equipment will be located at ground level and it will also be unnoticeable behind a CMU wall designed and painted to match the building. The Proposed Facility will be completely screened and the faux penthouse will blend in with the building and surroundings. The location and appearance of the Proposed Facility complies with the Code and meets city design criteria. The Proposed Facility is the least intrusive means to fill the significant gap of the alternatives investigated by AT&T.

Alternative No. 1 – 1701, 1705, 1711 Shoreline Drive

Conclusion: More intrusive than Proposed Facility

This set of apartment buildings is located adjacent to Wood Middle School. AT&T selected the Proposed Facility as less intrusive because it is adjacent to an existing approved WCF on the same property and it is further from the school than these buildings.

Alternative No. 2 – Wood Middle School

Conclusion: Unavailable

This school recently terminated the lease allowing AT&T to operate its WCF here. Last year, the Alameda Unified School District Board adopted a resolution to formally oppose WCFs on school property. This site is no longer available to AT&T, which is the reason AT&T is now seeking to relocate to the Proposed Facility.

Alternative No. 3 – Donald Lum Elementary School

Conclusion: Unavailable

This school is located adjacent to Wood Elementary School. Given the new policy of the Alameda Unified School District prohibiting WCFs on school property, and direction from the school district to remove WCFs from schools in Alameda, this site is not available.

Alternative No. 4 – Rittler Park

Conclusion: More intrusive than Proposed Facility

This city park is located adjacent to Wood Middle School. Given its location immediately adjacent to the school, and the intense opposition to locating WCFs on school property, this site is more intrusive than the Proposed Facility. In addition, a WCF here would need to be a freestanding structure that might stick out more than the proposed stealth rooftop installation.

Alternative No. 5 – Shoreline

Conclusion: More intrusive than Proposed Facility

The shoreline offers no opportunity to conceal a WCF. A WCF here would be much more visible and intrusive than the Proposed Facility.

Conclusion

The Proposed Facility is the least intrusive means by which AT&T can close its significant service coverage objective in this portion of Alameda.

AT&T Mobility Radio Frequency Statement
1777 Shoreline Drive, Alameda, CA
Site ID: CCU3969

STATEMENT OF MICHAEL QUINTO

I am the AT&T radio frequency engineer assigned to the proposed wireless communications facility at 1777 Shoreline Drive, Alameda, CA (the "Property"). Based on my personal knowledge of the Property and with AT&T's wireless network, as well as my review of AT&T's records with respect to the Property and its wireless communications facilities in the surrounding area, I have concluded that the work associated with this permit request is needed to close a significant service coverage gap in an area roughly bordered by Dayton Avenue to the north, Willow Street to the east, the Pacific Ocean to the south, and Shell Gate Road to the west. The service coverage gap will exist once AT&T decommissions its existing wireless communications facility at a school. To remedy this service coverage gap, AT&T will need to construct a new wireless communications facility.

The service coverage gap will be caused by inadequate infrastructure in the area. As explained further in Exhibit 1, AT&T's existing facilities cannot adequately serve its customers in the desired area of coverage, let alone address rapidly increasing data usage. The site will not only close the gap in coverage and help address rapidly increasing data usage driven by smart phone and tablet usage, but it will also include 4G LTE service coverage. This site is part of an effort to fully deploy 4G LTE technology in the area.

AT&T uses industry standard propagation tools to identify the areas in its network where signal strength is too weak to provide reliable in-building service quality. This information is developed from many sources including terrain and clutter databases, which simulate the environment, and propagation models that simulate signal propagation in the presence of terrain and clutter variation. AT&T designs and builds its wireless network to ensure customers receive reliable in-building service quality. In-building service is critical as customers increasingly use their mobile phones as their primary communication device (approximately 44% of American households are now wireless only) and rely on their mobile phones to do more (E911, GPS, web access, text, etc.).

Exhibit 2 is a map of the existing UMTS 3G service coverage (without the proposed installation at the Property) in the area at issue. It includes service coverage provided by existing AT&T sites. The green shaded areas depict areas within a signal strength range that provide acceptable in-building service coverage. In-building coverage means customers are able to place or receive a call on the ground floor of a building. The yellow shaded areas depict areas within a signal strength range that provide acceptable in-vehicle service coverage. In these areas, an AT&T customer should be able to successfully place or

receive a call within a vehicle. The blue shading depicts areas within a signal strength range in which a customer might have difficulty receiving a consistently acceptable level of service. The quality of service experienced by any individual customer can differ greatly depending on whether that customer is indoors, outdoors, stationary, or in transit. Any area in the yellow or blue category is considered inadequate service coverage and constitutes a service coverage gap.

Exhibit 3 to this Statement is a map that predicts service coverage based on signal strength in the vicinity of the Property if antennas are placed as proposed in the application. As shown by this map, placement of the equipment at the Property closes the significant UMTS 3G service coverage gap.

In addition to these 3G wireless service gap issues, AT&T is in the process of deploying its 4G LTE service in Alameda with the goal of providing the most advanced personal wireless experience available to residents of the county. 4G LTE is capable of delivering speeds up to 10 times faster than industry-average 3G speeds. LTE technology also offers lower latency, or the processing time it takes to move data through a network, such as how long it takes to start downloading a webpage or file once you've sent the request. Lower latency helps to improve the quality of personal wireless services. What's more, LTE uses spectrum more efficiently than other technologies, creating more space to carry data traffic and services and to deliver a better overall network experience. Attached Exhibits 4 and 5 are LTE maps that illustrate how the proposed site closes the significant service coverage gap in LTE service coverage. Moreover, it is important to note that as existing customers migrate to 4G LTE, the LTE technology will provide the added benefit of reducing 3G data traffic, which can contribute to the significant service coverage gap on the UMTS (3G) network during peak usage periods.

I have a Bachelor of Science Degree in electronics and communications engineering and have worked as an engineering expert in the wireless communications industry for over 14 years.

Michael Quinto
AT&T Mobility Services LLC
Network, Planning & Engineering
RAN Design & RF Engineering

March 11, 2015

EXHIBIT 1

Prepared by AT&T Mobility

AT&T's digital wireless technology converts voice or data signals into a stream of digits to allow a single radio channel to carry multiple simultaneous signal transmissions. This technology allows AT&T to offer services such as secured transmissions and enhanced voice, high-speed data, texting, video conferencing, paging and imaging capabilities, as well as voicemail, visual voicemail, call forwarding and call waiting that are unavailable in analog-based systems. With consumers' strong adoption of smartphones, customers now have access to wireless broadband applications, which consumers utilize at a growing number.

Mobile data traffic in the United States grew by 75,000 percent over a six-year span, from 2001-2006. And in the seven years that followed, mobile data traffic on AT&T's national wireless network increased more than 50,000 percent *(from January 2007 through December 2013).* AT&T expects total mobile data volume to ***grow 8x-10x over the next five years***. To put this estimate in perspective, all of AT&T Mobility's mobile traffic during 2010 would be equal to only six or seven weeks of mobile traffic volume in 2015. The FCC noted that U.S. mobile data traffic grew almost 300% in 2011, and driven by 4G LTE smartphones and tablets, traffic is projected to grow an additional 16-fold by 2016.

Mobile devices using AT&T's technology transmit a radio signal to antennas mounted on a tower, pole, building, or other structure. The antenna feeds the signal to electronic devices housed in a small equipment cabinet, or base station. The base station is connected by microwave, fiber optic cable, or ordinary copper telephone wire to the Radio Network Controller, subsequently routing the calls and data throughout the world.

The operation of AT&T's wireless network depends upon a network of wireless communications facilities. The range between wireless facilities varies based on a number of factors. The range between AT&T mobile telephones and the antennas in and nearby Alameda, for example, is particularly limited as a result of challenges such as blockage from buildings, trees, and other obstructions as well as the limited capacity of existing facilities.

To provide effective, reliable, and uninterrupted service to AT&T customers in their cars, public transportation, home, and office, without interruption or lack of access, coverage must overlap in a grid pattern resembling a honeycomb.

In the event that AT&T is unable to construct or upgrade a wireless communications facility within a specific geographic area, so that each site's coverage reliably overlaps with at least one adjacent facility, AT&T will not be able to provide adequate personal wireless service to its customers within that area. Some consumers will experience an abrupt loss of service. Others will be unable to obtain reliable service, particularly if they are placing a call inside a building.

Service problems occur for customers even in locations where the coverage maps on AT&T's "Coverage Viewer" website appear to indicate that coverage is available. As the legend to the Coverage Viewer maps indicates, these maps depict a high-level *approximation* of coverage, which may not show gaps in coverage; *actual* coverage in an area may differ substantially from map graphics, and may be affected by such things as terrain, foliage, buildings and other construction, motion, customer equipment, and network traffic. The legend states that AT&T does not guarantee coverage and its coverage maps are not intended to show actual

customer performance on the network, nor are they intended to show future network needs or build requirements inside or outside of AT&T's existing coverage areas.

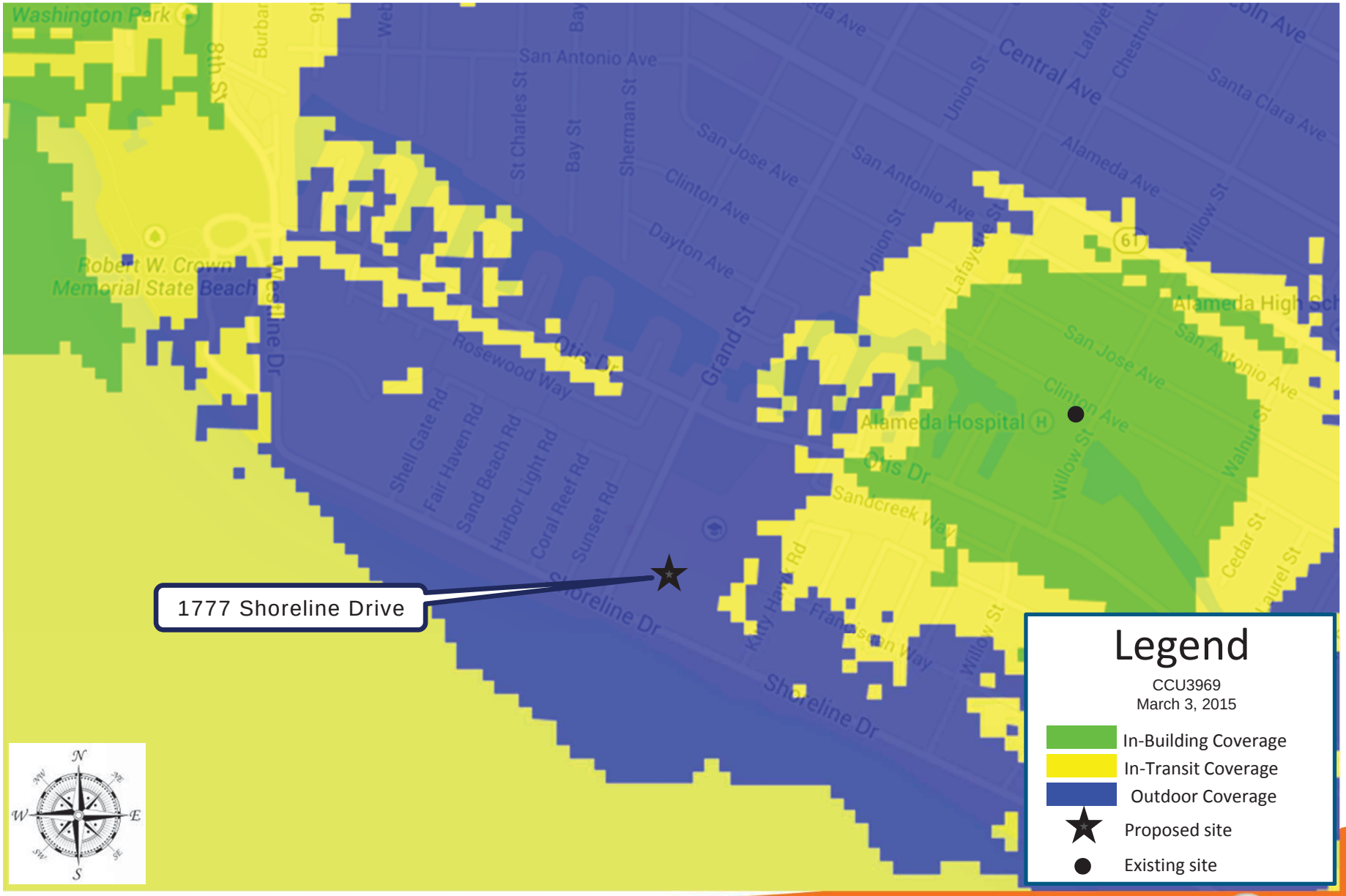
It is also important to note that the signal losses and service problems described above can and do occur for customers even at times when certain other customers in the same vicinity may be able to initiate and complete calls on AT&T's network (or other networks) on their wireless phones. These problems also can and do occur even when certain customers' wireless phones indicate "all bars" of signal strength on the handset.

The bars of signal strength that individual customers can see on their wireless phones are an imprecise and slow-to-update estimate of service quality. In other words, a customer's wireless phone can show "four bars" of signal strength, but that customer can still, at times, be unable to initiate voice calls, complete calls, or download data reliably and without service interruptions.

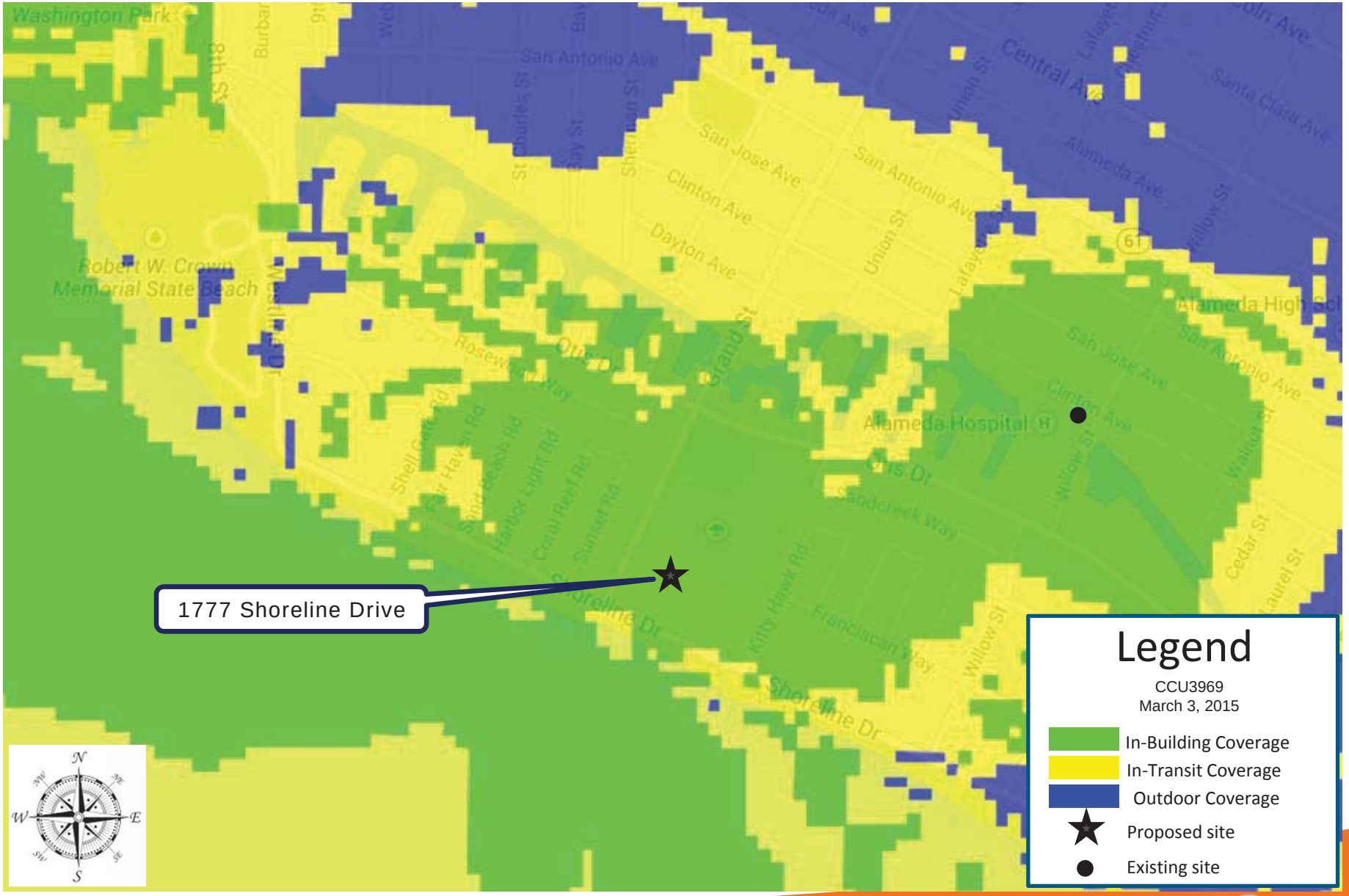
To determine where new or upgraded telecommunications facilities need to be located for the provision of reliable service in any area, AT&T's radio frequency engineers rely on far more complete tools and data sources than just signal strength from individual phones. AT&T creates maps incorporating signal strength that depict existing service coverage and service coverage gaps in a given area.

To rectify this significant gap in its service coverage, AT&T needs to locate a wireless facility in the immediate vicinity of the Property.

Without CCU3969 Coverage



With CCU3969 Coverage



Without CCL03969 Coverage

With CCL03969 Coverage

Cortel

March 12, 2015

Deborah Diamond
Community Development Department
2263 Santa Clara Ave
Alameda, CA 94501

RE: **AT&T Telecom Facility**
AT&T Site ID: CCU3085 (FA 13323784)
Property Address: 1538 St. Charles Street, Alameda, CA 94501
Project Number: PLN14-0729

Dear Ms. Diamond:

Please find the enclosed documents as supplemental material for the AT&T application for the proposed new telecommunications facility at 1538 St. Charles Street (PLN14-0729).

- Revised RF Exposure Study
- Alternative Site Analysis
- RF Statement, with Propagation Maps

This application seeks permission to collocate AT&T's proposed wireless telecommunications facility on the same rooftop as an existing wireless telecommunications facility, so the FCC's 90-day shot clock applies. AT&T filed the application on December 8, 2014. The shot clock was tolled from the city's December 16, 2014 incomplete letter until AT&T's complete response on February 2, 2015. Thus, the city must take final action on AT&T's application no later than April 25, 2015 (Day 90). Please let us know as soon as possible if you calculate a different shot clock deadline.

Should you have any questions before, please feel free to contact me at 415-601-3194 or by e-mail at alex.orner@cortel-llc.com.

Sincerely,

Alex Orner, Site Acquisition Specialist
Cortel, Inc.
Authorized Representative for AT&T
415-601-3194 (cell)
alex.orner@cortel-llc.com

Alternative Sites Analysis

AT&T Mobility

Wireless Communications Facility
at
1538 Saint Charles Street
Alameda, CA

Site ID: CCU3085

Introduction

New Cingular Wireless PCS, LLC d/b/a AT&T Mobility ("AT&T") has a significant gap in its service coverage in this portion of Alameda. AT&T proposes to collocate a stealth wireless communications facility ("WCF") on the roof of this apartment building property ("Proposed Facility") as a means to fill this gap in coverage. The Proposed Facility consists of nine panel antennas (three sectors of three antennas) mounted on the roof an fully concealed behind a 10' tall stealth enclosure designed as a faux penthouse to match the building's exiting penthouse, with the related equipment to be housed within a 102.7 square foot enclosure adjacent to T-Mobile's existing wireless telecommunication equipment in the garage. The Proposed Facility will be located about 25-26 feet from T-Mobile's existing WCF on this roof. The Proposed Facility is designed to minimize visual impacts, blend within the existing environment, and obscure the antennas. The Proposed Facility is the least intrusive means to fill the significant gap of the alternatives investigated by AT&T as explained below.

Objective

AT&T Mobility has identified a significant gap in its service coverage in Alameda, in an area roughly bordered by Buena Vista Avenue to the north, Benton Street to the east, Central Avenue to the south, and Wood Street to the west. The Proposed Facility will improve coverage to the surrounding residential neighborhoods with over 400 homes and a significant commercial area along Lincoln Avenue and vicinity, a parks, schools, places of worship and various other points of interest in the immediate vicinity. The service coverage in this portion of Alameda is described in the accompanying Radio Frequency Statement. The most recent traffic data available from Google Earth Pro for this area indicates that the average traffic along Central Avenue near Bay Street was 10,100 vehicles per day in 2012.

Methodology and Zoning Criteria

The location of a WCF to fill a significant gap in coverage is dependent upon topography, zoning, existing structures, collocation opportunities, available utilities, access, and a willing landlord. Wireless communication is line-of-sight technology that requires WCFs to be in relatively close proximity to the wireless handsets to be served.

AT&T seeks to fill a significant gap in service coverage using the least intrusive means under the values of the community as expressed in the Alameda Municipal Code ("Code"). Thus, AT&T is guided by Chapter 30-21 of the Code regarding use permits. AT&T also looks to the city's prior approvals of WCFs as guidance for acceptable installations. For example, there is an existing T-Mobile WCF on this same rooftop as the Proposed Facility. Finally, AT&T recently was required to vacate its existing site on the nearby school that serves this area. The gap in coverage results from the need to decommission that site. Thus, AT&T has sought non-school sites in the area to replace the necessary service coverage.

Analysis

AT&T investigated potential alternative designs of and alternative sites for facilities to fill the identified coverage gap in this portion of Alameda. The following is a map showing the locations of the Proposed Facility and the alternative sites that AT&T investigated. The alternatives are discussed in the analysis that follows.

Location of Candidate Sites

Proposed Facility – 1538 Saint Charles Street

Existing:

Proposed:

Conclusion: Based upon location, a willing landlord and the superior coverage as shown in the proposed coverage map included in AT&T's Radio Frequency Statement, the Proposed Facility is the least intrusive means for AT&T to meet its service coverage objective.

This four-story apartment building just south of Lincoln Avenue currently houses an approved T-Mobile WCF that consists of visible antennas on the side of a rooftop penthouse. AT&T proposes to collocate the Proposed Facility on this rooftop by installing a faux penthouse to completely screen its antennas, with equipment located in a garage adjacent to T-Mobile's equipment. The Proposed Facility will be completely screened and the faux penthouse will blend in with the building and surroundings. The Proposed Facility is the least intrusive means to fill the significant gap of the alternatives investigated by AT&T.

Alternative No. 1 – Mastick Senior Center, 1155 Santa Clara Avenue

Conclusion: More intrusive than Proposed Facility

This senior residential property houses a Sprint monopole. This is a feasible option, but the Proposed Facility offers a better opportunity for minimal stealth construction and design consistent with the city Code.

Alternative No. 2 – Pagano's Hardware, 1100 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This store is a relatively short building. A WCF here would not close AT&T's significant service coverage gap due to the low height and because the adjacent four-story apartment building (where the Proposed Facility is to be located) would block radio frequency signals. In addition, this building does not offer a collocation opportunity.

Alternative No. 3 – Vines Cafe & Gallery, 1113 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This commercial building is relatively short and the roof would not accommodate a WCF. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 4 – Lee Chiropractic, 1204 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

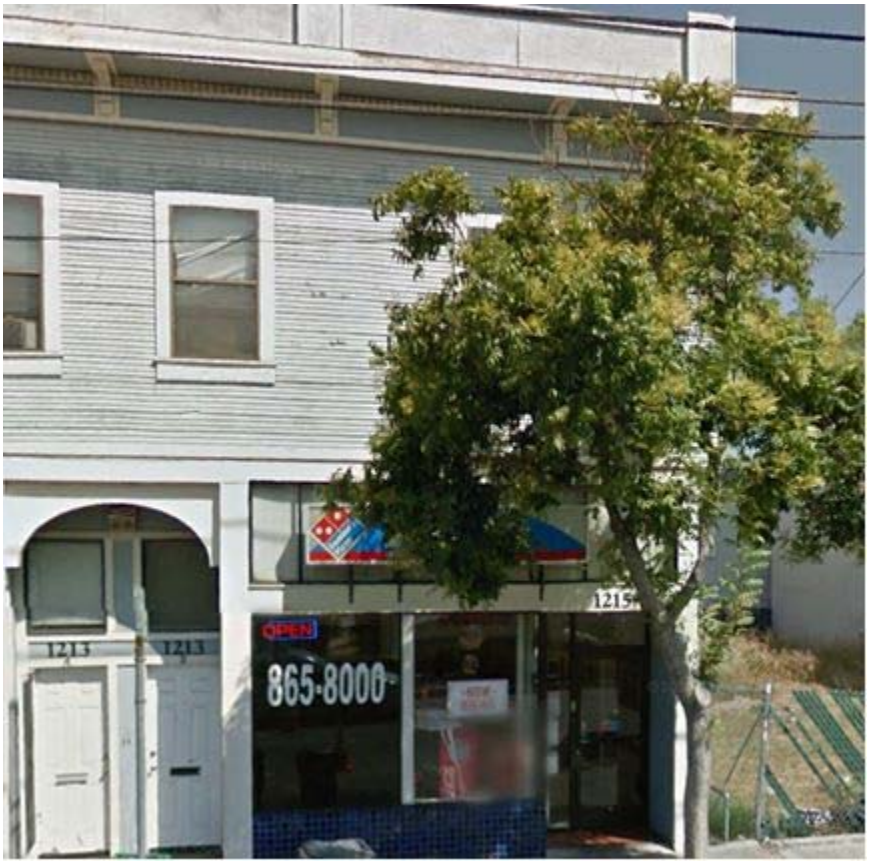
This two-story office building is relatively short, and it does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 5 – Intensity Martial Arts, 1209 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This two-story commercial use does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 6 – Domino's Pizza, 1215 Lincoln Avenue



Conclusion: Not feasible; more intrusive than Proposed Facility

This two-story commercial use does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 7 – The Market Spot, 1200 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This two-story market does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 8 –Faith Bible Church, 1206 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This short church does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 9 – Bay Stamp & Engraving, 1222 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This two-story building does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a rooftop WCF on this property would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 10 – Alameda Chapel, 1001 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This is a very short church building. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 11 – Seventh Day Adventist Church, 1515 Verdi Street

Conclusion: Not available; more intrusive than Proposed Facility

This church is located near the edge of the service coverage objective to the southwest of the Proposed Facility. This property is not available because Seventh Day Adventists churches do not lease space for WCFs. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Conclusion

The Proposed Facility is the least intrusive means by which AT&T can close its significant service coverage objective in this portion of Alameda.

Cortel

March 12, 2015

Deborah Diamond
Community Development Department
2263 Santa Clara Ave
Alameda, CA 94501

RE: **AT&T Telecom Facility**
AT&T Site ID: CCU3085 (FA 13323784)
Property Address: 1538 St. Charles Street, Alameda, CA 94501
Project Number: PLN14-0729

Dear Ms. Diamond:

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- Alternative Site Analysis
- RF Statement, with Propagation Maps

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Should you have any questions before, please feel free to contact me at 415-601-3194 or by e-mail at alex.orner@cortel-llc.com.

Sincerely,

Alex Orner, Site Acquisition Specialist
Cortel, Inc.
Authorized Representative for AT&T
415-601-3194 (cell)
alex.orner@cortel-llc.com

AT&T Mobility • Proposed Base Station (Site No. CCU3085)
1538 St. Charles Street • Alameda, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of AT&T Mobility, a personal wireless telecommunications carrier, to evaluate the base station (Site No. CCU3085) proposed to be located at 1538 St. Charles Street in Alameda, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

AT&T proposes to install directional panel antennas above the roof of the residential building located at 1538 St. Charles Street in Alameda. The proposed operation will, together with the existing base stations at the site and nearby, comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

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

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

General Facility Requirements

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

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

Computer Modeling Method

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

Site and Facility Description

The site at 1538 St. Charles Street in Alameda was visited by Mr. Brian Palmer, a qualified engineer employed by Hammett & Edison, Inc., during normal business hours on March 9, 2015. Six directional panel antennas, reportedly for use by T-Mobile, were observed on the stairwell penthouse above the roof of the four-story residential building located at that address. Observed on top of a light pole in a parking lot about 400 feet to the south were antennas for use by Sprint. The maximum power density level observed for a person at ground near the site was 2.7% of the most restrictive public limit, for the combined operation of existing RF services at the site as installed and operating at that time. The measurement equipment used was a Narda Type NBM-520 Broadband Field Meter with Type EF-0391 Isotropic Broadband Electric Field Probe (Serial No. D-0698); the meter and probe were under current calibration by the manufacturer.

Based upon information provided by AT&T, including zoning drawings by Cortel, Inc., dated January 22, 2015, it is proposed to install nine Andrew Model SBNHH-1D65B directional panel antennas within a view screen enclosure to be constructed near the center of the roof of the building. The antennas would be mounted with up to 8° downtilt at an effective height of about 47 feet above ground, 7 feet above the roof, and would be oriented in groups of three toward 60°T, 180°T, and 300°T, to provide service in all directions. The maximum effective radiated power in any direction would be 16,780 watts, representing simultaneous operation at 3,600 watts for WCS, 4,330 watts for AWS, 5,970 watts for PCS, 1,000 watts for cellular, and 1,880 watts for 700 MHz service.

For the limited purpose of this study, the transmitting facilities of the existing carriers are assumed to be as follows:

Operator	Service	Maximum ERP	Antenna Model	Downtilt	Height
T-Mobile	AWS	4,400 watts	Ericsson AIR21	2°	46 ft
	PCS	2,200	Ericsson AIR21	2	46
Sprint	BRS	1,500	DHHTT65B-3XR	6	43
	PCS	5,500	DHHTT65B-3XR	2	43
	SMR	430	DHHTT65B-3XR	2	43

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed AT&T operation by itself is calculated to be 0.049 mW/cm^2, which is 5.0% of the applicable public exposure limit. The maximum calculated cumulative level at ground, for the simultaneous operation of all those carriers, is 8.1% of the public exposure limit. The maximum calculated cumulative level at any nearby building* is 9.5% of the public limit. The maximum calculated cumulative level at the second-floor elevation of any nearby residence† is 7.8% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels. Levels are calculated to exceed the applicable exposure limits on the roof of the subject building, in front of the antennas.

Recommended Mitigation Measures

It is recommended that the roof access door be fitted with an alarmed "panic bar," so that the antennas on the roof are not accessible to unauthorized persons. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training be provided to all authorized personnel who have access to the roof, including employees and contractors of the wireless carriers and of the property owner. No access within 10 feet directly in front of the antennas themselves, such as might occur during maintenance work on the roof, should be allowed while the base stations are in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Marking yellow demarcation lines with paint on the roof, to identify areas calculated to exceed the FCC occupational limit, and posting explanatory signs‡ at the roof access door, next to the demarcation lines, and at the antennas, as shown in Figure 3, would be sufficient to meet FCC-adopted guidelines. Similar measures may already be in place for T-Mobile.

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* Located at least 17 feet away, based on the drawings.

† Located at least 50 feet away, based on photographs from Google Maps.

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

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the base station proposed by AT&T Mobility at 1538 St. Charles Street in Alameda, California, can comply with the prevailing standards for limiting human exposure to radio frequency energy and, therefore, need not for this reason cause a significant impact on the environment. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations. Locking the roof access door is recommended to establish compliance with public exposure limits; training authorized personnel, painting demarcation lines, and posting explanatory signs are recommended to establish compliance with occupational exposure limits.

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, 2015. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

William F. Hammett, P.E.
707/996-5200

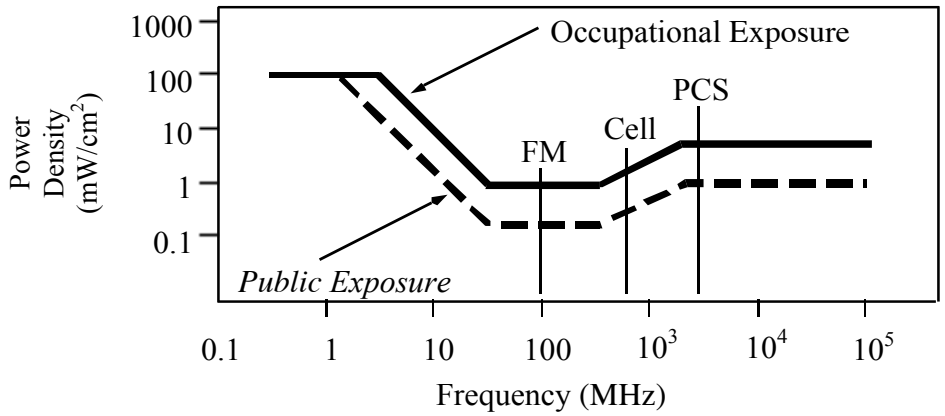
March 12, 2015

FCC Radio Frequency Protection Guide

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

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

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



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

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

Near Field.

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

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

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

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

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

Far Field.

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

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

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

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

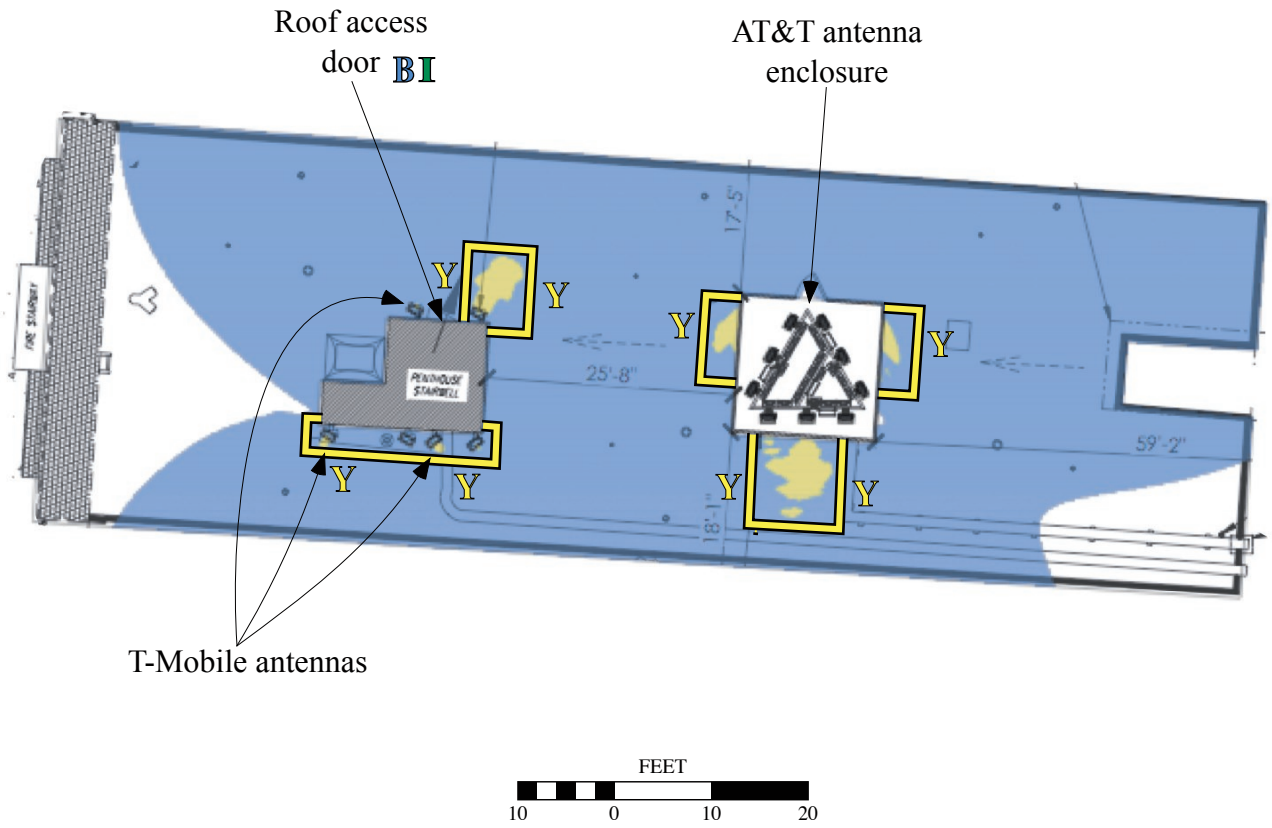
AT&T Mobility • Proposed Base Station (Site No. CCU3085)
1538 St. Charles Street • Alameda, California

Calculated RF Exposure Levels on Roof
for Proposed AT&T plus Existing T-Mobile

Recommended Mitigation Measures

- Lock all roof access locations
- Mark boundaries (if shown)
- Post explanatory signs
- Provide training

North



Notes:
Base drawing from Cortel, Inc., dated January 22, 2015.
Calculations performed according to OET Bulletin 65, August 1997.
Training should be provided to all persons with access to the roof.

Legend:	Less Than Public	Exceeds Public	Exceeds Occupational	Exceeds 10x Occupational
Shaded color	N/A			
Boundary marking	N/A			
Sign type	I - Green INFORMATION	B - Blue NOTICE	Y - Yellow CAUTION	O - Orange WARNING

Alternative Sites Analysis

AT&T Mobility

Wireless Communications Facility
at
1538 Saint Charles Street
Alameda, CA

Site ID: CCU3085

Introduction

New Cingular Wireless PCS, LLC d/b/a AT&T Mobility ("AT&T") has a significant gap in its service coverage in this portion of Alameda. AT&T proposes to collocate a stealth wireless communications facility ("WCF") on the roof of this apartment building property ("Proposed Facility") as a means to fill this gap in coverage. The Proposed Facility consists of nine panel antennas (three sectors of three antennas) mounted on the roof an fully concealed behind a 10' tall stealth enclosure designed as a faux penthouse to match the building's exiting penthouse, with the related equipment to be housed within a 102.7 square foot enclosure adjacent to T-Mobile's existing wireless telecommunication equipment in the garage. The Proposed Facility will be located about 25-26 feet from T-Mobile's existing WCF on this roof. The Proposed Facility is designed to minimize visual impacts, blend within the existing environment, and obscure the antennas. The Proposed Facility is the least intrusive means to fill the significant gap of the alternatives investigated by AT&T as explained below.

Objective

AT&T Mobility has identified a significant gap in its service coverage in Alameda, in an area roughly bordered by Buena Vista Avenue to the north, Benton Street to the east, Central Avenue to the south, and Wood Street to the west. The Proposed Facility will improve coverage to the surrounding residential neighborhoods with over 400 homes and a significant commercial area along Lincoln Avenue and vicinity, a parks, schools, places of worship and various other points of interest in the immediate vicinity. The service coverage in this portion of Alameda is described in the accompanying Radio Frequency Statement. The most recent traffic data available from Google Earth Pro for this area indicates that the average traffic along Central Avenue near Bay Street was 10,100 vehicles per day in 2012.

Methodology and Zoning Criteria

The location of a WCF to fill a significant gap in coverage is dependent upon topography, zoning, existing structures, collocation opportunities, available utilities, access, and a willing landlord. Wireless communication is line-of-sight technology that requires WCFs to be in relatively close proximity to the wireless handsets to be served.

AT&T seeks to fill a significant gap in service coverage using the least intrusive means under the values of the community as expressed in the Alameda Municipal Code ("Code"). Thus, AT&T is guided by Chapter 30-21 of the Code regarding use permits. AT&T also looks to the city's prior approvals of WCFs as guidance for acceptable installations. For example, there is an existing T-Mobile WCF on this same rooftop as the Proposed Facility. Finally, AT&T recently was required to vacate its existing site on the nearby school that serves this area. The gap in coverage results from the need to decommission that site. Thus, AT&T has sought non-school sites in the area to replace the necessary service coverage.

Analysis

AT&T investigated potential alternative designs of and alternative sites for facilities to fill the identified coverage gap in this portion of Alameda. The following is a map showing the locations of the Proposed Facility and the alternative sites that AT&T investigated. The alternatives are discussed in the analysis that follows.

Location of Candidate Sites

Proposed Facility – 1538 Saint Charles Street

Existing:

Proposed:

Conclusion: Based upon location, a willing landlord and the superior coverage as shown in the proposed coverage map included in AT&T's Radio Frequency Statement, the Proposed Facility is the least intrusive means for AT&T to meet its service coverage objective.

This four-story apartment building just south of Lincoln Avenue currently houses an approved T-Mobile WCF that consists of visible antennas on the side of a rooftop penthouse. AT&T proposes to collocate the Proposed Facility on this rooftop by installing a faux penthouse to completely screen its antennas, with equipment located in a garage adjacent to T-Mobile's equipment. The Proposed Facility will be completely screened and the faux penthouse will blend in with the building and surroundings. The Proposed Facility is the least intrusive means to fill the significant gap of the alternatives investigated by AT&T.

Alternative No. 1 – Mastick Senior Center, 1155 Santa Clara Avenue

Conclusion: More intrusive than Proposed Facility

This senior residential property houses a Sprint monopole. This is a feasible option, but the Proposed Facility offers a better opportunity for minimal stealth construction and design consistent with the city Code.

Alternative No. 2 – Pagano's Hardware, 1100 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This store is a relatively short building. A WCF here would not close AT&T's significant service coverage gap due to the low height and because the adjacent four-story apartment building (where the Proposed Facility is to be located) would block radio frequency signals. In addition, this building does not offer a collocation opportunity.

Alternative No. 3 – Vines Cafe & Gallery, 1113 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This commercial building is relatively short and the roof would not accommodate a WCF. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 4 – Lee Chiropractic, 1204 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

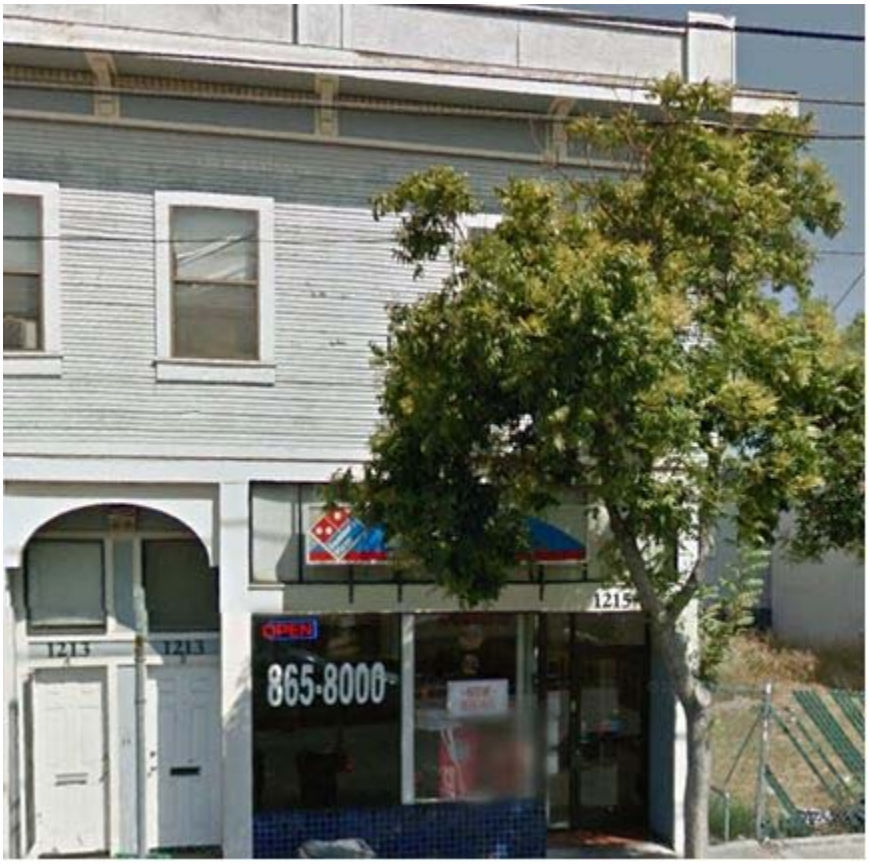
This two-story office building is relatively short, and it does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 5 – Intensity Martial Arts, 1209 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This two-story commercial use does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 6 – Domino's Pizza, 1215 Lincoln Avenue



Conclusion: Not feasible; more intrusive than Proposed Facility

This two-story commercial use does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 7 – The Market Spot, 1200 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This two-story market does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 8 –Faith Bible Church, 1206 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This short church does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 9 – Bay Stamp & Engraving, 1222 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This two-story building does not present a collocation opportunity. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a rooftop WCF on this property would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 10 – Alameda Chapel, 1001 Lincoln Avenue

Conclusion: Not feasible; more intrusive than Proposed Facility

This is a very short church building. A rooftop WCF here would not be high enough to close AT&T's significant service coverage gap. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Alternative No. 11 – Seventh Day Adventist Church, 1515 Verdi Street

Conclusion: Not available; more intrusive than Proposed Facility

This church is located near the edge of the service coverage objective to the southwest of the Proposed Facility. This property is not available because Seventh Day Adventists churches do not lease space for WCFs. In addition, a WCF here would be more intrusive than a fully concealed rooftop collocation such as the Proposed Facility.

Conclusion

The Proposed Facility is the least intrusive means by which AT&T can close its significant service coverage objective in this portion of Alameda.

AT&T Mobility Radio Frequency Statement
1538 St .Charles Street, Alameda, CA
Site ID: CCU3085

STATEMENT OF MICHAEL QUINTO

I am the AT&T radio frequency engineer assigned to the proposed wireless communications facility at 1538 St .Charles Street, Alameda, CA (the "Property"). Based on my personal knowledge of the Property and with AT&T's wireless network, as well as my review of AT&T's records with respect to the Property and its wireless communications facilities in the surrounding area, I have concluded that the work associated with this permit request is needed to close a significant service coverage gap in an area roughly bordered by Buena Vista Avenue to the north, Benton Street to the east, Central Avenue to the south, and Wood Street to the west. The service coverage gap will exist once AT&T decommissions its existing wireless communications facility at Wood Middle School. To remedy this service coverage gap, AT&T will need to construct a new wireless communications facility.

The service coverage gap will be caused by inadequate infrastructure in the area. As explained further in Exhibit 1, AT&T's existing facilities cannot adequately serve its customers in the desired area of coverage, let alone address rapidly increasing data usage. The site will not only close the gap in coverage and help address rapidly increasing data usage driven by smart phone and tablet usage, but it will also include 4G LTE service coverage. This site is part of an effort to fully deploy 4G LTE technology in the area.

AT&T uses industry standard propagation tools to identify the areas in its network where signal strength is too weak to provide reliable in-building service quality. This information is developed from many sources including terrain and clutter databases, which simulate the environment, and propagation models that simulate signal propagation in the presence of terrain and clutter variation. AT&T designs and builds its wireless network to ensure customers receive reliable in-building service quality. In-building service is critical as customers increasingly use their mobile phones as their primary communication device (approximately 44% of American households are now wireless only) and rely on their mobile phones to do more (E911, GPS, web access, text, etc.).

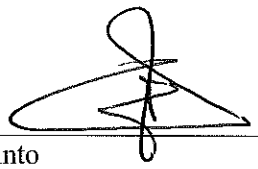
Exhibit 2 is a map of the existing UMTS 3G service coverage (without the proposed installation at the Property) in the area at issue. It includes service coverage provided by existing AT&T sites. The green shaded areas depict areas within a signal strength range that provide acceptable in-building service coverage. In-building coverage means customers are able to place or receive a call on the ground floor of a building. The yellow shaded areas depict areas within a signal strength range that provide acceptable in-vehicle service coverage. In these areas, an AT&T customer should be able to successfully place or

receive a call within a vehicle. The blue shading depicts areas within a signal strength range in which a customer might have difficulty receiving a consistently acceptable level of service. The quality of service experienced by any individual customer can differ greatly depending on whether that customer is indoors, outdoors, stationary, or in transit. Any area in the yellow or blue category is considered inadequate service coverage and constitutes a service coverage gap.

Exhibit 3 to this Statement is a map that predicts service coverage based on signal strength in the vicinity of the Property if antennas are placed as proposed in the application. As shown by this map, placement of the equipment at the Property closes the significant UMTS 3G service coverage gap.

In addition to these 3G wireless service gap issues, AT&T is in the process of deploying its 4G LTE service in Alameda with the goal of providing the most advanced personal wireless experience available to residents of the county. 4G LTE is capable of delivering speeds up to 10 times faster than industry-average 3G speeds. LTE technology also offers lower latency, or the processing time it takes to move data through a network, such as how long it takes to start downloading a webpage or file once you've sent the request. Lower latency helps to improve the quality of personal wireless services. What's more, LTE uses spectrum more efficiently than other technologies, creating more space to carry data traffic and services and to deliver a better overall network experience. Attached Exhibits 4 and 5 are LTE maps that illustrate how the proposed site closes the significant service coverage gap in LTE service coverage. Moreover, it is important to note that as existing customers migrate to 4G LTE, the LTE technology will provide the added benefit of reducing 3G data traffic, which can contribute to the significant service coverage gap on the UMTS (3G) network during peak usage periods.

I have a Bachelor of Science Degree in electronics and communications engineering and have worked as an engineering expert in the wireless communications industry for over 14 years.



Michael Quinto
AT&T Mobility Services LLC
Network, Planning & Engineering
RAN Design & RF Engineering

March 11, 2015

EXHIBIT 1

Prepared by AT&T Mobility

AT&T's digital wireless technology converts voice or data signals into a stream of digits to allow a single radio channel to carry multiple simultaneous signal transmissions. This technology allows AT&T to offer services such as secured transmissions and enhanced voice, high-speed data, texting, video conferencing, paging and imaging capabilities, as well as voicemail, visual voicemail, call forwarding and call waiting that are unavailable in analog-based systems. With consumers' strong adoption of smartphones, customers now have access to wireless broadband applications, which consumers utilize at a growing number.

Mobile data traffic in the United States grew by 75,000 percent over a six-year span, from 2001-2006. And in the seven years that followed, mobile data traffic on AT&T's national wireless network increased more than 50,000 percent *(from January 2007 through December 2013).* AT&T expects total mobile data volume to ***grow 8x-10x over the next five years***. To put this estimate in perspective, all of AT&T Mobility's mobile traffic during 2010 would be equal to only six or seven weeks of mobile traffic volume in 2015. The FCC noted that U.S. mobile data traffic grew almost 300% in 2011, and driven by 4G LTE smartphones and tablets, traffic is projected to grow an additional 16-fold by 2016.

Mobile devices using AT&T's technology transmit a radio signal to antennas mounted on a tower, pole, building, or other structure. The antenna feeds the signal to electronic devices housed in a small equipment cabinet, or base station. The base station is connected by microwave, fiber optic cable, or ordinary copper telephone wire to the Radio Network Controller, subsequently routing the calls and data throughout the world.

The operation of AT&T's wireless network depends upon a network of wireless communications facilities. The range between wireless facilities varies based on a number of factors. The range between AT&T mobile telephones and the antennas in and nearby Alameda, for example, is particularly limited as a result of challenges such as blockage from buildings, trees, and other obstructions as well as the limited capacity of existing facilities.

To provide effective, reliable, and uninterrupted service to AT&T customers in their cars, public transportation, home, and office, without interruption or lack of access, coverage must overlap in a grid pattern resembling a honeycomb.

In the event that AT&T is unable to construct or upgrade a wireless communications facility within a specific geographic area, so that each site's coverage reliably overlaps with at least one adjacent facility, AT&T will not be able to provide adequate personal wireless service to its customers within that area. Some consumers will experience an abrupt loss of service. Others will be unable to obtain reliable service, particularly if they are placing a call inside a building.

Service problems occur for customers even in locations where the coverage maps on AT&T's "Coverage Viewer" website appear to indicate that coverage is available. As the legend to the Coverage Viewer maps indicates, these maps depict a high-level *approximation* of coverage, which may not show gaps in coverage; *actual* coverage in an area may differ substantially from map graphics, and may be affected by such things as terrain, foliage, buildings and other construction, motion, customer equipment, and network traffic. The legend states that AT&T does not guarantee coverage and its coverage maps are not intended to show actual

customer performance on the network, nor are they intended to show future network needs or build requirements inside or outside of AT&T's existing coverage areas.

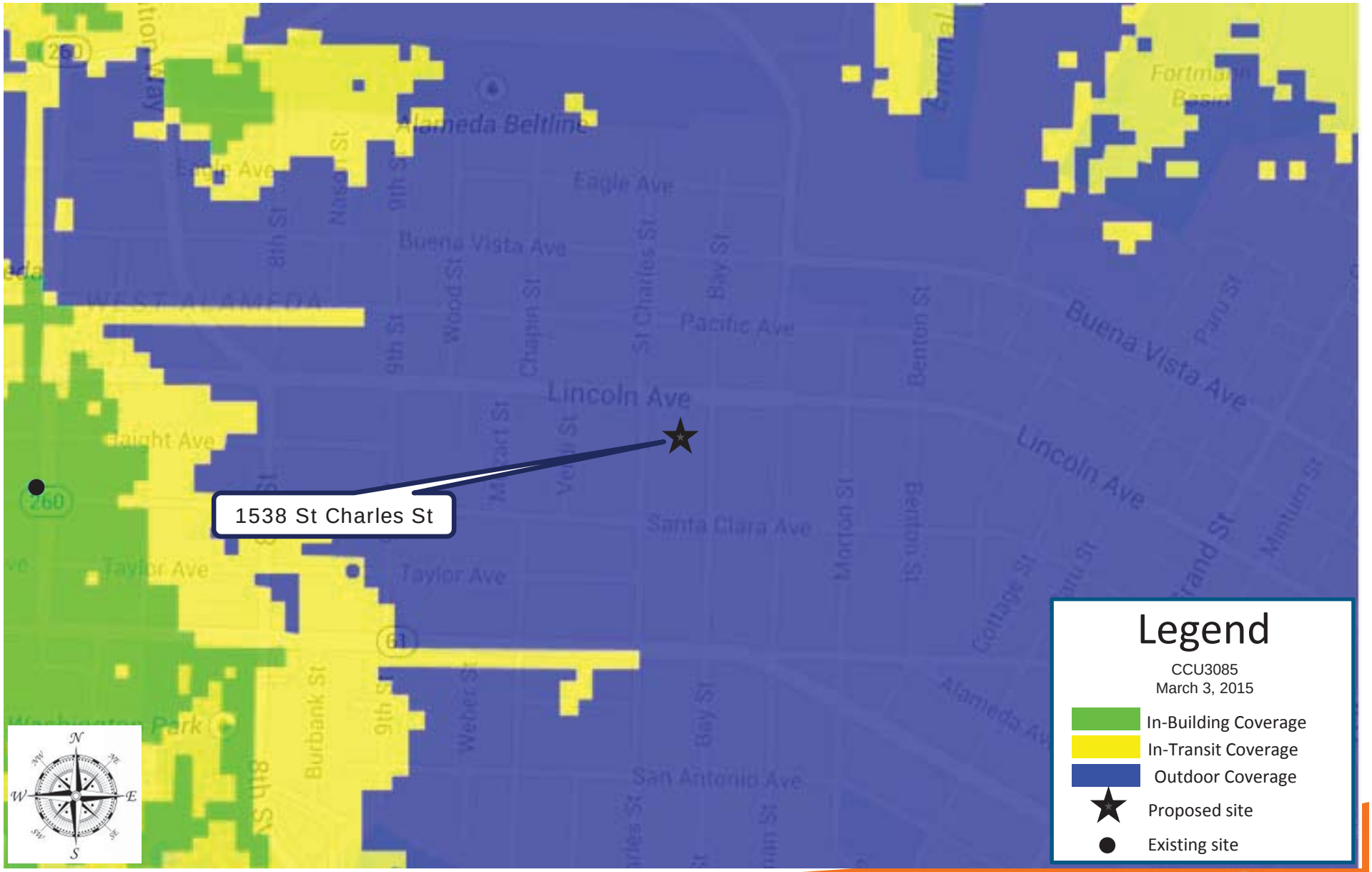
It is also important to note that the signal losses and service problems described above can and do occur for customers even at times when certain other customers in the same vicinity may be able to initiate and complete calls on AT&T's network (or other networks) on their wireless phones. These problems also can and do occur even when certain customers' wireless phones indicate "all bars" of signal strength on the handset.

The bars of signal strength that individual customers can see on their wireless phones are an imprecise and slow-to-update estimate of service quality. In other words, a customer's wireless phone can show "four bars" of signal strength, but that customer can still, at times, be unable to initiate voice calls, complete calls, or download data reliably and without service interruptions.

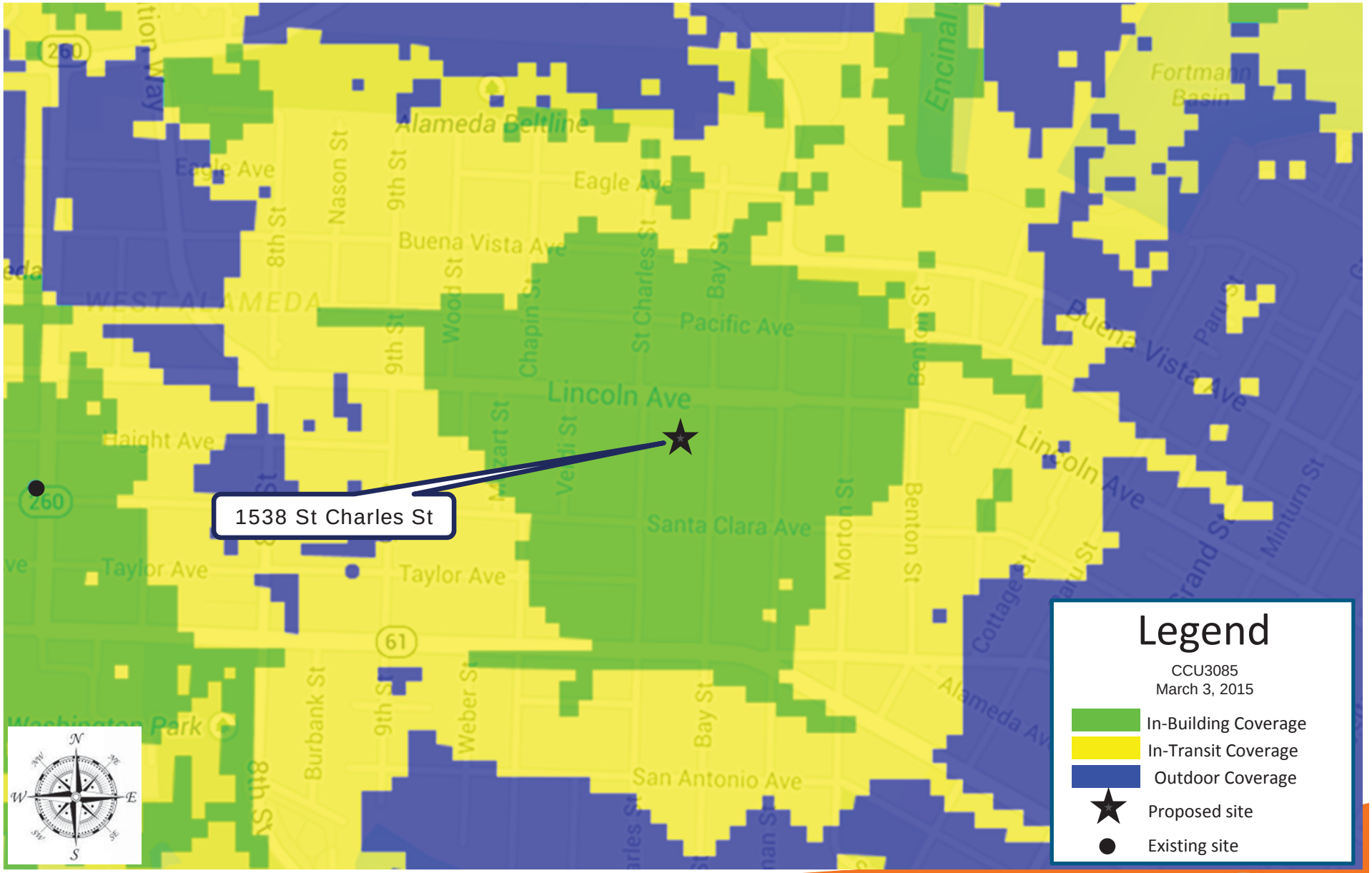
To determine where new or upgraded telecommunications facilities need to be located for the provision of reliable service in any area, AT&T's radio frequency engineers rely on far more complete tools and data sources than just signal strength from individual phones. AT&T creates maps incorporating signal strength that depict existing service coverage and service coverage gaps in a given area.

To rectify this significant gap in its service coverage, AT&T needs to locate a wireless facility in the immediate vicinity of the Property.

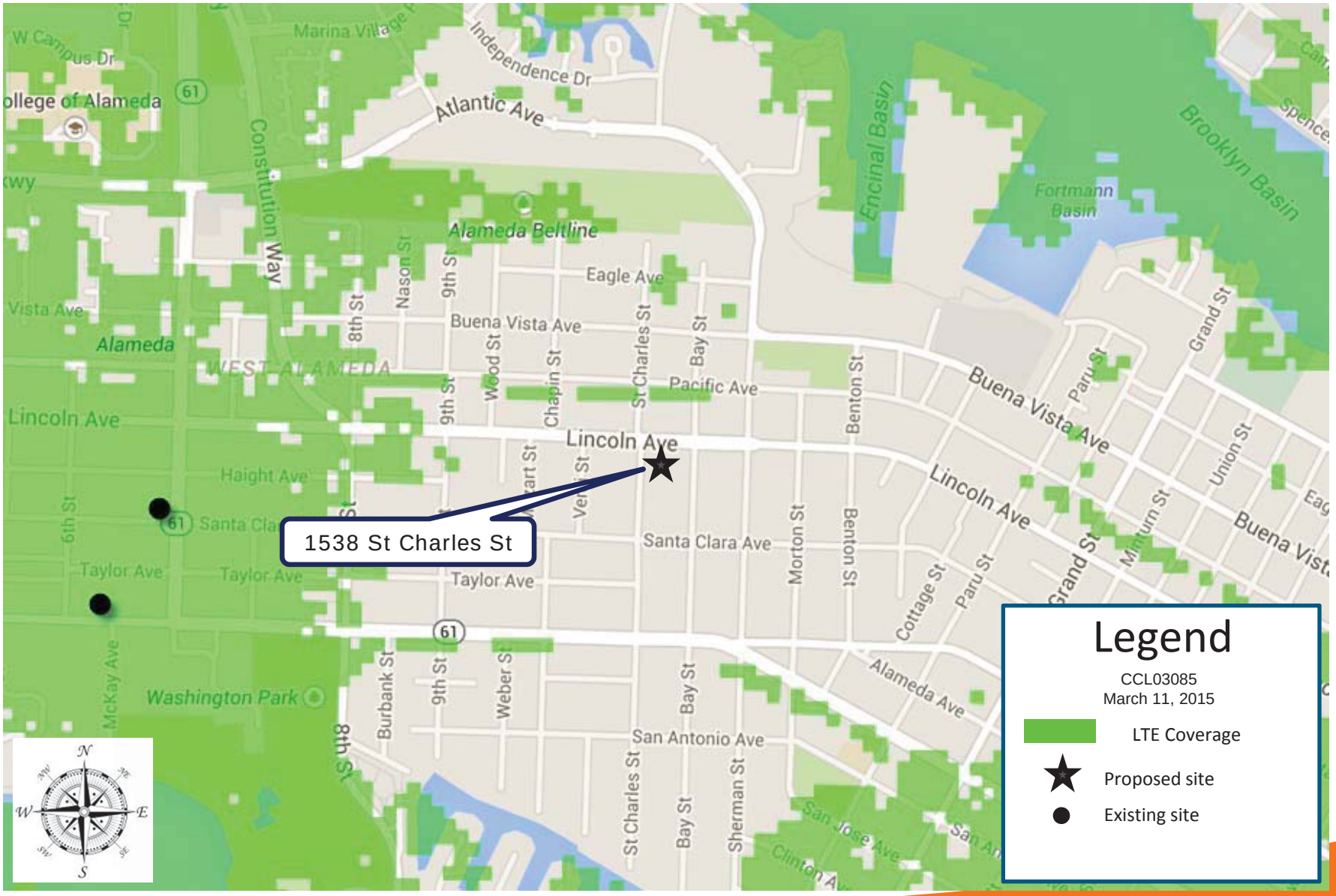
Without CCU3085 Coverage



With CCU3085 Coverage



Without CCL03085 Coverage



With CCL03085 Coverage

AT&T Mobility • Proposed Base Station (Site No. CCU3085)
1538 St. Charles Street • Alameda, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of AT&T Mobility, a personal wireless telecommunications carrier, to evaluate the base station (Site No. CCU3085) proposed to be located at 1538 St. Charles Street in Alameda, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

AT&T proposes to install directional panel antennas above the roof of the residential building located at 1538 St. Charles Street in Alameda. The proposed operation will, together with the existing base stations at the site and nearby, comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

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

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

General Facility Requirements

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

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

Computer Modeling Method

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

Site and Facility Description

The site at 1538 St. Charles Street in Alameda was visited by Mr. Brian Palmer, a qualified engineer employed by Hammett & Edison, Inc., during normal business hours on March 9, 2015. Six directional panel antennas, reportedly for use by T-Mobile, were observed on the stairwell penthouse above the roof of the four-story residential building located at that address. Observed on top of a light pole in a parking lot about 400 feet to the south were antennas for use by Sprint. The maximum power density level observed for a person at ground near the site was 2.7% of the most restrictive public limit, for the combined operation of existing RF services at the site as installed and operating at that time. The measurement equipment used was a Narda Type NBM-520 Broadband Field Meter with Type EF-0391 Isotropic Broadband Electric Field Probe (Serial No. D-0698); the meter and probe were under current calibration by the manufacturer.

Based upon information provided by AT&T, including zoning drawings by Cortel, Inc., dated January 22, 2015, it is proposed to install nine Andrew Model SBNHH-1D65B directional panel antennas within a view screen enclosure to be constructed near the center of the roof of the building. The antennas would be mounted with up to 8° downtilt at an effective height of about 47 feet above ground, 7 feet above the roof, and would be oriented in groups of three toward 60°T, 180°T, and 300°T, to provide service in all directions. The maximum effective radiated power in any direction would be 16,780 watts, representing simultaneous operation at 3,600 watts for WCS, 4,330 watts for AWS, 5,970 watts for PCS, 1,000 watts for cellular, and 1,880 watts for 700 MHz service.

For the limited purpose of this study, the transmitting facilities of the existing carriers are assumed to be as follows:

Operator	Service	Maximum ERP	Antenna Model	Downtilt	Height
T-Mobile	AWS	4,400 watts	Ericsson AIR21	2°	46 ft
	PCS	2,200	Ericsson AIR21	2	46
Sprint	BRS	1,500	DHHTT65B-3XR	6	43
	PCS	5,500	DHHTT65B-3XR	2	43
	SMR	430	DHHTT65B-3XR	2	43

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed AT&T operation by itself is calculated to be 0.049 mW/cm^2, which is 5.0% of the applicable public exposure limit. The maximum calculated cumulative level at ground, for the simultaneous operation of all those carriers, is 8.1% of the public exposure limit. The maximum calculated cumulative level at any nearby building* is 9.5% of the public limit. The maximum calculated cumulative level at the second-floor elevation of any nearby residence† is 7.8% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels. Levels are calculated to exceed the applicable exposure limits on the roof of the subject building, in front of the antennas.

Recommended Mitigation Measures

It is recommended that the roof access door be fitted with an alarmed "panic bar," so that the antennas on the roof are not accessible to unauthorized persons. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training be provided to all authorized personnel who have access to the roof, including employees and contractors of the wireless carriers and of the property owner. No access within 10 feet directly in front of the antennas themselves, such as might occur during maintenance work on the roof, should be allowed while the base stations are in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Marking yellow demarcation lines with paint on the roof, to identify areas calculated to exceed the FCC occupational limit, and posting explanatory signs‡ at the roof access door, next to the demarcation lines, and at the antennas, as shown in Figure 3, would be sufficient to meet FCC-adopted guidelines. Similar measures may already be in place for T-Mobile.

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* Located at least 17 feet away, based on the drawings.

† Located at least 50 feet away, based on photographs from Google Maps.

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

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the base station proposed by AT&T Mobility at 1538 St. Charles Street in Alameda, California, can comply with the prevailing standards for limiting human exposure to radio frequency energy and, therefore, need not for this reason cause a significant impact on the environment. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations. Locking the roof access door is recommended to establish compliance with public exposure limits; training authorized personnel, painting demarcation lines, and posting explanatory signs are recommended to establish compliance with occupational exposure limits.

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, 2015. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

William F. Hammett, P.E.
707/996-5200

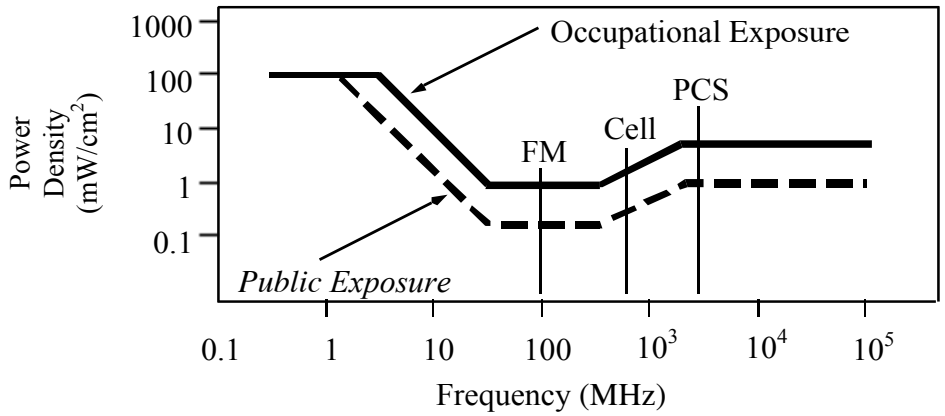
March 12, 2015

FCC Radio Frequency Protection Guide

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

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

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



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

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

Near Field.

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

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

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

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

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

Far Field.

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

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

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

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

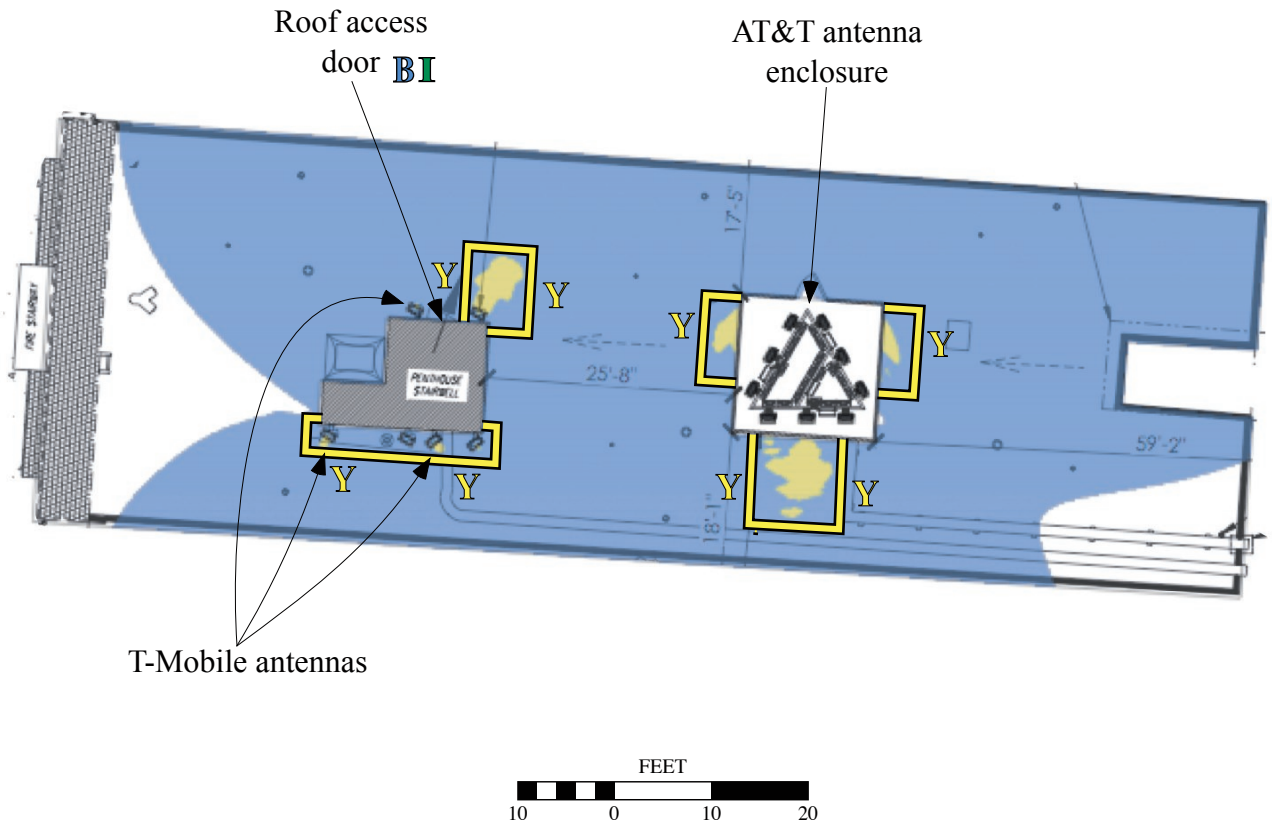
AT&T Mobility • Proposed Base Station (Site No. CCU3085)
1538 St. Charles Street • Alameda, California

Calculated RF Exposure Levels on Roof
for Proposed AT&T plus Existing T-Mobile

Recommended Mitigation Measures

- Lock all roof access locations
- Mark boundaries (if shown)
- Post explanatory signs
- Provide training

North



Notes:
Base drawing from Cortel, Inc., dated January 22, 2015.
Calculations performed according to OET Bulletin 65, August 1997.
Training should be provided to all persons with access to the roof.

Legend:	Less Than Public	Exceeds Public	Exceeds Occupational	Exceeds 10x Occupational
Shaded color	N/A			
Boundary marking	N/A			
Sign type	I - Green INFORMATION	B - Blue NOTICE	Y - Yellow CAUTION	O - Orange WARNING

AT&T Mobility Radio Frequency Statement
1538 St .Charles Street, Alameda, CA
Site ID: CCU3085

STATEMENT OF MICHAEL QUINTO

I am the AT&T radio frequency engineer assigned to the proposed wireless communications facility at 1538 St .Charles Street, Alameda, CA (the "Property"). Based on my personal knowledge of the Property and with AT&T's wireless network, as well as my review of AT&T's records with respect to the Property and its wireless communications facilities in the surrounding area, I have concluded that the work associated with this permit request is needed to close a significant service coverage gap in an area roughly bordered by Buena Vista Avenue to the north, Benton Street to the east, Central Avenue to the south, and Wood Street to the west. The service coverage gap will exist once AT&T decommissions its existing wireless communications facility at Wood Middle School. To remedy this service coverage gap, AT&T will need to construct a new wireless communications facility.

The service coverage gap will be caused by inadequate infrastructure in the area. As explained further in Exhibit 1, AT&T's existing facilities cannot adequately serve its customers in the desired area of coverage, let alone address rapidly increasing data usage. The site will not only close the gap in coverage and help address rapidly increasing data usage driven by smart phone and tablet usage, but it will also include 4G LTE service coverage. This site is part of an effort to fully deploy 4G LTE technology in the area.

AT&T uses industry standard propagation tools to identify the areas in its network where signal strength is too weak to provide reliable in-building service quality. This information is developed from many sources including terrain and clutter databases, which simulate the environment, and propagation models that simulate signal propagation in the presence of terrain and clutter variation. AT&T designs and builds its wireless network to ensure customers receive reliable in-building service quality. In-building service is critical as customers increasingly use their mobile phones as their primary communication device (approximately 44% of American households are now wireless only) and rely on their mobile phones to do more (E911, GPS, web access, text, etc.).

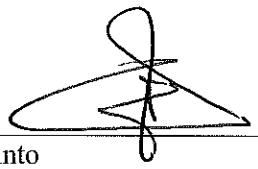
Exhibit 2 is a map of the existing UMTS 3G service coverage (without the proposed installation at the Property) in the area at issue. It includes service coverage provided by existing AT&T sites. The green shaded areas depict areas within a signal strength range that provide acceptable in-building service coverage. In-building coverage means customers are able to place or receive a call on the ground floor of a building. The yellow shaded areas depict areas within a signal strength range that provide acceptable in-vehicle service coverage. In these areas, an AT&T customer should be able to successfully place or

receive a call within a vehicle. The blue shading depicts areas within a signal strength range in which a customer might have difficulty receiving a consistently acceptable level of service. The quality of service experienced by any individual customer can differ greatly depending on whether that customer is indoors, outdoors, stationary, or in transit. Any area in the yellow or blue category is considered inadequate service coverage and constitutes a service coverage gap.

Exhibit 3 to this Statement is a map that predicts service coverage based on signal strength in the vicinity of the Property if antennas are placed as proposed in the application. As shown by this map, placement of the equipment at the Property closes the significant UMTS 3G service coverage gap.

In addition to these 3G wireless service gap issues, AT&T is in the process of deploying its 4G LTE service in Alameda with the goal of providing the most advanced personal wireless experience available to residents of the county. 4G LTE is capable of delivering speeds up to 10 times faster than industry-average 3G speeds. LTE technology also offers lower latency, or the processing time it takes to move data through a network, such as how long it takes to start downloading a webpage or file once you've sent the request. Lower latency helps to improve the quality of personal wireless services. What's more, LTE uses spectrum more efficiently than other technologies, creating more space to carry data traffic and services and to deliver a better overall network experience. Attached Exhibits 4 and 5 are LTE maps that illustrate how the proposed site closes the significant service coverage gap in LTE service coverage. Moreover, it is important to note that as existing customers migrate to 4G LTE, the LTE technology will provide the added benefit of reducing 3G data traffic, which can contribute to the significant service coverage gap on the UMTS (3G) network during peak usage periods.

I have a Bachelor of Science Degree in electronics and communications engineering and have worked as an engineering expert in the wireless communications industry for over 14 years.



Michael Quinto
AT&T Mobility Services LLC
Network, Planning & Engineering
RAN Design & RF Engineering

March 11, 2015

EXHIBIT 1

Prepared by AT&T Mobility

AT&T's digital wireless technology converts voice or data signals into a stream of digits to allow a single radio channel to carry multiple simultaneous signal transmissions. This technology allows AT&T to offer services such as secured transmissions and enhanced voice, high-speed data, texting, video conferencing, paging and imaging capabilities, as well as voicemail, visual voicemail, call forwarding and call waiting that are unavailable in analog-based systems. With consumers' strong adoption of smartphones, customers now have access to wireless broadband applications, which consumers utilize at a growing number.

Mobile data traffic in the United States grew by 75,000 percent over a six-year span, from 2001-2006. And in the seven years that followed, mobile data traffic on AT&T's national wireless network increased more than 50,000 percent *(from January 2007 through December 2013).* AT&T expects total mobile data volume to ***grow 8x-10x over the next five years***. To put this estimate in perspective, all of AT&T Mobility's mobile traffic during 2010 would be equal to only six or seven weeks of mobile traffic volume in 2015. The FCC noted that U.S. mobile data traffic grew almost 300% in 2011, and driven by 4G LTE smartphones and tablets, traffic is projected to grow an additional 16-fold by 2016.

Mobile devices using AT&T's technology transmit a radio signal to antennas mounted on a tower, pole, building, or other structure. The antenna feeds the signal to electronic devices housed in a small equipment cabinet, or base station. The base station is connected by microwave, fiber optic cable, or ordinary copper telephone wire to the Radio Network Controller, subsequently routing the calls and data throughout the world.

The operation of AT&T's wireless network depends upon a network of wireless communications facilities. The range between wireless facilities varies based on a number of factors. The range between AT&T mobile telephones and the antennas in and nearby Alameda, for example, is particularly limited as a result of challenges such as blockage from buildings, trees, and other obstructions as well as the limited capacity of existing facilities.

To provide effective, reliable, and uninterrupted service to AT&T customers in their cars, public transportation, home, and office, without interruption or lack of access, coverage must overlap in a grid pattern resembling a honeycomb.

In the event that AT&T is unable to construct or upgrade a wireless communications facility within a specific geographic area, so that each site's coverage reliably overlaps with at least one adjacent facility, AT&T will not be able to provide adequate personal wireless service to its customers within that area. Some consumers will experience an abrupt loss of service. Others will be unable to obtain reliable service, particularly if they are placing a call inside a building.

Service problems occur for customers even in locations where the coverage maps on AT&T's "Coverage Viewer" website appear to indicate that coverage is available. As the legend to the Coverage Viewer maps indicates, these maps depict a high-level *approximation* of coverage, which may not show gaps in coverage; *actual* coverage in an area may differ substantially from map graphics, and may be affected by such things as terrain, foliage, buildings and other construction, motion, customer equipment, and network traffic. The legend states that AT&T does not guarantee coverage and its coverage maps are not intended to show actual

customer performance on the network, nor are they intended to show future network needs or build requirements inside or outside of AT&T's existing coverage areas.

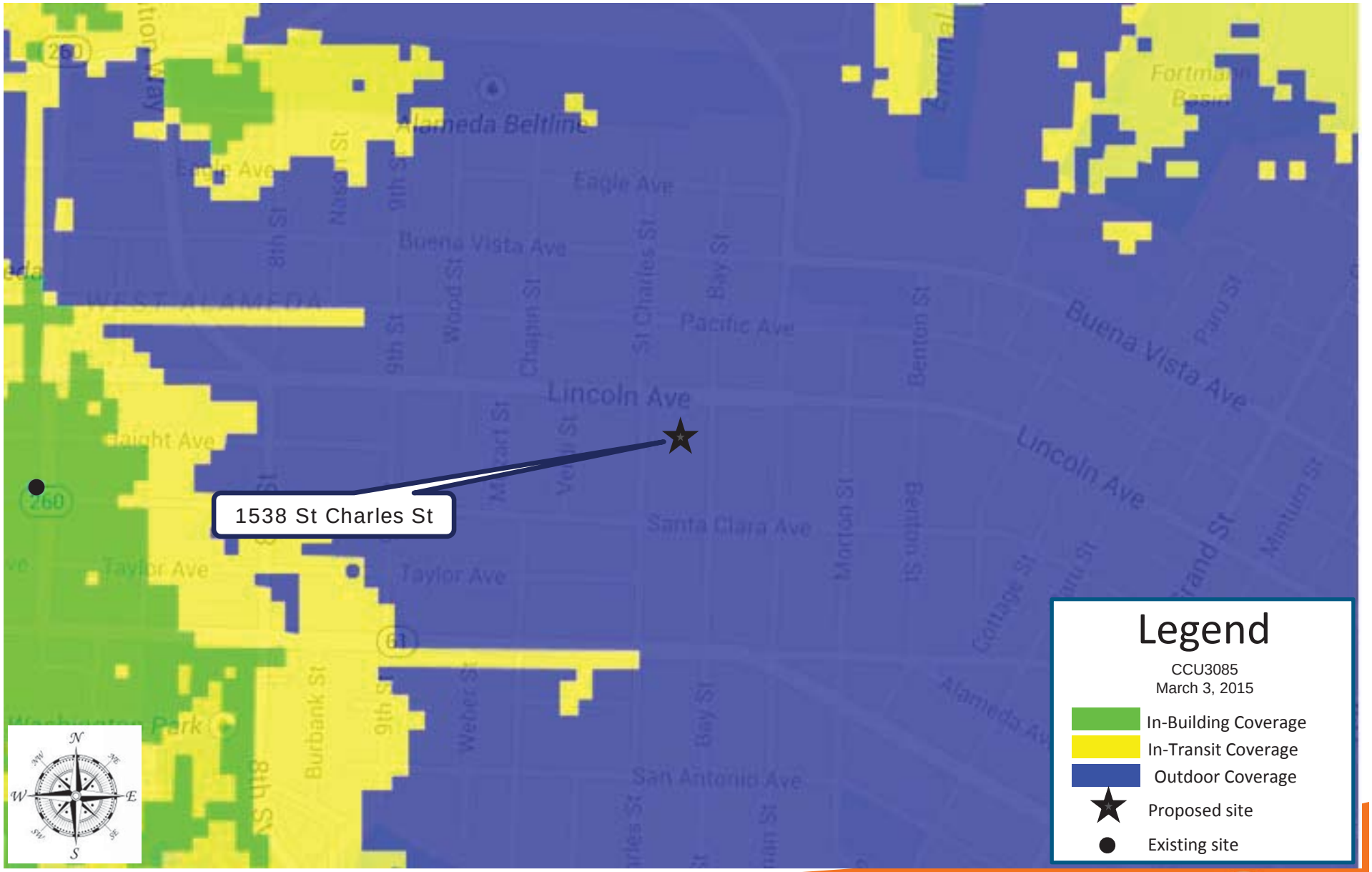
It is also important to note that the signal losses and service problems described above can and do occur for customers even at times when certain other customers in the same vicinity may be able to initiate and complete calls on AT&T's network (or other networks) on their wireless phones. These problems also can and do occur even when certain customers' wireless phones indicate "all bars" of signal strength on the handset.

The bars of signal strength that individual customers can see on their wireless phones are an imprecise and slow-to-update estimate of service quality. In other words, a customer's wireless phone can show "four bars" of signal strength, but that customer can still, at times, be unable to initiate voice calls, complete calls, or download data reliably and without service interruptions.

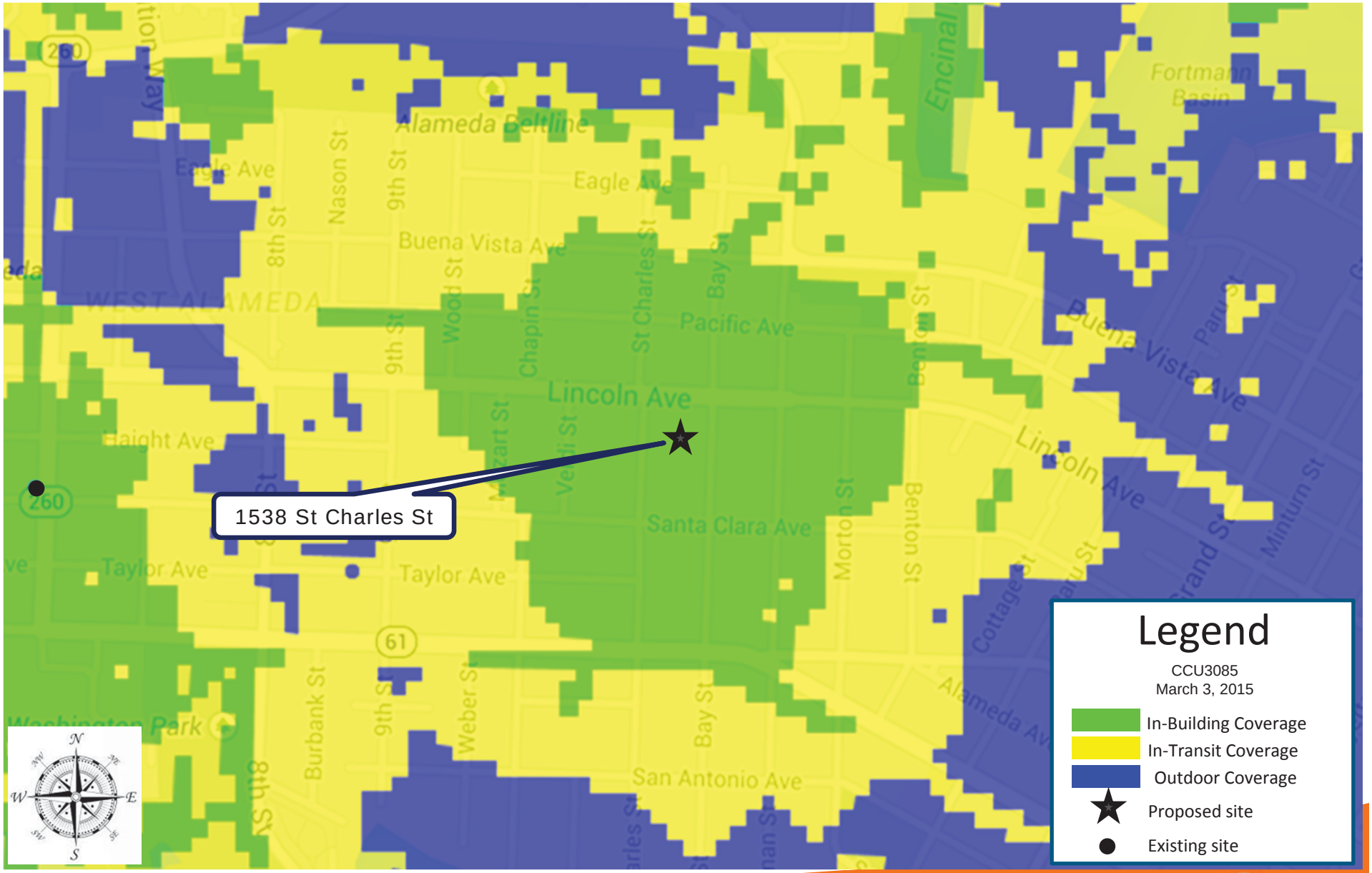
To determine where new or upgraded telecommunications facilities need to be located for the provision of reliable service in any area, AT&T's radio frequency engineers rely on far more complete tools and data sources than just signal strength from individual phones. AT&T creates maps incorporating signal strength that depict existing service coverage and service coverage gaps in a given area.

To rectify this significant gap in its service coverage, AT&T needs to locate a wireless facility in the immediate vicinity of the Property.

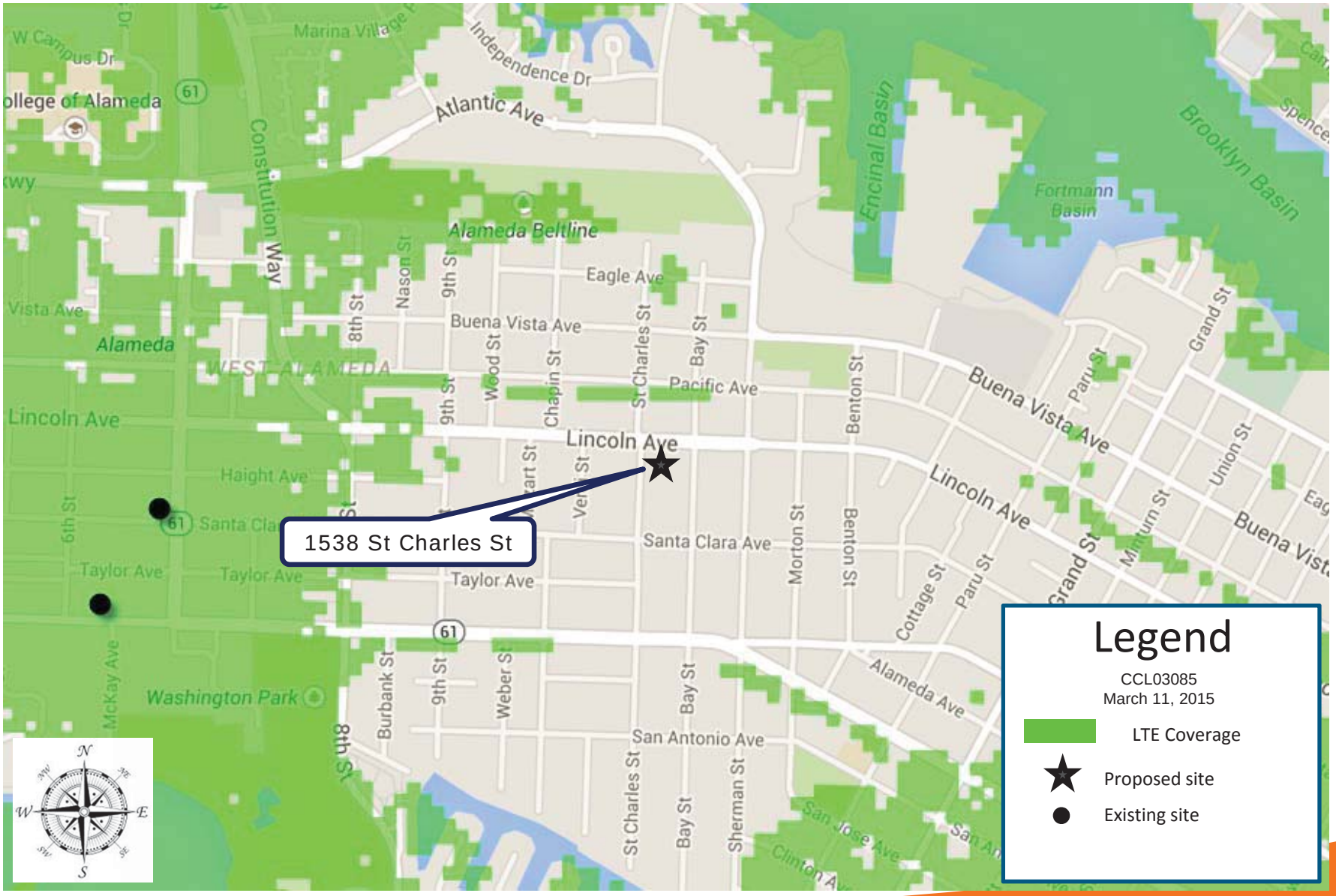
Without CCU3085 Coverage



With CCU3085 Coverage



Without CCL03085 Coverage



With CCL03085 Coverage

March 12, 2015

Deborah Diamond
Community Development Department
2263 Santa Clara Ave
Alameda, CA 94501

RE: **AT&T Telecom Facility**
AT&T Site ID: CCU3969 (FA 13323785)
Property Address: 1777 Shoreline Drive, Alameda, CA 94501
Project Number: PLN14-0731

Dear Ms. Diamond:

Please find the enclosed documents as supplemental material for the AT&T application for the proposed new telecommunications facility at 1777 Shoreline Drive (PLN14-0731).

- Revised RF Exposure Study
- Alternative Site Analysis
- RF Statement, with Propagation Maps

This application is subject to the FCC's 150-day shot clock. AT&T filed the application on December 9, 2014. The shot clock was tolled from the city's December 16, 2014 incomplete letter until AT&T's complete response on February 2, 2015. Thus, the city must take final action on AT&T's application no later than June 25, 2015 (Day 150). Please let us know as soon as possible if you calculate a different shot clock deadline.

Should you have any questions before, please feel free to contact me at 415-601-3194 or by e-mail at alex.orner@cortel-llc.com.

Sincerely,

Alex Orner, Site Acquisition Specialist
Cortel, Inc.
Authorized Representative for AT&T
415-601-3194 (cell)
alex.orner@cortel-llc.com

Alternative Sites Analysis

AT&T Mobility

Wireless Communications Facility
at
1777 Shoreline Drive
Alameda, CA

Site ID: CCU3969

Introduction

New Cingular Wireless PCS, LLC d/b/a AT&T Mobility ("AT&T") has a significant gap in its service coverage in this portion of Alameda. AT&T proposes to install a stealth wireless communications facility ("WCF") on the roof of this apartment building ("Proposed Facility") as a means to fill this gap in coverage. The Proposed Facility consists of twelve panel antennas (three sectors of four antennas) mounted around an existing elevator shaft and surrounded by a stealth enclosure designed to match the character of the existing structure, with the related equipment to be housed in cabinets at ground level concealed behind a CMU wall designed to match the building. The Proposed Facility is designed to minimize visual impacts, blend within the existing environment, and obscure the antennas. The Proposed Facility is the least intrusive means to fill the significant gap of the alternatives investigated by AT&T as explained below.

Objective

AT&T Mobility has identified a significant gap in its service coverage in Alameda, in an area roughly bordered by Dayton Avenue to the north, Willow Street to the east, the Pacific Ocean to the south, and Shell Gate Road to the west. The Proposed Facility will improve coverage to the surrounding residential neighborhoods with over 380 homes, a park, schools and various other points of interest in the immediate vicinity. The service coverage in this portion of Alameda is described in the accompanying Radio Frequency Statement. The most recent traffic data available from Google Earth Pro for this area indicates that the average traffic along Otis Drive near Grand Street was 7,156 vehicles per day in 2012.

Methodology and Zoning Criteria

The location of a WCF to fill a significant gap in coverage is dependent upon topography, zoning, existing structures, collocation opportunities, available utilities, access, and a willing landlord. Wireless communication is line-of-sight technology that requires WCFs to be in relatively close proximity to the wireless handsets to be served.

AT&T seeks to fill a significant gap in service coverage using the least intrusive means under the values of the community as expressed in the Alameda Municipal Code ("Code"). Thus, AT&T is guided by Chapter 30-21 of the Code regarding use permits. AT&T also looks to the city's prior approvals of WCFs as guidance for acceptable installations. For example, there is an existing T-Mobile WCF on the rooftop of the adjacent building from the Proposed Facility. Finally, AT&T recently was required to vacate its existing site on the nearby school that serves this area. The gap in coverage results from the need to decommission that site. Thus, AT&T has sought non-school sites in the area to replace the necessary service coverage.

Analysis

AT&T investigated potential alternative designs of and alternative sites for facilities to fill the identified coverage gap in this portion of Alameda. There are very few available alternatives in this portion of the city due to the number of single-family homes and lack of commercial properties. The following map shows the locations of the Proposed Facility and the alternative sites that AT&T investigated. The alternatives are discussed in the analysis that follows.

Location of Candidate Sites

Proposed Facility – 1777 Shoreline Drive

Existing:

Proposed:

Conclusion: Based upon location, a willing landlord and the superior coverage as shown in the proposed coverage map included in AT&T's Radio Frequency Statement, the Proposed Facility is the least intrusive means for AT&T to meet its service coverage objective.

This apartment building is located along Shoreline Drive. The adjacent building in the same complex houses an approved T-Mobile WCF. AT&T proposes to locate its Proposed Facility on this rooftop by installing a wall around the existing elevator shaft to completely screen its antennas. The result will be an unnoticeable WCF with a very minor change to the appearance of the rooftop. The related equipment will be located at ground level and it will also be unnoticeable behind a CMU wall designed and painted to match the building. The Proposed Facility will be completely screened and the faux penthouse will blend in with the building and surroundings. The location and appearance of the Proposed Facility complies with the Code and meets city design criteria. The Proposed Facility is the least intrusive means to fill the significant gap of the alternatives investigated by AT&T.

Alternative No. 1 – 1701, 1705, 1711 Shoreline Drive

Conclusion: More intrusive than Proposed Facility

This set of apartment buildings is located adjacent to Wood Middle School. AT&T selected the Proposed Facility as less intrusive because it is adjacent to an existing approved WCF on the same property and it is further from the school than these buildings.

Alternative No. 2 – Wood Middle School

Conclusion: Unavailable

This school recently terminated the lease allowing AT&T to operate its WCF here. Last year, the Alameda Unified School District Board adopted a resolution to formally oppose WCFs on school property. This site is no longer available to AT&T, which is the reason AT&T is now seeking to relocate to the Proposed Facility.

Alternative No. 3 – Donald Lum Elementary School

Conclusion: Unavailable

This school is located adjacent to Wood Elementary School. Given the new policy of the Alameda Unified School District prohibiting WCFs on school property, and direction from the school district to remove WCFs from schools in Alameda, this site is not available.

Alternative No. 4 – Rittler Park

Conclusion: More intrusive than Proposed Facility

This city park is located adjacent to Wood Middle School. Given its location immediately adjacent to the school, and the intense opposition to locating WCFs on school property, this site is more intrusive than the Proposed Facility. In addition, a WCF here would need to be a freestanding structure that might stick out more than the proposed stealth rooftop installation.

Alternative No. 5 – Shoreline

Conclusion: More intrusive than Proposed Facility

The shoreline offers no opportunity to conceal a WCF. A WCF here would be much more visible and intrusive than the Proposed Facility.

Conclusion

The Proposed Facility is the least intrusive means by which AT&T can close its significant service coverage objective in this portion of Alameda.

March 12, 2015

Deborah Diamond
Community Development Department
2263 Santa Clara Ave
Alameda, CA 94501

RE: **AT&T Telecom Facility**
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Sincerely,

Alex Orner, Site Acquisition Specialist
Cortel, Inc.
Authorized Representative for AT&T
415-601-3194 (cell)
alex.orner@cortel-llc.com

AT&T Mobility • Proposed Base Station (Site No. CCU3969)
1777 Shoreline Drive • Alameda, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of AT&T Mobility, a personal wireless telecommunications carrier, to evaluate the base station (Site No. CCU3969) proposed to be located at 1777 Shoreline Drive in Alameda, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

AT&T proposes to install directional panel antennas above the roof of the residential building located at 1777 Shoreline Drive in Alameda. The proposed operation will, together with the existing base station nearby, comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

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

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

General Facility Requirements

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

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

Computer Modeling Method

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

Site and Facility Description

The apartment complexes on Shoreline Drive in Alameda were visited by Mr. Brian Palmer, a qualified engineer employed by Hammett & Edison, Inc., during normal business hours on March 9, 2015. Four directional panel antennas for use by T-Mobile were observed high on the face of the three-story apartment building at the rear of the complex located at 1801 Shoreline Drive. The maximum power density level observed for a person at ground near the site was 1.7% of the most restrictive public limit, for the combined operation of the existing RF services at the site as installed and operating at that time. The measurement equipment used was a Narda Type NBM-520 Broadband Field Meter with Type EF-0391 Isotropic Broadband Electric Field Probe (Serial No. D-0698); the meter and probe were under current calibration by the manufacturer.

Based upon information provided by AT&T, including zoning drawings by Cortel, Inc., dated January 9, 2015, that carrier proposes to install twelve CCI Model HPA-45R-BUU-H6 directional panel antennas behind view screens to be constructed on the elevator penthouse above the roof of the three-story apartment building at the rear of the complex located at 1777 Shoreline Drive. The antennas would be mounted with up to 4° downtilt at an effective height of about 35½ feet above ground, 9 feet above the roof, and would be oriented in groups of four toward 25°T, 95°T, and 310°T. The maximum effective radiated power in any direction would be 16,190 watts, representing simultaneous operation at 3,860 watts for WCS, 4,650 watts for AWS, 4,360 watts for PCS, 1,000 watts for cellular, and 2,320 watts for 700 MHz service.

For the limited purpose of this study, the transmitting facilities of T-Mobile are assumed to be as follows:

Service	Maximum ERP	Antenna Model	Downtilt	Height
AWS	4,400 watts	Ericsson AIR21	2°	30 ft
PCS	2,200	Ericsson AIR21	2	30

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed AT&T operation by itself is calculated to be 0.048 mW/cm^2, which is 5.5% of the applicable public exposure limit. The maximum calculated cumulative level at ground, for the simultaneous operation of both carriers, is 7.2% of the public exposure limit. The maximum calculated cumulative level at the top-floor elevation of any nearby residence* is 28% of the public exposure limit. The maximum calculated cumulative level at any nearby school building† is 6.3% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels. Levels are calculated to exceed the applicable public exposure limit on the roof of the subject building, in front of the antennas.

Recommended Mitigation Measures

It is recommended that the outdoor roof access stairs continue to be kept locked, so that the AT&T antennas are not accessible to unauthorized persons. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training be provided to all authorized personnel who have access to the roof, including employees and contractors of AT&T and of the property owner. No access within 28 feet directly in front of the antennas themselves, such as might occur during maintenance work above the roof, should be allowed while the base station is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Marking a blue demarcation line at the stair landing below the top of the stairs, to indicate that certain areas above that point are calculated to exceed the FCC public limit, and posting explanatory signs‡ at the roof access stairs and on the screens in front of the antennas, as shown in Figure 3, 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.

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* Located at least 100 feet away, based on photographs from Google Maps.
† Located at least 130 feet away, based on photographs from Google Maps.
‡ Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the base station proposed by AT&T Mobility at 1777 Shoreline Drive in Alameda, California, can comply with the prevailing standards for limiting human exposure to radio frequency energy and, therefore, need 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. Locking the roof access stairs is recommended to establish compliance with public exposure limits; training authorized personnel, marking roof areas, and posting explanatory signs are recommended to establish compliance with occupational exposure limits.

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, 2015. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

William F. Hammett, P.E.
707/996-5200

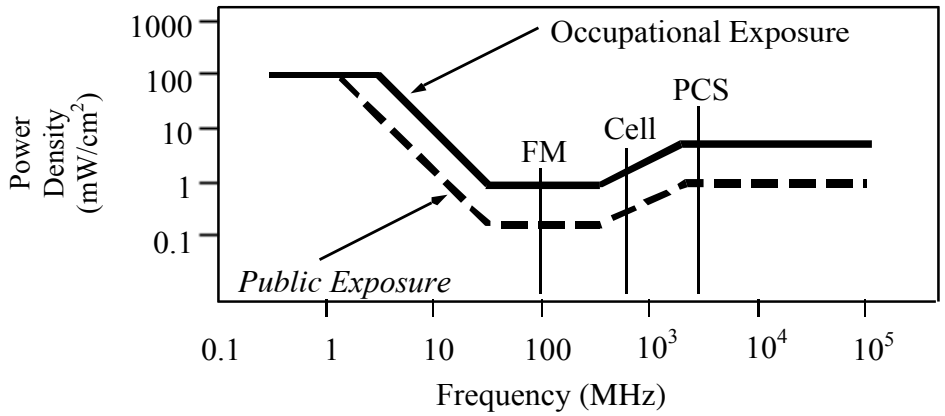
March 12, 2015

FCC Radio Frequency Protection Guide

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

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

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



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

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

Near Field.

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

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

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

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

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

Far Field.

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

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

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

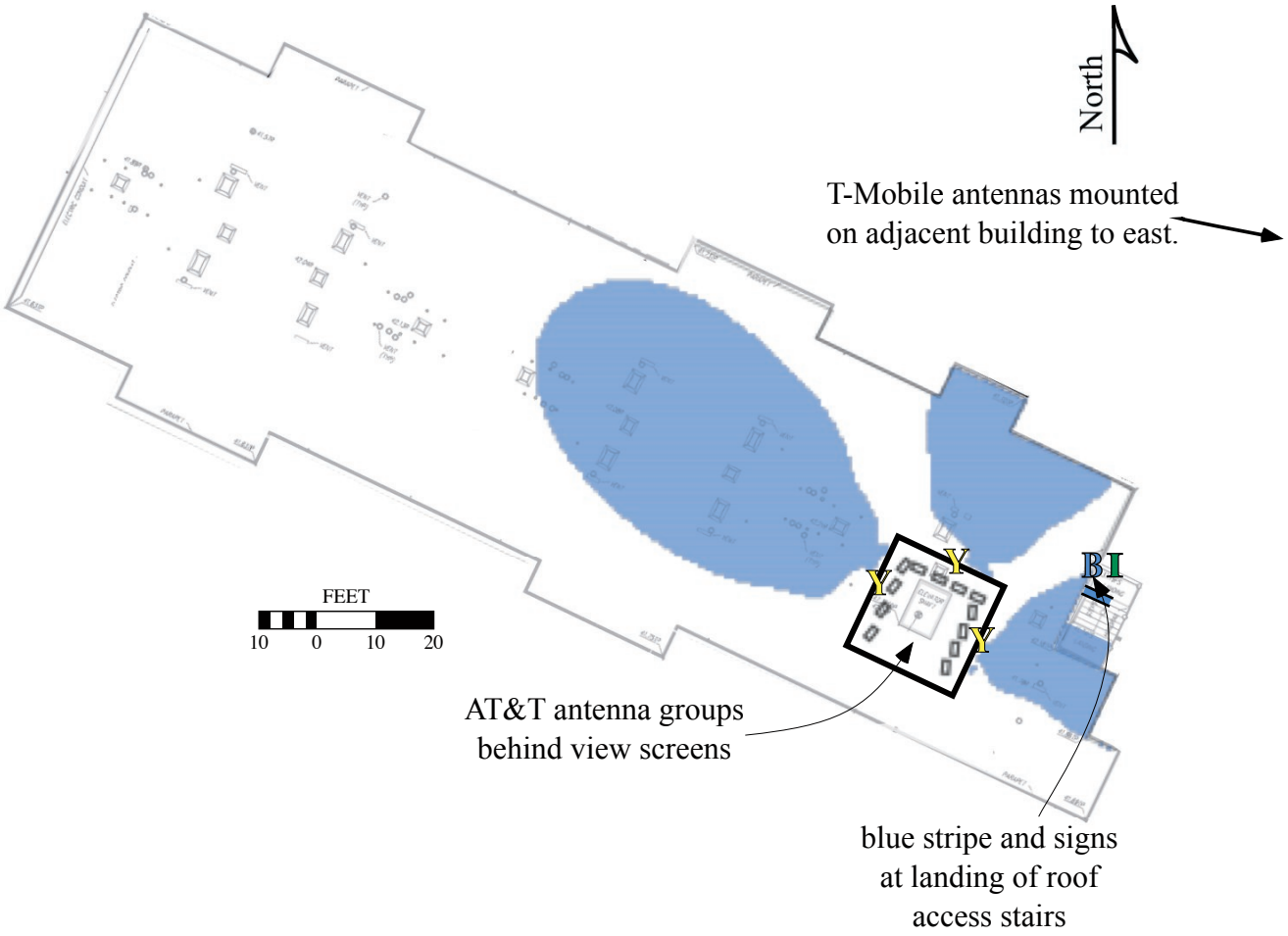
The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units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

AT&T Mobility • Base Station No. CCU3969
1777 Shoreline Drive Street • Alameda, California

Calculated RF Exposure Levels on Roof

Recommended Mitigation Measures

- Lock all roof access locations
- Mark boundaries (if shown)
- Post explanatory signs
- Provide training



Notes:
Base drawing from Cortel, Inc., dated January 9, 2015.
Calculations performed according to OET Bulletin 65, August 1997.
Training should be provided to all persons with access to the roof.

Legend:	Less Than Public	Exceeds Public	Exceeds Occupational	Exceeds 10x Occupational
Shaded color	N/A			
Boundary marking	N/A			
Sign type	I - Green INFORMATION	B - Blue NOTICE	Y - Yellow CAUTION	O - Orange WARNING

Alternative Sites Analysis

AT&T Mobility

Wireless Communications Facility
at
1777 Shoreline Drive
Alameda, CA

Site ID: CCU3969

Introduction

New Cingular Wireless PCS, LLC d/b/a AT&T Mobility ("AT&T") has a significant gap in its service coverage in this portion of Alameda. AT&T proposes to install a stealth wireless communications facility ("WCF") on the roof of this apartment building ("Proposed Facility") as a means to fill this gap in coverage. The Proposed Facility consists of twelve panel antennas (three sectors of four antennas) mounted around an existing elevator shaft and surrounded by a stealth enclosure designed to match the character of the existing structure, with the related equipment to be housed in cabinets at ground level concealed behind a CMU wall designed to match the building. The Proposed Facility is designed to minimize visual impacts, blend within the existing environment, and obscure the antennas. The Proposed Facility is the least intrusive means to fill the significant gap of the alternatives investigated by AT&T as explained below.

Objective

AT&T Mobility has identified a significant gap in its service coverage in Alameda, in an area roughly bordered by Dayton Avenue to the north, Willow Street to the east, the Pacific Ocean to the south, and Shell Gate Road to the west. The Proposed Facility will improve coverage to the surrounding residential neighborhoods with over 380 homes, a park, schools and various other points of interest in the immediate vicinity. The service coverage in this portion of Alameda is described in the accompanying Radio Frequency Statement. The most recent traffic data available from Google Earth Pro for this area indicates that the average traffic along Otis Drive near Grand Street was 7,156 vehicles per day in 2012.

Methodology and Zoning Criteria

The location of a WCF to fill a significant gap in coverage is dependent upon topography, zoning, existing structures, collocation opportunities, available utilities, access, and a willing landlord. Wireless communication is line-of-sight technology that requires WCFs to be in relatively close proximity to the wireless handsets to be served.

AT&T seeks to fill a significant gap in service coverage using the least intrusive means under the values of the community as expressed in the Alameda Municipal Code ("Code"). Thus, AT&T is guided by Chapter 30-21 of the Code regarding use permits. AT&T also looks to the city's prior approvals of WCFs as guidance for acceptable installations. For example, there is an existing T-Mobile WCF on the rooftop of the adjacent building from the Proposed Facility. Finally, AT&T recently was required to vacate its existing site on the nearby school that serves this area. The gap in coverage results from the need to decommission that site. Thus, AT&T has sought non-school sites in the area to replace the necessary service coverage.

Analysis

AT&T investigated potential alternative designs of and alternative sites for facilities to fill the identified coverage gap in this portion of Alameda. There are very few available alternatives in this portion of the city due to the number of single-family homes and lack of commercial properties. The following map shows the locations of the Proposed Facility and the alternative sites that AT&T investigated. The alternatives are discussed in the analysis that follows.

Location of Candidate Sites

Proposed Facility – 1777 Shoreline Drive

Existing:

Proposed:

Conclusion: Based upon location, a willing landlord and the superior coverage as shown in the proposed coverage map included in AT&T's Radio Frequency Statement, the Proposed Facility is the least intrusive means for AT&T to meet its service coverage objective.

This apartment building is located along Shoreline Drive. The adjacent building in the same complex houses an approved T-Mobile WCF. AT&T proposes to locate its Proposed Facility on this rooftop by installing a wall around the existing elevator shaft to completely screen its antennas. The result will be an unnoticeable WCF with a very minor change to the appearance of the rooftop. The related equipment will be located at ground level and it will also be unnoticeable behind a CMU wall designed and painted to match the building. The Proposed Facility will be completely screened and the faux penthouse will blend in with the building and surroundings. The location and appearance of the Proposed Facility complies with the Code and meets city design criteria. The Proposed Facility is the least intrusive means to fill the significant gap of the alternatives investigated by AT&T.

Alternative No. 1 – 1701, 1705, 1711 Shoreline Drive

Conclusion: More intrusive than Proposed Facility

This set of apartment buildings is located adjacent to Wood Middle School. AT&T selected the Proposed Facility as less intrusive because it is adjacent to an existing approved WCF on the same property and it is further from the school than these buildings.

Alternative No. 2 – Wood Middle School

Conclusion: Unavailable

This school recently terminated the lease allowing AT&T to operate its WCF here. Last year, the Alameda Unified School District Board adopted a resolution to formally oppose WCFs on school property. This site is no longer available to AT&T, which is the reason AT&T is now seeking to relocate to the Proposed Facility.

Alternative No. 3 – Donald Lum Elementary School

Conclusion: Unavailable

This school is located adjacent to Wood Elementary School. Given the new policy of the Alameda Unified School District prohibiting WCFs on school property, and direction from the school district to remove WCFs from schools in Alameda, this site is not available.

Alternative No. 4 – Rittler Park

Conclusion: More intrusive than Proposed Facility

This city park is located adjacent to Wood Middle School. Given its location immediately adjacent to the school, and the intense opposition to locating WCFs on school property, this site is more intrusive than the Proposed Facility. In addition, a WCF here would need to be a freestanding structure that might stick out more than the proposed stealth rooftop installation.

Alternative No. 5 – Shoreline

Conclusion: More intrusive than Proposed Facility

The shoreline offers no opportunity to conceal a WCF. A WCF here would be much more visible and intrusive than the Proposed Facility.

Conclusion

The Proposed Facility is the least intrusive means by which AT&T can close its significant service coverage objective in this portion of Alameda.

AT&T Mobility Radio Frequency Statement
1777 Shoreline Drive, Alameda, CA
Site ID: CCU3969

STATEMENT OF MICHAEL QUINTO

I am the AT&T radio frequency engineer assigned to the proposed wireless communications facility at 1777 Shoreline Drive, Alameda, CA (the "Property"). Based on my personal knowledge of the Property and with AT&T's wireless network, as well as my review of AT&T's records with respect to the Property and its wireless communications facilities in the surrounding area, I have concluded that the work associated with this permit request is needed to close a significant service coverage gap in an area roughly bordered by Dayton Avenue to the north, Willow Street to the east, the Pacific Ocean to the south, and Shell Gate Road to the west. The service coverage gap will exist once AT&T decommissions its existing wireless communications facility at a school. To remedy this service coverage gap, AT&T will need to construct a new wireless communications facility.

The service coverage gap will be caused by inadequate infrastructure in the area. As explained further in Exhibit 1, AT&T's existing facilities cannot adequately serve its customers in the desired area of coverage, let alone address rapidly increasing data usage. The site will not only close the gap in coverage and help address rapidly increasing data usage driven by smart phone and tablet usage, but it will also include 4G LTE service coverage. This site is part of an effort to fully deploy 4G LTE technology in the area.

AT&T uses industry standard propagation tools to identify the areas in its network where signal strength is too weak to provide reliable in-building service quality. This information is developed from many sources including terrain and clutter databases, which simulate the environment, and propagation models that simulate signal propagation in the presence of terrain and clutter variation. AT&T designs and builds its wireless network to ensure customers receive reliable in-building service quality. In-building service is critical as customers increasingly use their mobile phones as their primary communication device (approximately 44% of American households are now wireless only) and rely on their mobile phones to do more (E911, GPS, web access, text, etc.).

Exhibit 2 is a map of the existing UMTS 3G service coverage (without the proposed installation at the Property) in the area at issue. It includes service coverage provided by existing AT&T sites. The green shaded areas depict areas within a signal strength range that provide acceptable in-building service coverage. In-building coverage means customers are able to place or receive a call on the ground floor of a building. The yellow shaded areas depict areas within a signal strength range that provide acceptable in-vehicle service coverage. In these areas, an AT&T customer should be able to successfully place or

receive a call within a vehicle. The blue shading depicts areas within a signal strength range in which a customer might have difficulty receiving a consistently acceptable level of service. The quality of service experienced by any individual customer can differ greatly depending on whether that customer is indoors, outdoors, stationary, or in transit. Any area in the yellow or blue category is considered inadequate service coverage and constitutes a service coverage gap.

Exhibit 3 to this Statement is a map that predicts service coverage based on signal strength in the vicinity of the Property if antennas are placed as proposed in the application. As shown by this map, placement of the equipment at the Property closes the significant UMTS 3G service coverage gap.

In addition to these 3G wireless service gap issues, AT&T is in the process of deploying its 4G LTE service in Alameda with the goal of providing the most advanced personal wireless experience available to residents of the county. 4G LTE is capable of delivering speeds up to 10 times faster than industry-average 3G speeds. LTE technology also offers lower latency, or the processing time it takes to move data through a network, such as how long it takes to start downloading a webpage or file once you've sent the request. Lower latency helps to improve the quality of personal wireless services. What's more, LTE uses spectrum more efficiently than other technologies, creating more space to carry data traffic and services and to deliver a better overall network experience. Attached Exhibits 4 and 5 are LTE maps that illustrate how the proposed site closes the significant service coverage gap in LTE service coverage. Moreover, it is important to note that as existing customers migrate to 4G LTE, the LTE technology will provide the added benefit of reducing 3G data traffic, which can contribute to the significant service coverage gap on the UMTS (3G) network during peak usage periods.

I have a Bachelor of Science Degree in electronics and communications engineering and have worked as an engineering expert in the wireless communications industry for over 14 years.

Michael Quinto
AT&T Mobility Services LLC
Network, Planning & Engineering
RAN Design & RF Engineering

March 11, 2015

EXHIBIT 1

Prepared by AT&T Mobility

AT&T's digital wireless technology converts voice or data signals into a stream of digits to allow a single radio channel to carry multiple simultaneous signal transmissions. This technology allows AT&T to offer services such as secured transmissions and enhanced voice, high-speed data, texting, video conferencing, paging and imaging capabilities, as well as voicemail, visual voicemail, call forwarding and call waiting that are unavailable in analog-based systems. With consumers' strong adoption of smartphones, customers now have access to wireless broadband applications, which consumers utilize at a growing number.

Mobile data traffic in the United States grew by 75,000 percent over a six-year span, from 2001-2006. And in the seven years that followed, mobile data traffic on AT&T's national wireless network increased more than 50,000 percent *(from January 2007 through December 2013).* AT&T expects total mobile data volume to ***grow 8x-10x over the next five years***. To put this estimate in perspective, all of AT&T Mobility's mobile traffic during 2010 would be equal to only six or seven weeks of mobile traffic volume in 2015. The FCC noted that U.S. mobile data traffic grew almost 300% in 2011, and driven by 4G LTE smartphones and tablets, traffic is projected to grow an additional 16-fold by 2016.

Mobile devices using AT&T's technology transmit a radio signal to antennas mounted on a tower, pole, building, or other structure. The antenna feeds the signal to electronic devices housed in a small equipment cabinet, or base station. The base station is connected by microwave, fiber optic cable, or ordinary copper telephone wire to the Radio Network Controller, subsequently routing the calls and data throughout the world.

The operation of AT&T's wireless network depends upon a network of wireless communications facilities. The range between wireless facilities varies based on a number of factors. The range between AT&T mobile telephones and the antennas in and nearby Alameda, for example, is particularly limited as a result of challenges such as blockage from buildings, trees, and other obstructions as well as the limited capacity of existing facilities.

To provide effective, reliable, and uninterrupted service to AT&T customers in their cars, public transportation, home, and office, without interruption or lack of access, coverage must overlap in a grid pattern resembling a honeycomb.

In the event that AT&T is unable to construct or upgrade a wireless communications facility within a specific geographic area, so that each site's coverage reliably overlaps with at least one adjacent facility, AT&T will not be able to provide adequate personal wireless service to its customers within that area. Some consumers will experience an abrupt loss of service. Others will be unable to obtain reliable service, particularly if they are placing a call inside a building.

Service problems occur for customers even in locations where the coverage maps on AT&T's "Coverage Viewer" website appear to indicate that coverage is available. As the legend to the Coverage Viewer maps indicates, these maps depict a high-level *approximation* of coverage, which may not show gaps in coverage; *actual* coverage in an area may differ substantially from map graphics, and may be affected by such things as terrain, foliage, buildings and other construction, motion, customer equipment, and network traffic. The legend states that AT&T does not guarantee coverage and its coverage maps are not intended to show actual

customer performance on the network, nor are they intended to show future network needs or build requirements inside or outside of AT&T's existing coverage areas.

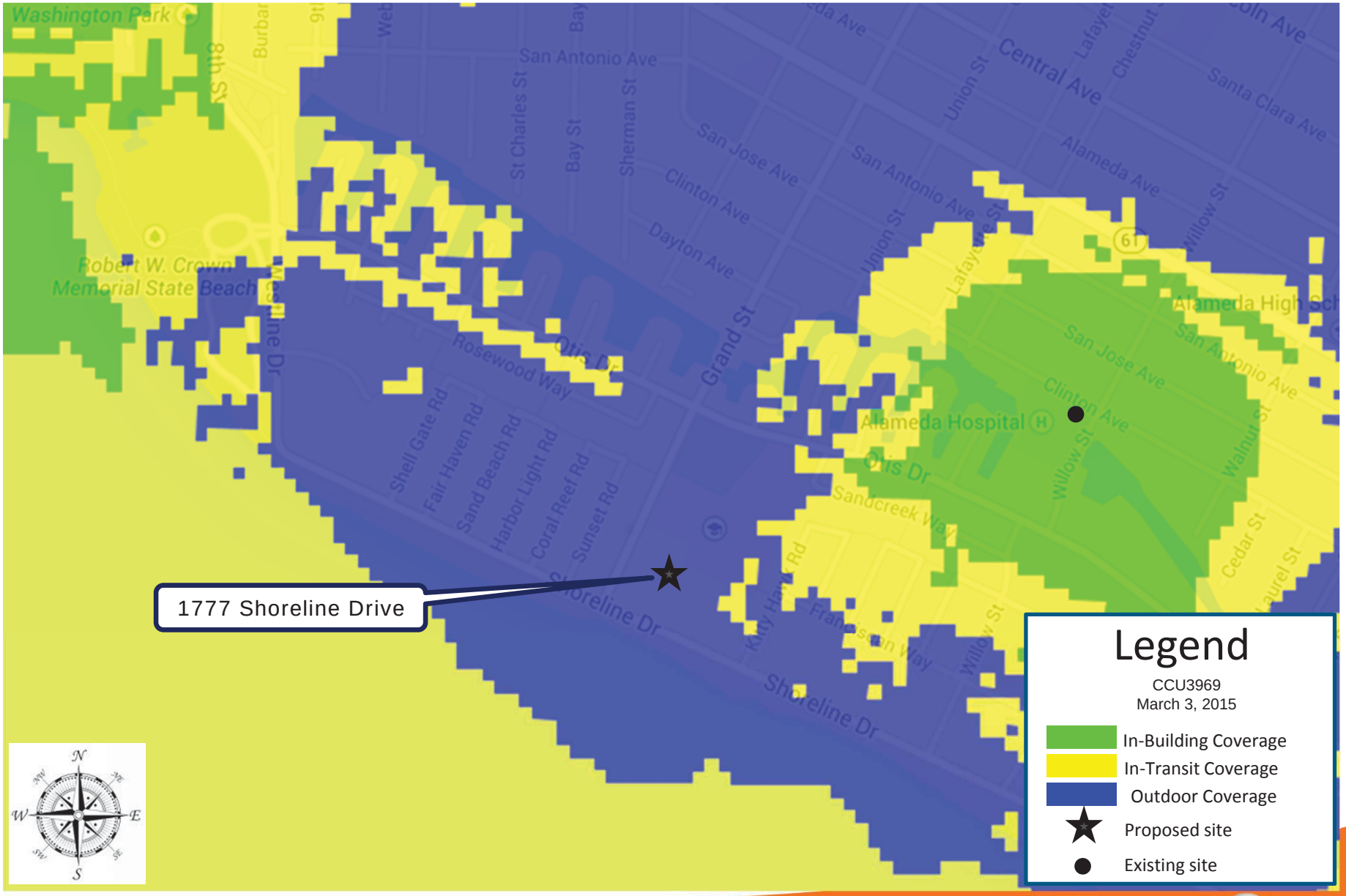
It is also important to note that the signal losses and service problems described above can and do occur for customers even at times when certain other customers in the same vicinity may be able to initiate and complete calls on AT&T's network (or other networks) on their wireless phones. These problems also can and do occur even when certain customers' wireless phones indicate "all bars" of signal strength on the handset.

The bars of signal strength that individual customers can see on their wireless phones are an imprecise and slow-to-update estimate of service quality. In other words, a customer's wireless phone can show "four bars" of signal strength, but that customer can still, at times, be unable to initiate voice calls, complete calls, or download data reliably and without service interruptions.

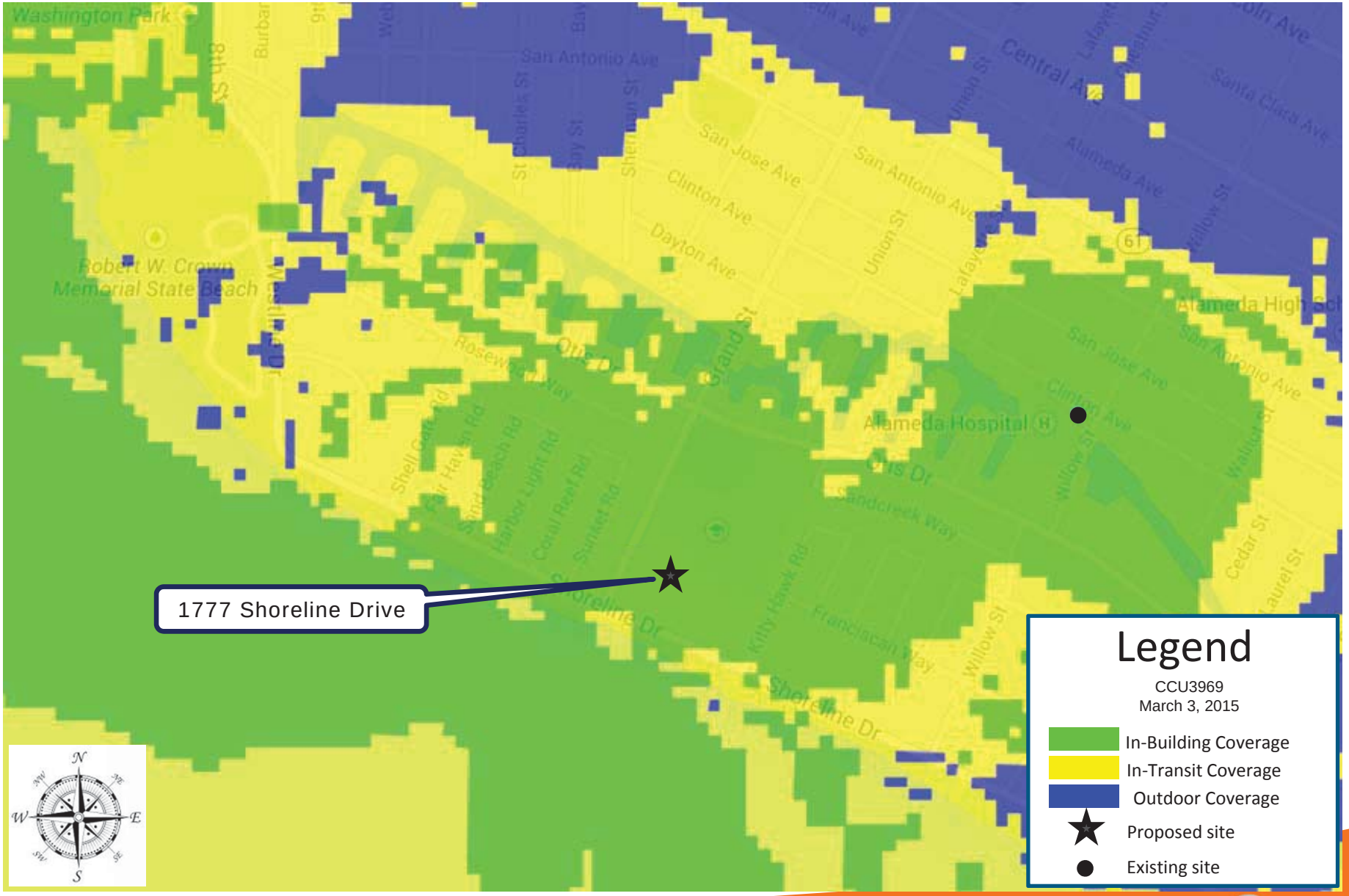
To determine where new or upgraded telecommunications facilities need to be located for the provision of reliable service in any area, AT&T's radio frequency engineers rely on far more complete tools and data sources than just signal strength from individual phones. AT&T creates maps incorporating signal strength that depict existing service coverage and service coverage gaps in a given area.

To rectify this significant gap in its service coverage, AT&T needs to locate a wireless facility in the immediate vicinity of the Property.

Without CCU3969 Coverage



With CCU3969 Coverage



Without CCL03969 Coverage

With CCL03969 Coverage

AT&T Mobility • Proposed Base Station (Site No. CCU3969)
1777 Shoreline Drive • Alameda, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of AT&T Mobility, a personal wireless telecommunications carrier, to evaluate the base station (Site No. CCU3969) proposed to be located at 1777 Shoreline Drive in Alameda, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

AT&T proposes to install directional panel antennas above the roof of the residential building located at 1777 Shoreline Drive in Alameda. The proposed operation will, together with the existing base station nearby, comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

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

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

General Facility Requirements

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

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

Computer Modeling Method

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

Site and Facility Description

The apartment complexes on Shoreline Drive in Alameda were visited by Mr. Brian Palmer, a qualified engineer employed by Hammett & Edison, Inc., during normal business hours on March 9, 2015. Four directional panel antennas for use by T-Mobile were observed high on the face of the three-story apartment building at the rear of the complex located at 1801 Shoreline Drive. The maximum power density level observed for a person at ground near the site was 1.7% of the most restrictive public limit, for the combined operation of the existing RF services at the site as installed and operating at that time. The measurement equipment used was a Narda Type NBM-520 Broadband Field Meter with Type EF-0391 Isotropic Broadband Electric Field Probe (Serial No. D-0698); the meter and probe were under current calibration by the manufacturer.

Based upon information provided by AT&T, including zoning drawings by Cortel, Inc., dated January 9, 2015, that carrier proposes to install twelve CCI Model HPA-45R-BUU-H6 directional panel antennas behind view screens to be constructed on the elevator penthouse above the roof of the three-story apartment building at the rear of the complex located at 1777 Shoreline Drive. The antennas would be mounted with up to 4° downtilt at an effective height of about 35½ feet above ground, 9 feet above the roof, and would be oriented in groups of four toward 25°T, 95°T, and 310°T. The maximum effective radiated power in any direction would be 16,190 watts, representing simultaneous operation at 3,860 watts for WCS, 4,650 watts for AWS, 4,360 watts for PCS, 1,000 watts for cellular, and 2,320 watts for 700 MHz service.

For the limited purpose of this study, the transmitting facilities of T-Mobile are assumed to be as follows:

Service	Maximum ERP	Antenna Model	Downtilt	Height
AWS	4,400 watts	Ericsson AIR21	2°	30 ft
PCS	2,200	Ericsson AIR21	2	30

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed AT&T operation by itself is calculated to be 0.048 mW/cm^2, which is 5.5% of the applicable public exposure limit. The maximum calculated cumulative level at ground, for the simultaneous operation of both carriers, is 7.2% of the public exposure limit. The maximum calculated cumulative level at the top-floor elevation of any nearby residence* is 28% of the public exposure limit. The maximum calculated cumulative level at any nearby school building† is 6.3% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels. Levels are calculated to exceed the applicable public exposure limit on the roof of the subject building, in front of the antennas.

Recommended Mitigation Measures

It is recommended that the outdoor roof access stairs continue to be kept locked, so that the AT&T antennas are not accessible to unauthorized persons. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training be provided to all authorized personnel who have access to the roof, including employees and contractors of AT&T and of the property owner. No access within 28 feet directly in front of the antennas themselves, such as might occur during maintenance work above the roof, should be allowed while the base station is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Marking a blue demarcation line at the stair landing below the top of the stairs, to indicate that certain areas above that point are calculated to exceed the FCC public limit, and posting explanatory signs‡ at the roof access stairs and on the screens in front of the antennas, as shown in Figure 3, 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.

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* Located at least 100 feet away, based on photographs from Google Maps.
† Located at least 130 feet away, based on photographs from Google Maps.
‡ Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the base station proposed by AT&T Mobility at 1777 Shoreline Drive in Alameda, California, can comply with the prevailing standards for limiting human exposure to radio frequency energy and, therefore, need 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. Locking the roof access stairs is recommended to establish compliance with public exposure limits; training authorized personnel, marking roof areas, and posting explanatory signs are recommended to establish compliance with occupational exposure limits.

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, 2015. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

William F. Hammett, P.E.
707/996-5200

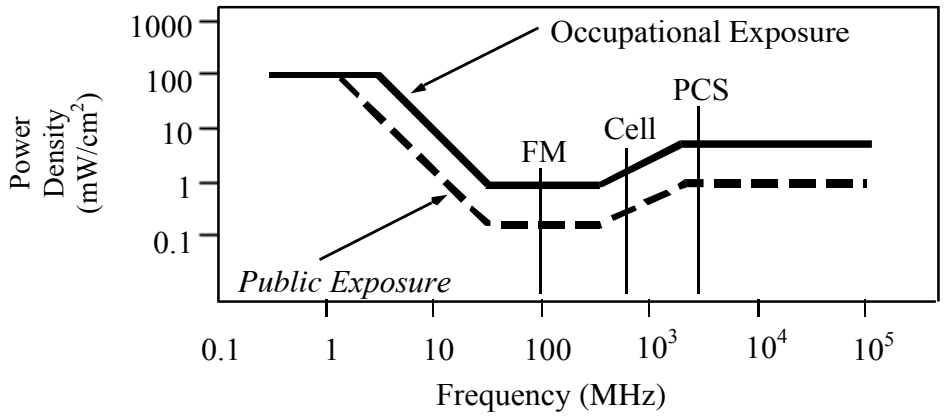
March 12, 2015

FCC Radio Frequency Protection Guide

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

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

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



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

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

Near Field.

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

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

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

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

Far Field.

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

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

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

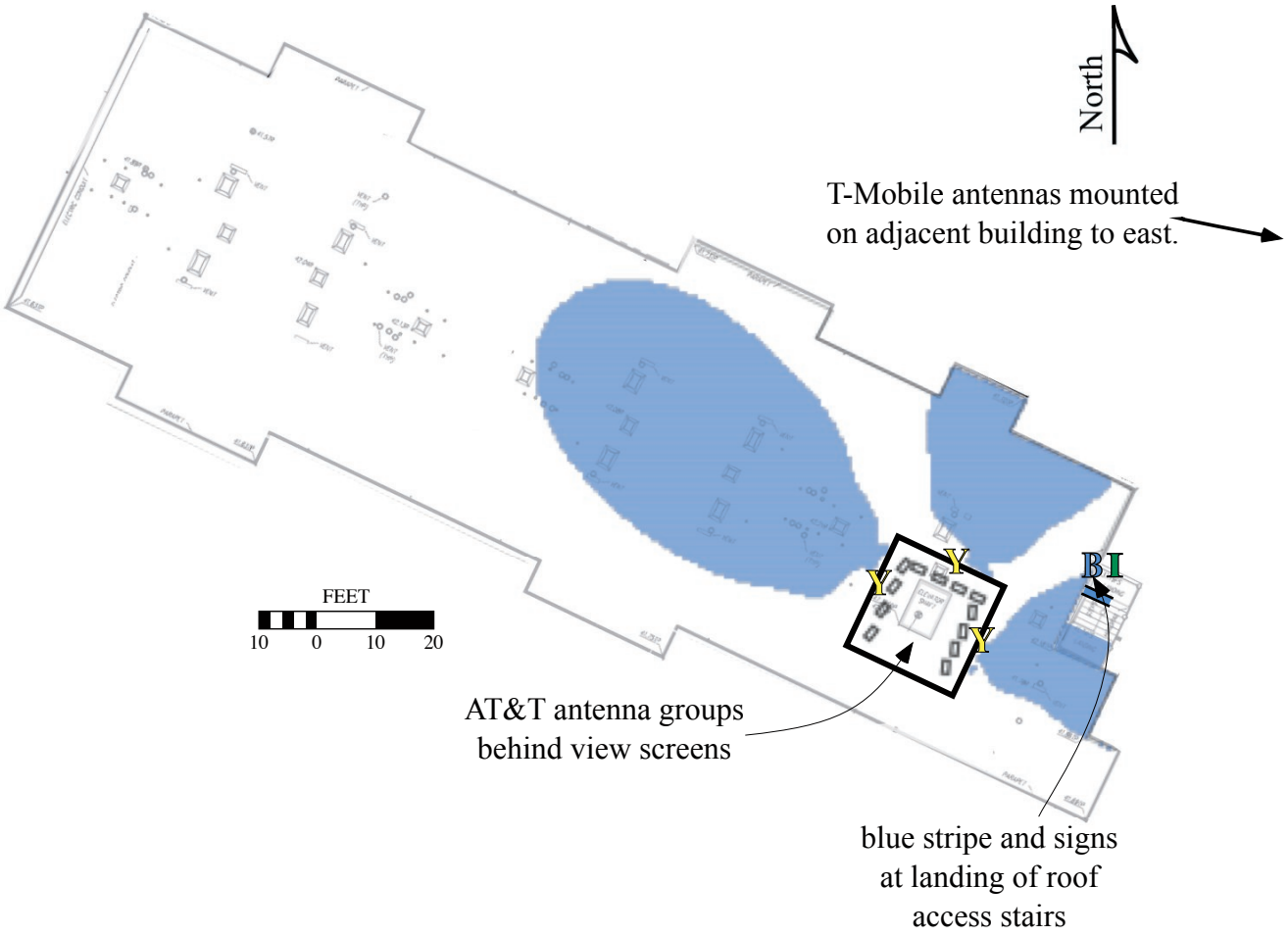
The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units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

AT&T Mobility • Base Station No. CCU3969
1777 Shoreline Drive Street • Alameda, California

Calculated RF Exposure Levels on Roof

Recommended Mitigation Measures

- Lock all roof access locations
- Mark boundaries (if shown)
- Post explanatory signs
- Provide training



Notes:
Base drawing from Cortel, Inc., dated January 9, 2015.
Calculations performed according to OET Bulletin 65, August 1997.
Training should be provided to all persons with access to the roof.

Legend:	Less Than Public	Exceeds Public	Exceeds Occupational	Exceeds 10x Occupational
Shaded color	N/A			
Boundary marking	N/A			
Sign type	I - Green INFORMATION	B - Blue NOTICE	Y - Yellow CAUTION	O - Orange WARNING

AT&T Mobility Radio Frequency Statement
1777 Shoreline Drive, Alameda, CA
Site ID: CCU3969

STATEMENT OF MICHAEL QUINTO

I am the AT&T radio frequency engineer assigned to the proposed wireless communications facility at 1777 Shoreline Drive, Alameda, CA (the "Property"). Based on my personal knowledge of the Property and with AT&T's wireless network, as well as my review of AT&T's records with respect to the Property and its wireless communications facilities in the surrounding area, I have concluded that the work associated with this permit request is needed to close a significant service coverage gap in an area roughly bordered by Dayton Avenue to the north, Willow Street to the east, the Pacific Ocean to the south, and Shell Gate Road to the west. The service coverage gap will exist once AT&T decommissions its existing wireless communications facility at a school. To remedy this service coverage gap, AT&T will need to construct a new wireless communications facility.

The service coverage gap will be caused by inadequate infrastructure in the area. As explained further in Exhibit 1, AT&T's existing facilities cannot adequately serve its customers in the desired area of coverage, let alone address rapidly increasing data usage. The site will not only close the gap in coverage and help address rapidly increasing data usage driven by smart phone and tablet usage, but it will also include 4G LTE service coverage. This site is part of an effort to fully deploy 4G LTE technology in the area.

AT&T uses industry standard propagation tools to identify the areas in its network where signal strength is too weak to provide reliable in-building service quality. This information is developed from many sources including terrain and clutter databases, which simulate the environment, and propagation models that simulate signal propagation in the presence of terrain and clutter variation. AT&T designs and builds its wireless network to ensure customers receive reliable in-building service quality. In-building service is critical as customers increasingly use their mobile phones as their primary communication device (approximately 44% of American households are now wireless only) and rely on their mobile phones to do more (E911, GPS, web access, text, etc.).

Exhibit 2 is a map of the existing UMTS 3G service coverage (without the proposed installation at the Property) in the area at issue. It includes service coverage provided by existing AT&T sites. The green shaded areas depict areas within a signal strength range that provide acceptable in-building service coverage. In-building coverage means customers are able to place or receive a call on the ground floor of a building. The yellow shaded areas depict areas within a signal strength range that provide acceptable in-vehicle service coverage. In these areas, an AT&T customer should be able to successfully place or

receive a call within a vehicle. The blue shading depicts areas within a signal strength range in which a customer might have difficulty receiving a consistently acceptable level of service. The quality of service experienced by any individual customer can differ greatly depending on whether that customer is indoors, outdoors, stationary, or in transit. Any area in the yellow or blue category is considered inadequate service coverage and constitutes a service coverage gap.

Exhibit 3 to this Statement is a map that predicts service coverage based on signal strength in the vicinity of the Property if antennas are placed as proposed in the application. As shown by this map, placement of the equipment at the Property closes the significant UMTS 3G service coverage gap.

In addition to these 3G wireless service gap issues, AT&T is in the process of deploying its 4G LTE service in Alameda with the goal of providing the most advanced personal wireless experience available to residents of the county. 4G LTE is capable of delivering speeds up to 10 times faster than industry-average 3G speeds. LTE technology also offers lower latency, or the processing time it takes to move data through a network, such as how long it takes to start downloading a webpage or file once you've sent the request. Lower latency helps to improve the quality of personal wireless services. What's more, LTE uses spectrum more efficiently than other technologies, creating more space to carry data traffic and services and to deliver a better overall network experience. Attached Exhibits 4 and 5 are LTE maps that illustrate how the proposed site closes the significant service coverage gap in LTE service coverage. Moreover, it is important to note that as existing customers migrate to 4G LTE, the LTE technology will provide the added benefit of reducing 3G data traffic, which can contribute to the significant service coverage gap on the UMTS (3G) network during peak usage periods.

I have a Bachelor of Science Degree in electronics and communications engineering and have worked as an engineering expert in the wireless communications industry for over 14 years.

Michael Quinto
AT&T Mobility Services LLC
Network, Planning & Engineering
RAN Design & RF Engineering

March 11, 2015

EXHIBIT 1

Prepared by AT&T Mobility

AT&T's digital wireless technology converts voice or data signals into a stream of digits to allow a single radio channel to carry multiple simultaneous signal transmissions. This technology allows AT&T to offer services such as secured transmissions and enhanced voice, high-speed data, texting, video conferencing, paging and imaging capabilities, as well as voicemail, visual voicemail, call forwarding and call waiting that are unavailable in analog-based systems. With consumers' strong adoption of smartphones, customers now have access to wireless broadband applications, which consumers utilize at a growing number.

Mobile data traffic in the United States grew by 75,000 percent over a six-year span, from 2001-2006. And in the seven years that followed, mobile data traffic on AT&T's national wireless network increased more than 50,000 percent *(from January 2007 through December 2013).* AT&T expects total mobile data volume to ***grow 8x-10x over the next five years***. To put this estimate in perspective, all of AT&T Mobility's mobile traffic during 2010 would be equal to only six or seven weeks of mobile traffic volume in 2015. The FCC noted that U.S. mobile data traffic grew almost 300% in 2011, and driven by 4G LTE smartphones and tablets, traffic is projected to grow an additional 16-fold by 2016.

Mobile devices using AT&T's technology transmit a radio signal to antennas mounted on a tower, pole, building, or other structure. The antenna feeds the signal to electronic devices housed in a small equipment cabinet, or base station. The base station is connected by microwave, fiber optic cable, or ordinary copper telephone wire to the Radio Network Controller, subsequently routing the calls and data throughout the world.

The operation of AT&T's wireless network depends upon a network of wireless communications facilities. The range between wireless facilities varies based on a number of factors. The range between AT&T mobile telephones and the antennas in and nearby Alameda, for example, is particularly limited as a result of challenges such as blockage from buildings, trees, and other obstructions as well as the limited capacity of existing facilities.

To provide effective, reliable, and uninterrupted service to AT&T customers in their cars, public transportation, home, and office, without interruption or lack of access, coverage must overlap in a grid pattern resembling a honeycomb.

In the event that AT&T is unable to construct or upgrade a wireless communications facility within a specific geographic area, so that each site's coverage reliably overlaps with at least one adjacent facility, AT&T will not be able to provide adequate personal wireless service to its customers within that area. Some consumers will experience an abrupt loss of service. Others will be unable to obtain reliable service, particularly if they are placing a call inside a building.

Service problems occur for customers even in locations where the coverage maps on AT&T's "Coverage Viewer" website appear to indicate that coverage is available. As the legend to the Coverage Viewer maps indicates, these maps depict a high-level *approximation* of coverage, which may not show gaps in coverage; *actual* coverage in an area may differ substantially from map graphics, and may be affected by such things as terrain, foliage, buildings and other construction, motion, customer equipment, and network traffic. The legend states that AT&T does not guarantee coverage and its coverage maps are not intended to show actual

customer performance on the network, nor are they intended to show future network needs or build requirements inside or outside of AT&T's existing coverage areas.

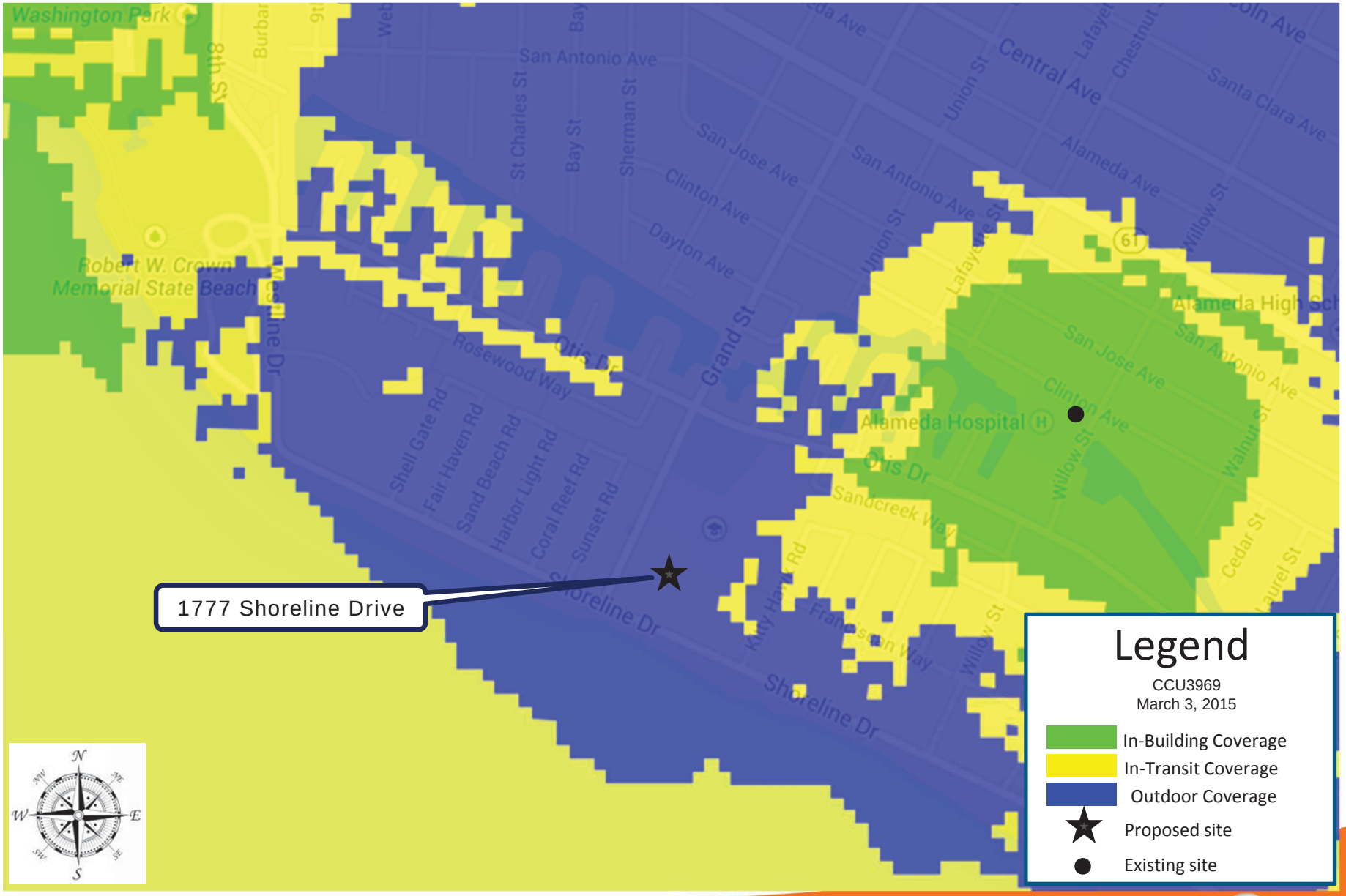
It is also important to note that the signal losses and service problems described above can and do occur for customers even at times when certain other customers in the same vicinity may be able to initiate and complete calls on AT&T's network (or other networks) on their wireless phones. These problems also can and do occur even when certain customers' wireless phones indicate "all bars" of signal strength on the handset.

The bars of signal strength that individual customers can see on their wireless phones are an imprecise and slow-to-update estimate of service quality. In other words, a customer's wireless phone can show "four bars" of signal strength, but that customer can still, at times, be unable to initiate voice calls, complete calls, or download data reliably and without service interruptions.

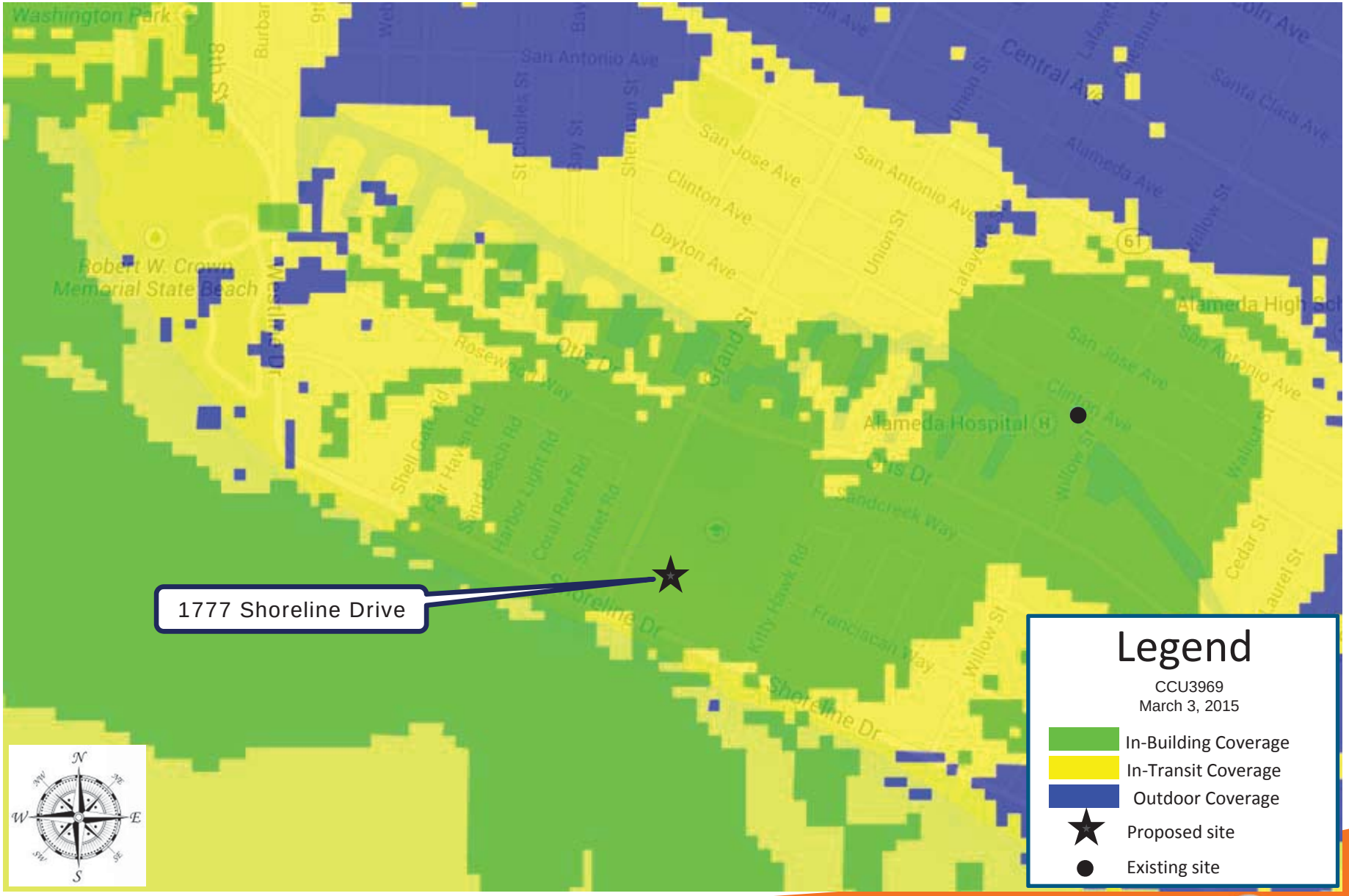
To determine where new or upgraded telecommunications facilities need to be located for the provision of reliable service in any area, AT&T's radio frequency engineers rely on far more complete tools and data sources than just signal strength from individual phones. AT&T creates maps incorporating signal strength that depict existing service coverage and service coverage gaps in a given area.

To rectify this significant gap in its service coverage, AT&T needs to locate a wireless facility in the immediate vicinity of the Property.

Without CCU3969 Coverage



With CCU3969 Coverage



Without CCL03969 Coverage

With CCL03969 Coverage

Deborah Diamond

From: the grimaldis <thegrimaldis@earthlink.net>
Sent: Monday, February 23, 2015 4:49 PM
To: John Knox White
Cc: Deborah Diamond
Subject: cell tower near Wood

Hello,

I would like to bring your attention to Alameda City Design Review applicaiton PLN14-0731 [1] for cellular antennas at 1777 Shoreline Drive.

This location is immediately adjacent to Wood Middle school, where AT&T has been asked to remove the existing cell antennas.

This new placement is inconsistent with the AUSD Resolution recently passed banning the placement of any new cellular antennas on or near any AUSD buildings which house students on a daily basis.

I'm asking for a reconsideration of this project.

Thank you,
Jane Grimaldi
President, Wood Middle School PTA

Deborah Diamond

From: J Phil <dannsphill@gmail.com>
Sent: Monday, February 23, 2015 3:10 PM
To: Deborah Diamond
Subject: Cell tower

I oppose the cell tower accross from Wood School; please do not allow this location.
Thank you,
Jenna Phillips

Sent from my iPhone

Deborah Diamond

From: J Phil <dannsphill@gmail.com>
Sent: Monday, February 23, 2015 3:12 PM
To: Deborah Diamond
Subject: Celltower

I am opposing
PLN14-0731 1777 Shoreline Drive -- TOWER IMMEDIATELY ADACENT
Thank you, Jenna Phillips

Sent from my iPhone

Deborah Diamond

From: j phil <dannsphill@gmail.com>
Sent: Monday, February 23, 2015 5:37 PM
To: Deborah Diamond
Subject: Re: Address Verified - Thank you!

Hello,

I am writing to show my opposition to two proposed cell towers. I do strongly believe that cell towers should NOT be near schools; I want the cell tower off of Maya Lin School (where my children attend) and I want to keep the proposed cell tower away from Wood Middle School (where I work and where my children plan to attend). I have voiced my opposition to both of those towers previously. I want to strongly voice my opposition to these sites and it is my priority to keep cell towers away from areas near schools.

However, I also want to voice my opposition to the proposed cell tower at 1538 St. Charles. We live at 1037 Taylor ave. We already have a large cell tower at Mastick Center just feet away from our home. Adding another cell tower in that neighborhood is not safe and I believe will expose my family to unhealthy levels of radiation. Please do not approve the application for that cell tower; it is too much for our neighborhood.

Thank you,
Jenna Phillips

Deborah Diamond

From: Craig Spahn <craigforsolar@gmail.com>
Sent: Monday, February 23, 2015 3:12 PM
To: Deborah Diamond
Subject: Current Cell projects

Hello,
I am writing to express my opposition to the following cell tower projects in Alameda:

PLN14-0731 1777 Shoreline Drive -- TOWER IMMEDIATELY ADACENT

opposing
PLN15-0031 716 Santa Clara Avenue -- VERIZON GENERATOR

There is no good reason, given unclear nature of health effect,to site cell towers at public schools.

Thank You,

Craig Spahn

2169 San Jose Ave. Apt A

Alameda, CA 94501

Deborah Diamond

From: Jessica Reed <jessreed12@gmail.com>
Sent: Monday, February 23, 2015 10:51 AM
To: Deborah Diamond
Subject: File No. PLN14-0729

Hi Ms. Diamond:

Could I please see the image of the posted notice, as well as the list of the neighbors to whom notice was sent? What was the distance requirement for mailed notice?
Does this change in height require a variance?
Did they provide any photographic renderings (more than the elevations drawings- a photoshop-like image) of what it will look like?

thank you,
Jessica Reed

Deborah Diamond

From: Jessica Reed <jessreed12@gmail.com>
Sent: Monday, February 23, 2015 12:47 PM
To: Deborah Diamond
Subject: File No. PLN14-0731

Can you please explain how the use of the roof top of a residence for telecommunications "is negligible or no expansion of use beyond that which exists"? There are no current telecommunication facilities there. Does this structure extend above the height limitation? It looks like it will be visible from the Shoreline path? It looks like it is adding 6 feet to the height and more than doubling the width of the existing roof structure. Is that correct?
Did all residents of the building and adjacent buildings (renters not just the owners) receive notice? Did Wood Middle School receive notice? What is the required radius of notification?
thank you,
Jessica Reed

Deborah Diamond

From: Cruz, Sarah <scruz@alameda.k12.ca.us>
Sent: Monday, February 23, 2015 2:14 PM
To: Deborah Diamond
Cc: Trish Spencer
Subject: I OPPOSE 1777 Shoreline Drive cellular antenna

Dear Deborah,

I am writing to echo the concerns of Joe Anakata, who today wrote to you opposing the construction of a cellular antenna at 1777 Shoreline Drive (PLN14-0731). This past Fall, the Alameda Unified School District - with the help of students, staff, and parents - created a ban on cell towers on or near our schools due to the potential harm that can be caused by the RF radiation from these structures. This proposed structure, which is extremely close to Wood Middle School as well as Lum Elementary School, and is in the neighborhood of families attending these schools, goes against this ban. Please respect our hard work in creating this ban and honor our voices. There are plenty of other non-residential places in Alameda where AT&T can propose an antenna.

Thank you for your time and consideration, Sarah Cruz

To: ddiamond@alamedaca.gov
From: "Kimberly, Joe, & Michael Anakata" <signup-ausd@anakata.org>
Subject: OPPOSE
Date: Mon, 23 Feb 2015 13:13:41 -0800

Dear Deborah,

I am writing to oppose the construction of a rooftop cellular antenna system at 1777 Shoreline Drive (PLN14-0731). This proposal needs to be subject to further review. AUSD has asked AT&T to remove existing antennas on Wood School due to concerns about exposing children to RF radiation on a daily basis. This application will be to replace this tower onto an immediately adjacent property. They are respecting the letter of the request but not the spirit.

AUSD has adopted a resolution against any new cell tower construction on or near schools. This antenna would violate that resolution.

Additionally, they are trying to be physically deceptive. The replacement plan calls for an "RF Transparent" sheath around the antennas. This will prevent the antennas from being seen, which may reduce opposition only because people don't know they are there.

A tower in this location may actually expose some children on the side of the school facing the new tower to higher levels of RF exposure, due to the lack of building shielding.

There are a lot of apartment buildings in that vicinity. AT&T should be able to find another one that is at least .25 miles from the school for their replacement tower.

Thanks
- -Joe Anakata
415-255-1102

Deborah Diamond

From: Jason Wilson <wilsonjason07@gmail.com>
Sent: Monday, February 23, 2015 3:36 PM
To: Deborah Diamond
Cc: Trish Spencer; Kahn, Barbara
Subject: New Cell Tower immediately next to Wood Middle (PLN14-0731 1777)

Dear Ms. Diamond,

As a parent of a Maya Lin School student who is considering attending Wood Middle School in the near future, I oppose the construction of a rooftop cellular antenna system at 1777 Shoreline Drive (PLN14-0731) due to possible health risks.

AUSD has already ordered AT&T to remove their existing cellular antennas on both Maya Lin and Wood School due to concerns about exposing children to RF radiation on a daily basis.

AUSD also adopted a resolution against any new cell tower construction on or near schools. This cellular antenna would violate that resolution.

I have copied Mayor Trish Spencer on this email who, as a previous School Board Trustee, was instrumental in passing both the directive to remove the AT&T cellular antenna at Maya Lin and Wood School, and the resolution banning any future cellular antenna's near a school.

Sincerely,

Jason Wilson

Deborah Diamond

From: Kimberly, Joe, & Michael Anakata <signup-ausd@anakata.org>
Sent: Monday, February 23, 2015 1:14 PM
To: Deborah Diamond
Subject: OPPOSE

Dear Deborah,

I am writing to oppose the construction of a rooftop cellular antenna system at 1777 Shoreline Drive (PLN14-0731). This proposal needs to be subject to further review. AUSD has asked AT&T to remove existing antennas on Wood School due to concerns about exposing children to RF radiation on a daily basis. This application will be to replace this tower onto an immediately adjacent property. They are respecting the letter of the request but not the spirit.

AUSD has adopted a resolution against any new cell tower construction on or near schools. This antenna would violate that resolution.

Additionally, they are trying to be physically deceptive. The replacement plan calls for an "RF Transparent" sheath around the antennas. This will prevent the antennas from being seen, which may reduce opposition only because people don't know they are there.

A tower in this location may actually expose some children on the side of the school facing the new tower to higher levels of RF exposure, due to the lack of building shielding.

There are a lot of apartment buildings in that vicinity. AT&T should be able to find another one that is at least .25 miles from the school for their replacement tower.

Thanks
-Joe Anakata
415-255-1102

Deborah Diamond

From: Carrie Sheret <carrie.sheret@gmail.com>
Sent: Monday, February 23, 2015 12:54 PM
To: Deborah Diamond; jknoxwhite@gmail.com
Subject: Opposition to PLN14-0731 1777 Shoreline Drive

Dear Ms. Diamond and Mr. White,

I am writing to ask that the City of Alameda Planning Board carefully review the design and installation of the proposed AT&T cellular antenna installation at 1777 Shoreline Drive. In the past, AT&T has demonstrated a lack of attention to Alameda's planning and contract procedures, i.e. the antenna installation which will soon be removed from Maya Lin (Washington) Elementary School, wherein the community was not sufficiently involved in the planning process and the contract with AT&T was written in direct violation of applicable contract limit codes. So the citizens of Alameda have no assurance that AT&T will follow proper procedures for this installation.

It is also disturbing that the proposed installation at 1777 Shoreline Drive is in the back of that apartment building *which is then directly facing the Wood Elementary grounds*. After vocal and unanimous parent community presentations and discussion, AUSD has declared that it will no longer allow cellular antenna to be installed on school property, and will remove the AT&T antennae from Maya Lin Elementary. I ask that the Alameda Planning Board consider this prohibition when reviewing any proposals for cellular antenna near our schools. The proximity of this proposed plan at 1777 Shoreline Dr. is contrary to the stated goals of a significant percentage of Alameda's parent population. Please ask AT&T to find a different location at least 1000 feet from any Alameda school for their equipment.

Regards,
Carrie Sheret
(415) 595-0420
1312 9th Street, Alameda CA

Deborah Diamond

From: cables2@comcast.net
Sent: Saturday, February 21, 2015 10:12 AM
To: Deborah Diamond
Subject: Pln14-0729 1538 St Charles Street

Hello Deborah Diamond,
I own the property on Lincoln Ave which is to the side of this subject property.
My main objection to this will be the noise factor (if any) Transmission signal (if it will effect any TV, radio etc. interference) and any health problem because of any radiation.
I would like to see at least a five year subject to review condition approval of this project as to any effect it might have on the area.
Sincerely
Lester Cabral

Deborah Diamond

From: Janet <jlevaux@gmail.com>
Sent: Monday, February 23, 2015 5:58 PM
To: Deborah Diamond
Subject: Resident Says No to Cell Phone Tower by Wood

Dear School Board,

I would like to bring your attention to Alameda City Design Review applicaiton PLN14-0731 [1] for cellular antennas at 1777 Shoreline Drive.

This location is immediately adjacent to Wood Middle school, where AT&T has been asked to remove the existing cell antennas.

This new placement is inconsistent with the AUSD Resolution recently passed (THANK YOU!) banning the placement of any new cellular antennas on or near any AUSD buildings which house students on a daily basis.

I would appreciate any/all action that would stop the new placement near Wood or any other school in Alameda.

Thank you!
Janet Levaux

2426 Lincoln Ave., #B, Alameda

510 387 6995

Allen Tai

From: ANDREW THOMAS
Sent: Thursday, April 02, 2015 5:29 PM
To: Allen Tai; NANCY McPeak
Subject: FW: 1777 Shoreline Proposal

From: Jessica Reed [mailto:jessreed12@gmail.com]
Sent: Thursday, April 02, 2015 2:14 PM
To: ANDREW THOMAS
Subject: 1777 Shoreline Proposal

Dear Mr. Thomas:

I would appreciate it if you would pass this along to the Board members.

I have concerns with regard to the antenna site proposal at 1777 Shoreline Drive.
The proposed structure will be out of proportion with the existing development, and the structure surrounding the antenna will exceed the height maximum for the R-3 Garden residential district.

It will be highly visible from Rittler Park and the Little League Fields. From the plans, it looks like it may also be visible from the Shoreline pedestrian path and new bike path as well, but I am not sure- a photo simulation would be very helpful to the community.
Additionally, the intersection of Grand and Shoreline is one of the broadest street spaces on the island, and it makes everything around it more noticeable. I think this structure will stand out and contrast with the rest of the views and skyline.

I also know that this proposal is conflict with the school district's resolution of last year, opposing new cell antenna on and adjacent to school property. This antenna will be only 102 1/2 feet from the school property line. Last year, AT&T representatives asked the community how far would be far enough. If they had asked about this; I think we would have said that this is not far enough.

While the health effects of cell antenna emissions is not allowed to be a basis for rejecting an application, it is within the Planning Board's authority to consider the health, safety and welfare of the community, and it is the highest duty of our community to make children feel safe at school. There are students who are concerned about antennas, and they expressed to the School Board last year that the antennas make them feel unsafe. And while they were disappointed that the School Board gave AT&T a year to take down the antennas, they thought they had accomplished something and there was an end in sight; but now, many of them, who are fifth graders, may have to face this again next year at Wood.

Moving the antenna even one more building away from the intersection of Grand, will make it less visible from Rittler Park, less awkward, and may have the additional advantage of making the students feel safer.
I request that AT&T be a good neighbor, and consider all aspects of this proposal and move the antenna further away from Grand Avenue.

And while it may not be required, I do believe it is within the ability of the owners/operators of these apartments, to provide individual notice to their tenants, either posted on each apartment door, or to the same mailing addresses that they use for other building notices. Wouldn't you want to be notified if you lived there?

Thank you for your consideration,
Jessica Reed

CITY OF ALAMEDA PLANNING BOARD
DRAFT RESOLUTION

A RESOLUTION OF THE PLANNING BOARD OF THE CITY OF ALAMEDA APPROVING DESIGN REVIEW APPLICATION NO. PLN14-0731 FOR THE INSTALLATION OF A TELECOMMUNICATIONS FACILITY AT 1777 SHORELINE DRIVE

WHEREAS, an application was made on December 9, 2014, by Cortel Inc. representing AT&T requesting Design Review approval to install wireless telecommunication facilities on the rooftop of a residential building at 1777 Shoreline Drive; and

WHEREAS, the application was accepted as complete on February 10, 2015; and

WHEREAS, the project site is located within a R-3-PD (Garden Residential Planned Development) zoning district; and

WHEREAS, AMC Section 30-4.3 allows above ground utility installations as a permitted use; and

WHEREAS, AMC Section 30-37.2 requires Design Review for new structures such as a proposed telecommunications facility; and

WHEREAS, AMC Section 30-5.8 allows antenna and utility structures up to a height of 25 feet beyond the building height limit of the zoning district, thereby allowing such structures to extend to a height of 60 feet; and

WHEREAS, local government authority over the review and approval of wireless communications antenna applications is established by the Federal Telecommunications Act of 1996, and the Middle Class Tax Relief Act of 2012.

NOW, THEREFORE, BE IT RESOLVED THAT the Planning Board of the City of Alameda finds this project exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15301 -- minor alterations to existing public or private structures involving negligible or no expansion of use beyond that which exists. The proposed installation is a negligible expansion of the residential use and is in compliance with all applicable zoning regulations. Approval of the project would not result in any significant environmental impacts.

BE IT FURTHER RESOLVED THAT the Planning Board held a public hearing on this Design Review application on April 13, 2015, and has examined pertinent plans and documents; and

BE IT FURTHER RESOLVED THAT pursuant to AMC Section 30-37.2, the Planning Board has made the following findings relative to the proposed Design Review application (PLN14-0731):

1. The proposed design is consistent with the General Plan, Zoning Ordinance, and the City of Alameda Design Review Manual, in that the design of the installation is visually consistent with the building on which it will be located and has a harmonious relationship with the surrounding area.

2. The project will be compatible and harmonious with the design and use of the surrounding area. The design and dimensions of the stealth enclosure (17'6" by 17'6" by 11' tall) are appropriate to the site, compatible with adjacent or neighboring buildings or surroundings, and promotes harmonious transitions in scale and character in areas between different designated land uses, in that the facilities will be located at the rear of the property and away from public view from the street, and will blend in with the apartment complex.

3. The proposed design of the structure and exterior materials are visually compatible with the surrounding development, and design elements have been incorporated to ensure the compatibility of the facility with the character and uses of adjacent development in that the antennas are screened from view by a stealthing structure that will be painted to match the building color, exterior cables will be boxed in and painted to match the building color, and the cabinet boxes will be located adjacent to the ground floor parking garage and will be concealed behind a door that will be painted to match the building.

BE IT FURTHER RESOLVED THAT the Planning Board hereby approves Design Review Application PLN14-0731, subject to the following conditions:

1. **Building Permit Plans**: The plans submitted for the Building Permit shall include printed copies of these conditions and shall be in substantial compliance with plans prepared by Cortel dated February 2, 2015, and on file in the office of the City of Alameda Community Development Department, except as modified in these conditions of approval specified by the Planning Board:
    a. This Planning Board resolution and conditions of approval shall be printed on the first sheet of the building permit plan set.
    b. The final plans, submitted for building permit approval, shall conform to all applicable codes, regulations, and guidelines.
    c. The final plans, submitted for building permit approval, shall note that exterior surfaces of the stealthing structure, exterior cable boxing and door to equipment cabinets are to be painted in the matching color(s) as the building.

2. **Permit Expiration:** The Design Review approval shall terminate two years from April 13, 2015, unless actual construction under valid building permits has commenced, or the applicant applies for, and is granted by the Community Development Director or

his/her designee, a one-time twenty-four month extension prior to the expiration of the Design Review.

3. **Discontinuation of Wireless Use.** Upon discontinuation of the use of the subject antennas, the property owner and/or permittee shall remove all antenna improvements and related equipment/enclosures associated with this Permit within 30 days.

4. **Co-location.** The owner(s) and operators of the proposed telecommunications facility shall fully cooperate and allow the co-location of antennas for other providers once a mutual agreement between the providers is established. Other wireless providers shall also be allowed to add on to existing at-grade equipment enclosures. Co-locations proposals shall be subject to Design Review.

5. **Compliance with FCC Standards.** The proposed wireless communication facility shall comply with all applicable Federal Communications Commission (FCC) radio frequency emissions safety standards.

6. **Subsequent Changes to Approved Plans.** The approved design and dimensions of the stealth enclosure (17'6" wide by 17'6" long by 11' tall) are appropriate to the site, compatible with adjacent or neighboring buildings, and promotes harmonious transitions in scale and character in the surrounding areas. Any subsequent exterior changes shall be submitted to the Community Development Department for review and approval prior to construction. Minor project design details requested by the applicant may be established, modified, and approved by the Community Development Director or his/her designee provided that the findings can be made that the proposed changes are consistent in character and quality to the design review plans approved by the Planning Board.

7. **Nuisance**. This use shall be operated in a manner which does not create a public or private nuisance. Any such nuisance must be abated immediately upon notice by the City.

8. **Noise**. Maximum noise levels emanating from any of the facilities operating on the subject site shall comply with the City's Noise Ordinance requirements.

Hold Harmless and Indemnification: The applicant shall defend (with counsel reasonably acceptable to the City), indemnify, and hold harmless the City of Alameda, the Alameda Planning Board and their respective agents, officers, and employees from any claim, action, or proceeding (including legal costs and attorney's fees) against the City of Alameda, Alameda Planning Board and their respective agents, officers or employees to attack, set aside, void or annul, an approval by the City of Alameda, the Community Development Department, Alameda Planning Board or City Council relating to this project. The City shall notify the applicant of any claim, action or proceeding and the City shall cooperate in such defense. The City may elect, in its sole discretion, to participate in the defense of said claim, action or proceeding.

NOTICE. No judicial proceedings subject to review pursuant to California Code of Civil Procedure Section 1094.5 may be prosecuted more than ninety (90) days following the date of this decision plus extensions authorized by California Code of Civil Procedure Section 1094.6.

NOTICE. The conditions of project approval set forth herein include certain fees and other exactions. Pursuant to Government Code section 66020(d)(1), these Conditions constitute written notice of a statement of the amount of such fees, and a description of the dedications, reservations and exactions. The applicant is hereby further notified that the 90-day appeal period, in which the applicant may protect these fees and other exactions, pursuant to Government Code section 66020(a) has begun. If the applicant fails to file a protest within this 90-day period complying with all requirements of section 66020, the applicant will be legally barred from later challenging such fees or exactions.

The decision of the Planning Board shall be final unless appealed to the City Council, in writing and within ten (10) days of the decision, by filing with the Community Development Department a written notice of appeal stating the basis of appeal and paying the required fees.

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CITY OF ALAMEDA PLANNING BOARD
DRAFT RESOLUTION

A RESOLUTION OF THE PLANNING BOARD OF THE CITY OF ALAMEDA APPROVING DESIGN REVIEW APPLICATION NO. PLN14-0729 FOR THE INSTALLATION OF A TELECOMMUNICATIONS FACILITY AT 1538 SAINT CHARLES STREET

WHEREAS, an application was made on December 8, 2014, by Cortel Inc. representing AT&T requesting Design Review approval to install wireless telecommunication facilities on the rooftop of a residential building at 1538 Saint Charles Street; and

WHEREAS, the application was accepted as complete on February 10, 2015; and

WHEREAS, the project site is located within the R-4 (Neighborhood Residential) zoning district; and

WHEREAS, AMC Section 30-4.3 allows above ground utility installations as a permitted use; and

WHEREAS, AMC Section 30-37.2 requires Design Review for new structures such as a proposed telecommunications facility; and

WHEREAS, AMC Section 30-5.8 allows antenna and utility structures up to a height of 25 feet beyond the building height limit of the zoning district, thereby allowing such structures to extend to a height of 60 feet; and

WHEREAS, local government authority over the review and approval of wireless communications antenna applications is established by the Federal Telecommunications Act of 1996, and the Middle Class Tax Relief Act of 2012.

NOW, THEREFORE, BE IT RESOLVED THAT the Planning Board of the City of Alameda finds this project exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15301 -- minor alterations to existing public or private structures involving negligible or no expansion of use beyond that which exists. The proposed installation is a negligible expansion of the residential use and is in compliance with all applicable zoning regulations. Approval of the project would not result in any significant environmental impacts.

BE IT FURTHER RESOLVED THAT, the Planning Board held a public hearing on this Design Review application on April 13, 2015, and has examined pertinent plans and documents; and

BE IT FURTHER RESOLVED THAT, pursuant to AMC Section 30-37.2, the Planning Board has made the following findings relative to the proposed Design Review application (PLN14-0729):

1. The proposed design is consistent with the General Plan, Zoning Ordinance, and the City of Alameda Design Review Manual, in that the design of the installation is visually consistent with the building on which it will be located and has a harmonious relationship with the surrounding area.

2. The project will be compatible and harmonious with the design and use of the surrounding area. The design and dimensions of the stealth enclosure (15'0" by 14'6" by 10' tall) are appropriate to the site, compatible with adjacent or neighboring buildings or surroundings, and promotes harmonious transitions in scale and character in areas between different designated land uses, in that the facilities will be located at the rear of the property and away from public view from the street, and will blend in with the apartment complex.

3. The proposed design of the structure and exterior materials are visually compatible with the surrounding development, and design elements have been incorporated to ensure the compatibility of the facility with the character and uses of adjacent development in that the antennas are screened from view by a stealthing structure that will be painted to match the building color, exterior cables will be boxed in and painted to match the building color, and the cabinet boxes will be located inside of the ground floor parking garage.

BE IT FURTHER RESOLVED THAT the Planning Board hereby approves Design Review Application PLN14-0729, subject to the following conditions:

1. **Building Permit Plans**: The plans submitted for the Building Permit shall include printed copies of these conditions and shall be in substantial compliance with plans prepared by Cortel dated February 2, 2015, and on file in the office of the City of Alameda Community Development Department, except as modified in these conditions of approval specified by the Planning Board:
    a. This Planning Board resolution and conditions of approval shall be printed on the first sheet of the building permit plan set.
    b. The final plans, submitted for building permit approval, shall conform to all applicable codes, regulations, and guidelines.
    c. The final plans, submitted for building permit approval, shall note that exterior surfaces of the stealthing structure and the exterior cable boxing are to be painted in the matching color(s) as the building.

2. **Permit Expiration:** The Design Review approval shall terminate two years from April 13, 2015, unless actual construction under valid building permits has commenced, or the applicant applies for, and is granted by the Community Development Director or his/her designee, a one-time twenty-four month extension prior to the expiration of the Design Review.

3. **Discontinuation of Wireless Use.** Upon discontinuation of the use of the subject antennas, the property owner and/or permittee shall remove all antenna improvements and related equipment/enclosures associated with this Permit within 30 days.

4. **Co-location.** The owner(s) and operators of the proposed telecommunications facility shall fully cooperate and allow the co-location of antennas for other providers once a mutual agreement between the providers is established. Other wireless providers shall also be allowed to add on to existing at-grade equipment enclosures. Co-location proposals shall be subject to Design Review.

5. **Compliance with FCC Standards.** The proposed wireless communication facility shall comply with all applicable Federal Communications Commission (FCC) radio frequency emissions safety standards.

6. **Subsequent Changes to Approved Plans.** The approved design and dimensions of the stealth enclosure (15'0" by 14'6" by 10' tall) are appropriate to the site, compatible with adjacent or neighboring buildings, and promotes harmonious transitions in scale and character in the surrounding areas. Any subsequent exterior changes shall be submitted to the Community Development Department for review and approval prior to construction. Minor project design details requested by the applicant may be established, modified, and approved by the Community Development Director or his/her designee provided that the findings can be made that the proposed changes are consistent in character and quality to the design review plans approved by the Planning Board.

7. **Nuisance**. This use shall be operated in a manner which does not create a public or private nuisance. Any such nuisance must be abated immediately upon notice by the City.

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Section 1094.6.

NOTICE. The conditions of project approval set forth herein include certain fees and other exactions. Pursuant to Government Code section 66020(d)(1), these Conditions constitute written notice of a statement of the amount of such fees, and a description of the dedications, reservations and exactions. The applicant is hereby further notified that the 90-day appeal period, in which the applicant may protect these fees and other exactions, pursuant to Government Code section 66020(a) has begun. If the applicant fails to file a protest within this 90-day period complying with all requirements of section 66020, the applicant will be legally barred from later challenging such fees or exactions.

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