November 18, 2016

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

Regarding:	Notice of Exempt Modification – Antenna Swap & Radio Head Swap
Property Address:	405 Bushy Plain Road Branford, CT 06405
AT&T Site:	CT2015

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 150 foot monopole at the above-referenced address, latitude 41.316806, longitude -72.819700. Said monopole is owned by American Tower Corporation. The existing equipment shelter is 25' x 21.7' totaling 542.5 square feet.

AT&T desires to modify its existing telecommunications facility by swapping three (3) antennas and three (3) remote-radio heads ("RRHs"). The centerline height of said antennas is and will remain at 153 feet. Antennas are mounted utilizing a platform with hand rails.

Please accept this application 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 James B. Cosgrove, First Selectman of the Town of Branford as well as to the landowners Edward F. Jaconette, Jr. and Kristin L. Jaconette. A copy of this letter is also being sent to the monopole owner American Towers Corporation.

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72 (b)(2). Specifically:

1. The planned modification will not result in an increase in the height of the existing structure. The antennas to be swapped will be installed at the existing height of 153 feet on the 150-foot monopole.

2. The proposed modifications will not involve any changes to ground-mounted equipment, and therefore will not require an extension of the site boundary.

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

4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above Federal Communications Commission (FCC) safety standard. An RF emissions calculation (attached) for AT&T's modified facility is herein provided.

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

6. The monopole and its foundation can support AT&T's proposed modifications (please see attached structural analysis completed by American Tower dated October 27, 2016).

For the foregoing reasons, AT&T respectfully requests that the proposed antenna and remote radio head swap be allowed within the exempt modifications under R.C.S.A. §16-50j-72 (b)(2).

Sincerely,

Sarah Snell

Sarah Snell
Site Acquisition Specialist

cc: James B. Cosgrove, First Selectman of the Town of Branford (municipality)
Edward F. Jaconette, Jr. and Kristin L. Jaconette (landowners)
American Tower Corporation (monopole owner)

Sarah Snell • Empire Telecom USA, LLC • 16 Esquire Road Billerica, MA 01862 • T: 978-608-8146 •
E: ssnell@empiretelecomm.com

Property Location: 405 BRUSHY PLAIN RD | **MAP ID:** D02/000 003/ 00001/ / | **Bldg Name:** | **State Use:** 0431

Vision ID: 695 | **Account #** 004475 | **Bldg #:** 1 of 3 | **Sec #:** 1 of 1 | **Card** 1 of 3 | **Print Date:** 04/06/2016 11:27

CURRENT OWNER	TOPO.	UTILITIES	STRT./ROAD	LOCATION
JACONETTE EDWARD F JR &	4 Rolling	5 Well	1 Paved	2 Suburban
JACONETTE KRISTIN L (SUR)		3 Public Sewer		
405 BRUSHY PLAIN RD				
BRANFORD, CT 06405				
Additional Owners:				

SUPPLEMENTAL DATA

Other ID: D02/000/003/00001/	HLDG TK
CONDO BLDG	SEPTIC
CONDO UNIT	SEWER
CONDO FLOOI	DISTRICT
	CENSUS TR 1847
PARCEL DESC	
GIS ID: D02/000/003/00001	*ASSOC PID#*

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
UTL LAND	4-1	362,200	253,500
UTL BLDG	4-2	171,300	119,900
UTL OUTBL	4-3	1,800	1,300
	Total	535,300	374,700

6014
BRANFORD, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
JACONETTE EDWARD F JR &	0788/1038	11/18/2002	U	I		25
ADAMS MARSHA	442/ 252	12/22/1987	U	V		
ADAMS MARSHA		12/22/1987				

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2015	4-1	253,500	2014	4-1	253,500	2013	4-1	253,500
2015	4-2	119,900	2014	4-2	119,900	2013	4-2	132,800
2015	4-3	1,300	2014	4-3	1,300	2013	4-3	900
	Total:	374,700		*Total:*	374,700		*Total:*	387,200

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
0050/A				

NOTES

2014-NO ACCESS PRESUME SAME
PAV2=3CONC PADS
RESIDENTIAL
120 FT HGT 773-2872
TOWER IDCT-0020
LEASED TO SNET + 4.26 AC
LANDTOTAL=4.5 AC=.24 AC

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	21,000
Appraised XF (B) Value (Bldg)	0
Appraised OB (L) Value (Bldg)	1,800
Appraised Land Value (Bldg)	362,200
Special Land Value	0
Total Appraised Parcel Value	535,300
Valuation Method:	C
Adjustment:	0
Net Total Appraised Parcel Value	535,300

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments
13-01490	12/13/2013	CM	Commercial	8,500	07/16/2014	100		UPGRADE TO EXISTI
00864-2012	11/05/2013	CO	CO ISSUED	0	07/16/2014	100		ADDING THREE LTE /
01070-2013	10/10/2013	CO	CO ISSUED	0	07/16/2014	100		MODIFICATIONS TO /
0900291	04/29/2009	CM	Commercial	20,000		100	07/28/2009	REPL 3 EXISTING AN

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result
10/15/2014			DV	11	Field Review
08/01/2014			JG	11	Field Review
07/16/2014			GM	37	Bldg Permit
10/22/2009			KC	16	Reval Review
10/05/2009			YM	11	Field Review

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units		Unit Price	I. Factor	S.A.	Acre Disc	C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing		S Adj Fact	Adj. Unit Price	Land Value
1	0431	TEL REL TW MDL96	R-4				0.46	AC	109,600.00	2.0152	5	1.0000	1.00	0050	1.00				1.00		101,600
1	0431	TEL REL TW MDL96	R-4				4.04	AC	15,000.00	1.0000	0	1.0000	1.00	0050	1.00				1.00		60,600
1	0431	TEL REL TW MDL96					1.00	BL	200,000.00	1.0000	0	1.0000	1.00		0.00	CELL SITE			1.00		200,000

Total Card Land Units: 4.50 AC | **Parcel Total Land Area:** 4.5 AC | **Total Land Value:** 362,200

Property Location: 405 BRUSHY PLAIN RD **MAP ID:** D02/000 003/ 00001/ / **Bldg Name:** **State Use:** 0431

Vision ID: 695 **Account #** 004475 **Bldg #:** 1 of 3 **Sec #:** 1 of 1 **Card** 1 of 3 **Print Date:** 04/06/2016 11:27

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Style	48		Warehouse
Model	96		Ind/Comm
Grade	03		C
Stories	1		
Occupancy	1		
Exterior Wall 1	22		Precast Panel
Exterior Wall 2			
Roof Structure	02		Shed
Roof Cover	04		T&G/Rubber
Interior Wall 1	01		Minim/Masonry
Interior Wall 2			
Interior Floor 1	03		Concr-Finished
Interior Floor 2			
Heating Fuel	04		Electric
Heating Type	03		Hot Air-no Duc
AC Type	02		Heat Pump
Bldg Use	0431		TEL REL TW MDL96
Total Rooms			
Total Bedrms	00		
Total Baths	0		
Heat/AC	01		HEAT/AC PKGS
Frame Type	03		MASONRY
Baths/Plumbing	00		NONE
Ceiling/Wall	02		CEILING ONLY
Rooms/Prtns	02		AVERAGE
Wall Height	9		
% Comn Wall			

CONSTRUCTION DETAIL (CONTINUED)

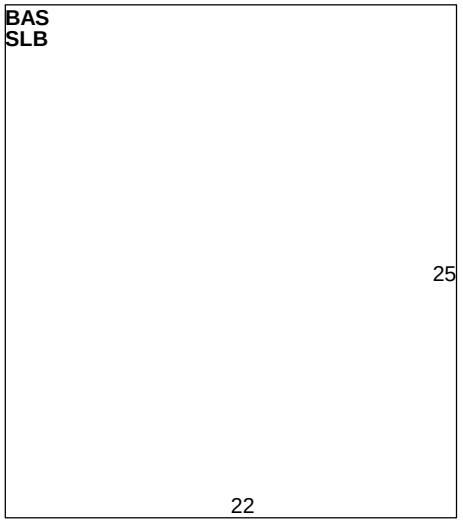
Element	Cd.	Ch.	Description

MIXED USE

Code	Description	Percentage
0431	TEL REL TW MDL96	100

COST/MARKET VALUATION

Adj. Base Rate:	46.07
Replace Cost	25,339
AYB	1992
Dep Code	A
Remodel Rating	
Year Remodeled	
Dep %	17
Functional Obslnc	0
External Obslnc	0
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	83
Apprais Val	21,000
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	



OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
FN3	FENCE-6' CHA			L	260	9.90	2002		0		50	1,300
PAV2	PAVING-CON			L	137	3.30	2014		0		100	500

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
BAS	First Floor	550	550	550	46.07	25,339
SLB	Slab	0	550	0	0.00	0
	Ttl. Gross Liv/Lease Area:	550	1,100	550		25,339

Property Location: 405 BRUSHY PLAIN RD | **MAP ID:** D02/000 003/ 00001/ / | **Bldg Name:** | **State Use:** 0431

Vision ID: 695 | **Account #** 004475 | **Bldg #:** 2 of 3 | **Sec #:** 1 of 1 | **Card** 2 of 3 | **Print Date:** 04/06/2016 11:27

CURRENT OWNER	TOPO.	UTILITIES	STRT./ROAD	LOCATION
JACONETTE EDWARD F JR &	4 Rolling	5 Well	1 Paved	2 Suburban
JACONETTE KRISTIN L (SUR)		3 Public Sewer		
405 BRUSHY PLAIN RD				
BRANFORD, CT 06405				
Additional Owners:				

SUPPLEMENTAL DATA

Other ID:	D02/000/003/00001/	HLDG TK	
CONDO BLDG		SEPTIC	
CONDO UNIT		SEWER	
CONDO FLOOI		DISTRICT	
		CENSUS TR	1847
PARCEL DESC			
GIS ID:	D02/000/003/00001	*ASSOC PID#*	

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
UTL LAND	4-1	362,200	253,500
UTL BLDG	4-2	171,300	119,900
UTL OUTBL	4-3	1,800	1,300
	Total	535,300	374,700

6014
BRANFORD, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
JACONETTE EDWARD F JR &	0788/1038	11/18/2002	U	I		25
ADAMS MARSHA	442/ 252	12/22/1987	U	V		
ADAMS MARSHA		12/22/1987				

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2015	4-1	253,500	2014	4-1	253,500	2013	4-1	253,500
2015	4-2	119,900	2014	4-2	119,900	2013	4-2	132,800
2015	4-3	1,300	2014	4-3	1,300	2013	4-3	900
	Total:	374,700		*Total:*	374,700		*Total:*	387,200

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	17,300
Appraised XF (B) Value (Bldg)	0
Appraised OB (L) Value (Bldg)	0
Appraised Land Value (Bldg)	0
Special Land Value	0
Total Appraised Parcel Value	535,300
Valuation Method:	C
Adjustment:	0
Net Total Appraised Parcel Value	535,300

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
0050/A				

NOTES

BLDG 2 LABELED
SITE 120 800-852-2671
120 FT MONOPOLE SITE

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result
10/15/2014			DV	11	Field Review
08/01/2014			JG	11	Field Review
07/16/2014			GM	37	Bldg Permit
10/22/2009			KC	16	Reval Review
10/05/2009			YM	11	Field Review

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units		Unit Price	I. Factor	S.A.	Acre Disc	C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing		S Adj Fact	Adj. Unit Price	Land Value
2	0431	TEL REL TW MDL96	R-4				0.00	AC	0.00	1.0000	0	1.0000	1.00	0050	1.00				.00		0

Total Card Land Units:	0.00	AC	Parcel Total Land Area:	4.5 AC	Total Land Value:	0

Property Location: 405 BRUSHY PLAIN RD **MAP ID:** D02/000 003/ 00001/ / **Bldg Name:** **State Use:** 0431

Vision ID: 695 **Account #** 004475 **Bldg #:** 2 of 3 **Sec #:** 1 of 1 **Card** 2 of 3 **Print Date:** 04/06/2016 11:27

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Style	48		Warehouse
Model	96		Ind/Comm
Grade	03		C
Stories	1		
Occupancy	1		
Exterior Wall 1	22		Precast Panel
Exterior Wall 2			
Roof Structure	02		Shed
Roof Cover	04		T&G/Rubber
Interior Wall 1	01		Minim/Masonry
Interior Wall 2			
Interior Floor 1	03		Concr-Finished
Interior Floor 2			
Heating Fuel	04		Electric
Heating Type	03		Hot Air-no Duc
AC Type	02		Heat Pump
Bldg Use	0431		TEL REL TW MDL96
Total Rooms			
Total Bedrms	00		
Total Baths	0		
Heat/AC	01		HEAT/AC PKGS
Frame Type	03		MASONRY
Baths/Plumbing	00		NONE
Ceiling/Wall	02		CEILING ONLY
Rooms/Prtns	02		AVERAGE
Wall Height	9		
% Comn Wall			

CONSTRUCTION DETAIL (CONTINUED)

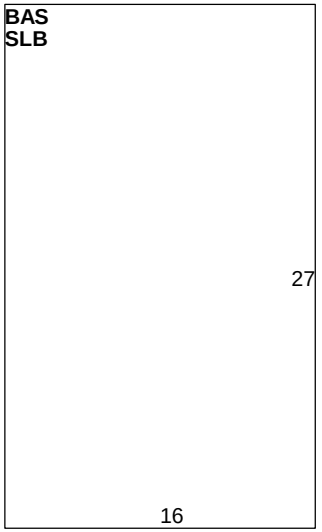
Element	Cd.	Ch.	Description

MIXED USE

Code	Description	Percentage
0431	TEL REL TW MDL96	100

COST/MARKET VALUATION

Adj. Base Rate:	46.07
Replace Cost	19,902
AYB	2001
Dep Code	A
Remodel Rating	
Year Remodeled	
Dep %	13
Functional Obslnc	0
External Obslnc	0
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	87
Apprais Val	17,300
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	



OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
BAS	First Floor	432	432	432	46.07	19,902
SLB	Slab	0	432	0	0.00	0
	Ttl. Gross Liv/Lease Area:	432	864	432		19,902

Property Location: 405 BRUSHY PLAIN RD | **MAP ID:** D02/000 003/ 00001/ / | **Bldg Name:** | **State Use:** 0431

Vision ID: 695 | **Account #** 004475 | **Bldg #:** 3 of 3 | **Sec #:** 1 of 1 | **Card** 3 of 3 | **Print Date:** 04/06/2016 11:27

CURRENT OWNER	TOPO.	UTILITIES	STRT./ROAD	LOCATION
JACONETTE EDWARD F JR &	4 Rolling	5 Well	1 Paved	2 Suburban
JACONETTE KRISTIN L (SUR)		3 Public Sewer		
405 BRUSHY PLAIN RD				
BRANFORD, CT 06405				
Additional Owners:				

SUPPLEMENTAL DATA

Other ID: D02/000/003/00001/	HLDG TK
CONDO BLDG	SEPTIC
CONDO UNIT	SEWER
CONDO FLOOI	DISTRICT
	CENSUS TR 1847
PARCEL DESC	
GIS ID: D02/000/003/00001	*ASSOC PID#*

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
UTL LAND	4-1	362,200	253,500
UTL BLDG	4-2	171,300	119,900
UTL OUTBL	4-3	1,800	1,300
	Total	535,300	374,700

6014
BRANFORD, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
JACONETTE EDWARD F JR &	0788/1038	11/18/2002	U	I		25
ADAMS MARSHA	442/ 252	12/22/1987	U	V		
ADAMS MARSHA		12/22/1987				

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2015	4-1	253,500	2014	4-1	253,500	2013	4-1	253,500
2015	4-2	119,900	2014	4-2	119,900	2013	4-2	132,800
2015	4-3	1,300	2014	4-3	1,300	2013	4-3	900
	Total:	374,700		*Total:*	374,700		*Total:*	387,200

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	128,900
Appraised XF (B) Value (Bldg)	4,100
Appraised OB (L) Value (Bldg)	0
Appraised Land Value (Bldg)	0
Special Land Value	0
Total Appraised Parcel Value	535,300
Valuation Method:	C
Adjustment:	0
Net Total Appraised Parcel Value	535,300

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
0050/A				

NOTES

DK BROWN IA
1STKLRDR3 BR2 BTHS
BSMTFR
ECO=RESALE

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result
10/15/2014			DV	11	Field Review
08/01/2014			JG	11	Field Review
07/16/2014			GM	37	Bldg Permit
10/22/2009			KC	16	Reval Review
10/05/2009			YM	11	Field Review

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units		Unit Price	I. Factor	S.A.	Acre Disc	C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing		S Adj Fact	Adj. Unit Price	Land Value
3	043R	TEL REL TW MDL01	R-4				0.00	AC	0.00	1.0000	0	1.0000	1.00	0050	1.00				.00		0

Total Card Land Units:	0.00	AC	Parcel Total Land Area:	4.5 AC	Total Land Value:	0

Property Location: 405 BRUSHY PLAIN RD **MAP ID:** D02/000 003/ 00001/ / **Bldg Name:** **State Use:** 0431

Vision ID: 695 **Account #** 004475 **Bldg #:** 3 of 3 **Sec #:** 1 of 1 **Card** 3 of 3 **Print Date:** 04/06/2016 11:27

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Style	08		Raised Ranch
Model	01		Residential
Grade	04		C +
Stories	1		1 Story
Occupancy	1		
Exterior Wall 1	14		Wood Shingle
Exterior Wall 2			
Roof Structure	03		Gable/Hip
Roof Cover	03		Asphalt
Interior Wall 1	05		Drywall
Interior Wall 2			
Interior Flr 1	14		Carpet
Interior Flr 2			
Heat Fuel	02		Oil
Heat Type	05		Hot Water
AC Type	03		Central
Total Bedrooms	03		3 Bedrooms
Total Bthrms	2		
Total Half Baths	0		
Total Xtra Fixtrs			
Total Rooms	7		7 Rooms
Bath Style	02		Average
Kitchen Style	02		Average
Cottage Cmplx			
Cottage Adj			

CONSTRUCTION DETAIL (CONTINUED)

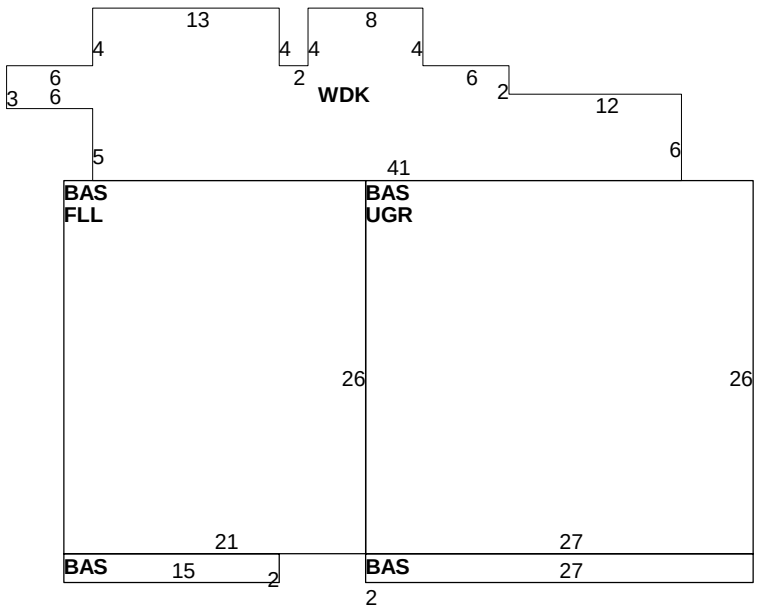
Element	Cd.	Ch.	Description

MIXED USE

Code	Description	Percentage
043R	TEL REL TW MDL01	100

COST/MARKET VALUATION

Adj. Base Rate:	97.96
Replace Cost	195,337
AYB	1975
Dep Code	A
Remodel Rating	
Year Remodeled	
Dep %	24
Functional Obslnc	0
External Obslnc	10
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	66
Apprais Val	128,900
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	



OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
FPL2	FIREPLACE 1			B	1	5,000.00	1990		1		100	3,300
FPO	EXTRA FPL O			B	1	1,200.00	1990		1		100	800

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
BAS	First Floor	1,332	1,332	1,332	97.96	130,486
FLL	Finished Lower Level	410	546	410	73.56	40,165
UGR	Garage Under	0	702	211	29.44	20,670
WDK	Deck, Wood	0	406	41	9.89	4,016
	Ttl. Gross Liv/Lease Area:	1,742	2,986	1,994		195,337

Town of Branford

Geographic Information System (GIS)

Date Printed: 11/18/2016

MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Branford and its mapping contractors assume no legal responsibility for the information contained herein.

0 150 Feet

N W E S

PROJECT TEAM

CLIENT REPRESENTATIVE:

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

SITE ACQUISITION & ZONING:

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

ENGINEERING:

TRYLON TSF
1825 W. WALNUT HILL LANE SUITE 302
KATYA SERAVALLE
PHONE: 519-465-4125

RF ENGINEER:

AT&T MOBILITY - NEW ENGLAND
550 COCHITUATE ROAD
SUITE 550 13 & 14
FRAMINGHAM, MA 01701
CAMERON SYME
508-596-7146
cs6970@att.com

CONSTRUCTION MANAGEMENT:

EMPIRE TELECOM
16 ESQUIRE ROAD
BILLERICA, MA 01821
GRZEGORZ "GREG" DORMAN
484-683-1750
gdorman@empiretelecomm.com

TOWER OWNER:

AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN, MA 01801
TEL: (781) 926-4500

GENERAL NOTES

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

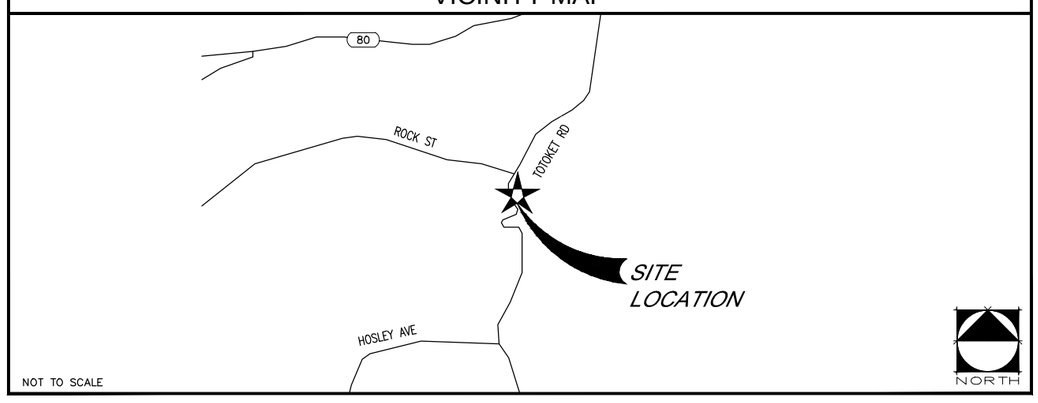
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

SITE INFORMATION

LATITUDE:	41° 19' 00.47" N
LONGITUDE:	72° 49' 10.89" W
LAT./LONG. TYPE:	NAD 83
GROUND ELEVATION:	N/A
APN/UPC:	N/A
AREA OF CONSTRUCTION:	EXISTING
ZONING/JURISDICTION:	CITY OF BRANFORD
CURRENT ZONING:	N/A
EXISTING USE:	TELECOMMUNICATIONS FACILITY
COUNTY:	NEW HAVEN COUNTY
HANDICAP REQUIREMENTS:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.

LTE MULTICARRIER BWE
CT2015
BRANFORD
405 BRUSHY PLAIN ROAD
BRANFORD, CT 06405
FA CODE: 10034973

VICINITY MAP



DRIVING DIRECTIONS

I-95 EXIT 54. END OF EXIT, TAKE LEFT ONTO BRUSHY PLAIN ROAD. CONTINUE APPROX. 2.2 MILES, TURN RIGHT ONTO HILL TOP DRIVE. SITE ON RIGHT.METER# NORTHEAST UTILITIES 88-992-807ACCESS 24/7 GATECOMBO: 2370 OR 4667DEMARC LOCATED INSIDE SHELTER CID'S: GSM-HCGS726650 / HCGS238874 / HCGS238875

CODE COMPLIANCE

BUILDING CODE: 2015 NEW HAVEN COMMERCIAL BUILDING CODE

ELECTRICAL CODE: 2014 NEW HAVEN ELECTRICAL CODE

LIGHTNING PROTECTION CODE: NFPA 780 – 2000, LIGHTNING PROTECTION CODE

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

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

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

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

APPROVALS

AT&T (RF): _____ DATE: _____

AT&T (CONST.): _____ DATE: _____

AT&T (OPS): _____ DATE: _____

TOWER OWNER: _____ DATE: _____

JURISDICTIONAL APPROVAL

BASED ON INFORMATION PROVIDED BY AT&T REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW OR ADMINISTRATIVE REVIEW).

PROJECT DESCRIPTION

THIS PROJECT WILL BE COMPRISED OF:
CHANGES ON THE EXISTING MONOPOLE:

- REMOVE (3) EXISTING AM-X-CD-16-65-00T-RET ANTENNA (1) PER SECTOR FOR (3) SECTORS.
- REMOVE (3) EXISTING RRUS-11 (1) PER SECTOR FOR (3) SECTORS.
- INSTALL (3) NEW HPA-65R-BUU-H6 ANTENNA (1) PER SECTOR FOR (3) SECTORS.
- INSTALL (3) NEW RRUS-32 B2, (1) PER SECTOR FOR (3) SECTORS.
- REUSE (1) EXISTING DC6 SQUID.
- REUSE (2) EXISTING DC POWER TRUNK.
- REUSE (1) EXISTING FIBER TRUNK.
- REUSE (1) EXISTING RET CABLE.
- REUSE (6) EXISTING RF CABLES.

CHANGES IN THE EXISTING AT&T EQUIPMENT ENCLOSURE AREA:

- UPGRADE DUS.
- INSTALL (1) NEW 2ND XMU.

MFP PROJECT #23216-080

SHEET	DESCRIPTION
T-1	TITLE SHEET
GN-1	GROUNDING & GENERAL NOTES
A-1	COMPOUND PLAN
A-2	EQUIPMENT LAYOUTS
A-3	ANTENNA LAYOUTS
A-4	TOWER ELEVATION
A-5	DETAILS
G-1	GROUNDING, ONE-LINE DIAGRAM & DETAILS

at&t Mobility
1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

PLANS PREPARED BY:
Trylon
1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038

NO.	DATE	DESCRIPTION	BY
A	11/04/16	FOR REVIEW	RSN
0	11/11/16	ISSUE FOR CONSTRUCTION	NPS

SITE INFORMATION:

CT2015
BRANFORD
FA CODE: 10034973

405 BRUSHY PLAIN ROAD
BRANFORD, CT 06405

SEAL:

STATE OF CONNECTICUT
MICHAEL F. PLAHOVINSAK
No. 25849
PROFESSIONAL ENGINEER
11-11-2016

MICHAEL F. PLAHOVINSAK, P.E. #25849
Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfpeng.com

SHEET TITLE:

TITLE SHEET

SHEET NUMBER:

T-1

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – EMPIRE TELECOM
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY
   OEM – ORIGINAL EQUIPMENT MANUFACTURER

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

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

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

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

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

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

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

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

10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF ALL SCR1 'AP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

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

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

14. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy=36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

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

16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

19. SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

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

20. SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    - AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
    - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, THIRTEENTH EDITION
    - AMERICAN SOCIETY OF TESTING OF MATERIALS, ASTM
    - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA-222-G-1), STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
    - TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
    - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA
    - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
    - TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

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

GROUNDING NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.

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

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

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

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

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

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

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

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

14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE ½" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50.

at&t Mobility
1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

PLANS PREPARED BY:
Trylon
1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038

NO.	DATE	DESCRIPTION	BY
A	11/04/16	FOR REVIEW	RSN
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SITE INFORMATION:

CT2015
BRANFORD
FA CODE: 10034973

405 BRUSHY PLAIN ROAD
BRANFORD, CT 06405

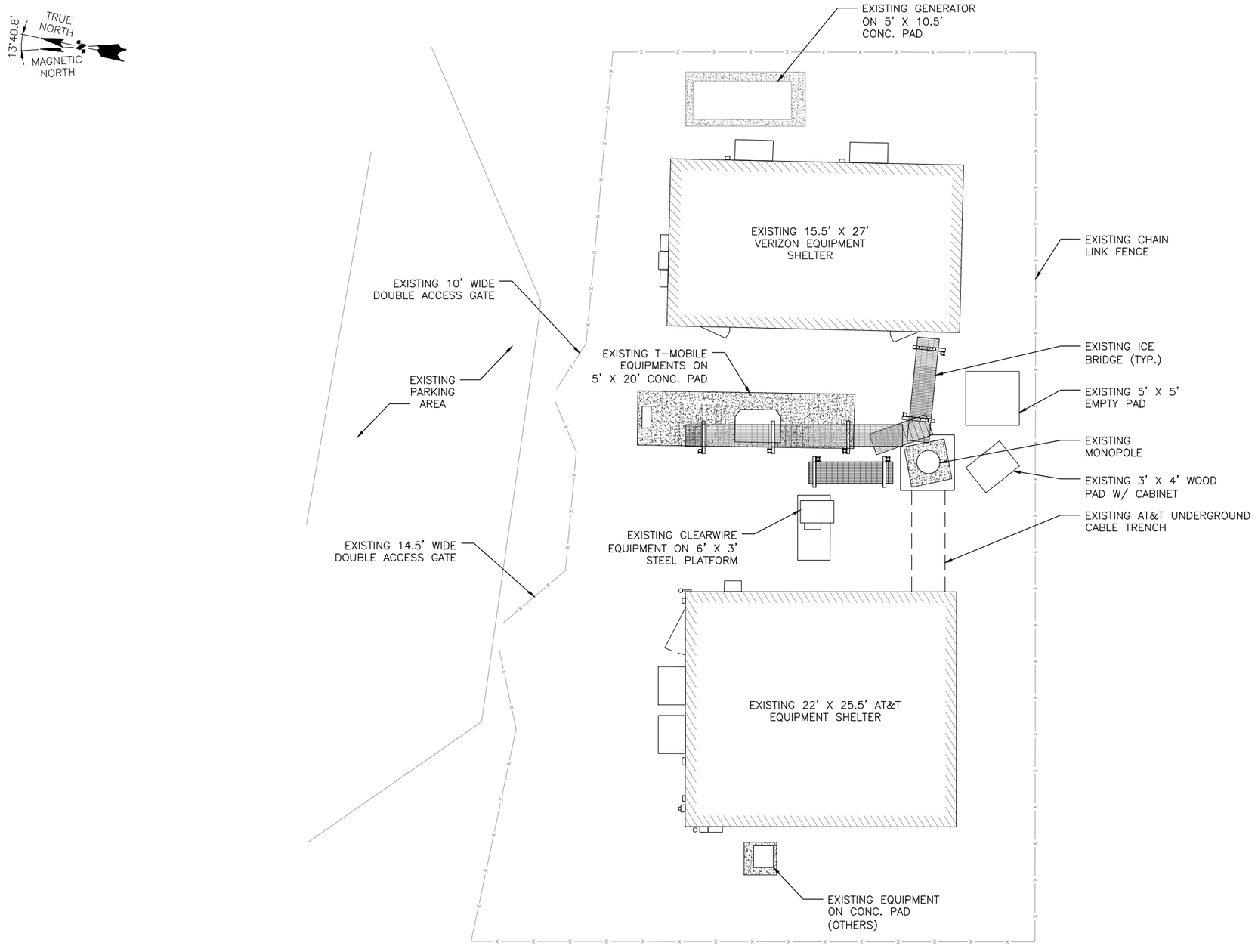
SEAL:

SHEET TITLE:

GENERAL NOTES &
GROUNDING NOTES

SHEET NUMBER:

GN-1



COMPOUND PLAN

22"x34" SCALE: 3/16" = 1'-0"
11"x17" SCALE: 3/32" = 1'-0"

4' 2' 0" 4'

1

at&t Mobility
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SEAL:

STATE OF CONNECTICUT
MICHAEL F. PLAHOVINSAK
No. 25849
PROFESSIONAL ENGINEER
11-11-2016

MICHAEL F. PLAHOVINSAK, P.E. #25849
Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfpeng.com

SHEET TITLE:

COMPOUND PLAN

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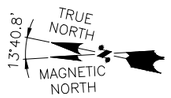
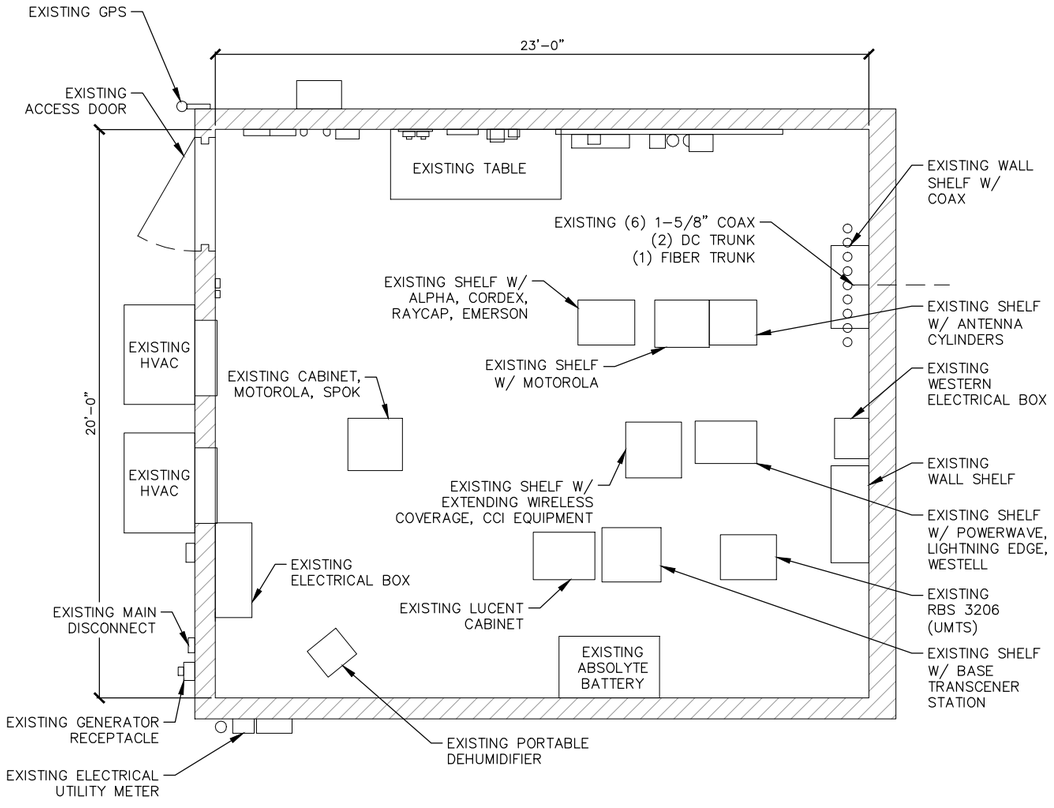
A-1



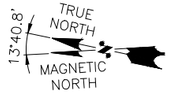


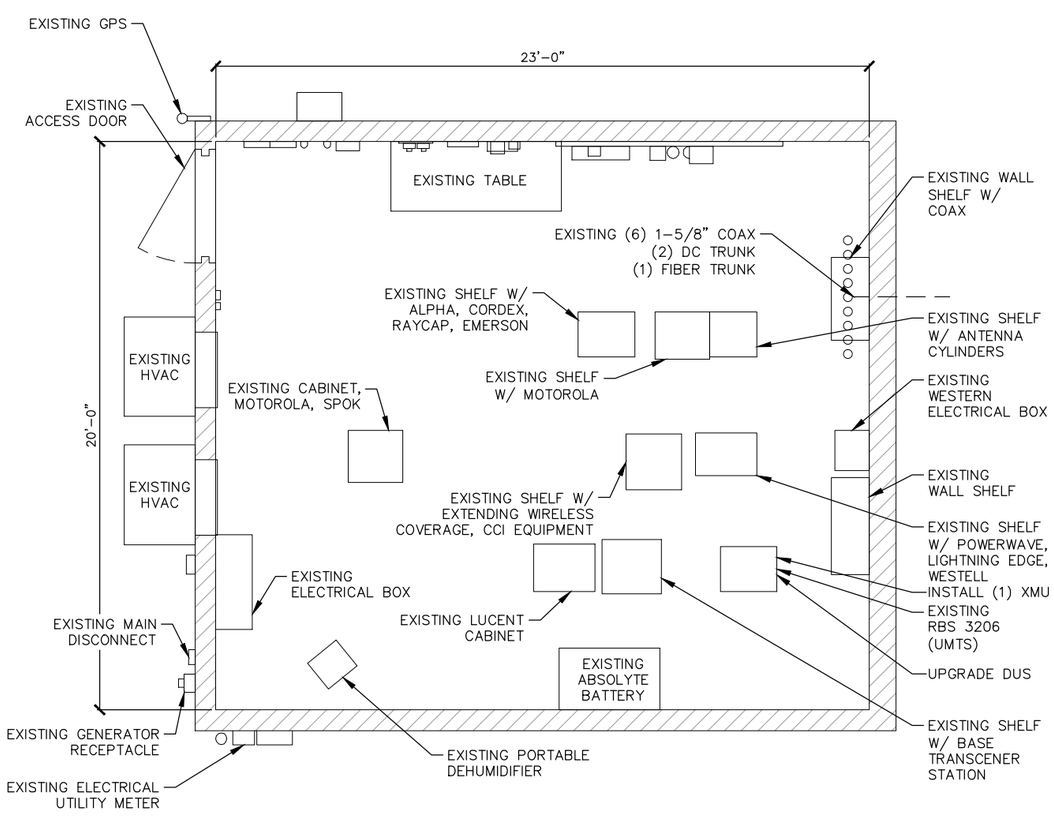
EXISTING EQUIPMENT LAYOUT

22"x34" SCALE: 3/8" = 1'-0"
11"x17" SCALE: 3/16" = 1'-0"

2' 1' 0" 2'

1





PROPOSED EQUIPMENT LAYOUT

22"x34" SCALE: 3/8" = 1'-0"
11"x17" SCALE: 3/16" = 1'-0"

2' 1' 0" 2'

2

at&t Mobility
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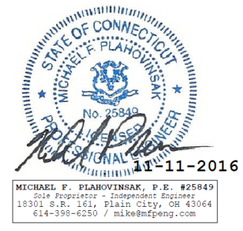
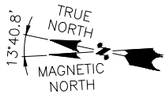


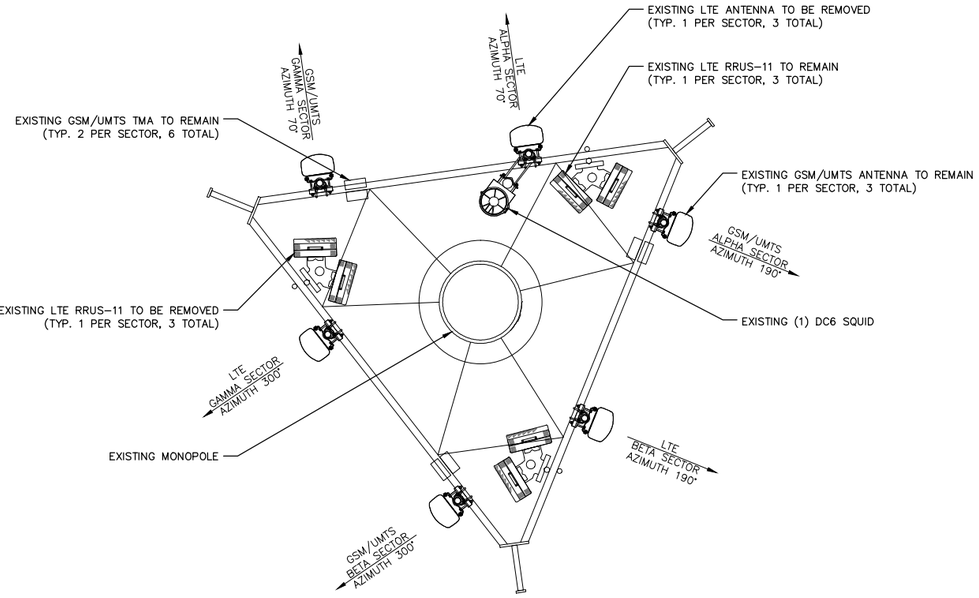
SHEET TITLE:

EQUIPMENT LAYOUTS

SHEET NUMBER:

A-2



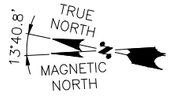


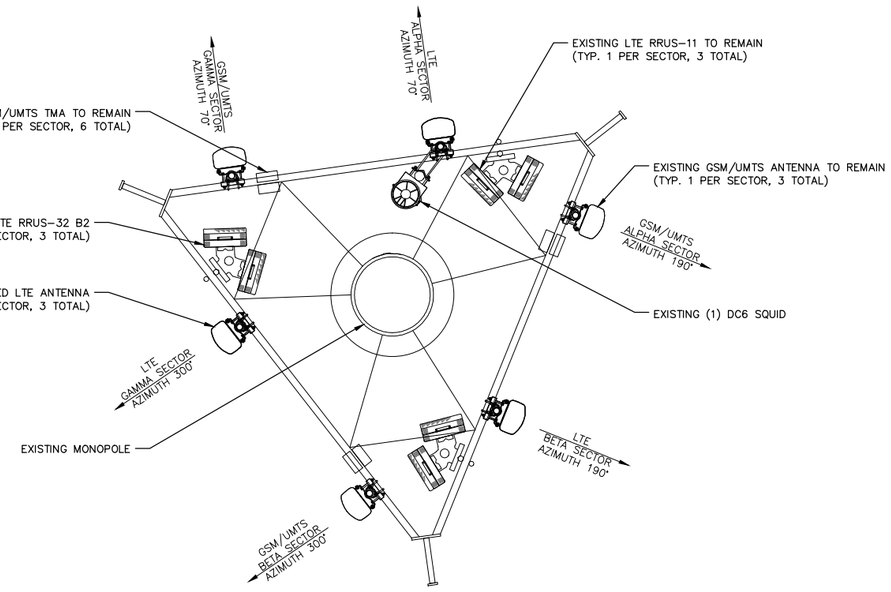
EXISTING ANTENNA LAYOUT

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

2' 1' 0" 2'

1





PROPOSED ANTENNA LAYOUT

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

2' 1' 0" 2'

2

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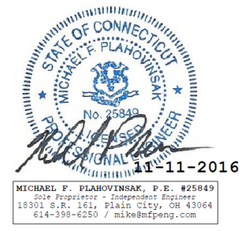
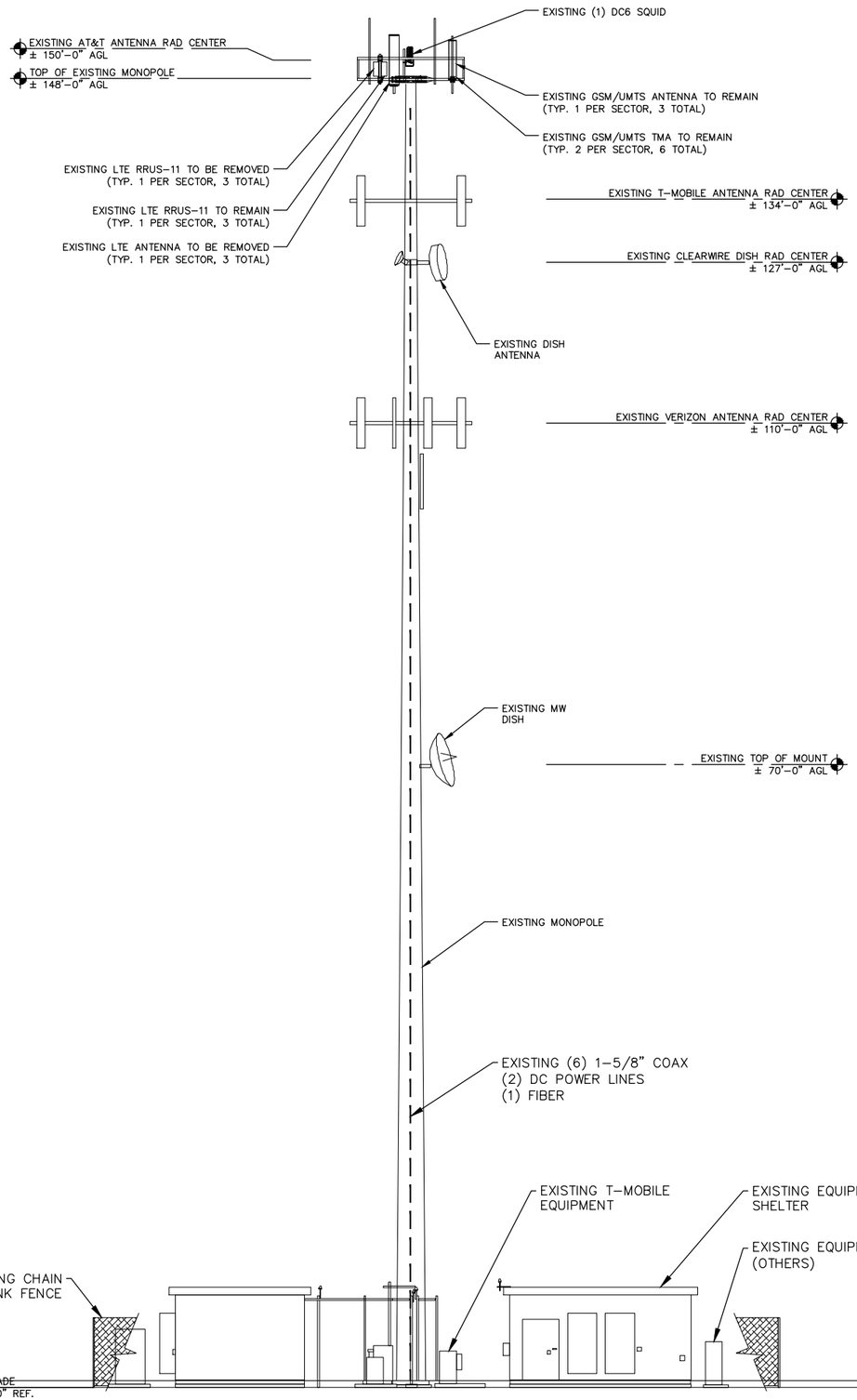


SHEET TITLE:

ANTENNA LAYOUTS

SHEET NUMBER:

A-3

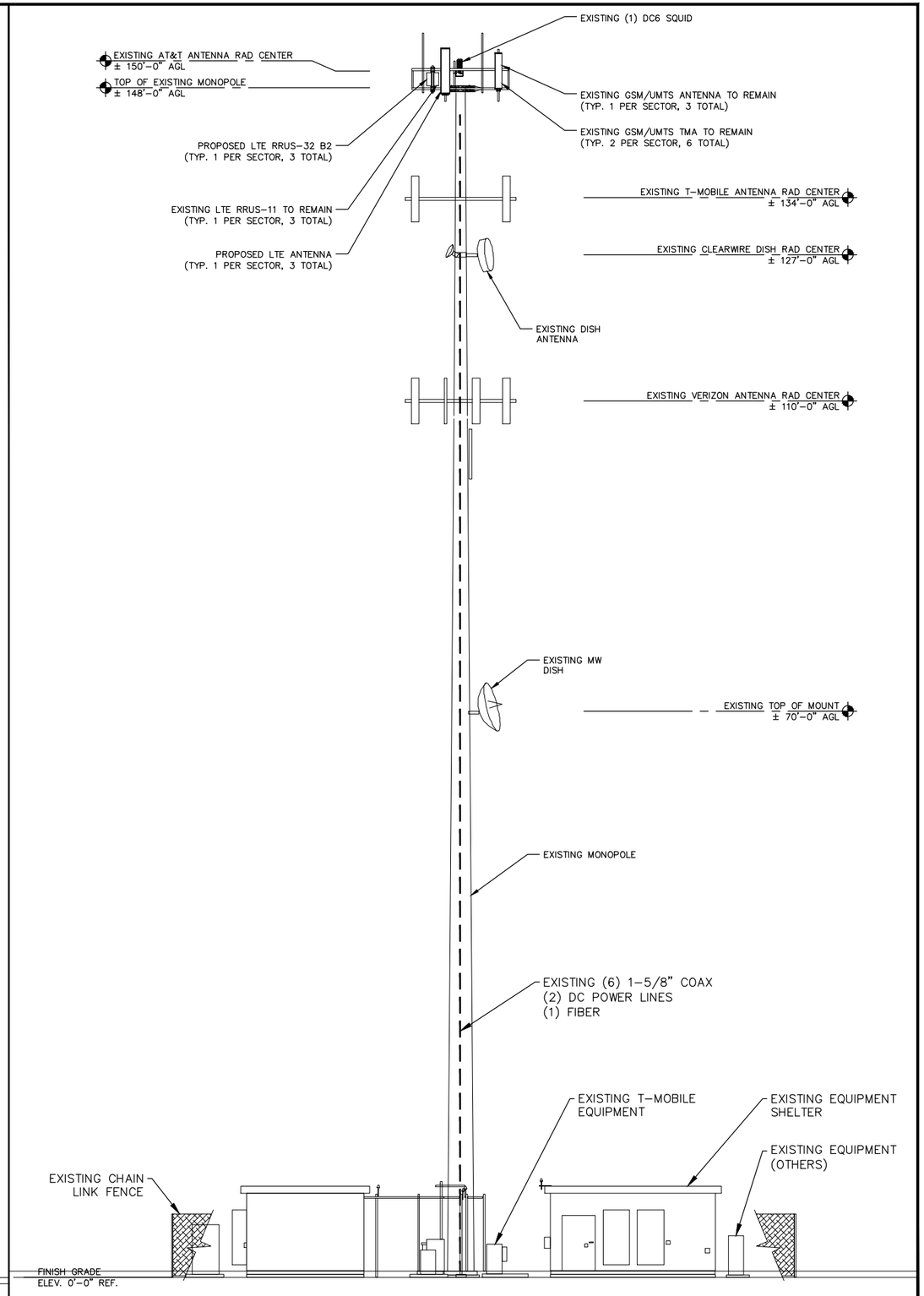


EXISTING TOWER ELEVATION

22"x34" SCALE: 1/8" = 1'-0"
11"x17" SCALE: 1/16" = 1'-0"

8' 6' 4' 2' 0" 8'

1



PROPOSED TOWER ELEVATION

22"x34" SCALE: 1/8" = 1'-0"
11"x17" SCALE: 1/16" = 1'-0"

8' 6' 4' 2' 0" 8'

2

at&t Mobility
1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

PLANS PREPARED BY:
Trylon
1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038

NO.	DATE	DESCRIPTION	BY
A	11/04/16	FOR REVIEW	RSN
0	11/11/16	ISSUE FOR CONSTRUCTION	NPS

SITE INFORMATION:

CT2015
BRANFORD
FA CODE: 10034973

405 BRUSHY PLAIN ROAD
BRANFORD, CT 06405

SEAL:

STATE OF CONNECTICUT
MICHAEL F. PLAHOVINSAK
No. 25849
PROFESSIONAL ENGINEER
11-11-2016

MICHAEL F. PLAHOVINSAK, P.E. #25849
Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfpeng.com

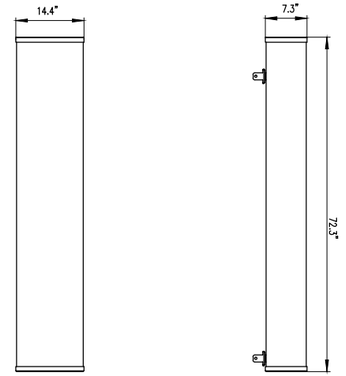
SHEET TITLE:

TOWER ELEVATION

SHEET NUMBER:

A-4

ANTENNA DETAILS | N.T.S | 1



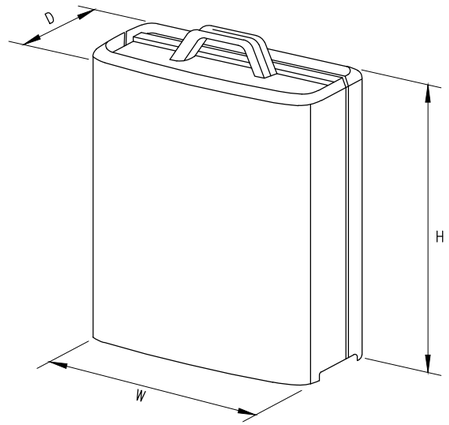
FRONT VIEW

SIDE VIEW

BOTTOM VIEW

MANUFACTURER	ANDREW
MODEL	HPA-65R-BUU-H6
WEIGHT	42.9 LBS

RRUS DETAILS | N.T.S | 2



MODEL	L x W x H	WEIGHT
RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
RRUS-12	20.4" x 18.5" x 7.5"	58 LBS
RRUS-32	29.9" x 13.3" x 9.5"	77 LBS
RRUS-32 B2	20.9" x 9.5" x 3.3"	77 LBS
RRUS-E2	20.4" x 18.5" x 7.5"	58 LBS
A2 MODULE	16.4" x 15.2" x 3.4"	22 LBS

NOT USED | N.T.S | 3

NOT USED | N.T.S | 4

at&t Mobility
1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

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1825 W. WALNUT HILL LANE SUITE 302
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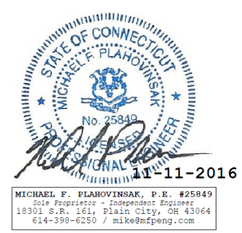
CT2015
BRANFORD
FA CODE: 10034973

405 BRUSHY PLAIN ROAD
BRANFORD, CT 06405

SEAL:

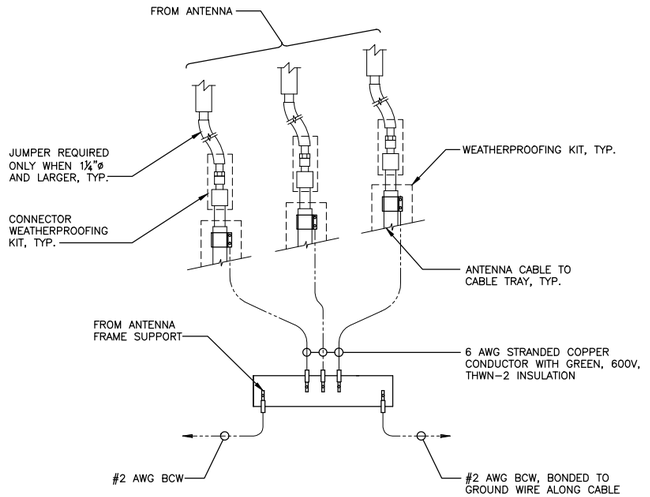


SHEET TITLE:

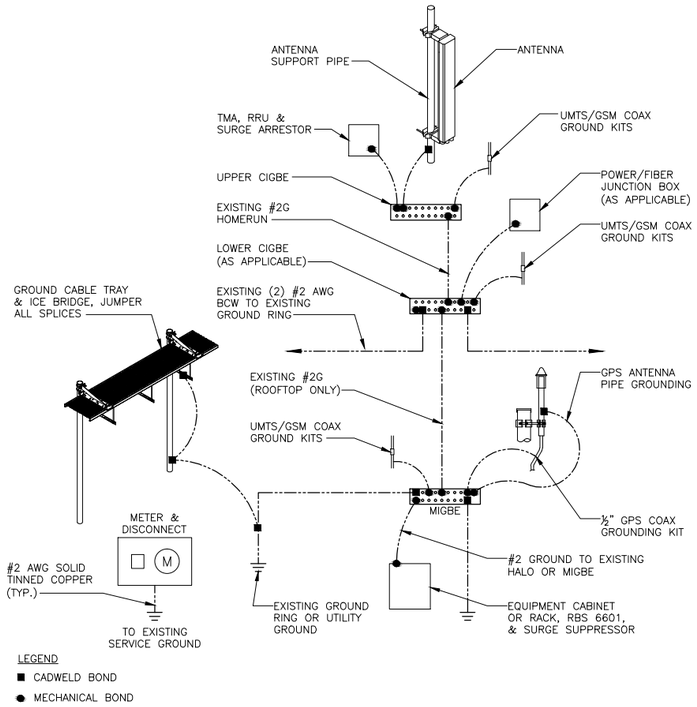
DETAILS

SHEET NUMBER:

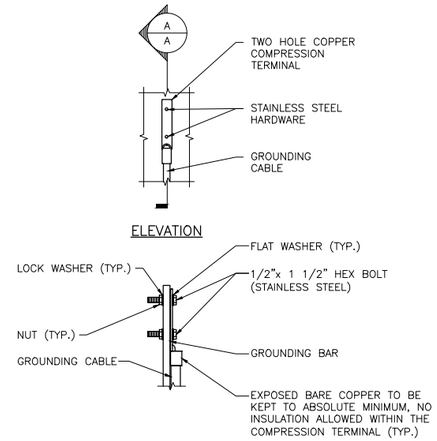
A-5



GROUND WIRE TO GROUND BAR CONNECTION DETAILS | N.T.S | 1



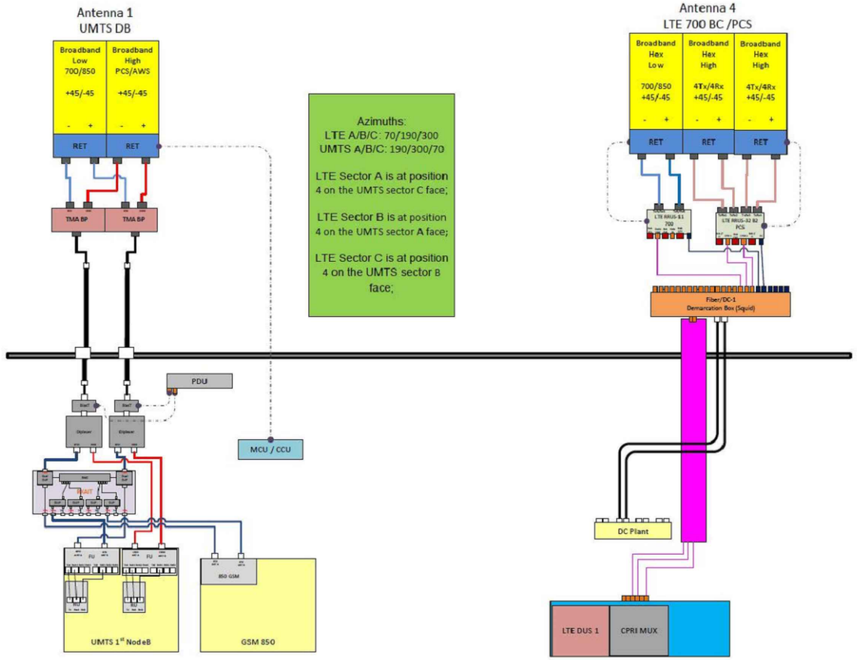
GROUND RISER DIAGRAM | N.T.S | 2



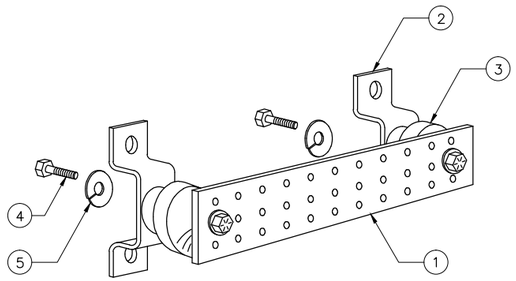
NOTE:

1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAILS | N.T.S | 3



PLUMBING DIAGRAM | N.T.S | 4



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

NOTES:

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION

SECTION "P" – SURGE PRODUCERS
- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- +24V POWER SUPPLY RETURN BAR (#2)
- –48V POWER SUPPLY RETURN BAR (#2)
- RECTIFIER FRAMES

SECTION "A" – SURGE ABSORBERS
- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)

GROUND BAR DETAILS | N.T.S | 5

at&t Mobility
1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419

EMPIRE telecom
16 ESQUIRE ROAD
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SITE INFORMATION:

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Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfpeng.com

SHEET TITLE:

GROUNDING, ONE-LINE DIAGRAM & DETAILS

SHEET NUMBER:

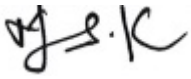
G-1

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**150 ft Monopole**
ATC Site Name	:	**Branford CT 6, CT**
ATC Site Number	:	**302484**
Engineering Number	:	**OAA688022_C3_01**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**Branford**
Carrier Site Number	:	**CT2015**
Site Location	:	**405 Brushy Plain Rd** **Branford, CT 06405-2308** **41.316806,-72.819700**
County	:	**New Haven**
Date	:	**October 27, 2016**
Max Usage	:	**93%**
Result	:	**Pass**

Prepared By:
Manasa Koppal



COA: PEC.0001553

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CORPORATION

Table of Contents

Introduction

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

Supporting Documents

Tower Drawings	SpectraSite Site #CT-0020, dated June 15, 2002
Foundation Drawing	Mapped by GRL ATC Tower ID #302484, dated February 24, 2009
Geotechnical Report	Clarence Welti Geotechnical Engineering ID #CT-0020, dated October 8, 1996
Modifications	SpectraSite Drawing CT-0020 M1 dated March 26, 2004 ATC Job # 26487334 dated September 15, 2006 ATC Job # 53055832 dated June 2, 2013

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:	101 mph (3-Second Gust, V_{asd}) / 130 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:	0.18 ft
Spectral Response:	Ss = 0.24, 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					
153.0	153.0	3	Diplexer / Coupler	Platform w/ Handrails	(2) 0.78" 8 AWG 6 (6) 1 5/8" Coax (1) 0.39" Fiber Trunk	AT&T Mobility
		1	Raycap DC6-48-60-18-8F			
		3	Ericsson RRUS 11 (Band 12)			
		3	Powerwave 7770			
	154.7	2	Decibel DB408	Platform w/ Handrails	(2) 7/8" Coax	Town Of Branford
	159.0	1	4' Omni	Platform w/ Handrails	(1) 1 5/8" Coax	USA Mobility
	150.0	1	GPS	Platform w/ Handrails	(1) 1/2" Coax	Verizon
140.0	140.0	3	Ericsson KRY 112 144/1	T-Arms	(12) 1 5/8" Coax (1) 1 1/4" Hybriflex	T-Mobile
		3	Ericsson RRUS 11 (Band 12)			
		3	Ericsson AIR 21, 1.3M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
		3	Andrew LNX-6515DS-VTM			
130.0	130.0	2	DragonWave Horizon Compact	Clearwire Mount	(6) 5/16" Coax (2) 2" Conduit (2) 1/2" Coax	Clearwire
		1	DragonWave A-ANT-23G-1-C			
		3	NextNet BTS-2500			
		3	Argus LLPX310R			
		1	DragonWave A-ANT-18G-2.5-C			
122.0	122.0	1	SWR FMEC/1	Flush	(3) 1/2" Coax	Alma Radio
113.0	113.0	6	RFS FD9R6004/2C-3L	T-Arms	(11) 1 1/4" Coax (1) 1/4" Coax (1) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x60-AWS			
		2	Antel BXA-171063-8CF-EDIN-X			
		1	Antel BXA-171085-8CF-EDIN-X			
		6	RFS APL868013-42T0			
		1	RFS DB-T1-6Z-8AB-0Z			
		3	Commscope SBNHH-1D65B			
69.0	70.0	1	Channel Master Type 120	Flush	(1) 0.28" RG6	USA Mobility

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
153.0	153.0	3	KMW AM-X-CD-16-65-00T-RET	-	-	AT&T Mobility
		6	KMW AWS Twin Dual 700 Bypass			
		3	Ericsson RRUS 11 (Band 12) (55 lb)			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
153.0	153.0	6	Powerwave 7020.00 Dual Band RET	Platform w/ Handrails	-	AT&T Mobility
		6	Powerwave LGP21401			
		3	Ericsson RRUS 32 B2			
		3	CCI HPA-65R-BUU-H6			

[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	74%	Pass
Shaft	93%	Pass
Base Plate	60%	Pass
Flanges	28%	Pass
Reinforcement	92%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3,144.6	32%
Axial (Kips)	42.1	47%

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) (°)
150.0	Powerwave 7020.00 Dual Band RET	AT&T Mobility	1.946	1.546
	Powerwave LGP21401			
	Ericsson RRUS 32 B2			
	CCI HPA-65R-BUU-H6			
130.0	DragonWave A-ANT-23G-1-C	Clearwire Corporation	1.431	1.345
	DragonWave A-ANT-18G-2.5-C			
69.0	Channel Master Type 120	USA Mobility	0.394	0.669

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

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CORPORATION

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:

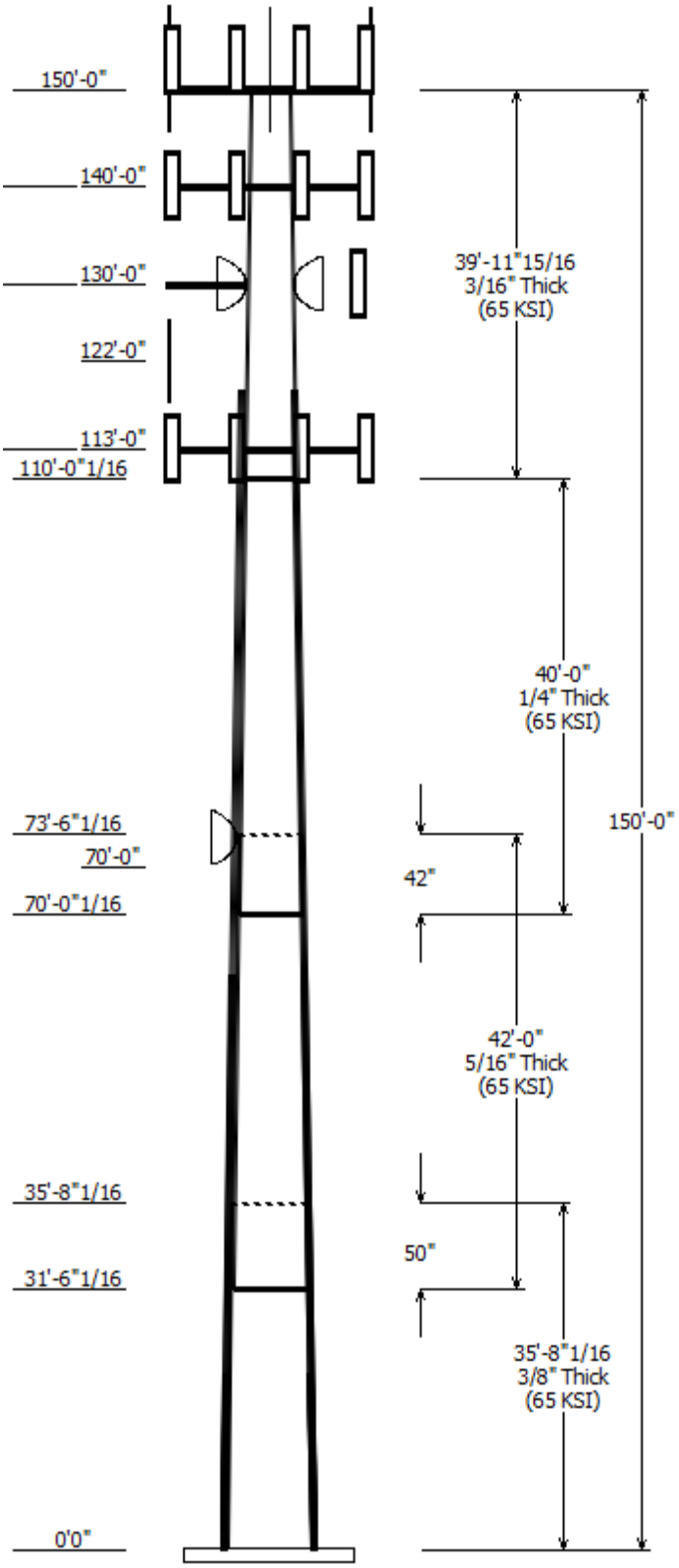
-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- 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.



Job Information

Pole :	302484	Code:	ANSI/TIA-222-G
Description :	150 ft. ITT Meyer - Model verified 10/25/11		
Client :	AT&T Mobility	Struct Class :	II
Location :	Branford CT 6, CT		
Shape :	12 Sides	Exposure :	B
Height :	150.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.156700 (in/ft)		

Sections Properties

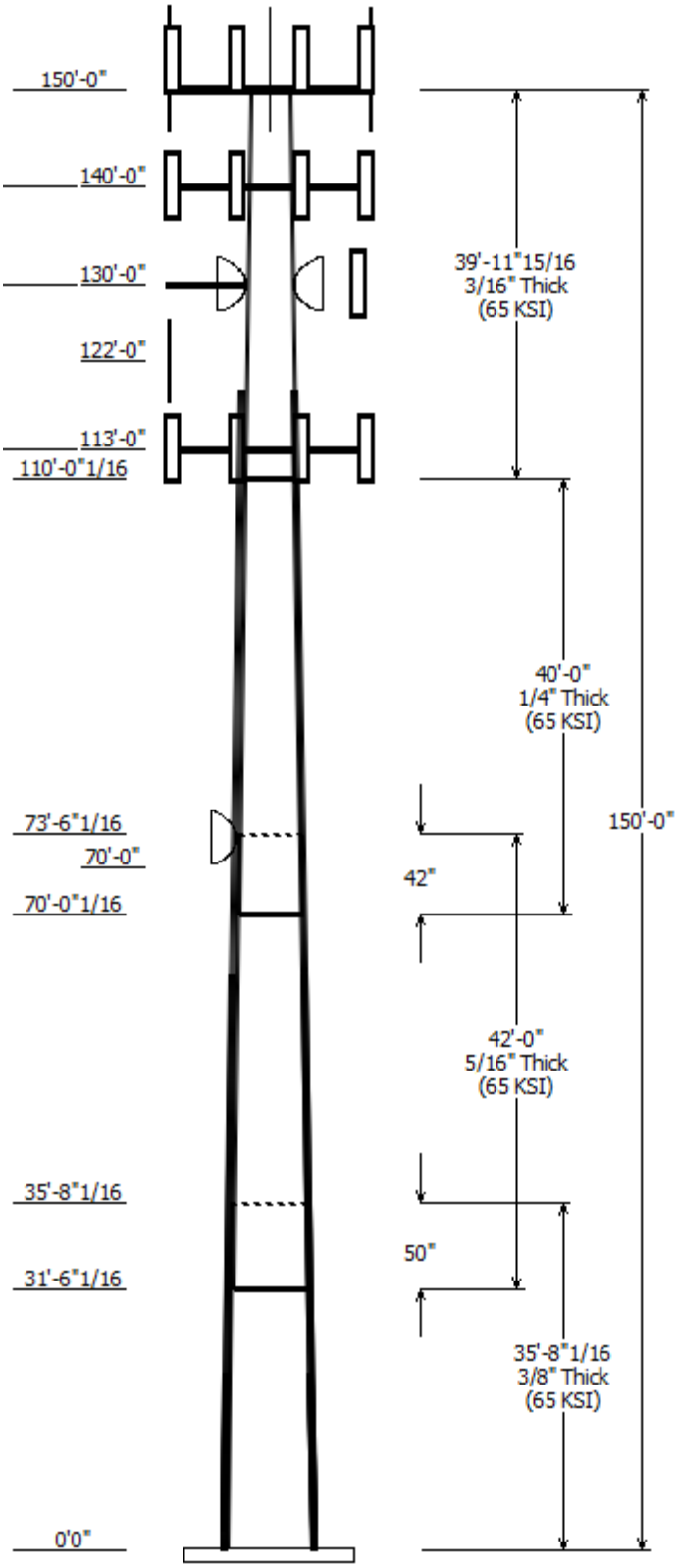
Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	35.670	31.79	37.38	0.375		0.000	0.156700	65
2	42.000	26.48	33.06	0.313	Slip Joint	50.000	0.156700	65
3	40.000	21.26	27.53	0.250	Slip Joint	42.000	0.156700	65
4	39.997	15.00	21.26	0.188	Butt Joint	0.000	0.156700	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
150.000	153.000	3	CCI HPA-65R-BUU-H6
150.000	153.000	3	Ericsson RRUS 32 B2
150.000	153.000	6	Powerwave LGP21401
150.000	153.000	6	Powerwave 7020.00 Dual Band
150.000	150.000	3	Round Side Arm
150.000	153.000	1	Raycap DC6-48-60-18-8F
150.000	153.000	3	Powerwave 7770
150.000	150.000	1	Flat Platform w/ Handrails
150.000	150.000	1	GPS
150.000	153.000	3	Ericsson RRUS 11 (Band 12)
150.000	153.000	3	Diplexer / Coupler
150.000	154.700	2	Decibel DB408
150.000	159.000	1	4' Omni
140.000	140.000	3	Andrew LNX-6515DS-VTM
140.000	140.000	3	Ericsson RRUS 11 (Band 12)
140.000	140.000	3	Round T-Arm
140.000	140.000	3	Ericsson KRY 112 144/1
140.000	140.000	3	Ericsson AIR 21, 1.3M, B4A B2P
140.000	140.000	3	Ericsson AIR 21, 1.3M, B2A B4P
130.000	130.000	3	NextNet BTS-2500
130.000	130.000	2	DragonWave Horizon Compact
130.000	130.000	1	DragonWave A-ANT-23G-1-C
130.000	130.000	1	DragonWave A-ANT-18G-2.5-C
130.000	130.000	1	Clearwire Mount
130.000	130.000	3	Argus LLPX310R
122.000	122.000	1	SWR FMEC/1
113.000	113.000	2	RFS APL868013-42T0
113.000	113.000	4	RFS APL868013-42T0
113.000	113.000	3	Commscope SBNHH-1D65B
113.000	113.000	2	Antel BXA-171063-8CF-EDIN-X
113.000	113.000	1	RFS DB-T1-6Z-8AB-0Z
113.000	113.000	1	Antel BXA-171085-8CF-EDIN-X
113.000	113.000	3	Alcatel-Lucent RRH2x60-AWS
113.000	113.000	3	Round T-Arm
113.000	113.000	6	RFS FD9R6004/2C-3L
70.000	71.000	1	Channel Master Type 120

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
123.0	140.0	1 5/8" Coax	Yes
65.000	123.0	1 5/8" Coax	Yes



0.000	130.0	1/2" Coax	Yes
0.000	130.0	2" Conduit	Yes
0.000	130.0	5/16" Coax	Yes
0.000	140.0	1 1/4" Hybriflex	Yes
0.000	150.0	0.39" Fiber Trunk	No
0.000	150.0	0.78" 8 AWG 6	No
0.000	150.0	1 5/8" Coax	No
0.000	150.0	1 5/8" Coax	No
0.000	150.0	1/2" Coax	No
0.000	150.0	7/8" Coax	No
0.000	65.000	#18 Dywidag Bars	Yes
0.000	65.000	1 5/8" Coax	Yes
0.000	70.000	0.28" RG6	Yes
0.000	113.0	1 1/4" Coax	No
0.000	113.0	1 5/8" Hybriflex	Yes
0.000	113.0	1/4" Coax	No
0.000	122.0	1/2" Coax	No
0.000	123.0	#18 Dywidag bars	Yes

Load Cases

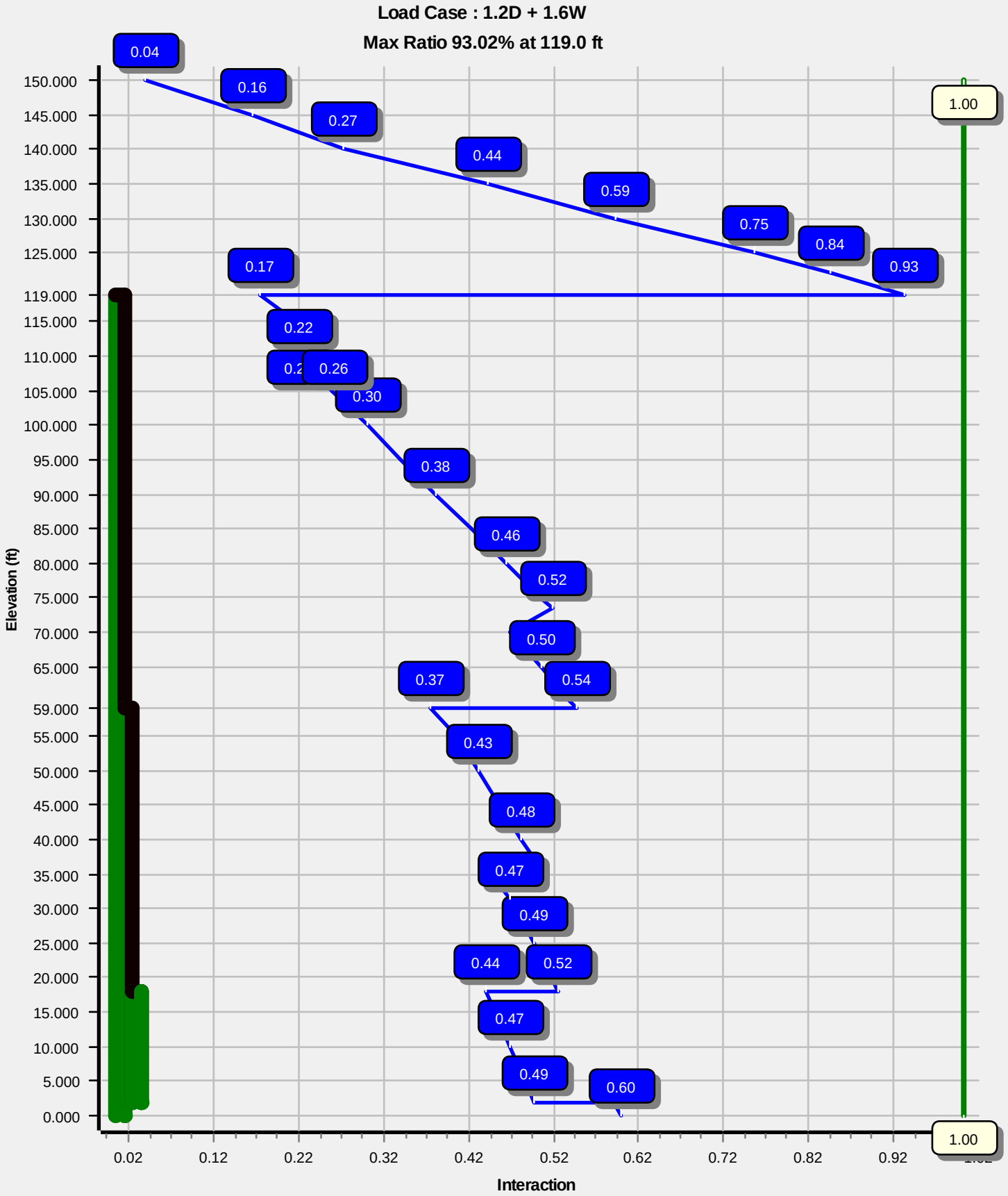
1.2D + 1.6W	101 mph with No Ice
0.9D + 1.6W	101 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	3144.61	31.55	42.07
0.9D + 1.6W	3111.70	31.54	31.55
1.2D + 1.0Di + 1.0Wi	710.95	6.81	71.41
(1.2 + 0.2Sds) * DL + E ELFM	167.28	1.37	43.19
(1.2 + 0.2Sds) * DL + E EMAM	331.82	2.93	43.19
(0.9 - 0.2Sds) * DL + E ELFM	164.88	1.37	29.26
(0.9 - 0.2Sds) * DL + E EMAM	326.64	2.92	29.26
1.0D + 1.0W	718.78	7.41	35.08

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	70.00	5.266	0.738
1.0D + 1.0W	130.00	18.738	1.489
1.0D + 1.0W	130.00	18.738	1.489


Load Case : 1.2D + 1.6W
Max Ratio 93.02% at 119.0 ft
0.04
0.16
0.27
0.44
0.59
0.75
0.84
0.93
0.17
0.22
0.26
0.30
0.38
0.46
0.52
0.50
0.37
0.54
0.43
0.48
0.47
0.49
0.44
0.52
0.47
0.49
0.60
1.00
1.00
150.000
145.000
140.000
135.000
130.000
125.000
119.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
59.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number:	302484	Code: ANSI/TIA-222-G	
Site Name:	Branford CT 6, CT	Engineering Number:OAA688022_C3_01	10/28/2016 12:57:08 PM
Customer:	AT&T Mobility		

Analysis Parameters

Location:	New Haven County, CT		
Code:	ANSI/TIA-222-G	Height (ft):	150
Shape:	12 Sides	Base Diameter (in):	37.38
Pole Type:	Taper	Top Diameter (in):	15.00
Pole Manfacturer:	ITT Meyer	Taper (in/ft) :	0.157

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	101 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.2 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):	2.29				
T_L (sec):	6	p:	1.3	C_s:	0.030
S_s:	0.243	S_1:	0.062	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.259	S_{d1}:	0.099		

Load Cases

1.2D + 1.6W	101 mph with No Ice
0.9D + 1.6W	101 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
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 302484 Code: ANSI/TIA-222-G

Site Name: Branford CT 6, CT Engineering Number:OAA688022_C3_01 10/28/2016 12:57:08 PM

Customer: AT&T Mobility

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-12	35.670	0.3750	65		0.00	5,014	37.38	0.00	44.68	7810.1	24.57	99.68	31.79	35.67	37.93	4778.7	20.57	84.77	0.156700
2-12	42.000	0.3125	65	Slip	50.00	4,237	33.06	31.50	32.96	4514.0	26.21	105.82	26.48	73.50	26.34	2303.2	20.57	84.76	0.156700
3-12	40.000	0.2500	65	Slip	42.00	2,646	27.53	70.00	21.96	2087.3	27.37	110.14	21.26	110.00	16.92	953.9	20.65	85.07	0.156700
4-12	39.997	0.1875	65	Butt	0.00	1,475	21.26	110.00	12.73	721.9	28.25	113.43	15.00	150.00	8.94	250.5	19.29	80.00	0.156700
				Shaft Weight		13,372													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
150.00	4' Omni	1	10.00	1.000	1.00	16.97	1.697	1.00	0.000	9.000
150.00	CCI HPA-65R-BUU-H6	3	51.00	9.660	0.83	298.62	11.024	0.83	0.000	3.000
150.00	Decibel DB408	2	17.00	2.900	1.00	28.85	4.921	1.00	0.000	4.700
150.00	Diplexer / Coupler	3	5.00	0.700	0.50	8.48	1.188	0.50	0.000	3.000
150.00	Ericsson RRUS 11 (Band 12)	3	55.00	2.520	0.67	135.24	3.164	0.67	0.000	3.000
150.00	Ericsson RRUS 32 B2	3	53.00	2.740	0.67	140.92	3.472	0.67	0.000	3.000
150.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,421.69	63.380	1.00	0.000	0.000
150.00	GPS	1	10.00	1.000	0.50	16.97	1.697	0.50	0.000	0.000
150.00	Powerwave 7020.00 Dual	6	2.20	0.400	0.50	17.87	0.621	0.50	0.000	3.000
150.00	Powerwave 7770	3	35.00	5.510	0.77	169.81	6.558	0.77	0.000	3.000
150.00	Powerwave LGP21401	6	14.10	1.100	0.50	47.67	1.563	0.50	0.000	3.000
150.00	Raycap DC6-48-60-18-8F	1	31.80	1.280	1.00	124.56	2.852	1.00	0.000	3.000
150.00	Round Side Arm	3	150.00	5.200	0.67	223.18	7.918	0.67	0.000	0.000
140.00	Andrew LNX-6515DS-VTM	3	51.30	11.430	0.84	312.03	13.079	0.84	0.000	0.000
140.00	Ericsson AIR 21, 1.3M, B2A	3	83.00	6.050	0.86	250.29	7.138	0.86	0.000	0.000
140.00	Ericsson AIR 21, 1.3M, B4A	3	81.50	6.090	0.85	248.75	7.183	0.85	0.000	0.000
140.00	Ericsson KRY 112 144/1	3	11.00	0.410	0.50	27.17	0.632	0.50	0.000	0.000
140.00	Ericsson RRUS 11 (Band 12)	3	50.00	2.570	0.67	108.64	2.005	0.67	0.000	0.000
140.00	Round T-Arm	3	250.00	9.700	0.67	457.61	17.889	0.67	0.000	0.000
130.00	Argus LLPX310R	3	28.60	4.290	0.73	134.29	5.174	0.73	0.000	0.000
130.00	Clearwire Mount	1	560.00	8.500	1.00	1,021.55	15.506	1.00	0.000	0.000
130.00	DragonWave A-ANT-18G-2.5-	1	47.60	8.430	1.00	217.44	10.109	1.00	0.000	0.000
130.00	DragonWave A-ANT-23G-1-C	1	15.00	1.610	1.00	49.83	2.356	1.00	0.000	0.000
130.00	DragonWave Horizon	2	10.60	0.430	0.50	40.18	0.656	0.50	0.000	0.000
130.00	NextNet BTS-2500	3	35.00	1.820	0.50	91.64	2.388	0.50	0.000	0.000
122.00	SWR FMEC/1	1	15.00	2.500	1.00	39.38	4.738	1.00	0.000	0.000
113.00	Alcatel-Lucent RRH2x60-AWS	3	44.00	1.880	0.50	105.30	2.343	0.50	0.000	0.000
113.00	Antel BXA-171063-8CF-EDIN-X	2	9.20	2.920	0.87	88.93	3.743	0.87	0.000	0.000
113.00	Antel BXA-171085-8CF-EDIN-X	1	10.50	2.940	0.87	99.16	4.118	0.87	0.000	0.000
113.00	Commscope SBNHH-1D65B	3	50.70	8.170	0.83	247.09	9.437	0.83	0.000	0.000
113.00	RFS APL868013-42T0	4	6.30	3.610	0.90	109.69	4.479	0.90	0.000	0.000
113.00	RFS APL868013-42T0	2	6.30	3.610	0.90	109.69	4.479	0.90	0.000	0.000
113.00	RFS DB-T1-6Z-8AB-0Z	1	44.00	4.800	0.67	182.80	5.646	0.67	0.000	0.000
113.00	RFS FD9R6004/2C-3L	6	2.60	0.370	0.50	15.11	0.570	0.50	0.000	0.000
113.00	Round T-Arm	3	250.00	9.700	0.67	453.31	17.719	0.67	0.000	0.000
70.00	Channel Master Type 120	1	126.00	20.190	1.00	207.21	33.203	1.00	0.000	1.000
	Totals	92	6947.00			17,092.67			Number of Loadings :	36

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	150.00	1	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility

0.00	150.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	150.00	1	1 5/8" Coax	1.98	0.82	N	0.00	N	USA Mobility
0.00	150.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	150.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Verizon Wireless
0.00	150.00	2	7/8" Coax	1.09	0.33	N	0.00	N	Town of Branford
0.00	140.00	1	1 1/4" Hybriflex	1.54	1.00	N	0.00	Y	T-Mobile
123.00	140.00	12	1 5/8" Coax	1.98	0.82	N	5.94	Y	T-Mobile
0.00	130.00	4	1/2" Coax	0.63	0.15	N	0.00	Y	Clearwire Corporation
0.00	130.00	1	2" Conduit	2.38	3.65	N	0.00	Y	Clearwire Corporation
0.00	130.00	6	5/16" Coax	0.31	0.05	N	0.00	Y	Clearwire Corporation
0.00	123.00	4	#18 Dywidag bars	2.50	0.00	N	8.00	Y	
65.00	123.00	12	1 5/8" Coax	1.98	0.82	N	1.94	Y	T-Mobile
0.00	122.00	3	1/2" Coax	0.63	0.15	N	0.00	N	ALMA Radio
0.00	113.00	11	1 1/4" Coax	1.55	0.63	N	0.00	N	Verizon Wireless
0.00	113.00	1	1 5/8" Hybriflex	1.98	1.30	N	0.00	Y	Verizon Wireless
0.00	113.00	1	1/4" Coax	0.34	0.06	N	0.00	N	Verizon
0.00	70.00	1	0.28" RG6	0.28	0.03	N	0.00	Y	USA Mobility
0.00	65.00	4	#18 Dywidag Bars	2.50	0.00	N	8.00	Y	
0.00	65.00	12	1 5/8" Coax	1.98	0.82	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	119.0	4	SOL #18 All Thread	75	6.37	6" T Bracket	30.0	3.50	5/8" A36 U-Bolt	Yes
0.00	59.00	4	SOL #18 All Thread	75	3.44	6" Angle Bracket	30.0	3.50	5/8" A36 U-Bolt	No
2.00	18.00	2	PL PL 4" x 1"	50	0.00	5/8" Hollo Bolt	12.0	3.00	5/8" Hollo Bolt	No
2.00	18.00	2	PL PL 5" x 1"	50	0.00	5/8" Hollo Bolt	12.0	3.00	5/8" Hollo Bolt	No

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	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.3750	37.380	44.684	7,810.1	24.57	99.68	77.9	403.6	0.0	0.0	32.00	9,896	0.0
2.00	Reinf Bottom Reinf	0.3750	37.067	44.305	7,613.3	24.34	98.84	78.2	396.8	0.0	302.8	32.00	9,772	217.6
5.00		0.3750	36.597	43.737	7,324.4	24.01	97.59	78.5	386.6	0.0	449.4	50.00	12,78	510.1
10.00		0.3750	35.813	42.791	6,859.3	23.45	95.50	79.1	370.0	0.0	736.1	50.00	12,34	850.2
15.00		0.3750	35.030	41.845	6,414.3	22.89	93.41	79.8	353.7	0.0	720.0	50.00	11,92	850.2
18.00	Reinf. Top Reinf.	0.3750	34.559	41.278	6,156.8	22.55	92.16	80.1	344.2	0.0	424.3	50.00	11,66	510.1
20.00		0.3750	34.246	40.899	5,989.0	22.33	91.32	80.4	337.8	0.0	279.6	32.00	8,691	217.6
25.00		0.3750	33.463	39.953	5,583.0	21.77	89.23	81.0	322.3	0.0	687.8	32.00	8,402	544.0
30.00		0.3750	32.679	39.007	5,195.7	21.21	87.14	81.6	307.1	0.0	671.7	32.00	8,118	544.0
31.50	Bot - Section 2	0.3750	32.443	38.723	5,082.8	21.04	86.52	81.8	302.7	0.0	198.8	32.00	8,033	163.6
35.00		0.3750	31.896	38.061	4,826.7	20.65	85.05	81.9	292.3	0.0	845.7	32.00	8,061	380.4
35.67	Top - Section 1	0.3125	32.416	32.304	4,249.4	25.65	103.73	76.7	253.3	0.0	160.4	32.00	8,023	72.9
40.00		0.3125	31.737	31.621	3,985.6	25.07	101.56	77.4	242.6	0.0	470.9	32.00	7,783	471.1
45.00		0.3125	30.954	30.833	3,694.9	24.40	99.05	78.1	230.6	0.0	531.3	32.00	7,509	544.0
50.00		0.3125	30.170	30.044	3,418.6	23.73	96.54	78.8	218.9	0.0	517.9	32.00	7,241	544.0
55.00		0.3125	29.387	29.256	3,156.5	23.05	94.04	79.6	207.5	0.0	504.5	32.00	6,978	544.0
59.00	Reinf. Top	0.3125	28.760	28.625	2,956.7	22.52	92.03	80.2	198.6	0.0	393.9	32.00	6,989	489.6
60.00		0.3125	28.603	28.467	2,908.1	22.38	91.53	80.3	196.4	0.0	97.1	16.00	3,838	54.4
65.00		0.3125	27.819	27.679	2,673.1	21.71	89.02	81.0	185.6	0.0	477.6	16.00	3,702	272.0
70.00		0.3125	27.036	26.891	2,451.2	21.04	86.52	81.8	175.1	0.0	464.2	16.00	3,569	272.0
70.00	Bot - Section 3	0.3125	27.035	26.890	2,451.0	21.04	86.51	81.8	175.1	0.0	0.3	16.00	3,568	0.2
73.50	Top - Section 2	0.2500	26.987	21.523	1,963.9	26.78	107.95	75.5	140.6	0.0	575.9	16.00	3,560	190.4
75.00		0.2500	26.753	21.335	1,912.7	26.53	107.01	75.8	138.1	0.0	109.1	16.00	3,521	81.4
80.00		0.2500	25.969	20.704	1,748.0	25.69	103.88	76.7	130.0	0.0	357.6	16.00	3,391	272.0
85.00		0.2500	25.186	20.073	1,593.1	24.85	100.74	77.6	122.2	0.0	346.9	16.00	3,263	272.0
90.00		0.2500	24.402	19.442	1,447.6	24.01	97.61	78.5	114.6	0.0	336.2	16.00	3,138	272.0
95.00		0.2500	23.619	18.812	1,311.2	23.17	94.47	79.4	107.2	0.0	325.4	16.00	3,015	272.0
100.0		0.2500	22.835	18.181	1,183.7	22.33	91.34	80.4	100.1	0.0	314.7	16.00	2,895	272.0
105.0		0.2500	22.052	17.550	1,064.7	21.49	88.21	81.3	93.3	0.0	304.0	16.00	2,777	272.0
110.0		0.2500	21.268	16.919	954.0	20.65	85.07	81.9	86.7	0.0	293.2	16.00	2,661	272.0
110.0	Top - Section 3	0.2500	21.267	16.919	953.9	20.65	85.07	81.9	86.7	0.0	0.2	16.00	2,661	0.2
110.0	Bot - Section 4	0.1875	21.267	12.727	721.9	28.25	113.43	73.9	65.6	0.0		16.00	2,661	
113.0		0.1875	20.798	12.444	674.7	27.58	110.92	74.6	62.7	0.0	128.3	16.00	2,593	163.0
115.0		0.1875	20.485	12.254	644.4	27.13	109.25	75.1	60.8	0.0	84.0	16.00	2,548	108.8
119.0	Reinf. Top	0.1875	19.858	11.876	586.5	26.23	105.91	76.1	57.1	0.0	164.2	16.00	2,661	0.2
120.0		0.1875	19.701	11.781	572.6	26.01	105.07	76.3	56.1	0.0	40.3			
122.0		0.1875	19.388	11.592	545.4	25.56	103.40	76.8	54.4	0.0	79.5			
125.0		0.1875	18.918	11.308	506.4	24.89	100.89	77.6	51.7	0.0	116.9			
130.0		0.1875	18.134	10.835	445.4	23.77	96.71	78.8	47.5	0.0	188.4			
135.0		0.1875	17.351	10.362	389.6	22.65	92.54	80.0	43.4	0.0	180.3			
140.0		0.1875	16.567	9.889	338.6	21.53	88.36	81.2	39.5	0.0	172.3			
145.0		0.1875	15.784	9.416	292.3	20.41	84.18	81.9	35.8	0.0	164.2			
150.0		0.1875	15.000	8.943	250.5	19.29	80.00	81.9	32.3	0.0	156.2			
											13,372.3			10,500.

Site Number: 302484 Code: ANSI/TIA-222-G

Site Name: Branford CT 6, CT Engineering Number:OAA688022_C3_01 10/28/2016 12:57:08 PM

Customer: AT&T Mobility

Load Case: 1.2D + 1.6W 101 mph with No Ice 24 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

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	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		117.8	0.0					0.0	0.0	117.8	0.0	0.0	0.0
2.00	Reinf Bottom	292.6	363.4					55.6	337.7	348.2	701.1	0.0	0.0
5.00		461.2	539.3					83.3	727.1	544.6	1,266.3	0.0	0.0
10.00		566.6	883.3					138.9	1,211.8	705.5	2,095.1	0.0	0.0
15.00		445.4	864.0					138.9	1,211.8	584.2	2,075.8	0.0	0.0
18.00	Reinf. Top Reinf.	274.0	509.1					83.3	727.1	357.3	1,236.2	0.0	0.0
20.00		376.7	335.6					55.6	337.7	432.2	673.3	0.0	0.0
25.00		529.4	825.4					138.9	844.3	668.3	1,669.7	0.0	0.0
30.00		339.7	806.1					138.9	844.3	478.6	1,650.4	0.0	0.0
31.50	Bot - Section 2	265.1	238.6					41.9	253.9	307.0	492.4	0.0	0.0
35.00		223.1	1,014.8					98.6	590.4	321.7	1,605.3	0.0	0.0
35.67	Top - Section 1	271.1	192.5					19.1	113.1	290.2	305.6	0.0	0.0
40.00		509.1	565.1					124.4	731.2	633.5	1,296.3	0.0	0.0
45.00		550.1	637.5					146.0	844.3	696.1	1,481.8	0.0	0.0
50.00		552.6	621.4					148.4	844.3	700.9	1,465.8	0.0	0.0
55.00		497.9	605.4					150.5	844.3	648.4	1,449.7	0.0	0.0
59.00	Reinf. Top	276.4	472.7					121.8	740.7	398.3	1,213.4	0.0	0.0
60.00		330.7	116.6					30.6	103.6	361.3	220.1	0.0	0.0
65.00		549.2	573.2					154.3	517.9	703.6	1,091.1	0.0	0.0
70.00	Appertunance(s)	274.0	557.1	790.0	0.0	790.0	151.2	115.4	517.9	1,179.4	1,226.2	0.0	0.0
70.00	Bot - Section 3	194.0	0.4					0.1	0.3	194.1	0.7	0.0	0.0
73.50	Top - Section 2	276.3	691.1					81.7	362.4	358.1	1,053.5	0.0	0.0
75.00		356.2	131.0					35.2	155.0	391.5	285.9	0.0	0.0
80.00		544.1	429.1					119.2	517.7	663.2	946.9	0.0	0.0
85.00		536.9	416.3					121.3	517.7	658.2	934.0	0.0	0.0
90.00		528.8	403.4					123.4	517.7	652.1	921.1	0.0	0.0
95.00		519.8	390.5					125.3	517.7	645.1	908.2	0.0	0.0
100.00		509.9	377.6					127.2	517.7	637.2	895.4	0.0	0.0
105.00		499.4	364.8					129.1	517.7	628.4	882.5	0.0	0.0
110.00		247.1	351.9					130.8	517.7	377.9	869.6	0.0	0.0
110.00	Top - Section 3	145.4	0.2					0.1	0.3	145.5	0.6	0.0	0.0
113.00	Appertunance(s)	241.0	154.0	2,605.9	0.0	0.0	1,392.5	79.2	310.3	2,926.1	1,856.8	0.0	0.0
115.00		284.2	100.8					53.2	187.2	337.4	288.0	0.0	0.0
119.00	Reinf. Top	235.0	197.1					107.2	113.5	342.2	310.6	0.0	0.0
120.00		138.7	48.3					27.0	28.3	165.7	76.6	0.0	0.0
122.00	Appertunance(s)	228.5	95.4	114.2	0.0	0.0	18.0	54.1	56.6	396.8	170.1	0.0	0.0
125.00		358.1	140.3					61.2	83.3	419.3	223.6	0.0	0.0
130.00	Appertunance(s)	436.5	226.0	1,236.0	0.0	0.0	1,001.5	85.4	138.9	1,757.9	1,366.5	0.0	0.0
135.00		422.2	216.4					85.9	111.8	508.1	328.2	0.0	0.0
140.00	Appertunance(s)	374.0	206.7	3,192.3	0.0	0.0	1,896.5	86.4	111.8	3,652.7	2,215.0	0.0	0.0
145.00		326.6	197.1					0.0	46.7	326.6	243.8	0.0	0.0
150.00	Appertunance(s)	160.1	187.4	4,808.5	0.0	7,272.0	3,876.7	0.0	46.7	4,968.5	4,110.9	0.0	0.0
								Totals:		31,629.6	42,103.6	0.00	0.00

Site Number: 302484 Code: ANSI/TIA-222-G

Site Name: Branford CT 6, CT Engineering Number: OAA688022_C3_01 10/28/2016 12:57:11 PM

Customer: AT&T Mobility

Load Case: 1.2D + 1.6W 101 mph with No Ice 24 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	-42.07	-31.55	0.00	-3,144.61	0.00	3,144.61	3,133.66	1,566.83	4,776.46	2,358.91	0.00	0.00	0.596
2.00	-41.31	-31.29	0.00	-3,081.52	0.00	3,081.52	3,116.86	1,558.43	4,710.21	2,326.20	0.02	-0.10	0.588
5.00	-39.95	-30.87	0.00	-2,987.65	0.00	2,987.65	3,091.35	1,545.67	4,611.19	2,277.30	0.13	-0.25	0.484
10.00	-37.75	-30.28	0.00	-2,833.32	0.00	2,833.32	3,047.99	1,524.00	4,447.17	2,196.29	0.51	-0.45	0.467
15.00	-35.59	-29.78	0.00	-2,681.90	0.00	2,681.90	3,003.60	1,501.80	4,284.50	2,115.95	1.09	-0.66	0.449
18.00	-34.31	-29.47	0.00	-2,592.56	0.00	2,592.56	2,976.47	1,488.23	4,187.58	2,068.09	1.55	-0.78	0.439
18.00	-34.31	-29.47	0.00	-2,592.56	0.00	2,592.56	2,976.47	1,488.23	4,187.58	2,068.09	1.55	-0.78	0.523
20.00	-33.56	-29.12	0.00	-2,533.63	0.00	2,533.63	2,958.17	1,479.08	4,123.27	2,036.33	1.89	-0.86	0.514
25.00	-31.78	-28.56	0.00	-2,388.02	0.00	2,388.02	2,911.70	1,455.85	3,963.58	1,957.46	2.93	-1.10	0.493
30.00	-30.07	-28.12	0.00	-2,245.25	0.00	2,245.25	2,864.18	1,432.09	3,805.55	1,879.42	4.21	-1.34	0.472
31.50	-29.53	-27.86	0.00	-2,202.97	0.00	2,202.97	2,849.69	1,424.85	3,758.37	1,856.12	4.64	-1.41	0.466
35.00	-27.88	-27.55	0.00	-2,105.54	0.00	2,105.54	2,805.48	1,402.74	3,636.10	1,795.73	5.74	-1.57	0.445
35.67	-27.53	-27.30	0.00	-2,087.08	0.00	2,087.08	2,231.05	1,115.53	2,951.35	1,457.56	5.96	-1.60	0.503
40.00	-26.16	-26.73	0.00	-1,968.86	0.00	1,968.86	2,201.95	1,100.98	2,850.70	1,407.85	7.51	-1.80	0.480
45.00	-24.60	-26.08	0.00	-1,835.21	0.00	1,835.21	2,167.39	1,083.69	2,735.30	1,350.86	9.51	-2.03	0.454
50.00	-23.06	-25.42	0.00	-1,704.80	0.00	1,704.80	2,131.78	1,065.89	2,620.87	1,294.35	11.76	-2.25	0.428
55.00	-21.55	-24.78	0.00	-1,577.72	0.00	1,577.72	2,095.13	1,047.56	2,507.52	1,238.37	14.24	-2.47	0.402
59.00	-20.31	-24.37	0.00	-1,478.59	0.00	1,478.59	2,065.06	1,032.53	2,417.69	1,194.00	16.39	-2.64	0.373
59.00	-20.31	-24.37	0.00	-1,478.59	0.00	1,478.59	2,065.06	1,032.53	2,417.69	1,194.00	16.39	-2.64	0.544
60.00	-20.04	-24.06	0.00	-1,454.22	0.00	1,454.22	2,057.44	1,028.72	2,395.35	1,182.97	16.94	-2.69	0.537
65.00	-18.87	-23.40	0.00	-1,333.94	0.00	1,333.94	2,018.71	1,009.36	2,284.46	1,128.21	19.92	-2.98	0.502
70.00	-17.65	-22.19	0.00	-1,216.18	0.00	1,216.18	1,978.94	989.47	2,174.96	1,074.13	23.19	-3.26	0.467
70.00	-17.62	-22.03	0.00	-1,216.11	0.00	1,216.11	1,978.92	989.46	2,174.88	1,074.09	23.19	-3.26	0.467
73.50	-16.54	-21.65	0.00	-1,139.00	0.00	1,139.00	1,462.63	731.31	1,612.04	796.13	25.66	-3.46	0.516
75.00	-16.21	-21.29	0.00	-1,106.60	0.00	1,106.60	1,455.06	727.53	1,589.51	785.00	26.76	-3.54	0.503
80.00	-15.21	-20.64	0.00	-1,000.13	0.00	1,000.13	1,429.11	714.55	1,514.58	747.99	30.61	-3.82	0.462
85.00	-14.24	-19.99	0.00	-896.92	0.00	896.92	1,402.12	701.06	1,440.27	711.29	34.75	-4.08	0.420
90.00	-13.29	-19.32	0.00	-796.99	0.00	796.99	1,374.09	687.04	1,366.68	674.95	39.15	-4.33	0.379
95.00	-12.36	-18.66	0.00	-700.37	0.00	700.37	1,345.02	672.51	1,293.93	639.02	43.81	-4.56	0.338
100.00	-11.45	-17.99	0.00	-607.08	0.00	607.08	1,314.91	657.46	1,222.10	603.55	48.70	-4.77	0.297
105.00	-10.57	-17.32	0.00	-517.12	0.00	517.12	1,283.76	641.88	1,151.31	568.59	53.80	-4.97	0.257
110.00	-9.71	-16.89	0.00	-430.50	0.00	430.50	1,247.14	623.57	1,077.81	532.29	59.10	-5.15	0.218
110.00	-9.71	-16.75	0.00	-430.44	0.00	430.44	1,247.10	623.55	1,077.76	532.26	59.10	-5.15	0.218
110.00	-9.71	-16.75	0.00	-430.44	0.00	430.44	846.53	423.27	735.94	363.45	59.10	-5.15	0.259
113.00	-8.11	-13.68	0.00	-380.25	0.00	380.25	835.87	417.94	710.34	350.81	62.36	-5.24	0.229
115.00	-7.83	-13.33	0.00	-352.89	0.00	352.89	828.55	414.27	693.31	342.40	64.57	-5.31	0.213
119.00	-7.54	-12.97	0.00	-299.58	0.00	299.58	813.40	406.70	659.43	325.67	69.06	-5.42	0.171
119.00	-7.54	-12.97	0.00	-299.58	0.00	299.58	813.40	406.70	659.43	325.67	69.06	-5.42	0.930
120.00	-7.45	-12.82	0.00	-286.61	0.00	286.61	809.51	404.76	651.00	321.50	70.20	-5.45	0.902
122.00	-7.24	-12.45	0.00	-260.98	0.00	260.98	801.61	400.80	634.19	313.20	72.53	-5.72	0.843
125.00	-6.97	-12.06	0.00	-223.65	0.00	223.65	789.44	394.72	609.12	300.82	76.25	-6.10	0.753
130.00	-5.72	-10.21	0.00	-163.33	0.00	163.33	768.32	384.16	567.78	280.41	82.92	-6.64	0.591
135.00	-5.39	-9.71	0.00	-112.26	0.00	112.26	746.17	373.08	527.09	260.31	90.11	-7.08	0.439
140.00	-3.62	-5.82	0.00	-63.73	0.00	63.73	722.98	361.49	487.14	240.58	97.69	-7.40	0.270
145.00	-3.41	-5.47	0.00	-34.64	0.00	34.64	694.06	347.03	445.03	219.79	105.54	-7.61	0.163
150.00	0.00	-4.97	0.00	-7.27	0.00	7.27	659.19	329.60	401.19	198.13	113.56	-7.71	0.037

Site Number: 302484 Code: ANSI/TIA-222-G

Site Name: Branford CT 6, CT Engineering Number: OAA688022_C3_01 10/28/2016 12:57:11 PM

Customer: AT&T Mobility

Load Case: 0.9D + 1.6W — 101 mph with No Ice (Reduced DL) — 24 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	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		117.8	0.0					0.0	0.0	117.8	0.0	0.0	0.0
2.00	Reinf Bottom	292.6	272.5					55.6	253.3	348.2	525.8	0.0	0.0
5.00		461.2	404.4					83.3	545.3	544.6	949.7	0.0	0.0
10.00		566.6	662.5					138.9	908.8	705.5	1,571.3	0.0	0.0
15.00		445.4	648.0					138.9	908.8	584.2	1,556.8	0.0	0.0
18.00	Reinf. Top Reinf.	274.0	381.8					83.3	545.3	357.3	927.1	0.0	0.0
20.00		376.7	251.7					55.6	253.3	432.2	505.0	0.0	0.0
25.00		529.4	619.0					138.9	633.2	668.3	1,252.3	0.0	0.0
30.00		339.7	604.5					138.9	633.2	478.6	1,237.8	0.0	0.0
31.50	Bot - Section 2	265.1	178.9					41.9	190.4	307.0	369.3	0.0	0.0
35.00		223.1	761.1					98.6	442.8	321.7	1,204.0	0.0	0.0
35.67	Top - Section 1	271.1	144.4					19.1	84.9	290.2	229.2	0.0	0.0
40.00		509.1	423.8					124.4	548.4	633.5	972.2	0.0	0.0
45.00		550.1	478.2					146.0	633.2	696.1	1,111.4	0.0	0.0
50.00		552.6	466.1					148.4	633.2	700.9	1,099.3	0.0	0.0
55.00		497.9	454.0					150.5	633.2	648.4	1,087.2	0.0	0.0
59.00	Reinf. Top	276.4	354.5					121.8	555.5	398.3	910.1	0.0	0.0
60.00		330.7	87.4					30.6	77.7	361.3	165.1	0.0	0.0
65.00		549.2	429.9					154.3	388.4	703.6	818.3	0.0	0.0
70.00	Appertunance(s)	274.0	417.8	790.0	0.0	790.0	113.4	115.4	388.4	1,179.4	919.6	0.0	0.0
70.00	Bot - Section 3	194.0	0.3					0.1	0.3	194.1	0.5	0.0	0.0
73.50	Top - Section 2	276.3	518.3					81.7	271.8	358.1	790.1	0.0	0.0
75.00		356.2	98.2					35.2	116.2	391.5	214.4	0.0	0.0
80.00		544.1	321.9					119.2	388.3	663.2	710.1	0.0	0.0
85.00		536.9	312.2					121.3	388.3	658.2	700.5	0.0	0.0
90.00		528.8	302.5					123.4	388.3	652.1	690.8	0.0	0.0
95.00		519.8	292.9					125.3	388.3	645.1	681.2	0.0	0.0
100.00		509.9	283.2					127.2	388.3	637.2	671.5	0.0	0.0
105.00		499.4	273.6					129.1	388.3	628.4	661.9	0.0	0.0
110.00		247.1	263.9					130.8	388.3	377.9	652.2	0.0	0.0
110.00	Top - Section 3	145.4	0.2					0.1	0.3	145.5	0.4	0.0	0.0
113.00	Appertunance(s)	241.0	115.5	2,605.9	0.0	0.0	1,044.4	79.2	232.7	2,926.1	1,392.6	0.0	0.0
115.00		284.2	75.6					53.2	140.4	337.4	216.0	0.0	0.0
119.00	Reinf. Top	235.0	147.8					107.2	85.1	342.2	232.9	0.0	0.0
120.00		138.7	36.2					27.0	21.2	165.7	57.5	0.0	0.0
122.00	Appertunance(s)	228.5	71.6	114.2	0.0	0.0	13.5	54.1	42.5	396.8	127.6	0.0	0.0
125.00		358.1	105.2					61.2	62.5	419.3	167.7	0.0	0.0
130.00	Appertunance(s)	436.5	169.5	1,236.0	0.0	0.0	751.1	85.4	104.2	1,757.9	1,024.8	0.0	0.0
135.00		422.2	162.3					85.9	83.8	508.1	246.1	0.0	0.0
140.00	Appertunance(s)	374.0	155.0	3,192.3	0.0	0.0	1,422.4	86.4	83.8	3,652.7	1,661.2	0.0	0.0
145.00		326.6	147.8					0.0	35.1	326.6	182.9	0.0	0.0
150.00	Appertunance(s)	160.1	140.6	4,808.5	0.0	7,272.0	2,907.5	0.0	35.1	4,968.5	3,083.2	0.0	0.0
								Totals:		31,629.6	31,577.7	0.00	0.00

Site Number: 302484 Code: ANSI/TIA-222-G

Site Name: Branford CT 6, CT Engineering Number: OAA688022_C3_01 10/28/2016 12:57:14 PM

Customer: AT&T Mobility

Load Case: 0.9D + 1.6W 101 mph with No Ice (Reduced DL) 24 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	-31.55	-31.54	0.00	-3,111.70	0.00	3,111.70	3,133.66	1,566.83	4,776.46	2,358.91	0.00	0.00	0.588
2.00	-30.96	-31.26	0.00	-3,048.63	0.00	3,048.63	3,116.86	1,558.43	4,710.21	2,326.20	0.02	-0.10	0.580
5.00	-29.91	-30.80	0.00	-2,954.86	0.00	2,954.86	3,091.35	1,545.67	4,611.19	2,277.30	0.13	-0.25	0.478
10.00	-28.24	-30.19	0.00	-2,800.84	0.00	2,800.84	3,047.99	1,524.00	4,447.17	2,196.29	0.50	-0.45	0.460
15.00	-26.61	-29.66	0.00	-2,649.91	0.00	2,649.91	3,003.60	1,501.80	4,284.50	2,115.95	1.08	-0.65	0.443
18.00	-25.63	-29.34	0.00	-2,560.92	0.00	2,560.92	2,976.47	1,488.23	4,187.58	2,068.09	1.53	-0.77	0.432
18.00	-25.63	-29.34	0.00	-2,560.92	0.00	2,560.92	2,976.47	1,488.23	4,187.58	2,068.09	1.53	-0.77	0.515
20.00	-25.05	-28.97	0.00	-2,502.24	0.00	2,502.24	2,958.17	1,479.08	4,123.27	2,036.33	1.87	-0.85	0.506
25.00	-23.70	-28.38	0.00	-2,357.40	0.00	2,357.40	2,911.70	1,455.85	3,963.58	1,957.46	2.89	-1.09	0.486
30.00	-22.40	-27.93	0.00	-2,215.52	0.00	2,215.52	2,864.18	1,432.09	3,805.55	1,879.42	4.16	-1.32	0.465
31.50	-21.98	-27.66	0.00	-2,173.53	0.00	2,173.53	2,849.69	1,424.85	3,758.37	1,856.12	4.59	-1.39	0.458
35.00	-20.74	-27.34	0.00	-2,076.81	0.00	2,076.81	2,805.48	1,402.74	3,636.10	1,795.73	5.67	-1.55	0.438
35.67	-20.46	-27.09	0.00	-2,058.49	0.00	2,058.49	2,231.05	1,115.53	2,951.35	1,457.56	5.89	-1.58	0.494
40.00	-19.41	-26.50	0.00	-1,941.21	0.00	1,941.21	2,201.95	1,100.98	2,850.70	1,407.85	7.42	-1.78	0.472
45.00	-18.22	-25.83	0.00	-1,808.73	0.00	1,808.73	2,167.39	1,083.69	2,735.30	1,350.86	9.40	-2.00	0.446
50.00	-17.05	-25.16	0.00	-1,679.56	0.00	1,679.56	2,131.78	1,065.89	2,620.87	1,294.35	11.62	-2.22	0.421
55.00	-15.91	-24.52	0.00	-1,553.77	0.00	1,553.77	2,095.13	1,047.56	2,507.52	1,238.37	14.07	-2.44	0.395
59.00	-14.98	-24.11	0.00	-1,455.69	0.00	1,455.69	2,065.06	1,032.53	2,417.69	1,194.00	16.18	-2.61	0.366
59.00	-14.98	-24.11	0.00	-1,455.69	0.00	1,455.69	2,065.06	1,032.53	2,417.69	1,194.00	16.18	-2.61	0.534
60.00	-14.76	-23.78	0.00	-1,431.58	0.00	1,431.58	2,057.44	1,028.72	2,395.35	1,182.97	16.74	-2.65	0.527
65.00	-13.86	-23.11	0.00	-1,312.66	0.00	1,312.66	2,018.71	1,009.36	2,284.46	1,128.21	19.67	-2.94	0.493
70.00	-12.95	-21.91	0.00	-1,196.32	0.00	1,196.32	1,978.94	989.47	2,174.96	1,074.13	22.90	-3.22	0.458
70.00	-12.93	-21.74	0.00	-1,196.24	0.00	1,196.24	1,978.92	989.46	2,174.88	1,074.09	22.90	-3.22	0.458
73.50	-12.11	-21.37	0.00	-1,120.14	0.00	1,120.14	1,462.63	731.31	1,612.04	796.13	25.33	-3.41	0.506
75.00	-11.85	-21.00	0.00	-1,088.16	0.00	1,088.16	1,455.06	727.53	1,589.51	785.00	26.41	-3.49	0.493
80.00	-11.09	-20.35	0.00	-983.16	0.00	983.16	1,429.11	714.55	1,514.58	747.99	30.22	-3.76	0.452
85.00	-10.35	-19.69	0.00	-881.43	0.00	881.43	1,402.12	701.06	1,440.27	711.29	34.30	-4.02	0.411
90.00	-9.63	-19.03	0.00	-782.99	0.00	782.99	1,374.09	687.04	1,366.68	674.95	38.64	-4.26	0.371
95.00	-8.93	-18.37	0.00	-687.86	0.00	687.86	1,345.02	672.51	1,293.93	639.02	43.22	-4.49	0.331
100.00	-8.25	-17.71	0.00	-596.03	0.00	596.03	1,314.91	657.46	1,222.10	603.55	48.04	-4.70	0.291
105.00	-7.59	-17.05	0.00	-507.50	0.00	507.50	1,283.76	641.88	1,151.31	568.59	53.07	-4.90	0.251
110.00	-6.95	-16.63	0.00	-422.26	0.00	422.26	1,247.14	623.57	1,077.81	532.29	58.29	-5.07	0.213
110.00	-6.95	-16.49	0.00	-422.20	0.00	422.20	1,247.10	623.55	1,077.76	532.26	58.29	-5.07	0.213
110.00	-6.95	-16.49	0.00	-422.20	0.00	422.20	846.53	423.27	735.94	363.45	58.29	-5.07	0.253
113.00	-5.80	-13.46	0.00	-372.80	0.00	372.80	835.87	417.94	710.34	350.81	61.50	-5.16	0.223
115.00	-5.60	-13.11	0.00	-345.89	0.00	345.89	828.55	414.27	693.31	342.40	63.67	-5.22	0.208
119.00	-5.38	-12.75	0.00	-293.45	0.00	293.45	813.40	406.70	659.43	325.67	68.10	-5.34	0.167
119.00	-5.38	-12.75	0.00	-293.45	0.00	293.45	813.40	406.70	659.43	325.67	68.10	-5.34	0.909
120.00	-5.31	-12.60	0.00	-280.70	0.00	280.70	809.51	404.76	651.00	321.50	69.22	-5.36	0.881
122.00	-5.15	-12.22	0.00	-255.50	0.00	255.50	801.61	400.80	634.19	313.20	71.52	-5.63	0.823
125.00	-4.93	-11.82	0.00	-218.85	0.00	218.85	789.44	394.72	609.12	300.82	75.17	-6.00	0.735
130.00	-4.02	-10.00	0.00	-159.73	0.00	159.73	768.32	384.16	567.78	280.41	81.74	-6.53	0.576
135.00	-3.78	-9.49	0.00	-109.73	0.00	109.73	746.17	373.08	527.09	260.31	88.81	-6.96	0.427
140.00	-2.56	-5.67	0.00	-62.28	0.00	62.28	722.98	361.49	487.14	240.58	96.27	-7.28	0.263
145.00	-2.40	-5.33	0.00	-33.92	0.00	33.92	694.06	347.03	445.03	219.79	103.98	-7.48	0.158
150.00	0.00	-4.97	0.00	-7.27	0.00	7.27	659.19	329.60	401.19	198.13	111.86	-7.58	0.037

Site Number: 302484 Code: ANSI/TIA-222-G

Site Name: Branford CT 6, CT Engineering Number: OAA688022_C3_01 10/28/2016 12:57:14 PM

Customer: AT&T Mobility

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 23 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

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	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		19.0	0.0					0.0	0.0	19.0	0.0	0.0	0.0
2.00	Reinf Bottom	47.5	467.8					18.9	470.3	66.4	938.1	0.0	0.0
5.00		75.4	715.2					29.2	954.3	104.6	1,669.5	0.0	0.0
10.00		93.0	1,194.0					49.6	1,623.5	142.6	2,817.6	0.0	0.0
15.00		73.4	1,184.7					50.2	1,647.8	123.6	2,832.4	0.0	0.0
18.00	Reinf. Top Reinf.	45.3	704.6					30.3	997.0	75.6	1,701.6	0.0	0.0
20.00		62.4	466.6					20.3	520.6	82.7	987.2	0.0	0.0
25.00		87.9	1,151.5					51.0	1,310.4	138.9	2,462.0	0.0	0.0
30.00		56.5	1,131.6					51.2	1,321.3	107.8	2,452.9	0.0	0.0
31.50	Bot - Section 2	44.2	336.9					15.6	399.1	59.8	736.1	0.0	0.0
35.00		37.2	1,246.0					37.1	931.4	74.3	2,177.4	0.0	0.0
35.67	Top - Section 1	45.3	236.9					7.3	178.9	52.6	415.8	0.0	0.0
40.00		85.3	848.6					47.9	1,159.8	133.1	2,008.4	0.0	0.0
45.00		92.4	961.0					57.3	1,346.0	149.7	2,307.0	0.0	0.0
50.00		93.1	940.8					59.4	1,352.6	152.5	2,293.4	0.0	0.0
55.00		84.1	920.1					61.3	1,358.6	145.4	2,278.7	0.0	0.0
59.00	Reinf. Top	46.8	721.5					50.3	1,156.1	97.1	1,877.7	0.0	0.0
60.00		56.2	178.7					12.7	208.0	68.9	386.7	0.0	0.0
65.00		93.5	877.5					64.7	1,042.8	158.2	1,920.3	0.0	0.0
70.00	Appertunance(s)	46.7	855.7	199.0	0.0	199.0	81.4	48.4	958.7	294.1	1,895.8	0.0	0.0
70.00	Bot - Section 3	33.1	0.6					0.0	0.6	33.2	1.2	0.0	0.0
73.50	Top - Section 2	47.2	901.1					34.6	660.7	81.8	1,561.9	0.0	0.0
75.00		61.1	220.4					14.9	283.1	76.0	503.4	0.0	0.0
80.00		93.5	720.9					50.6	947.8	144.1	1,668.6	0.0	0.0
85.00		92.6	701.6					51.7	951.0	144.3	1,652.5	0.0	0.0
90.00		91.6	682.1					52.7	954.0	144.3	1,636.1	0.0	0.0
95.00		90.5	662.4					53.6	956.9	144.1	1,619.3	0.0	0.0
100.00		89.2	642.6					54.5	959.7	143.7	1,602.2	0.0	0.0
105.00		87.8	622.6					55.4	962.3	143.2	1,584.9	0.0	0.0
110.00		43.5	602.4					56.3	964.8	99.9	1,567.3	0.0	0.0
110.00	Top - Section 3	25.7	0.4					0.0	0.6	25.8	1.0	0.0	0.0
113.00	Appertunance(s)	42.7	301.7	547.7	0.0	0.0	3,665.8	34.2	579.4	624.6	4,546.9	0.0	0.0
115.00		50.6	198.3					23.0	354.4	73.5	552.6	0.0	0.0
119.00	Reinf. Top	41.9	386.9					46.3	448.8	88.2	835.7	0.0	0.0
120.00		24.8	95.5					11.7	112.4	36.5	207.9	0.0	0.0
122.00	Appertunance(s)	41.0	188.6	33.1	0.0	0.0	44.5	23.4	225.0	97.5	458.1	0.0	0.0
125.00		64.5	277.2					24.9	298.5	89.5	575.7	0.0	0.0
130.00	Appertunance(s)	79.1	446.3	270.2	0.0	0.0	2,034.3	33.2	467.1	382.5	2,947.8	0.0	0.0
135.00		77.1	428.8					33.6	338.3	110.7	767.1	0.0	0.0
140.00	Appertunance(s)	75.0	411.3	630.9	0.0	0.0	4,337.6	34.0	339.2	739.9	5,088.0	0.0	0.0
145.00		72.8	393.6					0.0	46.7	72.8	440.3	0.0	0.0
150.00	Appertunance(s)	35.9	375.8	1,033.8	0.0	1,473.3	7,007.5	0.0	46.7	1,069.6	7,430.1	0.0	0.0
									Totals:	6,812.55	71,407.2	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 23 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	-71.41	-6.81	0.00	-710.95	0.00	710.95	3,133.66	1,566.83	4,776.46	2,358.91	0.00	0.00	0.146
2.00	-70.46	-6.78	0.00	-697.33	0.00	697.33	3,116.86	1,558.43	4,710.21	2,326.20	0.01	-0.02	0.144
5.00	-68.79	-6.72	0.00	-677.01	0.00	677.01	3,091.35	1,545.67	4,611.19	2,277.30	0.03	-0.06	0.119
10.00	-65.97	-6.63	0.00	-643.42	0.00	643.42	3,047.99	1,524.00	4,447.17	2,196.29	0.11	-0.10	0.115
15.00	-63.13	-6.54	0.00	-610.29	0.00	610.29	3,003.60	1,501.80	4,284.50	2,115.95	0.25	-0.15	0.110
18.00	-61.43	-6.48	0.00	-590.69	0.00	590.69	2,976.47	1,488.23	4,187.58	2,068.09	0.35	-0.18	0.108
18.00	-61.43	-6.48	0.00	-590.69	0.00	590.69	2,976.47	1,488.23	4,187.58	2,068.09	0.35	-0.18	0.129
20.00	-60.44	-6.43	0.00	-577.72	0.00	577.72	2,958.17	1,479.08	4,123.27	2,036.33	0.43	-0.20	0.127
25.00	-57.97	-6.34	0.00	-545.56	0.00	545.56	2,911.70	1,455.85	3,963.58	1,957.46	0.66	-0.25	0.122
30.00	-55.51	-6.25	0.00	-513.86	0.00	513.86	2,864.18	1,432.09	3,805.55	1,879.42	0.96	-0.30	0.117
31.50	-54.77	-6.22	0.00	-504.46	0.00	504.46	2,849.69	1,424.85	3,758.37	1,856.12	1.05	-0.32	0.116
35.00	-52.59	-6.15	0.00	-482.73	0.00	482.73	2,805.48	1,402.74	3,636.10	1,795.73	1.30	-0.36	0.111
35.67	-52.18	-6.12	0.00	-478.61	0.00	478.61	2,231.05	1,115.53	2,951.35	1,457.56	1.35	-0.37	0.125
40.00	-50.16	-6.01	0.00	-452.12	0.00	452.12	2,201.95	1,100.98	2,850.70	1,407.85	1.71	-0.41	0.120
45.00	-47.85	-5.89	0.00	-422.05	0.00	422.05	2,167.39	1,083.69	2,735.30	1,350.86	2.16	-0.46	0.114
50.00	-45.56	-5.76	0.00	-392.60	0.00	392.60	2,131.78	1,065.89	2,620.87	1,294.35	2.68	-0.51	0.108
55.00	-43.27	-5.63	0.00	-363.81	0.00	363.81	2,095.13	1,047.56	2,507.52	1,238.37	3.24	-0.57	0.101
59.00	-41.39	-5.53	0.00	-341.31	0.00	341.31	2,065.06	1,032.53	2,417.69	1,194.00	3.73	-0.60	0.094
59.00	-41.39	-5.53	0.00	-341.31	0.00	341.31	2,065.06	1,032.53	2,417.69	1,194.00	3.73	-0.60	0.137
60.00	-41.01	-5.48	0.00	-335.78	0.00	335.78	2,057.44	1,028.72	2,395.35	1,182.97	3.86	-0.61	0.135
65.00	-39.08	-5.35	0.00	-308.37	0.00	308.37	2,018.71	1,009.36	2,284.46	1,128.21	4.54	-0.68	0.127
70.00	-37.19	-5.05	0.00	-281.44	0.00	281.44	1,978.94	989.47	2,174.96	1,074.13	5.29	-0.75	0.118
70.00	-37.18	-5.03	0.00	-281.42	0.00	281.42	1,978.92	989.46	2,174.88	1,074.09	5.29	-0.75	0.118
73.50	-35.62	-4.95	0.00	-263.81	0.00	263.81	1,462.63	731.31	1,612.04	796.13	5.86	-0.79	0.132
75.00	-35.11	-4.89	0.00	-256.40	0.00	256.40	1,455.06	727.53	1,589.51	785.00	6.11	-0.81	0.129
80.00	-33.44	-4.76	0.00	-231.94	0.00	231.94	1,429.11	714.55	1,514.58	747.99	7.00	-0.88	0.119
85.00	-31.79	-4.62	0.00	-208.14	0.00	208.14	1,402.12	701.06	1,440.27	711.29	7.95	-0.94	0.109
90.00	-30.15	-4.48	0.00	-185.03	0.00	185.03	1,374.09	687.04	1,366.68	674.95	8.96	-0.99	0.099
95.00	-28.53	-4.33	0.00	-162.63	0.00	162.63	1,345.02	672.51	1,293.93	639.02	10.03	-1.05	0.089
100.00	-26.93	-4.18	0.00	-140.96	0.00	140.96	1,314.91	657.46	1,222.10	603.55	11.16	-1.10	0.079
105.00	-25.34	-4.03	0.00	-120.05	0.00	120.05	1,283.76	641.88	1,151.31	568.59	12.33	-1.14	0.069
110.00	-23.78	-3.90	0.00	-99.92	0.00	99.92	1,247.14	623.57	1,077.81	532.29	13.55	-1.18	0.059
110.00	-23.77	-3.88	0.00	-99.91	0.00	99.91	1,247.10	623.55	1,077.76	532.26	13.55	-1.18	0.059
110.00	-23.77	-3.88	0.00	-99.91	0.00	99.91	846.53	423.27	735.94	363.45	13.55	-1.18	0.071
113.00	-19.24	-3.17	0.00	-88.28	0.00	88.28	835.87	417.94	710.34	350.81	14.30	-1.21	0.062
115.00	-18.69	-3.09	0.00	-81.94	0.00	81.94	828.55	414.27	693.31	342.40	14.81	-1.22	0.058
119.00	-17.85	-2.99	0.00	-69.58	0.00	69.58	813.40	406.70	659.43	325.67	15.85	-1.25	0.048
119.00	-17.85	-2.99	0.00	-69.58	0.00	69.58	813.40	406.70	659.43	325.67	15.85	-1.25	0.236
120.00	-17.65	-2.96	0.00	-66.59	0.00	66.59	809.51	404.76	651.00	321.50	16.11	-1.25	0.229
122.00	-17.19	-2.87	0.00	-60.67	0.00	60.67	801.61	400.80	634.19	313.20	16.65	-1.32	0.215
125.00	-16.61	-2.80	0.00	-52.05	0.00	52.05	789.44	394.72	609.12	300.82	17.51	-1.41	0.194
130.00	-13.67	-2.37	0.00	-38.03	0.00	38.03	768.32	384.16	567.78	280.41	19.05	-1.53	0.153
135.00	-12.90	-2.26	0.00	-26.17	0.00	26.17	746.17	373.08	527.09	260.31	20.71	-1.64	0.118
140.00	-7.83	-1.38	0.00	-14.87	0.00	14.87	722.98	361.49	487.14	240.58	22.47	-1.71	0.073
145.00	-7.39	-1.30	0.00	-7.97	0.00	7.97	694.06	347.03	445.03	219.79	24.29	-1.76	0.047
150.00	0.00	-1.07	0.00	-1.47	0.00	1.47	659.19	329.60	401.19	198.13	26.14	-1.78	0.007

Site Number: 302484 Code: ANSI/TIA-222-G

Site Name: Branford CT 6, CT Engineering Number: OAA688022_C3_01 10/28/2016 12:57:17 PM

Customer: AT&T Mobility

Load Case: 1.0D + 1.0W Serviceability 60 mph 23 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 Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		26.0	0.0					0.0	0.0	26.0	0.0	0.0	0.0
2.00	Reinf Bottom	64.5	302.8					20.6	281.4	85.2	584.2	0.0	0.0
5.00		101.7	449.4					30.9	605.9	132.7	1,055.3	0.0	0.0
10.00		125.0	736.1					51.6	1,009.8	176.5	1,745.9	0.0	0.0
15.00		98.2	720.0					51.6	1,009.8	149.8	1,729.8	0.0	0.0
18.00	Reinf. Top Reinf.	60.4	424.3					30.9	605.9	91.4	1,030.2	0.0	0.0
20.00		83.1	279.6					20.6	281.4	103.7	561.1	0.0	0.0
25.00		116.8	687.8					51.6	703.6	168.3	1,391.4	0.0	0.0
30.00		74.9	671.7					51.6	703.6	126.5	1,375.3	0.0	0.0
31.50	Bot - Section 2	58.5	198.8					15.6	211.5	74.0	410.4	0.0	0.0
35.00		49.2	845.7					36.6	492.0	85.8	1,337.7	0.0	0.0
35.67	Top - Section 1	59.8	160.4					7.1	94.3	66.9	254.7	0.0	0.0
40.00		112.3	470.9					46.2	609.3	158.5	1,080.2	0.0	0.0
45.00		121.3	531.3					54.2	703.6	175.5	1,234.9	0.0	0.0
50.00		121.9	517.9					55.1	703.6	177.0	1,221.5	0.0	0.0
55.00		109.8	504.5					55.9	703.6	165.7	1,208.0	0.0	0.0
59.00	Reinf. Top	61.0	393.9					45.2	617.3	106.2	1,011.2	0.0	0.0
60.00		72.9	97.1					11.4	86.3	84.3	183.5	0.0	0.0
65.00		121.1	477.6					57.3	431.6	178.4	909.2	0.0	0.0
70.00	Appertunance(s)	60.4	464.2	174.2	0.0	174.2	126.0	37.2	431.6	271.9	1,021.8	0.0	0.0
70.00	Bot - Section 3	42.8	0.3					0.0	0.3	42.8	0.6	0.0	0.0
73.50	Top - Section 2	60.9	575.9					26.3	302.0	87.3	877.9	0.0	0.0
75.00		78.6	109.1					11.3	129.1	89.9	238.3	0.0	0.0
80.00		120.0	357.6					38.1	431.4	158.1	789.1	0.0	0.0
85.00		118.4	346.9					38.5	431.4	157.0	778.3	0.0	0.0
90.00		116.6	336.2					38.9	431.4	155.6	767.6	0.0	0.0
95.00		114.6	325.4					39.3	431.4	154.0	756.9	0.0	0.0
100.00		112.5	314.7					39.7	431.4	152.2	746.1	0.0	0.0
105.00		110.1	304.0					40.0	431.4	150.2	735.4	0.0	0.0
110.00		54.5	293.2					40.4	431.4	94.9	724.7	0.0	0.0
110.00	Top - Section 3	32.1	0.2					0.0	0.3	32.1	0.5	0.0	0.0
113.00	Appertunance(s)	53.1	128.3	574.8	0.0	0.0	1,160.4	24.4	258.6	652.3	1,547.3	0.0	0.0
115.00		62.7	84.0					16.3	156.0	79.0	240.0	0.0	0.0
119.00	Reinf. Top	51.8	164.2					32.8	94.6	84.6	258.8	0.0	0.0
120.00		30.6	40.3					8.2	23.6	38.8	63.8	0.0	0.0
122.00	Appertunance(s)	50.4	79.5	25.2	0.0	0.0	15.0	16.5	47.2	92.1	141.7	0.0	0.0
125.00		79.0	116.9					20.3	69.4	99.3	186.3	0.0	0.0
130.00	Appertunance(s)	96.3	188.4	272.6	0.0	0.0	834.6	30.3	115.7	399.2	1,138.7	0.0	0.0
135.00		93.1	180.3					30.6	93.1	123.7	273.5	0.0	0.0
140.00	Appertunance(s)	82.5	172.3	704.1	0.0	0.0	1,580.4	31.0	93.1	817.6	1,845.8	0.0	0.0
145.00		72.0	164.2					0.0	38.9	72.0	203.2	0.0	0.0
150.00	Appertunance(s)	35.3	156.2	1,060.6	0.0	1,604.0	3,230.6	0.0	38.9	1,095.9	3,425.7	0.0	0.0
								Totals:		7,432.82	35,086.3	0.00	0.00

Site Number: 302484 Code: ANSI/TIA-222-G

Site Name: Branford CT 6, CT Engineering Number: OAA688022_C3_01 10/28/2016 12:57:20 PM

Customer: AT&T Mobility

Load Case: 1.0D + 1.0W Serviceability 60 mph 23 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	-35.08	-7.41	0.00	-718.78	0.00	718.78	3,133.66	1,566.83	4,776.46	2,358.91	0.00	0.00	0.141
2.00	-34.50	-7.35	0.00	-703.95	0.00	703.95	3,116.86	1,558.43	4,710.21	2,326.20	0.01	-0.02	0.139
5.00	-33.44	-7.24	0.00	-681.92	0.00	681.92	3,091.35	1,545.67	4,611.19	2,277.30	0.03	-0.06	0.114
10.00	-31.69	-7.08	0.00	-645.74	0.00	645.74	3,047.99	1,524.00	4,447.17	2,196.29	0.12	-0.10	0.110
15.00	-29.95	-6.95	0.00	-610.33	0.00	610.33	3,003.60	1,501.80	4,284.50	2,115.95	0.25	-0.15	0.105
18.00	-28.92	-6.87	0.00	-589.48	0.00	589.48	2,976.47	1,488.23	4,187.58	2,068.09	0.35	-0.18	0.103
18.00	-28.92	-6.87	0.00	-589.48	0.00	589.48	2,976.47	1,488.23	4,187.58	2,068.09	0.35	-0.18	0.123
20.00	-28.35	-6.78	0.00	-575.75	0.00	575.75	2,958.17	1,479.08	4,123.27	2,036.33	0.43	-0.20	0.121
25.00	-26.96	-6.63	0.00	-541.86	0.00	541.86	2,911.70	1,455.85	3,963.58	1,957.46	0.67	-0.25	0.116
30.00	-25.58	-6.51	0.00	-508.72	0.00	508.72	2,864.18	1,432.09	3,805.55	1,879.42	0.96	-0.30	0.111
31.50	-25.17	-6.45	0.00	-498.93	0.00	498.93	2,849.69	1,424.85	3,758.37	1,856.12	1.06	-0.32	0.109
35.00	-23.83	-6.36	0.00	-476.38	0.00	476.38	2,805.48	1,402.74	3,636.10	1,795.73	1.31	-0.36	0.104
35.67	-23.57	-6.30	0.00	-472.12	0.00	472.12	2,231.05	1,115.53	2,951.35	1,457.56	1.36	-0.36	0.117
40.00	-22.48	-6.16	0.00	-444.82	0.00	444.82	2,201.95	1,100.98	2,850.70	1,407.85	1.71	-0.41	0.112
45.00	-21.25	-5.99	0.00	-414.03	0.00	414.03	2,167.39	1,083.69	2,735.30	1,350.86	2.17	-0.46	0.106
50.00	-20.02	-5.82	0.00	-384.07	0.00	384.07	2,131.78	1,065.89	2,620.87	1,294.35	2.68	-0.51	0.100
55.00	-18.81	-5.66	0.00	-354.96	0.00	354.96	2,095.13	1,047.56	2,507.52	1,238.37	3.24	-0.56	0.094
59.00	-17.80	-5.55	0.00	-332.32	0.00	332.32	2,065.06	1,032.53	2,417.69	1,194.00	3.72	-0.60	0.087
59.00	-17.80	-5.55	0.00	-332.32	0.00	332.32	2,065.06	1,032.53	2,417.69	1,194.00	3.72	-0.60	0.126
60.00	-17.61	-5.48	0.00	-326.77	0.00	326.77	2,057.44	1,028.72	2,395.35	1,182.97	3.85	-0.61	0.125
65.00	-16.70	-5.31	0.00	-299.39	0.00	299.39	2,018.71	1,009.36	2,284.46	1,128.21	4.52	-0.67	0.117
70.00	-15.68	-5.03	0.00	-272.69	0.00	272.69	1,978.94	989.47	2,174.96	1,074.13	5.27	-0.74	0.108
70.00	-15.67	-4.99	0.00	-272.67	0.00	272.67	1,978.92	989.46	2,174.88	1,074.09	5.27	-0.74	0.108
73.50	-14.80	-4.90	0.00	-255.19	0.00	255.19	1,462.63	731.31	1,612.04	796.13	5.82	-0.78	0.120
75.00	-14.55	-4.82	0.00	-247.86	0.00	247.86	1,455.06	727.53	1,589.51	785.00	6.07	-0.80	0.117
80.00	-13.76	-4.66	0.00	-223.76	0.00	223.76	1,429.11	714.55	1,514.58	747.99	6.94	-0.86	0.107
85.00	-12.98	-4.51	0.00	-200.43	0.00	200.43	1,402.12	701.06	1,440.27	711.29	7.88	-0.92	0.098
90.00	-12.21	-4.35	0.00	-177.89	0.00	177.89	1,374.09	687.04	1,366.68	674.95	8.87	-0.98	0.088
95.00	-11.46	-4.19	0.00	-156.13	0.00	156.13	1,345.02	672.51	1,293.93	639.02	9.93	-1.03	0.079
100.00	-10.71	-4.04	0.00	-135.16	0.00	135.16	1,314.91	657.46	1,222.10	603.55	11.03	-1.08	0.069
105.00	-9.97	-3.88	0.00	-114.97	0.00	114.97	1,283.76	641.88	1,151.31	568.59	12.18	-1.12	0.060
110.00	-9.25	-3.77	0.00	-95.57	0.00	95.57	1,247.14	623.57	1,077.81	532.29	13.37	-1.16	0.051
110.00	-9.25	-3.74	0.00	-95.56	0.00	95.56	1,247.10	623.55	1,077.76	532.26	13.37	-1.16	0.051
110.00	-9.25	-3.74	0.00	-95.56	0.00	95.56	846.53	423.27	735.94	363.45	13.37	-1.16	0.061
113.00	-7.72	-3.06	0.00	-84.34	0.00	84.34	835.87	417.94	710.34	350.81	14.11	-1.18	0.054
115.00	-7.48	-2.98	0.00	-78.22	0.00	78.22	828.55	414.27	693.31	342.40	14.61	-1.19	0.050
119.00	-7.22	-2.89	0.00	-66.29	0.00	66.29	813.40	406.70	659.43	325.67	15.62	-1.22	0.041
119.00	-7.22	-2.89	0.00	-66.29	0.00	66.29	813.40	406.70	659.43	325.67	15.62	-1.22	0.212
120.00	-7.15	-2.86	0.00	-63.40	0.00	63.40	809.51	404.76	651.00	321.50	15.88	-1.23	0.206
122.00	-7.01	-2.77	0.00	-57.69	0.00	57.69	801.61	400.80	634.19	313.20	16.40	-1.29	0.193
125.00	-6.82	-2.68	0.00	-49.37	0.00	49.37	789.44	394.72	609.12	300.82	17.24	-1.37	0.173
130.00	-5.69	-2.26	0.00	-35.98	0.00	35.98	768.32	384.16	567.78	280.41	18.74	-1.49	0.136
135.00	-5.42	-2.14	0.00	-24.66	0.00	24.66	746.17	373.08	527.09	260.31	20.35	-1.59	0.102
140.00	-3.59	-1.27	0.00	-13.96	0.00	13.96	722.98	361.49	487.14	240.58	22.05	-1.66	0.063
145.00	-3.39	-1.20	0.00	-7.59	0.00	7.59	694.06	347.03	445.03	219.79	23.81	-1.70	0.039
150.00	0.00	-1.10	0.00	-1.60	0.00	1.60	659.19	329.60	401.19	198.13	25.61	-1.72	0.008

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.24	
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 Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.26	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	2.29	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	1.89	
Total Unfactored Dead Load:	35.09	k
Seismic Base Shear (E):	1.37	k

Load Case (1.2 + 0.2Sds) * 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)
41	147.50	195	2,497	0.016	22	244
40	142.50	203	2,436	0.016	22	254
39	137.50	265	2,974	0.020	27	332
38	132.50	273	2,857	0.019	26	342
37	127.50	304	2,954	0.019	27	381
36	123.50	186	1,704	0.011	15	233
35	121.00	127	1,115	0.007	10	159
34	119.50	64	549	0.004	5	80
33	117.00	259	2,136	0.014	19	324
32	114.00	240	1,886	0.012	17	300
31	111.50	387	2,915	0.019	26	484
30	110.00	0	4	0.000	0	1
29	107.50	725	5,095	0.033	46	907
28	102.50	735	4,724	0.031	42	921
27	97.50	746	4,360	0.029	39	934
26	92.50	757	4,003	0.026	36	947
25	87.50	768	3,655	0.024	33	961
24	82.50	778	3,315	0.022	30	974
23	77.50	789	2,985	0.020	27	988
22	74.25	238	831	0.005	7	298
21	71.75	878	2,871	0.019	26	1,099
20	70.00	1	2	0.000	0	1
19	67.50	896	2,609	0.017	23	1,121

18	62.50	909	2,289	0.015	21	1,138
17	59.50	183	421	0.003	4	230
16	57.00	1,011	2,138	0.014	19	1,266
15	52.50	1,208	2,186	0.014	20	1,512
14	47.50	1,221	1,829	0.012	16	1,529
13	42.50	1,235	1,498	0.010	13	1,546
12	37.83	1,080	1,051	0.007	9	1,352
11	35.33	255	218	0.001	2	319
10	33.25	1,338	1,019	0.007	9	1,675
9	30.75	410	270	0.002	2	514
8	27.50	1,375	731	0.005	7	1,722
7	22.50	1,391	506	0.003	5	1,742
6	19.00	561	148	0.001	1	702
5	16.50	1,030	208	0.001	2	1,290
4	12.50	1,730	207	0.001	2	2,165
3	7.50	1,746	79	0.001	1	2,186
2	3.50	1,055	11	0.000	0	1,321
1	1.00	584	1	0.000	0	731
Powerwave 7020.00 Du	150.00	13	174	0.001	2	17
Diplexer / Coupler	150.00	15	198	0.001	2	19
GPS	150.00	10	132	0.001	1	13
4' Omni	150.00	10	132	0.001	1	13
Powerwave LGP21401	150.00	85	1,118	0.007	10	106
Raycap DC6-48-60-18-	150.00	32	420	0.003	4	40
Ericsson RRUS 11 (Ba	150.00	165	2,180	0.014	20	207
Ericsson RRUS 32 B2	150.00	159	2,101	0.014	19	199
Decibel DB408	150.00	34	449	0.003	4	43
Round Side Arm	150.00	450	5,946	0.039	53	563
Powerwave 7770	150.00	105	1,387	0.009	12	131
CCI HPA-65R-BUU-H6	150.00	153	2,022	0.013	18	192
Flat Platform w/ Han	150.00	2,000	26,426	0.174	238	2,504
Ericsson KRY 112 144	140.00	33	383	0.003	3	41
Ericsson RRUS 11 (Ba	140.00	150	1,739	0.011	16	188
Ericsson AIR 21, 1.3	140.00	249	2,887	0.019	26	312
Ericsson AIR 21, 1.3	140.00	244	2,835	0.019	25	306
Round T-Arm	140.00	750	8,696	0.057	78	939
Andrew LNX-6515DS-VT	140.00	154	1,784	0.012	16	193
DragonWave Horizon C	130.00	21	214	0.001	2	27
DragonWave A-ANT-23G	130.00	15	151	0.001	1	19
NextNet BTS-2500	130.00	105	1,058	0.007	10	131
Argus LLPX310R	130.00	86	865	0.006	8	107
DragonWave A-ANT-18G	130.00	48	480	0.003	4	60
Clearwire Mount	130.00	560	5,643	0.037	51	701
SWR FMEC/1	122.00	15	134	0.001	1	19
RFS FD9R6004/2C-3L	113.00	16	121	0.001	1	20
Alcatel-Lucent RRH2x	113.00	132	1,020	0.007	9	165
Antel BXA-171063-8CF	113.00	18	142	0.001	1	23
Antel BXA-171085-8CF	113.00	10	81	0.001	1	13
RFS APL868013-42T0	113.00	25	195	0.001	2	32
RFS APL868013-42T0	113.00	13	97	0.001	1	16
RFS DB-T1-6Z-8AB-0Z	113.00	44	340	0.002	3	55
Commscope SBNHH-1D65	113.00	152	1,175	0.008	11	190
Round T-Arm	113.00	750	5,796	0.038	52	939
Channel Master Type	70.00	126	393	0.003	4	158
		35,086	152,199	1.000	1,368	43,923

Load Case (0.9 - 0.2Sds) * DL + E ELFM — Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)

41	147.50	195	2,497	0.016	22	165
40	142.50	203	2,436	0.016	22	172
39	137.50	265	2,974	0.020	27	225
38	132.50	273	2,857	0.019	26	232
37	127.50	304	2,954	0.019	27	258
36	123.50	186	1,704	0.011	15	158
35	121.00	127	1,115	0.007	10	107
34	119.50	64	549	0.004	5	54
33	117.00	259	2,136	0.014	19	219
32	114.00	240	1,886	0.012	17	204
31	111.50	387	2,915	0.019	26	328
30	110.00	0	4	0.000	0	0
29	107.50	725	5,095	0.033	46	615
28	102.50	735	4,724	0.031	42	624
27	97.50	746	4,360	0.029	39	633
26	92.50	757	4,003	0.026	36	642
25	87.50	768	3,655	0.024	33	651
24	82.50	778	3,315	0.022	30	660
23	77.50	789	2,985	0.020	27	669
22	74.25	238	831	0.005	7	202
21	71.75	878	2,871	0.019	26	745
20	70.00	1	2	0.000	0	1
19	67.50	896	2,609	0.017	23	760
18	62.50	909	2,289	0.015	21	771
17	59.50	183	421	0.003	4	156
16	57.00	1,011	2,138	0.014	19	858
15	52.50	1,208	2,186	0.014	20	1,025
14	47.50	1,221	1,829	0.012	16	1,036
13	42.50	1,235	1,498	0.010	13	1,047
12	37.83	1,080	1,051	0.007	9	916
11	35.33	255	218	0.001	2	216
10	33.25	1,338	1,019	0.007	9	1,135
9	30.75	410	270	0.002	2	348
8	27.50	1,375	731	0.005	7	1,166
7	22.50	1,391	506	0.003	5	1,180
6	19.00	561	148	0.001	1	476
5	16.50	1,030	208	0.001	2	874
4	12.50	1,730	207	0.001	2	1,467
3	7.50	1,746	79	0.001	1	1,481
2	3.50	1,055	11	0.000	0	895
1	1.00	584	1	0.000	0	496
Powerwave 7020.00 Du	150.00	13	174	0.001	2	11
Diplexer / Coupler	150.00	15	198	0.001	2	13
GPS	150.00	10	132	0.001	1	8
4' Omni	150.00	10	132	0.001	1	8
Powerwave LGP21401	150.00	85	1,118	0.007	10	72
Raycap DC6-48-60-18-	150.00	32	420	0.003	4	27
Ericsson RRUS 11 (Ba	150.00	165	2,180	0.014	20	140
Ericsson RRUS 32 B2	150.00	159	2,101	0.014	19	135
Decibel DB408	150.00	34	449	0.003	4	29
Round Side Arm	150.00	450	5,946	0.039	53	382
Powerwave 7770	150.00	105	1,387	0.009	12	89
CCI HPA-65R-BUU-H6	150.00	153	2,022	0.013	18	130
Flat Platform w/ Han	150.00	2,000	26,426	0.174	238	1,696
Ericsson KRY 112 144	140.00	33	383	0.003	3	28
Ericsson RRUS 11 (Ba	140.00	150	1,739	0.011	16	127
Ericsson AIR 21, 1.3	140.00	249	2,887	0.019	26	211
Ericsson AIR 21, 1.3	140.00	244	2,835	0.019	25	207
Round T-Arm	140.00	750	8,696	0.057	78	636
Andrew LNX-6515DS-VT	140.00	154	1,784	0.012	16	131
DragonWave Horizon C	130.00	21	214	0.001	2	18
DragonWave A-ANT-23G	130.00	15	151	0.001	1	13
NextNet BTS-2500	130.00	105	1,058	0.007	10	89
Argus LLPX310R	130.00	86	865	0.006	8	73

DragonWave A-ANT-18G	130.00	48	480	0.003	4	40
Clearwire Mount	130.00	560	5,643	0.037	51	475
SWR FMEC/1	122.00	15	134	0.001	1	13
RFS FD9R6004/2C-3L	113.00	16	121	0.001	1	13
Alcatel-Lucent RRH2x	113.00	132	1,020	0.007	9	112
Antel BXA-171063-8CF	113.00	18	142	0.001	1	16
Antel BXA-171085-8CF	113.00	10	81	0.001	1	9
RFS APL868013-42T0	113.00	25	195	0.001	2	21
RFS APL868013-42T0	113.00	13	97	0.001	1	11
RFS DB-T1-6Z-8AB-0Z	113.00	44	340	0.002	3	37
Commscope SBNHH-1D65	113.00	152	1,175	0.008	11	129
Round T-Arm	113.00	750	5,796	0.038	52	636
Channel Master Type	70.00	126	393	0.003	4	107
		35,086	152,199	1.000	1,368	29,759

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	-43.19	-1.37	0.00	-167.28	0.00	167.28	3,133.66	1,566.83	4,776.46	2,358.91	0.00	0.00	0.039
2.00	-41.87	-1.37	0.00	-164.54	0.00	164.54	3,116.86	1,558.43	4,710.21	2,326.20	0.00	-0.01	0.039
5.00	-39.68	-1.38	0.00	-160.41	0.00	160.41	3,091.35	1,545.67	4,611.19	2,277.30	0.01	-0.01	0.032
10.00	-37.52	-1.38	0.00	-153.51	0.00	153.51	3,047.99	1,524.00	4,447.17	2,196.29	0.03	-0.02	0.031
15.00	-36.23	-1.39	0.00	-146.59	0.00	146.59	3,003.60	1,501.80	4,284.50	2,115.95	0.06	-0.04	0.030
18.00	-35.53	-1.39	0.00	-142.43	0.00	142.43	2,976.47	1,488.23	4,187.58	2,068.09	0.08	-0.04	0.029
18.00	-35.53	-1.39	0.00	-142.43	0.00	142.43	2,976.47	1,488.23	4,187.58	2,068.09	0.08	-0.04	0.035
20.00	-33.78	-1.39	0.00	-139.65	0.00	139.65	2,958.17	1,479.08	4,123.27	2,036.33	0.10	-0.05	0.034
25.00	-32.06	-1.39	0.00	-132.70	0.00	132.70	2,911.70	1,455.85	3,963.58	1,957.46	0.16	-0.06	0.033
30.00	-31.55	-1.39	0.00	-125.77	0.00	125.77	2,864.18	1,432.09	3,805.55	1,879.42	0.23	-0.07	0.032
31.50	-29.87	-1.38	0.00	-123.68	0.00	123.68	2,849.69	1,424.85	3,758.37	1,856.12	0.25	-0.08	0.032
35.00	-29.55	-1.38	0.00	-118.84	0.00	118.84	2,805.48	1,402.74	3,636.10	1,795.73	0.31	-0.09	0.031
35.67	-28.20	-1.37	0.00	-117.92	0.00	117.92	2,231.05	1,115.53	2,951.35	1,457.56	0.32	-0.09	0.034
40.00	-26.66	-1.36	0.00	-111.97	0.00	111.97	2,201.95	1,100.98	2,850.70	1,407.85	0.41	-0.10	0.033
45.00	-25.13	-1.35	0.00	-105.15	0.00	105.15	2,167.39	1,083.69	2,735.30	1,350.86	0.52	-0.11	0.031
50.00	-23.61	-1.33	0.00	-98.40	0.00	98.40	2,131.78	1,065.89	2,620.87	1,294.35	0.64	-0.13	0.030
55.00	-22.35	-1.31	0.00	-91.74	0.00	91.74	2,095.13	1,047.56	2,507.52	1,238.37	0.78	-0.14	0.028
59.00	-22.12	-1.31	0.00	-86.48	0.00	86.48	2,065.06	1,032.53	2,417.69	1,194.00	0.90	-0.15	0.027
59.00	-22.12	-1.31	0.00	-86.48	0.00	86.48	2,065.06	1,032.53	2,417.69	1,194.00	0.90	-0.15	0.038
60.00	-20.98	-1.29	0.00	-85.17	0.00	85.17	2,057.44	1,028.72	2,395.35	1,182.97	0.93	-0.15	0.038
65.00	-19.86	-1.27	0.00	-78.71	0.00	78.71	2,018.71	1,009.36	2,284.46	1,128.21	1.10	-0.17	0.035
70.00	-19.70	-1.27	0.00	-72.35	0.00	72.35	1,978.94	989.47	2,174.96	1,074.13	1.28	-0.18	0.034
70.00	-18.60	-1.24	0.00	-72.34	0.00	72.34	1,978.92	989.46	2,174.88	1,074.09	1.28	-0.18	0.033
73.50	-18.30	-1.24	0.00	-67.99	0.00	67.99	1,462.63	731.31	1,612.04	796.13	1.42	-0.20	0.038
75.00	-17.31	-1.21	0.00	-66.14	0.00	66.14	1,455.06	727.53	1,589.51	785.00	1.49	-0.20	0.036
80.00	-16.34	-1.18	0.00	-60.08	0.00	60.08	1,429.11	714.55	1,514.58	747.99	1.71	-0.22	0.034
85.00	-15.38	-1.15	0.00	-54.17	0.00	54.17	1,402.12	701.06	1,440.27	711.29	1.94	-0.23	0.031
90.00	-14.43	-1.11	0.00	-48.43	0.00	48.43	1,374.09	687.04	1,366.68	674.95	2.19	-0.25	0.028
95.00	-13.50	-1.07	0.00	-42.86	0.00	42.86	1,345.02	672.51	1,293.93	639.02	2.46	-0.26	0.026
100.00	-12.58	-1.03	0.00	-37.49	0.00	37.49	1,314.91	657.46	1,222.10	603.55	2.74	-0.28	0.023
105.00	-11.67	-0.98	0.00	-32.35	0.00	32.35	1,283.76	641.88	1,151.31	568.59	3.04	-0.29	0.021
110.00	-11.67	-0.98	0.00	-27.44	0.00	27.44	1,247.14	623.57	1,077.81	532.29	3.35	-0.30	0.018
110.00	-11.18	-0.95	0.00	-27.44	0.00	27.44	1,247.10	623.55	1,077.76	532.26	3.35	-0.30	0.018
110.00	-11.18	-0.95	0.00	-27.44	0.00	27.44	846.53	423.27	735.94	363.45	3.35	-0.30	0.022
113.00	-9.43	-0.85	0.00	-24.58	0.00	24.58	835.87	417.94	710.34	350.81	3.54	-0.31	0.019
115.00	-9.11	-0.83	0.00	-22.88	0.00	22.88	828.55	414.27	693.31	342.40	3.67	-0.31	0.018
119.00	-9.03	-0.82	0.00	-19.57	0.00	19.57	813.40	406.70	659.43	325.67	3.93	-0.32	0.016
119.00	-9.03	-0.82	0.00	-19.57	0.00	19.57	813.40	406.70	659.43	325.67	3.93	-0.32	0.071
120.00	-8.87	-0.81	0.00	-18.74	0.00	18.74	809.51	404.76	651.00	321.50	4.00	-0.32	0.069
122.00	-8.62	-0.80	0.00	-17.12	0.00	17.12	801.61	400.80	634.19	313.20	4.13	-0.34	0.065
125.00	-8.24	-0.78	0.00	-14.72	0.00	14.72	789.44	394.72	609.12	300.82	4.35	-0.36	0.059
130.00	-6.85	-0.67	0.00	-10.84	0.00	10.84	768.32	384.16	567.78	280.41	4.75	-0.40	0.048
135.00	-6.52	-0.64	0.00	-7.50	0.00	7.50	746.17	373.08	527.09	260.31	5.18	-0.43	0.038
140.00	-4.29	-0.44	0.00	-4.28	0.00	4.28	722.98	361.49	487.14	240.58	5.64	-0.45	0.024
145.00	-4.04	-0.42	0.00	-2.08	0.00	2.08	694.06	347.03	445.03	219.79	6.12	-0.46	0.015
150.00	0.00	-0.38	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	6.61	-0.47	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) 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	-29.26	-1.37	0.00	-164.88	0.00	164.88	3,133.66	1,566.83	4,776.46	2,358.91	0.00	0.00	0.036
2.00	-28.37	-1.37	0.00	-162.14	0.00	162.14	3,116.86	1,558.43	4,710.21	2,326.20	0.00	-0.01	0.036
5.00	-26.89	-1.38	0.00	-158.03	0.00	158.03	3,091.35	1,545.67	4,611.19	2,277.30	0.01	-0.01	0.029
10.00	-25.42	-1.38	0.00	-151.15	0.00	151.15	3,047.99	1,524.00	4,447.17	2,196.29	0.03	-0.02	0.028
15.00	-24.55	-1.38	0.00	-144.26	0.00	144.26	3,003.60	1,501.80	4,284.50	2,115.95	0.06	-0.03	0.028
18.00	-24.07	-1.38	0.00	-140.12	0.00	140.12	2,976.47	1,488.23	4,187.58	2,068.09	0.08	-0.04	0.027
18.00	-24.07	-1.38	0.00	-140.12	0.00	140.12	2,976.47	1,488.23	4,187.58	2,068.09	0.08	-0.04	0.032
20.00	-22.89	-1.38	0.00	-137.36	0.00	137.36	2,958.17	1,479.08	4,123.27	2,036.33	0.10	-0.05	0.032
25.00	-21.72	-1.38	0.00	-130.47	0.00	130.47	2,911.70	1,455.85	3,963.58	1,957.46	0.16	-0.06	0.031
30.00	-21.37	-1.38	0.00	-123.59	0.00	123.59	2,864.18	1,432.09	3,805.55	1,879.42	0.22	-0.07	0.030
31.50	-20.24	-1.37	0.00	-121.52	0.00	121.52	2,849.69	1,424.85	3,758.37	1,856.12	0.25	-0.08	0.029
35.00	-20.02	-1.37	0.00	-116.74	0.00	116.74	2,805.48	1,402.74	3,636.10	1,795.73	0.31	-0.08	0.028
35.67	-19.11	-1.36	0.00	-115.82	0.00	115.82	2,231.05	1,115.53	2,951.35	1,457.56	0.32	-0.09	0.032
40.00	-18.06	-1.35	0.00	-109.94	0.00	109.94	2,201.95	1,100.98	2,850.70	1,407.85	0.40	-0.10	0.031
45.00	-17.02	-1.33	0.00	-103.21	0.00	103.21	2,167.39	1,083.69	2,735.30	1,350.86	0.51	-0.11	0.029
50.00	-16.00	-1.31	0.00	-96.54	0.00	96.54	2,131.78	1,065.89	2,620.87	1,294.35	0.63	-0.12	0.028
55.00	-15.14	-1.30	0.00	-89.97	0.00	89.97	2,095.13	1,047.56	2,507.52	1,238.37	0.77	-0.14	0.026
59.00	-14.98	-1.29	0.00	-84.79	0.00	84.79	2,065.06	1,032.53	2,417.69	1,194.00	0.89	-0.15	0.025
59.00	-14.98	-1.29	0.00	-84.79	0.00	84.79	2,065.06	1,032.53	2,417.69	1,194.00	0.89	-0.15	0.035
60.00	-14.21	-1.27	0.00	-83.49	0.00	83.49	2,057.44	1,028.72	2,395.35	1,182.97	0.92	-0.15	0.035
65.00	-13.45	-1.25	0.00	-77.13	0.00	77.13	2,018.71	1,009.36	2,284.46	1,128.21	1.08	-0.16	0.033
70.00	-13.35	-1.25	0.00	-70.87	0.00	70.87	1,978.94	989.47	2,174.96	1,074.13	1.26	-0.18	0.031
70.00	-12.60	-1.22	0.00	-70.86	0.00	70.86	1,978.92	989.46	2,174.88	1,074.09	1.26	-0.18	0.031
73.50	-12.40	-1.22	0.00	-66.58	0.00	66.58	1,462.63	731.31	1,612.04	796.13	1.40	-0.19	0.035
75.00	-11.73	-1.19	0.00	-64.76	0.00	64.76	1,455.06	727.53	1,589.51	785.00	1.46	-0.20	0.034
80.00	-11.07	-1.16	0.00	-58.82	0.00	58.82	1,429.11	714.55	1,514.58	747.99	1.68	-0.21	0.031
85.00	-10.42	-1.13	0.00	-53.01	0.00	53.01	1,402.12	701.06	1,440.27	711.29	1.91	-0.23	0.029
90.00	-9.78	-1.09	0.00	-47.37	0.00	47.37	1,374.09	687.04	1,366.68	674.95	2.16	-0.24	0.026
95.00	-9.14	-1.05	0.00	-41.91	0.00	41.91	1,345.02	672.51	1,293.93	639.02	2.42	-0.26	0.024
100.00	-8.52	-1.01	0.00	-36.65	0.00	36.65	1,314.91	657.46	1,222.10	603.55	2.70	-0.27	0.021
105.00	-7.90	-0.96	0.00	-31.61	0.00	31.61	1,283.76	641.88	1,151.31	568.59	2.99	-0.28	0.019
110.00	-7.90	-0.96	0.00	-26.81	0.00	26.81	1,247.14	623.57	1,077.81	532.29	3.29	-0.29	0.017
110.00	-7.58	-0.93	0.00	-26.80	0.00	26.80	1,247.10	623.55	1,077.76	532.26	3.29	-0.29	0.016
110.00	-7.58	-0.93	0.00	-26.80	0.00	26.80	846.53	423.27	735.94	363.45	3.29	-0.29	0.020
113.00	-6.39	-0.83	0.00	-24.00	0.00	24.00	835.87	417.94	710.34	350.81	3.47	-0.30	0.017
115.00	-6.17	-0.81	0.00	-22.34	0.00	22.34	828.55	414.27	693.31	342.40	3.60	-0.30	0.016
119.00	-6.12	-0.81	0.00	-19.09	0.00	19.09	813.40	406.70	659.43	325.67	3.86	-0.31	0.014
119.00	-6.12	-0.81	0.00	-19.09	0.00	19.09	813.40	406.70	659.43	325.67	3.86	-0.31	0.066
120.00	-6.01	-0.80	0.00	-18.29	0.00	18.29	809.51	404.76	651.00	321.50	3.92	-0.31	0.064
122.00	-5.84	-0.78	0.00	-16.69	0.00	16.69	801.61	400.80	634.19	313.20	4.06	-0.33	0.061
125.00	-5.58	-0.76	0.00	-14.35	0.00	14.35	789.44	394.72	609.12	300.82	4.27	-0.35	0.055
130.00	-4.64	-0.65	0.00	-10.56	0.00	10.56	768.32	384.16	567.78	280.41	4.66	-0.39	0.044
135.00	-4.41	-0.63	0.00	-7.30	0.00	7.30	746.17	373.08	527.09	260.31	5.09	-0.42	0.034
140.00	-2.90	-0.43	0.00	-4.17	0.00	4.17	722.98	361.49	487.14	240.58	5.54	-0.44	0.021
145.00	-2.74	-0.41	0.00	-2.03	0.00	2.03	694.06	347.03	445.03	219.79	6.00	-0.45	0.013
150.00	0.00	-0.38	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	6.48	-0.46	0.000

Site Number:	302484	Code: ANSI/TIA-222-G	
Site Name:	Branford CT 6, CT	Engineering Number: OAA688022_C3_01	10/28/2016 12:57:21 PM
Customer:	AT&T Mobility		

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):	0.24
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}):	0.26
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.29
Redundancy Factor (p):	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)
41	147.50	195	1.828	1.667	1.025	0.434	73	244
40	142.50	203	1.706	1.144	0.823	0.335	59	254
39	137.50	265	1.588	0.742	0.654	0.247	57	332
38	132.50	273	1.475	0.441	0.513	0.170	40	342
37	127.50	304	1.366	0.222	0.397	0.103	27	381
36	123.50	186	1.281	0.095	0.320	0.058	9	233
35	121.00	127	1.230	0.035	0.278	0.032	4	159
34	119.50	64	1.200	0.004	0.254	0.018	1	80
33	117.00	259	1.150	-0.037	0.219	-0.003	-1	324
32	114.00	240	1.092	-0.074	0.182	-0.025	-5	300
31	111.50	387	1.044	-0.096	0.154	-0.041	-14	484
30	110.00	0	1.016	-0.105	0.140	-0.049	0	1
29	107.50	725	0.971	-0.116	0.117	-0.060	-38	907
28	102.50	735	0.883	-0.121	0.081	-0.076	-48	921
27	97.50	746	0.799	-0.112	0.053	-0.081	-52	934
26	92.50	757	0.719	-0.092	0.034	-0.075	-50	947
25	87.50	768	0.643	-0.068	0.020	-0.059	-40	961
24	82.50	778	0.572	-0.043	0.012	-0.035	-23	974
23	77.50	789	0.505	-0.018	0.007	-0.005	-3	988
22	74.25	238	0.463	-0.003	0.006	0.014	3	298
21	71.75	878	0.432	0.008	0.006	0.028	21	1,099
20	70.00	1	0.412	0.014	0.006	0.036	0	1
19	67.50	896	0.383	0.023	0.007	0.047	37	1,121
18	62.50	909	0.328	0.039	0.010	0.063	50	1,138
17	59.50	183	0.297	0.046	0.012	0.070	11	230
16	57.00	1,011	0.273	0.051	0.015	0.074	64	1,266
15	52.50	1,208	0.232	0.058	0.019	0.077	81	1,512
14	47.50	1,221	0.190	0.064	0.025	0.078	83	1,529
13	42.50	1,235	0.152	0.068	0.030	0.078	83	1,546
12	37.83	1,080	0.120	0.070	0.034	0.076	71	1,352
11	35.33	255	0.105	0.071	0.037	0.075	17	319
10	33.25	1,338	0.093	0.071	0.038	0.074	86	1,675
9	30.75	410	0.079	0.072	0.040	0.074	26	514
8	27.50	1,375	0.064	0.072	0.041	0.072	86	1,722

7	22.50	1,391	0.043	0.070	0.042	0.070	85	1,742
6	19.00	561	0.030	0.068	0.041	0.068	33	702
5	16.50	1,030	0.023	0.066	0.039	0.066	59	1,290
4	12.50	1,730	0.013	0.059	0.034	0.061	92	2,165
3	7.50	1,746	0.005	0.044	0.025	0.050	75	2,186
2	3.50	1,055	0.001	0.024	0.013	0.031	28	1,321
1	1.00	584	0.000	0.008	0.004	0.011	6	731
Powerwave 7020.00 Du	150.00	13	1.890	1.980	1.140	0.488	6	17
Diplexer / Coupler	150.00	15	1.890	1.980	1.140	0.488	6	19
GPS	150.00	10	1.890	1.980	1.140	0.488	4	13
4' Omni	150.00	10	1.890	1.980	1.140	0.488	4	13
Powerwave LGP21401	150.00	85	1.890	1.980	1.140	0.488	36	106
Raycap DC6-48-60-18-	150.00	32	1.890	1.980	1.140	0.488	13	40
Ericsson RRUS 11 (Ba	150.00	165	1.890	1.980	1.140	0.488	70	207
Ericsson RRUS 32 B2	150.00	159	1.890	1.980	1.140	0.488	67	199
Decibel DB408	150.00	34	1.890	1.980	1.140	0.488	14	43
Round Side Arm	150.00	450	1.890	1.980	1.140	0.488	190	563
Powerwave 7770	150.00	105	1.890	1.980	1.140	0.488	44	131
CCI HPA-65R-BUU-H6	150.00	153	1.890	1.980	1.140	0.488	65	192
Flat Platform w/ Han	150.00	2,000	1.890	1.980	1.140	0.488	845	2,504
Ericsson KRY 112 144	140.00	33	1.646	0.929	0.735	0.289	8	41
Ericsson RRUS 11 (Ba	140.00	150	1.646	0.929	0.735	0.289	38	188
Ericsson AIR 21, 1.3	140.00	249	1.646	0.929	0.735	0.289	62	312
Ericsson AIR 21, 1.3	140.00	244	1.646	0.929	0.735	0.289	61	306
Round T-Arm	140.00	750	1.646	0.929	0.735	0.289	188	939
Andrew LNX-6515DS-VT	140.00	154	1.646	0.929	0.735	0.289	39	193
DragonWave Horizon C	130.00	21	1.420	0.322	0.452	0.135	2	27
DragonWave A-ANT-23G	130.00	15	1.420	0.322	0.452	0.135	2	19
NextNet BTS-2500	130.00	105	1.420	0.322	0.452	0.135	12	131
Argus LLPX310R	130.00	86	1.420	0.322	0.452	0.135	10	107
DragonWave A-ANT-18G	130.00	48	1.420	0.322	0.452	0.135	6	60
Clearwire Mount	130.00	560	1.420	0.322	0.452	0.135	66	701
SWR FMEC/1	122.00	15	1.250	0.057	0.294	0.042	1	19
RFS FD9R6004/2C-3L	113.00	16	1.073	-0.084	0.170	-0.031	0	20
Alcatel-Lucent RRH2x	113.00	132	1.073	-0.084	0.170	-0.031	-4	165
Antel BXA-171063-8CF	113.00	18	1.073	-0.084	0.170	-0.031	-1	23
Antel BXA-171085-8CF	113.00	10	1.073	-0.084	0.170	-0.031	0	13
RFS APL868013-42T0	113.00	25	1.073	-0.084	0.170	-0.031	-1	32
RFS APL868013-42T0	113.00	13	1.073	-0.084	0.170	-0.031	0	16
RFS DB-T1-6Z-8AB-0Z	113.00	44	1.073	-0.084	0.170	-0.031	-1	55
Commscope SBNHH-	113.00	152	1.073	-0.084	0.170	-0.031	-4	190
Round T-Arm	113.00	750	1.073	-0.084	0.170	-0.031	-20	939
Channel Master Type	70.00	126	0.412	0.014	0.006	0.036	4	158
		35,086	79.082	37.091	29.585	10.866	2,927	43,923

Load Case (0.9 - 0.2Sds) * DL + E EMAM — Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
41	147.50	195	1.828	1.667	1.025	0.434	73	165
40	142.50	203	1.706	1.144	0.823	0.335	59	172
39	137.50	265	1.588	0.742	0.654	0.247	57	225
38	132.50	273	1.475	0.441	0.513	0.170	40	232
37	127.50	304	1.366	0.222	0.397	0.103	27	258
36	123.50	186	1.281	0.095	0.320	0.058	9	158
35	121.00	127	1.230	0.035	0.278	0.032	4	107
34	119.50	64	1.200	0.004	0.254	0.018	1	54
33	117.00	259	1.150	-0.037	0.219	-0.003	-1	219
32	114.00	240	1.092	-0.074	0.182	-0.025	-5	204

31	111.50	387	1.044	-0.096	0.154	-0.041	-14	328
30	110.00	0	1.016	-0.105	0.140	-0.049	0	0
29	107.50	725	0.971	-0.116	0.117	-0.060	-38	615
28	102.50	735	0.883	-0.121	0.081	-0.076	-48	624
27	97.50	746	0.799	-0.112	0.053	-0.081	-52	633
26	92.50	757	0.719	-0.092	0.034	-0.075	-50	642
25	87.50	768	0.643	-0.068	0.020	-0.059	-40	651
24	82.50	778	0.572	-0.043	0.012	-0.035	-23	660
23	77.50	789	0.505	-0.018	0.007	-0.005	-3	669
22	74.25	238	0.463	-0.003	0.006	0.014	3	202
21	71.75	878	0.432	0.008	0.006	0.028	21	745
20	70.00	1	0.412	0.014	0.006	0.036	0	1
19	67.50	896	0.383	0.023	0.007	0.047	37	760
18	62.50	909	0.328	0.039	0.010	0.063	50	771
17	59.50	183	0.297	0.046	0.012	0.070	11	156
16	57.00	1,011	0.273	0.051	0.015	0.074	64	858
15	52.50	1,208	0.232	0.058	0.019	0.077	81	1,025
14	47.50	1,221	0.190	0.064	0.025	0.078	83	1,036
13	42.50	1,235	0.152	0.068	0.030	0.078	83	1,047
12	37.83	1,080	0.120	0.070	0.034	0.076	71	916
11	35.33	255	0.105	0.071	0.037	0.075	17	216
10	33.25	1,338	0.093	0.071	0.038	0.074	86	1,135
9	30.75	410	0.079	0.072	0.040	0.074	26	348
8	27.50	1,375	0.064	0.072	0.041	0.072	86	1,166
7	22.50	1,391	0.043	0.070	0.042	0.070	85	1,180
6	19.00	561	0.030	0.068	0.041	0.068	33	476
5	16.50	1,030	0.023	0.066	0.039	0.066	59	874
4	12.50	1,730	0.013	0.059	0.034	0.061	92	1,467
3	7.50	1,746	0.005	0.044	0.025	0.050	75	1,481
2	3.50	1,055	0.001	0.024	0.013	0.031	28	895
1	1.00	584	0.000	0.008	0.004	0.011	6	496
Powerwave 7020.00 Du	150.00	13	1.890	1.980	1.140	0.488	6	11
Diplexer / Coupler	150.00	15	1.890	1.980	1.140	0.488	6	13
GPS	150.00	10	1.890	1.980	1.140	0.488	4	8
4' Omni	150.00	10	1.890	1.980	1.140	0.488	4	8
Powerwave LGP21401	150.00	85	1.890	1.980	1.140	0.488	36	72
Raycap DC6-48-60-18-	150.00	32	1.890	1.980	1.140	0.488	13	27
Ericsson RRUS 11 (Ba	150.00	165	1.890	1.980	1.140	0.488	70	140
Ericsson RRUS 32 B2	150.00	159	1.890	1.980	1.140	0.488	67	135
Decibel DB408	150.00	34	1.890	1.980	1.140	0.488	14	29
Round Side Arm	150.00	450	1.890	1.980	1.140	0.488	190	382
Powerwave 7770	150.00	105	1.890	1.980	1.140	0.488	44	89
CCI HPA-65R-BUU-H6	150.00	153	1.890	1.980	1.140	0.488	65	130
Flat Platform w/ Han	150.00	2,000	1.890	1.980	1.140	0.488	845	1,696
Ericsson KRY 112 144	140.00	33	1.646	0.929	0.735	0.289	8	28
Ericsson RRUS 11 (Ba	140.00	150	1.646	0.929	0.735	0.289	38	127
Ericsson AIR 21, 1.3	140.00	249	1.646	0.929	0.735	0.289	62	211
Ericsson AIR 21, 1.3	140.00	244	1.646	0.929	0.735	0.289	61	207
Round T-Arm	140.00	750	1.646	0.929	0.735	0.289	188	636
Andrew LNX-6515DS-VT	140.00	154	1.646	0.929	0.735	0.289	39	131
DragonWave Horizon C	130.00	21	1.420	0.322	0.452	0.135	2	18
DragonWave A-ANT-23G	130.00	15	1.420	0.322	0.452	0.135	2	13
NextNet BTS-2500	130.00	105	1.420	0.322	0.452	0.135	12	89
Argus LLPX310R	130.00	86	1.420	0.322	0.452	0.135	10	73
DragonWave A-ANT-18G	130.00	48	1.420	0.322	0.452	0.135	6	40
Clearwire Mount	130.00	560	1.420	0.322	0.452	0.135	66	475
SWR FMEC/1	122.00	15	1.250	0.057	0.294	0.042	1	13
RFS FD9R6004/2C-3L	113.00	16	1.073	-0.084	0.170	-0.031	0	13
Alcatel-Lucent RRH2x	113.00	132	1.073	-0.084	0.170	-0.031	-4	112
Antel BXA-171063-8CF	113.00	18	1.073	-0.084	0.170	-0.031	-1	16
Antel BXA-171085-8CF	113.00	10	1.073	-0.084	0.170	-0.031	0	9
RFS APL868013-42T0	113.00	25	1.073	-0.084	0.170	-0.031	-1	21
RFS APL868013-42T0	113.00	13	1.073	-0.084	0.170	-0.031	0	11
RFS DB-T1-6Z-8AB-0Z	113.00	44	1.073	-0.084	0.170	-0.031	-1	37

Commscope SBNHH-	113.00	152	1.073	-0.084	0.170	-0.031	-4	129
Round T-Arm	113.00	750	1.073	-0.084	0.170	-0.031	-20	636
Channel Master Type	70.00	126	0.412	0.014	0.006	0.036	4	107
		35,086	79.082	37.091	29.585	10.866	2,927	29,759

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	-43.19	-2.93	0.00	-331.82	0.00	331.82	3,133.66	1,566.83	4,776.46	2,358.91	0.00	0.00	0.070
2.00	-41.87	-2.91	0.00	-325.97	0.00	325.97	3,116.86	1,558.43	4,710.21	2,326.20	0.00	-0.01	0.069
5.00	-39.68	-2.84	0.00	-317.25	0.00	317.25	3,091.35	1,545.67	4,611.19	2,277.30	0.01	-0.03	0.057
10.00	-37.52	-2.76	0.00	-303.03	0.00	303.03	3,047.99	1,524.00	4,447.17	2,196.29	0.05	-0.05	0.055
15.00	-36.23	-2.71	0.00	-289.21	0.00	289.21	3,003.60	1,501.80	4,284.50	2,115.95	0.12	-0.07	0.053
18.00	-35.52	-2.69	0.00	-281.07	0.00	281.07	2,976.47	1,488.23	4,187.58	2,068.09	0.16	-0.08	0.052
18.00	-35.52	-2.69	0.00	-281.07	0.00	281.07	2,976.47	1,488.23	4,187.58	2,068.09	0.16	-0.08	0.063
20.00	-33.78	-2.61	0.00	-275.69	0.00	275.69	2,958.17	1,479.08	4,123.27	2,036.33	0.20	-0.09	0.062
25.00	-32.06	-2.54	0.00	-262.64	0.00	262.64	2,911.70	1,455.85	3,963.58	1,957.46	0.31	-0.12	0.060
30.00	-31.54	-2.52	0.00	-249.96	0.00	249.96	2,864.18	1,432.09	3,805.55	1,879.42	0.45	-0.14	0.058
31.50	-29.87	-2.43	0.00	-246.18	0.00	246.18	2,849.69	1,424.85	3,758.37	1,856.12	0.50	-0.15	0.057
35.00	-29.55	-2.42	0.00	-237.67	0.00	237.67	2,805.48	1,402.74	3,636.10	1,795.73	0.62	-0.17	0.055
35.67	-28.20	-2.35	0.00	-236.04	0.00	236.04	2,231.05	1,115.53	2,951.35	1,457.56	0.64	-0.17	0.062
40.00	-26.65	-2.28	0.00	-225.86	0.00	225.86	2,201.95	1,100.98	2,850.70	1,407.85	0.81	-0.20	0.060
45.00	-25.12	-2.20	0.00	-214.47	0.00	214.47	2,167.39	1,083.69	2,735.30	1,350.86	1.03	-0.22	0.058
50.00	-23.61	-2.12	0.00	-203.48	0.00	203.48	2,131.78	1,065.89	2,620.87	1,294.35	1.28	-0.25	0.056
55.00	-22.34	-2.06	0.00	-192.86	0.00	192.86	2,095.13	1,047.56	2,507.52	1,238.37	1.55	-0.28	0.054
59.00	-22.11	-2.05	0.00	-184.62	0.00	184.62	2,065.06	1,032.53	2,417.69	1,194.00	1.79	-0.30	0.051
59.00	-22.11	-2.05	0.00	-184.62	0.00	184.62	2,065.06	1,032.53	2,417.69	1,194.00	1.79	-0.30	0.074
60.00	-20.97	-2.01	0.00	-182.56	0.00	182.56	2,057.44	1,028.72	2,395.35	1,182.97	1.86	-0.30	0.073
65.00	-19.85	-1.98	0.00	-172.53	0.00	172.53	2,018.71	1,009.36	2,284.46	1,128.21	2.19	-0.34	0.070
70.00	-19.69	-1.98	0.00	-162.64	0.00	162.64	1,978.94	989.47	2,174.96	1,074.13	2.57	-0.38	0.068
70.00	-18.59	-1.95	0.00	-162.64	0.00	162.64	1,978.92	989.46	2,174.88	1,074.09	2.57	-0.38	0.068
73.50	-18.29	-1.96	0.00	-155.80	0.00	155.80	1,462.63	731.31	1,612.04	796.13	2.86	-0.40	0.077
75.00	-17.30	-1.96	0.00	-152.87	0.00	152.87	1,455.06	727.53	1,589.51	785.00	2.98	-0.42	0.075
80.00	-16.33	-1.99	0.00	-143.07	0.00	143.07	1,429.11	714.55	1,514.58	747.99	3.44	-0.45	0.072
85.00	-15.37	-2.03	0.00	-133.14	0.00	133.14	1,402.12	701.06	1,440.27	711.29	3.94	-0.49	0.068
90.00	-14.42	-2.08	0.00	-123.00	0.00	123.00	1,374.09	687.04	1,366.68	674.95	4.47	-0.53	0.063
95.00	-13.48	-2.13	0.00	-112.61	0.00	112.61	1,345.02	672.51	1,293.93	639.02	5.05	-0.57	0.059
100.00	-12.56	-2.18	0.00	-101.96	0.00	101.96	1,314.91	657.46	1,222.10	603.55	5.66	-0.60	0.054
105.00	-11.65	-2.21	0.00	-91.08	0.00	91.08	1,283.76	641.88	1,151.31	568.59	6.31	-0.63	0.049
110.00	-11.65	-2.21	0.00	-80.02	0.00	80.02	1,247.14	623.57	1,077.81	532.29	6.99	-0.67	0.044
110.00	-11.16	-2.22	0.00	-80.01	0.00	80.01	1,247.10	623.55	1,077.76	532.26	6.99	-0.67	0.044
110.00	-11.16	-2.22	0.00	-80.01	0.00	80.01	846.53	423.27	735.94	363.45	6.99	-0.67	0.053
113.00	-9.41	-2.24	0.00	-73.34	0.00	73.34	835.87	417.94	710.34	350.81	7.41	-0.68	0.048
115.00	-9.08	-2.24	0.00	-68.86	0.00	68.86	828.55	414.27	693.31	342.40	7.70	-0.70	0.045
119.00	-9.00	-2.24	0.00	-59.88	0.00	59.88	813.40	406.70	659.43	325.67	8.30	-0.72	0.038
119.00	-9.00	-2.24	0.00	-59.88	0.00	59.88	813.40	406.70	659.43	325.67	8.30	-0.72	0.195
120.00	-8.84	-2.24	0.00	-57.64	0.00	57.64	809.51	404.76	651.00	321.50	8.45	-0.73	0.190
122.00	-8.59	-2.24	0.00	-53.16	0.00	53.16	801.61	400.80	634.19	313.20	8.76	-0.78	0.180
125.00	-8.21	-2.22	0.00	-46.44	0.00	46.44	789.44	394.72	609.12	300.82	9.28	-0.86	0.165
130.00	-6.82	-2.07	0.00	-35.34	0.00	35.34	768.32	384.16	567.78	280.41	10.24	-0.97	0.135
135.00	-6.48	-2.02	0.00	-24.97	0.00	24.97	746.17	373.08	527.09	260.31	11.32	-1.07	0.105
140.00	-4.26	-1.53	0.00	-14.88	0.00	14.88	722.98	361.49	487.14	240.58	12.48	-1.14	0.068
145.00	-4.01	-1.45	0.00	-7.25	0.00	7.25	694.06	347.03	445.03	219.79	13.70	-1.19	0.039
150.00	0.00	-1.37	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	14.96	-1.21	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) 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	-29.26	-2.92	0.00	-326.64	0.00	326.64	3,133.66	1,566.83	4,776.46	2,358.91	0.00	0.00	0.067
2.00	-28.37	-2.90	0.00	-320.80	0.00	320.80	3,116.86	1,558.43	4,710.21	2,326.20	0.00	-0.01	0.066
5.00	-26.89	-2.83	0.00	-312.09	0.00	312.09	3,091.35	1,545.67	4,611.19	2,277.30	0.01	-0.03	0.054
10.00	-25.42	-2.75	0.00	-297.92	0.00	297.92	3,047.99	1,524.00	4,447.17	2,196.29	0.05	-0.05	0.052
15.00	-24.54	-2.70	0.00	-284.16	0.00	284.16	3,003.60	1,501.80	4,284.50	2,115.95	0.11	-0.07	0.051
18.00	-24.07	-2.67	0.00	-276.06	0.00	276.06	2,976.47	1,488.23	4,187.58	2,068.09	0.16	-0.08	0.050
18.00	-24.07	-2.67	0.00	-276.06	0.00	276.06	2,976.47	1,488.23	4,187.58	2,068.09	0.16	-0.08	0.059
20.00	-22.89	-2.59	0.00	-270.73	0.00	270.73	2,958.17	1,479.08	4,123.27	2,036.33	0.20	-0.09	0.059
25.00	-21.72	-2.51	0.00	-257.78	0.00	257.78	2,911.70	1,455.85	3,963.58	1,957.46	0.31	-0.12	0.057
30.00	-21.37	-2.49	0.00	-245.22	0.00	245.22	2,864.18	1,432.09	3,805.55	1,879.42	0.44	-0.14	0.055
31.50	-20.23	-2.41	0.00	-241.48	0.00	241.48	2,849.69	1,424.85	3,758.37	1,856.12	0.49	-0.15	0.054
35.00	-20.02	-2.39	0.00	-233.07	0.00	233.07	2,805.48	1,402.74	3,636.10	1,795.73	0.61	-0.17	0.052
35.67	-19.10	-2.32	0.00	-231.47	0.00	231.47	2,231.05	1,115.53	2,951.35	1,457.56	0.63	-0.17	0.059
40.00	-18.05	-2.24	0.00	-221.41	0.00	221.41	2,201.95	1,100.98	2,850.70	1,407.85	0.79	-0.19	0.057
45.00	-17.02	-2.16	0.00	-210.19	0.00	210.19	2,167.39	1,083.69	2,735.30	1,350.86	1.01	-0.22	0.055
50.00	-15.99	-2.09	0.00	-199.37	0.00	199.37	2,131.78	1,065.89	2,620.87	1,294.35	1.25	-0.25	0.053
55.00	-15.13	-2.02	0.00	-188.94	0.00	188.94	2,095.13	1,047.56	2,507.52	1,238.37	1.53	-0.27	0.051
59.00	-14.98	-2.02	0.00	-180.84	0.00	180.84	2,065.06	1,032.53	2,417.69	1,194.00	1.76	-0.29	0.048
59.00	-14.98	-2.02	0.00	-180.84	0.00	180.84	2,065.06	1,032.53	2,417.69	1,194.00	1.76	-0.29	0.070
60.00	-14.21	-1.97	0.00	-178.82	0.00	178.82	2,057.44	1,028.72	2,395.35	1,182.97	1.82	-0.30	0.070
65.00	-13.45	-1.94	0.00	-168.99	0.00	168.99	2,018.71	1,009.36	2,284.46	1,128.21	2.15	-0.33	0.067
70.00	-13.34	-1.93	0.00	-159.31	0.00	159.31	1,978.94	989.47	2,174.96	1,074.13	2.52	-0.37	0.065
70.00	-12.59	-1.91	0.00	-159.30	0.00	159.30	1,978.92	989.46	2,174.88	1,074.09	2.52	-0.37	0.064
73.50	-12.39	-1.91	0.00	-152.61	0.00	152.61	1,462.63	731.31	1,612.04	796.13	2.80	-0.40	0.073
75.00	-11.72	-1.92	0.00	-149.75	0.00	149.75	1,455.06	727.53	1,589.51	785.00	2.93	-0.41	0.072
80.00	-11.06	-1.94	0.00	-140.18	0.00	140.18	1,429.11	714.55	1,514.58	747.99	3.38	-0.44	0.068
85.00	-10.41	-1.98	0.00	-130.47	0.00	130.47	1,402.12	701.06	1,440.27	711.29	3.86	-0.48	0.064
90.00	-9.76	-2.03	0.00	-120.56	0.00	120.56	1,374.09	687.04	1,366.68	674.95	4.39	-0.52	0.060
95.00	-9.13	-2.08	0.00	-110.40	0.00	110.40	1,345.02	672.51	1,293.93	639.02	4.95	-0.56	0.056
100.00	-8.50	-2.13	0.00	-99.98	0.00	99.98	1,314.91	657.46	1,222.10	603.55	5.55	-0.59	0.052
105.00	-7.89	-2.17	0.00	-89.32	0.00	89.32	1,283.76	641.88	1,151.31	568.59	6.19	-0.62	0.047
110.00	-7.88	-2.17	0.00	-78.49	0.00	78.49	1,247.14	623.57	1,077.81	532.29	6.86	-0.65	0.042
110.00	-7.56	-2.18	0.00	-78.48	0.00	78.48	1,247.10	623.55	1,077.76	532.26	6.86	-0.65	0.042
110.00	-7.56	-2.18	0.00	-78.48	0.00	78.48	846.53	423.27	735.94	363.45	6.86	-0.65	0.050
113.00	-6.37	-2.21	0.00	-71.95	0.00	71.95	835.87	417.94	710.34	350.81	7.27	-0.67	0.046
115.00	-6.15	-2.21	0.00	-67.54	0.00	67.54	828.55	414.27	693.31	342.40	7.56	-0.68	0.043
119.00	-6.09	-2.20	0.00	-58.72	0.00	58.72	813.40	406.70	659.43	325.67	8.14	-0.71	0.036
119.00	-6.09	-2.20	0.00	-58.72	0.00	58.72	813.40	406.70	659.43	325.67	8.14	-0.71	0.188
120.00	-5.98	-2.20	0.00	-56.51	0.00	56.51	809.51	404.76	651.00	321.50	8.29	-0.71	0.183
122.00	-5.81	-2.20	0.00	-52.11	0.00	52.11	801.61	400.80	634.19	313.20	8.60	-0.77	0.174
125.00	-5.55	-2.18	0.00	-45.51	0.00	45.51	789.44	394.72	609.12	300.82	9.10	-0.84	0.158
130.00	-4.61	-2.03	0.00	-34.63	0.00	34.63	768.32	384.16	567.78	280.41	10.05	-0.95	0.130
135.00	-4.38	-1.98	0.00	-24.47	0.00	24.47	746.17	373.08	527.09	260.31	11.10	-1.05	0.100
140.00	-2.88	-1.50	0.00	-14.59	0.00	14.59	722.98	361.49	487.14	240.58	12.24	-1.12	0.065
145.00	-2.71	-1.42	0.00	-7.11	0.00	7.11	694.06	347.03	445.03	219.79	13.44	-1.17	0.036
150.00	0.00	-1.37	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	14.67	-1.18	0.000

Analysis Summary

Load Case	Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.6W	31.55	0.00	42.07	0.00	0.00	3144.61	119.00	0.93
0.9D + 1.6W	31.54	0.00	31.55	0.00	0.00	3111.70	119.00	0.91
1.2D + 1.0Di + 1.0Wi	6.81	0.00	71.41	0.00	0.00	710.95	119.00	0.24
(1.2 + 0.2Sds) * DL + E ELFM	1.37	0.00	43.19	0.00	0.00	167.28	119.00	0.07
(1.2 + 0.2Sds) * DL + E EMAM	2.93	0.00	43.19	0.00	0.00	331.82	119.00	0.19
(0.9 - 0.2Sds) * DL + E ELFM	1.37	0.00	29.26	0.00	0.00	164.88	119.00	0.07
(0.9 - 0.2Sds) * DL + E EMAM	2.92	0.00	29.26	0.00	0.00	326.64	119.00	0.19
1.0D + 1.0W	7.41	0.00	35.08	0.00	0.00	718.78	119.00	0.21

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	119.	(4) SOL-#18 All Thre	340.4	10.2	16.8	80.7	12.0	7	10	0.0	12.0	0	0	230.3	249.8	0.922
0.00	59.0	(4) SOL-#18 All Thre	193.5	5.8	16.8	140.9	12.0	12	18	0.0	12.0	0	0	201.2	249.8	0.806
2.00	18.0	(2) PL-PL 4" x 1"	117.6	1.4	25.3	124.1	25.3	5	8	136.3	25.3	6	8	138.0	174.4	0.791
2.00	18.0	(2) PL-PL 5" x 1"	147.0	1.8	25.3	155.1	25.3	7	8	170.3	25.3	7	8	172.5	218.0	0.791

Base/Flange Plate	Plate Type	***Baseplate***	
	Pole Diameter	37.38	in
	Pole Thickness	0.375	in
	Plate Length	44	in
	Plate Thickness	2.5	in
	Plate Fy	50	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	1151.98	k-in
	Applied	693.00	k-in
Stiffeners	#	***0***	

Bolts	#	***8***	
	Bolt Circle	44	in
	(R)adial / (S)quare	S	
	Bolt Gap	6	in
●	Diameter	2.25	in
	Hole Diameter	2.375	in
	Type	18J	
	Fy	75	ksi
	Fu	100	ksi
	ϕ_s Resistance	259.82	k
	Applied	191.44	k
Reinforcement ●	#	***4***	
	DYW. Circle	44	in
	Offset Angle	45	°
	Type	#18	
	Diameter	2.257	in
	Fu	100	ksi
Extra Bolts O	#	***4***	
	Bolt Circle	44	in
	(R)adial / (S)quare	R	
	Offset Angle	45	°
	Diameter	2.25	in
	Type	#18	
	Fy	80	ksi
	Fu	100	ksi
	ϕ_s Resistance	259.82	k
	Applied	143.40	k

Code Rev.	***G***	**Date**	10/27/2016
		Engineer	MK
		Site #	302484
Moment	3144.6 k-ft	**Carrier**	AT&T Mobility
Axial	42.1 k		

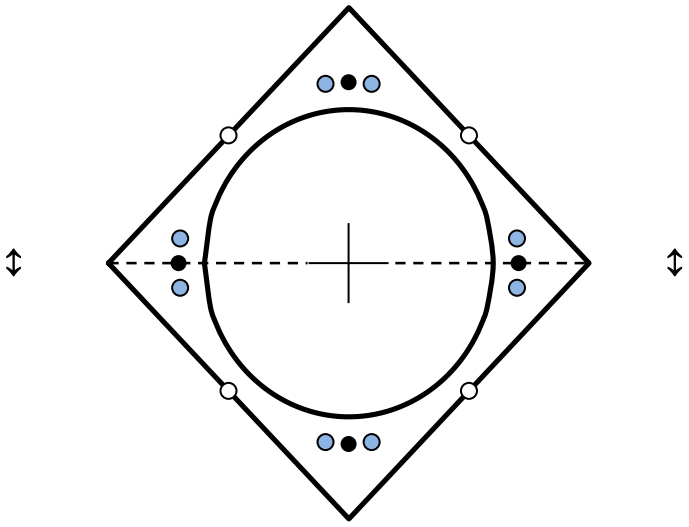


Plate Stress Ratio:
0.60 (Pass)

Bolt Stress Ratio:
0.74 (Pass)

Extra Bolt Stress Ratio:
0.55 (Pass)

Base/Flange Plate	Plate Type	***Flange*** ***@ 110.0 ft***
	Pole Diameter	21.25 in
	Pole Thickness	0.188 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	21.36 k-in
Stiffeners	#	***0***

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	14.24 k
Reinforcement	#	***4***
	DYW. Circle	34.41 in
	Offset Angle	15 °
	Type	#18
	Diameter	2.257 in
	Fu	100 ksi
Extra Bolts O	#	***0***

Code Rev. ***G***

Moment 430.4 k-ft
Axial 9.7 k

Date	10/27/2016
Engineer	MK
Site #	302484
Carrier	AT&T Mobility

Required Flange Thickness:
0.53 in OK

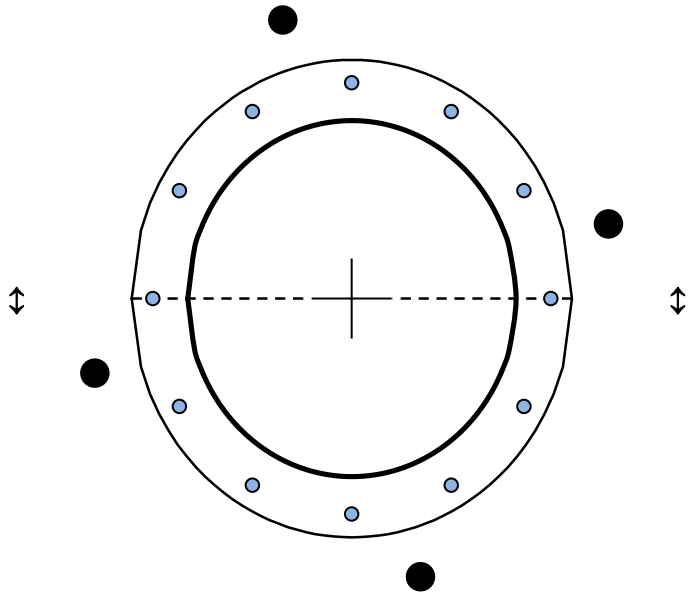
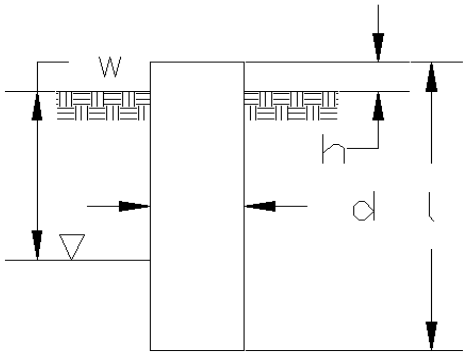


Plate Stress Ratio:
0.28 (Pass)

Bolt Stress Ratio:
0.26 (Pass)

Site Name:	Branford CT 6, CT	*Program Last Updated:*	*5/13/2014*
Site Number:	302484	*American Tower Corporation*	
Engineer:	MK		
Engineering Number:	OAA688022_C3_01		
Date:	10/27/16		



Design Base Loads (Factored) - Analysis per TIA-222-G Standards

Analyze or Design a Foundation?	Analyze	
Foundation Mapped:	Y	
Moment (M):	3144.6	k-ft
Shear/Leg (V):	31.6	k
Axial Load (P):	42.1	k
Uplift/Leg (U):	0.0	k
Tower Type (GT / SST / MP):	MP	
Diameter of Caisson (d):	5.0	ft
Caisson Embedment (L-h):	22.3	ft
Caisson Height Above Ground (h):	0.5	ft
Depth Below Ground Surface to Water Table (w):	4.5	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Water:	62.4	pcf
Tension Skin Friction/Compression Skin Friction:	1.00	
Pullout Angle:	30.0	degrees

Engineer Notes

Soil Mechanical Properties

Depth (ft) Top	Depth (ft) Bottom	γ_{Soil} (pcf)	Cohesion (psf)	ϕ (degree)	Ultimate Skin Friction (psf)	Ultimate Bearing Pressure (psf)
0.0	5.0	125	0	0	0	0
5.0	7.0	125	0	33	0	0
7.0	23.3	125	8000	0	0	8000

Required Embedment:	15.9	ft - OK, Caisson Embedment Satisfactory
Volume of Concrete:	446.7	ft^3 = 16.5 yd^3
Weight of Concrete (Buoyancy Effect Considered):	45.3	k
Average Soil Unit Weight:	75.2	pcf
Skin Friction Resistance:	0.0	k
Compressive Bearing Resistance:	157.1	k
Pullout Weight (Minus Concrete Weight):	458.1	k
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	33.9	k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	117.8	k
P_u:	55.2	k
$T_u/\phi_s T_n$:	0.00	Result: OK
$P_u/\phi_s P_n$:	0.47	Result: OK
Total Lateral Resistance:	4148.6	k
Inflection Point (Below Ground Surface):	15.2	ft
Design Overturning Moment At Inflection Point (M_D):	3638.5	k-ft
Nominal Moment Capacity ($\phi_s M_n$):	11313.1	k-ft
$M_D/\phi_s M_n$:	0.32	Result: OK
ϕ_s:	0.75	

EBI Consulting
environmental | engineering | due diligence

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

AT&T Existing Facility

Site ID: CT2015

Branford
405 Brushy Plain Road
Branford, CT 06405

November 5, 2016

EBI Project Number: 6216004959

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	8.63 %

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

November 5, 2016

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

Emissions Analysis for Site: **CT2015 – Branford**

EBI Consulting was directed to analyze the proposed AT&T facility located at **405 Brushy Plain Road, Branford, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **405 Brushy Plain Road, Branford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 2 UMTS channels (850 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 (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 GSM channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

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

6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

7) For the following calculations the sample point was the top of a 6-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 **Powerwave 7770 and the CCI HPA-65R-BUU-H6** for transmission in the 700 MHz, 850 MHz and 1900 MHz (PCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antenna mounting height centerlines of the proposed antennas are **153 feet** above ground level (AGL) for **Sector A**, **153 feet** above ground level (AGL) for **Sector B** and **153 feet** above ground level (AGL) for Sector C.

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

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

AT&T Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	**153 feet**	Height (AGL):	**153 feet**	Height (AGL):	**153 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	6	Channel Count	6	Channel Count	6
Total TX Power(W):	180 Watts	Total TX Power(W):	180 Watts	Total TX Power(W):	180 Watts
ERP (W):	3,453.54	ERP (W):	3,453.54	ERP (W):	3,453.54
Antenna A1 MPE%	**0.68 %**	Antenna B1 MPE%	**0.68 %**	Antenna C1 MPE%	**0.68 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6
Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd
Height (AGL):	**153 feet**	Height (AGL):	**153 feet**	Height (AGL):	**153 feet**
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts
ERP (W):	5,462.56	ERP (W):	5,462.56	ERP (W):	5,462.56
Antenna A2 MPE%	**1.27 %**	Antenna B2 MPE%	**1.27 %**	Antenna C2 MPE%	**1.27 %**

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max per sector	**1.95 %**
Clearwire	0.12 %
Verizon Wireless	3.24 %
Branf PD	0.06 %
PageNet	1.02 %
T-Mobile	2.24 %
Site Total MPE %:	**8.63 %**

AT&T Sector A Total:	1.95 %
AT&T Sector B Total:	1.95 %
AT&T Sector C Total:	1.95 %
Site Total:	8.63 %

AT&T _ Frequency Band / Technology per Sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	414.12	153	1.38	850 MHz	567	0.24%
AT&T 1900 MHz (PCS) UMTS	2	656.33	153	2.18	1900 MHz (PCS)	1000	0.22%
AT&T 1900 MHz (PCS) GSM	2	656.33	153	2.18	1900 MHz (PCS)	1000	0.22%
AT&T 700 MHz LTE	2	940.05	153	3.13	700 MHz	467	0.67%
AT&T 1900 MHz (PCS) LTE	2	1,791.23	153	5.96	1900 MHz (PCS)	1000	0.60%
						Total:	1.95%

Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	1.95 %
Sector B:	1.95 %
Sector C:	1.95 %
AT&T Maximum Total (per sector):	1.95 %
Site Total:	8.63 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **8.63 %** 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.