

**PROJECT TEAM**

**APPLICANT:**

AT&T  
5001 Executive Parkway  
San Ramon, Ca 94583

**ARCHITECT/ENGINEER:**

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**CONSTRUCTION MANAGER:**

Vinculums Services  
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**Attachment C**

**GENERAL NOTES**

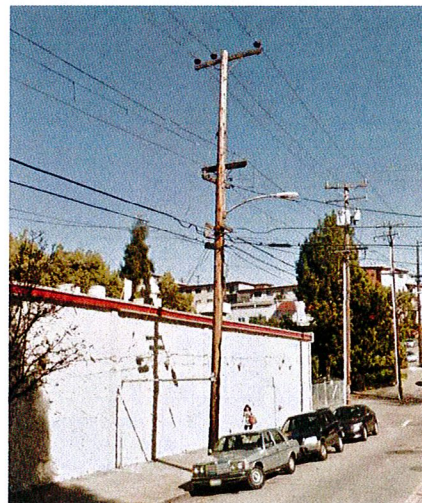
1. THIS IS AN UNMANNED TELECOMMUNICATIONS FACILITY FOR THE AT&T WIRELESS NETWORK CONSISTING OF THE INSTALLATION AND OPERATION OF AN ANTENNA AND ASSOCIATED EQUIPMENT ON AN EXISTING METAL LIGHT POLE IN THE PUBLIC RIGHT-OF-WAY. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
2. A TECHNICIAN WILL 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)

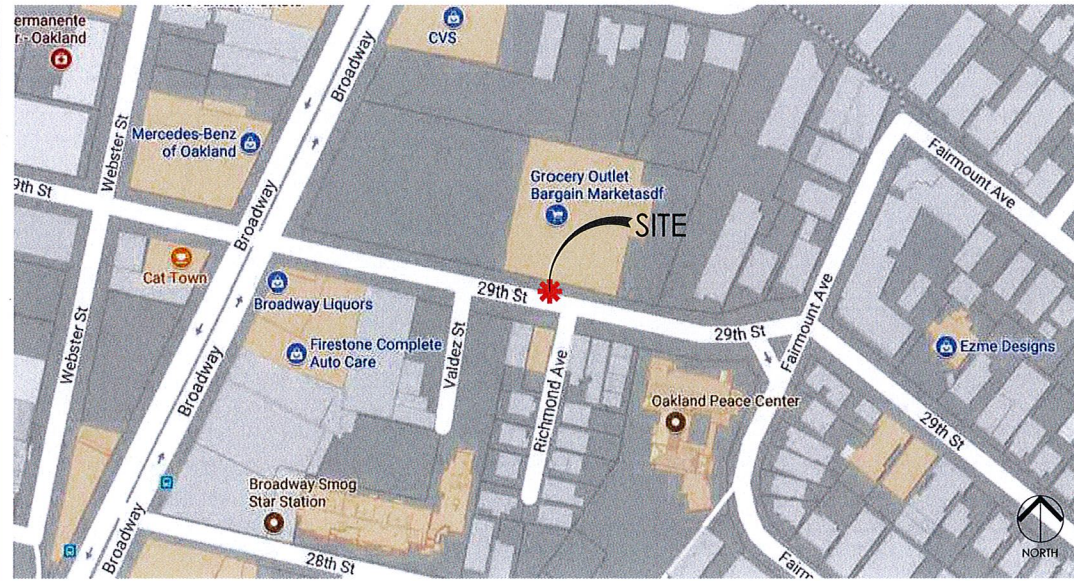
**SITE IMAGE**



5001 EXECUTIVE PARKWAY, SAN RAMON, CA 94583

**CRAN-RSFR-SF0K6-024**

PACE ID:  
ROW AT 276 29TH ST, OAKLAND, CA 94611  
COUNTY: ALAMEDA  
SITE TYPE: WOOD POLE  
FA:14307065 HUB:19 USID:192872



**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. Use the right 2 lanes to take exit 2B for Interstate 580 E towards Hayward
10. Use the right lane to merge onto I-580 E
11. Take exit 21A for Harrison St
12. Turn right onto Harrison St
13. Turn right onto 29th St

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**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 G095 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:	PG&E
APPLICANT:	AT&T 5001 EXECUTIVE PARKWAY SAN RAMON, CA 94583
LATITUDE:	37.8172500 (NAD 83)
LONGITUDE:	-122.2614700 (NAD 83)
GROUND ELEVATION:	34' AMSL
ADJACENT APN#:	(IFO) 9-702-1-1
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: \_\_\_\_\_

95% Zoning Drawings

Drawing Phase: \_\_\_\_\_

CRAN-RSFR-SF0K6-024

PACE ID:  
ROW AT 276 29TH ST  
OAKLAND, CA 94611  
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	09/26/17	Zoning Dwgs 90%
02	10/23/17	Zoning Dwgs 95%

Project No.: \_\_\_\_\_

Date: 10/23/17 Job No.: \_\_\_\_\_

Scale: AS SHOWN CAD File: \_\_\_\_\_

Designed By: JG Checked: RB

**TITLE SHEET**

Sheet Title: \_\_\_\_\_

**T.1**

Sheet No.: \_\_\_\_\_

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GENERAL CONSTRUCTION NOTES

- 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.
- THE CONTRACTOR SHALL OBTAIN, IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL CONTACT USA (UNDERGROUND SERVICE ALERT) AT (800) 227-2600, FOR UTILITY LOCATIONS, 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION, SITE WORK OR CONSTRUCTION.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE, OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CBC / UBC'S REQUIREMENTS REGARDING EARTHQUAKE RESISTANCE, FOR, BUT NOT LIMITED TO, PIPES, LIGHT FIXTURES, CEILING GRID, INTERIOR PARTITIONS, AND MECHANICAL EQUIPMENT. ALL WORK MUST COMPLY WITH LOCAL EARTHQUAKE CODES AND REGULATIONS.
- REPRESENTATIONS OF TRUE NORTH, OTHER THAN THOSE FOUND ON THE PLOT OF SURVEY DRAWINGS, SHALL NOT BE USED TO IDENTIFY OR ESTABLISH BEARING OF TRUE NORTH AT THE SITE. THE CONTRACTOR SHALL RELY SOLELY ON THE PLOT OF SURVEY DRAWING AND ANY SURVEYOR'S MARKINGS AT THE SITE FOR THE ESTABLISHMENT OF TRUE NORTH, AND SHALL NOTIFY THE ARCHITECT / ENGINEER PRIOR TO PROCEEDING WITH THE WORK IF ANY DISCREPANCY IS FOUND BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND THE TRUE NORTH ORIENTATION AS DEPICTED ON THE CIVIL SURVEY. THE CONTRACTOR SHALL ASSUME SOLE LIABILITY FOR ANY FAILURE TO NOTIFY THE ARCHITECT / ENGINEER.
- THE BUILDING DEPARTMENT ISSUING THE PERMITS SHALL BE NOTIFIED AT LEAST TWO WORKING DAYS PRIOR TO THE COMMENCEMENT OF WORK, OR AS OTHERWISE STIPULATED BY THE CODE ENFORCEMENT OFFICIAL HAVING JURISDICTION.
- DO NOT EXCAVATE OR DISTURB BEYOND THE PROPERTY LINES OR LEASE LINES, UNLESS OTHERWISE NOTED.
- ALL EXISTING UTILITIES, FACILITIES, CONDITIONS, AND THEIR DIMENSIONS SHOWN ON THE PLAN HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THE ARCHITECT / ENGINEER AND THE OWNER ASSUME NO RESPONSIBILITY WHATSOEVER AS TO THE SUFFICIENCY OR THE ACCURACY OF THE INFORMATION SHOWN ON THE PLANS, OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTORS SHALL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL EXISTING UTILITIES AND FACILITIES PRIOR TO START OF CONSTRUCTION. CONTRACTORS SHALL ALSO OBTAIN FROM EACH UTILITY COMPANY DETAILED INFORMATION RELATIVE TO WORKING SCHEDULES AND METHODS OF REMOVING OR ADJUSTING EXISTING UTILITIES.
- CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES, BOTH HORIZONTAL AND VERTICALLY, PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHOULD BE IMMEDIATELY REPORTED TO THE ARCHITECT / ENGINEER FOR RESOLUTION AND CORRECTION. NO FURTHER WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT / ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT HIS/HER OWN RISK AND EXPENSE.
- ALL PROPOSED AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS TO BE DISTURBED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISH ELEVATIONS PRIOR TO FINAL INSPECTION OF WORK.
- ANY DRAIN AND/OR FIELD TILE ENCOUNTERED / DISTURBED DURING CONSTRUCTION SHALL BE RETURNED TO ITS ORIGINAL CONDITION PRIOR TO COMPLETION OF WORK. SIZE, LOCATION AND TYPE OF ANY UNDERGROUND UTILITIES OR IMPROVEMENTS SHALL BE ACCURATELY NOTED AND PLACED ON "AS-BUILT" DRAWINGS BY GENERAL CONTRACTOR, AND ISSUED TO THE ARCHITECT / ENGINEER AT COMPLETION OF PROJECT.
- ALL TEMPORARY EXCAVATIONS FOR THE INSTALLATION OF FOUNDATIONS, UTILITIES, ETC., SHALL BE PROPERLY LAID BACK OR BRACED IN ACCORDANCE WITH CORRECT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS.
- INCLUDE MISC. ITEMS PER AT&T WIRELESS SPECIFICATIONS

GENERAL NOTES FOR EXISTING CELL SITES

- 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. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
- SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
- SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND TI CABLES. GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD PROPOSED TRAYS AS NECESSARY. SUBCONTRACTOR SHALL DETERMINE THE ACTUAL ROUTING WITH THE CONTRACTOR.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

APPLICABLE CODES, REGULATIONS AND STANDARDS:

- 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.
- THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
- SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
  - AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
  - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
  - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARD FOR STRUCTURAL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES
  - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM (IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRICAL EQUIPMENT.
  - IEEE C42.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")
- TIA 607 COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS TELCORDIA GR-63 NETWORK EQUIPMENT-BUILDING SYSTEM (NEBS); PHYSICAL PROTECTION TELCORDIA GR-347 CENTRAL OFFICE POWER WIRING TELCORDIA GR-1275 GENERAL INSTALLATION REQUIREMENTS TELCORDIA GR-1503 COAXIAL CABLE CONNECTIONS
- ANY AND ALL OTHER LOCAL & STATE LAWS AND REGULATIONS
- FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

GENERAL TRENCHING NOTES

- MAINTAIN 40" MINIMUM COVER FOR ALL ELECTRICAL CONDUITS.
- MAINTAIN 30" MINIMUM COVER FOR ALL TELECOMMUNICATIONS CONDUITS.
- MINIMUM 1" SAND SHADING BELOW CONDUITS, AND 6" COVERING ON TOP OF CONDUITS REQUIRED.
- ALL ELECTRICAL CONDUITS FROM POWER COMPANY FROM ANY POLE, TRANSFORMER OR OTHER LOCATIONS WILL BE SLURRY BACKFILL.
- IN STREET SLURRY TO GRADE AND MILL DOWN 1-1/2" FOR AC CAP.
- IN STREET SLURRY 18" FROM GRADE AND FILL 95% COMPACTION NATIVE SOIL FOR BALANCE
- WARNING TAPE TO BE PLACED IN TRENCH 12" ABOVE ALL CONDUITS AND #18 WARNING TAPE ABOVE RING.

GENERAL GROUNDING NOTES

- 5/8" x 8" ROD, CAD WELD BELOW GRADE
- GROUND TESTED AT 5 OHMS OR LESS.
- #5 GROUNDING AND BOND WIRE.
- GROUNDS 3' FROM POLE.
- PLACE 3 #10 GA WIRES FROM TESCO BREAKER TO PBMD OR STRONG BOX.
- WOOD MOLDING, STAPLED EVERY 3' AND AT EACH END.

GENERAL CONDUIT NOTES

- ALL CONDUITS WILL BE MANDRELED AND EQUIPPED WITH 3/8" ROLL POPE.
- SCHEDULE 40 CONDUIT FOR UNDERGROUND USE.
- SCHEDULE 80 CONDUIT FOR RISER USE.
- 2" GALVANIZED STEEL CONDUIT FOR ANY CONDUIT UNDER 3' STUB UP 10" THEN CONVERT TO SCHEDULE 80.
- CONVERT 4" CONDUIT TO 3" AT BASE OF POLE.
- CONTRACTOR TO STUB UP POLE 10' w/ 3" POWER CONDUIT. POWER COMPANY TO CONVERT FROM 3' STUB SCHEDULE 80 TO 2"
- INSTALL STEPS PER AT&T REQUIREMENTS

TYPICAL R.O.W. POLE CONSTRUCTION NOTES

- CABLE NOT TO IMPEDE 15' CLEAR SPACE OFF POLE FACE.
- ALL CLIMB STEPS NEXT TO CONDUIT SHALL HAVE EXTENDED STEPS.
- NO BOLT THREADS TO PROTRUDE MORE THAN 1-1/2"
- ALL HOLES IN POLE LEFT FROM REARRANGEMENT OF CLIMB STEPS TO BE FILLED.
- 90° SHORT SWEEPS UNDER ANTENNA ARM. ALL CABLES MUST TRANSITION ON THE INSIDE OR BOTTOM OF THE ARM (NO CABLE ON TOP OF ARM).
- USE 90° CONNECTOR AT CABLE CONNECTION FOR OMNI DIRECTION ANTENNAS.
- USE CABLE CLAMPS TO SECURE CABLE TO ARMS. PLACE 2" AT&T WIRELESS CABLE ID. TAGS ON BOTH SIDES OF ARMS.
- USE 1/2" DIA. CABLE ON ANTENNAS UNLESS OTHERWISE SPECIFIED.
- PLACE GPS ON ARM OF SOUTHERN SKY EXPOSURE AT MINIMUM 6' FROM TRANSMIT ANTENNA WHICH IS 24' AWAY FROM CENTER OF POLE.
- FILL VOID AROUND CABLES AT CONDUIT OPENING WITH FOAM SEALANT TO PREVENT WATER INTRUSION.

GENERAL NOTES

	PROPOSED ANTENNA		GROUT OR PLASTER		TELCO RUN		5/8" X 10'-0". CU. GND ROD IN TEST WELL 30" MIN. BELOW GRADE.
	EXISTING ANTENNA		(E) BRICK		POWER/TELCO RUN		CHEMICAL GROUND ROD (XIT GROUND ROD)
	GROUND ROD		(E) MASONRY		GROUNDING CONDUCTOR		CADWELD CONNECTION
	GROUND BUS BAR		CONCRETE		GROUNDING CONDUCTOR		MECHANICAL CONNECTION
	MECHANICAL GRND. CONN.		EARTH		GROUNDING CONDUCTOR		HALO GROUND CONNECTION
	GROUND ACCESS WELL		GRAVEL		CONDUIT UNDERGROUND		CIRCUIT BREAKER
	ELECTRIC BOX		PLYWOOD		FUSE. SIZE AND TYPE AS INDICATED.		UTILITY METER BASE
	TELEPHONE BOX		WOOD CONT.		SAFETY SWITCH, 2P-240V-60A W/60A FUSES, NEMA 3R ENCLOSURE, SQ D CATALOG NO. H222NR8		TRANSFORMER
	LIGHT POLE		WOOD BLOCKING		MANUAL TRANSFER SWITCH, 2P-240V-200A, NO FUSE, NEMA 3R ENCLOSURE		STEPDOWN TRANSFORMER
	FND. MONUMENT		STEEL		LIGHTING FIXTURE, FLUORESCENT, 10.94" x 4'-0", 2/40W, SURFACE MOUNTING TYPE, HUBBELL LIGHTING CATALOG #WSW232T		RECEPTACLE, 2P-3W-125V-15A, DUPLEX, GROUND TYPE, HUBBELL CATALOG #5362
	SPOT ELEVATION		CENTERLINE		LIGHTING FIXTURE, FLUORESCENT, 10.94" x 8'-0", 2/95W, SURFACE MOUNTING TYPE, HUBBELL LIGHTING CATALOG #TWSM232T		TOGGLE SWITCH, 1P-125V-15A, HUBBELL CATALOG #HBL 1201CN
	SET POINT		PROPERTY/LEASE LINE		LIGHTING FIXTURE, HIGH PRESSURE SODIUM, 1/70W, WALL MOUNTING TYPE, HUBBELL LIGHTING CATALOG #NRG-307 OR 1/50W, HUBBELL LIGHTING CATALOG #NRG-121		TOGGLE SWITCH, 1P-120V-15A, "WP"
	REVISION		MATCH LINE		COMBINATION, EXIT SIGN & EMERGENCY LIGHTING, HUBBELL LIGHTING CATALOG #PRC		IONIZATION SMOKE DETECTOR W/ALARM HORN & AUXILIARY CONTACT, 120 VAC, GENTEX PART NO. 7100F
	GRID REFERENCE		WORK POINT		EMERGENCY LIGHTING, 2/50W, HUBBELL LIGHTING CATALOG #HE6-50-2-R91		POLE
	DETAIL REFERENCE		GROUND CONDUCTOR		LIGHTING FIXTURE, INCANDESCENT, 1/100W, WALL MOUNTING TYPE, HUBBELL LIGHTING CATALOG #BRH-100-06-1		PROPOSED POLE MOUNTED XFMR
	ELEVATION REFERENCE		COAXIAL CABLE		LIGHTING FIXTURE, HALOGEN, QUARTZ, 1/300W, HUBBELL LIGHTING CATALOG #QL-505		(E) POLE MOUNTED XFMR
	SECTION REFERENCE		OVERHEAD SERVICE CONDUCTORS		LIGHTING FIXTURE, 1/175W, METAL HALIDE, HUBBELL CAT #MIC-0175H-336		PROPOSED PAD MOUNTED XFMR
			CHAIN LINK FENCING		LIGHTING FIXTURE, 1/175W, METAL HALIDE, HUBBELL CAT #MIC-0175H-336		(E) PAD MOUNTED XFMR
			OVERHEAD ELEPHONE/OVERHEAD POWER				
			OVERHEAD TELEPHONE LINE				
			OVERHEAD POWER LINE				
			POWER RUN				

LEGEND

ABBREVIATIONS

A	AMPERE	HT.	HEIGHT
A.B.	ANCHOR BOLT	ICGB.	ISOLATED COPPER GROUND BUS
ABV.	ABOVE	IN.(T)	INCH(ES)
ACCA	ANTENNA CABLE COVER ASSEMBLY	INT.	INTERIOR
ADD'L	ADDITIONAL	LB.(#)	POUND(S)
A.F.F.	ABOVE FINISHED FLOOR	LB.	LAG BOLTS
A.F.G.	ABOVE FINISHED GRADE	L.F.	LINEAR FEET (FOOT)
AIC	AMPERE INTERRUPTING CAPACITY	LG.	LENGTH
ALUM.	ALUMINUM	LONG.	LONGITUDINAL
ALT.	ALTERNATE	LPS	LOW PRESSURE SODIUM
ANT.	ANTENNA	MAS.	MASONRY
APPROX.	APPROXIMATE(LY)	MAX.	MAXIMUM
ARCH.	ARCHITECT(URAL)	M.B.	MACHINE BOLT
AT.	AMPERE TRIP	MECH.	MECHANICAL
AWG.	AMERICAN WIRE GAUGE	MFR.	MANUFACTURER
BATT.	BATTERY	MIN.	MINIMUM
BD.	BOARD	MISC.	MISCELLANEOUS
BLDG.	BUILDING	MLO.	MAIN LUGS ONLY
BLK.	BLOCK	MTD.	MOUNTED
BLKG.	BLOCKING	MTG.	MOUNTING
BM.	BOUNDARY NAILING	MIS.	MANUAL TRANSFER SWITCH
B.N.	BRANCH	N	NEUTRAL
BR.	BREAKER	N	PROPOSED
BICW.	BARE TINNED COPPER WIRE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
BIS.	BUS	NO.(#)	NUMBER
B.O.F.	BOTTOM OF FOOTING	N.T.S.	NOT TO SCALE
B/U	BACK-UP CABINET	OH	OVERHEAD
C	CONDUIT	O.C.	ON CENTER
CAB.	CABINET	OPNG.	OPENING
CANT.	CANTILEVER(ED)	P	POLE
CB.	CIRCUIT BREAKER	P	PRECAST CONCRETE
C.I.P.	CAST IN PLACE	P/C	PERSONAL COMMUNICATION SERVICES
CKT.	CIRCUIT	PH	PHASE
CL.	CLEAR	PLY.	PLYWOOD
CLC.	CLEAR	PNLBD	PANELBOARD
COL.	COLUMN	PPC	POWER PROTECTION CABINET
CONC.	CONCRETE	PRC	PRIMARY RADIO CABINET
CONN.	CONNECTION(OR)	PR1	PRIMARY
CONST.	CONSTRUCTION	P.S.F.	POUNDS PER SQUARE FOOT
CONT.	CONTINUOUS	P.S.I.	POUNDS PER SQUARE INCH
d	PENNY (NAILS)	P.T.	PRESSURE TREATED
DBL.	DOUBLE	PWR.	POWER (CABINET)
DEPT.	DEPARTMENT	QTY.	QUANTITY
D.F.	DOUGLAS FIR	RAD.(R)	RADIUS
DIA.	DIAMETER	REF.	REFERENCE
DIAG.	DIAGONAL	REIN.	REINFORCEMENT(ING)
DIM.	DIMENSION	REQD.	REQUIRED
DWG.	DRAWING(S)	RCS.	RIGID GALVANIZED STEEL
DWL.	DOWEL(S)	SAF	SAFETY
E.A.	EACH	SCH.	SCHEDULE
EGR.	EMERGENCY GENERATOR RECEPTACLE	SBRC	SOFT DRAWN BARE COPPER
EL.	ELEVATION	SEC	SECONDARY
ELEC.	ELECTRICAL	SH.	SHEET
ELEV.	ELEVATOR	SMAR.	SMALLER
EMT.	ELECTRICAL METALLIC TUBING	S.N.	SOLID NEUTRAL
EN.	EDGE NAIL	SPEC.	SPECIFICATION(S)
ENCL.	ENCLOSURE	SQ.	SQUARE
ENG.	ENGINEER	S.S.	STAINLESS STEEL
EQ.	EQUAL	STD.	STANDARD
EXST.(E)	EXISTING	STL.	STEEL
EXP.	EXPANSION	STRUC.	STRUCTURAL
EXT.	EXTERIOR	SURF.	SURFACE
FAB.	FABRICATION(OR)	SW	SWITCH
FAC.	FACE	TEL.	TELEPHONE
F.A.	FIRE ALARM	TEMP.	TEMPORARY
F.F.	FINISH FLOOR	THK.(N)	THICK(NESS)
F.G.	FINISH GRADE	T.N.	TOE NAIL
F.IN.	FINISHED	T.O.A.	TOP OF ANTENNA
FLOOR.	FLOOR	T.O.C.	TOP OF CURB
FLR.	FLUORESCENT	T.O.F.	TOP OF FOUNDATION
FDN.	FOUNDATION	T.O.P.	TOP OF PLATE (PARAPET)
F.O.C.	FACE OF CONCRETE	T.O.S.	TOP OF STEEL
F.O.M.	FACE OF MASONRY	T.O.W.	TOP OF WALL
F.O.S.	FACE OF STUD	TYP.	TYPICAL
F.O.W.	FACE OF WALL	U.G.	UNDER GROUND
F.S.	FINISH SURFACE	U.L.	UNDERWRITERS LABORATORY INC.
FT.(T)	FOOT (FEET)	UN.O.	UNLESS NOTED OTHERWISE
FIG.	FUSE	V.	VOLT
FUS.	FUSE	VAC	VOLT ALTERNATING CURRENT
G	GROUND	V.F.	VERIFY IN FIELD
GR	GROWTH (CABINET)	W	WAIT OR WIRE
GA.	GAUGE	WD	WIDE(WIDTH)
GEN.	GENERATOR	W/	WITH
G.F.C.I.	GALVANIZED(ED)	W/O	WITHOUT
GLB.	GROUND FAULT CIRCUIT INTERRUPTER	W.P.	WEATHERPROOF
GLD.	GLUE LAMINATED BEAM	WTD.	WEIGHT
GRD.	GROUND	XFR	TRANSFER
GPS	GLOBAL POSITIONING SYSTEM	XFMR	TRANSFORMER
GRND.	GROUND	XLPE	CROSS-LINK POLYETHYLENE
HDBC	HAND DRAWN COPPER WIRE		
HDR.	HEADER		
HGR.	HANGER		
HPS	HIGH PRESSURE SODIUM		

LEGEND



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:

95% Zoning Drawings

Drawing Phase:

CRAN-RSFR-SF0K6-024  
PACE ID:  
ROW AT 276 29TH ST  
OAKLAND, CA 94611  
COUNTY: ALAMEDA

Site Name:

Professional Seal:

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02	10/23/17	Zoning Dwgs 95%

Project No.:

Date: 10/23/17 Job No.:

Scale: AS SHOWN CAD File:

Designed By: JG Checked: RB

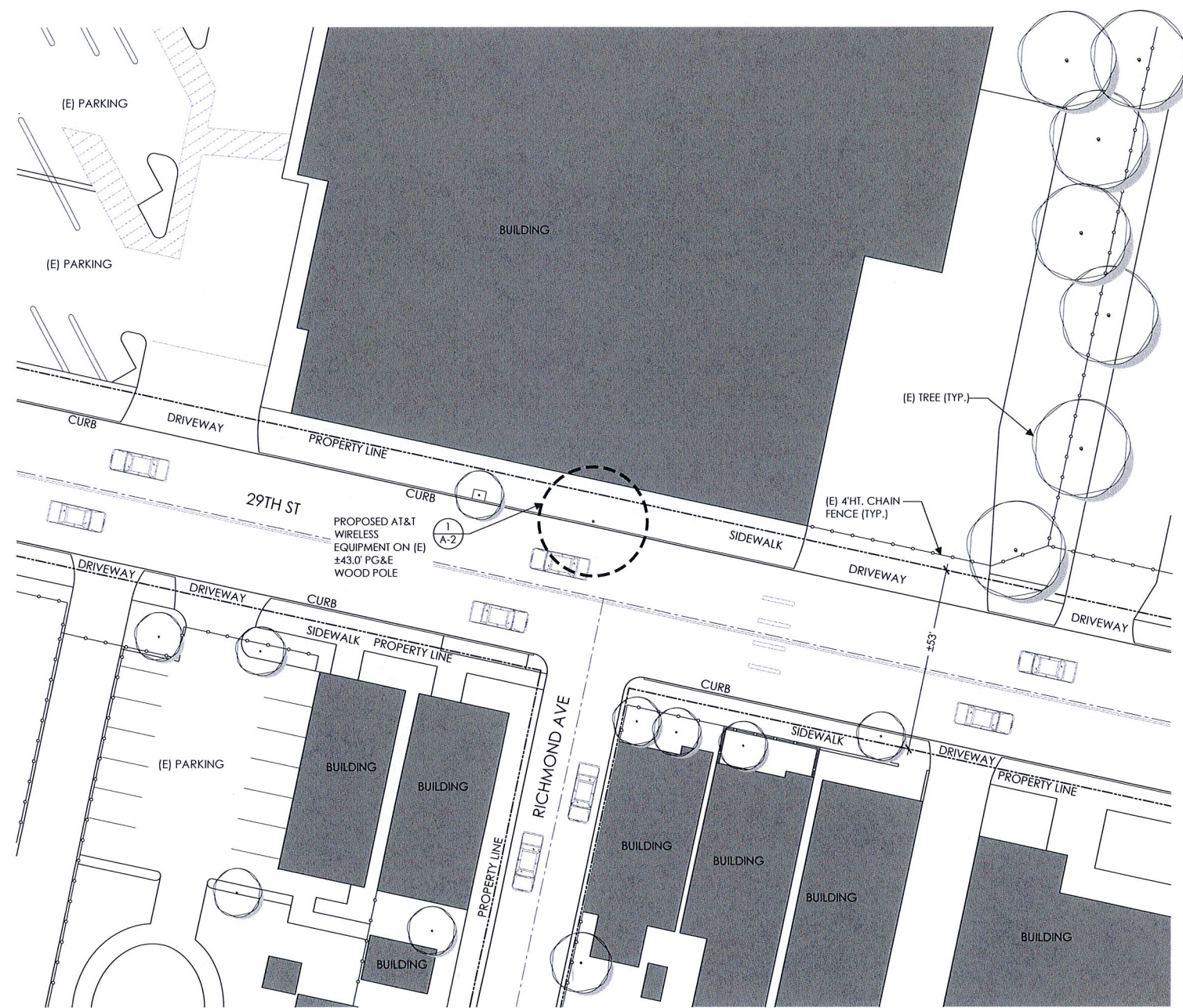
GENERAL NOTES  
LEGEND  
ABBREVIATIONS

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.



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 5001 Executive Parkway  
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Designed By: JG Checked: RB

OVERALL SITE PLAN

Sheet Title:

A.1

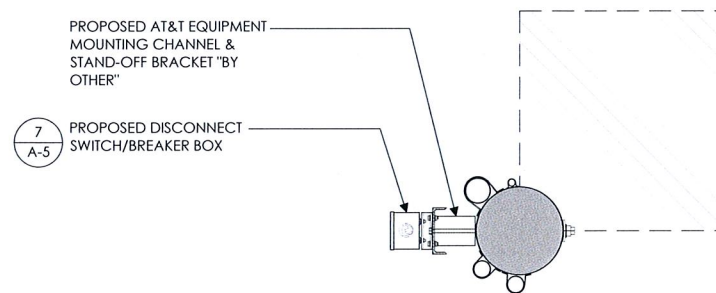
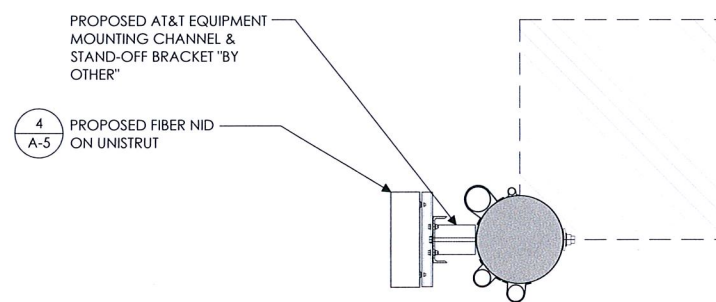
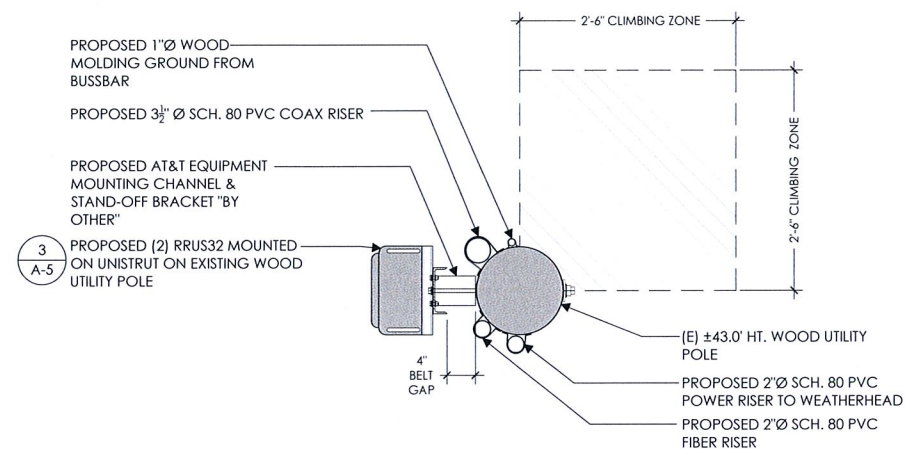
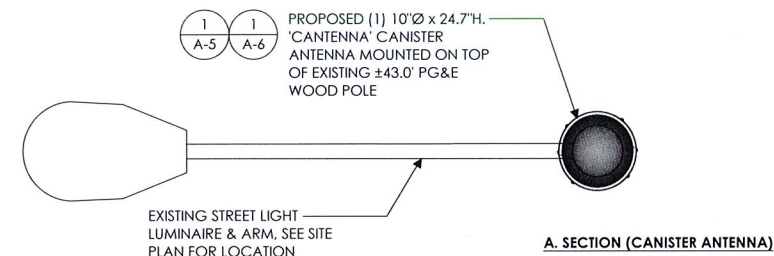
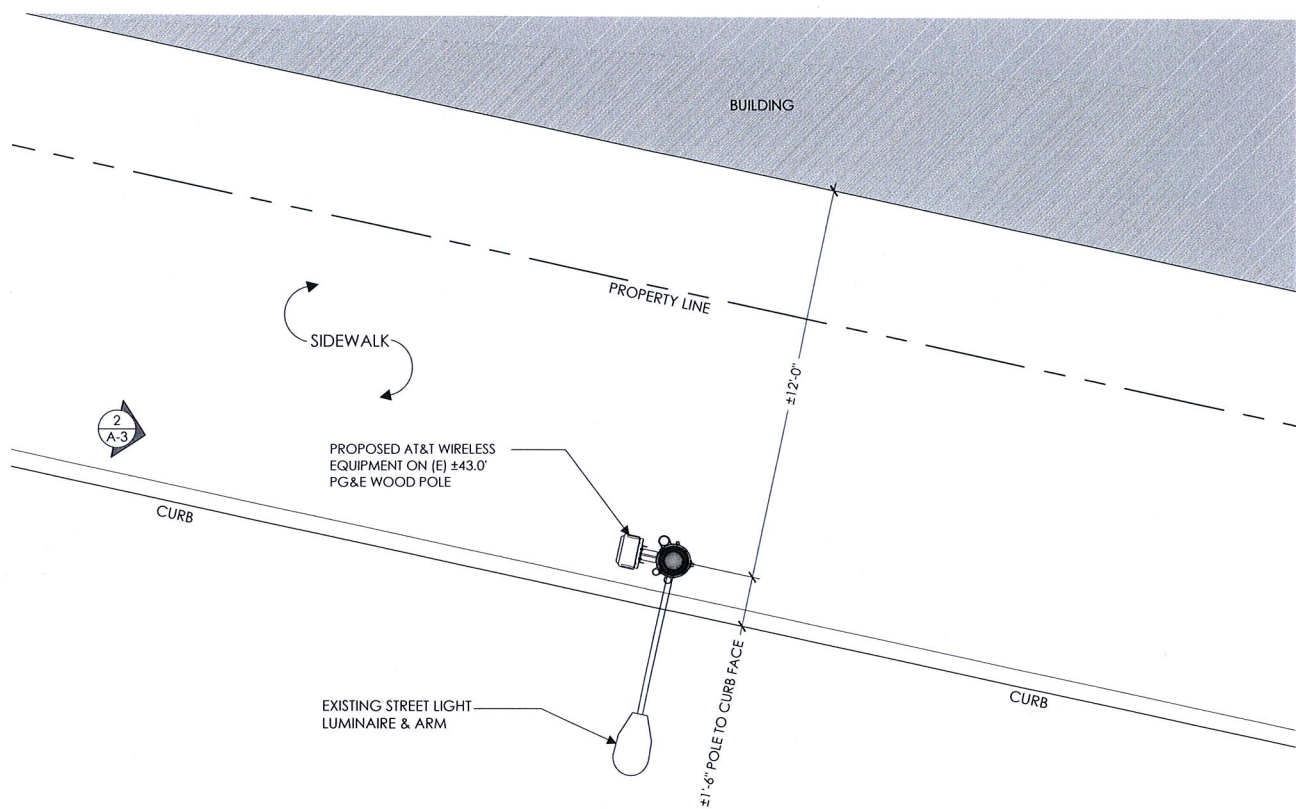
Sheet No.:



- (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



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Site Agent:

95% Zoning Drawings

Drawing Phase:

CRAN-RSFR-SF0K6-024

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OAKLAND, CA 94611  
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Date: 10/23/17 Job No.:

Scale: AS SHOWN CAD File:

Designed By: JG Checked: RB

POLE PLAN  
EQUIPMENT  
ENLARGEMENTS

Sheet Title:

A.2

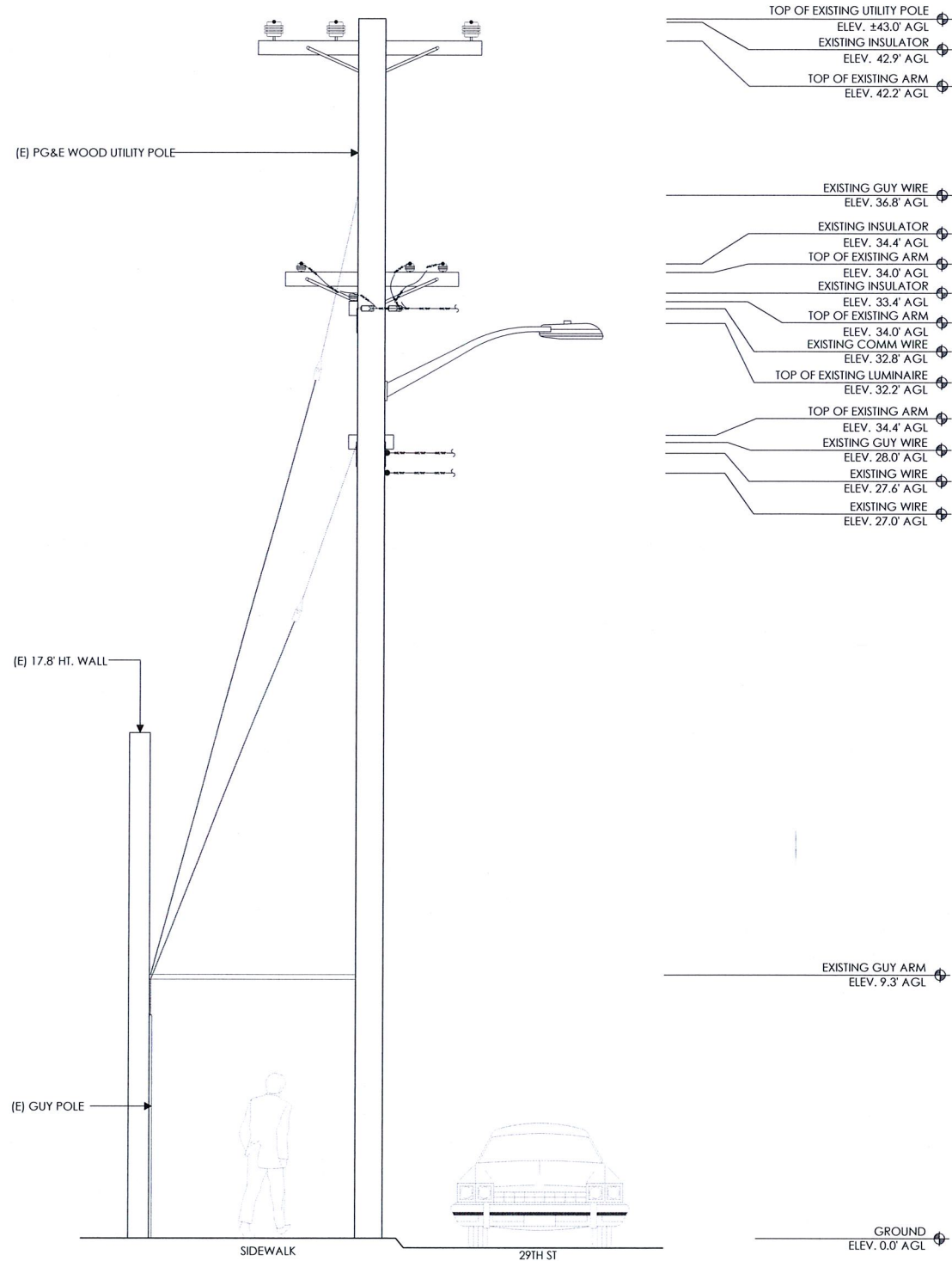
Sheet No.:

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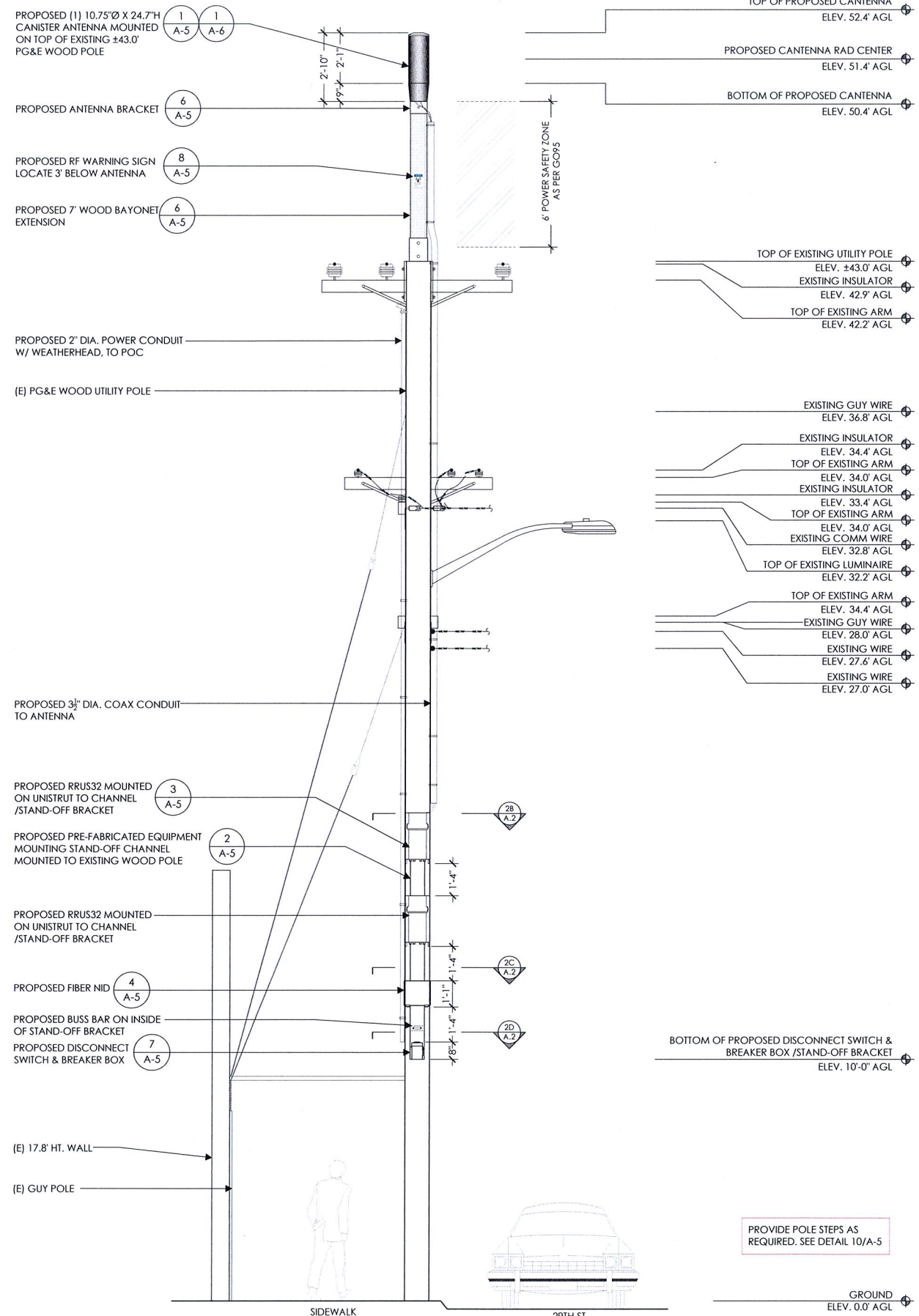
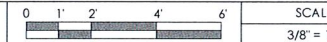


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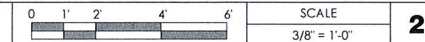
IF DIMENSIONS SHOWN ON PLAN DO NOT SCALE CORRECTLY, CHECK FOR REDUCTION OR ENLARGEMENT FROM ORIGINAL PLANS.



NORTHWEST ELEVATION - EXISTING



NORTHWEST ELEVATION - PROPOSED



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

Client:



Project Architect:



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SUITE 125  
WALNUT CREEK, CA 94598  
T 925.482.8500

Site Agent:

95% Zoning Drawings

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COUNTY: ALAMEDA

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Scale: AS SHOWN CAD File:

Designed By: JG Checked: RB

ELEVATIONS

Sheet Title:

A.3

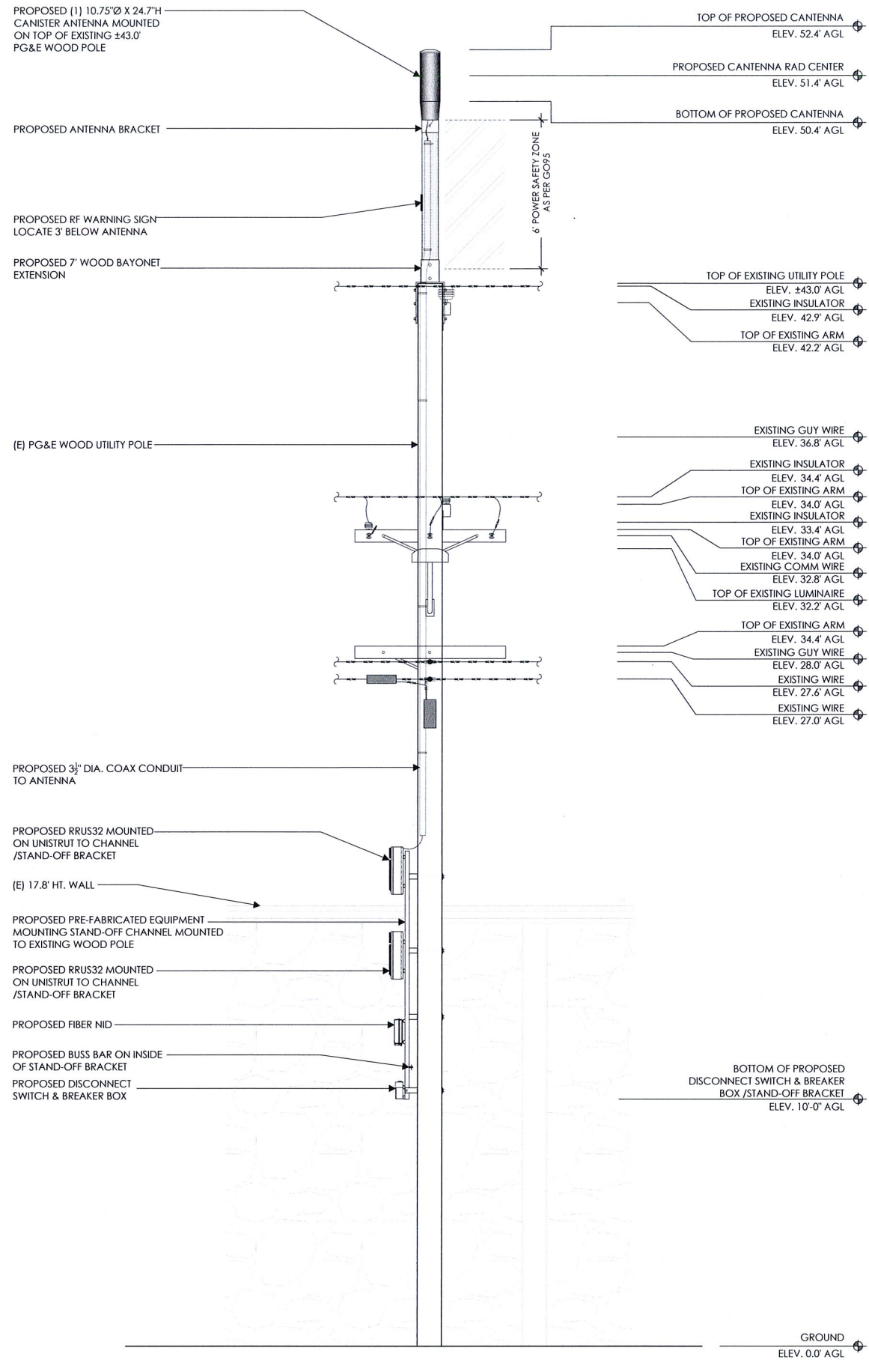
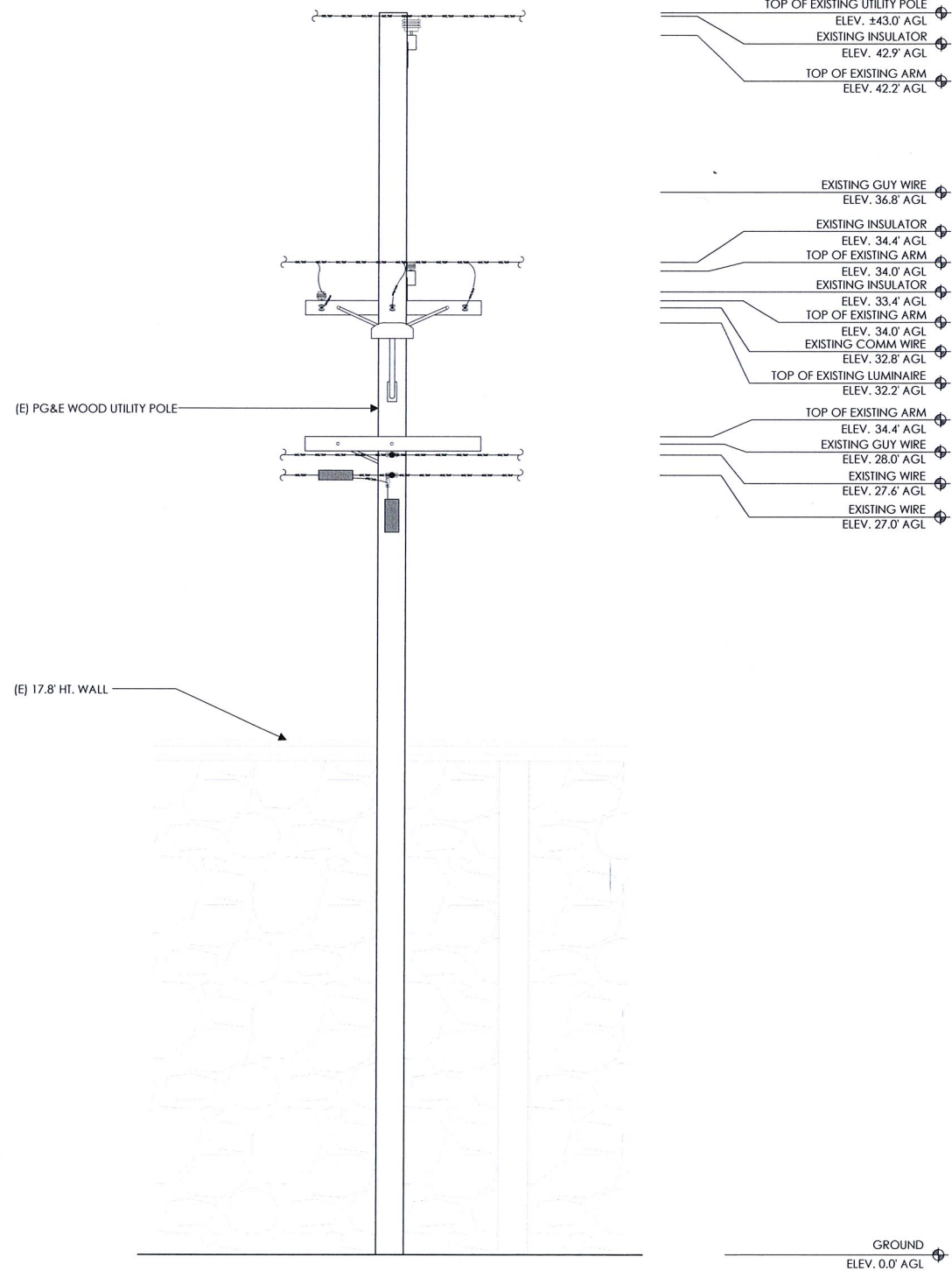
Sheet No.:

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SCALE NOTE:

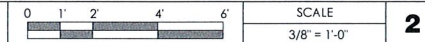
IF DIMENSIONS SHOWN ON PLAN DO NOT SCALE CORRECTLY, CHECK FOR REDUCTION OR ENLARGEMENT FROM ORIGINAL PLANS.



SOUTHWEST ELEVATION - EXISTING



SOUTHWEST ELEVATION - PROPOSED



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:

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Drawing Phase:

CRAN-RSFR-SFOK6-024

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OAKLAND, CA 94611  
COUNTY: ALAMEDA

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Designed By: JG Checked: RB

ELEVATIONS

Sheet Title:

A.4

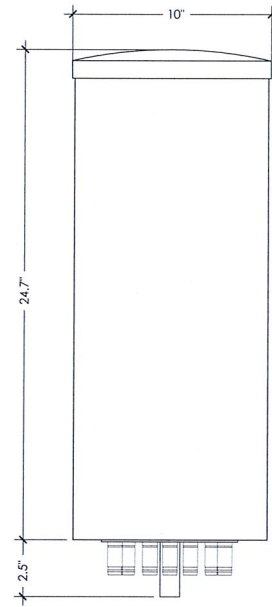
Sheet No.:

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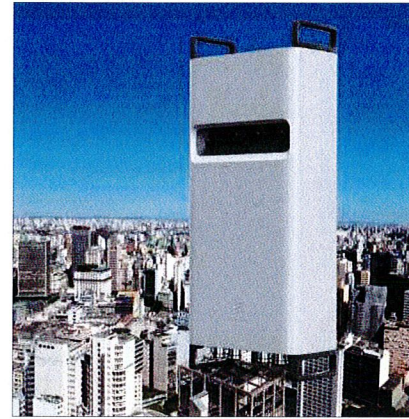
**AT&T CANISTER ANTENNA 'CAN-TENNA'**

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



**RRUS 32**

HEIGHT: 27.2"  
 WIDTH: 12.1"  
 DEPTH: 7.0"  
 WEIGHT: 53 LBS



**AFL MODEL# OPN-760 SPECIFICATIONS**

DEMARCATON CAPACITY: (2) JDSU BRIGHT JACKS WITH NO SPLICE TRAY OR (1) JSDU BRIGHT JACK WITH ONE SPLICE TRAY

DIMENSIONS: 1'-1" H. x 1'-1" W. x 4" D.

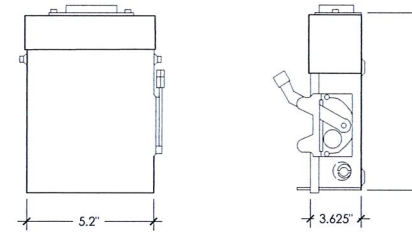


**NOTES:**

- 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

RRUS32

3

FIBER NID

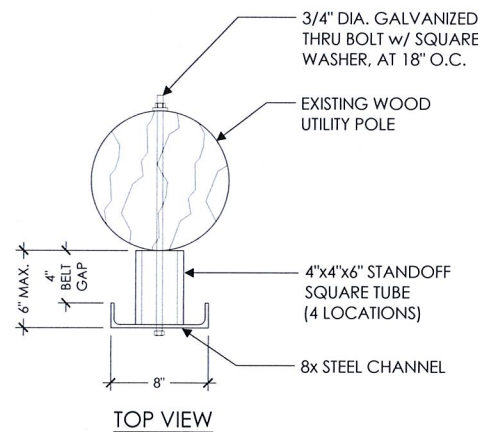
4

DISCONNECT SWITCH/BREAKER BOX

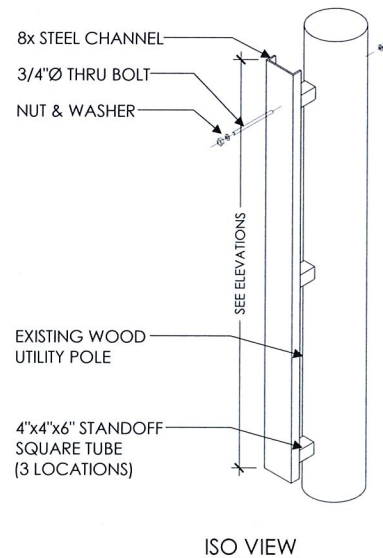
7

NOTICE SIGNAGE

8



TOP VIEW



ISO VIEW

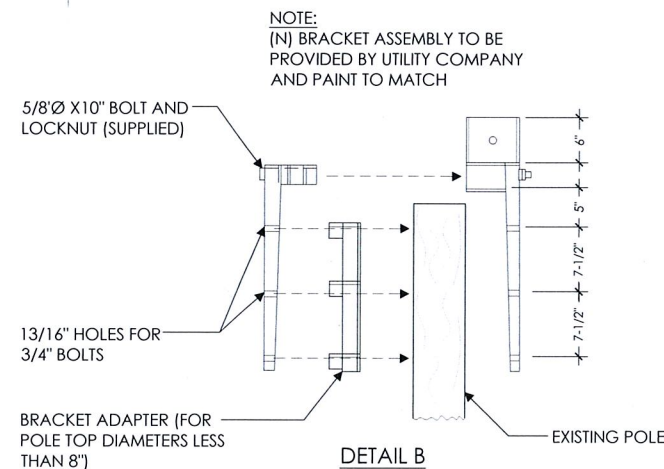
MOUNTING CHANNEL

2

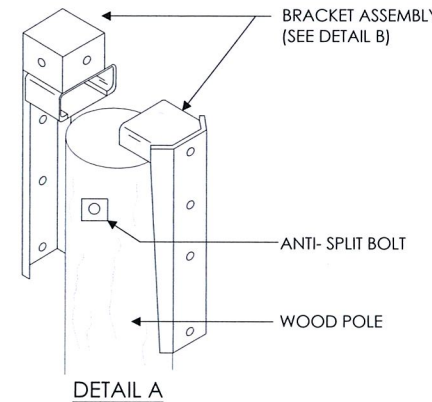
WOOD POLE EXTENSION

NOT USED

5



DETAIL B



DETAIL A

WOOD POLE EXTENSION

6

POLE STEPS

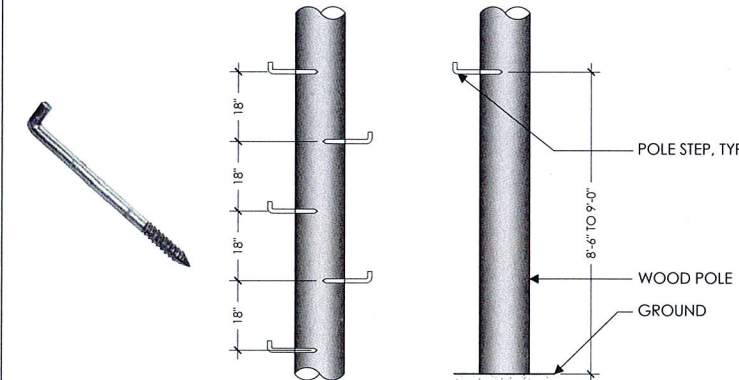
DISCONNECT SIGNAGE

9

**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.



POLE STEPS

10

**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.



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:

95% Zoning Drawings

Drawing Phase:

CRAN-RSFR-SFOK6-024

PACE ID:  
 ROW AT 276 29TH ST  
 OAKLAND, CA 94611  
 COUNTY: ALAMEDA

Site Name:

Professional Seal:

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Date: 10/23/17 Job No.:

Scale: AS SHOWN CAD File:

Designed By: JG Checked: RB

EQUIPMENT DETAILS

Sheet Title:

**A.5**

Sheet No.:

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Client: \_\_\_\_\_



Project Architect: \_\_\_\_\_



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

Site Agent: \_\_\_\_\_

95% Zoning Drawings

Drawing Phase: \_\_\_\_\_

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Scale: AS SHOWN CAD File: \_\_\_\_\_

Designed By: JG Checked: RB

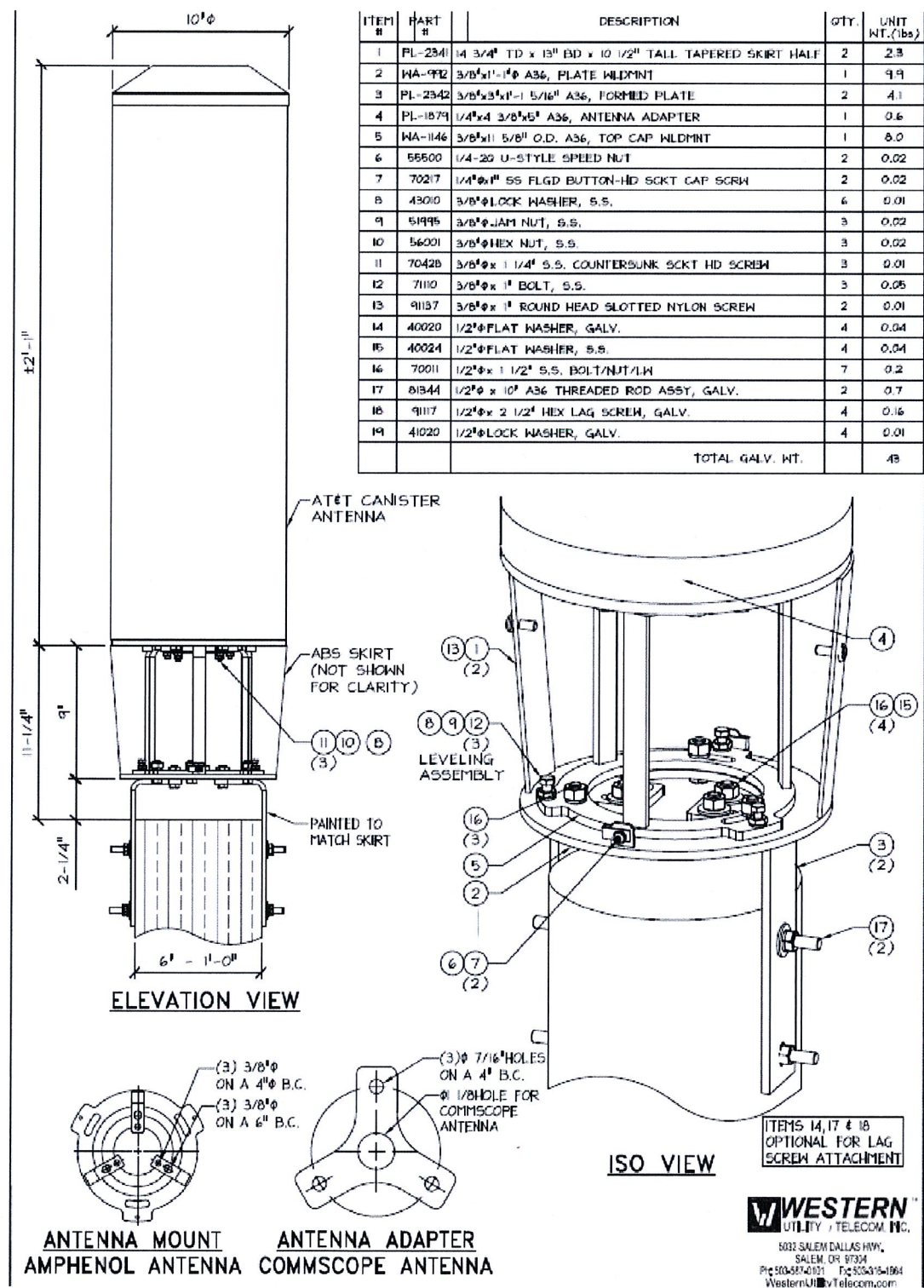
EQUIPMENT  
DETAILS

Sheet Title: \_\_\_\_\_

**A.6**

Sheet No.: \_\_\_\_\_

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**WESTERN**  
UTILITY TELECOM INC.  
5032 SALEM DALLAS HWY.  
SALEM, OR 97301  
P: 503.587.6151 F: 503.587.1964  
WesternUtilityTelecom.com



Existing

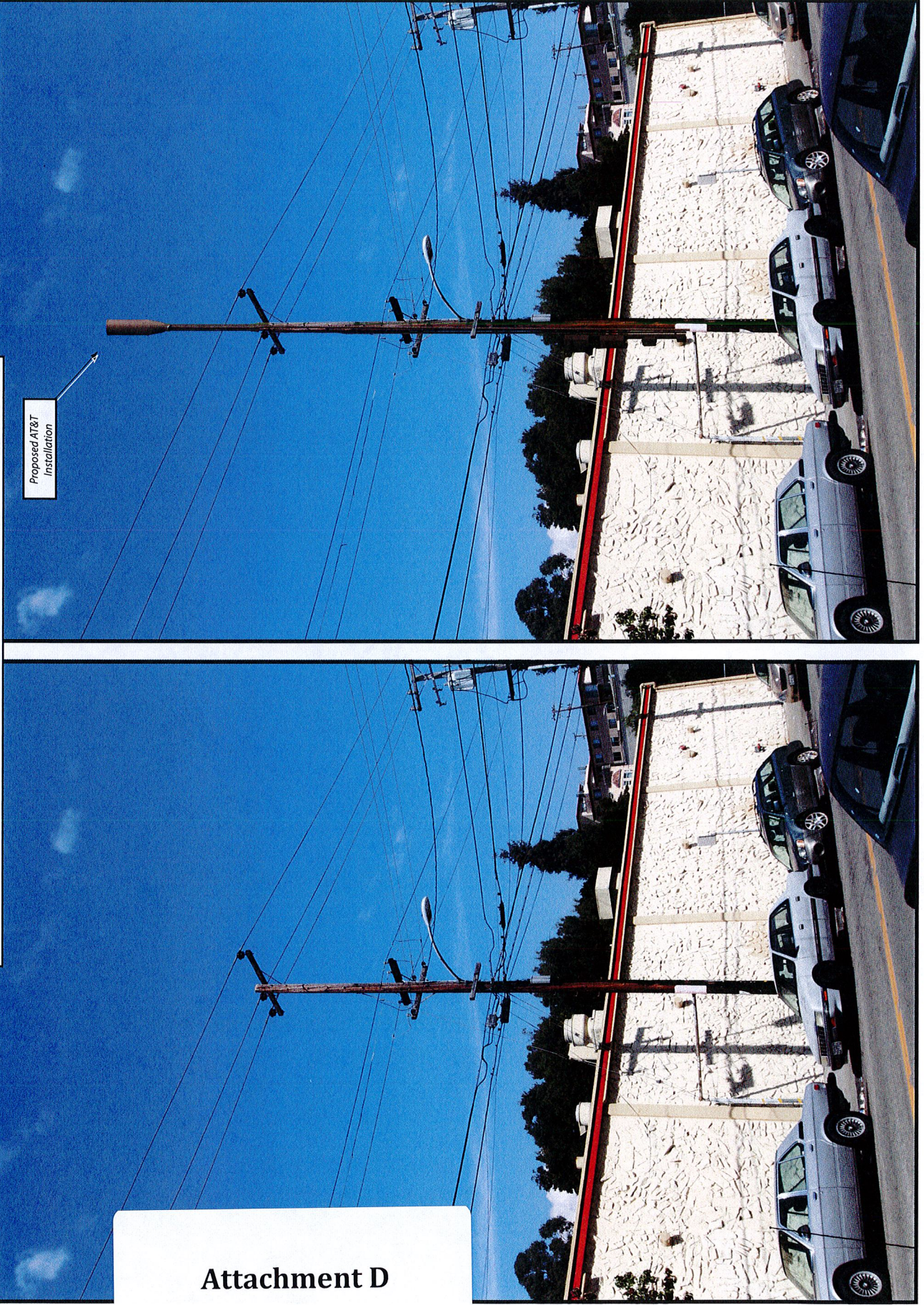
view from 29th Street looking northeast at site  
CRAN-RSFR-SFOK6-024  
276 29th Street, Oakland, CA  
Photosims Produced on 10-30-2017



Proposed

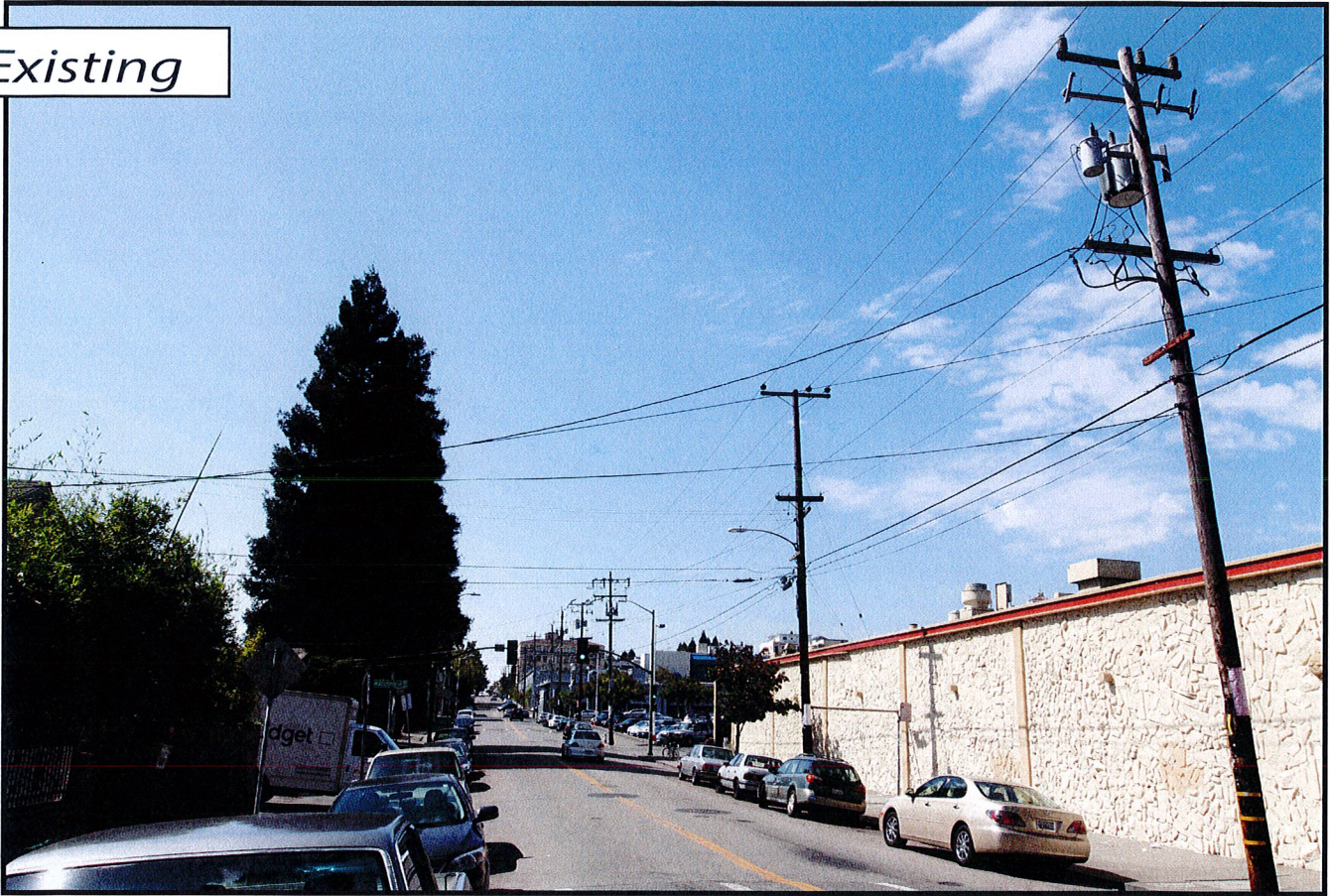
Proposed AT&T  
Installation

Attachment D





*Existing*



*Proposed*

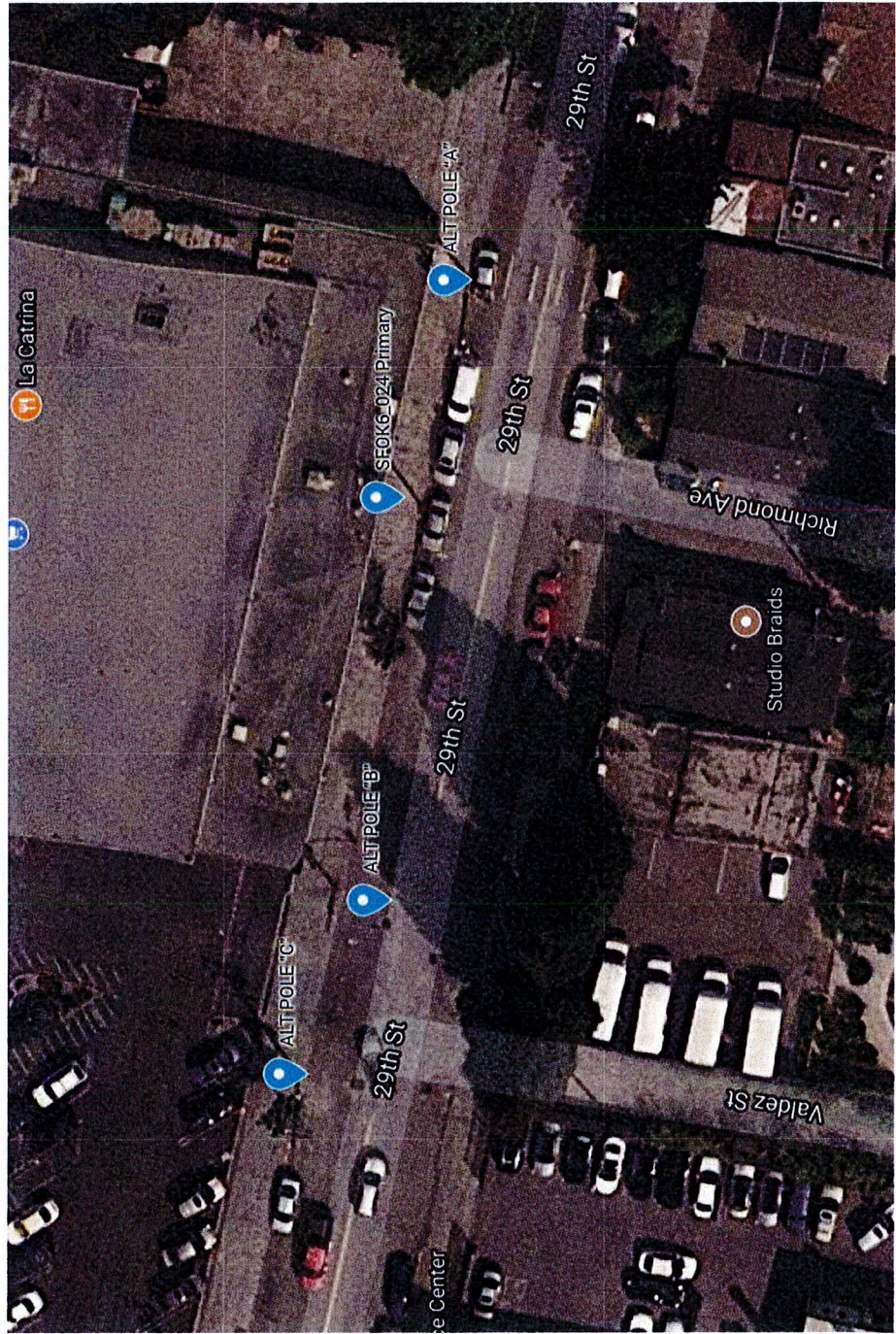


view from 29th Street looking west at site



# ALTERNATIVE SITE ANALYSIS SF0K6\_024

Attachment E







## **AT&T PROPOSED LOCATION**

**SFOK6\_024  
273 29<sup>th</sup> St., Oakland, CA 94611  
APN: 9-702-1-1  
37.8172500, -122.2614700**

**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  
273 29<sup>th</sup> St., Oakland, CA 94611  
37.817201, -122.261277**

**Findings: Cutouts on primary conductor  
lines of PG&E wood utility pole prohibit  
attaching small cell equipment**



## **ALTERNATIVE POLE "B"**

### **PG&E Wood Utility Pole**

**Corner of 29th St. & Valdez St., Oakland, CA 94611  
37.817259, -122.261828**

**Findings: PGE wood utility poles with manual disconnect arms are precluded from attachment.**





## **ALTERNATIVE POLE "C"**

### **PG&E Wood Utility Pole**

**Corner of 29<sup>th</sup> St. & Valdez St., Oakland, CA 94611  
37.817318, -122.261983**

**Findings: Cutouts on primary conductor  
lines of PG&E wood utility pole prohibit  
attaching small cell equipment**





## ALTERNATIVE DESIGN ANALYSIS

SFOK6\_024

**APN:**

9-702-1-1

**LAT/LONG:**

37.8172500, -122.2614700

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**





**AT&T Mobility • Proposed Small Cell (No. CRAN-RSFR-SFOK6-024)  
276 29th Street • Oakland, 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 its small cell (No. CRAN-RSFR-SFOK6-024) 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 276 29th Street 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:

<u>Wireless Service</u>	<u>Frequency Band</u>	<u>Occupational Limit</u>	<u>Public Limit</u>
Microwave (Point-to-Point)	5,000–80,000 MHz	5.00 mW/cm <sup>2</sup>	1.00 mW/cm <sup>2</sup>
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-SF0K6-024)**  
**276 29th Street • 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 26, 2017, it is proposed to install one KMW Model FLT-OM10H2, 2-foot tall, omnidirectional cylindrical antenna, on top of a utility pole sited in the public right-of-way on the north side of 29th Street in Oakland, opposite the intersection with Richmond Avenue. The antenna would employ 2° downtilt and would be mounted at an effective height of about 51 feet above ground. The maximum effective radiated power in any direction would be 1,360 watts, representing simultaneous operation of 700 watts for AWS and 660 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 0.011 mW/cm<sup>2</sup>, which is 0.11% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby building is 2.1% 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.

**Recommended Mitigation Measures**

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



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guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training, to include review of personal monitor use, be provided to all authorized personnel who have access to the antenna. No access within 4 feet and at the same height as the AT&T antenna, such as might occur during certain maintenance activities at the top of the pole, should be allowed while the small cell is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. It is recommended that an explanatory sign\* be posted at the antenna and/or on the pole below the antenna, readily visible to persons who might need to work within that distance.

**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 276 29th Street 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. Training authorized personnel 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, 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.

November 15, 2017



William F. Hammett, P.E.

707/996-5200

\* 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. Signage may also need to comply with the requirements of California Public Utilities Commission General Order No. 95.

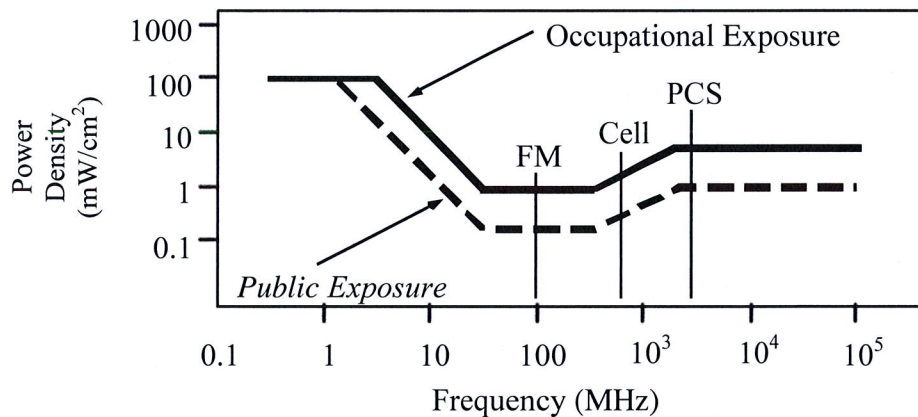


## FCC Radio Frequency Protection Guide

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 ( <i>f</i> is frequency of emission in MHz)					
	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm <sup>2</sup> )	
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/f<sup>2</sup></i>
3.0 – 30	1842/f	<i>823.8/f</i>	4.89/f	<i>2.19/f</i>	900/f <sup>2</sup>	<i>180/f<sup>2</sup></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√ <i>f</i>	<i>1.59√f</i>	√ <i>f</i> /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/cm<sup>2</sup>,

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<sup>2</sup>,

- where  $\theta_{BW}$  = 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
- $\eta$  = 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<sup>2</sup>,

- 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](#)









# 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](mailto:oaklandoutreach@vinculums.com)*

*(925) 482-8550*







**AT&T**

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*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@vinculums.com](mailto:oaklandoutreach@vinculums.com)*

*(925) 482-8550*





# AT&T Oakland Small Cell Master Plan Map

