20 Commercial St
Branford, CT 06405
Phone: (203) 208-0806
Fax: (203) 488-4820

April 6, 2015

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051
Attn: Ms. Melanie Bachman, Executive Director

Re: Notice of Exempt Modification Application
1030 New Britain Ave.
West Hartford, CT 06110

Dear Ms. Bachman,

On behalf of New Cingular Wireless PCS, LLC ("AT&T"), enclosed for filing are an original and two (2) copies of AT&T's Notice of Exempt Modification for Proposed Modifications to an Existing Telecommunications Facility located at the above-referenced site.

I also enclose herewith a check in the amount of $625.00 representing the fee for the Notice of Exempt Modification.

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

Thank you,

By: Paul F. Sagristano

Name: Paul Sagristano
Vertical Development LLC
Phone- 917-841-0247
Fax- 401-633-6202
psagristano@verticaldevelopmentllc.com

cc:

Hon. Scott Slifka 50 S. Main Street West Hartford, CT 06107 860-561-7445		Jeffrey Hirschfeld 1030 New Britain Ave. West Hartford, CT 06110 212-218-4666

siting.council@ct.gov (electronic copy)

Notice of Exempt Modification
1030 New Britain Ave.
West Hartford, CT 06110

New Cingular Wireless PCS, LLC ("AT&T") submits this Notice of Exempt Modification to the Connecticut Siting Council ("Council") pursuant to Sections 16-50j-73 and 16-50j-72(b) of the Regulations of Connecticut State Agencies ("Regulations") in connection with AT&T's planned modification of antennas and associated equipment on an existing 180' monopole located at 1030 New Britain Ave., in the Town of West Hartford, Connecticut. More particularly, AT&T plans to upgrade this site by adding LTE technology to its facilities. The proposed modifications will not increase the tower height, cause a significant adverse change or alteration in the physical or environmental characteristics of the site, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six (6) decibels, add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection, pursuant to Section 22a-162 of the Connecticut General Statutes, or impair the structural integrity of the facility, as determined in a certification provided by a professional engineer licensed in Connecticut.

To better meet the growing voice and data demands of its wireless customers, AT&T is upgrading their network nationwide to include LTE technology, which will provide faster service and better overall performance. Pursuant to the LTE technology upgrade at this site, AT&T will add panel antennas, install RRHs, and install related equipment to its equipment area within the fenced tower compound.

The monopole tower located at 1030 New Britain Ave, in the Town of West Hartford, Connecticut (lat. 41.731307°, long. -72.723801°) is owned and operated by Hirschfeld Towers, LLC, a CT limited liability company ("Landlord"). AT&T's existing facility is located within the Landlord's existing fenced compound. AT&T currently has Twelve (9) panel antennas (three (3) per sector) with a centerline of 180' installed on the tower. AT&T's base station equipment is located adjacent to the base of the tower within the fenced compound. A site plan depicting this is attached.

AT&T currently has three (3) LTE antennas, Six (6) existing Powerwave 7777.00 panel antennas (Two (2) per sector), Three (3) Powerwave TMAs, three (3) Ericsson RRUS-11 (one (1) per sector) which will be connected and located behind the Powerwave 7777.00 panel antennas, and one (1) DC-6 Surge Suppressor.

AT&T plans to replace the three (3) existing LTE antennas with three (3) CCI OPA-65R-LCUU-H6 panel antennas, and add three (3) RRUS-12 (1 per sector), three (3) Ericsson A2 modules (1) per sector (attached behind each respective RRU-12). The height of the tower will not be increased and all antennas, surge suppressors, and RRHs will be installed at the existing 180' centerline.

AT&T will make no modifications to their existing ground based communications platform. The compound's boundaries will not need to be extended. The proposed modifications will not cause a significant adverse change or alteration in the physical or environmental characteristics of the site, since it is already a telecommunications installation and the modifications will be compatible with this. Other than brief, construction-related noise, these modifications will not increase noise levels at the tower site boundary by six (6) decibels.

The proposed modifications will not add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the Federal Communications Commission pursuant to

Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection, pursuant to Section 22a-162 of the Connecticut General Statutes. A radio frequency emissions analysis prepared by EBI Consulting concludes that the proposed final configuration (including other carriers on the tower) will emit 26.79% of the allowable FCC established general public limits sampled at the ground level (see page 1 and the 6th page of Radio Frequency Emissions Analysis Report Evaluation of Human Exposure Potential to Non-Ionizing Emissions (the "MPE" Assessment) dated May 18, 2015). Emissions values for additional carriers were based upon values listed in Connecticut Siting Council active database (see the 2nd and 6 page of the MPE Assessment dated May 18, 2015). The information used in the report was analyzed as a percentage of current Maximum Permissible Exposure (%MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1 (see the 2nd page of the MPE Assessment).

The proposed modifications will not impair the structural integrity of the facility. Paul J Ford & Co., structural engineers performed a structural analysis of the tower on July 28, 2015 to verify that it can support the proposed loading at 99.9% of capacity the monopole will comply with the specified ANSI-TIA-222-G requirements and adequately structurally support the proposed loading.

In conclusion, AT&T's proposed modifications do not constitute a modification subject to the Council's review because AT&T will not change the height of the tower, will not extend the boundaries of the compound, will not cause a significant adverse change or alteration in the physical or environmental characteristics of the site, will not increase the noise levels at the site, will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards, and will not impair the structural integrity of the facility. Therefore, AT&T respectfully requests that the Council acknowledge that this Notice of Exempt Modification meets the Council's exemption criteria.

PROJECT INFORMATION

SCOPE OF WORK:

- REMOVE (1) EXISTING LTE ANTENNA PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) EXISTING ANTENNAS TO BE REMOVED.
- AT&T ANTENNAS: (1) NEW ANTENNA PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) NEW ANTENNAS; (3) EXISTING GSM/UMTS ANTENNAS TO REMAIN (1 PER SECTOR)
- AT&T RRUs: (1) NEW RRUs PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) NEW RRUs; (1) EXISTING RRU PER SECTOR TO REMAIN, FOR A TOTAL OF (3) EXISTING RRUs.
- (1) NEW A2 MODULE PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) NEW A2 MODULES.

SITE ADDRESS:	1030 NEW BRITAIN AVENUE WEST HARTFORD, CT 06110	
LATITUDE:	41.731307	41° 43' 52.7052"N
LONGITUDE:	−72.723801	−72° 43' 25.6836"W
USID:	25914	
TOWER OWNER:		
TYPE OF SITE:	LATTICE TOWER/OUTDOOR EQUIPMENT	
TOWER HEIGHT: RAD CENTER:	185'−0"± 180'−0"±	
CURRENT USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY	
PROPOSED USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY	

DRAWING INDEX

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T−1	TITLE SHEET	0
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A−1	COMPOUND LAYOUT	0
A−2	EQUIPMENT LAYOUT	0
A−3	ANTENNA LAYOUTS & ELEVATIONS	0
A−4	DETAILS	0
A−5	ANTENNA MOUNTING DETAILS	0
G−1	GROUNDING, ONE−LINE DIAGRAM & DETAILS	0

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE SUBCONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN, ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AMD MAY IMPOSE CHANGES OR SITE MODIFICATIONS.

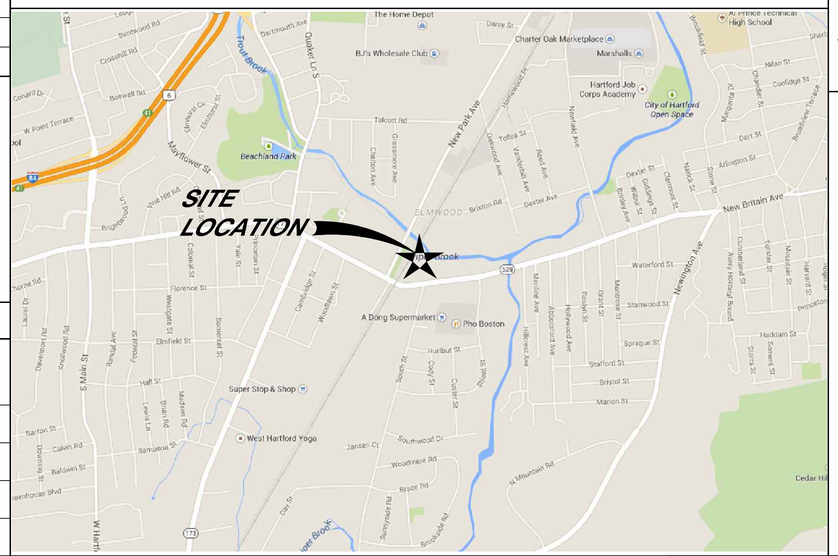
DISCIPLINE:	NAME:	DATE:
SITE ACQUISITION:		
CONSTRUCTION MANAGER:		
AT&T PROJECT MANAGER:		

at&t MOBILITY

FA CODE: 10071358
SITE NUMBER: CT5259
SITE NAME: WEST HARTFORD-ELMWOOD

VICINITY MAP

1. START AT 500 ENTERPRISE DR. ROCKY KILL GOING TOWARD CAPITAL BLVD; TURN LEFT ON CAPITAL BLVD; TURN LEFT ON WEST ST; TURN LEFT TO TAKE RAMP ONTO I−91 N TOWARD HARTFORD; TAKE THE WATERBURY LEFT EXIT ONTO I−84 W TOWARD #32A/WATERBURY; TAKE LEFT EXIT #45/FLATBUSH AVENUE; TURN RIGHT ON FLATBUSH AVE; TURN LEFT ON NEW PARK AVE; TURN LEFT ON NEW BRITAIN AVE (CT−71); ARRIVE AT 1030 NEW BRITAIN AVE. WEST HARTFORD, ON THE LEFT.



PROJECT TEAM

CLIENT REPRESENTATIVE

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD
BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617−639−4908
EMAIL: dcooper@empiretelecomm.com

SITE ACQUISITION:

COMPANY: VERTICAL DEVELOPMENT, LLC
ADDRESS: 20 COMMERCIAL STREET
BRANFORD, CT 06405
CONTACT: PAUL SAGRISTANO
PHONE: 917−841−0247
EMAIL: psagristano@verticaldevelopmentllc.com

ZONING:

COMPANY: VERTICAL DEVELOPMENT, LLC
ADDRESS: 20 COMMERCIAL STREET
BRANFORD, CT 06405
CONTACT: PAUL SAGRISTANO
PHONE: 917−841−0247
EMAIL: psagristano@verticaldevelopmentllc.com

ENGINEERING:

COMPANY: COM−EX CONSULTANTS, LLC
ADDRESS: 4 SECOND AVENUE
SUITE 204
DENVILLE, NJ 07834
CONTACT: NICHOLAS D. BARILE, P.E.
PHONE: 862−209−4300
EMAIL: nbarile@comexconsultants.com

RF ENGINEER:

COMPANY: AT&T MOBILITY − NEW ENGLAND
ADDRESS: 550 COCHITUATE ROAD
SUITE 550 13 & 14
FRAMINGHAM, MA 01701
CONTACT: CAMERON SYME
PHONE: 508−596−7146
EMAIL: cs6970@att.com

CONSTRUCTION MANAGEMENT:

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD
BILLERICA, MA 01821
CONTACT: GRZEGORZ "GREG" DORMAN
PHONE: 484−683−1750
EMAIL: gdorman@empiretelecomm.com

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.

CONNECTICUT ONE CALL SYSTEM, INC. 1-800-922-4455 STOP · CALL BEFORE YOU DIG!

CONNECTICUT LAW REQUIRES
TWO WORKING DAYS NOTICE PRIOR TO
ANY EARTH MOVING ACTIVITIES BY
CALLING 800−922−4455 OR DIAL 811

COM−EX Consultants
4 SECOND AVENUE
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EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT5259
SITE NAME: WEST HARTFORD-ELMWOOD
1030 NEW BRITAIN AVENUE
WEST HARTFORD, CT 06110
HARTFORD COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	04/27/15	ISSUED AS FINAL	KCD	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARILE · 28543 · PROFESSIONAL ENGINEER

AT&T

DRAWING TITLE: TITLE SHEET

JOB NUMBER	DRAWING NUMBER	REV
14257−EMP	T−1	0

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. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.

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 WITH STAINLESS STEEL HARDWARE 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 AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

13. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV-G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM EIGHT FEET (8') TO TEN FEET (10').

14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE ½" 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 – EMPIRE TELECOM
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY
   OEM – ORIGINAL EQUIPMENT MANUFACTURER

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 (EMPIRE TELECOM).

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

7. 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.

8. 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. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR

9. 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.

10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF 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.

11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

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

13. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

14. 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). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

15. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."

16. 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.

17. 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 MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. SINCE THE CELL SITE MAY BE 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 REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

19. 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.
    - INTERNATIONAL BUILDING CODE: IBC 2009 WITH LOCAL & COUNTY AMENDMENTS
    - NATIONAL ELECTRICAL CODE: NEC 2011 WITH LOCAL & COUNTY AMENDMENTS
    - FIRE/LIFE SAFETY CODE: NFPA-101 2009 WITH LOCAL & COUNTY AMENDMENTS

20. 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, THIRTEENTH EDITION
    - AMERICAN SOCIETY OF TESTING OF MATERIALS, ASTM
    - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA-222-G-1), STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
    - TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
    - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA
    - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
    - TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

21. 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.

22. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.

23. INFORMATION SHOWN ON THIS SET OF PLANS TAKEN FROM DRAWINGS PREPARED BY TURNING MILL CONSULTANTS FOR A RECENT UPGRADE DATED 09/25/13. CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.

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4 SECOND AVENUE
SUITE 204
DENVILLE, NJ 07834
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT5259
SITE NAME: WEST HARTFORD-ELMWOOD

1030 NEW BRITAIN AVENUE
WEST HARTFORD, CT 06110
HARTFORD COUNTY

at&t MOBILITY
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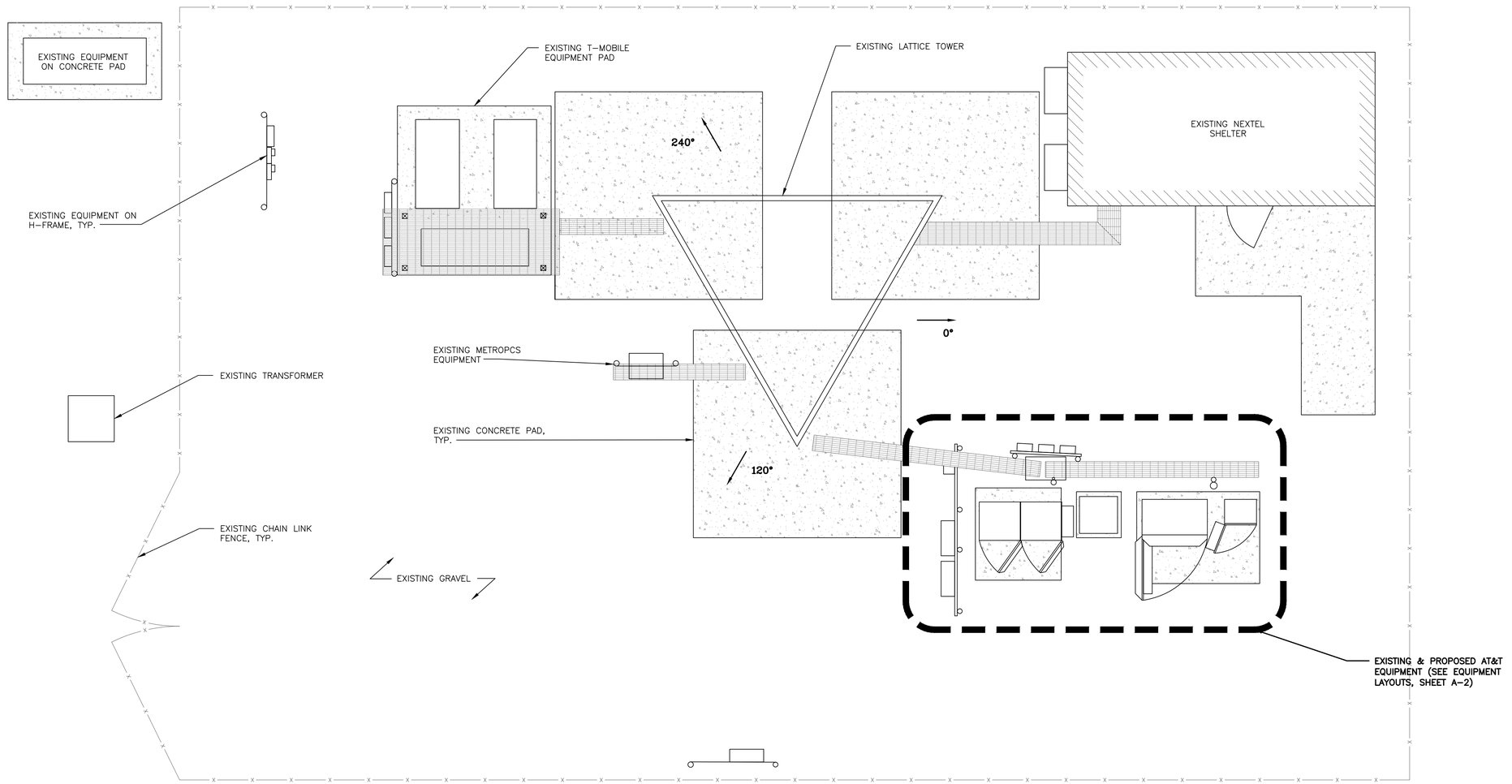
SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARILLE · LICENSED PROFESSIONAL ENGINEER · NO. 28643 · PROFESSIONAL ENGINEER

AT&T

DRAWING TITLE: GROUNDING & GENERAL NOTES

JOB NUMBER	DRAWING NUMBER	REV
14257-EMP	GN-1	0



NORTH

COMPOUND LAYOUT

SCALE: 1" = 4'-0"

4 0 2 4 8 16

(IN FEET)

1/4 Inch = 1 Foot

NOTE:
CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.

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HARTFORD COUNTY

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550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	04/27/15	ISSUED AS FINAL	KCD	NDB	NDB

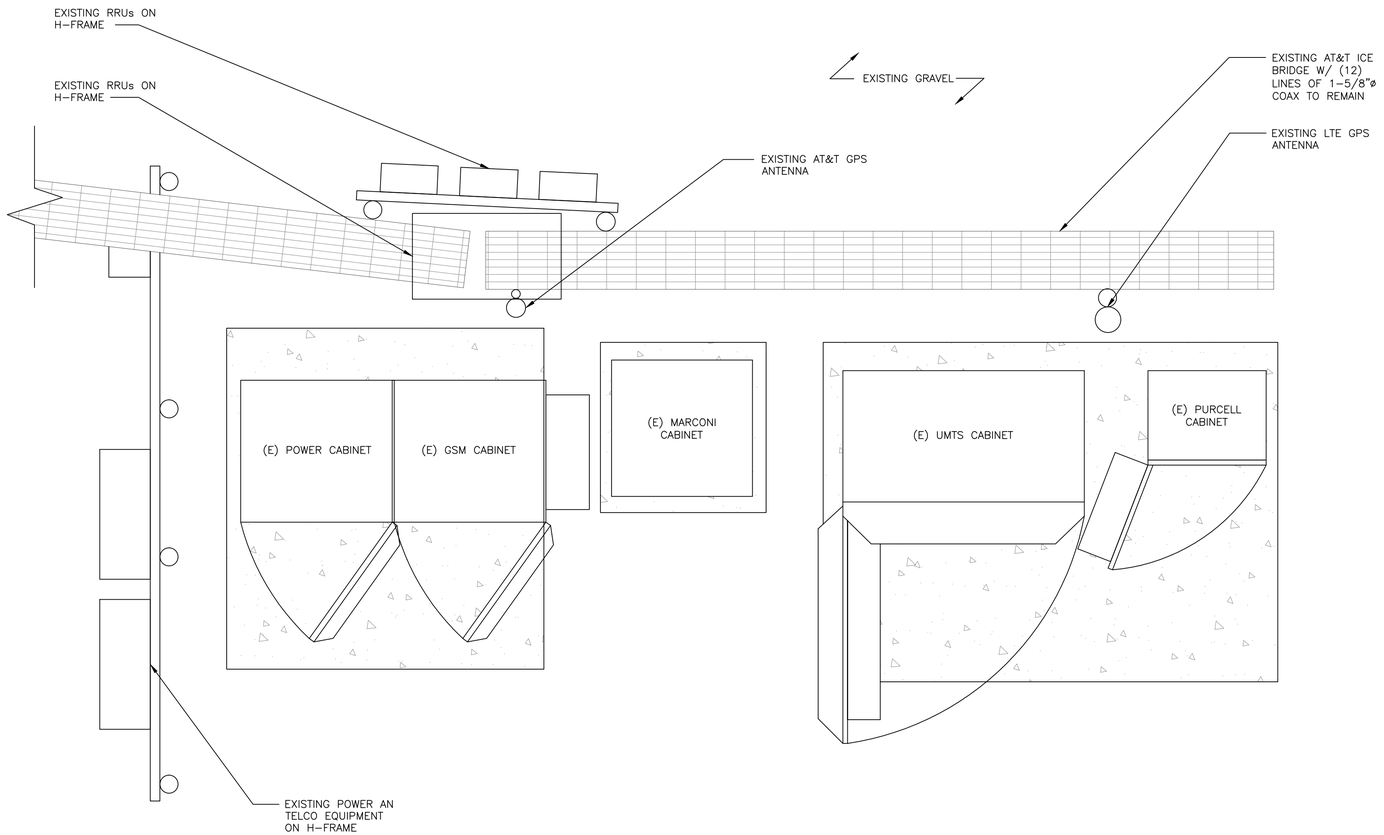
SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARILLI · LICENSED PROFESSIONAL ENGINEER · 29043

AT&T

DRAWING TITLE: COMPOUND LAYOUT

JOB NUMBER	DRAWING NUMBER	REV
14257-EMP	A-1	0



NORTH

EXISTING EQUIPMENT LAYOUT

SCALE: 1" = 2'-0"

2 0 1 2 4 8

(IN FEET)
1/2 Inch = 1 Foot

NO GROUND EQUIPMENT MODIFICATIONS ARE BEING MADE AS PART OF THIS SCOPE. EXISTING GROUND EQUIPMENT CONFIGURATION TO REMAIN.

COM-EX Consultants
4 SECOND AVENUE
SUITE 204
DENVILLE, NJ 07834
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT5259
SITE NAME: WEST HARTFORD-ELMWOOD

1030 NEW BRITAIN AVENUE
WEST HARTFORD, CT 06110
HARTFORD COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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

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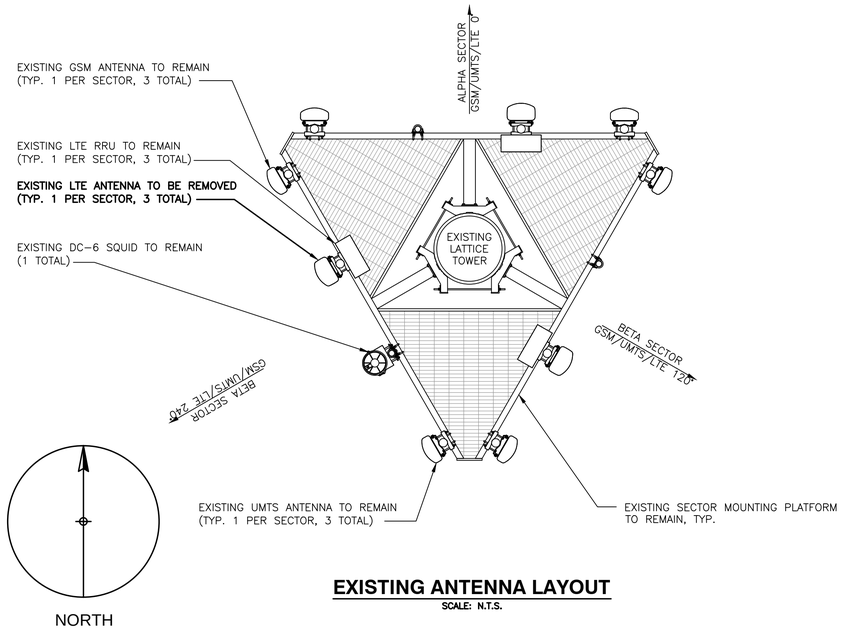
AT&T

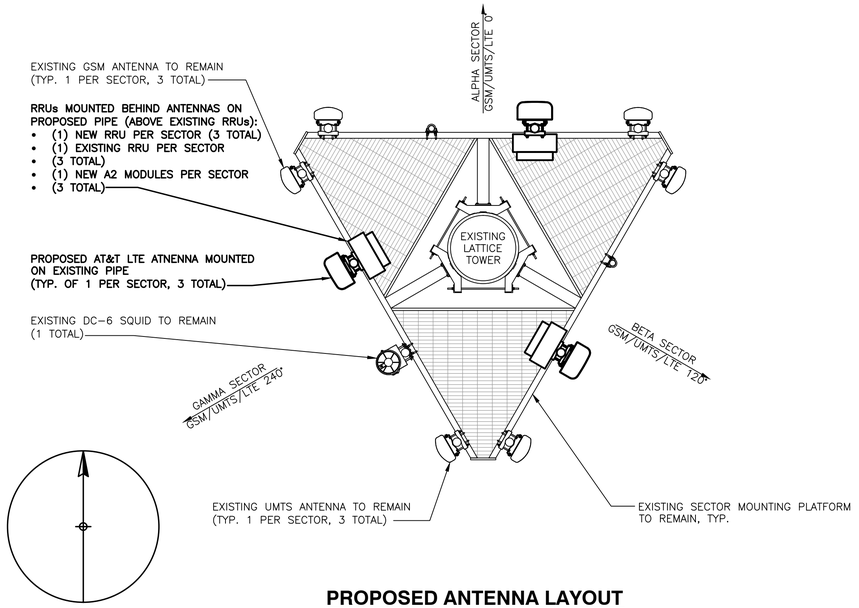
DRAWING TITLE: EQUIPMENT LAYOUT

JOB NUMBER	DRAWING NUMBER	REV
14257-EMP	A-2	0



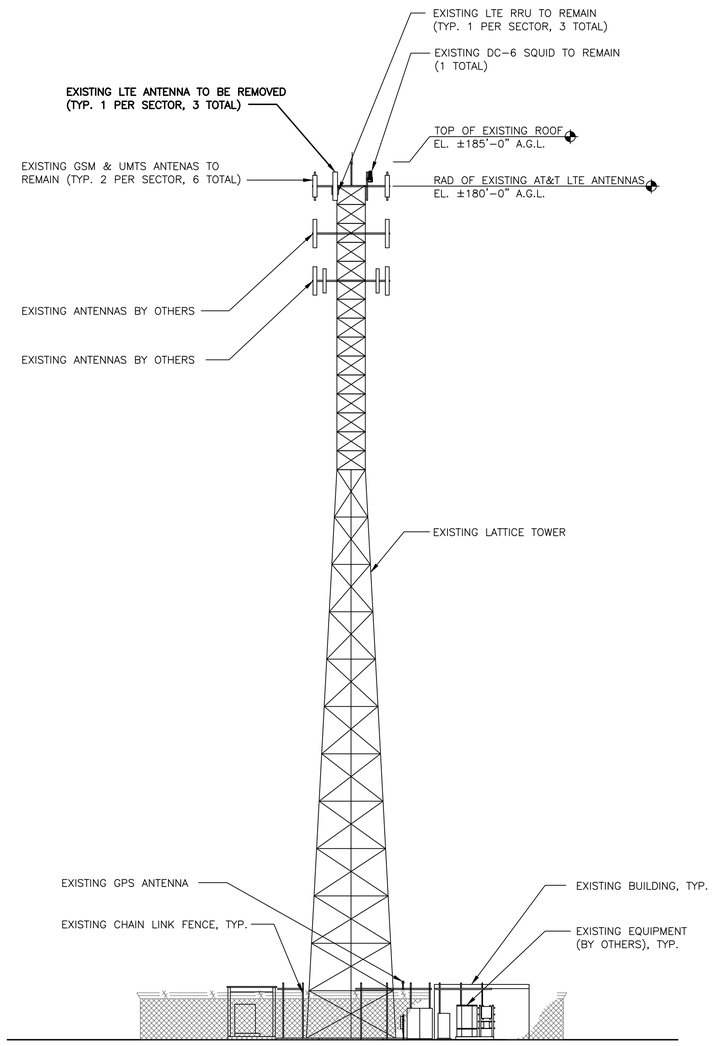
EXISTING ANTENNA LAYOUT

SCALE: N.T.S.



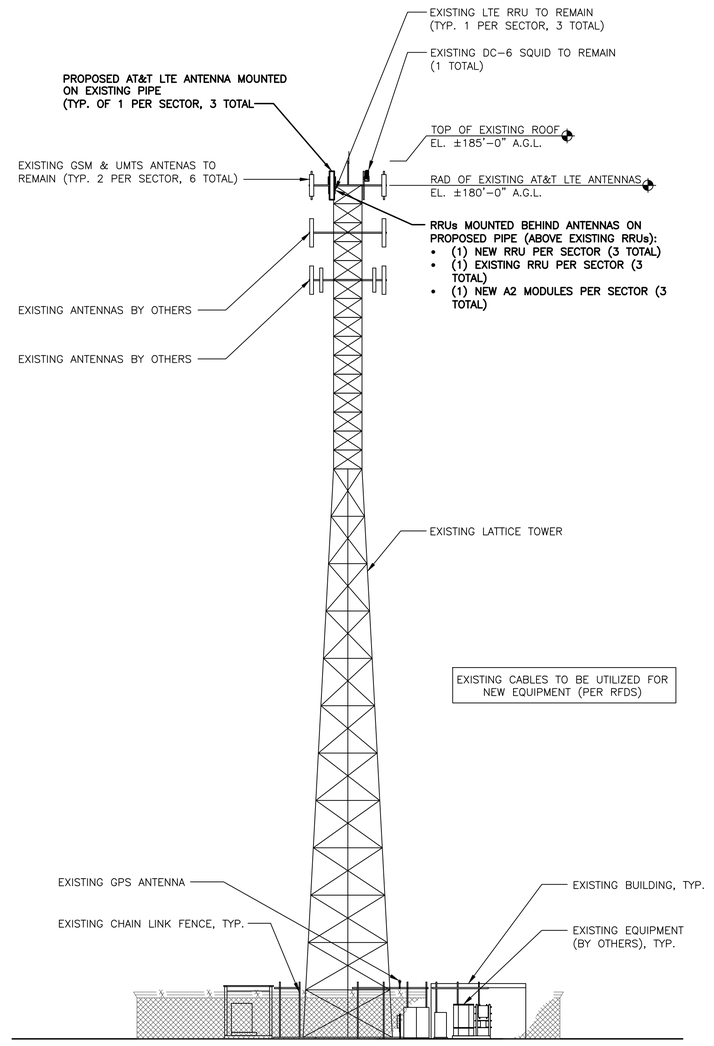
PROPOSED ANTENNA LAYOUT

SCALE: N.T.S.



EXISTING TOWER ELEVATION

SCALE: NTS



PROPOSED TOWER ELEVATION

SCALE: NTS

PROJECT OWNER IS RESPONSIBLE FOR PROVIDING A STRUCTURAL STABILITY ANALYSIS TO DETERMINE THE CAPACITY AND SUITABILITY OF THE EXISTING ANTENNA SUPPORT STRUCTURE TO SAFELY CARRY ALL ADDITIONAL LOADS IMPOSED BY THE PROPOSED EQUIPMENT AS SHOWN HEREIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY REQUIRED STRUCTURAL MODIFICATIONS INTO THEIR SCOPE OF WORK.

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0	04/27/15	ISSUED AS FINAL	KCD	NDB	NDB

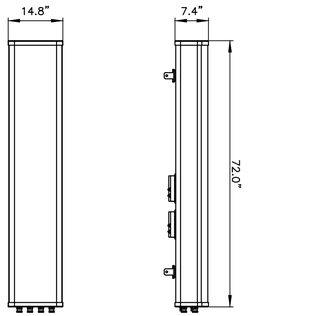
SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: STATE OF CONNECTICUT — NICHOLAS D. BARILLE — LICENSED PROFESSIONAL ENGINEER — LIC. NO. 28943 — PROFESSIONAL ENGINEER

AT&T

DRAWING TITLE:
ANTENNA LAYOUTS & ELEVATIONS

JOB NUMBER	DRAWING NUMBER	REV
14257-EMP	A-3	0



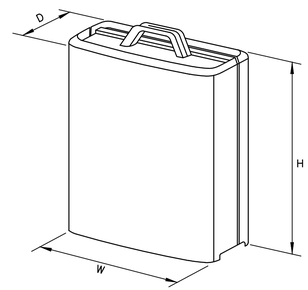
FRONT VIEW SIDE VIEW

BOTTOM VIEW

MANUFACTURER	CCI
MODEL	OPA-65R-LCUU-H6
WEIGHT	73.0 LBS

LTE ANTENNA DETAIL

SCALE: N.T.S.



MODEL	L x W x H	WEIGHT
*RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
RRUS-12	20.4" x 18.5" x 7.5"	58 LBS
A2 MODULE	16.4" x 15.2" x 3.4"	22 LBS

*DENOTES EXISTING.

RRUS DETAIL

SCALE: N.T.S.

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SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARILLI · 20143 · PROFESSIONAL ENGINEER · LICENSED · PROFESSIONAL ENGINEER

AT&T

DRAWING TITLE: DETAILS

JOB NUMBER	DRAWING NUMBER	REV
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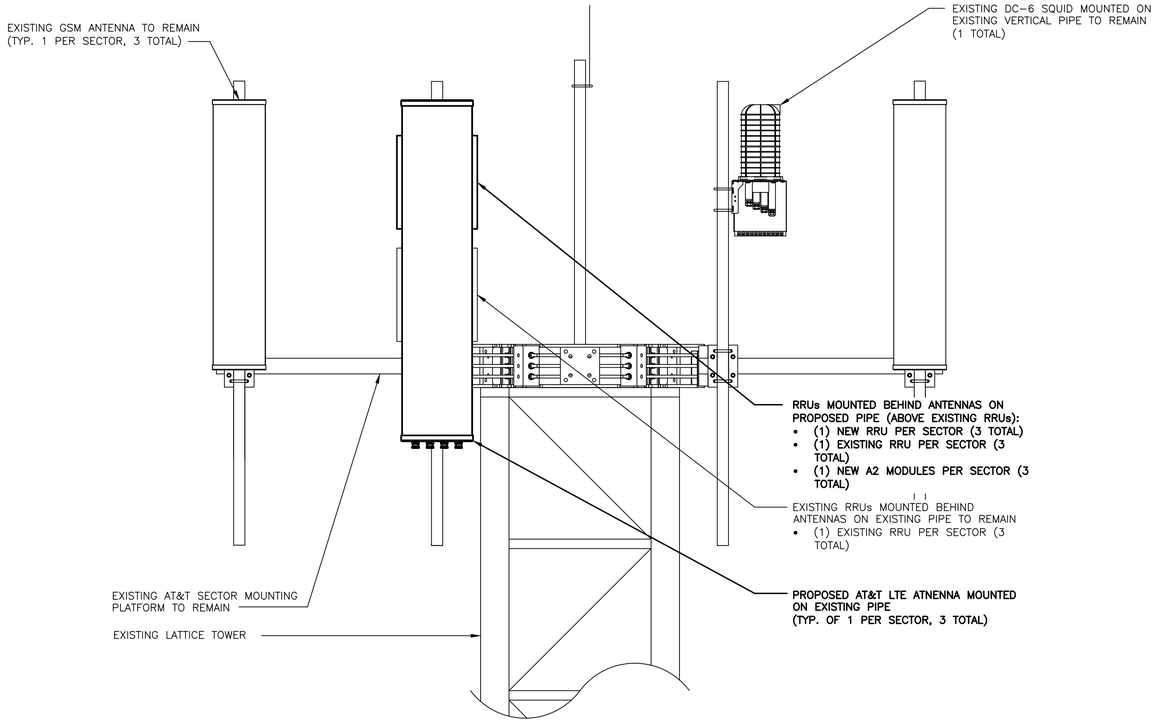
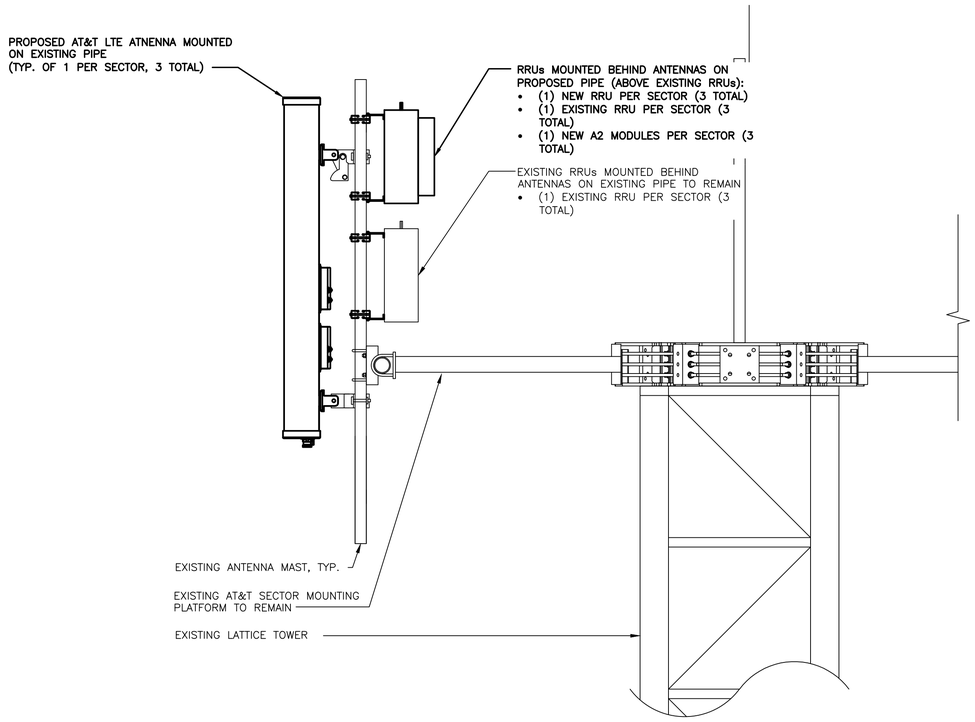


PROPOSED ANTENNA MOUNTING DETAIL (FRONT VIEW)

SCALE: N.T.S.



PROPOSED ANTENNA MOUNTING DETAIL (SIDE VIEW)

SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770	55"x11"x5"
	A2	–	–	–
	A3	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	A4	POWERWAVE	7770	55"x11"x5"
BETA	B1	POWERWAVE	7770	55"x11"x5"
	B2	–	–	–
	B3	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	B4	POWERWAVE	7770	55"x11"x5"
GAMMA	G1	POWERWAVE	7770	55"x11"x5"
	G2	–	–	–
	G3	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	G4	POWERWAVE	7770	55"x11"x5"

FINAL ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770	55"x11"x5"
	A2	–	–	–
	A3	**CCI**	**OPA-65R-LCUU-H6**	**72"X14.8"x7.4"**
	A4	POWERWAVE	7770	55"x11"x5"
BETA	B1	POWERWAVE	7770	55"x11"x5"
	B2	–	–	–
	B3	**CCI**	**OPA-65R-LCUU-H6**	**72"X14.8"x7.4"**
	B4	POWERWAVE	7770	55"x11"x5"
GAMMA	G1	POWERWAVE	7770	55"x11"x5"
	G2	–	–	–
	G3	**CCI**	**OPA-65R-LCUU-H6**	**72"X14.8"x7.4"**
	G4	POWERWAVE	7770	55"x11"x5"

PROPOSED RRU SCHEDULE

SECTOR	MAKE	MODEL	SIZE (INCHES)	ADDITIONAL COMPONENT	SIZE (INCHES)
ALPHA	ERICSSON	**RRUS-12**	**20.4"x18.5"x7.5"**	**A2 MODULE**	**16.4"x15.2"x3.4"**
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
BETA	ERICSSON	**RRUS-12**	**20.4"x18.5"x7.5"**	**A2 MODULE**	**16.4"x15.2"x3.4"**
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
GAMMA	ERICSSON	**RRUS-12**	**20.4"x18.5"x7.5"**	**A2 MODULE**	**16.4"x15.2"x3.4"**
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		

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SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARILLARI · 20143 · PROFESSIONAL ENGINEER · LICENSED PROFESSIONAL ENGINEER

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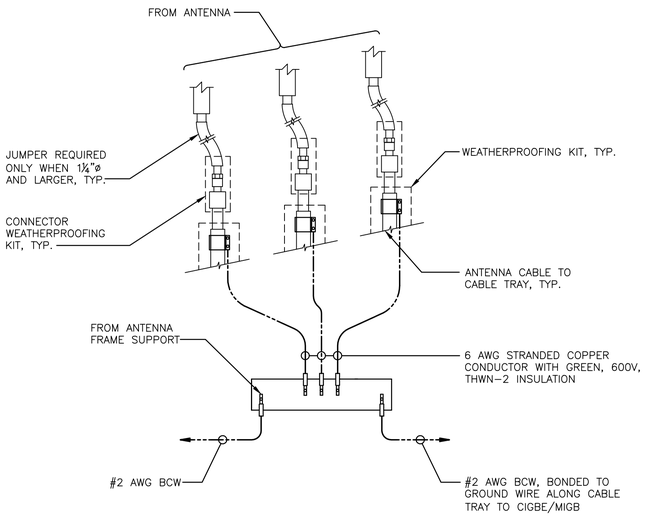
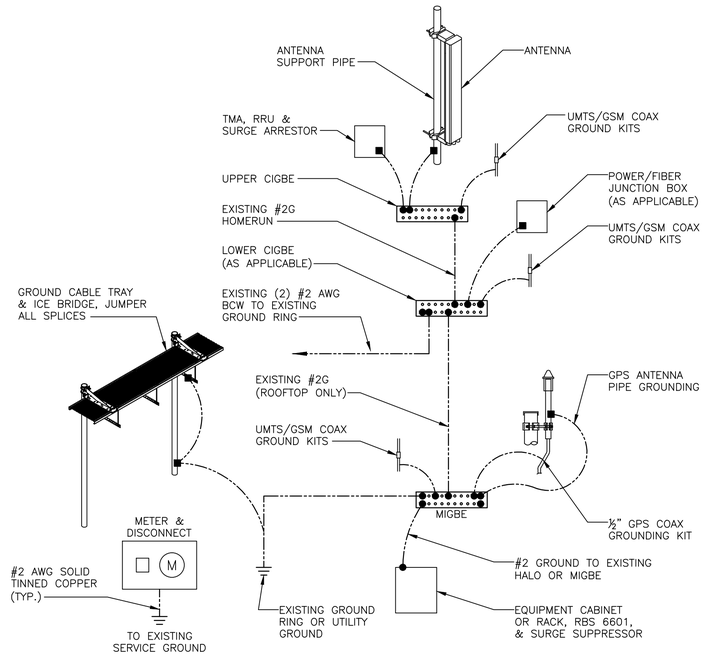
DRAWING TITLE:
ANTENNA MOUNTING DETAILS

JOB NUMBER	DRAWING NUMBER	REV
14257-EMP	A-5	0



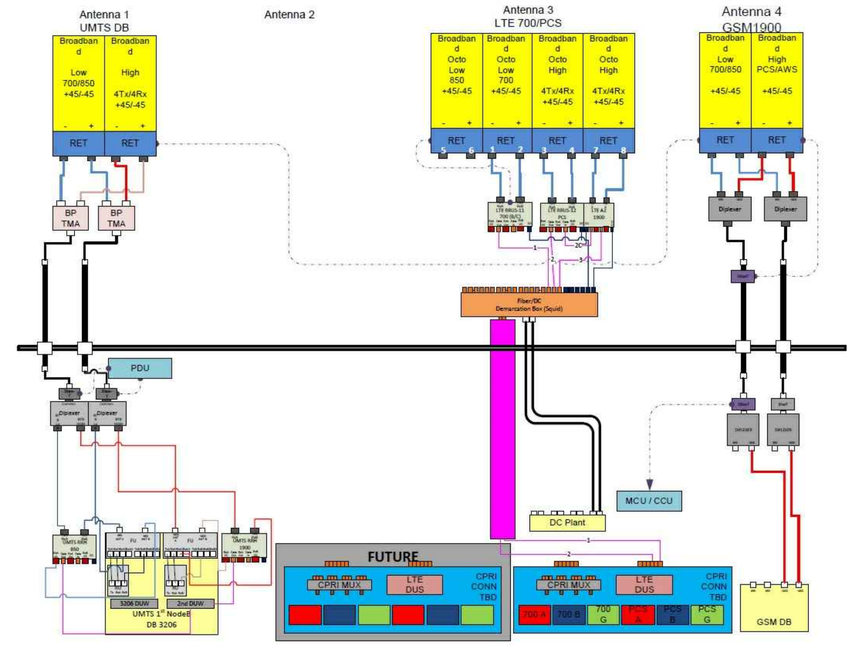
GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.



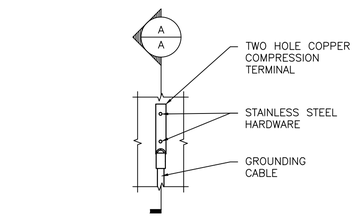
GROUNDING RISER DIAGRAM

SCALE: N.T.S.

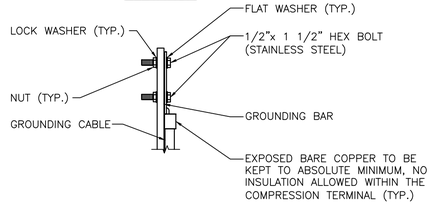


TYPICAL PLUMBING DIAGRAM (PER SECTOR)

SCALE: N.T.S.



ELEVATION



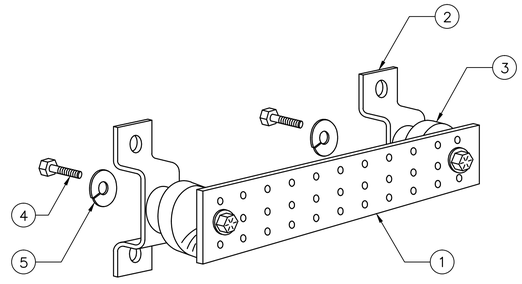
SECTION "A–A"

NOTE:

1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS 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

SCALE: N.T.S.



ITEM NO.	QTY.	DESCRIPTION
1	1	SOLID GROUND BAR (20"x 4"x ¼")
2	2	WALL MOUNTING BRACKET
3	2	INSULATORS
4	4	⅝"–11x1" H.H.C.S.
5	4	⅝" LOCK WASHER

NOTES:

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)

GROUND BAR DETAIL

SCALE: N.T.S.

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SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARILLI · 29043 · REGISTERED PROFESSIONAL ENGINEER

AT&T

DRAWING TITLE:
GROUNDING, ONE-LINE DIAGRAM & DETAILS

JOB NUMBER	DRAWING NUMBER	REV
14257-EMP	G-1	0

PAUL J. FORD & COMPANY

Report Date: July 28, 2015

Client: Hirschfeld Communications, LLC
1030 New Britain Avenue
West Hartford, CT
Attn: Ian Ormesher
Phone: 860.953.7000

Structure: Existing 180-ft Tower
Site Name: WESTHARTFORD_DEXTERST
Site Reference: CT0001
City, County, State: West Hartford, Hartford County, CT

PJF Project: 64114-0002.004.8700

Paul J. Ford and Company is pleased to submit this "**Structural Analysis Report**" to determine the structural integrity of the above mentioned tower. The purpose of this analysis is to determine the acceptability of the tower stress level.

Analysis Criteria:

Reference Standard:	TIA/EIA-222-F Standard, "Structural Standard for Antenna Supporting Structures and Antennas"
Basic Wind Speed:	80 mph fastest mile wind speed without ice
Wind Speed with Ice:	69.3 mph fastest mile speed with 0.50" radial ice
Service Wind Speed:	50.0 mph (Operational) without ice

Proposed Appurtenance Loads:
The structure was analyzed with the addition of the proposed appurtenance loads shown in Table 1 combined with the existing and reserved loads shown in Table 2 of this report.

Summary of Analysis Results:

Existing Structure:	99.9%	Pass
Existing Foundation:	46.3%	Pass

We at Paul J. Ford and Company appreciate the opportunity of providing our continuing professional services to you and Hirschfeld Communications, LLC. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Jonathan Sommer, EI
Structural Designer
jsommer@pjfweb.com

STATE OF CONNECTICUT
JOSEPH PACHICARAH JACOBS
No. PEN 22731
LICENSED
PROFESSIONAL ENGINEER

AUG 19 2015

PAUL J. FORD & COMPANY

STANDARD CONDITIONS FOR FURNISHING OF PROFESSIONAL ENGINEERING SERVICES ON EXISTING STRUCTURES BY PAUL J. FORD AND COMPANY

1) Paul J. Ford and Company has not performed a site visit to verify the tower member sizes or the antenna/coax loading. If the existing conditions are not as represented on these drawings, we should be contacted immediately to evaluate the significance of the deviation.

2) No allowance was made for any damaged, missing, or rusted members. The analysis of this tower assumes that no physical deterioration has occurred in any of the structural components of the tower and that all the tower members have the same load carrying capacity as the day the tower was erected.

3) It is not possible to have all the very detailed information to perform a very thorough analysis of every structural sub-component of an existing tower. The structural analysis by Paul J. Ford and Company verifies the adequacy of the main structural members of the tower. Paul J. Ford and Company provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc.

4) The structural integrity of the existing tower foundation can only be verified if exact foundation sizes and soil conditions are known. Paul J. Ford and Company will not accept any responsibility for the adequacy of the existing foundations unless the foundation sizes and a soils report are provided.

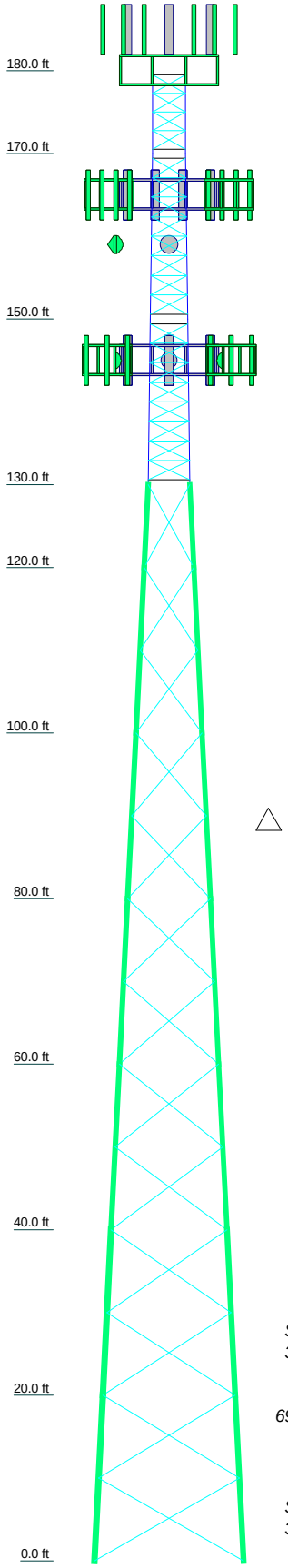
5) It is the owner's responsibility to determine the amount of ice accumulation, if any, that should be considered in the structural analysis.

6) This tower has been analyzed according to the minimum design wind loads recommended by the Telecommunications Industry Association Standard TIA/EIA-222-F. If the owner or local or state agencies require a higher design wind load, Paul J. Ford and Company should be made aware of this requirement.

7) The attached sketches are a schematic representation of the tower that we have analyzed. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions and for the proper fit and clearance in the field.

8) 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.

Section		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	
Legs		A	SR 2" solid	SR 2 1/4" solid	B	Pirod 105217 (12x1.5)		Pirod 105218 (12x1.75)		Pirod 105219 (12x2)		
Leg Grade		A572-50										
Diagonals		SR 3/4" solid	SR 7/8" solid	SR 1" solid	L 2.5 x 2.5 x 3/16			L 3 x 3 x 3/16		L 3 x 3 x 5/16		
Diagonal Grade		A572-50			A36							
Top Girts		SR 7/8" solid		SR 1" solid	N.A.							
Bottom Girts		SR 7/8" solid		SR 1" solid	N.A.							
Horizontals		SR 7/8" solid			N.A.							
Face Width (ft)	4	4.5			5	6	8	10	12	14	16	18
# Panels @ (ft)	4 @ 2.25	16 @ 2.35833						13 @ 10				
Weight (K)	0.4	1.3		1.7	1.1	2.6	2.7	3.2	3.3	5.0	5.2	26.5



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Pirod 13' LP Platform (lattice tower)	180	ERICSSON AIR 21 B2A	165
(2) 7770.00 w/ Mount Pipe	180	ERICSSON AIR 21 B2A	165
(2) 7770.00 w/ Mount Pipe	180	KRY 112 71	165
(2) 7770.00 w/ Mount Pipe	180	KRY 112 71	165
(2) LGP21401	180	KRY 112 71	165
(2) LGP21401	180	RRUS 11 B12	165
(2) LGP21401	180	RRUS 11 B12	165
(5) LGP21901	180	RRUS 11 B12	165
(5) LGP21901	180	AIR 21 B4A/B12-B5P 2.4M w/ Mount Pipe	165
(5) LGP21901	180	AIR 21 B4A/B12-B5P 2.4M w/ Mount Pipe	165
DC6-48-60-18-8F	180	AIR 21 B4A/B12-B5P 2.4M w/ Mount Pipe	165
OPA-65R-LCUU-H6 w/ Mount Pipe	180	Andrew VHLP2-18	159
OPA-65R-LCUU-H6 w/ Mount Pipe	180	Andrew VHLP2-18	159
OPA-65R-LCUU-H6 w/ Mount Pipe	180	4'x2" Pipe Mount	157
RRUS 11	180	4'x2" Pipe Mount	157
RRUS 11	180	PiRod 12' Lightweight T-Frame	145
RRUS 11	180	(2) 48010 w/Mount Pipe	145
RRUS 12	180	(2) 48010 w/Mount Pipe	145
RRUS 12	180	(2) 48010 w/Mount Pipe	145
RRUS 12	180	742 213 w/ Mount Pipe	145
RRUS A2	180	742 213 w/ Mount Pipe	145
RRUS A2	180	742 213 w/ Mount Pipe	145
RRUS A2	180	2 ft standard	145
LGP21901	180	2 ft standard	145
LGP21901	180	2 ft standard	145
LGP21901	180	PiRod 12' Lightweight T-Frame	145
PiRod 12' Lightweight T-Frame	165	PiRod 12' Lightweight T-Frame	145
PiRod 12' Lightweight T-Frame	165		
PiRod 12' Lightweight T-Frame	165		
ERICSSON AIR 21 B2A	165		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	SR 1 1/2" solid	B	Pirod 105216 (12x1.25)

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80.0 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69.3 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50.0 mph wind.
5. TOWER RATING: 99.9%

MAX. CORNER REACTIONS AT BASE:
DOWN: 296 K
SHEAR: 27 K

UPLIFT: -229 K
SHEAR: 21 K

AXIAL
72 K
SHEAR 39 K *MOMENT 4249 kip-ft*

TORQUE 33 kip-ft
69.3 mph WIND - 0.50 in ICE

AXIAL
40 K
SHEAR 31 K *MOMENT 3363 kip-ft*

TORQUE 27 kip-ft
REACTIONS - 80.0 mph WIND

Paul J Ford and Company
250 E. Broad Street Suite 600
Columbus, OH 43215
Phone: 614.221.6679
FAX: 614.448.4105

Job:	***Existing 180-ft S/S; West Hartford, CT***		
Project:	***CT001 (PJF# 64114-0002)***		
Client: Hirschfeld Communications, LLC	Drawn by: Jonathan Sommer	App'd:	
Code: TIA/EIA-222-F	Date: 07/28/15	Scale: NTS	
Path: G:\TOWER\641. Hirschfeld Communications\2014\64114-0002 CT001 W Hartford\SA 004\TNX\64114-0002-004.PASS.eri		Dwg No. E-1	

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1) INTRODUCTION

This tower is a 180 ft Self Support tower designed by PiROD Inc. in June of 1998. The tower was originally designed for a wind speed of 80 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 69.3 mph with 0.5 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
180.0	185.0	3	cci antennas	OPA-65R-LCUU-H6 w/ Mount Pipe	9* 9*	1/2 3/4
		3	ericsson	RRUS 11		
		3	ericsson	RRUS 12		
		3	ericsson	RRUS A2		
		3	powerwave technologies	LGP21901		

* Proposed feedlines must be stacked with no more than (3) of each size line exposed to wind, as shown in Appendix B, for the determined available capacity to be effective. If the current coax configuration does not match what is shown in Appendix B, Paul J. Ford and Company should be contacted immediately to assess the validity of this report.

Table 2 - Existing Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
180.0	185.0	6	powerwave technologies	7770.00 w/ Mount Pipe	18	1-5/8
		6	powerwave technologies	LGP21401		
		15	powerwave technologies	LGP21901		
		1	raycap	DC6-48-60-18-8F		
	180.0	1	tower mounts	Pirod 13' LP Platform (lattice tower)		
165.0	165.0	3	ericsson	AIR 21 B4A/B12-B5P 2.4M w/ Mount Pipe	12 1	1-5/8 Hybrid
		3	ericsson	ERICSSON AIR 21 B2A		
		3	ericsson	KRY 112 71		
		3	ericsson	RRUS 11 B12		
		3	tower mounts	PiRod 12' Lightweight T-Frame		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
159.0	159.0	2	andrew	Andrew VHLP2-18	2	1/2
145.0	145.0	6	dapa	48010 w/Mount Pipe	15	1-5/8
		3	kathrein	742 213 w/ Mount Pipe		
		3	microwave dishes	2 ft standard		
		3	tower mounts	PiRod 12' Lightweight T-Frame		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks
Manufacturer Drawings/Foundation Design	PiROD Inc., A-114804, 6/10/1998
Geotechnical Report	PiROD Inc., 6/5/1998

3.1) Analysis Method

tnxTower (version 6.1.4.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.
5) Feedlines are stacked as shown in Appendix B.

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J Ford and Company should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	180 - 170	Leg	1 1/2" solid	1	-16.10	48.44	33.2	Pass
T2	170 - 150	Leg	2" solid	37	-56.31	97.53	57.7	Pass
T3	150 - 130	Leg	2 1/4" solid	101	-115.85	128.80	89.9	Pass
T4	130 - 120	Leg	Pirod 105216 (12x1.25)	165	-117.38	122.94	95.5	Pass
T5	120 - 100	Leg	Pirod 105217 (12x1.5)	174	-154.35	184.67	83.6	Pass
T6	100 - 80	Leg	Pirod 105217 (12x1.5)	189	-184.40	184.67	99.9	Pass
T7	80 - 60	Leg	Pirod 105218 (12x1.75)	204	-212.88	258.24	82.4	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T8	60 - 40	Leg	Pirod 105218 (12x1.75)	219	-239.60	258.24	92.8	Pass
T9	40 - 20	Leg	Pirod 105219 (12x2)	234	-265.93	343.62	77.4	Pass
T10	20 - 0	Leg	Pirod 105219 (12x2)	249	-289.55	343.62	84.3	Pass
T1	180 - 170	Diagonal	3/4" solid	15	-1.97	5.36	36.8	Pass
T2	170 - 150	Diagonal	7/8" solid	50	-4.57	8.23	55.5	Pass
T3	150 - 130	Diagonal	1" solid	115	-5.78	11.87	48.7	Pass
T4	130 - 120	Diagonal	L 2.5 x 2.5 x 3/16	172	-8.55	12.23	69.9	Pass
T5	120 - 100	Diagonal	L 2.5 x 2.5 x 3/16	181	-6.40	9.65	66.3	Pass
T6	100 - 80	Diagonal	L 2.5 x 2.5 x 3/16	196	-6.35	7.63	83.2	Pass
T7	80 - 60	Diagonal	L 3 x 3 x 3/16	211	-6.36	10.68	59.5	Pass
T8	60 - 40	Diagonal	L 3 x 3 x 3/16	226	-6.50	8.62	75.4	Pass
T9	40 - 20	Diagonal	L 3 x 3 x 5/16	241	-6.93	11.34	61.1	Pass
T10	20 - 0	Diagonal	L 3 x 3 x 5/16	256	-8.64	9.38	92.1	Pass
T1	180 - 170	Horizontal	7/8" solid	30	-0.36	5.41	6.6	Pass
T2	170 - 150	Horizontal	7/8" solid	59	-0.68	4.60	14.7	Pass
T3	150 - 130	Horizontal	7/8" solid	158	-1.30	4.22	30.9	Pass
T1	180 - 170	Top Girt	7/8" solid	6	-0.96	5.41	17.8	Pass
T2	170 - 150	Top Girt	7/8" solid	41	-1.08	5.48	19.7	Pass
T3	150 - 130	Top Girt	1" solid	105	-1.67	7.40	22.6	Pass
T1	180 - 170	Bottom Girt	7/8" solid	7	-0.85	5.41	15.8	Pass
T2	170 - 150	Bottom Girt	7/8" solid	44	-1.95	4.35	44.9	Pass
T3	150 - 130	Bottom Girt	1" solid	107	-2.20	6.01	36.6	Pass
							Summary	
						Leg (T6)	99.9	Pass
						Diagonal (T10)	92.1	Pass
						Horizontal (T3)	30.9	Pass
						Top Girt (T3)	22.6	Pass
						Bottom Girt (T2)	44.9	Pass
						Bolt Checks	69.0	Pass
						RATING =	99.9	Pass

Table 5 - Tower Component Stresses vs. Capacity

Component	Elevation (ft)	% Capacity	Pass / Fail
Base Foundation	0	46.3	Pass

Structure Rating (max from all components) =	99.9%

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the existing and proposed loads. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

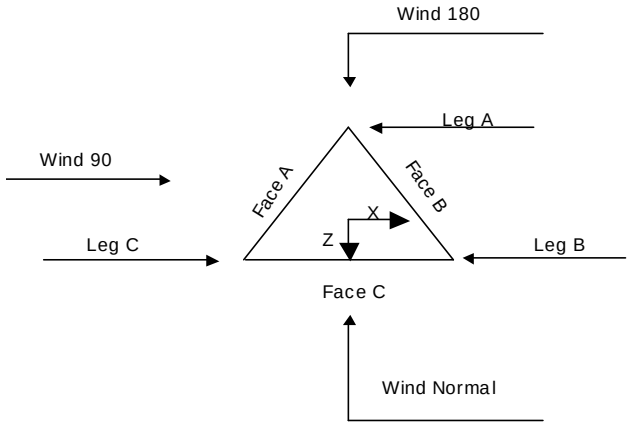
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 180.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 4.00 ft at the top and 18.00 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

1) Tower is located in Hartford County, Connecticut.
2) Basic wind speed of 80.0 mph.
3) Nominal ice thickness of 0.50 in.
4) Ice density of 56 pcf.
5) A wind speed of 69.3 mph is used in combination with ice.
6) Deflections calculated using a wind speed of 50.0 mph.
7) A non-linear (P-delta) analysis was used.
8) Pressures are calculated at each section.
9) Stress ratio used in tower member design is 1.333.
10) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	Assume Rigid Index Plate	√ Calculate Redundant Bracing Forces
Use Moment Magnification	√ Use Clear Spans For Wind Area	Ignore Redundant Members in FEA
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	SR Leg Bolts Resist Compression
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	√ All Leg Panels Have Same Allowable
Escalate Ice	Bypass Mast Stability Checks	Offset Girt At Foundation
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Consider Feedline Torque
Use Special Wind Profile	√ Project Wind Area of Appurt.	√ Include Angle Block Shear Check
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Poles
Leg Bolts Are At Top Of Section	√ SR Members Have Cut Ends	Include Shear-Torsion Interaction
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination	Use TIA-222-G Tension Splice	
	Capacity Exemption	



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	180.00-170.00		106778 (48)	4.00	1	10.00
T2	170.00-150.00		100246 (48/54)	4.00	1	20.00
T3	150.00-130.00		119703 (54/60)	4.50	1	20.00
T4	130.00-120.00		U06 105218 [L2.5 x 3/16]	5.00	1	10.00
T5	120.00-100.00		U08 105217 [L2.5 x 3/16]	6.00	1	20.00
T6	100.00-80.00		U10 105217 [L2.5 x 3/16]	8.00	1	20.00
T7	80.00-60.00		U12 105218 [L3 x 3/16]	10.00	1	20.00
T8	60.00-40.00		U14 105218 [L3 x 3/16]	12.00	1	20.00
T9	40.00-20.00		U16 105219 [L3 x 5/16]	14.00	1	20.00
T10	20.00-0.00		U18 105219 [L3 x 5/16]	16.00	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	180.00-170.00	2.25	X Brace	No	Steps	6.00	6.00
T2	170.00-150.00	2.36	X Brace	No	Steps	6.80	6.80
T3	150.00-130.00	2.36	X Brace	No	Steps	6.80	6.80
T4	130.00-120.00	10.00	X Brace	No	No	0.00	0.00
T5	120.00-100.00	10.00	X Brace	No	No	0.00	0.00
T6	100.00-80.00	10.00	X Brace	No	No	0.00	0.00
T7	80.00-60.00	10.00	X Brace	No	No	0.00	0.00
T8	60.00-40.00	10.00	X Brace	No	No	0.00	0.00
T9	40.00-20.00	10.00	X Brace	No	No	0.00	0.00
T10	20.00-0.00	10.00	X Brace	No	No	0.00	0.00

Tower Section Geometry *(cont'd)*

Tower Elevation ft	*Leg Type*	*Leg Size*	*Leg Grade*	*Diagonal Type*	*Diagonal Size*	*Diagonal Grade*
T1 180.00-170.00	Solid Round	1 1/2" solid	A572-50 (50 ksi)	Solid Round	3/4" solid	A572-50 (50 ksi)
T2 170.00-150.00	Solid Round	2" solid	A572-50 (50 ksi)	Solid Round	7/8" solid	A572-50 (50 ksi)
T3 150.00-130.00	Solid Round	2 1/4" solid	A572-50 (50 ksi)	Solid Round	1" solid	A572-50 (50 ksi)
T4 130.00-120.00	Truss Leg	Pirod 105216 (12x1.25)	A572-50 (50 ksi)	Single Angle	L 2.5 x 2.5 x 3/16	A36 (36 ksi)
T5 120.00-100.00	Truss Leg	Pirod 105217 (12x1.5)	A572-50 (50 ksi)	Single Angle	L 2.5 x 2.5 x 3/16	A36 (36 ksi)
T6 100.00-80.00	Truss Leg	Pirod 105217 (12x1.5)	A572-50 (50 ksi)	Single Angle	L 2.5 x 2.5 x 3/16	A36 (36 ksi)
T7 80.00-60.00	Truss Leg	Pirod 105218 (12x1.75)	A572-50 (50 ksi)	Single Angle	L 3 x 3 x 3/16	A36 (36 ksi)
T8 60.00-40.00	Truss Leg	Pirod 105218 (12x1.75)	A572-50 (50 ksi)	Single Angle	L 3 x 3 x 3/16	A36 (36 ksi)
T9 40.00-20.00	Truss Leg	Pirod 105219 (12x2)	A572-50 (50 ksi)	Single Angle	L 3 x 3 x 5/16	A36 (36 ksi)
T10 20.00-0.00	Truss Leg	Pirod 105219 (12x2)	A572-50 (50 ksi)	Single Angle	L 3 x 3 x 5/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	*Top Girt Type*	*Top Girt Size*	*Top Girt Grade*	*Bottom Girt Type*	*Bottom Girt Size*	*Bottom Girt Grade*
T1 180.00-170.00	Solid Round	7/8" solid	A572-50 (50 ksi)	Solid Round	7/8" solid	A572-50 (50 ksi)
T2 170.00-150.00	Solid Round	7/8" solid	A572-50 (50 ksi)	Solid Round	7/8" solid	A572-50 (50 ksi)
T3 150.00-130.00	Solid Round	1" solid	A572-50 (50 ksi)	Solid Round	1" solid	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	*No. of Mid Girts*	*Mid Girt Type*	*Mid Girt Size*	*Mid Girt Grade*	*Horizontal Type*	*Horizontal Size*	*Horizontal Grade*
T1 180.00-170.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	7/8" solid	A572-50 (50 ksi)
T2 170.00-150.00	None	Solid Round		A36 (36 ksi)	Solid Round	7/8" solid	A572-50 (50 ksi)
T3 150.00-130.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	7/8" solid	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T1 180.00-170.00	0.00	0.00	A36 (36 ksi)	1	1	1.02	36.00	36.00
T2 170.00-150.00	0.00	0.00	A36 (36 ksi)	1	1	1.03	54.00	54.00
T3 150.00-130.00	0.00	0.00	A36 (36 ksi)	1	1	1.03	36.00	36.00
T4 130.00-120.00	0.00	0.50	A36 (36 ksi)	1	1	1.05	36.00	36.00
T5 120.00-100.00	0.00	0.50	A36 (36 ksi)	1	1	1.05	36.00	36.00
T6 100.00-80.00	0.00	0.50	A36 (36 ksi)	1	1	1.05	36.00	36.00
T7 80.00-60.00	0.00	0.50	A36 (36 ksi)	1	1	1.05	36.00	36.00
T8 60.00-40.00	0.00	0.50	A36 (36 ksi)	1	1	1.05	36.00	36.00
T9 40.00-20.00	0.00	0.50	A36 (36 ksi)	1	1	1.05	36.00	36.00
T10 20.00-0.00	0.00	0.75	A36 (36 ksi)	1	1	1.05	36.00	36.00

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 180.00-170.00	No	No	1	0.9 0.9	0.7 0.7	0.7 0.7	0.7 0.7	0.7 0.7	0.7 0.7	1 1
T2 170.00-150.00	No	No	1	0.9 0.9	0.7 0.7	0.7 0.7	0.7 0.7	0.7 0.7	0.7 0.7	1 1
T3 150.00-130.00	No	No	1	0.9 0.9	0.7 0.7	0.7 0.7	0.7 0.7	0.7 0.7	0.7 0.7	1 1
T4 130.00-120.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 120.00-100.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 100.00-80.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 80.00-60.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 60.00-40.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 40.00-20.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T10 20.00-0.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

	Truss-Leg K Factors					
	Truss-Legs Used As Leg Members			Truss-Legs Used As Inner Members		
Tower Elevation ft	Leg Panels	X Brace Diagonals	Z Brace Diagonals	Leg Panels	X Brace Diagonals	Z Brace Diagonals
T4 130.00-120.00	1	0.5	0.85	1	0.5	0.85
T5 120.00-100.00	1	0.5	0.85	1	0.5	0.85
T6 100.00-80.00	1	0.5	0.85	1	0.5	0.85
T7 80.00-60.00	1	0.5	0.85	1	0.5	0.85
T8 60.00-40.00	1	0.5	0.85	1	0.5	0.85
T9 40.00-20.00	1	0.5	0.85	1	0.5	0.85
T10 20.00-0.00	1	0.5	0.85	1	0.5	0.85

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 180.00-170.00	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T2 170.00-150.00	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T3 150.00-130.00	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T4 130.00-120.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T5 120.00-100.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T6 100.00-80.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T7 80.00-60.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T8 60.00-40.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T9 40.00-20.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T10 20.00-0.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 180.00-170.00	Sleeve DS	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.63 A325N	0	0.00 A325N	0	0.63 A325N	0

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T2 170.00-150.00	Sleeve DS	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T3 150.00-130.00	Flange	1.00 A325N	6	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.50 A325N	0	0.00 A325N	0	0.50 A325N	0
T4 130.00-120.00	Flange	1.00 A325N	6	1.00 A325N	1	1.00 A325N	0	1.00 A325N	0	1.00 A325N	0	1.00 A325N	0	1.00 A325N	0
T5 120.00-100.00	Flange	1.00 A325N	6	1.00 A325N	1	1.00 A325N	0	1.00 A325N	0	1.00 A325N	0	1.00 A325N	0	1.00 A325N	0
T6 100.00-80.00	Flange	1.00 A325N	6	1.00 A325N	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T7 80.00-60.00	Flange	1.00 A325N	6	1.00 A325N	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T8 60.00-40.00	Flange	1.00 A325N	6	1.00 A325N	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T9 40.00-20.00	Flange	1.25 A325N	6	1.25 A325N	1	1.25 A325N	0	1.25 A325N	0	1.25 A325N	0	1.25 A325N	0	1.25 A325N	0
T10 20.00-0.00	Flange	1.25 F1554-105	6	1.25 A325N	1	1.25 A325N	0	1.00 A325N	0	1.00 A325N	0	1.00 A325N	0	1.00 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A (1 5/8" foam)	A	Yes	Ar (CfAe)	180.00 - 8.00	0.00	-0.45	18	6	1.00 0.50	1.98		0.92
FSJ4-50B(1/2")	A	Yes	Ar (CfAe)	180.00 - 8.00	0.00	-0.45	9	3	2.50 0.50	0.52		0.14
9776(3/4") **	A	Yes	Ar (CfAe)	180.00 - 8.00	0.00	-0.45	9	3	2.27 0.50	0.73		0.31
LDF7-50A (1 5/8" foam) **	C	Yes	Ar (CfAe)	145.00 - 8.00	0.00	0.45	15	8	1.00 0.50	1.98		0.92
LDF7-50A (1 5/8" foam)	A	Yes	Ar (CfAe)	165.00 - 8.00	0.00	0.45	12	6	1.00 0.50	1.98		0.92
LDF7-50A (1 5/8" foam) **	A	Yes	Ar (CfAe)	165.00 - 8.00	0.00	0.35	1	1	1.00 0.50	1.98		0.92
LDF4-50A (1/2" foam) **	C	Yes	Ar (CfAe)	159.00 - 8.00	0.00	-0.48	2	2	0.63	0.63		0.15

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Pirod 13' LP Platform (lattice tower)	C	None		0.000	180.00	No Ice 1/2" Ice	24.33 30.22	24.33 30.22	1.65 2.03
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	6.22 6.71	4.82 5.51	0.09 0.14

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	6.22 6.71	4.82 5.51	0.09 0.14
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	6.22 6.71	4.82 5.51	0.09 0.14
(2) LGP21401	A	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	1.29 1.45	0.36 0.48	0.01 0.02
(2) LGP21401	B	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	1.29 1.45	0.36 0.48	0.01 0.02
(2) LGP21401	C	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	1.29 1.45	0.36 0.48	0.01 0.02
(5) LGP21901	A	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	0.27 0.34	0.18 0.25	0.01 0.01
(5) LGP21901	B	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	0.27 0.34	0.18 0.25	0.01 0.01
(5) LGP21901	C	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	0.27 0.34	0.18 0.25	0.01 0.01
DC6-48-60-18-8F	C	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	1.47 1.67	1.47 1.67	0.02 0.04
OPA-65R-LCUU-H6 w/ Mount Pipe	A	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	10.60 11.27	7.18 8.36	0.10 0.18
OPA-65R-LCUU-H6 w/ Mount Pipe	B	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	10.60 11.27	7.18 8.36	0.10 0.18
OPA-65R-LCUU-H6 w/ Mount Pipe	C	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	10.60 11.27	7.18 8.36	0.10 0.18
RRUS 11	A	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	3.26 3.50	1.38 1.56	0.05 0.07
RRUS 11	B	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	3.26 3.50	1.38 1.56	0.05 0.07
RRUS 11	C	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	3.26 3.50	1.38 1.56	0.05 0.07
RRUS 12	A	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	3.67 3.93	1.49 1.67	0.06 0.08
RRUS 12	B	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	3.67 3.93	1.49 1.67	0.06 0.08
RRUS 12	C	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	3.67 3.93	1.49 1.67	0.06 0.08
RRUS A2	A	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	2.41 2.62	0.53 0.67	0.02 0.03
RRUS A2	B	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	2.41 2.62	0.53 0.67	0.02 0.03
RRUS A2	C	From Leg	4.00 0.00 5.00	0.000	180.00	No Ice 1/2" Ice	2.41 2.62	0.53 0.67	0.02 0.03
LGP21901	A	From Leg	4.00 0.00	0.000	180.00	No Ice 1/2"	0.27 0.34	0.18 0.25	0.01 0.01

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			5.00			Ice			
LGP21901	B	From Leg	4.00	0.000	180.00	No Ice	0.27	0.18	0.01
			0.00			1/2"	0.34	0.25	0.01
			5.00			Ice			
LGP21901	C	From Leg	4.00	0.000	180.00	No Ice	0.27	0.18	0.01
			0.00			1/2"	0.34	0.25	0.01
			5.00			Ice			
**									
PiRod 12' Lightweight T-Frame	A	From Leg	2.00	0.000	165.00	No Ice	8.90	5.90	0.23
			0.00			1/2"	13.80	8.70	0.32
			0.00			Ice			
PiRod 12' Lightweight T-Frame	B	From Leg	2.00	0.000	165.00	No Ice	8.90	5.90	0.23
			0.00			1/2"	13.80	8.70	0.32
			0.00			Ice			
PiRod 12' Lightweight T-Frame	C	From Leg	2.00	0.000	165.00	No Ice	8.90	5.90	0.23
			0.00			1/2"	13.80	8.70	0.32
			0.00			Ice			
ERICSSON AIR 21 B2A	A	From Leg	4.00	0.000	165.00	No Ice	6.53	4.36	0.07
			0.00			1/2"	6.98	4.77	0.11
			0.00			Ice			
ERICSSON AIR 21 B2A	B	From Leg	4.00	0.000	165.00	No Ice	6.53	4.36	0.07
			0.00			1/2"	6.98	4.77	0.11
			0.00			Ice			
ERICSSON AIR 21 B2A	C	From Leg	4.00	0.000	165.00	No Ice	6.53	4.36	0.07
			0.00			1/2"	6.98	4.77	0.11
			0.00			Ice			
KRY 112 71	A	From Leg	4.00	0.000	165.00	No Ice	0.68	0.45	0.01
			0.00			1/2"	0.80	0.56	0.02
			0.00			Ice			
KRY 112 71	B	From Leg	4.00	0.000	165.00	No Ice	0.68	0.45	0.01
			0.00			1/2"	0.80	0.56	0.02
			0.00			Ice			
KRY 112 71	C	From Leg	4.00	0.000	165.00	No Ice	0.68	0.45	0.01
			0.00			1/2"	0.80	0.56	0.02
			0.00			Ice			
RRUS 11 B12	A	From Leg	4.00	0.000	165.00	No Ice	3.31	1.36	0.05
			0.00			1/2"	3.55	1.54	0.07
			0.00			Ice			
RRUS 11 B12	B	From Leg	4.00	0.000	165.00	No Ice	3.31	1.36	0.05
			0.00			1/2"	3.55	1.54	0.07
			0.00			Ice			
RRUS 11 B12	C	From Leg	4.00	0.000	165.00	No Ice	3.31	1.36	0.05
			0.00			1/2"	3.55	1.54	0.07
			0.00			Ice			
AIR 21 B4A/B12-B5P 2.4M w/ Mount Pipe	A	From Leg	4.00	0.000	165.00	No Ice	11.78	11.01	0.15
			0.00			1/2"	12.50	12.53	0.25
			0.00			Ice			
AIR 21 B4A/B12-B5P 2.4M w/ Mount Pipe	B	From Leg	4.00	0.000	165.00	No Ice	11.78	11.01	0.15
			0.00			1/2"	12.50	12.53	0.25
			0.00			Ice			
AIR 21 B4A/B12-B5P 2.4M w/ Mount Pipe	C	From Leg	4.00	0.000	165.00	No Ice	11.78	11.01	0.15
			0.00			1/2"	12.50	12.53	0.25
			0.00			Ice			
**									
4'x2" Pipe Mount	A	From Leg	4.00	0.000	157.00	No Ice	0.79	0.79	0.03
			0.00			1/2"	1.03	1.03	0.03
			0.00			Ice			
4'x2" Pipe Mount	C	From Leg	4.00	0.000	157.00	No Ice	0.79	0.79	0.03
			0.00			1/2"	1.03	1.03	0.03
			0.00			Ice			
**									
PiRod 12' Lightweight T-Frame	A	From Leg	2.00	0.000	145.00	No Ice	8.90	5.90	0.23
			0.00			1/2"	13.80	8.70	0.32
			0.00			Ice			
PiRod 12' Lightweight T-	B	From Leg	2.00	0.000	145.00	No Ice	8.90	5.90	0.23

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment ° 	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Frame			0.00 0.00			1/2" Ice	13.80	8.70	0.32
PiRod 12' Lightweight T-Frame	C	From Leg	2.00 0.00 0.00	0.000	145.00	No Ice 1/2" Ice	8.90 13.80	5.90 8.70	0.23 0.32
(2) 48010 w/Mount Pipe	A	From Leg	4.00 0.00 0.00	0.000	145.00	No Ice 1/2" Ice	5.12 5.79	3.49 4.54	0.04 0.08
(2) 48010 w/Mount Pipe	B	From Leg	4.00 0.00 0.00	0.000	145.00	No Ice 1/2" Ice	5.12 5.79	3.49 4.54	0.04 0.08
(2) 48010 w/Mount Pipe	C	From Leg	4.00 0.00 0.00	0.000	145.00	No Ice 1/2" Ice	5.12 5.79	3.49 4.54	0.04 0.08
742 213 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.000	145.00	No Ice 1/2" Ice	5.37 5.95	4.62 6.00	0.05 0.09
742 213 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.000	145.00	No Ice 1/2" Ice	5.37 5.95	4.62 6.00	0.05 0.09
742 213 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.000	145.00	No Ice 1/2" Ice	5.37 5.95	4.62 6.00	0.05 0.09
***									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
2 ft standard	A	Paraboloid w/o Radome	From Leg	4.00 0.00 0.00	0.000		145.00	2.00	No Ice 1/2" Ice	3.14 3.41	0.01 0.06
2 ft standard	B	Paraboloid w/o Radome	From Leg	4.00 0.00 0.00	0.000		145.00	2.00	No Ice 1/2" Ice	3.14 3.41	0.01 0.06
2 ft standard	C	Paraboloid w/o Radome	From Leg	4.00 0.00 0.00	0.000		145.00	2.00	No Ice 1/2" Ice	3.14 3.41	0.01 0.06
Andrew VHLP2-18	A	Paraboloid w/Radome	From Leg	4.00 0.00 0.00	0.000		159.00	2.17	No Ice 1/2" Ice	3.72 4.01	0.03 0.05
Andrew VHLP2-18	C	Paraboloid w/Radome	From Leg	4.00 0.00 0.00	0.000		159.00	2.17	No Ice 1/2" Ice	3.72 4.01	0.03 0.05

Truss-Leg Properties

Section Designation	Area in^2	Area Ice in^2	Self Weight K	Ice Weight K	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in^2
Pirod 105216 (12x1.25)	2176.93	3447.56	0.60	0.46	7.56	11.97	3.68
Pirod 105217 (12x1.5)	2303.92	3618.80	0.71	0.47	8.00	12.57	5.30

Section Designation	Area	Area Ice	Self Weight	Ice Weight	Equiv. Diameter	Equiv. Diameter Ice	Leg Area
	in^2	in^2	K	K	in	in	in^2
Pirod 105217 (12x1.5)	2303.92	3618.80	0.71	0.47	8.00	12.57	5.30
Pirod 105218 (12x1.75)	2432.86	3798.39	0.85	0.49	8.45	13.19	7.22
Pirod 105218 (12x1.75)	2432.86	3798.39	0.85	0.49	8.45	13.19	7.22
Pirod 105219 (12x2)	2608.79	4065.88	1.22	0.53	9.06	14.12	9.42
Pirod 105219 (12x2)	2608.79	4065.88	1.22	0.53	9.06	14.12	9.42

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice
15	Dead+Wind 0 deg+Ice
16	Dead+Wind 30 deg+Ice
17	Dead+Wind 60 deg+Ice
18	Dead+Wind 90 deg+Ice
19	Dead+Wind 120 deg+Ice
20	Dead+Wind 150 deg+Ice
21	Dead+Wind 180 deg+Ice
22	Dead+Wind 210 deg+Ice
23	Dead+Wind 240 deg+Ice
24	Dead+Wind 270 deg+Ice
25	Dead+Wind 300 deg+Ice
26	Dead+Wind 330 deg+Ice
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
T1	180 - 170	9.82	35	0.580	0.127
T2	170 - 150	8.56	35	0.562	0.119

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T3	150 - 130	6.25	35	0.501	0.097
T4	130 - 120	4.28	35	0.398	0.073
T5	120 - 100	3.50	35	0.332	0.057
T6	100 - 80	2.27	35	0.248	0.038
T7	80 - 60	1.37	35	0.172	0.025
T8	60 - 40	0.74	35	0.120	0.016
T9	40 - 20	0.32	35	0.070	0.009
T10	20 - 0	0.09	35	0.034	0.004

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.00	Pirod 13' LP Platform (lattice tower)	35	9.82	0.580	0.127	34964
165.00	PiRod 12' Lightweight T-Frame	35	7.96	0.550	0.114	17039
159.00	Andrew VHLP2-18	35	7.25	0.533	0.108	16536
157.00	4'x2" Pipe Mount	35	7.02	0.527	0.105	16374
145.00	2 ft standard	35	5.71	0.480	0.092	12441

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 170	29.90	23	1.694	0.414
T2	170 - 150	26.26	23	1.653	0.394
T3	150 - 130	19.41	23	1.500	0.326
T4	130 - 120	13.48	23	1.215	0.245
T5	120 - 100	11.07	23	1.027	0.192
T6	100 - 80	7.22	23	0.778	0.126
T7	80 - 60	4.38	23	0.543	0.081
T8	60 - 40	2.38	23	0.380	0.052
T9	40 - 20	1.03	23	0.225	0.027
T10	20 - 0	0.28	23	0.110	0.013

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.00	Pirod 13' LP Platform (lattice tower)	23	29.90	1.694	0.414	13841
165.00	PiRod 12' Lightweight T-Frame	23	24.49	1.625	0.379	6752
159.00	Andrew VHLP2-18	23	22.41	1.583	0.359	6561
157.00	4'x2" Pipe Mount	23	21.73	1.567	0.352	6500
145.00	2 ft standard	23	17.81	1.443	0.308	4618

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T3	150	Leg	A325N	1.00	6	16.45	34.52	0.477 ✔	1.333	Bolt Tension
T4	130	Leg	A325N	1.00	6	16.70	34.56	0.483 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.00	1	7.09	7.75	0.915 ✔	1.333	Member Block Shear
T5	120	Leg	A325N	1.00	6	21.45	34.56	0.621 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.00	1	6.99	7.75	0.902 ✔	1.333	Member Block Shear
T6	100	Leg	A325N	1.00	6	25.21	34.56	0.729 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.00	1	5.70	7.75	0.736 ✔	1.333	Member Block Shear
T7	80	Leg	A325N	1.00	6	28.64	34.56	0.829 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.00	1	5.91	8.43	0.701 ✔	1.333	Member Block Shear
T8	60	Leg	A325N	1.00	6	31.81	34.56	0.920 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.00	1	6.02	8.43	0.714 ✔	1.333	Member Block Shear
T9	40	Leg	A325N	1.25	6	34.74	54.00	0.643 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.25	1	6.42	14.95	0.429 ✔	1.333	Member Block Shear
T10	20	Leg	F1554-105	1.25	6	37.35	50.62	0.738 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.25	1	6.96	14.95	0.466 ✔	1.333	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T1	180 - 170	1 1/2" solid	10.00	2.25	72.0 K=1.00	20.56	1.77	-16.10	36.34	0.443 ✔
T2	170 - 150	2" solid	20.00	2.36	56.6 K=1.00	23.29	3.14	-56.31	73.16	0.770 ✔
T3	150 - 130	2 1/4" solid	20.00	2.36	50.3 K=1.00	24.30	3.98	-115.85	96.62	1.199 ✔
T4	130 - 120	Pirod 105216 (12x1.25)	10.02	10.02	45.4 K=1.00	25.05	3.68	-117.38	92.23	1.273 ✔
T5	120 - 100	Pirod 105217 (12x1.5)	20.03	10.02	37.8 K=1.00	26.13	5.30	-154.35	138.54	1.114 ✔
T6	100 - 80	Pirod 105217 (12x1.5)	20.03	10.02	37.8 K=1.00	26.13	5.30	-184.40	138.54	1.331 ✔
T7	80 - 60	Pirod 105218 (12x1.75)	20.03	10.02	32.4 K=1.00	26.85	7.22	-212.88	193.73	1.099 ✔
T8	60 - 40	Pirod 105218 (12x1.75)	20.03	10.02	32.4 K=1.00	26.85	7.22	-239.60	193.73	1.237 ✔
T9	40 - 20	Pirod 105219 (12x2)	20.03	10.02	28.4 K=1.00	27.35	9.42	-265.93	257.78	1.032 ✔
T10	20 - 0	Pirod 105219 (12x2)	20.03	10.02	28.4 K=1.00	27.35	9.42	-289.55	257.78	1.123 ✔

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in^2	Actual V K	Allow. V_a K	Stress Ratio
T4	130 - 120	0.5	1.48	121.0	10.13	0.20	0.98	2.23	0.440 ✓
T5	120 - 100	0.5	1.47	120.0	10.28	0.20	0.76	2.26	0.335 ✓
T6	100 - 80	0.5	1.47	120.0	10.28	0.20	0.24	2.26	0.107 ✓
T7	80 - 60	0.5	1.46	119.0	10.42	0.20	0.23	2.29	0.100 ✓
T8	60 - 40	0.5	1.46	119.0	10.42	0.20	0.23	2.29	0.100 ✓
T9	40 - 20	0.625	1.45	94.4	13.67	0.31	0.26	4.69	0.055 ✓
T10	20 - 0	0.625	1.45	94.4	13.67	0.31	0.89	4.69	0.189 ✓

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 170	3/4" solid	4.59	2.22	128.0 K=0.90	9.11	0.44	-1.97	4.02	0.490 ✓
T2	170 - 150	7/8" solid	5.04	2.44	120.6 K=0.90	10.26	0.60	-4.57	6.17	0.740 ✓
T3	150 - 130	1" solid	5.49	2.66	114.8 K=0.90	11.34	0.79	-5.78	8.90	0.649 ✓
T4	130 - 120	L 2.5 x 2.5 x 3/16	11.42	4.98	120.8 K=1.00	10.17	0.90	-8.55	9.17	0.932 ✓
T5	120 - 100	L 2.5 x 2.5 x 3/16	12.50	5.63	136.4 K=1.00	8.02	0.90	-6.40	7.24	0.884 ✓
T6	100 - 80	L 2.5 x 2.5 x 3/16	13.80	6.33	153.4 K=1.00	6.35	0.90	-6.35	5.73	1.109 ✓
T7	80 - 60	L 3 x 3 x 3/16	15.24	7.08	142.5 K=1.00	7.35	1.09	-6.36	8.01	0.793 ✓
T8	60 - 40	L 3 x 3 x 3/16	16.80	7.88	158.6 K=1.00	5.94	1.09	-6.50	6.47	1.005 ✓
T9	40 - 20	L 3 x 3 x 5/16	18.45	8.68	176.8 K=1.00	4.78	1.78	-6.93	8.51	0.814 ✓
T10	20 - 0	L 3 x 3 x 5/16	20.16	9.54	194.4 K=1.00	3.95	1.78	-8.64	7.03	1.228 ✓

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 170	7/8" solid	4.00	3.88	148.8 K=0.70	6.74	0.60	-0.36	4.06	0.088 ✓
T2	170 - 150	7/8" solid	4.37	4.20	161.3 K=0.70	5.74	0.60	-0.68	3.45	0.197 ✓
T3	150 - 130	7/8" solid	4.57	4.39	168.4	5.27	0.60	-1.30	3.17	0.412

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
					K=0.70					✔

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 170	7/8" solid	4.00	3.88	148.8 K=0.70	6.74	0.60	-0.96	4.06	0.237 ✔
T2	170 - 150	7/8" solid	4.01	3.85	147.7 K=0.70	6.84	0.60	-1.08	4.11	0.263 ✔
T3	150 - 130	1" solid	4.51	4.33	145.4 K=0.70	7.07	0.79	-1.67	5.55	0.302 ✔

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 170	7/8" solid	4.00	3.88	148.8 K=0.70	6.74	0.60	-0.85	4.06	0.211 ✔
T2	170 - 150	7/8" solid	4.49	4.32	165.9 K=0.70	5.43	0.60	-1.95	3.26	0.598 ✔
T3	150 - 130	1" solid	4.99	4.80	161.2 K=0.70	5.75	0.79	-2.20	4.51	0.488 ✔

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 170	1 1/2" solid	10.00	2.25	72.0	30.00	1.77	13.65	53.01	0.258 ✔
T2	170 - 150	2" solid	20.00	2.36	56.6	30.00	3.14	47.67	94.25	0.506 ✔
T3	150 - 130	2 1/4" solid	20.00	2.36	50.3	30.00	3.98	98.73	119.28	0.828 ✔
T4	130 - 120	Pirod 105216 (12x1.25)	10.02	10.02	45.4	30.00	3.68	100.22	110.45	0.907 ✔
T5	120 - 100	Pirod 105217 (12x1.5)	20.03	10.02	37.8	30.00	5.30	128.69	159.04	0.809 ✔
T6	100 - 80	Pirod 105217 (12x1.5)	20.03	10.02	37.8	30.00	5.30	151.24	159.04	0.951 ✔
T7	80 - 60	Pirod 105218 (12x1.75)	20.03	10.02	32.4	30.00	7.22	171.87	216.47	0.794 ✔
T8	60 - 40	Pirod 105218 (12x1.75)	20.03	10.02	32.4	30.00	7.22	190.83	216.47	0.882 ✔
T9	40 - 20	Pirod 105219 (12x2)	20.03	10.02	28.4	30.00	9.42	208.44	282.74	0.737

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T10	20 - 0	Pirod 105219 (12x2)	20.03	10.02	28.4	30.00	9.42	224.13	282.74	0.793

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in^2	Actual V K	Allow. V_a K	Stress Ratio
T4	130 - 120	0.5	1.48	121.0	10.13	0.20	0.98	2.23	0.440
T5	120 - 100	0.5	1.47	120.0	10.28	0.20	0.76	2.26	0.335
T6	100 - 80	0.5	1.47	120.0	10.28	0.20	0.24	2.26	0.107
T7	80 - 60	0.5	1.46	119.0	10.42	0.20	0.23	2.29	0.100
T8	60 - 40	0.5	1.46	119.0	10.42	0.20	0.23	2.29	0.100
T9	40 - 20	0.625	1.45	94.4	13.67	0.31	0.26	4.69	0.055
T10	20 - 0	0.625	1.45	94.4	13.67	0.31	0.89	4.69	0.189

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 170	3/4" solid	4.59	2.22	142.3	30.00	0.44	1.93	13.25	0.146
T2	170 - 150	7/8" solid	5.04	2.44	134.0	30.00	0.60	4.60	18.04	0.255
T3	150 - 130	1" solid	5.49	2.66	127.5	30.00	0.79	5.69	23.56	0.241
T4	130 - 120	L 2.5 x 2.5 x 3/16	11.42	4.98	80.0	29.00	0.52	7.09	15.03	0.472
T5	120 - 100	L 2.5 x 2.5 x 3/16	11.93	5.38	86.2	29.00	0.52	6.99	15.03	0.465
T6	100 - 80	L 2.5 x 2.5 x 3/16	13.13	6.02	95.9	29.00	0.52	5.70	15.03	0.380
T7	80 - 60	L 3 x 3 x 3/16	14.50	6.73	88.6	29.00	0.66	5.91	19.12	0.309
T8	60 - 40	L 3 x 3 x 3/16	16.01	7.49	98.4	29.00	0.66	6.02	19.12	0.315
T9	40 - 20	L 3 x 3 x 5/16	17.62	8.27	111.0	29.00	1.01	6.42	29.37	0.219
T10	20 - 0	L 3 x 3 x 5/16	20.16	9.54	127.6	29.00	1.01	6.96	29.37	0.237

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 170	7/8" solid	4.00	3.88	212.6	30.00	0.60	0.51	18.04	0.028 ✔
T2	170 - 150	7/8" solid	4.37	4.20	230.5	30.00	0.60	0.85	18.04	0.047 ✔
T3	150 - 130	7/8" solid	4.57	4.39	240.6	30.00	0.60	1.50	18.04	0.083 ✔

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 170	7/8" solid	4.00	3.88	212.6	30.00	0.60	0.86	18.04	0.048 ✔
T2	170 - 150	7/8" solid	4.01	3.85	211.1	30.00	0.60	1.10	18.04	0.061 ✔
T3	150 - 130	1" solid	4.51	4.33	207.7	30.00	0.79	1.88	23.56	0.080 ✔

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 170	7/8" solid	4.00	3.88	212.6	30.00	0.60	0.89	18.04	0.049 ✔
T2	170 - 150	7/8" solid	4.49	4.32	236.9	30.00	0.60	1.86	18.04	0.103 ✔
T3	150 - 130	1" solid	4.99	4.80	230.3	30.00	0.79	2.43	23.56	0.103 ✔

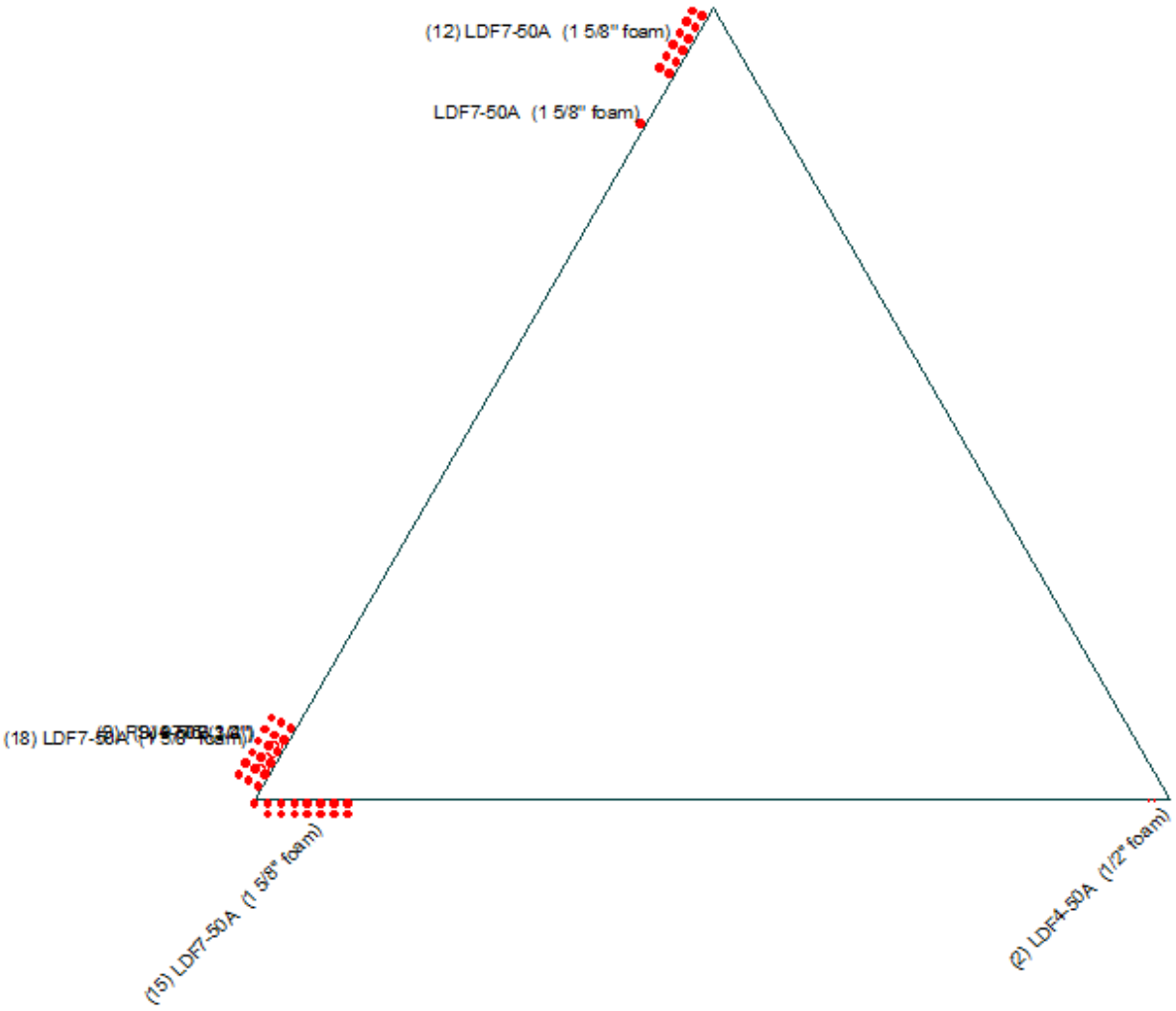
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T1	180 - 170	Leg	1 1/2" solid	1	-16.10	48.44	33.2	Pass
T2	170 - 150	Leg	2" solid	37	-56.31	97.53	57.7	Pass
T3	150 - 130	Leg	2 1/4" solid	101	-115.85	128.80	89.9	Pass
T4	130 - 120	Leg	Pirod 105216 (12x1.25)	165	-117.38	122.94	95.5	Pass
T5	120 - 100	Leg	Pirod 105217 (12x1.5)	174	-154.35	184.67	83.6	Pass
T6	100 - 80	Leg	Pirod 105217 (12x1.5)	189	-184.40	184.67	99.9	Pass
T7	80 - 60	Leg	Pirod 105218 (12x1.75)	204	-212.88	258.24	82.4	Pass
T8	60 - 40	Leg	Pirod 105218 (12x1.75)	219	-239.60	258.24	92.8	Pass
T9	40 - 20	Leg	Pirod 105219 (12x2)	234	-265.93	343.62	77.4	Pass
T10	20 - 0	Leg	Pirod 105219 (12x2)	249	-289.55	343.62	84.3	Pass
T1	180 - 170	Diagonal	3/4" solid	15	-1.97	5.36	36.8	Pass
T2	170 - 150	Diagonal	7/8" solid	50	-4.57	8.23	55.5	Pass
T3	150 - 130	Diagonal	1" solid	115	-5.78	11.87	48.7	Pass
T4	130 - 120	Diagonal	L 2.5 x 2.5 x 3/16	172	-8.55	12.23	69.9	Pass
T5	120 - 100	Diagonal	L 2.5 x 2.5 x 3/16	181	-6.40	9.65	66.3	Pass
T6	100 - 80	Diagonal	L 2.5 x 2.5 x 3/16	196	-6.35	7.63	83.2	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P_{allow} K	% Capacity	Pass Fail
T7	80 - 60	Diagonal	L 3 x 3 x 3/16	211	-6.36	10.68	59.5	Pass
T8	60 - 40	Diagonal	L 3 x 3 x 3/16	226	-6.50	8.62	75.4	Pass
T9	40 - 20	Diagonal	L 3 x 3 x 5/16	241	-6.93	11.34	61.1	Pass
T10	20 - 0	Diagonal	L 3 x 3 x 5/16	256	-8.64	9.38	92.1	Pass
T1	180 - 170	Horizontal	7/8" solid	30	-0.36	5.41	6.6	Pass
T2	170 - 150	Horizontal	7/8" solid	59	-0.68	4.60	14.7	Pass
T3	150 - 130	Horizontal	7/8" solid	158	-1.30	4.22	30.9	Pass
T1	180 - 170	Top Girt	7/8" solid	6	-0.96	5.41	17.8	Pass
T2	170 - 150	Top Girt	7/8" solid	41	-1.08	5.48	19.7	Pass
T3	150 - 130	Top Girt	1" solid	105	-1.67	7.40	22.6	Pass
T1	180 - 170	Bottom Girt	7/8" solid	7	-0.85	5.41	15.8	Pass
T2	170 - 150	Bottom Girt	7/8" solid	44	-1.95	4.35	44.9	Pass
T3	150 - 130	Bottom Girt	1" solid	107	-2.20	6.01	36.6	Pass
							Summary	
						Leg (T6)	99.9	Pass
						Diagonal (T10)	92.1	Pass
						Horizontal (T3)	30.9	Pass
						Top Girt (T3)	22.6	Pass
						Bottom Girt (T2)	44.9	Pass
						Bolt Checks	69.0	Pass
						RATING =	**99.9**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



EBI Consulting
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RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

AT&T Existing Facility

Site ID: CT5259

West Hartford- Elmwood
1030 New Britain Avenue
West Hartford, CT 06110

May 18, 2015

EBI Project Number: 6215002979

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	26.79 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

May 18, 2015

AT&T Mobility – New England
Attn: Cameron Syme, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 01701

Emissions Analysis for Site: **CT5259 – West Hartford- Elmwood**

EBI Consulting was directed to analyze the proposed AT&T facility located at **1030 New Britain Avenue, West Hartford, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 700 MHz Band and the 800 MHz band is 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively, and the general population exposure limit for the 1900 MHz PCS band is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **1030 New Britain Avenue, West Hartford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 GSM channels (PCS Band -1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 4 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 LTE channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 60 Watts

7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation 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) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antennas used in this modeling are the **Powerwave 7770** for 1900 MHz (PCS) and 850 MHz channels and the **CCI OPA-65R-LCUU-H6** for 700 MHz and 1900 MHz (PCS) channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Powerwave 7770** has a maximum gain of **11.4 dBd** at its main lobe at 800 MHz and a maximum gain of **13.4 dBd** at its main lobe at 1900 MHz. The **CCI OPA-65R-LCUU-H6** has a maximum gain of **12 dBd** at its main lobe at 700 MHz and a maximum gain of **14.8 dBd** at its main lobe at 1900 MHz. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antenna mounting height centerline of the proposed antennas is **180 feet** above ground level (AGL).

11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculations were done with respect to uncontrolled / general public threshold limits.

AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Frequency Bands	850 MHz / 1900 MHz(PCS)	Frequency Bands	850 MHz / 1900 MHz(PCS)	Frequency Bands	850 MHz / 1900 MHz(PCS)
Channel Count	8	Channel Count	8	# PCS Channels:	8
Total TX Power:	240	Total TX Power:	240	# AWS Channels:	240
ERP (W):	2,791.80	ERP (W):	2,791.80	ERP (W):	2,791.80
Antenna A1 MPE%	**0.66**	Antenna B1 MPE%	**0.66**	Antenna C1 MPE%	**0.66**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Frequency Bands	850 MHz / 1900 MHz(PCS)	Frequency Bands	850 MHz / 1900 MHz(PCS)	Frequency Bands	850 MHz / 1900 MHz(PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power:	120	Total TX Power:	120	Total TX Power:	120
ERP (W):	1,359.90	ERP (W):	1,359.90	ERP (W):	1,359.90
Antenna A2 MPE%	**0.33**	Antenna B2 MPE%	**0.33**	Antenna C2 MPE%	**0.33**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	CCI OPA-65R-LCUU-H6	Make / Model:	CCI OPA-65R-LCUU-H6	Make / Model:	CCI OPA-65R-LCUU-H6
Gain:	12 / 14.8 dBd	Gain:	12 / 14.8 dBd	Gain:	12 / 14.8 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Frequency Bands	700 MHz(PCS) / 1900 MHz	Frequency Bands	700 MHz(PCS) / 1900 MHz	Frequency Bands	700 MHz(PCS) / 1900 MHz
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power:	240	Total TX Power:	240	Total TX Power:	240
ERP (W):	3,172.53	ERP (W):	3,172.53	ERP (W):	3,172.53
Antenna A3 MPE%	**0.91**	Antenna B3 MPE%	**0.91**	Antenna C3 MPE%	**0.91**

Site Composite MPE%	
Carrier	**MPE%**
AT&T	**5.71 %**
T-Mobile	17.80 %
Clearwire	0.77 %
Nextel	2.51 %
Site Total MPE %:	**26.79 %**

AT&T Sector 1 Total:	1.90 %
AT&T Sector 2 Total:	1.90 %
AT&T Sector 3 Total:	1.90 %
Site Total:	**26.79 %**

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Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector 1:	1.90 %
Sector 2:	1.90 %
Sector 3 :	1.90 %
AT&T Total:	5.71 %
Site Total:	26.79 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **26.79%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

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