



Jon Ritter

16 Chestnut Street, Suite 420
Foxboro, MA 02035
Tel (781) 831-1281
Fax (774) 215-5423

Melanie Bachman
Executive Director
Connecticut Siting Counsel
10 Franklin Square
New Britain, CT 06051

Re: Notice of Exempt Modification – 438 Bridgeport Ave, Milford, CT

Dear Ms. Bachman:

Please accept this letter as notification pursuant to R.C.S.A Section 16-50j-73, for construction that constitutes modification pursuant to R.C.S.A Section 16-50j-72(b) and 16-50j-73. In accordance with R.C.S.A Section 16-50j-73, a copy of this submission is being sent to the Town of Milford. A copy of this submission is also being sent to Henry Charchenko, the property owner on which the tower is located and American Tower Company, the tower owner. Additionally, a copy will be sent to the major of the city of Milford Benjamin G. Blake

T-Mobile Northeast LLC's Proposed Wireless Modifications

T-Mobile as successor in interest to Omnipoint Communications achieved an initial approval from the Siting Council to install antennas as well as related ground equipment and currently maintains this equipment. The facility consists of a One-Hundred (100') foot high communications tower within a fenced in compound. T-Mobile now intends to modify the facility as shown on the enclosed plans prepared by Infinigy Engineering and annexed hereto in Exhibit 1. The modifications will consist of removing and replacing (swapping) three (3) antennas at the existing AGL of seventy three (73') feet and adding three (3) new antennas at the existing AGL of seventy three (73') feet for a total of six (6) antennas, two (2) per sector. A structural analysis has been completed for the site and attached as exhibit 3. The Connecticut siting council's record of docket number 44 is included and specifies that on July 24 of 1984 the Bridgeport Avenue cell tower was approved with the maximum height of 117' and that construction only occur during daylight working hours.

T-Mobile's Proposed Wireless Modifications Constitutes An "Exempt Modification"

The proposed modification to the above mentioned Facility constitutes an exempt modification of an existing facility provided for in R.C.S.A Section 16-50j-72(b)(2) and Council regulations promulgated pursuant thereto.

- 1) The proposed modification will not result in an increase in the height of the existing tower.
- 2) The modifications will remain entirely within the limits of the leased area. The modifications therefor, will not require the extension of the boundary.
- 3) The proposed modification does not increase the noise levels at the boundary by six(6) decibels or more under normal conditions.
- 4) T-Mobile's proposed facility will not increase the cumulative radio frequency electromagnetic radiation power density at the Tower sites' boundary to or above the standard adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and MPE limits established by the Federal Communications Commission. A cumulative General Power Density table for T-Mobile's proposed modified facility is included as Exhibit 2.
- 5) The facility has received all municipal zoning approvals and building permits. (Regs., Conn. State Agencies Section 16-50j-72))

For all the foregoing reasons, T-Mobile Northeast LLC respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A Section 16-50j-72(b)(2)

Respectfully submitted,

Jonathan H Ritter

Jon Ritter 774.264.0016

On behalf of American Tower Corporation

c/o Tower Resource Management, Inc.

16 Chestnut Street, Suite 420

Foxboro, MA 02035

cc: **City of Milford Major Benjamin G. Blake**
Henry Charchenko; property owner
American Tower Company; tower owner

Exhibit 1

Site Plan

Exhibit 2

Power Density Report

Exhibit 3

Structural Analysis

DOCKET NO. 44

AN APPLICATION SUBMITTED BY THE SOUTHERN : CONNECTICUT SITING
NEW ENGLAND TELEPHONE COMPANY FOR A :
CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY : COUNCIL
AND PUBLIC NEED FOR THE CONSTRUCTION,
MAINTENANCE AND OPERATION OF FACILITIES TO
PROVIDE CELLULAR SERVICE IN NEW HAVEN COUNTY : July 24, 1984

D E C I S I O N A N D O R D E R

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut, revisions of 1958, revised to 1983, as amended, be issued to the Southern New England Telephone Company for the construction, operation, and maintenance of a telecommunications tower and associated equipment to provide cellular service at each of the following sites:

Jasudowich tract, Brushy Plain Road, Branford, Connecticut;
Town of Guilford tract, Tanner Marsh Road, Guilford, Connecticut;
Bridgeport Avenue, Milford, Connecticut;
Quagliaro tract, Farmdale Drive, Waterbury, Connecticut;
Pease Road, Woodbridge, Connecticut; and
Dwight Street, North Haven, Connecticut.

The facilities shall be constructed, operated, and maintained as specified in the Council's record on this matter, and subject to the following conditions:

1. The towers including antennas shall be no taller than necessary to provide the proposed service and in no event shall exceed
 - a) 167' at the Branford site,
 - b) 167' at the Guilford site,
 - c) 117' at the Milford site,
 - d) 167' at the Waterbury site,
 - e) 167' at the Woodbridge site,
 - f) 167' at the North Haven site;
2. A fence not lower than eight feet shall surround each tower and its associated equipment;

3. The applicant or its successor shall notify the Council if and when directional antennas or any other equipment is added to any of these facilities;
4. The applicant or its successor shall permit, in accordance with representations made by it during the proceeding, public or private entities to share space on the facilities, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing;
5. Unless necessary to comply with condition number six, below, no lights shall be installed on any of these towers;
6. The facilities shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations;
7. The applicant shall submit a development and management plan (D&M) for the Branford, Milford, Woodbridge, and North Haven sites pursuant to sections 16-50j-85 through 16-50j-87 of the regulations of state agencies, except that irrelevant items in section 16-50j-86 need only be identified as such. The D&M plans shall include appropriate evergreen screening of the sites, erosion control measures, reseeding plans, and tree removal plans. The applicant shall comply with the reporting requirements of section 16-50j-87 for all sites;
8. Construction activities shall take place during daylight working hours;
9. This decision and order shall be void and the towers and associated equipment approved herein shall be dismantled and removed, or reapplication for any new use shall be made to the Connecticut

Siting Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction;

10. This decision and order shall be void if all construction authorized is not completed within three years of the issuance of this decision.

Pursuant to section 16-50p of the General Statutes, we hereby direct that a copy of the opinion and decision and order be served on each person listed below. A notice of the issuance shall be published in the Hartford Courant, New Haven Register, and the Waterbury Republican.

The parties to this proceeding are

The Southern New England Telephone Company (Applicant)
Room 314
227 Church Street
New Haven, Connecticut 06506

ATTENTION: Mr. Peter J. Tyrrell (its attorney)
Senior Attorney

Town of Hamden represented by:
Peter F. Villano, Mayor
Shirley Gonzales, Town Planner
Mr. Hugh Manke, Esquire
Office of the Town Attorney
Memorial Town Hall
2372 Whitney Avenue
Hamden, Connecticut 06518

Inland Wetlands Agency represented by:
Town of Woodbridge
Robert J. Klancko
Chairman
Town Hall
11 Meeting House Lane
Woodbridge, Connecticut 06525

Town Plan and Zoning
Commission
Town of Woodbridge

represented by:

Norman Fineberg
Chairman
Town Hall
11 Meeting House Lane
Woodbridge, Connecticut 06525

The Honorable Peter M. Lerner
State Representative
State of Connecticut
House of Representatives
State Capitol
Hartford, Connecticut 06115

John Menta
Felicia Tencza

represented by:

Ms. Felicia Tencza
580 Gaylord Mountain Road
Hamden, Connecticut 06518

Ms. Renee Robinson
265 Blue Trail
Hamden, Connecticut 06518

(service waived)

Irene L. Wong
Edson H. Mount
Dr. & Mrs. H.M. Fiskio
Dr. & Mrs. Alexander Gottschalk

represented by:

Dr. & Mrs. Alexander Gottschalk
230 Six Rod Highway
Hamden, Connecticut 06518

The Sleeping Giant Park Association

represented by:

Mr. Dag Pfeiffer
President
Box 14
Quinnipiac College
Hamden, Connecticut 06518

West Rock Ridge Park Association

represented by:

Mr. William L. Dohney, Jr., D.D.S.
President
220 Mountain Road
Hamden, Connecticut 06514

Sierra Club

represented by:

Ms. M. Kim Yanoshick
Executive Director
Hartford Chapter
118 Oak Street
Hartford, Connecticut 06106

Quinnipiac College

represented by:

Mr. Richard A. Terry
President
Hamden, Connecticut 06518

Guilford Conservation Commission

represented by:

Ms. Carolyn K. Evans
Chairman
Town Hall
Park Street
Guilford, Connecticut 06437

Mrs. Barbara R. Peterson
Mary & Phil Faust
Anita L. & Richard M. Sullivan

represented by:

Anita L. & Richard M. Sullivan
315 Chestnut Lane
Hamden, Connecticut 06518

Mrs. Pauline H. Hoff

represented by:

Herbert L. Emanuelson, Jr.
Emanuelson and Wynne
205 Church Street
New Haven, Connecticut 06510

Hamden League of Women Voters

represented by:

Mrs. Sherrill Zoller
605 West Woods Road
Hamden, Connecticut 06518
(service waived)

Joan Rosenberg
230 Ridewood Avenue
Hamden, Connecticut 06517

Mr. & Mrs. Richard Sykes
110 Blue Trail
Hamden, Connecticut 06518

Thomas & Claudia Sullivan, Jr.
100 Blue Trail
Hamden, Connecticut 06518

Mr. William N. Pantalone
27 Pease Road
Woodbridge, Connecticut 06525

(service waived)

INTERVENORS

Metromedia TeleCommunications
Nutmeg Telecommunications, Inc.
CSI of New Haven
CSI of Stamford
Cellular Communications, Inc.
LIN Cellular Corp.
Cellular Mobile Services
Maxcell TeleCommunications, Inc.
Mobile Cellular Telephone, Inc.
Cellular Dynamics
Connecticut Corridor Cellular
Chase/Post Cellular

represented by:

Dwight A. Johnson
Murtha, Cullina, Richter
and Pinney
101 Pearl Street
P.O. Box 3197
Hartford, Connecticut 06103-0197

C E R T I F I C A T I O N

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case or read the record thereof, and that we voted as follows:

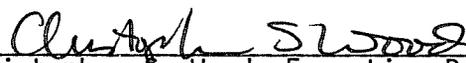
Dated at New Britain, Connecticut, this 24th day of July, 1984.

<u>Council Members</u>	<u>Vote Cast</u>
_____) Gloria Dibble Pond Chairperson	Absent
_____) Commissioner John Downey Designee: Commissioner Peter G. Boucher	Absent
<i>Brian Emerick</i> _____) Commissioner Stanley Pac Designee: Brian Emerick	Yes Absent Abstain
<i>Owen L. Clark</i> _____) Owen L. Clark	Yes
<i>Fred J. Doocy</i> _____) Fred J. Doocy	Yes
<i>Mortimer A. Gelston</i> _____) Mortimer A. Gelston	Yes
<i>James G. Horsfall</i> _____) James G. Horsfall	Yes
_____) Janet Sitty	Absent
<i>Colin C. Tait</i> _____) Colin C. Tait Acting Chairperson	Yes

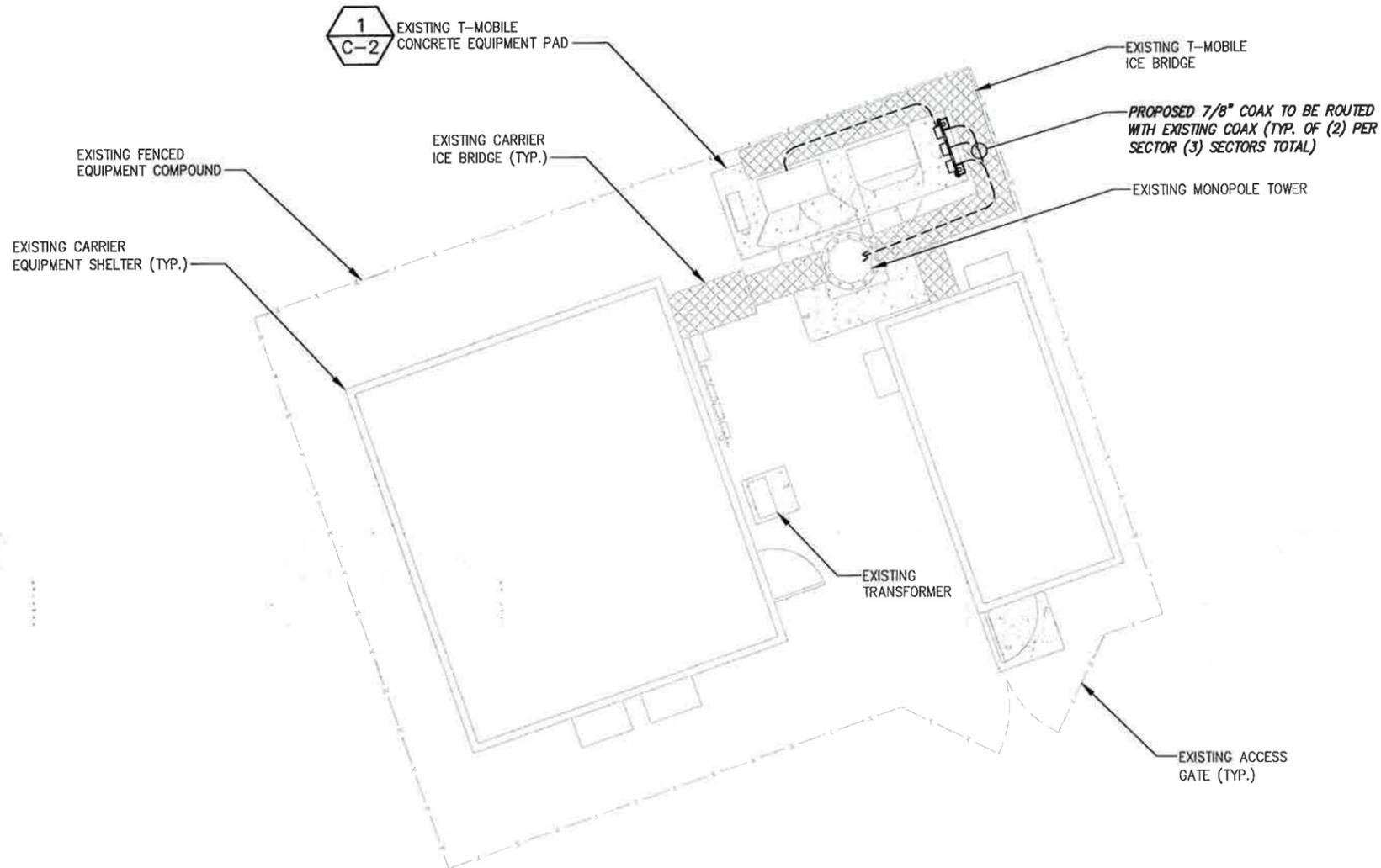
STATE OF CONNECTICUT)
 :
COUNTY OF HARTFORD) ss. New Britain, July 24, 1984

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:



Christopher S. Wood, Executive Director
Connecticut Siting Council



GENERAL SITE NOTES:

1. A COMPLETE BOUNDARY SURVEY OF THE HOST PARCEL HAS NOT BEEN PERFORMED BY INFINIGY. BOUNDARY INFORMATION IF SHOWN WAS OBTAINED FROM INFORMATION PROVIDED BY OTHERS. PROPERTY IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
2. BASEMAPPING INFORMATION BASED ON PROVIDED INFORMATION.
3. CONTRACTOR TO FIELD VERIFY DIMENSIONS AS NECESSARY BEFORE CONSTRUCTION.
4. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE SIGNS OF ADVERTISING.
5. THE PROPOSED DEVELOPMENT IS UNMANNED AND THEREFORE DOES NOT REQUIRE A MEANS OF WATER SUPPLY OR SEWAGE DISPOSAL.
6. NO LANDSCAPING WORK IS PROPOSED IN CONJUNCTION WITH THIS DEVELOPMENT OTHER THAN THAT WHICH IS SHOWN.
7. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.
8. UTILITIES SHOWN ON PLAN ARE TAKEN FROM OWNERS RECORDS AND FIELD LOCATION OF VISIBLE SURFACE FEATURES. THE EXISTENCE, EXTENT AND EXACT HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES HAS NOT BEEN VERIFIED. ANY CONTRACTOR PERFORMING WORK ON THIS SITE MUST CONTACT MISS UTILITY AT LEAST 48 HOURS PRIOR TO COMMENCING WORK.
9. ALL OBSOLETE OR UNUSED FACILITIES SHALL BE REMOVED WITHIN 12 MONTHS OF CESSATION OF OPERATIONS.

T-Mobile
T-MOBILE NORTHEAST LLC
 103 MONARCH DR
 LIVERPOOL, NY 13088

INFINIGY
1033 Waterlily Shaker Rd
 Albany, NY 12205
 Office # (518) 860-0790
 Fax # (518) 860-0793

SUBMITTALS

DATE	DESCRIPTION	REVISION
9/22/15	REVISED FOR PERMIT	0
12/11/15	REVISED FOR PERMIT	1

SITE LEGEND

- SITE PROPERTY LINE
- STREET OR ROAD
- x - x - CHAIN LINK FENCE
- O O — OPAQUE WOODEN FENCE
- ⊗ TREES/SHRUBS
- TREE LINE
- ⊗ UTILITY POLE
- (E) EXISTING
- (N) NEW
- (P) PROPOSED
- (F) FUTURE

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: 317-000
 DRAWN BY: MAP
 CHECKED BY: ASW



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NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CT11318F

SITE NAME:
 CT318/SPECTRA_DEVON
 438 BRIDGEPORT AVE
 MILFORD, CT 06480

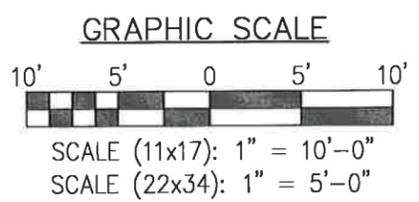
SHEET TITLE
SITE PLAN

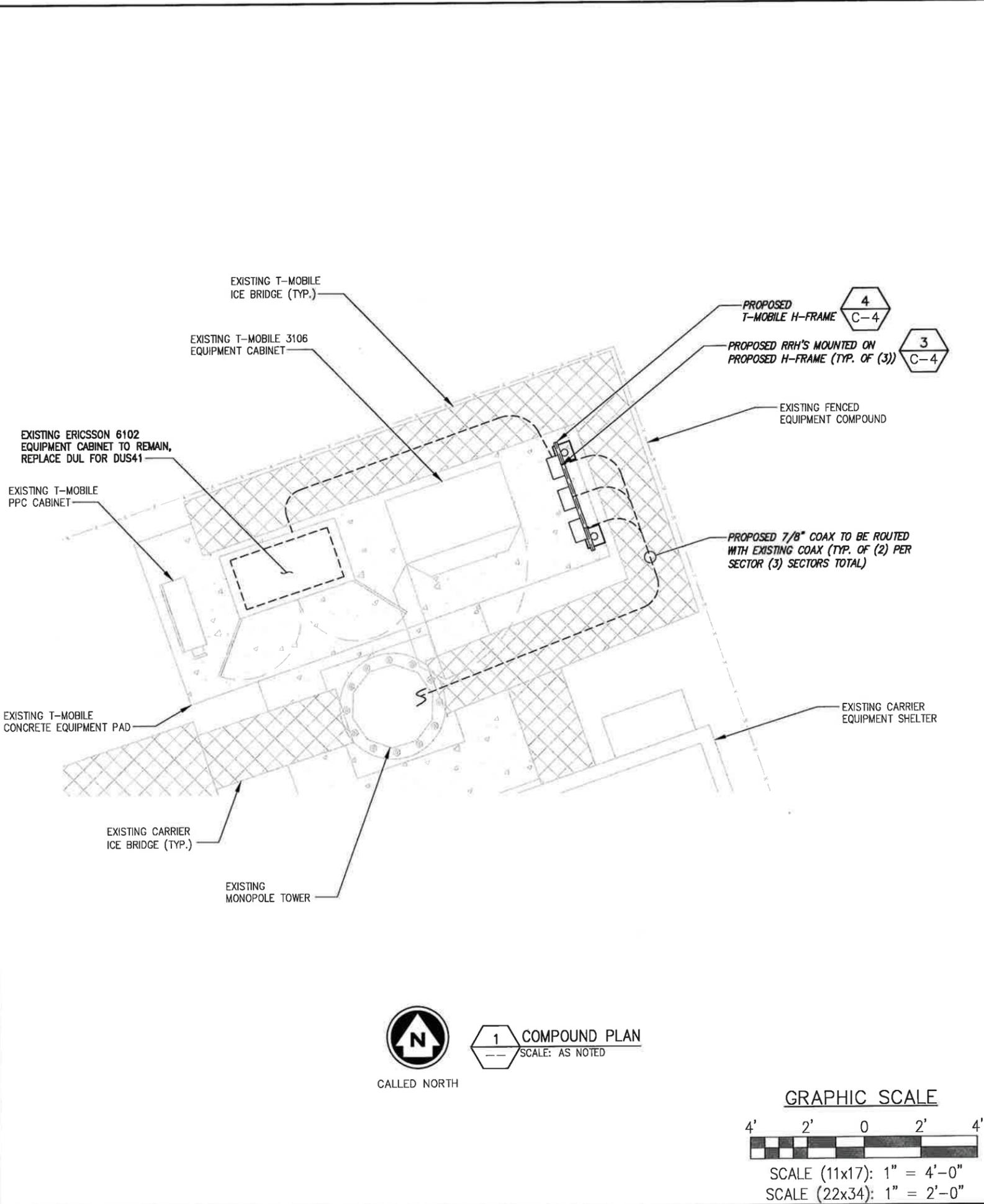
SHEET NUMBER
C-1

SHEET 2 OF 8 SHEETS



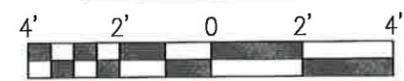
1 COMPOUND PLAN
 SCALE: AS NOTED



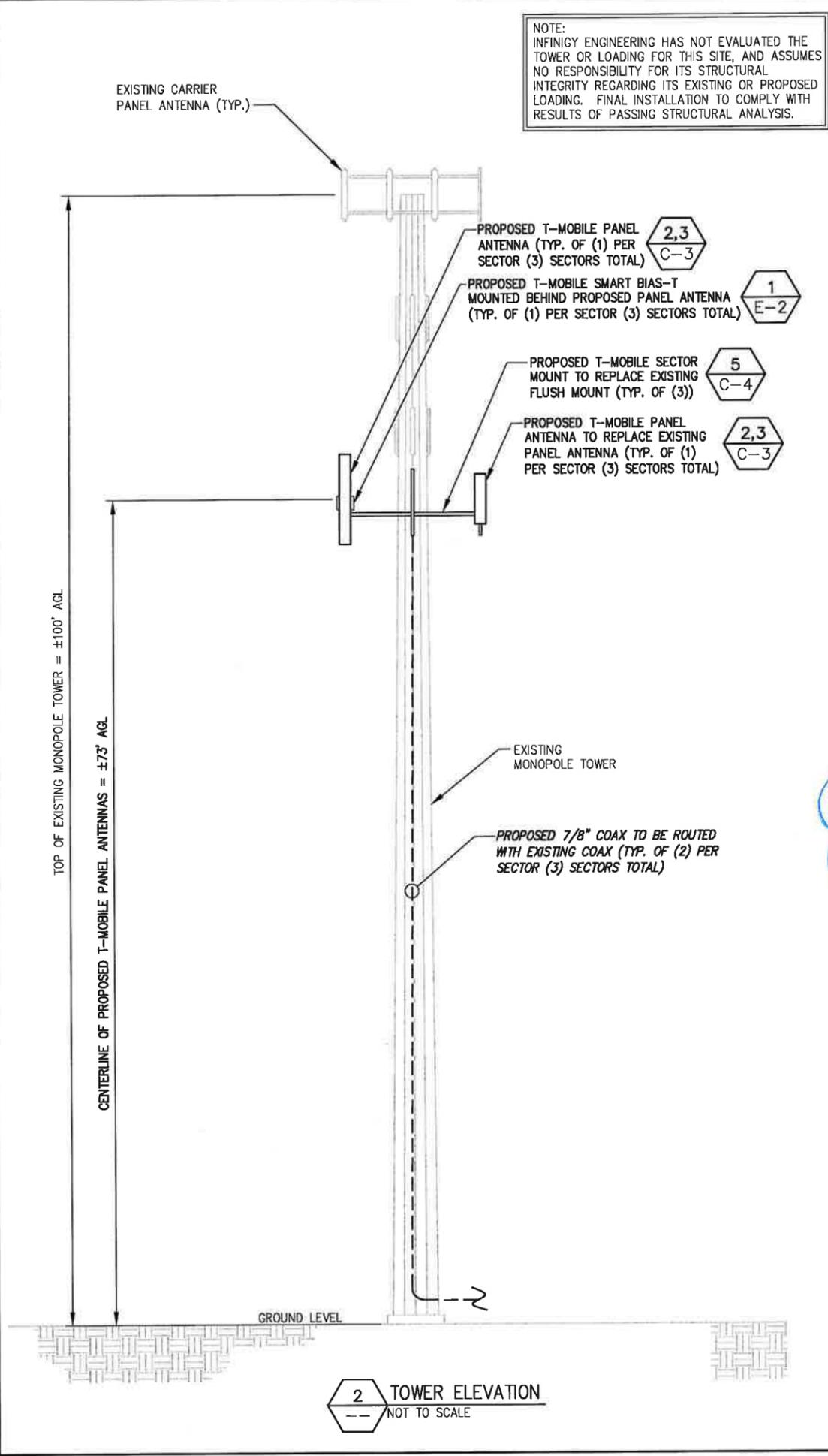


1 COMPOUND PLAN
SCALE: AS NOTED

GRAPHIC SCALE



SCALE (11x17): 1" = 4'-0"
SCALE (22x34): 1" = 2'-0"



NOTE:
INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER OR LOADING FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY REGARDING ITS EXISTING OR PROPOSED LOADING. FINAL INSTALLATION TO COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSIS.

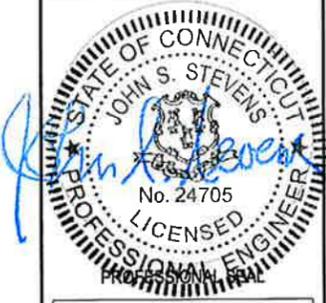
2 TOWER ELEVATION
NOT TO SCALE

SUBMITTALS

DATE	DESCRIPTION	REVISION
9/02/15	REVISED FOR PERMIT	0
12/11/15	REVISED FOR PERMIT	1

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC			

PROJECT NO: 317-000
DRAWN BY: MAP
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SITE NUMBER:
CT11318F
SITE NAME:
CT318/SPECTRA_DEVON
438 BRIDGEPORT AVE
MILFORD, CT 06460

SHEET TITLE
COMPOUND PLAN & ELEVATION

SHEET NUMBER
C-2
SHEET 3 OF 8 SHEETS

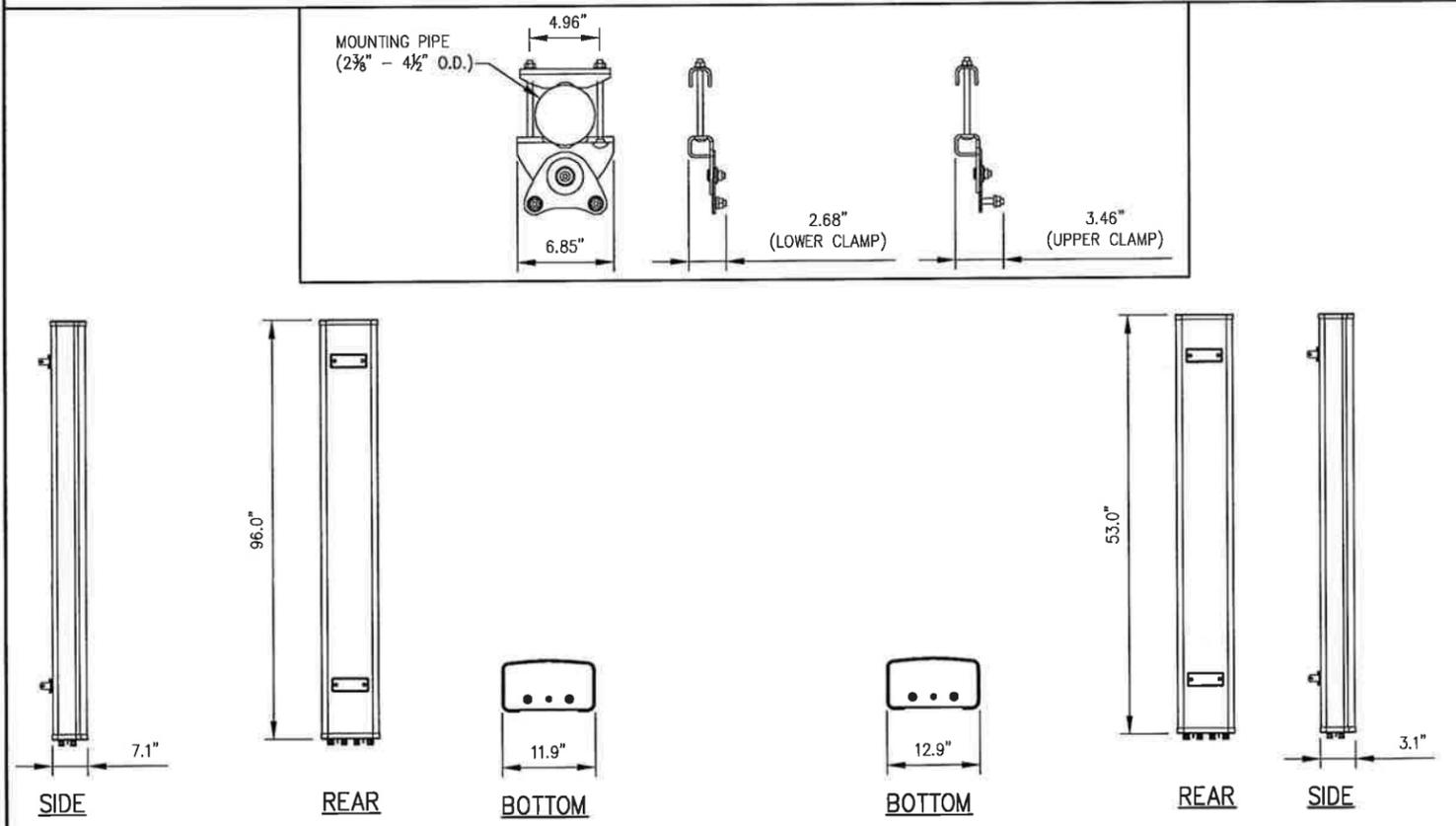
RF SYSTEM SCHEDULE (704Bu CONFIGURATION)

SECTOR	TECHNOLOGY	ANTENNA PORT	BAND	ANTENNA MODEL #	VENDOR	QTY (REMOVED)	QTY (NEW)	AZIMUTH	M-TILT	E-TILT	ANTENNA CENTERLINE	TMA MODEL #	VENDOR	RRU MODEL #	VENDOR	CABLE LENGTH	CABLE DIAMETER	CABLE TYPE	CABLE MODEL #	VENDOR	CABLE TAGGING	COLOR CODING	JUMPER TYPE	JUMPER TAGGING	COLOR CODING
A	GSM/UMTS	TBD	B2P	APX16PV-16PVL	RFS	1	1	60°	0°	4°	73'-0"	KRY 112 489/2	ERICSSON	-	-	(2)EXISTING	7/8"	COAX	TBD	N/A	LTE 700 COAX	-	COAX	LTE 700 COAX	---
	UMTS/LTE	TBD	B4P						0°	7°		ATMAA1412D	RFS	-	-	(2)EXISTING	7/8"	COAX	TBD	N/A	LTE 700 COAX	-	COAX	LTE 700 COAX	---
	LTE 700	TBD	B12P	LNX-6515DS-VTM	COMMSCOPE	0	1	60°	0°	2°	73'-0"	-	-	---	---	(2)±115'	7/8"	COAX	TBD	N/A	LTE 700 COAX	-	COAX	LTE 700 COAX	---
B	GSM/UMTS	TBD	B2P	APX16PV-16PVL	RFS	1	1	180°	0°	4°	73'-0"	KRY 112 489/2	ERICSSON	-	-	(2)EXISTING	7/8"	COAX	TBD	N/A	LTE 700 COAX	-	COAX	LTE 700 COAX	---
	UMTS/LTE	TBD	B4P						0°	7°		ATMAA1412D	RFS	-	-	(2)EXISTING	7/8"	COAX	TBD	N/A	LTE 700 COAX	-	COAX	LTE 700 COAX	---
	LTE 700	TBD	B12P	LNX-6515DS-VTM	COMMSCOPE	0	1	180°	0°	2°	73'-0"	-	-	---	---	(2)±115'	7/8"	COAX	TBD	N/A	LTE 700 COAX	-	COAX	LTE 700 COAX	---
C	GSM/UMTS	TBD	B2P	APX16PV-16PVL	RFS	1	1	300°	0°	6°	73'-0"	KRY 112 489/2	ERICSSON	-	-	(2)EXISTING	7/8"	COAX	TBD	N/A	LTE 700 COAX	-	COAX	LTE 700 COAX	---
	UMTS/LTE	TBD	B4P						0°	6°		ATMAA1412D	RFS	-	-	(2)EXISTING	7/8"	COAX	TBD	N/A	LTE 700 COAX	-	COAX	LTE 700 COAX	---
	LTE 700	TBD	B12P	LNX-6515DS-VTM	COMMSCOPE	0	1	300°	0°	2°	73'-0"	-	-	---	---	(2)±115'	7/8"	COAX	TBD	N/A	LTE 700 COAX	-	COAX	LTE 700 COAX	---

KEY

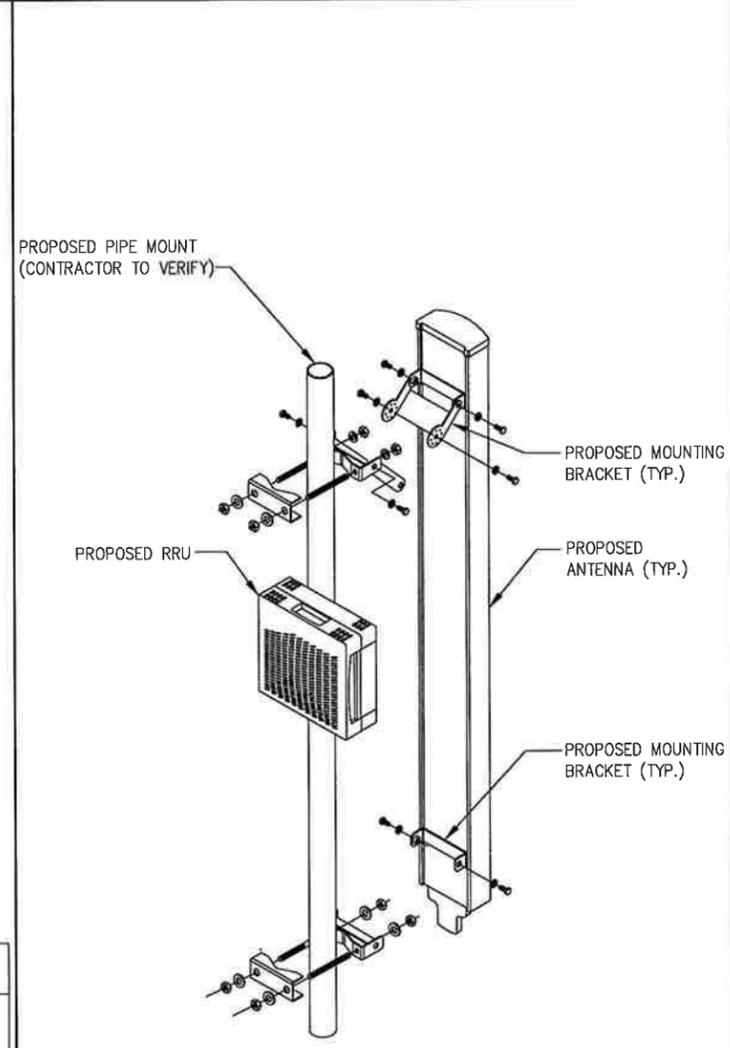
EXISTING	R - RED - GSM	G - GREEN - UMTS 1900
PROPOSED	B - BLUE - UMTS AWS	P - PURPLE - LTE
FIBER CONNECTION	O - ORANGE - FIBER CABLE	

1 RF SYSTEM SCHEDULE
--- NOT TO SCALE

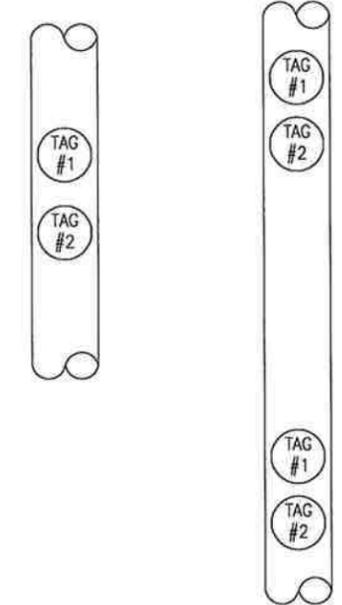


COMMSCOPE MODEL NO.:	LNX-6515DS-VTM	RFS MODEL NO.:	APX16PV-16PVL-A
RADOME MATERIAL:	FIBERGLASS, UV RESISTANT	RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
RADOME COLOR:	LIGHT GRAY	RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	96.0"x11.9"x7.1" (2438 x 301 x 181 mm)	DIMENSIONS, HxWxD:	53.0"x12.9"x3.1" (1346 x 328 x 79 mm)
WEIGHT, W/ PRE-MOUNTED BRACKETS:	50.3 LBS (19.8 kg)	WEIGHT, W/ PRE-MOUNTED BRACKETS:	31.6 LBS (14.3 kg)
CONNECTOR:	(2) 7-16 DIN FEMALE/BOTTOM	CONNECTOR:	(2) 7-16 DIN FEMALE/BOTTOM

2 ANTENNA DETAILS
--- NOT TO SCALE



3 MOUNTING DETAIL
--- NOT TO SCALE



- METALLIC TAG NOTES:
- TWO METALLIC TAGS SHALL BE ATTACHED AT EACH END OF EVERY CABLE LONGER THAN (3) THREE FEET.
 - CABLES LESS THAN (3) THREE FEET WILL HAVE TWO METALLIC TAGS ATTACHED AT THE CENTER OF THE CABLE.
 - TAGS WILL BE FASTENED WITH STAINLESS STEEL ZIP TIES APPROPRIATE FOR CABLE DIAMETER.
 - STANDARDIZED METALLIC TAG KITS WILL BE ASSEMBLED WITH TAGS ALREADY ENGRAVED TO ACCOMMODATE ALL CONFIGURATIONS.

3 METALLIC TAG DETAIL
4 NOT TO SCALE

SUBMITTALS

DATE	DESCRIPTION	REVISION
9/02/15	REVISED FOR PERMIT	0
12/11/15	REVISED FOR PERMIT	1

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: 317-000
DRAWN BY: MAP
CHECKED BY: ASW



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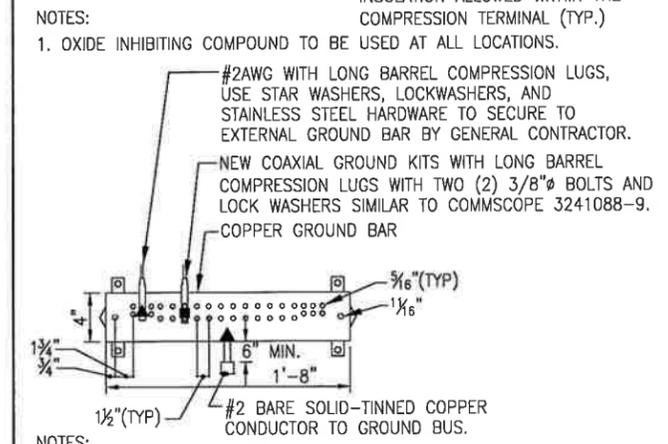
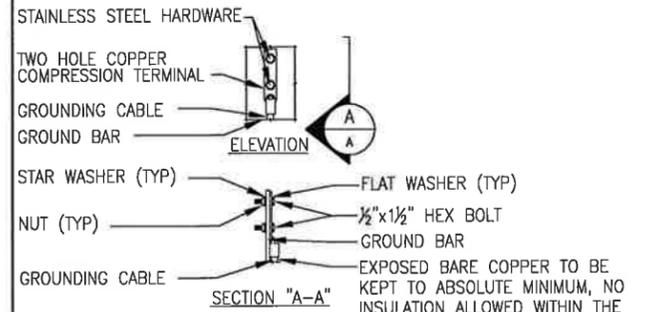
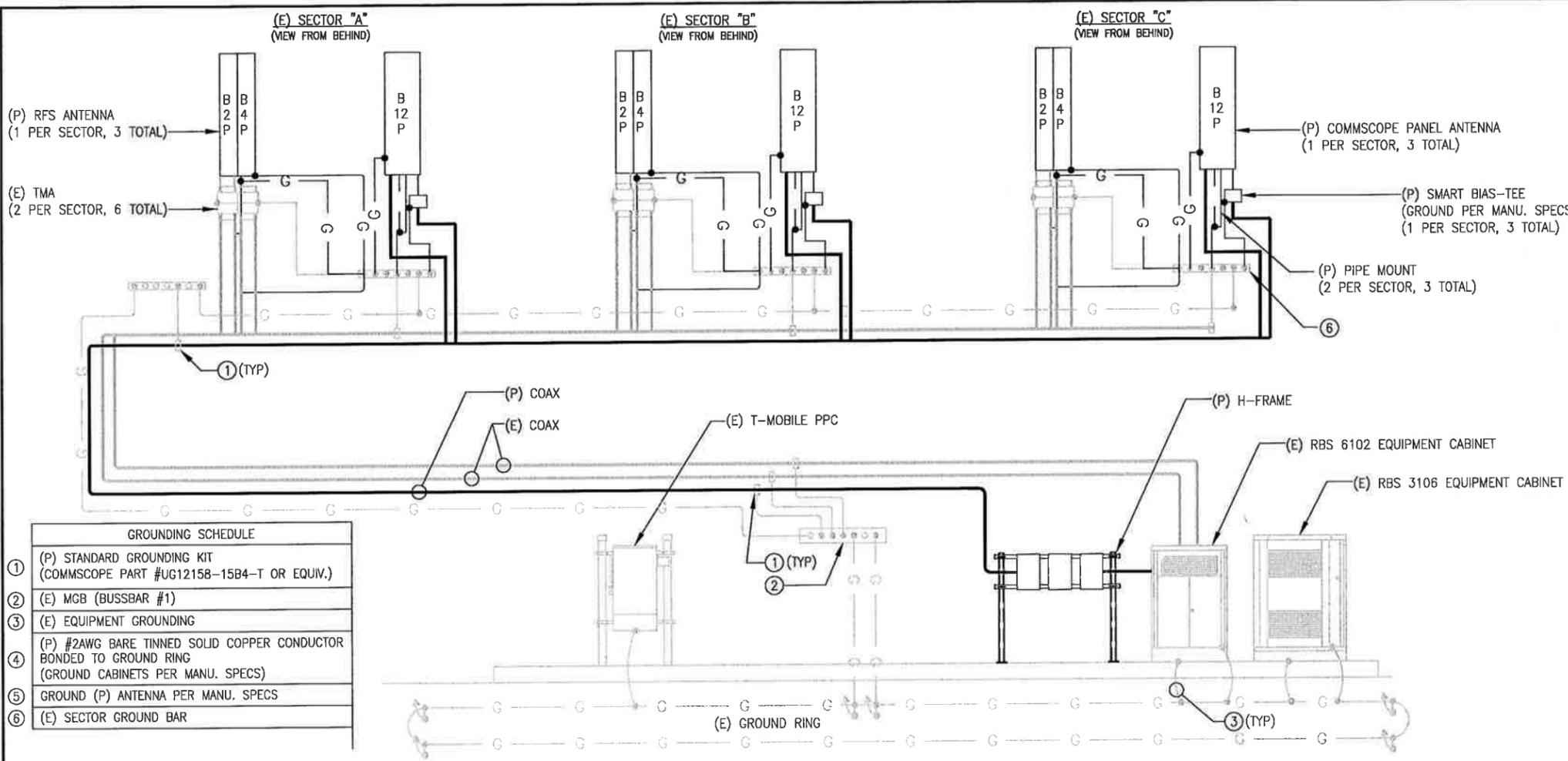
SITE NUMBER: CT11318F
SITE NAME: CT318/SPECTRA_DEVON
438 BRIDGEPORT AVE
MILFORD, CT 06460

SHEET TITLE
ANTENNA DETAIL & RF SCHEDULE

SHEET NUMBER

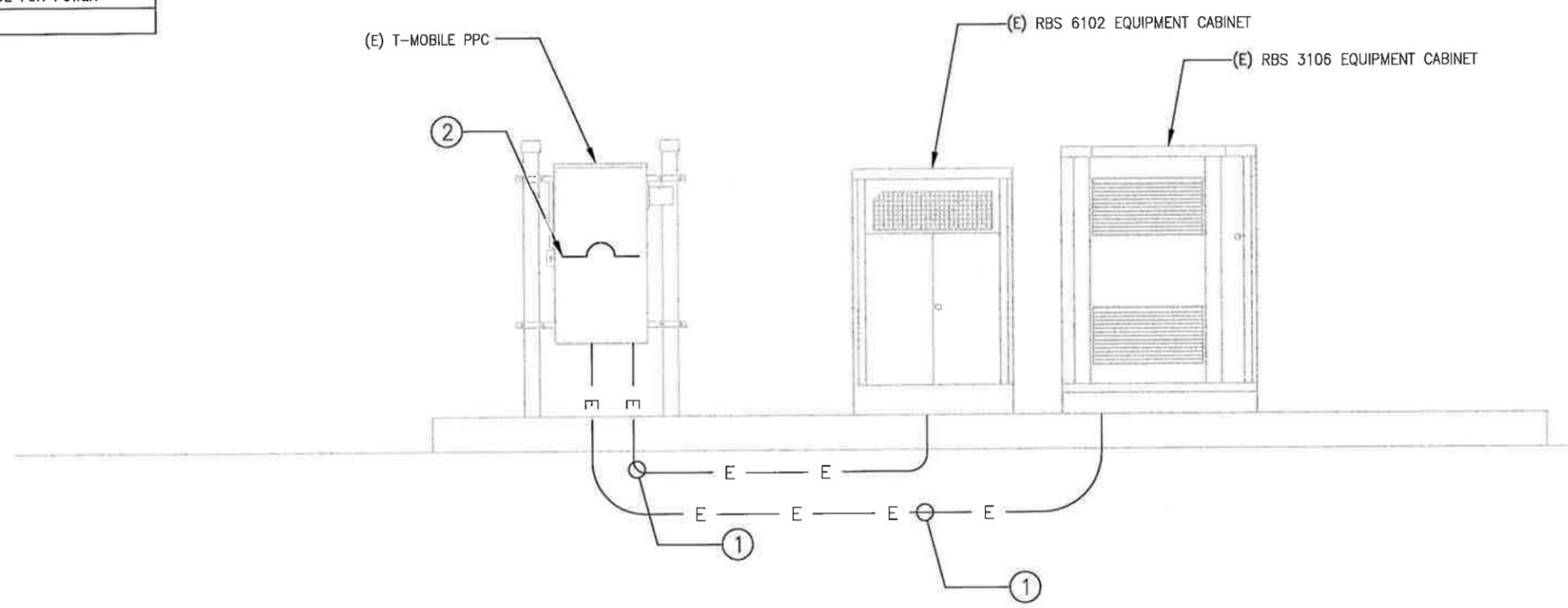
C-3

SHEET 4 OF 8 SHEETS



CONDUIT SCHEDULE

①	(P) WIRE AND CONDUIT UPGRADE FOR POWER
②	(P) 100A BREAKER UPGRADE



NOTES:
 1. ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
 2. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
 3. ALL HOLES ARE COUNTERSUNK 1/8".

CONTRACTOR NOTE:
 CONTRACTOR TO VERIFY THAT THE EXISTING CONDUITS AND WIRE SIZES ARE ADEQUATE FOR THE PROPOSED LOADING IN ACCORDANCE WITH NEC AND INCLUDE ELECTRICAL UPGRADES IN THE SCOPE OF WORK AS REQUIRED.

SUBMITTALS

DATE	DESCRIPTION	REVISION
9/02/15	REVISED FOR PERMIT	0
12/11/15	REVISED FOR PERMIT	1

DEPT.	DATE	APP'D	REVISIONS
RF MAN.			
ZONING			
CONSTR.			
SITE AC.			

PROJECT NO: 317-000
 DRAWN BY: MAP
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SITE NUMBER: CT11318F
 SITE NAME: CT318/SPECTRA_DEVON
 438 BRIDGEPORT AVE
 MILFORD, CT 06460

SHEET TITLE
GROUNDING & POWER DIAGRAMS

SHEET NUMBER
E-1

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

T-Mobile Existing Facility

Site ID: CT11318F

Spectra_Devon
438 Bridgeport Avenue
Milford, CT 06460

September 10, 2015

EBI Project Number: 6215004685

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	18.05 %

September 10, 2015

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Emissions Analysis for Site: **CT11318F – Spectra_Devon**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **438 Bridgeport Avenue, Milford, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **438 Bridgeport Avenue, Milford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

- 1) 2 GSM / UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel
- 2) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.
- 5) Since the radios are ground mounted there are additional cabling losses accounted for. For each RF path the following losses were calculated. 1.99 dB of additional cable loss for all 1900 MHz and 2100 MHz channels and 1.09 dB of additional cable loss at 700 MHz. This is based on manufacturers Specifications for 115 feet of 7/8” coax cable on each path.

- 6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 7) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antennas used in this modeling are the **RFS APX16PV-16PVL-A** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **RFS APX16PV-16PVL-A** has a maximum gain of **16.3 dBd** at its main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antenna mounting height centerline of the proposed antennas is **73 feet** above ground level (AGL).
- 10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APX16PV-16PVL-A	Make / Model:	RFS APX16PV-16PVL-A	Make / Model:	RFS APX16PV-16PVL-A
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	73	Height (AGL):	73	Height (AGL):	73
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	6	Channel Count	6	# PCS Channels:	6
Total TX Power:	240	Total TX Power:	240	# AWS Channels:	240
ERP (W):	6,474.57	ERP (W):	6,474.57	ERP (W):	6,474.57
Antenna A1 MPE%	5.19	Antenna B1 MPE%	5.19	Antenna C1 MPE%	5.19
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	73	Height (AGL):	73	Height (AGL):	73
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	673.16	ERP (W):	673.16	ERP (W):	673.16
Antenna A2 MPE%	1.15	Antenna B2 MPE%	1.15	Antenna C2 MPE%	1.15

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	6.34 %
Paging Omni	6.65 %
AT&T	1.66 %
Sprint	3.40 %
Site Total MPE %:	18.05 %

T-Mobile Sector 1 Total:	6.34 %
T-Mobile Sector 2 Total:	6.34 %
T-Mobile Sector 3 Total:	6.34 %
Site Total:	18.05 %

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2100 MHz (AWS) LTE	2	1618.64	73	25.93	2100	1000	2.59 %
T-Mobile 700 MHz LTE	1	673.16	73	5.39	700	467	1.15 %
T-Mobile 1900 MHz (PCS) UMTS	2	809.32	73	12.96	1900	1000	1.30 %
T-Mobile 2100 MHz (AWS) UMTS	2	809.32	73	12.96	2100	1000	1.30 %
						Total:	6.34%

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector 1:	6.34 %
Sector 2:	6.34 %
Sector 3 :	6.34 %
T-Mobile Per Sector Maximum:	6.34 %
Site Total:	18.05 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **18.05%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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



Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803



AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by



Structural Analysis Report

Structure : 100.5 ft Monopole
ATC Site Name : Mlfd - Milford, CT
ATC Site Number : 302516
Engineering Number : 64193122
Proposed Carrier : T-Mobile
Carrier Site Name : 302516
Carrier Site Number : CT11318F
Site Location : 438 Bridgeport Ave
Milford, CT 06460-4105
41.206611,-73.093400
County : New Haven
Date : January 18, 2016
Max Usage : 69%
Result : Pass

Reviewed by:
William Garrett, PE
Chief Engineer



Prepared By:
Zachary A. Medoff

Jan 19 2016 7:29 AM

COA: PEC.0001553



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 100.5 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	Spectra Site #CT-0052, dated May 31, 2002
Foundation Drawing	Spectra Site #CT-0052, dated January, 2003
Geotechnical Report	AET Job #002GT03, dated January 7, 2003
Modifications	Spectra Site #CT-0052, dated January 14, 2003

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	105 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendment w/ 2013 Revisions
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.20, S_1 = 0.06$
Site Class:	D - Stiff Soil

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					
100.0	109.0	1	15' Omni	Platform w/ Handrails	(13) 1 5/8" Coax (1) 3" Conduit	--
	102.0	6	Powerwave 21902			AT&T Mobility
		6	Powerwave LGP21401			
		1	Raycap DC6-48-60-18-8F			
		6	Ericsson RRUS 11 (Band 12)			
		3	KMW AM-X-CD-14-65-00T-RET			
		6	Powerwave 7770.00			
93.5	93.5	3	RFS APX86-909014L-CT0-00	Flush	(6) 7/8" Coax	Sprint Nextel
80.0	80.0	6	RFS APX86-909014L-CT0-00	Flush	(9) 7/8" Coax	
73.0	73.0	3	Kathrein Smart Bias Tee	T-Arm	(18) 7/8" Coax	T-Mobile
		3	RFS APX16PV-16PVL-A			

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
73.0	73.0	3	RFS APX16PV-16PVL-A	-	-	T-Mobile
		3	Andrew LNX-6515DS-VTM			
		6	Andrew E15S08P80			

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
73.0	73.0	3	Ericsson KRY 112 489/2	T-Arm	-	T-Mobile
		3	RFS ATMAA1412D-1A20			
		3	Commscope LNX-6515DS-VTM			

¹Mount 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	36%	Pass
Shaft	64%	Pass
Base Plate	39%	Pass
Reinforcement	69%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	1,378.8	59%

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) (°)
73.0	Ericsson KRY 112 489/2	T-Mobile	0.453	0.628
	RFS ATMAA1412D-1A20			
	Commscope LNX-6515DS-VTM			

*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 are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

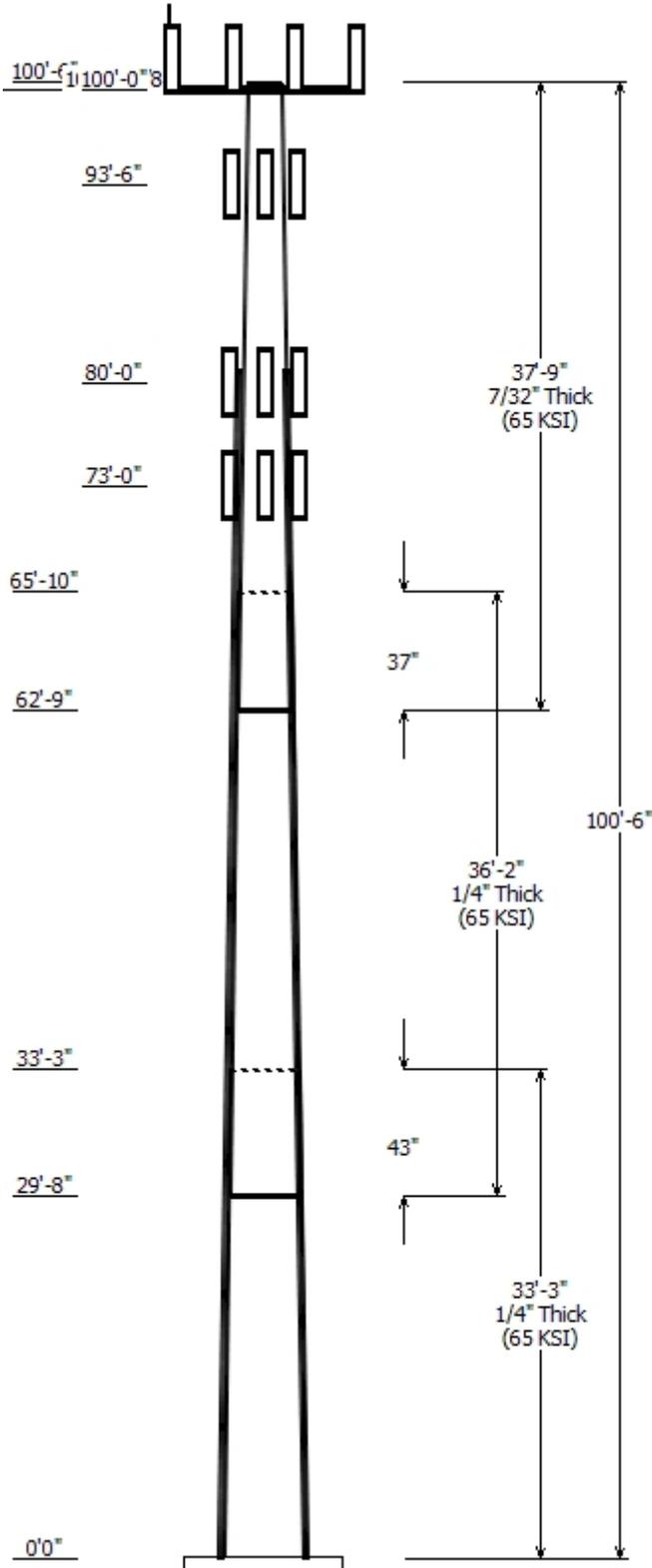
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

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. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

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 we supply.

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Job Information	
Pole :	302516
Code :	ANSI/TIA-222-G
Description :	100 ft ITT Meyer Type "D" Monopole
Client :	T- Mobile
Struct Class :	II
Location :	Mlfd - Milford, CT
Shape :	12 Sides
Exposure :	B
Height :	100.50 (ft)
Topo :	1
Base Elev (ft):	0.00
Taper:	0.17848(in/ft)

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
		Top	Bottom				
1	33.250	26.06	32.00	0.250	0.000	0.178500	65
2	36.167	20.75	27.20	0.250 Slip Joint	43.000	0.178500	65
3	37.750	15.00	21.73	0.219 Slip Joint	37.000	0.178500	65

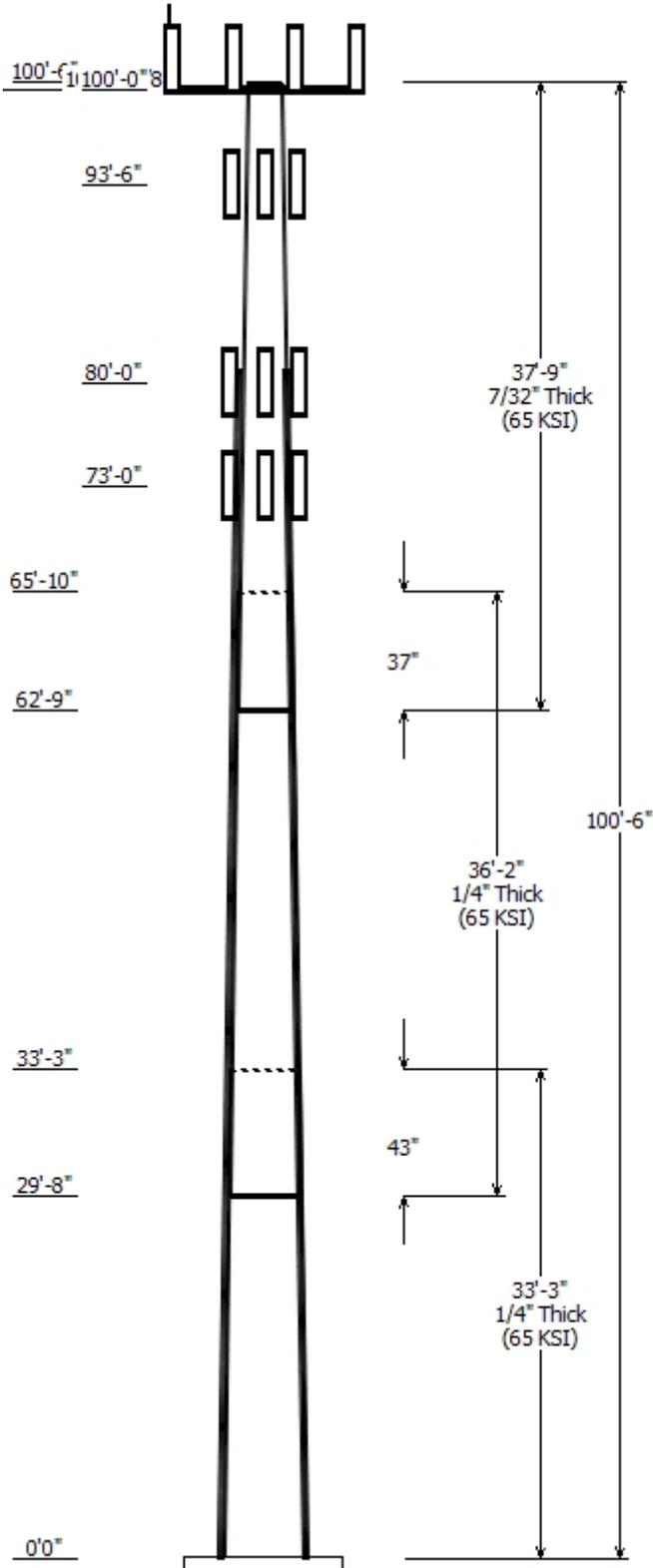
Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
100.010	109.010	1	15' Omni
100.000	102.000	3	Powerwave 7770.00
100.000	102.000	3	Powerwave 7770.00
100.000	102.000	3	KMW AM-X-CD-14-65-00T-RET
100.000	102.000	6	Powerwave LGP21401
100.000	102.000	1	Raycap DC6-48-60-18-8F
100.000	102.000	6	Ericsson RRUS 11 (Band 12)
100.000	102.000	6	Powerwave 21902
100.000	100.000	1	Flat Platform w/ Handrails
93.500	93.500	3	RFS APX86-909014L-CT0-00
80.000	80.000	6	RFS APX86-909014L-CT0-00
73.000	73.000	3	Commscope LNX-6515DS-VTM
73.000	73.000	3	RFS ATMAA1412D-1A20
73.000	73.000	3	Ericsson KRY 112 489/2
73.000	73.000	3	Kathrein Scala Smart Bias Tee
73.000	73.000	3	RFS APX16PV-16PVL-A

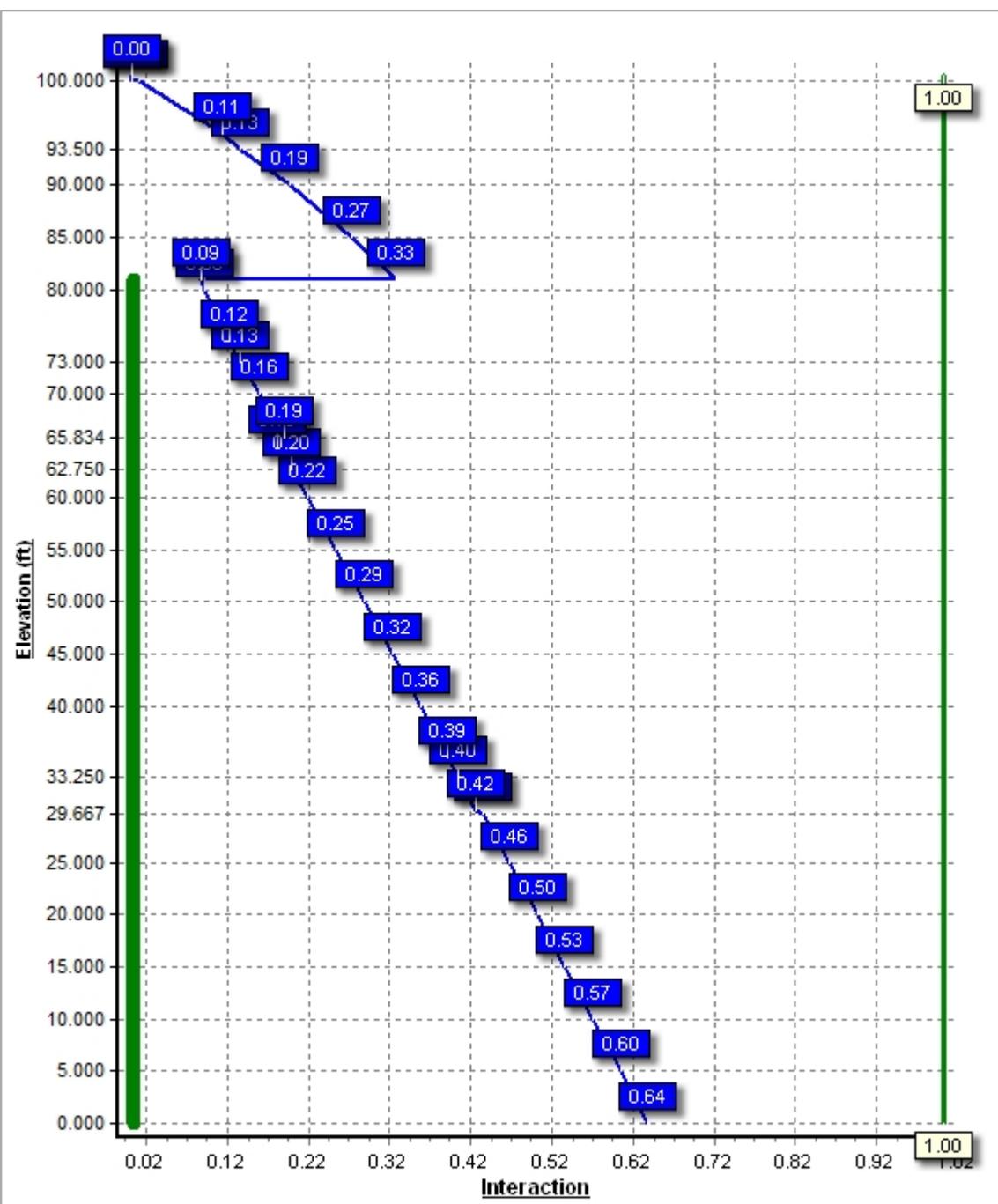
Linear Appurtenance			
Elev (ft)			
From	To	Description	Exposed To Wind
0.000	73.000	7/8" Coax	Yes
0.000	80.000	7/8" Coax	Yes
0.000	85.000	#20 DYWIDAG	Yes
0.000	93.500	7/8" Coax	Yes
0.000	100.0	0.28" RG-6	No
0.000	100.0	0.74" 8 AWG 7	No
0.000	100.0	1 5/8" Coax	No
0.000	100.0	3" Conduit	No
0.000	100.0	1 5/8" Coax	No

Load Cases	
1.2D + 1.6W	105 mph with No Ice
0.9D + 1.6W	105 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	1378.75	20.47	21.77
0.9D + 1.6W	1356.66	20.31	16.32
1.2D + 1.0Di + 1.0Wi	265.85	3.84	38.20
(1.2 + 0.2Sds) * DL + E E LFM	83.80	1.08	21.46
(1.2 + 0.2Sds) * DL + E EMAM	128.91	1.50	21.46
1.0D + 1.0W	279.88	4.19	18.18

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000





Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

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Customer: T- Mobile

Analysis Parameters

Location:	New Haven County, CT		
Code:	ANSI/TIA-222-G	Height (ft):	100.
Shape:	12 Sides	Base Diameter (in):	32.00
Pole Type:	Taper	Top Diameter (in):	15.00
Pole Manufacturer:	ITT Meyer	Taper (in/ft) :	0.178

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	105 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	1.47				
T _L (sec):	6	p:	1.3	C _s :	0.046
S _s :	0.198	S ₁ :	0.063	C _s Max:	0.046
F _a :	1.600	F _v :	2.400	C _s Min:	0.030
S _{ds} :	0.211	S _{d1} :	0.101		

Load Cases

1.2D + 1.6W	105 mph with No Ice
0.9D + 1.6W	105 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

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Customer: T-Mobile

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-12	33.250	0.2500	65		0.00	2,622	32.00	0.00	25.56	3288.6	32.15	128.00	26.06	33.25	20.78	1767.8	25.79	104.26	0.178483
2-12	36.167	0.2500	65	Slip	43.00	2,351	27.20	29.67	21.70	2012.3	27.01	108.82	20.75	65.83	16.50	885.2	20.10	83.00	0.178483
3-12	37.750	0.2188	65	Slip	37.00	1,642	21.73	62.75	15.16	895.9	24.48	99.37	15.00	100.50	10.41	290.4	16.23	68.57	0.178483
Shaft Weight						6,614													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice			Ice			Distance From Face (ft)	Vert Ecc (ft)
			Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor		
100.01	15' Omni	1	40.00	4.500	1.00	227.23	9.705	1.00	0.000	9.000
100.00	Ericsson RRUS 11 (Band 12)	6	50.00	2.570	0.67	127.28	3.191	0.67	0.000	2.000
100.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,364.04	62.529	1.00	0.000	0.000
100.00	KMW AM-X-CD-14-65-00T-	3	36.40	4.990	0.78	161.00	5.931	0.78	0.000	2.000
100.00	Powerwave 21902	6	5.50	0.270	0.50	18.16	0.459	0.50	0.000	2.000
100.00	Powerwave 7770.00	3	35.00	5.510	0.77	163.23	6.517	0.77	0.000	2.000
100.00	Powerwave 7770.00	3	35.00	5.510	0.77	163.23	6.517	0.77	0.000	2.000
100.00	Powerwave LGP21401	6	14.10	1.100	0.50	45.80	1.542	0.50	0.000	2.000
100.00	Raycap DC6-48-60-18-8F	1	20.00	1.110	1.00	96.34	1.702	1.00	0.000	2.000
93.50	RFS APX86-909014L-CT0-00	3	24.20	8.470	0.81	206.99	9.814	0.81	0.000	0.000
80.00	RFS APX86-909014L-CT0-00	6	24.20	8.470	0.81	203.31	9.790	0.81	0.000	0.000
73.00	Commscope LNX-6515DS-	3	50.30	11.440	0.84	291.86	12.983	0.84	0.000	0.000
73.00	Ericsson KRY 112 489/2	3	15.40	0.650	0.50	37.70	0.880	0.50	0.000	0.000
73.00	Kathrein Scala Smart Bias	3	3.30	0.090	0.50	9.21	0.229	0.50	0.000	0.000
73.00	RFS APX16PV-16PVL-A	3	39.60	6.040	0.66	157.47	7.029	0.66	0.000	0.000
73.00	RFS ATMAA1412D-1A20	3	13.00	1.000	0.50	44.80	1.398	0.50	0.000	0.000
Totals		54	3379.40			9,761.40			Number of Loadings : 16	

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	100.01	1	1 5/8" Coax	1.98	0.82	N	0.00	N	Abandoned
0.00	100.00	1	0.28" RG-6	0.28	0.03	N	0.00	N	AT&T Mobility
0.00	100.00	2	0.74" 8 AWG 7	0.74	0.49	N	0.00	N	AT&T Mobility
0.00	100.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	100.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	93.50	6	7/8" Coax	1.09	0.33	N	3.27	Y	Sprint Nextel
0.00	85.00	4	#20 DYWIDAG	2.50	0.00	N	4.73	Y	--
0.00	80.00	9	7/8" Coax	1.09	0.33	N	1.94	Y	Sprint Nextel
0.00	73.00	18	7/8" Coax	1.09	0.33	N	0.00	Y	T-Mobile

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	— Intermediate Connections —			Connectors	Continuation?
						Description	Spacing (in)	Len (in)		
0.00	81.00	4	SOL #20 All Thread	80	2.08	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	Yes

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:53:55 PM

Customer: T- Mobile

Segment Properties (Max Len : 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fy (ksi)	S (in ³)	Z (in ³)	Weight (lb)	Additional Reinforcing		
												Area (in ²)	Ix (in ⁴)	Weight (lb)
0.00		0.2500	32.000	25.559	3,288.6	32.15	128.00	69.6	198.5	0.0	0.0	19.64	3,676	0.0
5.00		0.2500	31.108	24.840	3,019.0	31.20	124.43	70.7	187.5	0.0	428.7	19.64	3,509	334.0
10.00		0.2500	30.215	24.122	2,764.6	30.24	120.86	71.7	176.8	0.0	416.5	19.64	3,345	334.0
15.00		0.2500	29.323	23.404	2,524.9	29.28	117.29	72.8	166.3	0.0	404.3	19.64	3,186	334.0
20.00		0.2500	28.430	22.685	2,299.4	28.33	113.72	73.8	156.2	0.0	392.1	19.64	3,030	334.0
25.00		0.2500	27.538	21.967	2,087.8	27.37	110.15	74.9	146.5	0.0	379.9	19.64	2,878	334.0
29.67	Bot - Section 2	0.2500	26.705	21.296	1,902.4	26.48	106.82	75.8	137.6	0.0	343.5	19.64	2,740	311.7
30.00		0.2500	26.646	21.248	1,889.6	26.41	106.58	75.9	137.0	0.0	48.7	19.64	2,813	22.3
33.25	Top - Section 1	0.2500	26.565	21.184	1,872.5	26.33	106.26	76.0	136.2	0.0	469.3	19.64	2,717	217.1
35.00		0.2500	26.253	20.933	1,806.6	25.99	105.01	76.4	132.9	0.0	125.4	19.64	2,667	116.9
40.00		0.2500	25.361	20.214	1,626.9	25.04	101.44	77.4	123.9	0.0	350.0	19.64	2,524	334.0
45.00		0.2500	24.468	19.496	1,459.5	24.08	97.87	78.5	115.2	0.0	337.8	19.64	2,386	334.0
50.00		0.2500	23.576	18.777	1,304.1	23.12	94.30	79.5	106.9	0.0	325.6	19.64	2,252	334.0
55.00		0.2500	22.683	18.059	1,160.0	22.17	90.73	80.5	98.8	0.0	313.4	19.64	2,121	334.0
60.00		0.2500	21.791	17.341	1,027.0	21.21	87.16	81.6	91.0	0.0	301.1	19.64	1,994	334.0
62.75	Bot - Section 3	0.2500	21.300	16.945	958.4	20.69	85.20	81.9	86.9	0.0	160.4	19.64	1,926	183.7
65.00		0.2500	20.899	16.622	904.6	20.26	83.59	81.9	83.6	0.0	243.4	19.64	1,931	150.3
65.83	Top - Section 2	0.2188	21.187	14.770	828.9	23.81	96.86	78.7	75.6	0.0	89.0	19.64	1,911	55.7
70.00		0.2188	20.444	14.246	743.8	22.90	93.46	79.7	70.3	0.0	205.7	19.64	1,811	278.3
73.00		0.2188	19.908	13.869	686.3	22.24	91.01	80.5	66.6	0.0	143.5	19.64	1,740	200.4
75.00		0.2188	19.551	13.617	649.6	21.81	89.38	80.9	64.2	0.0	93.5	19.64	1,694	133.6
80.00		0.2188	18.659	12.989	563.7	20.71	85.30	81.9	58.4	0.0	226.3	19.64	1,581	334.0
81.00	Reinf. Top	0.2188	18.480	12.863	547.5	20.49	84.48	81.9	57.2	0.0	44.0	19.64	1,559	66.8
85.00		0.2188	17.766	12.360	485.8	19.62	81.22	81.9	52.8	0.0	171.7			
90.00		0.2188	16.874	11.732	415.4	18.53	77.14	81.9	47.6	0.0	204.9			
93.50		0.2188	16.249	11.292	370.4	17.76	74.28	81.9	44.0	0.0	137.1			
95.00		0.2188	15.982	11.103	352.1	17.43	73.06	81.9	42.6	0.0	57.2			
100.0		0.2188	15.089	10.474	295.6	16.34	68.98	81.9	37.9	0.0	183.6			
100.0		0.2188	15.087	10.473	295.5	16.34	68.97	81.9	37.8	0.0	0.4			
100.5		0.2188	15.000	10.412	290.4	16.23	68.57	81.9	37.4	0.0	17.4			
											6,614.4			
												5,410.8		

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:53:55 PM

Customer: T- Mobile

Load Case: 1.2D + 1.6W	105 mph with No Ice	22 Iterations
Gust Response Factor : 1.10		Wind Importance Factor : 1.00
Dead Load Factor : 1.20		
Wind Load Factor : 1.60		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		269.8	0.0					0.0	0.0	269.8	0.0	0.0	0.0
5.00		531.9	514.5					158.2	581.6	690.2	1,096.1	0.0	0.0
10.00		516.7	499.8					158.2	581.6	674.9	1,081.5	0.0	0.0
15.00		501.4	485.2					158.2	581.6	659.6	1,066.8	0.0	0.0
20.00		486.1	470.5					158.2	581.6	644.4	1,052.1	0.0	0.0
25.00		455.7	455.8					158.2	581.6	613.9	1,037.5	0.0	0.0
29.67	Bot - Section 2	231.9	412.2					147.7	542.9	379.6	955.1	0.0	0.0
30.00		167.1	58.5					10.5	38.8	177.7	97.2	0.0	0.0
33.25	Top - Section 1	233.7	563.1					104.1	378.1	337.8	941.2	0.0	0.0
35.00		317.4	150.5					57.0	203.6	374.4	354.1	0.0	0.0
40.00		470.9	420.0					166.4	581.6	637.2	1,001.7	0.0	0.0
45.00		469.9	405.4					171.0	581.6	640.9	987.0	0.0	0.0
50.00		466.6	390.7					175.3	581.6	642.0	972.3	0.0	0.0
55.00		461.4	376.0					179.3	581.6	640.7	957.7	0.0	0.0
60.00		353.6	361.4					183.0	581.6	536.6	943.0	0.0	0.0
62.75	Bot - Section 3	227.3	192.5					102.1	319.9	329.5	512.5	0.0	0.0
65.00		140.8	292.1					84.3	261.7	225.1	553.8	0.0	0.0
65.83	Top - Section 2	225.3	106.8					31.4	97.0	256.8	203.8	0.0	0.0
70.00		320.2	246.8					158.3	484.7	478.5	731.5	0.0	0.0
73.00	Appertunance(s)	220.2	172.2	1,849.8	0.0	0.0	437.8	115.3	349.0	2,185.3	958.9	0.0	0.0
75.00		301.8	112.2					77.5	218.4	379.3	330.6	0.0	0.0
80.00	Appertunance(s)	256.5	271.6	1,801.1	0.0	0.0	174.2	195.7	546.0	2,253.3	991.8	0.0	0.0
81.00	Reinf. Top	208.1	52.8					31.0	105.6	239.0	158.4	0.0	0.0
85.00		375.1	206.0					124.7	101.9	499.7	307.9	0.0	0.0
90.00		353.9	245.9					0.0	127.4	353.9	373.3	0.0	0.0
93.50	Appertunance(s)	192.6	164.5	941.6	0.0	0.0	87.1	0.0	89.2	1,134.1	340.8	0.0	0.0
95.00		202.9	68.6					0.0	34.7	202.9	103.2	0.0	0.0
100.00	Appertunance(s)	155.4	220.3	3,830.5	0.0	3,706.3	3,308.2	0.0	115.5	3,985.9	3,643.9	0.0	0.0
100.01		15.1	0.4					0.0	0.0	15.1	0.4	0.0	0.0
100.50		14.8	20.9					0.0	0.0	14.8	20.9	0.0	0.0
Totals:										20,473.0	21,775.1	0.00	0.00

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:53:56 PM

Customer: T- Mobile

Load Case: 1.2D + 1.6W

105 mph with No Ice

22 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Wind Load Factor : 1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-21.77	-20.47	0.00	-1,378.75	0.00	1,378.75	1,602.06	801.03	2,099.85	1,037.04	0.00	0.00	0.636
5.00	-20.59	-19.88	0.00	-1,276.40	0.00	1,276.40	1,580.35	790.18	2,012.72	994.01	0.15	-0.27	0.602
10.00	-19.42	-19.28	0.00	-1,177.02	0.00	1,177.02	1,557.29	778.65	1,925.54	950.95	0.58	-0.54	0.567
15.00	-18.28	-18.69	0.00	-1,080.61	0.00	1,080.61	1,532.89	766.44	1,838.45	907.94	1.28	-0.80	0.533
20.00	-17.15	-18.11	0.00	-987.14	0.00	987.14	1,507.13	753.57	1,751.60	865.05	2.26	-1.06	0.499
25.00	-16.06	-17.54	0.00	-896.60	0.00	896.60	1,480.03	740.02	1,665.15	822.35	3.51	-1.31	0.465
29.67	-15.08	-17.17	0.00	-814.75	0.00	814.75	1,453.52	726.76	1,584.95	782.75	4.90	-1.54	0.432
30.00	-14.96	-17.01	0.00	-809.02	0.00	809.02	1,451.58	725.79	1,579.24	779.93	5.01	-1.56	0.423
33.25	-13.99	-16.68	0.00	-753.74	0.00	753.74	1,448.96	724.48	1,571.57	776.14	6.13	-1.71	0.402
35.00	-13.61	-16.33	0.00	-724.55	0.00	724.55	1,438.64	719.32	1,541.68	761.38	6.77	-1.79	0.390
40.00	-12.57	-15.70	0.00	-642.92	0.00	642.92	1,408.25	704.12	1,456.82	719.47	8.76	-2.01	0.355
45.00	-11.55	-15.07	0.00	-564.41	0.00	564.41	1,376.50	688.25	1,372.88	678.01	10.98	-2.22	0.321
50.00	-10.56	-14.42	0.00	-489.08	0.00	489.08	1,343.41	671.70	1,290.00	637.08	13.41	-2.41	0.286
55.00	-9.59	-13.77	0.00	-416.97	0.00	416.97	1,308.97	654.48	1,208.33	596.75	16.03	-2.59	0.251
60.00	-8.64	-13.21	0.00	-348.14	0.00	348.14	1,273.18	636.59	1,128.02	557.09	18.84	-2.76	0.216
62.75	-8.13	-12.86	0.00	-311.81	0.00	311.81	1,249.04	624.52	1,081.13	533.93	20.45	-2.84	0.197
65.00	-7.58	-12.62	0.00	-282.88	0.00	282.88	1,225.22	612.61	1,040.04	513.64	21.81	-2.91	0.179
65.83	-7.38	-12.36	0.00	-272.36	0.00	272.36	1,046.77	523.39	903.83	446.37	22.32	-2.93	0.188
70.00	-6.65	-11.85	0.00	-220.87	0.00	220.87	1,022.39	511.19	851.15	420.35	24.92	-3.04	0.156
73.00	-5.80	-9.62	0.00	-185.32	0.00	185.32	1,004.25	502.12	813.67	401.84	26.85	-3.10	0.133
75.00	-5.48	-9.23	0.00	-166.07	0.00	166.07	991.89	495.94	788.93	389.62	28.16	-3.15	0.121
80.00	-4.61	-6.93	0.00	-119.90	0.00	119.90	957.40	478.70	725.96	358.52	31.51	-3.23	0.090
81.00	-4.46	-6.69	0.00	-112.97	0.00	112.97	948.14	474.07	711.89	351.58	32.18	-3.25	0.086
81.00	-4.46	-6.69	0.00	-112.97	0.00	112.97	948.14	474.07	711.89	351.58	32.18	-3.25	0.326
85.00	-4.17	-6.18	0.00	-86.22	0.00	86.22	911.07	455.53	657.00	324.47	34.93	-3.30	0.270
90.00	-3.80	-5.82	0.00	-55.31	0.00	55.31	864.74	432.37	591.48	292.11	38.50	-3.51	0.194
93.50	-3.53	-4.67	0.00	-34.96	0.00	34.96	832.30	416.15	547.67	270.47	41.12	-3.62	0.134
95.00	-3.43	-4.46	0.00	-27.96	0.00	27.96	818.40	409.20	529.41	261.45	42.26	-3.65	0.111
100.00	-0.05	-0.25	0.00	-1.95	0.00	1.95	772.07	386.03	470.77	232.50	46.13	-3.72	0.008
100.01	-0.02	-0.02	0.00	-0.01	0.00	0.01	771.98	385.99	470.66	232.44	46.13	-3.72	0.000
100.50	0.00	-0.01	0.00	0.00	0.00	0.00	767.43	383.72	465.10	229.69	46.52	-3.72	0.000

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:53:56 PM

Customer: T- Mobile

Load Case: 0.9D + 1.6W

105 mph with No Ice (Reduced DL)

22 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		269.8	0.0					0.0	0.0	269.8	0.0	0.0	0.0
5.00		531.9	385.9					158.2	436.2	690.2	822.1	0.0	0.0
10.00		516.7	374.9					158.2	436.2	674.9	811.1	0.0	0.0
15.00		501.4	363.9					158.2	436.2	659.6	800.1	0.0	0.0
20.00		486.1	352.9					158.2	436.2	644.4	789.1	0.0	0.0
25.00		455.7	341.9					158.2	436.2	613.9	778.1	0.0	0.0
29.67	Bot - Section 2	231.9	309.2					147.7	407.1	379.6	716.3	0.0	0.0
30.00		167.1	43.8					10.5	29.1	177.7	72.9	0.0	0.0
33.25	Top - Section 1	233.7	422.3					104.1	283.5	337.8	705.9	0.0	0.0
35.00		317.4	112.9					57.0	152.7	374.4	265.5	0.0	0.0
40.00		470.9	315.0					166.4	436.2	637.2	751.3	0.0	0.0
45.00		469.9	304.0					171.0	436.2	640.9	740.3	0.0	0.0
50.00		466.6	293.0					175.3	436.2	642.0	729.3	0.0	0.0
55.00		461.4	282.0					179.3	436.2	640.7	718.3	0.0	0.0
60.00		353.6	271.0					183.0	436.2	536.6	707.3	0.0	0.0
62.75	Bot - Section 3	227.3	144.4					102.1	240.0	329.5	384.3	0.0	0.0
65.00		140.8	219.1					84.3	196.3	225.1	415.4	0.0	0.0
65.83	Top - Section 2	225.3	80.1					31.4	72.7	256.8	152.9	0.0	0.0
70.00		320.2	185.1					158.3	363.5	478.5	548.6	0.0	0.0
73.00	Appertunance(s)	220.2	129.2	1,849.8	0.0	0.0	328.3	115.3	261.7	2,185.3	719.2	0.0	0.0
75.00		301.8	84.2					77.5	163.8	379.3	248.0	0.0	0.0
80.00	Appertunance(s)	256.5	203.7	1,801.1	0.0	0.0	130.7	195.7	409.5	2,253.3	743.9	0.0	0.0
81.00	Reinf. Top	208.1	39.6					31.0	79.2	239.0	118.8	0.0	0.0
85.00		333.6	154.5					124.7	76.4	458.3	230.9	0.0	0.0
90.00		281.5	184.5					0.0	95.5	281.5	280.0	0.0	0.0
93.50	Appertunance(s)	161.6	123.4	941.6	0.0	0.0	65.3	0.0	66.9	1,103.2	255.6	0.0	0.0
95.00		202.9	51.4					0.0	26.0	202.9	77.4	0.0	0.0
100.00	Appertunance(s)	155.4	165.2	3,830.5	0.0	3,706.3	2,481.1	0.0	86.6	3,985.9	2,732.9	0.0	0.0
100.01		15.1	0.3					0.0	0.0	15.1	0.3	0.0	0.0
100.50		14.8	15.7					0.0	0.0	14.8	15.7	0.0	0.0
Totals:										20,328.2	16,331.3	0.00	0.00

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:53:57 PM

Customer: T- Mobile

Load Case: 0.9D + 1.6W

105 mph with No Ice (Reduced DL)

22 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-16.32	-20.31	0.00	-1,356.66	0.00	1,356.66	1,602.06	801.03	2,099.85	1,037.04	0.00	0.00	0.624
5.00	-15.41	-19.69	0.00	-1,255.10	0.00	1,255.10	1,580.35	790.18	2,012.72	994.01	0.14	-0.27	0.590
10.00	-14.51	-19.08	0.00	-1,156.64	0.00	1,156.64	1,557.29	778.65	1,925.54	950.95	0.57	-0.53	0.556
15.00	-13.64	-18.47	0.00	-1,061.26	0.00	1,061.26	1,532.89	766.44	1,838.45	907.94	1.26	-0.79	0.522
20.00	-12.78	-17.87	0.00	-968.91	0.00	968.91	1,507.13	753.57	1,751.60	865.05	2.22	-1.04	0.488
25.00	-11.95	-17.29	0.00	-879.57	0.00	879.57	1,480.03	740.02	1,665.15	822.35	3.45	-1.29	0.454
29.67	-11.21	-16.91	0.00	-798.89	0.00	798.89	1,453.52	726.76	1,584.95	782.75	4.82	-1.51	0.423
30.00	-11.11	-16.75	0.00	-793.26	0.00	793.26	1,451.58	725.79	1,579.24	779.93	4.93	-1.53	0.413
33.25	-10.38	-16.41	0.00	-738.82	0.00	738.82	1,448.96	724.48	1,571.57	776.14	6.02	-1.68	0.393
35.00	-10.09	-16.06	0.00	-710.09	0.00	710.09	1,438.64	719.32	1,541.68	761.38	6.65	-1.76	0.381
40.00	-9.30	-15.43	0.00	-629.80	0.00	629.80	1,408.25	704.12	1,456.82	719.47	8.61	-1.97	0.347
45.00	-8.53	-14.79	0.00	-552.65	0.00	552.65	1,376.50	688.25	1,372.88	678.01	10.79	-2.17	0.313
50.00	-7.79	-14.15	0.00	-478.69	0.00	478.69	1,343.41	671.70	1,290.00	637.08	13.17	-2.37	0.279
55.00	-7.06	-13.50	0.00	-407.95	0.00	407.95	1,308.97	654.48	1,208.33	596.75	15.74	-2.54	0.245
60.00	-6.35	-12.94	0.00	-340.46	0.00	340.46	1,273.18	636.59	1,128.02	557.09	18.49	-2.70	0.210
62.75	-5.96	-12.60	0.00	-304.87	0.00	304.87	1,249.04	624.52	1,081.13	533.93	20.08	-2.79	0.192
65.00	-5.55	-12.36	0.00	-276.52	0.00	276.52	1,225.22	612.61	1,040.04	513.64	21.41	-2.85	0.174
65.83	-5.40	-12.10	0.00	-266.21	0.00	266.21	1,046.77	523.39	903.83	446.37	21.91	-2.88	0.183
70.00	-4.86	-11.60	0.00	-215.78	0.00	215.78	1,022.39	511.19	851.15	420.35	24.46	-2.98	0.152
73.00	-4.24	-9.39	0.00	-180.97	0.00	180.97	1,004.25	502.12	813.67	401.84	26.36	-3.04	0.129
75.00	-4.01	-9.00	0.00	-162.19	0.00	162.19	991.89	495.94	788.93	389.62	27.64	-3.08	0.117
80.00	-3.38	-6.71	0.00	-117.19	0.00	117.19	957.40	478.70	725.96	358.52	30.92	-3.17	0.087
81.00	-3.27	-6.47	0.00	-110.47	0.00	110.47	948.14	474.07	711.89	351.58	31.58	-3.18	0.083
81.00	-3.27	-6.47	0.00	-110.47	0.00	110.47	948.14	474.07	711.89	351.58	31.58	-3.18	0.318
85.00	-3.05	-6.01	0.00	-84.59	0.00	84.59	911.07	455.53	657.00	324.47	34.27	-3.24	0.264
90.00	-2.77	-5.72	0.00	-54.56	0.00	54.56	864.74	432.37	591.48	292.11	37.78	-3.44	0.190
93.50	-2.58	-4.60	0.00	-34.55	0.00	34.55	832.30	416.15	547.67	270.47	40.34	-3.55	0.131
95.00	-2.51	-4.40	0.00	-27.64	0.00	27.64	818.40	409.20	529.41	261.45	41.46	-3.58	0.109
100.00	-0.04	-0.25	0.00	-1.95	0.00	1.95	772.07	386.03	470.77	232.50	45.26	-3.65	0.008
100.01	-0.01	-0.02	0.00	-0.01	0.00	0.01	771.98	385.99	470.66	232.44	45.26	-3.65	0.000
100.50	0.00	-0.01	0.00	0.00	0.00	0.00	767.43	383.72	465.10	229.69	45.64	-3.65	0.000

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:53:57 PM

Customer: T- Mobile

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

21 Iterations

Gust Response Factor : 1.10

Ice Dead Load Factor : 1.00

Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Ice Importance Factor : 1.00

Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		40.9	0.0					0.0	0.0	40.9	0.0	0.0	0.0
5.00		81.1	756.6					39.5	848.4	120.7	1,605.0	0.0	0.0
10.00		79.4	763.6					41.4	880.5	120.9	1,644.2	0.0	0.0
15.00		77.5	755.5					42.4	897.1	119.9	1,652.5	0.0	0.0
20.00		75.6	742.3					43.0	908.5	118.6	1,650.9	0.0	0.0
25.00		71.2	726.6					43.5	917.4	114.7	1,644.0	0.0	0.0
29.67	Bot - Section 2	36.3	662.7					41.0	862.9	77.3	1,525.6	0.0	0.0
30.00		26.2	76.8					2.9	61.9	29.2	138.6	0.0	0.0
33.25	Top - Section 1	36.7	739.4					29.2	604.5	65.9	1,343.8	0.0	0.0
35.00		50.1	245.1					16.1	326.5	66.2	571.6	0.0	0.0
40.00		74.5	684.2					47.6	936.4	122.1	1,620.7	0.0	0.0
45.00		74.7	664.2					49.6	941.3	124.3	1,605.5	0.0	0.0
50.00		74.6	643.6					51.5	945.7	126.1	1,589.3	0.0	0.0
55.00		74.2	622.5					53.2	949.7	127.4	1,572.2	0.0	0.0
60.00		57.1	601.1					54.9	953.3	112.0	1,554.4	0.0	0.0
62.75	Bot - Section 3	36.8	322.5					30.9	525.9	67.7	848.4	0.0	0.0
65.00		22.8	399.1					25.6	430.9	48.4	829.9	0.0	0.0
65.83	Top - Section 2	36.7	146.3					9.6	159.8	46.3	306.1	0.0	0.0
70.00		52.3	438.4					48.4	800.1	100.6	1,238.5	0.0	0.0
73.00	Appertunance(s)	36.1	307.5	304.4	0.0	0.0	1,696.1	35.4	577.4	375.9	2,581.0	0.0	0.0
75.00		49.8	201.3					23.9	311.6	73.7	512.9	0.0	0.0
80.00	Appertunance(s)	42.4	485.9	295.1	0.0	0.0	1,248.9	60.7	780.2	398.1	2,515.0	0.0	0.0
81.00	Reinf. Top	34.6	95.4					9.0	136.0	43.7	231.4	0.0	0.0
85.00		61.4	371.1					36.5	223.7	98.0	594.8	0.0	0.0
90.00		56.9	443.9					0.0	189.1	56.9	633.0	0.0	0.0
93.50	Appertunance(s)	32.9	299.1	154.6	0.0	0.0	635.5	0.0	132.6	187.5	1,067.2	0.0	0.0
95.00		41.6	125.6					0.0	34.7	41.6	160.2	0.0	0.0
100.00	Appertunance(s)	31.9	401.3	734.9	0.0	643.2	6,171.3	0.0	115.5	766.8	6,688.1	0.0	0.0
100.01		3.1	0.8					0.0	0.0	3.1	0.8	0.0	0.0
100.50		3.1	38.6					0.0	0.0	3.1	38.6	0.0	0.0
Totals:										3,797.62	37,964.2	0.00	0.00

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:53:59 PM

Customer: T- Mobile

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

21 Iterations

Gust Response Factor : 1.10

Ice Dead Load Factor : 1.00

Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Ice Importance Factor : 1.00

Wind Load Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-38.20	-3.84	0.00	-265.85	0.00	265.85	1,602.06	801.03	2,099.85	1,037.04	0.00	0.00	0.135
5.00	-36.59	-3.75	0.00	-246.65	0.00	246.65	1,580.35	790.18	2,012.72	994.01	0.03	-0.05	0.128
10.00	-34.94	-3.66	0.00	-227.89	0.00	227.89	1,557.29	778.65	1,925.54	950.95	0.11	-0.10	0.121
15.00	-33.29	-3.57	0.00	-209.59	0.00	209.59	1,532.89	766.44	1,838.45	907.94	0.25	-0.15	0.114
20.00	-31.63	-3.47	0.00	-191.77	0.00	191.77	1,507.13	753.57	1,751.60	865.05	0.44	-0.20	0.107
25.00	-29.99	-3.37	0.00	-174.42	0.00	174.42	1,480.03	740.02	1,665.15	822.35	0.68	-0.25	0.100
29.67	-28.46	-3.30	0.00	-158.69	0.00	158.69	1,453.52	726.76	1,584.95	782.75	0.95	-0.30	0.093
30.00	-28.32	-3.28	0.00	-157.59	0.00	157.59	1,451.58	725.79	1,579.24	779.93	0.97	-0.30	0.091
33.25	-26.98	-3.21	0.00	-146.93	0.00	146.93	1,448.96	724.48	1,571.57	776.14	1.19	-0.33	0.087
35.00	-26.40	-3.16	0.00	-141.31	0.00	141.31	1,438.64	719.32	1,541.68	761.38	1.31	-0.35	0.084
40.00	-24.78	-3.04	0.00	-125.51	0.00	125.51	1,408.25	704.12	1,456.82	719.47	1.70	-0.39	0.077
45.00	-23.17	-2.92	0.00	-110.29	0.00	110.29	1,376.50	688.25	1,372.88	678.01	2.13	-0.43	0.070
50.00	-21.58	-2.80	0.00	-95.67	0.00	95.67	1,343.41	671.70	1,290.00	637.08	2.60	-0.47	0.063
55.00	-20.01	-2.67	0.00	-81.67	0.00	81.67	1,308.97	654.48	1,208.33	596.75	3.11	-0.50	0.056
60.00	-18.46	-2.55	0.00	-68.32	0.00	68.32	1,273.18	636.59	1,128.02	557.09	3.66	-0.54	0.048
62.75	-17.61	-2.48	0.00	-61.30	0.00	61.30	1,249.04	624.52	1,081.13	533.93	3.97	-0.55	0.045
65.00	-16.78	-2.43	0.00	-55.72	0.00	55.72	1,225.22	612.61	1,040.04	513.64	4.23	-0.57	0.041
65.83	-16.47	-2.38	0.00	-53.70	0.00	53.70	1,046.77	523.39	903.83	446.37	4.33	-0.57	0.043
70.00	-15.24	-2.27	0.00	-43.77	0.00	43.77	1,022.39	511.19	851.15	420.35	4.84	-0.59	0.037
73.00	-12.66	-1.87	0.00	-36.95	0.00	36.95	1,004.25	502.12	813.67	401.84	5.22	-0.60	0.031
75.00	-12.15	-1.80	0.00	-33.21	0.00	33.21	991.89	495.94	788.93	389.62	5.47	-0.61	0.029
80.00	-9.63	-1.37	0.00	-24.23	0.00	24.23	957.40	478.70	725.96	358.52	6.13	-0.63	0.022
81.00	-9.40	-1.33	0.00	-22.86	0.00	22.86	948.14	474.07	711.89	351.58	6.26	-0.63	0.021
81.00	-9.40	-1.33	0.00	-22.86	0.00	22.86	948.14	474.07	711.89	351.58	6.26	-0.63	0.075
85.00	-8.81	-1.23	0.00	-17.55	0.00	17.55	911.07	455.53	657.00	324.47	6.79	-0.64	0.064
90.00	-8.18	-1.17	0.00	-11.41	0.00	11.41	864.74	432.37	591.48	292.11	7.49	-0.69	0.049
93.50	-7.11	-0.97	0.00	-7.32	0.00	7.32	832.30	416.15	547.67	270.47	8.01	-0.71	0.036
95.00	-6.95	-0.93	0.00	-5.87	0.00	5.87	818.40	409.20	529.41	261.45	8.23	-0.72	0.031
100.00	-0.27	-0.08	0.00	-0.59	0.00	0.59	772.07	386.03	470.77	232.50	8.99	-0.73	0.003
100.01	-0.04	0.00	0.00	0.00	0.00	0.00	771.98	385.99	470.66	232.44	8.99	-0.73	0.000
100.50	0.00	0.00	0.00	0.00	0.00	0.00	767.43	383.72	465.10	229.69	9.07	-0.73	0.000

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:53:59 PM

Customer: T-Mobile

Load Case: 1.0D + 1.0W	Serviceability 60 mph	21 Iterations
Gust Response Factor : 1.10		Wind Importance Factor : 1.00
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		55.1	0.0					0.0	0.0	55.1	0.0	0.0	0.0
5.00		108.6	428.7					33.5	484.7	142.1	913.4	0.0	0.0
10.00		105.4	416.5					33.5	484.7	138.9	901.2	0.0	0.0
15.00		102.3	404.3					33.5	484.7	135.8	889.0	0.0	0.0
20.00		99.2	392.1					33.5	484.7	132.7	876.8	0.0	0.0
25.00		93.0	379.9					33.5	484.7	126.5	864.5	0.0	0.0
29.67	Bot - Section 2	47.3	343.5					31.3	452.4	78.6	795.9	0.0	0.0
30.00		34.1	48.7					2.2	32.3	36.3	81.0	0.0	0.0
33.25	Top - Section 1	47.7	469.3					22.1	315.1	69.8	784.3	0.0	0.0
35.00		64.8	125.4					12.2	169.6	77.0	295.0	0.0	0.0
40.00		96.1	350.0					35.7	484.7	131.8	834.7	0.0	0.0
45.00		95.9	337.8					37.0	484.7	132.9	822.5	0.0	0.0
50.00		95.2	325.6					38.2	484.7	133.5	810.3	0.0	0.0
55.00		94.2	313.4					39.3	484.7	133.5	798.1	0.0	0.0
60.00		72.2	301.1					40.4	484.7	112.5	785.8	0.0	0.0
62.75	Bot - Section 3	46.4	160.4					22.6	266.6	69.0	427.1	0.0	0.0
65.00		28.7	243.4					18.7	218.1	47.5	461.5	0.0	0.0
65.83	Top - Section 2	46.0	89.0					7.0	80.8	53.0	169.8	0.0	0.0
70.00		65.3	205.7					35.3	403.9	100.6	609.6	0.0	0.0
73.00	Appertunance(s)	44.9	143.5	377.5	0.0	0.0	364.8	25.8	290.8	448.2	799.1	0.0	0.0
75.00		61.6	93.5					17.4	182.0	79.0	275.5	0.0	0.0
80.00	Appertunance(s)	52.4	226.3	367.6	0.0	0.0	145.2	44.0	455.0	463.9	826.5	0.0	0.0
81.00	Reinf. Top	42.5	44.0					7.2	88.0	49.6	132.0	0.0	0.0
85.00		68.1	171.7					28.9	84.9	97.0	256.6	0.0	0.0
90.00		57.4	204.9					0.0	106.2	57.4	311.1	0.0	0.0
93.50	Appertunance(s)	33.0	137.1	192.2	0.0	0.0	72.6	0.0	74.3	225.1	284.0	0.0	0.0
95.00		41.4	57.2					0.0	28.9	41.4	86.0	0.0	0.0
100.00	Appertunance(s)	31.7	183.6	781.7	0.0	756.4	2,756.8	0.0	96.3	813.5	3,036.6	0.0	0.0
100.01		3.1	0.4					0.0	0.0	3.1	0.4	0.0	0.0
100.50		3.0	17.4					0.0	0.0	3.0	17.4	0.0	0.0
Totals:										4,188.48	18,145.9	0.00	0.00

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:54:00 PM

Customer: T- Mobile

Load Case: 1.0D + 1.0W

Serviceability 60 mph

21 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-18.18	-4.19	0.00	-279.88	0.00	279.88	1,602.06	801.03	2,099.85	1,037.04	0.00	0.00	0.134
5.00	-17.27	-4.06	0.00	-258.95	0.00	258.95	1,580.35	790.18	2,012.72	994.01	0.03	-0.06	0.127
10.00	-16.36	-3.93	0.00	-238.65	0.00	238.65	1,557.29	778.65	1,925.54	950.95	0.12	-0.11	0.119
15.00	-15.47	-3.81	0.00	-218.97	0.00	218.97	1,532.89	766.44	1,838.45	907.94	0.26	-0.16	0.112
20.00	-14.59	-3.69	0.00	-199.92	0.00	199.92	1,507.13	753.57	1,751.60	865.05	0.46	-0.21	0.105
25.00	-13.72	-3.57	0.00	-181.48	0.00	181.48	1,480.03	740.02	1,665.15	822.35	0.71	-0.27	0.098
29.67	-12.93	-3.49	0.00	-164.81	0.00	164.81	1,453.52	726.76	1,584.95	782.75	0.99	-0.31	0.091
30.00	-12.84	-3.46	0.00	-163.65	0.00	163.65	1,451.58	725.79	1,579.24	779.93	1.02	-0.32	0.089
33.25	-12.06	-3.39	0.00	-152.40	0.00	152.40	1,448.96	724.48	1,571.57	776.14	1.24	-0.35	0.084
35.00	-11.76	-3.32	0.00	-146.47	0.00	146.47	1,438.64	719.32	1,541.68	761.38	1.37	-0.36	0.082
40.00	-10.93	-3.19	0.00	-129.88	0.00	129.88	1,408.25	704.12	1,456.82	719.47	1.78	-0.41	0.075
45.00	-10.10	-3.06	0.00	-113.93	0.00	113.93	1,376.50	688.25	1,372.88	678.01	2.23	-0.45	0.067
50.00	-9.29	-2.92	0.00	-98.65	0.00	98.65	1,343.41	671.70	1,290.00	637.08	2.72	-0.49	0.060
55.00	-8.49	-2.79	0.00	-84.03	0.00	84.03	1,308.97	654.48	1,208.33	596.75	3.25	-0.52	0.053
60.00	-7.71	-2.67	0.00	-70.09	0.00	70.09	1,273.18	636.59	1,128.02	557.09	3.82	-0.56	0.046
62.75	-7.28	-2.60	0.00	-62.75	0.00	62.75	1,249.04	624.52	1,081.13	533.93	4.14	-0.58	0.042
65.00	-6.82	-2.55	0.00	-56.90	0.00	56.90	1,225.22	612.61	1,040.04	513.64	4.42	-0.59	0.038
65.83	-6.65	-2.50	0.00	-54.77	0.00	54.77	1,046.77	523.39	903.83	446.37	4.52	-0.59	0.040
70.00	-6.04	-2.39	0.00	-44.37	0.00	44.37	1,022.39	511.19	851.15	420.35	5.05	-0.61	0.033
73.00	-5.25	-1.93	0.00	-37.20	0.00	37.20	1,004.25	502.12	813.67	401.84	5.44	-0.63	0.028
75.00	-4.97	-1.85	0.00	-33.33	0.00	33.33	991.89	495.94	788.93	389.62	5.70	-0.64	0.026
80.00	-4.15	-1.38	0.00	-24.06	0.00	24.06	957.40	478.70	725.96	358.52	6.38	-0.65	0.019
81.00	-4.02	-1.33	0.00	-22.68	0.00	22.68	948.14	474.07	711.89	351.58	6.52	-0.66	0.018
81.00	-4.02	-1.33	0.00	-22.68	0.00	22.68	948.14	474.07	711.89	351.58	6.52	-0.66	0.069
85.00	-3.76	-1.23	0.00	-17.36	0.00	17.36	911.07	455.53	657.00	324.47	7.07	-0.67	0.058
90.00	-3.45	-1.17	0.00	-11.20	0.00	11.20	864.74	432.37	591.48	292.11	7.79	-0.71	0.042
93.50	-3.17	-0.95	0.00	-7.09	0.00	7.09	832.30	416.15	547.67	270.47	8.32	-0.73	0.030
95.00	-3.08	-0.90	0.00	-5.67	0.00	5.67	818.40	409.20	529.41	261.45	8.55	-0.74	0.025
100.00	-0.06	-0.05	0.00	-0.40	0.00	0.40	772.07	386.03	470.77	232.50	9.34	-0.75	0.002
100.01	-0.02	0.00	0.00	0.00	0.00	0.00	771.98	385.99	470.66	232.44	9.34	-0.75	0.000
100.50	0.00	0.00	0.00	0.00	0.00	0.00	767.43	383.72	465.10	229.69	9.41	-0.75	0.000

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:54:00 PM

Customer: T-Mobile

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.20
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.21
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.05
Upper Limit C_s	0.05
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	1.47
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.49
Total Unfactored Dead Load:	18.19 k
Seismic Base Shear (E):	1.08 k

Load Case (1.2 + 0.2S_{ds}) * DL + E ELFM

Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
29	100.26	17	16	0.002	2	22
28	100.01	0	0	0.000	0	0
27	97.50	280	254	0.034	36	348
26	94.25	86	74	0.010	11	107
25	91.75	211	175	0.023	25	263
24	87.50	311	241	0.032	34	386
23	83.00	257	183	0.024	26	319
22	80.50	132	90	0.012	13	164
21	77.50	681	440	0.059	63	846
20	74.00	276	166	0.022	24	342
19	71.50	434	249	0.033	36	540
18	67.92	610	323	0.043	46	757
17	65.42	170	85	0.011	12	211
16	63.88	462	223	0.030	32	573
15	61.38	427	195	0.026	28	531
14	57.50	786	325	0.043	47	976
13	52.50	798	289	0.038	41	991
12	47.50	810	253	0.034	36	1,007
11	42.50	823	217	0.029	31	1,022
10	37.50	835	183	0.024	26	1,037
9	34.13	295	56	0.007	8	367
8	31.62	784	133	0.018	19	974
7	29.83	81	13	0.002	2	101

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

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Customer: T- Mobile

6	27.33	796	109	0.015	16	989
5	22.50	865	89	0.012	13	1,074
4	17.50	877	62	0.008	9	1,089
3	12.50	889	38	0.005	5	1,104
2	7.50	901	18	0.002	3	1,120
1	2.50	913	4	0.000	1	1,135
15' Omni	100.01	40	38	0.005	5	50
Powerwave 21902	100.00	33	31	0.004	4	41
Powerwave LGP21401	100.00	85	80	0.011	11	105
Raycap DC6-48-60-18-	100.00	20	19	0.003	3	25
Ericsson RRUS 11 (Ba	100.00	300	283	0.038	41	373
KMW AM-X-CD-14-65-00	100.00	109	103	0.014	15	136
Powerwave 7770.00	100.00	105	99	0.013	14	130
Powerwave 7770.00	100.00	105	99	0.013	14	130
Flat Platform w/ Han	100.00	2,000	1,886	0.251	270	2,484
RFS APX86-909014L-CT	93.50	73	62	0.008	9	90
RFS APX86-909014L-CT	80.00	145	98	0.013	14	180
Kathrein Scala Smart	73.00	10	6	0.001	1	12
Ericsson KRY 112 489	73.00	46	27	0.004	4	57
RFS ATMAA1412D-1A20	73.00	39	23	0.003	3	48
RFS APX16PV-16PVL-A	73.00	119	70	0.009	10	148
Commscope LNX-6515DS	73.00	151	89	0.012	13	187
		18,186	7,517	1.000	1,077	22,591

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:54:00 PM

Customer: T- Mobile

Load Case (1.2 + 0.2Sds) * DL + E ELFM

Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-21.46	-1.08	0.00	-83.80	0.00	83.80	1,602.06	801.03	2,099.85	1,037.04	0.00	0.00	0.046
5.00	-20.34	-1.08	0.00	-78.40	0.00	78.40	1,580.35	790.18	2,012.72	994.01	0.01	-0.02	0.044
10.00	-19.23	-1.08	0.00	-72.98	0.00	72.98	1,557.29	778.65	1,925.54	950.95	0.04	-0.03	0.042
15.00	-18.14	-1.08	0.00	-67.57	0.00	67.57	1,532.89	766.44	1,838.45	907.94	0.08	-0.05	0.039
20.00	-17.07	-1.07	0.00	-62.18	0.00	62.18	1,507.13	753.57	1,751.60	865.05	0.14	-0.07	0.037
25.00	-16.08	-1.06	0.00	-56.84	0.00	56.84	1,480.03	740.02	1,665.15	822.35	0.22	-0.08	0.035
29.67	-15.98	-1.06	0.00	-51.91	0.00	51.91	1,453.52	726.76	1,584.95	782.75	0.30	-0.10	0.033
30.00	-15.00	-1.04	0.00	-51.56	0.00	51.56	1,451.58	725.79	1,579.24	779.93	0.31	-0.10	0.032
33.25	-14.64	-1.03	0.00	-48.19	0.00	48.19	1,448.96	724.48	1,571.57	776.14	0.38	-0.11	0.031
35.00	-13.60	-1.00	0.00	-46.39	0.00	46.39	1,438.64	719.32	1,541.68	761.38	0.42	-0.11	0.029
40.00	-12.58	-0.97	0.00	-41.37	0.00	41.37	1,408.25	704.12	1,456.82	719.47	0.55	-0.13	0.027
45.00	-11.57	-0.94	0.00	-36.50	0.00	36.50	1,376.50	688.25	1,372.88	678.01	0.68	-0.14	0.025
50.00	-10.58	-0.90	0.00	-31.80	0.00	31.80	1,343.41	671.70	1,290.00	637.08	0.84	-0.15	0.022
55.00	-9.60	-0.85	0.00	-27.32	0.00	27.32	1,308.97	654.48	1,208.33	596.75	1.00	-0.16	0.020
60.00	-9.07	-0.82	0.00	-23.08	0.00	23.08	1,273.18	636.59	1,128.02	557.09	1.18	-0.17	0.017
62.75	-8.50	-0.79	0.00	-20.82	0.00	20.82	1,249.04	624.52	1,081.13	533.93	1.28	-0.18	0.016
65.00	-8.29	-0.78	0.00	-19.05	0.00	19.05	1,225.22	612.61	1,040.04	513.64	1.37	-0.18	0.015
65.83	-7.53	-0.73	0.00	-18.40	0.00	18.40	1,046.77	523.39	903.83	446.37	1.40	-0.19	0.016
70.00	-6.99	-0.69	0.00	-15.37	0.00	15.37	1,022.39	511.19	851.15	420.35	1.57	-0.19	0.014
73.00	-6.20	-0.63	0.00	-13.30	0.00	13.30	1,004.25	502.12	813.67	401.84	1.69	-0.20	0.012
75.00	-5.35	-0.57	0.00	-12.03	0.00	12.03	991.89	495.94	788.93	389.62	1.77	-0.20	0.011
80.00	-5.01	-0.54	0.00	-9.19	0.00	9.19	957.40	478.70	725.96	358.52	1.99	-0.21	0.009
81.00	-4.69	-0.51	0.00	-8.65	0.00	8.65	948.14	474.07	711.89	351.58	2.03	-0.21	0.008
81.00	-4.69	-0.51	0.00	-8.65	0.00	8.65	948.14	474.07	711.89	351.58	2.03	-0.21	0.030
85.00	-4.30	-0.48	0.00	-6.60	0.00	6.60	911.07	455.53	657.00	324.47	2.21	-0.21	0.025
90.00	-4.04	-0.45	0.00	-4.21	0.00	4.21	864.74	432.37	591.48	292.11	2.44	-0.23	0.019
93.50	-3.84	-0.43	0.00	-2.62	0.00	2.62	832.30	416.15	547.67	270.47	2.61	-0.24	0.014
95.00	-3.49	-0.40	0.00	-1.98	0.00	1.98	818.40	409.20	529.41	261.45	2.69	-0.24	0.012
100.00	-0.02	0.00	0.00	0.00	0.00	0.00	772.07	386.03	470.77	232.50	2.94	-0.24	0.000
100.01	0.00	0.00	0.00	0.00	0.00	0.00	771.98	385.99	470.66	232.44	2.94	-0.24	0.000
100.50	0.00	0.00	0.00	0.00	0.00	0.00	767.43	383.72	465.10	229.69	2.97	-0.24	0.000

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:54:00 PM

Customer: T-Mobile

Equivalent Modal Forces Analysis

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.20
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.21
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	1.47
Redundancy Factor (ρ):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM

Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
29	100.26	17	1.881	1.932	1.123	0.406	6	22
28	100.01	0	1.871	1.883	1.105	0.399	0	0
27	97.50	280	1.779	1.444	0.941	0.337	82	348
26	94.25	86	1.662	0.984	0.758	0.263	20	107
25	91.75	211	1.575	0.704	0.637	0.213	39	263
24	87.50	311	1.433	0.349	0.466	0.139	38	386
23	83.00	257	1.289	0.106	0.327	0.077	17	319
22	80.50	132	1.213	0.017	0.264	0.050	6	164
21	77.50	681	1.124	-0.055	0.202	0.024	14	846
20	74.00	276	1.025	-0.103	0.144	0.002	0	342
19	71.50	434	0.957	-0.118	0.111	-0.008	-3	540
18	67.92	610	0.863	-0.120	0.074	-0.015	-8	757
17	65.42	170	0.801	-0.112	0.054	-0.015	-2	211
16	63.88	462	0.763	-0.104	0.044	-0.013	-5	573
15	61.38	427	0.705	-0.088	0.031	-0.008	-3	531
14	57.50	786	0.619	-0.060	0.017	0.003	2	976
13	52.50	798	0.516	-0.022	0.008	0.020	14	991
12	47.50	810	0.422	0.011	0.006	0.035	25	1,007
11	42.50	823	0.338	0.036	0.009	0.045	32	1,022
10	37.50	835	0.263	0.053	0.016	0.049	35	1,037
9	34.13	295	0.218	0.060	0.021	0.050	13	367
8	31.62	784	0.187	0.064	0.025	0.049	33	974
7	29.83	81	0.167	0.066	0.028	0.049	3	101
6	27.33	796	0.140	0.069	0.032	0.048	33	989
5	22.50	865	0.095	0.071	0.038	0.045	34	1,074
4	17.50	877	0.057	0.071	0.041	0.043	33	1,089
3	12.50	889	0.029	0.068	0.040	0.039	30	1,104
2	7.50	901	0.011	0.056	0.032	0.032	25	1,120
1	2.50	913	0.001	0.026	0.014	0.016	13	1,135
15' Omni	100.01	40	1.872	1.884	1.105	0.399	14	50
Powerwave 21902	100.00	33	1.871	1.883	1.105	0.399	11	41
Powerwave LGP21401	100.00	85	1.871	1.883	1.105	0.399	29	105
Raycap DC6-48-60-18-	100.00	20	1.871	1.883	1.105	0.399	7	25
Ericsson RRUS 11 (Ba	100.00	300	1.871	1.883	1.105	0.399	104	373

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

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Customer: T- Mobile

KMW AM-X-CD-14-65-00	100.00	109	1.871	1.883	1.105	0.399	38	136
Powerwave 7770.00	100.00	105	1.871	1.883	1.105	0.399	36	130
Powerwave 7770.00	100.00	105	1.871	1.883	1.105	0.399	36	130
Flat Platform w/ Han	100.00	2,000	1.871	1.883	1.105	0.399	692	2,484
RFS APX86-909014L-CT	93.50	73	1.636	0.894	0.720	0.248	16	90
RFS APX86-909014L-CT	80.00	145	1.198	0.002	0.253	0.045	6	180
Kathrein Scala Smart	73.00	10	0.997	-0.111	0.130	-0.003	0	12
Ericsson KRY 112 489	73.00	46	0.997	-0.111	0.130	-0.003	0	57
RFS ATMAA1412D-1A20	73.00	39	0.997	-0.111	0.130	-0.003	0	48
RFS APX16PV-16PVL-A	73.00	119	0.997	-0.111	0.130	-0.003	0	148
Commscope LNX-	73.00	151	0.997	-0.111	0.130	-0.003	0	187
		18,186	46.664	24.575	18.174	6.246	1,513	22,591

Site Number: 302516

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:54:00 PM

Customer: T-Mobile

Load Case (1.2 + 0.2Sds) * DL + E EMAM

Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-21.46	-1.50	0.00	-128.91	0.00	128.91	1,602.06	801.03	2,099.85	1,037.04	0.00	0.00	0.066
5.00	-20.34	-1.49	0.00	-121.39	0.00	121.39	1,580.35	790.18	2,012.72	994.01	0.01	-0.03	0.064
10.00	-19.23	-1.47	0.00	-113.95	0.00	113.95	1,557.29	778.65	1,925.54	950.95	0.05	-0.05	0.061
15.00	-18.14	-1.44	0.00	-106.62	0.00	106.62	1,532.89	766.44	1,838.45	907.94	0.12	-0.08	0.058
20.00	-17.07	-1.41	0.00	-99.42	0.00	99.42	1,507.13	753.57	1,751.60	865.05	0.22	-0.10	0.056
25.00	-16.08	-1.38	0.00	-92.36	0.00	92.36	1,480.03	740.02	1,665.15	822.35	0.34	-0.13	0.053
29.67	-15.98	-1.38	0.00	-85.90	0.00	85.90	1,453.52	726.76	1,584.95	782.75	0.47	-0.15	0.051
30.00	-15.00	-1.35	0.00	-85.44	0.00	85.44	1,451.58	725.79	1,579.24	779.93	0.49	-0.15	0.049
33.25	-14.64	-1.34	0.00	-81.05	0.00	81.05	1,448.96	724.48	1,571.57	776.14	0.60	-0.17	0.048
35.00	-13.60	-1.31	0.00	-78.71	0.00	78.71	1,438.64	719.32	1,541.68	761.38	0.66	-0.18	0.047
40.00	-12.58	-1.28	0.00	-72.18	0.00	72.18	1,408.25	704.12	1,456.82	719.47	0.86	-0.20	0.044
45.00	-11.57	-1.25	0.00	-65.81	0.00	65.81	1,376.50	688.25	1,372.88	678.01	1.09	-0.23	0.041
50.00	-10.58	-1.24	0.00	-59.55	0.00	59.55	1,343.41	671.70	1,290.00	637.08	1.34	-0.25	0.038
55.00	-9.60	-1.23	0.00	-53.36	0.00	53.36	1,308.97	654.48	1,208.33	596.75	1.61	-0.27	0.035
60.00	-9.07	-1.24	0.00	-47.19	0.00	47.19	1,273.18	636.59	1,128.02	557.09	1.91	-0.29	0.032
62.75	-8.50	-1.24	0.00	-43.78	0.00	43.78	1,249.04	624.52	1,081.13	533.93	2.08	-0.31	0.030
65.00	-8.28	-1.24	0.00	-40.99	0.00	40.99	1,225.22	612.61	1,040.04	513.64	2.23	-0.32	0.029
65.83	-7.53	-1.25	0.00	-39.95	0.00	39.95	1,046.77	523.39	903.83	446.37	2.28	-0.32	0.030
70.00	-6.99	-1.25	0.00	-34.75	0.00	34.75	1,022.39	511.19	851.15	420.35	2.57	-0.33	0.027
73.00	-6.19	-1.25	0.00	-31.00	0.00	31.00	1,004.25	502.12	813.67	401.84	2.78	-0.35	0.024
75.00	-5.35	-1.23	0.00	-28.51	0.00	28.51	991.89	495.94	788.93	389.62	2.93	-0.35	0.022
80.00	-5.00	-1.22	0.00	-22.36	0.00	22.36	957.40	478.70	725.96	358.52	3.30	-0.37	0.018
81.00	-4.68	-1.20	0.00	-21.14	0.00	21.14	948.14	474.07	711.89	351.58	3.38	-0.37	0.018
81.00	-4.68	-1.20	0.00	-21.14	0.00	21.14	948.14	474.07	711.89	351.58	3.38	-0.37	0.065
85.00	-4.30	-1.16	0.00	-16.35	0.00	16.35	911.07	455.53	657.00	324.47	3.70	-0.38	0.055
90.00	-4.03	-1.12	0.00	-10.56	0.00	10.56	864.74	432.37	591.48	292.11	4.12	-0.42	0.041
93.50	-3.84	-1.08	0.00	-6.63	0.00	6.63	832.30	416.15	547.67	270.47	4.44	-0.44	0.029
95.00	-3.49	-1.00	0.00	-5.01	0.00	5.01	818.40	409.20	529.41	261.45	4.58	-0.45	0.023
100.00	-0.02	-0.01	0.00	0.00	0.00	0.00	772.07	386.03	470.77	232.50	5.05	-0.46	0.000
100.01	0.00	0.00	0.00	0.00	0.00	0.00	771.98	385.99	470.66	232.44	5.05	-0.46	0.000
100.50	0.00	0.00	0.00	0.00	0.00	0.00	767.43	383.72	465.10	229.69	5.10	-0.46	0.000

Site Number: 302516

Code: ANSI/TIA-222-G

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Site Name: Mlfd - Milford, CT

Engineering Number: 64193122

1/18/2016 4:54:00 PM

Customer: T- Mobile

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	20.47	0.00	21.77	0.00	0.00	1378.75	0.00	0.64
0.9D + 1.6W	20.31	0.00	16.32	0.00	0.00	1356.66	0.00	0.62
1.2D + 1.0Di + 1.0Wi	3.84	0.00	38.20	0.00	0.00	265.85	0.00	0.13
(1.2 + 0.2Sds) * DL + E ELFM	1.08	0.00	21.46	0.00	0.00	83.80	0.00	0.05
(1.2 + 0.2Sds) * DL + E EMAM	1.50	0.00	21.46	0.00	0.00	128.91	0.00	0.07
1.0D + 1.0W	4.19	0.00	18.18	0.00	0.00	279.88	0.00	0.13

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors			Upper Termination Connectors				Lower Termination Connectors				Max Member		
			VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Pu (kip)	phiPn (kip)	Ratio
0.00	81.0	(4) SOL-#20 All Thre	308.7	9.3	16.8	39.7	12.0	4	7	0.0	12.0	0	0	227.8	330.5	0.689

Base/Flange Plate	Plate Type	Baseplate
	Pole Diameter	32 in
	Pole Thickness	0.25 in
	Plate Length	44 in
	Plate Thickness	2 in
	Plate Fy	60 ksi
	Weld Length	0.3125 in
	ϕ_s Resistance	2087.53 k-in
	Applied	812.38 k-in
Stiffeners	#	12 Show
	Thickness	0.5 in
	Length	5.5 in
	Height	10 in
	Chamfer	1 in
	Offset Angle	0°
	Fy	36 ksi

Bolts	#	8
	Bolt Circle	44 in
	(R)adial / (S)quare	S
	Bolt Gap	6 in
	Diameter	2.25 in
	Hole Diameter	2.625 in
	Type	A615-75
	Fy	75 ksi
	Fu	100 ksi
	ϕ_s Resistance	259.82 k
Applied	92.84 k	
Reinforcement	#	4
	DYW. Circle	36.88 in
	Offset Angle	0°
	Type	#20
	Diameter	2.5 in
Fu	100 ksi	
Extra Bolts O	#	0

Code Rev. **G**

Date 1/18/2016
 Engineer Z. Medoff
 Site # 302516
 Carrier AT&T Mobility

Moment 1378.8 k-ft
 Axial 21.8 k

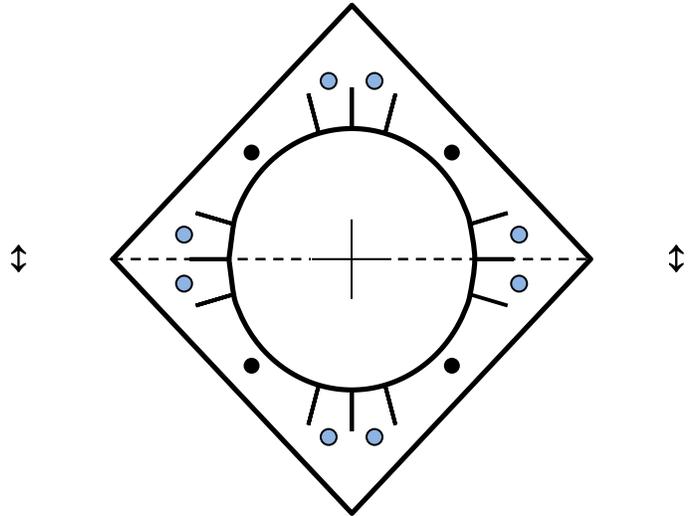


Plate Stress Ratio:
0.39 (Pass)

Bolt Stress Ratio:
0.36 (Pass)

Rock Anchor Foundation Calc

Rev. G

Anchor bolt diameter	2.25 in
Pull-out capacity	60 kips
x $\phi_s = 0.75$	45
Offset from edge	0.5 ft
# Rows (along length)	5
# Cols (along width)	5
Foundation length	8 ft
Design Moment	1378.8 ft-kips

Bolt Distance	0.5	2.25	4	5.75	7.5	
Num	5	2	2	2	5	
Force Capacity	3	13.5	24	34.5	45	TOTAL
Moment Capacity	7.5	60.75	192	396.75	1687.5	2344.5

Ratio	0.59
	OK