

PROJECT TEAM

APPLICANT:

AT&T
5001 Executive Parkway
San Ramon, Ca 94583

ARCHITECT/ENGINEER:

Rodney Barnes
Meridian Management LLC
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ZONING CONTACT

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LEASING CONTACT:

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CONSTRUCTION MANAGER:

Vinculums Services
575 Lennon Lane
Suite 125
Walnut Creek, CA 94598

GENERAL NOTES

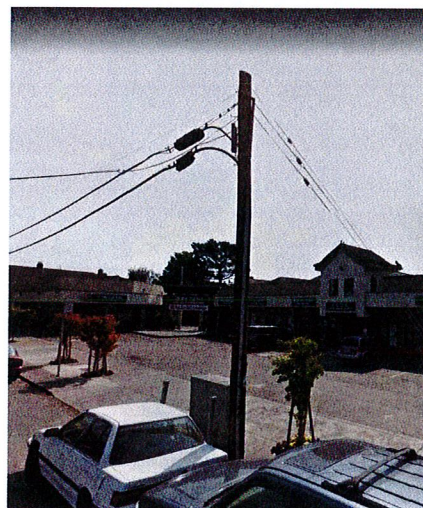
1. THIS IS AN UNMANNED TELECOMMUNICATIONS FACILITY FOR THE AT&T WIRELESS NETWORK CONSISTING OF THE INSTALLATION AND OPERATION OF AN ANTENNA AND ASSOCIATED EQUIPMENT ON AN EXISTING METAL LIGHT POLE IN THE PUBLIC RIGHT-OF-WAY. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
2. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT DRAINAGE, NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.
3. CHANGES FROM THE APPROVED PLANS DURING THE COURSE OF CONSTRUCTION SHALL CAUSE CONSTRUCTION TO BE SUSPENDED UNTIL SUCH TIME AS THE PLANS CAN BE AMENDED BY THE DESIGNER AND SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL

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 CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

- CALIFORNIA CODES
- 2016 CALIFORNIA BUILDING CODE
- 2016 CALIFORNIA MECHANICAL CODE
- 2016 CALIFORNIA PLUMBING CODE
- 2016 CALIFORNIA ELECTRIC CODE
- 2016 GREEN BUILDING CODE
- 2016 EDITION OF TITLE 24 ENERGY STANDARDS
- ANY LOCAL BUILDING CODE AMENDMENTS TO THE ABOVE
- CITY / COUNTY ORDINANCES
- CITY OF OAKLAND PUBLIC WORKS DEPARTMENT
- GENERAL ORDER 95 (JUNE 2009 EDITION)

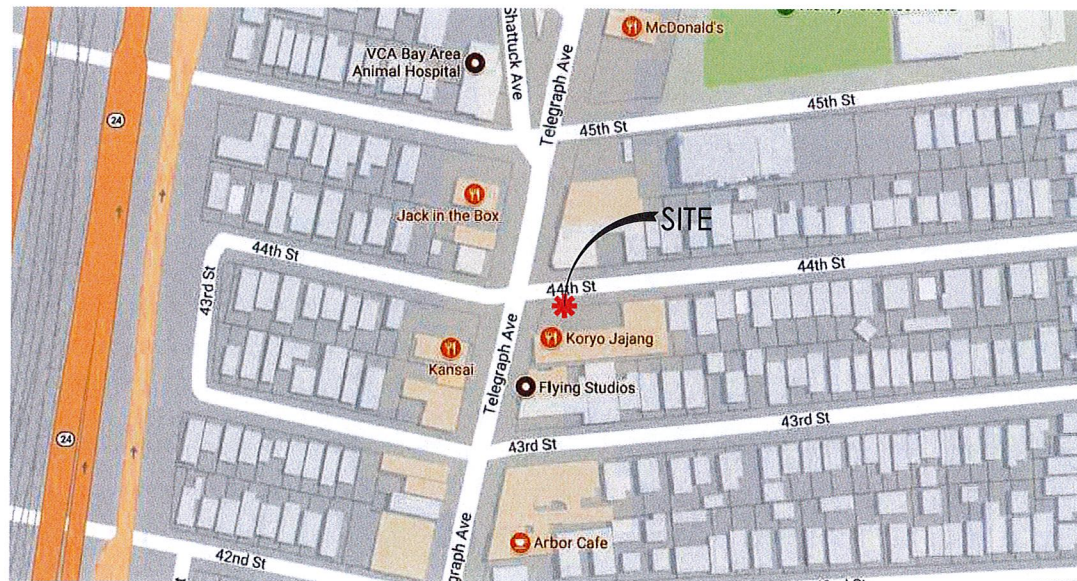
SITE IMAGE



5001 EXECUTIVE PARKWAY, SAN RAMON, CA 94583

CRAN-RSFR-SFOK7-011

PACE ID:
ROW AT 4390 TELEGRAPH AVE, OAKLAND, CA 94609
COUNTY: ALAMEDA
SITE TYPE: WOOD POLE
FA:14394424 HUB:20 USID:192910



DRIVING DIRECTIONS

FROM AT&T WIRELESS OFFICE AT 5001 EXECUTIVE PARKWAY, SAN RAMON, CA

1. Head north-east on Bishop Dr towards Sunset Dr
2. Turn right onto Sunset Dr
3. Use the right 2 lanes to turn right onto Bollinger Canyon Rd
4. Use the right 2 lanes to merge onto I-680 N via the slip road to Sacramento
5. Merge onto I-680 N
6. Use the right 2 lanes to take exit 46A for State Route 24 towards Oakland/Lafayette
7. Continue onto CA-24 W
8. Keep left at the fork to stay on CA-24 W
9. Take the Telegraph Avenue exit towards West Grand Avenue/Interstate 580
10. Turn left onto Telegraph Ave
11. Turn left onto 44th St

INDEX

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A.4	ELEVATIONS
A.5	EQUIPMENT DETAILS
A.6	EQUIPMENT DETAILS

DRAWING SIGN-OFF



Signature _____ Date _____
 SITE ACQUISITION: _____
 PLANNING: _____
 CONSTRUCTION: _____
 MANAGEMENT: _____



Signature _____ Date _____
 CONSTRUCTION: _____
 REAL ESTATE: _____
 RF ENGINEER: _____
 EQUIPMENT ENGINEER: _____
 MW ENG/TRANSPORT: _____
 OWNER: _____

PROJECT DESCRIPTION

THIS IS AN UNMANNED TELECOMMUNICATIONS FACILITY FOR THE AT&T WIRELESS NETWORK CONSISTING OF THE INSTALLATION AND OPERATION OF AN ANTENNA AND ASSOCIATED EQUIPMENT ON AN EXISTING WOOD POLE IN THE PUBLIC RIGHT-OF-WAY.

SCOPE OF WORK & SITE COMPLETION CHECKLIST:

1. ANTENNA & ASSOCIATED EQUIPMENT BOXES: INSTALL A NEW TELECOMMUNICATION ANTENNA, NEW 7' BAYONET EXTENSION, (2) EQUIPMENT BOXES, NEW FIBER BOX, AND NEW DISCONNECT/BREAKER BOX ON AN EXISTING WOOD POLE. ALL POLE-MOUNTED EQUIPMENT TO BE INSTALLED ON A G09S COMPLIANT STANDOFF BRACKET.
2. DURABLE PAINT: ANTENNAS, MOUNTING BRACKETS, CABLING, AND RADIO RELAY UNITS TO BE PAINTED SHERWIN WILLIAMS MESA BROWN
3. CABLING: CABLING TO BE INSTALLED IN A TIDY MANNER WITHOUT EXCESS CABLE LOOPS
4. LOGO REMOVAL: ALL EQUIPMENT LOGOS, OTHER THAN THOSE REQUIRED BY REGULATION (E.G. NODE IDENTIFICATION), SHALL BE PAINTED OVER OR REMOVED, RAISED/DEPRESSED TEXT ON RRUS OR OTHER EQUIPMENT, IF PRESENT, TO BE SANDED OFF OR SIMILARLY REMOVED AND/OR FILLED
5. SIGNAGE: FCC MANDATED RF WARNING SIGNAGE SHALL FACE CLIMBING SPACE, OPTIONAL SIGNAGE SHALL FACE OUT TO STREET WHEN PLACED IN FRONT OF OR NEAR A WINDOW. SIGNAGE SHALL FACE TOWARD BUILDING IF THERE IS NO WINDOW.
6. UTILITY LINES: PROPOSED UTILITY LINES BETWEEN EXISTING POINT OF CONNECTION TO BE IN CONDUIT ON POLE

SITE INFORMATION

OWNER: AT&T
 APPLICANT: AT&T
 5001 EXECUTIVE PARKWAY
 SAN RAMON, CA 94583
 LATITUDE: 37.8322600 (NAD 83)
 LONGITUDE: -122.2633500 (NAD 83)
 GROUND ELEVATION: 95' AMSL
 ADJACENT APN#: (IFO) 13-1098-33-4
 ZONING JURISDICTION: CITY OF OAKLAND
 CURRENT ZONING: PUBLIC ROW
 PROPOSED USE: UNMANNED TELECOMMUNICATIONS FACILITY

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS & FIELD CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME



AT&T Wireless
5001 Executive Parkway
San Ramon, CA 94583

Client: _____



Project Architect: _____



575 LENNON LANE
SUITE 125
WALNUT CREEK, CA 94598
T 925.482.8500

Site Agent: _____

90% Zoning Drawings

Drawing Phase: _____

CRAN-RSFR-SFOK7-011

PACE ID:
ROW AT 4390 TELEGRAPH AVE,
OAKLAND, CA 94609
COUNTY: ALAMEDA

Site Name: _____

Professional Seal: _____

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Rev.	Date	Description
01	09/27/17	Zoning Dwgs 90%

Project No.: _____

Date: 09/27/17 Job No.: _____

Scale: AS SHOWN CAD File: _____

Designed By: JG Checked: RB

TITLE SHEET

Sheet Title: _____

T.1

Sheet No.: _____

GENERAL CONSTRUCTION NOTES

- 1. PLANS ARE INTENDED TO BE DIAGRAMMATIC OUTLINE ONLY. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

GENERAL NOTES FOR EXISTING CELL SITES

- 1. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

APPLICABLE CODES, REGULATIONS AND STANDARDS:

- 1. SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION.

GENERAL TRENCHING NOTES

- 1. MAINTAIN 4" MINIMUM COVER FOR ALL ELECTRICAL CONDUITS.

GENERAL GROUNDING NOTES

- 1. 5/8" x 8" ROD, CAD WELD BELOW GRADE.

GENERAL CONDUIT NOTES

- 1. ALL CONDUITS WILL BE MANDELED AND EQUIPPED WITH 3/8" PULL ROPE.

TYPICAL R.O.W. POLE CONSTRUCTION NOTES

- 1. CABLE NOT TO IMPEDE 15' CLEAR SPACE OFF POLE FACE.

GENERAL NOTES

Legend table with symbols and descriptions for various construction elements like antennas, ground rods, conduits, and power lines.

Legend table with symbols and descriptions for electrical components like fuses, switches, transformers, and lighting fixtures.

Large table of abbreviations with columns for the abbreviation and its full name, covering terms like AMPERE, ANCHOR BOLT, and various electrical and construction terms.

LEGEND

ABBREVIATIONS



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Site Agent:

90% Zoning Drawings

Drawing Phase:

CRAN-RSFR-SF0K7-01 I

PAGE ID:
ROW AT 4390 TELEGRAPH AVE,
OAKLAND, CA 94609
COUNTY: ALAMEDA

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Project No.:

Date: 09/27/17 Job No.:

Scale: AS SHOWN CAD File:

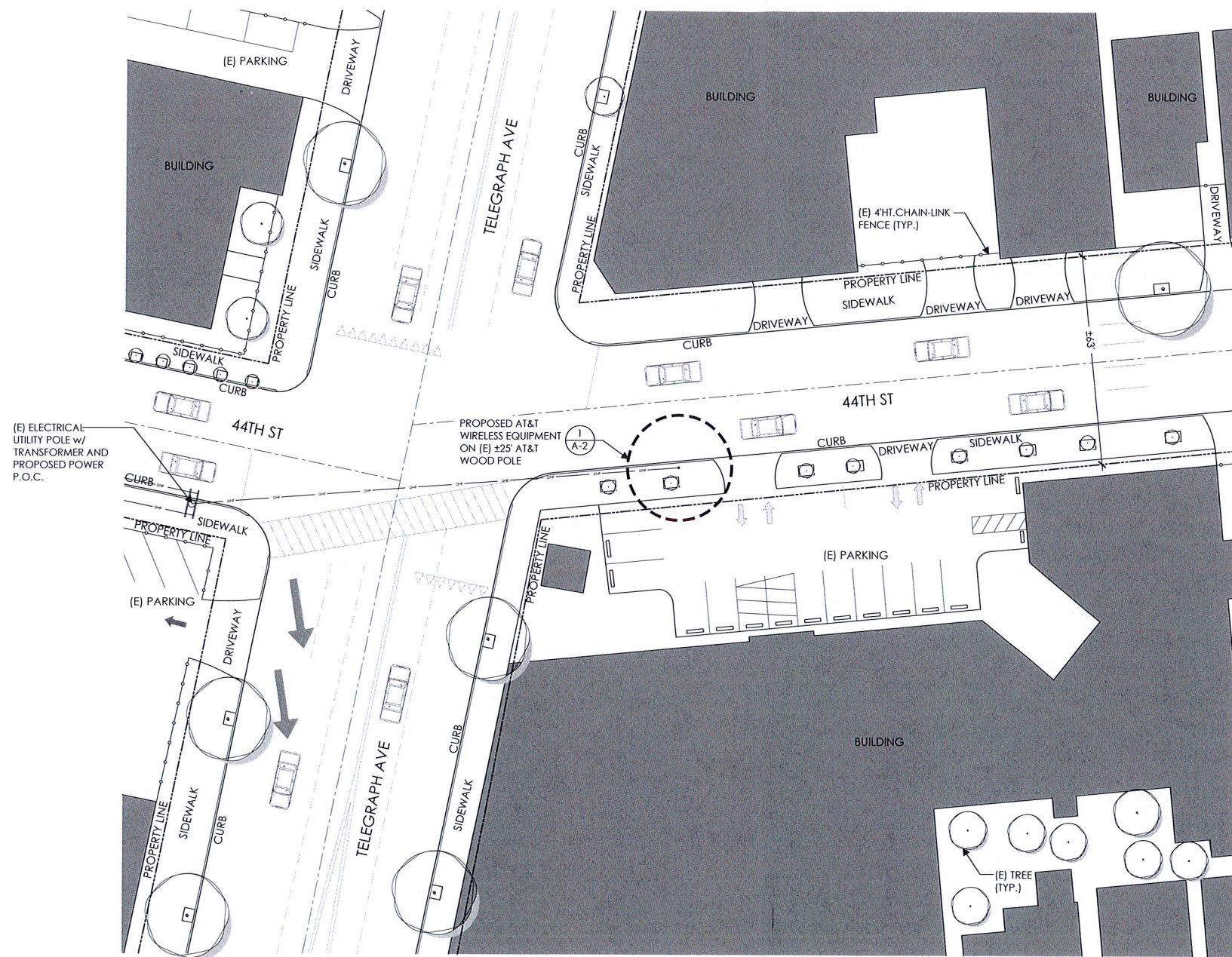
Designed By: JG Checked: RB

GENERAL NOTES
LEGEND
ABBREVIATIONS

Sheet Title:

T.2

Sheet No.:



NOTE:
THIS SITE PLAN WAS GENERATED WITHOUT THE USE OF A SURVEY. PROPERTY LINES, RIGHT-OF-WAYS, POWER & TELCO UTILITY POINT CONNECTIONS/ROUTES AND EASEMENTS SHOWN ON THESE PLANS ARE ESTIMATED. ALL ITEMS AND DIMENSIONS SHOULD BE VERIFIED IN THE FIELD.

UNDERGROUND UTILITIES NOTE:
THE LOCATIONS AND EXISTENCE OF ANY UNDERGROUND PIPES, STRUCTURES, OR CONDUITS SHOWN ON THIS PLAN WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. THERE MAY BE EXISTING UTILITIES OTHER THAN THOSE SHOWN ON THIS PLAN. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT SHOWN ON THIS PLAN.



NORTH



AT&T Wireless
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Site Agent:

90% Zoning Drawings

Drawing Phase:

CRAN-RSFR-SFOK7-011

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ROW AT 4390 TELEGRAPH AVE,
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OVERALL SITE PLAN

Sheet Title:

A.1

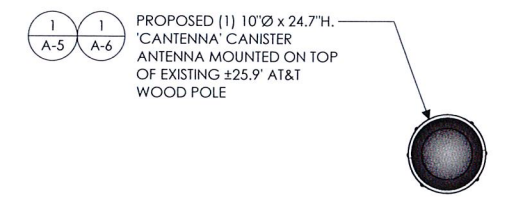
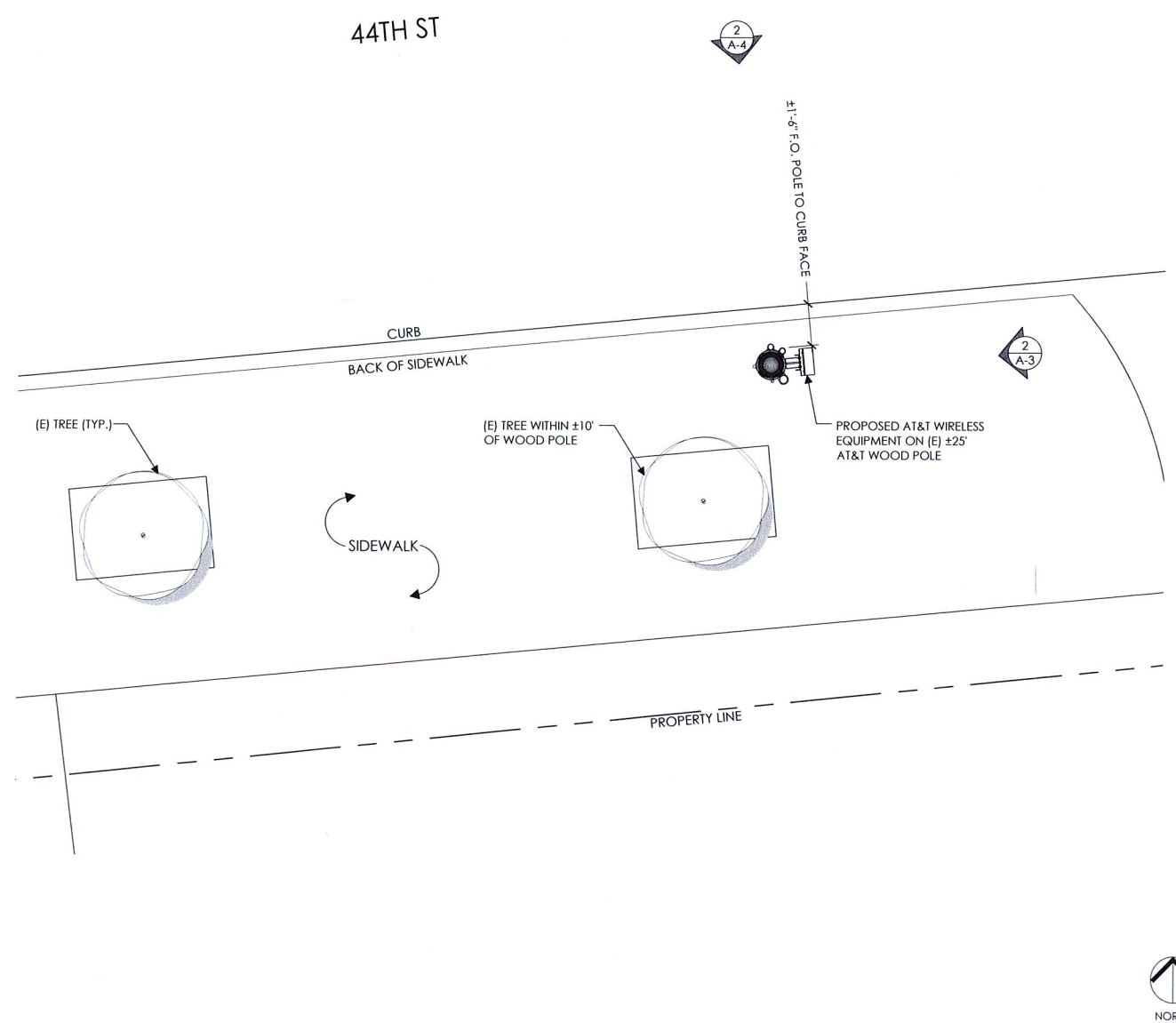
Sheet No.:

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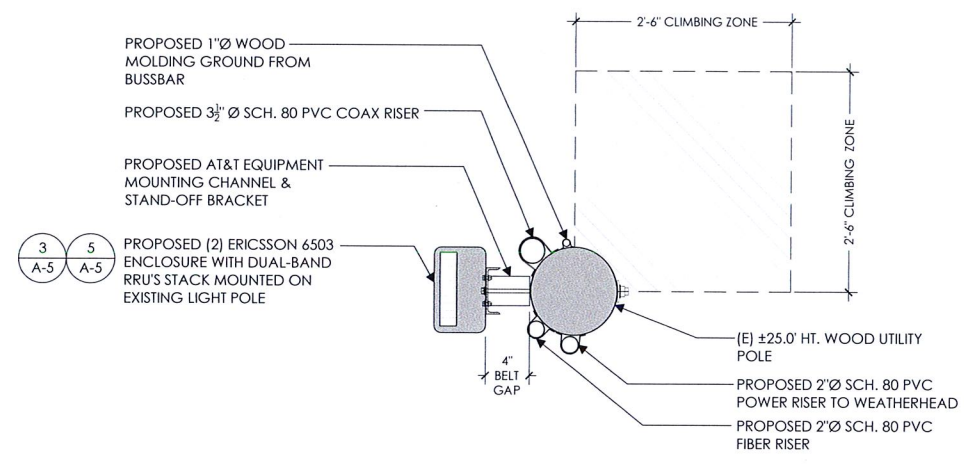
- (N) AT&T EQUIPMENT TO BE MOUNTED IN THE 9:00 QUADRANT
- CLIMBING SPACE BETWEEN 12:00 & 3:00
- POLE STEPS REQUIRED FROM 8.5' TO COMMUNICATIONS ZONE PER GO95
- STEPS SHOULD BE USABLE WHEN INSTALLED WITHIN CLIMBING SPACE

EQUIPMENT SYSTEM:
ALL NEW COMPONENTS NOT SHOP PAINTED SHOULD BE FIELD PAINTED SHERWIN WILLIAMS MESA BROWN

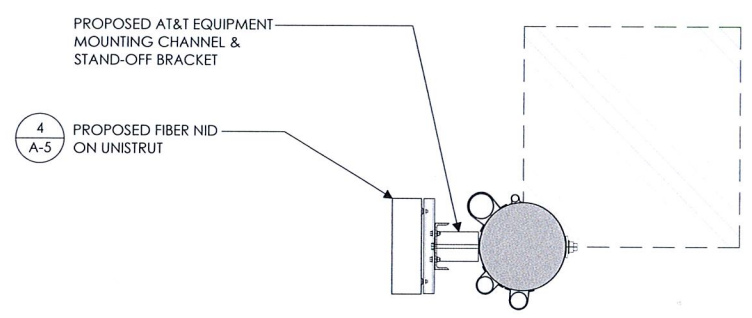
NEW CONDUIT FOR POWER/TELCO:
(1) 2" CONDUIT FOR POWER
(1) 2" CONDUIT FOR FIBER
(1) 3/4" CONDUIT FOR COAX
(1) 1" WOOD MOLDING FOR GROUND



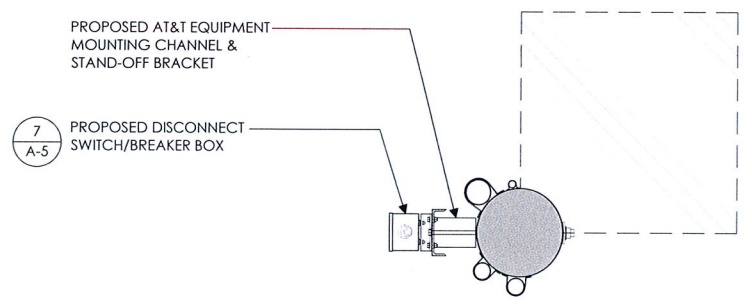
A. SECTION (CANISTER ANTENNA)



B. SECTION (RRUS)



C. SECTION (FIBER)



D. SECTION (DISCONNECT SWITCH/BREAKER BOX)



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Site Agent:

90% Zoning Drawings

(E) LIGHT POLE
Drawing Phase:

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POLE PLAN EQUIPMENT ENLARGEMENTS

Sheet Title:

A.2

Sheet No.:

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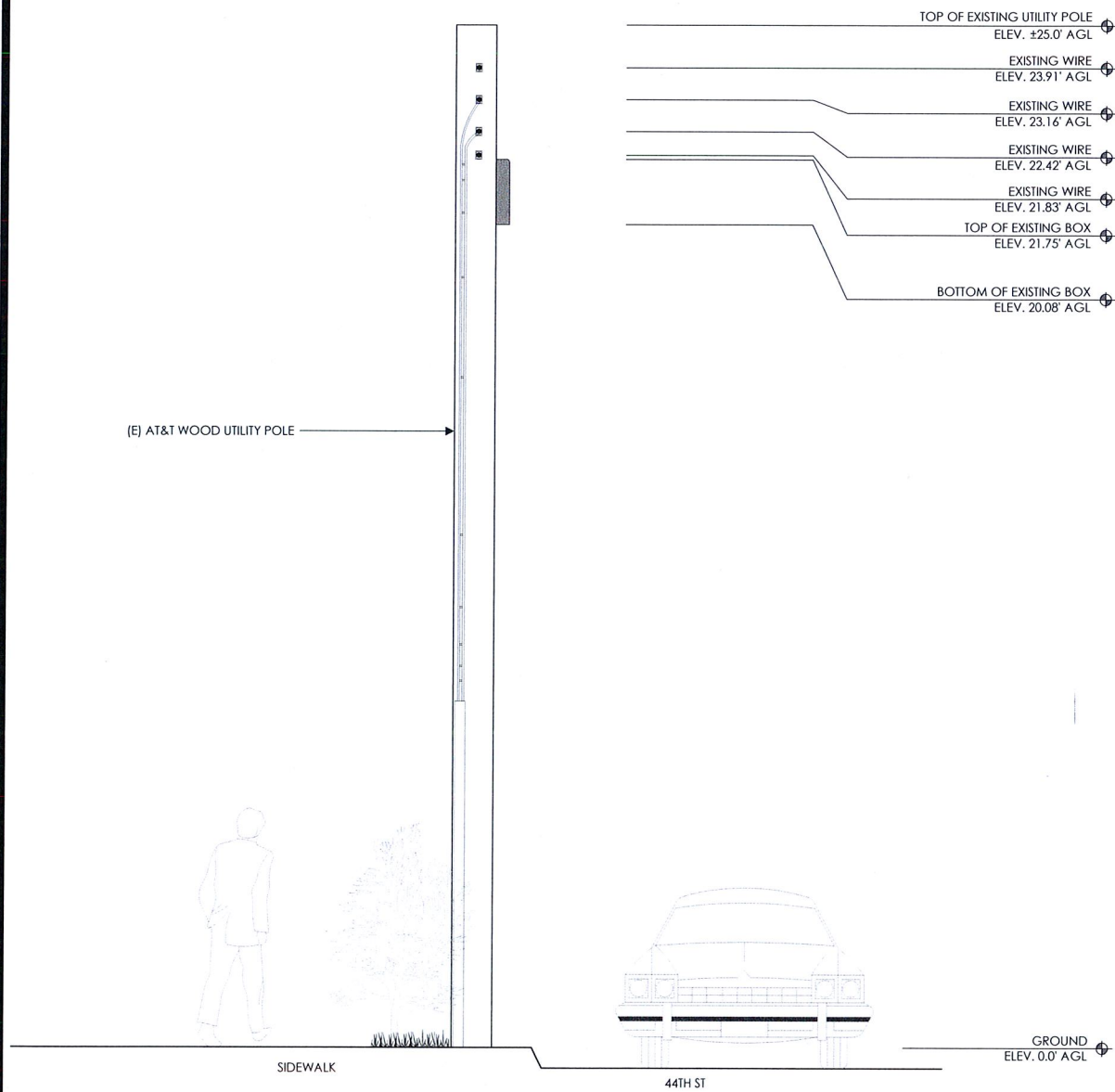
SCALE
3/8" = 1'-0"



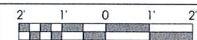
SCALE
1" = 1'-0"

SCALE NOTE:

IF DIMENSIONS SHOWN ON PLAN DO NOT SCALE CORRECTLY, CHECK FOR REDUCTION OR ENLARGEMENT FROM ORIGINAL PLANS.

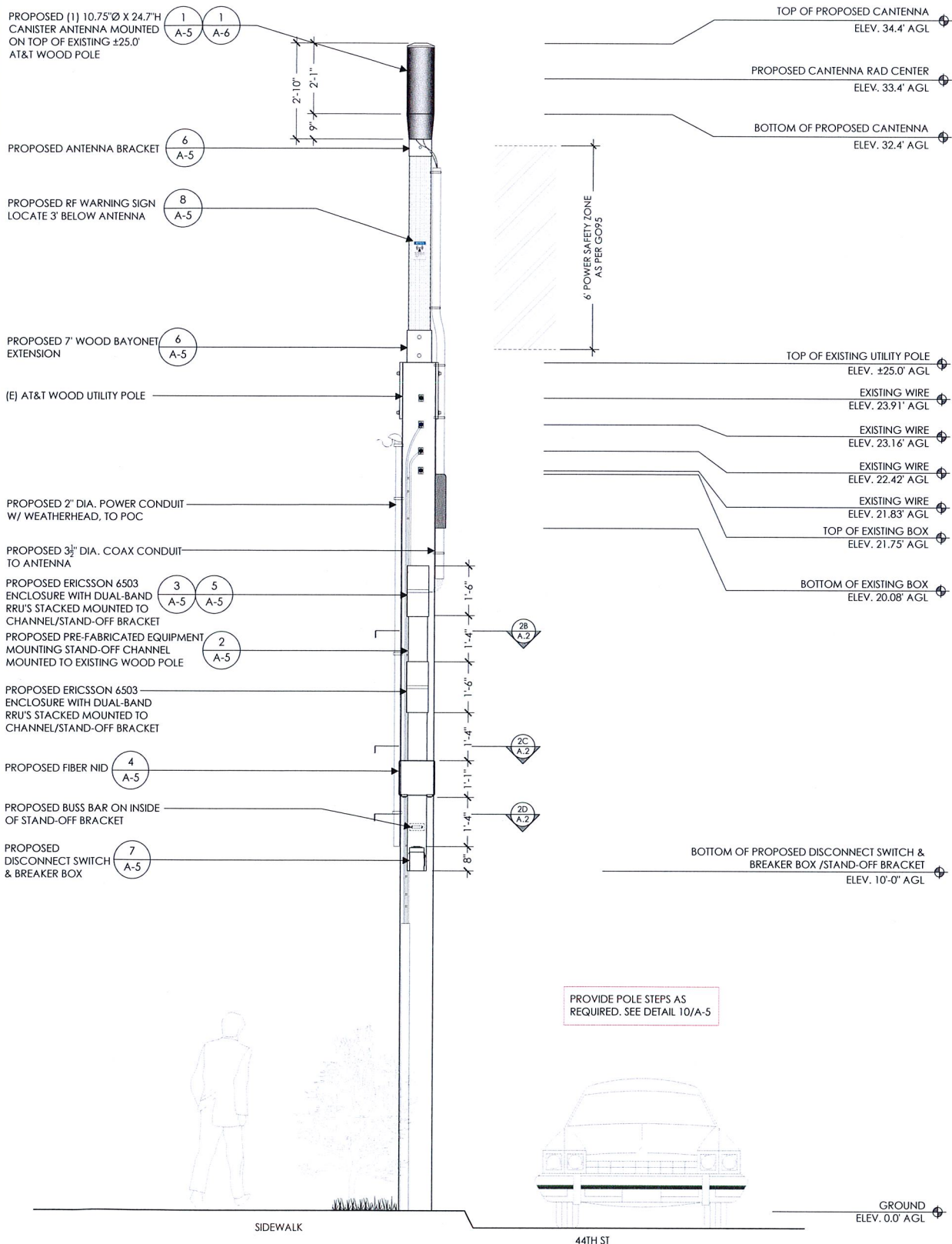


EAST ELEVATION - EXISTING

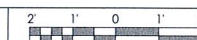


SCALE
1/2" = 1'-0"

1



EAST ELEVATION - PROPOSED



SCALE
1/2" = 1'-0"

2



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Drawing Phase:

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ELEVATIONS

Sheet Title:

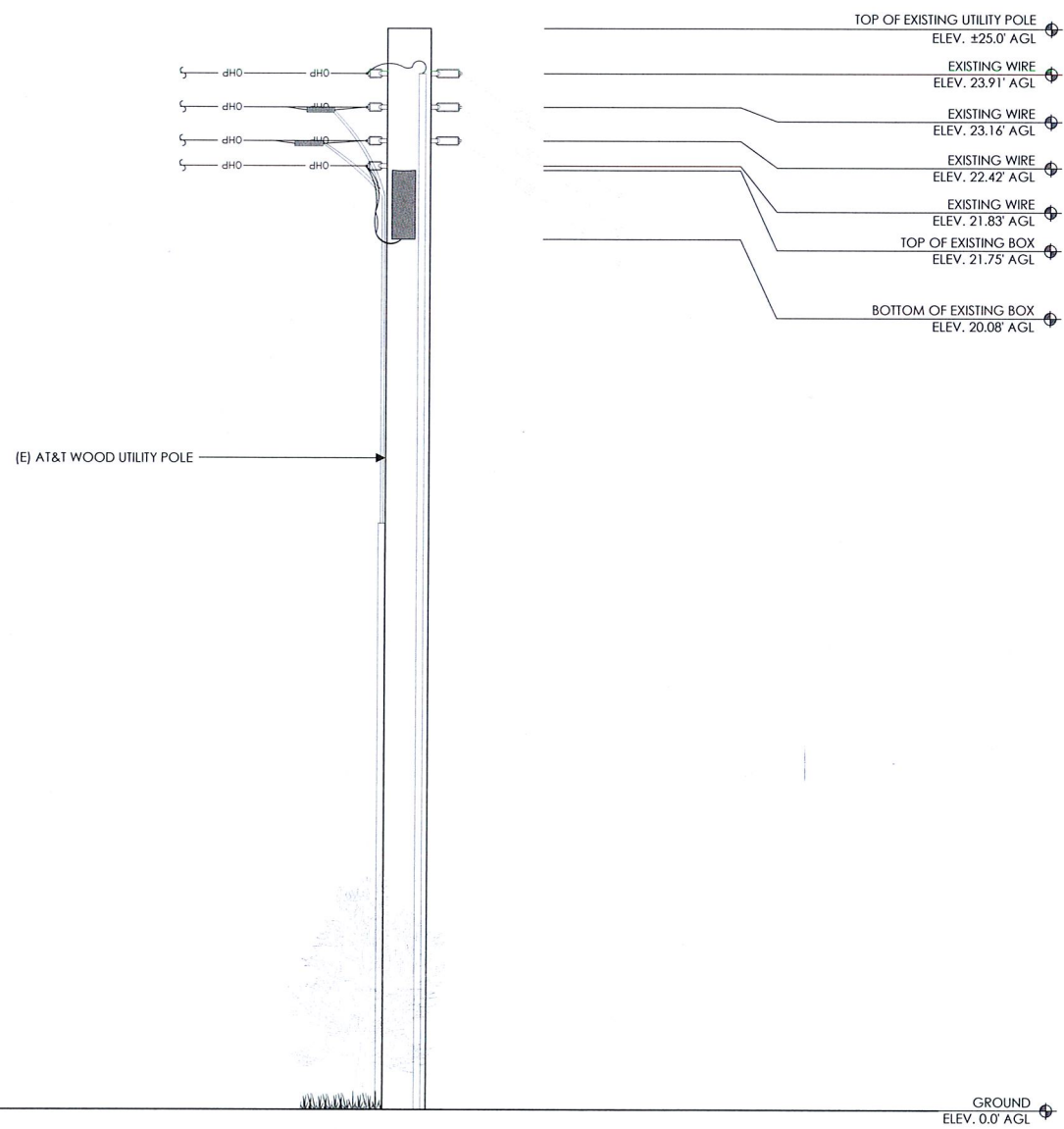
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Sheet No.:

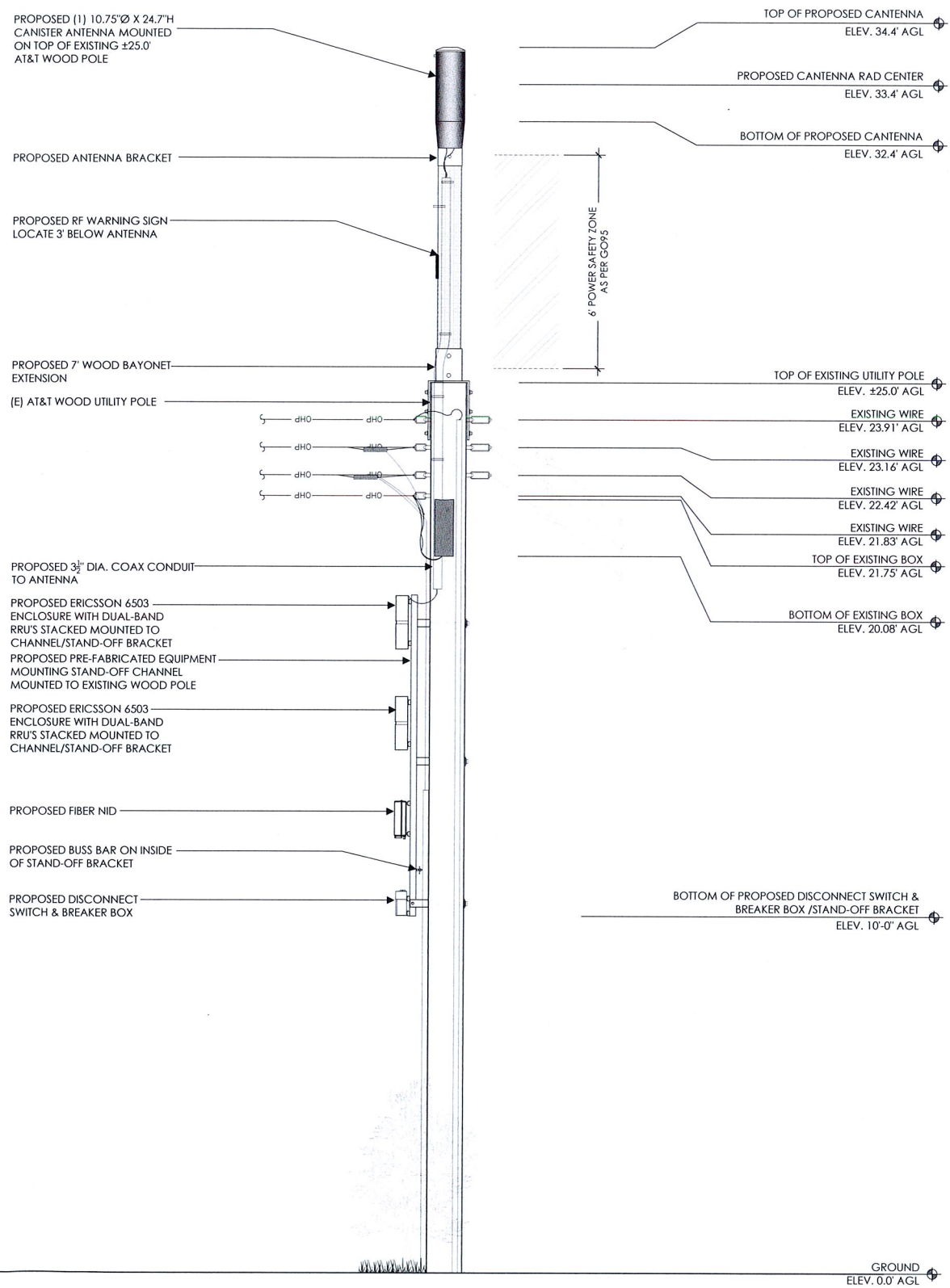
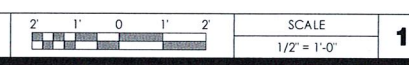
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SCALE NOTE:

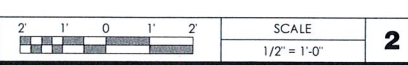
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NORTH ELEVATION - EXISTING



NORTH ELEVATION - PROPOSED



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ELEVATIONS

Sheet Title: _____

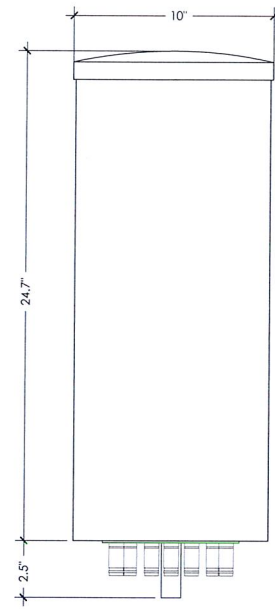
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Sheet No.: _____

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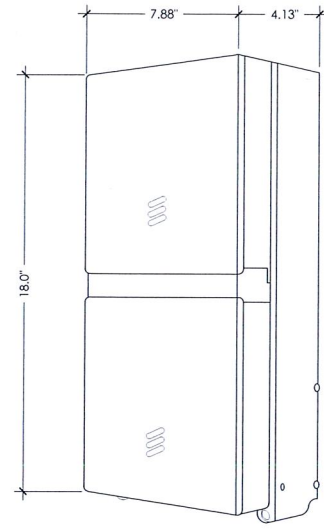
AT&T CANISTER ANTENNA 'CAN-TENNA'

ANTENNA COLOR: LIGHT GRAY
 DIMENSIONS: 10.0"Ø x 24.7" TALL
 NET WEIGHT: 19.0 LBS



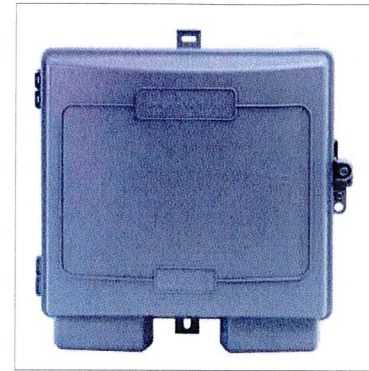
ERICSSON 6503

SINGLE BAND 2203: 2 TX / 2 RX (AWS OR PCS)
 DUAL BAND RRU (2 - 2203'S): 4 TX / 4 RX (AWS OR PCS)
 MAXIMUM POWER CONSUMPTION: <100W PER 2203 RADIO-
 ±95W PER SINGLE-BAND 2203 RADIO
 ±190W PER DUAL-BAND 2203 RRU
 MAX FUSE RATING: 32A
 WIRE SIZE: #10 CU OR #8 ALU



AFL MODEL# OPN-760 SPECIFICATIONS

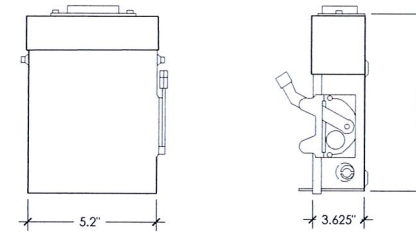
DEMARICATION CAPACITY: (2) JDSU BRIGHT JACKS WITH NO SPLICE TRAY OR (1) JDSU BRIGHT JACK WITH ONE SPLICE TRAY
 DIMENSIONS: 1'-1" H. x 1'-1" W. x 4" D.



- NOTES:
- INSTALL AT&T NETWORK INTERFACE DEVICE (NID) BELOW RRU ENCLOSURES & FEED FROM AT&T AERIAL FIBER CABLE ON POLE.
 - AFL - OPN-760 CONFIGURATION: DM000915, PID # 316079607

MURRAY LW002GRU SPECIFICATIONS

LOAD CENTER DEPTH: 3.625"
 LOAD CENTER WIDTH: 5.2"
 LOAD CENTER HEIGHT: 8.125"
 WEIGHT: 4.55 LB
 LOAD CENTER TYPE: MAIN LUG
 MAX AMPERAGE: 60
 MOUNTING TYPE: PLUG IN
 NUMBER OF PHASES: 1
 NUMBER OF SPACES: 2
 VOLTAGE (VOLTS): 120/240
 INDOOR/OUTDOOR: OUTDOOR
 ELECTRICAL PRODUCT TYPE: LOAD CENTER



NOTICE

Radio frequency fields beyond this point may exceed the FCC general public exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

In accordance with Federal Communications Commission rules on radio frequency emissions 47 CFR 1.1307(b)

ANTENNA DETAIL

1

6503 RRU ENCLOSURE

3

FIBER NID

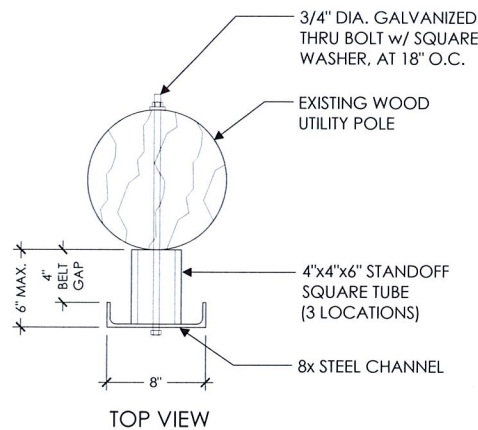
4

DISCONNECT SWITCH/BREAKER BOX

7

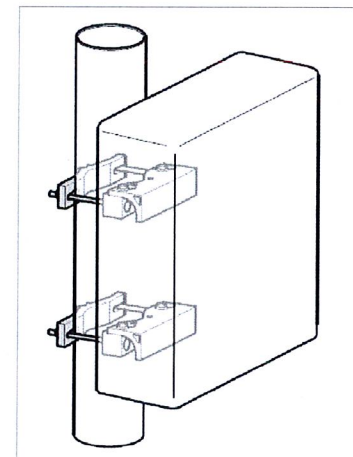
NOTICE SIGNAGE

8



Technical Specifications Radio 2203

FREQUENCY BANDS	
Bands:	3GPP Bands B1 (W/L), B3 (L), B3C (W/L), B9 (W/L), B66A (W/L), B5 (W/L), B2/B25 (W/L), B12 (L), B13 (L) and B7 (L)
HW CAPACITY	
Carrier capacity WCDMA:	Up to 4 carriers
Carrier capacity LTE:	Up to 40 MHz
IRW:	B1, B3 and B66A 45 MHz, B2/B25 and B7 40 MHz, B3C, B8, B5, B12 and B13 Full band
MIMO:	Yes, 2T2R
Output power:	Up to 2 x 5 W
INTERFACE SPECIFICATIONS	
Antenna Ports:	2 x 4.3-10 (f)
CPRI:	2 x 2.55/10 Gbps (exchangeable SFP modules)
Optical indicators:	6
External alarms:	2
Field ground:	1
MECHANICAL SPECIFICATIONS	
W x H x D:	200 mm x 200 mm x 100 mm, including mounting bracket and esthetic front cover
Weight:	< 4.5 kg
Volume:	4 l
Mounting:	Wall and pole mount
ELECTRICAL SPECIFICATIONS	
Power Supply:	-48 VDC or 100 - 250 VAC
ENVIRONMENTAL SPECIFICATIONS	
Normal operating temp.:	-40 °C to +55 °C (cold start at -40 °C)
Relative Humidity:	5 - 100%
Environment:	Outdoor class with IP65



NORMAL SHUT-DOWN PROTOCOLS:

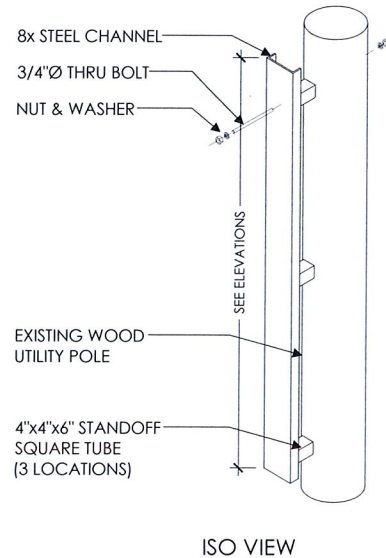
- Call 800-264-6620 NOC 24 HRS prior to schedule a shutdown day and time.
- Give NOC the Node number
- On scheduled day of shut-down, pull the disconnect handle to the "OFF" position.
- Call NOC when work is completed.

EMERGENCY SHUT-DOWN PROTOCOLS:

- Call 800-264-6620 NOC.
- Give NOC the Node number
- Pull the disconnect handle to the "OFF" position.
- Call NOC when work is completed.

DISCONNECT SIGNAGE

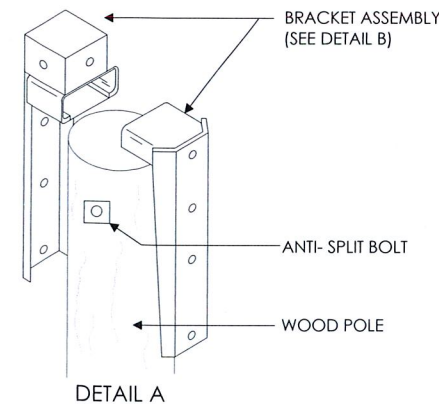
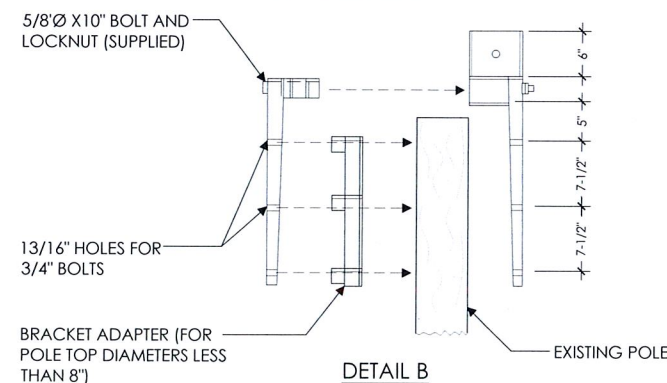
9



ERICSSON 2203 RRU

5

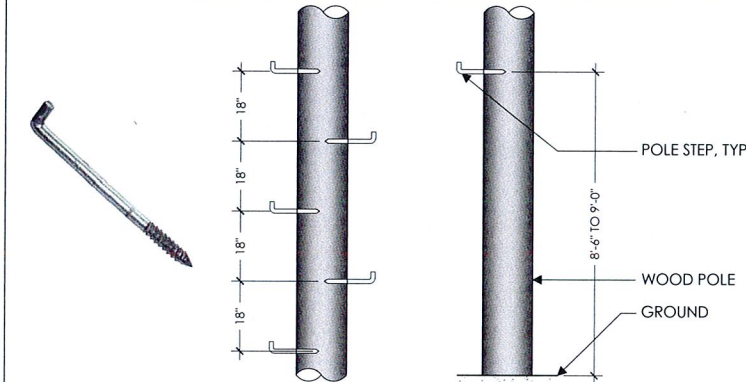
NOTE: (N) BRACKET ASSEMBLY TO BE PROVIDED BY UTILITY COMPANY AND PAINT TO MATCH



STEP: POLE 1/2 X 10 INCH GALVANIZED
 WEIGHT PER 100: 99 LBS
 MANUFACTURER: AERIAL SERVICE COMPANY, INC.
 1-800-256-5186
 http://www.linemen-tools.com/J1118

MODEL #:

DESCRIPTION: POLE STEPS ARE USED ON WOOD POLES WHERE FREQUENT ACCESS TO POLE MOUNTED EQUIPMENT IS REQUIRED. FLAT DRIVING SURFACE AND SHARP POINT EASE INSTALLATION. FETTER-DRIVE THREAD PERMITS REMOVAL WITH A WRENCH. HOT-DIPPED GALVANIZED FOR CORROSION RESISTANCE. NOTCHED MARK ON STEP INDICATES PROPER DRIVING DEPTH.



6

POLE STEPS

10

MOUNTING CHANNEL

2

WOOD POLE EXTENSION

AT&T Wireless
 5001 Executive Parkway
 San Ramon, CA 94583

Client:

Meridian Management LLC
 785 Oak Grove Road E2
 Suite 251
 Concord, CA 94518
 1 707.592.5924
 www.meridian.management

Project Architect:

VINCULUMS
 575 LENNON LANE
 SUITE 125
 WALNUT CREEK, CA 94598
 T 925.482.8500

Site Agent:

90% Zoning Drawings

Drawing Phase:

CRAN-RSFR-SFOK7-011
 PACE ID:
 ROW AT 4390 TELEGRAPH AVE,
 OAKLAND, CA 94609
 COUNTY: ALAMEDA

Site Name:

Professional Seal:
 It is a violation of law for any person, unless they are acting under the direction of a licensed Professional Architect/Engineer, to alter this document.

Rev.	Date	Description
01	09/27/17	Zoning Dwgs 90%

Project No.:
 Date: 09/27/17 Job No.:
 Scale: AS SHOWN CAD File:
 Designed By: JG Checked: RB

EQUIPMENT DETAILS

Sheet Title:

A.5

Sheet No.:



AT&T Wireless
5001 Executive Parkway
San Ramon, CA 94583

Client:



Project Architect:



575 LENNON LANE
SUITE 125
WALNUT CREEK, CA 94598
T 925.482.8500

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90% Zoning Drawings

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CRAN-RSFR-SFOK7-011

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of a licensed Professional
Architect/Engineer, to alter this document.

Rev. Date Description

01 09/27/17 Zoning Dwgs 90%

Project No.:

Date: 09/27/17 Job No.:

Scale: AS SHOWN CAD File:

Designed By: JG Checked: RB

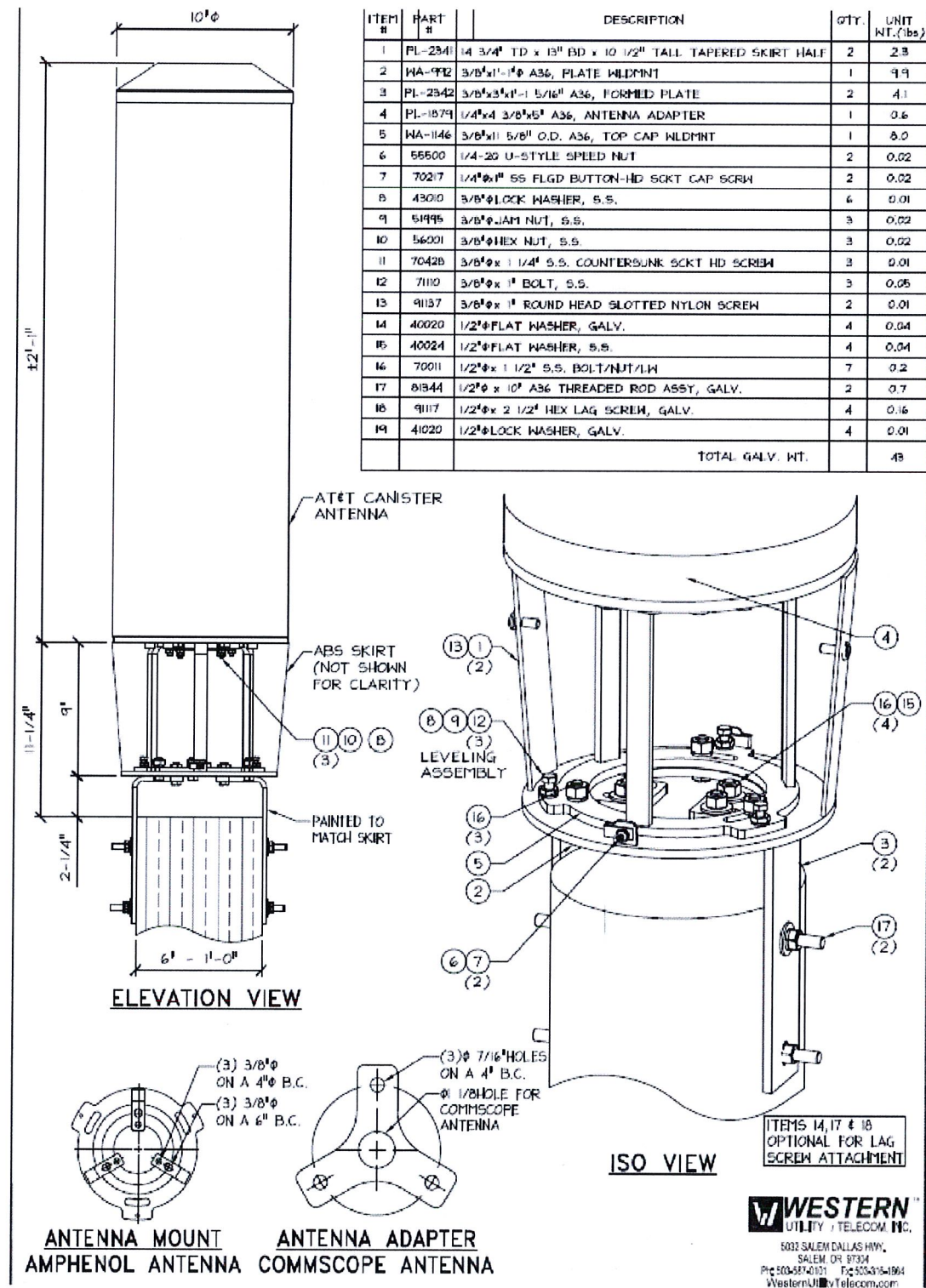
EQUIPMENT
DETAILS

Sheet Title:

A.6

Sheet No.:

© Meridian Management LLC, 2017



Existing



Proposed



view from 44th Street looking east at site

Existing



Proposed AT&T Installation

view from 44th Street looking southwest at site
CRAN-RSFR-SF0K7-011
4390 Telegraph Avenue, Oakland, CA
Photosims Produced on 9-29-2017

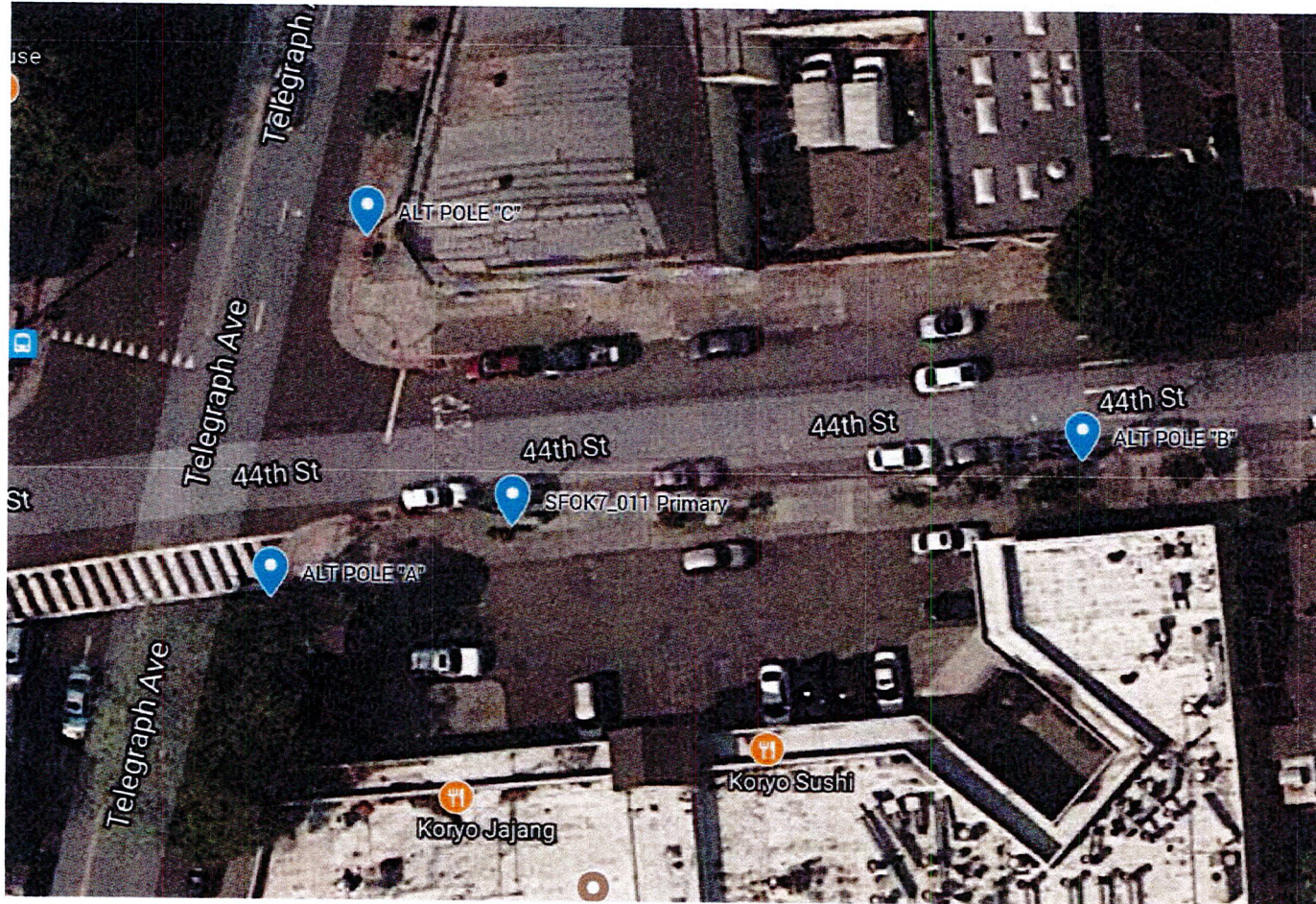


AT&T Wireless

Proposed



ALTERNATIVE SITE ANALYSIS SFOK7_011





AT&T PROPOSED LOCATION

SFOK7_011

4390 Telegraph Ave., Oakland, CA 94609

APN: 13-1098-33-4

37.8322600, -122.2633500

The project is located in an area with both existing residential & commercial structures. AT&T considered alternate utility poles immediately adjacent but none were desirable from a service coverage need, CPUC standards, PG&E standards, or an aesthetics perspective. The proposed project is in an underserved area.



ALTERNATIVE POLE "A"

**PG&E Wood Utility Pole
4390 Telegraph Ave., Oakland, CA 94609
37.832213, -122.263541**

**Findings: Metal streetlight is viable
alternative.**



ALTERNATIVE POLE "B"

**PG&E Wood Utility Pole
4390 Telegraph Ave., Oakland, CA 94609
37.832304, -122.262899**

Findings: PG&E wood utility poles with primary risers are precluded from attachment.



ALTERNATIVE POLE "C"

**PG&E Wood Utility Pole
4400 Telegraph Ave, Oakland, CA 94609
37.832443, -122.263467**

**Findings: Metal streetlight is viable
alternative.**

ALTERNATIVE DESIGN ANALYSIS

SFOK7_011

APN:

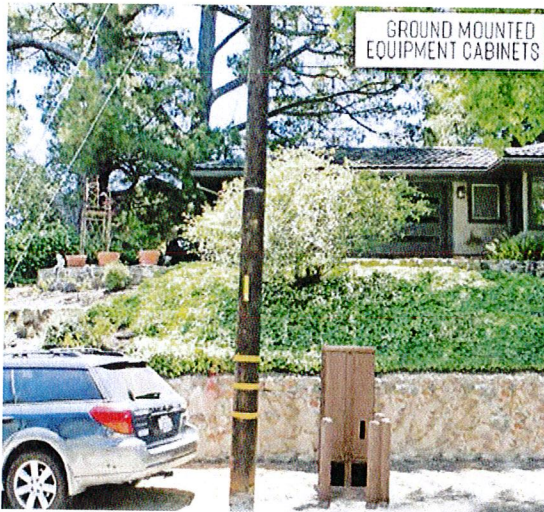
13-1098-33-4

LAT/LONG:

37.8322600, -122.2633500

The project is located in an area with existing commercial structures. AT&T considered alternative monopole designs (see below) in this area but none of these designs are as desirable from a planning perspective or from an aesthetics perspective to minimize visual impacts. The proposed project is in an underserved area.

Alternative light pole designs considered



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 its small cell (No. CRAN-RSFR-SFOK7-011) proposed to be sited in Oakland, California, for compliance with appropriate guidelines limiting human exposure to radio frequency (“RF”) electromagnetic fields.

Executive Summary

AT&T proposes to install an omnidirectional cylindrical antenna on a utility pole sited in the public right-of-way at 4390 Telegraph Avenue in Oakland. The proposed operation will 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
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	2.35	0.47
[most restrictive frequency range]	30–300	1.00	0.20

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

General Facility Requirements

Small cells typically consist of two distinct parts: the electronic transceivers (also called “radios”) 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 typically mounted on the support pole or placed in a cabinet at ground level, and they are connected to the antennas by coaxial cables. Because of the short wavelength of the frequencies assigned by the



AT&T Mobility • Proposed Small Cell (No. CRAN-RSFR-SF0K7-011)
4390 Telegraph Avenue • Oakland, California

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

Based upon information provided by AT&T, including drawings by Meridian Management LLC, dated September 27, 2017, it is proposed to install one KMW Model FLT-OM10H2, 2-foot tall, omnidirectional cylindrical antenna, on top of an existing utility pole sited in the public right-of-way on the south side of 44th Street, just east of Telegraph Avenue, next to the parking lot for the building at 4390 Telegraph Avenue. The antenna would employ 2° downtilt and would be mounted at an effective height of about 33½ feet above ground. The maximum effective radiated power in any direction would be 100 watts for PCS service. There are reported no other wireless telecommunications base stations at this site or nearby.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed AT&T operation is calculated to be 0.0017 mW/cm², which is 0.17% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 0.10% 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 from the proposed operation.

No Recommended Mitigation Measures

Due to its mounting location and height, the AT&T antenna would not be accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure



**AT&T Mobility • Proposed Small Cell (No. CRAN-RSFR-SF0K7-011)
4390 Telegraph Avenue • Oakland, California**

guidelines. The occupational limit is calculated to extend 4 inches from the antenna and, due to this short distance, the proposed operation is considered intrinsically compliant with that limit.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the small cell proposed by AT&T Mobility, at 4390 Telegraph Avenue in Oakland, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating small cells.

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, 2019. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



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

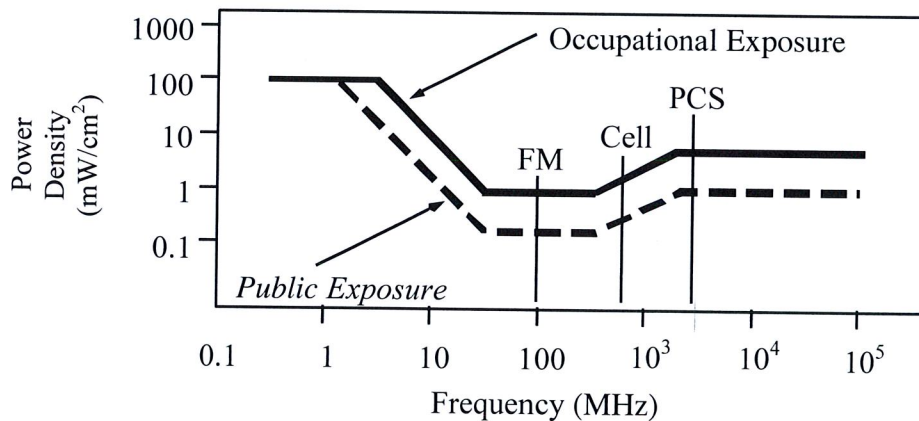
November 3, 2017

FCC Radio Frequency Protection Guide

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

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

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



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



Assessment by Calculation of Compliance with FCC Exposure Guidelines

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

Near Field.

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

For a panel or whip antenna, power density $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$, in mW/cm²,

and for an aperture antenna, maximum power density $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$, in mW/cm²,

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

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

Far Field.

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

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

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

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 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.

Utility Contact System Search

The Utility Contact System (UCS) is the Communications Division's database for the primary regulatory contact for each telephone corporation operating in California. The Communications Division sends important regulatory notices to the regulatory contact for each telephone corporation via e-mail, so it is important for primary regulatory contacts to update their UCS record if their e-mail address changes.

Telephone corporations may update UCS contact information using the form on the following page: [Carrier Reporting Requirements](#)

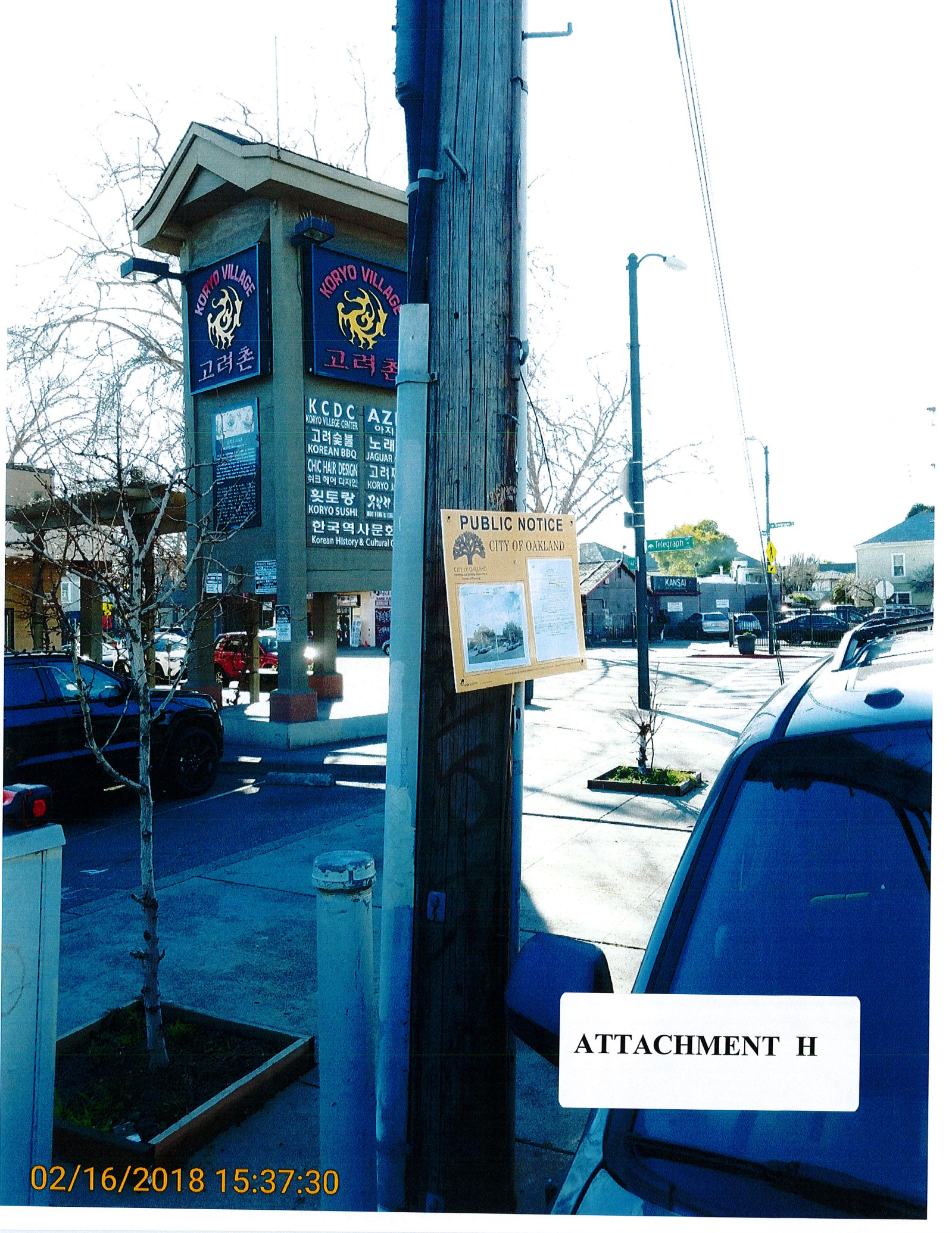
A description of the different utility types (granted authorities) are listed on the following page: [Utility Type Descriptions](#)

Search Utility Name Search Utility Number Search

Utility Name ▲	Alias (DBA Name)	Utility Number	Street Address	City	State	Zip	Phone Number	Email	Utility Type	CPCN Appri
New Cingular Wireless Pcs, LLC	CINGULAR WIRELESS	3060	430 BUSH STREET	SAN FRANCISCO	CA	94108	(415) 778-1299	att-regulatory-ca@att.com	CEC	12-21-1995
New Cingular Wireless Pcs, LLC	CINGULAR WIRELESS	3060	7405 GREENHAVEN DRIVE	SACRAMENTO	CA	95831	(800) 498-1912	west.region.oopsac@awsmail.att.com	CEC	12-21-1995
New Cingular Wireless Pcs, LLC	CINGULAR WIRELESS	3060	11760 US HIGHWAY ONE, WEST TOWER	NORTH PALM BEACH	FL	33048	770-240-8849		CEC	12-21-1995

[Save Search Results as CSV Spreadsheet](#)

[Comments & Feedback](#)



PUBLIC NOTICE
CITY OF OAKLAND
CITY OF OAKLAND
Public Notice
[Map and text on sign]

ATTACHMENT H

02/16/2018 15:37:30



AT&T OPEN HOUSE

AT&T is improving wireless service in Oakland!

We will soon be proposing state-of-the-art small cell wireless facilities including antennas, attached to existing utility poles and light poles.

Want to learn more?

Please join us for an open house showcasing AT&T's network, designs, permitting and radio frequency engineering.

Tuesday, January 30th, 2018

Open House—Stop by anytime between 6pm–8pm

Light refreshments served

Temescal Oakland Public Library

5205 Telegraph Ave., Oakland, CA 94609

If you have any questions, please feel free to contact:

oaklandoutreach@vinculums.com

(925) 482-8550





AT&T

AT&T OPEN HOUSE

AT&T is improving wireless service in Oakland!

We will soon be proposing state-of-the-art small cell wireless facilities including antennas, attached to existing utility poles and light poles.

Want to learn more?

Please join us for an open house showcasing AT&T's network, designs, permitting and radio frequency engineering.

Monday, January 8th, 2018

Open House—Stop by anytime between 6–8PM

Light refreshments served

Preservation Park - Nile Hall

1233 Preservation Park Way, Oakland, CA 94612

If you have any questions, please feel free to contact:

oaklandoutreach@vinculum.com

(925) 482-8550



AT&T Oakland Small Cell Master Plan Map

