Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, August 8, 2018 11:18 AM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030200414505

Your package has been delivered.

Delivery Date: Wednesday, 08/08/2018
Delivery Time: 11:12 AM

At the request of Centerline Communications, LLC this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030200414505
Ship To:	City of Waterbury Mayor Neil M. O'Leary 235 GRAND ST FLOOR 3 WATERBURY, CT 06702 US
UPS Service:	UPS 2ND DAY AIR
Number of Packages:	1
Shipment Type:	Letter
Delivery Location:	OFFICE PATRICA
Reference Number 1:	CT1005 - CSC to Mayor

 Download the UPS mobile app

UPS Privacy Notice

Help and Support Center

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, August 15, 2018 11:13 AM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030203317516

Your package has been delivered.

Delivery Date: Wednesday, 08/15/2018
Delivery Time: 11:06 AM

At the request of Centerline Communications, LLC this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030203317516
Ship To:	City of Waterbury James A. Sequin, City Planner 185 S MAIN ST WATERBURY, CT 06706 US
UPS Service:	UPS 2ND DAY AIR
Number of Packages:	1
Shipment Type:	Letter
Delivery Location:	RECEIVER DEBONA
Reference Number 1:	CT1005 - CSC to Planner

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, August 15, 2018 11:13 AM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030206822527

Your package has been delivered.

Delivery Date: Wednesday, 08/15/2018
Delivery Time: 11:06 AM

At the request of Centerline Communications, LLC this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030206822527
Ship To:	City of Waterbury Charles Morrison, Land Use Officer 185 S MAIN ST WATERBURY, CT 06706 US
UPS Service:	UPS 2ND DAY AIR
Number of Packages:	1
Shipment Type:	Letter
Delivery Location:	RECEIVER DEBONA
Reference Number 1:	CT1005 - CSC to Land Use

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, August 8, 2018 12:04 PM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030227399867

Your package has been delivered.

Delivery Date: Wednesday, 08/08/2018
Delivery Time: 12:01 PM

At the request of Centerline Communications, LLC this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030227399867
Ship To:	Ryan Tierney American Tower Corporation 10 PRESIDENTIAL WAY WOBURN, MA 01801 US
UPS Service:	UPS 2ND DAY AIR
Number of Packages:	1
Shipment Type:	Letter
Delivery Location:	OFFICE ANCRI
Reference Number 1:	CT1005 - CSC to ATC

August 7, 2018

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

Regarding: Notice of Exempt Modification – AT&T Site CT1005/FA# 10034976
Address: Farmdale Drive, Waterbury, CT 06704

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains a wireless telecommunications facility on an existing 150-guyed monopole at the above-referenced address, latitude 41.5706589, longitude -73.0175819. Said guyed-monopole is operated by American Tower Corporation.

AT&T desires to modify its existing telecommunications facility by adding three (3) antennas, adding six (6) remote radio heads and adding one (1) surge arrestor and accompanying feedlines. The centerline height of the existing antennas is and will remain at 154 feet.

Please accept this letter as notification pursuant to R.C.S.A §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.C.S.A. § 16-50j-73, a copy of this letter is being sent to Neil M. O'Leary, Mayor of the City of Waterbury, James A. Sequin, Planner of the City of Waterbury, Charles Morrison of the City of Waterbury and American Tower Corporation as tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2). Specifically:

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

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

3. The proposed modifications 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 modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. *Please see the RF emissions calculation for AT&T's modified facility enclosed herewith.*

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

6. The existing structure and its foundation can support the proposed loading. *Please see the structural analysis dated July 31, 2018 by Dewberry Engineers, Inc. enclosed herewith.*

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Jennifer Iliades
Site Acquisition Consultant
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
jiliades@clinellc.com

Enclosures: Exhibit 1 – Field Card and GIS Map
Exhibit 2 – Construction Drawings
Exhibit 3 – Structural Analysis
Exhibit 4 – RF Emissions Analysis Report Evaluation
Exhibit 5 – Mount Analysis and Correspondence

cc: Neil M. O'Leary, Mayor, City of Waterbury
James A. Sequin, City Planner, City of Waterbury
Charles Morrison, Land Use Officer, City of Waterbury
American Tower Corporation, Tower Operator

EXHIBIT 1

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2017.

CITY OF WATERBURY

Information on the Property Records for the Municipality of Waterbury was last updated on 7/31/2018.

Parcel Information

Location:	FARMDALE DR	Property Use:	Vacant Land	Primary Use:	Res Vac Land (5-1)
Unique ID:	016705590024	Map Block Lot:	0167-0559-0024	Acres:	4.75
490 Acres:	0.00	Zone:	RL	Volume / Page:	5156/ 333
Developers Map / Lot:		Census:			

Value Information

	Appraised Value	Assessed Value
Land	321,578	225,100
Buildings	0	0
Detached Outbuildings	0	0
Total	321,578	225,100

Owner's Information

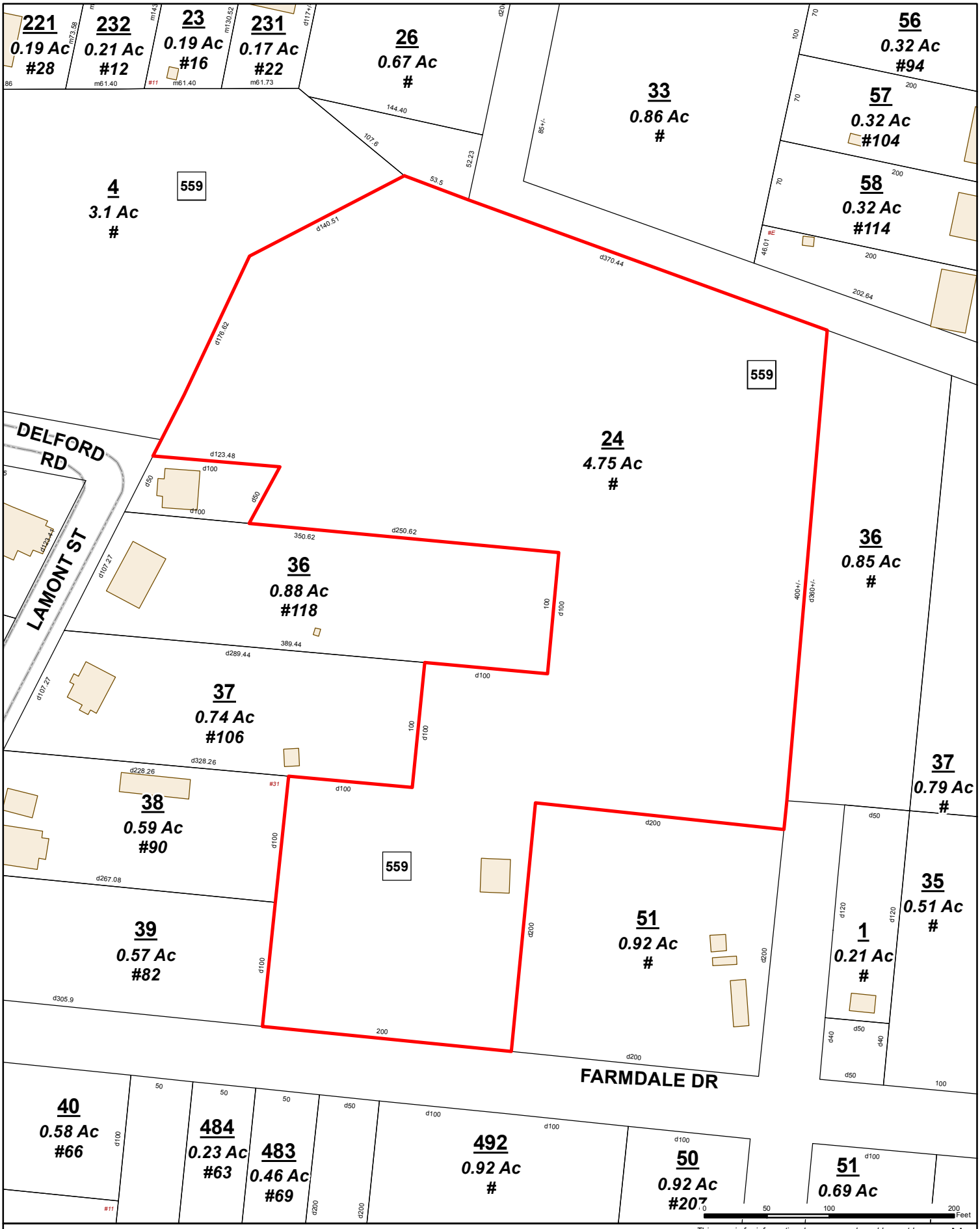
Owner's Data
SPRINGWICH CELLULAR TOWER HOLDINGS LLC C/O AT&T MOBILITY LLC 909 CHESTNUT, RM 36-M-1 ST LOUIS, MO 63101

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
SPRINGWICH CELLULAR TOWER HOLDINGS LLC	5156	0333	10/29/2004	Quit Claim	No	$0
SOUTHERN NEW ENGLAND TELEPHONE COMPANY	1710	0182	08/23/1984		No	$20,000

Building Permits

Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
2016.1522	Comm Renovations	05/26/2016		Closed	ATT MOBILITY CELL SITE, REPLACE ANTENNAS AND 3 REMOTE RADIO UNITS
2015.2331	Comm Renovations	08/26/2015		Closed	V-7, ADD 3 NEW ANTENNAS & 3 RRU'S, 1 FIBER CABLE, 2DC CABLES IN POLE
2015.0950	Comm Renovations	04/28/2015		Closed	CHANGE 3 ANTENNAS
2014.1587	Commercial Addition	06/20/2014		Closed	ADDING TOWER / ANTENNAES EQUIPMENT MODIFICATION
2014.0177	Comm Renovations	01/29/2014		Closed	INSTALL HYBRID CABLEREPLACE 6 ANTENNAS
2013.2198	Comm Renovations	08/09/2013		Closed	INSTALL GENERATOR - COMMUNICATIONS CELL SITE



City of Waterbury
Public Works Department

MBL: **0167-0559-0024**
ADDRESS: FARMDALE DR

This map is for informational purposes only and has not been prepared for, or suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to verify the usability of the information. The City of Waterbury makes no warranties, express or implied, as to the use of the information obtained herein.

EXHIBIT 2

PROJECT INFORMATION

SCOPE OF WORK:	TOWER – INSTALL (2) 8' OCTOPORT ANTENNAS FOR ALPHA/GAMMA AND (1) 6' OCTOPORT FOR BETA IN POSITION 3 FOR EACH SECTOR. INSTALL (3) RRUS 32 B66 (AWS) RADIOS TO EXISTING INSTALL (3) B14 4478 RADIOS. INSTALL (1) DC6 SQUID WITH (2) DC TRUNKS AND (1) ALARM CABLE. GROUND – SWAP (2) DUS WITH (2) 5216 & ILD2 WITH IDLe CABLE. INSTALL (3) 30 AMP BREAKERS IN EXISTING POWER PLANT.
SITE ADDRESS:	FARMDALE DRIVE WATERBURY, CT 06704
LATITUDE:	41° 34' 14.4" N (NAD 83)*
LONGITUDE:	73° 01' 3.3" W (NAD 83)* *PER EXISTING AT&T PLANS
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
TOWER TYPE:	155' GUYED TOWER
AT&T RAD CENTER:	153'
NAME OF APPLICANT:	AT&T MOBILITY 550 COCHITUATE ROAD SUITES 13 & 14 FRAMINGHAM, MA 01701
TOWER OWNER:	AMERICAN TOWER 302476
SITE NAME:	WTBR– WATERBURY

DRAWING INDEX

		REV
T01	TITLE SHEET	0
G01	GENERAL NOTES	0
C01	PROPOSED SITE PLAN & SHELTER PLAN	0
C02	PROPOSED ELEVATION & CONSTRUCTION DETAILS	0
C03	EQUIPMENT PLUMBING DIAGRAM	0
E01	GROUNDING DETAILS	0

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE & ITS SITE CONDITIONS & IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

STRUCTURAL NOTE:

1. AS REQUIRED UNDER TIA/EIA 222G – STANDARD, CENTERLINE COMMUNICATIONS SHALL PROVIDE A STRUCTURAL ANALYSIS OF THE TOWER PREPARED BY A LICENSED CONNECTICUT STRUCTURAL ENGINEER CERTIFYING THAT, THE EXISTING TOWER & ANY REQUIRED IMPROVEMENTS & REINFORCEMENTS HAVE SUFFICIENT CAPACITY TO SUPPORT ALL EXISTING & PROPOSED ANTENNAS, SUPPORTS & APPURTENANCES & COMPLIES WITH THE CURRENT CONNECTICUT STATE BUILDING CODE & EIA/TIA CRITERIA. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY IMPROVEMENTS & REINFORCEMENTS REQUIRED BY THE STRUCTURAL ANALYSIS CERTIFICATION ARE PROPERLY INSTALLED PRIOR TO THE ADDITION OF ANTENNAS, SUPPORTS & APPURTENANCES PROPOSED ON THESE DRAWINGS OR OTHERWISE NOTED IN THE STRUCTURAL ANALYSIS.

CONTACT INFORMATION

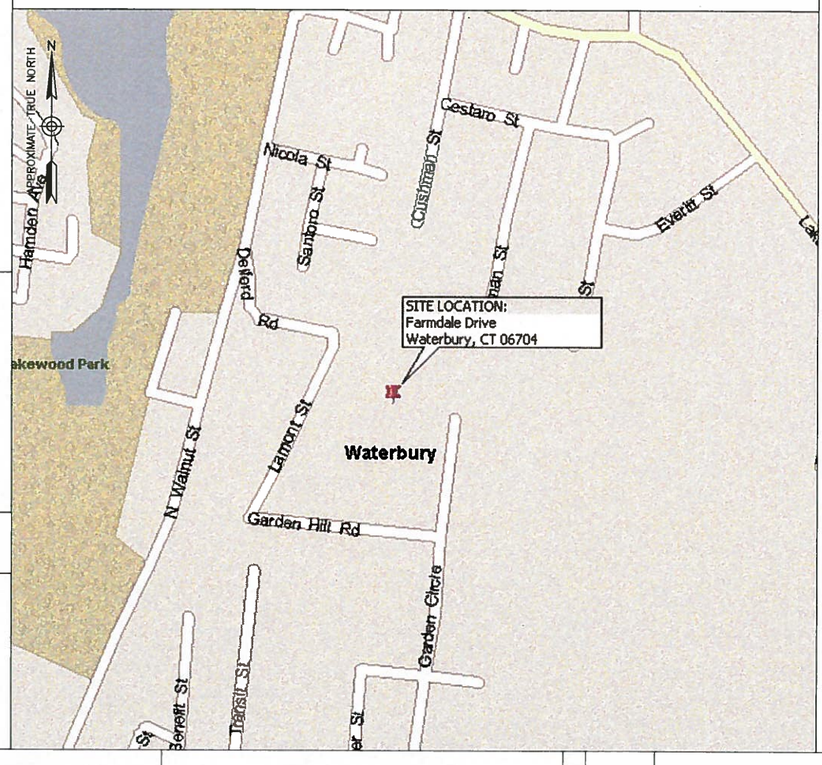
CONTACT	CONTACT	COMPANY	PHONE NO.
ENGINEERING:	BENJAMIN REVETTE, P.E.	DEWBERRY ENGINEERS INC.	(617) 531–0800
SAC:	MEREDITH PAYNTER	CENTERLINE COMMUNICATIONS	(508) 673–9116

at&t Mobility

SITE NAME: WOLCOTT WEST 6C/7C
SITE NUMBER: CT1005
PACE NO:. MRCTB022537 (6C) / MRCTB026722 (7C)

VICINITY MAP

DIRECTIONS: TAKE I–90 W. TAKE EXIT 9 FOR I–84 TOWARD US–20/HARTFORD/NEW YORK CITY. TAKE EXIT 22. CONTINUE ONTO BRASS MILL DR. CONTINUE STRAIGHT ONTO WELTON ST. TURN RIGHT ONTO WALNUT ST. TURN LEFT ONTO LONG HILL RD. TURN RIGHT TO STAY ON LONG HILL RD. TURN LEFT ONTO WARNER ST. TURN RIGHT ONTO GARDEN CIR. THE SITE WILL BE ON THE END OF THE ROAD.



APPLICABLE BUILDING CODES & STANDARDS

CONTRACTOR'S WORK SHALL COMPLY WITH PROJECT STANDARD NOTES, SYMBOLS & DETAILS (SEE DRAWING INDEX FOR STANDARD NOTES & DETAILS INCLUDED WITH TYPICAL DRAWING PACKAGE). CONTRACTOR WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, & LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES & STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE:
INTERNATIONAL BUILDING CODE (IBC)

ELECTRICAL CODE:
NATIONAL ELECTRICAL CODE (NEC)

CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS.
AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222–G, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER & ANTENNA SUPPORTING STRUCTURES:
TIA 607, COMMERCIAL BUILDING GROUNDING & BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, & EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING & GROUNDING OF ELECTRONIC EQUIPMENT

IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" & "HIGH SYSTEM EXPOSURE")

TELCORDIA GR–1503, COAXIAL CABLE CONNECTIONS

ANSI T1.311, FOR TELECOM – DC POWER SYSTEMS – TELECOM, ENVIRONMENTAL PROTECTION

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES & STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT & A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

Dewberry®
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.895.3400
FAX: 617.895.3310

CENTERLINE COMMUNICATIONS
95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767

at&t Mobility
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

WOLCOTT WEST 6C/7C
SITE NO. CT1005

FARMDALE DRIVE
WATERBURY, CT 06704

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	07/31/18	ISSUED FOR CONSTRUCTION	JIM	KB	DAS
B	03/05/18	ISSUED FOR REVIEW	JIM	KB	DAS
A	01/19/18	ISSUED FOR REVIEW	JIM	KB	DAS

SCALE: AS SHOWN | DESIGNED BY: KB | DRAWN BY: JG

STATE OF CONNECTICUT
BENJAMIN B. REVETTE
28971
LICENSED PROFESSIONAL ENGINEER

AT&T MOBILITY
FRAMINGHAM, MA 01701

TITLE SHEET

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50093724	T01	0

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   PROJECT MANAGEMENT – CENTERLINE COMMUNICATIONS
   CONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY
   OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS & TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF PROJECT MANAGEMENT.
3. ALL MATERIALS FURNISHED & INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, & ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES & COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, & LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL & UTILITY COMPANY SPECIFICATIONS & LOCAL JURISDICTIONAL CODES, ORDINANCES & APPLICABLE REGULATIONS.
5. DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED & ARE INTENDED TO SHOW OUTLINE ONLY.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, & LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT & MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY PROJECT MANAGEMENT.
9. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER & T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING & TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH PROJECT MANAGEMENT.
10. THE CONTRACTOR SHALL PROTECT EXISTING & PROPOSED IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING & STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
11. CONTRACTOR SHALL LEGALLY & PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES & OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. THE CONTRACTOR SHALL SUPERVISE & DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, & PROCEDURES & FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
14. CONTRACTOR SHALL NOTIFY DEWBERRY 48 HOURS IN ADVANCE OF POURING CONCRETE, OR BACKFILLING TRENCHES, SEALING ROOF & WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEER REVIEW.
15. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS & CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY PROJECT MANAGEMENT OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
16. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
17. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS & RECOMMENDATIONS & SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE & PPM & CONSTRUCTION DEVICES SUCH AS WELDING & FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.

SITE WORK GENERAL NOTES:

1. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, & OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, & WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO:
   A) FALL PROTECTION
   B) CONFINED SPACE
   C) ELECTRICAL SAFETY
   D) TRENCHING & EXCAVATION.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS & PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL & OTHER REFUSE SHALL BE REMOVED FROM THE SITE & DISPOSED OF LEGALLY.
5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC & OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
6. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE AT&T SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT & TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED & BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE SOIL COMPACTION NOTES.
11. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK & NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, & STABILIZED TO PREVENT EROSION.
12. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION & SEDIMENT CONTROL.

CONCRETE & REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 & THE DESIGN & CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000 PSI) MAY BE USED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE (UNO). SPLICES SHALL BE CLASS "B" & ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 & LARGER .....2 IN.
   #5 & SMALLER & WWF .....1 1/2 IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB & WALL .....3/4 IN.
   BEAMS & COLUMNS .....1 1/2 IN.
5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
7. CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
   (A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT,
   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
   FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
8. AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY & THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION & BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES & WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
3. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE 3/4"Ø CONNECTIONS & SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
7. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION & TOPSOIL EXPOSE UNDISTURBED NATURAL SUBGRADE & PLACE CRUSHED STONE AS REQUIRED.
2. COMPACTION CERTIFICATION: AN INSPECTION & WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
3. AS AN ALTERNATIVE TO INSPECTION & WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
4. COMPACTED SUBBASE SHALL BE UNIFORM & LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING 1" SIEVE.
5. AS AN ALTERNATIVE TO ITEMS 2 & 3 PROOFROLL THE SUBGRADE SOILS WITH 5 PASSES OF A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). ANY SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED & REPLACED WITH A WELL-GRADED GRANULAR FILL, & COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
   CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, AT&T ANTENNA PLATFORM LOCATION & ANTENNAS TO BE REPLACED.
2. COORDINATION OF WORK:
   CONTRACTOR SHALL COORDINATE RF WORK & PROCEDURES WITH PROJECT MANAGEMENT.
3. CABLE LADDER RACK:
   CONTRACTOR SHALL FURNISH & INSTALL CABLE LADDER RACK, CABLE TRAY, & CONDUIT AS REQUIRED TO SUPPORT CABLES TO ANY NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC & ALL APPLICABLE LOCAL CODES.
2. CONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF & TRANSPORT CABLING TO NEW BTS EQUIPMENT. CONTRACTOR SHALL SUBMIT MODIFICATIONS TO PROJECT MANAGEMENT FOR APPROVAL.
3. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
4. WIRING, RACEWAY & SUPPORT METHODS & MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC & TELCORDIA.
5. ALL CIRCUITS SHALL BE SEGREGATED & MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC & TELCORDIA.
6. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
7. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, & T1 CONDUCTOR & CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, & MATCH EXISTING INSTALLATION REQUIREMENTS.
8. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, & BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD & CIRCUIT ID'S).
9. PANELBOARDS (ID NUMBERS) & INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
10. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
11. POWER, CONTROL, & EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET & DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION & RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
12. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL.) PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA & MATCH EXISTING INSTALLATION REQUIREMENTS.
13. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET & DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION & RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
14. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
15. POWER & CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET & DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
16. ALL POWER & POWER GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS & WIRENUTS BY THOMAS & BETTS (OR EQUAL). LUGS & WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
17. RACEWAY & CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, & NEC.
18. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
19. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
20. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
21. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
22. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
23. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS & OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
24. CONDUIT & TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE & APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
25. CABINETS, BOXES, & WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, & NEC.
26. CABINETS, BOXES, & WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
27. WIREWAYS SHALL BE EPOXY-COATED (GRAY) & INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); & RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
28. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, & PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, & RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
29. METAL RECEPTACLE, SWITCH, & DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A & NEMA OS 1; & RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
30. NONMETALLIC RECEPTACLE, SWITCH, & DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; & RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
31. THE CONTRACTOR SHALL NOTIFY & OBTAIN NECESSARY AUTHORIZATION FROM PROJECT MANAGEMENT BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
32. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES & DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES & STANDARDS TO SAFEGUARD AGAINST LIFE & PROPERTY.

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FRAMINGHAM, MA 01701

WOLCOTT WEST 6C/7C
SITE NO. CT1005

FARMDALE DRIVE
WATERBURY, CT 06704

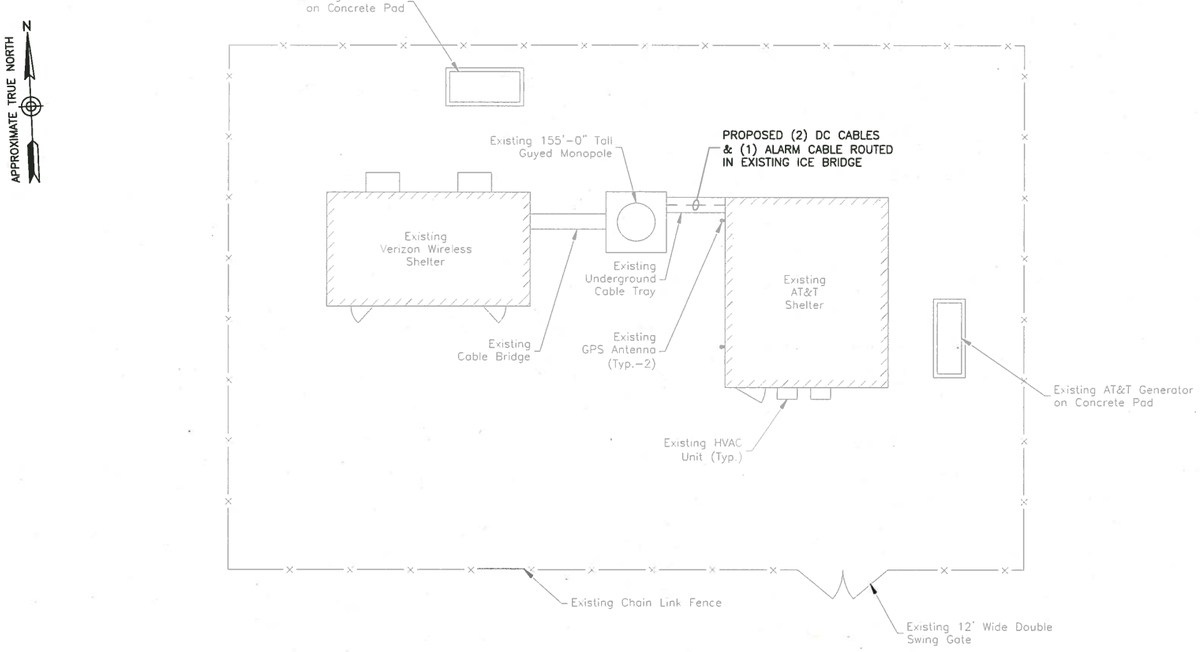
NO.	DATE	REVISIONS	BY	CHK	APP'D
0	07/31/18	ISSUED FOR CONSTRUCTION	JIM	KB	DAS
B	03/05/18	ISSUED FOR REVIEW	JIM	KB	DAS
A	01/19/18	ISSUED FOR REVIEW	JIM	KB	DAS

SCALE: AS SHOWN | DESIGNED BY: KB | DRAWN BY: JG

AT&T MOBILITY
FRAMINGHAM, MA 01701

GENERAL NOTES

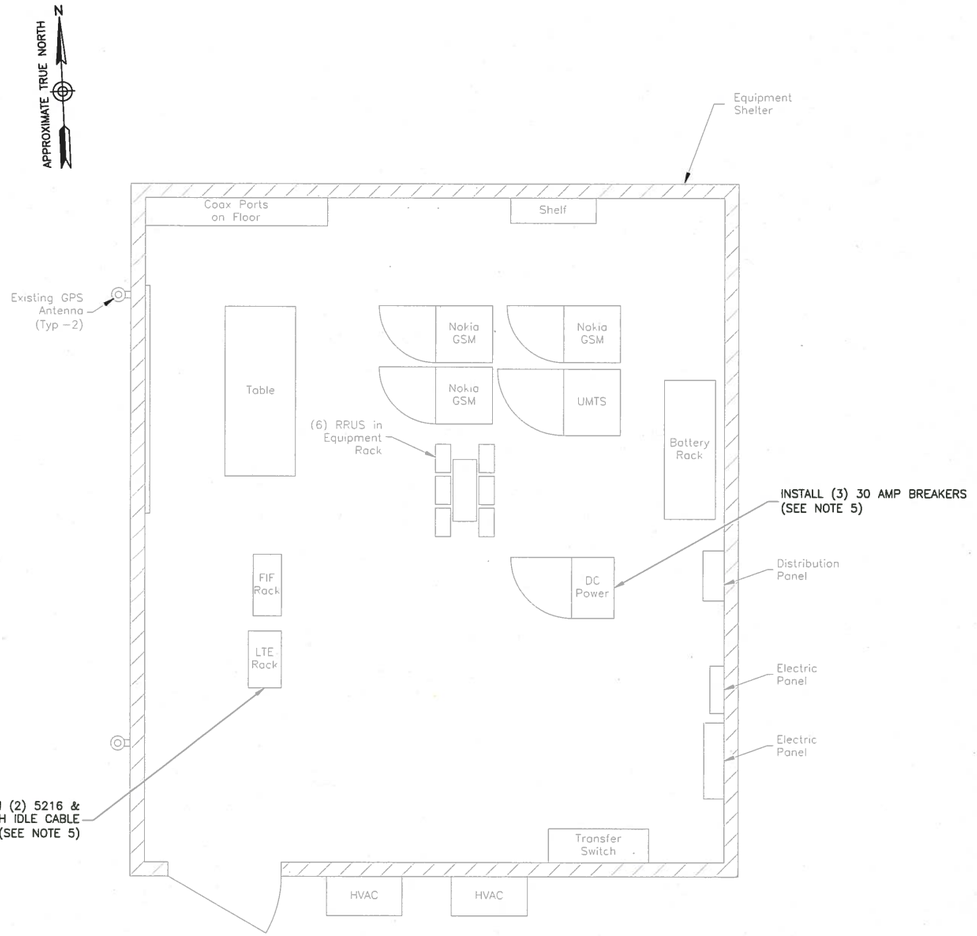
DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50093724	G01	0



SITE PLAN 1

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

0' 10' 20'



SHELTER LAYOUT DETAIL 2

SCALE: 3/16"=1' FOR 11"x17"
3/8"=1' FOR 22"x34"

0' 2' 4' 6'

NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS & MOUNT ASSESSMENT LETTER BY DEWBERRY ENGINEERS INC. DATED 06-26-18. THE EXISTING MOUNT IS TO BE REPLACED SINCE THE EXISTING MOUNTING FACE IS NOT LARGE ENOUGH TO ACCOMMODATE THE REQUIRED AT&T SPACING BETWEEN ANTENNAS.
3. DEWBERRY WAS NOT PROVIDED WITH OR CONTRACTED TO PERFORM A STRUCTURAL ANALYSIS ON THIS TOWER. TOWER RELATED IMPROVEMENTS ARE NOT TO BE INSTALLED WITHOUT A PASSING STRUCTURAL ANALYSIS. SEE STRUCTURAL NOTE ON SHEET T01.
4. NOT ALL INFORMATION SHOWN FOR CLARITY.
5. EQUIPMENT MODIFICATION SCOPE:

TOWER – INSTALL (2) 8' OCTOPORT ANTENNAS FOR ALPHA/GAMMA AND (1) 6' OCTOPORT FOR BETA IN POSITION 3 FOR EACH SECTOR. INSTALL (3) RRUS 32 B66 (AWS) RADIOS TO EXISTING 12PORT ANTENNA. INSTALL (1) DC6 SQUID WITH (2) DC TRUNKS AND (1) ALARM CABLE.

GROUND – SWAP (2) DUS WITH (2) 5216 & ILD2 WITH IDLe CABLE. INSTALL (3) 30 AMP BREAKERS IN EXISTING POWER PLANT.

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SCALE: AS SHOWN | DESIGNED BY: KB | DRAWN BY: JG

STATE OF CONNECTICUT
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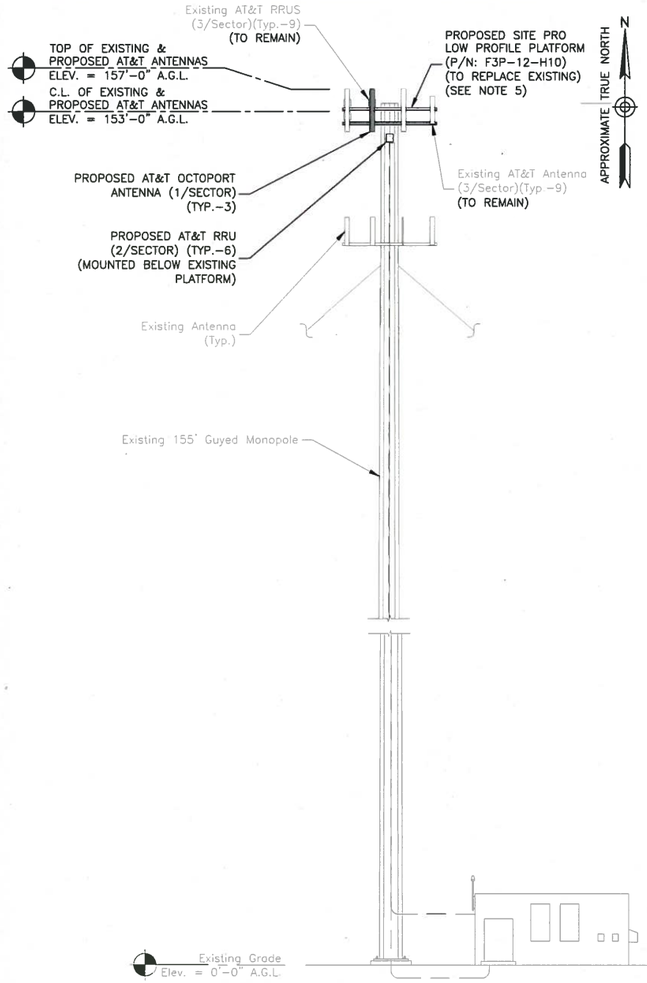
AT&T MOBILITY
FRAMINGHAM, MA 01701

PROPOSED SITE PLAN & SHELTER PLAN

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50093724	C01	0



PROPOSED ELEVATION 1

SCALE: 3/64"=1' FOR 11"x17"
3/32"=1' FOR 22"x34"

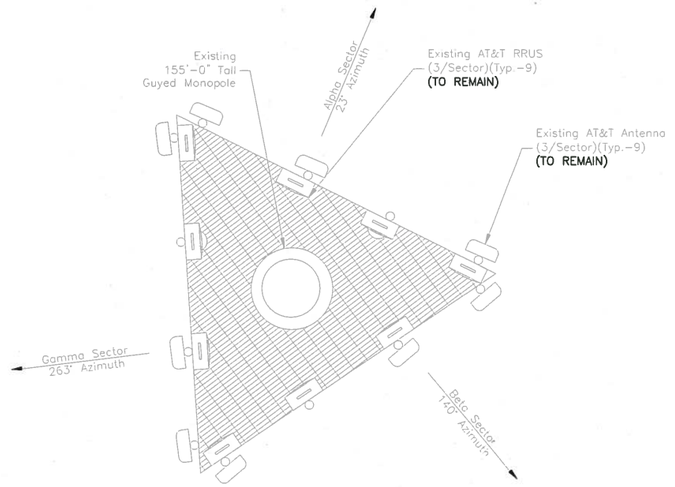
0' 8' 16' 24'

NOTES:

1. ELEVATION SHOWN AS APPROXIMATE.
2. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS & MOUNT ASSESSMENT LETTER BY DEWBERRY ENGINEERS INC. DATED 06-26-18. THE EXISTING MOUNT IS TO BE REPLACED TO ACCOMMODATE THE REQUIRED AT&T SPACING BETWEEN ANTENNAS.
3. DEWBERRY WAS NOT PROVIDED WITH OR CONTRACTED TO PERFORM A STRUCTURAL ANALYSIS ON THIS TOWER. TOWER RELATED IMPROVEMENTS ARE NOT TO BE INSTALLED WITHOUT A PASSING STRUCTURAL ANALYSIS. SEE STRUCTURAL NOTE ON SHEET T01.
4. NOT ALL INFORMATION SHOWN FOR CLARITY.
5. EQUIPMENT MODIFICATION SCOPE:

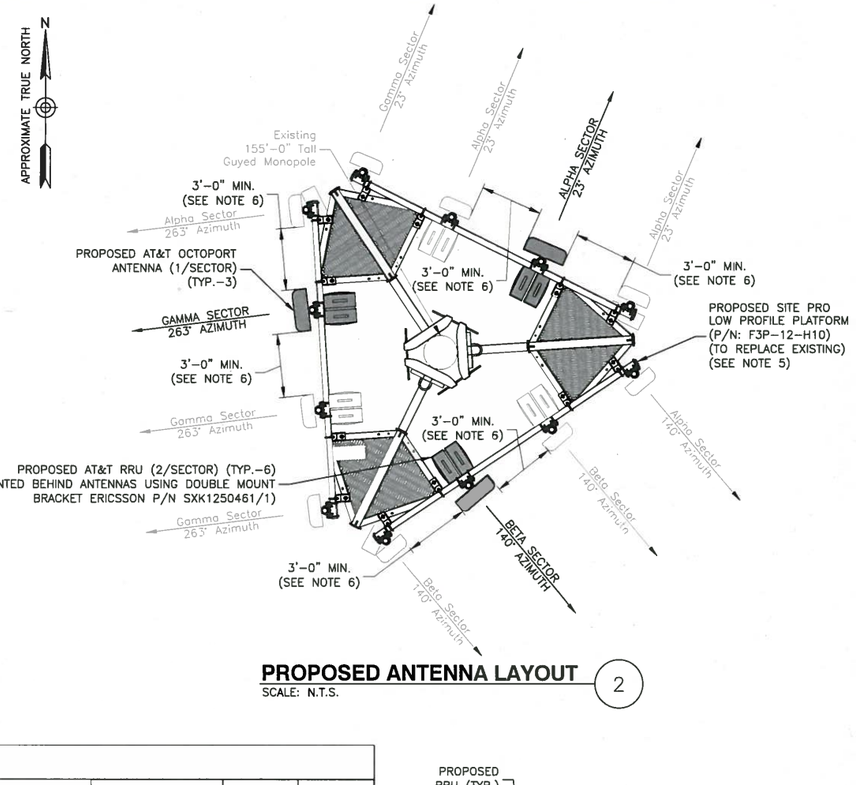
TOWER – INSTALL (2) 8' OCTOPORT ANTENNAS FOR ALPHA/GAMMA AND (1) 6' OCTOPORT FOR BETA IN POSITION 3 FOR EACH SECTOR. INSTALL (3) RRUS 32 B66 (AWS) RADIOS TO EXISTING 12PORT ANTENNA. INSTALL (1) DC6 SQUID WITH (2) DC TRUNKS AND (1) ALARM CABLE.

GROUND – SWAP (2) DUS WITH (2) 5216 & ILD2 WITH IDLe CABLE. INSTALL (3) 30 AMP BREAKERS IN EXISTING POWER PLANT.



PROPOSED ANTENNA LAYOUT 2

SCALE: N.T.S.



PROPOSED ANTENNA LAYOUT 2

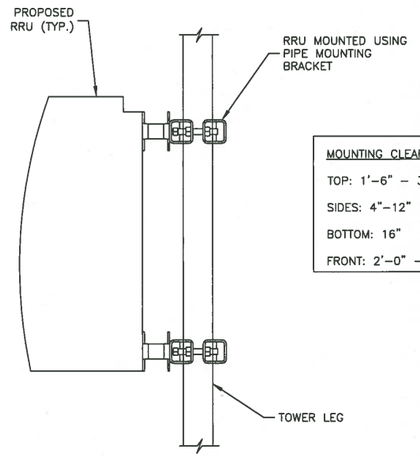
SCALE: N.T.S.

FINAL EQUIPMENT CONFIGURATION

SECTOR	BAND	ANTENNA	SIZE (INCHES) (LxWxD)	RAD. CENTER	AZIMUTH	TMA	RRU	SIZE (INCHES) (LxWxD)	COAX JUMPERS	FIBER JUMPERS
ALPHA	UMTS 850	(E) POWERWAVE 7770	55.0x11.0x5.0	153'-0"	140°	(E) DTMABP7819VG2A	–	–	(E) 2	–
	LTE WCS/850/700DE	(E) OPA-65R-LCUU-H8	92.7x14.4x7.0	153'-0"	23°	–	(E) RRUS-32 WCS	27.2 x 12.1 x 7.0	(E) 2	(P) 1
	LTE 700 B14/AWS	(P) 800-10966	96.0x20.0x6.9	153'-0"	23°	–	(P) RRUS-32 B66 (P) B14-4478	27.2 x 12.1 x 7.0 19.7 x 17.0 x 7.2	–	–
	LTE 700 BC/PCS	(E) TPA-65R-LCUUUU-H8	72.0x14.8x9.0	153'-0"	23°	–	(E) RRUS-11 (E) RRUS 32 PCS	19.7 x 17.0 x 7.2 27.2 x 12.1 x 7.0	–	–
BETA	UMTS 850	(E) 800-10121	54.5x10.3x5.9	153'-0"	263°	(E) DTMABP7819VG2A	–	–	(E) 2	–
	LTE WCS/850/700DE	(E) OPA-65R-LCUU-H8	92.7x14.4x7.0	153'-0"	140°	–	(E) RRUS-32 WCS	27.2 x 12.1 x 7.0	(E) 2	(P) 1
	LTE 700 B14/AWS	(P) 800-10965	78.7x20.0x6.9	153'-0"	140°	–	(P) RRUS-32 B66 (P) B14-4478	27.2 x 12.1 x 7.0 19.7 x 17.0 x 7.2	–	–
	LTE 700 BC/PCS	(E) QS66512-2	72.0x12.0x9.6	153'-0"	140°	–	(E) RRUS-11 (E) RRUS 32 PCS	19.7 x 17.0 x 7.2 27.2 x 12.1 x 7.0	–	–
GAMMA	UMTS 850	(E) 800-10121	54.5x10.3x5.9	153'-0"	23°	(E) DTMABP7819VG2A	–	–	(E) 2	–
	LTE WCS/850/700DE	(E) OPA-65R-LCUU-H8	92.7x14.4x7.0	153'-0"	263°	–	(E) RRUS-32 WCS	27.2 x 12.1 x 7.0	(E) 2	(P) 1
	LTE 700 B14/AWS	(P) 800-10966	96.0x20.0x6.9	153'-0"	263°	–	(P) RRUS-32 B66 (P) B14-4478	27.2 x 12.1 x 7.0 19.7 x 17.0 x 7.2	–	–
	LTE 700 BC/PCS	(E) TPA-65R-LCUUUU-H8	72.0x14.8x9.0	153'-0"	263°	–	(E) RRUS-11 (E) RRUS 32 PCS	19.7 x 17.0 x 7.2 27.2 x 12.1 x 7.0	–	–

FINAL EQUIPMENT CONFIGURATION 3

SCALE: N.T.S.



REMOTE ATTACHMENT DETAIL 4

SCALE: N.T.S.

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WOLCOTT WEST 6C/7C
SITE NO. CT1005

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WATERBURY, CT 06704

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SCALE: AS SHOWN | DESIGNED BY: KB | DRAWN BY: JG

STATE OF CONNECTICUT
BENJAMIN B. REVETTE
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PROFESSIONAL ENGINEER

AT&T MOBILITY
FRAMINGHAM, MA 01701

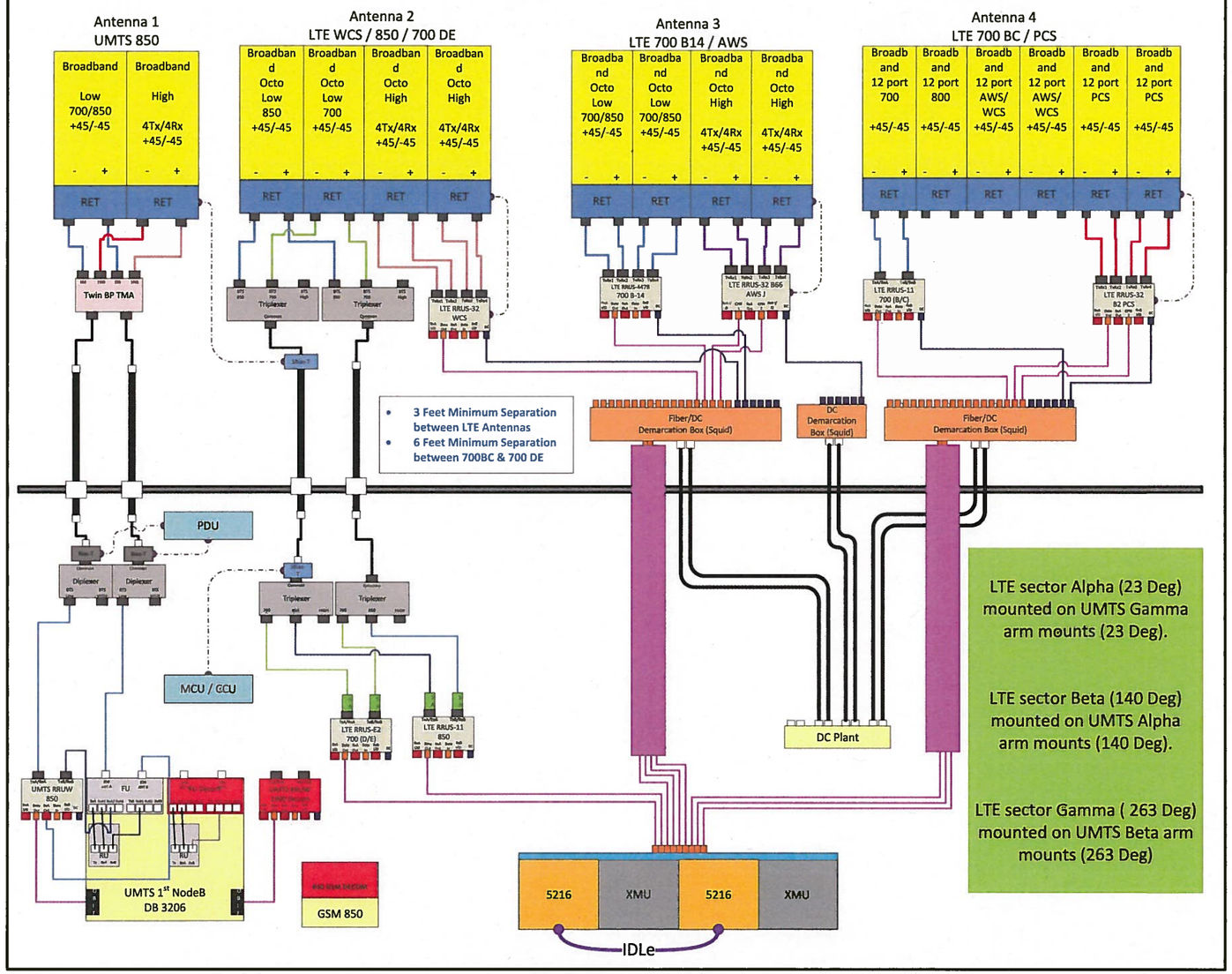
PROPOSED ELEVATION & CONSTRUCTION DETAILS

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50093724	C02	0

Diagram - Sector A | Diagram File Name - CT1005_A_B_C_AWS-J_700B14_d1.vsd

Atoll Site Name - CTV1005 | Location Name - WOLCOT- WEST | Market - CONNECTICUT | Market Cluster - NEW ENGLAND

Comments: Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ Radio Port connections Field Notice (RF-HW-2016-265)



EQUIPMENT PLUMBING DIAGRAM (1)

SCALE: N.T.S.

NOTES:

1. EQUIPMENT PLUMBING DIAGRAM PER RFDS VERSION 1 DATED 10/09/17.
2. CONTRACTOR TO VERIFY FINAL EQUIPMENT CONFIGURATION & SEPARATIONS WITH AT&T PRIOR TO CONSTRUCTION.

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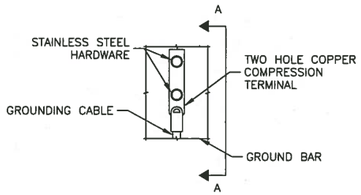
EQUIPMENT PLUMBING DIAGRAM

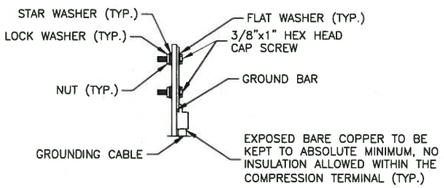
DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50093724	C03	0

GROUNDING NOTES:

1. THE CONTRACTOR SHALL REVIEW & INSPECT THE EXISTING FACILITY GROUNDING SYSTEM & LIGHTNING PROTECTION SYSTEM (AS DESIGNED & INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ). THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, & GENERAL COMPLIANCE WITH TELCORDIA & TIA GROUNDING STANDARDS. THE CONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, & AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS. ALL AVAILABLE GROUNDING ELECTRODES SHALL BE CONNECTED TOGETHER IN ACCORDANCE WITH THE NEC.
3. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 & 81) FOR GROUND ELECTRODE SYSTEMS. USE OF OTHER METHODS MUST BE PRE-APPROVED BY CONTRACTOR IN WRITING.
4. THE CONTRACTOR SHALL FURNISH & INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS ON TOWER SITES & 10 OHMS OR LESS ON ROOFTOP SITES. WHEN ADDING ELECTRODES, CONTRACTOR SHALL MAINTAIN A MINIMUM DISTANCE BETWEEN THE ADDED ELECTRODE & ANY OTHER EXISTING ELECTRODE EQUAL TO THE BURIED LENGTH OF THE ROD. IDEALLY, CONTRACTOR SHALL STRIVE TO KEEP THE SEPARATION DISTANCE EQUAL TO TWICE THE BURIED LENGTH OF THE RODS.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING & UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
6. METAL CONDUIT & TRAY SHALL BE GROUNDED & MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE & UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
7. 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 & INSTALLED WITH THE POWER CIRCUITS TO TRANSMISSION EQUIPMENT.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK-TO-BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 8 INCHES.
11. EACH INTERIOR TRANSMISSION CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH 6 AWG STRANDED, GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRE UNLESS NOTED OTHERWISE IN THE DETAILS. EACH OUTDOOR CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER WIRE UNLESS NOTED OTHERWISE IN THE DETAILS.
12. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS & THE GROUND RING, SHALL BE 2 AWG SOLID TIN-PLATED COPPER UNLESS OTHERWISE INDICATED.
13. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. CONNECTIONS TO ABOVE GRADE UNITS SHALL BE MADE WITH EXOTHERMIC WELDS WHERE PRACTICAL OR WITH 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS. HIGH PRESSURE CRIMP CONNECTORS MAY ONLY BE USED WITH WRITTEN PERMISSION FROM CENTERLINE COMMUNICATIONS COMMUNICATIONS MARKET REPRESENTATIVE.
14. EXOTHERMIC WELDS SHALL BE PERMITTED ON TOWERS ONLY WITH THE EXPRESS APPROVAL OF THE TOWER MANUFACTURER OR THE CONTRACTORS STRUCTURAL ENGINEER.
15. ALL WIRE TO WIRE GROUND CONNECTIONS TO THE INTERIOR GROUND RING SHALL BE FORMED USING HIGH PRESS CRIMPS OR SPLIT BOLT CONNECTORS WHERE INDICATED IN THE DETAILS.
16. ON ROOFTOP SITES WHERE EXOTHERMIC WELDS ARE A FIRE HAZARD COPPER COMPRESSION CAP CONNECTORS MAY BE USED FOR WIRE TO WIRE CONNECTORS. 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS SHALL BE USED FOR CONNECTION TO ALL ROOFTOP TRANSMISSION EQUIPMENT & STRUCTURAL STEEL.
17. COAX BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE & THE TOWER GROUND BAR USING TWO-HOLE MECHANICAL TYPE BRASS CONNECTORS & STAINLESS STEEL HARDWARE.
18. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION & BOLTED GROUND CONNECTIONS.
19. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
20. MISCELLANEOUS ELECTRICAL & NON-ELECTRICAL METAL BOXES, FRAMES & SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
21. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER GROUND CONDUCTOR. DURING EXCAVATION FOR NEW GROUND CONDUCTORS, IF EXISTING GROUND CONDUCTORS ARE ENCOUNTERED, BOND EXISTING GROUND CONDUCTORS TO NEW CONDUCTORS.
22. GROUND CONDUCTORS USED IN THE FACILITY GROUND & 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 WITH LISTED BONDING FITTINGS.



ELEVATION

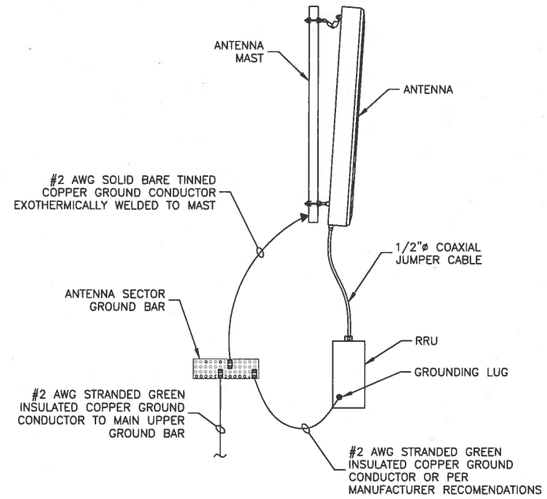


NOTES:

1. DOUBLING UP OR STACKING OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

TYPICAL GROUND BAR MECHANICAL CONNECTION DETAIL 1

SCALE: N.T.S.



NOTES:

1. VERIFY EXISTING GROUNDING SYSTEM IS INSTALLED PER AT&T STANDARDS.
2. BOND NEW EQUIPMENT INTO EXISTING GROUND SYSTEM IN ACCORDANCE WITH AT&T STANDARDS & MANUFACTURER RECOMMENDATIONS.

TYPICAL ANTENNA/RRU GROUNDING DETAIL 2

SCALE: N.T.S

Dewberry®
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

CENTERLINE COMMUNICATIONS
95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767

at&t Mobility
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

WOLCOTT WEST 6C/7C
SITE NO. CT1005

FARMDALE DRIVE
WATERBURY, CT 06704

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	07/31/18	ISSUED FOR CONSTRUCTION	JIM	KB	DAS
B	03/05/18	ISSUED FOR REVIEW	JIM	KB	DAS
A	01/19/18	ISSUED FOR REVIEW	JIM	KB	DAS

SCALE: AS SHOWN | DESIGNED BY: KB | DRAWN BY: JG

STATE OF CONNECTICUT
BENJAMIN B. REVETTE
28971
LICENSED PROFESSIONAL ENGINEER

AT&T MOBILITY
FRAMINGHAM, MA 01701

GROUNDING DETAILS

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50093724	E01	0

EXHIBIT 3

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**150 ft Guyed Monopole**
ATC Site Name	:	**Wtbr - Waterbury, CT**
ATC Site Number	:	**302476**
Engineering Number	:	**OAA737108_C3_01**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**WOLCOT-WEST**
Carrier Site Number	:	**CT1005**
Site Location	:	**352 Garden Circle** **Waterbury, CT 06704-2833** **41.570700,-73.017600**
County	:	**New Haven**
Date	:	**July 26, 2018**
Max Usage	:	**100%**
Result	:	**Pass**

Prepared By:
Robert D. Barrett, E.I.
Structural Engineer II

Robert D. Barrett

Reviewed By:

COA: PEC.0001553

AMERICAN TOWER®
CORPORATION

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft guyed monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	SpectraSite Site #CT-0012, Rev 1, dated November 18, 2004
Foundation Drawing	Girard & Co. Engineers Job #38926, dated July 10, 1984

Analysis

The tower was analyzed using tnxTower version 8.0.2.1 tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	97 mph (3-Second Gust, V_{asd}) / 125 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
154.0	154.0	6	CCI TPX-070821	Platform w/ Handrails	(12) 1 1/4" Coax (6) 0.78" 8 AWG 6 (2) 0.39" Fiber Trunk	AT&T Mobility
		3	CCI DTMABP7819VG12A			
		2	Raycap DC6-48-60-18-8F			
		3	ADC DD1900			
		3	Ericsson RRUS 32			
		3	Ericsson RRUS 32 B66			
		3	Powerwave 7770.00			
		1	CCI OPA-65R-LCUU-H6			
		2	CCI OPA-65R-LCUU-H8			
		2	CCI TPA-65R-LCUUUU-H8			
145.0	145.0	6	Allgon 7250.03 /XM-1900-65-18.5I-2-D	T-Arms	(12) 1 5/8" Coax	
129.0	129.0	6	RFS FD9R6004/2C-3L	Platform w/ Handrails	(2) 1 5/8" Hybriflex	Verizon
		3	Nokia B5 RRH4x40-850			
		3	Alcatel-Lucent RRH4x30W-B25			
		3	Alcatel-Lucent B13 RRH4x30-4R 700U			
		3	Alcatel-Lucent B66 RRH4x45			
		1	Raycap RCMDC-6627-PF-48			
		3	Antel BXA-80063-4CF-EDIN-X			
		4	Commscope JAHH-65B-R3B			
		2	Commscope JAHH-45B-R3B			

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
154.0	154.0	1	Quintel QS66512-3	-	-	AT&T Mobility
		3	Ericsson RRUS 11 B5			
		3	Ericsson RRUS-32			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
154.0	154.0	1	Raycap DC6-48-60-0-8F	Platform w/ Handrails	-	AT&T Mobility
		3	Ericsson RRUS 4478 B14			
		3	Ericsson RRUS 32 B2			
		3	Ericsson RRUS 11 B12			
		1	Quintel QS66512-2			
		1	Kathrein 80010965			
		2	Kathrein 80010966			

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	12%	Pass
Shaft	100%	Pass
Base Plate	8%	Pass
Flanges	77%	Pass
Guys	74%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Base Moment (Kips-Ft)	175.6	4%
Anchor Resultant (Kips)	35.4	69%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
154.0	Raycap DC6-48-60-0-8F	AT&T Mobility	0.530	1.067
	Ericsson RRUS 4478 B14			
	Ericsson RRUS 32 B2			
	Ericsson RRUS 11 B12			
	Quintel QS66512-2			
	Kathrein 80010965			
	Kathrein 80010966			

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G**

Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

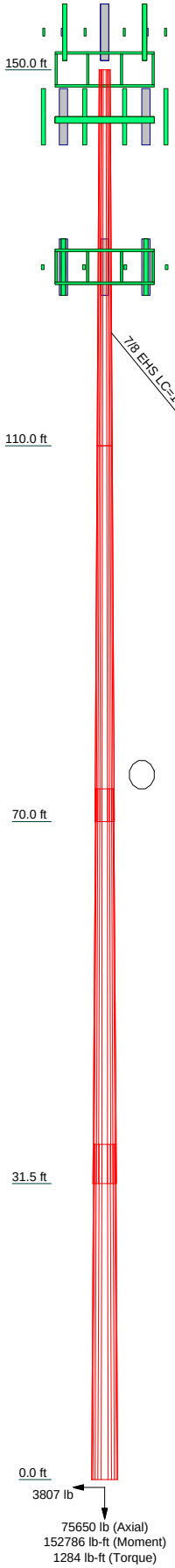
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

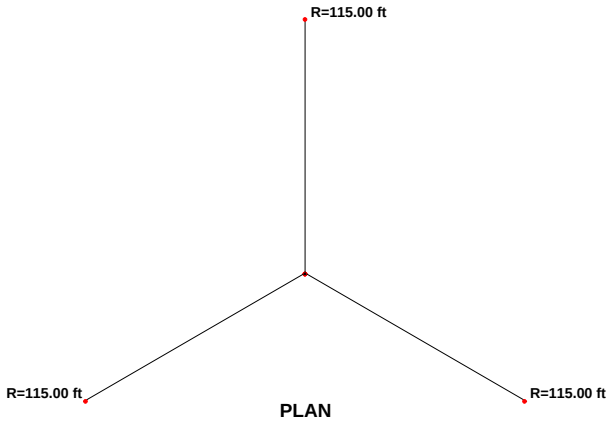
All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	40.00	12	0.1875		15.0000	21.2500		1474.1
2	40.00	12	0.2500	3.50	21.2500	27.6100		2649.4
3	42.00	12	0.3125	4.17	26.5535	33.1000		4244.5
4	35.67	12	0.3750		31.8255	37.3800		5016.1
							A572-65	13384.0





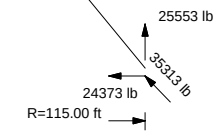
PLAN

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 99.8%



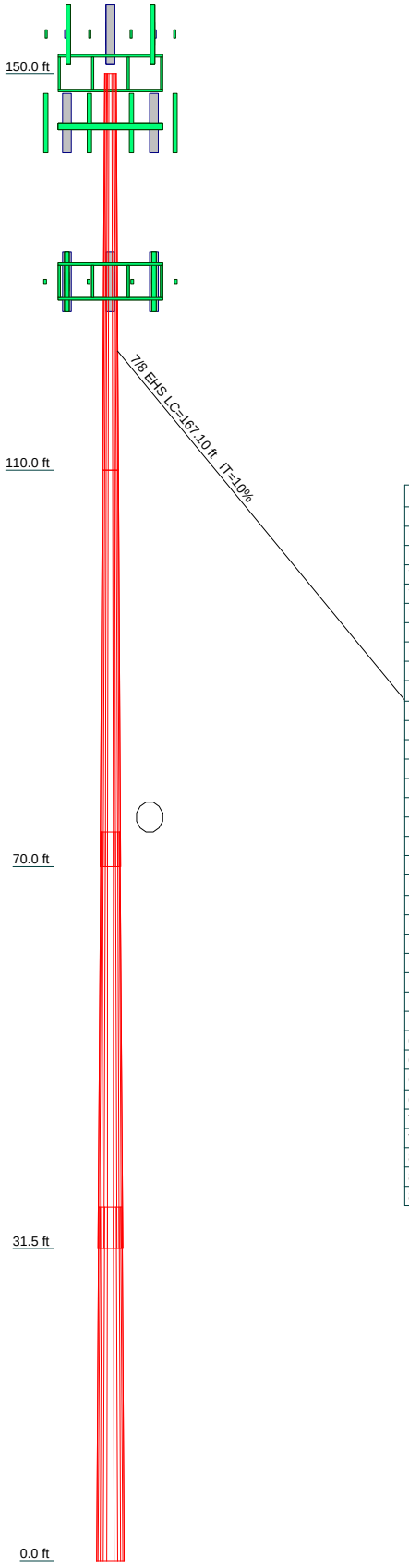
ALL REACTIONS ARE FACTORED

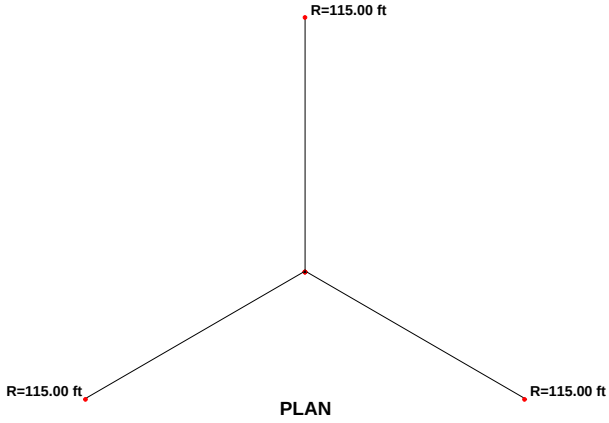
American Tower Engineering
3500 Regency Parkway, Suite 100
Cary, NC 27518
Phone: (919) 468-0112
FAX: (919) 466-5414

Tower Analysis

Job: ***302476 - Wtbr - Waterbury, CT***			
Project: ***OAA737108_C3_01***			
Client: AT&T Mobility	Drawn by: robert.barrett	App'd:	
Code: TIA-222-G	Date: 07/26/18	Scale: NTS	
Path: C:\Users\robert.barrett\Desktop\302476\tnx\302476.eri		Dwg No. E-1	

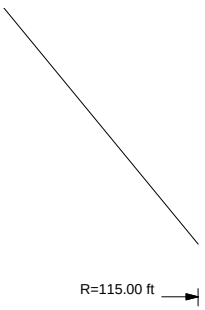
Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	40.00	12	0.1875		15.0000	21.2500		1474.1
2	40.00	12	0.2500	3.50	21.2500	27.6100		2649.4
3	42.00	12	0.3125	4.17	26.5535	33.1000		4244.5
4	35.67	12	0.3750		31.8255	37.3800		5016.1
							A572-65	13384.0





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
RRUS 32 B66	150	(2) TPX-070821	150
RRUS 32 B66	150	(2) TPX-070821	150
RRUS 32 B66	150	(2) TPX-070821	150
7770.00	150	10.75' Flat Platform w/ Handrails	150
7770.00	150	(2) 7250.03 /XM-1900-65-18.5I-2-D	145
7770.00	150	(2) 7250.03 /XM-1900-65-18.5I-2-D	145
DC6-48-60-18-8F	150	(2) 7250.03 /XM-1900-65-18.5I-2-D	145
DC6-48-60-18-8F	150	Round T-Arm	145
DTMABP7819VG12A	150	Round T-Arm	145
DTMABP7819VG12A	150	Round T-Arm	145
DTMABP7819VG12A	150	10.75' Flat Platform w/ Handrails	129
DD1900	150	BXA-80063-4CF-EDIN-X	129
DD1900	150	BXA-80063-4CF-EDIN-X	129
DD1900	150	BXA-80063-4CF-EDIN-X	129
RRUS-32	150	B66 RRH4x45	129
RRUS-32	150	B66 RRH4x45	129
RRUS-32	150	B66 RRH4x45	129
DC6-48-60-0-8F	150	B5 RRH4x40-850	129
RRUS 4478 B14	150	B5 RRH4x40-850	129
RRUS 4478 B14	150	B5 RRH4x40-850	129
RRUS 4478 B14	150	RRH4x30W-B25	129
RRUS 32 B2	150	RRH4x30W-B25	129
RRUS 32 B2	150	RRH4x30W-B25	129
RRUS 32 B2	150	B13 RRH4x30-4R 700U	129
RRUS 11 B12	150	B13 RRH4x30-4R 700U	129
RRUS 11 B12	150	B13 RRH4x30-4R 700U	129
RRUS 11 B12	150	(2) JAHH-65B-R3B	129
OPA-65R-LCUU-H6	150	JAHH-65B-R3B	129
OPA-65R-LCUU-H8 (92.7")	150	JAHH-65B-R3B	129
OPA-65R-LCUU-H8 (92.7")	150	JAHH-45B-R3B	129
QS66512-2	150	JAHH-45B-R3B	129
TPA-65R-LCUUUU-H8	150	(2) FD9R6004/2C-3L (3.1 lbs)	129
TPA-65R-LCUUUU-H8	150	(2) FD9R6004/2C-3L (3.1 lbs)	129
80010965	150	(2) FD9R6004/2C-3L (3.1 lbs)	129
80010966	150	RCMDC-6627-PF-48	129
80010966	150		



American Tower Engineering
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Phone: (919) 468-0112
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Tower Analysis

Job: ***302476 - Wtbr - Waterbury, CT***			
Project: ***OAA737108_C3_01***			
Client: AT&T Mobility	Drawn by: robert.barrett	App'd:	
Code: TIA-222-G	Date: 07/26/18	Scale: NTS	
Path: C:\Users\robert.barrett\Desktop\302476\tnx\302476.eri		Dwg No. E-1	

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Basic wind speed of 97 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Safety factor used in guy design is 1.
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		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned	√	Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios	√	Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys	√	Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice		Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
√	Include Bolts In Member Capacity	√	Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric				Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

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	150.00-110.00	40.00	0.00	12	15.0000	21.2500	0.1875	4.0000	A572-65

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
L2	110.00-70.00	40.00	3.50	12	21.2500	27.6100	0.2500	4.0000	(65 ksi) A572-65 (65 ksi)
L3	70.00-31.50	42.00	4.17	12	26.5535	33.1000	0.3125	4.0000	(65 ksi) A572-65 (65 ksi)
L4	31.50-0.00	35.67		12	31.8255	37.3800	0.3750	4.0000	(65 ksi) A572-65 (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	15.4630	8.9430	250.4541	5.3029	7.7700	32.2335	507.4880	4.4015	3.5175	18.76
	21.9335	12.7165	720.0669	7.5404	11.0075	65.4160	1459.0508	6.2587	5.1925	27.693
L2	21.9114	16.9050	951.5678	7.5180	11.0075	86.4472	1928.1342	8.3201	5.0250	20.1
	28.4958	22.0248	2104.4088	9.7949	14.3020	147.1411	4264.1028	10.8399	6.7295	26.918
L3	27.9448	26.4050	2320.7747	9.3943	13.7547	168.7258	4702.5188	12.9957	6.2788	20.092
	34.1574	32.9924	4527.0653	11.7379	17.1458	264.0335	9173.0615	16.2379	8.0333	25.707
L4	33.4877	37.9765	4794.6345	11.2593	16.4856	290.8376	9715.2293	18.6909	7.5242	20.065
	38.5663	44.6835	7810.0590	13.2478	19.3628	403.3530	15825.2970	21.9919	9.0128	24.034

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	Double Angle Stitch Bolt Spacing Redundants in
L1 150.00-110.00				1	1	1			
L2 110.00-70.00				1	1	1			
L3 70.00-31.50				1	1	1			
L4 31.50-0.00				1	1	1			

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension lb	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
122	EHS	A	7/8	7970.00	10%	19000	1.581	166.95	115.00	0.0000	0.00	100%
		B	7/8	7970.00	10%	19000	1.581	166.95	115.00	0.0000	0.00	100%
		C	7/8	7970.00	10%	19000	1.581	166.95	115.00	0.0000	0.00	100%

Guy Data*(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
122	Corner						

Guy Data *(cont'd)*

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
122.00	A572-50 (50 ksi)	Solid Round			No	A572-50 (50 ksi)	Solid Round	1 1/4

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A lb	Cable Weight B lb	Cable Weight C lb	Cable Weight D lb	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
122	263.95	263.95	263.95		2.73 2.9 sec/pulse	2.73 2.9 sec/pulse	2.73 2.9 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
122	No	No			1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
122	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
122	A	61.00	20	5	1.5950
	B	61.00	20	5	1.5950
	C	61.00	20	5	1.5950

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
0.78" (19.7 mm) 8 AWG 6	A	Surface Ar (CaAa)	150.00 - 7.00	2	2	-0.200 0.200	0.7800		0.59
0.39" (10mm) Fiber Trunk **	A	Surface Ar (CaAa)	150.00 - 7.00	1	1	0.200 0.250	0.3900		0.07
1 5/8" Hybriflex	C	Surface Ar (CaAa)	129.00 - 7.00	1	1	0.250 0.260	1.9800		1.30
1 5/8" Hybriflex ***	C	Surface Ar (CaAa)	129.00 - 7.00	1	1	0.250 0.260	1.9800		1.30

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 plf
1 1/4" Coax	A	No	Inside Pole	150.00 - 7.00	12	No Ice	0.00	0.63
						1/2" Ice	0.00	0.63
						1" Ice	0.00	0.63
0.39" (10mm) Fiber Trunk	A	No	Inside Pole	150.00 - 7.00	1	No Ice	0.00	0.07
						1/2" Ice	0.00	0.07
						1" Ice	0.00	0.07
0.78" (19.7 mm) 8 AWG 6	A	No	Inside Pole	150.00 - 7.00	4	No Ice	0.00	0.59
						1/2" Ice	0.00	0.59
						1" Ice	0.00	0.59
**								
1 5/8" Coax	B	No	Inside Pole	145.00 - 7.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
***								

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 lb
L1	150.00-110.00	A	0.000	0.000	7.800	0.000	449.60
		B	0.000	0.000	0.000	0.000	344.40
		C	0.000	0.000	7.524	0.000	49.40
L2	110.00-70.00	A	0.000	0.000	7.800	0.000	449.60
		B	0.000	0.000	0.000	0.000	393.60
		C	0.000	0.000	15.840	0.000	104.00
L3	70.00-31.50	A	0.000	0.000	7.507	0.000	432.74

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 lb
		B	0.000	0.000	0.000	0.000	378.84
		C	0.000	0.000	15.246	0.000	100.10
L4	31.50-0.00	A	0.000	0.000	4.777	0.000	275.38
		B	0.000	0.000	0.000	0.000	241.08
		C	0.000	0.000	9.702	0.000	63.70

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 lb
L1	150.00-110.00	A	1.719	0.000	0.000	40.305	0.000	880.52
		B		0.000	0.000	0.000	0.000	344.40
		C		0.000	0.000	20.590	0.000	344.65
L2	110.00-70.00	A	1.657	0.000	0.000	39.191	0.000	855.05
		B		0.000	0.000	0.000	0.000	393.60
		C		0.000	0.000	42.357	0.000	693.17
L3	70.00-31.50	A	1.566	0.000	0.000	37.721	0.000	822.99
		B		0.000	0.000	0.000	0.000	378.84
		C		0.000	0.000	40.768	0.000	667.17
L4	31.50-0.00	A	1.390	0.000	0.000	22.994	0.000	501.46
		B		0.000	0.000	0.000	0.000	241.08
		C		0.000	0.000	25.045	0.000	396.01

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	150.00-110.00	-1.2954	0.3710	-2.3207	-0.2599
L2	110.00-70.00	-1.7198	1.1563	-3.0123	0.8033
L3	70.00-31.50	-1.7753	1.1843	-3.3187	0.8651
L4	31.50-0.00	-1.4400	0.9564	-2.9025	0.7627

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	4	0.78" (19.7 mm) 8 AWG 6	110.00 - 150.00	1.0000	1.0000
L1	5	0.39" (10mm) Fiber Trunk	110.00 - 150.00	1.0000	1.0000
L1	10	1 5/8" Hybriflex	110.00 - 129.00	1.0000	1.0000
L1	11	1 5/8" Hybriflex	110.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			129.00		
L2	4	0.78" (19.7 mm) 8 AWG 6	70.00 - 110.00	1.0000	1.0000
L2	5	0.39" (10mm) Fiber Trunk	70.00 - 110.00	1.0000	1.0000
L2	10	1 5/8" Hybriflex	70.00 - 110.00	1.0000	1.0000
L2	11	1 5/8" Hybriflex	70.00 - 110.00	1.0000	1.0000
L3	4	0.78" (19.7 mm) 8 AWG 6	31.50 - 70.00	1.0000	1.0000
L3	5	0.39" (10mm) Fiber Trunk	31.50 - 70.00	1.0000	1.0000
L3	10	1 5/8" Hybriflex	31.50 - 70.00	1.0000	1.0000
L3	11	1 5/8" Hybriflex	31.50 - 70.00	1.0000	1.0000

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 lb
RRUS 32 B66	A	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	2.74 2.96 3.19	1.67 1.86 2.05	53.00 74.11 98.42
RRUS 32 B66	B	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	2.74 2.96 3.19	1.67 1.86 2.05	53.00 74.11 98.42
RRUS 32 B66	C	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	2.74 2.96 3.19	1.67 1.86 2.05	53.00 74.11 98.42
7770.00	A	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	5.51 5.87 6.23	2.93 3.27 3.63	35.00 67.63 105.06
7770.00	B	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	5.51 5.87 6.23	2.93 3.27 3.63	35.00 67.63 105.06
7770.00	C	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	5.51 5.87 6.23	2.93 3.27 3.63	35.00 67.63 105.06
DC6-48-60-18-8F	B	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	1.11 1.67 1.88	1.47 1.67 1.88	31.80 49.52 69.72
DC6-48-60-18-8F	C	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	1.11 1.67 1.88	1.47 1.67 1.88	31.80 49.52 69.72
DTMABP7819VG12A	A	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	0.97 0.00 1.43	0.39 0.49 0.60	19.20 26.49 35.63
DTMABP7819VG12A	B	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	0.97 0.00 1.43	0.39 0.49 0.60	19.20 26.49 35.63
DTMABP7819VG12A	C	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	0.97 0.00 1.43	0.39 0.49 0.60	19.20 26.49 35.63
DD1900	A	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	1.09 1.43 1.59	0.30 0.40 0.51	12.10 19.21 28.18

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
DD1900	B	From Leg	5.00	0.0000	150.00	No Ice	1.09	0.30	12.10
			0.00			1/2" Ice	1.43	0.40	19.21
			4.00			1" Ice	1.59	0.51	28.18
DD1900	C	From Leg	5.00	0.0000	150.00	No Ice	1.09	0.30	12.10
			0.00			1/2" Ice	1.43	0.40	19.21
			4.00			1" Ice	1.59	0.51	28.18
RRUS-32	A	From Leg	5.00	0.0000	150.00	No Ice	3.31	2.76	77.00
			0.00			1/2" Ice	4.15	3.02	104.93
			4.00			1" Ice	4.44	3.29	136.47
RRUS-32	B	From Leg	5.00	0.0000	150.00	No Ice	3.31	2.76	77.00
			0.00			1/2" Ice	4.15	3.02	104.93
			4.00			1" Ice	4.44	3.29	136.47
RRUS-32	C	From Leg	5.00	0.0000	150.00	No Ice	3.31	2.76	77.00
			0.00			1/2" Ice	4.15	3.02	104.93
			4.00			1" Ice	4.44	3.29	136.47
DC6-48-60-0-8F	A	From Leg	5.00	0.0000	150.00	No Ice	1.28	1.28	32.80
			0.00			1/2" Ice	1.46	1.46	50.52
			4.00			1" Ice	1.64	1.64	68.24
RRUS 4478 B14	A	From Leg	5.00	0.0000	150.00	No Ice	1.84	1.06	59.90
			0.00			1/2" Ice	2.10	1.27	75.78
			4.00			1" Ice	2.36	1.48	91.66
RRUS 4478 B14	B	From Leg	5.00	0.0000	150.00	No Ice	1.84	1.06	59.90
			0.00			1/2" Ice	2.10	1.27	75.78
			4.00			1" Ice	2.36	1.48	91.66
RRUS 4478 B14	C	From Leg	5.00	0.0000	150.00	No Ice	1.84	1.06	59.90
			0.00			1/2" Ice	2.10	1.27	75.78
			4.00			1" Ice	2.36	1.48	91.66
RRUS 32 B2	A	From Leg	5.00	0.0000	150.00	No Ice	2.74	1.67	53.00
			0.00			1/2" Ice	2.96	1.86	74.11
			4.00			1" Ice	3.19	2.05	98.42
RRUS 32 B2	B	From Leg	5.00	0.0000	150.00	No Ice	2.74	1.67	53.00
			0.00			1/2" Ice	2.96	1.86	74.11
			4.00			1" Ice	3.19	2.05	98.42
RRUS 32 B2	C	From Leg	5.00	0.0000	150.00	No Ice	2.74	1.67	53.00
			0.00			1/2" Ice	2.96	1.86	74.11
			4.00			1" Ice	3.19	2.05	98.42
RRUS 11 B12	A	From Leg	5.00	0.0000	150.00	No Ice	2.79	1.19	50.70
			0.00			1/2" Ice	3.11	1.42	71.57
			4.00			1" Ice	3.43	1.65	92.44
RRUS 11 B12	B	From Leg	5.00	0.0000	150.00	No Ice	2.79	1.19	50.70
			0.00			1/2" Ice	3.11	1.42	71.57
			4.00			1" Ice	3.43	1.65	92.44
RRUS 11 B12	C	From Leg	5.00	0.0000	150.00	No Ice	2.79	1.19	50.70
			0.00			1/2" Ice	3.11	1.42	71.57
			4.00			1" Ice	3.43	1.65	92.44
OPA-65R-LCUU-H6	A	From Leg	5.00	0.0000	150.00	No Ice	9.66	5.52	73.00
			0.00			1/2" Ice	10.13	5.97	131.43
			4.00			1" Ice	10.61	6.43	196.17
OPA-65R-LCUU-H8 (92.7")	B	From Leg	5.00	0.0000	150.00	No Ice	12.75	7.25	88.00
			0.00			1/2" Ice	13.33	7.82	159.29
			4.00			1" Ice	13.92	8.40	238.16
OPA-65R-LCUU-H8 (92.7")	C	From Leg	5.00	0.0000	150.00	No Ice	12.75	7.25	88.00
			0.00			1/2" Ice	13.33	7.82	159.29
			4.00			1" Ice	13.92	8.40	238.16
QS66512-2	A	From Leg	5.00	0.0000	150.00	No Ice	8.13	6.80	111.00
			0.00			1/2" Ice	8.82	7.50	168.20
			4.00			1" Ice	9.51	8.20	225.40

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 lb
TPA-65R-LCUUUU-H8	B	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	13.30 13.90 14.50	8.82 9.42 10.03	82.10 161.56 248.92
TPA-65R-LCUUUU-H8	C	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	13.30 13.90 14.50	8.82 9.42 10.03	82.10 161.56 248.92
80010965	A	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	13.81 14.62 15.43	5.83 6.57 7.31	97.60 174.13 250.66
80010966	B	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	17.36 18.31 19.26	7.50 8.39 9.28	114.60 206.78 298.96
80010966	C	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	17.36 18.31 19.26	7.50 8.39 9.28	114.60 206.78 298.96
(2) TPX-070821	A	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	0.47 0.56 0.66	0.18 0.25 0.32	7.50 10.98 15.80
(2) TPX-070821	B	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	0.47 0.56 0.66	0.18 0.25 0.32	7.50 10.98 15.80
(2) TPX-070821	C	From Leg	5.00 0.00 4.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	0.47 0.56 0.66	0.18 0.25 0.32	7.50 10.98 15.80
10.75' Flat Platform w/ Handrails	A	None		0.0000	150.00	No Ice 1/2" Ice 1" Ice	26.40 32.40 38.40	26.40 32.40 38.40	2000.00 2450.00 2900.00
***									
(2) 7250.03 /XM-1900-65-18.5I-2-D	A	From Leg	5.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice	4.00 4.39 4.78	1.87 2.33 2.70	15.40 35.03 59.38
(2) 7250.03 /XM-1900-65-18.5I-2-D	B	From Leg	5.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice	4.00 4.39 4.78	1.87 2.33 2.70	15.40 35.03 59.38
(2) 7250.03 /XM-1900-65-18.5I-2-D	C	From Leg	5.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice	4.00 4.39 4.78	1.87 2.33 2.70	15.40 35.03 59.38
Round T-Arm	A	None		0.0000	145.00	No Ice 1/2" Ice 1" Ice	9.70 12.10 14.50	3.30 5.20 7.10	250.00 314.00 378.00
Round T-Arm	B	None		0.0000	145.00	No Ice 1/2" Ice 1" Ice	9.70 12.10 14.50	3.30 5.20 7.10	250.00 314.00 378.00
Round T-Arm	C	None		0.0000	145.00	No Ice 1/2" Ice 1" Ice	9.70 12.10 14.50	3.30 5.20 7.10	250.00 314.00 378.00
***									
10.75' Flat Platform w/ Handrails	B	None		0.0000	129.00	No Ice 1/2" Ice 1" Ice	26.40 32.40 38.40	26.40 32.40 38.40	2000.00 2450.00 2900.00
BXA-80063-4CF-EDIN-X	A	From Leg	5.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	4.71 5.55 5.94	2.25 2.55 2.85	9.90 37.73 69.84
BXA-80063-4CF-EDIN-X	B	From Leg	5.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	4.71 5.55 5.94	2.25 2.55 2.85	9.90 37.73 69.84
BXA-80063-4CF-EDIN-X	C	From Leg	5.00	0.0000	129.00	No Ice	4.71	2.25	9.90

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00				1/2" Ice	5.55	2.55	37.73
			0.00				1" Ice	5.94	2.85	69.84
B66 RRH4x45	A	From Leg	5.00		0.0000	129.00	No Ice	2.58	1.59	67.00
			0.00				1/2" Ice	2.88	1.77	87.35
			0.00				1" Ice	3.10	1.96	110.85
B66 RRH4x45	B	From Leg	5.00		0.0000	129.00	No Ice	2.58	1.59	67.00
			0.00				1/2" Ice	2.88	1.77	87.35
			0.00				1" Ice	3.10	1.96	110.85
B66 RRH4x45	C	From Leg	5.00		0.0000	129.00	No Ice	2.58	1.59	67.00
			0.00				1/2" Ice	2.88	1.77	87.35
			0.00				1" Ice	3.10	1.96	110.85
B5 RRH4x40-850	A	From Leg	5.00		0.0000	129.00	No Ice	1.32	0.75	48.50
			0.00				1/2" Ice	1.54	0.92	56.76
			0.00				1" Ice	1.76	1.09	65.02
B5 RRH4x40-850	B	From Leg	5.00		0.0000	129.00	No Ice	1.32	0.75	48.50
			0.00				1/2" Ice	1.54	0.92	56.76
			0.00				1" Ice	1.76	1.09	65.02
B5 RRH4x40-850	C	From Leg	5.00		0.0000	129.00	No Ice	1.32	0.75	48.50
			0.00				1/2" Ice	1.54	0.92	56.76
			0.00				1" Ice	1.76	1.09	65.02
RRH4x30W-B25	A	From Leg	5.00		0.0000	129.00	No Ice	1.97	1.12	55.10
			0.00				1/2" Ice	2.24	1.34	65.95
			0.00				1" Ice	2.51	1.56	76.80
RRH4x30W-B25	B	From Leg	5.00		0.0000	129.00	No Ice	1.97	1.12	55.10
			0.00				1/2" Ice	2.24	1.34	65.95
			0.00				1" Ice	2.51	1.56	76.80
RRH4x30W-B25	C	From Leg	5.00		0.0000	129.00	No Ice	1.97	1.12	55.10
			0.00				1/2" Ice	2.24	1.34	65.95
			0.00				1" Ice	2.51	1.56	76.80
B13 RRH4x30-4R 700U	A	From Leg	5.00		0.0000	129.00	No Ice	2.17	1.63	57.20
			0.00				1/2" Ice	2.36	1.80	76.88
			0.00				1" Ice	2.56	1.98	99.53
B13 RRH4x30-4R 700U	B	From Leg	5.00		0.0000	129.00	No Ice	2.17	1.63	57.20
			0.00				1/2" Ice	2.36	1.80	76.88
			0.00				1" Ice	2.56	1.98	99.53
B13 RRH4x30-4R 700U	C	From Leg	5.00		0.0000	129.00	No Ice	2.17	1.63	57.20
			0.00				1/2" Ice	2.36	1.80	76.88
			0.00				1" Ice	2.56	1.98	99.53
(2) JAHH-65B-R3B	A	From Leg	5.00		0.0000	129.00	No Ice	9.11	5.98	60.60
			0.00				1/2" Ice	9.58	6.44	118.68
			0.00				1" Ice	10.05	6.91	183.05
JAHH-65B-R3B	B	From Leg	5.00		0.0000	129.00	No Ice	9.11	5.98	60.60
			0.00				1/2" Ice	9.58	6.44	118.68
			0.00				1" Ice	10.05	6.91	183.05
JAHH-65B-R3B	C	From Leg	5.00		0.0000	129.00	No Ice	9.11	5.98	60.60
			0.00				1/2" Ice	9.58	6.44	118.68
			0.00				1" Ice	10.05	6.91	183.05
JAHH-45B-R3B	B	From Leg	5.00		0.0000	129.00	No Ice	11.40	5.28	83.80
			0.00				1/2" Ice	12.13	5.97	120.87
			0.00				1" Ice	12.86	6.66	157.94
JAHH-45B-R3B	C	From Leg	5.00		0.0000	129.00	No Ice	11.40	5.28	83.80
			0.00				1/2" Ice	12.13	5.97	120.87
			0.00				1" Ice	12.86	6.66	157.94
(2) FD9R6004/2C-3L (3.1 lbs)	A	From Leg	5.00		0.0000	129.00	No Ice	0.31	0.08	3.10
			0.00				1/2" Ice	0.39	0.12	5.40
			0.00				1" Ice	0.47	0.17	8.79
(2) FD9R6004/2C-3L (3.1	B	From Leg	5.00		0.0000	129.00	No Ice	0.31	0.08	3.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
lbs)			0.00			1/2" Ice	0.39	0.12	5.40
			0.00			1" Ice	0.47	0.17	8.79
(2) FD9R6004/2C-3L (3.1	C	From Leg	5.00	0.0000	129.00	No Ice	0.31	0.08	3.10
lbs)			0.00			1/2" Ice	0.39	0.12	5.40
			0.00			1" Ice	0.47	0.17	8.79
RCMDC-6627-PF-48	B	From Leg	5.00	0.0000	129.00	No Ice	4.06	3.10	32.00
			0.00			1/2" Ice	4.45	3.46	68.49
			0.00			1" Ice	4.84	3.82	104.98

Tower Pressures - No Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1	129.06	1.063	24	62.327	A	0.000	62.327	62.327	100.00	7.800	0.000
150.00-110.00					B	0.000	62.327		100.00	0.000	0.000
					C	0.000	62.327		100.00	7.524	0.000
L2	89.45	0.957	22	84.012	A	0.000	84.012	84.012	100.00	7.800	0.000
110.00-70.00					B	0.000	84.012		100.00	0.000	0.000
					C	0.000	84.012		100.00	15.840	0.000
L3 70.00-31.50	50.64	0.814	18	99.622	A	0.000	99.622	99.622	100.00	7.507	0.000
					B	0.000	99.622		100.00	0.000	0.000
					C	0.000	99.622		100.00	15.246	0.000
L4 31.50-0.00	15.38	0.7	16	94.571	A	0.000	94.571	94.571	100.00	4.777	0.000
					B	0.000	94.571		100.00	0.000	0.000
					C	0.000	94.571		100.00	9.702	0.000

Tower Pressure - With Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1	129.06	1.063	6	1.7192	73.789	A	0.000	73.789	73.789	100.00	40.305	0.000
150.00-110.00						B	0.000	73.789		100.00	0.000	0.000
						C	0.000	73.789		100.00	20.590	0.000
L2 110.00-70.00	89.45	0.957	6	1.6573	95.061	A	0.000	95.061	95.061	100.00	39.191	0.000
						B	0.000	95.061		100.00	0.000	0.000
						C	0.000	95.061		100.00	42.357	0.000
L3 70.00-31.50	50.64	0.814	5	1.5656	110.256	A	0.000	110.256	110.256	100.00	37.721	0.000
						B	0.000	110.256		100.00	0.000	0.000
						C	0.000	110.256		100.00	40.768	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L4 31.50-0.00	15.38	0.7	4	1.3897	102.790	A	0.000	102.790	102.790	100.00	22.994	0.000
						B	0.000	102.790		100.00	0.000	0.000
						C	0.000	102.790		100.00	25.045	0.000

Tower Pressure - Service

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1	129.06	1.063	8	62.327	A	0.000	62.327	62.327	100.00	7.800	0.000
150.00-110.00					B	0.000	62.327		100.00	0.000	0.000
					C	0.000	62.327		100.00	7.524	0.000
L2	89.45	0.957	7	84.012	A	0.000	84.012	84.012	100.00	7.800	0.000
110.00-70.00					B	0.000	84.012		100.00	0.000	0.000
					C	0.000	84.012		100.00	15.840	0.000
L3 70.00-31.50	50.64	0.814	6	99.622	A	0.000	99.622	99.622	100.00	7.507	0.000
					B	0.000	99.622		100.00	0.000	0.000
					C	0.000	99.622		100.00	15.246	0.000
L4 31.50-0.00	15.38	0.7	5	94.571	A	0.000	94.571	94.571	100.00	4.777	0.000
					B	0.000	94.571		100.00	0.000	0.000
					C	0.000	94.571		100.00	9.702	0.000

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy
5	1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy
12	1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy
13	1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Ice+1.0 Temp+Guy
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
16	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
17	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
18	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
19	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy

Comb. No.	Description
24	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 110	6.364	30	1.0668	0.0123
L2	110 - 70	0.609	31	0.2119	0.0044
L3	73.5 - 31.5	0.071	37	0.0079	0.0017
L4	35.667 - 0	0.036	37	0.0059	0.0005

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	RRUS 32 B66	30	6.364	1.0668	0.0123	18208
145.00	(2) 7250.03 /XM-1900-65-18.5I-2-D	30	5.465	0.9406	0.0111	18208
129.00	10.75' Flat Platform w/ Handrails	31	2.790	0.5584	0.0077	4335
122.00	Guy	31	1.825	0.4124	0.0063	3251

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 110	42.022	6	5.7201	0.0741
L2	110 - 70	9.159	6	1.6404	0.0209
L3	73.5 - 31.5	2.701	6	0.3882	0.0079
L4	35.667 - 0	0.645	6	0.1563	0.0025

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	RRUS 32 B66	6	42.022	5.7201	0.0741	3738
145.00	(2) 7250.03 /XM-1900-65-18.5I-2-D	6	37.070	5.1284	0.0663	3738
129.00	10.75' Flat Platform w/ Handrails	6	22.160	3.3257	0.0424	888
122.00	Guy	6	16.569	2.6273	0.0333	665

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension lb	Breaking Load lb	Actual T_u lb	Allowable ϕT_n lb	Required S.F.	Actual S.F.
L1	122.00 (A) (7)	7/8 EHS	7970.00	79699.84	35011.00	47820.00	1.000	1.366
	122.00 (B) (6)	7/8 EHS	7970.00	79699.84	35504.80	47820.00	1.000	1.347
	122.00 (C) (5)	7/8 EHS	7970.00	79699.84	35501.90	47820.00	1.000	1.347

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L1	150 - 110 (1)	TP21.25x15x0.1875	40.00	28.00	48.9	11.5845	-56741.00	615724.00	0.092
L2	110 - 70 (2)	TP27.61x21.25x0.25	40.00	122.00	194.7	16.9050	-56834.10	100711.00	0.564
L3	70 - 31.5 (3)	TP33.1x26.5535x0.3125	42.00	122.00	152.7	26.9540	-61446.10	261264.00	0.235
L4	31.5 - 0 (4)	TP37.38x31.8255x0.375	35.67	122.00	127.4	38.7601	-68442.60	539514.00	0.127

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	150 - 110 (1)	TP21.25x15x0.1875	278600.83	315006.67	0.884	0.00	315006.67	0.000
L2	110 - 70 (2)	TP27.61x21.25x0.25	230024.17	531001.67	0.433	0.00	531001.67	0.000
L3	70 - 31.5 (3)	TP33.1x26.5535x0.3125	91776.67	1080200.00	0.085	0.00	1080200.00	0.000
L4	31.5 - 0 (4)	TP37.38x31.8255x0.375	72874.92	1861400.00	0.039	0.00	1861400.00	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	150 - 110 (1)	TP21.25x15x0.1875	4205.85	403664.00	0.010	751.58	640848.33	0.001
L2	110 - 70 (2)	TP27.61x21.25x0.25	4281.21	623034.00	0.007	1227.73	1081041.67	0.001
L3	70 - 31.5 (3)	TP33.1x26.5535x0.3125	2256.82	993388.00	0.002	1226.02	2198941.67	0.001
L4	31.5 - 0 (4)	TP37.38x31.8255x0.375	1445.55	1439990.00	0.001	747.98	3789241.67	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	150 - 110 (1)	0.092	0.884	0.000	0.010	0.001	0.977	1.000	4.8.2
L2	110 - 70 (2)	0.564	0.433	0.000	0.007	0.001	0.998	1.000	4.8.2
L3	70 - 31.5 (3)	0.235	0.085	0.000	0.002	0.001	0.320	1.000	4.8.2
L4	31.5 - 0 (4)	0.127	0.039	0.000	0.001	0.000	0.166	1.000	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	150 - 110	Pole	TP21.25x15x0.1875	1	-56741.00	615724.00	97.7	Pass
		Guy A@122	7/8	7	35011.00	47820.00	73.2	Pass
		Guy B@122	7/8	6	35504.80	47820.00	74.2	Pass
		Guy C@122	7/8	5	35501.90	47820.00	74.2	Pass
L2	110 - 70	Pole	TP27.61x21.25x0.25	2	-56834.10	100711.00	99.8	Pass
L3	70 - 31.5	Pole	TP33.1x26.5535x0.3125	3	-61446.10	261264.00	32.0	Pass
L4	31.5 - 0	Pole	TP37.38x31.8255x0.375	4	-68442.60	539514.00	16.6	Pass
							Summary	
						Pole (L2)	99.8	Pass
						Guy A (L1)	73.2	Pass
						Guy B (L1)	74.2	Pass
						Guy C (L1)	74.2	Pass
						RATING =	**99.8**	**Pass**

Base Plate & Anchor Rod Analysis

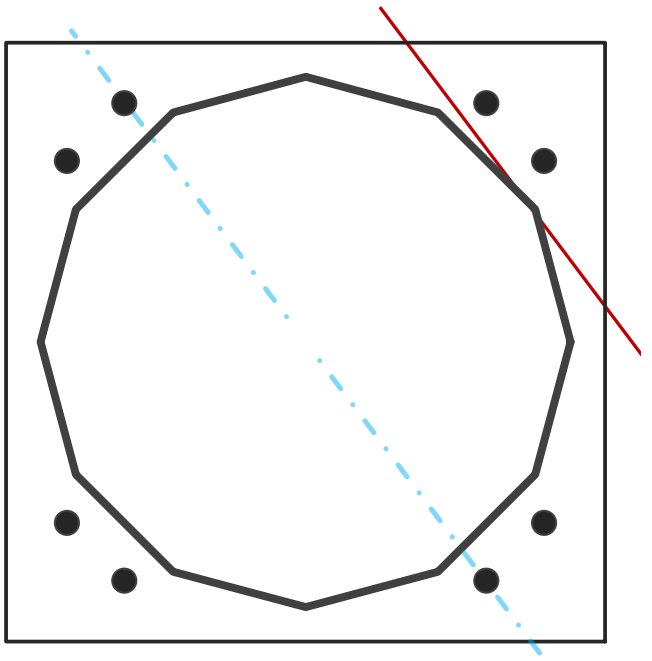
Pole Dimensions		
Number of Sides	12	-
Diameter	37.38	in
Thickness	0.375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	152.8	k-ft
Axial, Pu	75.7	k
Shear, Vu	3.8	k
Neutral Axis	307	°

Report Capacities		
Component	Capacity	Result
Base Plate	8%	Pass
Anchor Rods	12%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	44	in
Thickness	2 1/2	in
Grade	A572-60	-
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	0	in
Orientation Offset	0	°
Anchor Rod Detail	c	η=0.55
Clear Distance	N/A	in
Applied Moment, Mu	165.8	k
Bending Stress, ϕMn	2075.2	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	8	-
Diameter, ø	2 1/4	in
Bolt Circle	44	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	30.3	k
Anchor Rods, ϕPn	259.8	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	3.8	152.8	1.00
Anchor Rod Forces	3.8	152.8	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	43.0992	3.5916	0.1692		7379.37
Bolt	3.9761	3.2477	0.8393	4.5	6294.24
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	44	in
Thickness, t	2.5	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	23.211	in
Detail Type	c	-
Detail Factor	0.55	-
Clear Distance	N/A	-

External Base Plate		
Chord Length AA	24.595	in
Additional AA	0.000	in
Section Modulus, Z	38.430	in^3
Applied Moment, Mu	165.8	k-ft
Bending Capacity, ϕMn	2075.2	k-ft
Capacity, Mu/ϕMn	0.080	OK
Chord Length AB	23.268	in
Additional AB	0.000	in
Section Modulus, Z	36.356	in^3
Applied Moment, Mu	126.1	k-ft
Bending Capacity, ϕMn	1963.2	k-ft
Capacity, Mu/ϕMn	0.064	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in^3
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Anchor Rods		
Anchor Rod Quantity, N	8	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	44	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	30.3	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.116	OK
Interaction Capacity	0.116	OK

Additional Bolt Group 1		
Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Compressive Capacity, ϕPn		
Interaction Capacity		

Additional Bolt Group 2		
Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Compressive Capacity, ϕPn		
Interaction Capacity		

Dywidag Reinforcement		
Dywidag Quantity, N	0	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	44.26	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Capacity, Pu/ϕPn		

Base Plate Stiffeners		
Applied Axial Force, Pu	0.0	k
Applied Horizontal Force, Vu	0.00	k

Vertical Weld		
Vert.-to-Stiffener a=e_x/l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Compressive Capacity, ϕPn	#DIV/0!	k
Vert.-to-Plate a=e_x/l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, ϕVn	#DIV/0!	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	-	

Horizontal Weld		
Horz.-to-Stiffener a=e_x/l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Effective Fillet	0.000	in
Compressive Capacity, ϕPn	#DIV/0!	k
Horz.-to-Pole a=e_x/l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, ϕVn	#DIV/0!	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	-	

Plate Tension		
Gross Cross Section	0.000	in^2
Net Cross Section	0.000	in^2
Tensile Capacity, ϕTn	0.0	k
Capacity, Tu/ϕTn	-	

Plate Compression		
Radius of Gyration	#DIV/0!	in^3
kl/r	#DIV/0!	-
4.71 √(E/Fy)	0.00	-
Buckling Stress(Fe)	0.0	-
Crit. Buckling Stress(Fcr)	0.0	ksi
Compressive Capacity, ϕPn	0.0	k
Capacity, Pu/ϕPn	-	

Base/Flange Plate	Plate Type	***Flange***	***@ 110.0 ft***
	Pole Diameter	21.25	in
	Pole Thickness	0.1875	in
	Plate Diameter	28.5	in
	Plate Thickness	1	in
	Plate Fy	60	ksi
	Weld Length	0.1875	in
	ϕ_s Resistance	75.10	k-in
	Applied	57.79	k-in
Stiffeners	#		

Bolts	#	***12***	
	Bolt Circle	25.75	in
	(R)adial / (S)quare	R	
●	Diameter	1	in
	Hole Diameter	1.125	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	54.52	k
	Applied	38.52	k
Reinforcement ●	#	***0***	
Extra Bolts O	#	***0***	

Code Rev. ***G***

Moment 278.6 k-ft
Axial 56.7 k

Date	7/26/2018
Engineer	RDB
Site #	302476
Carrier	AT&T Mobility

Required Flange Thickness:
0.88 in OK

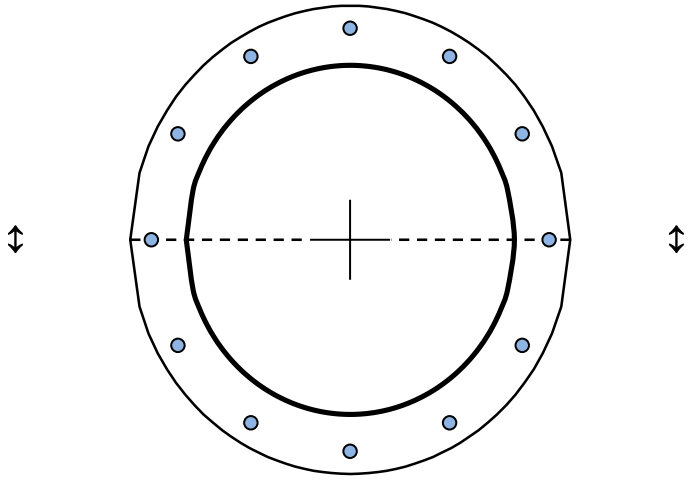
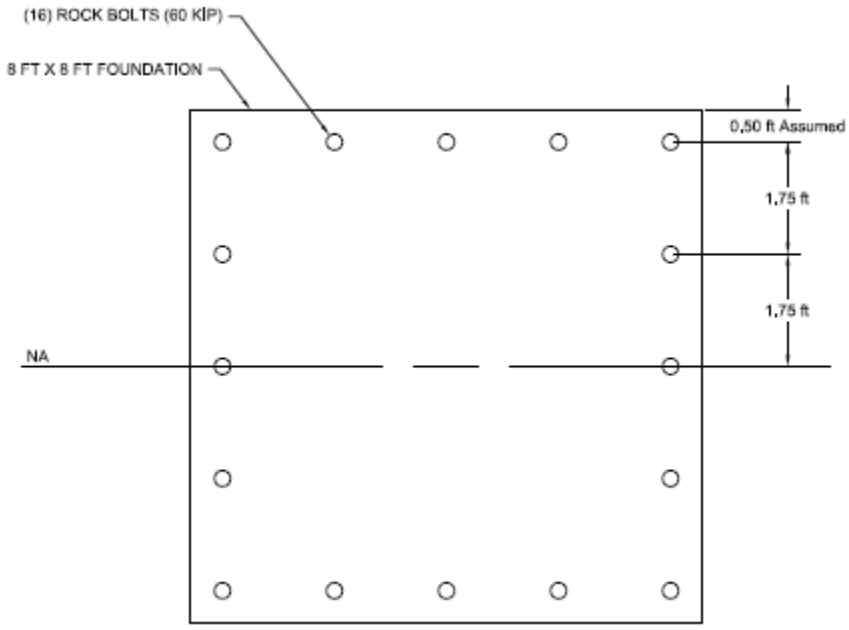


Plate Stress Ratio:
0.77 (Pass)

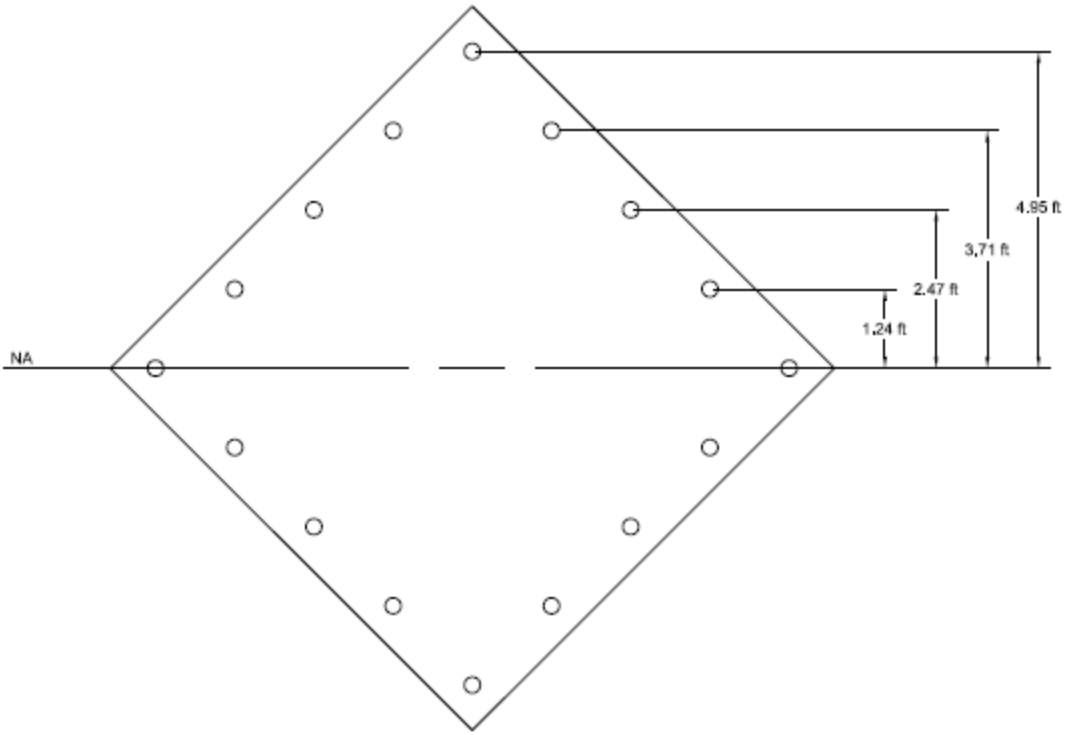
Bolt Stress Ratio:
0.71 (Pass)

REF TIA-G 4.9.6.4



$I_0 = \sum d^2$

$I_0 = 4 * 1.75^2 + 10 * 3.5^2 = \mathbf{134.8}$



$I_0 = \sum d^2$

$I_0 = 4 * 1.24^2 + 4 * 2.47^2 + 4 * 3.71^2 + 2 * 4.95^2 = \mathbf{134.6}$

CONTROLLING USAGE

$$M_{Overturning} = M + V * D = 152.8 + 3.8 * 6 = \mathbf{175.6k - ft}$$

$$T_{U-Rock-Bolt} = \frac{M_{Overturning} * L_{Max}}{I_0} - \frac{P}{\#Rock\ Bolts}$$

$$T_{U-Rock-Bolt} = \frac{175.6 * 4.95}{134.6} - \frac{75.7}{16} = \mathbf{1.7k}$$

$$\frac{Tub}{\emptyset Rnt} = \frac{1.7k}{0.75(60k)} = \mathbf{0.04\ OK}$$

GUY ANCHOR ROD CHECK

$$\left.\begin{matrix}\text{Uplift} = 25.6\text{k} \\ \text{Shear} = 24.4\text{k}\end{matrix}\right\} \text{Guy Anchor Reactions}$$

Tub = Tapplied $= \sqrt{(25.6k)^2 + (24.4k)^2} = 35.4k$

1.5” Diameter Anchor Rod
A36 Grade Assumed Ag = $1.77\ in^2$

$$\frac{Tub}{\emptyset Rnt} = \frac{35.4k}{0.8(36ksi * 1.77in^2)} = \mathbf{0.69\ OK}$$

EXHIBIT 4

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT1005

FA#: 10034976

Wolcot West
Farmdale Drive
Waterbury, CT 06704

August 2, 2018

Centerline Communications Project Number: 950012-143

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**14.97 %**

August 2, 2018

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

Emissions Analysis for Site: **CT1005 – Wolcot West**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **Farmdale Drive, Waterbury, 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 population 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 population 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.

Population 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 performed for the proposed AT&T Wireless antenna facility located at **Farmdale Drive, Waterbury, 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.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
LTE	850 MHz	2	40
LTE	700 MHz	4	40
LTE	2300 MHz (WCS)	4	30
LTE	700 MHz (BAND 14)	4	40
LTE	2100 MHz (AWS)	4	30
LTE	1900 MHz (PCS)	4	40

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) 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.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Powerwave 7770	154
A	2	CCI OPA-65R-LCUU-H8	154
A	3	Kathrein 800-10966	154
A	4	CCI TPA-65R-LCUUUU-H8	154
B	1	Powerwave 7770	154
B	2	CCI OPA-65R-LCUU-H6	154
B	3	Kathrein 800-10965	154
B	4	Quintel QS66512-2	154
C	1	Powerwave 7770	154
C	2	CCI OPA-65R-LCUU-H8	154
C	3	Kathrein 800-10966	154
C	4	CCI TPA-65R-LCUUUU-H8	154

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.24
Antenna A2	CCI OPA-65R-LCUU-H8	850 MHz / 700 MHz / 2300 MHz (WCS)	13.35 / 12.55 / 14.95	8	280	6,920.57	1.62
Antenna A3	Kathrein 800-10966	700 MHz (BAND 14) / 2100 MHz (AWS)	13.55 / 16.1	8	280	8,568.60	2.09
Antenna A4	CCI TPA-65R-LCUUUU-H8	700 MHz / 1900 MHz (PCS)	12.95 / 13.75	6	240	5,372.14	1.18
						Sector A Composite MPE%	**5.12**
Antenna B1	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.24
Antenna B2	CCI OPA-65R-LCUU-H6	850 MHz / 700 MHz / 2300 MHz (WCS)	12.45 / 11.65 / 15.45	8	280	6,785.10	1.51
Antenna B3	Kathrein 800-10965	700 MHz (BAND 14) / 2100 MHz (AWS)	12.65 / 15.95	8	280	7,667.84	1.81
Antenna B4	Quintel QS66512-2	700 MHz / 1900 MHz (PCS)	10.85 / 13.85	6	240	4,855.52	0.98
						Sector B Composite MPE%	**4.54**
Antenna C1	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.24
Antenna C2	CCI OPA-65R-LCUU-H8	850 MHz / 700 MHz / 2300 MHz (WCS)	13.35 / 12.55 / 14.95	8	280	6,920.57	1.62
Antenna C3	Kathrein 800-10966	700 MHz (BAND 14) / 2100 MHz (AWS)	13.55 / 16.1	8	280	8,568.60	2.09
Antenna C4	CCI TPA-65R-LCUUUU-H8	700 MHz / 1900 MHz (PCS)	12.95 / 13.75	6	240	5,372.14	1.18
						Sector C Composite MPE%	**5.12**

Table 3: AT&T Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, the sectors with the largest calculated MPE% are sectors A & C. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Sectors A & C	**5.12 %**
Verizon Wireless	9.37 %
Arch Paging	0.48 %
Site Total MPE %:	**14.97 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	5.12 %
AT&T Sector B Total:	4.54 %
AT&T Sector C Total:	5.12 %
Site Total:	14.97 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, the sectors with the largest calculated MPE% are sectors A & C.

AT&T _ Frequency Band / Technology (Sectors A & C)	# 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 850 MHz UMTS – Antenna 1	2	414.12	154	1.36	850 MHz	567	0.24%
AT&T 850 MHz LTE – Antenna 2	2	865.09	154	2.84	850 MHz	567	0.50%
AT&T 700 MHz LTE – Antenna 2	2	719.55	154	2.36	700 MHz	467	0.51%
AT&T 2300 MHz (WCS) LTE – Antenna 2	4	937.82	154	6.16	2300 MHz (WCS)	1000	0.62%
AT&T 700 MHz (BAND 14) LTE – Antenna 3	4	905.86	154	5.95	700 MHz	467	1.27%
AT&T 2100 MHz (AWS) LTE – Antenna 3	4	1,236.29	154	8.12	2100 MHz (AWS)	1000	0.81%
AT&T 700 MHz LTE – Antenna 4	2	788.97	154	2.59	700 MHz	467	0.55%
AT&T 1900 MHz (PCS) LTE – Antenna 4	4	948.55	154	6.23	1900 MHz (PCS)	1000	0.62%
						Total:	**5.12%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population 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 population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	5.12 %
Sector B:	4.54 %
Sector C:	5.12 %
AT&T Maximum MPE % (Sectors A & C):	5.12 %
Site Total:	14.97 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **14.97 %** of the allowable FCC established general population 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
RF Engineering Director
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

EXHIBIT 5

Jennifer Iliades

From:	Ryan Tierney <Ryan.Tierney@americantower.com>
Sent:	Tuesday, July 17, 2018 10:15 AM
To:	David Ford
Cc:	Jennifer Iliades
Subject:	RE: AT&T MOBILITY @ Wtbr - Waterbury, 302476-WT1 / Customer #CT1005/FA# 10034976 (OAA709206)

Hi David and Jennifer,

The mount change for this site was approved by ATC engineering.

Thank you,

Ryan Tierney
Account Project Manager
American Tower Corporation
10 Presidential Way
Woburn, MA 01801
781-428-7250 office
ryan.tierney@americantower.com
1 CE 227

From: David Ford <dford@clinellc.com>
Sent: Wednesday, July 11, 2018 5:18 PM
To: Ryan Tierney <Ryan.Tierney@americantower.com>
Cc: Jennifer Iliades <jiliades@clinellc.com>; David Ford <dford@clinellc.com>
Subject: RE: AT&T MOBILITY @ Wtbr - Waterbury, 302476-WT1 / Customer #CT1005/FA#10034976 (OAA709206)

Hi Ryan,

Please note the attached regarding the mount replacement.

Jennifer will confirm once the new app has been submitted.

Thanks!

David Ford
Centerline Communications
(508) 821-6509

Dewberry

Dewberry Engineers Inc.
280 Summer Street, 10th Floor
Boston, MA 02210

617.695.3400
617.695.3310 fax
www.dewberry.com

June 26, 2018

AT&T
550 Cochituate Road Suites 13 & 14
Framingham, MA 01701

RE: **Site Name: Wolcott West**
Site No.: CT1005
Address: Farmdale Drive
Waterbury, CT 06704

To whom it may concern,

AT&T has proposed to add three (3) new antennas and (6) new RRHs on the existing monopole at the above referenced site. Dewberry Engineers Inc. (Dewberry) has evaluated the final equipment mounting configuration, which is to be mounted to a new low profile platform at a centerline of 153 ft. A.G.L. on the existing 155 ft. tall monopole. Contractor will remove and replace the existing co-lo platform with a new Site Pro low profile platform (P/N: F3P-12-H10), as noted on the AT&T 6C/7C REV 0 Construction Drawings by Dewberry, dated 06/26/18.

See below for the final loading configurations:

(3) Powerwave 7770	35 lbs. each	(55.0"H x 11.0"W x 5.0"D)
(3) OPA-65R-LCUU-H8	79 lbs. each	(92.7"H x 14.4"W x 7.0"D)
(3) Kathrein 800-10966	126 lbs. each	(96.0"H x 20.0"W x 6.9"D)
(2) TPA-65R-LCUUUU-H8	90 lbs. each	(96.0"H x 14.4"W x 8.6"D)
(1) QS66512-2	111 lbs. each	(72.0"H x 12.0"W x 9.6"D)
(3) RRUS-32 WCS	60 lbs. each	(27.2"H x 12.1"W x 7.0"D)
(3) RRUS-32 B66	53 lbs. each	(27.2"H x 12.1"W x 7.0"D)
(3) B14 4478 RRU	59.9 lbs. each	(15"H x 13.2"W x 7.4"D)
(3) RRUS-11	50.7 lbs. each	(19.6"H x 16.9"W x 7.2"D)
(3) RRUS-32 PCS	60 lbs. each	(27.2"H x 12.1"W x 7.0"D)
(2) DC6-48-60-18-8F	30 lbs. each	(23"H x 9.7"W x 9.7"D)

Dewberry concludes that the equipment specified above may be mounted to the proposed low profile platform according to the allowable loading values in the capacity chart provided by Valmont Site Pro. The final equipment loading shown is based on antenna design sheet for AT&T Wolcott West dated 10/09/17.

The existing platform must be replaced because the mounting face is not large enough to accommodate the required spacing. The face widths of the existing and proposed platforms are 10'-4" and 12'-6", respectfully. That is a difference of 2'-2".

Please note; our assessment is limited to the proposed co-lo platform mount to the existing monopole. Dewberry has not analyzed the monopole or corresponding monopole components to which the mounts are attached. No conclusions, expressed or implied shall be made to the capacity of any components with the exception of the proposed antenna/equipment mounts previously described. The addition of any new equipment or reconfiguration of the proposed equipment shown on the plans will require further evaluation and design.

If you have any questions, please do not hesitate to call me at 617-531-0800.

Sincerely,
Dewberry Engineers Inc.

Benjamin Revette, P.E.
Senior Associate