City of Malden
City Council
110 Pleasant Street
Malden, MA 02148

12/5/2018

RE: Petition of New Cingular Wireless PCS, LLC ("AT&T") for Grant of Location for Telecommunication Wires and Wireless Attachments and Appurtenances: **Project: AREA4_0133A: Location: 14 EVELYN ST MALDEN, MA 02148, 42.427716 N -71.075058 W, Utility Pole #2840**

Dear Honorable Members of the City Council:

Pursuant to Massachusetts General Laws Chapter 166, Sections 21, 22 and 25A, please find enclosed the petition (the "Petition") of New Cingular Wireless PCS, LLC ("AT&T") for a grant of location for telecommunication wires and wireless attachments and appurtenances to be attached to existing utility poles owned by National Grid within the City of Malden. Included with the Petition are detailed plans that identify the locations where AT&T's proposed attachments will be placed. This includes an area map of all locations as well as the utility pole profiles depicting the equipment attachment heights and specs.

AT&T requests that the City schedule a public hearing on this Petition, subject to the requirements of Chapter 166 of the Massachusetts General Laws. Those requirements prescribe that the City mail "written notice of the time and place of the hearing at least seven days prior to all owners of real estate abutting upon that part of the way upon, along, across or under which the line is to be constructed, as such ownership is determined by the last preceding assessment for taxation". It is my understanding that the City will be able to produce this list and I will work with the City Clerk to ensure the letters are sent per these requirements.

Project Description

AT&T proposes to deploy six (6) small cell sites in the City of Malden in order to deal with the rapidly increasing demand on AT&T's wireless network. All six (6) small cell sites will be mounted on existing National Grid utility poles located within the public rights of way. The small cell sites will work in conjunction with the existing macro sites installed on rooftops, towers and other structures in and around the City of Malden. This Petition specifically addresses the following location:

Project: AREA4_0133A: Location: 14 EVELYN ST MALDEN, MA 02148, 42.427716 N -71.075058 W, Utility Pole #2840

AT&T's radio frequency engineers targeted the proposed location due to the high traffic and data demands on AT&T's network. AT&T's existing macro cell sites are not providing adequate data capacity in this location due to increased population, vehicular and foot traffic, multiple wireless devices used by each person and other contributing factors. This small cell site will work to offload the demand on the macro sites and allow for increased data capacity and speed within the immediate vicinity of the proposed small cell site.

The small cell site will be installed using standard commercially accepted methods in accordance with all applicable federal, state and local laws and regulations. All proposed attachments are to existing poles owned and maintained by National Grid. AT&T has entered into a Pole Attachment Agreement with National Grid.

95 Ryan Drive, Suite 1 • Raynham, MA 02767 • T: 508.821.6509 • F: 508.819.2017 • E: dford@clinellc.com

The small cell installation on each existing utility pole will include: fiber optic cable(s); remote nodes in a small equipment cabinet H32" x W18" x D12" mounted to the pole at least 16' above ground level; an unobtrusive pole top antenna measuring 24.7" long and 10" in diameter ; conduits and cable protectors; and, an electrical meter with shutoff switch. Attached please find design sketches for each site showing the proposed location, pole height, mounting height, equipment specifications and utility plan.

The Telecommunications Act of 1996 (the "Act")

Without the installation, AT&T would be unable to provide specifically established coverage and capacity objectives. The utility pole is located within the limited geographic area whereby AT&T's radio frequency engineers determined that a wireless facility is required. The Act imposes substantial restrictions affecting the standard for granting the requested relief. The ACT provides that: no laws or actions by any local government or planning or zoning board may prohibit, or have the effect of prohibiting, the placement, construction, or modification of communications towers, antennas, or other wireless facilities in any particular geographic area, see 47 U.S.C. §332(c)(7)(B)(i); local government or planning or zoning boards may not unreasonably discriminate among providers of functionally equivalent services, see 47 U.S.C. §332(c)(7)(B)(i); health concerns may not be considered so long as the emissions comply with the applicable standards of the FCC, see 47 U.S.C. §332(c)(7)(B)(iv); and, decisions must be rendered within a reasonable period of time, see 47 U.S.C. §332(c)(7)(B)(ii) and the FCC's Declaratory Ruling commonly referred to as the "shot clock".

We have attached to this petition a generic emissions report demonstrating that the low power antenna will comply with applicable FCC standards with respect to emissions.

For the convenience of the City Council, AT&T has provided a proposed Form of Order for your consideration.

Should you have any questions, or would like any additional information prior to the public hearing please do not hesitate to contact me at (774) 261-0043 or jiacoviello@clinellc.com. AT&T will be present at the public hearing to answer any questions you may have as well.

Thank you,

Jeff Iacoviello

CENTERLINE COMMUNICATIONS

Jeffrey Iacoviello | Site Acquisition Consultant
750 W Center St, Floor 3 | West Bridgewater, MA 02379
Mobile: 774.261.0043 | Fax: 617.249.0819
jiacoviello@clinellc.com | www.centerlinecommunications.com

PETITION FOR LOCATIONS FOR TELECOMUNICATIONS WIRES AND WIRELESS ATTACHMENTS AND APPURTENANCES

To THE CITY COUNCIL OF THE CITY OF MALDEN, MASSACHUSETTS

Pursuant to Massachusetts General Laws, Chapter 166, Sections 21, 22 and 25A, and the City Ordinances of the City of Malden, Massachusetts, NEW CINGULAR WIRELESS PCS, LLC ("AT&T") requests that it be granted locations for and permission to construct and maintain telecommunications wires and wireless attachments and appurtenances, including fiber optic cable(s), remote nodes and pole top antennas to be attached to existing National Grid utility poles, located upon and along the following public ways within the City of Malden, as depicted on the attached plans. In addition, AT&T seeks permission to install conduit or direct bury cable(s) as depicted on the plans submitted.

Wherefore, AT&T requests that, after due notice and public hearing as provided by law, that it be granted locations for permission to construct the telecommunications wires and wireless attachments and appurtenances upon, along and under the public ways within the City of Malden as depicted on the plans filed herewith. AT&T also submitted additional information in support of this Petition.

Respectfully submitted,

NEW CINGULAR WIRELESS PCS, LLC ("AT&T")

By: Jeff Iacoviello
Centerline Communications, LLC

ORDER FOR LOCATION FOR TELECOMMUNICATIONS WIRES AND WIRELESS ATTACHMENTS AND APPURTENANCES

By the City Council

Of the City of Malden, Massachusetts, _____, 2018

ORDERED:

That pursuant to Massachusetts General Laws, Chapter 166, NEW CINGULAR WIRELESS PCS, LLC ("AT&T") is hereby granted locations for and permission to construct and maintain telecommunications wires and wireless attachments and appurtenances, including fiber optic cable(s), remote nodes and pole top antennas, to be attached to existing National Grid utility poles, located upon, along and under the public ways within the City of Malden, as substantially shown on the plans filed with said Petition. In addition, AT&T is hereby granted permission to install conduit or direct bury fiber cable(s) as depicted on the plans submitted.

The forgoing permission is subject to the following conditions:

1. The telecommunications wires and wireless attachments and appurtenances shall be installed and operated in compliance with all applicable federal and state laws and regulations.
2. AT&T shall indemnify and save the City harmless against all damages, costs and expense whatsoever to which the City may be subjected in consequence of the acts or neglect of AT&T or its agents or servants, or in any manner arising from the rights and privileges granted by the City.
3. AT&T shall comply with the requirements of existing City Ordinances, as may be applicable and such as may hereafter be adopted governing the construction and maintenance of said telecommunications wires and wireless attachments and appurtenances, so far as the same are not inconsistent with the laws of the United States or of the Commonwealth of Massachusetts.

I hereby certify that the foregoing was adopted at a meeting of the City Council of the City of Malden, Massachusetts, held on the _____ day of _____, 2018.

_____

City Clerk

APPROVED

_____

We hereby certify that on _____, 2018, at _____, o'clock at _____, a public hearing was held on the Petition of NEW CINGULAR WIRELESS PCS, LLC ("AT&T") for permission to construct and maintain telecommunications wires and wireless attachments and appurtenances, including fiber optic cable(s), remote nodes and pole top antennas, to be attached to existing utility poles, located upon, along and under the public ways within the City of Malden and to install conduit or direct bury fiber cable(s) as indicated in the plans described in the order herewith recorded, that we mailed at least seven days before said hearing a written notice of the time and place of said hearing to each of the owners of real estate (as determined by the last preceding assessment for taxation) along the ways or parts of ways upon which the Company is permitted to construct the telecommunications wires and appurtenances of AT&T under said order, and that thereupon said order was duly adopted.

_____

_____

_____

_____

_____

_____

_____

_____

_____

City Council of the City of Malden

CERTIFICATE

I hereby certify that the forgoing is a true copy of a grant of location order and certificate of hearing with notice adopted by the City Council of the City of Malden, Massachusetts, on the _____ day of _____, 2018, and recorded with records of location orders of said City, Book _____, Page _____. This certified copy is made under the provisions of Chapter 166 of the Massachusetts General Laws, as amended.

Attest:

_____

City Clerk

AT&T SITE ID: AREA4_0133A
14 EVELYN ST
MALDEN, MA 02148

SHEET INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	3
GN-1	GENERAL NOTES	3
A-1	KEY PLAN AND ELEVATION	3
A-2	EQUIPMENT DETAILS	3
E-1	ELECTRICAL & GROUNDING DETAILS	3

VICINITY MAP (NOT TO SCALE)

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

PROJECT SUMMARY

SITE ADDRESS:	14 EVELYN ST MALDEN, MA 02148
COUNTY:	ESSEX
LATITUDE:	42.427716° N
LONGITUDE:	71.075058° W
STRUCTURE TYPE:	UTILITY POLE
ARCHITECT/ENGINEER:	HUDSON DESIGN GROUP LLC 45 BEECHWOOD DRIVE N. ANDOVER, MA 01845

DRIVING DIRECTIONS

FROM MARLBOROUGH, MA:

DEPART LEGGAT MCCALL CONNECTOR RD TOWARD SPEEN ST. 0.2 MI. TURN RIGHT ONTO SPEEN ST. 0.4 MI. TURN RIGHT ONTO RT-30 / COCHITUATE RD. 0.1 MI. TAKE RAMP RIGHT FOR I-90 EAST TOWARD BOSTON. TOLL ROAD. 6.4 MI. AT EXIT 14, TAKE RAMP RIGHT FOR I-95 NORTH TOWARD PORTSMOUTH NH / WALTHAM. 17.4 MI. AT EXIT 37A, TAKE RAMP RIGHT FOR I-93 SOUTH TOWARD BOSTON. 4.9 MI. TAKE RAMP RIGHT FOR RT-28 S / FELLSWAY W. 0.5 MI. AT ROUNDABOUT, TAKE 3RD EXIT. 1.0 MI. TURN LEFT ONTO RT-60 / SALEM ST. 0.8 MI. TURN LEFT, AND THEN IMMEDIATELY TURN LEFT ONTO PLEASANT ST. 0.1 MI. TURN RIGHT ONTO EVELYN PL. 174 FT. ARRIVE AT SITE ON THE RIGHT.

CALL 811

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WWW.DIGSAFE.COM

72 HOURS PRIOR
UNDERGROUND SERVICE ALERT

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

CENTERLINE
750 WEST CENTER STREET
SUITE #301
WEST BRIDGEWATER, MA 02379

HDG HUDSON Design Group LLC
45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5068

COMMONWEALTH OF MASSACHUSETTS
DEREK J. CREASER
CIVIL
REGISTERED PROFESSIONAL ENGINEER

CHECKED BY: AT

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	10/15/18	REVISED FOR CONSTRUCTION	SB
2	06/08/18	ISSUED FOR CONSTRUCTION	TR
1	05/02/18	ISSUED FOR CONSTRUCTION	SB
0	01/16/18	ISSUED FOR REVIEW	SB

CLUSTER AND NODE NUMBER:
AREA4_0133A

SITE ID:
AREA4_0133A

SITE ADDRESS:
14 EVELYN ST
MALDEN, MA 02148
ESSEX COUNTY

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR – CENTERLINE
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY

2. 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.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. 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.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (F_y = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (F_y = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."

17. 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.

18. APPLICABLE BUILDING CODES:
    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.
    BUILDING CODE: MA STATE BUILDING CODE 780 CMR 9TH EDITION & IBC 2015
    ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)

    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, FOURTEENTH EDITION;

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

NATIONAL GRID NOTES

ALL INSTALLATIONS SHALL BE MADE IN COMPLIANCE WITH ALL APPLICABLE CODES INCLUDING THE NATIONAL ELECTRICAL SAFETY CODE (NESC) AND NATIONAL ELECTRICAL CODE (NEC), WITH LOCAL WIRING INSPECTOR REQUIREMENTS AND WITH APPLICABLE SERVICE REQUIREMENTS FROM THE COMPANY'S TARIFFS. CURRENTLY, IN MASSACHUSETTS, NEW HAMPSHIRE AND RHODE ISLAND THESE INCLUDE THE CURRENT "INFORMATION AND REQUIREMENTS FOR ELECTRIC SERVICE" BOOK AND IN NEW YORK THE CURRENT "SPECIFICATIONS FOR ELECTRICAL INSTALLATIONS" (ESB 750) BOOK.

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH ERICSSON AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET
SUITE #301
WEST BRIDGEWATER, MA 02379

HUDSON Design Group LLC
41 WEDGEWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-1553
FAX: (978) 336-5586

COMMONWEALTH OF MASSACHUSETTS
DEREK J. CREASER
CIVIL
REGISTERED PROFESSIONAL ENGINEER

CHECKED BY: AT

APPROVED BY: DJC

SUBMITTALS

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2	06/08/18	ISSUED FOR CONSTRUCTION	TR
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CLUSTER AND NODE NUMBER:
AREA4_0133A

SITE ID:
AREA4_0133A

SITE ADDRESS:
14 EVELYN ST
MALDEN, MA 02148
ESSEX COUNTY

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

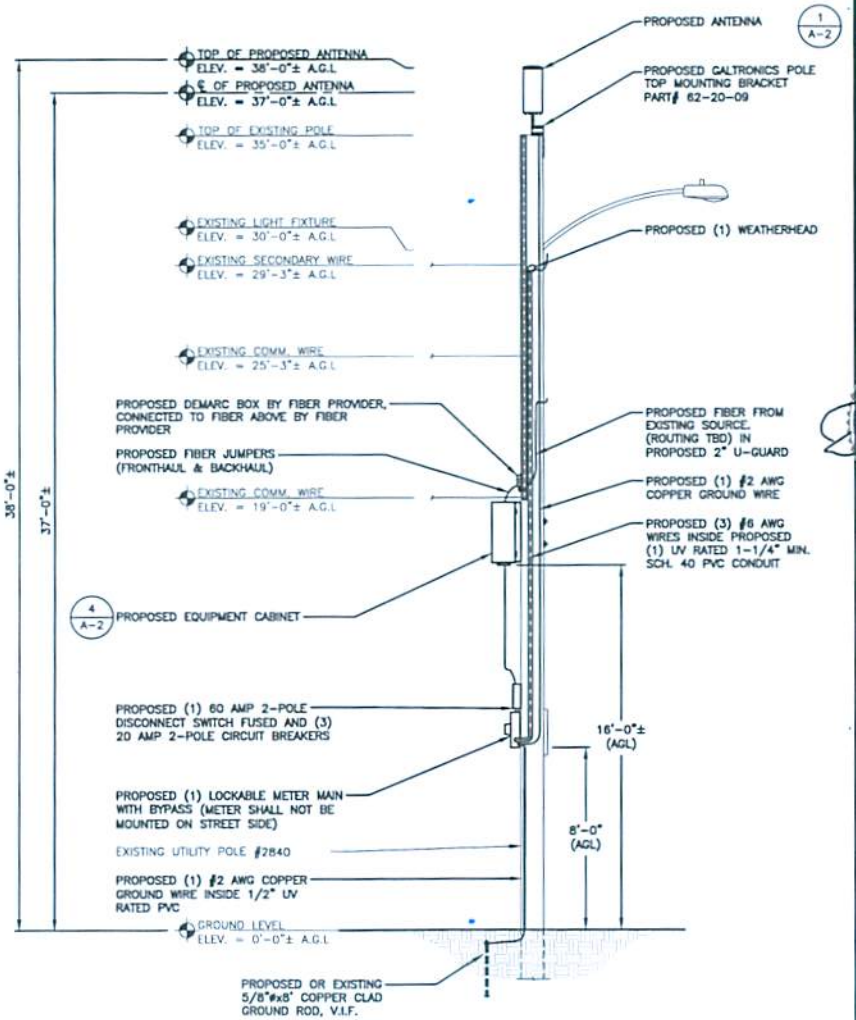
MAGNETIC NORTH 14°44' TRUE NORTH

KEY PLAN (1 / A-1)
22x34 SCALE: 1"=30'
11x17 SCALE: 1"=60'

GRAPHIC SCALE
0 15 30 60 90 FEET

EXISTING CONDITIONS PHOTO DETAIL (2 / A-1)
SCALE: N.T.S

APPROXIMATE COORDINATES:	LAT: 42.427716° N LONG: 71.075058° W



ELEVATION (3 / A-1)
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"

GRAPHIC SCALE
0 1'-4" 2'-8" 5'-4" 8'-0"

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

CENTERLINE
750 WEST CENTER STREET
SUITE #301
WEST BRIDGEWATER, MA 02379

HDG HUDSON Design Group LLC
43 BIRCHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-0553
FAX: (978) 334-5584

COMMONWEALTH OF MASSACHUSETTS
DEREK J. CREASER
CIVIL
REGISTERED PROFESSIONAL ENGINEER

CHECKED BY: AT
APPROVED BY: DJC

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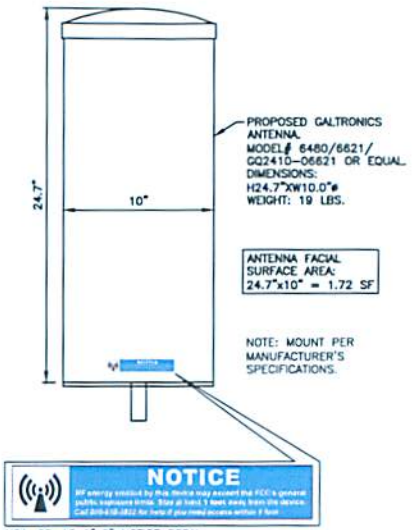
SITE ID:
AREA4_0133A

SITE ADDRESS:
14 EVELYN ST
MALDEN, MA 02148
ESSEX COUNTY

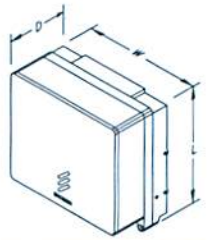
SHEET TITLE
KEY PLAN AND ELEVATION

SHEET NUMBER
A-1



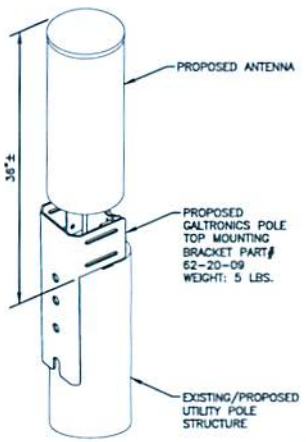
NO1-CO-16 1"x6" NOTICE DECAL
PLACE THREE NOTICE STICKERS EQUALLY SPACED AROUND THE BOTTOM OF ANTENNA RADOME

ANTENNA DETAIL (1 / A-2)
SCALE: N.T.S

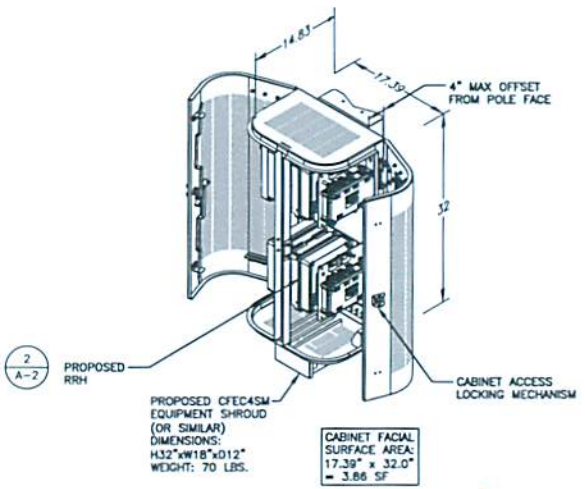


MODEL	QTY	L	W	D	WGT.
2203	2	8.0"	8.0"	4.0"	11 LB
2205	1	8.0"	8.0"	4.0"	11 LB

RRH DETAIL (2 / A-2)
SCALE: N.T.S



ANTENNA MOUNT DETAIL (3 / A-2)
SCALE: N.T.S



NO BATTERY BACKUP OR AUXILIARY OUTLETS FOR BACKUP POWER ARE BEING PROVIDED IN THIS DESIGN

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

EQUIPMENT CABINET DETAIL (4 / A-2)
SCALE: N.T.S

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET
SUITE #301
WEST BRIDGEWATER, MA 02379

HUDSON Design Group LLC
40 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

COMMONWEALTH OF MASSACHUSETTS
DEREK J. CREASER
CIVIL
REGISTERED PROFESSIONAL ENGINEER

CHECKED BY: AT
APPROVED BY: DJC

SUBMITTALS

REV	DATE	DESCRIPTION	BY
3	10/15/18	REVISED FOR CONSTRUCTION	SB
2	06/08/18	ISSUED FOR CONSTRUCTION	TR
1	05/02/18	ISSUED FOR CONSTRUCTION	SB
0	01/16/18	ISSUED FOR REVIEW	SB

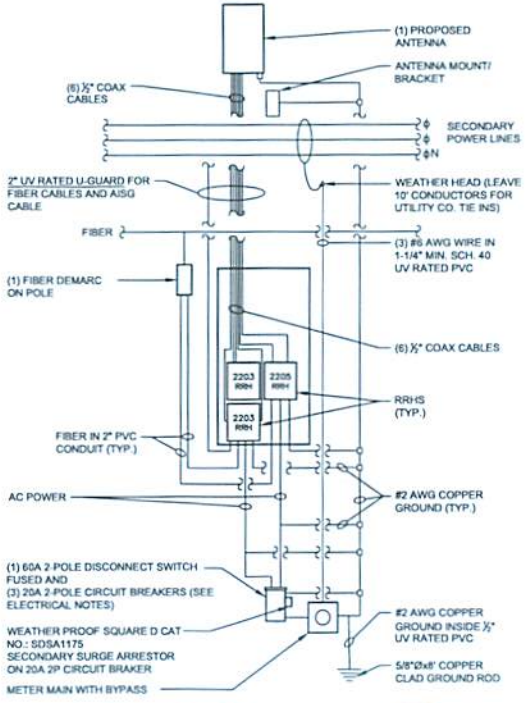
CLUSTER AND NODE NUMBER:
AREA4_0133A

SITE ID:
AREA4_0133A

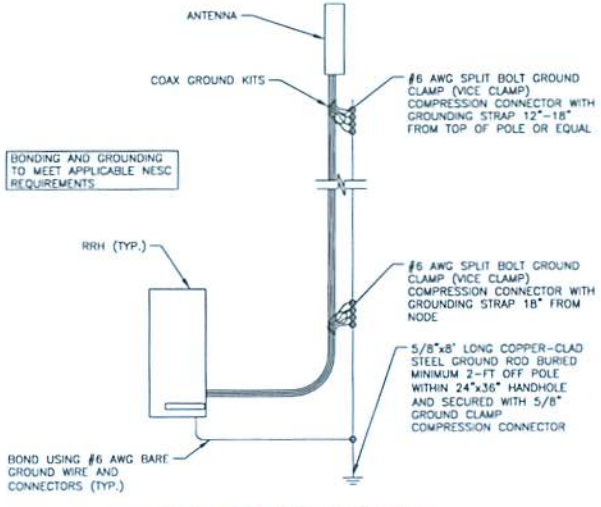
SITE ADDRESS:
14 EVELYN ST
MALDEN, MA 02148
ESSEX COUNTY

SHEET TITLE
EQUIPMENT DETAILS

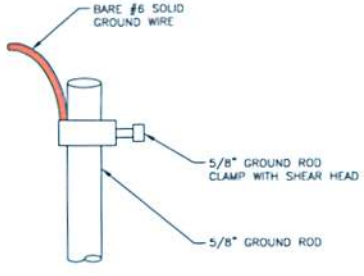
SHEET NUMBER
A-2



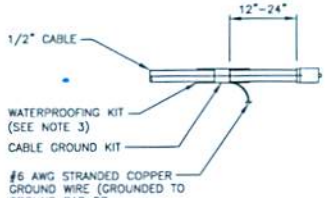
GENERAL WIRING DIAGRAM (1 / E-1)
SCALE: N.T.S



GROUNDING ONE LINE DIAGRAM (2 / E-1)
SCALE: N.T.S



CONNECTION TO GROUND ROD (3 / E-1)
SCALE: N.T.S



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR, OR COMPRESSION CONNECTION.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHERPROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

ANTENNA CABLE GROUND KIT (4 / E-1)
SCALE: N.T.S

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

CENTERLINE
750 WEST CENTER STREET
SUITE #301
WEST BRIDGEWATER, MA 02379

HDG
HUDSON
Design Group LLC
43 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

COMMONWEALTH OF MASSACHUSETTS
DEREK J. CREASER
CIVIL
REGISTERED PROFESSIONAL ENGINEER

CHECKED BY: AT

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	10/15/18	REVISED FOR CONSTRUCTION	SB
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0	01/16/18	ISSUED FOR REVIEW	SB

CLUSTER AND NODE NUMBER:
AREA4_0133A

SITE ID:
AREA4_0133A

SITE ADDRESS:
14 EVELYN ST
MALDEN, MA 02148
ESSEX COUNTY

SHEET TITLE
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER
E-1

DONALD L. HAES, JR., PH.D., CHP

Radiation Safety Specialist

Registered Health Physics Services Provider in NH and MA

PO Box 198, Hampstead, NH 03841 603-303-9959 Email: donald_haes_chp@comcast.net

January 17, 2018

I have reviewed the information pertinent to the hypothetical installation of an AT&T Personal Wireless Services (PWS) omni-directional panel antenna installation on a utility pole. I have analyzed the scenario where there would be one antenna mounted with a centerline height of 30' above ground level (AGL). This analysis considers the contributions of the AT&T PWS transmitters operating at the following supplied parameters:

PWS Service	Frequency (MHz)	Transmit Power (ERP: Watts)	Antenna Manufacturer / Model Number	Antenna Gain (dBd)
PCS LTE	1930-1950	40	EXTENT™ P6480i (See Appendix A)	7.33
5G: U-NII-1	5150-5250	1		7.53
5G: U-NII-3	5725-5850			

The calculated values of RF fields are presented as a percent of current Maximum Permissible Exposures (%MPE) as adopted by the Federal Communications Commission (FCC). Theoretical RF field calculations for the near proximity of RF source terms (in this case the AT&T transmit antennas), however, are not straight forward. For these theoretical calculations, a cylindrical model was used, where "spatially averaged plane-wave equivalent power densities parallel to the antenna may be estimated by dividing the net antenna input power by the surface area of an imaginary cylinder surrounding the length of the radiating antenna". Calculations using "far-field" formula would considerably overestimate the resultant power densities. The calculations performed for this analysis still accurately represent the "worst case" and assume 100% usage of all the antennas.

The power density estimates can be calculated by using the formula:

$$S = \frac{P_{net}}{2 \bullet \Pi \bullet R \bullet h}$$

Where: P_{net} = Net power to antenna (watts)
R = Distance (range) from antenna
h = aperture height of the antenna

The results of the RF field calculations for a single antenna are depicted in Figure 1 showing a side view representation demonstrating the directionality of the RF energy propagating from the antenna.

Note: The analyses, conclusions and professional opinions are based upon the precise parameters and conditions of this typical AT&T "small cell" installation on a utility pole with a mounting centerline height of 30' AGL. Utilization of these analyses, conclusions and professional opinions for any personal wireless services installation, existing or proposed, other than the aforementioned has not been sanctioned by the author, and therefore should not be accepted as evidence of regulatory compliance.

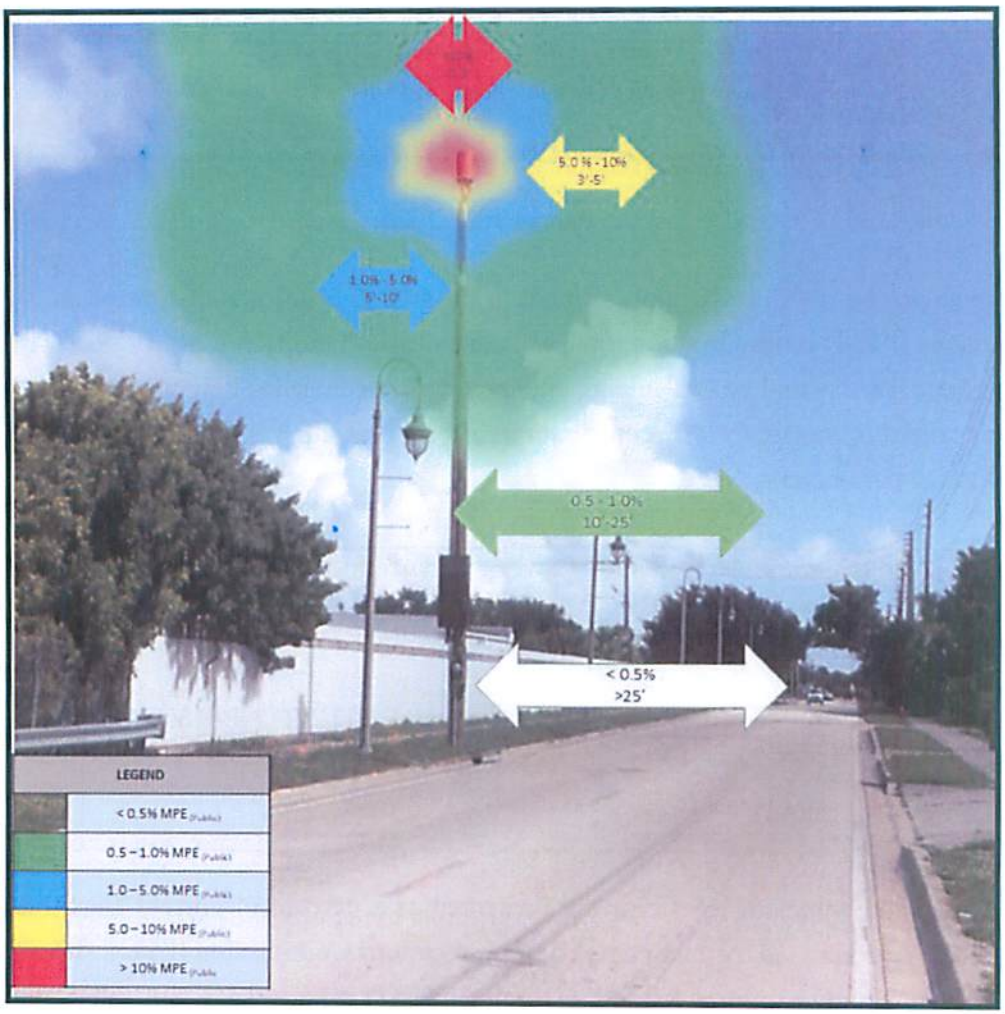


Figure 1: Results of RF field calculations for a typical AT&T antenna installation on a utility pole at 30' (AGL) showing profile view

CONCLUSION

Theoretical RF field calculations data indicate the summation of the AT&T RF contributions on a typical utility pole would be well within the established RF exposure guidelines; see Figure 1. Although the calculations assume a typically low mounting height of 30' AGL, some applications may require the antenna to be mounted higher. In these circumstances, the increased separation between the ground and antenna would result in an even lower general public exposure levels. These results indicate there could be more similar installations at these locations, and still be within Federal and State guidelines for RF exposure. This report provides written proof that the proposed facilities would comply with the FCC RF exposure guidelines. These small cell antenna installations proposed by AT&T would not produce significant changes to the ambient RF environment.

DONALD L. HAES, JR., PH.D., CHP

Radiation Safety Specialist

Registered Health Physics Services Provider in NH and MA

PO Box 198, Hampstead, NH 03841 603-303-9959 Email: donald_haes_chp@comcast.net

STATEMENT OF CERTIFICATION

1. I certify to the best of my knowledge and belief, the statements of fact contained in this report are true and correct.

2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are personal, unbiased professional analyses, opinions and conclusions.

3. I have no present or prospective interest in the property that is the subject of this report and I have no personal interest or bias with respect to the parties involved.

4. My compensation is not contingent upon the reporting of a predetermined energy level or direction in energy level that favors the cause of the client, the amount of energy level estimate, the attainment of a stipulated result, or the occurrence of a subsequent event.

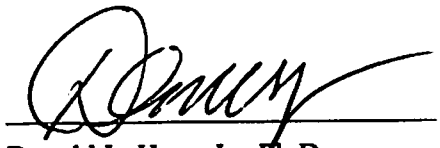
5. This assignment was not based on a requested minimum environmental energy level or specific power density.

6. My compensation is not contingent on an action or event resulting from the analyses, opinions, or conclusions in, or the use of, this report.

7. The consultant has accepted this assessment assignment having the knowledge and experience necessary to complete the assignment competently.

8. My analyses, opinions, and conclusions were developed and this report has been prepared, in conformity with the *American Board of Health Physics* (ABHP) statements of standards of professional responsibility for Certified Health Physicists.

Date: January 17, 2018



Donald L. Haes, Jr., Ph.D

Certified Health Physicist

GALTRONICS
WE'RE MAKING WAVES™
A BAYLIN TECHNOLOGIES COMPANY

10" x 24" Outdoor Pseudo Omni Canister Antenna [1695-2400, 3550-3700 and 5150-5950 MHz]

EXTENT™ P6480i

Description:

- Pseudo Omni Canister Antenna for Outdoor DAS and Small Cells.
- 4x ports for AWS/PCS/WCS Band 1695-2400 MHz
- 4x ports for CBRS Band 3550-3700 MHz
- 2x ports for 5GHz Band 5150-5950 MHz

1695-2400, 3550-3700 and 5150-5950 MHz Pseudo Omni Canister Antenna

Electrical Specifications

Frequency Band [MHz]	1695-2180	2180-2400	3550-3700	5150-5950
Input Connector Type	4x 4.3-10 DIN(F)		4x 4.3-10 DIN(F)	2x 4.3-10 DIN(F)
Isolation (typ.)	-20 dB		-25 dB	-25 dB
Inter-band Isolation	-30 dB (typ)		-30 dB (typ)	-30 dB (typ)
VSWR/Return Loss	1.5:1(Typ.) 1.7:1(Max.) / 14.0 dB(Typ.) 11.8dB(Max.)			
Impedance	50 Ω			
Polarization	Dual slant 45° (±45°)			
Horizontal Beamwidth	Omni (360°)			
Vertical Beamwidth	15°	12°	15°	19°
Max. Gain	9 dBi	9.5 dBi	8.5 dBi	6 dBi(Max.)
Avg. Gain	7.5 dBi	8 dBi	8 dBi	3 dBi
Downtilt	0°			
Max Power / Port	150 Watts		100 Watts	10 Watts
PIM @ 2x43 dBm	<-153 dBc		N/A	N/A

Mechanical Specifications

Operating Temperature	-40° to 158°F (-40° to +70°C)
Antenna Weight	19 lbs (9 kg)
Antenna Diameter	10" (254 mm)
Antenna Height	24.7" (628 mm)
Radome Material	ASA
RoHS	Compliant
Radome Color	Gray, Brown, 3M™ Conceal Film, Custom Colors Possible
Ingress Protection	Outdoor (IP65)
Wind Survival Rating	150 mph (241 km/h)
Shipping Dimensions - L x W x D	30"x19"x19" (762x483x483 mm)
Shipping Weight (Gross Weight)	26 lbs (12 kg)

Release Date: March 02, 2017; Revision: S-1 ; RFD#6480

WWW.GALTRONICS.COM

CITY OF MALDEN, MASSACHUSETTS
OFFICE OF THE BOARD OF ASSESSORS
GARY CHRISTENSON, MAYOR

JAMES P. O'BRIEN, ASSESSOR
CHAIRMAN

KATHLEEN M. FRENCH, ASSESSOR
ROBERT DONNELLY, ASSESSOR

This is a certified list of abutters for the property located at: 14 EVELYN PLACE (022 130 029) In accordance with the City's ordinance in place as of January 1, 2008. Below is a list of Ward Councilors and Councilors-at-Large. For your convenience we have checked the box next to your councilor's name.

	Police Chief Kevin Molis		200 Pleasant Street
☐	Ward 1:	Peg Crowe	9 Hancock Street
☑	Ward 2:	Paul Condon	52 Gale Street
☐	Ward 3:	John P. Matheson	15 Bower Street
☐	Ward 4:	Ryan O'Malley	706 Main Street
☐	Ward 5:	Barbara M. Murphy	28 Forest Street
☐	Ward 6:	David M. Camell	35 Williams Street
☐	Ward 7:	Neal Anderson	56 Mills Street
☐	Ward 8:	Jadeane M. Sica	12 Cleveland Street

Councilors-at-large:

Steven Winslow	83 Jacob Street
Debbie A. DeMaria	290 Clifton Street
Craig Spadafora	75 Elm Street

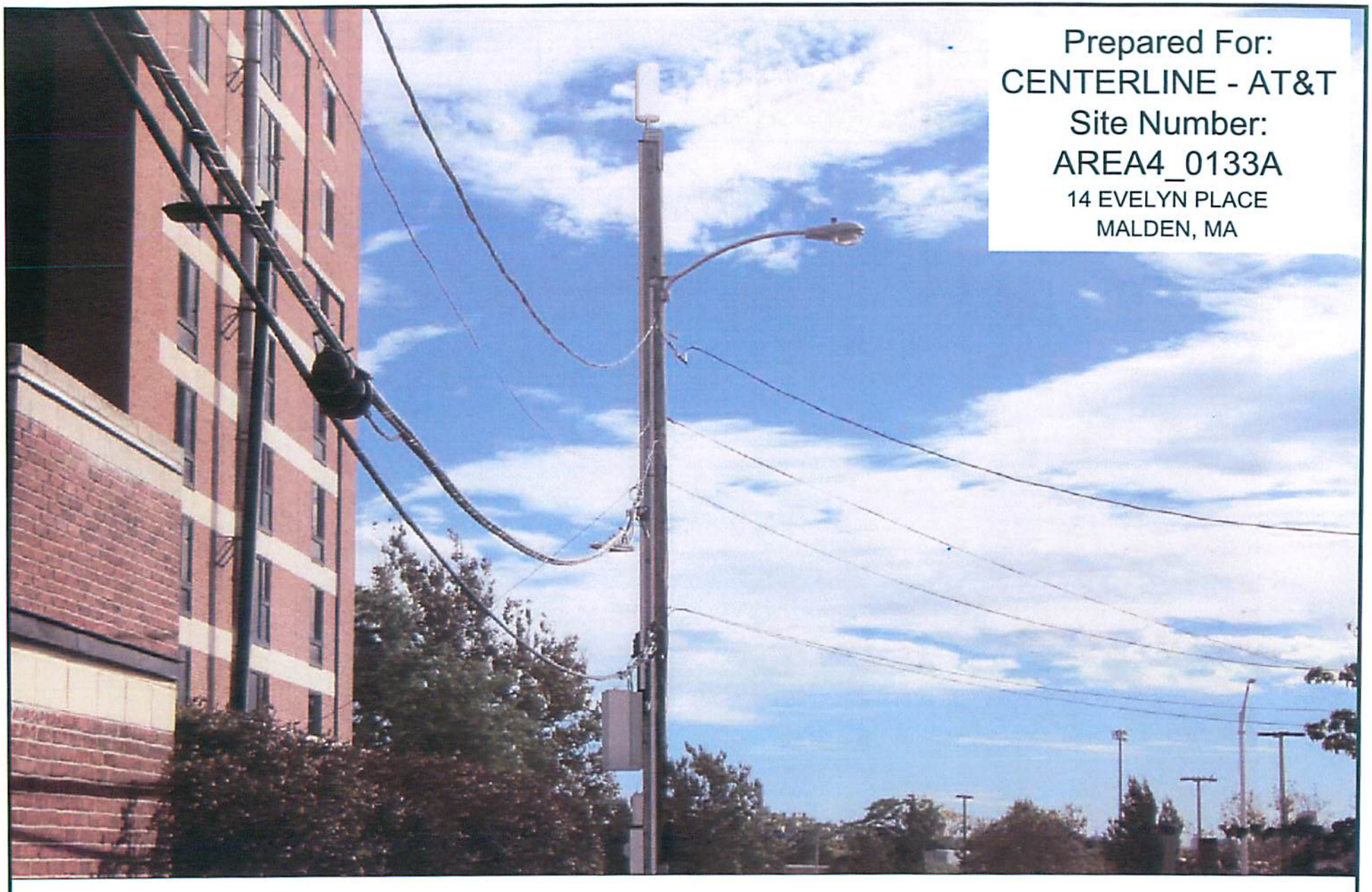
Date: 10/23/2018

Kathleen French

022 130 024
HUANG JIAN XIN HUANG MELODY
18 EVELYN PLACE
MALDEN, MA 02148

022 130 029
STRIKE JOHN
14 EVELYN PLACE
MALDEN, MA 02148

022 132 201
EQR- GATEWAY MALDEN CENTER LLC
PO BOX 87407 (19147)
CHICAGO, IL 60680-0407

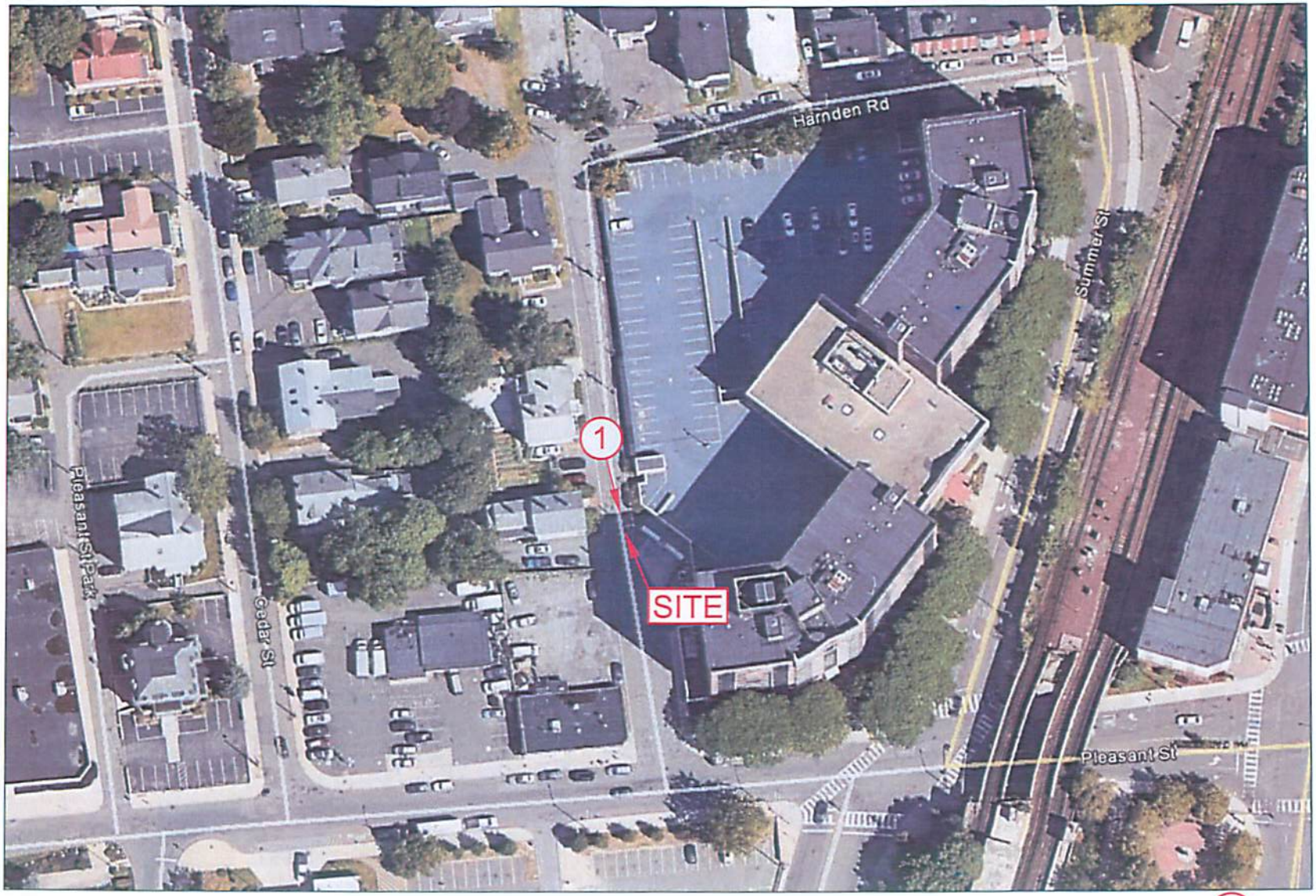


Prepared For:
CENTERLINE - AT&T
Site Number:
AREA4_0133A
14 EVELYN PLACE
MALDEN, MA

SITE NO: AREA4_0133A ADDRESS: 14 EVELYN PLACE MALDEN, MA	at&t 550 COCHITUATE ROAD FRAMINGHAM, MA 01701	PREPARED FOR: CENTERLINE COMMUNICATIONS 95 RYAN DRIVE RAYNHAM, MA 02767	HUDSON Design Group LLC 45 BEECHWOOD DRIVE N. ANDOVER, MA 01845 TEL: (978) 557-5553 FAX: (978) 336-5584	SITE TYPE: UTILITY POLE DATE: 04/27/2018 REV: 0 DRAWN BY: KB SCALE: N.T.S.	THIS STUDY DOES NOT CLAIM IN ANY WAY TO SHOW THE ONLY AREAS OF VISIBILITY. IT IS MEANT TO SHOW A BROAD REPRESENTATION OF AREAS WHERE THE PROPOSED INSTALLATION MAY BE VISIBLE BASED UPON THE BEST INFORMATION FOR TOPOGRAPHY AND VEGETATION LOCATIONS AVAILABLE TO DATE. PAGE 1 OF 4

LOCUS MAP

TAKEN FROM GOOGLE.COM ON 04-27-18



(#) PHOTO LOCATION

SITE NO: AREA4_0133A ADDRESS: 14 EVELYN PLACE MALDEN, MA	at&t 550 COCHITUATE ROAD FRAMINGHAM, MA 01701	PREPARED FOR: CENTERLINE COMMUNICATIONS 95 RYAN DRIVE RAYNHAM, MA 02767	HUDSON Design Group LLC 45 BEECHWOOD DRIVE N. ANDOVER, MA 01845 TEL: (978) 557-5553 FAX: (978) 336-5586	SITE TYPE: UTILITY POLE DATE: 04/27/2018 | REV: 0 DRAWN BY: KB SCALE: N.T.S.	THIS STUDY DOES NOT CLAIM IN ANY WAY TO SHOW THE ONLY AREAS OF VISIBILITY. IT IS MEANT TO SHOW A BROAD REPRESENTATION OF AREAS WHERE THE PROPOSED INSTALLATION MAY BE VISIBLE BASED UPON THE BEST INFORMATION FOR TOPOGRAPHY AND VEGETATION LOCATIONS AVAILABLE TO DATE. PAGE 2 OF 4

EXISTING CONDITIONS

LOCATION # 1

DATE OF PHOTO: 11/09/2017

DETAIL OF EQUIPMENT

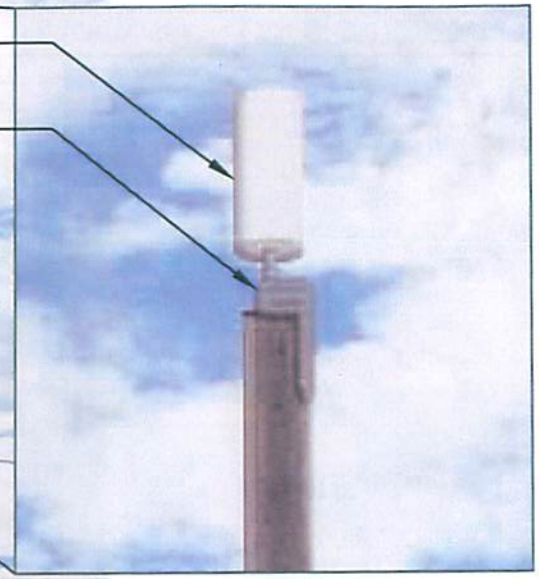
VIEW SOUTHEAST FROM EVELYN PLACE

SITE NO: AREA4_0133A ADDRESS: 14 EVELYN PLACE MALDEN, MA	at&t 550 COCHITUATE ROAD FRAMINGHAM, MA 01701	PREPARED FOR: CENTERLINE COMMUNICATIONS 95 RYAN DRIVE RAYNHAM, MA 02767	HUDSON Design Group LLC 45 BEECHWOOD DRIVE N. ANDOVER, MA 01845 TEL: (978) 557-5553 FAX: (978) 336-5586	SITE TYPE: UTILITY POLE DATE: 04/27/2018 REV: 0 DRAWN BY: KB SCALE: N.T.S.	THIS STUDY DOES NOT CLAIM IN ANY WAY TO SHOW THE ONLY AREAS OF VISIBILITY. IT IS MEANT TO SHOW A BROAD REPRESENTATION OF AREAS WHERE THE PROPOSED INSTALLATION MAY BE VISIBLE BASED UPON THE BEST INFORMATION FOR TOPOGRAPHY AND VEGETATION LOCATIONS AVAILABLE TO DATE. PAGE 3 OF 4

PROPOSED CONDITIONS

LOCATION # 1

DATE OF PHOTO: 11/09/2017



DETAIL OF EQUIPMENT

VIEW SOUTHEAST FROM EVELYN PLACE

SITE NO: AREA4_0133A ADDRESS: 14 EVELYN PLACE MALDEN, MA	at&t 550 COCHITUATE ROAD FRAMINGHAM, MA 01701	PREPARED FOR: CENTERLINE COMMUNICATIONS 95 RYAN DRIVE RAYNHAM, MA 02767	HUDSON Design Group LLC 45 BEECHWOOD DRIVE N. ANDOVER, MA 01845 TEL: (978) 557-5553 FAX: (978) 336-5586	SITE TYPE: UTILITY POLE DATE: 04/27/2018 REV: 0 DRAWN BY: KB SCALE: N.T.S.	THIS STUDY DOES NOT CLAIM IN ANY WAY TO SHOW THE ONLY AREAS OF VISIBILITY. IT IS MEANT TO SHOW A BROAD REPRESENTATION OF AREAS WHERE THE PROPOSED INSTALLATION MAY BE VISIBLE BASED UPON THE BEST INFORMATION FOR TOPOGRAPHY AND VEGETATION LOCATIONS AVAILABLE TO DATE.

Universal Licensing System

ULS License

Cellular License - KNKA226 - AT&T Mobility Spectrum LLC

Call Sign	KNKA226	Radio Service	CL - Cellular
Status	Active	Auth Type	Regular

Market

Market	CMA006 - Boston-Lowell-Brockton-Lawrence-Haverhill, MA-NH	Channel Block	A (View Frequencies)
Submarket	0	Phase	2

Dates

Grant	09/09/2014	Expiration	10/01/2024
Effective	06/08/2017	Cancellation	

Five Year Buildout Date

06/28/1999

Control Points

2 — 100 LOWDER BROOK DR, NORFOLK, WESTWOOD, MA
P: (617)462-7094

Licensee

FRN	0014980726 (View Ownership Filing)	Type	Limited Liability Company

Licensee

AT&T Mobility Spectrum LLC
208 S Akard St., RM 1016
Dallas, TX 75202
ATTN Leslie Wilson

P:(855)699-7073
F:(214)746-6410
E:FCCMW@att.com

Contact

AT&T Mobility LLC
Michael P Goggin
1120 20th Street, NW - Suite 1000
Washington, DC 20036
ATTN Michael P. Goggin

P:(202)457-2055
F:(202)457-3073
E:michael.p.goggin@att.com

Ownership and Qualifications

Radio Service Type	Mobile		
Regulatory Status	Common Carrier	Interconnected	Yes

Alien Ownership
The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications
The Applicant answered "No" to each of the Basic Qualification questions.

Demographics

Race

Ethnicity Gender

ULS Help	ULS Glossary - FAQ - Online Help - Technical Support - Licensing Support
ULS Online Systems	CORES - ULS Online Filing - License Search - Application Search - Archive License Search
About ULS	Privacy Statement - About ULS - ULS Home
Basic Search	By Call Sign = SEARCH

FCC | Wireless | ULS | CORES

Help | Tech Support

Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Phone: 1-877-480-3201
TTY: 1-717-338-2824
Submit Help Request

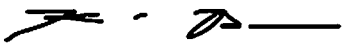
To whom it may concern:

AT&T operates radio transmitting equipment in compliance with the requirements of the rules and regulations of the Federal Communications Commission (FCC) and uses the only the portion of the radio spectrum that AT&T is authorized to use. Additionally AT&T uses equipment that has been approved by the FCC based on their specific guidelines on interference.

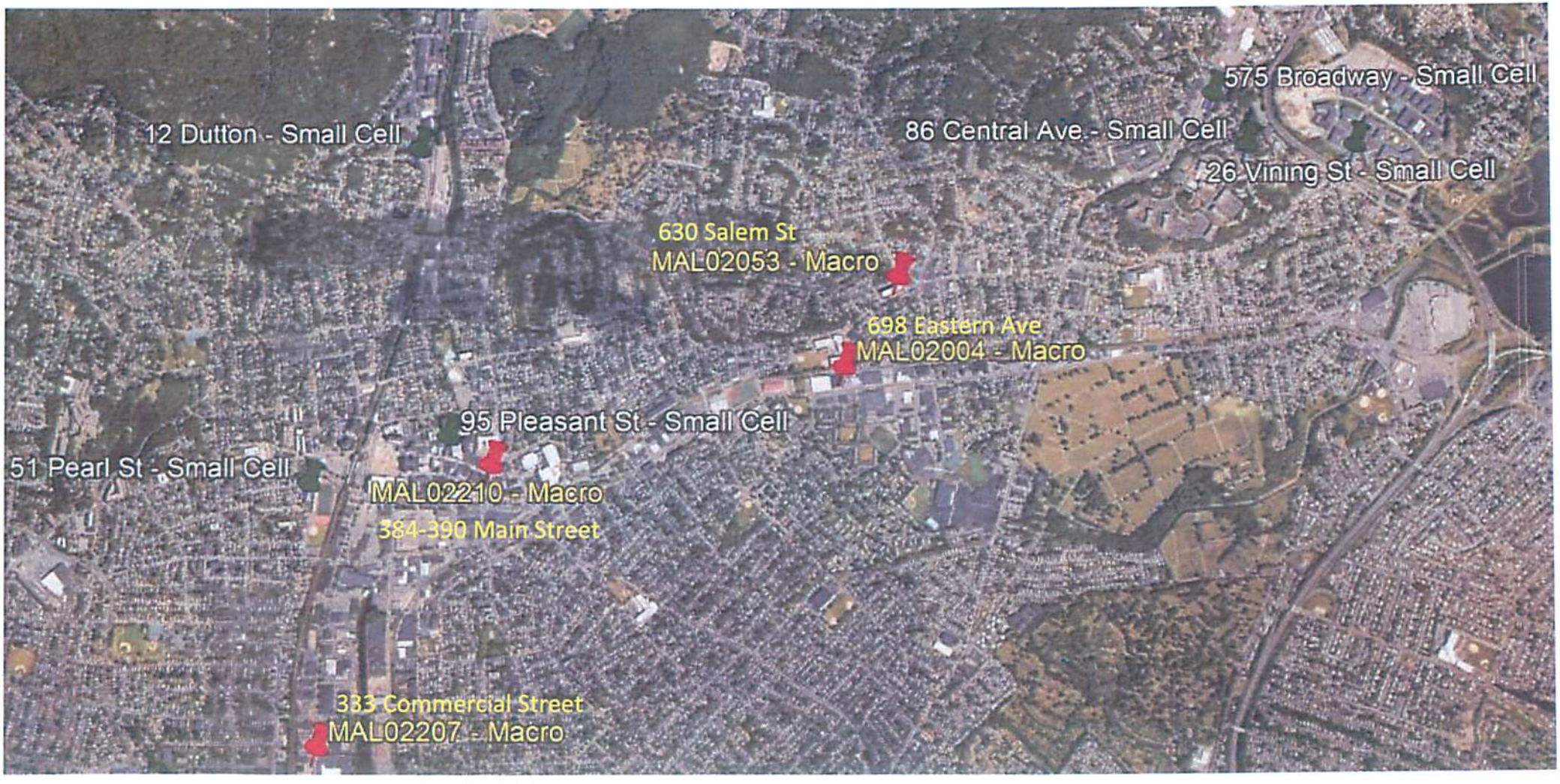
Per the FCC *"Radio Frequency (RF) devices are required to be properly authorized under 47 CFR part 2 prior to being marketed or imported into the United States. The [FCC's] Office of Engineering and Technology (OET) administers the equipment authorization program under the authority delegated to it by the Commission. This program is one of the principal ways the Commission ensures that RF devices used in the United States operate effectively without causing harmful interference and otherwise comply with the Commission's rules. All RF devices subject to equipment authorization must comply with the Commission's technical requirements prior to importation or marketing."*

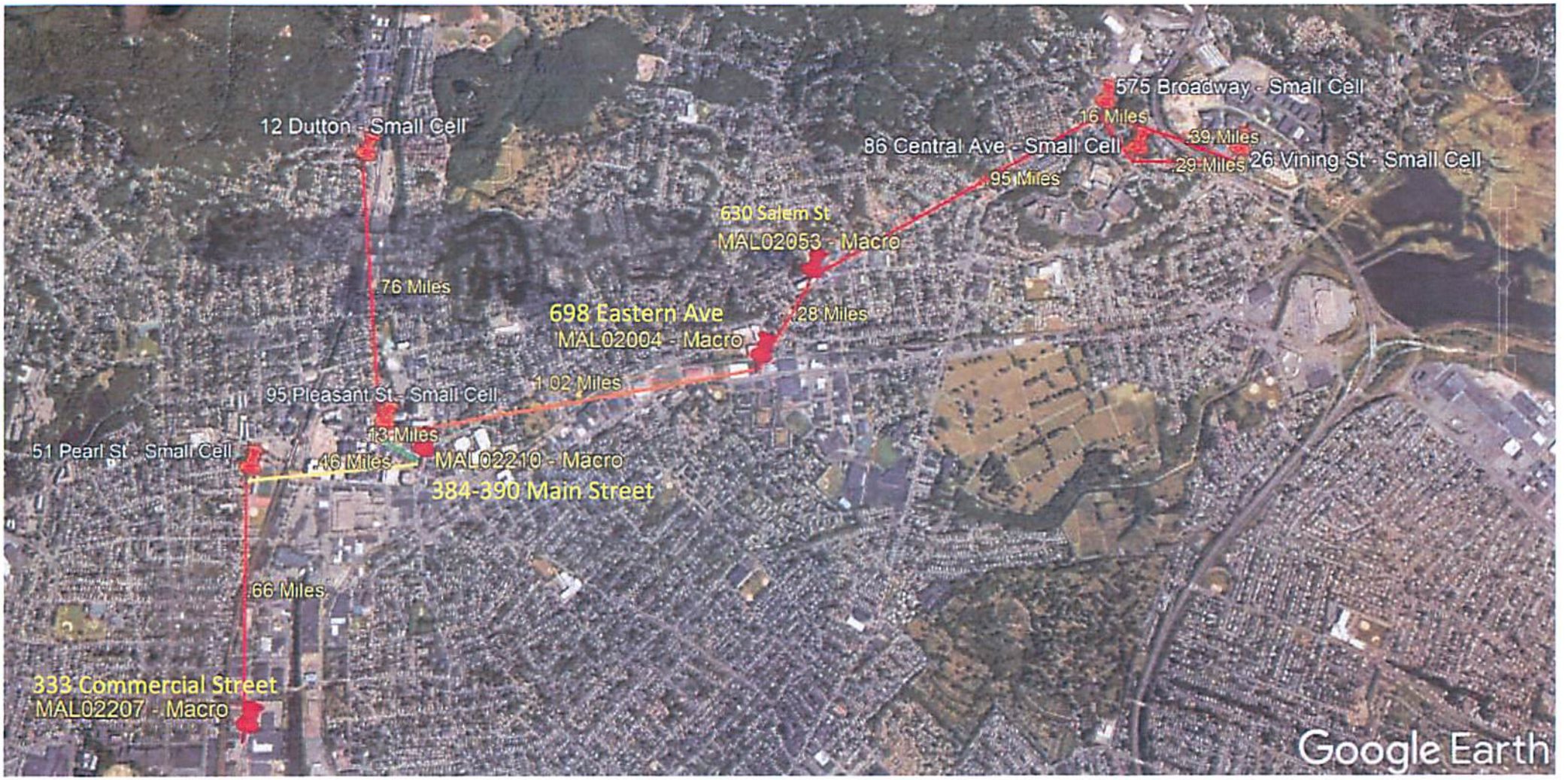
AT&T continuously monitors the health of the transmitters in our network. AT&T does not intentionally create interference. AT&T will address all complaints of interference to other radio operations as required by the FCC rules.

Respectfully Submitted,



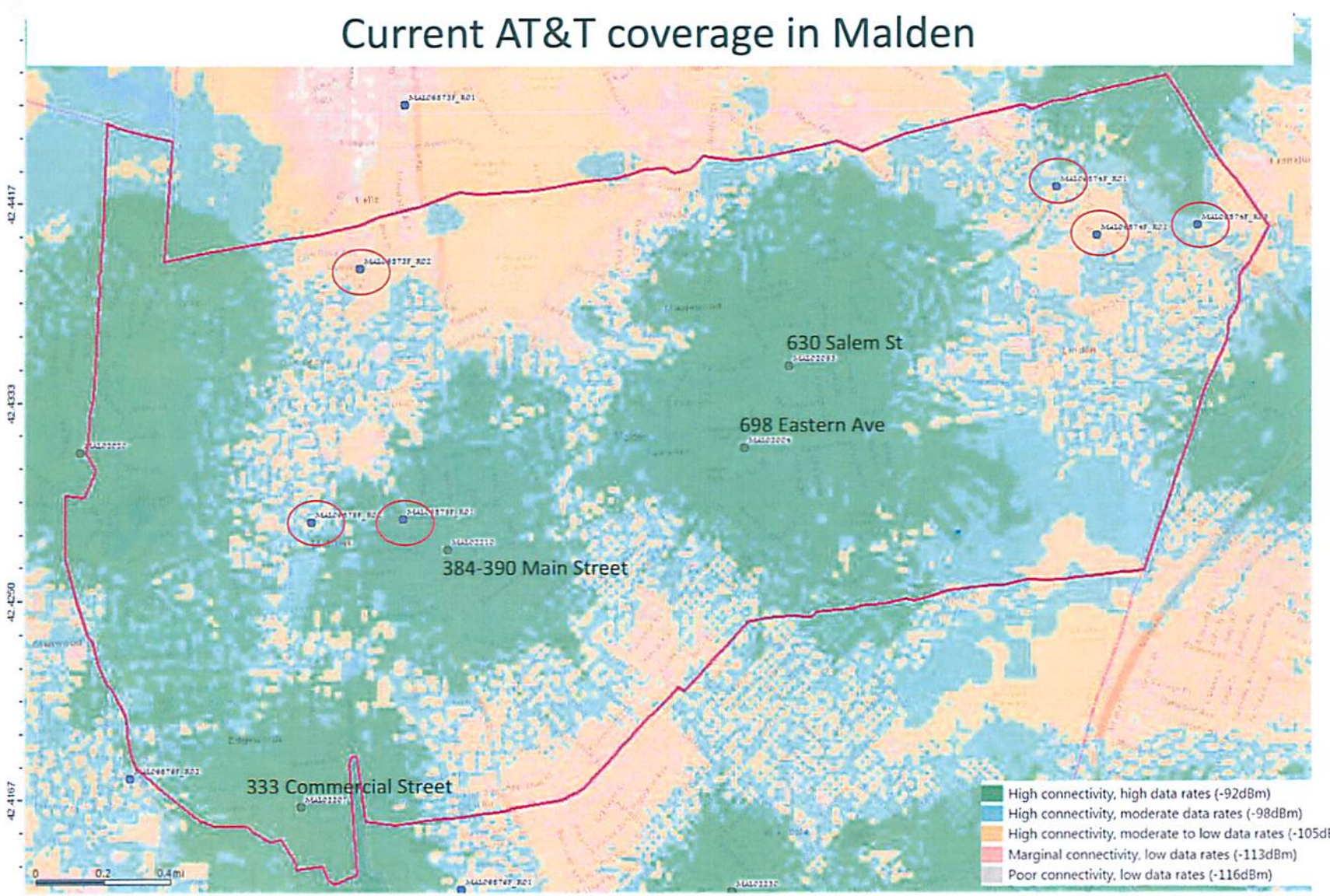
Kevin M Breuer
RF Engineering
AT&T Mobility
550 Cochituate Road
Framingham, MA 01701
Phone: (508) 572-0011
Email: kb2322@att.com


575 Broadway - Small Cell
12 Dutton - Small Cell
86 Central Ave - Small Cell
26 Vining St - Small Cell
630 Salem St
MAL02053 - Macro
698 Eastern Ave
MAL02004 - Macro
95 Pleasant St - Small Cell
51 Pearl St - Small Cell
MAL02210 - Macro
384-390 Main Street
333 Commercial Street
MAL02207 - Macro

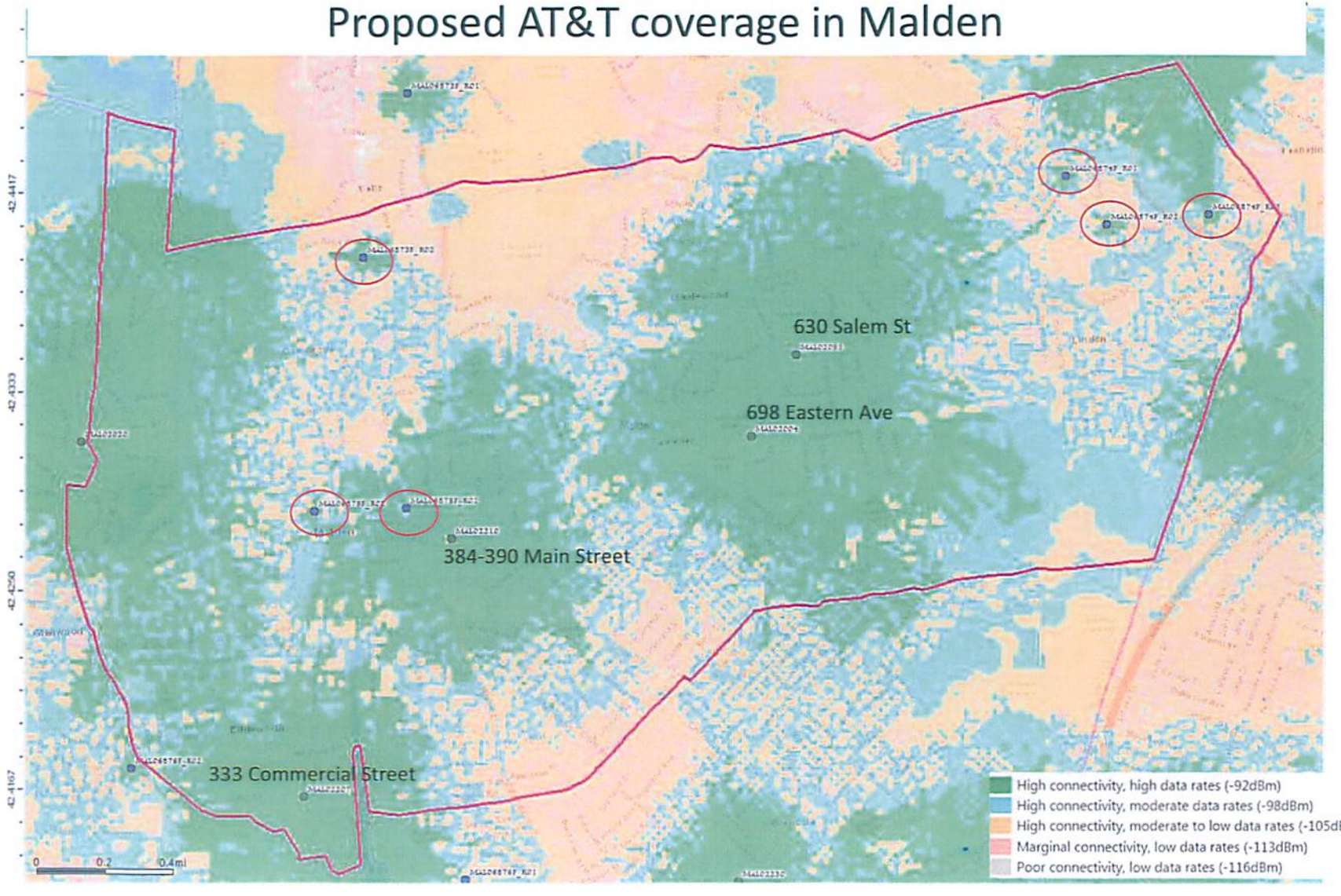

575 Broadway - Small Cell
.16 Miles
.39 Miles
.29 Miles
26 Vining St - Small Cell
86 Central Ave - Small Cell
.95 Miles
630 Salem St
MAL02053 - Macro
12 Dutton - Small Cell
.76 Miles
698 Eastern Ave
MAL02004 - Macro
.28 Miles
1.02 Miles
95 Pleasant St - Small Cell
.13 Miles
51 Pearl St - Small Cell
.46 Miles
MAL02210 - Macro
384-390 Main Street
.66 Miles
333 Commercial Street
MAL02207 - Macro
Google Earth

AT&T locations (green dots) and proposed locations (blue dots) in and around Malden

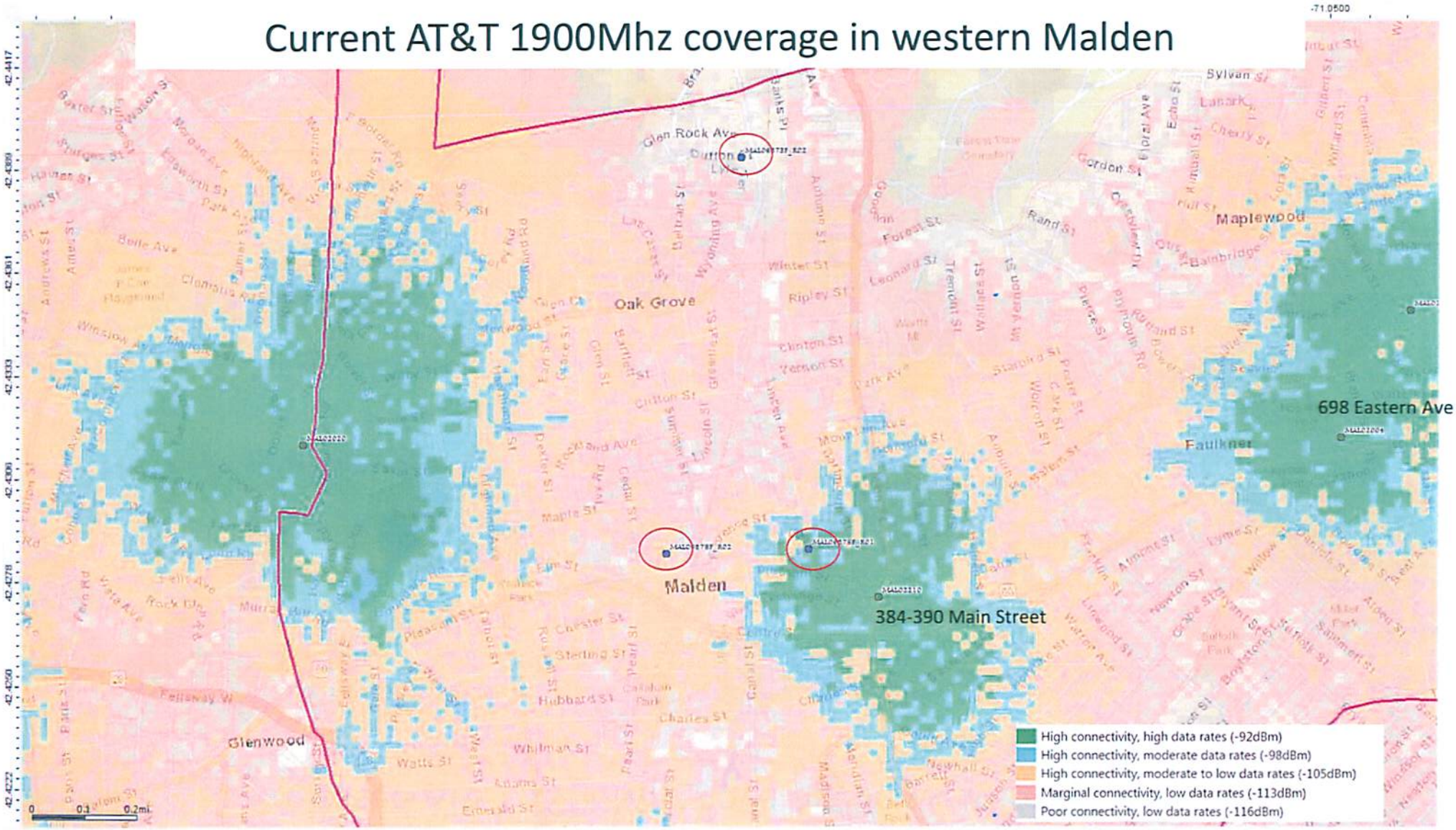
Current AT&T coverage in Malden



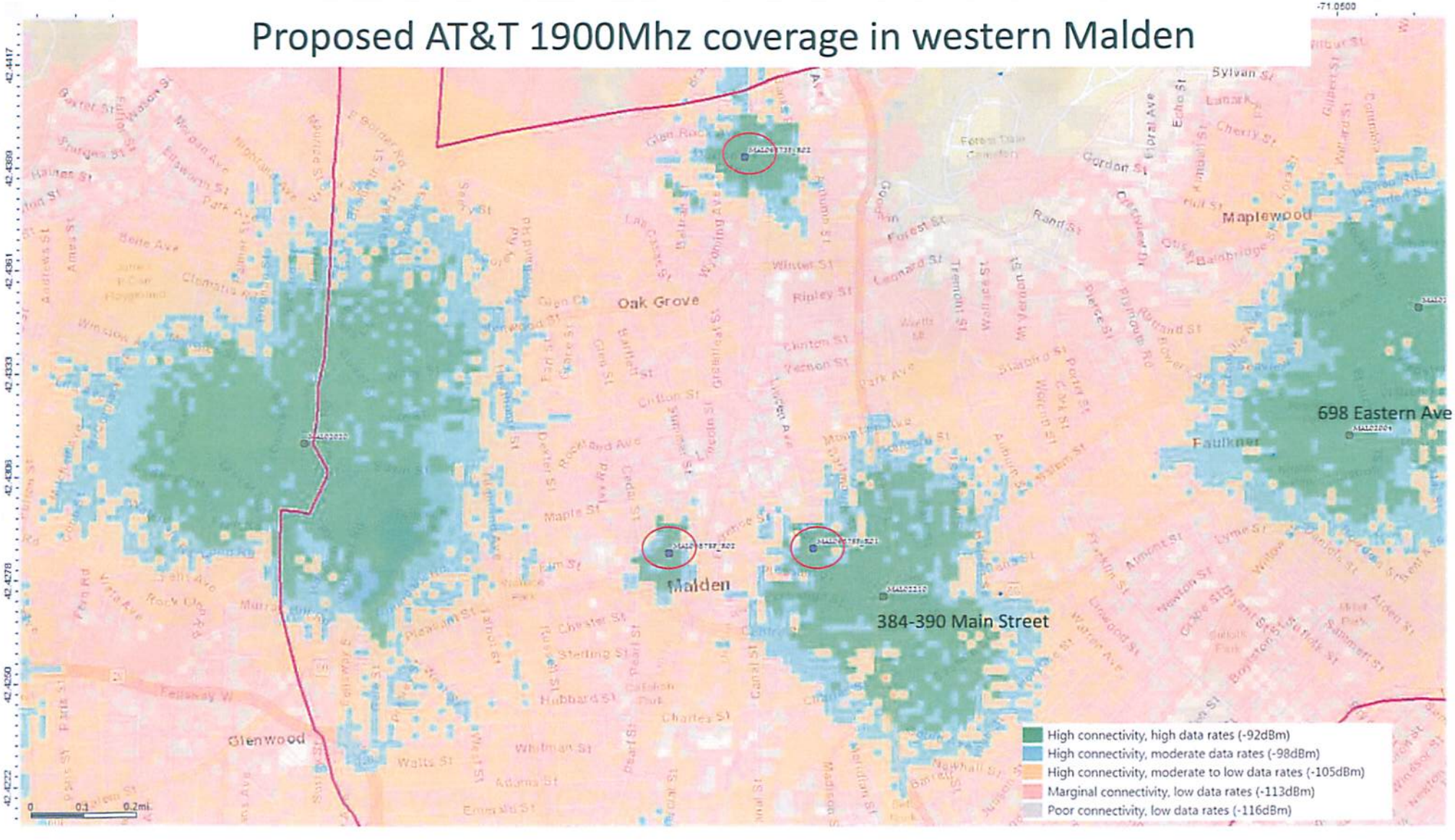
Proposed AT&T coverage in Malden



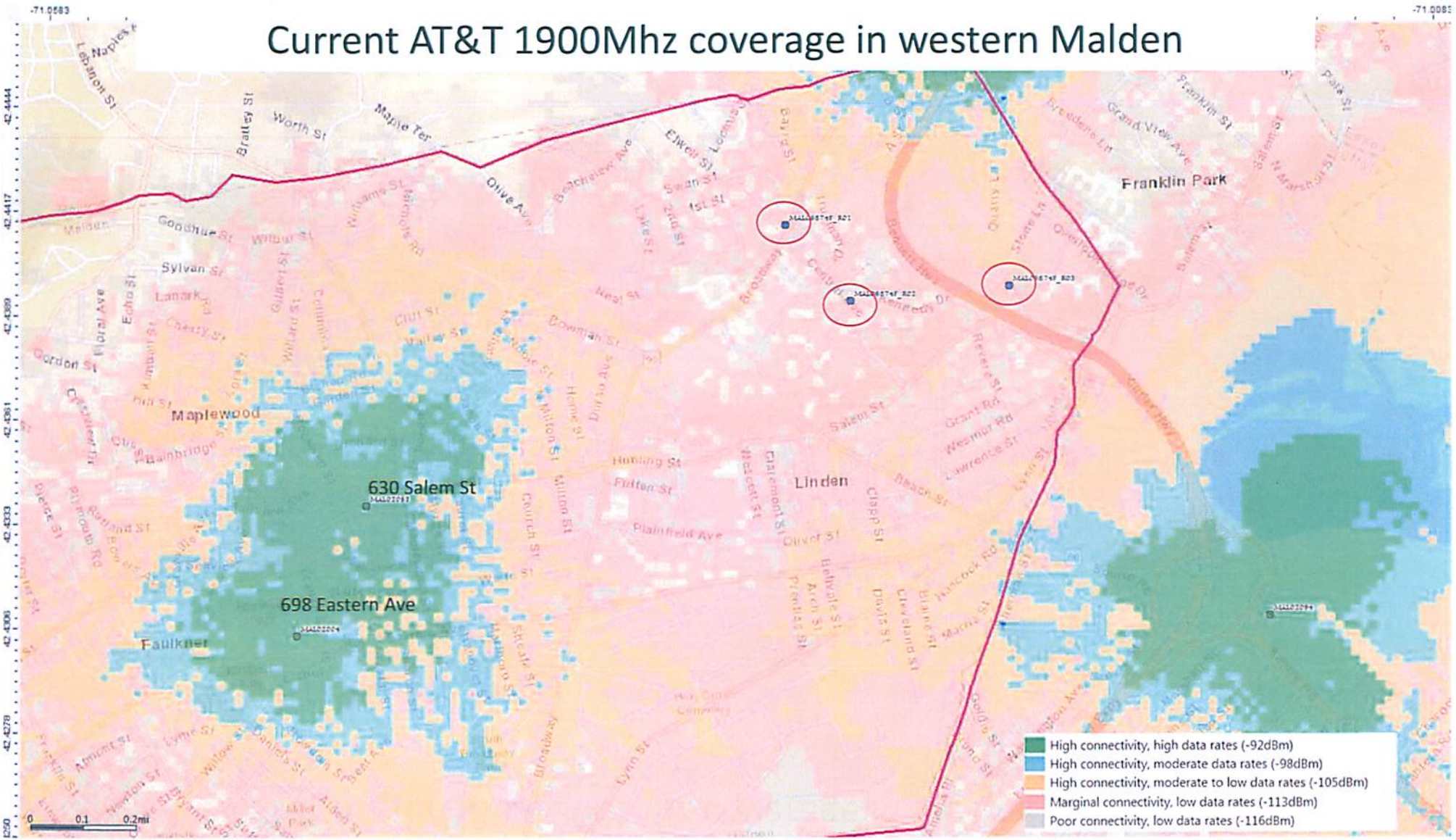
Current AT&T 1900Mhz coverage in western Malden



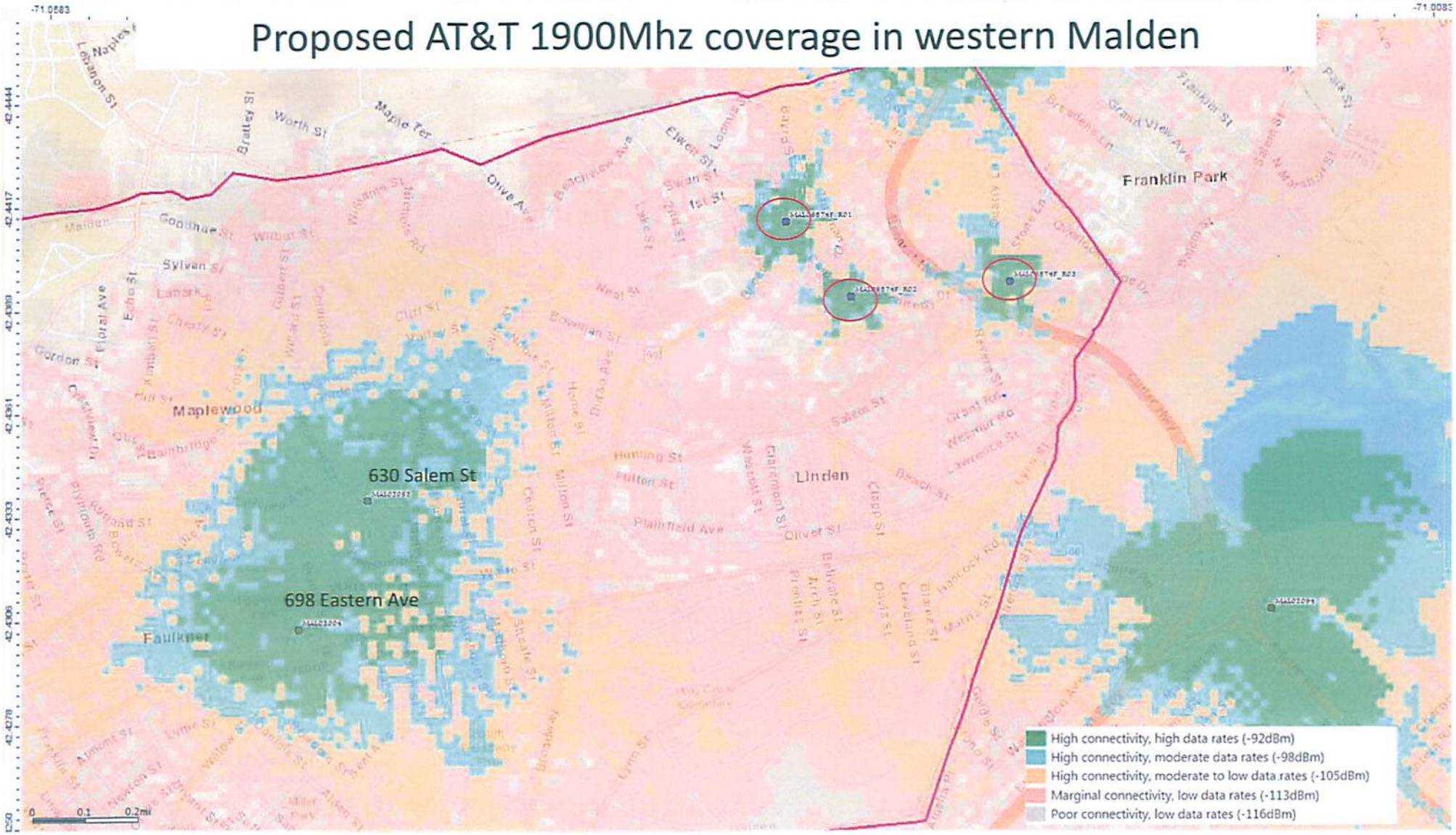
Proposed AT&T 1900Mhz coverage in western Malden



Current AT&T 1900Mhz coverage in western Malden



Proposed AT&T 1900Mhz coverage in western Malden



NCE TECH MEMO 2017-057

AT&T Small Cell Noise Analysis

Revision 0

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

0.0 SUMMARY

Noise Control Engineering, LLC (NCE) has been contracted to conduct a noise study of AT&T Small Cell installations. For their 5G service, AT&T has begun shifting from large stand-alone cell towers with many antennae to smaller units typically installed on existing telephone poles in areas of high data usage. The shift from large installations to the Small Cell installations has made conducting a separate noise study for each site, as was done in the past, impractical. This report presents a noise study for these installations that is intended to be general enough that it could be applied to any of the proposed sites in the Commonwealth of Massachusetts.

Source levels were obtained for the proposed equipment and used to predict the resulting noise levels at various distances from the equipment. Because noise ordinances vary in different towns, the results from this prediction are not evaluated for compliance. Instead, the predicted results are compared to typical human noise perception of other noise sources commonly encountered.

At a distance of 1.8 meters (6 feet), the approximate distance of a pedestrian on a sidewalk adjacent to the telephone pole, the sound pressure level from the proposed equipment is predicted to be 40 dBA during a 68°F day.

1.0 NOISE MODEL

Spherical spreading was used to predict noise levels at various distances from the proposed small cell installations. This method and the results are presented in this section.

1.1 Source Levels

A typical installation of the small cell sites is shown in Figure 1; the noise source is located 11'-6" off the ground. The only item of the proposed equipment that produces any significant noise is a cooling fan included in each radio unit.

Source levels for the radio units were obtained from documentation published by the manufacturer of the radio units, Ericsson. Two different models of radio will be used, the 2203 [1] and the 2205 [2], and up to five units will be used at each site. The published source levels are similar for these two radio units, ranging from 34-49 dBA each (A-weighted sound pressure level dB re 20 μPa scaled to one meter), dependent on temperature. For a typical configuration of five units, the predicted source levels can be seen in Table 1. This source level varies with air temperature as different cooling loads are required. For each temperature in this table, four levels are shown:

1) The source level for a single 2203 radio unit,
2) the source level for a single 2205 radio unit,
3) the worst-case (loudest expected) configuration of five 2205 radio units,
4) a typical configuration of three 2203 units and two 2205 units.

The smallest distance between any two adjacent sites will be 0.3 miles. At this range, any individual site will not contribute to the noise levels at any other site.

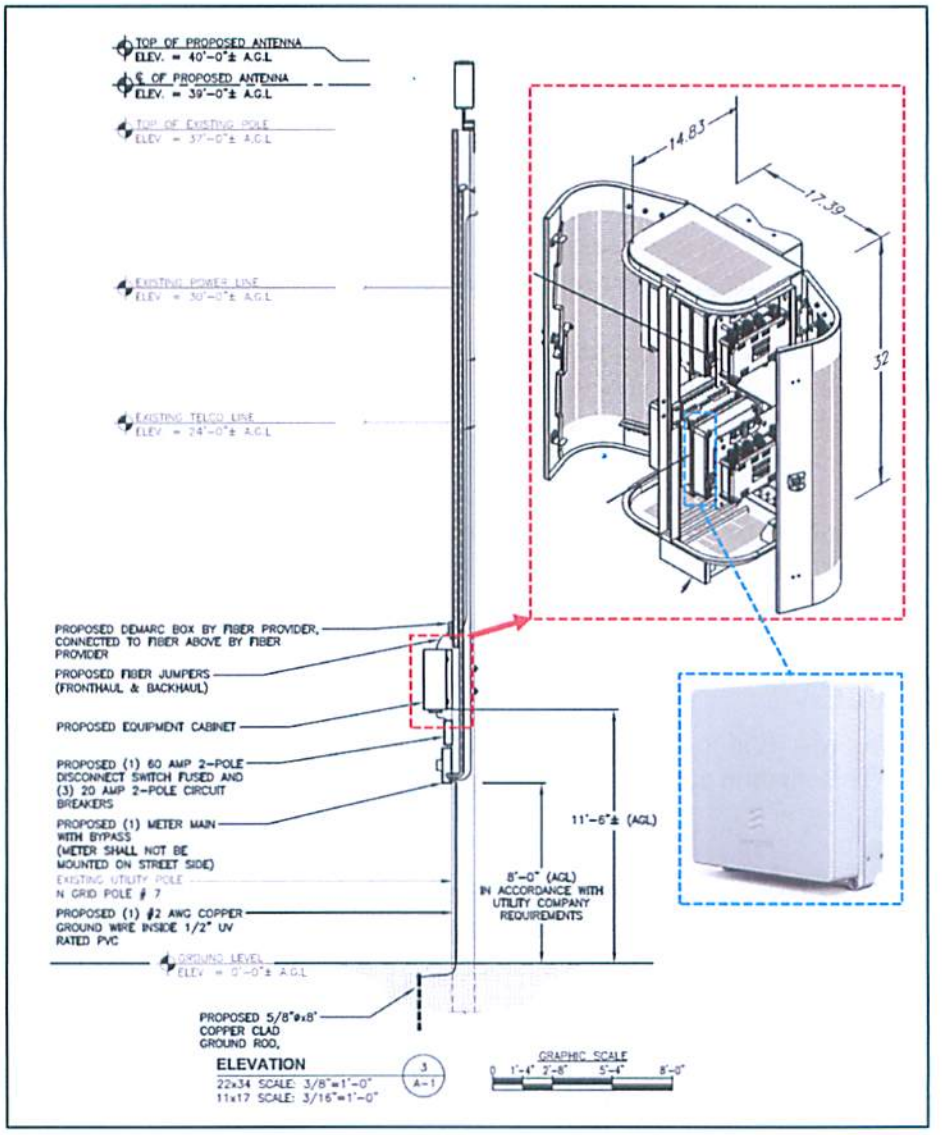

Figure 1: Typical installation showing an enclosure containing multiple radio units. Each radio unit contains a cooling fan.

Table 1: Acoustic source levels for Ericsson Model 2203 & 2205 radio units

Temperature °F	A-weighted SPL, dB re 20 µPa at one meter			
	Individual Unit (1x 2203)	Individual Unit (1x 2205)	Configuration 1 (5x 2203)	Configuration 2 (3x 2203 + 2x 2205)
68	38	34	45	43
86	41	40	48	47
104	44	44	51	51
131	49	49	56	56

1.2 Spherical Spreading

A spherical spreading method was used to predict noise levels at various distances from the radio units installed on the telephone poles, as this is a standard method to predict sound dissipation over distance from a point sound source. This spreading is expressed by the following equation [3]:

$$L_{p_{r2}} = L_{p_{r1}} - 20 * log_{10}\left(\frac{r_2}{r_1}\right)$$

where,
$L_{p_{r2}}$ = sound pressure level at distance, r_2
$L_{p_{r1}}$ = sound pressure level at distance, r_1

1.3 Sound Pressure Level at Distance

Using the source levels from Table 1 and the spherical spreading equation, sound pressure levels for the radio units were predicted at various distances from the source at each environmental temperature. The resulting data for the two typical configurations is provided in Section 5.0. For each temperature/source level condition, a figure is provided that shows the noise levels graphically and a table of sound pressure levels at distances out to 10 meters, for both radio configurations.

Note that the levels presented in these tables and figures are solely due to the proposed small cell equipment and do not take into account human noise sources such as distant traffic or people talking, nor do they take into account environmental noises such as wind, rain, birds, etc.

2.0 SUBJECTIVE NOISE PERCEPTION

Noise levels of typical sources have been compiled from several literary references [3]–[6] and are provided in Table 2. For a pedestrian walking on the sidewalk adjacent to the telephone pole, the sound pressure level from the 5x 2203 unit configuration is predicted to be 40 dBA on a 68°F day (corresponding to soft stereo music) and 43 dBA on an 86°F day (corresponding to whispered speech). Whether these noise levels would be noticeable or bothersome depends on the local ambient conditions and proximity.

Table 2: Typical noise sources and levels, compiled from [3]–[6].

SPL, dBA	Noise Source	
80	Printing press plant	
	Diesel truck at 15 m	
	Computer equipment room	
	Shouting at 1 m	
70	Cafeteria with sound reflecting surfaces	
	garbage disposal (1 m)	
	diesel truck (15 m)	
		Normal Human Speech Range
	B-757 Cabin during flight, vacuum cleaner	
60	Busy office	
	Inside car (50 mph)	
	Air conditioning window unit (1 m)	
	Conversational speech at 1 m, large store	
50	Near highway traffic	
	Light traffic at 100'	
	Quiet urban area during daytime, office activities	
40	Quiet residence exterior	
	Whispered speech	
	Soft stereo music in residence	
30	Quiet urban area at night	
	Private business office	
	Quiet suburban area at night	
	Residence late at night	
20		
	Studio for Sound Pictures	
	Quiet countryside, Whisper	
10	Studio (Voice Over)	
	Audiometric test room	
	Rustle of leaves in breeze	
0	Human breathing	
	Threshold of Hearing (Audibility)	

3.0 NOISE ORDINANCES

No direct comparison can be made between the predicted noise levels and the Massachusetts Department of Environmental Protection (MADEP) noise ordinances [7] because the MADEP regulation specifies that noise sources must not exceed 10 dB above the background level at the property line. To confirm compliance with this ordinance, measurements of local background noise must be performed; background noise levels can vary widely by location (e.g. town vs. city, rural vs urban, residential vs. industrial).

Furthermore, compliance with individual Massachusetts town noise ordinances cannot be blanketly determined; each town may have specific requirements. Some towns specify noise limits by zoning area, some specify relative to ambient levels, and others have no quantitative limits. A general idea of expected compliance for a given town can be determined by comparing the predicted equipment noise levels at the closest property line (see Table 3 through Table 6 in Section 5.0) to the town-established limit, though this does not include preexisting noise sources or other local conditions which could raise the overall noise level.

4.0 REFERENCES

[1] Ericsson, "Radio Description 2203 and RRU 2208, 180/1551-LZA 701 6001/1 Uen C | 2016-04-04," 2016.
[2] Ericsson, "Radio Description 2205, 88/1551-LZA 701 6001/1 Uen C | 2017-07-07," 2017.
[3] M. Long, *Architectural Acoust.*, Second Edi. 2014.
[4] M. Mehta, J. Johnson, and J. Rocafort, *Architectural Acoust.: Principles and Design.* 1999.
[5] D. A. Bies and C. H. Hansen, *Engineering Noise Control - Theory and Practice*, 4th ed. 2009.
[6] D. M. Egan, *Architectural Acoust.* 1988.
[7] Massachussetts Department of Enviromental Protection, "310 CMR 7.10: Air Pollution Control - U Noise," vol. 1. 2014.

5.0 FIGURES / TABLES

5.1 Noise Levels at 68°F

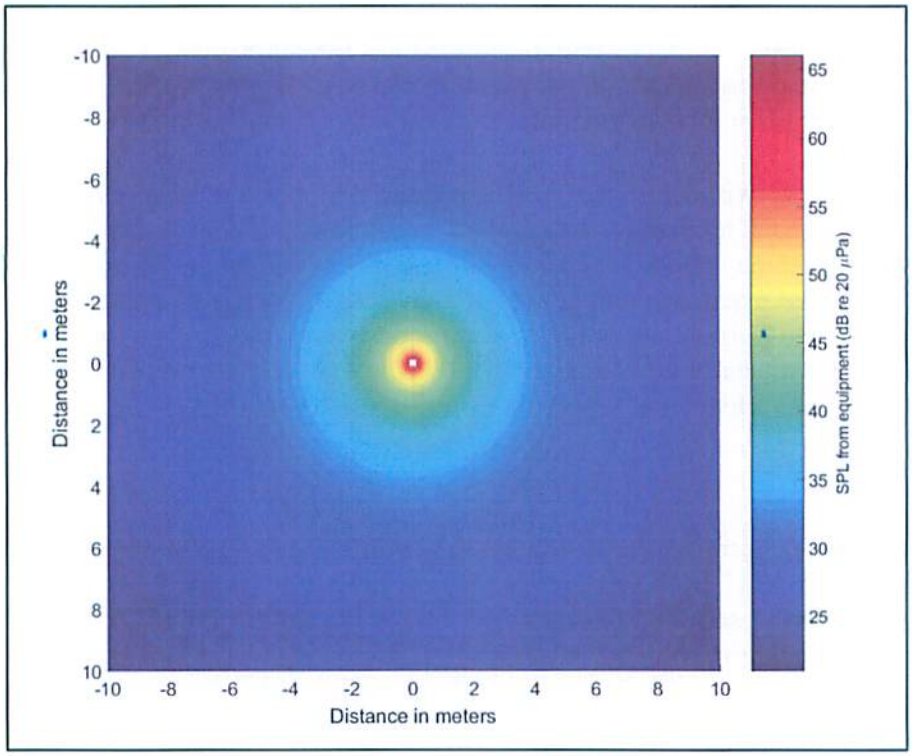

Figure 2: Predicted Sound Pressure Levels (A-weighted SPL dB re 20 μPa) at various distances from the source at 68°F, 5x2205 units.

Table 3: Sound Pressure Levels at 1 meter increments from the source at 68°F[1]
A-weighted SPL dB re 20 μPa.

		Radio Unit Configurations	
		5x2205	3x2203 + 2x2205
Distance from Source (m)	1	45	43
	2	39	37
	3	35	34
	4	33	31
	5	31	29
	6	29	27
	7	28	26
	8	27	25
	9	26	24
	10	25	23

[1] Change in dB level: 1 – Imperceptible, 3 – Just perceptible, 10 – Substantial Change [4].

5.2 Noise Levels at 86°F

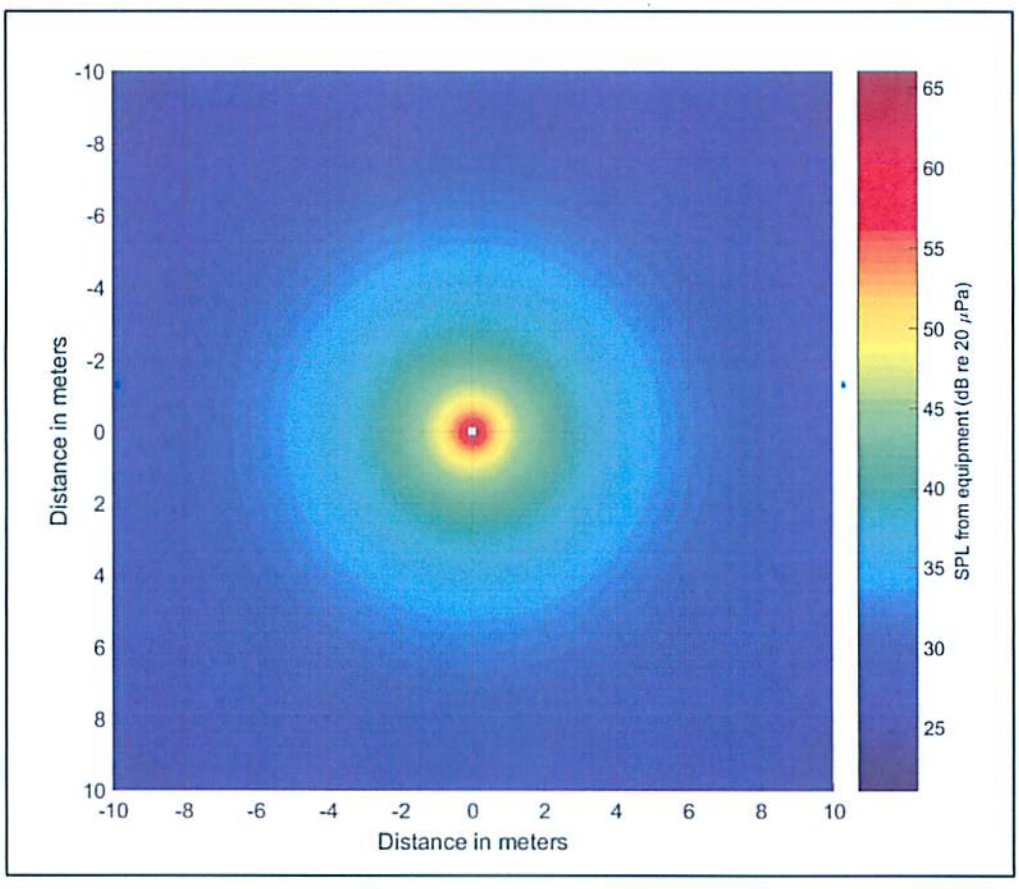

Figure 3: Predicted Sound Pressure Levels (A-weighted SPL dB re 20 μPa) at a distance from the source at 86°F, 5x2205 units.

Table 4: Sound Pressure Levels (dBA) at 1 meter increments from the source at 86°F[1]
A-weighted SPL dB re 20 μPa.

		Radio Unit Configurations	
		5x2205	3x2203 + 2x2205
Distance from Source (m)	1	48	47
	2	42	41
	3	38	38
	4	36	35
	5	34	33
	6	32	32
	7	31	31
	8	30	29
	9	29	28
	10	28	27

5.3 Noise Levels at 104°F

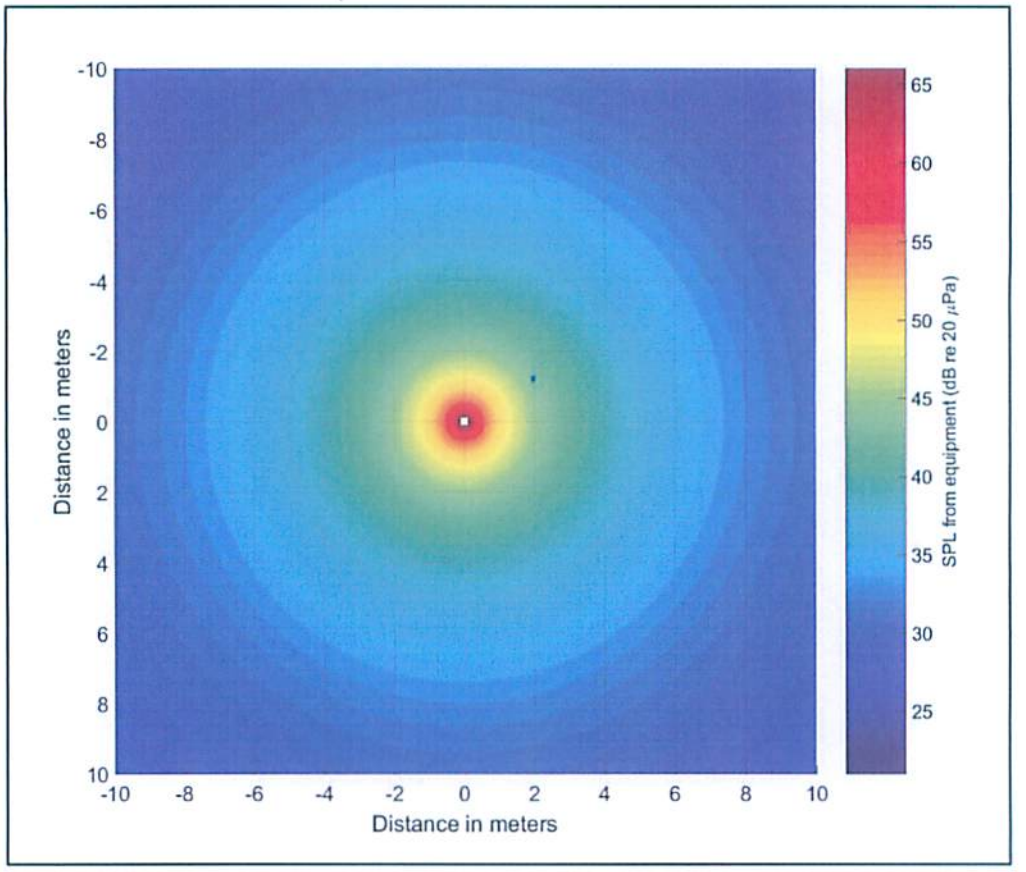

Figure 4: Predicted Sound Pressure Levels (A-weighted SPL dB re 20 μPa) at a distance from the source at 104°F, 5x2205 units.

Table 5: Sound Pressure Levels (dBA) at 1 meter increments from the source at 104°F[1] A-weighted SPL dB re 20 μPa.

		Radio Unit Configurations	
		5x2205	3x2203 + 2x2205
Distance from Source (m)	1	51	51
	2	45	45
	3	41	41
	4	39	39
	5	37	37
	6	35	35
	7	34	34
	8	33	33
	9	32	32
	10	31	31

5.4 Noise Levels at 131°F

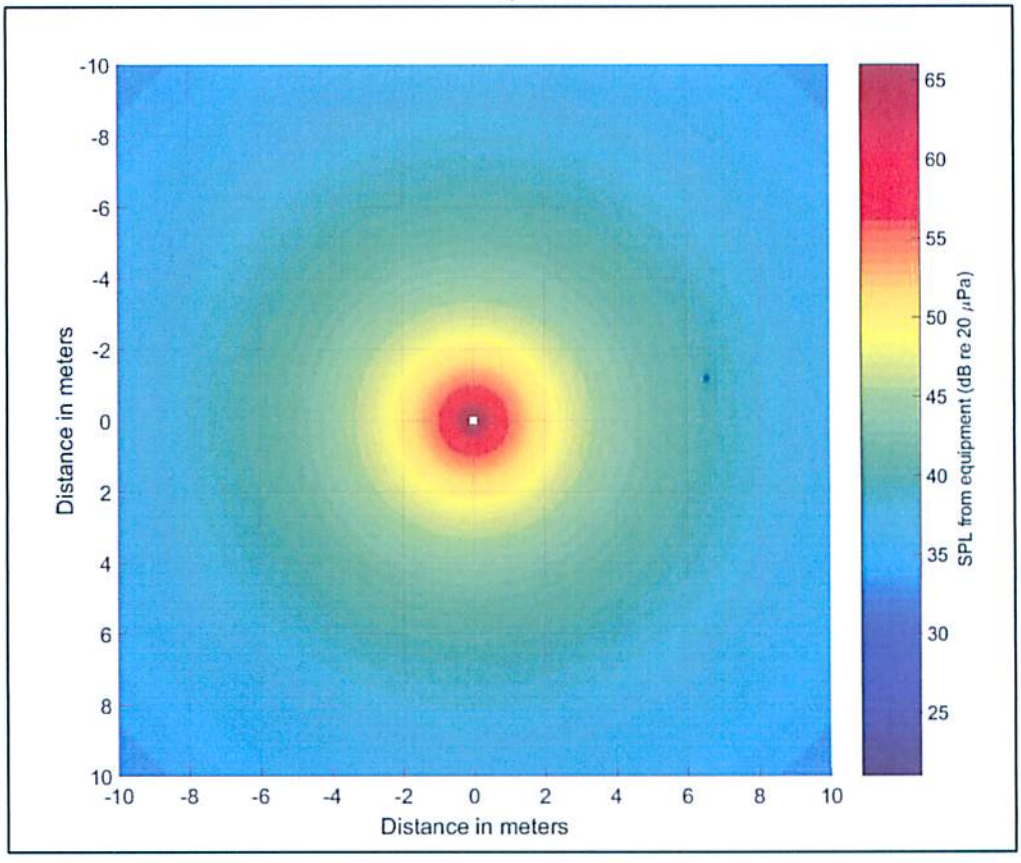

Figure 5: Predicted Sound Pressure Levels (A-weighted SPL dB re 20 μPa) at a distance from the source at 131°F, 5x2205 units.

Table 6: Sound Pressure Levels (dBA) at 1 meter increments from the source at 131°F[1] A-weighted SPL dB re 20 μPa.

		Radio Unit Configurations	
		5x2205	3x2203 + 2x2205
Distance from Source (m)	1	56	56
	2	50	50
	3	46	46
	4	44	44
	5	42	42
	6	40	40
	7	39	39
	8	38	38
	9	37	37
	10	36	36