2/23/2018

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

Regarding: Notice of Exempt Modification – Antenna Swap
Property Address: Catoona Lane, Stamford, CT
AT&T Site: CTL02135 / FA: 10034997

Dear Ms. Bachman:

On behalf of AT&T, 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).

AT&T currently maintains a wireless telecommunications facility on an existing self-support tower at the above-referenced address. American Towers, Inc. owns said facility. The site consists of nine (9) wireless telecommunication antennas at an antenna centerline height of 235-feet on an existing 300-foot self-support tower. AT&T now intends to retain three (3) SBNHH-1D65A panel antennas, position 1, all sectors; three (3) CCI OPA-65R-LCUU-H4 panel antennas, position 3, all sectors; three (3) Powerwave 7770 panel antennas on position 4, all sectors. AT&T plans to install three (3) new KMW EPBQ-654L8H6-L2 on position 2, all sectors (for a total of (12) panel antennas), at the 235-foot level. AT&T also intends to install three (3) RRUS-B14-4478, three (3) RRUS-4426 B66, and one additional DC/Fiber surge suppression dome on the existing antenna masts.

Please accept this letter pursuant to Regulation of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-5I0j-72(b) (2). In accordance with R.C.S.A., a copy of this letter is being sent to David Martin, Mayor, and James Lunney III, Zoning Officer, City of Stamford 888 Washington Boulevard, Stamford, CT 06901. A copy of this letter is also being sent to American Tower Corporation, Tower/Property Owner.

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).

1. The proposed modifications will not result in an increase in the height of the existing tower. AT&T's replacement antennas will be installed at the 235-foot level of the 300-foot monopole.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require and extension of the site boundary.
3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A

cumulative worst-case RF emissions calculation for AT&T's modified facility is provided in the RF Emissions Compliance Report, included,

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (See Structural Analysis Report included).

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

Sincerely,

Ryan Lynch
Real Estate Specialist | Smartlink, LLC
85 Rangeway Road, Building 3, Suite 102
North Billerica, MA 01862

Enclosures

CC w/ enclosures:

David Martin, Mayor, City of Stamford, CT,
James Lunney III, Zoning Officer, City of Stamford, CT,
American Tower, Inc., Tower/Property Owner.

Ryan Lynch

From: TrackingUpdates@fedex.com
Sent: Thursday, March 8, 2018 11:33 AM
To: Ryan Lynch
Subject: FedEx Shipment 771552571249 Delivered

Your package has been delivered

Tracking # 771552571249

Ship date:
Fri, 2/23/2018

Ryan Lynch
Smartlink LLC
North Billerica, MA 01862
US

Delivery date:
Mon, 2/26/2018 9:46 am

ATTN: Zoning
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN, MA 01801105399
US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	771552571249
Status:	Delivered: 02/26/2018 09:46 AM Signed for By: DLONG
Signed for by:	DLONG
Delivery location:	Woburn, MA
Service type:	FedEx Ground
Packaging type:	Package
Number of pieces:	1
Weight:	1.00 lb.
Standard transit:	2/26/2018

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 10:32 AM CST on 03/08/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date the package should be delivered by, based on the selected service, destination, and ship date. Limitations and exceptions may apply.Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

Ryan Lynch

From: TrackingUpdates@fedex.com
Sent: Thursday, March 8, 2018 11:32 AM
To: Ryan Lynch
Subject: FedEx Shipment 771552628436 Delivered

Your package has been delivered

Tracking # 771552628436

Ship date:
Fri, 2/23/2018

Ryan Lynch
Smartlink LLC
North Billerica, MA 01862
US

Delivery date:
Mon, 2/26/2018 2:16 pm

ATTN: Zoning Officer James Lunney
CITY OF STAMFORD
888 WASHINGTON BLVD
STAMFORD, CT 06901290288
US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	771552628436
Status:	Delivered: 02/26/2018 2:16 PM Signed for By: TTRACEY
Signed for by:	TTRACEY
Delivery location:	Stamford, CT
Service type:	FedEx Ground
Packaging type:	Package
Number of pieces:	1
Weight:	1.00 lb.
Standard transit:	2/26/2018

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 10:32 AM CST on 03/08/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date the package should be delivered by, based on the selected service, destination, and ship date. Limitations and exceptions may apply.Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

Ryan Lynch

From: TrackingUpdates@fedex.com
Sent: Thursday, March 8, 2018 11:33 AM
To: Ryan Lynch
Subject: FedEx Shipment 771552608412 Delivered

Your package has been delivered

Tracking # 771552608412

Ship date:
Fri, 2/23/2018

Ryan Lynch
Smartlink LLC
North Billerica, MA 01862
US

Delivery date:
Mon, 2/26/2018 2:21 pm

ATTN: Mayor David Martin
CITY OF STAMFORD
888 WASHINGTON BLVD
STAMFORD, CT 06901290288
US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	771552608412
Status:	Delivered: 02/26/2018 2:21 PM Signed for By: MMARJORIE
Signed for by:	MMARJORIE
Delivery location:	Stamford, CT
Service type:	FedEx Ground
Packaging type:	Package
Number of pieces:	1
Weight:	1.00 lb.
Standard transit:	2/26/2018

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 10:33 AM CST on 03/08/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date the package should be delivered by, based on the selected service, destination, and ship date. Limitations and exceptions may apply.Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

168 CATOONA LANE

Location	168 CATOONA LANE	**Mblu**	000/ 0370/ / /
Acct#	000-0370	**Owner**	AMERICAN TOWERS INC
Assessment	$3,019,920	**Appraisal**	$4,314,160
PID	116	**Building Count**	2

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$422,560	$3,891,600	$4,314,160
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$295,800	$2,724,120	$3,019,920

Owner of Record

Owner	AMERICAN TOWERS INC	**Sale Price**	$1,040,050
Co-Owner		**Book & Page**	5456/ 339
Address	PO BOX 723597 ATLANTA, GA 31139	**Sale Date**	02/17/2000

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
AMERICAN TOWERS INC	$1,040,050	5456/ 339	02/17/2000
AMERICAN T & T CO	$0	1128/ 268	03/15/1968

Building Information

Building 1 : Section 1

Year Built: 1968
Living Area: 3,249

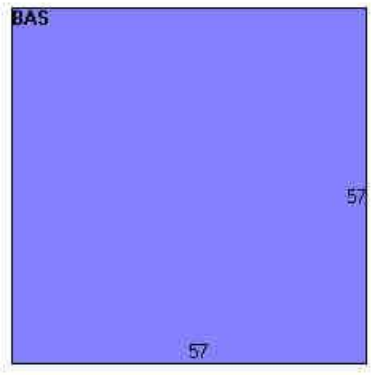
Building Attributes	
Field	**Description**
STYLE	Telephone Bldg
Stories:	1
Occupancy	1

Exterior Wall 1	Reinforc Concr
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	T&G/Rubber
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete Slab
Interior Floor 2	
Heating Fuel	Gas/LP
Heating Type	Hot Air-no Duc
AC Type	Central
Bldg Use	Industrial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	300C
Heat/AC	Heat/AC Pkgs
Frame Type	Masonry
Baths/Plumbing	None
Ceiling/Wall	Ceil & Wall
Rooms/Prtns	Average
Wall Height	15
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/StamfordCTPhotos//\00\11\89/5

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	3,249	3,249
		3,249	3,249

Building 2 : Section 1

Year Built: 1989
Living Area: 600

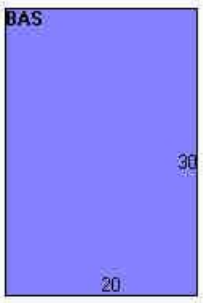
Building Attributes : Bldg 2 of 2	
Field	**Description**
STYLE	Telephone Bldg
Stories:	1
Occupancy	1
Exterior Wall 1	Reinforc Concr
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	T&G/Rubber

Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete Slab
Interior Floor 2	
Heating Fuel	Gas/LP
Heating Type	Hot Air-no Duc
AC Type	Central
Bldg Use	Industrial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	300C
Heat/AC	Heat/AC Pkgs
Frame Type	FireProofSteel
Baths/Plumbing	None
Ceiling/Wall	Ceil & Wall
Rooms/Prtns	Average
Wall Height	10
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/StamfordCTPhotos//\00\11\89/5

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	600	600
		600	600

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	300C
Description	Industrial MDL-94
Zone	MZN
Neighborhood	0300

Land Line Valuation

Size (Acres)	3.64
Depth	
Assessed Value	$2,724,120
Appraised Value	$3,891,600

Alt Land Appr Category No

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
AP1	Fence Chn Lk			2400 L.F.	$20,700	1
LP4	Pavng Asphlt			3880 S.F	$4,660	1
CEL1	Cell Tower			1 SITES	$146,250	1
CSHD	Cell Equipment			240 S.F.	$7,300	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$1,109,510	$3,537,530	$4,647,040
2015	$1,109,510	$3,537,530	$4,647,040
2014	$1,109,510	$3,537,530	$4,647,040

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$776,670	$2,476,270	$3,252,940
2015	$776,670	$2,476,270	$3,252,940
2014	$776,670	$2,476,270	$3,252,940

MAYOR
THOM SERRANI

ZONING BOARD OF APPEALS
977-4160

CITY OF STAMFORD, CONNECTICUT
STAMFORD GOVERNMENT CENTER
888 WASHINGTON BOULEVARD
P.O. BOX 10152
STAMFORD, CT 06904-2152

November 30, 1988

RE: Application for Variance/Special Exception

Dear Applicant/Agent:

Attached is a copy of the Zoning Board of Appeals Certificate of Decision on your application.

This Certificate of Decision will be filed with the Town Clerk of the City of Stamford and advertised in the legal notices of the Advocate tomorrow, December 1, 1988.

Very truly yours,

Georgia A. Bacon
Administrative Assistant
and Clerk of the Board

Attach.

283

ZONING APPEALS BOARD CERTIFICATE VOL 3355 PAGE 350

20109

I, LEONARD DiPRETA, zoning enforcement officer for the City of Stamford, in compliance with Special Act No. 379 of the 1951 General Assembly, hereby certify that on October 26, 1988 a hearing was held by the Zoning Appeals Board on the application of:

SNET CELLULAR, INC.
(So. New England Telephone Company) Appl. #109-88

for a variance of Section 10-A (Non-Conforming Uses) to permit the addition of a one-story (10 ft. high) 21' x 29' concrete equipment building behind existing building and tower which will house radio telephone equipment for cellular mobile telephone service. (Will be associated with antennas to be mounted on the tower).

Said property is located on the north side of Catoona Lane, in both the RM-1 and R-5 zones, and is described as follows:

All that certain parcel of land in Stamford (Fairfield County) Connecticut lying northerly of Catoona Lane, a public way, and more particularly bounded and described as follows:

Beginning at a concrete monument on the northerly sideline of Catoona Lane, said monument marking the southwesterly corner of land of Serafino Stoni and the southeasterly corner of the parcel described herein; thence S 82° 21' 00" W along the northerly sideline of Catoona Lane a distance of 100 feet to a concrete monument; thence N 7° 49' 40" W along land of owners unknown a distance of 125.83 feet to an iron pipe, thence N 81° 20' 15" E a distance of 50.01 feet to a concrete monument; thence N 7° 49' 30" W a distance of 363.95 feet to a concrete monument; thence N 82° 07' 00" E a distance of 402.57 feet to a concrete monument, the last three courses being along land of the City of Stamford; thence S 7° 53' 00" E a distance of 362.07 feet to a concrete monument; thence S 78° 43' 40" W a distance of 6.42 feet to a point; thence S 82° 37' 25" W a distanceof 115.86 feet to a point; thence S 81° 12' 10" W a distance of 80.65 feet to a concrete monument, the last four courses being along land of the grantor herein; thence S 81° 12' 10" W a distance of 19.36 feet to a point; thence S 82° 00' 10" W a distance of 130.71 feet to a concrete monument thence S 7° 49' 40" E a distance of 127.59 feet to the point of beginning and containing 3.645 acres, the last three courses being along land of said Stoni.

The parcel described above is a portion of land described in Book 527 at Page 533, a deed from Sir Douglas Alexander dated October 13, 1943 and described in Book 591 at Page 100, a deed from H.A. Bostron dated January 28, 1947.

and that the land affected is owned by and located on the following streets:

NAME	LOCATION
American Telephone & Telegraph	North side of Catoona Lane

and that the following is a statement of its findings and approval or rejection.

November 16, 1988

To deny this variance would deny the applicant reasonable use of the property.

Therefore, the Board grants a variance of Section 10-A (Non-Conforming Uses) to permit the addition of a one-story (10 ft. high) 21' x 29' concrete equipment building behind existing building and tower which will house radio telephone equipment for cellular mobile telephone service.

The applicant is allowed one year from the effective date of this decision in which to obtain a building permit.

Dated at Stamford, Connecticut, this 1st day of December, 1988.

Raymond D. Sanborne
Raymond D. Sanborne
Chairman; Zoning Board of Appeals

Leonard DiPreta
Leonard DiPreta
Zoning Enforcing Officer of the City of Stamford

The land hereby affected lies in block 283

THE LAND AFFECTED HEREBY LIES IN BLOCK 283
OF THE STAMFORD BLOCK MAP. RECEIVED FOR RECORD
AT STAMFORD ON 12-1-88 AT 9:52A
ATTEST: LOIS PONTBRIANT, TOWN AND CITY CLERK

Sanborne, Chairman; Friedlander; Haygood; Granelli (4 Members Only)

PUBLIC HEARING: October 26, 1988 **BOARD MEETING:** November 16, 1988

APPLICANT:

109-88 SNET CELLULAR, INC.
(So. New England Telephone Company)
North side of Catoona Lane

1— Application of SNET Cellular, Inc. (So. New England Telephone Company) for a variance of Section 10-A (non-Conforming Uses) to permit the addition of a one-story (10' high 21' x 29' concrete equipment building behind existing building and tower which will house radio telephone equipment for cellular mobile telephone service. (Will be associated with antennas to be mounted on the tower). Said property is located on the north side of Catoona Lane, in both the RM-1 and R-5 zones, and is described as follows:
All that certain parcel of land in Stamford (Fairfield Co.) Connecticut lying northerly of Catoona Street, a public way, and more particularly bounded and described as follows:
Beginning at a concrete monument in the northerly sideline of Catoona Street, said monument marking the southwesterly corner of land of Serafino Stoni and the southeasterly corner of the parcel described herein; thence S 82° 21' 00" W along the northerly sideline of Catoona Street a distance of 100.00 feet to a concrete monument; thence N 7° 49' 40" W along land of owners unknown a distance of 125.85 feet to an iron pipe; thence N 81° 20' 15" E a distance of 50.01 feet to a concrete monument; thence N 7° 49' 30" W a distance of 363.95 feet to a concrete monument; thence N 82° 07' 00" E a distance of 402.57 feet to a concrete monument, the last three courses being along land of the City of Stamford; thence S 7° 53' 00" E a distance of 362.07 feet to a concrete monument; thence S 78° 43' 40" W a distance of 6.42 feet to a point; thence S 82° 37' 25" W a distance of 115.86 feet to a point; thence S 81° 12' 10" W a distance of 80.65 feet to a concrete monument, the last four courses being along land of the grantor herein; thence S 81° 12' 10" W a distance of 19.36 feet to a point; thence S 82° 00' 10" W a distance of 130.71 feet to a concrete monument; thence S 7° 49' 40" E a distance of 127.59 feet to the point of beginning and containing 3.645 acres, the last three courses being along land of said Stoni.
The parcel described above is a portion of land described in Book 527 at Page 553, a deed from Sir Douglas Alexander dated October 13, 1943 and land described in Book 591 at Page 100, a deed from H. A. Bostron dated January 28, 1947.

DECISION:

November 16, 1988

To deny this variance would deny the applicant reasonable use of the property.

Therefore, the Board grants a variance of Section 10-A (Non-Conforming Uses) to permit the addition of a one-story (10 ft. high) 21' x 29' concrete equipment building behind existing building and tower which will house radio telephone equipment for cellular mobile telephone service.

The applicant is allowed one year from the effective date of this decision in which to obtain a building permit.

VOTE ON APPLICATION:

YES	NO
Raymond D Sanborne	
Edward E Granelli	
Marc Friedlander	
Merce Haygood	

AMERICAN TOWER®
CORPORATION

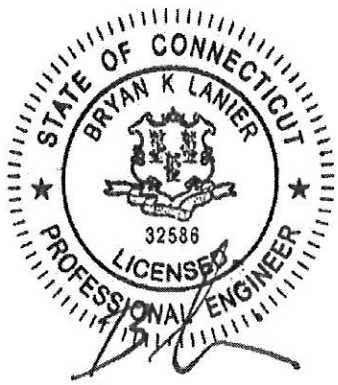
Structural Analysis Report

Structure	:	**300 ft Self Supported AT&T TAG Tower**
ATC Site Name	:	**Stamford (Katoona), CT**
ATC Site Number	:	**88018**
Engineering Number	:	**OAA722004_C3_01**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**Stamford Catoona Lane**
Carrier Site Number	:	**CTL02135 / 10034997**
Site Location	:	**Catoona Lane** **Stamford, CT 06902-4573** **41.052800,-73.563000**
County	:	**Fairfield**
Date	:	**January 31, 2018**
Max Usage	:	**95%**
Result	:	**Pass**

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

Robert D. Barrett

Reviewed By:



Feb 1 2018 9:18 AM cosign

COA: PEC.0001553

AMERICAN TOWER®
CORPORATION

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Foundations 4

Standard Conditions 5

Calculations ..... Attached

AMERICAN TOWER®
CORPORATION

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 300 ft self supported AT&T tag tower to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	CSEI Analysis, ATC Eng. #73123451, dated September 28, 2005
Foundation Drawing	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
Geotechnical Report	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
Modifications	ATC Eng. #42439132, dated September 26, 2008 ATC Eng. #44209632, dated December 2, 2009

Analysis

The tower was analyzed using Power Line Systems, Inc. tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	93 mph (3-Second Gust, V_{asd}) / 120 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft

Conclusion

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

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

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
300.0	338.0	1	TX RX Systems 101-68-10-X-03N	Platform w/ Handrails	(1) 1 1/4" Coax	Marcus Comm.
	324.0	1	15' Omni-Grid		(1) 1 5/8" Coax	
	320.0	1	12' Omni		-	Other
	311.0	1	Radio/ODU		(1) 7/8" Coax	Marcus Comm.
		1	4' Std. Dish			
	307.0	1	Radio/ODU		(1) 1/2" Coax	Other
		1	3' HP Dish			
	303.0	3	DragonWave Horizon Compact		(5) 7/8" Coax	Clearwire
		3	DragonWave A-ANT-18G-2-C			
275.0	275.0	1	Rohde & Schwarz ADD090	Side Arm	(2) 7/8" Coax	US Dept Of Homeland Security
270.0	270.0	1	Dielectric TLP-08M-2E	Side Arms	-	Other
		2	Til-Tek TA-2350-DAB		(1) 1 5/8" Coax	Sirius XM Radio
268.0	268.0	3	Ericsson AIR 21, 1.3 M, B2A B4P	Sector Frames	(15) 1 5/8" Coax (3) 7/8" Fiber	T-Mobile
		3	Ericsson AIR-32 B2A/B66Aa			
		3	Andrew LNX-6515DS-VTM			
		3	RFS ATMAA1412D-1A20			
		3	Ericsson RRUS 11 B12			
260.0	260.0	-	-	-	(1) EW20	Sirius XM Radio
250.0	250.0	1	Sinclair SC281-L	Side Arm	(1) 7/8" Coax	US Dept Of Homeland Security
246.0	246.0	1	Sinclair SC381-HL	Side Arm	(1) 7/8" Coax	
235.0	235.0	6	CCI TPX-070821	Sector Frames	(12) 1 5/8" Coax (4) 0.74" 8 AWG 7 (2) 0.39" Fiber Trunk	AT&T Mobility
		6	Powerwave TT19-08BP111-001			
		2	Raycap DC2-48-60-0-9E			
		6	Ericsson RRUS A2			
		3	Ericsson RRUS-11 800 MHz			
		3	Ericsson RRUS 32			
		3	Ericsson RRUS 32 B2			
		3	Ericsson RRUS E2 B29			
		3	Ericsson RRUS-11			
		3	Powerwave 7770.00			
		3	Andrew SBNHH-1D65A			
		3	CCI OPA-65R-LCUU-H4			
222.0	222.0	12	Decibel DB844H90E-XY	Sector Frames	(15) 1 5/8" Coax	Sprint Nextel
207.0	207.0	1	Sinclair SC281-L	Side Arm	(1) 7/8" Coax	US Dept Of Homeland Security
200.0	200.0	2	TX RX Systems 101-68-10-X-03N	Side Arms	(2) 1 1/4" Coax	Marcus Comm.
193.0	193.0	2	Antel BCD-87010___	Side Arms	(3) 7/8" Coax	Spok Holdings
		1	30" x 30" Reflector	Leg		
175.0	175.0	1	12" x 12" Junction Box	Leg	-	Clearwire
171.0	171.0	3	NextNet BTS-2500	T-Arms	(6) 5/16" Coax (2) 2" Conduit	
		3	Argus LLPX310R			

Existing and Reserved Equipment (Continued)

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
165.0	165.0	15	RCU	Leg	(12) 1 5/8" Coax (1) 3/8" RET Control Cable (1) 3/8" Coax	Metro PCS
		6	Kathrein 800 10504			
155.0	155.0	3	Alcatel-Lucent ALU 800MHz External Notch Filter	Sector Frames	(5) 1 1/4" Hybriflex	Sprint Nextel
		3	RFS IBC1900HB-2			
		3	Alcatel-Lucent 800MHz RRH			
		6	Alcatel-Lucent 1900MHz RRH			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS APXVTM14-C-I20			
		3	RFS APXVSPP18-C-A20			
139.0	139.0	1	Antel BCD-87010 ___ 4°	Side Arm	(1) 7/8" Coax	Sensus USA
135.0	135.0	1	L-com HG908U-PRO	Stand-Off	(1) 0.38" Cat 5e (1) 1/2" Coax	Senet
130.0	130.0	1	Tycon ENC-DC	Side Arm	-	
120.0	120.0	1	Channel Master Type 120	Stand-Off	(1) 1/2" Coax	Spok Holdings
107.0	107.0	1	TX RX Systems 101-68-10-X-03N	Side Arm	(1) 1 1/4" Coax	Marcus Comm.
92.0	92.0	3	Alcatel-Lucent RRH2X60-1900A-4R	Sector Frames	(3) 1 1/4" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x60 700			
		3	Alcatel-Lucent RRH4x45-B66 w/o Solar Shield			
		3	RFS DB-T1-6Z-8AB-0Z			
		6	Andrew SBNHH-1D65B			
		6	72" x 14" Panel			
22.0	22.0	1	Til-Tek TA-2324-LHCP	Leg	(1) 7/8" Coax	Sirius XM Radio
6.0	6.0	1	Trimble Acutime 2000	Leg	(1) 1/2" Coax (1) 1/4" Coax	Spok Holdings
		1	Channel Master Type 120			

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
235.0	235.0	3	KMW AM-X-CD-14-65-00T-RET	-	-	AT&T Mobility
		3	Ericsson RRUS 12			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
235.0	235.0	1	Raycap DC6-48-60-18-8F	Sector Frames	(2) 0.78" 8 AWG 6	AT&T Mobility
		3	Ericsson RRUS 4426 B66			
		3	Ericsson RRUS 4478 B14			
		3	KMW EPBQ-654L8H6-L2			

[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).

Install proposed coax alongside existing AT&T Mobility coax.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	76%	Pass
Diagonals	87%	Pass
Truss Diagonals	92%	Pass
Horizontals	81%	Pass
Truss Horizontals	95%	Pass
Anchor Bolts	51%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	338.8	88%
Axial (Kips)	475.4	5%

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.

AMERICAN TOWER®
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Standard Conditions

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

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

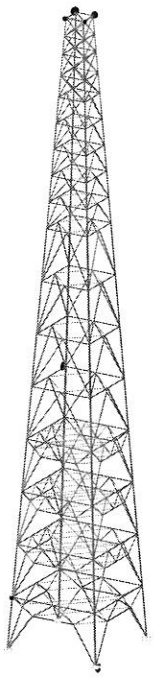
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

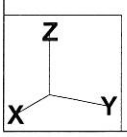
All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

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

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

American Tower Corp., Project: "2018.01.31 - at&t mobility - oaa722004_c3_01"
Tower Version 15.00, 7:47:32 PM Wednesday, January 31, 2018
Undeformed geometry displayed





Project Name : 88018 - Stamford (Katsona), CT
Project Notes: OAA722004_C3_01 - AT&T Mobility
Project File : n:\12 - atc\88018\2018.01.31 - at&t mobility - oaa722004_c3_01\2018.01.31 - at&t mobility - oaa722004_c3_01.tow
Date run : 7:27:08 PM Wednesday, January 31, 2018
by : Tower Version 15.00
Licensed to : American Tower Corp.

Successfully performed nonlinear analysis

The model has 0 warnings.

Member check option: ANSI/TIA 222-G-1
Connection rupture check: Not Checked
Crossing diagonal check: Fixed
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force
Loads from file: n:\12 - atc\88018\2018.01.31 - at&t mobility - oaa722004_c3_01\2018.01.31 - at&t mobility - oaa722004_c3_01.eia

*** Analysis Results:

Maximum element usage is 94.82% for Angle "LH 3X" in load case "W -45"

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Bending Moment (ft-k)	Vert. Moment (ft-k)	Found. Usage %
W 0	0P	-45.82	-22.10	-344.30	50.87	-0.91	-5.36	5.44	-2.14	0.00
W 0	0X	-43.95	22.54	-334.13	49.39	0.87	-5.07	5.10	2.26	0.00
W 0	0XY	-34.43	-14.89	208.56	37.51	0.51	-5.61	5.63	2.06	0.00
W 0	0Y	-35.42	13.91	204.71	38.06	-0.35	-5.91	5.92	-2.03	0.00
W 180	0P	35.51	13.67	201.79	38.05	-0.33	5.96	5.99	1.93	0.00
W 180	0X	34.31	-14.42	201.99	37.22	0.52	5.71	5.74	-2.27	0.00
W 180	0XY	44.06	22.42	-331.28	49.44	0.56	5.17	5.20	-2.27	0.00
W 180	0Y	45.52	-21.64	-337.67	50.40	-0.91	5.43	5.51	2.27	0.00
W 45	0P	-47.25	-47.37	-475.41	66.90	3.47	-3.44	4.89	0.13	0.00
W 45	0X	-20.11	-11.72	-63.75	23.28	4.62	-3.65	5.89	3.13	0.00
W 45	0XY	-39.19	-39.29	338.81	55.50	4.41	-4.39	6.23	-5.00	0.00
W 45	0Y	-11.54	-20.28	-64.82	23.34	3.67	-4.60	5.88	-3.13	0.00
W -45	0P	-21.44	12.51	-70.02	24.83	-4.87	-3.87	6.23	-3.19	0.00
W -45	0X	-45.78	47.54	-467.19	66.00	-3.72	-3.23	4.93	0.01	0.00
W -45	0XY	-12.78	19.64	-62.73	22.41	-3.56	-4.37	5.64	3.16	0.00
W -45	0Y	-39.78	38.49	334.78	55.35	-4.30	-4.61	6.30	0.03	0.00
W 90	0P	-22.06	-46.11	-344.52	51.11	5.39	0.93	5.47	2.26	0.00
W 90	0X	13.93	-35.57	205.24	36.20	5.95	0.35	5.96	2.53	0.00
W 90	0XY	-14.89	-34.47	208.45	37.55	5.62	-0.52	5.64	-2.27	0.00
W 90	0Y	22.60	-44.00	-334.33	49.47	5.06	-1.56	5.11	-2.06	0.00
W -90	0P	13.67	35.90	202.26	38.41	-6.00	0.33	6.01	-2.04	0.00
W -90	0X	-21.63	45.66	-338.63	50.53	-5.45	0.94	5.53	-2.27	0.00
W -90	0XY	22.49	44.02	-331.32	49.43	-5.16	-0.54	5.19	2.27	0.00
W -90	0Y	-14.49	34.30	202.52	37.24	-5.70	-0.53	5.72	2.08	0.00
W 0 Ice	0P	-20.46	-14.14	-198.61	24.87	-1.50	-0.16	1.51	-0.57	0.00
W 0 Ice	0X	-19.69	14.21	-192.85	24.29	1.36	-0.07	1.36	0.58	0.00
W 0 Ice	0XY	-2.01	3.29	-39.51	3.85	1.39	-2.81	3.13	0.58	0.00
W 0 Ice	0Y	-2.02	-3.47	-43.73	4.01	-1.43	-2.89	3.22	-0.56	0.00
W 180 Ice	0P	2.00	-3.86	-48.31	4.35	-1.41	2.98	3.30	0.55	0.00
W 180 Ice	0X	2.02	3.64	-44.84	4.16	1.40	2.93	3.25	-0.59	0.00
W 180 Ice	0XY	19.76	13.99	-188.30	24.21	1.34	0.19	1.35	-0.60	0.00
W 180 Ice	0Y	20.36	-13.76	-193.25	24.56	-1.51	0.24	1.53	0.61	0.00
W 45 Ice	0P	-21.36	-21.40	-236.52	30.24	-0.29	0.30	0.42	0.92	0.00
W 45 Ice	0X	-12.97	4.64	-118.24	13.78	2.51	0.32	2.53	0.86	0.00
W 45 Ice	0XY	-3.52	-3.55	-1.92	5.00	2.49	-2.48	3.52	-3.00	0.00
W 45 Ice	0Y	4.67	-12.98	-118.52	13.80	-0.31	-2.50	2.52	-0.86	0.00
W -45 Ice	0P	-13.59	-4.51	-123.15	14.31	-2.63	0.25	2.64	-0.88	0.00
W -45 Ice	0X	-23.77	21.42	-231.20	29.83	0.17	0.36	0.40	-0.01	0.00
W -45 Ice	0XY	4.69	12.87	-114.15	13.70	0.25	-2.43	2.44	0.87	0.00
W -45 Ice	0Y	-3.45	3.41	-6.21	4.85	-2.55	-2.55	3.60	0.02	0.00
W 90 Ice	0P	-14.11	-20.53	-198.67	24.91	0.17	1.51	1.52	0.60	0.00
W 90 Ice	0X	-3.49	-2.03	-44.05	4.04	2.90	1.44	3.24	0.56	0.00
W 90 Ice	0XY	3.30	-2.03	-39.54	3.87	2.82	-1.39	3.14	-0.58	0.00
W 90 Ice	0Y	14.21	-19.68	-192.43	24.28	0.07	-1.35	1.35	-0.58	0.00
W -90 Ice	0P	-3.85	2.06	-48.20	4.36	-2.98	1.42	3.30	-0.57	0.00
W -90 Ice	0X	-13.77	20.40	-193.91	24.61	-0.24	1.52	1.54	-0.61	0.00
W -90 Ice	0XY	14.02	19.73	-188.29	24.20	-0.18	-1.33	1.34	0.60	0.00
W -90 Ice	0Y	3.60	2.03	-44.30	4.14	-2.92	-1.40	3.24	0.59	0.00

Summary of Joint Support Reactions For All Load Cases in Direction of Leg:

Load Case	Support Origin Joint	Joint	Leg Force In Member	Residual Shear Leg Dir. (kips)	Residual Shear Perpendicular To Leg (kips)	Residual Shear Horizontal To Leg - Res. (kips)	Residual Shear Horizontal To Leg - Long. (kips)	Residual Shear Horizontal To Leg - Tran. (kips)	Total Long. Force (kips)	Total Tran. Force (kips)	Total Vert. Force (kips)
W 0	0P	1P	L 1P	347.175	24.555	24.605	24.590	0.866	-45.82	-22.10	-344.30
W 0	0X	1X	L 1X	336.953	23.376	23.427	23.347	-1.933	-43.95	22.54	-334.13
W 0	0XY	1XY	L 1XY	-210.796	21.619	21.668	21.573	2.024	-34.43	-14.89	208.56
W 0	0Y	1Y	L 1Y	-206.969	22.785	22.833	22.797	-1.289	-35.42	13.91	204.71
W 180	0P	1P	L 1P	-204.045	23.050	23.099	-23.066	-1.227	35.51	13.67	201.79
W 180	0X	1X	L 1X	-204.224	21.896	21.945	-21.857	1.963	34.31	-14.42	201.99
W 180	0XY	1XY	L 1XY	334.109	23.663	23.715	-23.632	-1.991	44.06	22.42	-331.28
W 180	0Y	1Y	L 1Y	340.521	24.662	24.711	-24.698	0.814	45.52	-21.64	-337.67
W 45	0P	1P	L 1P	479.425	25.347	25.443	17.930	18.052	-47.25	-47.37	-475.41
W 45	0X	1X	L 1X	64.020	22.514	22.554	16.184	15.482	-20.11	-11.72	-63.75
W 45	0XY	1XY	L 1XY	-342.346	25.850	25.948	18.302	18.394	-39.19	-39.29	338.81
W 45	0Y	1Y	L 1Y	65.109	22.509	22.509	15.540	16.295	-11.54	-20.28	-64.82
W -45	0P	1P	L 1P	70.306	24.011	24.011	17.125	-16.830	-21.44	12.51	-70.02
W -45	0X	1X	L 1X	471.161	25.180	25.276	16.972	-18.730	-45.78	47.54	-467.19
W -45	0XY	1XY	L 1XY	63.036	21.528	21.528	14.647	-15.777	-10.78	19.64	-62.73
W -45	0Y	1Y	L 1Y	-338.319	26.061	26.160	19.131	-17.842	-39.78	38.49	334.78
W 90	0P	1P	L 1P	347.404	24.825	24.875	0.810	24.862	-22.06	-46.11	-344.52
W 90	0X	1X	L 1X	-207.505	22.903	22.951	-1.277	22.915	13.93	-35.57	205.24
W 90	0XY	1XY	L 1XY	-210.690	21.659	21.707	2.038	21.611	-14.89	-34.47	208.45
W 90	0Y	1Y	L 1Y	337.162	23.416	23.468	-1.287	23.384	22.60	-44.00	-334.33
W -90	0P	1P	L 1P	-204.543	23.405	23.454	-1.201	-23.423	13.67	35.90	202.26
W -90	0X	1X	L 1X	341.485	24.740	24.790	0.749	-24.778	-21.63	45.66	-338.63
W -90	0XY	1XY	L 1XY	334.155	23.627	23.680	-2.057	-23.590	22.49	44.02	-331.32
W -90	0Y	1Y	L 1Y	-204.754	21.858	21.906	2.005	-21.915	-14.49	34.30	202.52
W 0 Ice	0P	1P	L 1P	199.987	8.399	8.422	8.208	1.889	-20.46	-14.14	-198.61
W 0 Ice	0X	1X	L 1X	194.203	8.116	8.139	7.803	-2.317	-19.69	14.21	-192.85
W 0 Ice	0XY	1XY	L 1XY	39.438	4.521	4.526	4.446	-0.855	-2.01	3.29	-39.51
W 0 Ice	0Y	1Y	L 1Y	43.651	4.769	4.775	4.712	0.735	-2.02	-3.47	-43.73
W 180 Ice	0P	1P	L 1P	48.244	5.046	5.053	-4.975	0.882	2.00	-3.86	-48.31
W 180 Ice	0X	1X	L 1X	44.770	4.860	4.866	-4.787	-0.874	2.02	3.64	-44.84
W 180 Ice	0XY	1XY	L 1XY	189.660	8.467	8.492	-8.153	-2.374	19.76	13.99	-188.30
W 180 Ice	0Y	1Y	L 1Y	194.611	8.604	8.627	-8.428	1.839	20.35	-13.76	-193.25
W 45 Ice	0P	1P	L 1P	98.250	9.573	9.609	6.773	6.817	-21.36	-21.40	-236.52
W 45 Ice	0X	1X	L 1X	118.873	6.264	6.267	5.679	2.650	-12.97	4.64	-118.24
W 45 Ice	0XY	1XY	L 1XY	1.478	5.151	5.170	3.640	3.671	-3.52	-3.55	-1.92
W 45 Ice	0Y	1Y	L 1Y	118.660	6.271	6.274	2.608	5.706	4.67	-12.98	-118.02
W -45 Ice	0P	1P	L 1P	123.796	6.735	6.737	5.991	-3.082	-13.59	-4.51	-123.15
W -45 Ice	0X	1X	L 1X	232.912	9.639	9.675	6.508	-7.159	-20.77	21.42	-231.20
W -45 Ice	0XY	1XY	L 1XY	114.792	6.288	6.292	2.353	-5.835	4.69	12.87	-114.15
W -45 Ice	0Y	1Y	L 1Y	5.762	5.375	5.396	3.834	-3.796	-3.45	3.41	-6.21
W 90 Ice	0P	1P	L 1P	200.049	8.468	8.488	1.860	8.281	-14.11	-20.53	-198.67
W 90 Ice	0X	1X	L 1X	43.977	4.806	4.812	2.770	4.752	-3.49	-2.03	-44.05
W 90 Ice	0XY	1XY	L 1XY	39.473	4.843	4.849	-0.861	4.666	3.30	-2.03	-39.54
W 90 Ice	0Y	1Y	L 1Y	193.789	8.138	8.162	-2.345	7.817	14.21	-19.68	-192.43
W -90 Ice	0P	1P	L 1P	48.126	5.097	5.103	0.873	-5.028	-3.85	2.06	-48.20
W -90 Ice	0X	1X	L 1X	195.272	8.608	8.631	1.809	-8.440	-13.77	20.40	-193.91
W -90 Ice	0XY	1XY	L 1XY	189.656	8.446	8.470	-2.405	-8.122	14.02	19.73	-188.29
W -90 Ice	0Y	1Y	L 1Y	44.027	4.839	4.845	-0.872	-4.765	3.60	2.03	-44.30

Overturning Moment Summary For All Load Cases:

Load Case	Transverse Moment (ft-k)	Longitudinal Moment (ft-k)	Torsional Moment (ft-k)	Resultant Moment (ft-k)	Transverse Force (kips)	Longitudinal Force (kips)	Vertical Force (kips)
W 0	322.361	-25129.189	98.204	25111.228	0.532	159.628	265.168
W 180	151.855	24672.776	-96.325	24673.243	-0.033	-159.404	265.168
W 45	18751.618	-18702.300	-0.921	26483.943	113.658	118.099	265.168
W -45	-18277.571	-18613.111	151.286	26086.730	-118.183	117.781	265.168
W 90	25128.401	-307.967	-108.570	25130.288	160.146	0.411	265.168
W -90	-24718.954	-174.667	112.881	24719.566	-159.881	-0.037	265.168
W 0 Ice	729.592	-7089.188	23.550	7092.905	0.112	44.175	474.698
W 180 Ice	193.654	6633.331	-23.137	6635.858	-0.007	-44.128	474.698
W 45 Ice	5390.734	-5400.717	-0.648	7630.711	33.297	33.181	474.698
W -45 Ice	-4967.608	-5381.819	36.193	7324.006	-33.191	33.116	474.698
W 90 Ice	7072.845	-247.208	-26.262	7077.157	44.278	0.286	474.698
W -90 Ice	-6663.222	-218.788	27.086	6666.813	-44.220	-0.008	474.698

EIA Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Top Width (ft)	Bottom Width (ft)	Gross Face Area (ft^2)	Af Face Adjust Factor	Ar Face Adjust Factor	Dead Load Factor
291.4-300.0	300.000	291.417	8	20	9.30	10.06	81.79	1.1220	1.1220	1.346
282.8-291.4	291.417	282.834	8	16	10.06	11.12	90.89	1.2150	1.2150	1.458
272.7-282.8	282.834	272.667	8	16	11.12	12.37	119.40	1.1970	1.1970	1.436

262.5-272.7	272.667	262.500	12	24	12.37	13.63	132.15	1.2030	1.2030	1.444
250.0-262.5	262.500	250.000	16	24	13.63	15.17	179.95	1.2010	1.2010	1.441
237.5-250.0	250.000	237.500	16	24	15.17	16.71	199.22	1.2070	1.2070	1.449
225.0-237.5	237.500	225.000	16	24	16.71	18.25	218.49	1.2130	1.2130	1.456
212.5-225.0	225.000	212.500	16	24	18.25	19.79	237.76	1.2190	1.2190	1.463
200.0-212.5	212.500	200.000	16	24	19.79	21.33	257.03	1.2250	1.2250	1.470
175.0-200.0	200.000	175.000	16	24	21.33	24.42	571.88	1.2320	1.2320	1.479
150.0-175.0	175.000	150.000	16	24	24.42	27.50	648.96	1.2570	1.2570	1.509
125.0-150.0	150.000	125.000	16	24	27.50	30.58	726.04	1.2660	1.2660	1.519
100.0-125.0	125.000	100.000	20	32	30.58	33.67	803.13	1.2790	1.2790	1.535
75.00-100.0	100.000	75.000	36	76	33.67	36.75	880.21	1.2760	1.2760	1.531
50.00-75.00	75.000	50.000	36	76	36.75	39.83	957.29	1.2790	1.2790	1.535
25.00-50.00	50.000	25.000	32	68	39.83	42.92	1034.38	1.2820	1.2820	1.539
0.000-25.00	25.000	0.000	20	40	42.92	46.00	1111.46	1.3210	1.3210	1.586

Printed capacities do not include the strength factor entered for each load case.
The Group Summary reports on the member and load case that resulted in maximum usage
which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Control	Max Use In Comp. %	Comp. Control Member	Comp. Force (kips)	Comp. Control Load Case	L/r Capacity (kips)	Comp. Connect. Shear Capacity (kips)	Comp. Connect. Bearing Capacity (kips)	RLX	RLY	RLZ	L/r	KL/r	Length Comp. Member (ft)	Curve No.	No. Of Bolts Comp.
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	75.84	Comp	75.84	L 1P	-417.644	W 45	464.114	0.000	0.000	0.281	0.281	0.281	54.30	54.30	25.095	1	0
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	71.49	Comp	71.49	L 2P	-355.053	W 45	464.114	0.000	0.000	0.281	0.281	0.281	54.30	54.30	25.095	1	0
Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	66.11	Comp	66.11	L 3P	-306.812	W 45	464.114	0.000	0.000	0.281	0.281	0.281	54.30	54.30	25.095	1	0
Leg S4	L 8" x 8" x 1"	SAE	8X8X1	36.0	61.66	Comp	61.66	L 4P	-256.560	W 45	416.121	0.000	0.000	0.281	0.281	0.281	54.30	54.30	25.095	1	0
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	70.96	Comp	70.96	L 5P	-245.284	W 45	345.671	0.000	0.000	0.333	0.333	0.333	63.93	63.93	25.095	1	0
Leg S6	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	58.70	Comp	58.70	L 6P	-202.905	W 45	345.671	0.000	0.000	0.333	0.333	0.333	63.93	63.93	25.095	1	0
Leg S7	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	54.03	Comp	54.03	L 7P	-161.934	W 45	299.714	0.000	0.000	0.333	0.333	0.333	63.53	63.53	25.095	1	0
Leg S8	L 8" x 8" x 0.625"	SAE	8X8X0.63	36.0	49.26	Comp	49.26	L 8P	-124.010	W 45	251.771	0.000	0.000	0.333	0.333	0.333	63.53	63.53	25.095	1	0
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	47.57	Comp	47.57	L 9P	-104.610	W 45	219.900	0.000	0.000	0.500	0.500	0.500	64.35	64.35	12.547	1	0
Leg S10	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	38.50	Comp	38.50	L 10P	-84.663	W 45	219.900	0.000	0.000	0.500	0.500	0.500	64.35	64.35	12.547	1	0
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	40.32	Comp	40.32	L 11P	-67.797	W 45	168.148	0.000	0.000	0.500	0.500	0.500	63.80	63.80	12.547	1	0
Leg S12	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	30.88	Comp	30.88	L 12P	-51.930	W 45	168.148	0.000	0.000	0.500	0.500	0.500	63.80	63.80	12.547	1	0
Leg S13	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0	27.57	Comp	27.57	L 13P	-36.609	W 45	132.797	0.000	0.000	0.500	0.500	0.500	63.26	63.26	12.547	1	0
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	25.89	Comp	25.89	L 14P	-28.615	W 45	110.546	0.000	0.000	0.500	0.500	0.500	62.10	62.10	10.206	1	0
Leg S15	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	15.95	Comp	15.95	L 15P	-17.631	W 45	110.546	0.000	0.000	0.500	0.500	0.500	62.10	62.10	10.206	1	0
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	10.82	Comp	10.82	L 16P	-9.189	W 45	84.920	0.000	0.000	0.500	0.500	0.500	52.01	52.01	8.616	1	0
Leg S17	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	5.62	Comp	5.62	L 17P	-4.775	W 45	84.920	0.000	0.000	0.500	0.500	0.500	52.01	52.01	8.616	1	0
Diag S1	B/B L3"x4"x0.3125"	DAS	4X3X0.31	36.0	78.51	Comp	78.51	D 2X	-48.042	W -90	61.196	0.000	0.000	0.310	0.920	0.310	124.62	122.84	21.786	6	0
Diag S2	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	36.0	84.54	Comp	84.54	D 4X	-53.680	W -90	63.493	0.000	0.000	0.310	0.620	0.310	94.31	94.31	20.916	1	0
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	86.84	Comp	86.84	D 6X	-53.169	W -90	48.311	0.000	0.000	0.333	0.667	0.333	111.82	111.82	20.550	1	0
Diag S4	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	86.27	Comp	86.27	D 8X	-53.574	W -90	49.384	0.000	0.000	0.333	0.667	0.333	109.94	109.94	20.204	1	0
Diag S5	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	72.78	Comp	72.78	D 9X	-33.167	W -90	45.574	0.000	0.000	0.333	0.667	0.333	134.71	129.05	30.178	6	0
Diag S6	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	69.19	Comp	69.19	D 11X	-32.519	W -90	46.997	0.000	0.000	0.333	0.667	0.333	131.00	126.76	29.346	6	0
Diag S7	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	61.70	Comp	61.70	D 13X	-29.826	W -90	48.336	0.000	0.000	0.333	0.667	0.333	127.55	124.64	28.573	6	0
Diag S8	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	64.84	Comp	64.84	D 15X	-28.208	W -90	43.503	0.000	0.000	0.333	0.667	0.333	140.20	132.43	27.864	6	0
Diag S9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	34.76	Comp	34.76	D 18Y	-16.186	W 180	46.570	0.000	0.000	0.320	0.590	0.320	97.87	97.87	16.451	1	0
Diag S10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	57.71	Comp	57.71	D 20P	-14.719	W 0	25.507	0.000	0.000	0.500	1.000	0.500	160.96	145.19	15.962	6	0
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	75.62	Comp	75.62	D 22P	-13.592	W 0	17.975	0.000	0.000	0.480	0.960	0.480	190.92	163.61	15.495	6	0
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	65.50	Comp	65.50	D 23P	-11.574	W 90	17.669	0.000	0.000	0.500	1.000	0.500	193.21	165.03	15.054	6	0
Diag S13	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	59.50	Comp	59.50	D 25P	-10.942	W 90	18.390	0.000	0.000	0.500	1.000	0.500	187.90	161.76	14.641	6	0
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	37.65	Comp	37.65	D 28X	-7.154	W -90	19.003	0.000	0.000	0.520	0.520	0.520	148.48	141.74	16.514	5	0
Diag S15	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	21.49	Comp	21.49	D 29Y	-4.494	W 180	20.914	0.000	0.000	0.520	0.520	0.520	139.78	135.11	15.546	5	0
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	16.92	Comp	16.92	D 31P	-2.885	W 0	17.044	0.000	0.000	0.520	0.520	0.520	143.77	138.16	13.640	5	0
Diag S17	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	12.90	Comp	12.90	D 33P	-2.414	W 0	18.723	0.000	0.000	0.520	0.520	0.520	135.30	131.69	12.836	5	0
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	81.02	Comp	81.02	H 1P	-38.420	W -90	47.419	0.000	0.000	0.480	0.480	0.480	113.39	113.39	21.458	1	0
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	55.99	Comp	55.99	H 3P	-39.436	W -90	70.437	0.000	0.000	0.500	0.500	0.500	73.09	73.09	13.278	1	0
Horiz 3	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	49.64	Comp	49.64	H 5P	-36.462	W -90	73.448	0.000	0.000	0.500	0.500	0.500	67.43	67.43	12.250	1	0
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	77.66	Comp	77.66	H 7P	-34.182	W -90	44.013	0.000	0.000	0.470	0.940	0.470	112.02	112.02	11.222	1	0
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	74.90	Comp	74.90	H 9P	-16.224	W -90	21.660	0.000	0.000	1.000	1.000	1.000	194.18	165.62	15.292	6	0
Horiz 6	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	58.67	Comp	58.67	H 11P	-14.779	W -90	25.190	0.000	0.000	1.000	1.000	1.000	174.60	153.58	13.750	6	0
Horiz 7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	61.86	Comp	61.86	H 13P	-12.464	W -90	20.147	0.000	0.000	1.000	1.000	1.000	190.51	163.36	12.208	6	0
Horiz 8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	45.80	Comp	45.80	H 16P	-11.156	W 180	24.360	0.000	0.000	1.000	1.000	1.000	166.45	148.57	10.667	6	0
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	36.33	Comp	36.33	H 18P	-9.802	W 180	26.980	0.000	0.000	1.000	1.000	1.000	154.42	141.17	9.896	6	0
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	27.47	Comp	27.47	H 20Y	-8.255	W 0	30.046	0.000	0.000	1.000	1.000	1.000	142.39	133.77	9.125	6	0
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	22.09	Comp	22.09	H 22Y	-7.340	W 0	33.265	0.000	0.000	1.000	1.000	1.000	130.36	126.37	8.354	6	0
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	17.01	Comp	17.01	H 23P	-6.277	W -90	36.894	0.000	0.000	1.000	1.000	1.000	118.34	118.34	7.583	1	0
Horiz 13	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	11.16	Comp	11.16	H 25X	-4.749	W 90	42.534	0.000	0.000	1.000	1.000	1.000	106.31	106.31	6.813	1	0
Horiz 14	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	6.02	Tens	5.74	H 27Y	-0.531	W 0	9.254	0.000	0.000	0.500	1.000	0.500	197.15	178.83	12.371	5	0
Horiz 15	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	1.67	Tens	0.58	H 29Y	-0.238	W 0	40.911	0.000	0.000	0.500	1.000	0.500	118.06	118.06	11.117	1	0
Horiz 16	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	2.34	Tens	0.00	H 32X	0.000		13.023	0.000	0.000	0.500	1.000	0.500	160.30	150.75	10.059	5	0
Horiz 17	C8x11.5	CHN	C8x11.5	36.0	1.06	Comp	1.06	H 33P	-0.316	W -90	29.726	0.000	0.000	1.000	1.000	1.000	172.80	160.27	9.000	5	0
LD 1	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	67.14	Comp	67.14	LD 1X	-19.353	W -90	28.827	0.000	0.000	0.850	0.850	0.850	146.95	136.57	12.836	6	0
LD 2	B/B L4"x3"x0.25"	DAL	4X3X0.25	36.0	77.37	Comp	77.37	LD 3X	-50.749	W -90	65.590	0.000	0.000	0.820	0.820	0.820	98.68	98.68	12.836	1	0
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	92.34	Comp	92.34	LD 7X	-25.384	W -45	24.372	0.000	0.000	0.870	0.870	0.870	153.35	140.51	11.516	6	0
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	86.09	Comp	86.09	LD 9X	-35.003	W -90	40.657	0.000	0.000	0.800	0.800	0.800	100.25	100.25	8.187	1	0
LD 6	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	72.64	Comp	72.64	LD 11P	-37.964	W -90	52.263	0.000	0.000	0.840	0.840	0.840	104.93	104.93	9.681	1	0
LD 7	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	58.16	Comp	58.16	LD 13X	-25.011	W -45	43.005	0.000	0.000	0.865	0.865	0.865	122.12	121.30	10.941	6	0
LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	85.54	Comp	85.54	LD 15X	-34.518	W -90	40.354	0.000	0.000	0.820	0.820	0.820	100.96	100.96	8.044	1	0
LD 9	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	84.23	Comp	84.23	LD 17P	-37.115	W -90	44.061	0.000	0.000	0.820	0.820	0.820	103.11	103.11	9.336	1	0
LD 10	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	55.54	Comp	55.54	LD 19X	-25.750	W -45	46.365	0.000	0.000	0.860	0.860	0.860	115.26	115.26	10.387	1	0
LD 11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	84.01	Comp	84.01	LD 21X	-34.512	W -90	41.083	0.000	0.000	0.820	0.820	0.820	99.26	99.26	7.909	1	0
LD 12	B/B L2.5"x2.5"x0.375"	DAE	2.5X2.5X0.38	36.0	69.93	Comp	69.93	LD 23P	-36.266	W -90	51.857	0.000	0.000	0.850	0.850	0.850	122.01	121.24	9.008	6	0
LH 1	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	11.73	Tens	0.00	LH 2X	0.000		0.001	0.000	0.000	100.000	100.000	100.000	34196.55	21077.08	21.458	6	0
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	94.82	Comp	94.82	LH 3X	-29.081	W -45	24.347	0.000	0.000	1.000	2.000	1.000	178.89	156.22	10.808	6	0
LH 3	B/B L2.5"x3"x0.375"	DAS	3X2.5X0.38	36.0	68.83	Comp	68.83	LH 5X	-27.760	W -45	40.333	0.000	0.000	1.000	2.000	1.000	163.34	146.66	10.005	6	0
LH 4	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	62.19	Comp	62.19	LH 7X	-27.440	W -45	44.123	0.000	0.000	0.998	1.995	0.998	138.55	131.41	9.202	6	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 11XY	-1.156	W 45	0.324	0.000	0.000	1.000	1.000	1.000	2.33	2.33	19.445	1	0

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Control	Max Use In Tens. %	Tension Control Member	Tension Force (kips)	Tension Control Load Case	Net Section Capacity (kips)	Tension Connect. Shear Capacity (kips)	Tension Connect. Bearing Capacity (kips)	Tension Connect. Rupture Capacity (kips)	Length Tens. Member (ft)	No. Of Bolts Tens.	No. Of Holes	Hole Diameter (in)
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	75.84	Comp	52.73	L 1XY	285.834	W 45	542.051	0.000	0.000	0.000	25.095	0	0.000	0
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	71.49	Comp	45.89	L 2XY	248.739	W 45	542.051	0.000	0.000	0.000	25.095	0	0.000	0
Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	66.11	Comp	39.53	L 3XY	214.264	W 45	542.051	0.000	0.000	0.000	25.095	0	0.000	0
Leg S4	L 8" x 8" x 1"	SAE	8X8X1	36.0	61.66	Comp	37.00	L 4XY	179.811	W 45	485.999	0.000	0.000	0.000	25.095	0	0.000	0
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	70.96	Comp	40.89	L 5XY	175.287	W 45	428.651	0.000	0.000	0.000	25.095	0	0.000	0
Leg S6	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	58.70	Comp	33.40	L 6XY	143.158	W 45	428.651	0.000	0.000	0.000	25.095	0	0.000	0
Leg S7	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	54.03	Comp	30.33	L 7XY	112.414	W 45	370.655	0.000	0.000	0.000	25.095	0	0.000	0
Leg S8	L 8" x 8" x 0.625"	SAE	8X8X0.63	36.0	49.26	Comp	26.41	L 8XY	82.221	W 45	311.364	0.000	0.000	0.000	25.095	0	0.000	0
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	47.57	Comp	24.95	L 9XY	68.220	W 45	273.456	0.000	0.000	0.000	12.547	0	0.000	0
Leg S10	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	38.50	Comp	19.84	L 10XY	54.251	W 45	273.456	0.000	0.000	0.000	12.547	0	0.000	0
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	40.32	Comp	19.66	L 11XY	40.961	W 45	208.332	0.000	0.000	0.000	12.547	0	0.000	0
Leg S12	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	30.88	Comp	13.91	L 12XY	28.977	W 45	208.332	0.000	0.000	0.000	12.547	0	0.000	0
Leg S13	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0	27.57	Comp	10.70	L 13XY	17.546	W 45	163.944	0.000	0.000	0.000	12.547	0	0.000	0
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	25.89	Comp	9.76	L 14XY	13.214	W 45	135.432	0.000	0.000	0.000	10.206	0	0.000	0
Leg S15	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	15.95	Comp	4.30	L 15XY	5.819	W 45	135.432	0.000	0.000	0.000	10.206	0	0.000	0
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	10.82	Comp	2.42	L 16XY	2.376	W 45	98.172	0.000	0.000	0.000	8.616	0	0.000	0
Leg S17	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	5.62	Comp	0.00	L 17Y	0.000		98.172	0.000	0.000	0.000	8.616	0	0.000	0
Diag S1	B/B L3"x4"x0.3125"	DAS	4X3X0.31	36.0	78.51	Comp	31.43	D 2P	42.563	W -90	135.432	0.000	0.000	0.000	21.786	0	0.000	0
Diag S2	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	36.0	84.54	Comp	45.05	D 4P	45.685	W -90	101.412	0.000	0.000	0.000	20.916	0	0.000	0
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	86.84	Comp	48.92	D 6P	45.647	W -90	93.312	0.000	0.000	0.000	20.550	0	0.000	0
Diag S4	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	86.27	Comp	48.28	D 8P	45.055	W -90	93.312	0.000	0.000	0.000	20.204	0	0.000	0
Diag S5	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	72.78	Comp	27.96	D 9P	30.623	W -90	109.512	0.000	0.000	0.000	30.178	0	0.000	0
Diag S6	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	69.19	Comp	27.35	D 11P	29.951	W -90	109.512	0.000	0.000	0.000	29.346	0	0.000	0
Diag S7	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	61.70	Comp	25.23	D 13P	27.630	W -90	109.512	0.000	0.000	0.000	28.573	0	0.000	0
Diag S8	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	64.84	Comp	24.42	D 15P	26.738	W -90	109.512	0.000	0.000	0.000	27.864	0	0.000	0
Diag S9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	34.76	Comp	19.55	D 18P	15.075	W 180	77.112	0.000	0.000	0.000	16.451	0	0.000	0
Diag S10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	57.71	Comp	17.85	D 20Y	13.761	W 0	77.112	0.000	0.000	0.000	15.962	0	0.000	0
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	75.62	Comp	18.52	D 22Y	12.784	W 0	69.012	0.000	0.000	0.000	15.495	0	0.000	0
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	65.50	Comp	15.74	D 23X	10.860	W 90	69.012	0.000	0.000	0.000	15.054	0	0.000	0
Diag S13	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	59.50	Comp	14.88	D 25X	10.267	W 90	69.012	0.000	0.000	0.000	14.641	0	0.000	0
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	37.65	Comp	10.15	D 28X	5.557	W 90	54.756	0.000	0.000	0.000	16.514	0	0.000	0
Diag S15	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	21.49	Comp	6.04	D 30XY	3.310	W 90	54.756	0.000	0.000	0.000	15.546	0	0.000	0
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	16.92	Comp	4.33	D 32XY	2.022	W 90	46.656	0.000	0.000	0.000	13.640	0	0.000	0
Diag S17	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	12.90	Comp	3.47	D 33Y	1.620	W 0	46.656	0.000	0.000	0.000	12.836	0	0.000	0
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	81.02	Comp	44.70	H 1X	41.711	W -90	93.312	0.000	0.000	0.000	21.458	0	0.000	0
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	55.99	Comp	47.45	H 3X	44.272	W -90	93.312	0.000	0.000	0.000	13.278	0	0.000	0
Horiz 3	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	49.64	Comp	44.75	H 5X	41.755	W -90	93.312	0.000	0.000	0.000	12.250	0	0.000	0
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	77.66	Comp	44.08	H 7P	37.560	W 90	85.212	0.000	0.000	0.000	11.222	0	0.000	0
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	74.90	Comp	19.85	H 9P	16.912	W 90	85.212	0.000	0.000	0.000	15.292	0	0.000	0
Horiz 6	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	58.67	Comp	17.74	H 11P	15.114	W 90	85.212	0.000	0.000	0.000	13.750	0	0.000	0
Horiz 7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	61.86	Comp	16.35	H 13X	12.608	W -90	77.112	0.000	0.000	0.000	12.208	0	0.000	0
Horiz 8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	45.80	Comp	14.88	H 16P	11.473	W 0	77.112	0.000	0.000	0.000	10.667	0	0.000	0
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	36.33	Comp	12.81	H 18P	9.880	W 0	77.112	0.000	0.000	0.000	9.896	0	0.000	0
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	27.47	Comp	11.01	H 20P	8.490	W 0	77.112	0.000	0.000	0.000	9.125	0	0.000	0
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	22.09	Comp	9.61	H 22P	7.412	W 0	77.112	0.000	0.000	0.000	8.354	0	0.000	0
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	17.01	Comp	8.30	H 23P	6.401	W 90	77.112	0.000	0.000	0.000	7.583	0	0.000	0
Horiz 13	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	11.16	Comp	7.58	H 25X	5.843	W -90	77.112	0.000	0.000	0.000	6.813	0	0.000	0
Horiz 14	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	6.02	Tens	6.02	H 28P	2.556	W 45	42.444	0.000	0.000	0.000	12.371	0	0.000	0
Horiz 15	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	1.67	Tens	1.67	H 29P	1.427	W 0	85.212	0.000	0.000	0.000	11.117	0	0.000	0
Horiz 16	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	2.34	Tens	2.34	H 31P	0.991	W 0	42.444	0.000	0.000	0.000	10.059	0	0.000	0
Horiz 17	C8x11.5	CHN	C8x11.5	36.0	1.06	Comp	0.50	H 33P	0.544	W 90	109.512	0.000	0.000	0.000	9.000	0	0.000	0
LD 1	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	67.14	Comp	26.03	LD 2Y	20.071	W -45	77.112	0.000	0.000	0.000	12.836	0	0.000	0
LD 2	B/B L4"x3"x0.25"	DAL	4X3X0.25	36.0	77.37	Comp	42.81	LD 3P	46.880	W -90	109.512	0.000	0.000	0.000	12.836	0	0.000	0
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	92.34	Comp	32.66	LD 7P	22.538	W -90	69.012	0.000	0.000	0.000	11.516	0	0.000	0
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	86.09	Comp	44.03	LD 9P	30.388	W -90	69.012	0.000	0.000	0.000	8.187	0	0.000	0
LD 6	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	72.64	Comp	41.90	LD 11X	39.096	W -90	93.312	0.000	0.000	0.000	9.681	0	0.000	0
LD 7	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	58.16	Comp	23.64	LD 14Y	22.060	W -45	93.312	0.000	0.000	0.000	10.941	0	0.000	0

LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	85.54	Comp	44.12	LD 15P	30.447	W -90	69.012	0.000	0.000	0.000	8.044	0	0.000	0
LD 9	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	84.23	Comp	49.39	LD 17X	38.085	W -90	77.112	0.000	0.000	0.000	9.336	0	0.000	0
LD 10	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	85.24	Comp	23.52	LD 20Y	21.942	W -45	93.312	0.000	0.000	0.000	10.389	0	0.000	0
LD 11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	84.01	Comp	43.52	LD 21P	35.033	W -90	69.012	0.000	0.000	0.000	7.909	0	0.000	0
LD 12	B/B L2.5"x2.5"x0.375"	DAE	2.5X2.5X0.38	36.0	69.93	Comp	33.04	LD 23X	37.143	W -90	112.428	0.000	0.000	0.000	9.508	0	0.000	0
LH 1	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	11.73	Tens	11.73	LH 2X	9.995	W 90	85.212	0.000	0.000	0.000	21.438	0	0.000	0
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	94.92	Comp	29.29	LH 3P	24.956	W -90	85.212	0.000	0.000	0.000	10.808	0	0.000	0
LH 3	B/B L2.5"x3"x0.375"	DAS	3X2.5X0.38	36.0	68.83	Comp	19.13	LH 6Y	23.602	W -45	124.416	0.000	0.000	0.000	10.065	0	0.000	0
LH 4	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	62.19	Comp	20.78	LH 8Y	22.762	W -45	159.512	0.000	0.000	0.000	9.202	0	0.000	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 11X	0.953	W -45	0.324	0.000	0.000	0.000	19.445	0	0.000	0

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
W 0	92.37	LH 4P	Angle
W 180	92.79	LH 4Y	Angle
W 45	91.68	LH 3P	Angle
W -45	94.82	LH 3X	Angle
W 90	92.78	LH 3P	Angle
W -90	93.12	LH 3X	Angle
W 0 Ice	34.94	LH 4P	Angle
W 180 Ice	35.83	LH 4Y	Angle
W 45 Ice	36.70	L 1P	Angle
W -45 Ice	37.74	L 1X	Angle
W 90 Ice	35.11	LH 3P	Angle
W -90 Ice	35.89	LH 3X	Angle

*** Weight of Structure (lbs):

Weight of Angles*Section DLF:	146562.4
Weight of Equipment:	1109.0
Total:	147671.4

*** End of Report

Site #:	88018
Name:	Stamford (Katoona), CT

Engineer:	RDB
Date:	01/31/18

Windspeed:	No Ice: 93 mph	Ice: 50 mph	
Carrier	AT&T Mobility		

Taper:	-0.123333
FW @ Base:	46.00 ft

Taper Change:	300 ft
FW @ Top:	9 ft

Spreadsheet Version Last Updated: 11/12/2014

Joint Label	Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.	Drop Sub-Brace (Y or Blank)	# Vert	Drop (ft)	Height (ft)	Type	Count	Z-Elev. (ft)	FW (ft)	# Sub-Brace
0	XY-Symmetry	23	23	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed		3	7.033	25	1	1	0	46	3
1	XY-Symmetry	21.45833333	21.45833333	25	Free	Free	Free	Free	Free	Free		2	7.033	25	2	2	25	42.91666667	3
2	XY-Symmetry	19.91666667	19.91666667	50	Free	Free	Free	Free	Free	Free		2	7.033	25	2	3	50	39.83333333	3
3	XY-Symmetry	18.375	18.375	75	Free	Free	Free	Free	Free	Free		2	7.033	25	2	4	75	36.75	3
4	XY-Symmetry	16.83333333	16.83333333	100	Free	Free	Free	Free	Free	Free				25	A	5	100	33.66666667	2
5	XY-Symmetry	15.29166667	15.29166667	125	Free	Free	Free	Free	Free	Free				25	A	6	125	30.58333333	2
6	XY-Symmetry	13.75	13.75	150	Free	Free	Free	Free	Free	Free				25	A	7	150	27.5	2
7	XY-Symmetry	12.20833333	12.20833333	175	Free	Free	Free	Free	Free	Free				25	A	8	175	24.41666667	2
8	XY-Symmetry	10.66666667	10.66666667	200	Free	Free	Free	Free	Free	Free				12.5	A	9	200	21.33333333	1
9	XY-Symmetry	9.895833333	9.895833333	212.5	Free	Free	Free	Free	Free	Free				12.5	A	10	212.5	19.79166667	1
10	XY-Symmetry	9.125	9.125	225	Free	Free	Free	Free	Free	Free				12.5	A	11	225	18.25	1
11	XY-Symmetry	8.354166667	8.354166667	237.5	Free	Free	Free	Free	Free	Free				12.5	A	12	237.5	16.70833333	1
12	XY-Symmetry	7.583333333	7.583333333	250	Free	Free	Free	Free	Free	Free				12.5	A	13	250	15.16666667	1
13	XY-Symmetry	6.8125	6.8125	262.5	Free	Free	Free	Free	Free	Free		1		10.167	X	14	262.5	13.625	1
14	XY-Symmetry	6.185535	6.185535	272.667	Free	Free	Free	Free	Free	Free		1		10.167	X	15	272.667	12.37107	1
15	XY-Symmetry	5.55857	5.55857	282.834	Free	Free	Free	Free	Free	Free		1		8.583	X	16	282.834	11.11714	1
16	XY-Symmetry	5.029285	5.029285	291.417	Free	Free	Free	Free	Free	Free				8.583	X	17	291.417	10.05857	1
17	XY-Symmetry	4.5	4.5	300	Free	Free	Free	Free	Free	Free						18	300	9	
A1	Y-Symmetry	21.45833333	0	25	Free	Free	Free	Free	Free	Free									
A2	X-Symmetry	0	21.45833333	25	Free	Free	Free	Free	Free	Free									
A3	XY-Symmetry	19.91666667	6.638888889	50	Free	Free	Free	Free	Free	Free									
A4	XY-Symmetry	6.638888889	19.91666667	50	Free	Free	Free	Free	Free	Free									
A5	XY-Symmetry	18.375	6.125	75	Free	Free	Free	Free	Free	Free									
A6	XY-Symmetry	6.125	18.375	75	Free	Free	Free	Free	Free	Free									
A7	XY-Symmetry	16.83333333	5.611111111	100	Free	Free	Free	Free	Free	Free									
A8	XY-Symmetry	5.611111111	16.83333333	100	Free	Free	Free	Free	Free	Free									
A9	Y-Symmetry	15.29166667	0	125	Free	Free	Free	Free	Free	Free									
A10	X-Symmetry	0	15.29166667	125	Free	Free	Free	Free	Free	Free									
A11	Y-Symmetry	13.75	0	150	Free	Free	Free	Free	Free	Free									
A12	X-Symmetry	0	13.75	150	Free	Free	Free	Free	Free	Free									
A13	Y-Symmetry	12.20833333	0	175	Free	Free	Free	Free	Free	Free									
A14	X-Symmetry	0	12.20833333	175	Free	Free	Free	Free	Free	Free									
A15	Y-Symmetry	10.66666667	0	200	Free	Free	Free	Free	Free	Free									
A16	X-Symmetry	0	10.66666667	200	Free	Free	Free	Free	Free	Free									
A17	Y-Symmetry	9.895833333	0	212.5	Free	Free	Free	Free	Free	Free									
A18	X-Symmetry	0	9.895833333	212.5	Free	Free	Free	Free	Free	Free									
A19	Y-Symmetry	9.125	0	225	Free	Free	Free	Free	Free	Free									
A20	X-Symmetry	0	9.125	225	Free	Free	Free	Free	Free	Free									
A21	Y-Symmetry	8.354166667	0	237.5	Free	Free	Free	Free	Free	Free									
A22	X-Symmetry	0	8.354166667	237.5	Free	Free	Free	Free	Free	Free									
A23	Y-Symmetry	7.583333333	0	250	Free	Free	Free	Free	Free	Free									
A24	X-Symmetry	0	7.583333333	250	Free	Free	Free	Free	Free	Free									
A25	Y-Symmetry	6.8125	0	262.5	Free	Free	Free	Free	Free	Free									
A26	X-Symmetry	0	6.8125	262.5	Free	Free	Free	Free	Free	Free									
H1	XY-Symmetry	21.892035	10.72916667	17.967	Free	Free	Free	Free	Free	Free									
H2	XY-Symmetry	10.72916667	21.892035	17.967	Free	Free	Free	Free	Free	Free									
H5	XY-Symmetry	20.35036833	10.807895	42.967	Free	Free	Free	Free	Free	Free									
H6	XY-Symmetry	10.807895	20.35036833	42.967	Free	Free	Free	Free	Free	Free									
H7	Y-Symmetry	20.35036833	0	42.967	Free	Free	Free	Free	Free	Free									
H8	X-Symmetry	0	20.35036833	42.967	Free	Free	Free	Free	Free	Free									
H9	XY-Symmetry	18.80870167	10.00487167	67.967	Free	Free	Free	Free	Free	Free									
H10	XY-Symmetry	10.00487167	18.80870167	67.967	Free	Free	Free	Free	Free	Free									
H11	Y-Symmetry	18.80870167	0	67.967	Free	Free	Free	Free	Free	Free									
H12	X-Symmetry	0	18.80870167	67.967	Free	Free	Free	Free	Free	Free									
H13	XY-Symmetry	17.267035	9.201848333	92.967	Free	Free	Free	Free	Free	Free									
H14	XY-Symmetry	9.201848333	17.267035	92.967	Free	Free	Free	Free	Free	Free									
H15	Y-Symmetry	17.267035	0	92.967	Free	Free	Free	Free	Free	Free									
H16	X-Symmetry	0	17.267035	92.967	Free	Free	Free	Free	Free	Free									

NOTES	
Types:	
1:	Built up Horizs. w/ A
2:	Built up Horizs. w/ M
A:	Typical A brace
X:	Typical X brace
Drop:	Use only for types 1 & 2

# Sections:	17

Legs

Site No.:	88018
Engineer:	RDB
Date:	01/31/2018
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations *(ft)*	Type of Shape [1]	Diameter or Length *(in)*	Thickness [2] *(in)*	F_Y *(ksi)*
1	0.000-25.00	L	8	1.125	36
2	25.00-50.00	L	8	1.125	36
3	50.00-75.00	L	8	1.125	36
4	75.00-100.0	L	8	1	36
5	100.0-125.0	L	8	0.875	36
6	125.0-150.0	L	8	0.875	36
7	150.0-175.0	L	8	0.75	36
8	175.0-200.0	L	8	0.625	36
9	200.0-212.5	L	6	0.75	36
10	212.5-225.0	L	6	0.75	36
11	225.0-237.5	L	6	0.5625	36
12	237.5-250.0	L	6	0.5625	36
13	250.0-262.5	L	6	0.4375	36
14	262.5-272.7	L	5	0.4375	36
15	272.7-282.8	L	5	0.4375	36
16	282.8-291.4	L	5	0.3125	36
17	291.4-300.0	L	5	0.3125	36

Notes:

[1] Type of Leg Shape: **R** = Round or **P** = Bent Plate or **S** = Schifflerized Angle. **L** = Even Leg

[2] For Solid Round Leg Shapes Thickness Equals Zero.

[3] Adjust for Bent Plate Leg Shapes.

Diagonals

Site No.:	88018
Engineer:	RDB
Date:	01/31/2018
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations *(ft)*	Type of Shape [1]	Diameter [2] *(in)*	Web Length [3] *(in)*	Flange Length [3] *(in)*	Thickness *(in)*	F_y *(ksi)*	Is Diag. Tension Only? *(Y/N)*
1	0.000-25.00	2L		3	4	0.3125	36	
2	25.00-50.00	2L		3	3.5	0.25	36	
3	50.00-75.00	2L		2.5	3.5	0.25	36	
4	75.00-100.0	2L		2.5	3.5	0.25	36	
5	100.0-125.0	2L		3	4	0.25	36	
6	125.0-150.0	2L		3	4	0.25	36	
7	150.0-175.0	2L		3	4	0.25	36	
8	175.0-200.0	2L		3.5	3.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2	0.25	36	
12	237.5-250.0	2L		2.5	2	0.25	36	
13	250.0-262.5	2L		2.5	2	0.25	36	
14	262.5-272.7	L		3.5	3.5	0.25	36	
15	272.7-282.8	L		3.5	3.5	0.25	36	
16	282.8-291.4	L		3	3	0.25	36	
17	291.4-300.0	L		3	3	0.25	36	

Notes:

[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Horizontals

Site No.:	88018
Engineer:	RDB
Date:	01/31/2018
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)	
1	0.000-25.00	2L		3.5	2.5	0.25	36	
2	25.00-50.00	2L		3.5	2.5	0.25	36	
3	50.00-75.00	2L		3.5	2.5	0.25	36	
4	75.00-100.0	2L		3	2.5	0.25	36	
5	100.0-125.0	2L		3	2.5	0.25	36	
6	125.0-150.0	2L		3	2.5	0.25	36	
7	150.0-175.0	2L		2.5	2.5	0.25	36	
8	175.0-200.0	2L		2.5	2.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2.5	0.25	36	
12	237.5-250.0	2L		2.5	2.5	0.25	36	
13	250.0-262.5	2L		2.5	2.5	0.25	36	
14	262.5-272.7	L		3	2.5	0.25	36	
15	272.7-282.8	2L		3	2.5	0.25	36	
16	282.8-291.4	L		3	2.5	0.25	36	
17	291.4-300.0	C		8	11.5		36	

Notes:

[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle, **2L** = Double-Angle, **C** = Channel, **W** = W Shape

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Diagonals

Site No.:	88018
Engineer:	RDB
Date:	01/31/2018
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.
Input diags. from left to center & from base section upward.

Tower Built-up Diag. #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)
1	0.000-25.00	2L		3	2	0.25	36
2	0.000-25.00	2L		4	3	0.25	36
3	25.00-50.00	2L		2.5	2	0.25	36
4	25.00-50.00	2L		2.5	2	0.25	36
5	25.00-50.00	2L		3	3	0.25	36
6	50.00-75.00	2L		3	3	0.25	36
7	50.00-75.00	2L		2.5	2	0.25	36
8	50.00-75.00	2L		3	2	0.25	36
9	75.00-100.0	2L		3	3	0.25	36
10	75.00-100.0	2L		2.5	2	0.25	36
11	75.00-100.0	2L		2.5	2.5	0.375	36

Notes:

[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Horizontals

Site No.:	88018
Engineer:	RDB
Date:	01/31/2018
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations *(ft)*	Type of Shape [1]	Diameter [2] *(in)*	Web Length [3] *(in)*	Flange Length [3] *(in)*	Thickness *(in)*	F_y *(ksi)*	Is Horiz. Tension Only? *(Y/N)*
1	0.000-25.00	2L		2.5	3	0.25	36	Y
2	25.00-50.00	2L		2.5	3	0.25	36	
3	50.00-75.00	2L		2.5	3	0.375	36	
4	75.00-100.0	2L		3.5	3.5	0.25	36	

Notes:

[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Coax (p. 1 of 2)

Orig by MED, Improved by ABL. Last update 6/25/13 MED

Site No.:	88018
Engineer:	RDB
Date:	01/31/18
Carrier:	AT&T Mobility

Description	From (ft)	To (ft)	Quantity	Shape	Width or Diameter (in)	Perimeter (in)	Unit Weight (lb/ft)	Part of Face Solidity Ratio (Yes/No)	Include in Wind Load (Yes/No)
1 Ladder	0	300	1	Flat	1.5	6.0	6	Yes	Yes
2 Short Ladder	8.3333	33.3333	2	Flat	1.5	6.0	6	Yes	Yes
3 Short Ladder	8.3333	33.3333	2	Flat	1.5	6.0	6	Yes	Yes
5 WG	5	300	1	Flat	1.5	6.0	6	Yes	Yes
6 WG	5	272	1	Flat	1.5	6.0	6	Yes	Yes
7 WG	5	235	1	Flat	1.5	6.0	6	Yes	Yes
8 WG	5	223	1	Flat	1.5	6.0	6	Yes	Yes
9 WG	5	160	1	Flat	1.5	6.0	6	Yes	Yes
10 Marcus Communications LLC	5	300	1	Round	1.55	4.9	0.63	Yes	Yes
11 Marcus Communications LLC	5	300	1	Round	1.98	6.2	0.82	Yes	Yes
12 Marcus Communications LLC	5	300	1	Round	1.09	3.4	0.33	Yes	Yes
13 Other	5	300	1	Round	0.63	2.0	0.15	Yes	Yes
14 Clearwire Corporation	5	300	5	Round	1.09	3.4	0.33	Yes	Yes
15 US Dept Of Homeland Security	5	275	2	Round	1.09	3.4	0.33	Yes	Yes
16 Sirius XM Radio Inc.	5	270	1	Round	1.98	6.2	0.82	Yes	Yes
17 T-Mobile	5	268	1	Flat	7.065	37.7	12.3	Yes	Yes
18 T-Mobile	5	268	3	Round	0.88	2.8	0.68	Yes	Yes
19 Sirius XM Radio Inc.	5	260	1	Round	5.02	15.8	1.85	Yes	Yes
20 US Dept Of Homeland Security	5	250	1	Round	1.09	3.4	0.33	Yes	Yes
21 US Dept Of Homeland Security	5	246	1	Round	1.09	3.4	0.33	Yes	Yes
22 AT&T Mobility	5	235	1	Flat	7.065	37.7	9.84	Yes	Yes
23 AT&T Mobility	5	235	2	Round	0.39	1.2	0.17	No	No
24 AT&T Mobility	5	235	2	Round	0.78	2.5	0.59	Yes	Yes
25 AT&T Mobility	5	235	4	Round	0.74	2.3	0.49	No	No
26 Sprint Nextel	5	222	1	Flat	7.065	37.7	12.3	Yes	Yes
27 US Dept Of Homeland Security	5	207	1	Round	1.09	3.4	0.33	Yes	Yes
28 Marcus Communications LLC	5	200	2	Round	1.55	4.9	0.63	Yes	Yes
29 Spok Holdings, Inc.	5	193	2	Round	1.09	3.4	0.33	Yes	Yes
30 Spok Holdings, Inc.	5	193	1	Round	1.09	3.4	0.33	Yes	Yes
31 Clearwire Corporation	5	171	2	Round	2.38	7.5	3.65	Yes	Yes
32 Clearwire Corporation	5	171	6	Round	0.31	1.0	0.05	Yes	Yes
33 Metro PCS Inc	5	165	1	Flat	7.065	37.7	9.84	Yes	Yes
34 Metro PCS Inc	5	165	1	Round	0.38	1.2	0.23	Yes	Yes
35 Metro PCS Inc	5	165	1	Round	0.44	1.4	0.08	Yes	Yes
36 Sprint Nextel	5	155	5	Round	1.54	4.8	1	Yes	Yes
37 Sensus USA Inc.	5	139	1	Round	1.09	3.4	0.33	Yes	Yes
38 Senet, Inc.	5	135	1	Round	0.38	1.2	0.23	Yes	Yes
39 Senet, Inc.	5	135	1	Round	0.63	2.0	0.15	Yes	Yes
40 Spok Holdings, Inc.	5	120	1	Round	0.63	2.0	0.2	Yes	Yes
41 Marcus Communications LLC	5	107	1	Round	1.55	4.9	0.6	Yes	Yes
42 Verizon Wireless	5	92	3	Round	1.54	4.8	1.0	Yes	Yes
43 Sirius XM Radio Inc.	5	22	1	Round	1.09	3.4	0.3	Yes	Yes
44 Spok Holdings, Inc.	0	6	1	Round	0.63	2.0	0.2	Yes	Yes
45 Spok Holdings, Inc.	0	6	1	Round	0.34	1.1	0.1	Yes	Yes

Coax (p. 2 of 2)

Site No.:	88018
Engineer:	RDB
Date:	01/31/18
Carrier:	AT&T Mobility

Exposure: B | α: 7 | $k_{z\,max}$: 2.01

Tia Code: TIA-222-G | Topo Cat: 1 | z_g: 1200 | $k_{z\,min}$: 0.7

f | K_e: 0.9 | K_t:

Description	From (ft)	To (ft)	Quantity	Face # (1-4, A-D)	Coax Width (in)	Coax Shape (Block / Flat / Ind)	% Exposed	Spacing (in)	Shape (Round/Flat)	Block Width (# coax)	Block Depth (# coax)	Perimeter (in)	Unit Weight (lb/ft)	In Face Zone (Yes/No)	Include in Wind Load (Yes/No)
Ladder	0	300	1	B	1.50	Flat	100		Flat	1	1	6.0	6	Yes	Yes
Short Ladder	8.3333	33.3333	2	1	1.50	Flat	100		Flat	2	1	6.0	6	Yes	Yes
Short Ladder	8.3333	33.3333	2	3	1.50	Flat	100		Flat	2	1	6.0	6	Yes	Yes
														No	No
WG	5	300	1	2	1.50	Flat	100		Flat	1	1	6.0	6	Yes	Yes
WG	5	272	1	3	1.50	Flat	100		Flat	1	1	6.0	6	Yes	Yes
WG	5	235	1	1	1.50	Flat	100		Flat	1	1	6.0	6	Yes	Yes
WG	5	223	1	2	1.50	Flat	100		Flat	1	1	6.0	6	Yes	Yes
WG	5	160	1	1	1.50	Flat	100		Flat	1	1	6.0	6	Yes	Yes
Marcus Communications LLC	5	300	1	B	1.55	Ind	100		Round	1	1	4.9	0.63	Yes	Yes
Marcus Communications LLC	5	300	1	B	1.98	Ind	100		Round	1	1	6.2	0.82	Yes	Yes
Marcus Communications LLC	5	300	1	B	1.09	Ind	100		Round	1	1	3.4	0.33	Yes	Yes
Other	5	300	1	B	0.63	Ind	100		Round	1	1	2.0	0.15	Yes	Yes
Clearwire Corporation	5	300	5	2	1.09	Ind	100		Round	5	1	3.4	0.33	Yes	Yes
US Dept Of Homeland Security	5	275	2	2	1.09	Ind	100		Round	2	1	3.4	0.33	Yes	Yes
Sirius XM Radio Inc.	5	270	1	4	1.98	Ind	100		Round	1	1	6.2	0.82	Yes	Yes
T-Mobile	5	268	15	4	1.98	Block	33	0.5	Flat	5	3	37.7	12.3	Yes	Yes
T-Mobile	5	268	3	4	0.88	Ind	100		Round	3	1	2.8	0.68	Yes	Yes
Sirius XM Radio Inc.	5	260	1	4	5.02	Ind	100		Round	1	1	15.8	1.85	Yes	Yes
US Dept Of Homeland Security	5	250	1	2	1.09	Ind	100		Round	1	1	3.4	0.33	Yes	Yes
US Dept Of Homeland Security	5	246	1	2	1.09	Ind	100		Round	1	1	3.4	0.33	Yes	Yes
AT&T Mobility	5	235	12	1	1.98	Block	50	0.5	Flat	6	2	37.7	9.84	Yes	Yes
AT&T Mobility	5	235	2	1	0.39	Ind	100		Round	2	1	1.2	0.17	No	No
AT&T Mobility	5	235	2	1	0.78	Ind	100		Round	2	1	2.5	0.59	Yes	Yes
AT&T Mobility	5	235	4	1	0.74	Ind	100		Round	4	1	2.3	0.49	No	No
Sprint Nextel	5	222	15	2	1.98	Block	33	0.5	Flat	5	3	37.7	12.3	Yes	Yes
US Dept Of Homeland Security	5	207	1	2	1.09	Ind	100		Round	1	1	3.4	0.33	Yes	Yes
Marcus Communications LLC	5	200	2	B	1.55	Ind	100		Round	2	1	4.9	0.63	Yes	Yes
Spok Holdings, Inc.	5	193	2	B	1.09	Ind	100		Round	2	1	3.4	0.33	Yes	Yes
Spok Holdings, Inc.	5	193	1	B	1.09	Ind	100		Round	1	1	3.4	0.33	Yes	Yes
Clearwire Corporation	5	171	2	2	2.38	Ind	100		Round	2	1	7.5	3.65	Yes	Yes
Clearwire Corporation	5	171	6	2	0.31	Ind	100		Round	6	1	1.0	0.05	Yes	Yes
Metro PCS Inc	5	165	12	1	1.98	Block	50	0.5	Flat	6	2	37.7	9.84	Yes	Yes
Metro PCS Inc	5	165	1	1	0.38	Ind	100		Round	1	1	1.2	0.23	Yes	Yes
Metro PCS Inc	5	165	1	1	0.44	Ind	100		Round	1	1	1.4	0.08	Yes	Yes
Sprint Nextel	5	155	5	2	1.54	Ind	100		Round	5	1	4.8	1	Yes	Yes
Sensus USA Inc.	5	139	1	B	1.09	Ind	100		Round	1	1	3.4	0.33	Yes	Yes
Senet, Inc.	5	135	1	3	0.38	Ind	100		Round	1	1	1.2	0.23	Yes	Yes
Senet, Inc.	5	135	1	3	0.63	Ind	100		Round	1	1	2.0	0.15	Yes	Yes
Spok Holdings, Inc.	5	120	1	B	0.63	Ind	100		Round	1	1	2.0	0.15	Yes	Yes
Marcus Communications LLC	5	107	1	B	1.55	Ind	100		Round	1	1	4.9	0.63	Yes	Yes
Verizon Wireless	5	92	3	4	1.54	Ind	100		Round	3	1	4.8	1	Yes	Yes
Sirius XM Radio Inc.	5	22	1	4	1.09	Ind	100		Round	1	1	3.4	0.33	Yes	Yes
Spok Holdings, Inc.	0	6	1	B	0.63	Ind	100		Round	1	1	2.0	0.15	Yes	Yes
Spok Holdings, Inc.	0	6	1	B	0.34	Ind	100		Round	1	1	1.1	0.06	Yes	Yes
														No	No
														No	No
														No	No
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														No	No
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														No	No
														No	No
														No	No

Dishes

Site No.:	88018
Engineer:	RDB
Date:	01/31/18
Carrier:	AT&T Mobility

Dish Types	
S	Standard
R	Standard w/ Radome
H	High Performance
G	Grid

Dish Number	Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation	Equipment Staus
1	311	4	51.4	S	XY	
2	307	3	0	H	Y	
3	303	2	90	H	XY	
4	303	2	180	H	X	
5	303	2	270	H	P	
6	120	4	90	S	XY	
7	22	2	197	R	X	
8	6	4	270	S	P	
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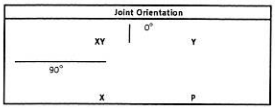
Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle *(deg)*
4' STD 1 @ 311'	17XY	4 ft STD Dish	51.4
3' HP 2 @ 307'	17Y	3 ft HP Dish	0
2' HP 3 @ 303'	17XY	2 ft HP Dish	90
2' HP 4 @ 303'	17X	2 ft HP Dish	180
2' HP 5 @ 303'	17P	2 ft HP Dish	270
4' STD 6 @ 120'	5XY	4 ft STD Dish	90
2' RAD 7 @ 22'	1X	2 ft RAD Dish	197
4' STD 8 @ 6'	0P	4 ft STD Dish	270

Joint Orientation



Site #:	88018
Name:	AT&T Mobility

Engineer:	RDB
Date:	01/31/18

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
L 1	Leg S1		XY-Symmetry	0P	1P	1	4	0.28132	0.28132	0.28132
L 2	Leg S2		XY-Symmetry	1P	2P	1	4	0.28132	0.28132	0.28132
L 3	Leg S3		XY-Symmetry	2P	3P	1	4	0.28132	0.28132	0.28132
L 4	Leg S4		XY-Symmetry	3P	4P	1	4	0.28132	0.28132	0.28132
L 5	Leg S5		XY-Symmetry	4P	5P	1	4	0.333333333	0.333333333	0.333333333
L 6	Leg S6		XY-Symmetry	5P	6P	1	4	0.333333333	0.333333333	0.333333333
L 7	Leg S7		XY-Symmetry	6P	7P	1	4	0.333333333	0.333333333	0.333333333
L 8	Leg S8		XY-Symmetry	7P	8P	1	4	0.333333333	0.333333333	0.333333333
L 9	Leg S9		XY-Symmetry	8P	9P	1	4	0.5	0.5	0.5
L 10	Leg S10		XY-Symmetry	9P	10P	1	4	0.5	0.5	0.5
L 11	Leg S11		XY-Symmetry	10P	11P	1	4	0.5	0.5	0.5
L 12	Leg S12		XY-Symmetry	11P	12P	1	4	0.5	0.5	0.5
L 13	Leg S13		XY-Symmetry	12P	13P	1	4	0.5	0.5	0.5
L 14	Leg S14		XY-Symmetry	13P	14P	1	4	0.5	0.5	0.5
L 15	Leg S15		XY-Symmetry	14P	15P	1	4	0.5	0.5	0.5
L 16	Leg S16		XY-Symmetry	15P	16P	1	4	0.5	0.5	0.5
L 17	Leg S17		XY-Symmetry	16P	17P	1	4	0.5	0.5	0.5
D 1	Diag S1		XY-Symmetry	0P	H2P	1	6	0.31	0.92	0.31
D 2	Diag S1		XY-Symmetry	0P	H1P	1	6	0.31	0.92	0.31
D 3	Diag S2		XY-Symmetry	1P	H6P	1	6	0.31	0.62	0.31
D 4	Diag S2		XY-Symmetry	1P	H5P	1	6	0.31	0.62	0.31
D 5	Diag S3		XY-Symmetry	2P	H10P	1	6	0.333333333	0.666666667	0.333333333
D 6	Diag S3		XY-Symmetry	2P	H9P	1	6	0.333333333	0.666666667	0.333333333
D 7	Diag S4		XY-Symmetry	3P	H14P	1	6	0.333333333	0.666666667	0.333333333
D 8	Diag S4		XY-Symmetry	3P	H13P	1	6	0.333333333	0.666666667	0.333333333
D 9	Diag S5		XY-Symmetry	4P	A9P	1	6	0.333333333	0.666666667	0.333333333
D 10	Diag S5		XY-Symmetry	4P	A10P	1	6	0.333333333	0.666666667	0.333333333
D 11	Diag S6		XY-Symmetry	5P	A11P	1	6	0.333333333	0.666666667	0.333333333
D 12	Diag S6		XY-Symmetry	5P	A12P	1	6	0.333333333	0.666666667	0.333333333
D 13	Diag S7		XY-Symmetry	6P	A13P	1	6	0.333333333	0.666666667	0.333333333
D 14	Diag S7		XY-Symmetry	6P	A14P	1	6	0.333333333	0.666666667	0.333333333
D 15	Diag S8		XY-Symmetry	7P	A15P	1	6	0.333333333	0.666666667	0.333333333
D 16	Diag S8		XY-Symmetry	7P	A16P	1	6	0.333333333	0.666666667	0.333333333
D 17	Diag S9		XY-Symmetry	8P	A17P	1	6	0.32	0.59	0.32
D 18	Diag S9		XY-Symmetry	8P	A18P	1	6	0.32	0.59	0.32
D 19	Diag S10		XY-Symmetry	9P	A19P	1	6	0.5	1	0.5
D 20	Diag S10		XY-Symmetry	9P	A20P	1	6	0.5	1	0.5
D 21	Diag S11		XY-Symmetry	10P	A21P	1	6	0.48	0.96	0.48
D 22	Diag S11		XY-Symmetry	10P	A22P	1	6	0.48	0.96	0.48
D 23	Diag S12		XY-Symmetry	11P	A23P	1	6	0.5	1	0.5
D 24	Diag S12		XY-Symmetry	11P	A24P	1	6	0.5	1	0.5
D 25	Diag S13		XY-Symmetry	12P	A25P	1	6	0.5	1	0.5
D 26	Diag S13		XY-Symmetry	12P	A26P	1	6	0.5	1	0.5
D 27	Diag S14		XY-Symmetry	13P	14Y	2	5	0.52	0.52	0.52
D 28	Diag S14		XY-Symmetry	13P	14X	2	5	0.52	0.52	0.52
D 29	Diag S15		XY-Symmetry	14P	15Y	2	5	0.52	0.52	0.52
D 30	Diag S15		XY-Symmetry	14P	15X	2	5	0.52	0.52	0.52
D 31	Diag S16		XY-Symmetry	15P	16Y	2	5	0.52	0.52	0.52
D 32	Diag S16		XY-Symmetry	15P	16X	2	5	0.52	0.52	0.52
D 33	Diag S17		XY-Symmetry	16P	17Y	2	5	0.52	0.52	0.52
D 34	Diag S17		XY-Symmetry	16P	17X	2	5	0.52	0.52	0.52
H 1	Horiz 1		XY-Symmetry	1P	A1P	1	6	0.48	0.48	0.48
H 2	Horiz 1		XY-Symmetry	1P	A2P	1	6	0.48	0.48	0.48
H 3	Horiz 2		XY-Symmetry	2P	A3P	1	6	0.5	0.5	0.5
H 4	Horiz 2		XY-Symmetry	2P	A4P	1	6	0.5	0.5	0.5
H 5	Horiz 3		XY-Symmetry	3P	A5P	1	6	0.5	0.5	0.5
H 6	Horiz 3		XY-Symmetry	3P	A6P	1	6	0.5	0.5	0.5
H 7	Horiz 4		XY-Symmetry	4P	A7P	1	6	0.47	0.94	0.47
H 8	Horiz 4		XY-Symmetry	4P	A8P	1	6	0.47	0.94	0.47
H 9	Horiz 5		XY-Symmetry	5P	A9P	1	6	1	1	1
H 10	Horiz 5		XY-Symmetry	5P	A10P	1	6	1	1	1
H 11	Horiz 6		XY-Symmetry	6P	A11P	1	6	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
H 12	Horiz 6		XY-Symmetry	6P	A12P	1	6	1	1	1
H 13	Horiz 7		XY-Symmetry	7P	A13P	1	6	1	1	1
H 14	Horiz 7		XY-Symmetry	7P	A14P	1	6	1	1	1
H 15	Horiz 8		XY-Symmetry	8P	A15P	1	6	1	1	1
H 16	Horiz 8		XY-Symmetry	8P	A16P	1	6	1	1	1
H 17	Horiz 9		XY-Symmetry	9P	A17P	1	6	1	1	1
H 18	Horiz 9		XY-Symmetry	9P	A18P	1	6	1	1	1
H 19	Horiz 10		XY-Symmetry	10P	A19P	1	6	1	1	1
H 20	Horiz 10		XY-Symmetry	10P	A20P	1	6	1	1	1
H 21	Horiz 11		XY-Symmetry	11P	A21P	1	6	1	1	1
H 22	Horiz 11		XY-Symmetry	11P	A22P	1	6	1	1	1
H 23	Horiz 12		XY-Symmetry	12P	A23P	1	6	1	1	1
H 24	Horiz 12		XY-Symmetry	12P	A24P	1	6	1	1	1
H 25	Horiz 13		XY-Symmetry	13P	A25P	1	6	1	1	1
H 26	Horiz 13		XY-Symmetry	13P	A26P	1	6	1	1	1
H 27	Horiz 14		Y-Symmetry	14P	14X	3	5	0.5	1	0.5
H 28	Horiz 14		X-Symmetry	14P	14Y	3	5	0.5	1	0.5
H 29	Horiz 15		Y-Symmetry	15P	15X	1	6	0.5	1	0.5
H 30	Horiz 15		X-Symmetry	15P	15Y	1	6	0.5	1	0.5
H 31	Horiz 16		Y-Symmetry	16P	16X	3	5	0.5	1	0.5
H 32	Horiz 16		X-Symmetry	16P	16Y	3	5	0.5	1	0.5
H 33	Horiz 17		Y-Symmetry	17P	17X	3	5	1	1	1
H 34	Horiz 17		X-Symmetry	17P	17Y	3	5	1	1	1
H 37	Horiz 2		Y-Symmetry	A3P	A3X	1	6	0.5	1	0.5
H 38	Horiz 2		X-Symmetry	A4P	A4Y	1	6	0.5	1	0.5
H 39	Horiz 3		Y-Symmetry	A5P	A5X	1	6	0.5	1	0.5
H 40	Horiz 3		X-Symmetry	A6P	A6Y	1	6	0.5	1	0.5
H 41	Horiz 4		Y-Symmetry	A7P	A7X	1	6	0.5	1	0.5
H 42	Horiz 4		X-Symmetry	A8P	A8Y	1	6	0.5	1	0.5
LH 1	LH 1		Y-Symmetry	H1P	H1X	1	6	100	100	100
LH 2	LH 1		X-Symmetry	H2P	H2Y	1	6	100	100	100
LH 3	LH 2		XY-Symmetry	H5P	H7P	1	6	1	2	1
LH 4	LH 2		XY-Symmetry	H6P	H8P	1	6	1	2	1
LH 5	LH 3		XY-Symmetry	H9P	H11P	1	6	1	2	1
LH 6	LH 3		XY-Symmetry	H10P	H12P	1	6	1	2	1
LH 7	LH 4		XY-Symmetry	H13P	H15P	1	6	0.998	1.995	0.998
LH 8	LH 4		XY-Symmetry	H14P	H16P	1	6	0.998	1.995	0.998
LD 1	LD 1		XY-Symmetry	H1P	1P	1	6	0.85	0.85	0.85
LD 2	LD 1		XY-Symmetry	H2P	1P	1	6	0.85	0.85	0.85
LD 3	LD 2		XY-Symmetry	H1P	A1P	1	6	0.82	0.82	0.82
LD 4	LD 2		XY-Symmetry	H2P	A2P	1	6	0.82	0.82	0.82
LD 7	LD 4		XY-Symmetry	H5P	2P	1	6	0.87	0.87	0.87
LD 8	LD 4		XY-Symmetry	H6P	2P	1	6	0.87	0.87	0.87
LD 9	LD 5		XY-Symmetry	H5P	A3P	1	6	0.8	0.8	0.8
LD 10	LD 5		XY-Symmetry	H6P	A4P	1	6	0.8	0.8	0.8
LD 11	LD 6		XY-Symmetry	A3P	H7P	1	6	0.84	0.84	0.84
LD 12	LD 6		XY-Symmetry	A4P	H8P	1	6	0.84	0.84	0.84
LD 13	LD 7		XY-Symmetry	H9P	3P	1	6	0.865	0.865	0.865
LD 14	LD 7		XY-Symmetry	H10P	3P	1	6	0.865	0.865	0.865
LD 15	LD 8		XY-Symmetry	H9P	A5P	1	6	0.82	0.82	0.82
LD 16	LD 8		XY-Symmetry	H10P	A6P	1	6	0.82	0.82	0.82
LD 17	LD 9		XY-Symmetry	A5P	H11P	1	6	0.82	0.82	0.82
LD 18	LD 9		XY-Symmetry	A6P	H12P	1	6	0.82	0.82	0.82
LD 19	LD 10		XY-Symmetry	H13P	4P	1	6	0.86	0.86	0.86
LD 20	LD 10		XY-Symmetry	H14P	4P	1	6	0.86	0.86	0.86
LD 21	LD 11		XY-Symmetry	H13P	A7P	1	6	0.82	0.82	0.82
LD 22	LD 11		XY-Symmetry	H14P	A8P	1	6	0.82	0.82	0.82
LD 23	LD 12		XY-Symmetry	A7P	H15P	1	6	0.85	0.85	0.85
LD 24	LD 12		XY-Symmetry	A8P	H16P	1	6	0.85	0.85	0.85
BR 1	DUM 1		XY-Symmetry	A1P	A2P	1	4	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
BR 3	DUM 1		XY-Symmetry	A3P	A4P	1	4	1	1	1
BR 4	DUM 1		XY-Symmetry	A3P	A4XY	1	4	1	1	1
BR 5	DUM 1		XY-Symmetry	A5P	A6P	1	4	1	1	1
BR 6	DUM 1		XY-Symmetry	A5P	A6XY	1	4	1	1	1
BR 7	DUM 1		XY-Symmetry	A7P	A8P	1	4	1	1	1
BR 8	DUM 1		XY-Symmetry	A7P	A8XY	1	4	1	1	1
BR 9	DUM 1		XY-Symmetry	A9P	A10P	1	4	1	1	1
BR 11	DUM 1		XY-Symmetry	A11P	A12P	1	4	1	1	1
BR 13	DUM 1		XY-Symmetry	A13P	A14P	1	4	1	1	1
BR 15	DUM 1		XY-Symmetry	A15P	A16P	1	4	1	1	1
BR 17	DUM 1		XY-Symmetry	A17P	A18P	1	4	1	1	1
BR 19	DUM 1		XY-Symmetry	A19P	A20P	1	4	1	1	1
BR 21	DUM 1		XY-Symmetry	A21P	A22P	1	4	1	1	1
BR 23	DUM 1		XY-Symmetry	A23P	A24P	1	4	1	1	1
BR 25	DUM 1		XY-Symmetry	A25P	A26P	1	4	1	1	1
BR 61	DUM 1		XY-Symmetry	H1P	H2P	1	4	1	1	1
BR 62	DUM 1		XY-Symmetry	H1P	H2XY	1	4	1	1	1
BR 64	DUM 1		XY-Symmetry	H5P	H6P	1	4	1	1	1
BR 65	DUM 1		XY-Symmetry	H5P	H6XY	1	4	1	1	1
BR 66	DUM 1		XY-Symmetry	H7P	H8P	1	4	1	1	1
BR 67	DUM 1		XY-Symmetry	H9P	H10P	1	4	1	1	1
BR 68	DUM 1		XY-Symmetry	H9P	H10XY	1	4	1	1	1
BR 69	DUM 1		XY-Symmetry	H11P	H12P	1	4	1	1	1
BR 70	DUM 1		XY-Symmetry	H13P	H14P	1	4	1	1	1
BR 71	DUM 1		XY-Symmetry	H13P	H14XY	1	4	1	1	1
BR 72	DUM 1		XY-Symmetry	H15P	H16P	1	4	1	1	1

Task:	Determine Point Loads	
Tower Height:	300	ft
Gh:	0.85	
Wind Speed:	92.9516003	mph, Vasd
Ice Wind Speed:	50	
Ice Density:	56	
Tower Type:	S	

Ice Thick:	0.75	in
Topographic Category (1-4):	1	
Exposure Category (B-D):	B	
Structure Class (1-3):	2	
Height of Crest (H) if Topo Cat. >1:	0	ft
Load Factor; Wind:	1.6	
Load Factor; Dead:	1.2	

Site No.:	88018
Engineer:	RDB
Date:	01/31/2018
Carrier:	AT&T Mobility

No.	Carrier	Elevation (ft)	Quantity	# of Azimuths	Manufacturer	Model	Height (in)	Width (in)	Depth (in)	Weight (lbs/ea)	Flat/Round (F/R)	Reduction	C_AA_A (ft^2)	Weight (k)	Ka
1		300	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		300	1	4		Platform w/ HR						1.000	80.00	9.00	1
2		283	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		283	1	4		Catwalk						1.000	70.00	8.00	1
3		212.5	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		212.5	1	3		Access Platform						1.000	45.00	5.00	1
4		100	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		100	1	3		Access Platform						1.000	45.00	5.00	1
5															1
6	Marcus Communications LLC	338	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Marcus Communications LLC	338	1	1	TX RX Systems	101-68-10-X-03N						1.000	5.53	0.07	1
7	Marcus Communications LLC	324	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Marcus Communications LLC	324	1	1		15' Omni-Grid						1.000	13.41	0.08	1
8	Other	320	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Other	320	1	1		12' Omni						1.000	3.60	0.04	1
9	Marcus Communications LLC	311	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Marcus Communications LLC	311	1	1		Radio/ODU						0.500	1.60	0.03	1
10	Other	307	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Other	307	1	1		Radio/ODU						0.500	1.60	0.03	1
11	Clearwire Corporation	303	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Clearwire Corporation	303	1	1	DragonWave	Horizon Compact						0.500	0.43	0.01	1
12	US Dept Of Homeland Security	275	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	US Dept Of Homeland Security	275	1	1		Round Side Arm						1.000	5.20	0.15	1
13	US Dept Of Homeland Security	275	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	US Dept Of Homeland Security	275	1	1	Rohde & Schwarz	ADD090						1.000	20.76	0.09	1
14	Other	270	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Other	270	1	1	Dielectric	TLP-08M-2E						1.000	22.75	0.13	1
15	Other	270	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Other	270	1	1		Round Side Arm						1.000	5.20	0.15	1
16	Sirius XM Radio Inc.	270	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Sirius XM Radio Inc.	270	2	2	Til-Tek	TA-2350-DAB						1.000	1.34	0.02	1
17	Sirius XM Radio Inc.	270	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Sirius XM Radio Inc.	270	2	2		Round Side Arm						0.900	5.20	0.15	0.9
18	T-Mobile	268	3	3	Ericsson	AIR 21, 1.3 M, B2A B4P	56	12	8	83	F	0.710			0.8
	T-Mobile	268	3	3	Ericsson	AIR-32 B2A/B66Aa						0.710	6.51	0.13	0.8
19	T-Mobile	268	3	3	Andrew	LNX-6515DS-VTM	96.3	11.9	7.1	51.3	F	0.700			0.8
	T-Mobile	268	3	3	RFS	ATMAA1412D-1A20						0.500	1.00	0.01	0.8
20	T-Mobile	268	3	3	Ericsson	RRUS 11 B12	19.7	17	7.2	50.7	F	0.500			0.8
	T-Mobile	268	3	3		Flat Sector Frame						0.670	17.90	0.40	0.75
21	US Dept Of Homeland Security	250	1	1	Sinclair	SC281-L	251	5	5	79	R	1.000			1
	US Dept Of Homeland Security	250	1	1		Round Side Arm						1.000	5.20	0.15	1
22	US Dept Of Homeland Security	246	1	1	Sinclair	SC381-HL	148.3	4.5	4.5	47	R	1.000			1
	US Dept Of Homeland Security	246	1	1		Round Side Arm						1.000	5.20	0.15	1
23	AT&T Mobility	235	3	3	Powerwave Allgon	7770	55	11	5	35	F	0.650			0.8
	AT&T Mobility	235	3	3	Andrew	SBNHH-1D65A						0.690	5.80	0.04	0.8
24	AT&T Mobility	235	3	3	CCI	OPA-65R-LCUU-H4	48	14.8	7.4	57	F	0.660			0.8
	AT&T Mobility	235	1	3		(42) Diplexer/TTA/BOB/RET/RRU						0.500	74.92	1.44	0.8
25	AT&T Mobility	235	3	3	KMW	EPBQ-654L8H6-L2	73	21	6.3	72.8	F	0.610			0.8
	AT&T Mobility	235	3	3		Flat Sector Frame						0.670	17.90	0.40	0.75
26	Sprint Nextel	222	12	3	Decibel	DB844H90E-XY	48	6.5	8	14	F	0.740			0.8
	Sprint Nextel	222	3	3		Flat Sector Frame						0.670	17.90	0.40	0.75
27	US Dept Of Homeland Security	207	1	1	Sinclair	SC281-L	251	5	5	79	R	1.000			1
	US Dept Of Homeland Security	207	1	1		Round Side Arm						1.000	5.20	0.15	1
28	Marcus Communications LLC	200	2	2	TX RX Systems	101-68-10-X-03N	189.6	3.5	3.5	70	R	1.000			1
	Marcus Communications LLC	200	2	2		Round Side Arm						0.900	5.20	0.15	0.9
29	Spok Holdings, Inc.	193	2	2	Antel	BCD-87010 ___	134	2.6	2.6	26.5	R	1.000			1
	Spok Holdings, Inc.	193	2	2		Round Side Arm						0.900	5.20	0.15	0.9
30	Spok Holdings, Inc.	193	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Spok Holdings, Inc.	193	1	1		30" x 30" Reflector						1.000	7.50	0.03	1
31	Clearwire Corporation	175	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Clearwire Corporation	175	1	1		12" x 12" Junction Box						1.000	1.20	0.01	1
32	Clearwire Corporation	171	3	3	NextNet	BTS-2500	19.3	11.3	5.1	35	F	0.500			0.8
	Clearwire Corporation	171	3	3	Argus	LLPX310R						0.630	4.29	0.03	0.8
33	Clearwire Corporation	171	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Clearwire Corporation	171	3	3		Flat T-Arm						0.670	12.90	0.25	0.75
34	Sprint Nextel	155	3	3	RFS	APXVTM14-C-I20	56.3	12.6	6.3	52.9	F	0.660			0.8
	Sprint Nextel	155	1	3		(18) Filter/Diplexer/RRU						0.500	43.83	0.78	0.8
35	Sprint Nextel	155	3	3	RFS	APXV5PP18-C-A20	72	11.8	7	57	F	0.690			0.8
	Sprint Nextel	155	3	3		Flat Sector Frame						0.750	17.90	0.40	0.75
36	Sensus USA Inc.	139	1	1	Antel	BCD-87010 ___ 4"	134	2.6	2.6	26.5	R	1.000			1
	Sensus USA Inc.	139	1	1		Round Side Arm						1.000	5.20	0.15	1
37	Senet, Inc.	135	1	1	L-com	HG908U-PRO	63	1.5	1.5	3.8	R	1.000			1
	Senet, Inc.	135	1	1		Round Side Arm						1.000	5.20	0.15	1
38	Senet, Inc.	130	1	1	Tycon	ENC-DC	11	8.5	3	4	F	1.000			1
	Senet, Inc.	130	1	1		Stand-Off						1.000	2.50	0.08	1
39	Marcus Communications LLC	107	1	1	TX RX Systems	101-68-10-X-03N	189.6	3.5	3.5	70	R	1.000			1
	Marcus Communications LLC	107	1	1		Round Side Arm						1.000	5.20	0.15	1
40	Verizon Wireless	92	6	3	Andrew	SBNHH-1D65B	72.7	11.9	7.1	50.7	F	0.690			0.8
	Verizon Wireless	92	1	3		(12) RRU/BOB						0.500	33.87	0.63	0.8
41	Verizon Wireless	92	6	3		72" x 14" Panel	72	14	7	45	F	0.670			0.8
	Verizon Wireless	92	3	3		Flat Sector Frame						0.670	17.90	0.40	0.75
42	-	42	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	-	42	4	4		Ice Shield						1.000	6.00	0.15	1
43	Spok Holdings, Inc.	6	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Spok Holdings, Inc.	6	1	1	Trimble	Acutime 2000						1.000	0.30	0.00	1
44															1
45															1
46															1
47															1
48															1
49															1
50															1

No.	Elevation	C_AA_C	C_AA_C (Ice)	Force	Force (Ice)	Weight	Weight (Ice)	60 Azi	Force	F (Ice)	Height	Sum of Forces (No I	
	(ft)	(ft^2)	(ft^2)	(lb)	(lb)	(lb)	(lb)	Mult.	mean	mean	Flag	60 Azi.	180 Azi.
1	300	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00			
	300	80.00	108.00	2766.817	675.492	10800	14040	1.00	1521.75	371.52	1.5033333	2766.817067	
2	283	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5033343		
	283	70.00	94.50	2380.948	581.286	9600	12480	1.00	1309.52	319.71	1.5035336	2380.948376	
3	212.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5035346		
	212.5	45.00	60.75	1410.307	344.313	6000	7800	1.00	775.67	189.37	1.5047059	1410.307249	
4	100	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5047069		
	100	45.00	60.75	1137.058	277.602	6000	7800	1.00	625.38	152.68	1.5100000	1137.05799	
5								1.00			1.5100010		
								1.00					
6	338	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00			
	338	5.53	7.47	197.886	48.312	84	109	1.00	108.84	26.57	1.5029586	197.8856442	
7	324	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5029596		
	324	13.41	18.10	474.099	115.747	90	117	1.00	260.75	63.66	1.5030864	474.0988274	
8	320	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5030874		
	320	3.60	4.86	126.824	30.963	48	62	1.00	69.75	17.03	1.5031250	126.8239182	
9	311	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5031260		
	311	0.80	1.08	27.954	6.825	36	47	1.00	15.37	3.75	1.5032154	27.95430955	
10	307	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5032164		
	307	0.80	1.08	27.851	6.800	36	47	1.00	15.32	3.74	1.5032573	27.85110819	
11	303	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5032583		
	303	0.22	0.29	7.457	1.821	13	17	1.00	4.10	1.00	1.5033003	7.456990624	
12	275	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5033013		
	275	5.20	7.02	175.427	42.829	180	234	1.00	96.48	23.56	1.5033013	175.4272562	
13	275	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5033023		
	275	20.76	28.03	700.360	170.986	106	138	1.00	385.20	94.04	1.5036364	875.7868408	
14	270	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5036374		
	270	22.75	30.71	763.481	186.397	156	203	1.00	419.91	102.52	1.5037037	763.4811011	
15	270	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5037047		
	270	5.20	7.02	174.510	42.605	180	234	1.00	95.98	23.43	1.5037037	937.9910671	
16	270	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5037047		
	270	2.68	3.62	89.940	21.958	36	47	1.00	49.47	12.08	1.5037037	1027.930819	
17	270	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5037047		
	270	9.36	12.64	282.706	69.020	360	468	1.00	155.49	37.96	1.5037037	1310.636964	
18	268	10.31	12.86	345.203	77.882	299	564	1.00	189.86	42.84	1.5037047		
	268	13.87	18.72	371.488	90.695	476	619	1.00	204.32	49.88	1.5037313	716.6914318	
19	268	19.20	21.56	643.123	130.555	185	563	1.00	353.72	71.81	1.5037323		
	268	1.50	2.03	40.186	9.811	47	61	1.00	22.10	5.40	1.5037313	1400.000689	
20	268	3.35	4.58	112.153	27.711	183	309	1.00	61.68	15.24	1.5037323		
	268	35.98	48.57	903.659	220.620	1440	1872	1.00	497.01	121.34	1.5037313	2415.812532	
21	250	10.46	13.68	343.344	81.202	95	615	1.00	188.84	44.66	1.5037323		
	250	5.20	7.02	170.715	41.678	180	234	1.00	93.89	22.92	1.5040000	514.0587784	
22	246	5.56	7.49	181.735	44.237	56	340	1.00	99.95	24.33	1.5040010		
	246	5.20	7.02	169.930	41.487	180	234	1.00	93.46	22.82	1.5040650	351.6645299	
23	235	8.59	10.71	277.170	62.480	126	322	1.00	152.44	34.36	1.5040660		
	235	12.01	16.21	309.797	75.634	147	191	1.00	170.39	41.60	1.5042553	586.967591	
24	235	9.64	12.43	310.785	72.479	205	443	1.00	170.93	39.86	1.5042563		
	235	37.46	50.57	966.601	235.987	1726	2243	1.00	531.63	129.79	1.5042553	1864.353462	
25	235	19.38	23.86	625.052	139.169	262	701	1.00	343.78	76.54	1.5042563		
	235	35.98	48.57	870.362	212.491	1440	1872	1.00	478.70	116.87	1.5042553	3359.7675	
26	222	26.52	32.48	841.643	186.394	202	371	1.00	462.90	102.52	1.5042563		
	222	35.98	48.57	856.325	209.064	1440	1872	1.00	470.98	114.98	1.5045045	1697.967451	
27	207	10.46	13.68	325.319	76.939	95	604	1.00	178.93	42.32	1.5045055		
	207	5.20	7.02	161.752	39.490	180	234	1.00	88.96	21.72	1.5048309	487.0716767	
28	200	11.06	15.93	340.670	88.708	168	482	1.00	187.37	48.79	1.5048319		
	200	9.36	12.64	259.476	63.349	360	468	1.00	142.71	34.84	1.5050000	600.1458282	
29	193	5.81	9.26	177.045	51.055	64	236	1.00	97.38	28.08	1.5050010		
	193	9.36	12.64	256.848	62.707	360	468	1.00	141.27	34.49	1.5051813	433.8935049	
30	193	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5051823		
	193	7.50	10.13	228.675	55.829	36	47	1.00	125.77	30.71	1.5051813	662.5687569	
31	175	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5051823		
	175	1.20	1.62	35.579	8.686	12	16	1.00	19.57	4.78	1.5057143	35.57875845	
32	171	2.18	3.11	64.236	16.545	126	210	1.00	35.33	9.10	1.5057153		
	171	8.11	10.95	191.051	46.643	103	134	1.00	105.08	25.65	1.5058480	255.2867387	
33	171	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5058490		
	171	25.93	35.00	572.779	139.839	900	1170	1.00	315.03	76.91	1.5058480	828.066216	
34	155	10.05	12.55	287.715	65.002	190	419	1.00	158.24	35.75	1.5058490		
	155	21.92	29.59	502.091	122.581	935	1216	1.00	276.15	67.42	1.5064516	789.8052239	
35	155	13.29	15.74	380.562	81.512	205	485	1.00	209.31	44.83	1.5064526		
	155	40.28	54.37	865.062	211.197	1440	1872	1.00	475.78	116.16	1.5064516	2035.429962	
36	139	2.90	4.63	80.599	23.242	32	192	1.00	44.33	12.78	1.5064526		
	139	5.20	7.02	144.356	35.243	180	234	1.00	79.40	19.38	1.5071942	224.9547542	
37	135	0.79	1.51	21.680	7.508	5	57	1.00	11.92	4.13	1.5071952		
	135	5.20	7.02	143.157	34.950	180	234	1.00	78.74	19.22	1.5074074	164.8366753	
38	130	0.78	1.22	21.221	5.986	5	31	1.00	11.67	3.29	1.5074084		
	130	2.50	3.38	68.087	16.623	96	125	1.00	37.45	9.14	1.5076923	89.30768555	
39	107	5.53	7.96	142.459	37.095	84	360	1.00	78.35	20.40	1.5076933		
	107	5.20	7.02	133.958	32.705	180	234	1.00	73.68	17.99	1.5093458	276.4172789	
40	92	27.07	32.02	667.887	142.855	365	667	1.00	367.34	78.57	1.5093468		
	92	16.94	22.86	334.271	81.609	756	983	1.00	183.85	44.89	1.5108696	1002.158293	
41	92	29.66	35.62	731.771	158.939	324	642	1.00	402.47	87.42	1.5108706		
	92	35.98	48.57	665.785	162.545	1440	1872	1.00	366.18	89.40	1.5108696	2399.71479	
42	42	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5108706		
	42	24.00	32.40	473.302	115.552	720	936	1.00	260.32	63.55	1.5238095	473.3019375	
43	6	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5238105		
	6	0.30	0.41	5.369	1.311			1.00	2.95	0.72	1.6666667	5.369462784	
44					#VALUE!			1.00	#VALUE!	#VALUE!	1.6666677		
								1.00	#VALUE!	#VALUE!	1.6666677	#VALUE!	
45					#VALUE!			1.00	#VALUE!	#VALUE!	1.6666687		
								1.00	#VALUE!	#VALUE!	1.6666687	#VALUE!	
46					#VALUE!			1.00	#VALUE!	#VALUE!	1.6666697		
								1.00	#VALUE!	#VALUE!	1.6666697	#VALUE!	
47					#VALUE!			1.00	#VALUE!	#VALUE!	1.6666707		
								1.00	#VALUE!	#VALUE!	1.6666707	#VALUE!	
48					#VALUE!			1.00	#VALUE!	#VALUE!	1.6666717		
								1.00	#VALUE!	#VALUE!	1.6666717	#VALUE!	
49					#VALUE!			1.00	#VALUE!	#VALUE!	1.6666727		
								1.00	#VALUE!	#VALUE!	1.6666727	#VALUE!	
50					#VALUE!			1.00	#VALUE!	#VALUE!	1.6666737		
								1.00	#VALUE!	#VALUE!	1.6666737	#VALUE!	

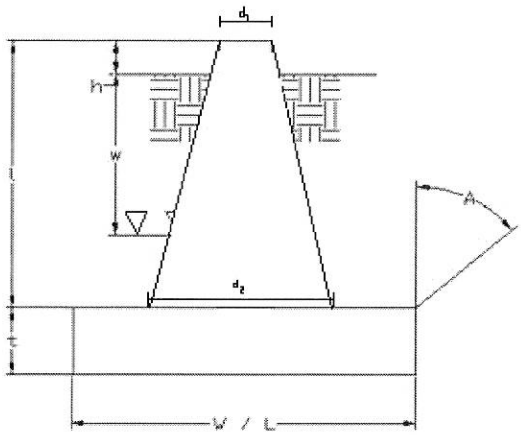
Foundation

Site No.:	88018
Engineer:	RDB
Date:	01/31/18
Carrier:	AT&T Mobility

Design Loads (Factored)

Compression/Leg:	475.41	k
Uplift/Leg:	338.81	k
Shear/Leg	66.90	k

Face Width @ Top of Pier (d_1):	4.00	ft
Face Width @ Bottom of Pier (d_2):	8.00	ft
Total Length of Pier (l):	8.00	ft
Height of Pedestal Above Ground (h):	0.50	ft
Width of Pad (W):	18.00	ft
Length of Pad (L):	18.00	ft
Thickness of Pad (t):	3.00	ft
Water Table Depth (w):	99.00	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil (Above Water Table):	100.0	pcf
Unit Weight of Soil (Below Water Table):	37.6	pcf
Friction Angle of Uplift (A):	20	°
Ultimate Compressive Bearing Pressure:	40000	psf
Ultimate Skin Friction:	197	psf



Volume Pier (Total):	298.67	ft^3
Volume Pad (Total):	972.00	ft^3
Volume Soil (Total):	2935.41	ft^3
Volume Pier (Buoyant):	0.00	ft^3
Volume Pad (Buoyant):	0.00	ft^3
Volume Soil (Buoyant):	0.00	ft^3
Weight Pier:	44.80	k
Weight Pad:	145.80	k
Weight Soil:	293.54	k
Uplift Skin Friction:	31.91	k

Uplift Check

ϕs Uplift Resistance (k)	Ratio	Result
387.04	0.88	**OK**

Axial Check

ϕs Axial Resistance (k)	Ratio	Result
9720.00	0.05	**OK**

Anchor Bolt Check

Bolt Diameter (in)	2.25
# of Bolts	6
Steel Grade	A36
Steel Fy	36
Steel Fu	58
Detail Type	C

Usage Ratio	Result
0.51	**OK**

SITESAFE
RF COMPLIANCE EXPERTS

200 North Glebe Road, Suite 1000, Arlington, VA 22203-3728
703.276.1100 ● 703.276.1169 fax
info@sitesafe.com ● www.sitesafe.com

Smartlink on behalf of AT&T Mobility, LLC Site FA – 10034997 Site ID – CT2135 (MRCTB026967-MRCTB026942) USID – 60419 Site Name – Stamford West Site Compliance Report

Catoonah Lane
Stamford, CT 6902

Latitude: N41-3-07.97
Longitude: W73-33-47.30
Structure Type: Self-Support

Report generated date: March 5, 2018
Report by: Sam Cosgrove
Customer Contact: Ryan Lynch

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

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1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Access to Antennas Locked?	Yes
RF Sign(s) @ access point(s)	None
RF Sign(s) @ antennas	None
Barrier(s) @ sectors	None
Max cumulative simulated RFE level on the Ground	<1% General Public Limit
FCC & AT&T Compliant?	Will Be Compliant

The following documents were provided by the client and were utilized to create this report:

RFDS: NEW-ENGLAND_CONNECTICUT_CTL02135_2018-LTE-Next-Carrier_LTE_mh705r_2051A0EFQ7_10034997_60419_10-25-2017_Preliminary-Modification-Recommended_v1.00

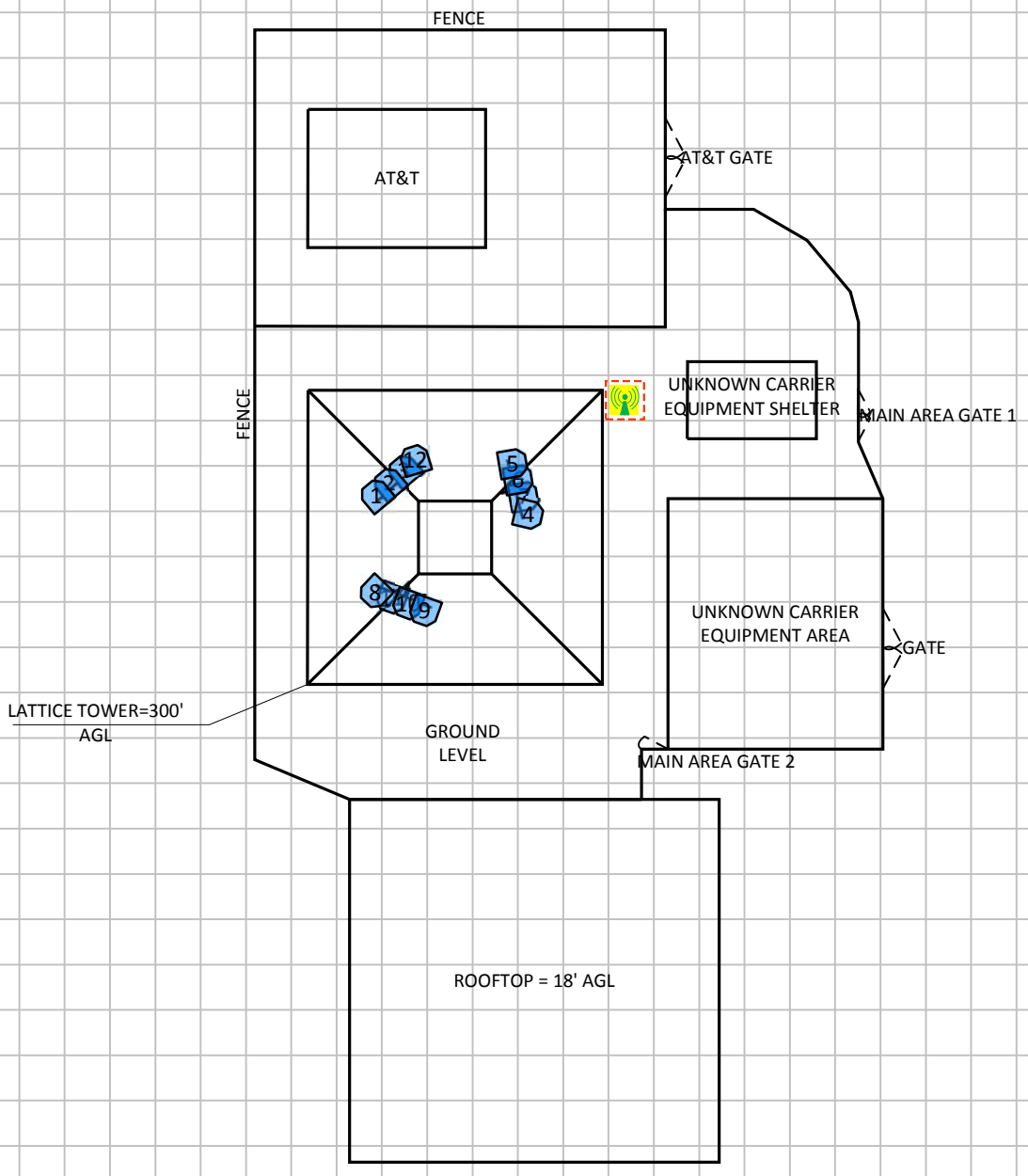
CD's: 10034997_AE201_180201_CTL02135_Rev1 S&S 6C-7C

2 Scale Maps of Site

The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- Elevation View

Site Scale Map For: Stamford West



(Feet)

0 14.9 29.9

www.sitesafe.com
Site Name:Stamford West
3/5/2018 4:37:36 PM

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Sign Legend

Caution 1 | Caution 2 | Notice 2 | Notice 1 | Warning | Info 1 | Info 2

Barrier

Proposed Barriers/ Signs

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Ant Gain (dBd)	2G GSM Radio(s)	3G UMTS Radio(s)	4G Radio(s)	Total ERP (Watts)	X	Y	Z (AGL)
1	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	737	0	66	4.6	11.29	0	0	1	1475.7	67.6'	145.5'	232.7'
1	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	1900	0	65	4.6	14.65	0	0	1	4842.1	67.6'	145.5'	232.7'
2	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H6	Panel	737	0	68	6.4	12.36	0	0	1	2951.4	69.8'	147.4'	231.8'
2	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H6	Panel	2100	0	61	6.4	15.36	0	0	1	5070.3	69.8'	147.4'	231.8'
3	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	737	0	65.8	4	10.76	0	0	1	1475.7	72.2'	149.5'	233'
3	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	850	0	60	4	11.36	0	0	1	1000	72.2'	149.5'	233'
3	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	0	61.1	4	14.26	0	0	1	1285.3	72.2'	149.5'	233'
4	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	143	82	4.6	11.51	0	1	0	254.7	92.8'	142.3'	232.7'
5	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	737	120	66	4.6	11.29	0	0	1	1475.7	90.2'	150.7'	232.7'
5	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	1900	120	65	4.6	14.65	0	0	1	4842.1	90.2'	150.7'	232.7'
6	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H6	Panel	737	120	68	6.4	12.36	0	0	1	2951.4	91.1'	148.1'	231.8'
6	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H6	Panel	2100	120	61	6.4	15.36	0	0	1	5070.3	91.1'	148.1'	231.8'
7	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	737	120	65.8	4	10.76	0	0	1	1475.7	92'	145.3'	233'
7	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	850	120	60	4	11.36	0	0	1	1000	92'	145.3'	233'
7	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	120	61.1	4	14.26	0	0	1	1285.3	92'	145.3'	233'
8	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	263	82	4.6	11.51	0	1	0	254.7	67.5'	129.4'	232.7'
9	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	737	240	66	4.6	11.29	0	0	1	1475.7	75.7'	126.3'	232.7'
9	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	1900	240	65	4.6	14.65	0	0	1	4842.1	75.7'	126.3'	232.7'
10	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H6	Panel	737	240	68	6.4	12.36	0	0	1	2951.4	72.9'	127.4'	231.8'
10	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H6	Panel	2100	240	61	6.4	15.36	0	0	1	5070.3	72.9'	127.4'	231.8'
11	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	737	240	65.8	4	10.76	0	0	1	1475.7	70.2'	128.4'	233'
11	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	850	240	60	4	11.36	0	0	1	1000	70.2'	128.4'	233'
11	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	240	61.1	4	14.26	0	0	1	1285.3	70.2'	128.4'	233'
12	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	23	82	4.6	11.51	0	1	0	254.7	74.1'	151.3'	232.7'

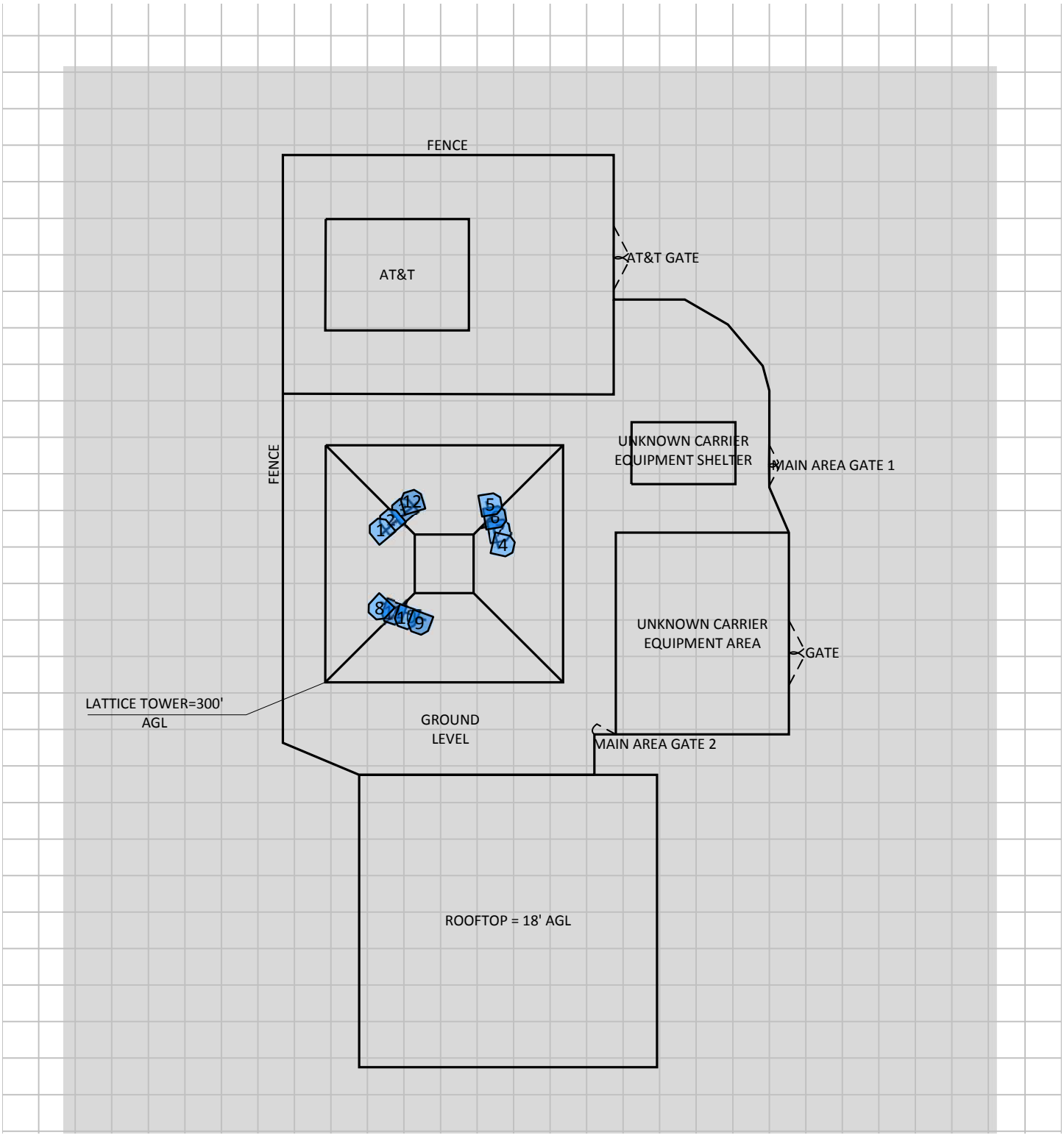
NOTE: X, Y and Z indicate relative position of the bottom of the antenna to the origin location on the site, displayed in the model results diagram. Specifically, the Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. The distance to the bottom of the antenna is calculated by subtracting half of the length of the antenna from the antenna centerline. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed.

4 Emission Predictions

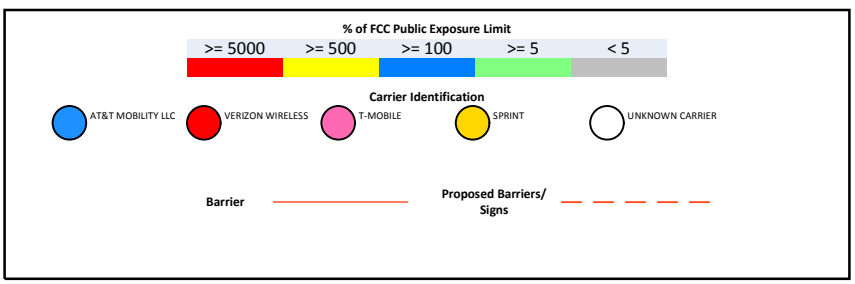
In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas.

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: Stamford West



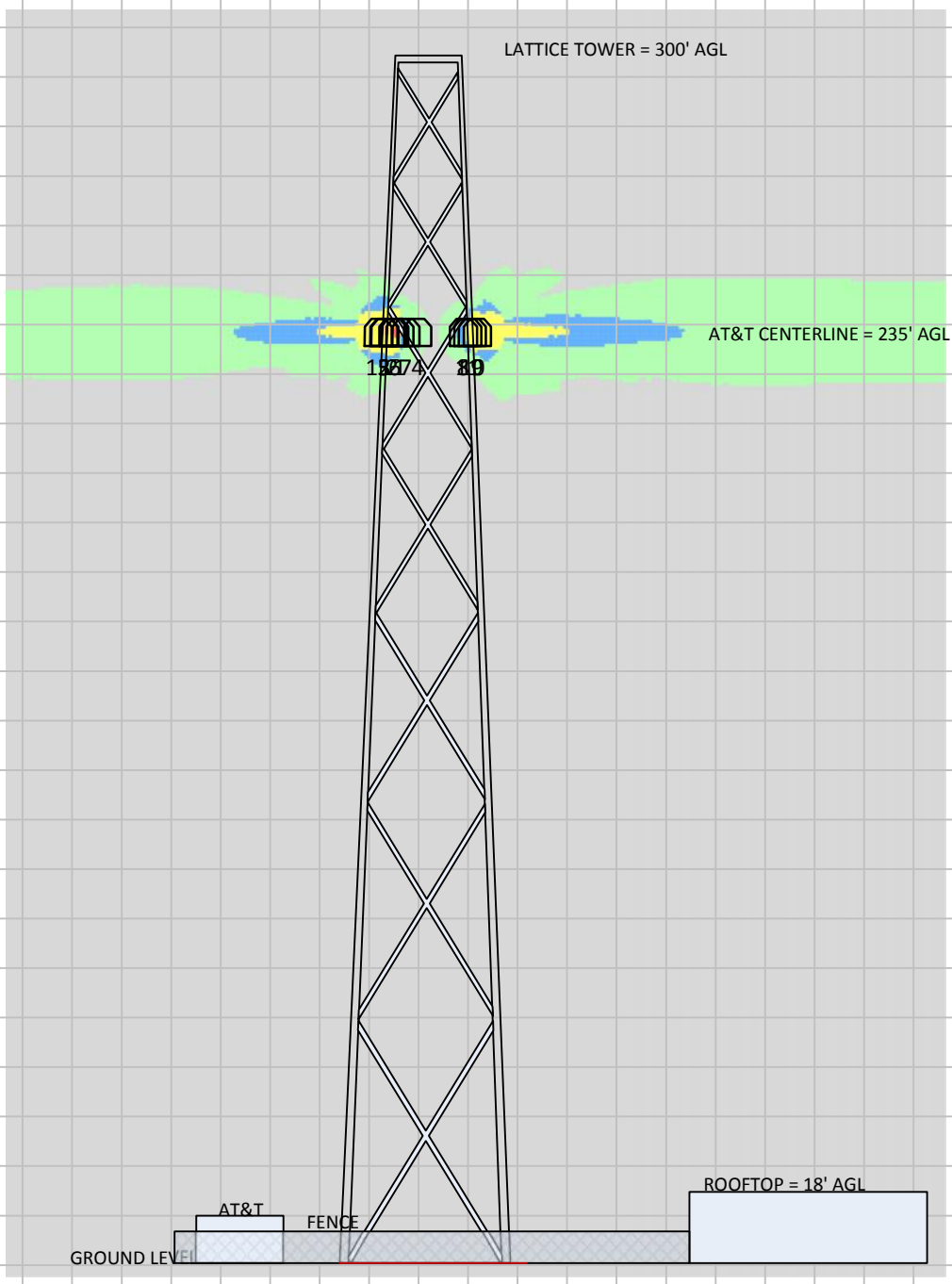
% of FCC Public Exposure Limit
Spatial average 0' - 6'



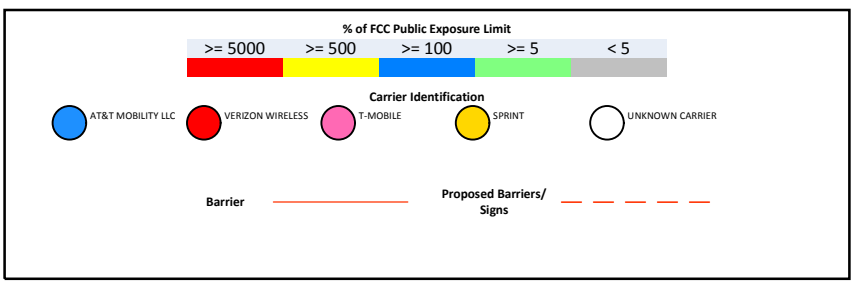
(Feet)
0 15.4 30.8
www.sitesafe.com
Site Name:Stamford West
3/5/2018 4:36:55 PM

SitesafeTC Version:1.0.0.0 - 0.0.0.268
Sitesafe OET-65 Model
Near Field Boundary: 1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: Stamford West
Elevation View



% of FCC Public Exposure Limit
Spatial average 0' - 6'



(Feet)
0 24.3 48.6

www.sitesafe.com
Site Name:Stamford West
3/5/2018 4:35:28 PM

SitesafeTC Version:1.0.0.0 - 0.0.0.268
Sitesafe OET-65 Model
Near Field Boundary: 1.5 * Aperture
Reflection Factor: 1
Single Level (0)

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Site Access Location

Yellow caution 2 sign required at the tower access.

Notes:

- This report's diagrams do not show the Access locations because the data provided did not include them.
- Data concerning all other carriers on site was unavailable and therefore not included in this report.
- Signage may already exist on site. Sitesafe is recommending as a worst case scenario

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Sitesafe, Inc., in Arlington, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio-frequency Radiation; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Sam Cosgrove.

March 5, 2018

Appendix A – Statement of Limiting Conditions

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data collected by Sitesafe provided by a second party and data collected by Sitesafe, the data will be used.

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

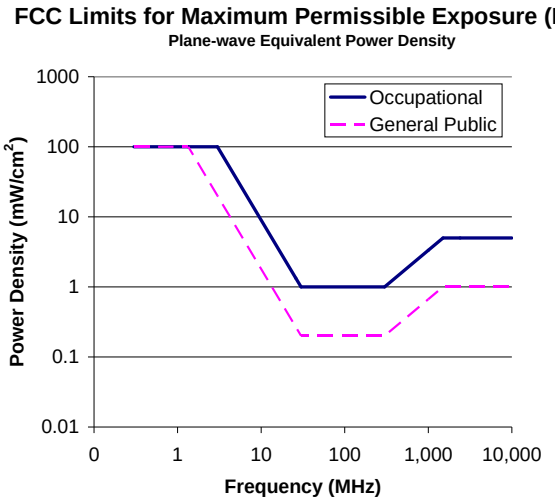
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lock Out Tag Out procedure aimed to control the unexpected energization or start up of machines when maintenance or service is being performed.

Appendix C – Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3 foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. **Gray represents areas more than 20 times below the most conservative exposure limit**.
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone**.
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers**.
- Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels**.
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur, but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.

Gain (of an antenna) – The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antennas as compared to an omni directional antenna.

General Population/Uncontrolled Environment – Defined by the FCC, as an area where exposure to RF energy may occur to persons who are **unaware** of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The maximum levels of RF exposure a person may be exposed to without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are **aware** of the

potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of Radio Frequency radiation on Humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency (RF) – The frequencies of electromagnetic waves which are used for radio communications. Approximately 3 kHz to 300 GHz.

Radio Frequency Exposure (RFE) – The amount of RF power density that a person is or might be exposed to.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average power density an average sized human will be exposed to at a location.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix F – References

The following references can be followed for further information about RF Health and Safety.

Sitesafe, Inc.
http://www.sitesafe.com
FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety
National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org
Institute of Electrical and Electronics Engineers, Inc., (IEEE)
http://www.ieee.org
American National Standards Institute (ANSI)
http://www.ansi.org
Environmental Protection Agency (EPA)
http://www.epa.gov/radtown/wireless-tech.html
National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/
Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/
International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org
World Health Organization (WHO)
http://www.who.int/peh-emf/en/
National Cancer Institute
http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones
American Cancer Society (ACS)
http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?siteareа=PED
European Commission Scientific Committee on Emerging and Newly Identified Health Risks
http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf
Fairfax County, Virginia Public School Survey
http://www.fcps.edu/fts/safety-security/RFEESurvey/
UK Health Protection Agency Advisory Group on Non-ionising Radiation
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368
Norwegian Institute of Public Health
http://www.fhi.no/dokumenter/545eea7147.pdf

SITE NAME: STAMFORD WEST
FA NUMBER: 10034997
SITE NUMBER: CTL02135

6C - MRCTB026942
7C - MRCTB026967

CATOONAH LANE
STAMFORD, CT 06902
FAIRFIELD COUNTY

PROJECT TEAM

CLIENT REPRESENTATIVE

COMPANY: SMARTLINK, LLC
ADDRESS: 85 RANGEWAY ROAD, BUILDING 3, SUITE 102
CITY, STATE, ZIP: NORTH BILLERICA, MA 01862-2105
CONTACT: TODD OLIVER
PHONE: (774) 369-3613
E-MAIL: TODD.OLIVER@SMARTLINKLLC.COM

SITE ACQUISITION

COMPANY: SMARTLINK, LLC
ADDRESS: 85 RANGEWAY ROAD, BUILDING 3, SUITE 102
CITY, STATE, ZIP: NORTH BILLERICA, MA 01862-2105
CONTACT: SHARON KEEFE
PHONE: (978) 930-3918
E-MAIL: SHARON.KEEFE@SMARTLINKLLC.COM

ENGINEER

COMPANY: MASER CONSULTING CONNECTICUT
ADDRESS: 331 NEWMAN SPRINGS ROAD, SUITE 203
CITY, STATE, ZIP: RED BANK, NJ 07701-5699
CONTACT: PETROS TSOUKALAS
PHONE: (856) 797-0412 x4102
E-MAIL: PTSOUKALAS@MASERCONSULTING.COM

CONSTRUCTION MANAGER

COMPANY: SMARTLINK, LLC.
ADDRESS: 85 RANGEWAY ROAD, BUILDING 3, SUITE 102
CITY, STATE, ZIP: NORTH BILLERICA, MA 01862-2105
CONTACT: MARK DONNELLY
PHONE: (617) 515-2080
E-MAIL: MARK.DONNELLY@SMARTLINKLLC.COM

SITE INFORMATION

APPLICANT/LESSEE

at&t

NEW CINGULAR WIRELESS PCS, LLC
550 COCHITUATE RD.
FRAMINGHAM, MA 01701

PROPERTY/TOWER OWNER:

NAME: AMERICAN TOWER
ADDRESS: 116 HUNTINGTON AVE., 11TH FLOOR
CITY, STATE, ZIP: BOSTON, MA 02116
SITE ID#: 88018

LATITUDE: 41.0522139° N

LONGITUDE: 73.5631381° W

LAT./LONG. TYPE: NAD 83

AREA OF CONSTRUCTION: EXISTING EQUIPMENT SHELTER AND LATTICE TOWER

ZONING/JURISDICTION: CITY OF STAMFORD

CURRENT USE/PROPOSED USE: UNMANNED TELECOMMUNICATIONS FACILITY

HANDICAP REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.

CONSTRUCTION TYPE: IIB

USE GROUP: U

VICINITY MAP

NOT TO SCALE
IMAGE SOURCE: BING MAPS

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.

1. 2016 CONNECTICUT STATE BUILDING CODE, INCORPORATING THE 2012 IBC
2. 2014 NATIONAL ELECTRICAL CODE - NFPA 70
3. 2012 NFPA 101
4. LIGHTNING PROTECTION CODE 2011
5. AMERICAN CONCRETE INSTITUTE 318
6. AMERICAN INSTITUTE OF STEEL CONSTRUCTION 360-10.
7. EIA/TIA-222 REVISION G
8. TIA 607 FOR GROUNDING
9. INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81
10. IEEE C2 LATEST EDITION
11. TELCORDIA GR-1275
12. ANSI T1.311

GENERAL CONTRACTOR 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.

GENERAL NOTES

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.

SHEET	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES
A-1	COMPOUND PLAN AND EQUIPMENT PLAN
A-2	ELEVATION VIEW, DETAILS AND ANTENNA SCHEDULE
A-3	ANTENNA LAYOUTS
A-4	DETAILS
A-5	DETAILS
A-6	RF PLUMBING DIAGRAMS
G-1	GROUNDING DETAILS

PROJECT DESCRIPTION/SCOPE OF WORK

THIS PROJECT WILL BE COMPRISED OF:

- INSTALL (3) NEW AT&T ANTENNAS, (1) PER SECTOR
- INSTALL (3) NEW RRUS-B14 4478
- INSTALL (3) NEW RRUS 4426 B66
- INSTALL (1) DC-6 SURGE SUPPRESSION DOME
- INSTALL (2) NEW 6/C DC CABLES
- REPLACE (2) DUS WITH (2) 5216
- REPLACE IDL2 WITH IDLe

PROPOSED PROJECT SCOPE BASED ON RFDS ID# 2042909 VERSION 2.0, LAST UPDATED 01/11/2018.

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at&t

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smartlink
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NORTH BILLERICA, MA 01862-2105
TEL: (774) 369-3613

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SCALE: AS SHOWN
JOB NUMBER: 17946131A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
1	02/01/18	FOR CONSTRUCTION	AJC	RA
0	01/24/18	ISSUED FOR REVIEW	AJC	RA

STAMFORD, CT PETROS E. TSOUKALAS CONNECTICUT LICENSED PROFESSIONAL ENGINEER
PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN.28574

SITE NAME:

STAMFORD WEST
FA# 10034997
SITE # CTL02135

CATOONAH LANE
STAMFORD, CT 06902
FAIRFIELD COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701
Phone: 732.383.1950
Fax: 732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE: TITLE SHEET

SHEET NUMBER: T-1

GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING 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 GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5O HMS OR LESS.
4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
5. 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.
6. 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.
7. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE EQUIPMENT GROUND RING WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
10. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
11. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. ALL BENDS SHALL BE MADE WITH 12" RADIUS OR LARGER.
12. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
13. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS EXCEPT FOR GROUND BAR CONNECTION FROM MGB TO OUTSIDE EXTERIOR GROUND SHALL ALL BE CADWELD CONNECTIONS.
14. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
15. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED TO THE TOWER GROUND BAR.
16. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
17. ALL EXTERIOR AND INTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
18. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
19. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
20. 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.
21. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/4" IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.
22. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

    CONTRACTOR - SMARTLINK
    SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
    OWNER - AT&T (NEW CINGULAR WIRELESS PCS, LLC)

23. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
24. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
25. 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.
26. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
27. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
28. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
29. 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.
30. 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.
31. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
32. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE RESPONSIBLE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
33. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
34. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION.
35. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
36. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
37. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
38. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
39. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
40. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
41. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
42. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR.
43. 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.
44. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
45. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS.
46. 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) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
47. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
48. 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.
49. 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 SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
50. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN ALERT OF DANGEROUS EXPOSURE LEVELS.

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SCALE : AS SHOWN

JOB NUMBER : 17946131A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
1	02/01/18	FOR CONSTRUCTION	AJC	RA
0	01/24/18	ISSUED FOR REVIEW	AJC	RA

STATE OF CONNECTICUT — PETROS E. TSOUKALAS — LICENSED PROFESSIONAL ENGINEER

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN.28574

SITE NAME:

STAMFORD WEST
FA# 10034997
SITE # CTL02135

CATOONAH LANE
STAMFORD, CT 06902
FAIRFIELD COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701
Phone: 732.383.1950
Fax: 732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE : GENERAL NOTES

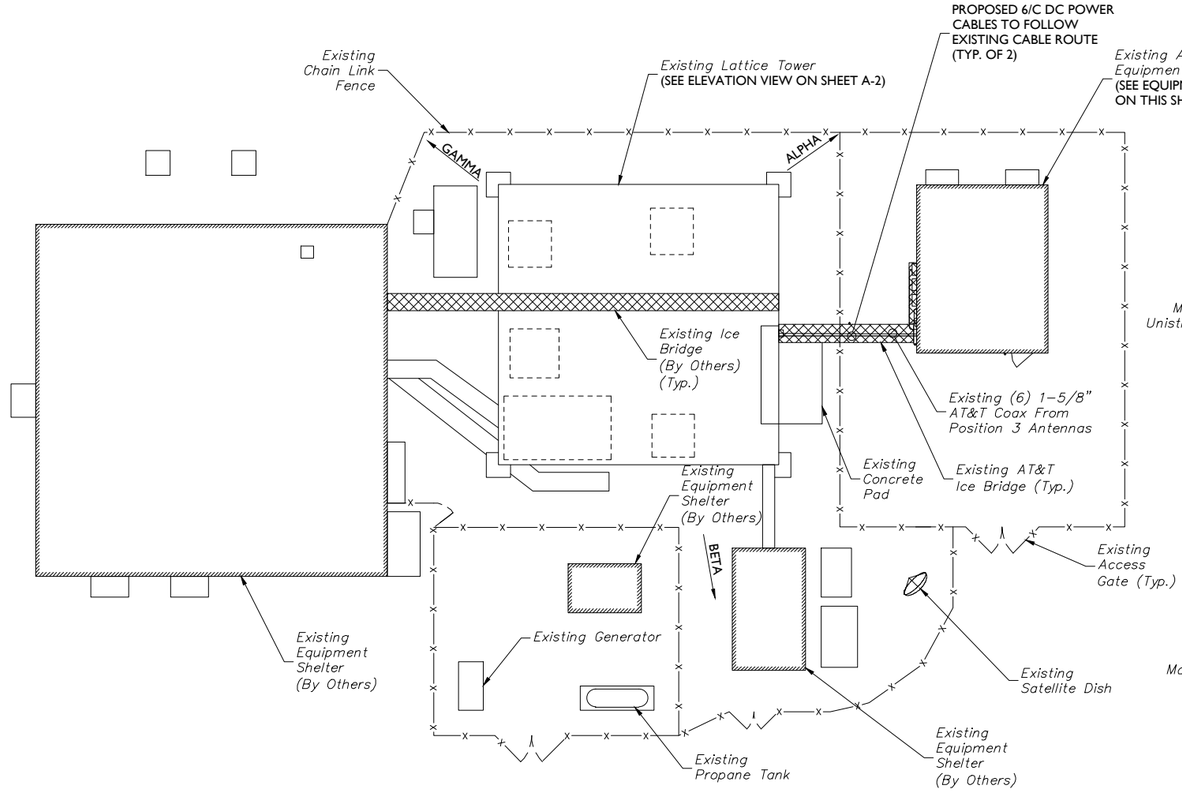
SHEET NUMBER : GN-1

NOTES:

SITE INFORMATION OBTAINED FROM THE FOLLOWING:

A. PLAN ENTITLED "STAMFORD WEST" PREPARED BY MASER CONSULTING P.A., LAST REVISED 02/28/2017.

B. LIMITED FIELD OBSERVATIONS BY MASER CONSULTING P.A. ON 12/01/2016.



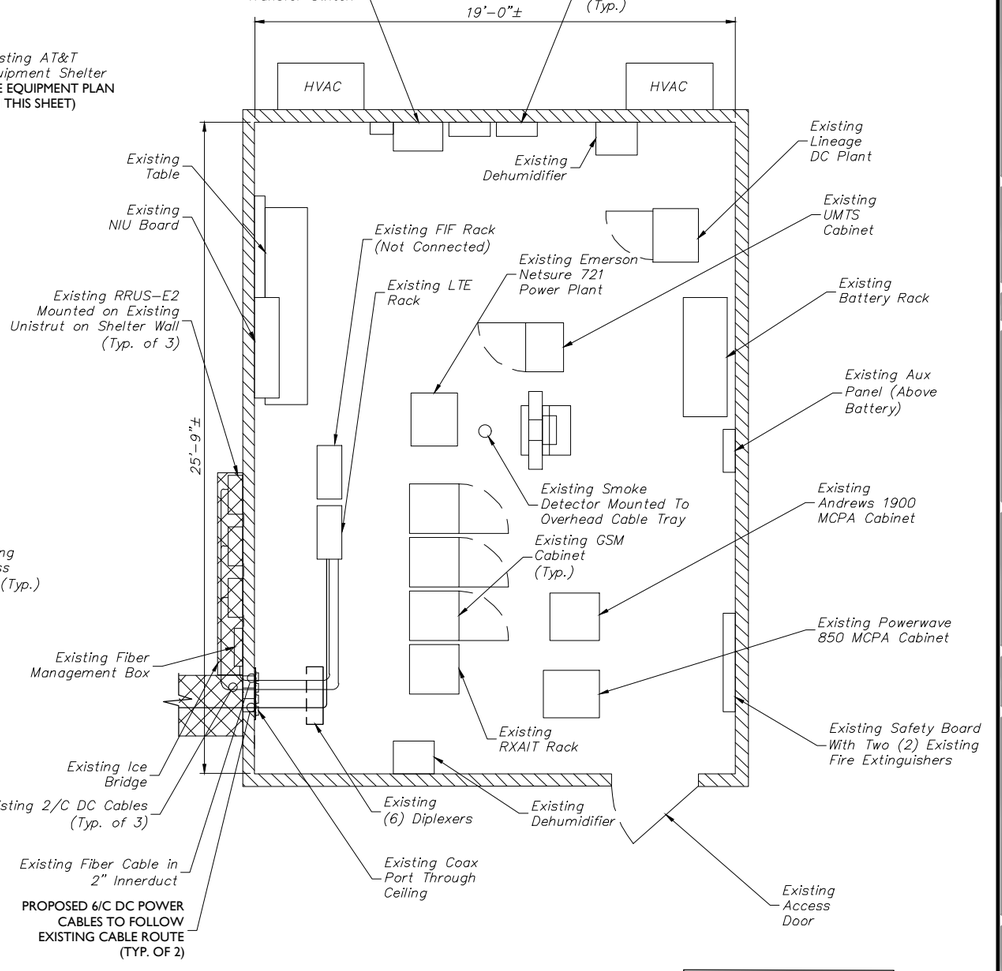
COMPOUND PLAN

GRAPHIC SCALE

10 0 5 10 20

(IN FEET)

SCALE: 1" = 10' FOR 24"X36" DRAWINGS
(DO NOT SCALE 11"X17" DRAWINGS)



EQUIPMENT PLAN

GRAPHIC SCALE

3 0 1.5 3 6

(IN FEET)

SCALE: 1" = 3' FOR 24"X36" DRAWINGS
(DO NOT SCALE 11"X17" DRAWINGS)

NOTE:

THESE PLANS WERE DESIGNED WITH THE ASSUMPTION THAT THE PREVIOUS PLANS PREPARED BY MASER CONSULTING CONNECTICUT, DATED 02/28/2017, WILL BE COMPLETED PRIOR TO THE CURRENT SCOPE OF WORK BEING INSTALLED. ANY CHANGES IN PREVIOUS DESIGN SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

NOTE:

REPLACE (2) DUS WITH (2) 5216 AND REPLACE IDL2 WITH IDLe IN EXISTING LTE RACK

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SCALE:	JOB NUMBER:
AS SHOWN	17946131A

REV	DATE	DESCRIPTION	BY	CHECKED BY
1	02/01/18	FOR CONSTRUCTION	AJC	RA
0	01/24/18	ISSUED FOR REVIEW	AJC	RA

STATE OF CONNECTICUT — PETROS E. TSOUKALAS — LICENSED PROFESSIONAL ENGINEER

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN.28570

SITE NAME:

STAMFORD WEST
FA# 10034997
SITE # CTL02135

CATOONAH LANE
STAMFORD, CT 06902
FAIRFIELD COUNTY

RED BANK OFFICE
331 Newman Springs Road
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Red Bank, NJ 07701
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Fax: 732.383.1984
email: solutions@maserconsulting.com

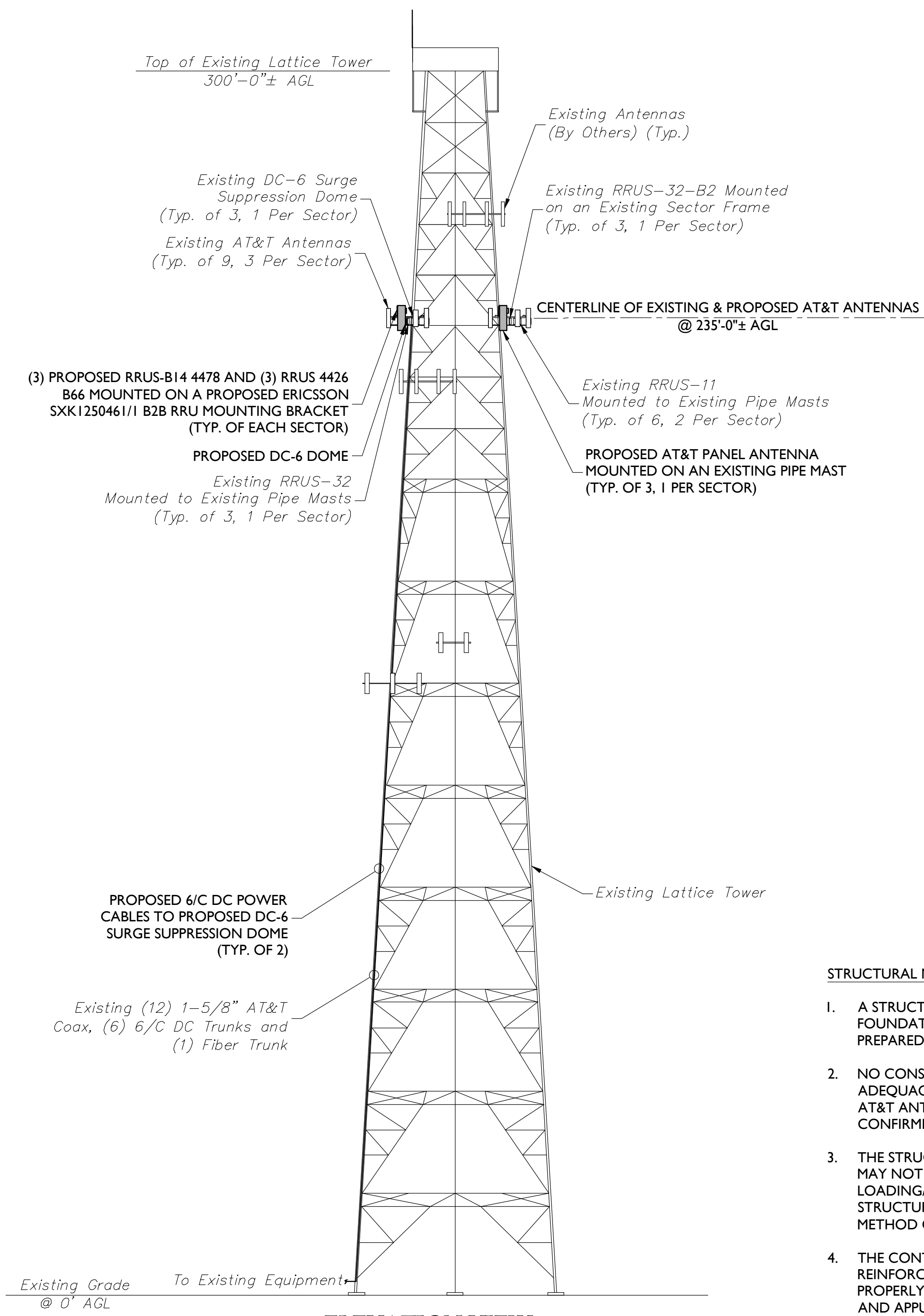
SHEET TITLE:

COMPOUND PLAN AND EQUIPMENT PLAN

SHEET NUMBER:

A-1

3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNAS
6 FEET MINIMUM SEPARATION BETWEEN 700BC & 700 DE



ELEVATION VIEW

GRAPHIC SCALE

20 0 10 20 40

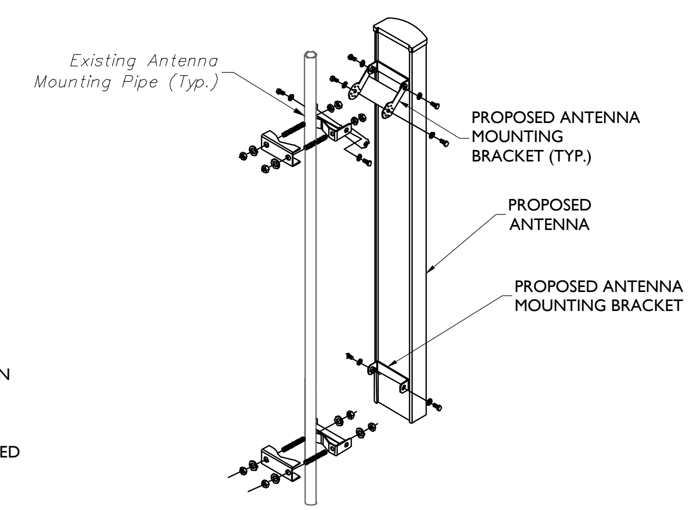
(IN FEET)
SCALE: 1" = 20' FOR 24"X36" DRAWINGS
(DO NOT SCALE 11"X17" DRAWINGS)

PROPOSED ANTENNA AND RRUS CONFIGURATION													
SECTOR		EXISTING ANTENNA CONFIGURATION	PROPOSED ANTENNA CONFIGURATION	TECHNOLOGY	ANTENNA STATUS	HEIGHT (in)	WIDTH (in)	DEPTH (in)	WEIGHT (lbs)	ANTENNA AZIMUTH	ANT. CL. ELEV (ft.)	RRUS CONFIGURATION	STATUS
ALPHA	A1	SBNHH-1D65A	SBNHH-1D65A	LTE	REMAIN	55.00	11.90	7.10	33.50	0°	235'	(1) RRUS-11 (1) RRUS-32-B2	REMAIN REMAIN
	A2	VACANT MAST	KMW EPBQ-654L8H6-L2	LTE	NEW	73.00	21.00	6.30	72.80	0°	235'	(1) RRUS-B14 4478 (1) RRUS 4426 B66	NEW NEW
	A3	CCI OPA-65R-LCUU-H4	CCI OPA-65R-LCUU-H4	LTE	REMAIN	48.00	14.40	7.30	57.00	0°	235'	(1) RRUS-32 (1) RRUS-11 (1) RRUS-E2	REMAIN REMAIN REMAIN
	A4	Powerwave 7770	Powerwave 7770	UMTS	REMAIN	55.00	11.00	5.00	35.00	143°	235'	-	-
BETA	B1	SBNHH-1D65A	SBNHH-1D65A	LTE	REMAIN	55.00	11.90	7.10	33.50	120°	235'	(1) RRUS-11 (1) RRUS-32-B2	REMAIN REMAIN
	B2	VACANT MAST	KMW EPBQ-654L8H6-L2	LTE	NEW	73.00	21.00	6.30	72.80	120°	235'	(1) RRUS-B14 4478 (1) RRUS 4426 B66	NEW NEW
	B3	CCI OPA-65R-LCUU-H4	CCI OPA-65R-LCUU-H4	LTE	REMAIN	48.00	14.40	7.30	57.00	120°	235'	(1) RRUS-32 (1) RRUS-11 (1) RRUS-E2	REMAIN REMAIN REMAIN
	B4	Powerwave 7770	Powerwave 7770	UMTS	REMAIN	55.00	11.00	5.00	35.00	263°	235'	-	-
GAMMA	C1	SBNHH-1D65A	SBNHH-1D65A	LTE	REMAIN	55.00	11.90	7.10	33.50	240°	235'	(1) RRUS-11 (1) RRUS-32-B2	REMAIN REMAIN
	C2	VACANT MAST	KMW EPBQ-654L8H6-L2	LTE	NEW	73.00	21.00	6.30	72.80	240°	235'	(1) RRUS-B14 4478 (1) RRUS 4426 B66	NEW NEW
	C3	CCI OPA-65R-LCUU-H4	CCI OPA-65R-LCUU-H4	LTE	REMAIN	48.00	14.40	7.30	57.00	240°	235'	(1) RRUS-32 (1) RRUS-11 (1) RRUS-E2	REMAIN REMAIN REMAIN
	C4	Powerwave 7770	Powerwave 7770	UMTS	REMAIN	55.00	11.00	5.00	35.00	23°	235'	-	-

ANTENNA SCHEDULE

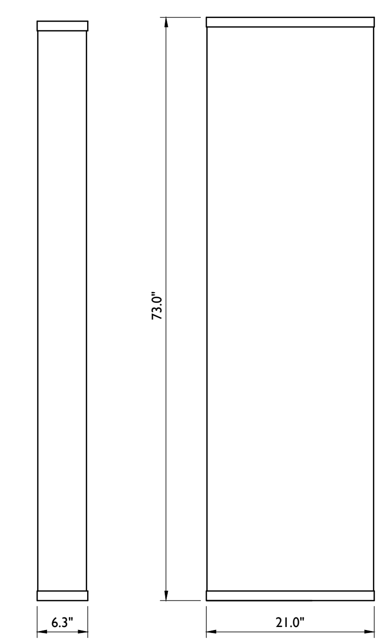
STRUCTURAL NOTES:

1. A STRUCTURAL ANALYSIS TO DETERMINE IF THE EXISTING STRUCTURE AND FOUNDATION CAN ADEQUATELY SUPPORT THE PROPOSED LOADING HAS NOT BEEN PREPARED/ANALYZED BY MASER AND IS TO BE PERFORMED BY OTHERS.
2. NO CONSTRUCTION OF THE PROPOSED LOADING SHOWN SHALL PROCEED UNTIL ADEQUACY OF EXISTING STRUCTURE AND FOUNDATION, INCLUDING THE PROPOSED AT&T ANTENNA MOUNTING CONFIGURATION SHOWN HEREIN, HAS BEEN CONFIRMED BY SMARTLINK.
3. THE STRUCTURE ELEVATION IS SHOWN FOR INFORMATIONAL PURPOSES ONLY AND MAY NOT REFLECT AS-BUILT FIELD CONDITIONS FOR ALL EXISTING INVENTORY LOADING/ANTENNAS/APPURTENANCES ON STRUCTURE. REFER TO THE LATEST STRUCTURAL ANALYSIS FOR EXISTING STRUCTURE LOADING AND THE PROPOSED METHOD OF ATTACHMENT OF THE PROPOSED ANTENNAS/CABLES.
4. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY IMPROVEMENTS AND REINFORCEMENTS REQUIRED BY THE STRUCTURAL ANALYSIS CERTIFICATION ARE PROPERLY INSTALLED PRIOR TO THE ADDITION OF ANTENNAS, CABLES, SUPPORTS AND APPURTENANCES PROPOSED ON THESE DRAWINGS OR OTHERWISE NOTED IN THE STRUCTURAL ANALYSIS.



ANTENNA MOUNTING DETAIL

NOT TO SCALE



WEIGHT = 72.8 LBS

EPBQ-654L8H6-L2

ANTENNA DETAIL

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SCALE : AS SHOWN
JOB NUMBER : 17946131A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
1	02/01/18	FOR CONSTRUCTION	AJC	RA
0	01/24/18	ISSUED FOR REVIEW	AJC	RA

STATE OF CONNECTICUT PETROS TSOUKALAS LICENSED PROFESSIONAL ENGINEER

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL
ENGINEER - LICENSE NUMBER: PEN.32577

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF THE RESPONSIBLE LICENSED PROFFESIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:

STAMFORD WEST
FA# 10034997
SITE # CTL02135

CATOONAH LANE
STAMFORD, CT 06902
FAIRFIELD COUNTY

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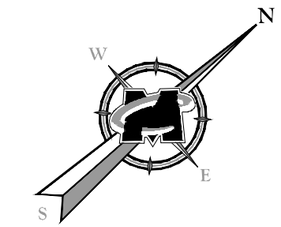
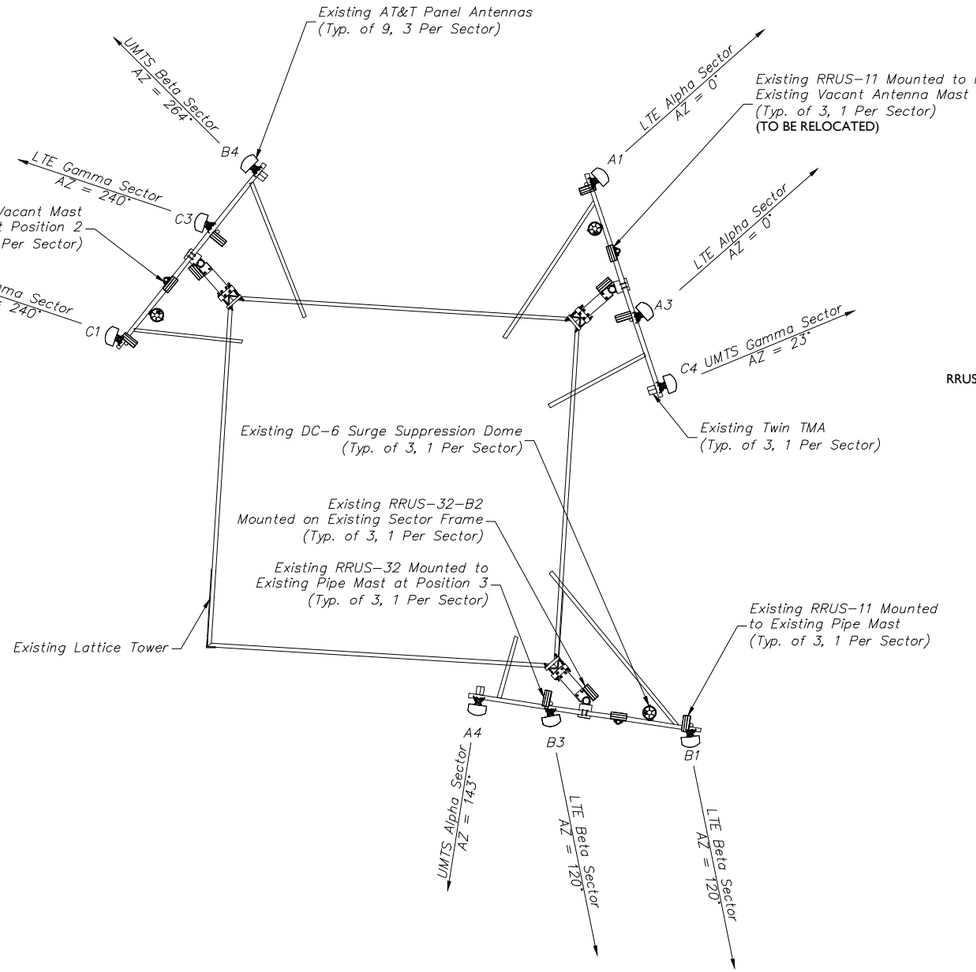
Fax: 732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE :
ELEVATION VIEW, DETAILS AND ANTENNA SCHEDULE

SHEET NUMBER :
A-2

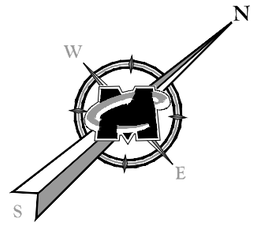


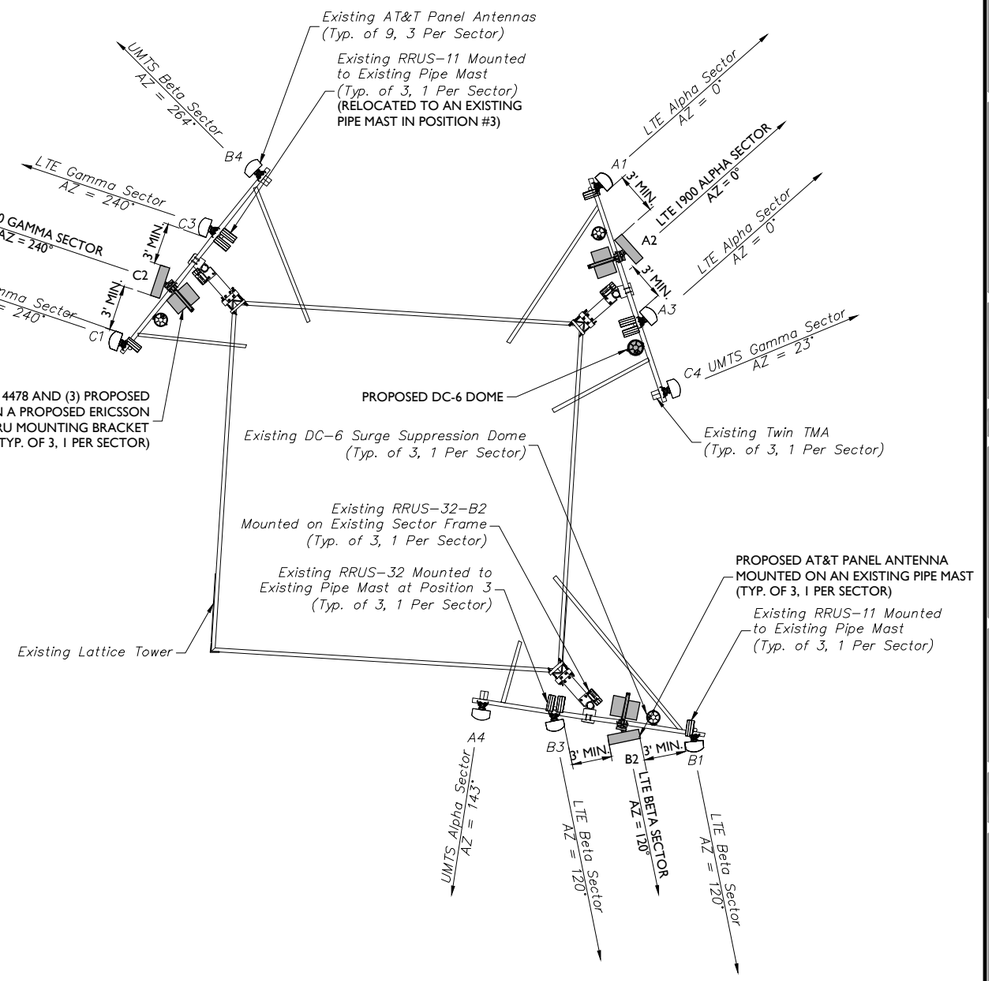


EXISTING ANTENNA LAYOUT

NOT TO SCALE

3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNAS
6 FEET MINIMUM SEPARATION BETWEEN 700BC & 700 DE





PROPOSED ANTENNA LAYOUT

NOT TO SCALE

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SCALE :	JOB NUMBER :
AS SHOWN	17946131A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
I	02/01/18	FOR CONSTRUCTION	AJC	RA
0	01/24/18	ISSUED FOR REVIEW	AJC	RA

STATE OF CONNECTICUT
PETROS L. TSOUKALAS
PROFESSIONAL ENGINEER
LICENSED

PETROS L. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN.28578

SITE NAME:

STAMFORD WEST
FA# 10034997
SITE # CTL02135

CATOONAH LANE
STAMFORD, CT 06902
FAIRFIELD COUNTY

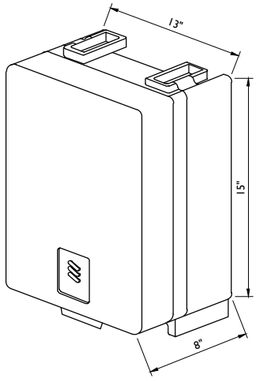
RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701
Phone: 732.383.1950
Fax: 732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE :

ANTENNA LAYOUTS

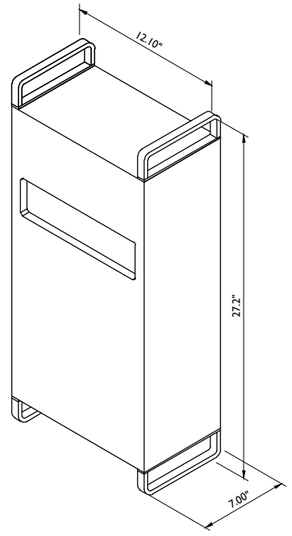
SHEET NUMBER :

A-3



DIMENSIONS (H X W X D): 15"H X 13"W X 8"D (INCLUDES SUNSHIELD)
WEIGHT: 60 LBS

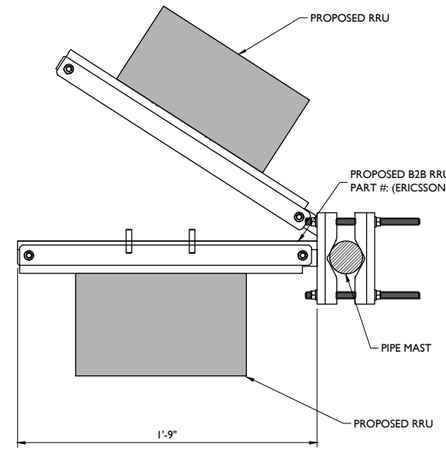
RRU-4478-B14 DETAIL
NOT TO SCALE



RRUS-4426 B66 DIMENSIONS (H X W X D): 27.2" X 12.1" X 7.0"
(INCLUDES HANDLES, FEET AND SUNSHIELD)

WEIGHT: 53 LBS

4426 B66 DETAIL
NOT TO SCALE



RRH MOUNTING DETAIL
NOT TO SCALE

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STATE OF CONNECTICUT · PETROS E. TSOUKALAS · LICENSED PROFESSIONAL ENGINEER

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN.25.0

SITE NAME:

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FA# 10034997
SITE # CTL02135

CATOONAH LANE
STAMFORD, CT 06902
FAIRFIELD COUNTY

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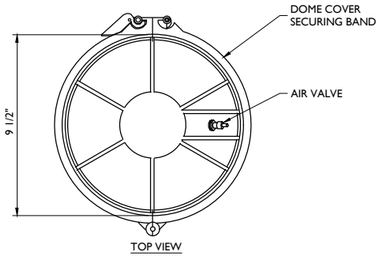
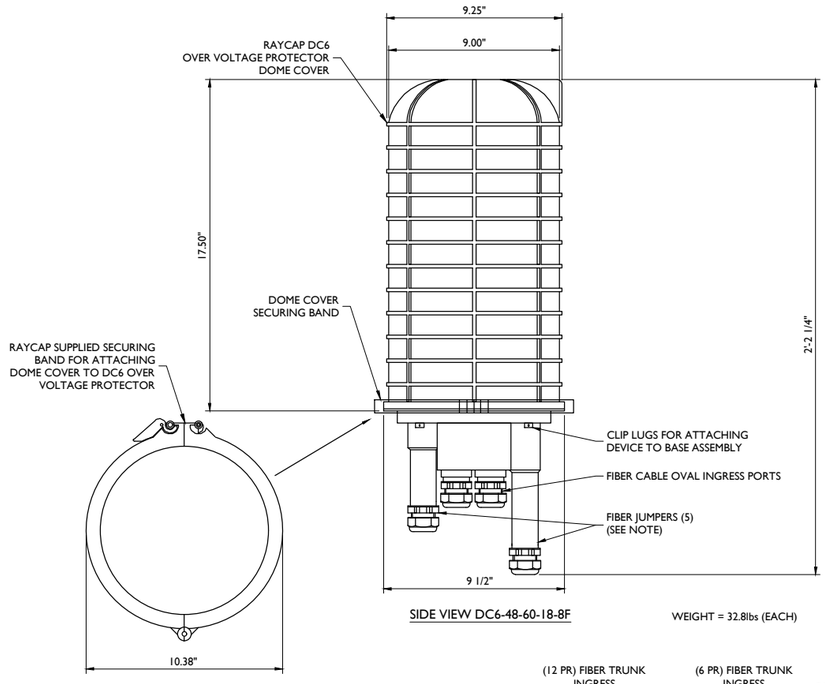
email: solutions@maserconsulting.com

SHEET TITLE :
DETAILS

SHEET NUMBER :
A-4

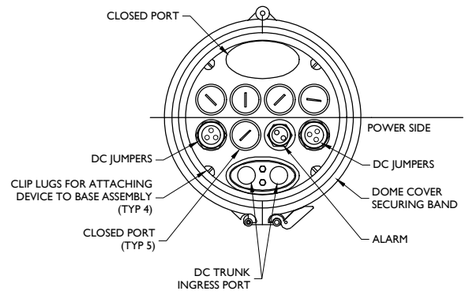


TOP VIEW

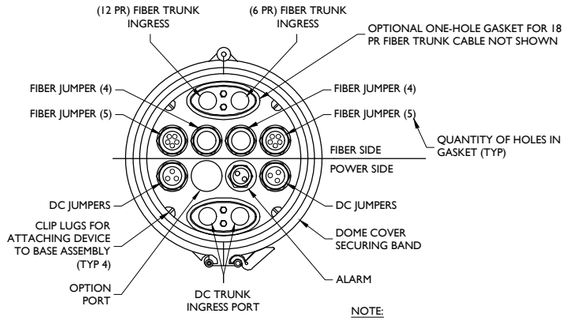


SIDE VIEW DC6-48-60-18-8F

WEIGHT = 32.8lbs (EACH)



BOTTOM VIEW
DC6-48-60-0-8F



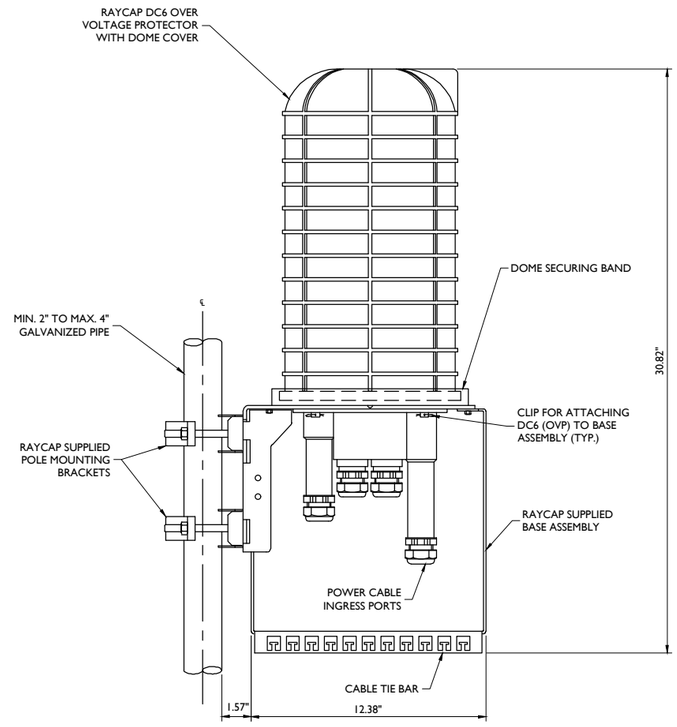
BOTTOM VIEW
DC6-48-60-18-8F

NOTE:

REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC-TO-1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP.

DC6 SURGE SUPPRESSION DOME DETAIL

NOT TO SCALE



ELEVATION

NOTES:

RAYCAP VIA AT&T SUPPLIES THE DC6 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

RAYCAP DC6-48-60-18-8F & DC6-48-60-0-8F
DC POWER OVER VOLTAGE PROTECTOR (OVP)
POLE MOUNT BASE ASSEMBLY

NOT TO SCALE

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STATE OF CONNECTICUT
PETROS E. TSOUKALAS
LICENSED PROFESSIONAL ENGINEER

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN.28570

SITE NAME:

STAMFORD WEST
FA# 10034997
SITE # CTL02135

CATOONAH LANE
STAMFORD, CT 06902
FAIRFIELD COUNTY

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331 Newman Springs Road
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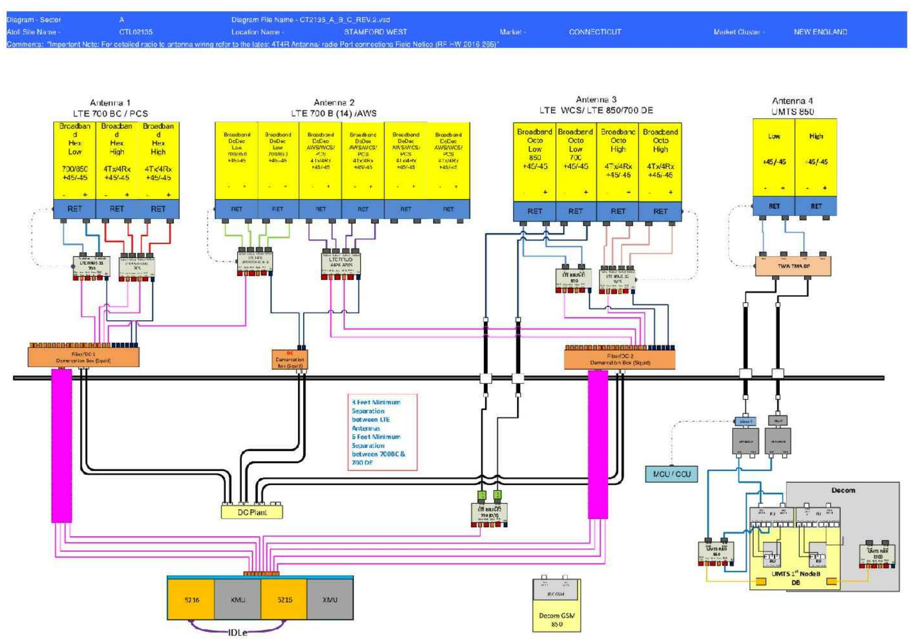
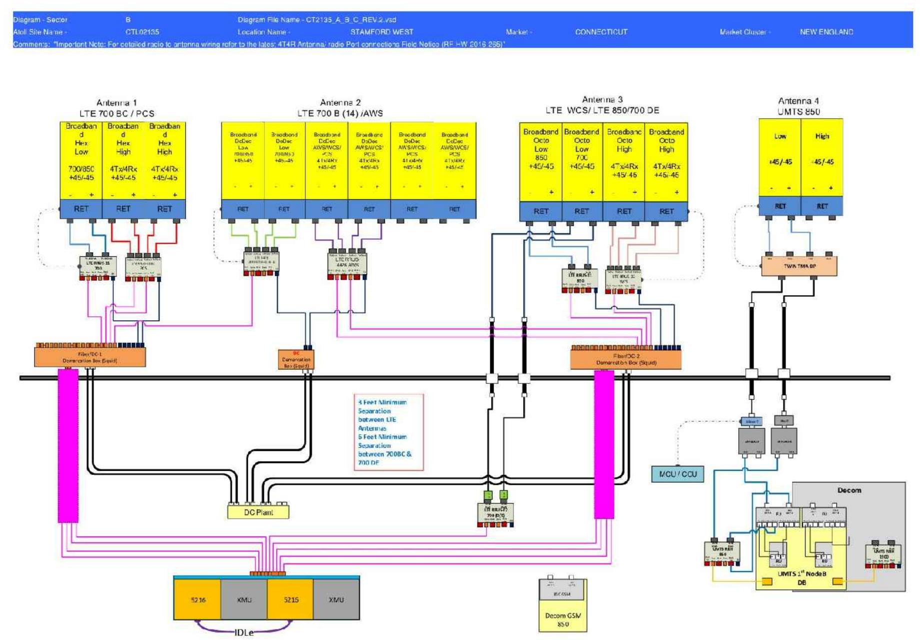
email: solutions@maserconsulting.com

SHEET TITLE : DETAILS

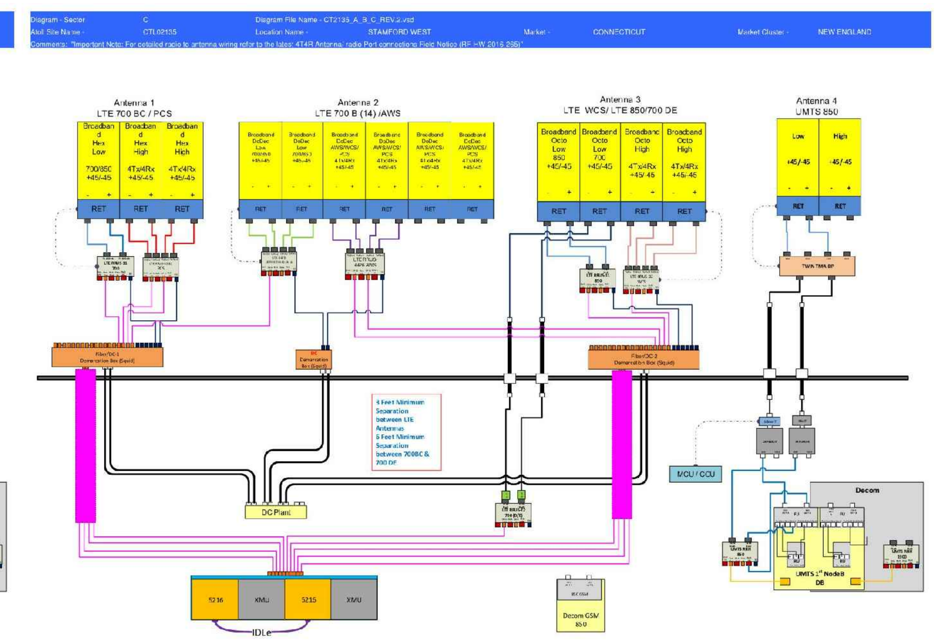
SHEET NUMBER : A-5



ALPHA SECTOR



BETA SECTOR



GAMMA SECTOR

BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_CONNECTICUT_CTL02135_2018-LTE-Next-Carrier_LTE_mh705r_2051A0...", LAST UPDATED 01/11/2018

RF PLUMBING DIAGRAMS

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PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN.

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SITE NAME:

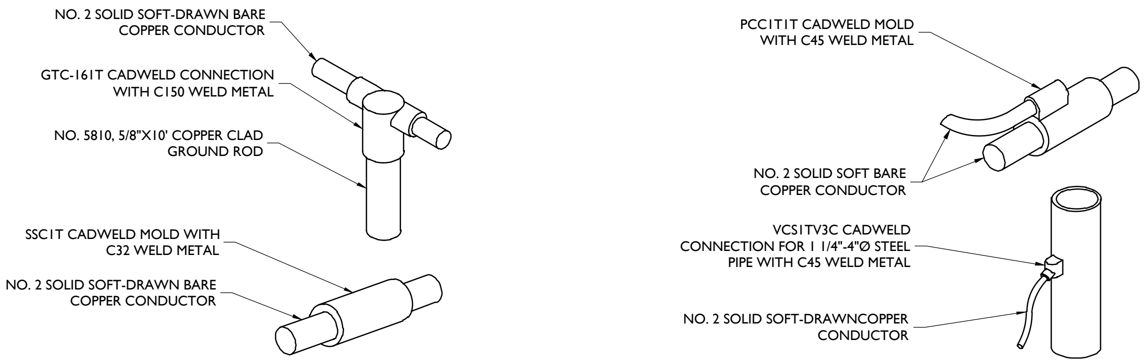
STAMFORD WEST
FA# 10034997
SITE # CTL02135

CATOONAH LANE
STAMFORD, CT 06902
FAIRFIELD COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701
Phone: 732.383.1950
Fax: 732.383.1984
email: solutions@maserconsulting.com

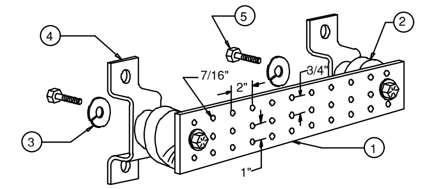
SHEET TITLE:
RF PLUMBING DIAGRAMS

SHEET NUMBER:
A-6



CADWELD DETAILS

NOT TO SCALE



LEGEND

1- TINNED COPPER GROUND BAR, 1/4"x4"x20", NEWTON INSTRUMENT CO. CAT. NO. B-6142 OR EQUAL. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.

2- INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4

3- 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8

4- WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-5056

5- 5/8-11 X 1" HHCS BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

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

SECTION "P" - SURGE PRODUCERS

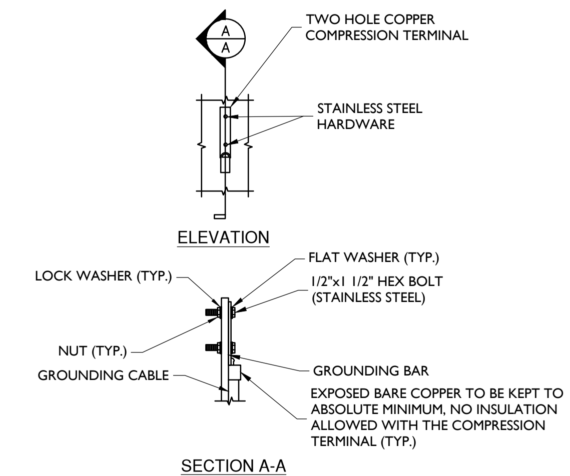
CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLY RETURN BAR (#2)
RECTIFIER FRAMES.

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)

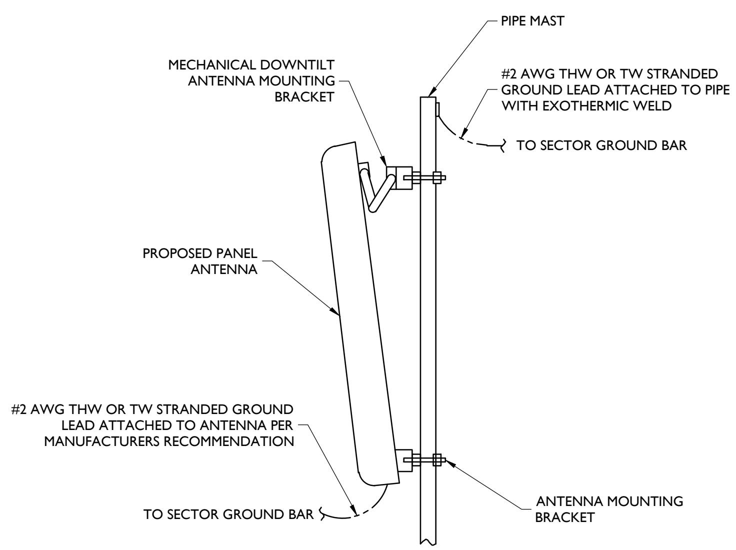
MASTER GROUND BAR

NOT TO SCALE



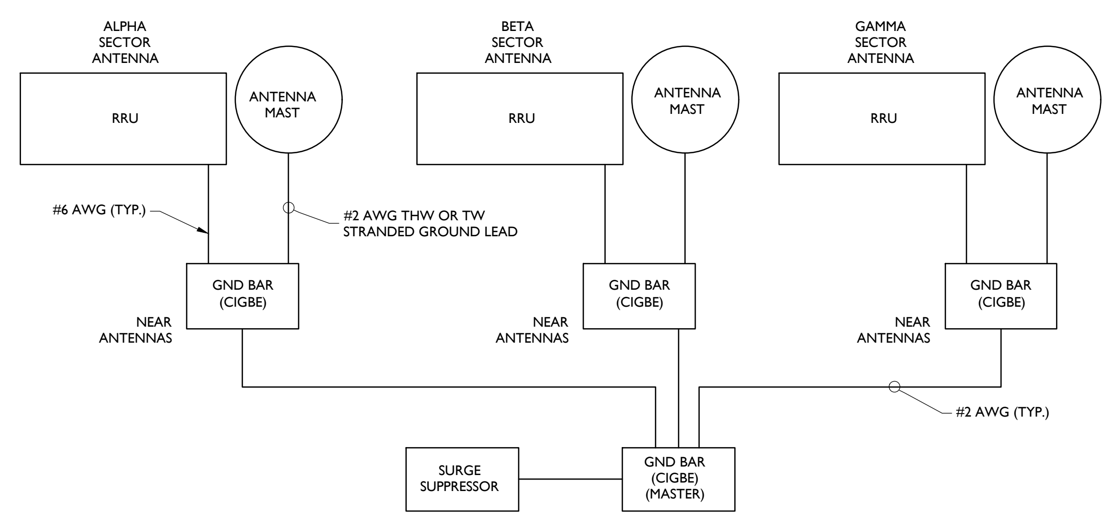
TYPICAL GROUND BAR CONNECTION DETAIL

NOT TO SCALE

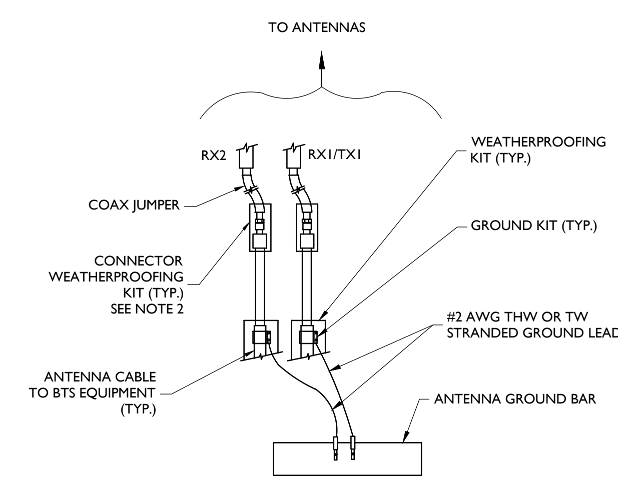


ANTENNA GROUNDING

NOT TO SCALE



SCHEMATIC DIAGRAM GROUNDING SYSTEM

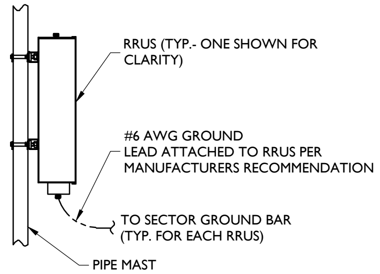


NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

TYPICAL GROUND WIRE TO GROUNDING BAR

NOT TO SCALE



RRU GROUNDING

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STATE OF CONNECTICUT · PETROS TSOUKALAS · 32577 · LICENSED · PROFESSIONAL ENGINEER

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN.32577

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SITE NAME:

STAMFORD WEST
FA# 10034997
SITE # CTL02135

CATOONAH LANE
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FAIRFIELD COUNTY

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331 Newman Springs Road
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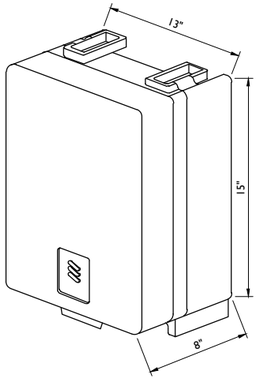
Red Bank, NJ 07701
Phone: 732.383.1950
Fax: 732.383.1984
email: solutions@maserconsulting.com

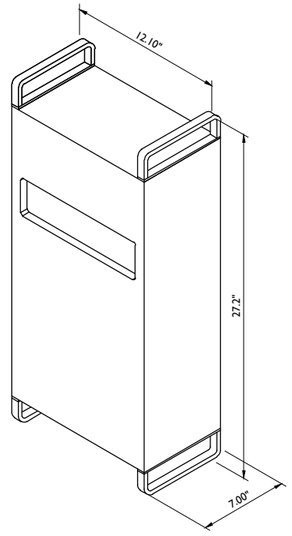
SHEET TITLE :
GROUNDING DETAILS

SHEET NUMBER :
G-1



DIMENSIONS (H X W X D): 15"H X 13"W X 8"D (INCLUDES SUNSHIELD)
WEIGHT: 60 LBS

RRU-4478-B14 DETAIL
NOT TO SCALE



RRUS-4426 B66 DIMENSIONS (H X W X D): 27.2" X 12.1" X 7.0"
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WEIGHT: 53 LBS

4426 B66 DETAIL
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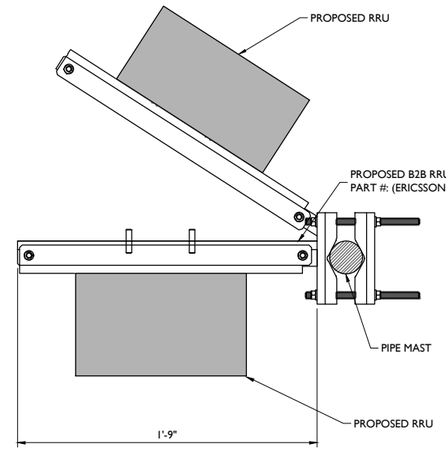

RRH MOUNTING DETAIL
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SITE # CTL02135

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FAIRFIELD COUNTY

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SHEET TITLE :
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SHEET NUMBER :
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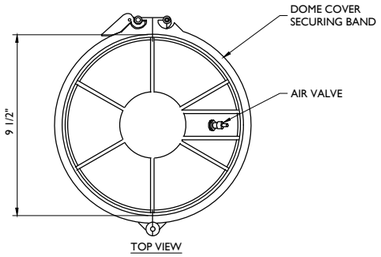
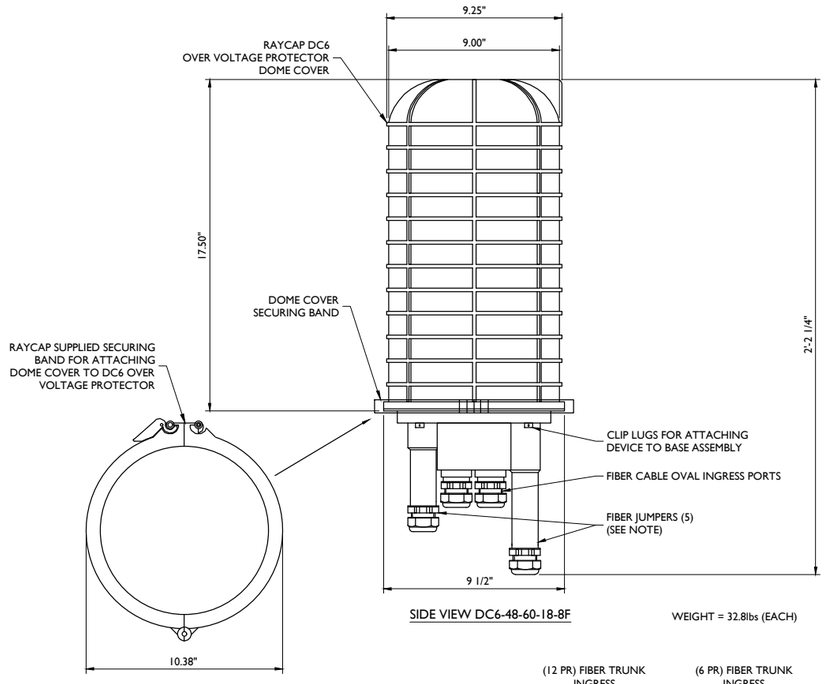
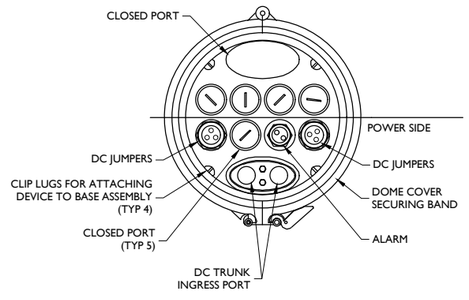


TOP VIEW

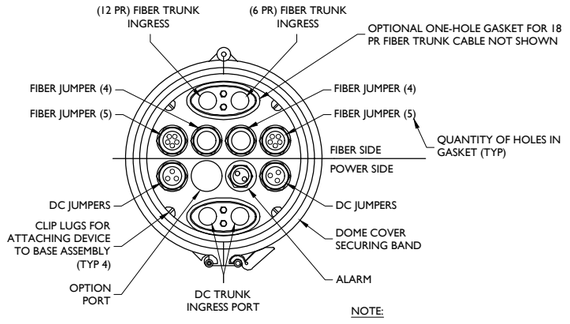


SIDE VIEW DC6-48-60-18-8F

WEIGHT = 32.8lbs (EACH)



BOTTOM VIEW
DC6-48-60-0-8F



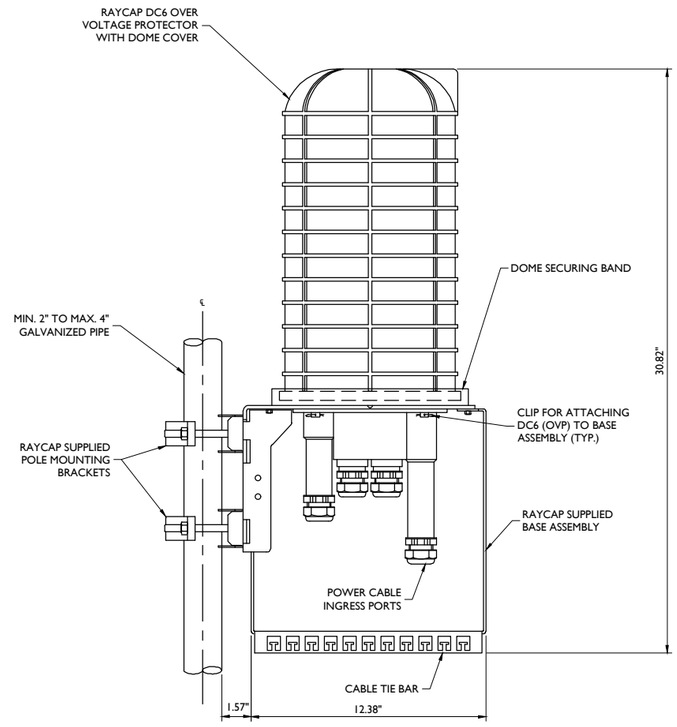
BOTTOM VIEW
DC6-48-60-18-8F

NOTE:

REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC-TO-1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP.

DC6 SURGE SUPPRESSION DOME DETAIL

NOT TO SCALE



ELEVATION

NOTES:

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RAYCAP DC6-48-60-18-8F & DC6-48-60-0-8F
DC POWER OVER VOLTAGE PROTECTOR (OVP)
POLE MOUNT BASE ASSEMBLY

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STATE OF CONNECTICUT
PETROS E. TSOUKALAS
LICENSED PROFESSIONAL ENGINEER

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN.28570

SITE NAME:

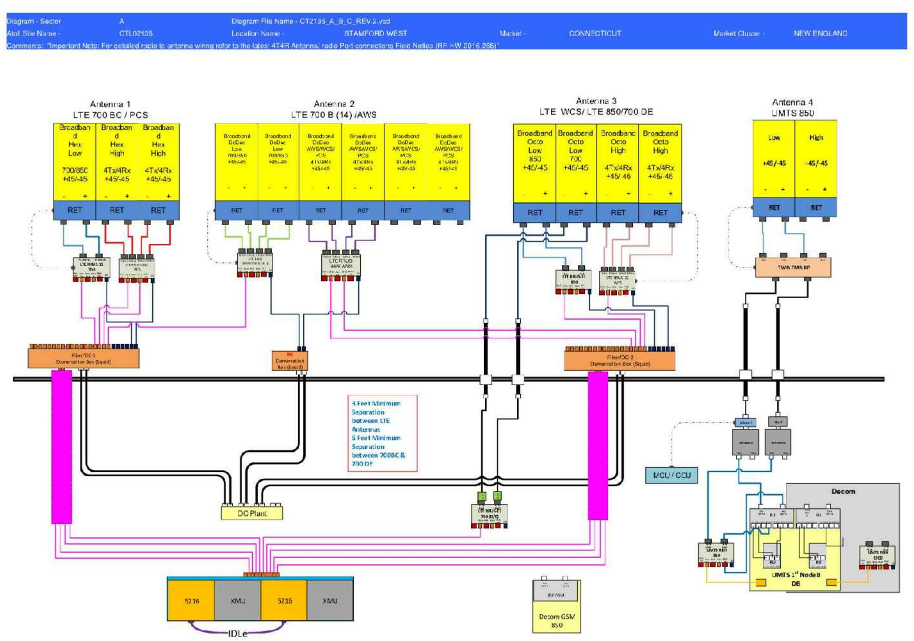
STAMFORD WEST
FA# 10034997
SITE # CTL02135

CATOONAH LANE
STAMFORD, CT 06902
FAIRFIELD COUNTY

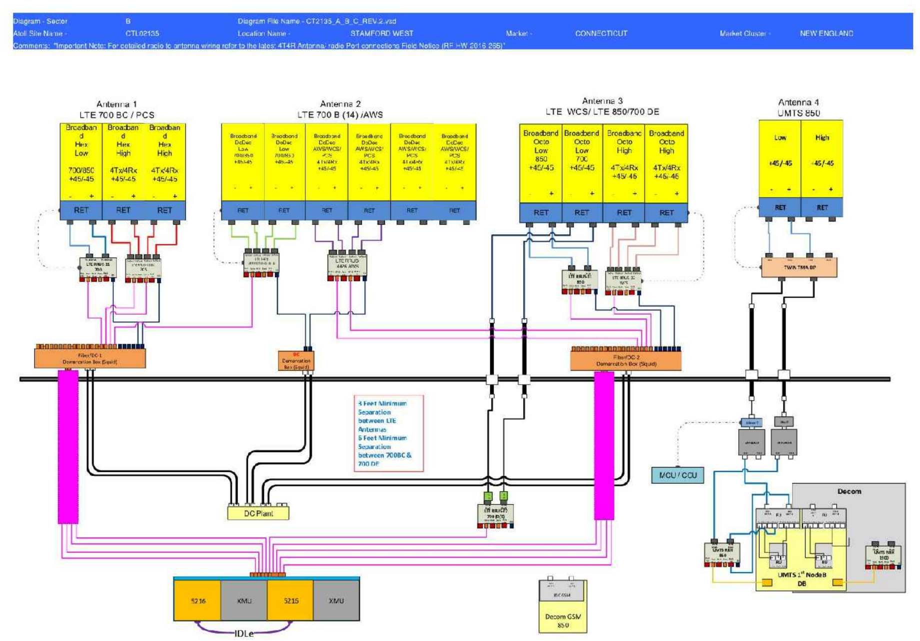
RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701
Phone: 732.383.1950
Fax: 732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE : DETAILS

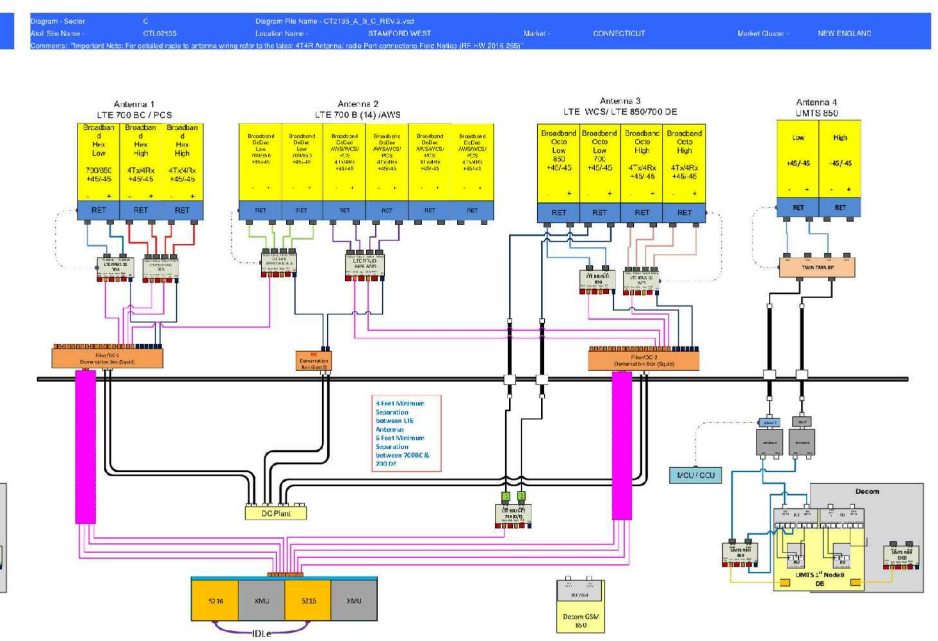
SHEET NUMBER : A-5



ALPHA SECTOR



BETA SECTOR



GAMMA SECTOR

BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_CONNECTICUT_CTL02135_2018-LTE-Next-Carrier_LTE_mh705r_2051A0...", LAST UPDATED 01/11/2018

RF PLUMBING DIAGRAMS

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT:
WWW.CALL811.COM

SCALE:	JOB NUMBER:
AS SHOWN	17946131A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
1	02/01/18	FOR CONSTRUCTION	AJC	RA
0	01/24/18	FOR REVIEW	AJC	RA

PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN.21570

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF THE RESPONSIBLE LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

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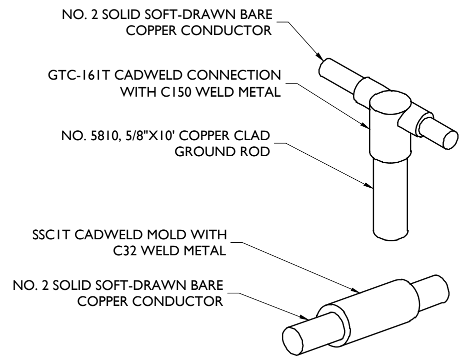
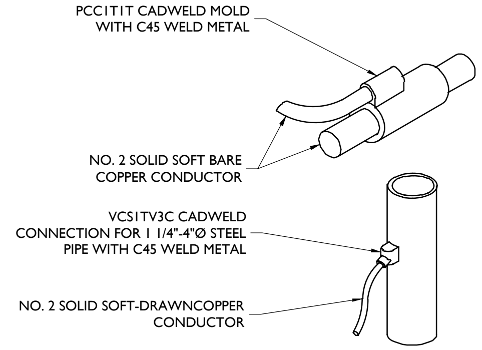
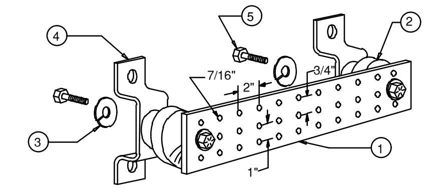
SHEET TITLE:
RF PLUMBING DIAGRAMS

SHEET NUMBER:
A-6





CADWELD DETAILS
NOT TO SCALE



LEGEND

1- TINNED COPPER GROUND BAR, 1/4"x4"x20", NEWTON INSTRUMENT CO. CAT. NO. B-6142 OR EQUAL. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.

2- INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4

3- 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8

4- WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-5056

5- 5/8-11 X 1" HHCS BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

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

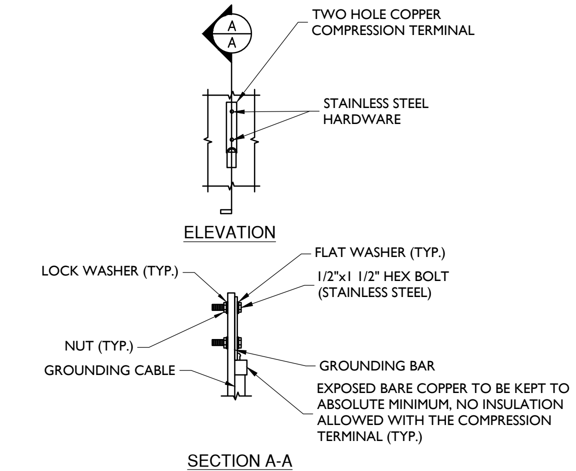
SECTION "P" - SURGE PRODUCERS

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.

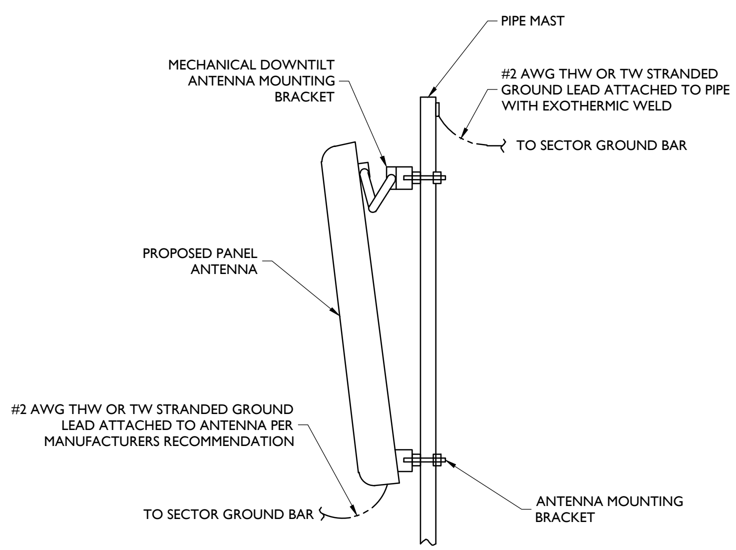
SECTION "A" - SURGE ABSORBERS

INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

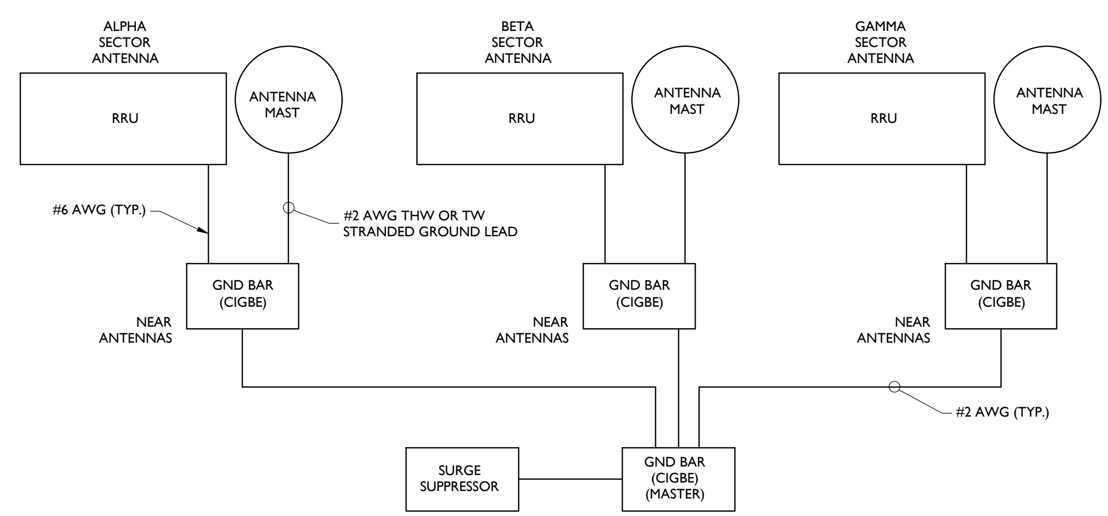
MASTER GROUND BAR
NOT TO SCALE



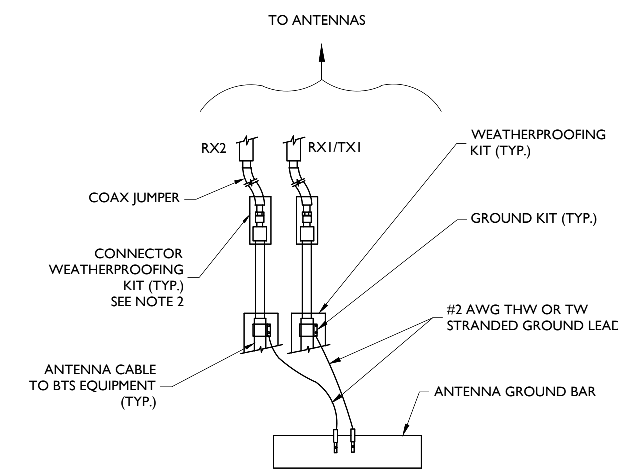
TYPICAL GROUND BAR CONNECTION DETAIL
NOT TO SCALE



ANTENNA GROUNDING
NOT TO SCALE



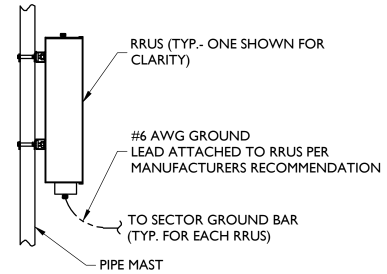
SCHEMATIC DIAGRAM GROUNDING SYSTEM



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

TYPICAL GROUND WIRE TO GROUNDING BAR
NOT TO SCALE



RRU GROUNDING
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STATE OF CONNECTICUT
PETROS E. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN.35...
LICENSED PROFESSIONAL ENGINEER

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SHEET TITLE:
GROUNDING DETAILS

SHEET NUMBER:
G-1