Edward D. Pare, Jr., Esq.
direct dial: 401-276-2639
epare@brownrudnick.com

March 29, 2021

VIA EMAIL

Board of Selectmen
Town of Oak Bluffs
c/o Alice Butler
Executive Secretary
56 School Street
Oak Bluffs, MA 02557

RE: Application of New Cingular Wireless PCS, LLC d/b/a AT&T ("AT&T") for Grants of Location for Small Cell Wireless Facilities, Including Telecommunication Wires and Wireless Attachments and Appurtenances on Existing or Replacement Utility Poles in the Public Right-of-Way at the Following Locations:

Pole #19/1S - Near 64 Circuit Avenue, Oak Bluffs – CRAN_RCTB_OAKB_002 – Replacement Pole

Pole #48/7 - Across from 35 and 37 Pequot Avenue near Hartford Park – CRAN_RCTB_OAKB_003 – Replacement Pole

Pole #63/2 – Near 2 Pennecook Avenue on the corner of Tuckernuck Avenue and Seaview Avenue, across from Waban Park – CRAN_RCTB_OAKB_004 – Existing Pole

Dear Honorable Members of the Oak Bluffs Board of Selectmen:

We represent New Cingular Wireless PCS, LLC (d/b/a "AT&T") with respect to its deployment of small cell facilities in the Town of Oak Bluffs and the Commonwealth of Massachusetts. AT&T is licensed by the Federal Communications Commission (the "FCC") to provide wireless communications services in the Town of Oak Bluffs and throughout the Commonwealth of Massachusetts.

On behalf of AT&T and while reserving all rights, please accept this submission as an application for approval (the "Application") for three (3) small cell wireless facilities installed on existing or replacement utility poles owned by Eversource and located near the above-referenced addresses in Oak Bluffs, MA (the "Sites") pursuant to the federal Telecommunications Act of 1996 (the "Act"), the Declaratory Ruling and Third Report and Order 18-133 (the "Order") issued by the FCC in September 2018 https://docs.fcc.gov/public/attachments/FCC-18-133A1_Rcd.pdf and Massachusetts General Laws Chapter 166, Section 21,22, 25A for telecommunication wires and wireless attachments and appurtenances installed within the public right-of-way. AT&T has entered into a Pole Attachment Agreement with Eversource and we have included a copy of the licenses issued by Eversource which allows the installations.

AT&T's small cell wireless facilities comply and are in accordance with the Act, the Order and Massachusetts law.

We have also provided detailed sets of drawings (the "Plans") and maps for each small cell facility. AT&T has not installed any small cell wireless facilities on Martha's Vineyard yet, so we have provided photographs of similar small cell wireless facilities installed by AT&T on Nantucket as examples. Also enclosed, please find a generic small cell wireless facility radio frequency emissions report demonstrating compliance with applicable exposure to emissions standards established by the FCC.

AT&T proposes these low-power small cell facilities in the Town of Oak Bluffs to deal with the rapidly increasing demands on AT&T's wireless network. These small cell wireless facilities will work in conjunction with the existing macro cell sites installed on rooftops, towers, and other structures in and around the Town of Oak Bluffs. AT&T's radio frequency engineers targeted the proposed locations due to the high traffic and data demands on AT&T's network in the areas near the Sites. Please see the enclosed coverage maps submitted as part of the Application. AT&T's existing macro cell sites are not providing adequate data capacity in the areas near the Sites due to population, network usage, vehicular and foot traffic, multiple wireless devices used by customers and other contributing factors. These small cell facilities will also work to offload the demands on AT&T's macro cell sites and allow for increased data capacity and speed within the immediate vicinity of the Sites and in the areas surrounding the macro cell sites.

As further illustrated on the Plans, the proposed small cell facilities consist of the following:

Pole #19/1S - Near 64 Circuit Avenue, Oak Bluffs – CRAN_RCTB_OAKB_002 – AT&T proposes to install: fiber optic cable(s); remote radios in an equipment cabinet 39" long by 23" wide by 15" deep (7.78 cubic feet in volume) mounted to a 29' 6" replacement wood utility pole at 11' 6" above ground level ("AGL"); a top-mounted antenna measuring 25" long and 10" in diameter (1.22 cubic feet in volume) and antennas measuring 11" long by 8" wide by 5" deep (.25 cubic feet) concealed within an unobtrusive shroud; conduits and cable protectors; and, an electrical meter 8' AGL with shutoff switch and grounding rod.

Pole #48/7 - Across from 35 and 37 Pequot Avenue near Hartford Park – CRAN_RCTB_OAKB_003 - AT&T proposes to install: fiber optic cable(s); remote radios in an equipment cabinet 39" long by 23" wide by 15" deep (7.78 cubic feet in volume) mounted to a 34' replacement wood utility pole at 11' 6" AGL; a top-mounted antennas measuring 25" long and 10" in diameter (1.22 cubic feet in volume) and antenna measuring 11" long by 8" wide by 5" deep

(.25 cubic feet) concealed within an unobtrusive shroud; conduits and cable protectors; and, an electrical meter 8' AGL with shutoff switch and grounding rod.

Pole #63/2 – Near 2 Pennecook Avenue on the corner of Tuckernuck Avenue and Seaview Avenue, near the beach across from Waban Park – CRAN_RCTB_OAKB_004 - AT&T proposes to install: fiber optic cable(s); remote radios in a small equipment cabinet 39" long by 23" wide by 15" deep (7.78 cubic feet in volume) mounted to an existing 28' 4" wood utility pole at 11' 6" AGL; a top-mounted antenna measuring 25" long and 10" in diameter (1.22 cubic feet in volume) and antennas measuring 11" long by 8" wide by 5" deep (.25 cubic feet) concealed within an unobtrusive shroud; conduits and cable protectors; and, an electrical meter 8' AGL with shutoff switch and grounding rod.

These small cell facilities will be installed using standard commercially accepted methods in accordance with all applicable federal, state, and local laws, regulations, and orders. All existing wires, streetlights, guy wires, and other attachments will be transferred to the replacement Pole at their current heights. The Plans also provide the proposed locations, pole heights, mounting heights and equipment specifications.

THE TELECOMMUNICATIONS ACT OF 1996

Without the installation of these small cell facilities, AT&T would be unable to provide specifically established coverage and capacity objectives. The existing utility poles are 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 Order commonly referenced as the applicable "shot clocks". The FCC shot clocks in these instances are ninety (90) days for the replacement poles and sixty (60) days for the existing pole from the submission of the Application. We also note that the Order redefined "effective prohibition" to mean that state and local governments cannot impose requirements that materially limits or inhibits a provider's ability to engage in activities related to the provision of service. This standard applies to efforts to introduce new or enhance coverage, capacity or service capabilities and notes that regulations that cause a financial burden or competitive disparity can be an effective prohibition.

CONCLUSION

We respectfully assert that AT&T's proposed small cell wireless facilities are reasonable and reasonably comply with the requirements of the Town of Oak Bluffs in light of the Act, the Order and Massachusetts law. AT&T is ready and willing to work cooperatively with the Town of Oak Bluffs with respect the deployment of its small cell wireless facilities. For the foregoing reasons, as well as to satisfy the mandate of the federal government to facilitate competition in the telecommunications industry as set forth in the Act and the Order, AT&T respectfully requests that the Board grant its approval to the Application.

If you have any questions, please don't hesitate to contact us. We look forward to presenting the Application at an upcoming meeting. For the Board's convenience, we have provided a proposed order.

Sincerely,

BROWN RUDNICK LLP

/s/ Edward D. Pare, Jr.
Edward D. Pare, Jr., Esq.

Enclosures: Plans
Structural Report
License from Utility
Radio Frequency Coverage Maps
Photograph of Existing Small Cell Wireless Facility (Nantucket)
Emissions Report

cc: Robert Whritenour, Town Administrator

Alice Butler

From: David Ford <dford@clinellc.com>
Sent: Thursday, April 15, 2021 2:03 PM
To: Alice Butler
Cc: Vincent Paquette; David Ford
Subject: RE: AT&T Small Cell // Oak Bluffs, MA - (3) Proposed Wireless Facilities // Grant of Location - Application Package

Checking in, have we been assigned to a hearing date?

Thanks

David Ford
Centerline Communications
508.821.6509

From: David Ford <dford@clinellc.com>
Sent: Monday, April 5, 2021 10:40 AM
To: abutler@oakbluffsma.gov
Cc: Vincent Paquette <vpaquette@clinellc.com>; David Ford <dford@clinellc.com>
Subject: RE: AT&T Small Cell // Oak Bluffs, MA - (3) Proposed Wireless Facilities // Grant of Location - Application Package

Dear Town of Oak Bluffs Board of Selectmen,

In addition to the Grant of Location filing that was submitted on 4/2, attached please find a supplement filing letter outlining a change in address for one of the locations.

Let me know if you have any questions.

Thanks

David Ford
Centerline Communications
508.821.6509

From: David Ford <dford@clinellc.com>
Sent: Friday, April 2, 2021 1:31 PM
To: abutler@oakbluffsma.gov
Cc: Vincent Paquette <vpaquette@clinellc.com>; David Ford <dford@clinellc.com>
Subject: AT&T Small Cell // Oak Bluffs, MA - (3) Proposed Wireless Facilities // Grant of Location - Application Package

Dear Town of Oak Bluffs Board of Selectmen,

In regards to AT&T's (3) proposed small cell facilities at the below referenced addresses, attached please find the Grant of Location package.

- **OAKB_002 – 64 Circuit Ave**
- **OAKB_003 – 04 Massasoit Ave**
- **OAKB_004 – 02 Pennecook Ave**

Please review and let us know if you need anything further to add us to the next available agenda.

Call or email with any questions or concerns

Thanks

CENTERLINE COMMUNICATIONS

David Ford | Site Acquisition Lead – Project Manager
Mobile: 508.821.6509 | Fax: 508.819.3017
dford@clinellc.com | www.centerlinecommunications.com

ORDER FOR LOCATION FOR TELECOMMUNICATIONS WIRES AND WIRELESS ATTACHMENTS AND APPURTENANCES

By the Board of Selectmen

Of the Town of Oak Bluffs, Massachusetts, _____, 2021

ORDERED:

That pursuant to the federal Telecommunication Act of 1996 and Massachusetts General Laws, Chapter 166, NEW CINGULAR WIRELESS PCS, LLC ("AT&T") is hereby granted a location 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 Eversource utility poles, located upon, along and under the public ways within the Town of Oak Bluffs, as substantially shown on the plans filed with said petition.

The forgoing permission is subject to the following condition: the telecommunications wires and wireless attachments and appurtenances shall be installed and operated in compliance with all applicable federal, state and local laws, codes and regulations.

I hereby certify that the foregoing was adopted at a meeting of the Board of Selectmen of the Town of Oak Bluffs, Massachusetts, held on the _____ day of _____, 2021.

_____
Town Clerk

AT&T SITE ID: CRAN_RCTB_OAKB_002
64 CIRCUIT AVE
OAK BLUFFS, MA 02557

SHEET INDEX

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A-1	KEY PLAN AND ELEVATION	1
A-2	EQUIPMENT DETAILS	1
E-1	ELECTRICAL & GROUNDING DETAILS	1

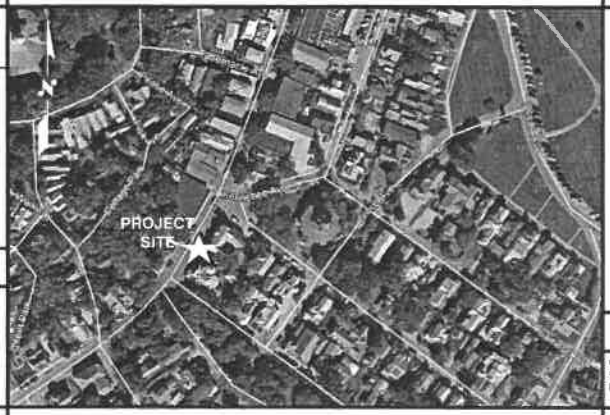
PROJECT DESCRIPTION

1. INSTALLATION OF ANTENNA AND ASSOCIATED EQUIPMENT ON PROPOSED UTILITY POLE.
2. THIS IS AN UNMANNED AND RESTRICTED ACCESS EQUIPMENT SITE AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNALS FOR THE PURPOSE OF IMPROVING CELLULAR AND WIRELESS INTERNET SERVICE.

PROJECT SUMMARY

SITE ADDRESS:	64 CIRCUIT AVE OAK BLUFFS, MA 02557
COUNTY:	DUKES
LATITUDE:	41.454517° N
LONGITUDE:	70.558951° W
POLE OWNER:	EVERSOURCE
STRUCTURE TYPE:	UTILITY POLE
POLE NUMBER:	#19/1S
ARCHITECT/ENGINEER:	HUDSON DESIGN GROUP LLC 45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845

VICINITY MAP (NOT TO SCALE)



DRIVING DIRECTIONS

FROM FRAMINGHAM, MA:

HEAD NORWEST TOWARD LEGGATT McCALL CONN. TURN LEFT ONTO LEGGATT McCALL CONN. CONTINUE ONTO BURR ST. TURN LEFT ONTO COCHITUATE RD. TAKE THE I-90 E/MASSPIKE RAMP TO BOSTON. MERGE ONTO I-90 E. TAKE EXIT 14 TOWARD I-95/PORTSMOUTH/PROVIDENCE. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-95 S/DEDHAM/PROVIDENCE AND MERGE ONTO I-95 S. CONTINUE ONTO US-1 N. CONTINUE ONTO I-93 N/US-1 N. TAKE EXIT 4 FOR STATE RTE 24 S. TOWARD BROCKTON /FALL RIVER. CONTINUE ONTO MA-24 S/STATE RTE 24 S. TAKE EXIT 14A TO MERGE ONTO I-495 S TOWARD CAPE COD. KEEP LEFT TO CONTINUE ON MA-25 E. CONTINUE ONTO MA-28 S. AT BOURNE ROTARY S, TAKE THE 3RD EXIT ONTO MA-28 S/GENERAL MacARTHUR BLVD/MacARTHUR BLVD. AT THE TRAFFIC CIRCLE, TAKE THE 2ND EXIT ONTO MA-28 S. MA -28 S TURN RIGHT AND BECOMES LOCUS ST. CONTINUE ONTO WOODS HOLE RD. TURN LEFT ONTO CRANE ST. TURN RIGHT ONTO COWDRY RD. TAKE THE WOOD HOLE – OAK BLUFFS FERRY TO OAK BLUFFS CONTINUE STRAIGHT ONTO OAK BLUFFS AVE. SLIGHT LEFT ONTO CIRCUIT ASVE.

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.

CALL 811

811 DigSafe MA-ME-NH-RI-VT

WWW.DIGSAFE.COM

72 HOURS PRIOR
UNDERGROUND SERVICE ALERT

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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

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

COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HAMM
CIVIL
No. 47720
REGISTERED PROFESSIONAL ENGINEER
Daniel P. Hamm

CHECKED BY: AT

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	12/23/20	ISSUED FOR CONSTRUCTION	MR
A	12/14/20	ISSUED FOR REVIEW	MR

CLUSTER AND NODE NUMBER:
CRAN_RCTB_OAKB_002

SITE ID:
CRAN_RCTB_OAKB_002

SITE ADDRESS:
64 CIRCUIT AVE
OAK BLUFFS, MA 02557
DUKES 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 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 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: 2020 NATIONAL ELECTRICAL CODE (NFPA 70-2020)

    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-H, 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.

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 STANDARDS) 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 AND #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 AWG 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

HDG HUDSON Design Group LLC
45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5356

COMMONWEALTH OF MASSACHUSETTS
DANIEL P. AMY
CIVIL
No. 40720
REGISTERED PROFESSIONAL ENGINEER

CHECKED BY: AT

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	12/23/20	ISSUED FOR CONSTRUCTION	MR
A	12/14/20	ISSUED FOR REVIEW	MR

CLUSTER AND NODE NUMBER:
CRAN_RCTB_OAKB_002

SITE ID:
CRAN_RCTB_OAKB_002

SITE ADDRESS:
64 CIRCUIT AVE
OAK BLUFFS, MA 02557
DUKES COUNTY

SHEET TITLE
GENERAL NOTES

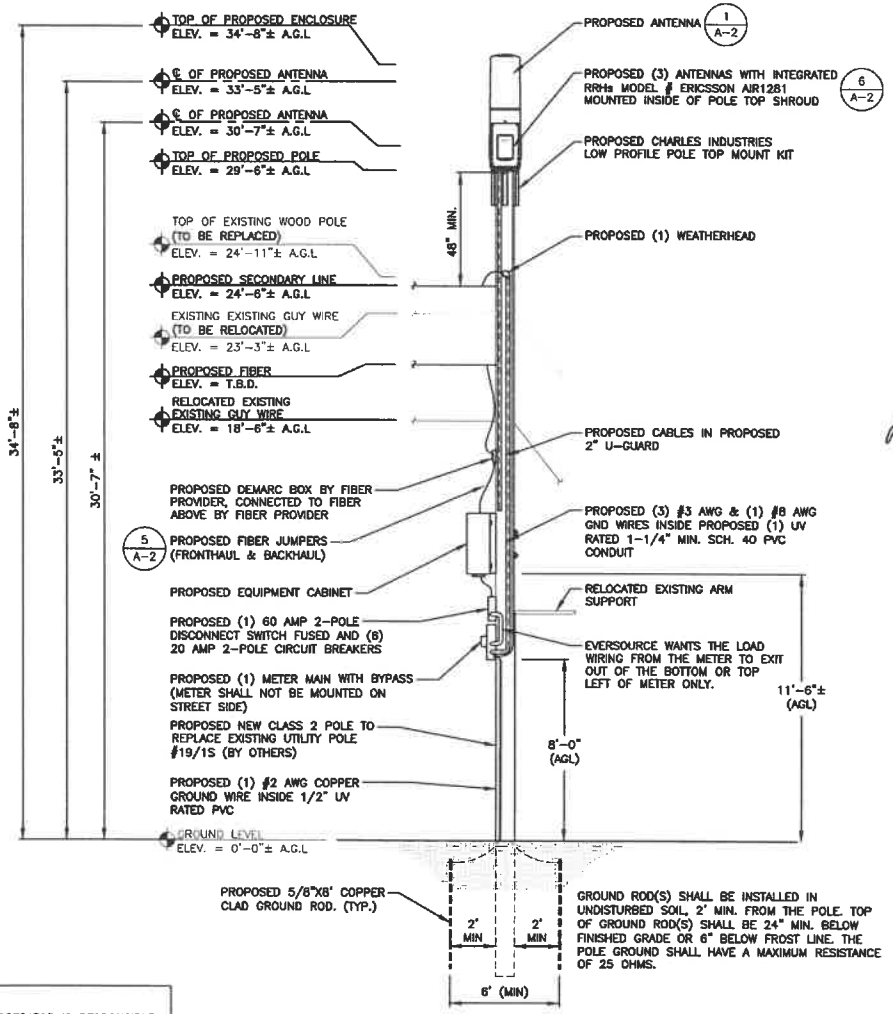
SHEET NUMBER
GN-1

APPROXIMATE COORDINATES:	LAT:	41.454517° N
	LONG:	70.558951° W

KEY PLAN (1 / A-1)
22x34 SCALE: 1"=20'
11x17 SCALE: 1"=40'

GRAPHIC SCALE
0 10 20 40 60 FEET

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



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"

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: **HUDSON DESIGN GROUP, LLC** DATED: **DECEMBER 18, 2020,** FOR THE CAPACITY OF THE STRUCTURE TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
ALL EXISTING UTILITY POLE ATTACHMENTS AND FIXTURES ARE TO BE TRANSFERRED TO NEW POLE AT THE SAME HEIGHTS UNLESS OTHERWISE NOTED

NOTE:
1. THE WIRELESS COMMUNICATIONS OPERATOR IS RESPONSIBLE FOR PLACING A WARNING SIGN ON THE POWER SUPPLY COMMUNICATING THE RF EMISSIONS IN COMPLIANCE WITH THE CURRENT EDITION OF IEEE STANDARD C95.2. THIS SIGN MUST ALSO HAVE A 24-HOUR CONTACT PHONE NUMBER IN CASE OF EMERGENCY. THIS NUMBER MUST BE VISIBLE FROM THE GROUND.

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COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HAMM
CIVIL
No. 47770
REGISTERED PROFESSIONAL ENGINEER

CHECKED BY: AT

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	12/23/20	ISSUED FOR CONSTRUCTION	MR
A	12/14/20	ISSUED FOR REVIEW	MR

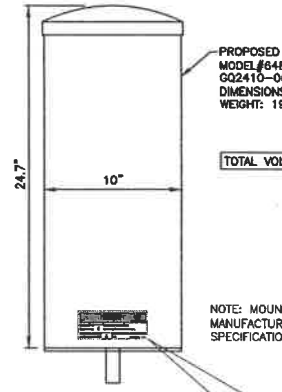
CLUSTER AND NODE NUMBER:
CRAN_RCTB_OAKB_002

SITE ID:
CRAN_RCTB_OAKB_002

SITE ADDRESS:
64 CIRCUIT AVE
OAK BLUFFS, MA 02557
DUKES COUNTY

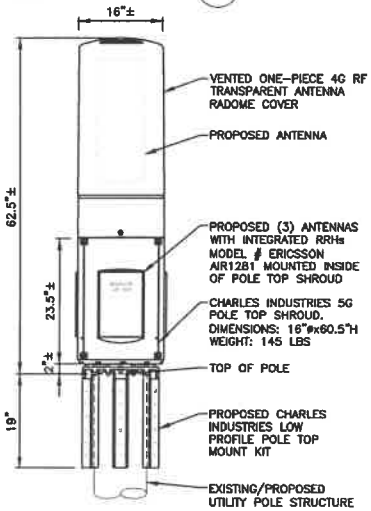
SHEET TITLE
KEY PLAN AND ELEVATION

SHEET NUMBER
A-1



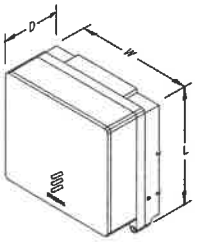
STONEHOUSE SIGNS INC. P/N RD899
SIGN DIMENSIONS 2.5"x6.5"
TWO NOTICE STICKERS MUST BE PLACED OPPOSITE EACH OTHER ON THE ANTENNA

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



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

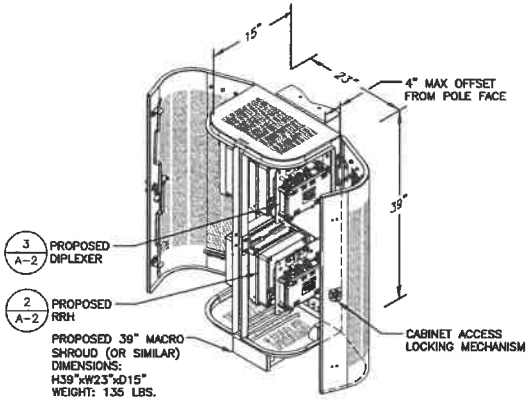
ANTENNA MOUNT DETAIL (4 / A-2)
SCALE: N.T.S



MODEL	QTY.	L	W	D	WGT.
4402	2	8.0"	8.0"	4.0"	11 LBS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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

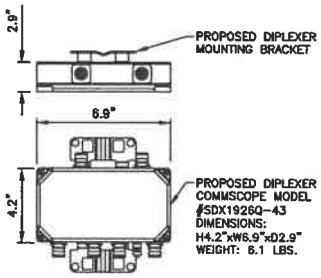


CABINET VOLUME:
39" x 15" X 23"
= 7.78 CU.FT.

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

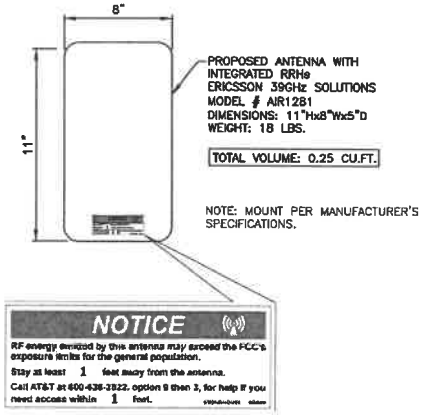
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

EQUIPMENT CABINET DETAIL (5 / A-2)
SCALE: N.T.S



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DIPLEXER DETAIL (AS REQUIRED) (3 / A-2)
SCALE: N.T.S



NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS.

STONEHOUSE SIGNS INC. P/N RD899
SIGN DIMENSIONS 2.5"x6.5"
TWO NOTICE STICKERS MUST BE PLACED OPPOSITE EACH OTHER ON THE ANTENNA

ANTENNA DETAIL (6 / A-2)
SCALE: N.T.S

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Daniel P. Hamon

CHECKED BY: AT

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	12/21/20	ISSUED FOR CONSTRUCTION	MR
A	12/14/20	ISSUED FOR REVIEW	MR

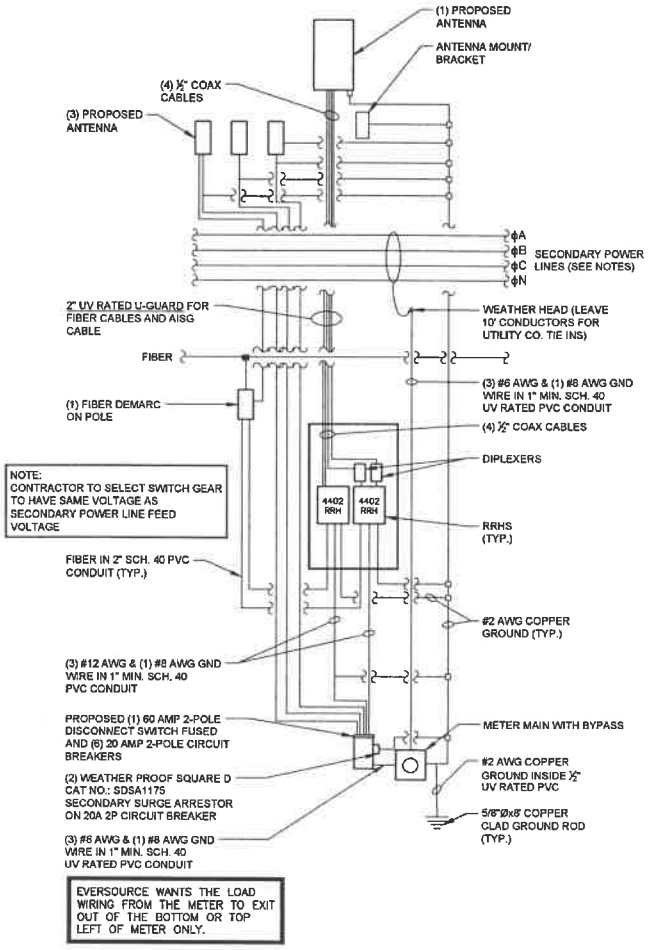
CLUSTER AND NODE NUMBER:
CRAN_RCTB_OAKB_002

SITE ID:
CRAN_RCTB_OAKB_002

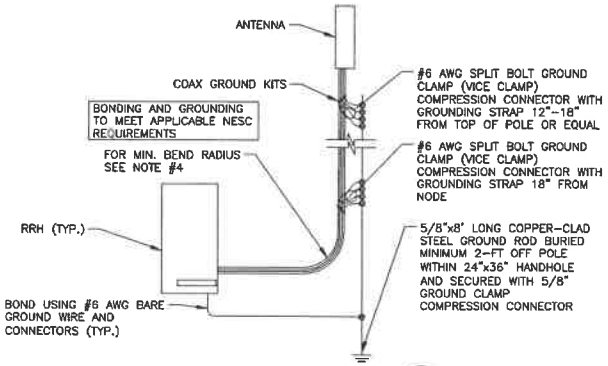
SITE ADDRESS:
64 CIRCUIT AVE.
OAK BLUFFS, MA 02557
DUKES COUNTY

SHEET TITLE:
EQUIPMENT DETAILS

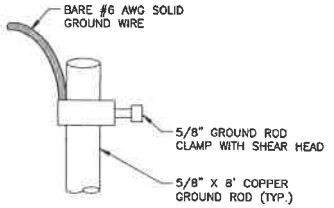
SHEET NUMBER:
A-2



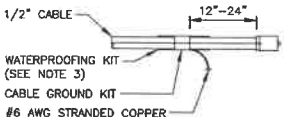
GENERAL WIRING DIAGRAM 1 E-1
SCALE: N.T.S



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.
4. MINIMUM BEND RADIUS OF A CONDUCTOR SHALL NOT BE BENT TO LESS THAN 12 TIMES OVERALL CONDUCTOR DIAMETER.

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

USE MILBANK MODEL NO.: U2272-RL-5T9-BL OR APPROVED EQUAL

METER MAIN WITH BYPASS DETAIL 5 E-1
SCALE: N.T.S

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REGISTERED PROFESSIONAL ENGINEER

CHECKED BY: AT

APPROVED BY: DPH

SUBMITTALS

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1	12/23/20	ISSUED FOR CONSTRUCTION	MR
A	12/14/20	ISSUED FOR REVIEW	MR

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SITE ID:
CRAN_RCTB_OAKB_002

SITE ADDRESS:
64 CIRCUIT AVE
OAK BLUFFS, MA 02557
DUKES COUNTY

SHEET TITLE
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER
E-1

AT&T SITE ID: CRAN_RCTB_OAKB_003
4 MASSASOIT AVE.
OAK BLUFFS, MA 02557

SHEET INDEX

SHEET NO.	DESCRIPTION	REV.
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A-1	KEY PLAN AND ELEVATION	2
A-2	EQUIPMENT DETAILS	2
E-1	ELECTRICAL & GROUNDING DETAILS	2

PROJECT DESCRIPTION

1. INSTALLATION OF ANTENNA AND ASSOCIATED EQUIPMENT ON PROPOSED UTILITY POLE.
2. THIS IS AN UNMANNED AND RESTRICTED ACCESS EQUIPMENT SITE AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNALS FOR THE PURPOSE OF IMPROVING CELLULAR AND WIRELESS INTERNET SERVICE.

PROJECT SUMMARY

SITE ADDRESS:	4 MASSASOIT AVE. OAK BLUFFS, MA 02557
COUNTY:	DUKES
LATITUDE:	41.452874° N
LONGITUDE:	70.557325° W
POLE OWNER:	EVERSOURCE
STRUCTURE TYPE:	UTILITY POLE
POLE NUMBER:	#48/7
ARCHITECT/ENGINEER:	HUDSON DESIGN GROUP LLC 45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845

VICINITY MAP (NOT TO SCALE)

DRIVING DIRECTIONS

FROM FRAMINGHAM, MA:

HEAD NORWEST TOWARD LEGGATT McCALL CONN. TURN LEFT ONTO LEGGATT McCALL CONN. CONTINUE ONTO BURR ST. TURN LEFT ONTO COCHITUATE RD. TAKE THE I-90 E/MASSPIKE RAMP TO BOSTON. MERGE ONTO I-90 E. TAKE EXIT 14 TOWARD I-95/PORTSMOUTH/PROVIDENCE. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-95 S/DEDHAM/PROVIDENCE AND MERGE ONTO I-95 S. CONTINUE ONTO US-1 N. CONTINUE ONTO I-93 N/US-1 N. TAKE EXIT 4 FOR STATE RTE 24 S. TOWARD BROCKTON /FALL RIVER. CONTINUE ONTO MA-24 S/STATE RTE 24 S. TAKE EXIT 14A TO MERGE ONTO I-495 S TOWARD CAPE COD. KEEP LEFT TO CONTINUE ON MA-25 E. CONTINUE ONTO MA-28 S. AT BOURNE RDTARY S, TAKE THE 3RD EXIT ONTO MA-28 S/GENERAL MacARTHUR BLVD/MacARTHUR BLVD. AT THE TRAFFIC CIRCLE, TAKE THE 2ND EXIT ONTO MA-28 S. MA -28 S TURN RIGHT AND BECOMES LOCUS ST. CONTINUE ONTO WOODS HOLE RD. TURN LEFT ONTO CRANE ST. TURN RIGHT ONTO COWDRY RD. TAKE THE WOOD HOLE – OAK BLUFFS FERRY TO OAK BLUFFS CONTINUE STRAIGHT ONTO OAK BLUFFS AVE. TURN LEFT ONTO SEAVIEW AVE. TURN RIGHT ONTO PEQUOT AVE.

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.

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COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HAMM
CIVIL
No. 40750
REGISTERED PROFESSIONAL ENGINEER
Daniel P. Hamm

CHECKED BY: AT

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	03/12/21	ISSUED FOR CONSTRUCTION	MR
1	12/23/20	ISSUED FOR CONSTRUCTION	MR
A	12/14/20	ISSUED FOR REVIEW	MR

CLUSTER AND NODE NUMBER:
CRAN_RCTB_OAKB_003

SITE ID:
CRAN_RCTB_OAKB_003

SITE ADDRESS:
4 MASSASOIT AVE.
OAK BLUFFS, MA 02557
DUKES 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 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 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: 2020 NATIONAL ELECTRICAL CODE (NFPA 70-2020)

    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-H, 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.

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 STANDARDS) 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 AND #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 AWG 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		

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FAX: (978) 336-5566

COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HAMM
CIVIL
No. 47070
REGISTERED PROFESSIONAL ENGINEER
Daniel P. Hamm

CHECKED BY: AT

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	03/12/21	ISSUED FOR CONSTRUCTION	MR
1	12/23/20	ISSUED FOR CONSTRUCTION	MR
A	12/14/20	ISSUED FOR REVIEW	MR

CLUSTER AND NODE NUMBER:
CRAN_RCTB_OAKB_003

SITE ID:
CRAN_RCTB_OAKB_003

SITE ADDRESS:
4 MASSASOIT AVE.
OAK BLUFFS, MA 02557
DUKES COUNTY

SHEET TITLE
GENERAL NOTES

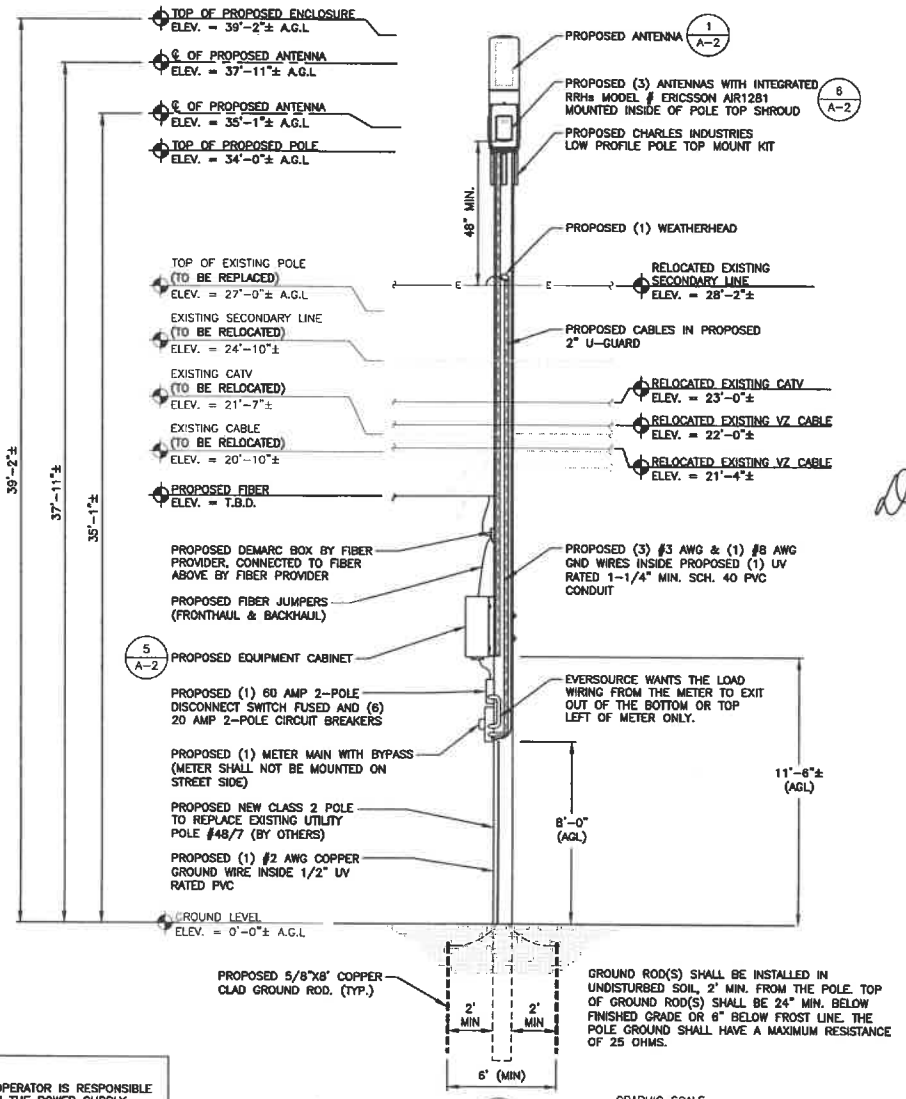
SHEET NUMBER
GN-1

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: 41.452874° N, LONG: 70.557325° 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"

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC DATED: DECEMBER 23, 2020, FOR THE CAPACITY OF THE STRUCTURE TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
ALL EXISTING UTILITY POLE ATTACHMENTS AND FIXTURES ARE TO BE TRANSFERRED TO NEW POLE AT THE SAME HEIGHTS UNLESS OTHERWISE NOTED

NOTE:
1. THE WIRELESS COMMUNICATIONS OPERATOR IS RESPONSIBLE FOR PLACING A WARNING SIGN ON THE POWER SUPPLY COMMUNICATING THE RF EMISSIONS IN COMPLIANCE WITH THE CURRENT EDITION OF IEEE STANDARD C95.2. THIS SIGN MUST ALSO HAVE A 24-HOUR CONTACT PHONE NUMBER IN CASE OF EMERGENCY. THIS NUMBER MUST BE VISIBLE FROM THE GROUND.

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

CENTERLINE COMMUNICATIONS
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) 336-5586

COMMONWEALTH OF MASSACHUSETTS
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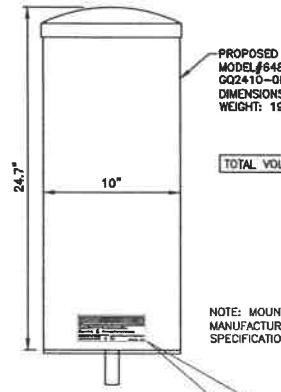
DUKES COUNTY

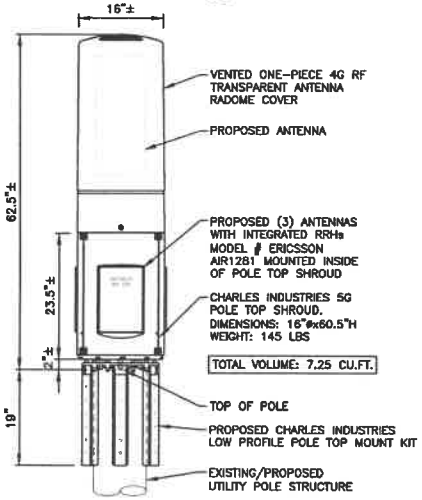
SHEET TITLE
KEY PLAN AND ELEVATION

SHEET NUMBER
A-1



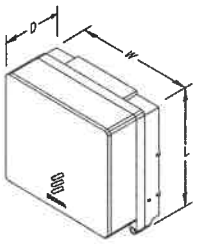
STONEHOUSE SIGNS INC. P/N RD899
SIGN DIMENSIONS 2.5"x6.5"
TWO NOTICE STICKERS MUST BE PLACED OPPOSITE EACH OTHER ON THE ANTENNA

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



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

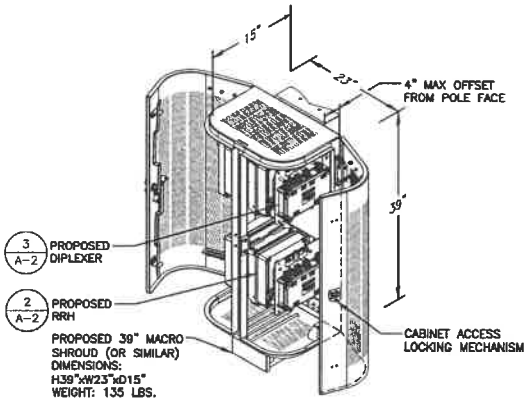
ANTENNA MOUNT DETAIL (4 / A-2)
SCALE: N.T.S



MODEL	QTY.	L	W	D	WGT.
4402	2	8.0"	8.0"	4.0"	11 LBS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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

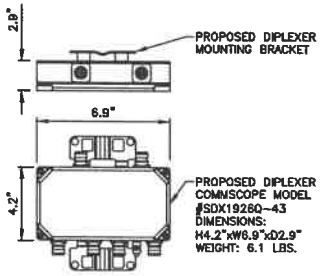


CABINET VOLUME:
39" x 15" X 23"
= 7.78 CU.FT.

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

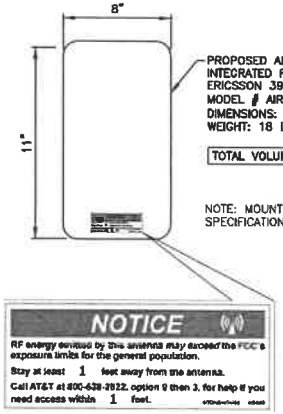
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

EQUIPMENT CABINET DETAIL (5 / A-2)
SCALE: N.T.S



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DIPLEXER DETAIL (AS REQUIRED) (3 / A-2)
SCALE: N.T.S



STONEHOUSE SIGNS INC. P/N RD899
SIGN DIMENSIONS 2.5"x6.5"
TWO NOTICE STICKERS MUST BE PLACED OPPOSITE EACH OTHER ON THE ANTENNA

ANTENNA DETAIL (6 / A-2)
SCALE: N.T.S

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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

HUDSON
Design Group LLC
41 BEECHWOOD DRIVE
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TEL: (978) 557-5553
FAX: (978) 336-5586

COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HAMM
No. 46720
REGISTERED PROFESSIONAL ENGINEER

Daniel P. Hamm

CHECKED BY: AT

APPROVED BY: DPH

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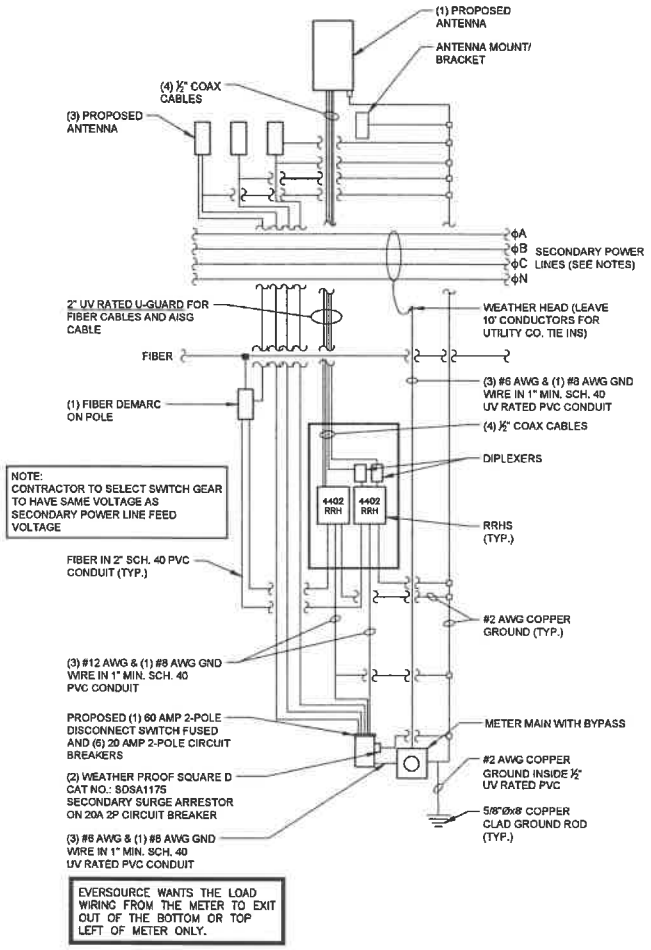
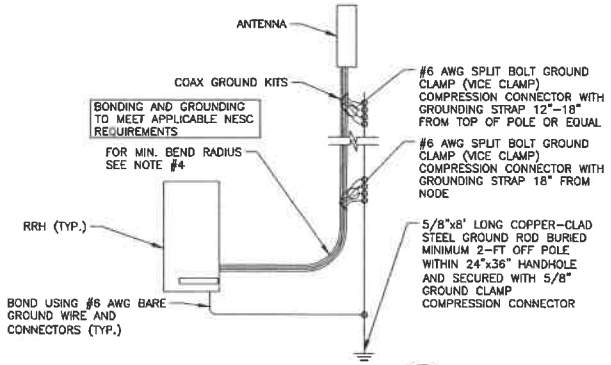
4 MASSASOIT AVE.
OAK BLUFFS, MA 02557
DUKES COUNTY

SHEET TITLE
EQUIPMENT DETAILS

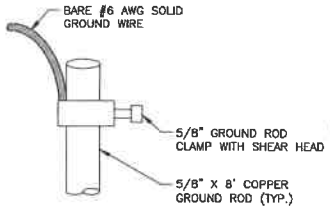
SHEET NUMBER
A-2



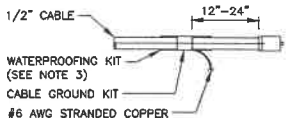
GENERAL WIRING DIAGRAM 1 / E-1
SCALE: N.T.S



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.
4. MINIMUM BEND RADIUS OF A CONDUCTOR SHALL NOT BE BENT TO LESS THAN 12 TIMES OVERALL CONDUCTOR DIAMETER.

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

USE MILBANK MODEL NO.: U2272-RL-579-BL OR APPROVED EQUAL

METER MAIN WITH BYPASS DETAIL 5 / 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

HUDSON Design Group LLC

COMMONWEALTH OF MASSACHUSETTS DANIEL P. HAMM NO. 46730 REGISTERED PROFESSIONAL ENGINEER
Daniel P. Hamm

CHECKED BY: AT

APPROVED BY: DPH

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SITE ADDRESS:
4 MASSASOIT AVE.
OAK BLUFFS, MA 02557
DUKES COUNTY

SHEET TITLE
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER
E-1

AT&T SITE ID: CRAN_RCTB_OAKB_004
2 PENNECOOK AVE
OAK BLUFFS, MA 02557

SHEET INDEX

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

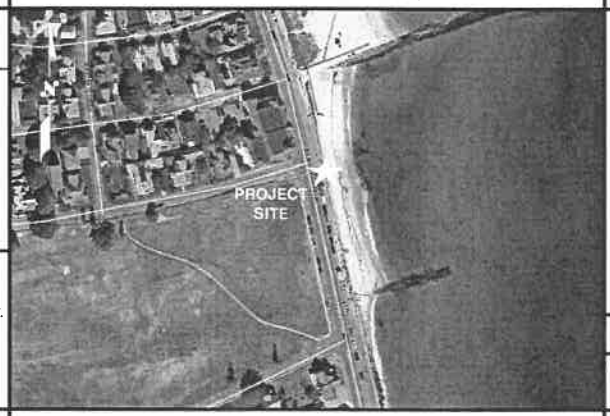
PROJECT DESCRIPTION

1. INSTALLATION OF ANTENNA AND ASSOCIATED EQUIPMENT ON EXISTING UTILITY POLE.
2. THIS IS AN UNMANNED AND RESTRICTED ACCESS EQUIPMENT SITE AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNALS FOR THE PURPOSE OF IMPROVING CELLULAR AND WIRELESS INTERNET SERVICE.

PROJECT SUMMARY

SITE ADDRESS:	2 PENNECOOK AVE OAK BLUFFS, MA 02557
COUNTY:	DUKES
LATITUDE:	41.452216° N
LONGITUDE:	70.553572° W
POLE OWNER:	EVERSOURCE
STRUCTURE TYPE:	UTILITY POLE
POLE NUMBER:	#63/2
ARCHITECT/ENGINEER:	HUDSON DESIGN GROUP LLC 45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845

VICINITY MAP (NOT TO SCALE)



DRIVING DIRECTIONS

FROM FRAMINGHAM, MA:

HEAD NORWEST TOWARD LEGGATT McCALL CONN. TURN LEFT ONTO LEGGATT McCALL CONN. CONTINUE ONTO BURR ST. TURN LEFT ONTO COCHITUATE RD. TAKE THE I-90 E/MASSPIKE RAMP TO BOSTON. MERGE ONTO I-90 E. TAKE EXIT 14 TOWARD I-95/PORTSMOUTH/PROVIDENCE. KEEP RIGHT AT THE FORK. FOLLOW SIGNS FOR I-95 S/DEDHAM/PROVIDENCE AND MERGE ONTO I-95 S. CONTINUE ONTO US-1 N. CONTINUE ONTO I-93 N/US-1 N. TAKE EXIT 4 FOR STATE RTE 24 S. TOWARD BROCKTON /FALL RIVER. CONTINUE ONTO MA-24 S/STATE RTE 24 S. TAKE EXIT 14A TO MERGE ONTO I-495 S TOWARD CAPE COD. KEEP LEFT TO CONTINUE ON MA-25 E. CONTINUE ONTO MA-28 S. AT BOURNE ROTARY S, TAKE THE 3RD EXIT ONTO MA-28 S/GENERAL MacARTHUR BLVD/MacARTHUR BLVD. AT THE TRAFFIC CIRCLE, TAKE THE 2ND EXIT ONTO MA-28 S. MA -28 S TURN RIGHT AND BECOMES LOCUS ST. CONTINUE ONTO WOODS HOLE RD. TURN LEFT ONTO CRANE ST. TURN RIGHT ONTO COWDRY RD. TAKE THE WOOD HOLE -- OAK BLUFFS FERRY TO OAK BLUFFS. CONTINUE STRAIGHT ONTO OAK BLUFFS AVE. TURN LEFT ONTO SEAVIEW AVE.

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.

CALL 811

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

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COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HAMM
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DUKES 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 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 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: 2020 NATIONAL ELECTRICAL CODE (NFPA 70-2020)

    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-H, 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.

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 STANDARDS) 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 AND #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 AWG 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		

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HDG
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COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HAMM
CIVIL
NO. 46770
REGISTERED PROFESSIONAL ENGINEER
Daniel P. Hamm

CHECKED BY: AT

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	12/21/20	ISSUED FOR CONSTRUCTION	MR
A	12/16/20	ISSUED FOR REVIEW	MR

CLUSTER AND NODE NUMBER:
CRAN_RCTB_OAKB_004

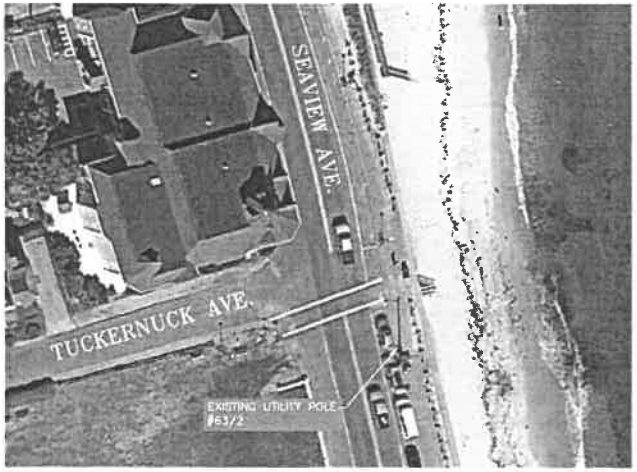
SITE ID:
CRAN_RCTB_OAKB_004

SITE ADDRESS:
2 PENNECOOK AVE
OAK BLUFFS, MA 02557
DUKES COUNTY

SHEET TITLE
GENERAL NOTES

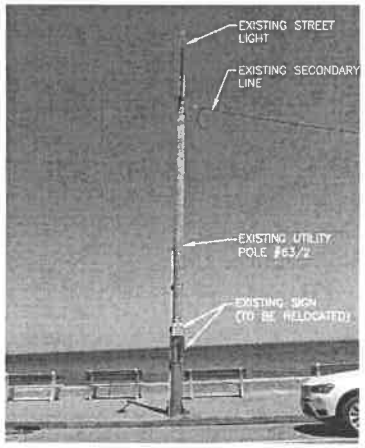
SHEET NUMBER
GN-1

APPROXIMATE COORDINATES:	LAT:	41.452216° N
	LONG:	70.553572° W

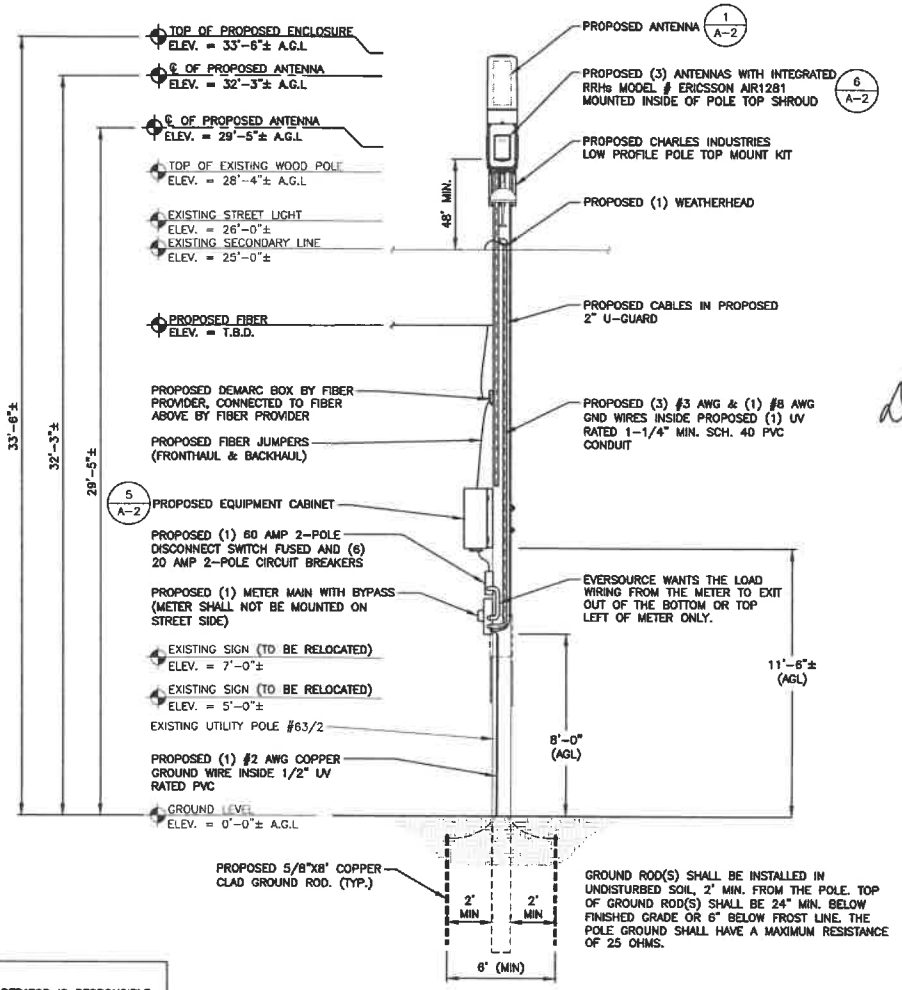


KEY PLAN (1 / A-1)
22x34 SCALE: 1"=30'
11x17 SCALE: 1"=60'

GRAPHIC SCALE
0 15 30 60 90 FEET



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



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"

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC DATED: DECEMBER 21, 2020, FOR THE CAPACITY OF THE STRUCTURE TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
1. THE WIRELESS COMMUNICATIONS OPERATOR IS RESPONSIBLE FOR PLACING A WARNING SIGN ON THE POWER SUPPLY COMMUNICATING THE RF EMISSIONS IN COMPLIANCE WITH THE CURRENT EDITION OF IEEE STANDARD C95.2. THIS SIGN MUST ALSO HAVE A 24-HOUR CONTACT PHONE NUMBER IN CASE OF EMERGENCY. THIS NUMBER MUST BE VISIBLE FROM THE GROUND.

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COMMONWEALTH OF MASSACHUSETTS
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No. 40720
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Daniel P. Hamm

CHECKED BY: AT
APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	12/21/21	ISSUED FOR CONSTRUCTION	MR
A	12/16/21	ISSUED FOR REVIEW	MR

CLUSTER AND NODE NUMBER:
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SITE ID:
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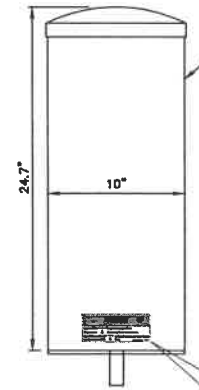
SITE ADDRESS:
2 PENNECOOK AVE
OAK BLUFFS, MA 02557
DUKES COUNTY

SHEET TITLE
KEY PLAN AND ELEVATION

SHEET NUMBER
A-1



PROPOSED GALTRONICS ANTENNA
MODEL#6480/6621/
G02410-06621 OR EQUAL.
DIMENSIONS: H24.7"XW10.0"ø
WEIGHT: 19 LBS.

TOTAL VOLUME: 1.22 CU.FT.

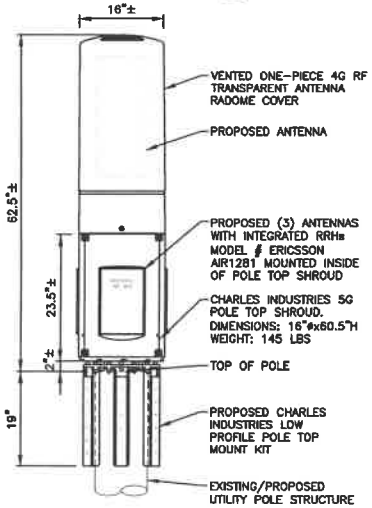
NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS.

NOTICE

RF energy emitted by this antenna may exceed the FCC's exposure limits for the general population.
Stay at least 1 feet away from the antenna.
Call AT&T at 800-638-2822, option 9 then 3, for help if you need access within 1 feet.

STONEHOUSE SIGNS INC. P/N RD899
SIGN DIMENSIONS 2.5"x6.5"
TWO NOTICE STICKERS MUST BE PLACED OPPOSITE EACH OTHER ON THE ANTENNA

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



VENTED ONE-PIECE 4G RF TRANSPARENT ANTENNA RADOME COVER

PROPOSED ANTENNA

PROPOSED (3) ANTENNAS WITH INTEGRATED RRHs MODEL # ERICSSON AIR1281 MOUNTED INSIDE OF POLE TOP SHROUD

CHARLES INDUSTRIES 5G POLE TOP SHROUD.
DIMENSIONS: 16"ø x60.5"H
WEIGHT: 145 LBS

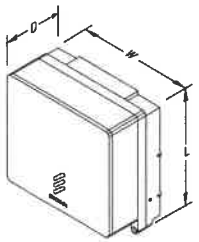
TOP OF POLE

PROPOSED CHARLES INDUSTRIES LOW PROFILE POLE TOP MOUNT KIT

EXISTING/PROPOSED UTILITY POLE STRUCTURE

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

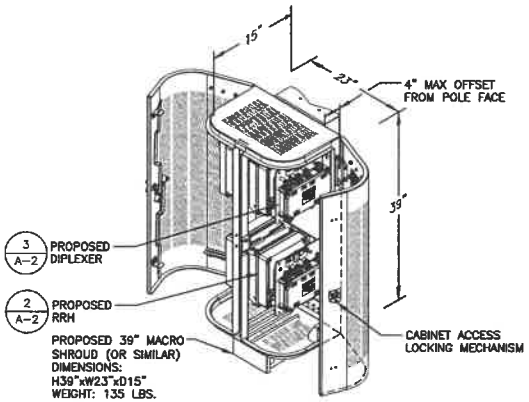
ANTENNA MOUNT DETAIL (4 / A-2)
SCALE: N.T.S



MODEL	QTY.	L	W	D	WGT.
4402	2	8.0"	8.0"	4.0"	11 LBS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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



4" MAX OFFSET FROM POLE FACE

3 / A-2 PROPOSED DIPLEXER

2 / A-2 PROPOSED RRH

PROPOSED 39" MACRO SHROUD (OR SIMILAR)
DIMENSIONS:
H39"xW23"xD15"
WEIGHT: 135 LBS.

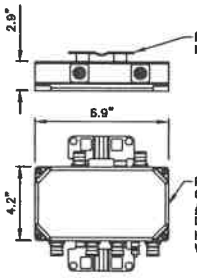
CABINET ACCESS LOCKING MECHANISM

CABINET VOLUME:
39" x 15" X 23"
= 7.78 CU.FT.

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

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

EQUIPMENT CABINET DETAIL (5 / A-2)
SCALE: N.T.S

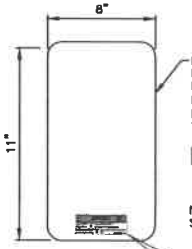


PROPOSED DIPLEXER MOUNTING BRACKET

PROPOSED DIPLEXER COMMSCOPE MODEL #SDX1926Q-43
DIMENSIONS:
H4.2"xW6.9"xD2.9"
WEIGHT: 6.1 LBS.

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DIPLEXER DETAIL (AS REQUIRED) (3 / A-2)
SCALE: N.T.S



PROPOSED ANTENNA WITH INTEGRATED RRHs ERICSSON 39GHz SOLUTIONS MODEL # AIR1281
DIMENSIONS: 11"Hx8"Wx5"D
WEIGHT: 18 LBS.

TOTAL VOLUME: 0.25 CU.FT.

NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS.

NOTICE

RF energy emitted by this antenna may exceed the FCC's exposure limits for the general population.
Stay at least 1 feet away from the antenna.
Call AT&T at 800-638-2822, option 9 then 3, for help if you need access within 1 feet.

STONEHOUSE SIGNS INC. P/N RD899
SIGN DIMENSIONS 2.5"x6.5"
TWO NOTICE STICKERS MUST BE PLACED OPPOSITE EACH OTHER ON THE ANTENNA

ANTENNA DETAIL (6 / A-2)
SCALE: N.T.S

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COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HAMM
CIVIL
No. 44720
REGISTERED PROFESSIONAL ENGINEER

Daniel P. Hamm

CHECKED BY: AT

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	12/23/20	ISSUED FOR CONSTRUCTION	MR
A	12/16/20	ISSUED FOR REVIEW	MR

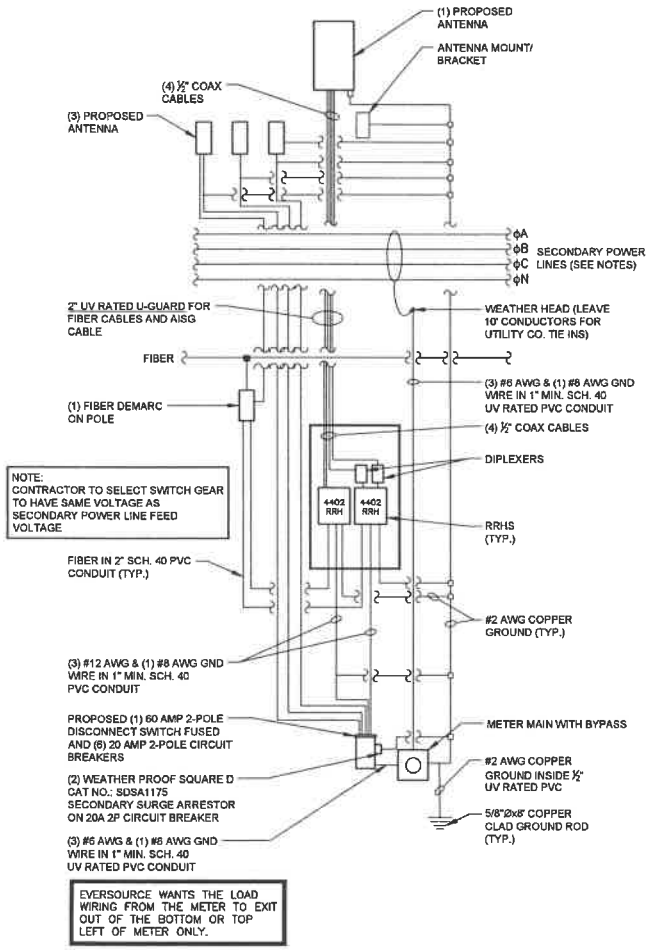
CLUSTER AND NODE NUMBER:
CRAN_RCTB_OAKB_004

SITE ID:
CRAN_RCTB_OAKB_004

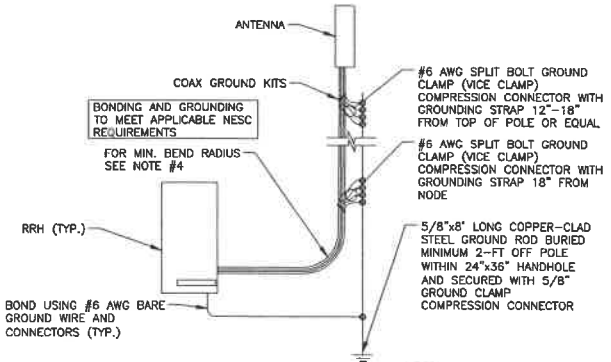
SITE ADDRESS:
2 PENNECOOK AVE
OAK BLUFFS, MA 02557
DUKES COUNTY

SHEET TITLE
EQUIPMENT DETAILS

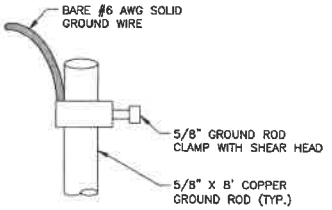
SHEET NUMBER
A-2



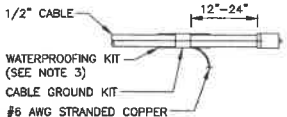
GENERAL WIRING DIAGRAM 1 / E-1
SCALE: N.T.S



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.
4. MINIMUM BEND RADIUS OF A CONDUCTOR SHALL NOT BE BENT TO LESS THAN 12 TIMES OVERALL CONDUCTOR DIAMETER.

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

USE MILBANK
MODEL NO.:
U2272-RL-ST9-BL
OR APPROVED EQUAL

METER MAIN WITH BYPASS DETAIL 5 / E-1
SCALE: N.T.S

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No. 40770
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CHECKED BY: AT

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	12/21/20	ISSUED FOR CONSTRUCTION	MR
A	12/14/20	ISSUED FOR REVIEW	MR

CLUSTER AND NODE NUMBER:
CRAN_RCTB_OAKB_004

SITE ID:
CRAN_RCTB_OAKB_004

SITE ADDRESS:
2 PENNECOOK AVE
OAK BLUFFS, MA 02557
DUKES COUNTY

SHEET TITLE
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER
E-1

STRUCTURAL ANALYSIS REPORT

For

CRAN_RCTB_OAKB_002

64 Circuit Avenue
Oak Bluffs, MA 02557

Equipment Mounted on Proposed Utility Pole

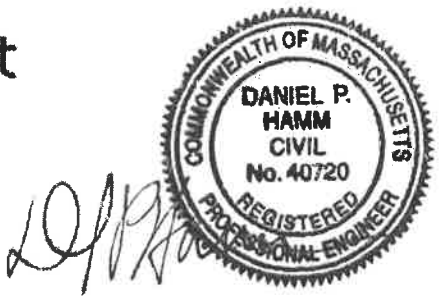
Prepared for:

CENTERLINE COMMUNICATIONS

at&t

Dated: December 18, 2020

Prepared by:



HUDSON Design Group LLC

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www.hudsondesigngroupllc.com

HUDSON
Design Group LLC

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the proposed utility pole supporting the proposed AT&T equipment.

This report represents this office's findings, conclusions and recommendations pertaining to the support of the proposed AT&T equipment listed below.

This office conducted an on-site visual survey of the above areas on June 23, 2020. Attendees included Patrick Barrett (HDG – Field Technician).

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the proposed pole **is in conformance** with the National Electric Safety Code 2017 (NESC). The utility pole structure is rated at 74.0%.

APPURTENANCES CONFIGURATION:

Appurtenances	Elev.	Mount
(1) GQ2410-06621 Antenna	33'-5"	Top of Pole Top Shroud
(3) AIR1281 Antenna	30'-7"	Pole Top Shroud
(1) Demarc Box	17'-0"	Side of Wood Pole
(1) Equipment Cabinet	13'-0"	Side of Wood Pole
(1) Disconnect Switch	10'-3"	Side of Wood Pole
(1) Elec. Meter	8'-9"	Side of Wood Pole

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft.)	Pass/Fail
SYP 2 (Proposed)	**74.0%**	**0 – 29.5**	**PASS**

HUDSON
Design Group LLC

DESIGN CRITERIA:

National Electric Safety Code 2017 (NESC) and the Massachusetts State Building Code 9th Edition.		
Wind		
City/Town:	Oak Bluffs	
County:	Dukes	
NESC Rule	Rule 250B	NESC Section 25
Construction Grade	C	NESC Section 25
Wind Load:	39.53 mph	NESC Table 230-2
Ice		
Loading District	Heavy	NESC Figure 250-1
Radial Ice Thickness:	0.50 in	NESC Table 230-1

1. Approximate height above grade to center of the proposed Galtronics antenna: 33'-5" +/-

2. Approximate height above grade to center of the proposed Ericsson antennas: 30'-7" +/-

***Calculations and referenced documents are attached.**

HUDSON
Design Group LLC

PROPOSED STRUCTURE:

The proposed 29'-6" +/- utility pole is assumed to be Southern Yellow Pine class 2 (Fb = 8000 psi) with an 11.62" diameter base. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

ANTENNA SUPPORT RECOMMENDATIONS:

- The new Galtronics antenna is proposed to be installed on the proposed pole top shroud using thru bolts.
- The new Ericsson antennas are proposed to be installed within the proposed pole top shroud secured to the wood pole using a low-profile pole top kit.

EQUIPMENT SUPPORT RECOMMENDATIONS:

The new equipment is proposed to be installed on the wood pole using the approved manufacturer's mounts.

Limitations and assumptions:

1. Reference the latest HDG construction drawings for all the equipment locations details.
2. Mount all equipment per manufacturer's specifications.
3. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities. Contractor to perform pre-inspection prior to construction.
4. All antennas and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.
5. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
6. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.
7. HDG did not perform any geotechnical analysis / or / investigation. Soil Information is unknown.

HUDSON
Design Group LLC

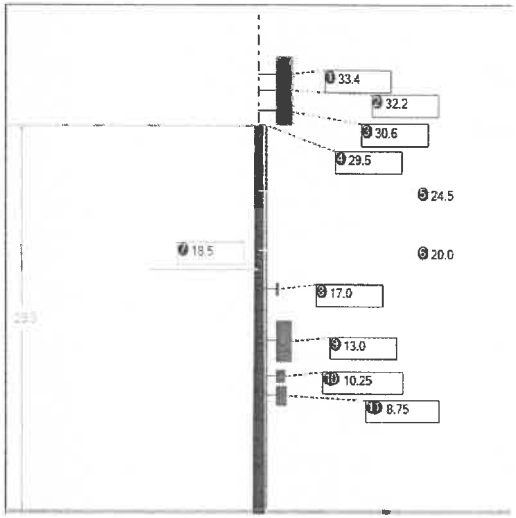
FIELD PHOTOS:

Photo 1: Sample photo illustrating the existing wood pole (to be removed and replaced).

HUDSON
Design Group LLC

Calculations

Pole Num:	**Proposed Pole**	Pole Length / Class:	**35 / 2**	Code:	**NESC**	Structure Type:	**Deadend**
Pole Number	**Proposed Pole**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Guy Wires Adequate**
Site Name	**cRAN_RCTB_OAKB_002**	Setting Depth (ft):	**5.5**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Site Address	**64 Circuit Avenue**	G/L Circumference (in):	**36.50**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
City, State	**Oak Bluffs, MA**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.30**
Zip Code	**02557**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Designed By	**KM**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:		**41.454517° N**	Longitude:		**70.558951° W**	Elevation:	**78'**



Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	**74.0**	0.0	84.8
Groundline	**74.0**	0.0	84.8
Vertical	**1.4**	18.3	263.0

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**63,663**	47.9	84.8
Groundline	**63,663**	47.9	84.8
GL Allowable	**87,248**		

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load With Overload Applied	
Description	**Lead Length (ft)**	**Lead Angle (deg)**	**Height (ft)**	**Nominal Capacity (%)**	**Wind Angle (deg)**	**Max* Load Capacity (%)**	**Wind Angle (deg)**
▸ Anchor	103.0	13.0		**0.0**	84.8	**0.0**	0.0
• EHS 3/8 (Span/Head)			18.5	**0.0**	84.8	**0.0**	0.0
▸ Single Helix Anchor	10.0	153.0		**21.3**	84.8	**28.3**	300.0
• EHS 3/8 (Sidewalk)			18.5	**30.7**	84.8	**40.8**	300.0
○ Sidewalk Strut	10.0	153.0	10.1	**81.5**	84.8	98.5	300.0
			System Capacity Summary:	**Adequate**		At Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 47.9°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,569	45.4	**35,899**	56.4	**41.2**	**2,995**	148	1	**2,997**	**44.1**
Comms	1,503	43.5	**28,060**	44.1	**32.2**	**2,341**	156	1	**2,343**	**34.5**
GuyBraces	132	3.8	**-5,084**	-8.0	**-5.8**	**-793**	4,204	40	**-754**	**-11.1**
GenericEquipments	116	3.4	**2,783**	4.4	**3.2**	**232**	785	7	**240**	**3.5**
Pole	135	3.9	**1,950**	3.1	**2.2**	**163**	1,778	17	**179**	**2.6**
Risers	3	0.1	**56**	0.1	**0.1**	**5**	56	1	**5**	**0.1**
Insulators	0	0.0	**0**	0.0	**0.0**	**0**	19	0	**0**	**0.0**
Pole Load	3,457	100.0	**63,663**	100.0	**73.0**	**4,943**	7,146	67	**5,010**	**73.7**
Pole Reserve Capacity			**23,585**		**27.0**	**1,857**			**1,790**	**26.3**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 47.9°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Proposed	3,191	92.3	**66,797**	104.9	**76.6**	**5,573**	1,165	11	**5,584**	**82.1**
Existing	132	3.8	**-5,084**	-8.0	**-5.8**	**-793**	4,204	40	**-754**	**-11.1**
Pole	135	3.9	**1,950**	3.1	**2.2**	**163**	1,778	17	**179**	**2.6**
Totals:	3,457	100.0	**63,663**	100.0	**73.0**	**4,943**	7,146	67	**5,010**	**73.7**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	DUPLEX 1/0	Proposed	24.45	6.79	0.9540		0.260	103.0	13.0	103.0			-5	217	212
Overlashed Bundle	10M	Proposed	24.50	6.79	0.3060	1.27	0.165	103.0	13.0	103.0	1,438	32,473	-5	564	33,032
											Totals:	**32,473**	**-10**	**781**	**33,244**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6M	Proposed	20.00	7.07	0.2420	1.13	0.104	103.0	13.0	103.0	1,375	25,357	-4	461	25,813

Fiber	TELE 1.0	Proposed	19.95	7.07	1.0000	0.400	103.0	13.0	103.0		-7	178	171
										Totals:	**25,357**	**-11**	**639**	**25,984**

GenericEquipment		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Cylinder	Top Shroud	Proposed	32.20	0.19	0.0	0.0	145.00	62.50	--	16.00	--	-3	1,084	1,081
Cylinder	Galtronics Antenna	Proposed	33.40	0.19	180.0	0.0	19.00	24.70	--	10.00	--	0	268	267
Box	Ericsson Antenna	Proposed	30.60	0.19	180.0	0.0	18.00	11.00	5.00	--	8.00	0	100	99
Box	Ericsson Antenna	Proposed	30.60	0.19	180.0	0.0	18.00	11.00	5.00	--	8.00	0	100	99
Box	Ericsson Antenna	Proposed	30.60	0.19	180.0	0.0	18.00	11.00	5.00	--	8.00	0	100	99
Box	Fiber Demarc	Proposed	17.00	6.45	35.0	0.0	3.00	12.30	3.40	--	3.00	3	35	37
Box	Equipment Cabinet	Proposed	13.00	14.00	35.0	0.0	160.00	39.00	18.00	--	15.00	299	427	726
Box	Disconnect Switch	Proposed	10.25	7.27	35.0	0.0	17.00	12.60	4.20	--	8.80	17	54	71
Box	Elec. Meter	Proposed	8.75	7.77	35.0	0.0	15.00	19.00	5.00	--	10.00	16	80	96
											Totals:	**330**	**2,247**	**2,577**

Riser		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
2" U-Guard 90.0° H:29.5	2" U-Guard	Proposed	29.50	5.90	90.0	90.0	29.50	354.00	2.00	2.00	354.00	9	43	52
											Totals:	**9**	**43**	**52**

Insulator		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Bolt	Three Bolt	Proposed	24.50	0.00	310.0	220.0	5.00	3.00	0.10	0	0	0
Bolt	Three Bolt	Proposed	20.00	0.00	310.0	220.0	5.00	3.00	0.10	0	0	0
									Totals:	**0**	**0**	**0**

Guy Wire and Brace		**Owner**	**Attach Height (ft)**	**End Height (ft)**	**Lead/Span Length (ft)**	**Wire Diameter (in)**	**Percent Solid (%)**	**Lead Angle (deg)**	**Incline Angle (deg)**	**Wire Weight (lbs/ft)**	**Rest Length (ft)**	**Stretch Length (in)**
EHS 3/8	Span/Head	Existing	18.50	18.50	103.00	0.375	75.00	13.0	0.0	0.273	100.26	0.00
EHS 3/8	Sidewalk	Existing	18.50	0.00	10.00	1.38	75.00	153.0	39.8	0.273	26.87	0.05

Guy Wire and Brace (Loads and Reactions)		**Elastic Modulus (psi)**	**Rated Tensile Strength (lbs)**	**Guy Strength Factor**	**Allowable Tension (lbs)**	**Initial Tension (lbs)**	**Loaded Tension*[2] (lbs)**	**Maximum Tension[2] (lbs)**	**Applied Tension[3] (lbs)**	**Vertical Load (lbs)**	**Shear Load In Guy Dir (lbs)**	**Shear Load At Report Angle (lbs)**	**Moment at GL[3] (ft-lb)**
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	431
EHS 3/8	Sidewalk	2.30e+7	15,400	0.90	13,860	700	5,657	5,143	4,257	2,723	3,273	-850	-5,874
									Totals:	**2,723**	**3,273**	**-850**	**-5,443**

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load[2] (lbs)	Load at Pole MCU[3] (lbs)	Max Required Capacity[2] (%)
Anchor	Existing	30.00	103.00	13.0	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor	Existing	18.00	10.00	153.0	20,000	1.00	20,000	5,657	4,257	28.3

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	18.33	32.94	10.87	4.00	7.96	11.62	2.13e+6	60.00	57.00	29.50	506,292	**5104.54**	**71.43**

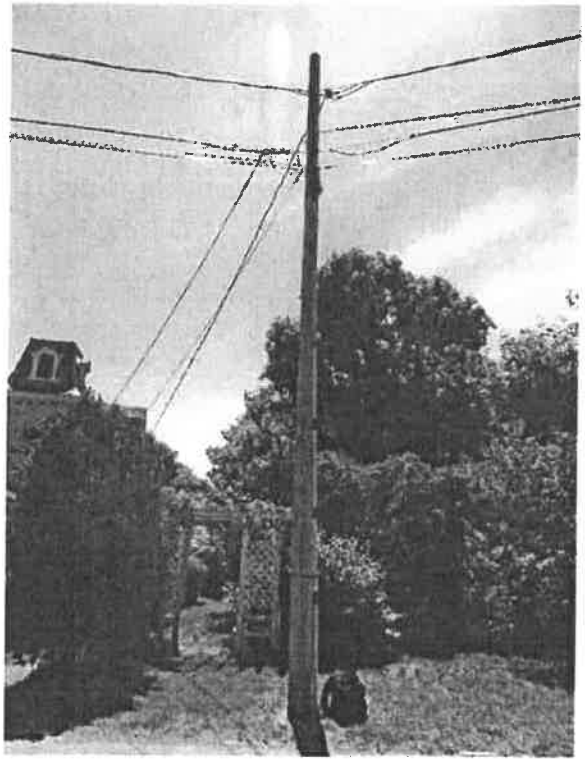
STRUCTURAL ANALYSIS REPORT

For

CRAN_RCTB_OAKB_003

11 Massasoit Avenue
Oak Bluffs, MA 02557

Equipment Mounted on Proposed Utility Pole



Prepared for:

CENTERLINE COMMUNICATIONS

at&t

COMMONWEALTH OF MASSACHUSETTS
DANIEL P. HAMM
CIVIL
No. 40720
REGISTERED PROFESSIONAL ENGINEER

Dated: December 23, 2020

Prepared by:

HUDSON Design Group LLC

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HUDSON
Design Group LLC

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the proposed utility pole supporting the proposed AT&T equipment.

This report represents this office's findings, conclusions and recommendations pertaining to the support of the proposed AT&T equipment listed below.

This office conducted an on-site visual survey of the above areas on June 23, 2020. Attendees included Patrick Barrett (HDG – Field Technician).

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the proposed pole **is in conformance** with the National Electric Safety Code 2017 (NESC). The utility pole structure is rated at 88.2%.

APPURTENANCES CONFIGURATION:

Appurtenances	Elev.	Mount
(1) GQ2410-06621 Antenna	37'-11"	Top of Pole Top Shroud
(3) AIR1281 Antennas	35'-1"	Pole Top Shroud
(1) Demarc Box	17'-0"	Side of Wood Pole
(1) Equipment Cabinet	13'-0"	Side of Wood Pole
(1) Disconnect Switch	10'-3"	Side of Wood Pole
(1) Elec. Meter	8'-9"	Side of Wood Pole

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft.)	Pass/Fail
SYP 2 (Proposed)	**88.2%**	**0 – 34.0**	**PASS**

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DESIGN CRITERIA:

National Electric Safety Code 2017 (NESC) and the Massachusetts State Building Code 9th Edition.		
Wind		
City/Town:	Oak Bluffs	
County:	Dukes	
NESC Rule	Rule 250B	NESC Section 25
Construction Grade	C	NESC Section 25
Wind Load:	39.53 mph	NESC Table 230-2
Ice		
Loading District	Heavy	NESC Figure 250-1
Radial Ice Thickness:	0.50 in	NESC Table 230-1

1. Approximate height above grade to center of the proposed Galtronics antenna: 37'-11" +/-

2. Approximate height above grade to center of the proposed Ericsson antennas: 35'-1" +/-

***Calculations and referenced documents are attached.**

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PROPOSED STRUCTURE:

The proposed 34'-0" +/- utility pole is assumed to be Southern Yellow Pine class 2 (Fb = 8000 psi) with a 12.25" diameter base. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

ANTENNA SUPPORT RECOMMENDATIONS:

- The new Galtronics antenna is proposed to be installed on the proposed pole top shroud using thru bolts.
- The new Ericsson antennas are proposed to be installed within the proposed pole top shroud secured to the wood pole using a low-profile pole top kit.

EQUIPMENT SUPPORT RECOMMENDATIONS:

The new equipment is proposed to be installed on the wood pole using the approved manufacturer's mounts.

Limitations and assumptions:

1. Reference the latest HDG construction drawings for all the equipment locations details.
2. Mount all equipment per manufacturer's specifications.
3. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities. Contractor to perform pre-inspection prior to construction.
4. All antennas and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.
5. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
6. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.
7. HDG did not perform any geotechnical analysis / or / investigation. Soil Information is unknown.

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FIELD PHOTOS:

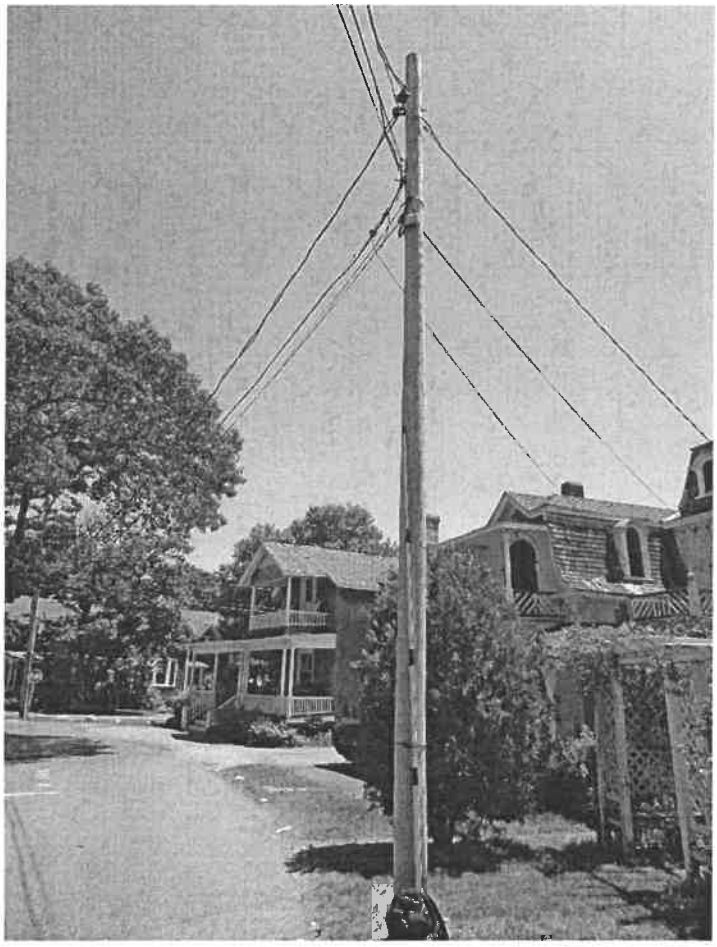

Photo 1: Sample photo illustrating the existing wood pole (to be removed and replaced).

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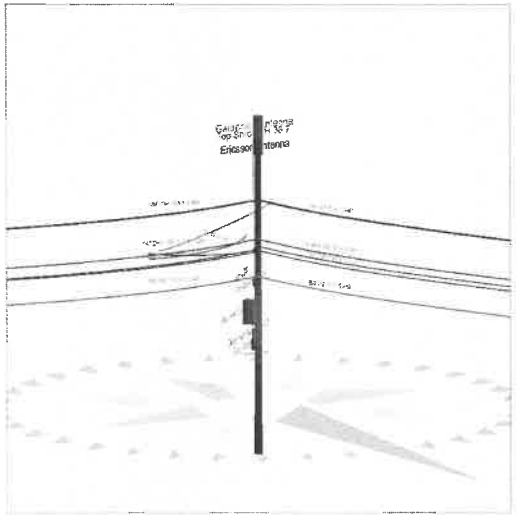
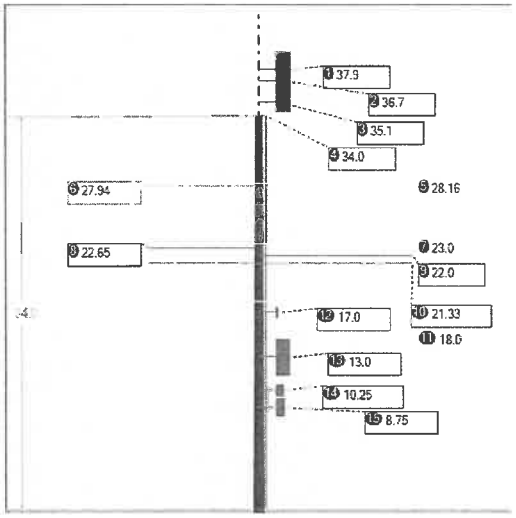
Calculations

Pole Num:	**Proposed Pole**	Pole Length / Class:	**40 / 2**	Code:	**NESC**	Structure Type:	**Unguyed Tangent**
Pole Number	**Proposed Pole**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Site Name	**cRAN_RCTB_OAKB_003**	Setting Depth (ft):	**6.0**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Site Address	**1 1 Massasoit Avenue**	G/L Circumference (in):	**38.48**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
City, State	**Oak Bluffs, MA**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.00**
Zip Code	**02557**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Designed By	**KM**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:		**41.452877° N**	Longitude:		**70.557324° W**	Elevation:	**30'**





Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	88.2	0.0	41.2
Groundline	88.2	0.0	41.2
Vertical	**8.7**	21.0	41.2

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**89,480**	33.6	41.2
Groundline	**89,480**	33.6	41.2
GL Allowable	**102,231**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 33.6°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	717	18.4	**20,857**	23.3	**20.4**	**1,364**	570	5	**1,369**	**20.1**
Comms	2,821	72.4	**61,145**	68.3	**59.8**	**3,999**	1,356	12	**4,010**	**59.0**
GenericEquipments	147	3.8	**3,654**	4.1	**3.6**	**239**	785	7	**246**	**3.6**
Pole	199	5.1	**3,505**	3.9	**3.4**	**229**	2,190	19	**248**	**3.6**
Risers	14	0.4	**311**	0.4	**0.3**	**20**	65	1	**21**	**0.3**
Insulators	0	0.0	**9**	0.0	**0.0**	**1**	49	0	**1**	**0.0**
Pole Load	3,898	100.0	**89,480**	100.0	**87.5**	**5,852**	5,016	43	**5,894**	**86.7**
Pole Reserve Capacity			**12,751**		**12.5**	**949**			**906**	**13.3**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 33.6°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Existing	2,869	73.6	**69,566**	77.7	**68.1**	**4,549**	1,678	14	**4,563**	**67.1**
Proposed	831	21.3	**16,409**	18.3	**16.1**	**1,073**	1,147	10	**1,083**	**15.9**
Pole	199	5.1	**3,505**	3.9	**3.4**	**229**	2,190	19	**248**	**3.6**
Totals:	3,898	100.0	**89,480**	100.0	**87.5**	**5,852**	5,016	43	**5,894**	**86.7**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	DUPLEX 1/0	Existing	28.11	6.60	0.9540		0.260	103.0	108.0	103.2			44	551	595
Secondary	DUPLEX 1/0	Existing	28.21	6.60	0.9540		0.260	103.0	108.0	103.2			44	553	597
Secondary	DUPLEX 1/0	Existing	28.11	6.60	0.9540		0.260	87.0	332.0	87.1			37	432	470
Secondary	DUPLEX 1/0	Existing	28.21	6.60	0.9540		0.260	87.0	332.0	87.1			37	434	471
Secondary	TRIPLEX 1/0	Existing	27.94	27.17	1.0300	0.50	0.399	32.0	183.0	32.0	336	-7,494	34	166	-7,293
Overlashed Bundle	10M	Existing	28.16	6.60	0.3060	2.87	0.165	103.0	108.0	103.2	1,039	8,004	39	1,313	9,356
Overlashed Bundle	10M	Existing	28.16	6.60	0.3060	1.89	0.165	87.0	332.0	87.1	1,145	15,597	33	1,031	16,661
											Totals:	**16,107**	**270**	**4,480**	**20,857**

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)

Telco	TELE 1.0	Existing	22.00	7.24	1.0000	2.01	0.400	87.0	332.0	87.1	1,210	12,876	67	934	13,877
Overlashed Bundle	1/4" EHS	Existing	23.00	7.17	0.2500	2.80	0.121	103.0	108.0	103.2	979	6,152	41	1,038	7,231
CATV	CATV .75	Existing	22.95	7.17	1.0700		0.900	103.0	108.0	103.2			87	415	502
CATV	CATV .50	Existing	22.65	30.42	0.5700	0.50	0.600	32.0	188.0	32.0	305	-6,001	19	78	-5,904
Overlashed Bundle	1/4" EHS	Existing	23.00	7.17	0.2500	1.78	0.121	87.0	332.0	87.1	1,091	12,143	35	815	12,992
CATV	CATV .75	Existing	22.95	7.17	1.0700		0.900	87.0	332.0	87.1			73	326	399
Telco	TELE 1.0	Existing	21.33	7.28	1.0000	2.96	0.400	103.0	108.0	103.2	803	4,684	67	1,154	5,905
Telco	TELE 1.0	Existing	21.33	7.28	1.0000	2.01	0.400	87.0	332.0	87.1	1,210	12,484	57	905	13,446
Telco	TELE 1.0	Existing	21.33	7.28	1.0000	2.96	0.400	103.0	108.0	103.2	803	4,684	-9	1,154	5,829
Telco	TELE 1.0	Existing	21.33	7.28	1.0000	0.51	0.400	32.0	185.0	32.0	304	-5,684	-6	115	-5,576
Overlashed Bundle	6M	Proposed	18.00	7.49	0.2420	1.86	0.104	87.0	332.0	87.1	781	6,800	34	623	7,456
Fiber	TELE 1.0	Proposed	17.95	7.49	1.0000		0.400	87.0	332.0	87.1			49	240	290
Overlashed Bundle	6M	Proposed	18.00	7.49	0.2420	2.85	0.104	103.0	108.0	103.2	711	3,500	40	794	4,334
Fiber	TELE 1.0	Proposed	17.95	7.49	1.0000		0.400	103.0	108.0	103.2			58	306	365
											Totals:	**51,635**	**613**	**8,897**	**61,145**

GenericEquipment		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Cylinder	Top Shroud	Proposed	36.70	0.19	0.0	0.0	145.00	62.50	--	16.00	--	-4	1,798	1,795
Cylinder	Galtronics Antenna	Proposed	37.90	0.19	180.0	0.0	19.00	24.70	--	10.00	--	0	444	444
Box	Ericsson Antenna	Proposed	35.10	0.19	180.0	0.0	18.00	11.00	5.00	--	8.00	0	218	218
Box	Ericsson Antenna	Proposed	35.10	0.19	180.0	0.0	18.00	11.00	5.00	--	8.00	0	218	218
Box	Ericsson Antenna	Proposed	35.10	0.19	180.0	0.0	18.00	11.00	5.00	--	8.00	0	218	218
Box	Fiber Demarc	Proposed	17.00	6.75	140.0	0.0	3.00	12.30	3.40	--	3.00	-1	55	55
Box	Equipment Cabinet	Proposed	13.00	14.30	140.0	0.0	160.00	39.00	18.00	--	15.00	-104	710	606
Box	Disconnect Switch	Proposed	10.25	7.58	140.0	0.0	17.00	12.60	4.20	--	8.80	-6	45	39
Box	Elec. Meter	Proposed	8.75	8.07	140.0	0.0	15.00	19.00	5.00	--	10.00	-6	68	62
											Totals:	**-122**	**3,776**	**3,654**

Riser		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
2" U-Guard 200.0° H:34.0	2" U-Guard	Proposed	34.00	6.25	200.0	200.0	34.00	408.00	2.00	2.00	408.00	-17	328	311
											Totals:	**-17**	**328**	**311**

Insulator		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Spool	Spool 2.5"	Existing	28.16	0.00	40.0	310.0	1.00	2.50	2.12	0	7	7
Bolt	Single Bolt	Existing	22.00	0.00	40.0	310.0	5.00	3.00	0.10	0	0	0
Bolt	Three Bolt	Existing	23.00	0.00	40.0	310.0	5.00	3.00	0.10	0	0	0
Bolt	Single Bolt	Existing	21.33	0.00	0.0	0.0	5.00	3.00	0.10	0	0	0
J-Hook	J-Hook	Existing	21.33	0.00	130.0	130.0	5.00	3.00	0.10	0	0	0
Bolt	Three Bolt	Proposed	18.00	0.00	40.0	310.0	5.00	3.00	0.10	0	0	0
									Totals:	**0**	**9**	**9**

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.98	33.24	11.37	6.65	7.96	12.25	2.13e+6	60.00	57.00	34.00	57,772	**576.51**	**11.49**

STRUCTURAL ANALYSIS REPORT

For

CRAN_RCTB_OAKB_004

2 Pennecook Avenue
Oak Bluffs, MA 02557

Equipment Mounted on Existing Utility Pole

Prepared for:

CENTERLINE COMMUNICATIONS

at&t

Dated: December 21, 2020

Prepared by:

HUDSON
Design Group LLC

45 Beechwood Drive
North Andover, MA 01845
Phone: (978) 557-5553
www.hudsondesigngroupllc.com

HUDSON
Design Group LLC

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the existing utility pole supporting the proposed AT&T equipment.

This report represents this office's findings, conclusions and recommendations pertaining to the support of the proposed AT&T equipment listed below.

This office conducted an on-site visual survey of the above areas on June 23, 2020. Attendees included Patrick Barrett (HDG – Field Technician).

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing pole **is in conformance** with the National Electric Safety Code 2017 (NESC). The utility pole structure is rated at 91.2%.

APPURTENANCES CONFIGURATION:

Appurtenances	Elev.	Mount
(1) GQ2410-06621 Antenna	32'-3"	Top of Pole Top Shroud
(3) AIR1281 Antennas	29'-5"	Pole Top Shroud
(1) Demarc Box	17'-0"	Side of Wood Pole
(1) Equipment Cabinet	13'-0"	Side of Wood Pole
(1) Disconnect Switch	10'-3"	Side of Wood Pole
(1) Elec. Meter	8'-9"	Side of Wood Pole

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft.)	Pass/Fail
SYP 5 (Existing)	**91.2%**	**0 – 28.3**	**PASS**

HUDSON Design Group LLC

DESIGN CRITERIA:

National Electric Safety Code 2017 (NESC) and the Massachusetts State Building Code 9th Edition.		
Wind		
City/Town:	Oak Bluffs	
County:	Dukes	
NESC Rule	Rule 250B	NESC Section 25
Construction Grade	C	NESC Section 25
Wind Load:	39.53 mph	NESC Table 230-2
Ice		
Loading District	Heavy	NESC Figure 250-1
Radial Ice Thickness:	0.50 in	NESC Table 230-1

1. Approximate height above grade to center of the proposed Galtronics antenna: 32'-3" +/-

2. Approximate height above grade to center of the proposed Ericsson antennas: 29'-5" +/-

***Calculations and referenced documents are attached.**

HUDSON Design Group LLC

EXISTING STRUCTURE:

The existing 28'-4" +/- utility pole is assumed to be Southern Yellow Pine class 5 (Fb = 8000 psi) with a 10" diameter base. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

ANTENNAS SUPPORT RECOMMENDATIONS:

- The new Galtronics antenna is proposed to be installed on the proposed pole top shroud using thru bolts.
- The new Ericsson antennas are proposed to be installed within the proposed pole top shroud secured to the wood pole using a low-profile pole top kit.

EQUIPMENT SUPPORT RECOMMENDATIONS:

The new equipment is proposed to be installed on the wood pole using the approved manufacturer's mounts.

Limitations and assumptions:

1. Reference the latest HDG construction drawings for all the equipment locations details.
2. Mount all equipment per manufacturer's specifications.
3. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities. Contractor to perform pre-inspection prior to construction.
4. All antennas and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.
5. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
6. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.
7. HDG did not perform any geotechnical analysis / or / investigation. Soil Information is unknown.

HUDSON
Design Group LLC

FIELD PHOTOS:

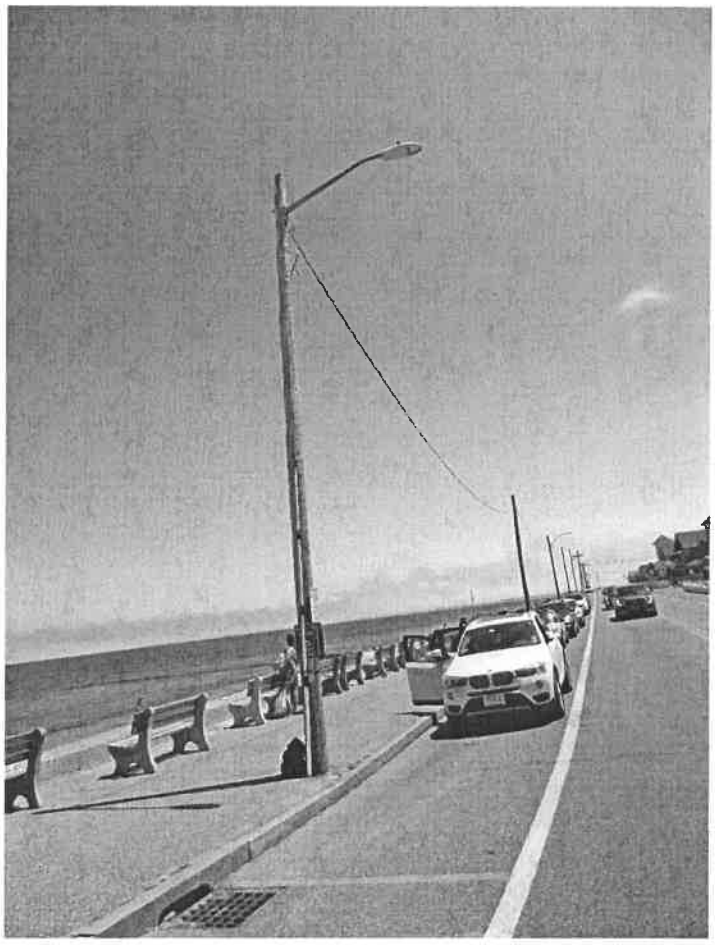
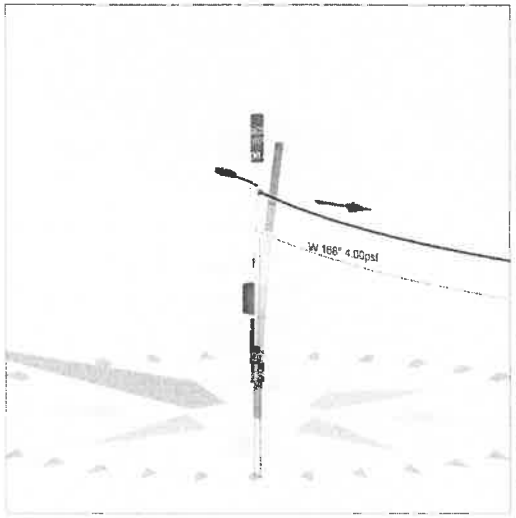


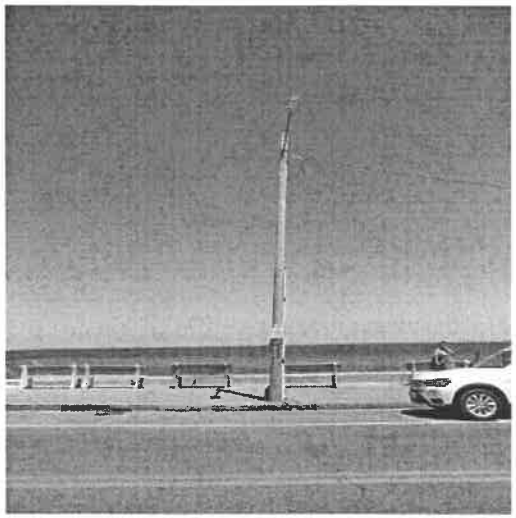
Photo 1: Sample photo illustrating the existing wood pole.

HUDSON
Design Group LLC

Calculations

Pole Num:	**Pole #63/2**	Pole Length / Class:	**35 / 5**	Code:	**NESC**	Structure Type:	**Deadend**
Pole Number	**Pole #63/2**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Site Name	**cRAN_RCTB_OAKB_004**	Setting Depth (ft):	**6.67**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Site Address	**2 Pennecook Avenue**	G/L Circumference (in):	**29.00**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
City, State	**Oak Bluffs, MA**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.30**
Zip Code	**02557**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Designed By	**KM**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**41.452216° N**	Longitude:		**70.553572° W**		Elevation:	**8'**





Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	91.2	0.0	167.9
Groundline	91.2	0.0	167.9
Vertical	**12.4**	19.6	167.9

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**39,706**	168.8	167.9
Groundline	**39,706**	168.8	167.9
GL Allowable	**43,759**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 168.8°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	828	46.1	**20,938**	52.7	**47.9**	**3,232**	214	3	**3,235**	**47.6**
Comms	567	31.5	**11,992**	30.2	**27.4**	**1,851**	146	2	**1,853**	**27.3**
GenericEquipments	210	11.7	**3,332**	8.4	**7.6**	**514**	813	12	**526**	**7.7**
Pole	120	6.7	**1,742**	4.4	**4.0**	**269**	948	14	**283**	**4.2**
Streetlights	40	2.2	**1,107**	2.8	**2.5**	**171**	114	2	**173**	**2.5**
Risers	31	1.8	**594**	1.5	**1.4**	**92**	54	1	**93**	**1.4**
Insulators	0	0.0	**1**	0.0	**0.0**	**0**	19	0	**0**	**0.0**
Pole Load	1,796	100.0	**39,706**	100.0	**90.7**	**6,129**	2,308	34	**6,164**	**90.6**
Pole Reserve Capacity			**4,053**		**9.3**	**671**			**636**	**9.4**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 168.8°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Exisitng	926	51.5	**22,340**	56.3	**51.1**	**3,449**	366	5	**3,454**	**50.8**
Proposed	751	41.8	**15,624**	39.4	**35.7**	**2,412**	994	15	**2,427**	**35.7**
Pole	120	6.7	**1,742**	4.4	**4.0**	**269**	948	14	**283**	**4.2**
Totals:	1,796	100.0	**39,706**	100.0	**90.7**	**6,129**	2,308	34	**6,164**	**90.6**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	DUPLEX 1/0	Exisitng	24.95	5.36	0.9540		0.260	96.0	168.0	96.5			33	0	33
Secondary	DUPLEX 1/0	Exisitng	25.05	5.36	0.9540		0.260	96.0	168.0	96.5			33	0	33
Overlashed Bundle	10M	Exisitng	25.00	5.36	0.3060	3.70	0.165	96.0	168.0	96.5	637	20,842	29	0	20,872
											Totals:	**20,842**	**96**	**0**	**20,938**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6M	Proposed	21.00	5.64	0.2420	3.70	0.104	96.0	168.0	96.5	436	11,979	5	0	11,985

Fiber	TELE 1.0	Proposed	20.95	5.64	1.0000	0.400	96.0	168.0	96.5	8	0	8
									Totals:	**11,979**	**13**	**0**	**11,992**

GenericEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Box	Road Sign	Exisitng	7.00	4.62	252.0	0.0	5.00	24.00	1.00	--	15.00	0	15	16
Box	Road Sign	Exisitng	5.00	4.76	162.0	0.0	5.00	24.00	1.00	--	15.00	4	139	143
Box	Road Sign	Exisitng	5.00	4.76	342.0	0.0	5.00	24.00	1.00	--	15.00	-4	139	136
Box	Fiber Demarc	Proposed	17.00	5.12	0.0	0.0	3.00	12.30	3.40	--	3.00	-2	49	47
Box	Equipment Cabinet	Proposed	13.00	12.70	0.0	0.0	160.00	39.00	18.00	--	15.00	-318	600	282
Box	Disconnect Switch	Proposed	10.25	6.00	0.0	0.0	17.00	12.60	4.20	--	8.80	-16	87	71
Box	Elec. Meter	Proposed	8.75	6.50	0.0	0.0	15.00	19.00	5.00	--	10.00	-15	127	112
Cylinder	Top Shroud	Proposed	31.00	0.06	0.0	0.0	145.00	62.50	--	16.00	--	1	1,517	1,518
Cylinder	Galtronics Antenna	Proposed	32.20	0.06	180.0	0.0	19.00	24.70	--	10.00	--	0	375	375
Box	Ericsson Antenna	Proposed	29.40	0.06	180.0	0.0	18.00	11.00	5.00	--	8.00	0	210	210
Box	Ericsson Antenna	Proposed	29.40	0.06	180.0	0.0	18.00	11.00	5.00	--	8.00	0	210	210
Box	Ericsson Antenna	Proposed	29.40	0.06	180.0	0.0	18.00	11.00	5.00	--	8.00	0	210	210
											Totals:	**-349**	**3,681**	**3,332**

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Flood Light	Streetlight - 6 ft. Arm	Exisitng	26.00	2.79	252.0	252.0	60.00	24.00	20.00	3.00	72.00	56	1,050	1,107
											Totals:	**56**	**1,050**	**1,107**

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
2" U-Guard 60.0° H:28.33	2" U-Guard	Proposed	28.33	4.80	60.0	60.0	28.33	339.96	2.00	2.00	339.96	-4	598	594
											Totals:	**-4**	**598**	**594**

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
J-Hook	J-Hook	Exisitng	25.00	0.00	165.0	165.0	5.00	3.00	0.10	0	0	0
Bolt	Three Bolt	Proposed	21.00	0.00	248.0	158.0	5.00	3.00	0.10	0	0	0
									Totals:	**0**	**1**	**1**

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	19.64	34.48	8.28	5.48	5.26	9.24	2.13e+6	60.00	57.00	28.33	18,562	**186.09**	**8.06**

241/398

Form 1

APPLICATION AND POLE ATTACHMENT LICENSE

ANTENNA / NODE LICENSE

Licensee New Cingular Wireless PCS, LLC / AT&T - 15213973
Street Address 550 Cochituate Rd., 2nd Floor
City, State and Zip Framingham, MA 01701
Date 7/27/2020

In accordance with the terms and conditions of the **CONSTRUCTION REQUIREMENTS FOR DISTRIBUTED ANTENNA SYSTEMS (DAS) ON DISTRIBUTION POLES AGREEMENT**, application is hereby made for a license to make 2 Antenna (Node) Attachment to pole and 1 Power Supply and 1 other attachments located in the municipality of Oak Bluffs in the State of Massachusetts.

This request will be designated **Pole Attachment License Application Number 15213973 - cRAN_RCTB_OAKB_002. Attached are my power supply specifications if applicable. The cable's strand size is 1/2" and weight per foot of cable is 0.12 .**

Licensee's Name (Print) Jilian Fancher

Signature Jilian Fancher

NSTAR d/b/a EVERSOURCE
Power Company

Title Site acquisition Specialist

Tel. No. 508-813-1614

Fax No. 617-249-0819

E-mail jfancher@clinellc.com

**********************For licensor use, do not write below this line*******************

Pole Attachment License Application Number **15213973 - cRAN_RCTB_OAKB_002** is hereby granted to make 1 Antenna / Node attachment described in this application to 1 attachments to JO[1] pole _____ attachment to FO[2] pole, _____ attachment to JU[3] pole, _____ Power Supplies and _____ other attachments located in the municipality of Oak Bluffs, in the State of Massachusetts as indicated on the attached Form 3.

Licensor's Name (Print) Richard Comeau

Signature Richard Comeau

(AGREEMENT ID #)

Title Supervisor

Date 12/14/2020

Tel. No. _____

Form 2

AUTHORIZATION FOR FIELD SURVEY WORK

Licensee: New Cingular Wireless PCS, LLC

In accordance with Article III & Appendix I of the Pole Attachment Agreement, following is a summary of the charges which will apply to complete a field survey covering Pole Attachment License Application Number **15213973 - cRAN_RCTB_OAKB_002** in the municipality of Oak Bluffs in the State of Massachusetts.

FIELD SURVEY CHARGES

Field Survey	#Poles	Unit Rate	Total
Field Survey Application Fee (includes 1st pole)	1 pole	$139.00	$ 139.00
Field Survey 2 -200 Poles	0	$ 13.45 per Pole	$
Additional Travel Time*		$200.00 per Day	$
TOTAL Charges			$ 139.00

$

* Based on average of 75 poles surveyed per day, add $200.00 travel time for each additional day required to complete survey.

Please note, if you calculated the cost incorrectly, your check will be returned and a new check for the correct amount must be received by this office in order to schedule the survey. If you need assistance, please call the **HOTLINE on** 800-340-9822. The required field survey covering Pole Attachment License Application # **15213973 - cRAN_RCTB_OAKB_002** is authorized. I am enclosing an advance payment in the amount of $ 139.00.

Licensee's Name (Print) Jilian Fancher
Agent for New Cingular Wireless PCS

Signature Jilian Fancher
Title Site Acquisition Specialist
Address 750 W. Center St., Suite 301
West Bridgewater, MA 02379
Tel. No. 508-813-1614
Date: 7/27/2020

Billing

Please send monthly electric bills to:
AT&T Mobility
c/o Engie Insight – MS7372
P. O. Box 2456
Spokane, WA 99210-2456
Bill email: attlivebills.impact@engie.com

Please include FA #15213973 on the bill.

Please continue to send make ready fees as you currently are.

FORM 3 – EVERSOURCE ITEMIZED Pole Make-Ready Work Charges ***PAGE__1_ OF__1_***

RCE to Complete: Total Poles Surveyed _____ Total Poles Requiring NSTAR Make-Ready _____

Appendix IV Form 3

FIELD SURVEY / MAKE READY WORK FORM														
SURVEYORS:				***DATE OF SURVEY:***								CWO #:	
Verizon				***MUNIC: Oak Bluffs STATE: MA***								Exch Code: Munic Code:	
Licensee	New Cingular Wireless PCS LLC			***LICENSEE NAME: New Cingular Wireless PCS LLC***								***LICENSEE APPLICATION #:*** **15213973 - cRAN_RCTB_OAKB_002**	
EVERSOURCE				***ELCO NAME:*** EVERSOURCE								**NSTAR APPLICATION #**	
LOCATION		***POLE #***		***ATT***	***OWNERSHIP***						CHARGE		WORK DESCRIPTION	
TEL RTE / STREET NAME ***List one pole per line***		***Tel***	***El***	***F/C P.S. Riser***	***J.O.***		***J.U.***		***F.O.***		YES	NO	TASK #S / REMARKS	* Height of Att.
					Tel	***El***	***Tel***	***El***	***Tel***	***El***				
64 Circuit Ave., Oak Bluffs, MA 41.454517, -70.558951			**19/ 1S**		VZ	✓							**Requesting pole replacement for clearance. Pole top antenna install with shroud mounted at 11'6" and meter at 8'**	**29.5' (replacement)**
														*
														*
														*
														*
TOTALS:						1								

- **Height of Attachment = Height of Licensee Attachment shall be 40" below ELCO MGN unless otherwise noted here by Verizon and EVERSOURCE surveyor.**

Licensee to complete bold italicized areas only. (Provide ownership information if known)

N

1"=20' (1/A-1)

1"=40'

GRAPHIC SCALE

0 10 20 40 60 FEET

NOTE:

TOP OF PROPOSED ENCLOSURE
ELEV. = 34'-2"± A.G.L

℄ OF PROPOSED ANTENNA
ELEV. = 32'-11"± A.G.L

℄ OF PROPOSED ANTENNA
ELEV. = 30'-1"± A.G.L

TOP OF PROPOSED POLE
ELEV. = 29'-6"± A.G.L

RELOCATED EXISTING
EXISTING GUY WIRE
ELEV. = 26'-0"± A.G.L

PROPOSED SECONDARY LINE
ELEV. = (T.B.D.)

TOP OF EXISTING WOOD POLE
(TO BE REPLACED)
ELEV. = 24'-2"± A.G.L

EXISTING EXISTING GUY WIRE
(TO BE RELOCATED)
ELEV. = 23'-03"± A.G.L

PROPOSED FIBER
ELEV. = T.B.D.

34'-2"±

32'-11"±

30'-1" ±

PROPOSED DEMARC BOX BY FIBER PROVIDER, CONNECTED TO FIBER ABOVE BY FIBER PROVIDER

5/A-2 PROPOSED FIBER JUMPERS (FRONTHAUL & BACKHAUL)

PROPOSED EQUIPMENT CABINET

PROPOSED (100) 60 AMP 2-POLE DISCONNECT SWITCH FUSED AND (5) 20 AMP 2-POLE CIRCUIT BREAKERS

PROPOSED (1) METER MAIN WITH BYPASS (METER SHALL NOT BE MOUNTED ON STREET SIDE)

PROPOSED NEW CLASS 2 POLE TO REPLACE EXISTING UTILITY POLE #19/1S (BY OTHERS)

PROPOSED (1) #2 AWG COPPER GROUND WIRE INSIDE 1/2" UV RATED PVC

GROUND LEVEL
ELEV. = 0'-0"± A.G.L

PROPOSED 5/8"X8' COPPER CLAD GROUND ROD. (TYP.)

2' MIN

2' MIN

6' (MIN)

GROUND ROD(S) SHALL BE INSTALLED IN UNDISTURBED SOIL, 2' MIN. FROM THE F OF GROUND ROD(S) SHALL BE 24" MIN. FINISHED GRADE OR 6" BELOW FROST LI POLE GROUND SHALL HAVE A MAXIMUM OF 25 OHMS.

PROPOSED ANTENNA 1/A-2

PROPOSED (3) ANTENNAS WITH INTEGRA RRHs MODEL # ERICSSON AIR1281 MOUNTED INSIDE OF POLE TOP SHROUD

PROPOSED CHARLES INDUSTRIES LOW PROFILE POLE TOP MOUNT KIT

48" MIN.

PROPOSED (1) WEATHERHEAD

PROPOSED CABLES IN PROPOSED 2" U-GUARD

PROPOSED (3) #3 AWG & (1) #8 AWG GND WIRES INSIDE PROPOSED (1) UV RATED 1-1/4" MIN. SCH. 40 PVC CONDUIT

RELOCATED EXISTING ARM SUPPORT

EVERSOURCE WANTS THE LOAD WIRING FROM THE METER TO EXIT OUT OF THE BOTTOM OR TOP LEFT OF METER ONLY.

11'-5" (AGL)

8'-0" (AGL)

TOTAL VOLUME: 1.22 CU.FT.

NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS.

may exceed the FCC's
station.
the antenna.
then 3, for help if you

N RD899

BE PLACED OPPOSITE
NA

1
A-2

"±

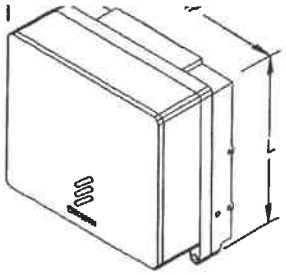
VENTED ONE-PIECE 4G RF TRANSPARENT ANTENNA RADOME COVER

PROPOSED ANTENNA

PROPOSED (3) ANTENNAS WITH INTEGRATED RRHs MODEL # ERICSSON AIR1281 MOUNTED INSIDE OF POLE TOP SHROUD

CHARLES INDUSTRIES 5G POLE TOP SHROUD. DIMENSIONS: 16"ø x 60.5"H WEIGHT: 145 LBS

PROPOSED CHARLES INDUSTRIES LOW PROFILE POLE TOP MOUNT KIT

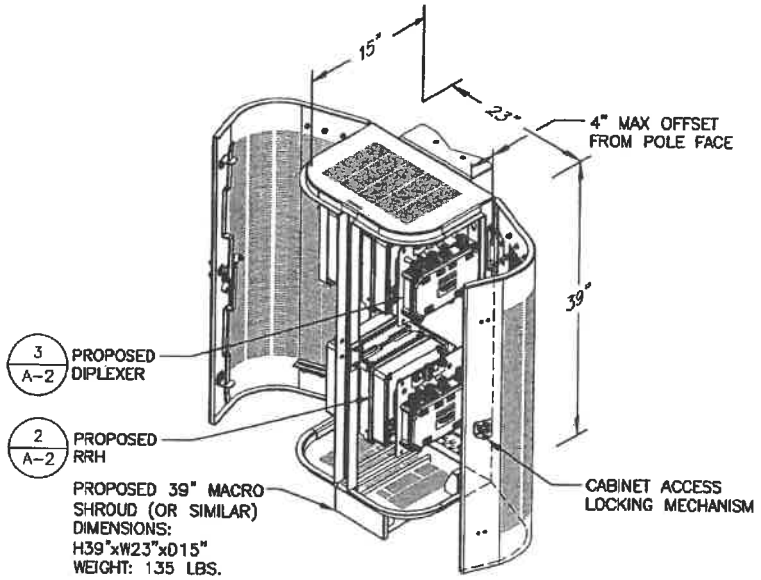


MODEL	QTY.	L	W	D	WGT.
4402	2	8.0"	8.0"	4.0"	11 LBS

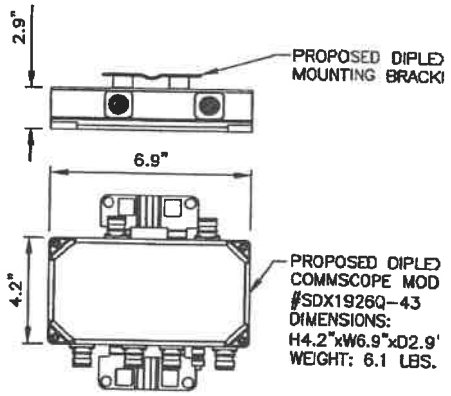
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

RRH DETAIL
SCALE: N.T.S

2
A-2



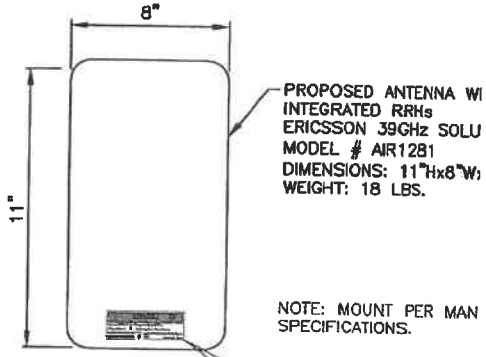
CABINET VOLUME:
39" x 15" X 23"
= 7.78 CU.FT.



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DIPLEXER DETAIL (AS REQUIRED)
SCALE: N.T.S

3
A-2



NOTICE

RF energy emitted by this antenna may exceed the FCC's exposure limits for the general population.

Stay at least 1 feet away from the antenna.

2411456

Form 1

APPLICATION AND POLE ATTACHMENT LICENSE

ANTENNA / NODE LICENSE

Licensee New Cingular Wireless PCS, LLC / AT&T - 15213974
Street Address 550 Cochituate Rd., 2nd Floor
City, State and Zip Framingham, MA 01701
Date 7/27/2020

In accordance with the terms and conditions of the **CONSTRUCTION REQUIREMENTS FOR DISTRIBUTED ANTENNA SYSTEMS (DAS) ON DISTRIBUTION POLES AGREEMENT**, application is hereby made for a license to make 2 Antenna (Node) Attachment to pole and 1 Power Supply and 1 other attachments located in the municipality of Oak Bluffs in the State of Massachusetts.

This request will be designated **Pole Attachment License Application Number 15213974 - cRAN_RCTB_OAKB_003. Attached are my power supply specifications if applicable. The cable's strand size is 1/2" and weight per foot of cable is 0.12.**

NSTAR d/b/a EVERSOURCE
Power Company

Licensee's Name (Print) Jilian Fancher
Signature Jilian Fancher
Title Site acquisition Specialist
Tel. No. 508-813-1614
Fax No. 617-249-0819
E-mail jfancher@clinellc.com

**********************For licensor use, do not write below this line*******************

Pole Attachment License Application Number **15213974 - cRAN_RCTB_OAKB_003** is hereby granted to make 1 Antenna / Node attachment described in this application to 1 attachments to JO[1] pole_____ attachment to FO[2] pole, _____ attachment to JU[3] pole,_____ Power Supplies and _____other attachments located in the municipality of Oak Bluffs, in the State of Massachusetts as indicated on the attached Form 3.

Licensor's Name (Print) Richard Comeau
Signature Richard A Comeau

_____
(AGREEMENT ID #)

Title Supervisor
Date 12/3/2020
Tel. No. _____

Form 2

AUTHORIZATION FOR FIELD SURVEY WORK

Licensee: New Cingular Wireless PCS, LLC

In accordance with Article III & Appendix I of the Pole Attachment Agreement, following is a summary of the charges which will apply to complete a field survey covering Pole Attachment License Application Number **15213974 - cRAN_RCTB_OAKB_003** in the municipality of Oak Bluffs in the State of Massachusetts.

FIELD SURVEY CHARGES

Field Survey	#Poles	Unit Rate	Total
Field Survey Application Fee (includes 1st pole)	1 pole	$139.00	$ 139.00
Field Survey 2 -200 Poles	0	$ 13.45 per Pole	$
Additional Travel Time*		$200.00 per Day	$
TOTAL Charges			$ 139.00

$

* Based on average of 75 poles surveyed per day, add $200.00 travel time for each additional day required to complete survey.

Please note, if you calculated the cost incorrectly, your check will be returned and a new check for the correct amount must be received by this office in order to schedule the survey. If you need assistance, please call the **HOTLINE on** 800-340-9822. The required field survey covering Pole Attachment License Application # **15213974 - cRAN_RCTB_OAKB_003** is authorized. I am enclosing an advance payment in the amount of $ 139.00.

Licensee's Name (Print) Jilian Fancher
Agent for New Cingular Wireless PCS

Signature Jilian Fancher
Title Site Acquisition Specialist
Address 750 W. Center St., Suite 301
West Bridgewater, MA 02379
Tel. No. 508-813-1614
Date: 7/27/2020

Billing

Please send monthly electric bills to:
AT&T Mobility
c/o Engie Insight – MS7372
P. O. Box 2456
Spokane, WA 99210-2456
Bill email: attlivebills.impact@engie.com

Please include FA #15213974 on the bill.

Please continue to send make ready fees as you currently are.

FORM 3 – EVERSOURCE ITEMIZED Pole Make-Ready Work Charges ***PAGE_1_ OF_1_***

RCE to Complete: Total Poles Surveyed _____ Total Poles Requiring NSTAR Make-Ready ____

Appendix IV Form 3

FIELD SURVEY / MAKE READY WORK FORM															
SURVEYORS:				***DATE OF SURVEY:***								CWO #:			
Verizon				***MUNIC: Oak Bluffs STATE: MA***								Exch Code: Munic Code:			
Licensee	New Cingular Wireless PCS LLC			***LICENSEE NAME: New Cingular Wireless PCS LLC***								***LICENSEE APPLICATION #:*** **15213974 - cRAN_RCTB_OAKB_003**			
EVERSOURCE				***ELCO NAME:*** EVERSOURCE								**NSTAR APPLICATION #**			
LOCATION		***POLE #***		***ATT***	***OWNERSHIP***							CHARGE		WORK DESCRIPTION	
TEL RTE / STREET NAME ***List one pole per line***		***Tel***	***El***	***F/C P.S. Riser***	***J.O.***		***J.U.***		***F.O.***			YES	NO	TASK #S / REMARKS	* Height of Att.
					Tel	***El***	***Tel***	***El***	***Tel***	***El***					
11 Massasoit Ave., Oak Bluffs, MA 41.453177, -70.557071			**48/ 7**		VZ									**Pole top antenna install with shroud mounted at 11'6" and meter at 8'**	**27' pole top**
															*
															*
															*
															*
TOTALS:															

- **Height of Attachment = Height of Licensee Attachment shall be 40" below ELCO MGN unless otherwise noted here by Verizon and EVERSOURCE surveyor.**

Licensee to complete bold italicized areas only. (Provide ownership information if known)

1"=30'
1"=60'

1
A-1

GRAPHIC SCALE
0 15 30 60 90 FEET

NOTE:

TOP OF PROPOSED ENCLOSURE
ELEV. = 32'-2"± A.G.L

℄ OF PROPOSED ANTENNA
ELEV. = 30'-11"± A.G.L

℄ OF PROPOSED ANTENNA
ELEV. = 28'-1"± A.G.L

TOP OF EXISTING WOOD POLE
ELEV. = 27'-0"± A.G.L

EXISTING SECONDARY LINE
(TO BE RELOCATED)
ELEV. = 24'-10"±

EXISTING CABLE
(TO BE RELOCATED)
ELEV. = 21'-7"±

EXISTING CABLE
(TO BE RELOCATED)
ELEV. = 20'-10"±

PROPOSED FIBER
ELEV. = T.B.D.

32'-2"±

30'-11"±

28'-1"±

PROPOSED DEMARC BOX BY FIBER PROVIDER, CONNECTED TO FIBER ABOVE BY FIBER PROVIDER

PROPOSED FIBER JUMPERS (FRONTHAUL & BACKHAUL)

5
A-2
PROPOSED EQUIPMENT CABINET

PROPOSED (100) 60 AMP 2-POLE DISCONNECT SWITCH FUSED AND (5) 20 AMP 2-POLE CIRCUIT BREAKERS

PROPOSED (1) METER MAIN WITH BYPASS (METER SHALL NOT BE MOUNTED ON STREET SIDE)

EXISTING UTILITY POLE #48/7

PROPOSED (1) #2 AWG COPPER GROUND WIRE INSIDE 1/2" UV RATED PVC

GROUND LEVEL
ELEV. = 0'-0"± A.G.L

PROPOSED 5/8"X8' COPPER CLAD GROUND ROD. (TYP.)

2' MIN

2' MIN

6' (MIN)

GROUND ROD(S) SHALL BE INSTALLED IN UNDISTURBED SOIL, 2' MIN. FROM THE F OF GROUND ROD(S) SHALL BE 24" MIN. FINISHED GRADE OR 6" BELOW FROST LI POLE GROUND SHALL HAVE A MAXIMUM OF 25 OHMS

48" MIN.

PROPOSED ANTENNA
1
A-2

PROPOSED (3) ANTENNAS WITH INTEGRA RRHs MODEL # ERICSSON AIR1281 MOUNTED INSIDE OF POLE TOP SHROUD

PROPOSED CHARLES INDUSTRIES LOW PROFILE POLE TOP MOUNT KIT

PROPOSED (1) WEATHERHEAD

RELOCATED EXISTING SECONDARY LINE
ELEV. = 23'-10"±

PROPOSED CABLES IN PROPOSED 2" U-GUARD

RELOCATED EXISTING CABLE
ELEV. = 20'-7"±

RELOCATED EXISTING CABLE
ELEV. = 19'-10"±

PROPOSED (3) #3 AWG & (1) #8 AWG GND WIRES INSIDE PROPOSED (1) UV RATED 1-1/4" MIN. SCH. 40 PVC CONDUIT

EVERSOURCE WANTS THE LOAD WIRING FROM THE METER TO EXIT OUT OF THE BOTTOM OR TOP LEFT OF METER ONLY.

11'-6" (AGL)

8'-0" (AGL)

TOTAL VOLUME: 1.22 CU.FT.

NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS.

TICE

antenna may exceed the FCC's neral population.

way from the antenna.

option 9 then 3, for help if you feet.

NC. P/N RD899
"x6.5"
S MUST BE PLACED OPPOSITE ANTENNA

TAIL (1 / A-2)

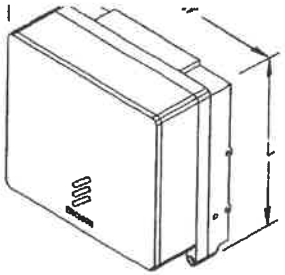
VENTED ONE-PIECE 4G RF TRANSPARENT ANTENNA RADOME COVER

PROPOSED ANTENNA

PROPOSED (3) ANTENNAS WITH INTEGRATED RRHs MODEL # ERICSSON AIR1281 MOUNTED INSIDE OF POLE TOP SHROUD

CHARLES INDUSTRIES 5G POLE TOP SHROUD. DIMENSIONS: 16"ø x 60.5"H WEIGHT: 145 LBS

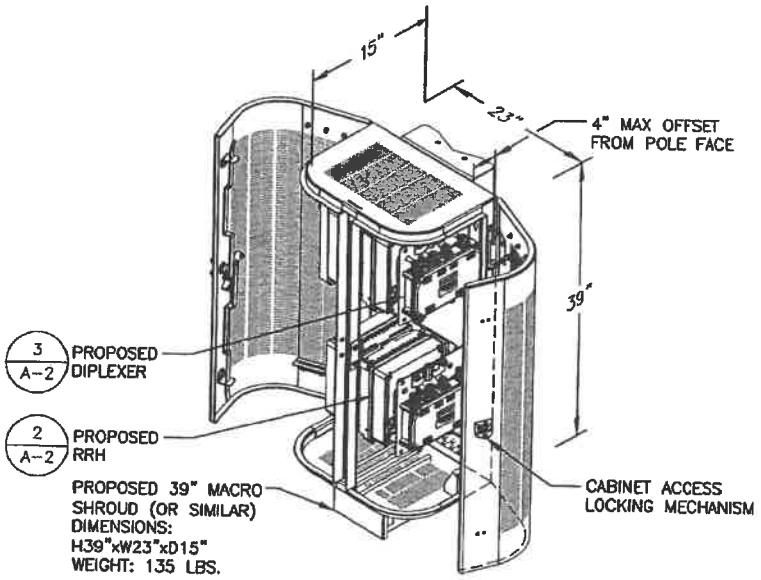
PROPOSED CHARLES INDUSTRIES LOW PROFILE POLE TOP MOUNT KIT



MODEL	QTY.	L	W	D	WGT.
4402	2	8.0"	8.0"	4.0"	11 LBS

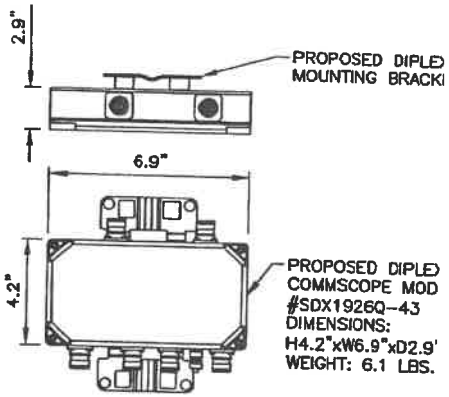
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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



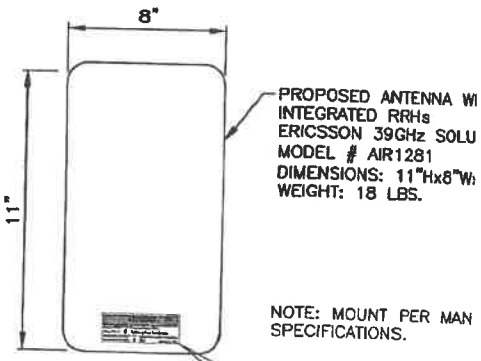
CABINET VOLUME:
39" x 15" X 23"
= 7.78 CU.FT.

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



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DIPLEXER DETAIL (AS REQUIRED) (3 / A-2)
SCALE: N.T.S



NOTE: MOUNT PER MAN
SPECIFICATIONS.

NOTICE

RF energy emitted by this antenna may exceed the FCC's exposure limits for the general population.

Stay at least 1 feet away from the antenna.

Call AT&T at 800-638-2822, option 9 then 3, for help if you need access within 1 feet.

STONEHOUSE SIGNS INC. P/N RD899

FA 15213958 USID 289276 2411383

Form 1

APPLICATION AND POLE ATTACHMENT LICENSE

ANTENNA / NODE LICENSE

Licensee New Cingular Wireless PCS, LLC / AT&T - 15213958
Street Address 550 Cochituate Rd., 2nd Floor
City, State and Zip Framingham, MA 01701
Date 7/27/2020

In accordance with the terms and conditions of the **CONSTRUCTION REQUIREMENTS FOR DISTRIBUTED ANTENNA SYSTEMS (DAS) ON DISTRIBUTION POLES AGREEMENT**, application is hereby made for a license to make 2 Antenna (Node) Attachment to pole and 1 Power Supply and 1 other attachments located in the municipality of Oak Bluffs in the State of Massachusetts.

This request will be designated **Pole Attachment License Application Number 15213958 - cRAN_RCTB_OAKB_004. Attached are my power supply specifications if applicable. The cable's strand size is 1/2" and weight per foot of cable is 0.12 .**

Licensee's Name (Print) Jilian Fancher

Signature Jilian Fancher

NSTAR d/b/a EVERSOURCE
Power Company

Title Site acquisition Specialist

Tel. No. 508-813-1614

Fax No. 617-249-0819

E-mail jfancher@clinellc.com

***********************For licensor use, do not write below this line*******************

Pole Attachment License Application Number **15213958 - cRAN_RCTB_OAKB_004** is hereby granted to make 1 Antenna / Node attachment described in this application to 1 attachments to JO[1] pole attachment to FO[2] pole, attachment to JU[3] pole, Power Supplies and other attachments located in the municipality of Oak Bluffs, in the State of Massachusetts as indicated on the attached Form 3.

Licensor's Name (Print) Richard Comeau

Signature Richard A Comeau

(AGREEMENT ID #)

Title Supervisor

Date 10/2/2020

Tel. No.

Form 2

AUTHORIZATION FOR FIELD SURVEY WORK

Licensee: New Cingular Wireless PCS, LLC

In accordance with Article III & Appendix I of the Pole Attachment Agreement, following is a summary of the charges which will apply to complete a field survey covering Pole Attachment License Application Number **15213958 - cRAN_RCTB_OAKB_004** in the municipality of Oak Bluffs in the State of Massachusetts.

FIELD SURVEY CHARGES

Field Survey	#Poles	Unit Rate	Total
Field Survey Application Fee (includes 1st pole)	1 pole	$139.00	$ 139.00
Field Survey 2 -200 Poles	0	$ 13.45 per Pole	$_____
Additional Travel Time*	_____	$200.00 per Day	$_____
$_____			
TOTAL Charges			$ 139.00

* Based on average of 75 poles surveyed per day, add $200.00 travel time for each additional day required to complete survey.

Please note, if you calculated the cost incorrectly, your check will be returned and a new check for the correct amount must be received by this office in order to schedule the survey. If you need assistance, please call the **HOTLINE** on 800-340-9822. The required field survey covering Pole Attachment License Application # **15213958 - cRAN_RCTB_OAKB_004** is authorized. I am enclosing an advance payment in the amount of $ 139.00.

Licensee's Name (Print) Jilian Fancher
Agent for New Cingular Wireless PCS

Signature Jilian Fancher
Title Site Acquisition Specialist
Address 750 W. Center St., Suite 301
West Bridgewater, MA 02379
Tel. No. 508-813-1614
Date: 7/27/2020

Billing

Please send monthly electric bills to:
AT&T Mobility
c/o Engie Insight – MS7372
P. O. Box 2456
Spokane, WA 99210-2456
Bill email: attlivebills.impact@engie.com

Please include FA #15213958 on the bill.

Please continue to send make ready fees as you currently are.

FORM 3 – EVERSOURCE ITEMIZED Pole Make-Ready Work Charges ***PAGE__1_ OF__1_***

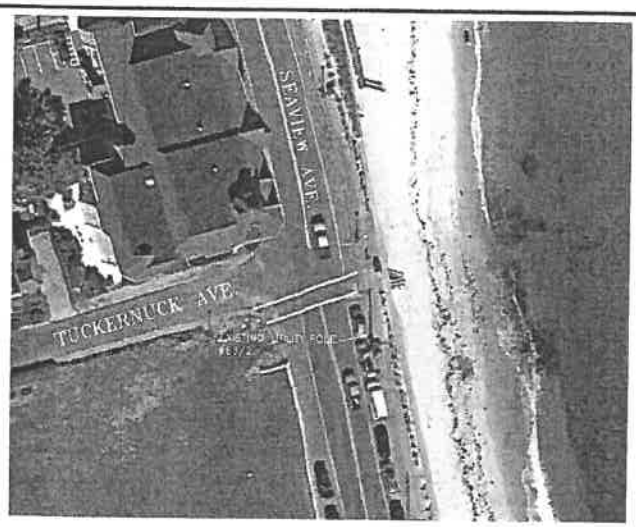
RCE to Complete: Total Poles Surveyed _____ Total Poles Requiring NSTAR Make-Ready ____

Appendix IV Form 3

FIELD SURVEY / MAKE READY WORK FORM														
SURVEYORS:				***DATE OF SURVEY:***								CWO #:		
Verizon				***MUNIC: Oak Bluffs STATE: MA***								Exch Code: Munic Code:		
Licensee	New Cingular Wireless PCS LLC			***LICENSEE NAME: New Cingular Wireless PCS LLC***								***LICENSEE APPLICATION #:*** **15213958 - cRAN_RCTB_OAKB_004**		
EVERSOURCE				***ELCO NAME:*** EVERSOURCE								**NSTAR APPLICATION #**		
LOCATION		***POLE #***		***ATT***	***OWNERSHIP***						CHARGE		WORK DESCRIPTION	
TEL RTE / STREET NAME ***List one pole per line***		***Tel***	***El***	***F/C P.S. Riser***	***J.O.***		***J.U.***		***F.O.***		YES	NO	TASK #S / REMARKS	* Height of Att.
					Tel	***El***	***Tel***	***El***	***Tel***	***El***				
2 Pennecook Ave, Oak Bluffs, MA 41.452216, -70.553572			**63/ 2**		VZ								**Pole top antenna install with shroud mounted at 11'6" and meter at 8'**	**28'4" pole top**
														*
														*
														*
														*
TOTALS:														

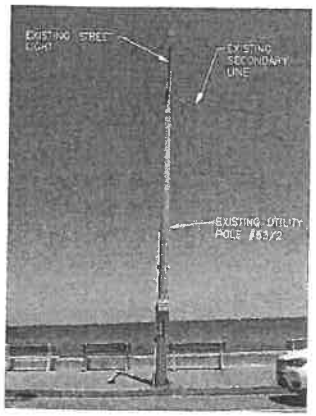
- **Height of Attachment = Height of Licensee Attachment shall be 40" below ELCO MGN unless otherwise noted here by Verizon and EVERSOURCE surveyor.**

Licensee to complete bold italicized areas only. (Provide ownership information if known)



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

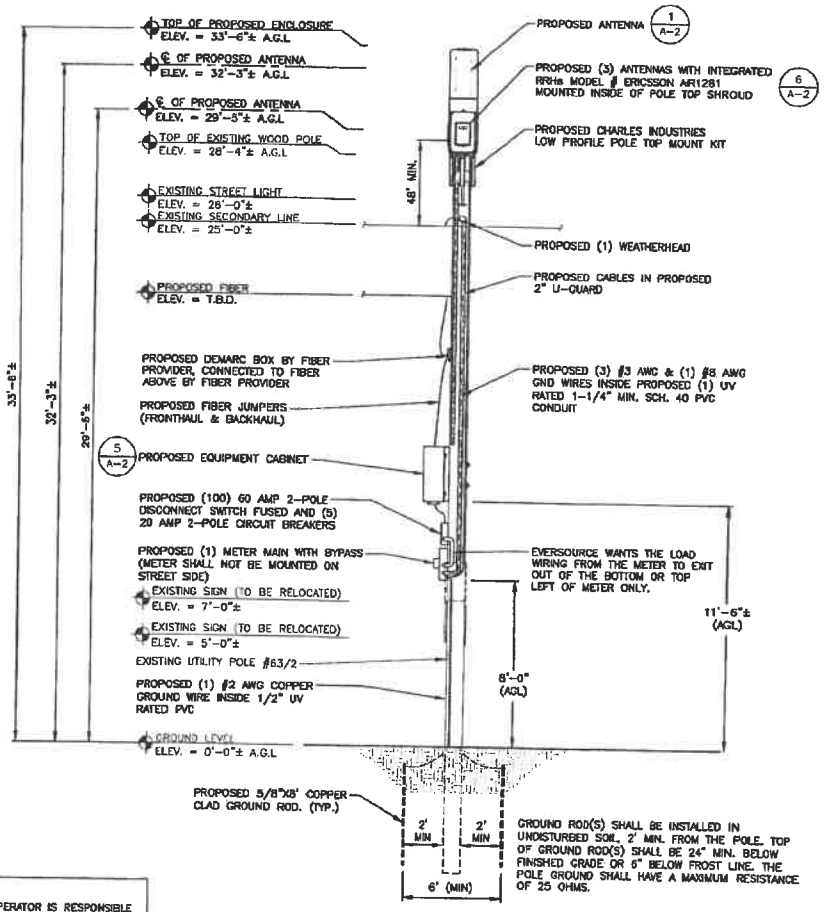
GRAPHIC SCALE
0 15 30 60 90 FEET



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

NOTE:
1. THE WIRELESS COMMUNICATIONS OPERATOR IS RESPONSIBLE FOR PLACING A WARNING SIGN ON THE POWER SUPPLY COMMUNICATING THE RF EMISSIONS IN COMPLIANCE WITH THE CURRENT EDITION OF IEEE STANDARD C95.2. THIS SIGN MUST ALSO HAVE A 24-HOUR CONTACT PHONE NUMBER IN CASE OF EMERGENCY. THIS NUMBER MUST BE VISIBLE FROM THE GROUND.

APPROXIMATE COORDINATES: LAT: 41.452216° N LONG: 70.553572° W



GROUND ROD(S) SHALL BE INSTALLED IN UNDISTURBED SOIL, 2' MIN. FROM THE POLE. TOP OF GROUND ROD(S) SHALL BE 24" MIN. BELOW FINISHED GRADE OR 6" BELOW FROST LINE. THE POLE GROUND SHALL HAVE A MAXIMUM RESISTANCE OF 25 OHMS.

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

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

CHECKED BY: AT
APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
A	06/30/20	ISSUED FOR REVIEW	MS

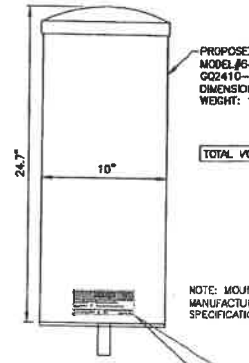
CLUSTER AND NODE NUMBER:
CRAN_RCTB_OAKB_004

SITE ID:
CRAN_RCTB_OAKB_004

SITE ADDRESS:
2 PENNECOOK AVE
OAK BLUFFS, MA 02557
DUKES COUNTY

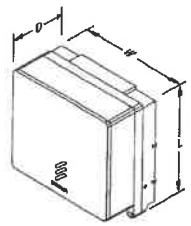
SHEET TITLE
KEY PLAN AND ELEVATION

SHEET NUMBER
A-1



STONEHOUSE SIGNS INC. P/N RD899
SIGN DIMENSIONS 2.5"x6.5"
TWO NOTICE STICKERS MUST BE PLACED OPPOSITE EACH OTHER ON THE ANTENNA

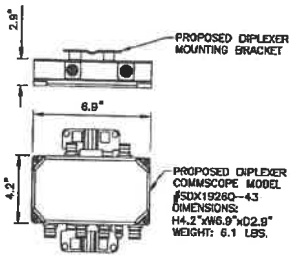
ANTENNA DETAIL (1 / A-2)
SCALE: N.T.S



MODEL	QTY.	L	W	D	WGT.
4402	2	8.0"	8.0"	4.0"	11 LBS

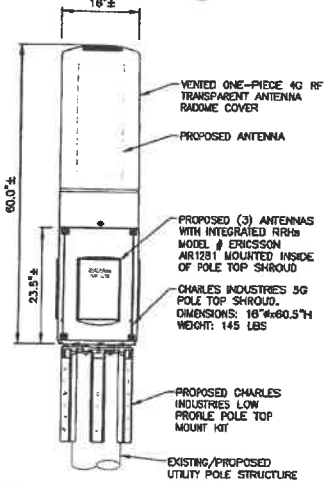
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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



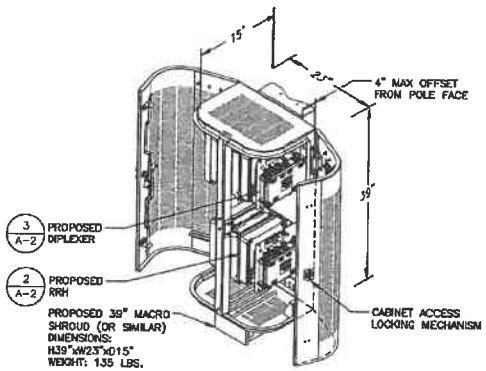
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DIPLEXER DETAIL (AS REQUIRED) (3 / A-2)
SCALE: N.T.S



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

ANTENNA MOUNT DETAIL (4 / A-2)
SCALE: N.T.S

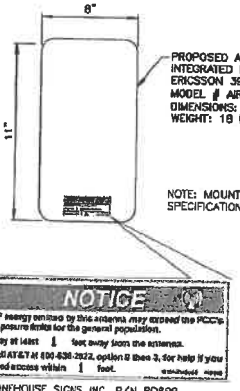


CABINET VOLUME:
39" x 15" X 23"
= 7.78 CU.FT.

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

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

EQUIPMENT CABINET DETAIL (5 / A-2)
SCALE: N.T.S



STONEHOUSE SIGNS INC. P/N RD899
SIGN DIMENSIONS 2.5"x6.5"
TWO NOTICE STICKERS MUST BE PLACED OPPOSITE EACH OTHER ON THE ANTENNA

ANTENNA DETAIL (6 / A-2)
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
45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5566

CHECKED BY: AT
APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
A	06/30/14	ISSUED FOR REVIEW	MB

CLUSTER AND NODE NUMBER:
CRAN_RCTB_OAKB_004

SITE ID:
CRAN_RCTB_OAKB_004

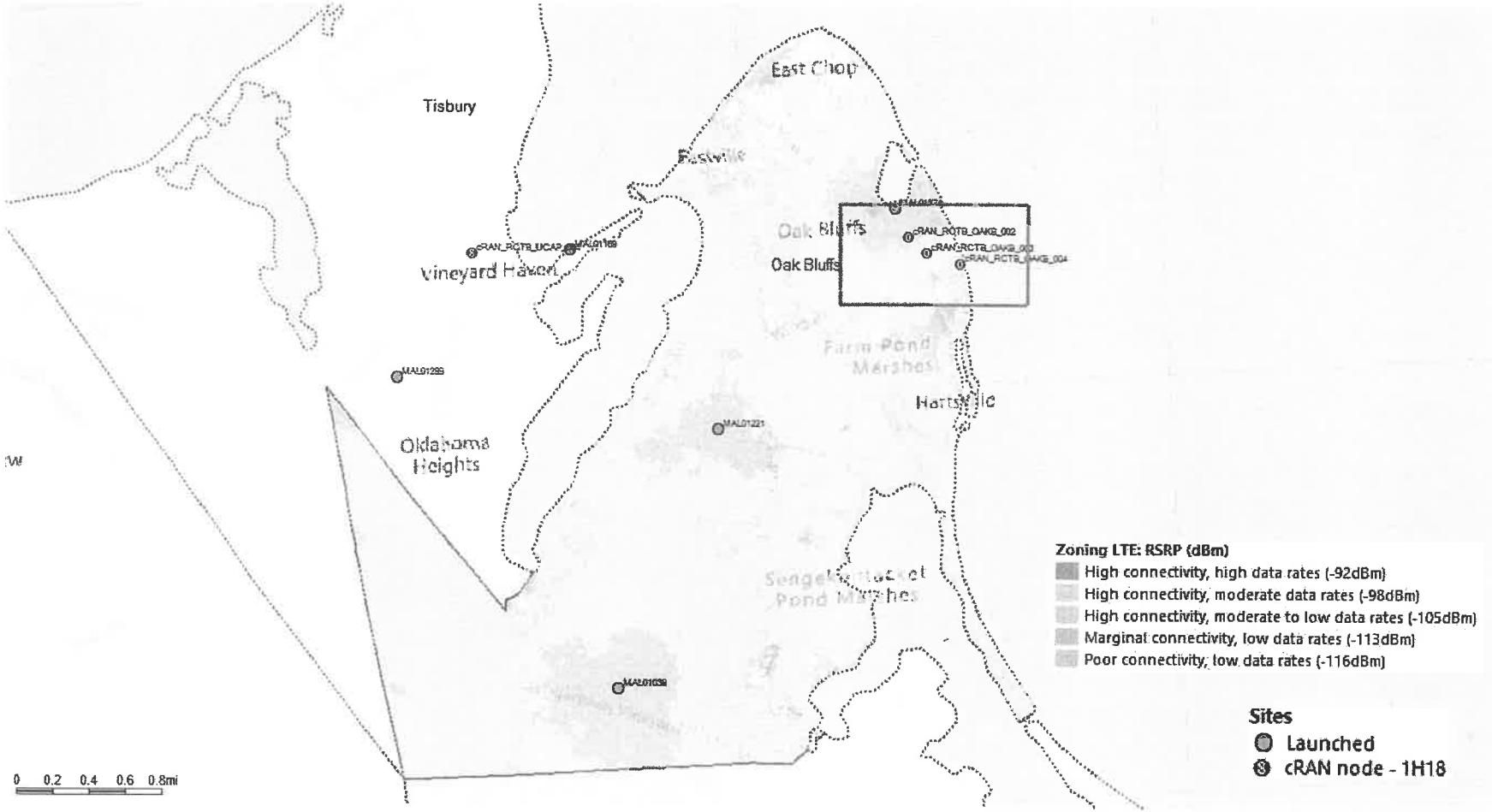
SITE ADDRESS:
2 PENNECOOK AVE
OAK BLUFFS, MA 02557
DUKES COUNTY

SHEET TITLE
EQUIPMENT DETAILS

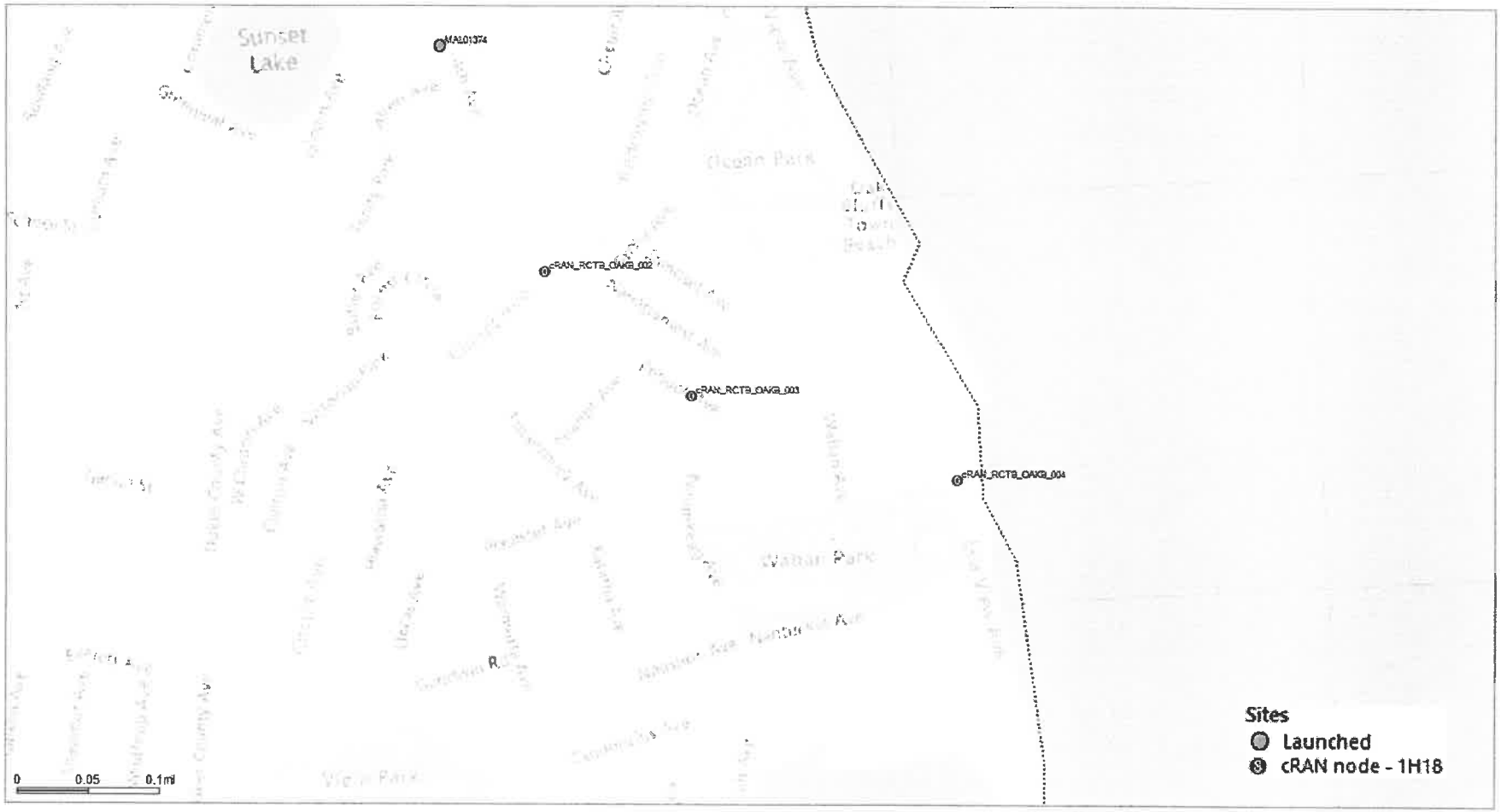
SHEET NUMBER
A-2

AT&T locations (green dots) and proposed locations (blue dots) in and around Oak Bluffs, MA

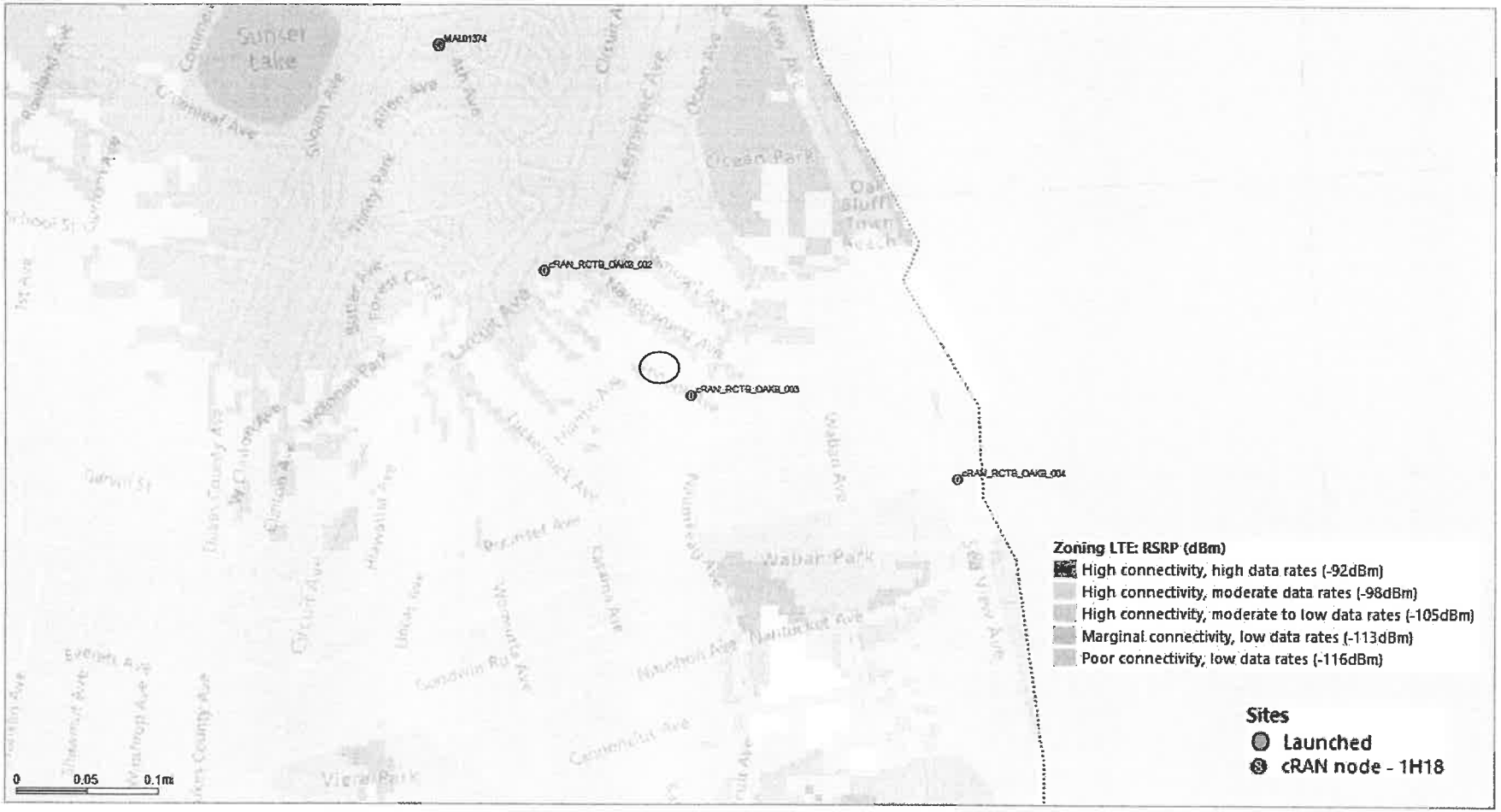
Current AT&T Coverage in Oak Bluffs, MA



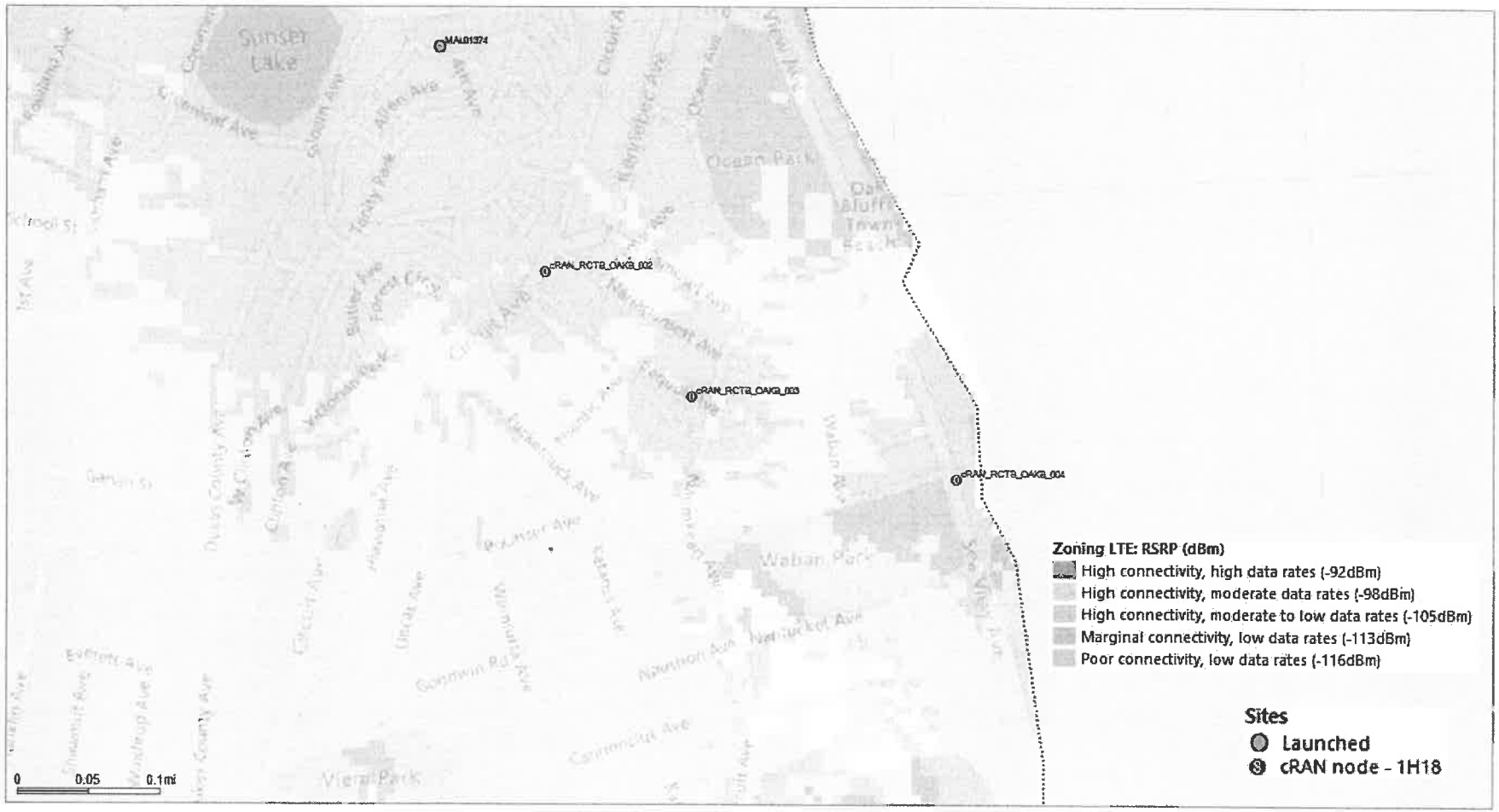
AT&T locations (green dots) and proposed locations (blue dots) near Town Beach



Current AT&T Coverage near Town Beach, Oak Bluffs



Proposed AT&T Coverage near Town Beach, Oak Bluffs



2019/12/29 07:47:42
Lat: 41.2788889, Lon: -70.1045888

2019/12/20 10:19:07
Lat: 41.28945766, Lon: -70.09847939

2019/12/27 13:08:16
Lat: 41.28388422, Lon: -70.10085834

DONALD L. HAES, JR., CHP, CLSO

Radiation Safety Specialist

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July 1, 2019

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)	Transmitter Output Power	Antenna Manufacturer / Model Number	Antenna Gain (dBd)
PCS LTE	1930-1950	40 watts	EXTENT™ P6480i (See Appendix A)	7.33
5G: U-NII-1	5150-5250	1 watt (maximum)		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:

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

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.

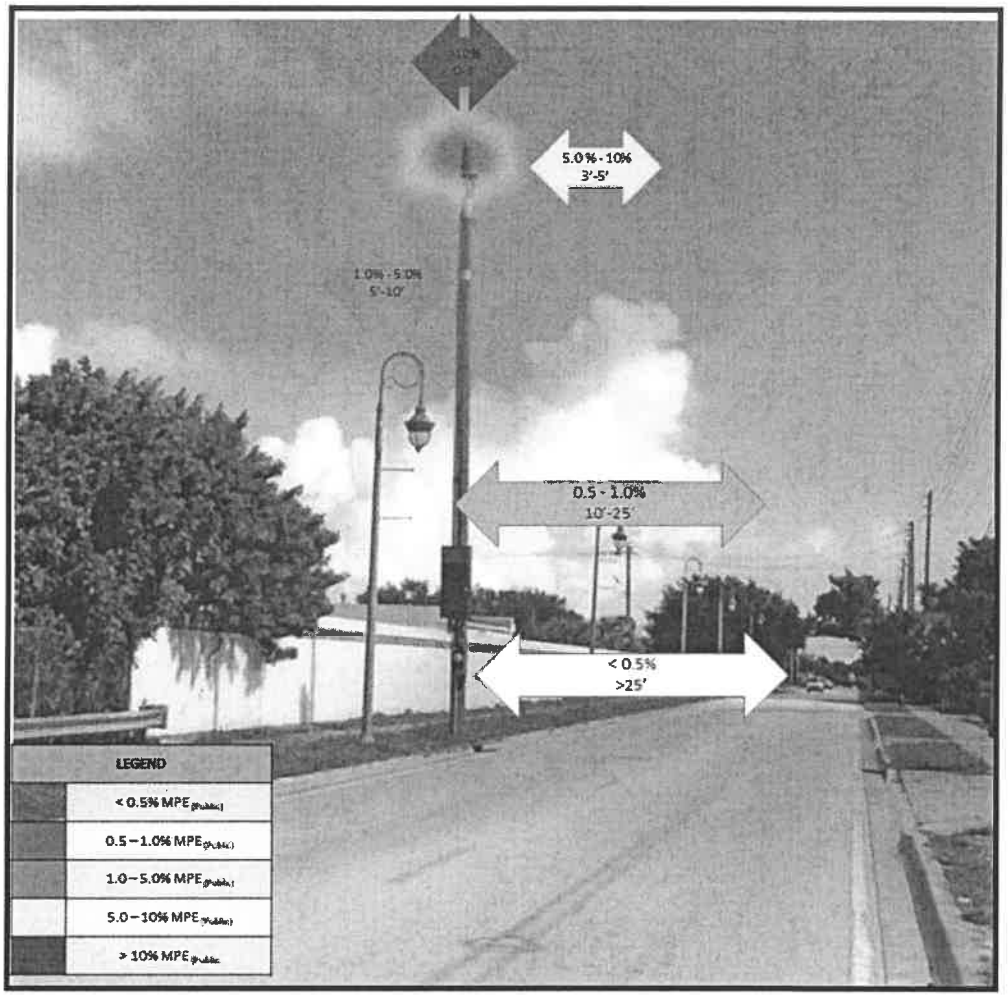

Figure 1: Results of RF field calculations for a typical AT&T antenna installation on a utility pole at 30' (AGL) showing profile view

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.

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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.

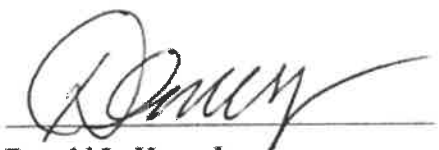
5. This assignment was not based on a requested minimum environmental energy level or specific power density.

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: July 1, 2019



Donald L. Haes, Jr.

Certified Health Physicist

APPENDIX A

GALTRONICS
WE'RE MAKING WAVES™
A BATU 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: 5-1 : RFD#6480

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WWW.GALTRONICS.COM

CVEC - Oak Bluffs_01.22.21	$	79.17	BS211	01199-5211	3.85% of total CVEC NMC cash-out from Nexamp
CVEC - OBHA1913-90027963	$	7.48	BS211	01199-5211	2.56% of total NMC cash-out for Harwich Landfill PV
County of Dukes County	$	6,006.50	BS845	01122-4845	Parking revenue February FY21
Paul Hartel	$	725.00	29PKNG	29176-4800	Parking Mitigation/ 35 Circuit
Reynolds, Rappaport, Kaplan & Hackney	$	2,025.00	29PAR	29631-4800	Ocean Park / Catalpa tree/ Parks department

			Business/Common Vic BS436		Building/BI334		Fire/FD335		Ent Lic/BS419		Taxi/Livery BS434		Auto BS370
Dockside Inn	$	145.00	$	50.00	$	50.00	$	45.00					
Lazy Frog	$	145.00	$	50.00	$	50.00	$	45.00					
Nautilus Trading	$	145.00	$	50.00	$	50.00	$	45.00					
Oak Bluffs Land and Wharf Co	$	145.00								$	145.00		
Oak Bluffs Land and Wharf Co	$	255.00								$	255.00		
Sun n Fun	$	395.00			$	50.00	$	45.00				$	300.00
titticut Follies	$	145.00	$	50.00	$	50.00	$	45.00					

Chickering	$	40.00	Shellfish recreational
Davis	$	40.00	Shellfish recreational
Oslyn	$	40.00	Shellfish recreational
Sittard	$	5.00	Shellfish recreational