Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

January 26, 2016

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: **Notice of Exempt Modification for AT&T/ LTE 3C Crown Site BU: 876359**
AT&T Site ID: CT5458
954 Norwich Road, Plainfield, CT 06062
Latitude: 41° 39' 31.46" / Longitude: -71° 55' 29.75"

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 115-foot level of the existing 130-foot monopole at 954 Norwich Road in Plainfield, CT. The tower is owned by Crown Castle. The property is owned by the Global Signal Acquisition IV LLC. AT&T now intends to replace three (3) antennas with three (3) new 700 MHz antennas. AT&T also intends to install three (3) RRU12s and three (3) A2s.

This facility was approved by the Planning and Zoning Commission in Special Permit #Sp-99-08 on June 8, 1999. This approval included the conditions that:

1. A Zoning Permit, Building Permit, and NDDH approval will need to be obtained prior to construction.
2. Please file the enclosed notice on the Land Records of the town.

This modification complies with the aforementioned condition(s).

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to Mr. Paul E. Sweet, First Selectman for the Town of Plainfield, as well as the property owner, and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,

Jeffrey Barbadora
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
781-729-0053
Jeff.Barbadora@crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc: Mr. Paul E. Sweet
Town of Plainfield
8 Community Avenue
Plainfield, CT 06374

Global Signal Acquisitions IV LLC
PO Box 277455
Atlanta, GA 30384

THE PLAINFIELD TOWN HALL
PLAINFIELD • CENTRAL VILLAGE • MOOSUP • WAUREGAN

Town Hall
8 Community Avenue
Plainfield, CT 06374

Telephone (860) 564-4071
Fax (860) 564-0612

PLANNING AND ZONING COMMISSION

COPY

June 14, 1999

Sprint Spectrum L.P.
C/O Thomas J. Regan
Brown, Rudnick, Freed & Gesmer
185 Asylum St., 38th Fl.
Hartford, CT 06103-3402

Dear Applicant:

At its meeting on Tuesday, June 8, 1999, the Planning & Zoning Commission approved your request SP-99-08 for a Special Permit for property located at 954 Norwich Rd., Plainfield. Map 10, Block 133, Lot 15.

The Conditions are:

- A Zoning Permit, Building Permit and NDDH approval will need to be obtained prior to construction.
- Please file the enclosed notice on the Land Records of the town.

A copy of the Legal Notice is enclosed for your records and will appear in the Norwich Bulletin on Wednesday, June 16, 1999.

Yours Truly,

PLANNING & ZONING COMMISSION

Dennis Jolley, Chairman

Gloria Rizer, Secretary

CC: Stanley Chuddy, Owner

TOWN OF PLAINFIELD
SPECIAL PERMIT RECORD

CORRECTED

In accordance with Section 8-3d of the Connecticut General Statutes and the Plainfield Zoning Regulations, this Record must be filed in the Town Land Records. The Town Clerk shall index this record in the Grantor Index under the name of the owner of Record of such property at the time the Special Permit is granted. The Special Permit is not effective until the Record is filed.

1. *Grantor(s): ***Chudy*** ***Stanley***
   (Last) (First) (Middle)

2. Assessor's Information **10** **133** **15**
   (Map) (Block) (Parcel)

3. Location of Property: **954 Norwich Rd., Plainfield**

4. Zoning District in which property is located: **C-1**

5. Description of Project/Activity:
   Construction of 130 ft. telecommunications tower and related equipment for the provision of wireless telecommunications service.

6. Special Permit granted under the following Sections of the Plainfield Zoning Regulations: Section 6.35 Wireless Telecommunication Facilities

7. Date Special Permit Granted: **June 8, 1999**

8. Approval is granted subject to the following conditions:
   None

9 Reasons for granting Special Permit: None Stated.

The Planning and Zoning Commission finds that the proposed use or development satisfies all criteria identified within the Planning Zoning Regulations for the approval of a Special Permit.

I certify that this is a true Record of the Special Permit granted for the subject Property.

Dated at Plainfield, CT
this 27th day of July 1999

PLANNING AND ZONING COMMISSION

June A. Bissette
Secretary or Acting Clerk

* Correction made for the spelling of the Grantor.

Received For Record at Plainfield, CT
on 7/27/99 1:08 PM
Attest Helen Francis Coombs
Helen Francis Coombs, Town Clerk

PROJECT INFORMATION

SCOPE OF WORK:

- AT&T ANTENNAS: (1) NEW ANTENNA PER SECTOR, FOR A TOTAL (3) NEW ANTENNAS. (1) EXISTING ANTENNAS TO BE RELOCATED PER SECTOR FOR 3 SECTORS, FOR A TOTAL OF (3) EXISTING ANTENNAS RELOCATED. (1) EXISTING ANTENNAS PER SECTOR FOR 3 SECTORS, FOR A TOTAL OF (3) EXISTING ANTENNAS TO REMAIN. (1) EXISTING ANTENNA PER SECTOR FOR (3) SECTORS, FOR A TOTAL OF (3) EXISTING ANTENNAS TO BE REMOVED.
- AT&T RRUs: (1) NEW RRUs PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) NEW RRUs. (1) NEW A2 MODULE PER SECTOR FOR (3) SECTORS, FOR A TOTAL OF (3) NEW A2 MODULES. (1) EXISTING RRU PER SECTOR TO BE REUSED, FOR A TOTAL OF (3) EXISTING RRUs.
- AT&T SQUID: (1) EXISTING DC-6 SQUID TO REMAIN.

SITE ADDRESS:	954 NORWICH ROAD PLAINFIELD, 06374	
LATITUDE:	41.6584919	41° 39' 30.57084"N
LONGITUDE:	-71.9254	-71° 55' 31.44"W
USID:	24527	
TOWER OWNER:	AT&T MOBILITY	
TYPE OF SITE:	MONOPOLE/OUTDOOR EQUIPMENT	
MONOPOLE HEIGHT:	130'-0"±	
RAD CENTER:	117'-0"±	
CURRENT USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY	
PROPOSED USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY	

DRAWING INDEX

		REV.
T-1	TITLE SHEET	0
GN-1	GROUNDING & GENERAL NOTES	0
A-1	COMPOUND LAYOUT	0
A-2	EQUIPMENT LAYOUTS	0
A-3	ANTENNA LAYOUTS & ELEVATIONS	0
A-4	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.

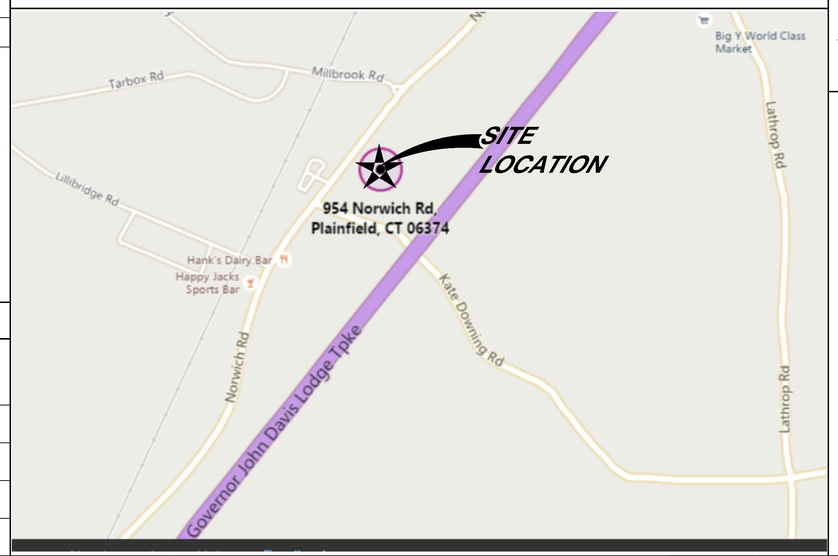
DISCIPLINE:	NAME:	
SITE ACQUISITION:		
CONSTRUCTION MANAGER:		
AT&T PROJECT MANAGER:		

at&t MOBILITY

FA CODE: 10092031
SITE NUMBER: CT5458
SITE NAME: PLAINFIELD SOUTH

VICINITY MAP

START OUT GOING NE 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, MERGE ONTO CT-3 N VIA EXIT 25 TOWARD GLASTONBURY, MERGE ONTO CT-2E TOWARD NORWICH, MERGE ONTO I-395 N/GOVERNOR JOHN DAVIS LODGE TURNPIKE VIA EXIT 28N TOWARD PROVIDENCE, TAKE THE LATHROP ROAD EXIT, EXIT 87. TURN LEFT ONTO LATHROP RD. TURN LEFT ONTO NORWICH RD/CT-12.



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

COMPANY: COM-EX CONSULTANTS, LLC
ADDRESS: 115 ROUTE 46, SUITE E39, MOUNTAIN LAKES, NJ 07046
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
115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CTV5458
SITE NAME: PLAINFIELD SOUTH
954 NORWICH ROAD
PLAINFIELD, CT 06374
WINDHAM COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	12/10/15	ISSUED AS FINAL	NJM	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: NJM

SEAL: STATE OF CONNECTICUT, DOUGLAS G. BOWEN, 18643, PROFESSIONAL ENGINEER

AT&T

DRAWING TITLE: TITLE SHEET

JOB NUMBER	DRAWING NUMBER	REV
15169-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 HUDSON DESIGN GROUP FOR A RECENT UPGRADE DATED 10/04/2012. CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.

COM-EX Consultants
115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CTV5458

SITE NAME: PLAINFIELD SOUTH

954 NORWICH ROAD
PLAINFIELD, CT 06374
WINDHAM COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	12/10/15	ISSUED AS FINAL	NJM	NDB	NDB

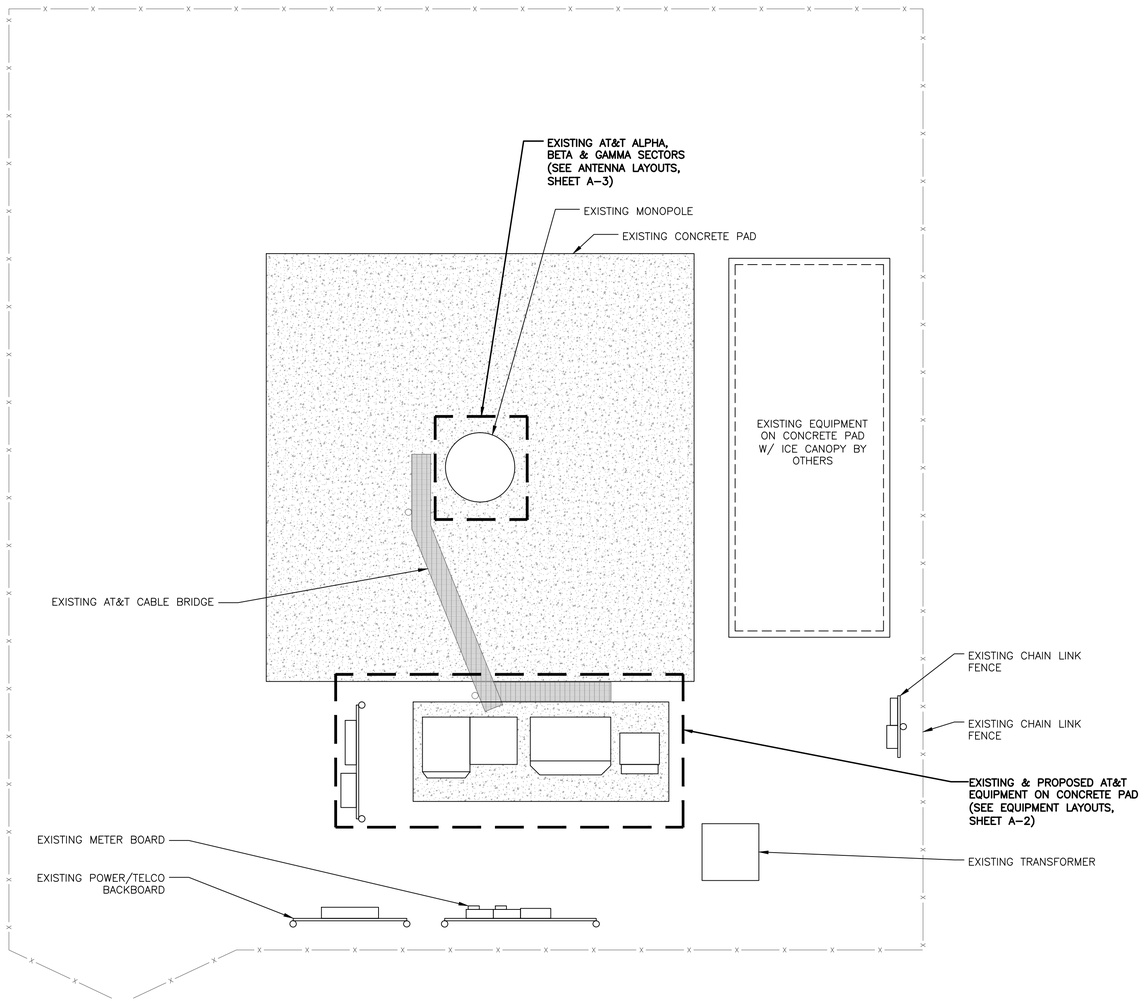
SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: NJM

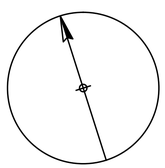
SEAL:
STATE OF CONNECTICUT
DOUGLAS G. BALL
0023643
REGISTERED
PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER
CT LICENSE NO. 23643

AT&T

DRAWING TITLE:
GROUNDING & GENERAL NOTES

JOB NUMBER	DRAWING NUMBER	REV
15169-EMP	GN-1	0





COMPOUND LAYOUT

SCALE: 1/8" = 1'-0"

0 4 8 16

GRAPHIC SCALE: 1/8"=1'-0"

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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SUITE E39
MOUNTAIN LAKES, NJ 07046
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16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CTV5458

SITE NAME: PLAINFIELD SOUTH

954 NORWICH ROAD
PLAINFIELD, CT 06374
WINDHAM COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	12/10/15	ISSUED AS FINAL	NJM	NDB	NDB

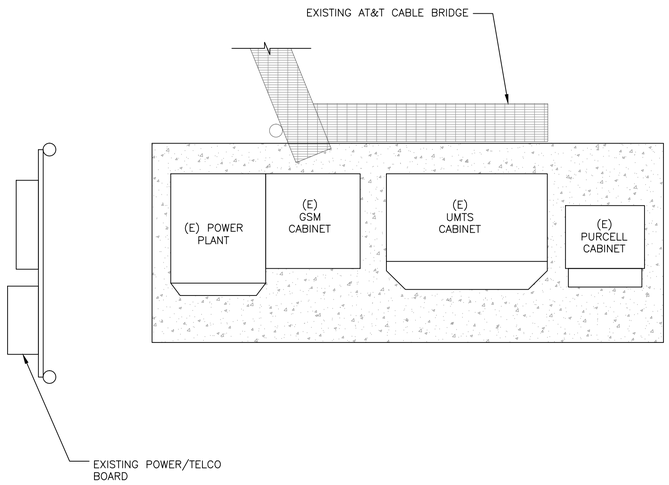
SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: NJM

SEAL:
STATE OF CONNECTICUT
NICHOLAS D. BARBER
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER
CT LICENSE NO. 28643

AT&T

DRAWING TITLE:
COMPOUND LAYOUT

JOB NUMBER	DRAWING NUMBER	REV
15169-EMP	A-1	0

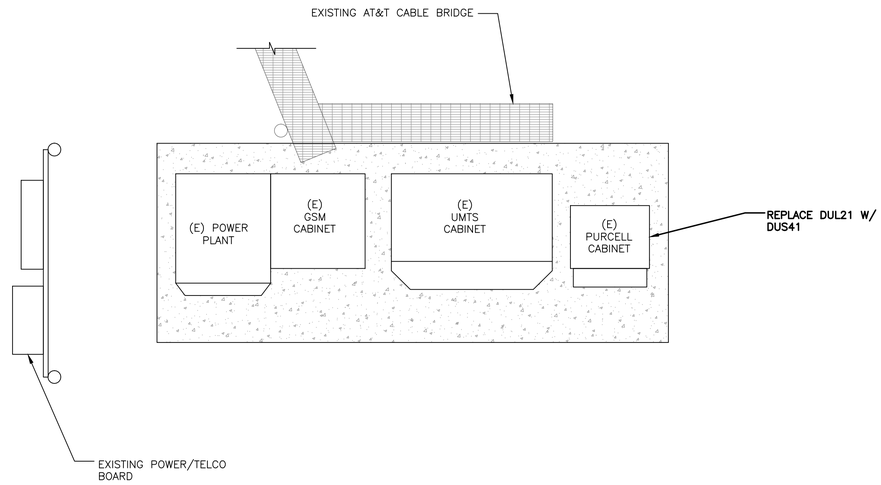


NORTH

EXISTING EQUIPMENT LAYOUT

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

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



NORTH

PROPOSED EQUIPMENT LAYOUT

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

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

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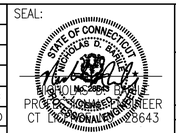
SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: NJM

SEAL:



AT&T

DRAWING TITLE: EQUIPMENT LAYOUT

JOB NUMBER	DRAWING NUMBER	REV
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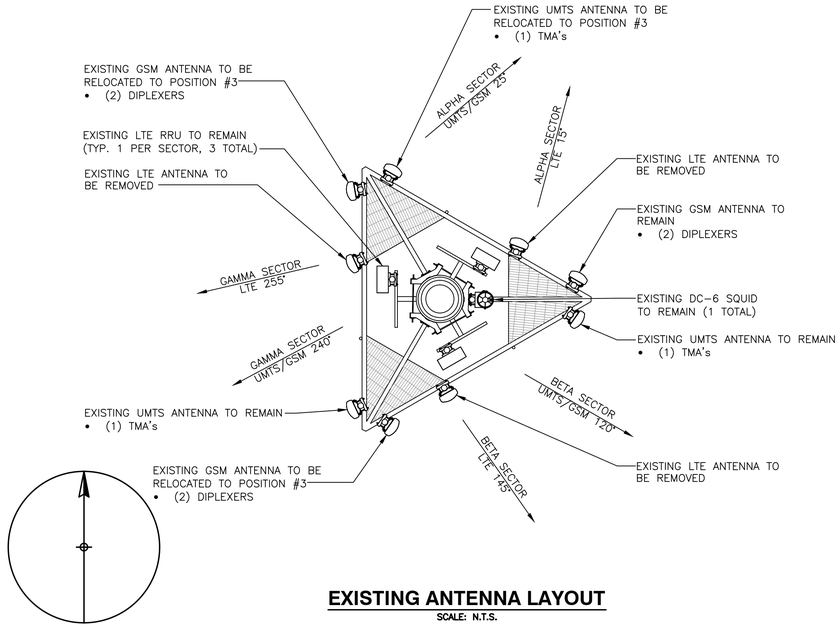
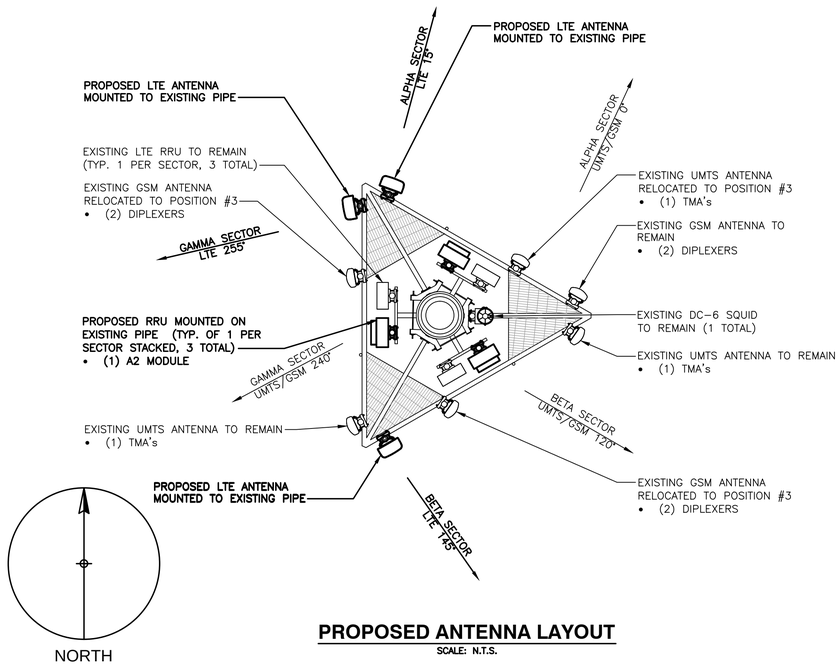


EXISTING ANTENNA LAYOUT

SCALE: N.T.S.



PROPOSED ANTENNA LAYOUT

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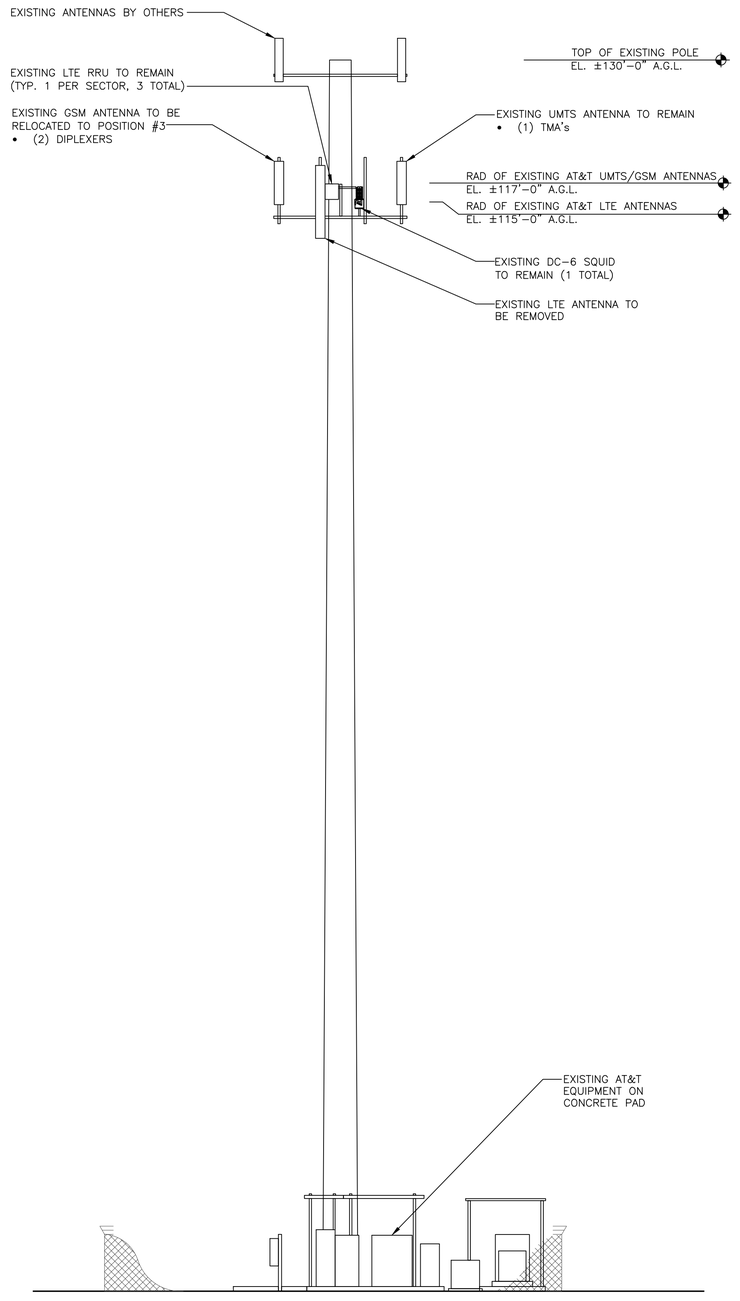
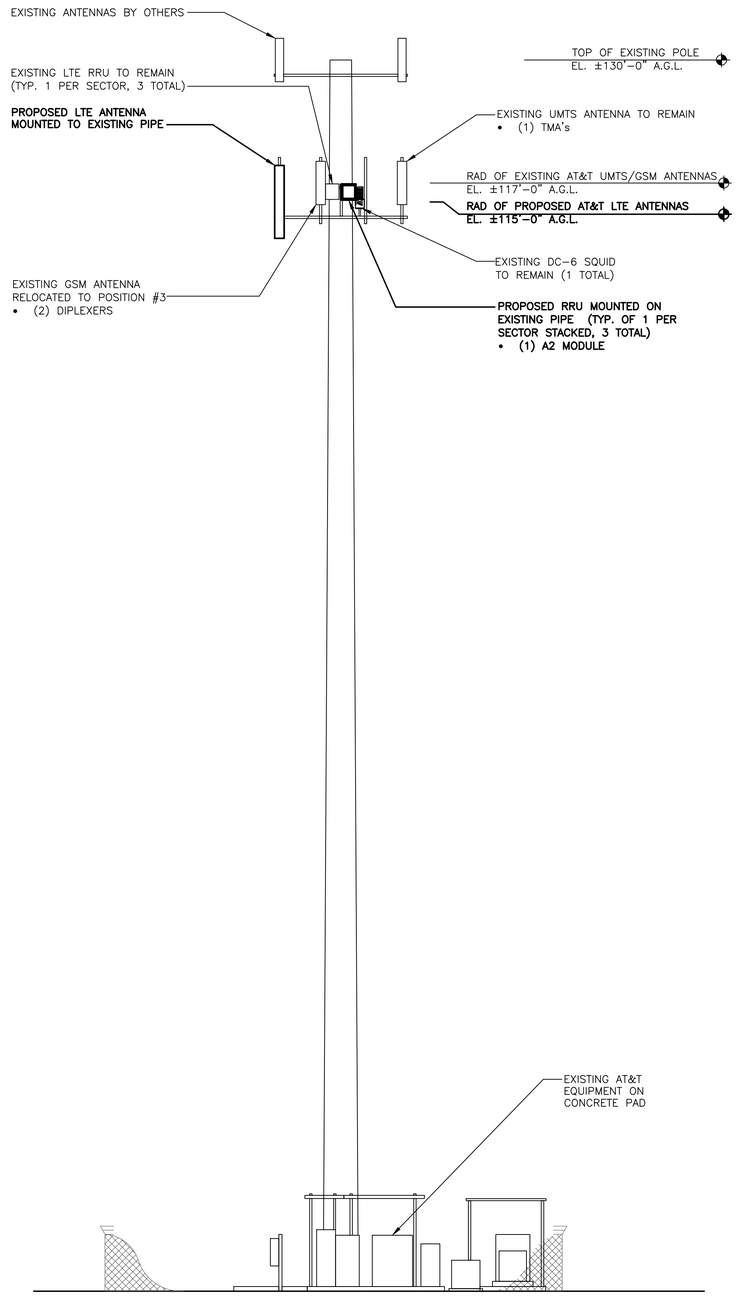


EXISTING TOWER ELEVATION

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.



PROPOSED TOWER ELEVATION

SCALE: NTS

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SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: NJM

SEAL: STATE OF CONNECTICUT — NICHOLAS D. BARBER — LICENSED PROFESSIONAL ENGINEER — 28643

PROFESSIONAL ENGINEER
CT LICENSE NO. 28643

AT&T

DRAWING TITLE:
ANTENNA LAYOUTS & ELEVATIONS

JOB NUMBER	DRAWING NUMBER	REV
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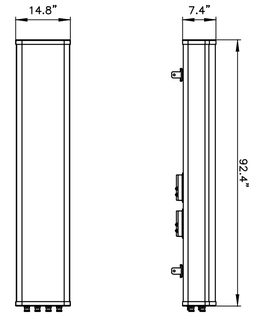


FRONT VIEW

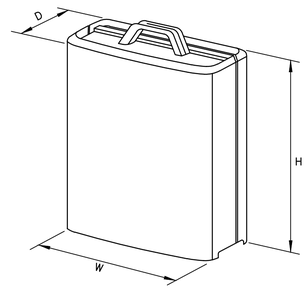
SIDE VIEW

BOTTOM VIEW

MANUFACTURER	CCI
MODEL	HPA-65R-BUU-H8
WEIGHT	68 LBS

LTE ANTENNA DETAIL

SCALE: N.T.S.

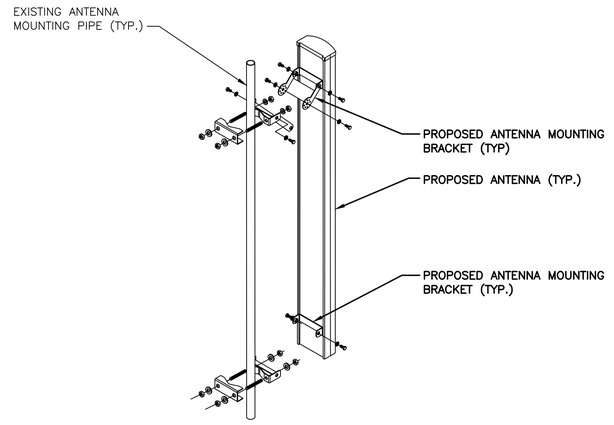


MODEL	L x W x H	WEIGHT
*RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
RRUS-12	20.4"x18.5"x7.5"	58 LBS
A2 MODULE	16.4" x 15.2" x 3.4"	22 LBS

*DENOTES EXISTING.

RRUS DETAIL

SCALE: N.T.S.



ANTENNA AND RRU MOUNTING DETAIL

SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770.00.850.08	55"x11"x5"
	A2	–	–	–
	A3	KMW	AM-X-CD-17-65-00T-RET	96"x11.8"x6"
	A4	POWERWAVE	7770.00.850.08	55"x11"x5"
BETA	B1	POWERWAVE	7770.00.850.08	55"x11"x5"
	B2	–	–	–
	B3	KMW	AM-X-CD-17-65-00T-RET	96"x11.8"x6"
	B4	POWERWAVE	7770.00.850.08	55"x11"x5"
GAMMA	G1	POWERWAVE	7770.00.850.08	55"x11"x5"
	G2	–	–	–
	G3	KMW	AM-X-CD-17-65-00T-RET	96"x11.8"x6"
	G4	POWERWAVE	7770.00.850.08	55"x11"x5"

FINAL ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	**CCI**	**HPA-65R-BUU-H8**	**92.4"x14.8"x7.4"**
	A2	–	–	–
	A3	POWERWAVE	7770.00.850.08	55"x11"x5"
	A4	POWERWAVE	7770.00.850.08	55"x11"x5"
BETA	B1	POWERWAVE	7770.00.850.08	55"x11"x5"
	B2	–	–	–
	B3	POWERWAVE	7770.00.850.08	55"x11"x5"
	B4	**CCI**	**HPA-65R-BUU-H8**	**92.4"x14.8"x7.4"**
GAMMA	G1	POWERWAVE	7770.00.850.08	55"x11"x5"
	G2	–	–	–
	G3	POWERWAVE	7770.00.850.08	55"x11"x5"
	G4	**CCI**	**HPA-65R-BUU-H8**	**92.4"x14.8"x7.4"**

PROPOSED RRU SCHEDULE

SECTOR	MAKE	MODEL	SIZE (INCHES)	ADDITIONAL COMPONENT	SIZE (INCHES)
ALPHA	**ERICSSON**	**RRUS-12**	**20.4"x18.5"x9.5"**	**ERICSSON 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"x9.5"**	**ERICSSON 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"x9.5"**	**ERICSSON A2 MODULE**	**16.4"x15.2"x3.4"**
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	–	–
	–	–	–		

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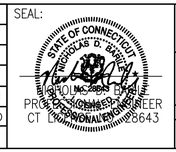
0	12/10/15	ISSUED AS FINAL	NJM	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: NJM

SEAL:



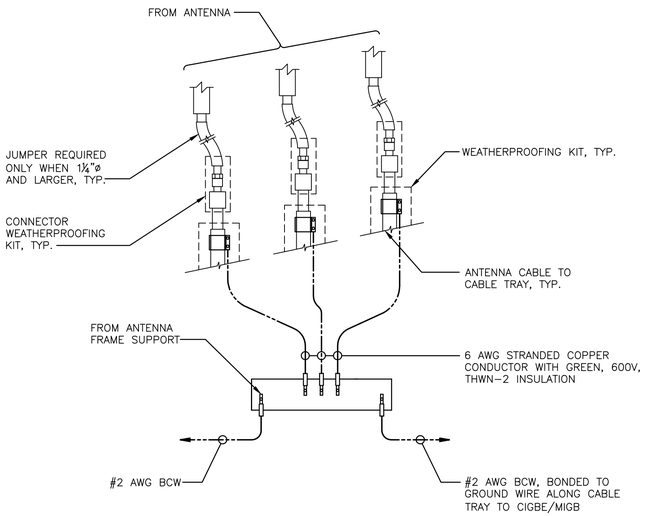
PROFESSIONAL ENGINEER
CT LICENSE NO. 28643

AT&T

DRAWING TITLE:

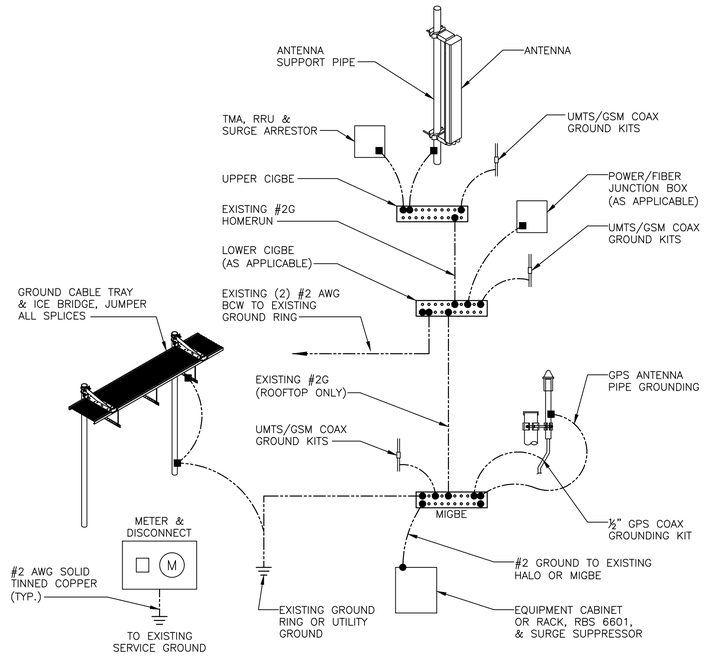
DETAILS

JOB NUMBER	DRAWING NUMBER	REV
15169-EMP	A-4	0



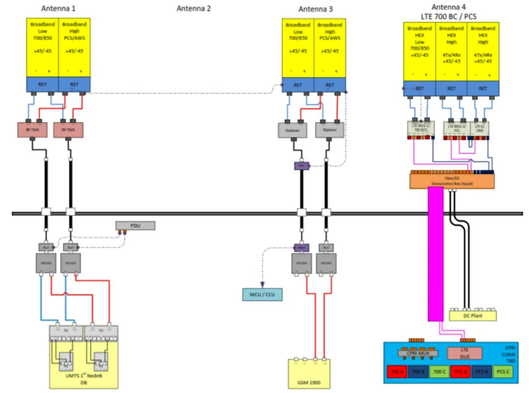
GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.



GROUNDING RISER DIAGRAM

SCALE: N.T.S.



TYPICAL PLUMBING DIAGRAM (PER SECTOR)

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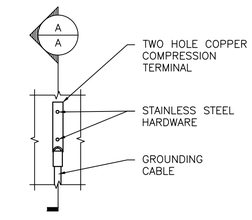
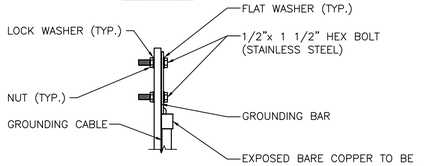


ELEVATION



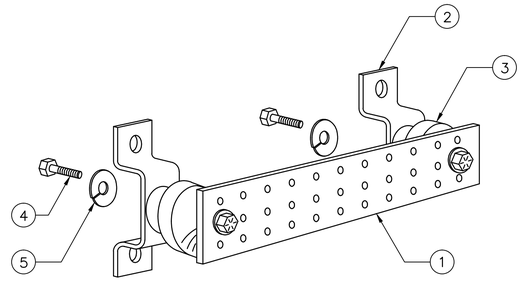
SECTION "A–A"

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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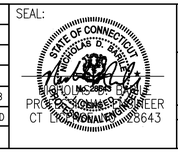
SEAL:



AT&T

DRAWING TITLE: GROUNDING, ONE–LINE DIAGRAM & DETAILS

JOB NUMBER	DRAWING NUMBER	REV
15169–EMP	G–1	0

Date: **December 07, 2015**

Holly Haas
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

JACOBS
Jacobs Engineering Group, Inc.
5449 Bells Ferry Road
Acworth, GA 30102
(770) 701-2500

Subject: **Structural Analysis Report**

Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CT5458
	Carrier Site Name:	Plainfield South
Crown Castle Designation:	**Crown Castle BU Number:**	876359
	Crown Castle Site Name:	NORWICH
	Crown Castle JDE Job Number:	358363
	Crown Castle Work Order Number:	1162323
	Crown Castle Application Number:	323122 Rev. 1
Engineering Firm Designation:	**Jacobs Engineering Group, Inc. Project Number:**	1162323
Site Data:	**954 Norwich Road, PLAINFIELD, Windham County, CT** **Latitude *41° 39' 31.46"*, Longitude *-71° 55' 29.75"*** **130 Foot - Monopole Tower**	

Dear Holly Haas,

Jacobs Engineering Group, Inc. is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 851976, in accordance with application 323122, revision 1.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing loading, respectively.

This analysis has been performed in accordance with the TIA/EIA-222-F standard and the 2005 Connecticut State Building Code with 2009 amendment based upon a wind speed of 85 mph fastest mile.

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *Jacobs Engineering Group, Inc.* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by:

Abha Gupta

Abha Gupta
Structure Engineer

12/07/15

Reviewed by:

Matthew E. Watkins, P.E.
Engineering Project Manager

tnxTower Report - version 6.1.4.1

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 130 ft Monopole tower designed by SUMMIT in July of 1999. The tower was originally designed for a wind speed of 90 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 85 mph with no ice, 37.6 mph with 1 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)	Note
114.0	115.0	3	cci antennas	HPA-65R-BUU-H8 w/ Mount Pipe	-	-	-
		3	ericsson	RRUS 12			
		3	ericsson	RRUS A2			

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)	Note
130.0	130.0	6	decibel	DB980H90E-M w/ Mount Pipe	6	1-5/8	1
		1	tower mounts (Crown)	Platform Mount [LP 1201-1]			
116.0	116.0	3	ericsson	TME-RRUS-11	-	-	1
		1	tower mounts (Crown)	Side Arm Mount [SO 102-3]			
114.0	115.0	1	kmw communications	AM-X-CD-17-65-00T-RET w/ Mount Pipe	-	-	2
		2	powerwave technologies	P65-17-XLH-RR w/ Mount Pipe			
		6	powerwave technologies	7770.00 w/ Mount Pipe	1 2 12	3/8 3/4 1-1/4	1
		2	powerwave technologies	LGP21401			
	114.0	4	powerwave technologies	LGP21401			
		6	powerwave technologies	LGP21901			
		1	raycap	DC6-48-60-18-8F			
		1	tower mounts (Crown)	Platform Mount [LP 303-1]			

Notes:
1) Existing Equipment
2) Equipment To Be Removed; not considered in this analysis

Table 3 - Design 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)
130	130	12	Generic	DB98OH PCS	-	-
110	110	12	Generic	Panel Antenna	-	-
90	90	12	Generic	Panel Antenna	-	-
80	80	1	Generic	GPS	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Vanasse Hangen Brustlin, INC.	1616503	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Summit Manufacturing, LLC	1616546	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Summit Manufacturing, LLC	1446983	CCISITES

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.

This analysis may be affected if any assumptions are not valid or have been made in error. Jacobs Engineering Group, Inc. should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	130 - 83	Pole	TP26.06x16x0.25	1	-7.04	1051.02	64.6	Pass
L2	83 - 43.25	Pole	TP34.068x24.864x0.313	2	-11.92	1718.22	75.5	Pass
L3	43.25 - 0	Pole	TP42.7x32.533x0.375	3	-20.92	2656.92	74.3	Pass
							Summary	
						Pole (L2)	75.5	Pass
						RATING =	**75.5**	**Pass**

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	68.1	Pass
1	Base Plate	0	67.5	Pass
1	Base Foundation (Reaction Comparison)	0	76.9	Pass

Structure Rating (max from all components) =	76.9%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

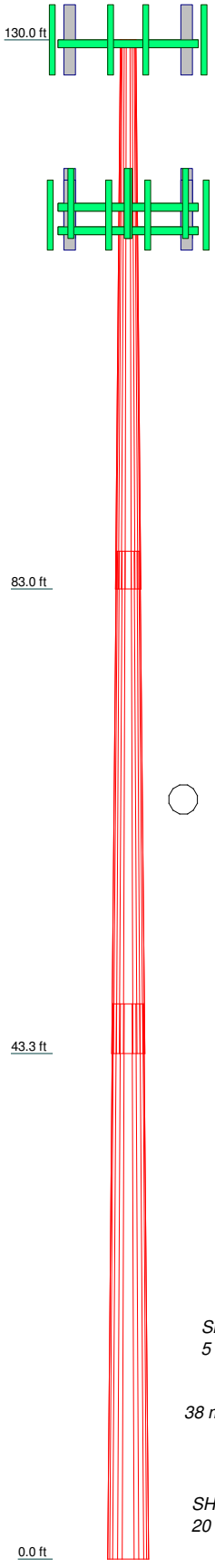
4.1) Recommendations

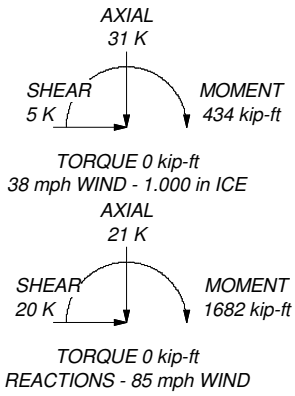
The tower and its foundation have sufficient capacity to carry the existing and proposed loads. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	47.00	12	0.250	3.25	16.000	26.060		2.7
2	43.00	12	0.313	4.25	24.864	34.068	A607-65	4.3
3	47.50	12	0.375		32.533	42.700		7.3
								14.2





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) DB980H90E-M w/ Mount Pipe	130	(2) LGP21401	114
(2) DB980H90E-M w/ Mount Pipe	130	(2) LGP21401	114
(2) DB980H90E-M w/ Mount Pipe	130	(2) LGP21901	114
8'x2 1/2" Pipe Mount	130	(2) LGP21901	114
8'x2 1/2" Pipe Mount	130	(2) LGP21901	114
8'x2 1/2" Pipe Mount	130	DC6-48-60-18-8F	114
Lighting Rod 1" x 8'	130	HPA-65R-BUU-H8 w/ Mount Pipe	114
Platform Mount [LP 1201-1]	130	HPA-65R-BUU-H8 w/ Mount Pipe	114
TME-RRUS-11	116	HPA-65R-BUU-H8 w/ Mount Pipe	114
TME-RRUS-11	116	RRUS 12	114
TME-RRUS-11	116	RRUS 12	114
Side Arm Mount [SO 102-3]	116	RRUS 12	114
(2) 7770.00 w/ Mount Pipe	114	RRUS A2	114
(2) 7770.00 w/ Mount Pipe	114	RRUS A2	114
(2) 7770.00 w/ Mount Pipe	114	RRUS A2	114
(2) LGP21401	114	Platform Mount [LP 303-1]	114

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Windham 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 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 75.5%

Jacobs Engineering Group, Inc.
5449 Bells Ferry Rd
Acworth, GA 30102
Phone: 770-701-2500
FAX: 770-701-2501

Job: ***130 ft. Monopole - Norwich***			
Project: ***BU 876359- WO 1162323***			
Client: Crown Castle	Drawn by: J. Earnest		App'd:
Code: TIA/EIA-222-F	Date: 12/07/15		Scale: NTS
Path: c:\pwworking\telecommunications\earnesj\dms68608\BU 876359_WO 1162323.er			Dwg No. E-1

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 Windham County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 1.000 in.
Ice thickness is considered to increase with height.
Ice density of 56.00 pcf.
A wind speed of 38 mph is used in combination with ice.
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, 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		

Tapered Pole Section Geometry

Section	*Elevation* *ft*	*Section Length* *ft*	*Splice Length* *ft*	*Number of Sides*	*Top Diameter* *in*	*Bottom Diameter* *in*	*Wall Thickness* *in*	*Bend Radius* *in*	*Pole Grade*
L1	130.00-83.00	47.00	3.25	12	16.000	26.060	0.250	1.000	A607-65 (65 ksi)
L2	83.00-43.25	43.00	4.25	12	24.864	34.068	0.313	1.250	A607-65 (65 ksi)
L3	43.25-0.00	47.50		12	32.533	42.700	0.375	1.500	A607-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	16.564	12.679	401.443	5.638	8.288	48.437	813.432	6.240	3.618	14.472
	26.979	20.777	1766.631	9.240	13.499	130.870	3579.673	10.226	6.314	25.256
L2	26.462	24.705	1900.838	8.790	12.880	147.584	3851.613	12.159	5.826	18.644
	35.270	33.966	4939.983	12.084	17.647	279.930	10009.745	16.717	8.293	26.537
L3	34.623	38.831	5125.708	11.513	16.852	304.155	10386.074	19.112	7.714	20.57
	44.206	51.107	11685.949	15.152	22.119	528.331	23678.901	25.154	10.439	27.836

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
L1 130.00-83.00				1	1	1		
L2 83.00-43.25				1	1	1		
L3 43.25-0.00				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
Safety Line 3/8	C	No	CaAa (Out Of Face)	130.00 - 0.00	1	No Ice	0.04	0.00
						1/2" Ice	0.14	0.00
						1" Ice	0.24	0.00
						2" Ice	0.44	0.00
						4" Ice	0.84	0.00
130								
LDF7-50A(1-5/8")	C	No	Inside Pole	130.00 - 0.00	6	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
114								
LDF6-50A(1-1/4")	A	No	Inside Pole	114.00 - 0.00	12	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
FB-L98B-002-75000(3/8")	A	No	Inside Pole	114.00 - 0.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
WR-VG86ST-BRD(3/4)	A	No	Inside Pole	114.00 - 0.00	2	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
1 1/2" Rigid Conduit	A	No	Inside Pole	114.00 - 0.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight klf
107							

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	130.00-83.00	A	0.000	0.000	0.000	0.000	0.31
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.763	0.24
L2	83.00-43.25	A	0.000	0.000	0.000	0.000	0.40
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.491	0.20
L3	43.25-0.00	A	0.000	0.000	0.000	0.000	0.44
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.622	0.22

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	130.00-83.00	A	1.149	0.000	0.000	0.000	0.000	0.31
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	12.563	0.30
L2	83.00-43.25	A	1.080	0.000	0.000	0.000	0.000	0.40
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.625	0.25
L3	43.25-0.00	A	1.000	0.000	0.000	0.000	0.000	0.44
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.963	0.27

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	130.00-83.00	-0.048	0.028	-0.275	0.159
L2	83.00-43.25	-0.048	0.028	-0.293	0.169
L3	43.25-0.00	-0.048	0.028	-0.290	0.167

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 K
130									
(2) DB980H90E-M w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.04 4.50 4.95 5.87 8.05	3.62 4.48 5.22 6.74 10.00	0.03 0.07 0.11 0.22 0.55
(2) DB980H90E-M w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.04 4.50 4.95 5.87 8.05	3.62 4.48 5.22 6.74 10.00	0.03 0.07 0.11 0.22 0.55
(2) DB980H90E-M w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.04 4.50 4.95 5.87 8.05	3.62 4.48 5.22 6.74 10.00	0.03 0.07 0.11 0.22 0.55
8'x2 1/2" Pipe Mount	A	From Leg	4.00 0.00 0.00	0.000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.30 3.13 3.62 4.62 6.73	2.30 3.13 3.62 4.62 6.73	0.04 0.06 0.08 0.14 0.33
8'x2 1/2" Pipe Mount	B	From Leg	4.00 0.00 0.00	0.000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.30 3.13 3.62 4.62 6.73	2.30 3.13 3.62 4.62 6.73	0.04 0.06 0.08 0.14 0.33
8'x2 1/2" Pipe Mount	C	From Leg	4.00 0.00 0.00	0.000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.30 3.13 3.62 4.62 6.73	2.30 3.13 3.62 4.62 6.73	0.04 0.06 0.08 0.14 0.33
Lighting Rod 1" x 8'	C	None		0.000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.80 1.62 2.45 3.78 5.86	0.80 1.62 2.45 3.78 5.86	0.03 0.04 0.05 0.09 0.24
Platform Mount [LP 1201-1]	C	None		0.000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	23.10 26.80 30.50 37.90 52.70	23.10 26.80 30.50 37.90 52.70	2.10 2.50 2.90 3.70 5.30
116									
TME-RRUS-11	A	From Leg	2.00 0.00 0.00	0.000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.31 3.58 3.85 4.45 5.76	1.72 2.03 2.37 3.13 4.89	0.05 0.08 0.11 0.19 0.40
TME-RRUS-11	B	From Leg	2.00 0.00 0.00	0.000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.31 3.58 3.85 4.45 5.76	1.72 2.03 2.37 3.13 4.89	0.05 0.08 0.11 0.19 0.40
TME-RRUS-11	C	From Leg	2.00 0.00 0.00	0.000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.31 3.58 3.85 4.45 5.76	1.72 2.03 2.37 3.13 4.89	0.05 0.08 0.11 0.19 0.40

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Side Arm Mount [SO 102-3]	C	None		0.000	116.00	No Ice	3.00	3.00	0.08
						1/2" Ice	3.48	3.48	0.11
						1" Ice	3.96	3.96	0.14
						2" Ice	4.92	4.92	0.20
						4" Ice	6.84	6.84	0.32
114									
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.000	114.00	No Ice	6.12	4.25	0.06
						1/2" Ice	6.63	5.01	0.10
						1" Ice	7.13	5.71	0.16
						2" Ice	8.16	7.16	0.29
						4" Ice	10.36	10.41	0.66
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.000	114.00	No Ice	6.12	4.25	0.06
						1/2" Ice	6.63	5.01	0.10
						1" Ice	7.13	5.71	0.16
						2" Ice	8.16	7.16	0.29
						4" Ice	10.36	10.41	0.66
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.000	114.00	No Ice	6.12	4.25	0.06
						1/2" Ice	6.63	5.01	0.10
						1" Ice	7.13	5.71	0.16
						2" Ice	8.16	7.16	0.29
						4" Ice	10.36	10.41	0.66
(2) LGP21401	A	From Leg	4.00 0.00 1.00	0.000	114.00	No Ice	1.29	0.23	0.01
						1/2" Ice	1.45	0.31	0.02
						1" Ice	1.61	0.40	0.03
						2" Ice	1.97	0.61	0.05
						4" Ice	2.79	1.12	0.14
(2) LGP21401	B	From Leg	4.00 0.00 0.00	0.000	114.00	No Ice	1.29	0.23	0.01
						1/2" Ice	1.45	0.31	0.02
						1" Ice	1.61	0.40	0.03
						2" Ice	1.97	0.61	0.05
						4" Ice	2.79	1.12	0.14
(2) LGP21401	C	From Leg	4.00 0.00 0.00	0.000	114.00	No Ice	1.29	0.23	0.01
						1/2" Ice	1.45	0.31	0.02
						1" Ice	1.61	0.40	0.03
						2" Ice	1.97	0.61	0.05
						4" Ice	2.79	1.12	0.14
(2) LGP21901	A	From Leg	4.00 0.00 0.00	0.000	114.00	No Ice	0.27	0.18	0.01
						1/2" Ice	0.34	0.25	0.01
						1" Ice	0.43	0.32	0.01
						2" Ice	0.62	0.49	0.02
						4" Ice	1.10	0.94	0.07
(2) LGP21901	B	From Leg	4.00 0.00 0.00	0.000	114.00	No Ice	0.27	0.18	0.01
						1/2" Ice	0.34	0.25	0.01
						1" Ice	0.43	0.32	0.01
						2" Ice	0.62	0.49	0.02
						4" Ice	1.10	0.94	0.07
(2) LGP21901	C	From Leg	4.00 0.00 0.00	0.000	114.00	No Ice	0.27	0.18	0.01
						1/2" Ice	0.34	0.25	0.01
						1" Ice	0.43	0.32	0.01
						2" Ice	0.62	0.49	0.02
						4" Ice	1.10	0.94	0.07
DC6-48-60-18-8F	B	From Leg	4.00 0.00 0.00	0.000	114.00	No Ice	1.47	1.47	0.03
						1/2" Ice	1.67	1.67	0.05
						1" Ice	1.88	1.88	0.07
						2" Ice	2.33	2.33	0.12
						4" Ice	3.38	3.38	0.25
HPA-65R-BUU-H8 w/	A	From Leg	4.00	0.000	114.00	No Ice	13.81	10.80	0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Mount Pipe			0.00			1/2" Ice	14.54	12.12	0.18
			1.00			1" Ice	15.27	13.17	0.29
						2" Ice	16.76	15.29	0.54
						4" Ice	19.84	19.72	1.22
HPA-65R-BUU-H8 w/ Mount Pipe	B	From Leg	4.00	0.000	114.00	No Ice	13.81	10.80	0.08
			0.00			1/2" Ice	14.54	12.12	0.18
			1.00			1" Ice	15.27	13.17	0.29
						2" Ice	16.76	15.29	0.54
						4" Ice	19.84	19.72	1.22
HPA-65R-BUU-H8 w/ Mount Pipe	C	From Leg	4.00	0.000	114.00	No Ice	13.81	10.80	0.08
			0.00			1/2" Ice	14.54	12.12	0.18
			1.00			1" Ice	15.27	13.17	0.29
						2" Ice	16.76	15.29	0.54
						4" Ice	19.84	19.72	1.22
RRUS 12	A	From Leg	4.00	0.000	114.00	No Ice	3.67	1.49	0.06
			0.00			1/2" Ice	3.93	1.67	0.08
			1.00			1" Ice	4.19	1.87	0.11
						2" Ice	4.75	2.28	0.17
						4" Ice	5.96	3.21	0.34
RRUS 12	B	From Leg	4.00	0.000	114.00	No Ice	3.67	1.49	0.06
			0.00			1/2" Ice	3.93	1.67	0.08
			1.00			1" Ice	4.19	1.87	0.11
						2" Ice	4.75	2.28	0.17
						4" Ice	5.96	3.21	0.34
RRUS 12	C	From Leg	4.00	0.000	114.00	No Ice	3.67	1.49	0.06
			0.00			1/2" Ice	3.93	1.67	0.08
			1.00			1" Ice	4.19	1.87	0.11
						2" Ice	4.75	2.28	0.17
						4" Ice	5.96	3.21	0.34
RRUS A2	A	From Leg	4.00	0.000	114.00	No Ice	2.41	0.53	0.02
			0.00			1/2" Ice	2.62	0.67	0.03
			1.00			1" Ice	2.84	0.81	0.05
						2" Ice	3.30	1.11	0.09
						4" Ice	4.32	1.83	0.20
RRUS A2	B	From Leg	4.00	0.000	114.00	No Ice	2.41	0.53	0.02
			0.00			1/2" Ice	2.62	0.67	0.03
			1.00			1" Ice	2.84	0.81	0.05
						2" Ice	3.30	1.11	0.09
						4" Ice	4.32	1.83	0.20
RRUS A2	C	From Leg	4.00	0.000	114.00	No Ice	2.41	0.53	0.02
			0.00			1/2" Ice	2.62	0.67	0.03
			1.00			1" Ice	2.84	0.81	0.05
						2" Ice	3.30	1.11	0.09
						4" Ice	4.32	1.83	0.20
Platform Mount [LP 303-1]	C	None		0.000	114.00	No Ice	14.66	14.66	1.25
						1/2" Ice	18.87	18.87	1.48
						1" Ice	23.08	23.08	1.71
						2" Ice	31.50	31.50	2.18
						4" Ice	48.34	48.34	3.10
107									

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 Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	130 - 83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-13.80	-0.28	-0.22
			Max. Mx	5	-7.04	-342.93	-0.07
			Max. My	8	-7.04	-0.11	-342.99
			Max. Vy	5	11.51	-342.93	-0.07
			Max. Vx	8	11.51	-0.11	-342.99
			Max. Torque	9			0.32
L2	83 - 43.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-20.18	-0.22	-0.25
			Max. Mx	5	-11.92	-858.63	-0.08
			Max. My	8	-11.92	-0.11	-858.71
			Max. Vy	5	15.14	-858.63	-0.08

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	8	15.14	-0.11	-858.71
			Max. Torque	9			0.32
L3	43.25 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-31.22	-0.13	-0.30
			Max. Mx	5	-20.92	-1682.30	-0.09
			Max. My	8	-20.92	-0.10	-1682.42
			Max. Vy	5	19.62	-1682.30	-0.09
			Max. Vx	8	19.62	-0.10	-1682.42
			Max. Torque	9			0.31

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	21	31.22	-0.00	-4.75
	Max. H_x	11	20.94	19.61	-0.00
	Max. H_z	2	20.94	-0.00	19.61
	Max. M_x	2	1682.23	-0.00	19.61
	Max. M_z	5	1682.30	-19.61	-0.00
	Max. Torsion	9	0.29	9.80	-16.98
	Min. Vert	1	20.94	0.00	0.00
	Min. H_x	5	20.94	-19.61	-0.00
	Min. H_z	8	20.94	-0.00	-19.61
	Min. M_x	8	-1682.42	-0.00	-19.61
	Min. M_z	11	-1682.09	19.61	-0.00
	Min. Torsion	3	-0.29	-9.80	16.98

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	20.94	0.00	0.00	0.09	-0.09	0.00
Dead+Wind 0 deg - No Ice	20.94	0.00	-19.61	-1682.23	-0.10	0.23
Dead+Wind 30 deg - No Ice	20.94	9.80	-16.98	-1456.84	-841.20	0.29
Dead+Wind 60 deg - No Ice	20.94	16.98	-9.80	-841.07	-1456.93	0.27
Dead+Wind 90 deg - No Ice	20.94	19.61	0.00	0.09	-1682.30	0.19
Dead+Wind 120 deg - No Ice	20.94	16.98	9.80	841.26	-1456.93	0.05
Dead+Wind 150 deg - No Ice	20.94	9.80	16.98	1457.03	-841.20	-0.10
Dead+Wind 180 deg - No Ice	20.94	0.00	19.61	1682.42	-0.10	-0.23
Dead+Wind 210 deg - No Ice	20.94	-9.80	16.98	1457.03	841.00	-0.29
Dead+Wind 240 deg - No Ice	20.94	-16.98	9.80	841.26	1456.73	-0.28
Dead+Wind 270 deg - No Ice	20.94	-19.61	0.00	0.09	1682.09	-0.19
Dead+Wind 300 deg - No Ice	20.94	-16.98	-9.80	-841.07	1456.73	-0.05
Dead+Wind 330 deg - No Ice	20.94	-9.80	-16.98	-1456.84	841.00	0.11
Dead+Ice	31.22	0.00	0.00	0.30	-0.13	0.00
Dead+Wind 0 deg+Ice	31.22	0.00	-4.75	-433.20	-0.16	0.01
Dead+Wind 30 deg+Ice	31.22	2.38	-4.12	-375.11	-216.91	0.05
Dead+Wind 60 deg+Ice	31.22	4.12	-2.38	-216.43	-375.58	0.08
Dead+Wind 90 deg+Ice	31.22	4.75	0.00	0.33	-433.66	0.08
Dead+Wind 120 deg+Ice	31.22	4.12	2.38	217.10	-375.58	0.07
Dead+Wind 150 deg+Ice	31.22	2.38	4.12	375.78	-216.91	0.03

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 180 deg+Ice	31.22	0.00	4.75	433.86	-0.16	-0.01
Dead+Wind 210 deg+Ice	31.22	-2.38	4.12	375.78	216.59	-0.05
Dead+Wind 240 deg+Ice	31.22	-4.12	2.38	217.10	375.26	-0.08
Dead+Wind 270 deg+Ice	31.22	-4.75	0.00	0.33	433.33	-0.08
Dead+Wind 300 deg+Ice	31.22	-4.12	-2.38	-216.43	375.26	-0.07
Dead+Wind 330 deg+Ice	31.22	-2.38	-4.12	-375.11	216.59	-0.03
Dead+Wind 0 deg - Service	20.94	0.00	-6.78	-582.69	-0.10	0.08
Dead+Wind 30 deg - Service	20.94	3.39	-5.88	-504.61	-291.47	0.10
Dead+Wind 60 deg - Service	20.94	5.88	-3.39	-291.30	-504.77	0.10
Dead+Wind 90 deg - Service	20.94	6.78	0.00	0.10	-582.84	0.07
Dead+Wind 120 deg - Service	20.94	5.88	3.39	291.49	-504.77	0.02
Dead+Wind 150 deg - Service	20.94	3.39	5.88	504.80	-291.47	-0.04
Dead+Wind 180 deg - Service	20.94	0.00	6.78	582.88	-0.10	-0.08
Dead+Wind 210 deg - Service	20.94	-3.39	5.88	504.80	291.27	-0.10
Dead+Wind 240 deg - Service	20.94	-5.88	3.39	291.49	504.56	-0.10
Dead+Wind 270 deg - Service	20.94	-6.78	0.00	0.10	582.64	-0.07
Dead+Wind 300 deg - Service	20.94	-5.88	-3.39	-291.30	504.56	-0.02
Dead+Wind 330 deg - Service	20.94	-3.39	-5.88	-504.61	291.27	0.04

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-20.94	0.00	0.00	20.94	0.00	0.000%
2	0.00	-20.94	-19.61	-0.00	20.94	19.61	0.000%
3	9.80	-20.94	-16.98	-9.80	20.94	16.98	0.000%
4	16.98	-20.94	-9.80	-16.98	20.94	9.80	0.000%
5	19.61	-20.94	0.00	-19.61	20.94	-0.00	0.000%
6	16.98	-20.94	9.80	-16.98	20.94	-9.80	0.000%
7	9.80	-20.94	16.98	-9.80	20.94	-16.98	0.000%
8	0.00	-20.94	19.61	-0.00	20.94	-19.61	0.000%
9	-9.80	-20.94	16.98	9.80	20.94	-16.98	0.000%
10	-16.98	-20.94	9.80	16.98	20.94	-9.80	0.000%
11	-19.61	-20.94	0.00	19.61	20.94	-0.00	0.000%
12	-16.98	-20.94	-9.80	16.98	20.94	9.80	0.000%
13	-9.80	-20.94	-16.98	9.80	20.94	16.98	0.000%
14	0.00	-31.22	0.00	0.00	31.22	0.00	0.000%
15	0.00	-31.22	-4.75	-0.00	31.22	4.75	0.000%
16	2.38	-31.22	-4.12	-2.38	31.22	4.12	0.000%
17	4.12	-31.22	-2.38	-4.12	31.22	2.38	0.000%
18	4.75	-31.22	0.00	-4.75	31.22	-0.00	0.000%
19	4.12	-31.22	2.38	-4.12	31.22	-2.38	0.000%
20	2.38	-31.22	4.12	-2.38	31.22	-4.12	0.000%
21	0.00	-31.22	4.75	-0.00	31.22	-4.75	0.000%
22	-2.38	-31.22	4.12	2.38	31.22	-4.12	0.000%
23	-4.12	-31.22	2.38	4.12	31.22	-2.38	0.000%
24	-4.75	-31.22	0.00	4.75	31.22	-0.00	0.000%
25	-4.12	-31.22	-2.38	4.12	31.22	2.38	0.000%
26	-2.38	-31.22	-4.12	2.38	31.22	4.12	0.000%
27	0.00	-20.94	-6.78	0.00	20.94	6.78	0.000%
28	3.39	-20.94	-5.88	-3.39	20.94	5.88	0.000%
29	5.88	-20.94	-3.39	-5.88	20.94	3.39	0.000%
30	6.78	-20.94	0.00	-6.78	20.94	0.00	0.000%
31	5.88	-20.94	3.39	-5.88	20.94	-3.39	0.000%
32	3.39	-20.94	5.88	-3.39	20.94	-5.88	0.000%
33	0.00	-20.94	6.78	0.00	20.94	-6.78	0.000%
34	-3.39	-20.94	5.88	3.39	20.94	-5.88	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
35	-5.88	-20.94	3.39	5.88	20.94	-3.39	0.000%
36	-6.78	-20.94	0.00	6.78	20.94	0.00	0.000%
37	-5.88	-20.94	-3.39	5.88	20.94	3.39	0.000%
38	-3.39	-20.94	-5.88	3.39	20.94	5.88	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00026093
3	Yes	5	0.00000001	0.00036351
4	Yes	5	0.00000001	0.00035565
5	Yes	4	0.00000001	0.00023672
6	Yes	5	0.00000001	0.00035980
7	Yes	5	0.00000001	0.00036127
8	Yes	4	0.00000001	0.00026102
9	Yes	5	0.00000001	0.00035518
10	Yes	5	0.00000001	0.00036306
11	Yes	4	0.00000001	0.00023658
12	Yes	5	0.00000001	0.00035879
13	Yes	5	0.00000001	0.00035730
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00017789
16	Yes	4	0.00000001	0.00057181
17	Yes	4	0.00000001	0.00054227
18	Yes	4	0.00000001	0.00018004
19	Yes	4	0.00000001	0.00056745
20	Yes	4	0.00000001	0.00056187
21	Yes	4	0.00000001	0.00017894
22	Yes	4	0.00000001	0.00054350
23	Yes	4	0.00000001	0.00057328
24	Yes	4	0.00000001	0.00017894
25	Yes	4	0.00000001	0.00054709
26	Yes	4	0.00000001	0.00055240
27	Yes	4	0.00000001	0.00005585
28	Yes	4	0.00000001	0.00062656
29	Yes	4	0.00000001	0.00059564
30	Yes	4	0.00000001	0.00005208
31	Yes	4	0.00000001	0.00061195
32	Yes	4	0.00000001	0.00061784
33	Yes	4	0.00000001	0.00005592
34	Yes	4	0.00000001	0.00059380
35	Yes	4	0.00000001	0.00062451
36	Yes	4	0.00000001	0.00005198
37	Yes	4	0.00000001	0.00060715
38	Yes	4	0.00000001	0.00060148

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	130 - 83	28.066	32	1.911	0.002
L2	86.25 - 43.25	12.151	32	1.397	0.001
L3	47.5 - 0	3.531	32	0.699	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
130.00	(2) DB980H90E-M w/ Mount Pipe	32	28.066	1.911	0.002	25363
116.00	TME-RRUS-11	32	22.593	1.772	0.001	9057
114.00	(2) 7770.00 w/ Mount Pipe	32	21.827	1.751	0.001	7925

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	130 - 83	80.852	8	5.507	0.005
L2	86.25 - 43.25	35.037	8	4.029	0.002
L3	47.5 - 0	10.186	8	2.015	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
130.00	(2) DB980H90E-M w/ Mount Pipe	8	80.852	5.507	0.005	8941
116.00	TME-RRUS-11	8	65.101	5.106	0.004	3191
114.00	(2) 7770.00 w/ Mount Pipe	8	62.894	5.045	0.004	2792

Compression Checks

Pole Design Data

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 $\frac{P}{P_a}$
L1	130 - 83 (1)	TP26.06x16x0.25	47.00	0.00	0.0	39.0000	20.217	-7.04	788.47	0.009
L2	83 - 43.25 (2)	TP34.068x24.864x0.313	43.00	0.00	0.0	39.0000	33.051	-11.92	1288.99	0.009
L3	43.25 - 0 (3)	TP42.7x32.533x0.375	47.50	0.00	0.0	39.0000	51.107	-20.92	1993.19	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	130 - 83 (1)	TP26.06x16x0.25	343.02	33.2280	39.0000	0.852	0.00	0.0000	39.0000	0.000
L2	83 - 43.25 (2)	TP34.068x24.864x0.313	858.73	38.8893	39.0000	0.997	0.00	0.0000	39.0000	0.000
L3	43.25 - 0 (3)	TP42.7x32.533x0.375	1682.43	38.2130	39.0000	0.980	0.00	0.0000	39.0000	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	130 - 83 (1)	TP26.06x16x0.25	11.51	0.5692	26.0000	0.044	0.14	0.0066	26.0000	0.000
L2	83 - 43.25 (2)	TP34.068x24.864x0.313	15.14	0.4580	26.0000	0.036	0.13	0.0027	26.0000	0.000
L3	43.25 - 0 (3)	TP42.7x32.533x0.375	19.62	0.3840	26.0000	0.030	0.10	0.0011	26.0000	0.000

Pole Interaction Design Data

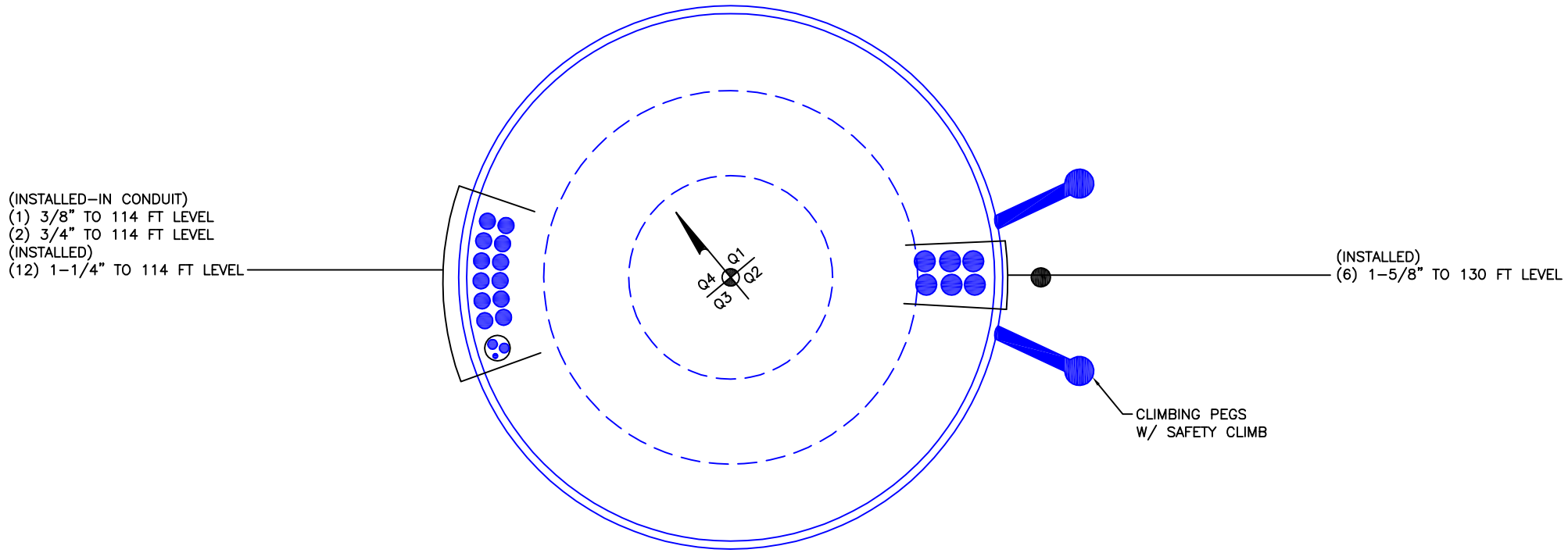
Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	130 - 83 (1)	0.009	0.852	0.000	0.044	0.000	0.861 ✔	1.333	H1-3+VT ✔
L2	83 - 43.25 (2)	0.009	0.997	0.000	0.036	0.000	1.007 ✔	1.333	H1-3+VT ✔
L3	43.25 - 0 (3)	0.010	0.980	0.000	0.030	0.000	0.991 ✔	1.333	H1-3+VT ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	130 - 83	Pole	TP26.06x16x0.25	1	-7.04	1051.02	64.6	Pass
L2	83 - 43.25	Pole	TP34.068x24.864x0.313	2	-11.92	1718.22	75.5	Pass
L3	43.25 - 0	Pole	TP42.7x32.533x0.375	3	-20.92	2656.92	74.3	Pass
							Summary	
						Pole (L2)	75.5	Pass
						RATING =	**75.5**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876359 TOWER ID: C_BASELEVEL

BASE LEVEL DRAWING

SCALE: 1" = 1'–0" | 1

PLOT DATE: 12/3/2015 FILE NAME: 876359_BASELEVEL.DWG

Xref R:\TEMPLATES\TYPICAL BLOCKS FOR TEMPLATES\TITLE BLOCK STD–VER 5.1.dwg

1	18/11/08	APPLICATION ADDED PER WORK ORDER # 241071 KAH
2	14/05/09	APPLICATION ADDED PER WORK ORDER # 272812 NP
3	27/05/09	UPDATED PER WORK ORDER # 274966 RJK
4	26/06/09	AS–BUILT INFORMATION ADDED PER WORK ORDER # 277572 AGC
5	03/10/11	AS–BUILT INFORMATION ADDED PER WORK ORDER # 432186 AK
6	09/08/12	APPLICATION ADDED PER WORK ORDER # 516984 AM
7	03/10/14	UPDATED PER WORK ORDER # 930160 DMB
8	24/11/2014	UPDATED PER WORK ORDER 920586 LRW
9	3/12/2015	UPDATED PER WORK ORDER 1182305 GG

DRAWN BY: **KEYSTONE/DS**
CHECKED BY: **JDC**
DRAWING DATE: **12/12/07**

SITE NUMBER:
SITE NAME:

SITE NAME

NORWICH

BUSINESS UNIT NUMBER

876359

SITE ADDRESS

954 NORWICH ROAD
PLAINFIELD, CT 06062
WINDHAM COUNTY
USA

SHEET TITLE

BASE LEVEL

SHEET NUMBER

A1-0

APPENDIX C

ADDITIONAL CALCULATIONS

Square, Stiffened / Unstiffened Base Plate, Any Rod Material - Rev. F /G

Assumptions: 1) Rod groups at corners. Total # rods divisible by 4. Maximum total # of rods = 48 (12 per Corner).
2) Rod Spacing = Straight Center-to-Center distance between any (2) adjacent rods (same corner)
3) Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#: *876359*
Site Name: *Norwich*
App #: *323122 Rev#1*

Anchor Rod Data		
Qty:	12	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, Fy:	75	ksi
Strength, Fu:	100	ksi
Bolt Circle:	50	in
Anchor Spacing:	6	in

Plate Data		
W=Side:	48	in
Thick:	3	in
Grade:	50	ksi
Clip Distance:	5	in

Stiffener Data (Welding at both sides)		
Configuration:	Unstiffened	
Weld Type:		**
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Diam:	42.7	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	12	"0" IF Round

Stress Increase Factor		
ASD ASIF:	1.333	

Base Reactions		
TIA Revision:	F	
Unfactored Moment, M:	1682	ft-kips
Unfactored Axial, P:	21	kips
Unfactored Shear, V:	20	kips

Anchor Rod Results

TIA F --> Maximum Rod Tension	132.8 Kips
Allowable Tension:	195.0 Kips
Anchor Rod Stress Ratio:	68.1% **Pass**

Base Plate Results — Flexural Check

Base Plate Stress:	33.7 ksi
Allowable PL Bending Stress:	50.0 ksi
Base Plate Stress Ratio:	67.5% **Pass**

PL Ref. Data
Yield Line (in):
25.18
Max PL Length:
25.18

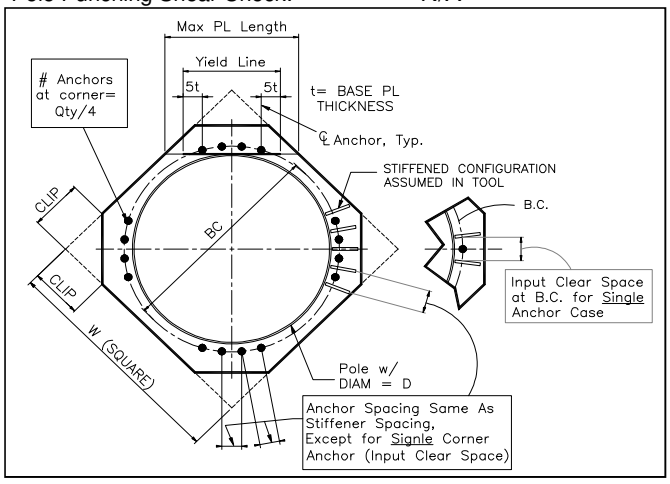
N/A - Unstiffened

Stiffener Results

Horizontal Weld :	N/A
Vertical Weld:	N/A
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	N/A
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	N/A
Plate Comp. (AISC Bracket):	N/A

Pole Results

Pole Punching Shear Check:	N/A



** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Project Name:	NORWICH	JACOBS® Jacobs Engineering Group, Inc.	Created On: 4/29/2014
Project Number:	876359		Checked By: DW
Job Number:	1162323		Revised On:
Date:	12/7/2015		Revision No.: 0

FOUNDATION REACTION COMPARISON

BASE REACTIONS	DESIGN REACTION*	CURRENT REACTION	% CAPACITY
SHEAR (kips)	26	20	76.9%
MOMENT (kips-ft)	2260	1682	74.4%

* Design Reactions obtained from CCIsites Document # 1446983

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

AT&T Existing Facility

Site ID: CTL05458

Plainfield South
954 Norwich Road
Plainfield, CT 06374

January 25, 2016

EBI Project Number: 6216000453

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	5.14 %

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January 25, 2016

AT&T Mobility – New England
Attn: Cameron Syme, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CTL05458 – Plainfield South**

EBI Consulting was directed to analyze the proposed AT&T facility located at **954 Norwich Road, Plainfield, 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 limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands 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 **954 Norwich Road, Plainfield, 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 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

2) 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.

3) 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.

4) 2 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 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.

6) 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.

7) 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.

8) The antennas used in this modeling are the **CCI HPA-65R-BUU-H8 and the Powerwave 7770.00** for transmission in the 700 MHz, 850 MHz and1900 MHz (PCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. 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.

9) The antenna mounting height centerline of the proposed antennas is **115 feet** above ground level (AGL).

10) 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:	CCI OPA-65R-BUU-H8	Make / Model:	CCI OPA-65R-BUU-H8	Make / Model:	CCI OPA-65R-BUU-H8
Gain:	13.15 / 14.95 dBd	Gain:	13.15 / 14.95 dBd	Gain:	13.15 / 14.95 dBd
Height (AGL):	115 feet	Height (AGL):	115 feet	Height (AGL):	115 feet
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	6,229.75	ERP (W):	6,229.75	ERP (W):	6,229.75
Antenna A1 MPE%	**2.74**	Antenna B1 MPE%	**2.74**	Antenna C1 MPE%	**2.74**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00
Gain:	13.4 / 11.4 dBd	Gain:	13.4 / 11.4 dBd	Gain:	13.4 / 11.4 dBd
Height (AGL):	115 feet	Height (AGL):	115 feet	Height (AGL):	115 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(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A2 MPE%	**0.84**	Antenna B2 MPE%	**0.84**	Antenna C2 MPE%	**0.84**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00
Gain:	13.4 dBd	Gain:	13.4 dBd	Gain:	13.4 dBd
Height (AGL):	115 feet	Height (AGL):	115 feet	Height (AGL):	115 feet
Frequency Bands	1900 MHz (PCS)	Frequency Bands	1900 MHz (PCS)	Frequency Bands	1900 MHz (PCS)
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	60	Total TX Power(W):	60	Total TX Power(W):	60
ERP (W):	1,312.66	ERP (W):	1,312.66	ERP (W):	1,312.66
Antenna A3 MPE%	**0.42**	Antenna B3 MPE%	**0.42**	Antenna C3 MPE%	**0.42**

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max per sector	**3.98 %**
MetroPCS	0.48 %
Sprint	0.68 %
Site Total MPE %:	**5.14 %**

AT&T Sector 1 Total:	3.98 %
AT&T Sector 2 Total:	3.98 %
AT&T Sector 3 Total:	3.98 %
Site Total:	5.14 %

AT&T _ Per Sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 700 MHz LTE	2	1239.23	115	7.50	700	467	1.61 %
AT&T 1900 MHz (PCS) LTE	2	1875.65	115	11.35	1900	1000	1.14 %
AT&T 850 MHz UMTS	2	414.12	115	2.51	850	567	0.44 %
AT&T 1900 MHz (PCS) UMTS	2	656.33	115	3.97	1900	1000	0.40 %
AT&T 1900 MHz (PCS) GSM	2	414.12	115	3.97	850	567	0.40 %
						Total:	3.98 %

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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:	3.98 %
Sector 2:	3.98 %
Sector 3 :	3.98 %
AT&T Maximum Total (per sector):	3.98 %
Site Total:	5.14 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **5.14%** 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.

Scott Heffernan
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