EM-CING-028-130114

New Cingular Wireless PCS, LLC
154 General Patton Dr.
Naugatuck, CT 06770
Phone: (203)-217-6200
Christopher Bisson
Real Estate Consultant

ORIGINAL

January 11, 2013

Hand Delivered

Ms. Linda Roberts
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 315 Old Hartford Road, Colchester, CT 06415, know to AT&T as site CT5346.

Dear Ms. Roberts:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and/or Long Term Evolution ("LTE") capabilities, and enhance system performance in the state of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and its attachments is being sent to the chief elected official of the municipality in which affected cell site is located.

UMTS offers services to mobile computer and phone users anywhere in the world. Based on the Global System for Mobile ("GSM") communication standard, UMTS is the planned worldwide standard for mobile users. UMTS, fully implemented, gives computer and phone users high-speed access to the internet as they travel. They have the same capabilities even when they roam, through both terrestrial wireless and satellite transmissions.

LTE is a new high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration based on the supplied structural modification plan dated 4/26/2012 requiring the restacking of the existing coaxial cables.

The changes to the facility do not constitute modification as defined Connecticut General Statues ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for the R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will not be affected.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound as all proposed equipment will be located in the existing AT&T equipment shelter.
3. The proposed changes will not increase the noise level at the existing facility by 6 decibels or more.
4. Radio Frequency power density may increase due to the use of one or more GSM channels for UMTS transmissions. Moreover, LTE will utilize additional radio frequencies newly licensed by the FCC for cellular mobile communications. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons New Cingular Wireless PCS, LLC respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (203)-217-6200 or email CBisson@Transcendwireless.com with questions concerning this matter.
Thank you for your consideration.

Sincerely,

Christopher Bisson
Real Estate Consultant

PROJECT INFORMATION

SCOPE OF WORK:	TELECOMMUNICATIONS FACILITY UPGRADE (LTE): 1. INSTALL (3) NEW LTE ANTENNAS, (6) RRH'S, (1) SURGE ARRESTOR, (1) FIBER LINE, (2) DC POWER LINES & (1) GPS ANTENNA 2. INSTALL (1) LTE 6601 CABINET, (1) DC POWER PLANT & (1) SURGE SUPPRESSOR
SITE ADDRESS:	315 OLD HARTFORD ROAD COLCHESTER, CT 06415
LATITUDE: LONGITUDE:	41.58069 N (41° 34' 50.5" N) 72.35040 W (72° 21' 01.4" W)
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

at&t

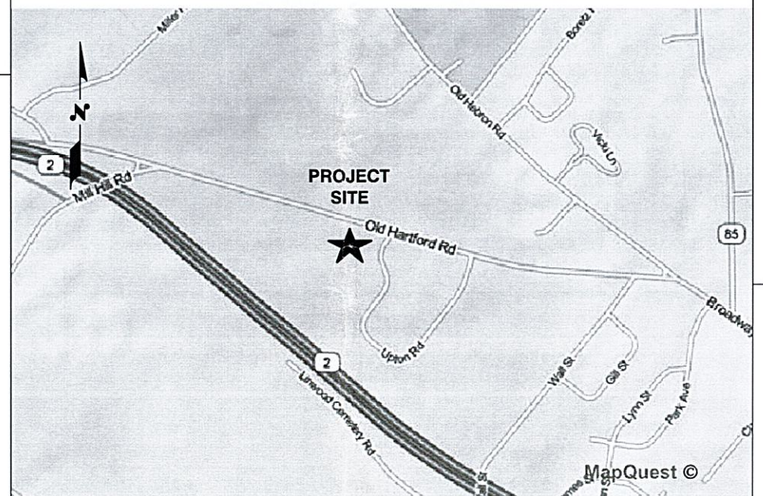
SITE NUMBER: CT5346
SITE NAME: COLCHESTER NORTH CENTRAL

DRAWING INDEX

VICINITY MAP

DIRECTIONS TO SITE:

START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITOL BLVD. TURN LEFT ONTO CAPITOL BLVD. TURN LEFT ONTO WEST ST. MERGE ONTO I-91 N VIA THE RAMP ON THE LEFT TOWARD HARTFORD 4.5 MILES. MERGE ONTO CT-3 N VIA EXIT 25 TOWARD GLASTONBURY. MERGE ONTO CT-2E TOWARD NORWICH 17.7 MILES. TAKE EXIT 17 TOWARD BUSINESS ROUTE/COLCHESTER. TURN LEFT AT MILL HILL RD. TURN SLIGHT RIGHT ONTO OLD HARTFORD RD. 315 OLD HARTFORD RD IS ON THE RIGHT.



GENERAL NOTES

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

CALL

BEFORE YOU DIG

CALL TOLL FREE 1-800-922-4455 OR DIAL 811

UNDERGROUND SERVICE ALERT

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

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

SITE NUMBER: CT5346
SITE NAME: COLCHESTER NORTH CENTRAL
315 OLD HARTFORD ROAD
COLCHESTER, CT 06415
NEW LONDON COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK
1	01/07/13	ISSUED FOR PERMITTING	HC	DEH
0	08/17/12	ISSUED FOR REVIEW	RM	DEH

SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RM

STATE OF CONNECTICUT · DANIEL HAMM · 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET (LTE)

JOB NUMBER	DRAWING NUMBER	REV
15346.01	T-1	1

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

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

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

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

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO 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 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTIING 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 – PINNACLE WIRELESS
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – AT&T MOBILITY

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

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

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

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

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

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

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

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

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

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

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

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

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

16. CONSTRUCTION SHALL COMPLY WITH 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: 2003 IBC WITH 2005 CT SUPPLEMENT & 2009 CT AMENDMENTS
ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
LIGHTENING 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-F, 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	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF.	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ'D	REQUIRED		

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

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

SITE NUMBER: CT5346
SITE NAME: COLCHESTER
NORTH CENTRAL
315 OLD HARTFORD ROAD
COLCHESTER, CT 06415
NEW LONDON COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	01/07/13	ISSUED FOR PERMITTING	HC	DP	DPH
0	08/17/12	ISSUED FOR REVIEW	RM	DP	DPH

SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RM

STATE OF CONNECTICUT · DANIEL HAMM · 24179 · LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES (LTE)

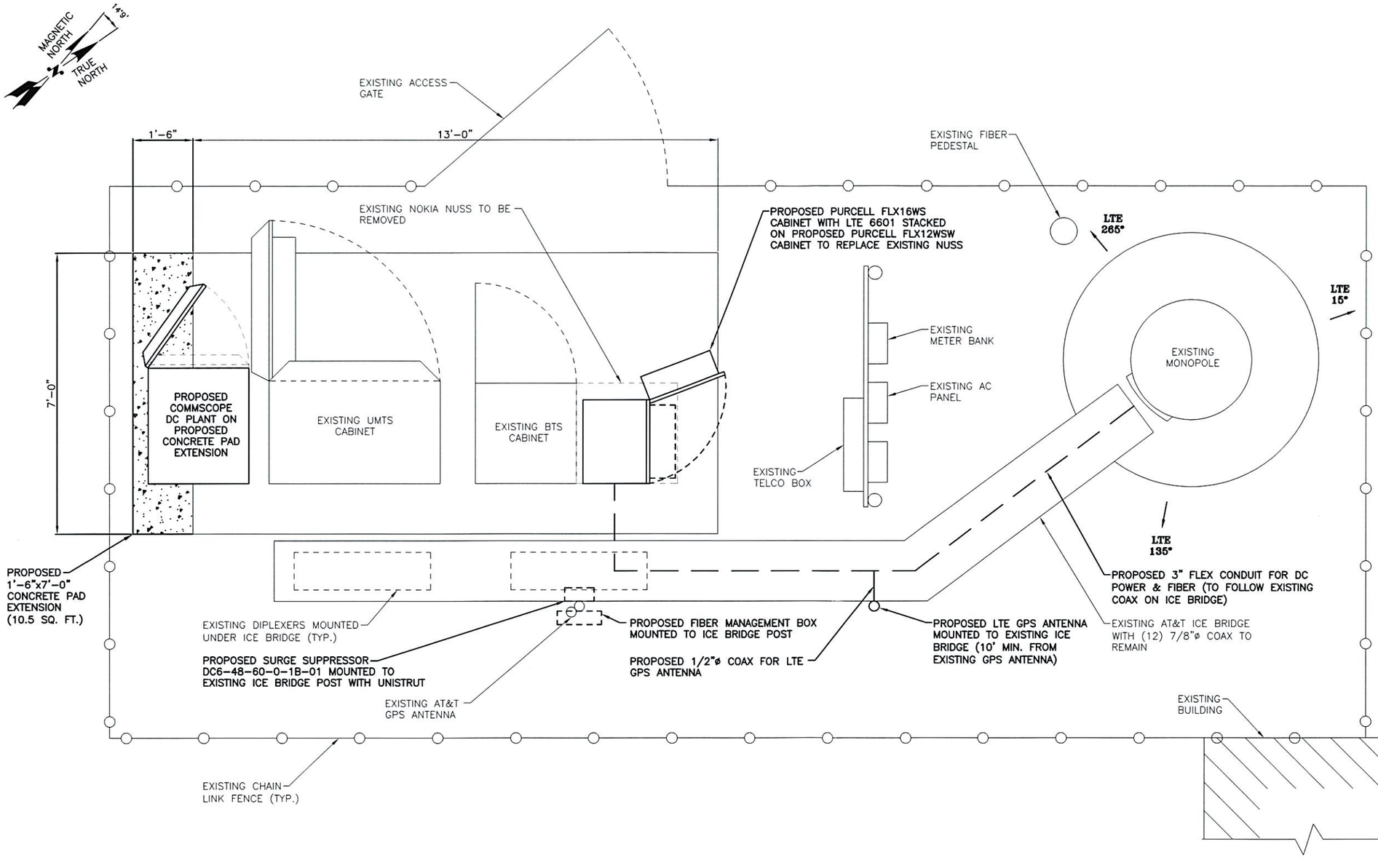
JOB NUMBER	DRAWING NUMBER	REV
10346.01	GN-1	1

NOTE:

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

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



COMPOUND/EQUIPMENT PLAN

SCALE: 3/4"=1'-0"

0 0'-8" 1'-4" 2'-8" 4'-0"

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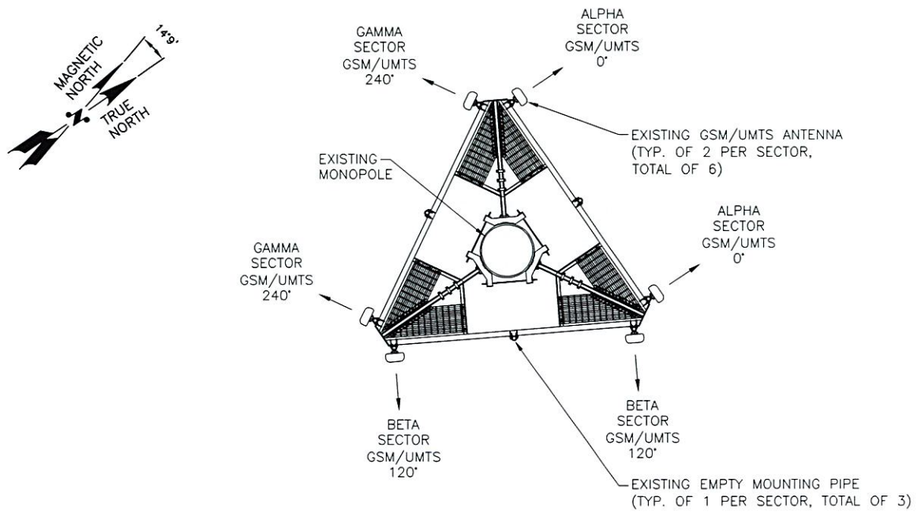
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RM

STATE OF CONNECTICUT
DANIEL HAMM
12478
LICENSED
PROFESSIONAL ENGINEER

AT&T

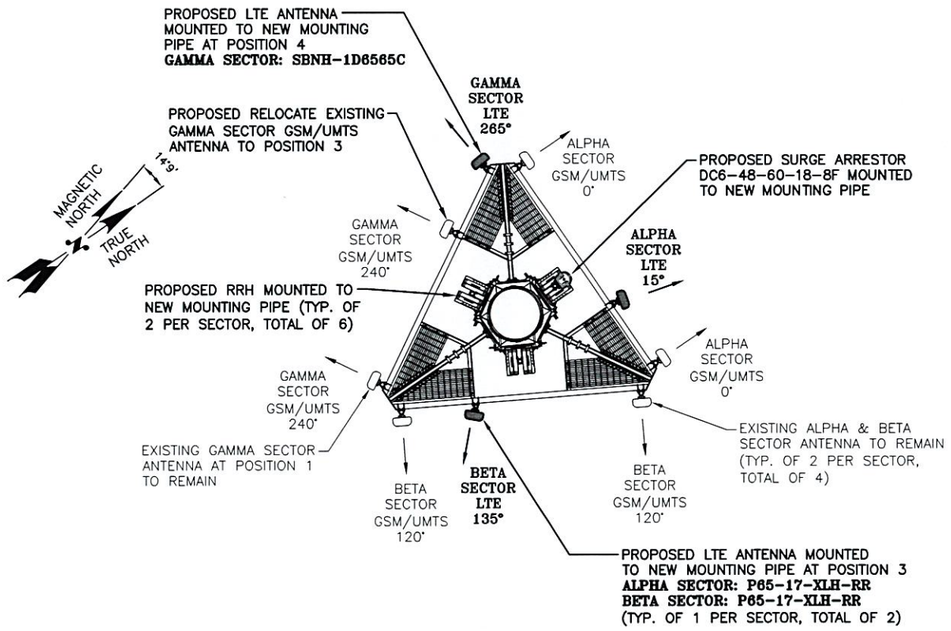
COMPOUND AND EQUIPMENT PLAN (LTE)

JOB NUMBER	DRAWING NUMBER	REV
13046.01	A-1	1



EXISTING GSM/UMTS ANTENNA PLAN

SCALE: N.T.S.



PROPOSED LTE ANTENNA PLAN

SCALE: N.T.S.

NOTE:

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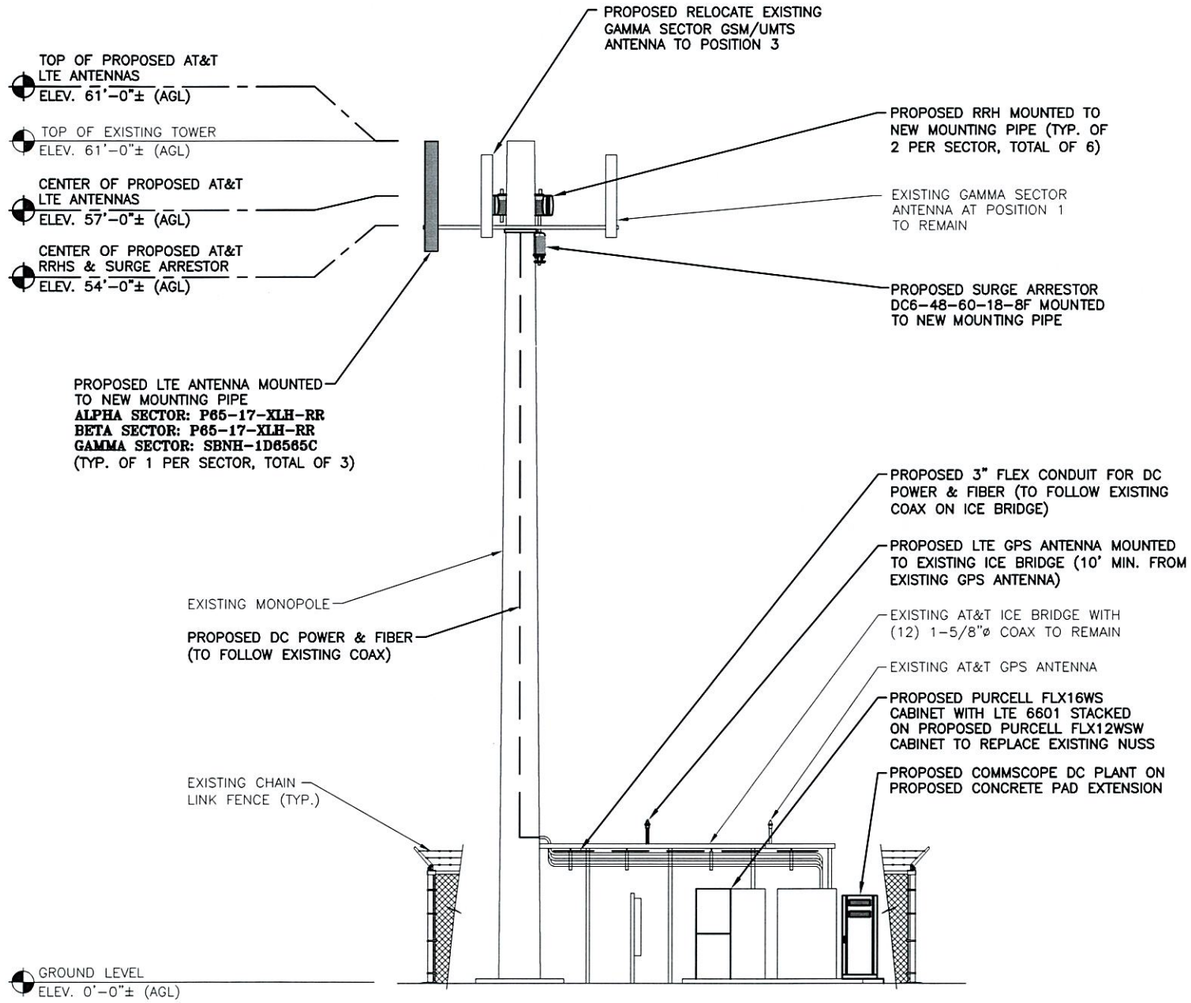
NOTE:

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



NORTHWEST ELEVATION

SCALE: 3/16"=1'-0"

0'-0" 5'-4" 10'-8" 16'-0"

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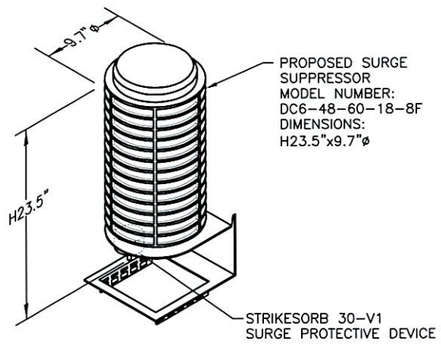
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RM

STATE OF CONNECTICUT · DANIEL HAMM · LICENSED PROFESSIONAL ENGINEER

AT&T

ELEVATION & ANTENNA PLAN (LTE)

JOB NUMBER	DRAWING NUMBER	REV
13046.01	A-2	1



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL

SCALE: N.T.S.

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

NOTE:
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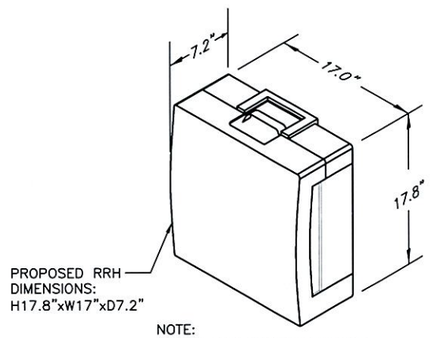
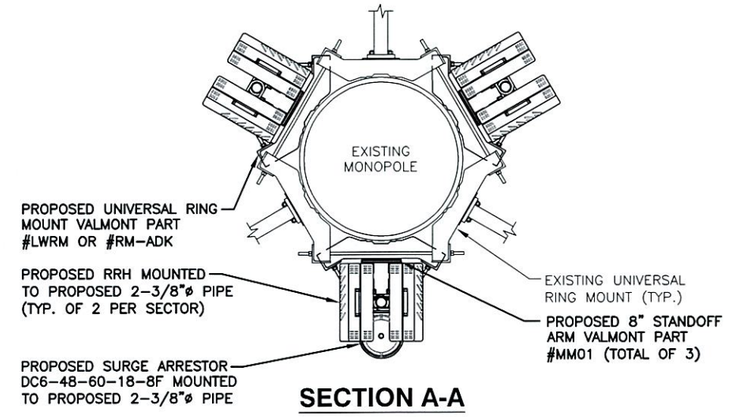


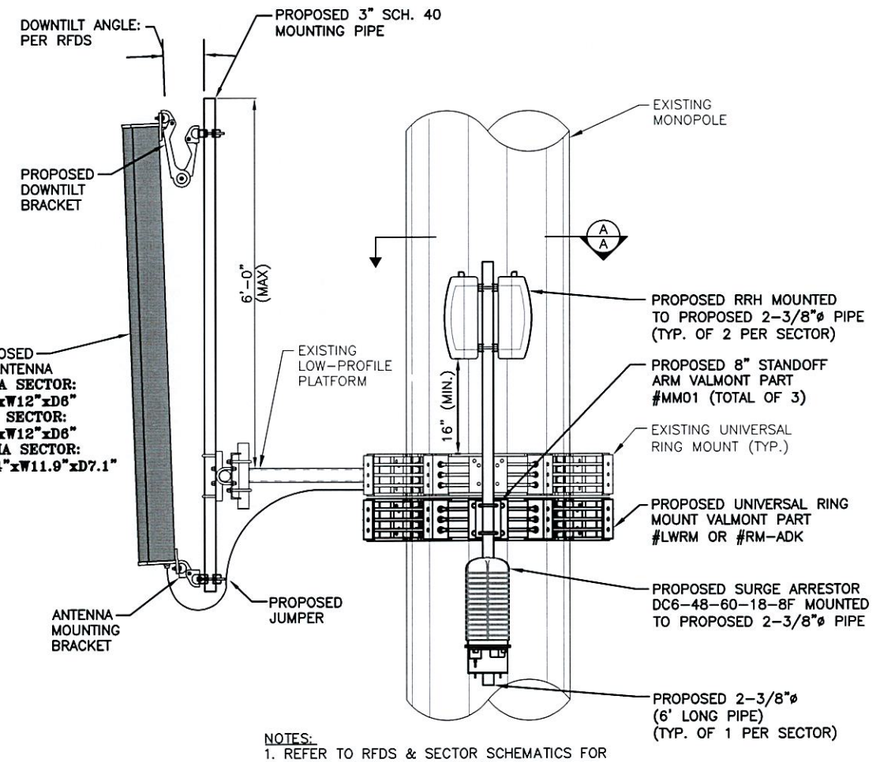
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

RRH DETAIL

SCALE: N.T.S.



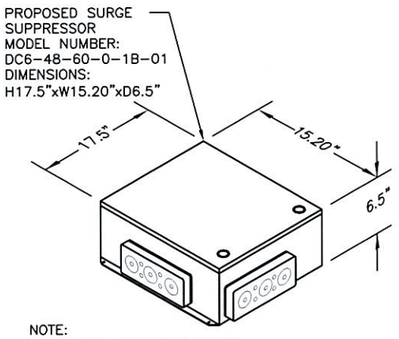
SECTION A-A



NOTES:
1. REFER TO RFDS & SECTOR SCHEMATICS FOR ANTENNA MODEL, TYPE & QUANTITY REQUIRED PER SECTOR

PROPOSED RRH & SURGE ARRESTOR MOUNTING DETAIL

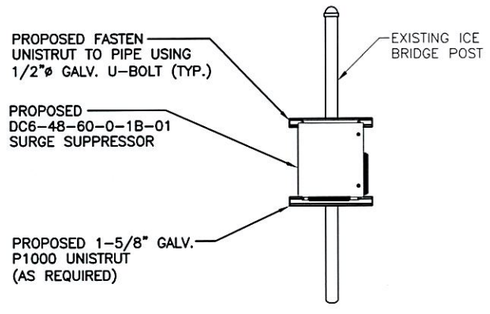
SCALE: N.T.S.



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

SURGE SUPPRESSOR DETAIL

SCALE: N.T.S.



NOTE:
MOUNT PROPOSED EQUIPMENT PER MANUFACTURER'S SPECIFICATIONS

PROPOSED SURGE SUPPRESSOR MOUNTING DETAIL

SCALE: N.T.S.

NOTE:
1. MINIMUM MONOPOLE DIAMETER OF 2'-0" AT BANDING LOCATION. IF SMALLER, STACK RRH'S 3 OVER 3
2. CONTRACTOR TO ENSURE THAT RRH MOUNTING DOES NOT INTERFERE WITH CLIMBING LADDER

PART #	VMI PART #	SIZE RANGE
LWRM	801068	12"-45"
RM-ADK	157286	36"-60" ADAPTER KIT

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

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

SITE NUMBER: CT5346
SITE NAME: COLCHESTER
NORTH CENTRAL
315 OLD HARTFORD ROAD
COLCHESTER, CT 06415
NEW LONDON COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	01/07/13	ISSUED FOR PERMITTING	HC	DC	DPH
0	08/17/12	ISSUED FOR REVIEW	RM	DC	DPH

SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RM

STATE OF CONNECTICUT
DANIEL HAMM
24178
LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS (LTE)

SITE NUMBER	DRAWING NUMBER	REV
CT5346.01	A-3	1

NOTE:

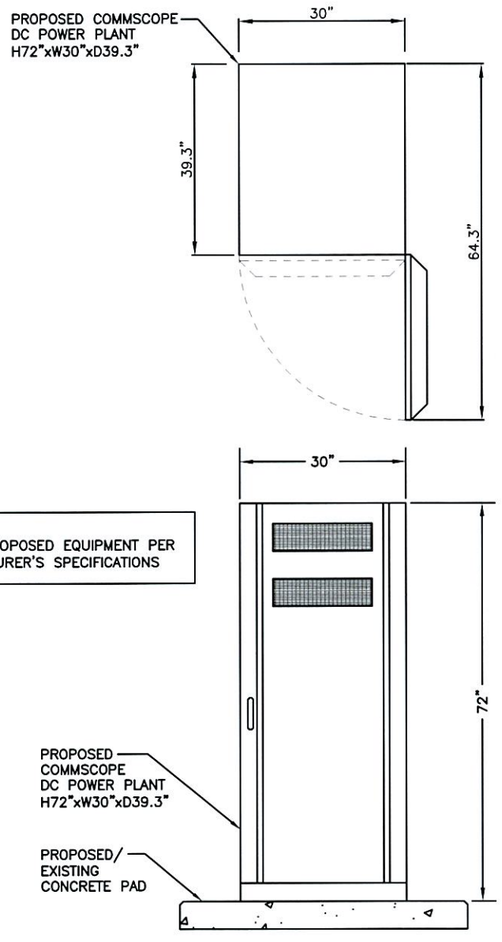
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

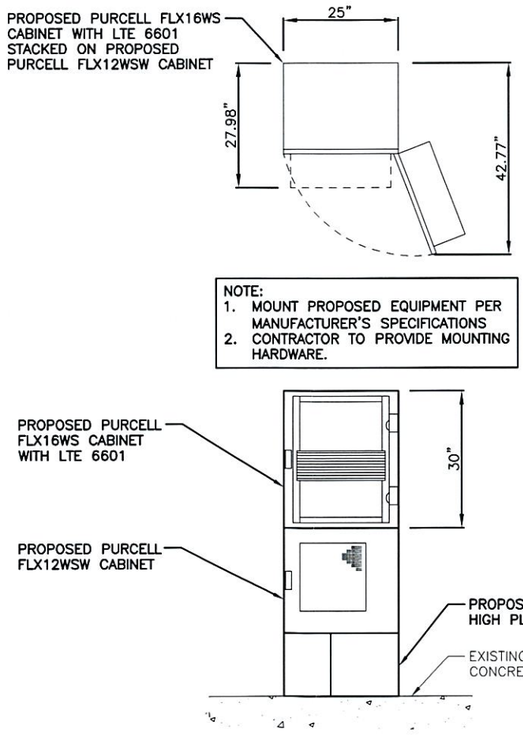
NOTE:
– ATTACH EQUIPMENT TO CONCRETE PER MANUFACTURER'S SPECIFICATIONS.

NEW CONC. PAD NOTES:
– REINF. W/ #4's @ 8" O.C. EA. WAY (MID-DEPTH).
– DOWEL NEW CONC. TO EXIST. W/ #4's @ 8" O.C. x 8" LONG. DRILL & EPOXY GROUT 4" INTO EXIST. CONC.
– REINF. SHALL BE ASTM A615-GRADE 60. SECURE IN PLACE.
– REINFORCEMENT IN EQUIPMENT SLAB TO BE WELDED AND BONDED TO GROUND RING



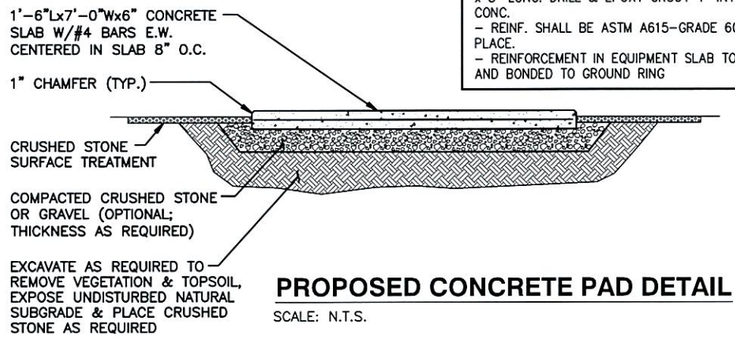
PROPOSED DC POWER PLANT DETAIL

SCALE: N.T.S.



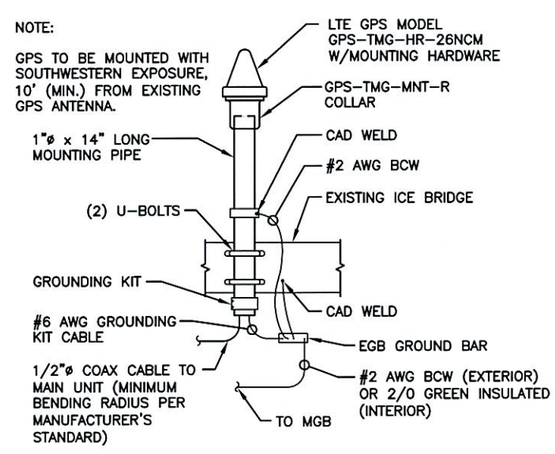
PROPOSED EQUIPMENT MOUNTING DETAIL

SCALE: N.T.S.



PROPOSED CONCRETE PAD DETAIL

SCALE: N.T.S.



GPS MOUNTING DETAIL

SCALE: N.T.S.

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1600 OSGOOD STREET
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N. ANDOVER, MA 01845
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SITE NUMBER: CT5346
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315 OLD HARTFORD ROAD
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NEW LONDON COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK'D
1	01/07/13	ISSUED FOR PERMITTING	HC	DFR
0	08/17/12	ISSUED FOR REVIEW	RM	DFR

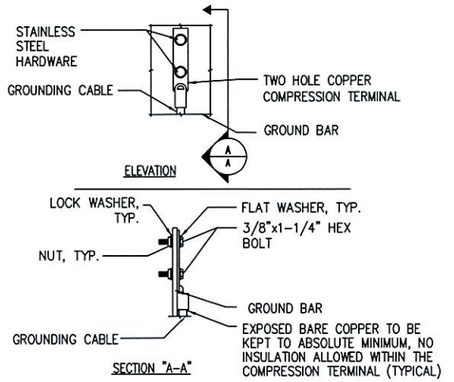
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RM

STATE OF CONNECTICUT · DANIEL HAMM · 24179 · LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS (LTE)

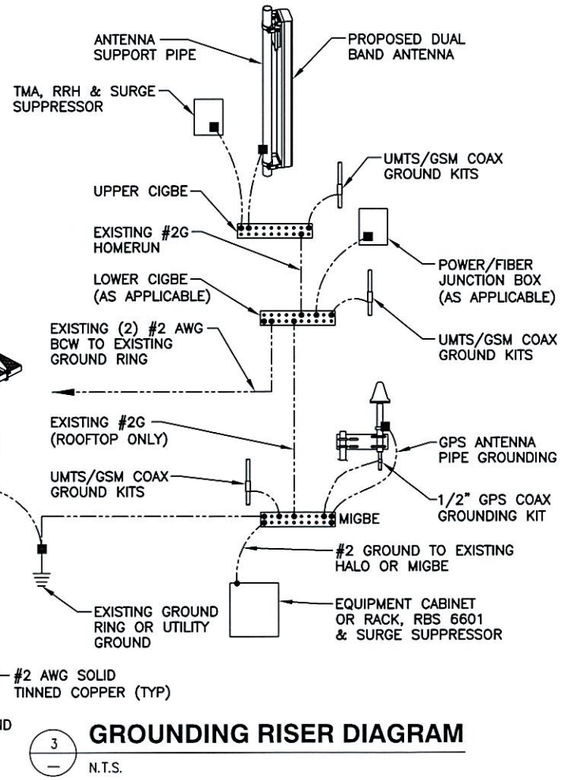
JOB NUMBER	DRAWING NUMBER	REV
5346.01	A-4	1



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.

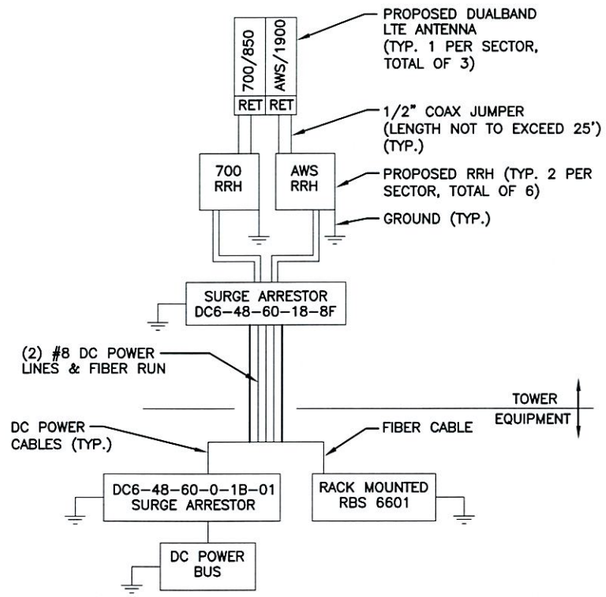
TYPICAL GROUND BAR CONNECTION DETAIL

1 — N.T.S.



GROUNDING RISER DIAGRAM

3 — N.T.S.



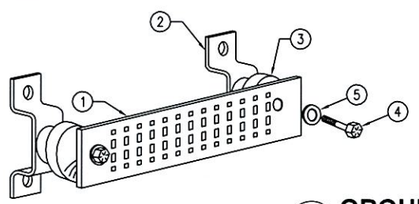
NOTE:

CONTRACTOR TO CONFIRM ALL PARTS & INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.

LTE PLUMBING DIAGRAM

2 — N.T.S.

WIRELESS SOLUTIONS INC.			
NO.	REQ.	PART NO.	DESCRIPTION
1	1	HLGB-0420-IS	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)

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NO.	DATE	REVISIONS	BY	CHK	APP'D
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SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RM

STATE OF CONNECTICUT · DANIEL HAMM · 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

PLUMBING DIAGRAM & GROUNDING DETAILS (LTE)

JOB NUMBER	DRAWING NUMBER	REV
12046.01	G-1	1

Nexlink Global Services
800 Marshall Phelps Rd.
Windsor, CT 06095
(401) 477-2938

GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
Kevin Clements
1117 Perimeter Center West, Suite W303
Atlanta, GA 30338
(678) 781-5061
kclements@gpdgroup.com

GPD# 2012801.89
January 7, 2013

STRUCTURAL ANALYSIS REPORT

AT&T DESIGNATION:	**Site USID:**	**25960**
	Site FA:	**10070973**
	Site Name:	**COLCHESTER NORTH CENTRAL**
	AT&T Project:	**MOD LTE 082912**
ANALYSIS CRITERIA:	**Codes:**	**TIA/EIA-222-F, 2003 IBC, ASCE 7-05 & 2005 CTBC** **85-mph with 0" ice** **38-mph with 3/4" ice**
SITE DATA:		**315 Old Hartford Rd, Colchester, CT 06415 New London County** **Latitude 41° 34' 50.491" N, Longitude 72° 21' 1.436" W** **Market: New England** **61' Monopole**

Ms. Lauren Groppi,

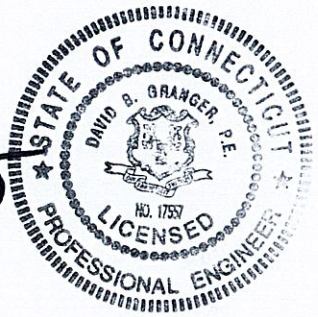
GPD is pleased to submit this Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	31.9%	Pass
Foundation Ratio with Proposed Equipment:	39.7%	Pass

We at GPD appreciate the opportunity of providing our continuing professional services to you and Nexlink Global Services. If you have any questions or need further assistance on this or any other projects please do not hesitate to call.

Respectfully submitted,



David B. Granger, P.E.
Connecticut #: 17557

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing modified structure is capable of carrying the proposed loading configuration as specified by AT&T to Nexlink Global Services. This report was commissioned by Ms. Lauren Groppi of Nexlink Global Services.

The proposed coax shall be run internal to the monopole with the existing coax in order for the analysis to be valid.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	31.9%	Pass
Anchor Rods	24.0%	Pass
Base Plate	23.6%	Pass
Foundation	39.7%	Pass

ANALYSIS METHOD

TnxTower (Version 6.0.4.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being completed without the benefit of a recent site visit.

DOCUMENTS PROVIDED

Document	Remarks	Source
Equipment Modification Form	AT&T Internal Modification documents, uploaded 8/29/2012	Siterra
Radio Frequency Data Sheet	Not Provided	N/A
Tower Design	Not Provided	N/A
Foundation Design	Not Provided	N/A
Geotechnical Report	Clarence Welti Assoc. Site #: CT-346, dated 2/19/2003	Siterra
Previous Structural Analysis	GPD Job #: 2008013.23, dated 12/15/2008	Siterra
Foundation Mapping	GPD Job #: 2012801.89, dated 11/16/2012	GPD

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The monopole shaft sizes and shape are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations. If no data is available, the foundation system is not verified. In the case of absent foundation data, it is the tower owner's responsibility to insure that the foundation system is adequate to support the structure with its new reactions.
6. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
7. All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report.
8. All prior structural modifications, if any, are assumed to be as per data supplied/available, to have been properly installed and to be fully effective.
9. Loading interpreted from photos is accurate to $\pm$ 5' AGL, antenna size accurate to $\pm$ 3.3 sf, and coax equal to the number of existing antennas without reserve.
10. All existing loading was obtained from site photos and the provided Equipment Modification Form.
11. The proposed coax shall be run internal to the monopole with the existing coax in order for the analysis to be valid.
12. Foundation steel was not able to be determined through testing. Therefore it was assumed that the foundation steel in place is equal to or in excess of the soil failure criteria in the foundation analysis.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD Group should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a recent site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the specified code recommended amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD GROUP makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

Tower Analysis Summary Form

General Info

Site Name	COLCHESTER NORTH CENTRAL
Site Number	CT5346 (25960)
FA Number	10070973
Date of Analysis	11/21/2012
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (G, SST, MP)	MP	
Tower Height (top of steel AGL)	61'	
Tower Manufacturer	n/a	
Tower Model	n/a	
Tower Design	n/a	
Foundation Design	n/a	
Geotech Report	Clarence Welti Associates, Site #: CT-346	2/19/2003
Tower Mapping	GPD & Northeast Towers	12/3/2008
Previous Structural Analysis	GPD Job #: 2008013.23	12/15/2008
Foundation Mapping	GPD Job #: 2012801.89	11/16/2012

Design Parameters

Design Code Used	TIA/EIA-222-F, 2003 IBC ASCE 7-05 & 2005 CTBC
Location of Tower (County, State)	New London, CT
Basic Wind Speed (mph)	85 (fastest mile)
Ice Thickness (in)	0.75
Structure Classification (I, II, III)	
Exposure Category (B, C, D)	
Topographic Category (1 to 5)	

Analysis Results (% Maximum Usage)

Existing/Reserved + Proposed Condition	
Tower (%)	31.9%
Base Plate (%)	24.0%
Foundation (%)	39.7%
Foundation Adequate?	Yes

Steel Yield Strength (ksi)

Pole	60
Base Plate	50
Anchor Rods	75

Note: Steel strengths assumed based on previous analysis.

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
Unknown	60	70	1	Omni	Unknown	20' Omni		1	Unknown	3' Sidearm	1	Unknown	1/2"	Internal
AT&T Mobility	56	57	6	Panel	Powerwave	7770.00	30/150/270	1	Unknown	13' LP Platform	12	Unknown	1-5/8"	Internal
AT&T Mobility	56	57	6	TMA	Powerwave	LGP21401				behind antennas				
Unknown	44	44	1	Yagi	Unknown	2' Yagi		1	Unknown	3' Sidearm	1	Unknown	1/2"	Internal
Unknown	30	30	1	Yagi	Unknown	3' Yagi		1	Unknown	3' Sidearm	2	Unknown	1/2"	Internal
Unknown	30	30	1	Yagi	Unknown	6' Yagi				on same mount				

Proposed Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
AT&T Mobility	56	57	2	Panel	Powerwave	P65-17-XLH-RR	30/150			on existing mount	2	DC Power	7/8"	Internal
AT&T Mobility	56	57	1	Panel	Andrew	SBNH-1D6565C	270			on existing mount	1	Fiber	1/2"	Internal
AT&T Mobility	56	57	6	RRU	Ericsson	RBS 6601				on existing mount				
AT&T Mobility	56	57	1	Surge	Raycap	DC6-48-60-18-8F				on existing mount				

Note: The proposed loading shall be installed in addition to the existing loading

Note: The proposed coax shall be run internal to the monopole with the existing coax in order for the analysis to be valid.

Future Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External

APPENDIX B

tnxTower Output File

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in New London County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Feed Line/Linear Appurtenances - Entered As Area

Description	*Face or Leg*	*Allow Shield*	*Component Type*	*Placement* *ft*	*Total Number*		C_AA_A *ft²/ft*	*Weight* *klf*
LDF4-50A (1/2 FOAM)	C	No	Inside Pole	60.00 - 8.00	1	No Ice	0.00	0.000
						1/2" Ice	0.00	0.000
						1" Ice	0.00	0.000
						2" Ice	0.00	0.000
						4" Ice	0.00	0.000
LDF7-50A (1-5/8 FOAM)	B	No	Inside Pole	56.00 - 8.00	12	No Ice	0.00	0.001
						1/2" Ice	0.00	0.001
						1" Ice	0.00	0.001
						2" Ice	0.00	0.001
						4" Ice	0.00	0.001
7/8" DC Power Cable	B	No	Inside Pole	56.00 - 8.00	2	No Ice	0.00	0.001
						1/2" Ice	0.00	0.001
						1" Ice	0.00	0.001
						2" Ice	0.00	0.001
						4" Ice	0.00	0.001
1/2" Fiber Cable	B	No	Inside Pole	56.00 - 8.00	1	No Ice	0.00	0.000
						1/2" Ice	0.00	0.000
						1" Ice	0.00	0.000
						2" Ice	0.00	0.000
						4" Ice	0.00	0.000
LDF4-50A (1/2 FOAM)	C	No	Inside Pole	44.00 - 8.00	1	No Ice	0.00	0.000
						1/2" Ice	0.00	0.000
						1" Ice	0.00	0.000
						2" Ice	0.00	0.000
						4" Ice	0.00	0.000
LDF4-50A (1/2 FOAM)	C	No	Inside Pole	30.00 - 8.00	2	No Ice	0.00	0.000
						1/2" Ice	0.00	0.000
						1" Ice	0.00	0.000
						2" Ice	0.00	0.000
						4" Ice	0.00	0.000
Safety Line 3/8	C	No	CaAa (Out Of Face)	61.00 - 8.00	1	No Ice	0.04	0.000
						1/2" Ice	0.14	0.001
						1" Ice	0.24	0.001

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
5/8" Step Bolts	C	No	CaAa (Out Of Face)	61.00 - 8.00	1	2" Ice	0.44	0.002
						4" Ice	0.84	0.004
						No Ice	0.04	0.001
						1/2" Ice	0.14	0.002
						1" Ice	0.24	0.003
						2" Ice	0.44	0.007
						4" Ice	0.84	0.023

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
3' Sidearm - Round (GPD)	C	From Leg	1.50 0.000 0.000	0.000	60.00	No Ice	0.80	1.40	34.310
						1/2" Ice	1.05	1.75	43.720
						1" Ice	1.30	2.10	53.130
						2" Ice	1.80	2.80	71.950
						4" Ice	2.80	4.20	109.590
20' Omni	C	From Leg	3.00 0.000 10.000	0.000	60.00	No Ice	4.00	4.00	40.000
						1/2" Ice	6.03	6.03	70.772
						1" Ice	8.07	8.07	114.118
						2" Ice	12.20	12.20	239.142
						4" Ice	20.59	20.59	646.793
Pirod 13' LP Platform (Mono)	C	None		0.000	56.00	No Ice	15.70	15.70	1300.000
						1/2" Ice	20.10	20.10	1765.000
						1" Ice	24.50	24.50	2230.000
						2" Ice	33.30	33.30	3160.000
						4" Ice	50.90	50.90	5020.000
(2) 7770.00 w/Mount Pipe	A	From Centroid-Leg	3.46 2.000 1.000	30.000	56.00	No Ice	5.88	4.10	61.538
						1/2" Ice	6.31	4.73	107.077
						1" Ice	6.75	5.37	160.390
						2" Ice	7.66	6.70	289.457
						4" Ice	9.58	9.87	654.286
(2) 7770.00 w/Mount Pipe	B	From Centroid-Leg	3.46 2.000 1.000	30.000	56.00	No Ice	5.88	4.10	61.538
						1/2" Ice	6.31	4.73	107.077
						1" Ice	6.75	5.37	160.390
						2" Ice	7.66	6.70	289.457
						4" Ice	9.58	9.87	654.286
(2) 7770.00 w/Mount Pipe	C	From Centroid-Leg	3.46 2.000 1.000	30.000	56.00	No Ice	5.88	4.10	61.538
						1/2" Ice	6.31	4.73	107.077
						1" Ice	6.75	5.37	160.390
						2" Ice	7.66	6.70	289.457
						4" Ice	9.58	9.87	654.286
(2) LGP21401	A	From Centroid-Leg	3.46 2.000 1.000	30.000	56.00	No Ice	0.00	0.23	14.100
						1/2" Ice	0.00	0.31	21.263
						1" Ice	0.00	0.40	30.319
						2" Ice	0.00	0.61	54.887
						4" Ice	0.00	1.12	135.288
(2) LGP21401	B	From Centroid-Leg	3.46 2.000 1.000	30.000	56.00	No Ice	0.00	0.23	14.100
						1/2" Ice	0.00	0.31	21.263
						1" Ice	0.00	0.40	30.319
						2" Ice	0.00	0.61	54.887
						4" Ice	0.00	1.12	135.288
(2) LGP21401	C	From Centroid-Le	3.46 2.000	30.000	56.00	No Ice	0.00	0.23	14.100
						1/2" Ice	0.00	0.31	21.263

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
		g	1.000			1" Ice	0.00	0.40	30.319
						2" Ice	0.00	0.61	54.887
						4" Ice	0.00	1.12	135.288
P65-17-XLH-RR w/ Mount Pipe	A	From Centroid-Le g	3.46 2.000 1.000	30.000	56.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.47 12.08 12.71 14.07 17.08	8.70 10.11 11.38 13.58 18.18	99.200 179.134 273.318 493.701 1100.378
P65-17-XLH-RR w/ Mount Pipe	B	From Centroid-Le g	3.46 2.000 1.000	30.000	56.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.47 12.08 12.71 14.07 17.08	8.70 10.11 11.38 13.58 18.18	99.200 179.134 273.318 493.701 1100.378
SBNH-1D6565C w/ Mount Pipe	C	From Centroid-Le g	3.46 2.000 1.000	30.000	56.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.45 12.06 12.69 14.03 17.05	9.12 10.21 11.18 13.17 17.35	82.700 162.028 254.154 469.014 1051.990
(2) RBS 6601	A	From Centroid-Le g	3.46 2.000 1.000	30.000	56.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.55 0.70 0.86 1.19 1.97	0.40 0.52 0.64 0.91 1.55	22.000 34.879 50.272 89.381 206.333
(2) RBS 6601	B	From Centroid-Le g	3.46 2.000 1.000	30.000	56.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.55 0.70 0.86 1.19 1.97	0.40 0.52 0.64 0.91 1.55	22.000 34.879 50.272 89.381 206.333
(2) RBS 6601	C	From Centroid-Le g	3.46 2.000 1.000	30.000	56.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.55 0.70 0.86 1.19 1.97	0.40 0.52 0.64 0.91 1.55	22.000 34.879 50.272 89.381 206.333
DC6-48-60-18-8F Surge Suppression Unit	C	From Centroid-Le g	3.46 2.000 1.000	30.000	56.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.47 1.67 1.88 2.33 3.38	1.47 1.67 1.88 2.33 3.38	32.800 50.515 70.725 119.237 252.915
3' Sidearm - Round (GPD)	B	From Leg	1.50 0.000 0.000	0.000	44.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.80 1.05 1.30 1.80 2.80	1.40 1.75 2.10 2.80 4.20	34.310 43.720 53.130 71.950 109.590
2' Yagi	B	From Leg	3.00 0.000 0.000	0.000	44.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.30 0.43 0.58 0.93 1.78	0.30 0.43 0.58 0.93 1.78	5.000 8.283 13.145 28.213 84.005
3' Sidearm - Round (GPD)	C	From Face	1.50 0.000 0.000	0.000	30.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.80 1.05 1.30 1.80 2.80	1.40 1.75 2.10 2.80 4.20	34.310 43.720 53.130 71.950 109.590
3' Yagi	C	From Face	3.00 0.000 0.000	0.000	30.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.52 0.71 0.90 1.33	0.52 0.71 0.90 1.33	15.000 19.811 26.810 47.987

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
6' Yagi	C	From Face	3.00 0.000 0.000	0.000	30.00	4" Ice No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.44 1.20 1.80 2.17 2.93 4.57	2.44 1.20 1.80 2.17 2.93 4.57	123.327 30.000 39.392 52.806 92.308 226.291

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
60.00	3' Sidearm - Round (GPD)	33	1.7530	0.214	0.002	50602
56.00	Pirod 13' LP Platform (Mono)	33	1.5669	0.210	0.002	50602
44.00	3' Sidearm - Round (GPD)	33	1.0434	0.195	0.002	14883
30.00	3' Sidearm - Round (GPD)	33	0.5756	0.154	0.001	15156

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
L1	61 - 36.58	Pole	TP31.341x26.75x0.2188	1	-3970.420	1025736.792	12.7	Pass
L2	36.58 - 0	Pole	TP38.22x30.4125x0.25	2	-8306.240	1440839.640	31.9	Pass
						Summary	ELC:	Proposed
						Pole (L2)	31.9	Pass
						Rating =	31.9	Pass

APPENDIX C

Tower Elevation Drawing

DESIGNED APPURTENANCE LOADING

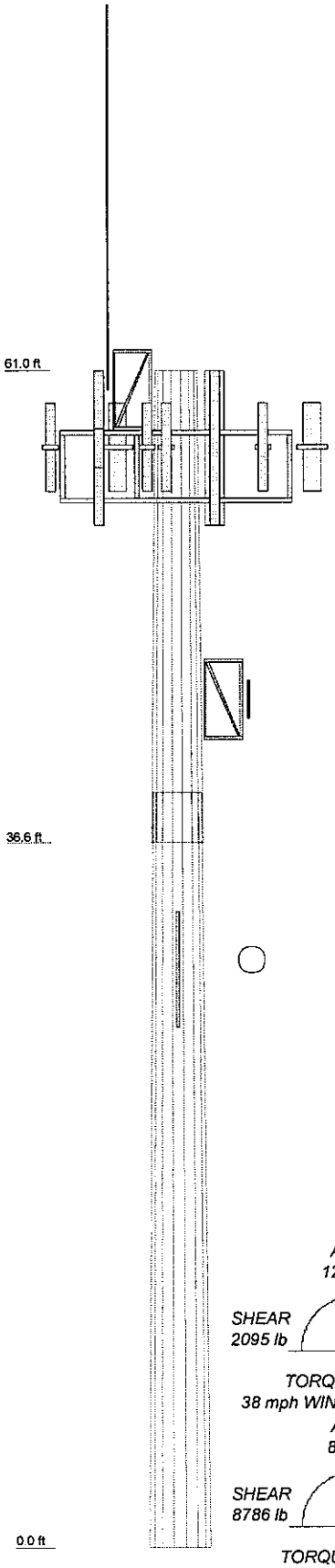
TYPE	ELEVATION	TYPE	ELEVATION
3' Sidearm - Round (GPD)	60	SBNH-1D6565C w/ Mount Pipe	56
20' Omni	60	(2) RBS 6601	56
Pirod 13' LP Platform (Mono)	56	(2) RBS 6601	56
(2) 7770.00 w/Mount Pipe	56	(2) RBS 6601	56
(2) 7770.00 w/Mount Pipe	56	DC6-48-60-18-8F Surge Suppression Unit	56
(2) 7770.00 w/Mount Pipe	56		
(2) LGP21401	56	3' Sidearm - Round (GPD)	44
(2) LGP21401	56	2' Yagi	44
(2) LGP21401	56	3' Sidearm - Round (GPD)	30
P65-17-XLH-RR w/ Mount Pipe	56	3' Yagi	30
P65-17-XLH-RR w/ Mount Pipe	56	6' Yagi	30

MATERIAL STRENGTH

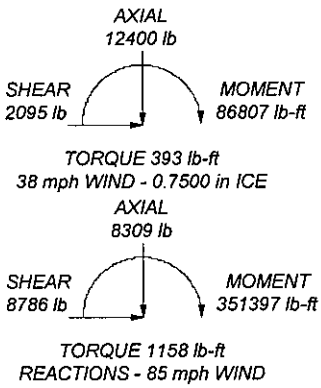
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-60	60 ksi	75 ksi			

TOWER DESIGN NOTES

1. Tower is located in New London County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 31.9%



Section	4	3	2	1
Length (ft)	39.19	24.42		
Number of Sides	16	16		
Thickness (in)	0.2500	0.2188		
Socket Length (ft)		2.61		
Top Dia (in)	30.4125	26.7500		
Bot Dia (in)	38.2200	31.3410		
Grade	A572-60			
Weight (lb)	3623.1	1671.5		5294.7

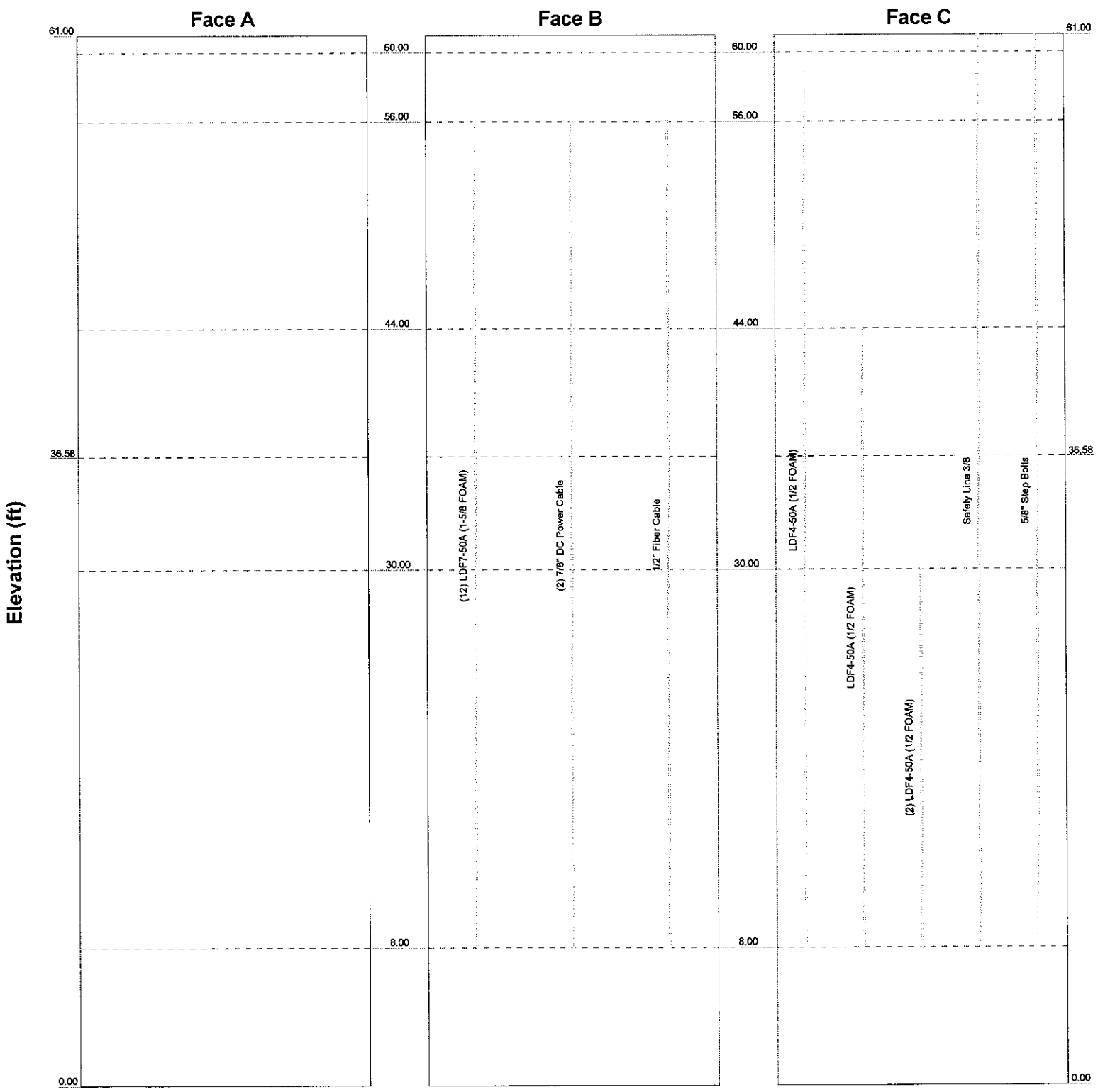


GPD Group
520 South Main St, Suite 2531
Akron, OH 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: CT5346 (25960) COLCHESTER NORTH CENTR			
Project: 2012801.89			
Client: Nexlink Global Services	Drawn by: klicca	App'd:	
Code: TIA/EIA-222-F	Date: 11/21/12	Scale: NTS	
Path:		Dwg No. E-1	

0' - 61'

Round | Flat | App In Face | App Out Face | Truss Leg



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520 South Main St, Suite 2531
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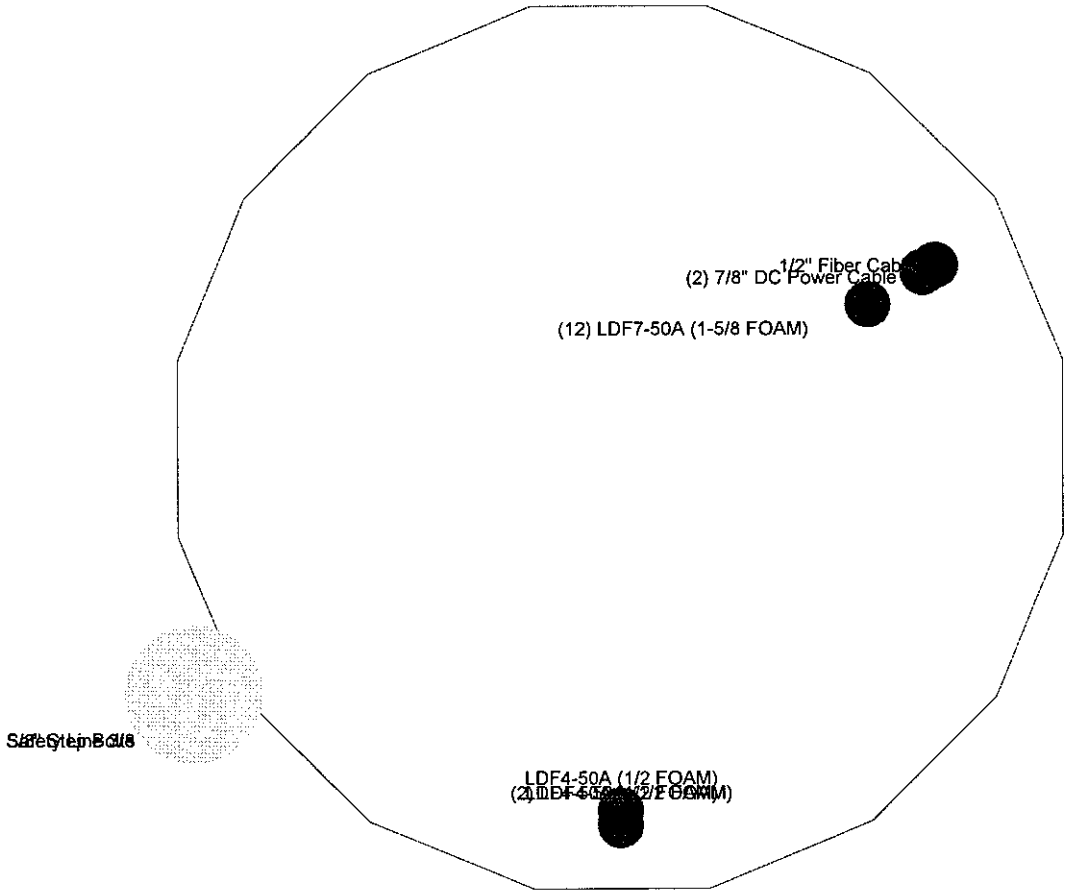
FAX: (330) 572-2101

Job: CT5346 (25960) COLCHESTER NORTH CENTR			
Project: 2012801.89			
Client: Nexlink Global Services	Drawn by: kliccar	App'd:	
Code: TIA/EIA-222-F	Date: 11/21/12	Scale: NTS	
Path:		Dwg No. E-7	

Round _____ Flat _____ App In Face App Out Face



GPD Group 520 South Main St, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Job: CT5346 (25960) COLCHESTER NORTH CENTR		
	Project: 2012801.89		
	Client: Nexlink Global Services	Drawn by: klicca	App'd:
	Code: TIA/EIA-222-F	Date: 11/21/12	Scale: NTS
	Path:		Dwg No. E-7

APPENDIX D

Anchor Rod & Base Plate Analysis

GPD GROUP

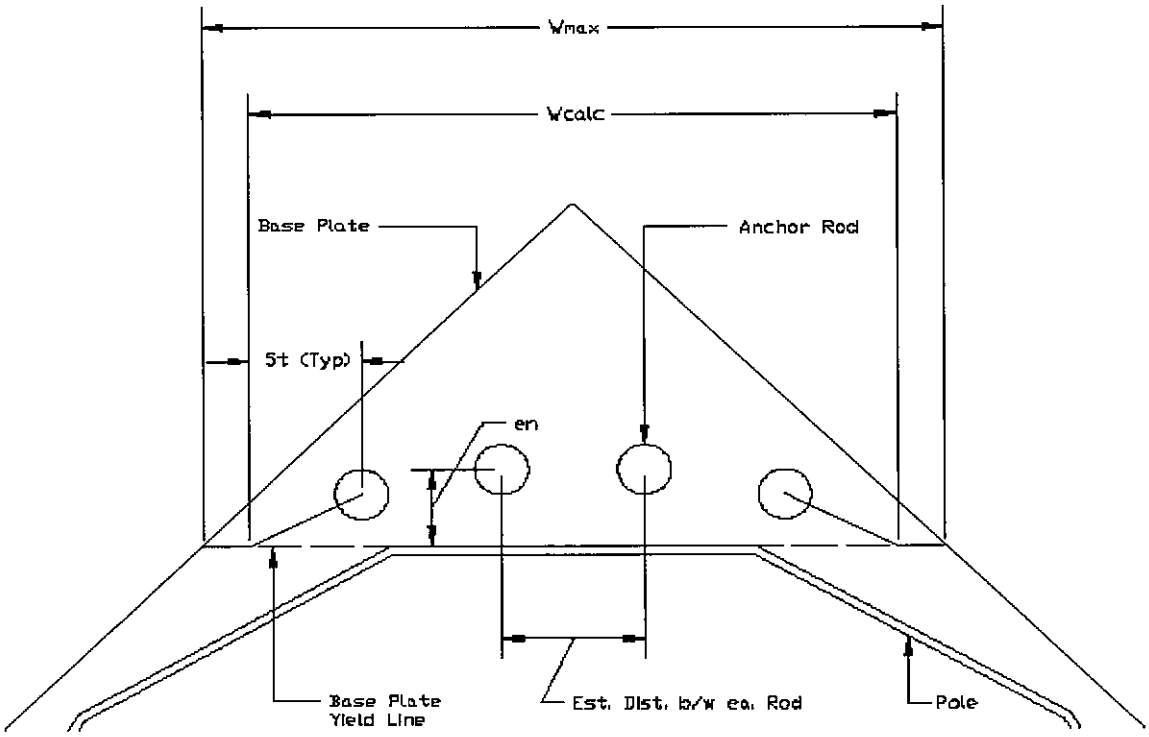
Anchor Rod and Base Plate Stresses
CT5346 (25960) COLCHESTER NORTH CENTRAL
2012801.89

Overturning Moment =	351.40	k*ft
Axial Force =	8.31	k
Shear Force =	8.79	k

Acceptable Stress Ratio =	100.0%

Anchor Rods		
Pole Diameter =	38.22	in
Number of Rods =	8	
Type =	Upset Rod	
Rod Yield Strength (Fy) =	75	ksi
ASIF =	1.333	
Rod Circle =	44	in
Rod Diameter =	2.25	in
Net Tensile Area =	3.25	in^2
Max Tension on Rod =	46.82	kips
Max Compression on Rod =	48.89	kips
Allow. Rod Force =	195.00	kips
Anchor Rod Capacity =	**24.0%**	**OK**

Base Plate		
Plate Strength (Fy) =	50	ksi
Plate Thickness =	2.5	in
Plate Width =	42	in
Est. Dist. b/w ea. Rod =	6	in
w_{calc} =	31.000	in
w_{max} =	21.177	in
w =	21.18	in
S =	22.06	in^3
fb =	11.79	ksi
Fb =	50	ksi
Base Plate Capacity =	**23.6%**	**OK**



APPENDIX E

Foundation Analysis

GPD GROUP

Caisson Analysis
CT5346 (25960) COLCHESTER NORTH CENTRAL
2012801.89

General Info	
Code	TIA/EIA-222-F
Concrete Code	ACI 318-02
Seismic Design Category	B
Max Stress Ratio	1.00
Reinforcing Known?	No/Assume Min
Modified?	No

General Soil	
Ground Water	99.00 ft
Soil Depth to Neglect	3.50 ft

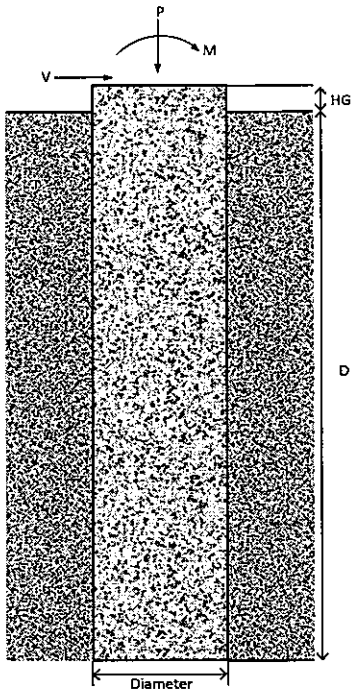
Reactions	
Moment, M	351.40 k-ft
Axial, P	8.31 k
Shear, V	8.79 k

Pier Information		
Pier Diameter	5	ft
Pier Length Below Grade	16	ft
Distance Above Grade	0.5	ft
Vertical Bar Size	# 11	
Vertical Bar Quantity	8	
Tie Size	# 4	ft
fc' =	3	ksi
fy =	60	ksi
Clear Cover =	3	in

Soil Summary (Req. FS=2.0)		
Mu =	351.40	k-ft
Mr =	1770.26	k-ft
FS =	5.04	
Capacity =	39.7%	Pass

Reinforcing Summary		
ϕMn =	1412.39	k-ft
Mu =	513.37	k-ft
Min ρ =	0.00333	
Provided ρ =	0.00441	OK
Capacity =	36.3%	Pass

As Min is assumed for the purpose of this analysis.



Soil Info								
Layer	Soil Type	Thickness	γ, pcf	Cu, psf	ϕ	Kp	Top of Layer	Bot. of Layer
Layer 1	Sand	5	120	0	32	3.25	0.00	5.00
Layer 2	Sand	11	165	0	32	3.25	5.00	16.00
Layer 3	Clay					0.00	16.00	16.00
Layer 4	Clay					0.00	16.00	16.00
Layer 5	Clay					0.00	16.00	16.00
Layer 6	Sand					1.00	16.00	16.00
Layer 7	Sand					1.00	16.00	16.00
Layer 8	Clay					0.00	16.00	16.00
Layer 9	Sand					1.00	16.00	16.00
Layer 10	Clay					0.00	16.00	16.00

C Squared Systems, LLC
65 Dartmouth Drive, Unit A3
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions

at&t

CT5346

(Colchester North Central)

315 Old Hartford Road, Colchester, CT 06415

November 29, 2012

Table of Contents

List of Tables

List of Figures

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modifications to the existing AT&T antenna arrays mounted on the monopole tower located on 315 Old Hartford Road in Colchester, CT. The coordinates of the tower are 41° 34' 50.49" N, 72° 21' 1.44" W.

AT&T is proposing the following modifications:

1) Install three multi-band (700/850/1900/2100 MHz) antennas for their LTE network (one per sector).

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{1.6^2 \times EIRP}{4\pi \times R^2} \right) \text{x Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

These calculations assume that the antennas are operating at 100 percent capacity and power, and that all channels are transmitting simultaneously. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the finished modifications.

4. Calculation Results

Table 1 below outlines the power density information for the site. Because the proposed AT&T antennas are directional in nature, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower. Please refer to Attachment C for the vertical patterns of the proposed AT&T antennas. The calculated results for AT&T in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm^2)	Limit	%MPE
AT&T UMTS	57.5	880	1	500	0.0544	0.5867	9.27%
AT&T GSM	57.5	880	4	296	0.1288	0.5867	21.95%
AT&T GSM	57.5	1900	2	427	0.0929	1.0000	9.29%
Ken-Tronics	60	159.915	1	160	0.0160	0.2000	7.99%
Ken-Tronics	60	854.8375	4	35	0.0140	0.5699	2.45%
Ken-Tronics	40	468.8	1	40	0.0090	0.3125	2.88%
Ken-Tronics	30	468.425	1	40	0.0160	0.3123	5.12%
AT&T UMTS	57	880	2	565	0.0125	0.5867	2.13%
AT&T UMTS	57	1900	2	875	0.0194	1.0000	1.94%
AT&T LTE	57	734	1	1615	0.0179	0.4893	3.65%
AT&T GSM	57	880	1	283	0.0031	0.5867	0.53%
AT&T GSM	57	1900	4	525	0.0232	1.0000	2.32%
						Total	**29.02%**

Table 1: Carrier Information[1] [2] [3]

[1] The existing CSC filing for AT&T should be removed and replaced with the updated AT&T technologies and values provided in Table 1. The power density information for carriers other than AT&T was taken directly from the CSC database dated 7/26/2012. Please note that %MPE values listed are rounded to two decimal points. The total %MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

[2] In the case where antenna models are not uniform across all 3 sectors for the same frequency band, the antenna model with the highest gain was used for the calculations to present a worse-case scenario.

[3] Antenna height listed for AT&T is in reference to the GPD Group Structural Analysis dated November 21, 2012.

5. Conclusion

The above analysis verifies that emissions from the existing site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed transmit antennas at the existing facility is well below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at ground level is **29.02% of the FCC limit**.

As noted previously, obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be from the finished modifications.

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.

Daniel L. Goulet
C Squared Systems, LLC

November 29, 2012
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz. IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave. IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure[4]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure[5]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 2: FCC Limits for Maximum Permissible Exposure (MPE)

[4] Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

[5] General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

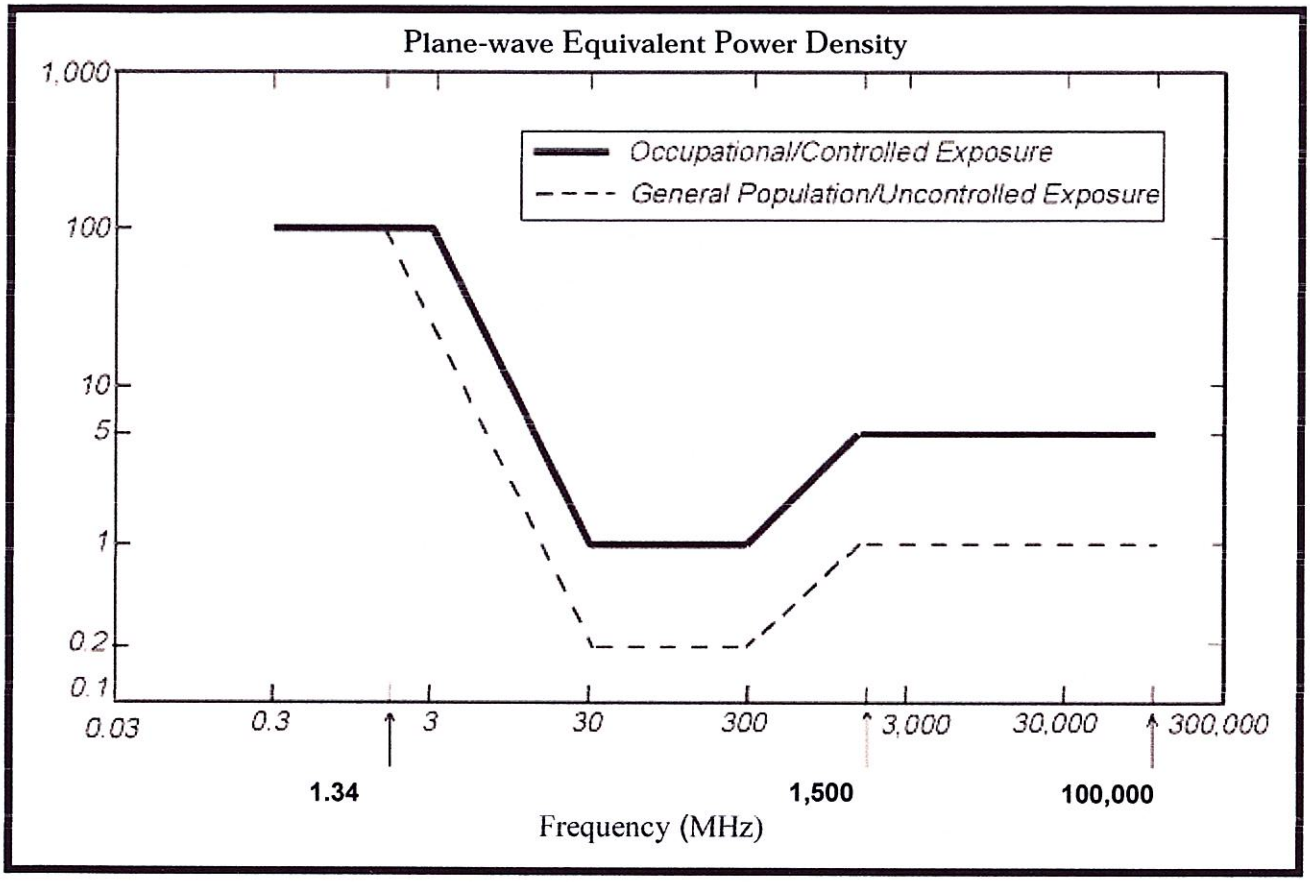
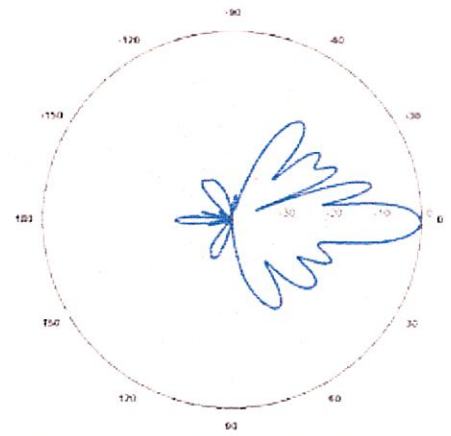


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Antenna Data Sheets and Electrical Patterns

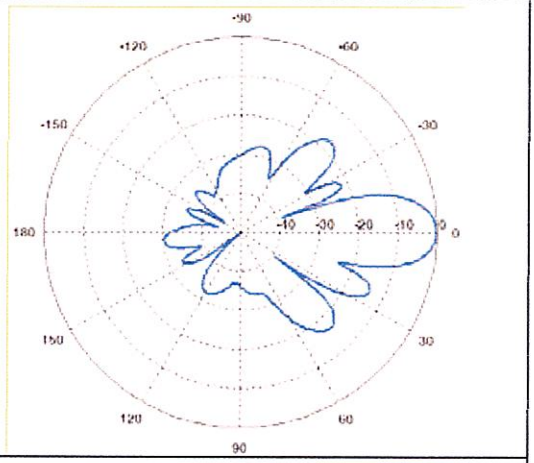
700 MHz

Manufacturer:	Powerwave
Model #:	P65-17-XLH-RR
Frequency Band:	698-806 MHz
Gain:	14.3 dBd
Vertical Beamwidth:	8.4°
Horizontal Beamwidth:	70°
Polarization:	Dual Linear ± 45°
Size L x W x D:	96.0" x 12.0" x 6.0"



850 MHz

Manufacturer:	Powerwave
Model #:	7770.00
Frequency Band:	824-896 MHz
Gain:	11.5 dBd
Vertical Beamwidth:	15°
Horizontal Beamwidth:	82°
Polarization:	Dual Linear ± 45°
Size L x W x D:	55.0" x 11.0" x 5.0"



1900 MHz

Manufacturer:	Powerwave
Model #:	7770.00
Frequency Band:	1850-1990 MHz
Gain:	13.4 dBd
Vertical Beamwidth:	7°
Horizontal Beamwidth:	86°
Polarization:	Dual Linear ± 45°
Size L x W x D:	55.0" x 11.0" x 5.0"