

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



CITY OF PORTLAND

BUILDING PERMIT

This is to certify that DIOCESAN BUREAU OF HOUSING

Located At 880 FOREST AVE

Job ID: 2012-03-3591-ALTCOMM

CBL: 136-E-005-001

has permission to Modify & upgrade existing rooftop wireless communications antennas & associated equipment provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

Fire Prevention Officer

[Signature] 4/19/12

Code Enforcement Officer / Plan Reviewer

THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY
PENALTY FOR REMOVING THIS CARD

City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Job No: 2012-03-3591-ALTCOMM	Date Applied: 3/21/2012	CBL: 136- E-005-001	
Location of Construction: 880 FOREST AVE	Owner Name: DIOCESAN BUREAU OF HOUSING	Owner Address: 880 FOREST AVE PORTLAND, 04103	Phone:
Business Name: Deering Pavillion	Contractor Name: Nexlink Global Services	Contractor Address: 800 MARSHALL PHELPS RD, WINDSOR, CT 06095	Phone: 860-640-4834
Lessee/Buyer's Name: AT&T Mobility	Phone: Peter Coore - 978-399-8600	Permit Type: BLDG	Zone: R-6
Past Use: 200 dwelling units	Proposed Use: Same: 200 dwelling Units- To modify and upgrade existing wireless communications	Cost of Work: \$20,000.00	CEO District:
		Fire Dept: <input type="checkbox"/> Approved <input type="checkbox"/> Denied <input checked="" type="checkbox"/> N/A Signature: <i>[Signature]</i> (58)	Inspection: Use Group: R-2 Type: N/A #BL-2009 Signature: <i>[Signature]</i>
Proposed Project Description: modification/upgrade existing wireless communicon		Pedestrian Activities District (P.A.D.) 4/19/12	
Permit Taken By: Gayle		Zoning Approval	

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules. 2. Building Permits do not include plumbing, septic or electrical work. 3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.	Special Zone or Reviews <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetlands <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input checked="" type="checkbox"/> Site Plan Attached Approval <input type="checkbox"/> Maj <input type="checkbox"/> Min <input type="checkbox"/> MM Date: ok 3/26/17	Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date:	Historic Preservation <input checked="" type="checkbox"/> Not in Dist or Landmark <input type="checkbox"/> Does not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: <i>[Signature]</i>
	CERTIFICATION		

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

Electrical - Commercial

Final Inspection

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.



PORTLAND MAINE

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Acting Director of Planning and Urban Development
Gregory Mitchell

Job ID: 2012-03-3591-ALTCOMM

Located At: 880 FOREST AVE

CBL: 136- E-005-001

Conditions of Approval:

Building

1. Application approval based upon information provided by applicant. Any deviation from approved plans requires separate review and approval prior to work.
2. Separate permits are required for any electrical, plumbing, sprinkler, fire alarm, HVAC systems, heating appliances, including pellet/wood stoves, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.



2012 03 3 591
General Building Permit Application

66

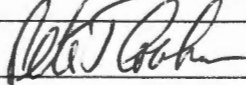
If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: 880 FOREST AVENUE			R-6
Total Square Footage of Proposed Structure/Area N/A		Square Footage of Lot	Number of Stories 11 (UNKNOWN)
Tax Assessor's Chart, Block & Lot		Applicant *must be owner, Lessee or Buyer*	
Chart#	Block#	Lot#	Telephone: "
136	E	5	PETER COOKE 978-399-8600
137	H	1	
142	G	7-4	
Name AT&T MOBILITY		Address 800 MARSHALL PITERS RD	
City, State & Zip WINDSOR CT 06095		City, State & Zip WINDSOR CT 06095	
Lessee/DBA (If Applicable) AT&T MOBILITY		Owner (if different from Applicant)	Cost Of Work: \$ 20000
Name DIOLESON SURETY OF MORTGAGE		Address 880 FOREST AVE	C of O Fee: \$ _____
City, State & Zip PORTLAND ME		City, State & Zip PORTLAND ME	Total Fee: \$ 220
Current legal use (i.e. single family) WIRELESS COMMUNICATIONS		Number of Residential Units 200 DU. N/A - UNKNOWN	
If vacant, what was the previous use? N/A			
Proposed Specific use: WIRELESS COMMUNICATIONS			
Is property part of a subdivision? NO If yes, please name _____			
Project description: MODIFICATION AND UPGRADE OF EXISTING WIRELESS COMMUNICATIONS SITE ON BUILDING ROOF INCLUDING ANTENNA UPGRADES AND ASSOCIATED EQUIPMENT ILL ATTACHED PLANS.			
Contractor's name: NEXLINK GLOBAL SERVICES			
Address: 800 MARSHALL HELPS RD		BRIAN PAUL	
City, State & Zip WINDSOR CT 06095		Telephone: 860-640-4834	
Who should we contact when the permit is ready: PETER COOKE		Telephone: 978-399-8600	
Mailing address: POB 894 WOLFEBORO NH 03894			

Please submit all of the information outlined on the applicable Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature:  **AGEN - FOR APPLICANT** Date: **3/18/12**

This is not a permit; you may not commence ANY work until the permit is issued

MAR 21 2012

By mail



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Receipts Details:

Tender Information: Check , BusinessName: Nexlink Global Services, LLC, Check Number: 5911

Tender Amount: 220.00

Receipt Header:

Cashier Id: gguertin

Receipt Date: 3/26/2012

Receipt Number: 42174

Receipt Details:

Referance ID:	5804	Fee Type:	BP-Constr
Receipt Number:	0	Payment Date:	
Transaction Amount:	220.00	Charge Amount:	220.00
Job ID: Job ID: 2012-03-3591-ALTCOMM - modification/upgrade existing wireless comunicion			
Additional Comments:			

Thank You for your Payment!



Administrative Authorization Application

Portland, Maine

Planning and Urban Development Department, Planning Division

PROJECT NAME: AT&T MOBILITY WIRELESS INSTALLATION LTE UPGRADE

PROJECT ADDRESS: 880 Forest Avenue CHART/BLOCK/LOT [REDACTED] 87-H-1 142-G-7-4

APPLICATION FEE: \$50.00 (\$50.00)

PROJECT DESCRIPTION: (Please Attach Sketch/Plan of the Proposal/Development)

Replacement of existing antennas, addition of GPS antenna and addition of equipment to existing facility

CONTACT INFORMATION:

OWNER/APPLICANT

Name: AT&T Mobility
Address: c/o Nexlink Global Services
800 Marshall Phelps Rd
Work #: Windsor, CT 06095
Cell #: 860-420-8562
Fax #: _____
Home #: _____
E-mail: Mark Roberts <robertsm@nexlinkgs.com>

CONSULTANT/AGENT

Name: Peter Cooke
Address: POB 874
Wolfeboro, NH 03894
Work #: 978-399-8600
Cell #: 978-399-8600
Fax #: 888-
Home #: _____
E-mail: pcooke@wellmanassociates.net

Criteria for an Administrative Authorization:
(see section 14-523(4) on pg .2 of this appl.)

- a) Is the proposal within existing structures?
- b) Are there any new buildings, additions, or demolitions?
- c) Is the footprint increase less than 500 sq. ft.?
- d) Are there any new curb cuts, driveways or parking areas?
- e) Are the curbs and sidewalks in sound condition?
- f) Do the curbs and sidewalks comply with ADA?
- g) Is there any additional parking?
- h) Is there an increase in traffic?
- i) Are there any known stormwater problems?
- j) Does sufficient property screening exist?
- k) Are there adequate utilities?
- l) Are there any zoning violations?
- m) Is an emergency generator located to minimize noise?
- n) Are there any noise, vibration, glare, fumes or other impacts?

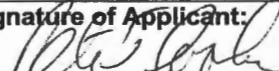
Applicant's Assessment Planning Division
Y(yes), N(no), N/A

Yes	_____
No	_____
Yes	_____
No	_____
N/A	_____
N/A	_____
No	_____
No	_____
No	_____
Yes	_____
Yes	_____
No	_____
N/A	_____
No	_____

RECEIVED

FEB 29 2012

City of Portland
Planning Division

Signature of Applicant: 	Date: 2/29/12
---	-------------------------

Agent for Applicant

Planning Division Use Only

Authorization Granted Partial Exemption Exemption Denied

See attached

Standard Condition of Approval: The applicant shall obtain all required City Permits, including building permits from the Inspection Division (Room 315, City Hall (874-8703)) prior to the start of any construction.

Planner Signature _____ Date _____

IMPORTANT NOTICE TO APPLICANT: The granting of an Administrative Authorization to exempt a development from site plan review does not exempt this proposal from other required approvals or permits, nor is it an authorization for construction. You should first check with the Building Inspections Office, Room 315, City Hall (207)874-8703, to determine what other City permits, such as a building permit, will be required.

**PROVISION OF PORTLAND CITY CODE
14-523 (SITE PLAN ORDINANCE)
RE: Administrative Authorization**

Sec. 14-523 (b). Applicability

No person shall undertake any development identified in Section 14-523 without obtaining a site plan improvement permit under this article. (c) Administrative Authorization. Administrative Authorization means the Planning Authority may grant administrative authorization to exempt a development proposal from complete or partial site plan review that meets the standards below, as demonstrated by the applicant.

1. The proposed development will be located within existing structures, and there will be no new buildings, demolitions, or building additions other than those permitted by subsection b of this section;
2. Any building addition shall have a new building footprint expansion of less than five hundred (500) square feet;
3. The proposed site plan does not add any new curb cuts, driveways, or parking areas; the existing site has no more than one (1) curb cut and will not disrupt the circulation flows and parking on-site; and there will be no drive-through services provided;
4. The curbs and sidewalks adjacent to the lot are complete and in sound condition, as determined by the public works authority, with granite curb with at least four (4) inch reveal, and sidewalks are in good repair with uniform material and level surface and meet accessibility requirements of the Americans with Disabilities Act;
5. The use does not require additional or reduce existing parking, either on or off the site, and the project does not significantly increase traffic generation;
6. There are no known stormwater impacts from the proposed use or any existing deficient conditions of stormwater management on the site;
7. There are no evident deficiencies in existing screening from adjoining properties; and
8. Existing utility connections are adequate to serve the proposed development and there will be no disturbance to or improvements within the public right-of-way.
9. There are no current zoning violations;
10. Any emergency generators are to be located to minimize noise impacts to adjoining properties and documentation that routine testing of the generators occur on weekdays between the hours of 9 a.m. to 5 p.m. Documentation pertaining to the noise impacts of the emergency generator shall be submitted; and
11. There is no anticipated noise, vibration, glare, fumes or other foreseeable impacts associated with the project.

- a. **Filing the Application.** An applicant seeking an administrative authorization under this subsection shall submit an administrative authorization application for review, detailing the site plan with dimensions of proposed improvements and distances from all property lines, and stating that the proposal meets all of the provisions in standards 1-11 of Section 14-423 (b)1. **The application must be accompanied by an application fee of \$50.**
- b. **Review.** Upon receipt of such a complete application, the Planning Authority will process it and render a written decision of approval, approval with conditions or denial, with all associated findings.
- c. **Decision.** If a full administrative authorization is granted, the application shall be approved without further review under this article, and no performance guarantee shall be required. In the event that the Planning Authority determines that standards a and b of Section 14-523 (b) (1) and at least four (4) of the remaining standards have been met, the Planning Authority shall review the site plan according to all applicable review standards of Section 14-526 that are affected by the standards in this subsection that have not been met. If an exemption or partial exemption from site plan review is not granted, the applicant must submit a site plan application that will undergo a full review by the Planning Board or Planning Authority according to the standards of Section 14-526.

Criteria for an Administrative Authorizations:
(See Section 14-523 (4) on page 2 of this application)

Applicant's Assessment
Y(yes), N(no), N/A

Planning Division
Use Only

a) Is the proposal within existing structures?	Yes	Yes, on the roof
b) Are there any new buildings, additions, or demolitions?	No	No
c) Is the footprint increase less than 500 sq. ft.?	Yes	Yes
d) Are there any new curb cuts, driveways or parking areas?	No	No
e) Are the curbs and sidewalks in sound condition?	n/a	Yes
f) Do the curbs and sidewalks comply with ADA?	n/a	Yes
g) Is there any additional parking?	No	No
h) Is there an increase in traffic?	No	No
i) Are there any known stormwater problems?	No	No
j) Does sufficient property screening exist?	Yes	Yes
k) Are there adequate utilities?	Yes	Yes
l) Are there any zoning violations?	No	No
m) Is an emergency generator located to minimize noise?	n/a	n/a
n) Are there any noise, vibration, glare, fumes or other impacts?	No	No

The Administrative Authorization for 880 Forest Avenue was approved by Barbara Barhydt, Development Review Services Manager on March 7, 2012 with the required Standard Condition of Approval listed below:

1. **Standard Condition of Approval:** The applicant shall obtain all required City Permits, including building permits from the Inspection Division (874-8703) and any other permits required from the Department of Public Services (874-8801) prior to the start of any construction.

Barbara Barhydt

3/7/12

STRUCTURAL ANALYSIS REPORT

For

ME 5038 (LTE)
MORRILLS CORNER
880 Forrest Avenue
Portland, ME 04101

**Equipment Shelter on the Roof and Antennas Supported on
Ballast Frames**



RECEIVED
APR 18 2012
Dept. of Building Inspections
City of Portland Maine

Prepared for:



500 Enterprise Drive, Suite 3A
Rock Hill, CT 06067

Dated:

March 1, 2012

Prepared by:

HUDSON DESIGN GROUP, LLC.
1600 Osgood Street Building 20 North, Suite 2-101
North Andover, MA 01845
Phone: (978) 557-5553
www.hudsondesigngroupllc.com





SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the structure supporting the proposed AT&T equipment located in the areas depicted in the latest HDG's construction drawings.

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

This office conducted an on-site visual survey of the above areas on February 29, 2011. Attendees included Sergio Anastacio (HDG-Assistant Project Manager).

CONCLUSION SUMMARY:

Limited building plans prepared by Krumbhaar & Holt Associates Architects were available for our use. A limited visual survey of the structure was completed in or near the areas of the Proposed Work. Based on our evaluation, we have determined that, in general, structural designs to support the proposed AT&T Equipment within or near the Proposed Location can be completed and components installed with **NO STRUCTURAL UPGRADES REQUIRED** to the existing structure. Reference the attached HDG's drawings for all equipment locations.

A summary of the proposed support types and attachment locations are as follows:

- (3) LTE Antennas (KMW AM-X-CD-16-65-00T) (54"x12.6"x7.87" - Wt. 33lbs.) (One per Sector)....**Mounted on the existing steel pipes supported by the existing steel ballast frames.
- (1) RBS 6601 Indoor 23" Rack (Wt 100 lbs.)...**Mounted inside the existing equipment room at ground level.
- (3) Surge Arrestor DC2-48-60-0-9E (1 per sector)...**Mounted on unistruts secured to the existing steel ballast frames.
- (6) RRH (2 per sector) (Wt. = 50 lbs/each).....**Mounted on unistruts secured to the existing steel ballast frames.



Referenced documents are attached.

DESIGN CRITERIA:

1. International Building Code 2009, ASCE 7-10 Minimum Design Loads for Buildings and Other Structures.

Wind Analysis:

Reference Wind Speed:	110 MPH	(FIG 26.5-1C; ASCE 7-10)
Category:	C	(26.7.3; ASCE 7-10)
Gust Effect Factor (G):	0.85	(26.9.1; ASCE 7-10)
Force Coefficient (Cf):	Varies	(FIG 29.5-1 thru 29.5-3; ASCE 7-10)
$F = qz * G * Cf * Af:$		(Equation 29.5-1; ASCE 7-10)

Snow Loading:

Ground Snow Load (Pg):	60 psf	(FIG 7-1; ASCE 7-10)
Flat Roof Snow Load (Pf):	37.8 psf	

$$Pf = 0.7 * Ce * Ct * I * Pg \quad \text{(Equation 7.3-1; ASCE 7-10)}$$

$$Ce=0.9; Ct=1.0; I=1.0$$

2. EIA/TIA -222- G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

County: Cumberland
Wind Load: 100 mph

3. Approximate height above grade to antennas: 107'-0"



EXISTING ROOF CONSTRUCTION:

The roof appears to consist of a roofing membrane on rigid insulation over precast-prestressed concrete planks, supported by reinforced concrete bearing walls.

EQUIPMENT SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed equipment rack be mounted inside the existing AT&T equipment shelter on the roof.

Antenna SUPPORT RECOMMENDATIONS:

The new LTE antennas are proposed to be supported by the existing steel pipes, secured to the existing ballasted roof top frames.

HDG recommends adding more ballast to all the existing frames. See the latest HDG construction drawings for ballast requirements.

RRH's / Surge Arrestor SUPPORT RECOMMENDATIONS:

The new Surge Arrestors and RRH's are proposed to be mounted on new unistrut components secured to the existing ballast frames.

Notes:

1. Reference the latest HDG construction drawings for all the equipment locations.
2. All detail requirements will be designed and furnished in the construction drawings.
3. Mount all equipment per manufacturer's specifications.
4. HDG could not verify the support attachments to the roof structure at the time of our site visit. HDG is under the assumption that the equipment shelter was constructed properly and adequately attached to the building structure over bearing walls.
5. HDG is under the assumption that the ballast mounts were located over structurally adequate roof support (i.e. beam or column). HDG was not able to verify the roof structure and its components at the time of our visit.
6. 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.

EXISTING EQUIPMENT:



Photo 1: Sample photo illustrating the existing equipment shelter.



Photo 2: Sample photo illustrating the existing equipment.

EXISTING ANTENNAS:



Photo 3: Sample photo illustrating the existing antennas.



Photo 4: Sample photo illustrating the existing antennas.



Proposed Drawings

PROJECT INFORMATION

SCOPE OF WORK: UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS
 SITE ADDRESS: 880 FOREST AVENUE
 PORTLAND, ME 04101
 LATITUDE: 43.678305 N 43° 40' 41.90" N
 LONGITUDE: 70.289647 W 70° 17' 23.45" W
 JURISDICTION: NATIONAL, STATE & LOCAL CODES OR ORDINANCES
 CURRENT USE: TELECOMMUNICATIONS FACILITY
 PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: ME5038
SITE NAME: MORRILLS CORNER

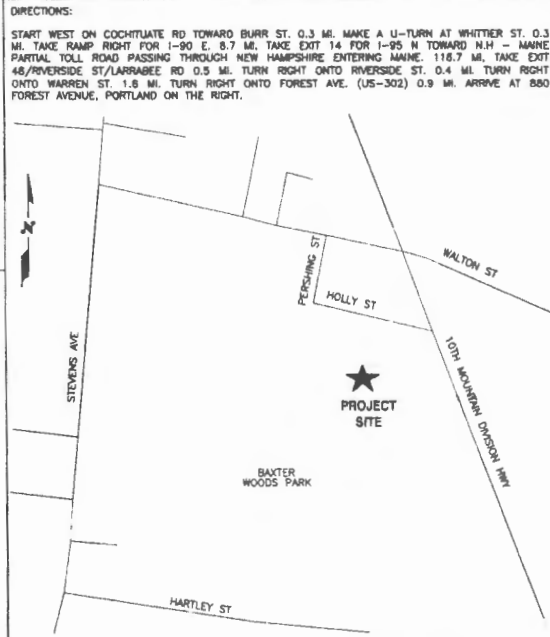
DRAWING INDEX

REV

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- GN-1 GENERAL NOTES
- A-1 EQUIPMENT & ROOFTOP PLAN
- A-2 ELEVATION
- A-3 ANTENNA PLAN
- A-4 DETAILS
- G-1 PLUMBING DIAGRAM & GROUNDING DETAILS

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VICINITY MAP



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 ACCESSIBLE BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOW 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 REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL
 BEFORE YOU DIG
 CALL TOLL FREE 888-DIG-SAFE

UNDERGROUND SERVICE ALERT

1470 BRIDGE STREET
 BIRMINGHAM, AL 35203
 TEL: (205) 988-1111
 FAX: (205) 988-1111

© Unitel GLOBAL SERVICES company
 800 MARSHALL PHELPS ROAD UNIT# 2A
 WINDSOR, CT 06095

SITE NUMBER: ME5038
 SITE NAME: MORRILLS CORNER
 880 FOREST AVENUE
 PORTLAND, ME 04101
 CUMBERLAND COUNTY

350 COCHITUATE ROAD
 FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP
2	03/21/13	ISSUED FOR CONSTRUCTION	RP	DC	DPH
1	02/23/13	ISSUED FOR PERMITTING	RP	DC	DPH
0	02/15/13	ISSUED FOR REVIEW	RP	DC	DPH
SCALE: AS SHOWN			DESIGNED BY: RP	DRAWN BY: RP	

AT&T		
TITLE SHEET (LTE)		
JOB NUMBER	DRAWING NUMBER	REV
5038.01	T-1	2

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 TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTI-OXIDANT 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 THE BRIDGE AND THE TOWER 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 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR - NEXLINK
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 TT CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TROLD 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 UMTS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY 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. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. 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: IRC 2009
ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
LIGHTNING CODE: REFER TO ELECTRICAL DRAWINGS
SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION;
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL
ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.
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.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCEIVER STATION	PROPOSED	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TERR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED		

140 DIXWOOD UNIT
MILLSBORO DE 19966
TEL: 302-398-1000 FAX: 302-398-1000

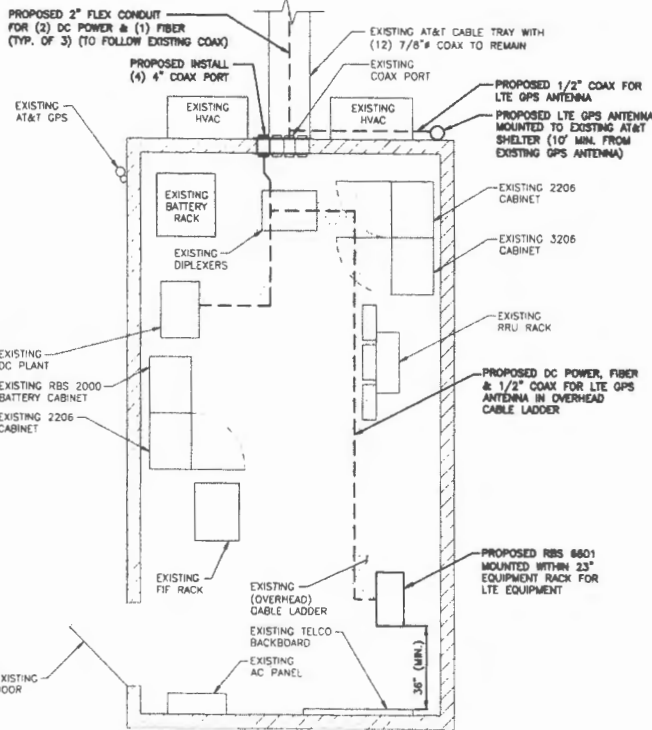
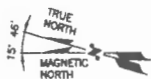
a Unifak GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT# 2A
WINDSOR, CT 06095

SITE NUMBER: ME5038
SITE NAME: MORRILLS CORNER
880 FOREST AVENUE
PORTLAND, ME 04101
CUMBERLAND COUNTY

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APPVE
2	03/01/18	ISSUED FOR CONSTRUCTION	RF	DC	DPH
1	02/24/18	ISSUED FOR PERMITTING	RF	DC	DPH
0	02/16/18	ISSUED FOR REVIEW	RF	DC	DPH
SCALE: AS SHOWN DESIGNED BY: RF DRAWN BY: RF					

AT&T		
GENERAL NOTES (LTE)		
JOB NUMBER	DRAWING NUMBER	REV
5038.01	GN-1	2

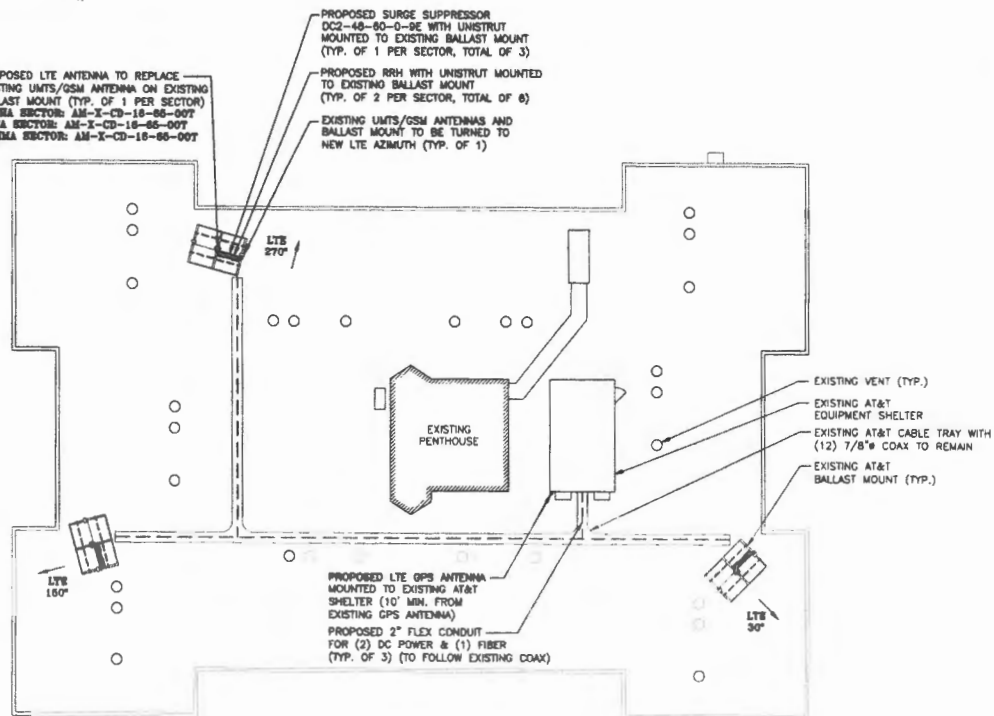


EQUIPMENT PLAN

SCALE: 1/2"=1'-0"



PROPOSED LTE ANTENNA TO REPLACE EXISTING UMTS/GSM ANTENNA ON EXISTING BALLAST MOUNT (TYP. OF 1 PER SECTOR)
ALPHA SECTOR: AM-X-CD-18-88-00T
BETA SECTOR: AM-X-CD-18-88-00T
GAMMA SECTOR: AM-X-CD-18-88-00T



ROOFTOP PLAN

SCALE: 3/32"=1'-0"



NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION. REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP LLC, DATED: MARCH 01, 2012.

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

Hudson Design Group
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3420000.0000
1 4022058 WA 0000

NEXLINK
a Unitek GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT# 2A
WINDSOR, CT 06095

SITE NUMBER: ME5038
SITE NAME: MORRILLS CORNER
880 FOREST AVENUE
PORTLAND, ME 04101
CUMBERLAND COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	03/01/12	ISSUED FOR CONSTRUCTION	RP	DC	SPH
1	02/23/12	ISSUED FOR PERMITTING	RP	DC	SPH
0	02/15/12	ISSUED FOR REVIEW	RP	DC	SPH
SCALE: AS SHOWN			DESIGNED BY: RP	DRAWN BY: RP	

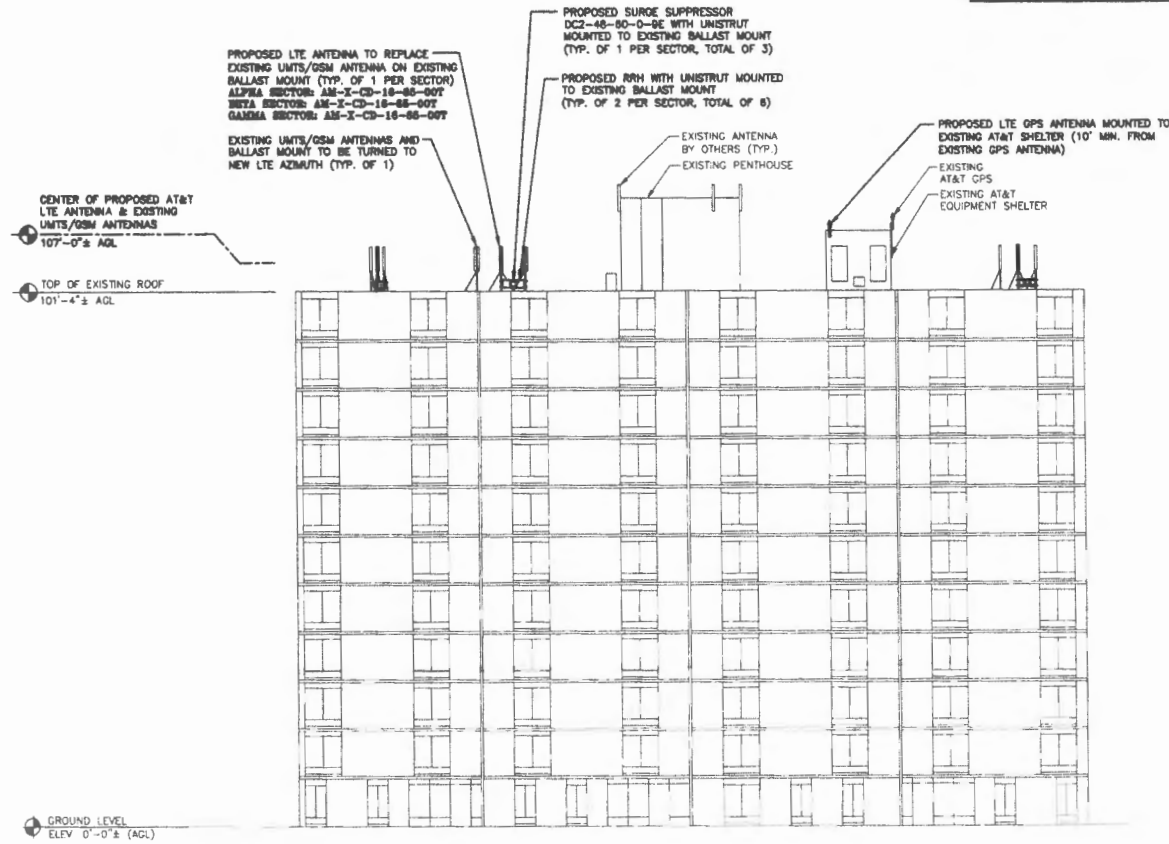
AT&T	
EQUIPMENT & ROOFTOP PLAN (L-C)	
JOB NUMBER	DRAWING NUMBER
5038.01	A 1

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION. REFER TO STRUCTURAL ANALYSIS BY HUDSON DESIGN GROUP LLC, DATED: MARCH 01, 2012.

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



EAST ELEVATION
SCALE: 3/32"=1'-0"



Hudson
Design Group
14-6 000000 STREET
TULLOHG 2E 100TH SUFF 1 RR
WINDSOR, MA 01093
TEL: 978 331-3333
FAX: 978 331-3340

NEXLINK
a Unitel GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT# 2A
WINDSOR, CT 06095

SITE NUMBER: ME5038
SITE NAME: MORRILLS CORNER
860 FOREST AVENUE
PORTLAND, ME 04101
CUMBERLAND COUNTY

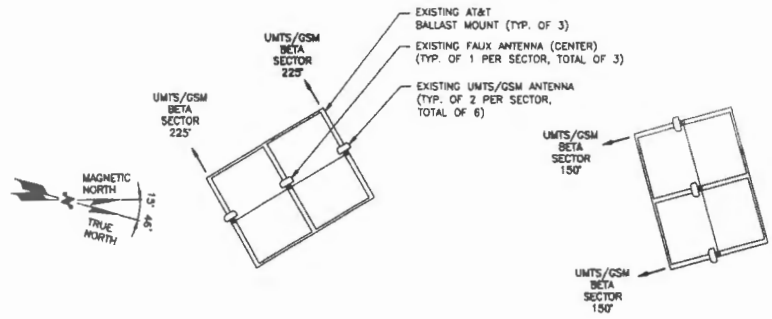
at&t
350 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
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1	02/23/12	ISSUED FOR PERMITTING	RP	DC	DPH
0	02/10/12	ISSUED FOR REVIEW	RP	DC	DPH
SCALE: AS SHOWN					
DESIGNED BY: RP		DRAWN BY: RP			

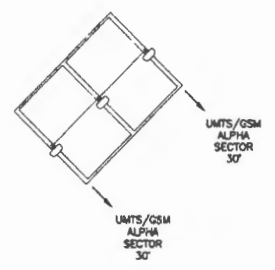
AT&T	
ELEVATION (LTE)	
JOB NUMBER	DRAWING NUMBER
5038.01	A-2
	2

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION. REFER TO STRUCTURAL ANALYSIS BY HUDSON DESIGN GROUP LLC, DATED: MARCH 01, 2012.

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

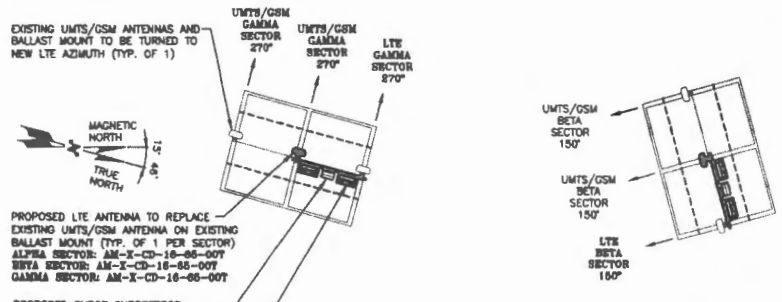


EXISTING UMTS/GSM ANTENNA PLAN
SCALE: N.T.S.

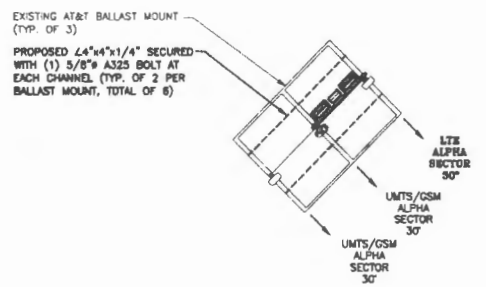


TEMPORARY CONSTRUCTION AZIMUTH (ALPHA SECTOR)
SCALE: N.T.S.

NOTE:
DUE TO BUILDING CONSTRUCTION ALPHA SECTOR BALLAST MOUNT HAS BEEN DISMANTLED. EXISTING ALPHA SECTOR UMTS/GSM ANTENNA HAS BEEN TEMPORARILY RELOCATED TO EXISTING AT&T SHELTER



PROPOSED LTE ANTENNA PLAN
SCALE: N.T.S.



Hudson Design Group
146-00000 TRKT
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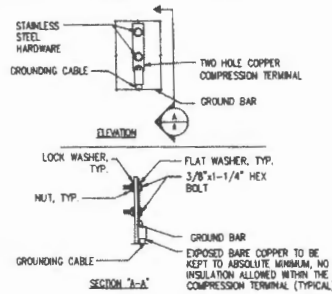
NEXLINK
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800 MARSHALL PHELPS ROAD UNIT# 2A
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SITE NUMBER: ME5038
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880 FOREST AVENUE
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CUMBERLAND COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP
1	03/01/12	ISSUED FOR CONSTRUCTION	RP	DC	DPH
2	05/23/12	ISSUED FOR PERMITTING	RP	DC	DPH
3	02/10/12	ISSUED FOR REVIEW	RP	DC	DPH
SCALE: AS SHOWN			DESIGNED BY: RP	DRAWN BY: RP	

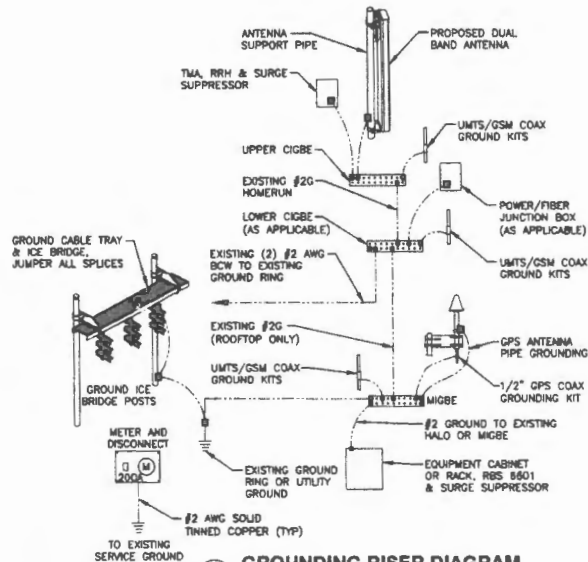
AT&T		
ANTENNA PLAN (LTE)		
JOB NUMBER	DRAWING NUMBER	REV
5038.01	A-3	2



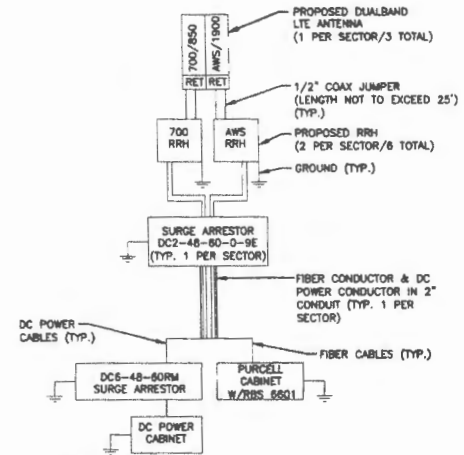
NOTE:
 1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
 3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAIL

2
 N.T.S.



GROUNDING RISER DIAGRAM
 1
 N.T.S.

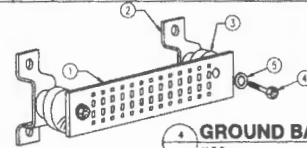


NOTES:
 1. CONTRACTOR TO CONFIRM ALL PARTS.
 2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.

PLUMBING DIAGRAM

3
 N.T.S.

WIRELESS SOLUTIONS INC.			
NO.	REQ.	PART NO.	DESCRIPTION
1	1	HLCB-0420-15	SOLID GND. BAR (20"x4"x1/4")
2	2		WALL MTG. BRKT.
3	2		INSULATORS
4	4		5/8" - 11x1" H.H.C.S.
5	4		5/8" LOCKWASHER



GROUND BAR - DETAIL
 4
 N.T.S.

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS
 CABLE ENTRY PORTS (HATCH PLATES) (#2)
 GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
 TELCO GROUND BAR
 COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
 +24V POWER SUPPLY RETURN BAR (#2)
 -48V POWER SUPPLY RETURN BAR (#2)
 RECTIFIER FRAMES.

SECTION "A" - SURGE ABSORBERS
 INTERIOR GROUND RING (#2)
 EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
 METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
 BUILDING STEEL (IF AVAILABLE) (#2)

	 a Un-Tek GLOBAL SERVICES company 800 MARSHALL PHELPS ROAD UNIT # 2A WINDSOR, CT 06095	SITE NUMBER: ME5038 SITE NAME: MORRILLS CORNER 880 FOREST AVENUE PORTLAND, ME 04 03 CUMBERLAND COUNTY	 350 COCHITUATE ROAD FRAMINGHAM, MA 01701	<table border="1"> <tr> <th>NO.</th> <th>DATE</th> <th>REVISIONS</th> <th>BY</th> <th>CHK</th> <th>APP'D</th> </tr> <tr> <td>2</td> <td>03/01/12</td> <td>ISSUED FOR CONSTRUCTION</td> <td>RP</td> <td>DC</td> <td>DPH</td> </tr> <tr> <td>1</td> <td>02/23/12</td> <td>ISSUED FOR PERMITTING</td> <td>RP</td> <td>DC</td> <td>DPH</td> </tr> <tr> <td>0</td> <td>02/10/12</td> <td>ISSUED FOR REVIEW</td> <td>RP</td> <td>DC</td> <td>DPH</td> </tr> <tr> <td>NO.</td> <td>DATE</td> <td>REVISIONS</td> <td>BY</td> <td>CHK</td> <td>APP'D</td> </tr> <tr> <td colspan="6">SCALE: AS SHOWN DESIGNED BY: RP DRAWN BY: RP</td> </tr> </table>	NO.	DATE	REVISIONS	BY	CHK	APP'D	2	03/01/12	ISSUED FOR CONSTRUCTION	RP	DC	DPH	1	02/23/12	ISSUED FOR PERMITTING	RP	DC	DPH	0	02/10/12	ISSUED FOR REVIEW	RP	DC	DPH	NO.	DATE	REVISIONS	BY	CHK	APP'D	SCALE: AS SHOWN DESIGNED BY: RP DRAWN BY: RP						AT&T PLUMBING DIAGRAM & GROUNDING DETAILS (LTE) JOB NUMBER: 5038.01 DRAWING NUMBER: 0 REV: 2
NO.	DATE	REVISIONS	BY	CHK	APP'D																																				
2	03/01/12	ISSUED FOR CONSTRUCTION	RP	DC	DPH																																				
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NO.	DATE	REVISIONS	BY	CHK	APP'D																																				
SCALE: AS SHOWN DESIGNED BY: RP DRAWN BY: RP																																									



Calculations

Date: 03-01-12

Project Name: MORRILLS CORNER

Project Number: ME5038

Designed By: AA Checked By: MSC



2.6.5.2 Velocity Pressure Coeff:

$$K_z = 2.01 (z/z_g)^{2/\alpha}$$

$K_z = 1.284$ $z = 107$ (ft)
 $z_g = 900$ (ft)
 $\alpha = 9.5$

$K_{zmin} \leq K_z \leq 2.01$

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_e
B	1200 ft	7	0.70	0.90
C	900 ft	9.5	0.85	1
D	700 ft	11.5	1.03	1.10

2.6.6.4 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2
4	0.72	1.5

$K_{zt} = [1 + (K_e K_t / K_h)]^2$

$K_h = e^{(fz/H)}$

$K_{zt} = \text{\#DIV/0!}$

$K_h = \text{\#DIV/0!}$

(If Category 1 then $K_{zt} = 1.0$)

$K_e = 0$ (from Table 2-4)

$K_t = 0$ (from Table 2-5)

f = 0 (from Table 2-5)

z = 107

H = 0 (Ht. of the crest above surrounding terrain)

$K_{zt} = 1.00$

Category = **1**

Date: 03-01-12
Project Name: MORRILLS CORNER
Project Number: ME5038
Designed By: AA Checked By: MSC



2.6.7 Gust Effect Factors

2.6.7.1 Self Supporting Lattice Structures

Gh = 1.0 Latticed Structures > 600 ft

Gh = 0.85 Latticed Structures 450 ft or less

Gh = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h= 107 Gh= 0.507

2.6.7.2 Guyed Masts

Gh= 0.85

2.6.7.3 Pole Structures

Gh= 1.1

2.6.7.4 Structures Supported on Other Structures

(Cantilevered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

Gh= 1.35 Gh= 1.35

Date: 03-01-12
 Project Name: MORRILLS CORNER
 Project Number: ME5038
 Designed By: AA Checked By: MSC



2.6.8 Design Ice Thickness:

$$t_{iz} = 2.0 * t_i * I * K_{iz} * (K_{zt})^{0.35}$$

$t_i = 1$
 $I = 1$
 $K_{iz} = 1.12$
 $K_{zt} = 1$

$$t_{iz} = 2.25$$

$$K_{iz} = [z/33]^{0.10} \leq 1.4$$

$K_{iz} = 1.12$

Calculating the weight of ice, the cross-sectional area of ice shall be determined by:

$$A_{iz} = \pi * t_{iz} * (D_c + t_{iz})$$

$D_c = 54$ (in) Largest Dim of Member

$$A_{iz} = 397.55$$

2.6.9 Design Wind Load:

$$F = q_z * G * h * (EPA's)$$

$$q_z = 0.00256 * K_z * K_{zt} * K_d * V_{max}^2$$

$K_z = 1.284$
 $K_{zt} = 1$
 $K_d = 0.95$
 $V_{max} = 100$

$$q_z = 31.22$$

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances.	0.95

Date: 03-01-12

Project Name: MORRILLS CORNER

Project Number: ME5038

Designed By: AA Checked By: MSC



Determine Cf:

If lattice Structure See Manual

If Tubular Pole Structure, Use Corrected Value from Table 2.7 Below

C mph.ft	Round	18 Sided	16 Sided	12 Sided	8 Sided
< 32 (Subcritical)	1.2	1.2	1.2	1.2	1.2
32 to 64 (Transitional)	$38.4/C^{1.0}$	$25.8/C^{0.885}$	$12.6/C^{0.678}$	$2.99/C^{0.263}$	1.2
> 64 (Supercritical)	0.6	0.65	0.75	1	1.2

$$C = (I * K_{zt} * K_z)^{0.5} * V * D$$

Dp = Outside Diameter or Out to Out: 0.2 feet

C= 22.66

Cf= 1.2

<u>Appurtenances</u>	<u>Height</u>	<u>Width</u>	<u>Depth</u>	<u>Flat Area</u>	<u>Force Per Appurtenance</u>
Item No.1	54	12.6	7.87	4.73	238.98 (lbs)
Item No.2	17.8	17	7.2	2.10	106.29 (lbs)
Item No.3	10.25	10.25	6.29	0.73	36.90 (lbs)
Item No.4	0	0	0	0.00	0.00 (lbs)
Item No.5	0	0	0	0.00	0.00 (lbs)

TOTAL FORCE (ΣF_A) =	382.17 (lbs)
--	---------------------

