

THOMAS J. REGAN
Direct Dial: (860) 509-6522
tregan@brownrudnick.com

EM-T-MOBILE-045-100909

CityPlace I
185 Asylum
Street
Hartford
Connecticut
06103
tel 860.509.6500
fax 860.509.6501

Via Hand Delivery

September 9, 2010

Daniel F. Caruso, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

ORIGINAL

RECEIVED
SEP - 9 2010
CONNECTICUT
SITING COUNCIL

RE: Notice of Exempt Modification / 269 Flanders Road, East Lyme

Dear Mr. Caruso:

On behalf of T-Mobile USA, Inc. ("T-Mobile"), enclosed for filing are an original and 5 copies of T-Mobile's Notice of Exempt Modification for 269 Flanders Road in East Lyme, Connecticut.

I also enclose herewith a check in the amount of \$625.00 representing the filing fee.

I would appreciate it if you would date-stamp the enclosed copy of this transmittal letter and return it to the courier delivering this package.

If you have any questions, please feel free to contact me.

Very truly yours,

BROWN RUDNICK LLP

By: Thomas J. Regan
Thomas J. Regan

Enclosures

cc w/ encl. via 1st Class Mail – First Selectman Formica

40276724 v1 - MERCIECM - 025064/0016

CONNECTICUT SITING COUNCIL

In re:

T-Mobile USA, Inc. Notice to Make an Exempt : EXEMPT MODIFICATION No. _____
Modification to an Existing Facility at :
269 Flanders Road in East Lyme, Connecticut. : September 9, 2010

NOTICE OF EXEMPT MODIFICATION

Pursuant to Conn. Agencies Regs. §§ 16-50j-73 and 16-50j-72(b), T-Mobile USA, Inc. ("T-Mobile") hereby gives notice to the Connecticut Siting Council ("Council") and the Town of East Lyme of T-Mobile's intent to make an exempt modification to the existing Connecticut Light & Power ("CL&P") transmission tower (the "Tower") located at 269 Flanders Road in East Lyme, Connecticut. Specifically, T-Mobile plans to upgrade its wireless system in Connecticut by implementing its Universal Mobile Telecommunications System ("UMTS"). UMTS is a third-generation ("3G") technology that utilizes a code division multiple access ("CDMA") base to allow for fast and large data transfers. To accomplish this upgrade, T-Mobile must modify its antenna and equipment configurations at many of its existing sites.

Once the UMTS upgrade is complete, T-Mobile will operate on a more unified communication system, allowing international wireless telephones to function world-wide. Furthermore, UMTS will enhance global positioning system ("GPS") navigation capabilities and provide emergency responders with more advanced tracking capabilities. The proposed UMTS technology is compatible with the existing second-generation ("2G") Global System for Mobile Communication ("GSM") currently on the Tower and the proposed upgrade is expected to enhance the existing 2G system. In order to accomplish the upgrade at this site, T-Mobile plans to add UMTS technology and install associated equipment at the base of the Tower.

Under the Council's regulations (Conn. Agencies Regs. § 16-50j-72(b)), T-Mobile's plans do not constitute a modification subject to the Council's review because T-Mobile will not

change the height of the Tower, will not extend the boundaries of the site, will not increase the noise levels at the site, and will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards.

The Tower is an 85-foot CL&P transmission pole (Pole No. 6076), with an existing 11-foot extension located at 269 Flanders Road in East Lyme, Connecticut (latitude N 41° 21' 40.6", longitude W -72° 12' 25.0"). The Tower is owned by CL&P. Currently, T-Mobile has 3 panel antennas with a centerline at 92 feet on the Tower. A site plan with Tower specifications is attached.

T-Mobile plans to remove the existing canister and install a new pipe mast (which will be shorter than the existing canister) in order to support its proposed modifications at this site. Specifically, T-Mobile plans to remove its 3 existing antennas and install 2 new UMTS panel antennas (in the Alpha and Gamma sectors). The proposed antennas will have a centerline of 92 feet. To confirm the Tower can support these changes, T-Mobile commissioned Centek Engineering to perform a structural analysis of the Tower (attached). According to the structural assessment, dated May 25, 2010, "the subject utility pole is adequate to support the proposed antenna mast and related appurtenances" (Section, 1-3, Structural Analysis, emphasis in original). T-Mobile will comply with the suggestion in the Structural Analysis to replace the existing antenna mast so it can adequately support T-Mobile's upgrade.

In addition, T-Mobile proposes to install its UTMS equipment cabinet, adjacent to the existing concrete pad, on a new 6-foot by 10-foot concrete pad. The ice canopy will be extended to cover the equipment cabinet and an ice bridge will connect the equipment with the Tower. Since T-Mobile is locating its concrete pad adjacent to the existing pad it is therefore not increasing the boundaries of the site.

Therefore, excluding brief, minor, construction-related noise during the addition of the antennas and the installation of the equipment cabinet, T-Mobile's changes to the Tower will not increase noise levels at the site.

The proposed antennas will not adversely impact the health and safety of the surrounding community or the people working on the Tower. The total radio frequency exposure measured around the Tower will be well below the National Council on Radiation Protection and Measurements' ("NCRP") standard adopted by the Federal Communications Commission ("FCC"). The worst-case power density analysis measured at the base of the Tower indicates that T-Mobile's antennas will emit 14.86% of the NCRP's standard for maximum permissible exposure. Therefore, the power density levels will be below the FCC mandated radio frequency exposure limits in all locations around the Tower, even with extremely conservative assumptions. The power density analysis is attached.

In conclusion, T-Mobile's proposed plan to add antennas and equipment at this site does not constitute a modification subject to the Council's jurisdiction because T-Mobile will not increase the height of the Tower, will not extend the boundaries of its lease area at the site, will not increase the noise levels at the site, and the total radio frequency electromagnetic radiation power density will stay within all applicable standards. *See Conn. Agencies Regs. § 16-50j-72.*

T-Mobile USA, Inc.

By: Thomas J. Regan

Thomas J. Regan
Brown Rudnick LLP
185 Asylum Street, CityPlace I
Hartford, CT 06103-3402
Email - tregan@brownrudnick.com
Phone - 860.509.6522 /Fax - 860.509.6501

Certificate of Service

This is to certify that on this 9th day of September, 2010, the foregoing Notice of Exempt Modification was sent, via first class mail, to the following:

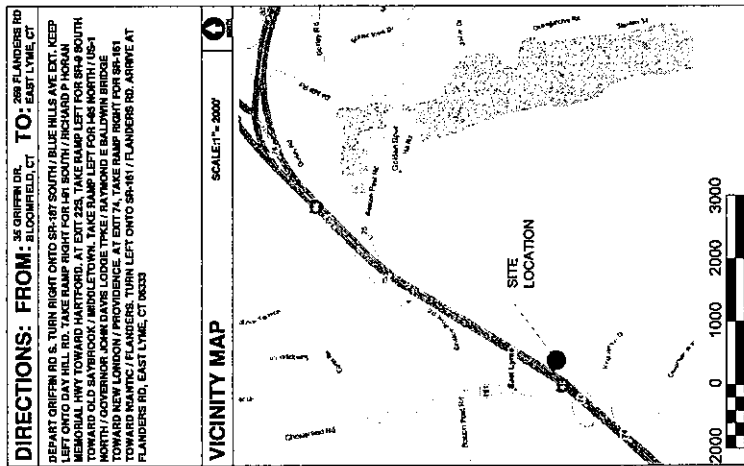
Paul Formica
First Selectman
Town of East Lyme
108 Pennsylvania Avenue
Niantic, CT 06357

By: Thomas J. Regan
Thomas J. Regan

40275191 v1 - MERCIECM - 028667/0016

EASTLYME/I-95/X72/AT_1 CT11039D
CL&P POLE #6076
269 FLANDERS ROAD
EAST LYME, CT 06333

PROJECT SUMMARY	
SITE NAME:	EASTLYNCH-45X272A1_1 CLAP POLE #0076
SITE ADDRESS:	268 FLANDERS ROAD EAST LYME, CT 06033
SITE LOCATION:	LATITUDE 41° 21' 46" N LONGITUDE -72° 12' 25" W GROUND E.L. 175 (A.M.S.L.)
PROPERTY OWNER:	CONN LIGHT & POWER CO. 87 SLODGE STREET BURLINGTON, CT 06027
APPLICANT, LESSOR/OWNER, PROJECT OWNER:	T-MOBILE NORTHHEAT, LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 (860) 687-1765
CONTACT:	LISA LIN NIDENBERGER TRANSCEND WIRELESS, LLC (203) 276-4666
ASSESSOR'S PARCEL NO.:	MAP: 31.0 LOT: 6-1
ZONING DISTRICT:	CA
SHEET INDEX	
SHT. NO.	DESCRIPTION
01	TITLE SHEET
02	COMPOUND PLAN, NOTES & DETAILS
03	ELEVATION AND DETAILS
04	EQUIPMENT DETAILS
05	ANTENNA DETAILS
06	GROUNDING NOTES, RISERS AND DETAILS
07	ELECTRICAL SPECIFICATIONS AND NOTES
08	GROUNDING NOTES
GENERAL NOTES	
THE PROPOSED SCOPE OF WORK GENERALLY INCLUDES (1) NEW ERICSSON RISB 300K UNITS CABINET ON PROPOSED CONCRETE PAD WITHIN COMPOUND. A TOTAL OF TWO (2) DIRECTIONAL PANEL ANTENNAS ARE PROPOSED TO BE MOUNTED ON THE PROPOSED 17 MAST PIPE ON EXISTING 8" TALL CLAP STEEL POLE #0076 (UTILITY POLE DESIGN BY OTHERS) AT A RAD CENTER ELEVATION OF 82' ABOVE THE GROUND. THE ANTENNAS ARE TO BE MOUNTED TO THE MAST TO THE EXTERIOR OF THE UTILITY POLE NO HOLES OR WELDING SHALL BE MADE TO EXISTING UTILITY POLE. PROPOSED ELECTRICAL SERVICE WILL BE ROUTED ABOVE GRADE PROPOSED RISB 300K UNITS CABINET. PROPOSED TELCO SERVICE WILL BE ROUTED ABOVE GRADE FROM EXISTING TELCO ON H-FRAME TO PROPOSED RISB 300K UNITS CABINET LOCATED WITHIN THE COMPOUND.	



11. ALL EQUIPMENT PRODUCTS PURCHASED ARE TO BE REVIEWED BY THE CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
12. ANY AND ALL ERRORS, DISCREPANCIES, AND MISSED ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF T-MOBILE DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO "EXTRA" WILL BE ALLOWED FOR MISSED ITEMS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
14. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT TO THE ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKERS INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
15. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLE, AND LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION AND FOR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
16. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APURTHERANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL UTILITIES. COMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
17. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
18. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO EXCAVATIONS AT THE JOB SITE. ALL UTILITIES SHALL BE PROTECTED AND MARKED PRIOR TO EXCAVATION. THE CONTRACTOR SHALL PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
19. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL WORK AND ACTIVATION FOR THE PROJECT INCLUDING PROTECTING ALL SENSITIVE MATERIALS TO BE PROTECTED BY THE CONTRACTOR.
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2003 CONNECTICUT SUPPLEMENT, INCLUDING THE TBMBA-222 REVISION "T" STRUCTURES", ANTENNA TOWERS AND SUPPORTING STRUCTURES".
2. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE SUBCONTRACTORS SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL BE RESPONSIBLE FOR THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
3. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL INSPECTION.
4. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH ALL CITY, STATE AND FEDERAL REQUIREMENTS AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
5. CONTRACTORS SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE PERMITS AND INSPECTIONS. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
6. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO ALL SUBCONTRACTORS. ALL NEW DRAWINGS SHALL BE MAILED VOUCHER AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN "AS-BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
7. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTOR.
8. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITIONS OF WHATEVER BRACING, SHADING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
9. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE NOTED TO BE SUBSTANDARD TO ANY ORDINANCE, LAW, CODE, RULE, OR REGULATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND INSURANCE TO CORRECTLY CONFORM TO ALL ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
10. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.

1. ALL DIMENSIONS SHOWN THIS & ARE APPROPRIATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL DIMENSIONS OF THE CONTRACT WORK. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH OWNER PRIORS TO CONSTRUCTION.
2. NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. CONTRACTOR SHALL VERIFY TRUE NORTH AND INFORM ANY DISCREPANCY TO ANY DESIGN PRIORS BEFORE STARTING CONSTRUCTION.
3. THE CONTRACTOR AND/OR HIS SUB CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK IN ANY STATE OR LOCAL GOVERNMENT AUTHORITY.
4. ANTENNA INSTALLATION SHALL BE CONDUCTED BY MU APPROVED CONSTRUCTORS.
5. COAXIAL CABLES CONNECTORS AND TRANSMITTER EQUIPMENT SHALL BE PROVIDED BY THE OWNER AND NOT INCLUDED IN SUPPLIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPLIED MATERIALS IS ATTACHED TO THE BID DOCUMENTS. ALL SUPPLIED MATERIALS TO BE PROVIDED BY THE CONTRACTOR.
6. CONSTRUCTION, LAYOUT, AND FINISHING OF COAXIAL CABLE AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF THE ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
7. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND INSPECTION.
8. PER FOR MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED FOR ALL COMMUNICATIONS SYSTEMS. IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND ANTENNA LOCATED IN CLOSE PROXIMITY TO THE BIDS MAJOR CARRIERS. TELECOMMUNICATIONS RESERVES THE RIGHT TO MAKE REASONABLE TECHNOLOGY EVALUATES TO MEET REQUIRED SPECIFICATIONS.

ABBREVIATIONS

LESS OTHERS NOTED
WALLS WERE FAIRLY
THIN
IN CONTRACT
MENT IN
EXISTING
TERIOR
FINISHED FLOOR
LIKE
ADVANCED
PERIAL CONTRACTOR
FOUND
NO
CONCRETE
CORRECTION
FACTORY
GROUND BAR
HOLE
FIRE
TAL
IN CONTRACT
AS TRANSMISSION STATION
NORMAL
COMMUNICATIONS SERVICE
INTERNAL MARK 1
AIRLINE
SITE
ED
AT
LOCAL POSITIONING SYSTEM

TRANSCEND WIRELESS, LLC
18 INDUSTRIAL AVE

T-MOBILE NORTHEAST, LLC
35 GLENN ROAD SOUTH
BLOOMFIELD, CT 06011
OFFICE: (860) 953-7150
FAX: (860) 953-7159

ATLANTIS GROUP
1340 Centre Street Suite 203
Newton Center, MA 02459
Office: 617-865-0788
Fax: 617-863-6032



APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

AVE _____

DRAWN BY:	QC
CHECKED BY:	SM

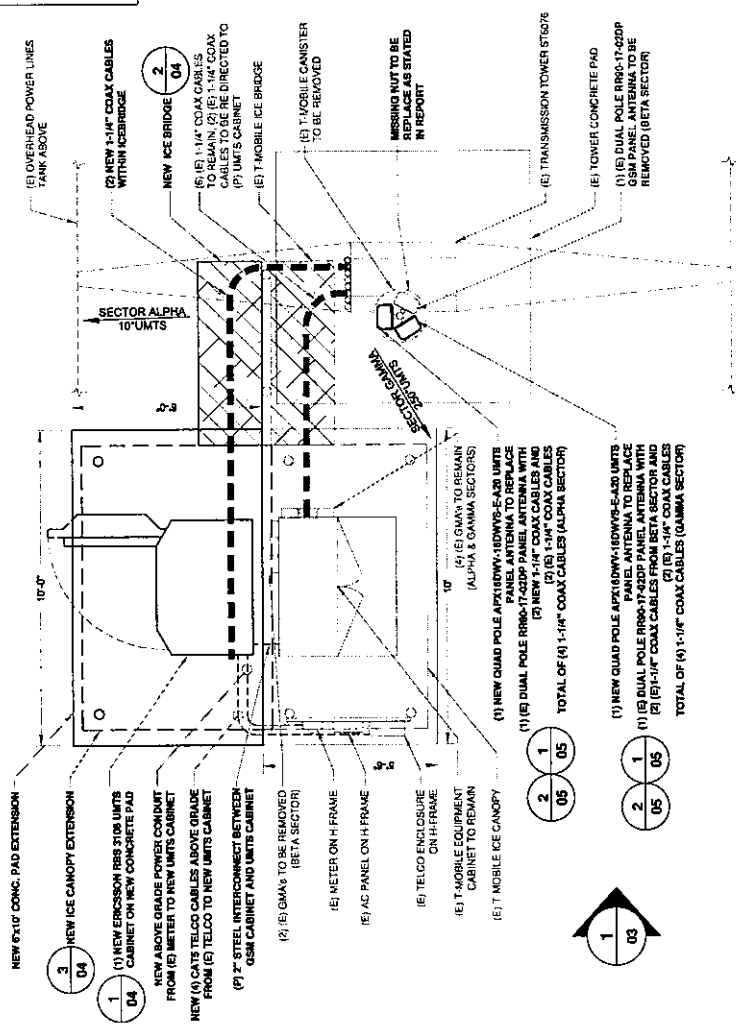
A	05/21/10	ISSUED FOR REVIEW
D	06/23/10	REVISED

THIS DOCUMENT IS THE CREATION OF THE DESIGN, PROPERTY AND COPYRIGHTED WORK OF A NETWORK OF MOBILE COMMUNICATIONS, ANY REPLICATION 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.

CT11039D
CL&P POLE #6076
269 FLANDERS ROAD
EAST LYME, CT 06325

SHEET TITLE:
**COMPOUND PLAN,
NOTES AND DETAILS**

02



COMPOUND PLAN

1 02

SCALE: 1/4" = 1'-0" (11x17)
2 0 2 4 6
1/2" = 1'-0" (24x36)

NORTH



ANTENNA AZIMUTHS:
SECTOR A= 10°
SECTOR B= TO BE RE
SECTOR C= 250°

T-MOBILE NORTHEAST, LLC
35 GILBERT ROAD SOUTH
BLOOMFIELD, CT 06007
OFFICE: (860) 693-3329
FAX: (860) 693-7139

ATLANTIS GROUP
1340 Centre Street Suite 203
Newton Center, MA 02459
Office: 617-465-0760
Fax: 617-465-0032



APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

A/E _____

DRAWN BY:	GC
CHECKED BY:	SM

SUBMITTALS

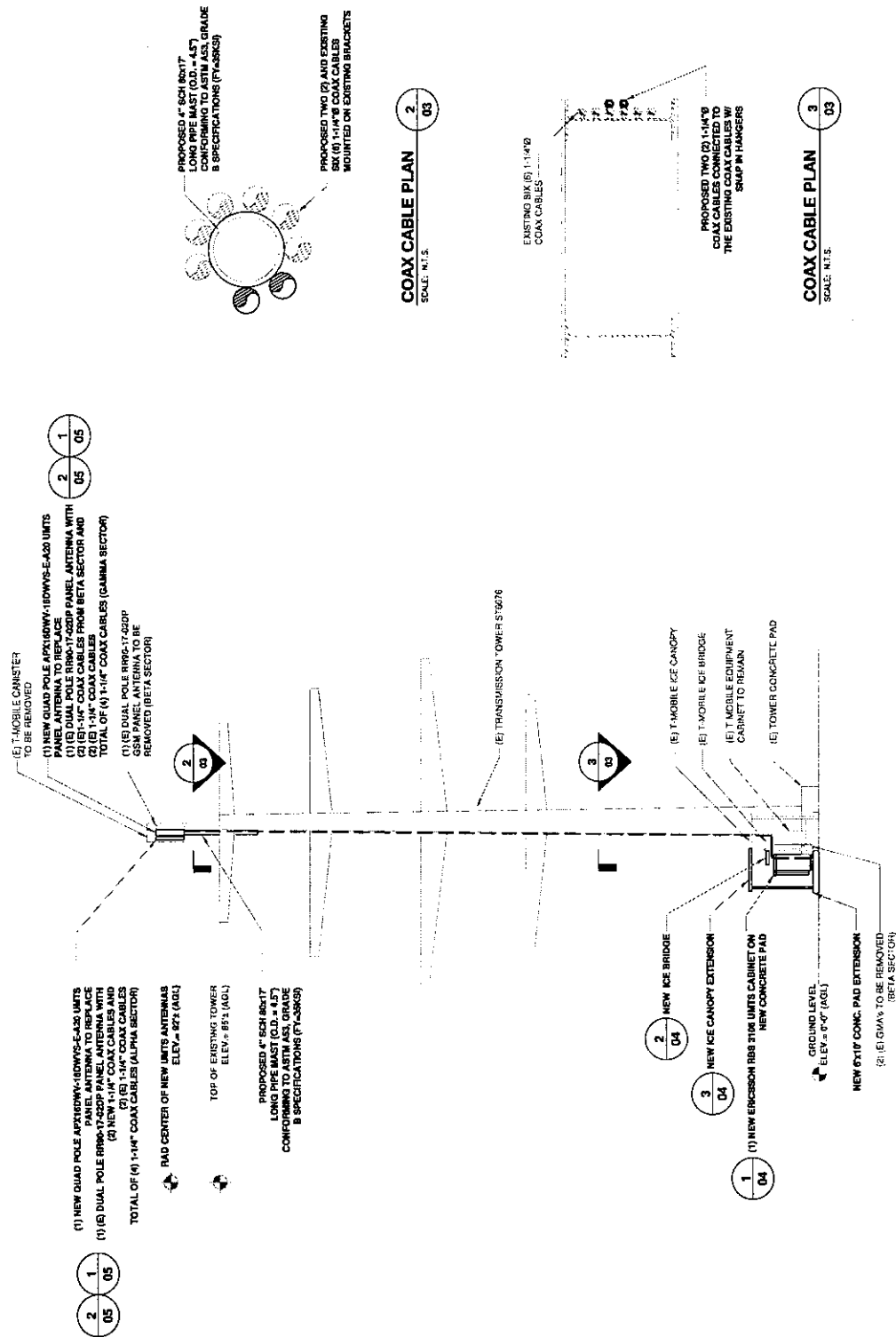
A	06/21/10	ISSUED FOR REVIEW
D	06/23/10	REVISED

THIS DOCUMENT IS THE CREATION OF THE U.S. GOVERNMENT. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT EXPRESS WRITTEN CONSENT FROM THE U.S. GOVERNMENT. THIS DOCUMENT IS STRICTLY PROHIBITED, DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR FULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

EASTLYME/I-95/X72/AT_1
CT11039D
CL&P POLE #6076
260 FLANDERS ROAD
EAST LYME, CT 06333

SHEET TITLE:
**ELEVATION AND
DETAILS**

SHEET NUMBER:
03



ELEVATION

1
03

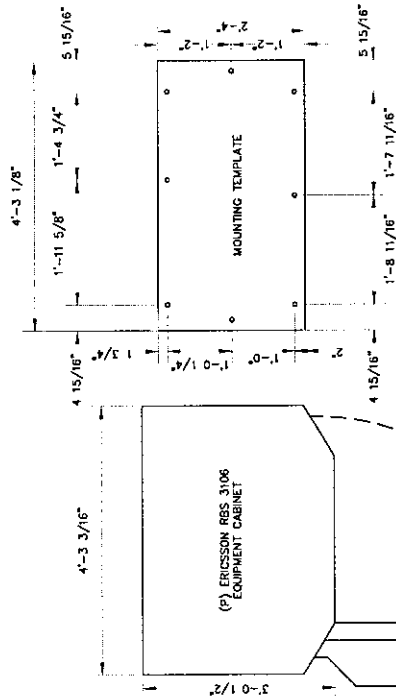
SCALE: 1/16" = 1'-0" (1:12)
SCALE: 1/8" = 1'-0" (24:36)

8 0 8 16 24

2 03
COAX CABLE PLAN
SCALE: N.T.S.

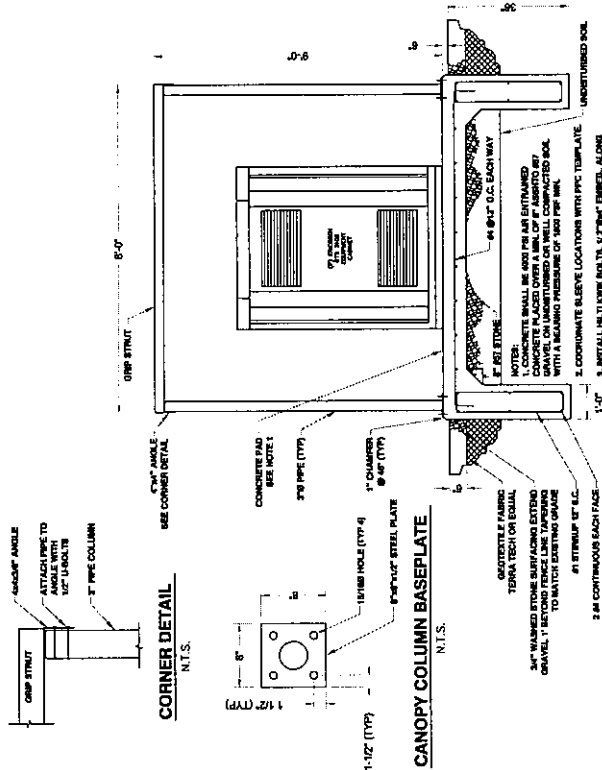
COAX CABLE PLAN

NOTE: NO STRUCTURAL EVALUATION HAS BEEN CONDUCTED BY ATLANTIS GROUP, INC. NO ADDITIONS OR MODIFICATIONS TO THE CLAP TOWER SHALL BE MADE WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.



SECTION AT ICE BRIDGE/CABLE TRAY

04



CONCRETE PAD SECTION

04

ERICSSON RBS 3106 EQUIPMENT CABINET

04

SCALE: 1/2" = 1'-0" (11x17)
SCALE: 1" = 1'-0" (24x36)

STRUCTURAL NOTES

- DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENT, ANSIS/ASCE E87A10-22-F STRUCTURAL STANDARDS FOR STEEL ANTENNA SUPPORTING STRUCTURES.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN FIELD PRIOR TO FABRICATION AND ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER.
- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE FOR THE DESIGN FABRICATION AND Erection OF STRUCTURAL STEEL FOR BUILDINGS.
- STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A572 GRADE 50 STRUCTURAL STEEL UNLESS OTHERWISE INDICATED.
- STEEL PIPE SHALL CONFORM TO ASTM A500 COLD-FORMED STRUCTURAL TUBING, GRADE A, OR ASTM A53 PIPE STEEL, BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS. ACTUAL OUTSIDE DIAMETER IS LARGER.
- STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325. ALL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS, ALL BOLTS SHALL BE 5/8" DIA UNLESS OTHERWISE NOTED.
- ALL STEEL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A152, "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
- FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH THE REQUIREMENTS OF ASTM A790. GALVANIZING REPAIR PAINT SHALL HAVE 85 PERCENT ZINC BY WEIGHT, DRY FILM THICKNESS SHALL BE 0.004 IN. (0.10 MM) MINIMUM, OR OF EQUAL THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT LESS THAN 4 COATS (ALLOWED TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A790 AND A153 AS APPLICABLE.
- CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS AND METHODS USED IN CONNECTION WITH ALL WELDING. WELDING SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AWS D11.1 WHERE FULL PENETRATION WELDS ARE NOT SHOWN, THE WELD SHALL BE FULL PENETRATION WELDS IN THE JOINT. WELDING SHALL BE DONE IN ACCORDANCE WITH THE CONSTRUCTION 8TH EDITION.
- NO WELDING, OR CUTTING INTO CLAP OR WMEOS STRUCTURES.
- INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
- UNISTRUTS SHALL BE FORMED STEEL CHANNEL, TRUSS FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STEEL MEMBERS SHALL BE 1 1/2" x 1 1/2" x 1/4" UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
- STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS, AN INTERNAL WELDING ROD WITH NUTS & WASHERS, A LOCK WASHING AND A LOCK WASHER SHALL BE 304 STAINLESS STEEL, 1/2" DIA. OR 1/4" DIA. (AS SPECIFIED ON DWG.) OR ENGINEERS APPROVED EQUIVALENT WITH 1/4" MIN. EMBEDMENT DEPTH.
- EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-352, GROUP A, TYPE 4, CLASS 1, 1/2" DIA. BOLTS & APPROVED EQUAL. MANUFACTURER'S RECOMMENDATIONS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE THREE AND ONE HALF (3 1/2) INCHES.

TRANSCEND WIRELESS, LLC
18 INDUSTRIAL AVE
ROCKFORD, CT 06455
OFFICE: (860) 441-8800
FAX: (860) 441-8801

T-MOBILE NORTHEAST, LLC
1000 W. ROAD NORTH
ROCKFORD, CT 06455
OFFICE: (860) 441-8800
FAX: (860) 441-8801

ATLANTIS GROUP
1340 Centre Street Suite 200
Newtown Center, MA 02459
OFFICE: (508) 548-0000
FAX: (508) 548-0001



APPROVALS
LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
A/E _____

DRAWN BY: OC

CHECKED BY: SM

SUBMITTALS

A 05/21/08 ISSUED FOR REVIEW

0 06/23/09 REVISED

THIS DOCUMENT IS THE CREATION OF TRANSCEND WIRELESS, LLC. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT EXPRESS WRITTEN CONSENT OF TRANSCEND WIRELESS, LLC. FOR THE PURPOSES OF CONTRACTING, THE MANUFACTURER'S RECOMMENDATIONS SHALL BE USED. REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

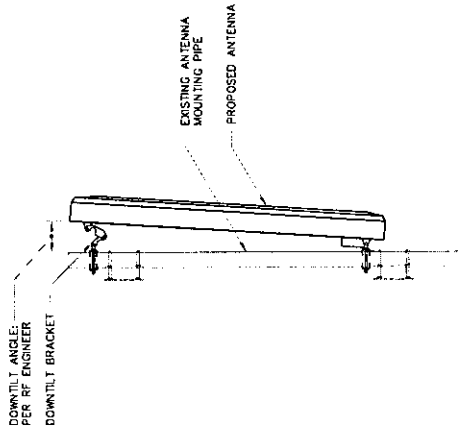
BASTLYMEZ-95X72AT 1
CT11039D
CL&P POLE #6076
240 FLANKERS ROAD
EAST LYME, CT 06333

SHEET TITLE:

EQUIPMENT DETAILS

SHEET NUMBER: 04

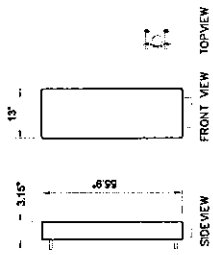
NOTE: NO STRUCTURAL EVALUATION HAS BEEN CONDUCTED BY ATLANTIS GROUP, INC. NO ADDITIONS OR MODIFICATIONS TO THE CLAP TOWER SHALL BE MADE WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.



**MOUNTING ASSEMBLY
(ALL ANTENNAS)**

1
05

N.T.S.



QUAD POLE ANTENNA DETAIL

2
05

N.T.S.

TRANSCEND WIRELESS, LLC
14 PONDHILL AVE
PONDHILL, MA 01906
OFFICE: 508-853-0000
FAX: 508-853-0000

T-MOBILE NORTHEAST, LLC
14 PONDHILL AVE
PONDHILL, MA 01906
OFFICE: 508-853-0000
FAX: 508-853-0000

ATLANTIS GROUP
1400 GARDEN CITY ROAD
GARDEN CITY, NY 11530
OFFICE: 516-460-0789
FAX: 516-460-0802

STATE OF CONNECTICUT
HOMES VALUED
LICENSED ANTIQUE
ARTS AND CRAFTS
SHOW

APPROVALS
LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
A/E _____

DRAWN BY: GC
CHECKED BY: SM

SUBMITTALS
A 06/2/06 ISSUED FOR REVIEW
B 06/23/06 REVISED

THIS DOCUMENT IS THE CREATION OF TRANSCEND WIRELESS, LLC. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF TRANSCEND WIRELESS, LLC. THIS DOCUMENT IS THE PROPERTY OF TRANSCEND WIRELESS, LLC. IT IS TO BE USED FOR THE PURPOSES OF CONDUCTING THE PROJECT ONLY. IT IS NOT TO BE USED FOR ANY OTHER PURPOSES. TRANSCEND WIRELESS, LLC. AUTHORIZED FUNCTIONS IS SPECIFICALLY ALLOWED.

EASTLYMEET-95X72/AT_1
CT11039D
CL&P POLE #6076
269 FLANDERS ROAD
EAST LYME, CT 06333

SHEET TITLE:
ANTENNA DETAILS

SHEET NUMBER:
05

ELECTRICAL SPECIFICATIONS

SECTION 16010

1.01. SCOPE OF WORK

A. WORK SHALL INCLUDE ALL LABOR, EQUIPMENT AND SERVICES REQUIRED TO COMPLETE MAKE READY FOR OPERATION ALL THE ELECTRICAL WORK INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

1. ALL EQUIPMENT AND HAND TRENCHING FOR POWER, TELECOMMUNICATION, GROUNDING SYSTEM INSTALLATION.
2. PROVIDE A COMPLETE EXTERIOR GROUNDING SYSTEM, CONSISTING OF ANTENNA GROUNDING, GROUND RODS, GROUNDING CABLE, COMPRESSION AND EXOTHERMIC CONNECTIONS.
3. PROVIDE GROUNDING SYSTEM TEST FOR THE EXISTING SITE. PROVIDE REPORT TO WIRELESS CARRIER CONSTRUCTION MANAGER. PROVIDE NEW WIRELESS CARRIER CELLULAR SITE GROUNDING TEST AND A GROUNDING SYSTEM TEST FOR WHEN ALL SYSTEMS ARE CONNECTED. PROVIDE SEPARATE REPORTS FOR EACH TEST TO CONSTRUCTION MANAGER.

B. CONTRACTOR SHALL CONFER WITH LOCAL UTILITY COMPANIES TO ASCERTAIN THE LIMITS OF THEIR WORK. ALL UTILITY CHARGES OR FEES FOR THE ABOVE WORK WILL BE DIRECTLY BILLED TO WIRELESS CARRIER. THE CONTRACTOR SHALL EXCLUDE THESE ITEMS FROM THE BID. THE CONTRACTOR MUST BE AN APPROVED NU CONTRACTOR.

1.02. GENERAL REQUIREMENTS

- A. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY APPLY AND NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT OF SUCH CODES OR REGULATIONS.
- B. THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH WIRELESS CARRIER REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRAVEL.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES AS MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR SCHEDULING OF ALL INSPECTIONS AS REQUIRED BY THE LOCAL AUTHORITY.
- D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE LAND LEASE OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.
- E. NO MATERIAL OTHER THAN THAT CONTAINED IN THE LATEST LIST OF ELECTRICAL "MATERIALS" APPROVED BY THE UNDERWRITERS LABORATORIES, SHALL BE USED IN ANY PART OF THE WORK. ALL MATERIAL FOR WHICH LABEL SERVICE HAS BEEN ESTABLISHED SHALL BEAR THE UL LABEL.
- F. THE CONTRACTOR SHALL GUARANTEE ALL WORK FOR 5 YEARS OF THE CONTRACTOR'S ACCEPTANCE DATE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE OWNER.
- G. DRAWINGS INDICATE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. CONTRACTOR SHALL WITHOUT EXTRA CHARGE, MAKE MODIFICATIONS TO THE LAYOUT OF THE WORK TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR THE PROPER INSTALLATION OF WORK. CHECK ALL DRAWINGS AND VISIT JOB SITE TO VERIFY SPACE AND TYPE OF ACCESS AND CONDITIONS IN WHICH WORK WILL BE DONE, PRIOR TO SUBMITTAL OF BID.
- H. THE ELECTRICAL CONTRACTOR SHALL SUPPLY SIX (6) COMPLETE SETS OF APPROVED DRAWINGS, ENGINEERING DATA SHEETS, MAINTENANCE AND TESTING INSTRUCTIONS, AND ALL NECESSARY MATERIALS. ALL REQUIRED EQUIPMENT, THESE MANUALS SHALL BE INSERTED IN VINYL COVERED 3-RING BINDERS AND TURNED OVER TO OWNERS REPRESENTATIVE ONE (1) WEEK PRIOR TO FINAL PUNCH LIST.
- I. ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER AND WILL BE SUBJECT TO THE APPROVAL OF THE OWNERS REPRESENTATIVE. ALL EQUIPMENT AND MATERIALS TO BE INSTALLED SHALL BE NEW, UNLESS OTHERWISE NOTED.
- J. BEFORE FINAL PAYMENT, THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF PRINTS (AS-BUILTS), LEGIBLY MARKED IN RED PENCIL TO SHOW ALL CHANGES FROM THE ORIGINAL PLANS.
- K. PROVIDE TEMPORARY POWER AND LIGHTING IN WORK AREAS AS REQUIRED.
- L. SHOP DRAWINGS
- M. SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SIX (6) COPIES OF SHOP DRAWINGS ON ALL EQUIPMENT AND MATERIALS TO BE USED ON THE PROJECT, INCLUDING ALL DETAILS, WHICH INCLUDE DIMENSIONS, CAPACITIES, ETC. FOR IN THE SPECIFICATIONS AND DRAWINGS.

2. CONTRACTOR SHALL SUBMIT SIX (6) COPIES OF ALL TEST REPORTS CALLED FOR IN THE SPECIFICATIONS AND DRAWINGS.

SECTION 16450

1.01. GROUNDING

A. ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AND INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.

B. GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTION HAVING JURISDICTION.

C. CELLULAR GROUNDING SYSTEM:

CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE FOLLOWING: 1. PROVIDE A COMPLETE EXTERIOR GROUNDING SYSTEM, CONSISTING OF ANTENNA GROUNDING, GROUND RODS, GROUNDING CABLE, COMPRESSION AND EXOTHERMIC CONNECTIONS. 2. PROVIDE GROUNDING SYSTEM TEST FOR THE EXISTING SITE. PROVIDE REPORT TO WIRELESS CARRIER CONSTRUCTION MANAGER. PROVIDE NEW WIRELESS CARRIER CELLULAR SITE GROUNDING TEST AND A GROUNDING SYSTEM TEST FOR WHEN ALL SYSTEMS ARE CONNECTED. PROVIDE SEPARATE REPORTS FOR EACH TEST TO CONSTRUCTION MANAGER.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

SECTION 16960

1.01. TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

A. CONTRACTOR SHALL PROVIDE A COMPLETE GROUNDING SYSTEM WITH THE FOLLOWING: 1. PROVIDE A COMPLETE EXTERIOR GROUNDING SYSTEM, CONSISTING OF ANTENNA GROUNDING, GROUND RODS, GROUNDING CABLE, COMPRESSION AND EXOTHERMIC CONNECTIONS. 2. PROVIDE GROUNDING SYSTEM TEST FOR THE EXISTING SITE. PROVIDE REPORT TO WIRELESS CARRIER CONSTRUCTION MANAGER. PROVIDE NEW WIRELESS CARRIER CELLULAR SITE GROUNDING TEST AND A GROUNDING SYSTEM TEST FOR WHEN ALL SYSTEMS ARE CONNECTED. PROVIDE SEPARATE REPORTS FOR EACH TEST TO CONSTRUCTION MANAGER.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

CELLULAR GROUNDING NOTES

1. CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE FOLLOWING: 1. PROVIDE A COMPLETE EXTERIOR GROUNDING SYSTEM, CONSISTING OF ANTENNA GROUNDING, GROUND RODS, GROUNDING CABLE, COMPRESSION AND EXOTHERMIC CONNECTIONS. 2. PROVIDE GROUNDING SYSTEM TEST FOR THE EXISTING SITE. PROVIDE REPORT TO WIRELESS CARRIER CONSTRUCTION MANAGER. PROVIDE NEW WIRELESS CARRIER CELLULAR SITE GROUNDING TEST AND A GROUNDING SYSTEM TEST FOR WHEN ALL SYSTEMS ARE CONNECTED. PROVIDE SEPARATE REPORTS FOR EACH TEST TO CONSTRUCTION MANAGER.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

D. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM, SHALL NOTIFY WIRELESS CARRIER CONSTRUCTION MANAGER WHO SHALL DESIGNATE AN INSPECTION VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

3. PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUNDING BARS
2. GROUND RODS
3. EXTERIOR GROUNDING
4. CEE BRIDGE GROUND CONNECTIONS.

TRANSCEND WIRELESS, LLC
1100 WESTERN AVE
SUITE 200
OFFICE: 203.461.4400
FAX: 203.461.4400

T-MOBILE, NORTHEAST, LLC
1000 WESTERN AVE
SUITE 200
OFFICE: 203.461.4400
FAX: 203.461.4400

ATLANTIS GROUP
1500 Street Suite 200
Newtown, CT 06459
OFFICE: 203.461.4400
FAX: 203.461.4400



APPROVALS
LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
A/E _____
DRAWN BY: _____
CHECKED BY: _____
SUBMITTALS
1. 05/21/06 ISSUED FOR REVIEW
2. 06/23/06 REVISED
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

THIS DOCUMENT IS THE PROPERTY OF TRANSCEND WIRELESS, LLC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE WRITTEN CONSENT OF TRANSCEND WIRELESS, LLC. FOR THE PURPOSES OF CONTRACTING, REGULATION AND ADMINISTRATIVE FUNCTIONS, IS SPECIFICALLY ALLOWED.

EASTLYNMB21-95X72AT_1
CT11039D
CL&P POLE #6076
240 PLAINFIELD ROAD
EAST LYME, CT 06423

SHEET TITLE:
ELECTRICAL
SPECIFICATIONS
AND NOTES
SHEET NUMBER
07

GENERAL:

1. **MOBILE, NORTHEAST, LLC, WILL FURNISH THE WIRE, CONNECTORS, AND MISCELLANEOUS MATERIAL ASSOCIATED WITH THE COUNTERPOISE GROUNDING SYSTEM.**
2. **THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO INSTALL THE GROUNDING SYSTEM AND TO REHABILITATE THE RIGHT-OF-WAY AS CLOSE AS POSSIBLE TO ITS ORIGINAL CONDITION.**
3. **THE CONTRACTOR SHALL HANDLE AND TRANSPORT THE OWNER SUPPLIED MATERIAL FROM THE OWNER'S STOREHOUSES AND YARDS TO THE JOB SITE AND SHALL RETURN SURPLUS MATERIAL AND EMPTY REELS TO DESIGNATED STOREHOUSES AND YARDS UPON COMPLETION OF THE CONTRACT.**
4. **NORTHEAST UTILITIES WILL BE RESPONSIBLE FOR PERFORMING TEST FOR SURGE IMPEDANCE AND WAVE IMPEDANCE.**

1. UNLESS OTHERWISE DIRECTED BY THE OWNER'S REPRESENTATIVE, COUNTERPOISE SHALL BE BURIED A MINIMUM OF 24" IN CULTIVATED AREAS AND 18" IN WOODED OR OTHER AREAS. IN ROCKY AREAS OR WHERE OBSTRUCTIONS ARE ENCOUNTERED, THE COUNTERPOISE SHALL BE ORIENTED AROUND SUCH OBSTRUCTIONS. ALL INSTALLATIONS SHALL INCLUDE CONNECTIONS TO EXISTING OR PROPOSED STRUCTURES, AND SUCH CONNECTIONS SHALL BE MADE BELOW GROUND USING BOLTED PARALLEL GROOVE CONNECTORS.

2. WHERE MULTIPLE STRUCTURE GROUNDS EXIST AT MULTI POLE STRUCTURES, THEY SHALL BE CONNECTED TOGETHER WITH BURRED COPPERWELD WIRE, BUT ONLY IF SUCH GROUNDS ARE IDENTICAL TO THE OTHERS. WHERE MULTIPLE GROUNDS EXIST AT SINGLE POLE STRUCTURES, CONNECTIONS SHALL BE MADE ONLY TO THE POLE GROUNDS, AND THE MINIMUM SPACING BETWEEN THE COUNTERPOISE AND ANCHOR RODS SHALL BE 10'. AT WOOD POLE STRUCTURES WHERE NO POLY PLOT GROUND EXIST, COUNTERPOISE CONNECTIONS SHALL BE MADE TO THE POLY PLOT GROUND.
3. FOR SINGLE CONTINUOUS (TYPE A) AND SINGLE BROKEN (TYPE B) COUNTERPOISE, THE WIRE SHALL BE 1/8" DIAMETER. FOR DOUBLE BROKEN (TYPE C) COUNTERPOISE, THE WIRES SHALL IN GENERAL, BE LAYED UNDER THE OUTSIDE PHASE WIRES OF THE TRANSMISSION LINE. COUNTERPOISE SHALL NOT BE INSTALLED ACROSS RIVERS, HIGHWAY, RAILROADS, OR OTHER OBSTACLES.

4. AT STEEL POLE STRUCTURES, A BURIED GRADING RING AND SPOKES SHALL ALSO BE INSTALLED AROUND THE STRUCTURE UNLESS THE STRUCTURE HAS A PAID PIER FOUNDATION OR UNLESS A RING ALREADY EXISTS. COUNTERPOISE WILL BE CONSIDERED AT TWO TIMES THE WEIGHT OF THE RING AND COMPENSATED SPOKES SHALL SLOPE LINEARLY UP TO THE STRUCTURE GROUND.
5. AT WOOD POLE STRUCTURES, AN 8" LENGTH OF PLASTIC HOLDING SHALL BE STAPLED OVER THE BOTTOM WITH 8" OF DOWN-LEG.

1. WHERE GROUND RODS ARE REQUIRED, THEY SHALL BE SINGLE OR SECTIONAL WITH THE LENGTH SPECIFIED. THEY SHALL BE DRIVEN VERTICALLY INTO THE GROUND TO A DEPTH WHICH WILL LEAVE THE TOP OF THE ROD AT LEAST 12" BELOW GRADE. ALL RODS SHALL BE CONNECTED TO COUNTERPOISE OR TO POLE GROUNDS USING BOLTED CONNECTORS.

1. SELECTIVE CLEANING PROCEDURES WERE USED IN THE DEVELOPMENT OF THE RIGHT-OF-WAY AND GROWTH OF PLANTS HAS BEEN SATISFIED. THE CONTRACTOR SHALL NOT VIOLATE ANY FEDERAL OR STATE LAWS OR REGULATIONS. THE CONTRACTOR SHALL MAINTAIN THE RIGHT-OF-WAY DURING THE EXECUTION OF THE WORK. THE CONTRACTOR SHALL REVIEW THE ROUTING OF EACH FIELD OF COMPARISON WITH THE OWNER'S REPRESENTATIVE PRIOR TO ITS FIELD SPECIFIED LOCATION. THE CONTRACTOR IS RESPONSIBLE TO THE OWNER FOR DAMAGES TO THE RIGHT-OF-WAY IN OTHER THAN THE FIELD SPECIFIED LOCATIONS.

-
2. ANY BRUSH ALONG THE FIELD SPECIFIED COUNTERTOP ROUGHNESS WHICH IS LEFT IN AN UNSUITABLE CONDITION BY THE INSTALLATION WORK WILL BE CUT TO THE GROUND BY THE CONTRACTOR AND LEFT IN SMALL, NEAT PILES IN PLACE WHERE CUT.
- L
1. IN SURFACE AREA EXCAVATION FOR THE INSTALLATION OF COUNTERTOP FINISHES TO THE LOCATION ANY SMALL Boulders, THEY WILL BE BACKFILL BELOW GARAGE OR DISPERSED ON THE RIGHT-OF-WAY AS THE OWNERS REPRESENTATIVE MAY DIRECT. INSTALLATION OF THE COUNTERTOP SHALL NOT RESULT IN A PATH OF SMALL BOULDERS ON THE FINISHED SURFACE.

1. THE OWNER ANTICIPATES THAT SEASONAL CONDITIONS MAY NOT ALLOW PERMANENT REHABILITATION OF WORK SITES AND THE RIGHT-OF-WAY UPON COMPLETION OF THE INSTALLATION OF THE COUNTERPOISE, WHERE TEMPORARY REHABILITATION HAS BEEN COMPLETED IN ADVERSE SEASON. THE CONTRACTOR SHALL TAKE THE FOLLOWING STEPS:

6. ALL DISTURBED SURFACES OF FOUNDATION SITES OR LONG TRENCH LINES OR ACCESS ROADS WILL BE GRAZED AND COVERED WITH HAY MULCH. SUCH DISTURBED SURFACES ON SLOPES GREATER THAN ONE (VERTICAL) ON FOUR (HORIZONTAL) SHALL BE COVERED WITH WOOD CHIPS.

3. AS DRYING CONDITIONS PERMIT IN THE SPRING, FOLLOWING COMPLETION OF THE INSTALLATION OF COUNTERPOISE, PERMANENT REHABILITATION OF ALL DISTURBED OR ERODED SURFACES SHALL BE ACCOMPLISHED AS FOLLOWS:

OF BUREAU

- GARDENS, OTHER CULTIVATED AREAS AND PASTURES, SHALL BE GRADED AND TOPSOILED TO RESTORE THE DEPTH OF FERTILE SOIL COMMON TO THE ADJACENT GROUND. WHEN APPROPRIATE, SEEDING SHALL BE DONE IN ACCORDANCE WITH STEP C BELOW.
- THE CONTRACTOR SHALL SEED ALL DISTURBED AREAS ALONG THE NEW COUNTERPOISE ROUTES. SEED SHALL BE SPREAD AT THE RATE OF 100 LBS. PER ACRE AND SHALL BE AS FOLLOWS OR APPROVED EQUAL:

	% BY WEIGHT	% BY GERMINATION	% BY PURITY
CREeping RED FESCUE	30	85	98
DOMESTIC RYE	20	90	98
KENTUCKY TALL FESCUE	60	-	-

3. ALL OTHER DISTURBED AREAS INCLUDING REMAINING FOUNDATION SITES, ACCESS ROADS, AND REPAIR OF EROSION OF SITUATION SHALL BE SEEDING WITH MOOD SPECIFICATION ABOVE IN REMOTE AREAS, A CONSERVATION MIX, AS USED BY THE CONNECTICUT STATE PARKS AND FOREST COMMISSION MAY BE SUBSTITUTED. ALL AREAS WHICH EXPERIENCED EROSION DAMAGE AND ALL SLOPES OVER ONE (VERTICAL) AND FOUR (HORIZONTAL) WHERE TEMPORARY REHABILITATION WORK HAS BEEN DONE SHALL BE RESEEDING.

- PERATIVE THAT PERMANENT REHABILITATION BE ACCOMPLISHED IN 6000 TIME, WHICH ALLOW THE OCCUPANT FULL AND UNDISTURBED USE OF THE SITE SUCCEEDING SEASON, TO PREVENT UNNECESSARY AND UNREASONABLE SPREADING OF CONTAMINATION OF BUILT SURFACES.

- BRUSH ALONG THE ACCESS ROADS WHICH IS LEFT IN AN UNSIGHTLY CONDITION BY THE CONDUCTED, SHALL BE CUT TO THE GROUND BY THE CONTRACTOR AND LEFT IN SMALL PILES IN PLACE WHERE CUT.

MAINTENANCE
OFFICE: (813) 664-8055
FAX: (813) 664-8056

ATLANTIS GROUP
1340 Caroline Street Suite 203
Newton Center, MA 02459
Office: 617-466-0769
Fax: 617-663-6002



APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

A/E _____

DRAWN BY:	QC
CHECKED BY:	SM

SUBMITTALS	
A	05/21/10 ISSUED FOR REVIEW
D	06/23/10 REVISED

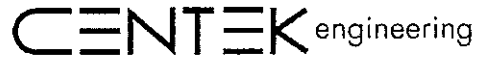
THIS DOCUMENT IS THE CREATION OF THE DESIGN, INTELLECTUAL PROPERTY AND COPYRIGHTED WORK OF T-MOBILE COMMUNICATIONS, INC. ANY REPRODUCTION OF THIS DOCUMENT WITHOUT EXPRESS WRITTEN CONSENT FROM T-MOBILE COMMUNICATIONS, INC. IS STRICTLY PROHIBITED. DUPLICATION FOR ANY PURPOSES OTHER THAN THAT AUTHORIZED BY T-MOBILE COMMUNICATIONS, INC. FOR THE PURPOSES OF CONDUCTING REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

EASTLYMEET-95/X72/AT_1
CT11039D
CL&P POLE #6076
269 FLANDERS ROAD
EAST LYME, CT 06333

SHEET TITLE:

GROUNDING NOTES

SHEET NUMBER:
08



Centered on Solutions™

Structural Analysis of PCS
Structure and CL&P Pole

T-Mobile: CT11-039D; East Lyme

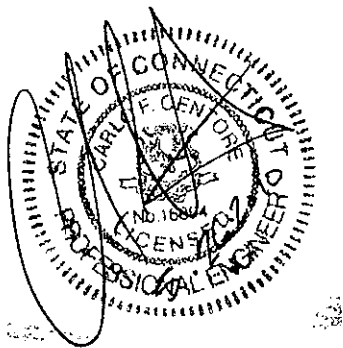
CL&P Structure No. 6076
85' Electric Transmission Pole (Finney)

269 Flanders Road,
East Lyme, CT

CENTEK Project No. 10021.CO6

~~*Date: April 23, 2010*~~

Rev 1: May 25, 2010



Prepared for:
Transcend Wireless, LLC
113 N Mountain Blvd.
Mountain Top, PA 18707

Table of Contents

SECTION 1 - REPORT

- INTRODUCTION
- PRIMARY ASSUMPTIONS USED IN THE ANALYSIS
- ANALYSIS
- DESIGN BASIS
- RESULTS
- CONCLUSIONS

SECTION 2 - CONDITIONS & SOFTWARE

- STANDARD ENGINEERING CONDITIONS
- GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAMS
 - RISA 3-D

SECTION 3 - DESIGN CRITERIA

- CRITERIA FOR DESIGN OF PCS FACILITIES ON OR EXTENDING ABOVE METAL ELECTRIC TRANSMISSION TOWERS
- NU DESIGN CRITERIA TABLE
- PCS SHAPE FACTOR CRITERIA
- WIRE LOADS SHEET

SECTION 4 - DRAWINGS

- EL-1 TOWER MAST AND ELEVATION
- S-1 MAST CONNECTION DETAILS
- N-1 STRUCTURAL NOTES

SECTION 5 - EIA/TIA-222-F LOAD CALCULATIONS FOR PCS STRUCTURE ANALYSIS

- PCS STRUCTURE WIND & ICE LOAD
- ANTENNA WIND & ICE LOAD
- CANISTER WIND & ICE LOAD
- COAX CABLE WIND & ICE LOAD

SECTION 6 - PCS STRUCTURE ANALYSIS PER EIA/TIA-222F

- LOAD CASES AND COMBINATIONS (TIA/EIA LOADING)
- RISA 3-D ANALYSIS REPORT

**SECTION 7 - NECS/NU LOAD CALCULATIONS FOR OBTAINING PCS
STRUCTURE REACTIONS APPLIED TO UTILITY POLE**

- PCS STRUCTURE WIND LOAD
- ANTENNA WIND LOAD
- CANISTER WIND LOAD
- COAX CABLE WIND LOAD

**SECTION 8 - PCS STRUCTURE ANALYSIS PER NESC/NU FOR
OBTAINING PCS STRUCTURE REACTIONS APPLIED TO
UTILITY POLE**

- LOAD CASES AND COMBINATIONS (NESC/NU LOADING)
- RISA 3-D ANALYSIS REPORT

SECTION 9 - CL&P POLE ANALYSIS

- CL&P POLE SECTION PROPERTIES
- NESC LOAD CALCULATIONS ON CL&P POLE
- LOAD CASES AND COMBINATIONS (NESC/NU LOADING)
- RISA 3-D ANALYSIS REPORT
- CL&P POLE ANALYSIS
- ANCHOR BOLTS AND PLATE ANALYSIS
- FOUNDATION ANALYSIS

SECTION 10 - REFERENCE MATERIAL

- TRANSCEND WIRELESS LE 1-3 DATED 4-21-10
- EQUIPMENT CUT SHEETS

Introduction

The purpose of this report is to analyze the existing 11' long PCS mast and 85' CL&P pole located at 269 Flanders Road in East Lyme, CT for the proposed antenna and equipment upgrade by T-Mobile.

The proposed loads consist of the following:

- **T-MOBILE (Existing to be removed):**
Antennas: Three (3) RR90-17-02DP panel antennas and antenna canister mounted on a PCS mast with a RAD center elevation of 92-ft above tower base plate.
- **T-MOBILE (Existing to remain):**
Coax Cables: Six (6) 1-1/4" Ø coax cables.
- **T-MOBILE (Proposed):**
Antennas: Two (2) RFS APX16DWV-16DWVS-E-A20 panel antennas mounted on a proposed pipe mast with a RAD center elevation of 92-ft above tower base plate.
Coax Cables: Two (2) 1-1/4" Ø coax cables running on the outside of the tower as indicated in section 4 of this report.

Primary assumptions used in the analysis

- Allowable steel stresses are defined by AISC-ASD 9th edition for design of the PCS Mast and antenna supporting elements.
- ASCE Manual No. 72, "Design of Steel Transmission Pole Structures Second Edition", defines allowable steel stresses for evaluation of the CL&P utility pole.
- All utility pole members are adequately protected to prevent corrosion of steel members.
- All proposed antenna mounts are modeled as listed above.
- All coaxial cable will be installed within the pipe mast unless specified otherwise.
- Pipe mast will be properly installed and maintained.
- No residual stresses exist due to incorrect pole erection.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds conform to the requirements of AWS D1.1.
- All proposed pipe mast members will be as specified in the construction documents to be prepared by CEN TEK engineering, Inc.
- Pipe mast and utility pole will be in plumb condition.
- Utility pole was properly installed and maintained and all members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.
- Any deviation from the analyzed loading will require a new analysis for verification of structural adequacy.

A n a l y s i s

Structural analysis of the existing *PCS Mast Structure* was independently completed using the current version of RISA-3D computer program licensed to CEN TEK Engineering, Inc.

The existing mast consisting of a 4-in x 11-ft long SCH. 80 pipe (O.D. = 4.5") connected at two points to the existing tower was analyzed for its ability to resist loads prescribed by the TIA/EIA standard. Section 5 of this report details these gravity and lateral wind loads. NESC prescribed loads were also applied to the mast structure in order to obtain reactions needed for analyzing the CL&P pole structure. These loads are developed in Section 7 of this report. Load cases and combinations used in RISA-3D for TIA/EIA loading and for NESC/NU loading are listed in report Sections 6 and 8, respectively.

An envelope solution was first made to determine maximum and minimum forces, stresses, and deflections to confirm the selected section as adequate. Additional analyses were then made to determine the NESC forces to be applied to the CL&P pole structure.

The RISA-3D program contains a library of all AISC shapes and corresponding section properties are computed and applied directly within the program. The program's Steel Code Check option was also utilized. The forces calculated in RISA-3D using NESC guidelines were then applied to the CL&P pole using RISA-3D. Maximum usage for the pole was calculated considering the additional forces from the mast and associated appurtenances.

D e s i g n B a s i s

Our analysis was performed in accordance with EIA-222-F-1996, ASCE Manual No. 72 – "Design of Steel Transmission Pole Structures Second Edition", NESC C2-2007 and Northeast Utilities Design Criteria.

The CL&P pole structure, considering existing and future conductor and shield wire loading, with the proposed antenna mast was analyzed under two conditions:

▪ UTILITY POLE ANALYSIS

The purpose of this analysis is to determine the adequacy of the existing utility pole to support the proposed antenna loads. The loading and design requirements were analyzed in accordance with the NU Design Criteria Table, NESC C2-2007 – Construction Grade B, and ASCE Manual No. 72.

Load cases considered:

Load Case 1: NESC Heavy

Wind Pressure.....	4.0 psf
Vertical Overload Capacity Factor.....	1.50
Wind Overload Capacity Factor.....	2.50
Wire Tension Overload Capacity Factor.....	1.65

Load Case 2: NESC Extreme

Wind Speed.....	120 mph ⁽¹⁾
Radial Ice Thickness.....	0"

Note 1: NESC C2-2007, Section 25, Rule 250C: Extreme Wind Loading, 1.25 x Gust Response Factor (wind speed: 3-second gust)

▪ PCS MAST ANALYSIS

The PCS mast, appurtenances and connections to the utility pole were analyzed and designed in accordance with the NU Design Criteria Table, TIA/EIA-222-F, and AISC-ASD standards.

Load cases considered:

Load Case 1:

Wind Speed..... 85 mph ⁽²⁾
 Radial Ice Thickness..... 0"

Load Case 2:

Wind Pressure..... 75% of 85 mph wind pressure
 Radial Ice Thickness..... 0.5"

| Note 2: Per NU Mast Design Criteria Exception 1.

R e s u l t s

▪ PCS MAST

With the removal of the antenna canister the existing pipe mast was determined to have inadequate length to accommodate the proposed antenna upgrade. Replacement of the existing antenna mast with a **4 SCH. 80 Pipe x 17-ft long (O.D. = 4.5")**, conforming to ASTM A53, Grade B, $F_y = 35$ ksi specifications will be required.

▪ UTILITY POLE

This analysis finds that the subject utility pole is adequate to support the proposed antenna mast and related appurtenances. The pole stresses meet the requirements set forth by the ASCE Manual No. 72, "Design of Steel Transmission Pole Structures Second Edition", for the applied NESC Heavy and Extreme Wind load cases. The detailed analysis results are provided in Section 9 of this report. The analysis results are summarized as follows:

A maximum usage of **90.0%** occurs in the utility pole under the **NESC Heavy** loading condition.

POLE SECTION:

The utility pole was found to be within allowable limits.

Tower Section	Elevation	Stress Ratio (% of capacity)	Result
Base	0' -5.0' (AGL)	90.0%	PASS

▪ FOUNDATION AND ANCHORS

The existing foundation consists of a 8-ft x 8-ft x 8.0-ft long reinforced concrete pier with twelve (12) rock anchors embedded 22-ft into rock. The base of the tower is connected to the foundation by means of (20) 2.25"Ø, ASTM A615-60 anchor bolts embedded into the concrete foundation structure. Foundation information was obtained from NUSCO drawing # 01087-60000.

Review of the foundation and anchor design consisted of verification of applied loads obtained from the tower design calculations and code checks of allowable stresses:

BASE REACTIONS:

From Risa-3D analysis of CL&P pole based on NESC/NU prescribed loads.

Load Case	Transverse	Axial	Overturning Moment
NESC Heavy Wind x-dir	65 kips	63 kips	3942 ft-kips
NESC Heavy Wind z-dir	6 kips	63 kips	253 ft-kips
NESC Extreme Wind x-dir	69 kips	34 kips	3935 ft-kips
NESC Extreme Wind z-dir	26 kips	34 kips	1108 ft-kips
NESC Heavy Broken Wire	23 kips	61 kips	1694 ft-kips

ANCHOR BOLTS:

The anchor bolts and base plate were found to be within allowable limits.

Tower Component	Design Limit	Stress Ratio (% of capacity)	Result
Anchor Bolts	Compression	83.6%	PASS
Base Plate	Bending	79.0%	PASS

FOUNDATION:

The foundation was found to be within allowable limits.

Foundation	Design Limit	Allowable Limit	Proposed Loading	Result
Reinf. Conc. Pier w/ Rock Anchors	OTM ⁽¹⁾	1.5 FS ⁽²⁾	1.93 FS ⁽²⁾	PASS
	Soil Bearing	80 ksf ⁽³⁾	56.1 ksf	PASS

Note 1: OTM denote overturning moment.

Note 2: FS denotes Factor of Safety

Note 3: Value based on typical soil bearing values for granite rock type; refer to NUSCO drawing no. 01087-60000.

Conclusions

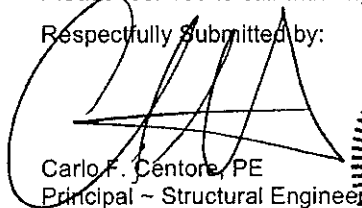
During site investigation conducted by Centek personnel on April 7, 2010, it was observed that the nut at one (1) anchor bolt was missing. This will need to be replaced prior to the antenna upgrade.

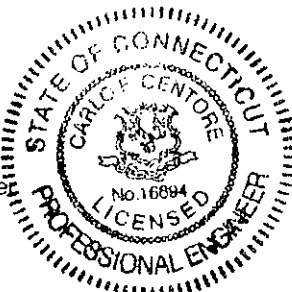
This analysis shows that the subject utility pole with the proposed mast replacement is adequate to support the proposed T-Mobile equipment upgrade.

The analysis is based, in part on the information provided to this office by Northeast Utilities and Transcend Wireless. If the existing conditions are different than the information in this report, CENTEK engineering, Inc. must be contacted for resolution of any potential issues.

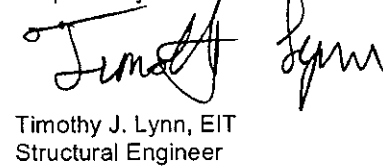
Please feel free to call with any questions or comments.

Respectfully Submitted by:


Carlo F. Centore, PE
Principal ~ Structural Engineer



Prepared by:


Timothy J. Lynn, EIT
Structural Engineer

Technical Memo

To: Transcend
From: Amir Uzzaman - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CT11039D
Date: July 1, 2010

1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the T-Mobile antenna installation on a Utly Lattice Tower at 269 Flanders Rd.(CL&P tower #1605), East Lyme, CT. This study incorporates the most conservative consideration for determining the practical combined worst case power density levels that would be theoretically encountered from locations surrounding the transmitting location.

2. Discussion:

The following assumptions were used in the calculations:

- 1) The emissions from T-Mobile transmitters are in the (1935-1944.8), (1983-1984), (2140-2145)MHz frequency Band.
- 2) The antenna array consists of two sectors, with 1 antenna per sector.
- 3) The model number of the antennas are APX16DWV-16DWV, , APX16DWV-16DWV
- 3) The model number for UMTS antenna is APX16DWV-16DWV.
- 4) GSM antenna center line height is 92 ft.
- 4) UMTS antenna center line height is 92 ft.
- 5) The maximum transmit power from any GSM sector is 2382.43 Watts Effective Radiated Power (EIRP) assuming 8 channels per sector.
- 5) The maximum transmit power from any UMTS sector is 2628.39 Watts Effective Radiated Power (EIRP) assuming 2 channels per sector.
- 6) All the antennas are simultaneously transmitting and receiving, 24 hours a day.
- 7) Power levels emitting from the antennas are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 8) The average ground level of the studied area does not change significantly with respect to the transmitting location.

Equations given in "FCC OET Bulletin 65, Edition 97-01" were then used with the above information to perform the calculations.

3. Conclusion:

Based on the above worst case assumptions, the power density calculation from the T-Mobile antenna installation on a Utly Lattice Tower at 269 Flanders Rd.(CL&P tower #1605), East Lyme, CT, is 0.14864 mW/cm². This value represents 14.864% of the Maximum Permissible Exposure (MPE) standard of 1 milliwatt per square centimeter (mW/cm²) set forth in the FCC/ANSI/IEEE C95.1-1991. Furthermore, the proposed antenna location for T-Mobile will not interfere with existing public safety communications, AM or FM radio broadcasts, TV, Police Communications, HAM Radio communications or any other signals in the area.

Connecticut Market**T-Mobile****Worst Case Power Density**

Site: CT11039D
Site Address: 269 Flanders Rd.(CL&P tower #1605)
Town: East Lyme
Tower Height: 85 ft.
Tower Style: Utly Lattice Tower

GSM Data		UMTS Data	
Base Station TX output	20 W	Base Station TX output	40 W
Number of channels	8	Number of channels	2
Antenna Model	APX16DWV-16DWV	Antenna Model	APX16DWV-16DWV
Cable Size	1 1/4	Cable Size	1 1/4
Cable Length	13.1	Cable Length	13.1
Antenna Height	85.0	Antenna Height	85.0
Ground Reflection	1.6	Ground Reflection	1.6
Frequency	1945.0 MHz	Frequency	2.1 GHz
Jumper & Connector loss	4.50 dB	Jumper & Connector loss	1.50 dB
Antenna Gain	18.0 dBi	Antenna Gain	18.0 dBi
Cable Loss per foot	0.0154 dB	Cable Loss per foot	0.0116 dB
Total Cable Loss	1.7710 dB	Total Cable Loss	1.3340 dB
Total Attenuation	6.2710 dB	Total Attenuation	2.8340 dB
Total EIRP per Channel	54.74 dBm	Total EIRP per Channel	61.19 dBm
(In Watts)	297.80 W	(In Watts)	1314.20 W
Total EIRP per Sector	63.77 dBm	Total EIRP per Sector	64.20 dBm
(In Watts)	2382.43 W	(In Watts)	2628.39 W
nsg	11.7290	nsg	15.1660
Power Density (S) = 0.070671 mW/cm^2		Power Density (S) = 0.077967 mW/cm^2	
T-Mobile Worst Case % MPE =		14.8639%	

Equation Used :

$$S = \frac{(1000)(grf)^2(Power)10^{(log10)}}{4\pi(R)^2}$$

Office of Engineering and Technology (OET) Bulletin 65, Edition 97-01, August 1997

Co-Location Total

Carrier	% of Standard
Verizon	
Cingular	
Sprint	
Metricom	
Pocket	
XM Radio	
Nextel	
Other Antenna Systems	
Total Excluding T-Mobile	0.0000 %
T-Mobile	14.8639
Total % MPE for Site	14.8639%