



Centek Engineering, Inc.
3-2 North Branford Road
Branford, Connecticut 06405
Phone: (203) 488-0580
Fax: (203) 488-8587

Steven L. Levine
Real Estate Consultant

HAND DELIVERED

December 3, 2015

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing tele-communications facility located at 555 (East) Main Street, Stamford (Owner, Frontier Communications)

Dear Ms. Bachman:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and/or Long Term Evolution ("LTE") capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, copies of this letter are being sent to the chief elected official of the municipality in which the affected cell site is located, the property owner of record, and the tower owner or operator.

UMTS technology offers services to mobile computer and phone users anywhere in the world. Based on the Global System for Mobile ("GSM") communication standard, UMTS is the planned worldwide standard for mobile users. UMTS, fully implemented, gives computer and phone users high-speed access to the Internet as they travel. They have the same capabilities even when they roam, through both terrestrial wireless and satellite transmissions.

LTE is a high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

The changes to the facility do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical and environmental characteristics of the site will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will not increase.
2. The proposed changes will not extend the site boundaries.
3. The proposed changes will not increase the noise level at the site boundary by six decibels or more, or to levels that exceed state and local criteria.
4. The changes will not add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection, pursuant to Section 22a-162 of the Connecticut General Statutes.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The structure and its foundation can support the proposed antennas and equipment.

For the foregoing reasons, AT&T respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (860) 830-0380 with questions concerning this matter. Thank you for your consideration.

Sincerely,



Steven L. Levine
Real Estate Consultant

cc: Town CEO – Mayor David Martin, City of Stamford
Land Owner of Record – Frontier Communications (email)
Tower Owner / Operator – Frontier Communications (email)

Attachments

NEW CINGULAR WIRELESS PCS, LLC

Equipment Modification

555 (East) Main Street, Stamford
Geographic Coordinates: N 41-03-12.2 W 73-32-08.33
AT&T Site CT2118
Prior CSC Approvals: Petitions 128 and 154
Exempt Mods 9/92, 9/02, 12/05,
9/11, 8/15

- Tower Owner/Manager:** Frontier Communications
- Land Owner of Record:** Frontier Communications
- Equipment Configuration:** Rooftop Self-Supporting Lattice Tower: 231 ft. Overall Ht.
(Rooftop = 106 ft a.g.l. / Tower = 125 ft tall.)
Note: Centerlines in this section are measured
from the tower base.
- Current and/or approved:** Three PowerWave P65-15-XLH-RR antennas @ 129 ft c.l.
Six CCI OPA-65R-LCUU-H4 antennas @ 129 ft c.l.
Six PowerWave TMA's @ 129 ft
Three Ericsson RRUS-11 remote radio heads @ 129 ft
Three Ericsson RRUS-12 remote radio heads
with A-2 modules @ 129 ft
Three Ericsson RRUS-32 remote radio heads @ 129 ft
Two Raycap DC6-48-60-18-8F surge arrestors @ 129 ft
Twelve runs 1 5/8 inch coax
Two fiber and four DC power cables
Equipment room inside building.
- Planned Modifications:** Remove two PowerWave P65-15 antennas.
Remove four CCI OPA-65R antennas.
Install six CCI HPA-45R-BUU-H6 antennas @ 129 ft c.l.

Power Density:

Worst-case calculations with 10 dB reduction for existing wireless operations at the site indicate a radio frequency electromagnetic radiation power density, measured at six feet above ground level beside the tower, of approximately 2.5 % of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density following proposed modifications would be approximately 2.3 % of the standard.

Existing

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm ²)	Standard Limits (mW/cm ²)	Percent of Limit
Other Users *							1.63
AT&T LTE *	235	700	2	1032	0.0142	0.4667	0.30
AT&T LTE *	235	1900	2	1032	0.0142	1.0000	0.14
AT&T LTE *	235	2300	2	227	0.0031	1.0000	0.03
AT&T UMTS *	235	850	4	397	0.0109	0.5667	0.19
AT&T UMTS *	235	1900	4	397	0.0109	1.0000	0.11
AT&T GSM *	235	850	4	227	0.0062	0.5667	0.11
Total							2.52%

* Per CSC records.

Proposed

Carrier & Technology	Centerline Ht (feet)	Antennas (All Sectors)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm ²)	Standard Limits (mW/cm ²)	Percent of Limit
Other Users *								1.63
AT&T LTE	235	CCI HPA #3&6 CCI OPA #2	700	2	1032	0.0142	0.4667	0.30
AT&T LTE	235	CCI HPA #3&6 CCI OPA #2	1900	2	1032	0.0142	1.0000	0.14
AT&T LTE	235	CCI HPA #2&5 CCI OPA #1	2300	2	227	0.0031	1.0000	0.03
AT&T UMTS	235	CCI HPA #1&4 PW P65 #1	850	2	397	0.0054	0.5667	0.10
AT&T UMTS	235	CCI HPA #1&4 PW P65 #1	1900	1	397	0.0027	1.0000	0.03
AT&T GSM	235	CCI HPA #2&5 CCI OPA #1	850	1	227	0.0016	0.5667	0.03
Total								2.26%

* Per CSC records.

Original Permitting:

The 555 East Main Street tower was constructed in the late 1960's or early 1970's as part of the Southern New England Telephone Company (SNET) microwave system. Efforts to locate original local zoning documents per the Council's requirement to present original permitting information have been unsuccessful. Please refer to the attached email correspondence with Council staff for details of the search and the relief granted from the requirement. The tower has been in use for cellular operations by SNET and its successors including AT&T since 1986 (Petition 154).

Lease Area:

Comparison of the attached Petition 128 site plan from 1985 with the attached construction drawings indicates that the proposed modifications will not be enlarged due to the proposed equipment modifications.

Structural information:

The attached structural analysis demonstrates that the tower and foundation will have adequate structural capacity to accommodate the proposed equipment modifications. (Malouf Engineering, 10-15-15)

Excerpt from Email Correspondence Regarding Original Zoning Approval

From: "Bachman, Melanie" <Melanie.Bachman@ct.gov>
To: 'Steve Levine' <sllevine@snet.net>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>; Christopher Fisher <cfisher@cuddyfeder.com>; Carl Aquilina <carl.aquilina@sai-comm.com>
Sent: Tuesday, December 1, 2015 10:19 AM
Subject: RE: Exempt Modification Filing Memo

Good morning, Steve.

Certainly, the details of what you provide below as an explanation of your efforts to acquire the information is sufficient for relief from the requirement. If you could include this information with the formal exempt mod filing, that would be appreciated.

The rationale for the new requirement originates from the FCC Wireless Infrastructure Report and Order for eligible facilities requests to comply with any conditions of the original approval for an existing tower.

If you have further questions, please feel free to contact me.

Thanks. Have a great day.

Melanie

Melanie A. Bachman
Staff Attorney/Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051
(860) 827-2951

CONFIDENTIAL INFORMATION: The information contained in this e-mail is confidential and is protected from general disclosure. If the recipient or the reader of this e-mail is not the intended recipient, or person responsible to receive this e-mail, you are requested to delete this e-mail immediately and do not disseminate or distribute or copy. If you have received this e-mail by mistake, please notify us immediately by replying to the message so that we can take appropriate action immediately and see to it that this mistake is rectified.

From: Steve Levine [mailto:sllevine@snet.net]
Sent: Tuesday, December 1, 2015 10:12 AM
To: Bachman, Melanie
Cc: CSC-DL Siting Council; Christopher Fisher; Carl Aquilina
Subject: Re: Exempt Modification Filing Memo

Melanie, good morning.

I am currently preparing an AT&T exempt mod filing for the tower at 555 E. Main Street in Stamford. This is the bright orange rooftop tower on the Frontier Communications building downtown.

The new requirement of providing the original zoning application is proving to be difficult in this instance due to the age of the tower. The best I can tell is that it was built around the 1970's by AT&T's predecessor SNET for their microwave system. I have made several attempts thus far to locate the document without success.

1. Examined AT&T's records in Rocky Hill. The paper records were all transferred to Frontier, and the document is not in their digital records either.
2. Contacted the person at Frontier to whom the AT&T files were transferred. She reports that nothing that old was contained in the files.
3. Searched Siting Council files (petitions & EM's). Not found there.
4. Spoken with Stamford zoning officials (Norman Cole, Land Use Bureau Chief). He informed me that no actual zoning permits were issued prior to 1988. Referred me to the Building Dept.
5. Spoken with the Building Department receptionist. She informed me that records that old have not been retained. I also placed a call to the BO himself, and am awaiting a reply. ^[1]

If I am ultimately unable to locate the original zoning approval for this tower, what provision can be made for relief from the new requirement?

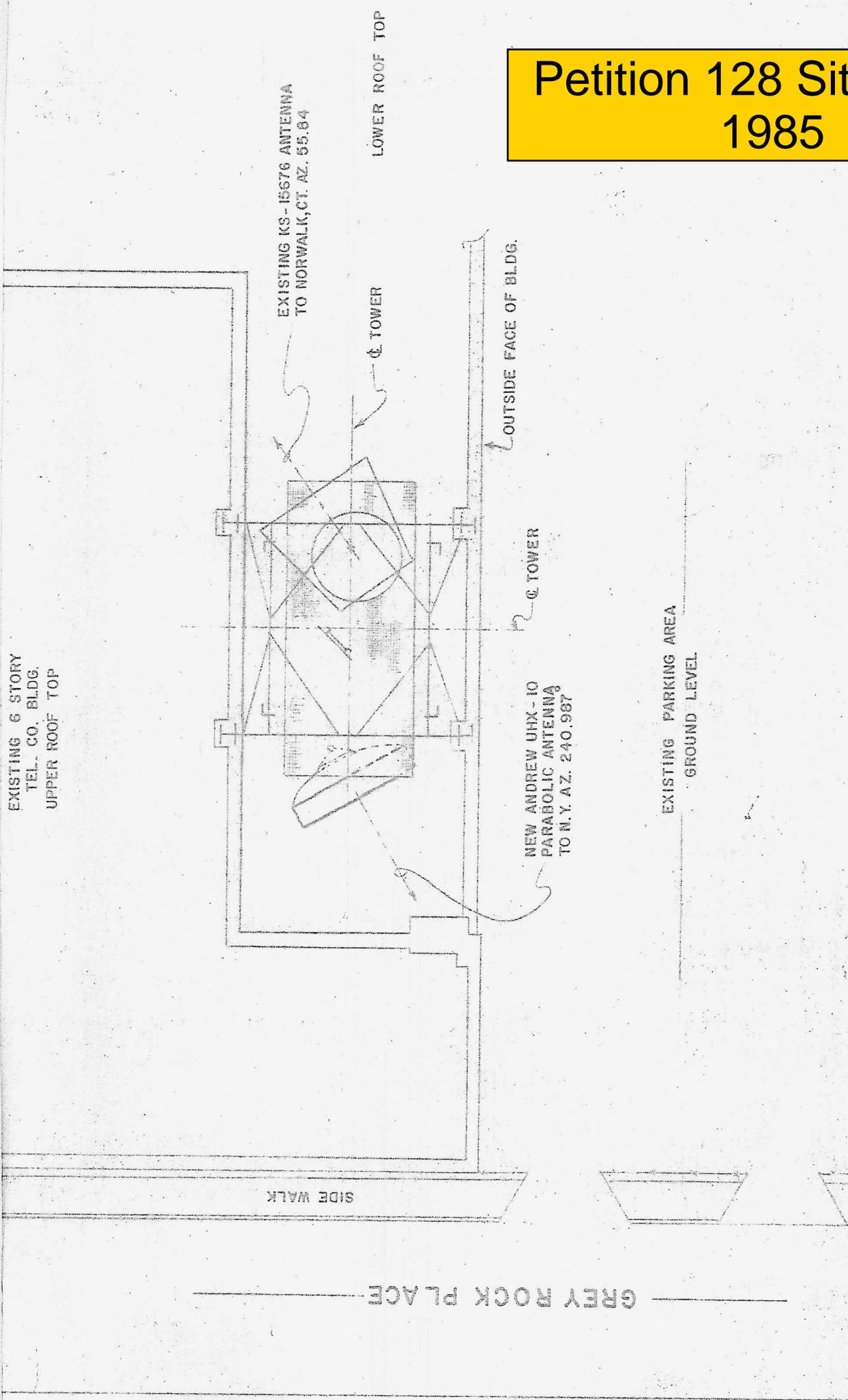
Thank you.

-- Steve Levine 860-830-0380

(End of Excerpt)

¹ **Update to Levine 12/1/15 Email: I spoke with the Building Official, Robert DeMarco, on 12/3. He concurred that documents retention from the 1970's is poor, and it is very unlikely that detailed records would be found in the Building Department files.**

Petition 128 Site Plan, 1985



PROJECT INFORMATION

SCOPE OF WORK: MODIFICATIONS TO AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.
 SITE ADDRESS: 555 MAIN STREET
 STAMFORD, CT 06901
 LATITUDE: 41.053474° N 41° 03' 12.51" N
 LONGITUDE: 73.535663° W 73° 32' 08.39" W
 TYPE OF SITE: ROOFTOP & LATTICE TOWER/ INDOOR EQUIPMENT
 OVERALL
 ROOF HEIGHT: 140'-0"±
 TOWER HEIGHT: 231'-0"±
 RAD CENTER: 235'-0"±



SITE NUMBER: CT2118
SITE NAME: STAMFORD - CENTRAL SBC CO.

DRAWING INDEX

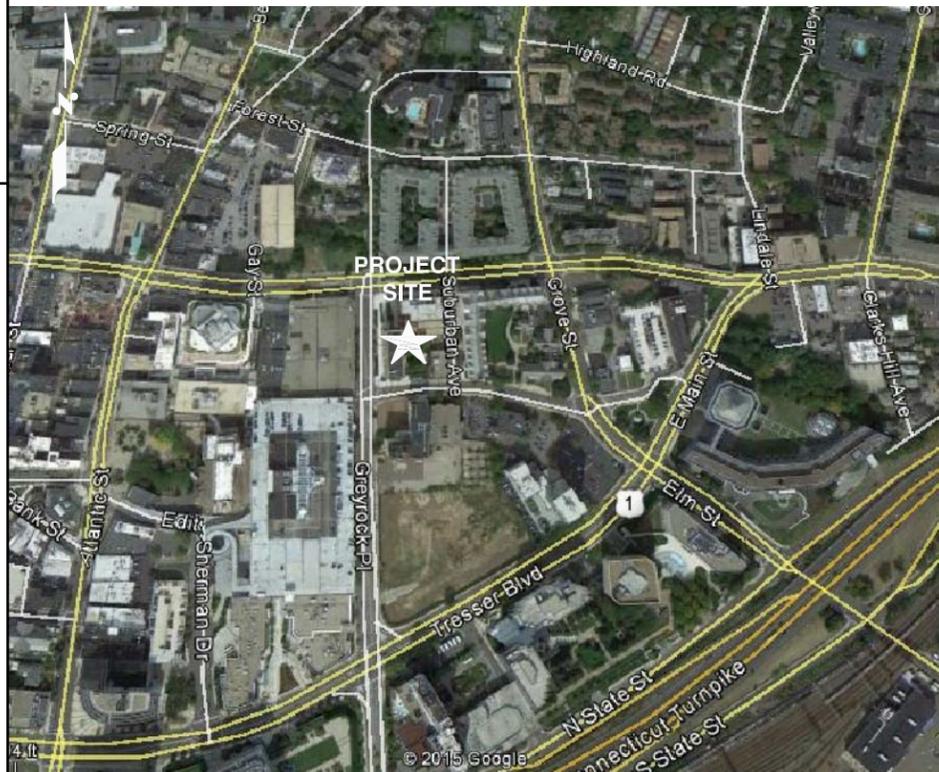
REV

- T-1 TITLE SHEET**
- GN-1 GENERAL NOTES**
- A-1 COMPOUND AND EQUIPMENT PLAN**
- A-2 ANTENNA LAYOUT AND ELEVATION**
- A-3 DETAILS**
- G-1 PLUMBING DIAGRAMS & DETAILS**

- 2**
- 2**
- 2**
- 2**
- 2**
- 2**

VICINITY MAP

DIRECTIONS TO SITE:
 START OUT GOING WEST ON COCHITUATE RD/MA-30 TOWARD BURR ST. 0.02 MI. MAKE A U-TURN AT BURR ST ONTO COCHITUATE RD/MA-30. 0.05 MI. MERGE ONTO I-90 W/MASSACHUSETTS TPKE W TOWARD SPRINGFIELD/BOSTON (PORTIONS TOLL). 38.8 MI. MERGE ONTO I-84 W/WILBUR CROSS HWY S VIA EXIT 9 TOWARD US-20/HARTFORD/NEW YORK CITY (PORTIONS TOLL) (CROSSING INTO CONNECTICUT). 41.7 MI. KEEP LEFT TO TAKE CT-15 S/WILBUR CROSS HWY S VIA EXIT 57 TOWARD I-91 S/CHARTER OAK BR/NY CITY. 2.0 MI. MERGE ONTO I-91 S VIA EXIT 86 TOWARD NEW HAVEN/NY CITY. 17.1 MI. MERGE ONTO CT-15 S VIA EXIT 17 TOWARD E MAIN ST. 30.2 MI. MERGE ONTO CT-8 S VIA EXIT 52 TOWARD BRIDGEPORT. 5.9 MI. MERGE ONTO I-95 S TOWARD NY CITY. 20.4 MI. TAKE THE ELM ST EXIT, EXIT 8. 0.6 MI. TURN RIGHT ONTO ELM ST. 0.1 MI. ELM ST BECOMES MAIN ST. 0.05 MI. TURN LEFT TO STAY ON MAIN ST. 0.1 MI. 555 MAIN ST IS ON THE LEFT.



GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.



72 HOURS

BEFORE YOU DIG



CALL TOLL FREE 888-DIG-SAFE OR DIAL 811

UNDERGROUND SERVICE ALERT

1600 OSGOOD STREET
 BUILDING 20 NORTH, SUITE 3090
 N. ANDOVER, MA 01845
 TEL: (978) 557-5553
 FAX: (978) 336-5586

27 NORTHWESTERN DR.
 SALEM, NH 03079

SITE NUMBER: CT2118
SITE NAME: STAMFORD - CENTRAL SBC CO.
 555 MAIN STREET
 STAMFORD, CT 06901
 FAIRFIELD COUNTY

550 COCHITUATE ROAD
 FRAMINGHAM, MA 01701

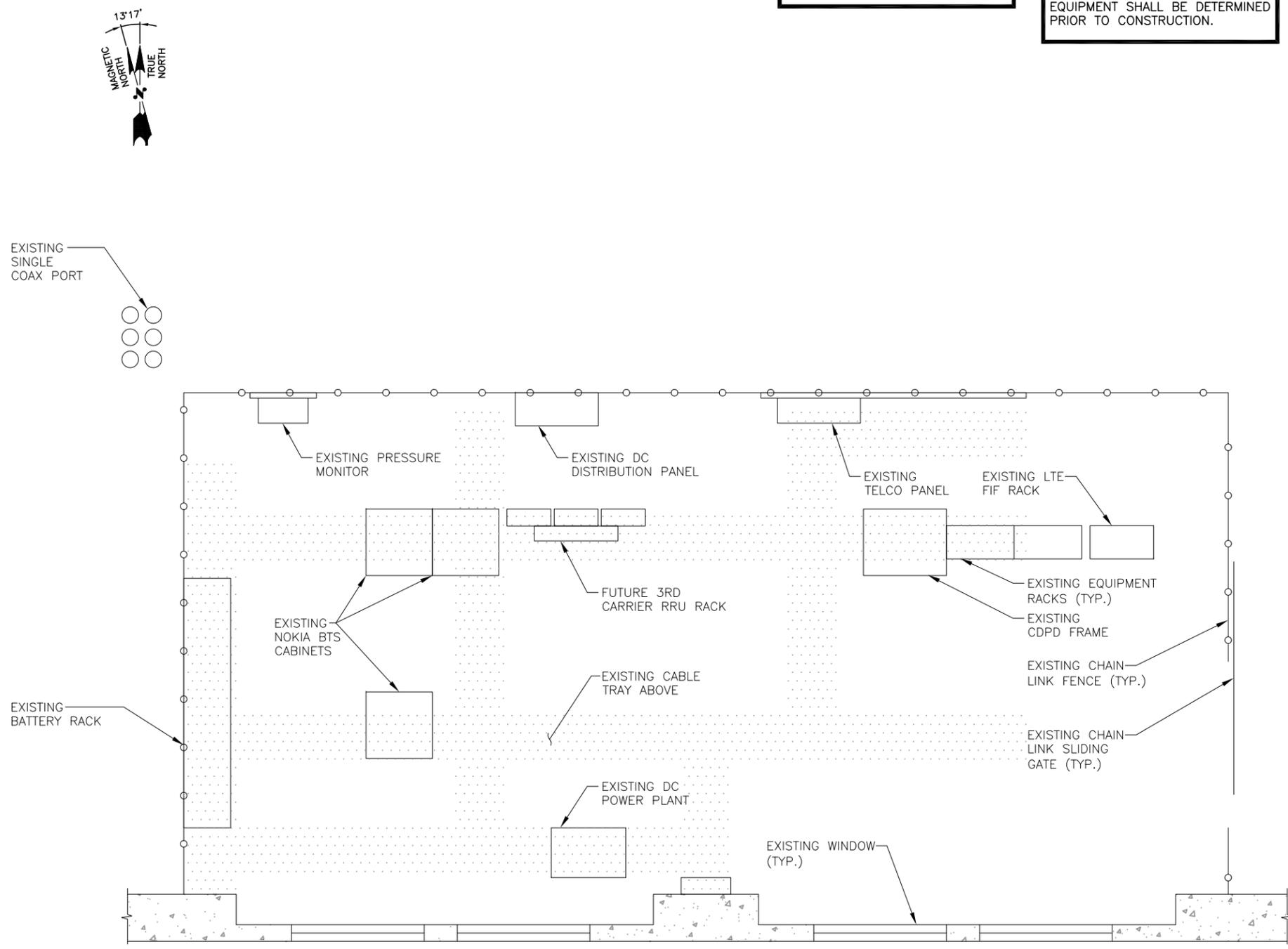
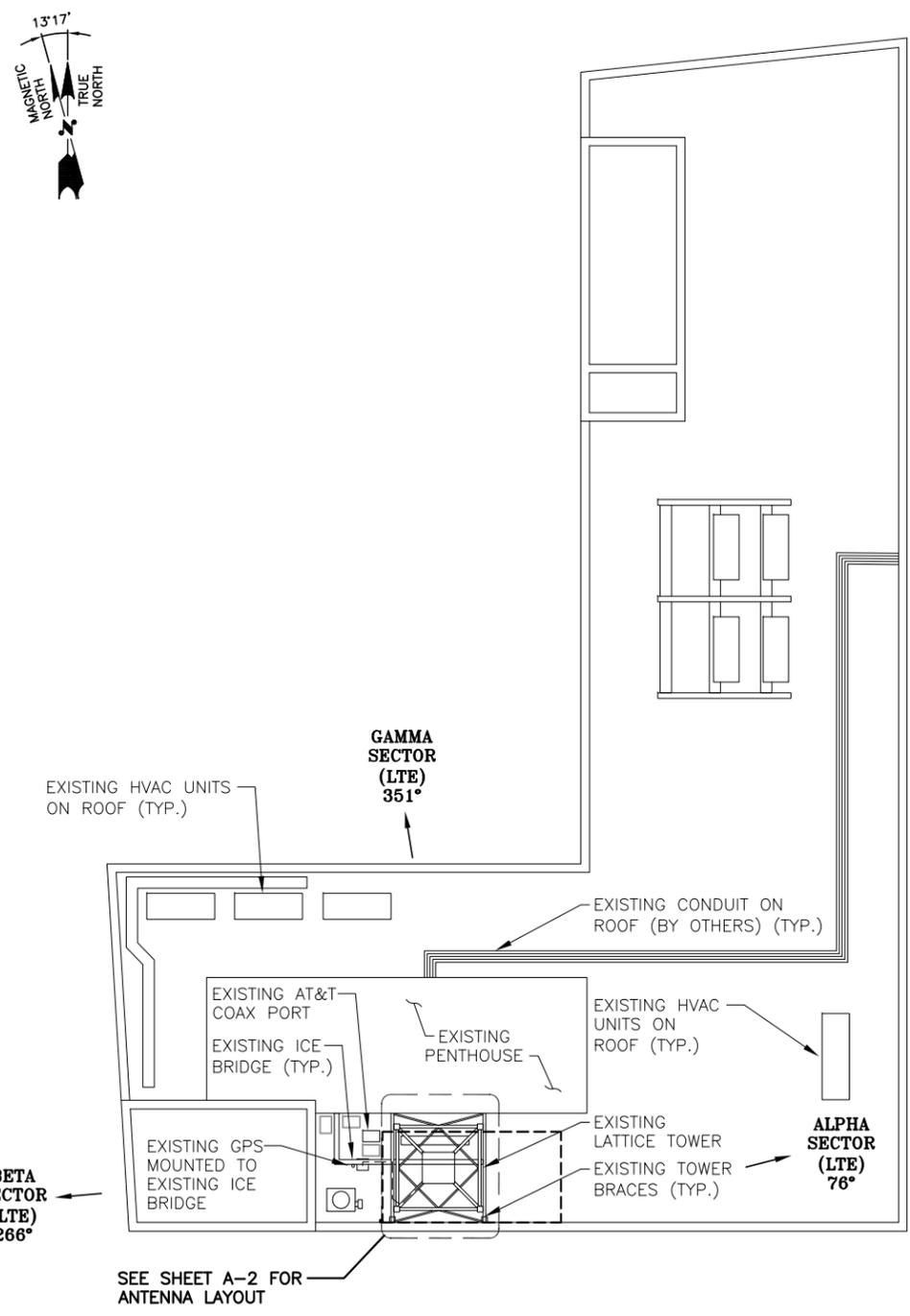
NO.	DATE	REVISIONS	BY	CHK	APP'D
2	11/17/15	ISSUED FOR CONSTRUCTION	SG	AT	DJC
1	11/10/15	ISSUED FOR REVIEW	SG	AT	DJC
0	11/03/15	ISSUED FOR REVIEW	SG	AT	DJC
A	08/20/15	ISSUED FOR REVIEW	SG	AT	DJC

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: SG

AT&T	
TITLE SHEET (RF MOD)	
JOB NUMBER	DRAWING NUMBER
2118.00	T-1
REV	2

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



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

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

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 334-5586

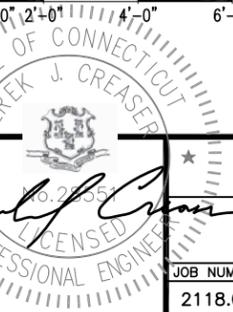
SAI
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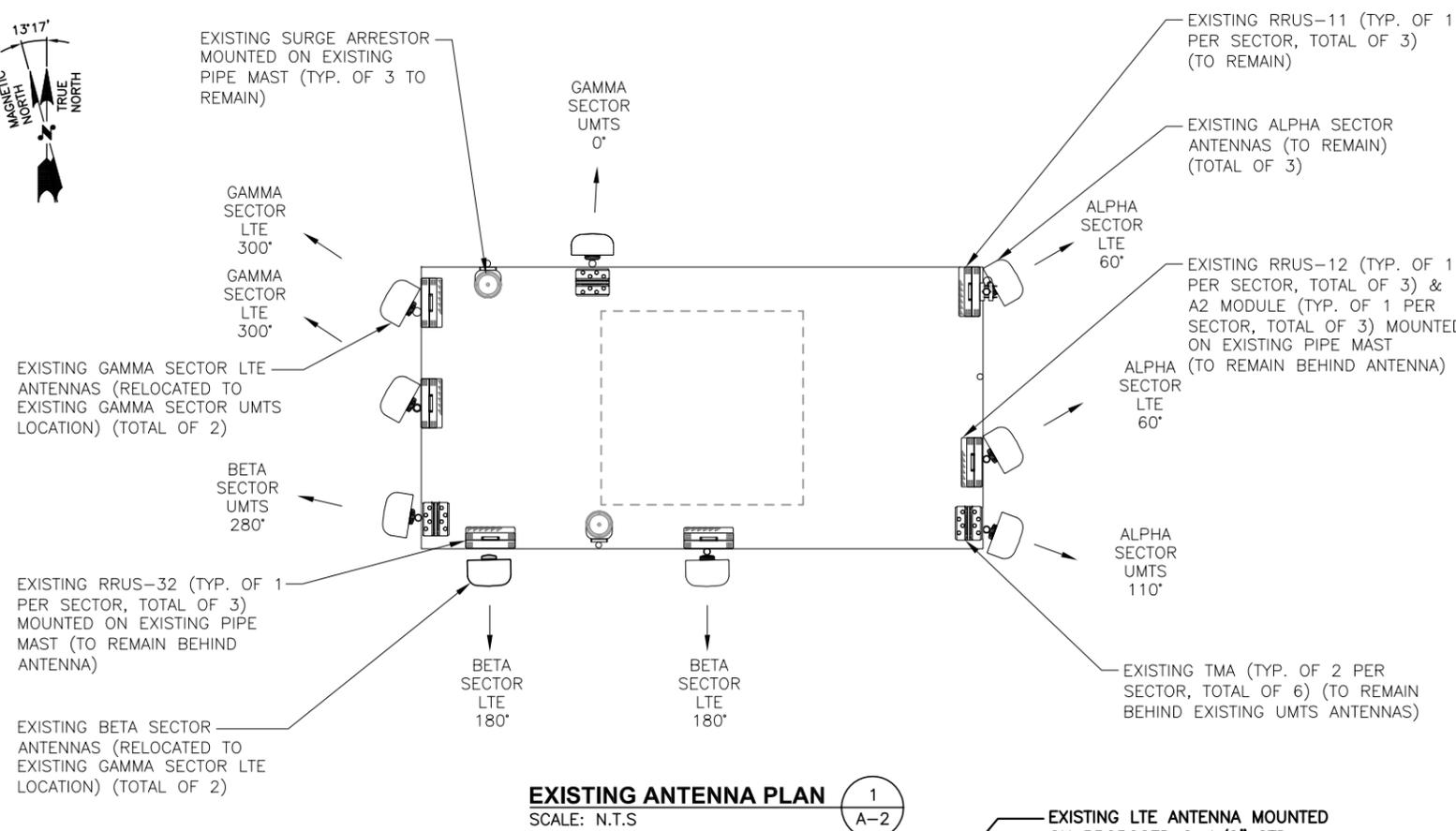
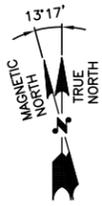
at&t
550 COCHITUATE ROAD
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NO.	DATE	REVISIONS	BY	CHK	APP'D
2	11/17/15	ISSUED FOR CONSTRUCTION	SG	AT	DJG
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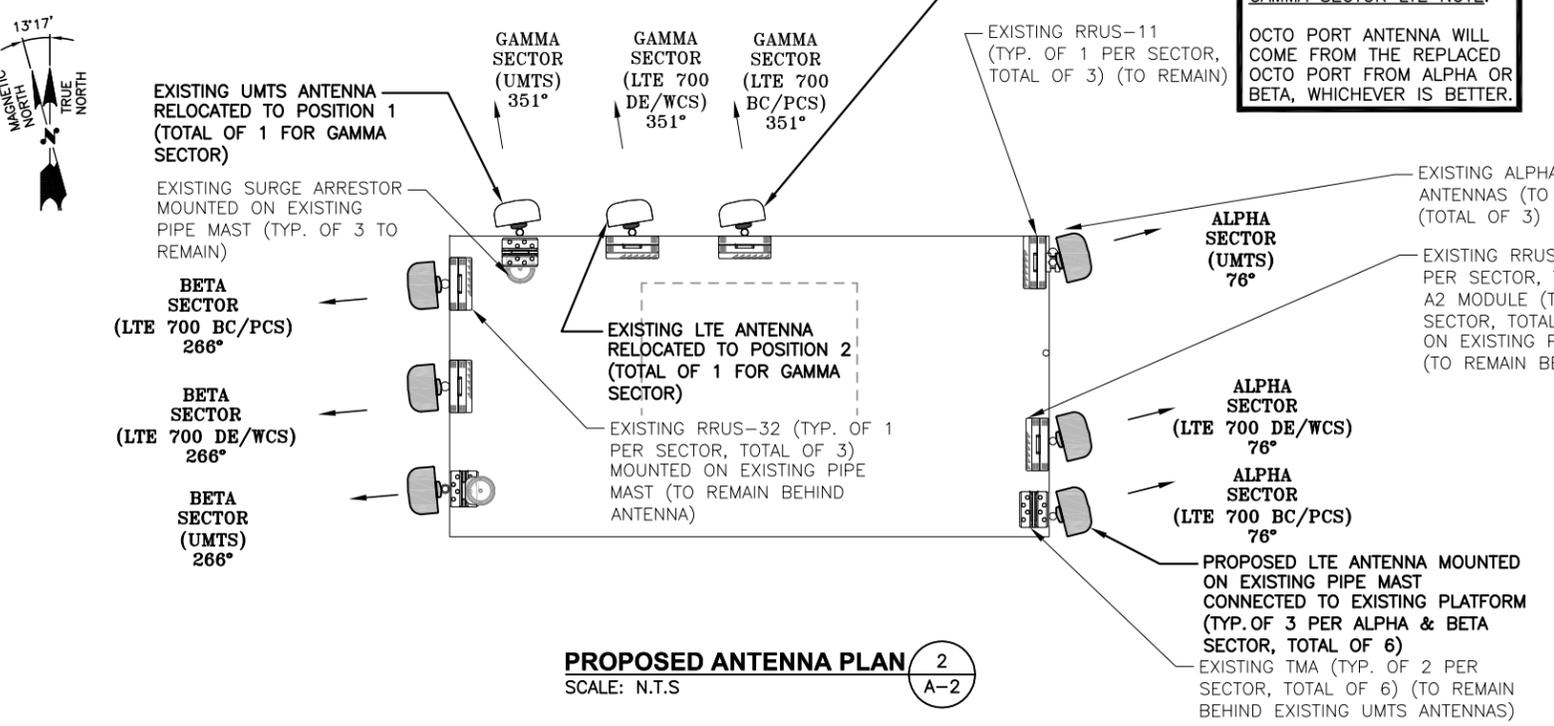
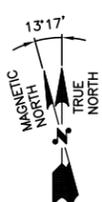
SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: SG



AT&T
ROOF AND EQUIPMENT PLAN (RF MOD)
JOB NUMBER: 2118.00 DRAWING NUMBER: A-1 REV: 2

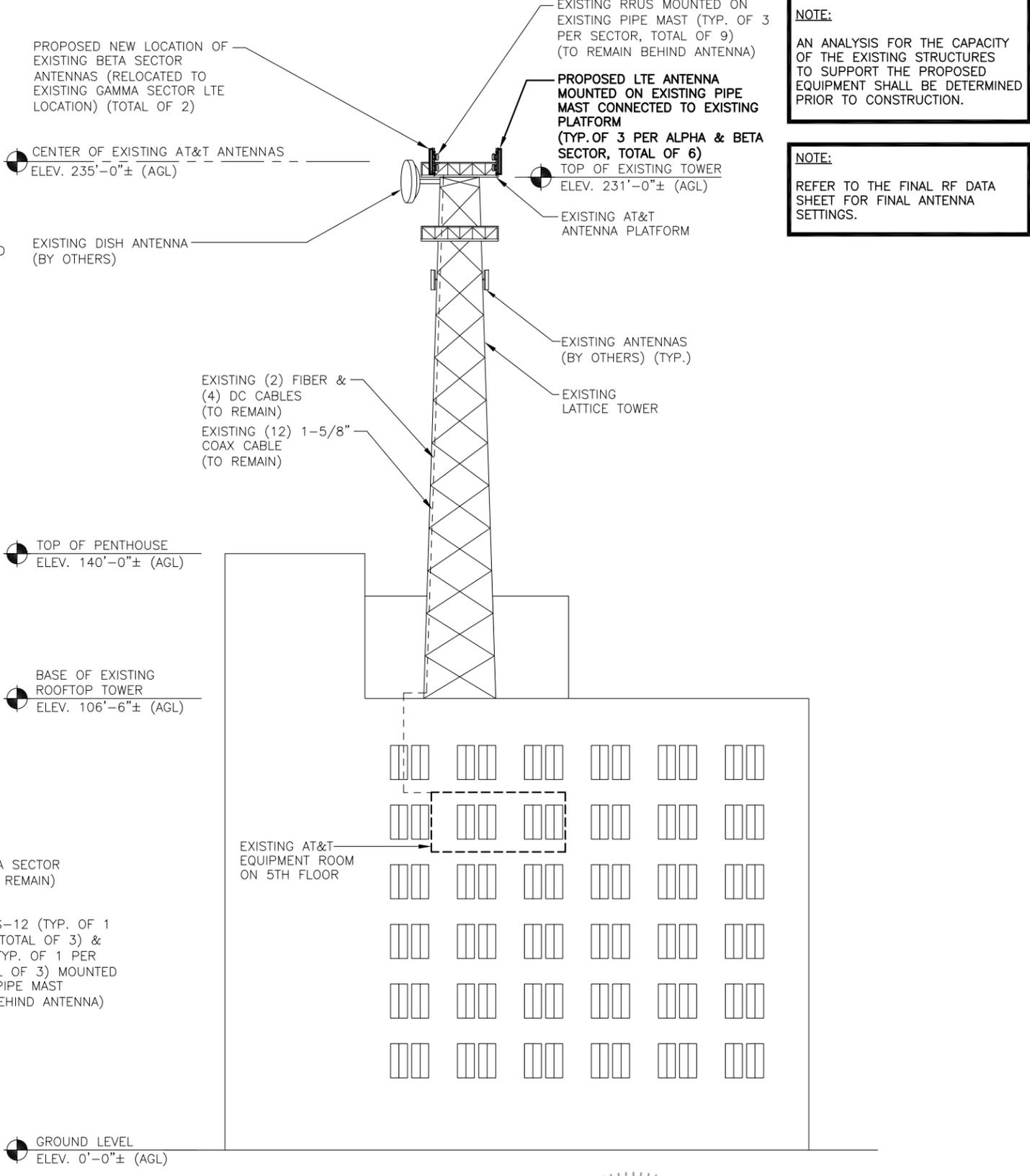


EXISTING ANTENNA PLAN 1
SCALE: N.T.S. A-2



PROPOSED ANTENNA PLAN 2
SCALE: N.T.S. A-2

GAMMA SECTOR LTE NOTE:
OCTO PORT ANTENNA WILL COME FROM THE REPLACED OCTO PORT FROM ALPHA OR BETA, WHICHEVER IS BETTER.



SOUTH ELEVATION 3
22x34 SCALE: 1/16"=1'-0"
11x17 SCALE: 1/32"=1'-0" A-2

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: SG		

AT&T
ANTENNA LAYOUT AND ELEVATION (RF MOD)

JOB NUMBER	DRAWING NUMBER	REV
2118.00	A-2	2

EXISTING ANTENNA SCHEDULE

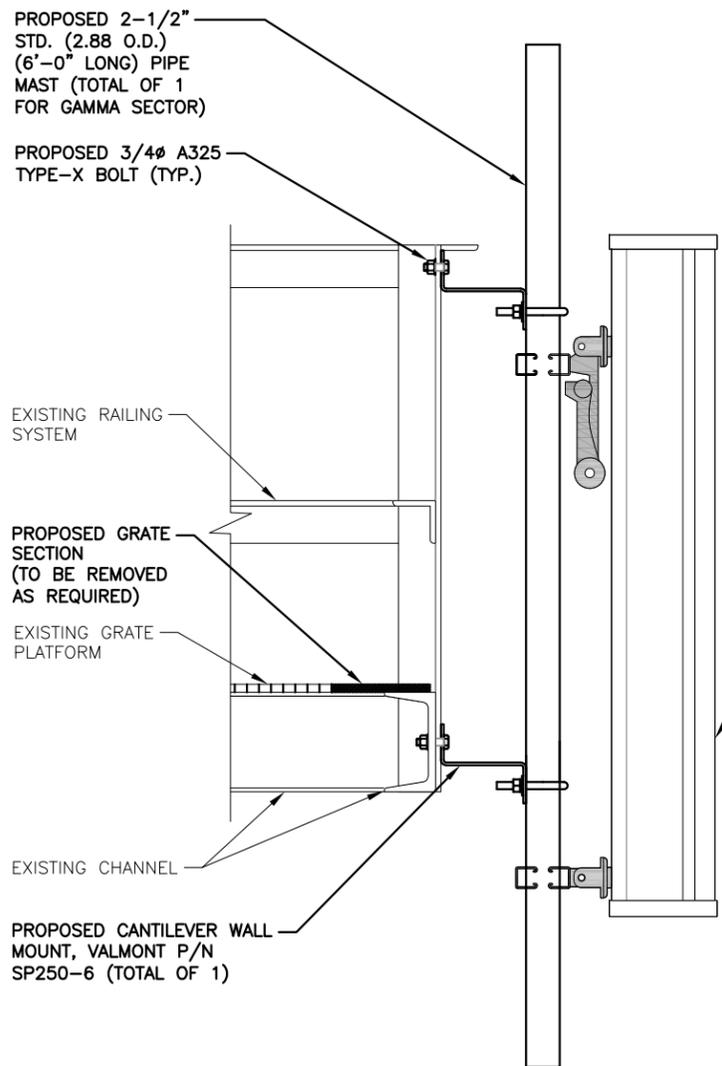
SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	CCI	OPA-65R-LCUU-H4	48X14.4X7.3
	-	-	-
	CCI POWERWAVE	OPA-65R-LCUU-H4 P65-15-XLH-RR	48X14.4X7.3 51X12X6
BETA:	CCI	OPA-65R-LCUU-H4	48X14.4X7.3
	-	-	-
	CCI POWERWAVE	OPA-65R-LCUU-H4 P65-15-XLH-RR	48X14.4X7.3 51X12X6
GAMMA:	CCI	OPA-65R-LCUU-H4	48X14.4X7.3
	-	-	-
	CCI POWERWAVE	OPA-65R-LCUU-H4 P65-15-XLH-RR	48X14.4X7.3 51X12X6

PROPOSED ANTENNA SCHEDULE

SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	CCI	HPA-45R-BUU-H6	72X18.9X8.3
	-	-	-
	CCI CCI	HPA-45R-BUU-H6 HPA-45R-BUU-H6	72X18.9X8.3 72X18.9X8.3
BETA:	CCI	HPA-45R-BUU-H6	72X18.9X8.3
	-	-	-
	CCI CCI	HPA-45R-BUU-H6 HPA-45R-BUU-H6	72X18.9X8.3 72X18.9X8.3
GAMMA:	POWERWAVE	P65-15-XLH-RR	51X12X6
	CCI	OPA-65R-LCUU-H4	48X14.4X7.3
	-	-	-
CCI	OPA-65R-LCUU-H4	48X14.4X7.3	

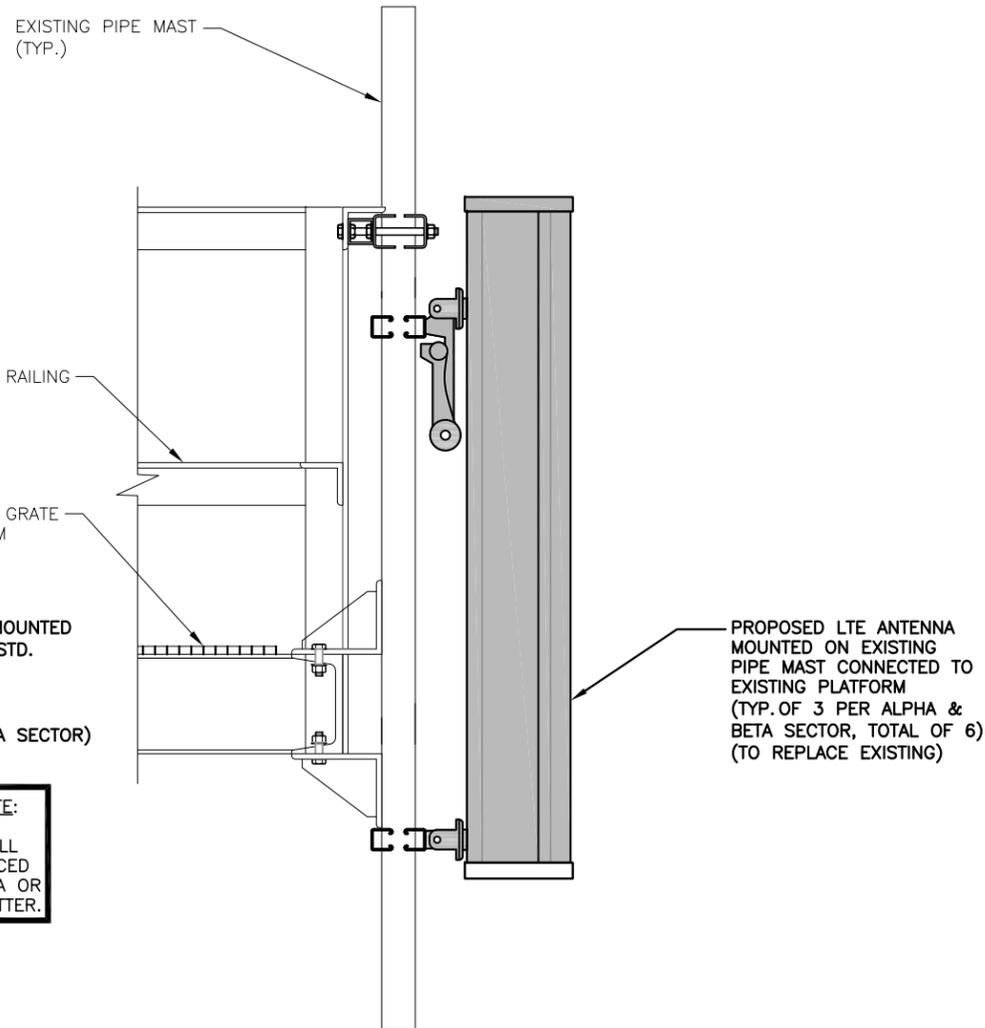
NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



EXISTING LTE ANTENNA MOUNTED ON NEW PIPE MAST CONNECTION DETAIL
SCALE: N.T.S.

1
A-3



PROPOSED LTE ANTENNA MOUNTED ON EXISTING PIPE MAST CONNECTION DETAIL
SCALE: N.T.S.

2
A-3

GAMMA SECTOR LTE NOTE:
OCTO PORT ANTENNA WILL COME FROM THE REPLACED OCTO PORT FROM ALPHA OR BETA, WHICHEVER IS BETTER.

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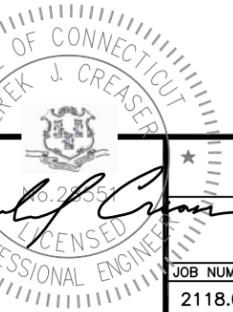
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A	08/20/15	ISSUED FOR REVIEW	SG	AT	DJC

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: SG



AT&T	DETAILS (RF MOD)
JOB NUMBER: 2118.00	DRAWING NUMBER: A-3
REV: 2	

Structural Analysis Report



AT&T – Stamford Central SBC CO #CT2118 / FA #10034983
Owner: Frontier Communications - Stamford #1 Co Site
Stamford, Connecticut

October 15, 2015

MEI PROJECT ID: CT02768S-15V4



17950 PRESTON ROAD, SUITE 720 ■ DALLAS, TEXAS 75252 ■ TEL. 972-783-2578 FAX 972-783-2583
www.maloufengineering.com





October 15, 2015

Mr. Carl Aquilina

SAI Communications

carl.aquilina@sai-comm.com

STRUCTURAL ANALYSIS

Structure/Make/Model:	125 ft Self-Supporting Tower (onto 106.5ft Rooftop)	Not Known / Not Known	
Client/Site Name/#:	SAI Communications / AT&T	Stamford Central SBC CO #CT2118 FA #10034983	
Owner/Site Name/#:	Frontier Communications	Stamford #1 Co	
MEI Project ID:	CT02768S-15V2		
Location:	555 Main St Stamford, CT 06901	Fairfield County FCC #1046319	
	LAT	41-03-12.47 N	LON

EXECUTIVE SUMMARY:

Malouf Engineering Int'l (MEI), as requested, has performed a structural analysis of the above mentioned structure to assess the impact of the changed condition as noted in Table 1.

Based on the stress analysis performed, the existing structure **is in conformance** with the Int'l Building Code (IBC) / ANSI/TIA **222-F** Standard for the loading considered under the criteria listed and referenced in the report sections – tower rated at 97.7% - Legs.

The installation of the proposed changed condition as noted in Table 1 is structurally acceptable. Please refer to Appendix 1 for Schematic Lines Layout.

MEI appreciates the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or other projects please contact us.

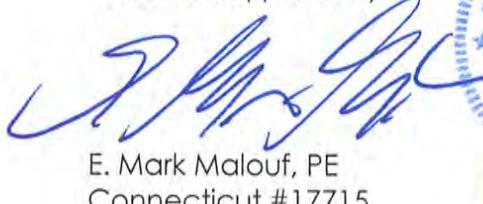
Respectfully submitted,

MALOUF ENGINEERING INT'L, INC.

Analysis performed by:

Luan Nguyen, PE
Sr. Project Engineer

Reviewed & Approved by:


 E. Mark Malouf, PE
 Connecticut #17715
 972-783-2578 ext. 106
 mmalouf@maloufengineering.com



1. INTRODUCTION & SCOPE

A structural analysis performed by Malouf Engineering Int'l (MEI), as requested and authorized by Mr. Carl Aquilina, SAI Communications, on behalf of AT&T, to determine the acceptance of the proposed changed conditions in conformance with the IBC / ANSI/TIA-222-F Standard, "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures".

The scope of this independent analysis is to determine the overall stability and the adequacy of structural members, foundations, and member connections, as available and stated. This analysis considers the structure to have been properly installed and maintained with no structural defects. Installation procedures and related loading are not within the scope of this analysis and should be performed and evaluated by a competent person of the erection contractor.

The different report sections detail the applicable information used in this evaluation, relating to the tower data, the appurtenances configuration and the wind and ice loading considered.

2. SOURCE OF DATA

The following information has been used in this evaluation as source data that accurately represent the existing structure and the related appurtenances:

	Source	Information	Reference
STRUCTURE			
Tower	MEI Records	Previous Structural Analysis / Mods	ID CT02768S-15V2 Dated 06/24/2015
Base Support	Tower is on a building rooftop – building members to be reviewed by others.		
Material Grade	Not available from supplied documents-Assumed based on typical towers of this type-refer to Appendix		
CURRENT APPURTENANCES			
	MEI Records	Previous Structural Analysis / Mods	ID CT02768S-15V2 Dated 06/24/2015
CHANGED CONDITION			
	SAI Communications / Mr. Carl Aquilina	AT&T CDs	Dated 08/20/2015
		AT&T RF Data Sheet	Dated 05/12/2015

Background Information:

Based on available information, the following is known regarding this structure:

DESIGNER / FABRICATOR	Not Known / Not Known
ORIGINAL DESIGN CRITERIA	TIA/EIA 222-Unknown
PRIOR STRUCTURAL MODIFICATIONS	Mods as per MEI CT02768S-11V1; CT02768S-15V2 dated 06/24/2015 – considered properly installed.

3. ANALYSIS CRITERIA

The structural analysis performed used the following criteria:

CODE / STANDARD	2005 CT State Building Code / 2003 Int'l Building Code / ANSI/TIA-222-F-96 Standard	
LOADING CASES	<i>Full Wind:</i>	85 Mph (fastest-mile) – with No Radial Ice
	<i>Iced Case:</i>	73.61 Mph (fastest-mile) + 0.5" Radial Ice
	<i>Service:</i>	50 Mph

Appurtenances Configuration

The following appurtenances configuration is denoted by the *summation of Tables 1 & 2*:

Table 1: Proposed Changed Condition Appurtenances

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
235	AT&T	6	HPA-45R-BUU-H6 Panel Antennas	[Existing Mounts]		No New Lines
To Be Removed (See Below)						
235	AT&T	4	OPA-65R-LCUU-H4 Panel Antenna			
		2	P65-15-XLH-RR Panel Antennas			

Table 2: Current and Reserved/Future Appurtenances

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
245.17		2	Top Small Beacons	13ft T-Beam Mount	1	1-1/4" R.C.
244.5		1	Top Lightning Rod			
235	AT&T	1	P65-15-XLH-RR Panel Antennas	Top Square Platform Mount	12	1-5/8" DC Power Trunk Cables 0.625" Fiber Trunk Cable RET Cable-(FZ)
		2	OPA-65R-LCUU-H4 Panel Antenna		4	
		6	LGP21401 TMAs		2	
		3	RRUS-11 Boxes		1	
		3	RRUS-32 Boxes			
		3	RRUS-12 w/ A2 Backpacks			
233	AT&T	2	Raycap DC6-48-60-18-8F DC Surge Box			
231.5				Unused I-Beam Mount		
229	AT&T	1	1.5ft (2-Elem) Yagi Antenna	[Onto Platform]	1	1/2"-(FZ)
223.5		1	10ft Dia. HP Dish (Az. 210°±)	Dish Pipe Mount-DA Face	2	EW90-(FZ)
221.5	[Unused]				2	3/8"-(FZ)
221		1	1ft Dia. HP Dish (Windstar 43029) (Az. 210°±)	Dish Pipe Mount-BC Face	1	3/8"-(FZ)
216.5				(2) 4'Lx6'W Rest Platforms		
209.5	T-Mobile	6	AIR21 B2A B4P Panel Antennas	(3) Sector Frame Mounts	12	1-5/8" Huber-Suhner 1.25" TC-OF Cable-(FZ)
		6	KRY 112 71/2 TMAs		1	
203	T-Mobile [New]	3	LNX-6515DS-VTM Panel Antennas	(3) Sector Frame Mounts		
		3	RRUS-11 B12 Boxes			
201.5	T-Mobile [Unused]				18	1-5/8"-(FZ)
132	AT&T	1	4ft (7-Elem) Yagi Antenna	2ft Sidearm Mount	1	1/2"-(FZ)

Notes:

1. Tower Base elevation is at 106.5ft Above Ground Level - All above elevations are measured from AGL.
2. Please note appurtenances not listed above are to be removed/not present as per data supplied.
3. (I) = Internal; (E) = External; (FZ) = Within Face Zone; (OFZ) = Outside Face Zone - as per TIA-222.
4. The above appurtenances represent MEI's understanding of the appurtenances configuration. If different than above, the analysis is invalid. Please contact MEI if any discrepancies are found.

4. ANALYSIS PROCEDURE

The subject structure is analyzed for feasibility of the installation of the proposed changed condition previously noted. The data records furnished were reviewed and a computer stress analysis was performed in accordance with the TIA-222 Standard provisions and with the agreed scope of work terms and the results of this analysis are reported.

Analysis Program

The computer program used to model the structure is a rigorous Finite Element Analysis program, tnxTower (ver. 6.1.3.1), a commercially available program by Tower Numerics Inc. The latticed structures members are modeled using beam/truss and cable members and the pole members using tubular beam elements. The structural parameters and geometry of the members are included in the model. The dead and temperature loads and the wind loads are internally calculated by the program for the different wind directions and then applied as external loads on the structure.

Assumptions

This engineering study is based on the theoretical capacity of the members and is not a condition assessment of the structure. This analysis is based on information supplied, and therefore, its results are based on and as accurate as that supplied data. MEI has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural stress analysis:

- This existing tower is assumed, for the purpose of this analysis, to have been properly maintained and to be in good condition with no structural defects and with no deterioration to its member capacities ('as-new' condition).
- The tower member sizes and configuration are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated.
- The appurtenances configuration is as supplied and/or as stated in the report. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
- Some assumptions are made regarding antennas and mounts sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type & industry practice.
- Mounts/Platforms are considered adequate to support the loading. No actual analysis of the platform/mount itself is performed, with the analysis being limited to analyzing the structure.
- The soil parameters are as per data supplied or as assumed and stated in the calculations. Refer to the Appendix. If no data is available, the foundation system is assumed to support the structure with its new reactions.
- All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report.
- All prior structural modifications, if any, are assumed to be as per data supplied/available, and to have been properly installed and to be fully effective.

If any of the above assumptions are not valid or have been made in error, this analysis results may be invalidated, MEI should be contacted to review any contradictory information to determine its effect.

5. ANALYSIS RESULTS

The results of the structural stress analysis based on data available and with the previous listed criteria, indicated the following:

Table 3: Stress Analysis Results

Component Type	Maximum Stress Ratio	Controlling Elev. (ft) / Component	Pass/Fail	Comment
LEGS	97.7%	231.5 - 229	Pass	
DIAGONALS	85.0%	161.5 - 151.5	Pass	
HORIZONTALS / GIRTS	52.6%	141.5 - 131.5	Pass	
SECONDARY HORIZONTALS	80.5%	151.5 - 141.5	Pass	
BRACINGS	68.4%	131.5 - 119	Pass	
BASE SUPPORT	N/A	-	-	Tower is on top of building. Scope is limited to tower. Building members to be reviewed by others.

Table 4: Serviceability Requirements

	Maximum Value	TIA Requirement (10dB)	Pass/Fail	Comment
TWIST/SWAY	0.1798 Deg.	4.425 Deg.	Pass	1ft HP Dish (Windstar 43029) Elev. 221.00ft
	0.1819 Deg.	0.2957 Deg.	Pass	10 FT HP DISH Elev. 223.50ft

Notes:

1. The Maximum Stress Ratio is the percentage that the maximum load in the member is relative to the allowable load as determined by Code requirements.
2. Refer to the Appendix 1 for more details on the member loads.
3. A maximum stress ratio between 100% and 105% may be considered as *Acceptable* according to industry standard practice.

6. FINDINGS & RECOMMENDATIONS

- Based on the stress analysis results, the subject structure is **rated at 97.7%** of its support capacity (controlling component: Leg) with the proposed changed condition considered. Please refer to Table 3 and to Appendix 1 for more details of the analysis results.
- Based on the stress analysis performed, the existing structure **is in conformance** with the IBC / ANSI/TIA **222-F** Standard for the loading considered under the criteria listed and referenced in the report sections.
- Please note that the tower is mounted on top of a building rooftop. Building rooftop is to be evaluated by others to determine its adequacy for the new base loads (not within scope). Refer to Appendix for tower base reactions.
- *The installation of the proposed changed condition as noted in Table 1 is structurally acceptable.* Please refer to Appendix 1 for Schematic Lines Layout.
- This structure is at its maximum support capacity for the appurtenances and loading criteria considered. Therefore, no changes to the configuration considered should be made without performing a new proper evaluation.

Rigging and temporary supports required for the erection/modification shall be determined, documented, furnished and installed by the erector/contractor accounting for the loads imposed on the structure due to the proposed construction method.

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) TOP SMALL BEACONS (E)	245.17	4'Lx6'W REST PLATFORM (E)	216.5
TOP LIGHTNING ROD (E)	244.5	4'Lx6'W REST PLATFORM (E)	216.5
(3) HPA-45R-BUU-H6 w/ Pipe Mounts (ATI / P)	235	(2) AIR21 B2A B4P w/ pipe Mount (T-MOBILE / E)	209.5
(2) LGP21401 TMA'S (ATI / E)	235	(2) KRY 112 71/2 (T-MOBILE / E)	209.5
(2) HPA-45R-BUU-H6 w/ Pipe Mounts (ATI / P)	235	(2) KRY 112 71/2 (T-MOBILE / E)	209.5
HPA-45R-BUU-H6 w/ Pipe Mounts (ATI / P)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	209.5
(2) LGP21401 TMA'S (ATI / E)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	209.5
RRUS-11 (ATI / E)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	209.5
RRUS-11 (ATI / E)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	209.5
P65-15-XLH-RR w/ Pipe Mount (ATI / E)	235	(2) AIR21 B2A B4P w/ pipe Mount (T-MOBILE / E)	209.5
OPA-65R-LCUU-H4 w/ Pipe Mounts (ATI / E)	235	(2) AIR21 B2A B4P w/ pipe Mount (T-MOBILE / E)	209.5
OPA-65R-LCUU-H4 w/ Pipe Mounts (ATI / E)	235	10'T x 9.5'W x 3.5'D TMA's (T-MOBILE / E)	203
LGP21401 TMA'S (ATI / E)	235	LNX-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / N)	203
LGP21401 TMA'S (ATI / E)	235	LNX-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / N)	203
RRUS-11 (ATI / E)	235	LNX-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / N)	203
RRUS-12 w/ A2 Backpack (ATI / E)	235	LNX-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / N)	203
RRUS-12 w/ A2 Backpack (ATI / E)	235	RRUS-11 B12 (T-MOBILE / N)	203
RRUS-12 w/ A2 Backpack (ATI / E)	235	RRUS-11 B12 (T-MOBILE / N)	203
RRUS-32 (ATI / E)	235	RRUS-11 B12 (T-MOBILE / N)	203
RRUS-32 (ATI / E)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	203
RRUS-32 (ATI / E)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	203
RAYCAP DC6-48-60-18-8F DC SURGE BOX (ATI / E)	233	SECTOR FRAME MOUNT (T-MOBILE / E)	203
RAYCAP DC6-48-60-18-8F DC SURGE BOX (ATI / E)	233	SECTOR FRAME MOUNT (T-MOBILE / E)	203
13' T BEAM MOUNT (E)	231.5	SECTOR FRAME MOUNT (T-MOBILE / E)	203
UNUSED I-BEAM MOUNT (ATI / E)	231.5	10'T x 9.5'W x 3.5'D TMA's (T-MOBILE / E)	203
TOP SQUARE PLATFORM MOUNT (ATI / E)	231.5	10'T x 9.5'W x 3.5'D TMA's (T-MOBILE / E)	203
1.5x2-ELEMENT YAGI AND MOUNT (ATI / E)	229	4'x7-ELEMENT YAGI (ATI / E)	132
PIPE DISH MOUNT (E)	223.5	2FT SIDEARM MOUNT (ATI / E)	132
10 FT HP DISH (E)	223.5		
PIPE DISH MOUNT (E)	221		
1 FT HP DISH (WINDSTAR 43029) (E)	221		

SYMBOL LIST

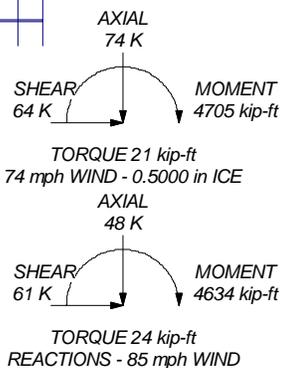
MARK	SIZE	MARK	SIZE
A	C8x11.5	C	L2 1/2x2x1/4
B	L2 1/2x2 1/2x1/4	D	1 @ 2.5

MATERIAL STRENGTH

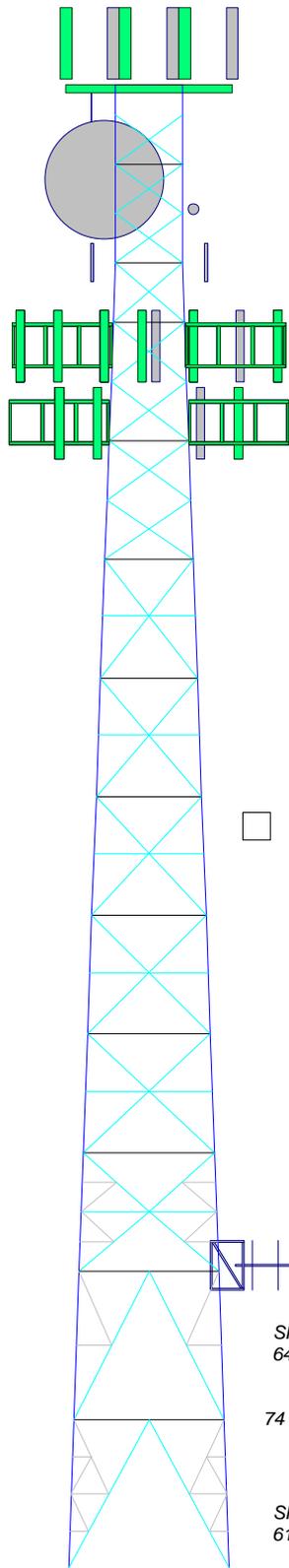
GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

MAX. CORNER REACTIONS AT BASE: TOWER DESIGN NOTES

- DCI(A)/: 262 K
 SF: 1. Tower is located in Fairfield County, Connecticut.
 2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
 3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
 UF: 4. Deflections are based upon a 50 mph wind.
 SF: 5. TOWER RATING: 97.7%



231.5 ft
 229.0 ft
 224.8 ft
 220.7 ft
 216.5 ft
 211.5 ft
 206.5 ft
 201.5 ft
 196.5 ft
 191.5 ft
 181.5 ft
 171.5 ft
 161.5 ft
 151.5 ft
 141.5 ft
 131.5 ft
 119.0 ft
 106.5 ft



Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17
Legs	L4x4x3/8																
Leg Grade																	
Diagonal Grade																	
Top Girts																	
Horizontals																	
Sec. Horizontals																	
Red. Diagonals																	
Red. Sub-Horiz																	
Red. Sub-Diags																	
Inner Bracing																	
Face Width (ft)																	
# Panels @ (ft)																	
Weight (K)																	

maloufengineering.com

Malouf Engineering Int'l, Inc.
 17950 Preston Road, Suite #720
 Dallas, TX 75252
 Phone: (972) 783-2578
 FAX: (972) 783-2583

Job: **125 FT SST, STAMFORD CENTRAL SITE #CT2118**
 Project: **CT02768S-15V4-R1**
 Client: SAI / AT&T
 Code: TIA/EIA-222-F
 Path: D:\MEI\Projects\15 DATA\SS\CT02768S-15V4\CT02768S-15V4-R1.dwg

Drawn by: LNguyen
 Date: 11/18/15
 Dwg No: E-1

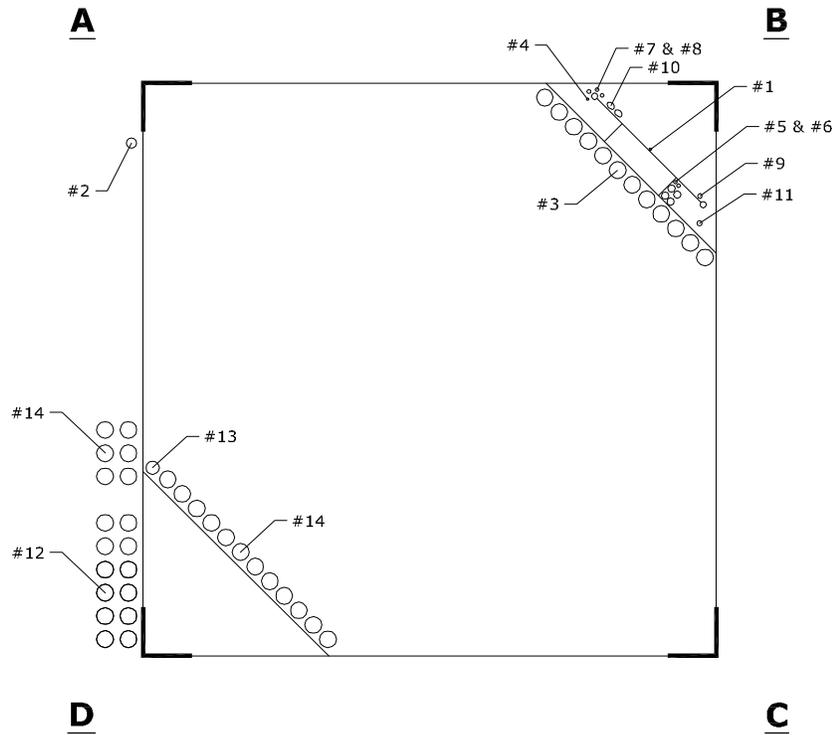
App'd:
 Scale: NTS

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No.	QTY.	DESCRIPTION	ELEV.	TENANT
1	1	Safety Climb & Climbing Ladder	125'	E
2	1	1 1/4" Rigid Conduit	125'	E
3	12	1 5/8	125'	AT&T / E
4	1	0.30	125'	AT&T / E
5	4	0.75" DC POWER TRUNK CABLES	125'	AT&T / E
6	2	0.625" FIBER TRUNK CABLE	125'	AT&T / E
7	2	3/8 (UNUSED)	115'	E
8	1	3/8	114.5'	E
9	1	1/2	122.5'	E
10	2	EW90	117'	E
11	1	1/2	25.5'	E
12	12	1 5/8	103'	T-MOBILE / E
13	1	HUBER-SUHNER 1.25" TC-OF CABLE	103'	T-MOBILE / E
14	18	1 5/8 (UNUSED)	96.5'	T-MOBILE / E

LEGEND:

- E = EXISTING #X
- P = PROPOSED #X
- F = FUTURE #X
- R = REMOVE #X
- TO RELOCATE #X



101 PLAN: SCHEMATIC Tx-LINE LAYOUT
SCALE: NOT TO SCALE

- NOTE:**
1. Tx LINE LAYOUT IS SCHEMATIC ONLY, BASED UPON MEI MAPPING DATED 4/6/2015 .
 2. NO NEW LINES ARE ADDED.
 3. ELEVATIONS SHOWN ARE ABOVE ROOF LINE.

OCT 15, 2015



17950 PRESTON ROAD SUITE 720
DALLAS, TEXAS 75252-5635
972-783-2578 (fax: 2583)
www.maloufengineering.com

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STAMFORD CENTRAL SITE #CT2118

TOWER TxLINE LAYOUT

MEI PROJECT ID	SHEET NUMBER	REV.
CT02768S-15V4	L01	0



Centek Engineering, Inc.
3-2 North Branford Road
Branford, Connecticut 06405
Phone: (203) 488-0580
Fax: (203) 488-8587

Steven L. Levine
Real Estate Consultant

December 3, 2015

Mayor David Martin
City of Stamford Government Center
888 Washington Boulevard
Stamford, CT 06901

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing tele-communications facility located at 555 (East) Main Street, Stamford (Owner, Frontier Communications)

Dear Mayor Martin:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System (“UMTS”) and Long Term Evolution (“LTE”) capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC (“AT&T”) will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies (“R.C.S.A.”) Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review AT&T’s proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The enclosed Notice fully sets forth the AT&T proposal. However, if you have any questions or require any further information on the plans for the site or the Siting Council’s procedures, please contact the undersigned at 860-830-0380 or Ms. Melanie Bachman, Acting Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Steven L. Levine
Real Estate Consultant

Enclosure

Structural Analysis Report



AT&T – Stamford Central SBC CO #CT2118 / FA #10034983
Owner: Frontier Communications - Stamford #1 Co Site
Stamford, Connecticut

October 15, 2015

MEI PROJECT ID: CT02768S-15V4



17950 PRESTON ROAD, SUITE 720 ■ DALLAS, TEXAS 75252 ■ TEL. 972-783-2578 FAX 972-783-2583
www.maloufengineering.com





October 15, 2015

Mr. Carl Aquilina

SAI Communications

carl.aquilina@sai-comm.com

STRUCTURAL ANALYSIS

Structure/Make/Model:	125 ft Self-Supporting Tower (onto 106.5ft Rooftop)	Not Known / Not Known	
Client/Site Name/#:	SAI Communications / AT&T	Stamford Central SBC CO #CT2118 FA #10034983	
Owner/Site Name/#:	Frontier Communications	Stamford #1 Co	
MEI Project ID:	CT02768S-15V2		
Location:	555 Main St Stamford, CT 06901	Fairfield County FCC #1046319	
	LAT	41-03-12.47 N	LON

EXECUTIVE SUMMARY:

Malouf Engineering Int'l (MEI), as requested, has performed a structural analysis of the above mentioned structure to assess the impact of the changed condition as noted in Table 1.

Based on the stress analysis performed, the existing structure **is in conformance** with the Int'l Building Code (IBC) / ANSI/TIA **222-F** Standard for the loading considered under the criteria listed and referenced in the report sections – tower rated at 97.7% - Legs.

The installation of the proposed changed condition as noted in Table 1 is structurally acceptable. Please refer to Appendix 1 for Schematic Lines Layout.

MEI appreciates the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or other projects please contact us.

Respectfully submitted,

MALOUF ENGINEERING INT'L, INC.

Analysis performed by:

Luan Nguyen, PE
Sr. Project Engineer

Reviewed & Approved by:

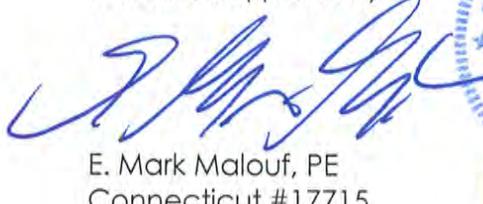

 E. Mark Malouf, PE
 Connecticut #17715
 972-783-2578 ext. 106
 mmalouf@maloufengineering.com



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The different report sections detail the applicable information used in this evaluation, relating to the tower data, the appurtenances configuration and the wind and ice loading considered.

2. SOURCE OF DATA

The following information has been used in this evaluation as source data that accurately represent the existing structure and the related appurtenances:

	Source	Information	Reference
STRUCTURE			
Tower	MEI Records	Previous Structural Analysis / Mods	ID CT02768S-15V2 Dated 06/24/2015
Base Support	Tower is on a building rooftop – building members to be reviewed by others.		
Material Grade	Not available from supplied documents-Assumed based on typical towers of this type-refer to Appendix		
CURRENT APPURTENANCES			
	MEI Records	Previous Structural Analysis / Mods	ID CT02768S-15V2 Dated 06/24/2015
CHANGED CONDITION			
	SAI Communications / Mr. Carl Aquilina	AT&T CDs	Dated 08/20/2015
		AT&T RF Data Sheet	Dated 05/12/2015

Background Information:

Based on available information, the following is known regarding this structure:

DESIGNER / FABRICATOR	Not Known / Not Known
ORIGINAL DESIGN CRITERIA	TIA/EIA 222-Unknown
PRIOR STRUCTURAL MODIFICATIONS	Mods as per MEI CT02768S-11V1; CT02768S-15V2 dated 06/24/2015 – considered properly installed.

3. ANALYSIS CRITERIA

The structural analysis performed used the following criteria:

CODE / STANDARD	2005 CT State Building Code / 2003 Int'l Building Code / ANSI/TIA-222-F-96 Standard	
LOADING CASES	<i>Full Wind:</i>	85 Mph (fastest-mile) – with No Radial Ice
	<i>Iced Case:</i>	73.61 Mph (fastest-mile) + 0.5" Radial Ice
	<i>Service:</i>	50 Mph

Appurtenances Configuration

The following appurtenances configuration is denoted by the *summation of Tables 1 & 2*:

Table 1: Proposed Changed Condition Appurtenances

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
235	AT&T	6	HPA-45R-BUU-H6 Panel Antennas	[Existing Mounts]		No New Lines
To Be Removed (See Below)						
235	AT&T	4	OPA-65R-LCUU-H4 Panel Antenna			
		2	P65-15-XLH-RR Panel Antennas			

Table 2: Current and Reserved/Future Appurtenances

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
245.17		2	Top Small Beacons	13ft T-Beam Mount	1	1-1/4" R.C.
244.5		1	Top Lightning Rod			
235	AT&T	1	P65-15-XLH-RR Panel Antennas	Top Square Platform Mount	12	1-5/8" DC Power Trunk Cables 0.625" Fiber Trunk Cable RET Cable-(FZ)
		2	OPA-65R-LCUU-H4 Panel Antenna		4	
		6	LGP21401 TMAs		2	
		3	RRUS-11 Boxes		1	
		3	RRUS-32 Boxes			
		3	RRUS-12 w/ A2 Backpacks			
233	AT&T	2	Raycap DC6-48-60-18-8F DC Surge Box			
231.5				Unused I-Beam Mount		
229	AT&T	1	1.5ft (2-Elem) Yagi Antenna	[Onto Platform]	1	1/2"-(FZ)
223.5		1	10ft Dia. HP Dish (Az. 210°±)	Dish Pipe Mount-DA Face	2	EW90-(FZ)
221.5	[Unused]				2	3/8"-(FZ)
221		1	1ft Dia. HP Dish (Windstar 43029) (Az. 210°±)	Dish Pipe Mount-BC Face	1	3/8"-(FZ)
216.5				(2) 4'Lx6'W Rest Platforms		
209.5	T-Mobile	6	AIR21 B2A B4P Panel Antennas	(3) Sector Frame Mounts	12	1-5/8" Huber-Suhner 1.25" TC-OF Cable-(FZ)
		6	KRY 112 71/2 TMAs		1	
203	T-Mobile [New]	3	LNX-6515DS-VTM Panel Antennas	(3) Sector Frame Mounts		
		3	RRUS-11 B12 Boxes			
201.5	T-Mobile [Unused]				18	1-5/8"-(FZ)
132	AT&T	1	4ft (7-Elem) Yagi Antenna	2ft Sidearm Mount	1	1/2"-(FZ)

Notes:

1. Tower Base elevation is at 106.5ft Above Ground Level - All above elevations are measured from AGL.
2. Please note appurtenances not listed above are to be removed/not present as per data supplied.
3. (I) = Internal; (E) = External; (FZ) = Within Face Zone; (OFZ) = Outside Face Zone - as per TIA-222.
4. The above appurtenances represent MEI's understanding of the appurtenances configuration. If different than above, the analysis is invalid. Please contact MEI if any discrepancies are found.

4. ANALYSIS PROCEDURE

The subject structure is analyzed for feasibility of the installation of the proposed changed condition previously noted. The data records furnished were reviewed and a computer stress analysis was performed in accordance with the TIA-222 Standard provisions and with the agreed scope of work terms and the results of this analysis are reported.

Analysis Program

The computer program used to model the structure is a rigorous Finite Element Analysis program, tnxTower (ver. 6.1.3.1), a commercially available program by Tower Numerics Inc. The latticed structures members are modeled using beam/truss and cable members and the pole members using tubular beam elements. The structural parameters and geometry of the members are included in the model. The dead and temperature loads and the wind loads are internally calculated by the program for the different wind directions and then applied as external loads on the structure.

Assumptions

This engineering study is based on the theoretical capacity of the members and is not a condition assessment of the structure. This analysis is based on information supplied, and therefore, its results are based on and as accurate as that supplied data. MEI has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural stress analysis:

- This existing tower is assumed, for the purpose of this analysis, to have been properly maintained and to be in good condition with no structural defects and with no deterioration to its member capacities ('as-new' condition).
- The tower member sizes and configuration are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated.
- The appurtenances configuration is as supplied and/or as stated in the report. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
- Some assumptions are made regarding antennas and mounts sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type & industry practice.
- Mounts/Platforms are considered adequate to support the loading. No actual analysis of the platform/mount itself is performed, with the analysis being limited to analyzing the structure.
- The soil parameters are as per data supplied or as assumed and stated in the calculations. Refer to the Appendix. If no data is available, the foundation system is assumed to support the structure with its new reactions.
- All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report.
- All prior structural modifications, if any, are assumed to be as per data supplied/available, and to have been properly installed and to be fully effective.

If any of the above assumptions are not valid or have been made in error, this analysis results may be invalidated, MEI should be contacted to review any contradictory information to determine its effect.

5. ANALYSIS RESULTS

The results of the structural stress analysis based on data available and with the previous listed criteria, indicated the following:

Table 3: Stress Analysis Results

Component Type	Maximum Stress Ratio	Controlling Elev. (ft) / Component	Pass/Fail	Comment
LEGS	97.7%	231.5 - 229	Pass	
DIAGONALS	85.0%	161.5 - 151.5	Pass	
HORIZONTALS / GIRTS	52.6%	141.5 - 131.5	Pass	
SECONDARY HORIZONTALS	80.5%	151.5 - 141.5	Pass	
BRACINGS	68.4%	131.5 - 119	Pass	
BASE SUPPORT	N/A	-	-	Tower is on top of building. Scope is limited to tower. Building members to be reviewed by others.

Table 4: Serviceability Requirements

	Maximum Value	TIA Requirement (10dB)	Pass/Fail	Comment
TWIST/SWAY	0.1798 Deg.	4.425 Deg.	Pass	1ft HP Dish (Windstar 43029) Elev. 221.00ft
	0.1819 Deg.	0.2957 Deg.	Pass	10 FT HP DISH Elev. 223.50ft

Notes:

1. The Maximum Stress Ratio is the percentage that the maximum load in the member is relative to the allowable load as determined by Code requirements.
2. Refer to the Appendix 1 for more details on the member loads.
3. A maximum stress ratio between 100% and 105% may be considered as *Acceptable* according to industry standard practice.

6. FINDINGS & RECOMMENDATIONS

- Based on the stress analysis results, the subject structure is **rated at 97.7%** of its support capacity (controlling component: Leg) with the proposed changed condition considered. Please refer to Table 3 and to Appendix 1 for more details of the analysis results.
- Based on the stress analysis performed, the existing structure **is in conformance** with the IBC / ANSI/TIA **222-F** Standard for the loading considered under the criteria listed and referenced in the report sections.
- Please note that the tower is mounted on top of a building rooftop. Building rooftop is to be evaluated by others to determine its adequacy for the new base loads (not within scope). Refer to Appendix for tower base reactions.
- *The installation of the proposed changed condition as noted in Table 1 is structurally acceptable.* Please refer to Appendix 1 for Schematic Lines Layout.
- This structure is at its maximum support capacity for the appurtenances and loading criteria considered. Therefore, no changes to the configuration considered should be made without performing a new proper evaluation.

Rigging and temporary supports required for the erection/modification shall be determined, documented, furnished and installed by the erector/contractor accounting for the loads imposed on the structure due to the proposed construction method.

7. REPORT DISCLAIMER

The engineering services rendered by Malouf Engineering International, Inc. ('MEI') in connection with this Structural Analysis are limited to a computer analysis of the tower structure, size and capacity of its members. MEI does not analyze the fabrication, including welding and connection capacities, except as included in this Report.

The analysis performed and the conclusions contained herein are based on the assumption that the tower has been properly installed and maintained, including, but not limited to the following:

1. Proper alignment and plumbness.
2. Correct guy tensions, as applicable.
3. Correct bolt tightness or slip jacking of sleeved connections.
4. No significant deterioration or damage to any structural component.

Furthermore, the information and conclusions contained in this Report were determined by application of the current "state-of-the-art" engineering and analysis procedures and formulae. MALOUF ENGINEERING INTERNATIONAL, INC. assumes no obligation to revise any of the information or conclusions contained in this Report in the event that such engineering and analysis procedures and formulae are hereafter modified or revised. In addition, under no circumstances will MALOUF ENGINEERING INTERNATIONAL, INC. have any obligation or responsibility whatsoever for or on account of consequential or incidental damages sustained by any person, firm or organization as a result of any information or conclusions contained in the Report, and the maximum liability of MALOUF ENGINEERING INTERNATIONAL, INC., if any, pursuant to this Report shall be limited to the total funds actually received by MALOUF ENGINEERING INTERNATIONAL, INC. for preparation of this Report.

Customer has requested MALOUF ENGINEERING INTERNATIONAL, INC. to prepare and submit to Customer an engineering analysis with respect to the Subject Tower and has further requested MALOUF ENGINEERING INTERNATIONAL, INC. to make appropriate recommendations regarding suggested structural modifications and changes to the Subject Tower. In making such request of MALOUF ENGINEERING INTERNATIONAL, INC., Customer has informed MALOUF ENGINEERING INTERNATIONAL, INC. that Customer will make a determination as to whether or not to implement any of the changes or modifications which may be suggested by MALOUF ENGINEERING INTERNATIONAL, INC. and that Customer will have any such changes or modifications made by riggers, erectors and other subcontractors of Customer's choice. MALOUF ENGINEERING INTERNATIONAL, INC. shall have the right to rely upon the accuracy of the information supplied by the customer and shall not be held responsible for the Customer's misrepresentation or omission of relevant fact whether intentional or otherwise.

Customer hereby agrees and acknowledges that MALOUF ENGINEERING INTERNATIONAL, INC. shall have no liability whatsoever to Customer or to others for any work or services performed by any persons other than MALOUF ENGINEERING INTERNATIONAL, INC. in connection with the implementation of services including but not limited to any services rendered for Customer or for others by riggers, erectors or other subcontractors. Customer acknowledges and agrees that any riggers, erectors or subcontractors retained or employed by Customer shall be solely responsible to Customer and to others for the quality of work performed by them and that MALOUF ENGINEERING INTERNATIONAL, INC. shall have no liability or responsibility whatsoever as a result of any negligence or breach of contract by any such rigger, erector or subcontractor and that Customer and rigger, erector, or subcontractor will provide MALOUF ENGINEERING INTERNATIONAL, INC. with a Certificate of Insurance naming MALOUF ENGINEERING INTERNATIONAL, INC. as additional insured.

APPENDIX 1 - ANALYSIS PRINTOUT & GRAPHICS

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) TOP SMALL BEACONS (E)	245.17	4'Lx6'W REST PLATFORM (E)	216.5
TOP LIGHTNING ROD (E)	244.5	4'Lx6'W REST PLATFORM (E)	216.5
(3) HPA-45R-BUU-H6 w/ Pipe Mounts (ATI / P)	235	(2) AIR21 B2A B4P w/ pipe Mount (T-MOBILE / E)	209.5
(2) LGP21401 TMA'S (ATI / E)	235	(2) KRY 112 71/2 (T-MOBILE / E)	209.5
(2) HPA-45R-BUU-H6 w/ Pipe Mounts (ATI / P)	235	(2) KRY 112 71/2 (T-MOBILE / E)	209.5
HPA-45R-BUU-H6 w/ Pipe Mounts (ATI / P)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	209.5
(2) LGP21401 TMA'S (ATI / E)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	209.5
RRUS-11 (ATI / E)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	209.5
RRUS-11 (ATI / E)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	209.5
P65-15-XLH-RR w/ Pipe Mount (ATI / E)	235	(2) AIR21 B2A B4P w/ pipe Mount (T-MOBILE / E)	209.5
OPA-65R-LCUU-H4 w/ Pipe Mounts (ATI / E)	235	(2) AIR21 B2A B4P w/ pipe Mount (T-MOBILE / E)	209.5
OPA-65R-LCUU-H4 w/ Pipe Mounts (ATI / E)	235	10'T x 9.5'W x 3.5'D TMA's (T-MOBILE / E)	203
LGP21401 TMA'S (ATI / E)	235	LNX-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / N)	203
LGP21401 TMA'S (ATI / E)	235	LNX-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / N)	203
RRUS-11 (ATI / E)	235	LNX-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / N)	203
RRUS-12 w/ A2 Backpack (ATI / E)	235	LNX-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / N)	203
RRUS-12 w/ A2 Backpack (ATI / E)	235	RRUS-11 B12 (T-MOBILE / N)	203
RRUS-12 w/ A2 Backpack (ATI / E)	235	RRUS-11 B12 (T-MOBILE / N)	203
RRUS-32 (ATI / E)	235	RRUS-11 B12 (T-MOBILE / N)	203
RRUS-32 (ATI / E)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	203
RRUS-32 (ATI / E)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	203
RAYCAP DC6-48-60-18-8F DC SURGE BOX (ATI / E)	233	SECTOR FRAME MOUNT (T-MOBILE / E)	203
RAYCAP DC6-48-60-18-8F DC SURGE BOX (ATI / E)	233	SECTOR FRAME MOUNT (T-MOBILE / E)	203
13' T BEAM MOUNT (E)	231.5	SECTOR FRAME MOUNT (T-MOBILE / E)	203
UNUSED I-BEAM MOUNT (ATI / E)	231.5	10'T x 9.5'W x 3.5'D TMA's (T-MOBILE / E)	203
TOP SQUARE PLATFORM MOUNT (ATI / E)	231.5	10'T x 9.5'W x 3.5'D TMA's (T-MOBILE / E)	203
1.5x2-ELEMENT YAGI AND MOUNT (ATI / E)	229	10'T x 9.5'W x 3.5'D TMA's (T-MOBILE / E)	203
PIPE DISH MOUNT (E)	223.5	4'x7-ELEMENT YAGI (ATI / E)	132
10 FT HP DISH (E)	223.5	2FT SIDEARM MOUNT (ATI / E)	132
PIPE DISH MOUNT (E)	221		
1 FT HP DISH (WINDSTAR 43029) (E)	221		

SYMBOL LIST

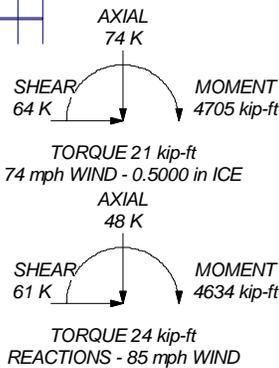
MARK	SIZE	MARK	SIZE
A	C8x11.5	C	L2 1/2x2x1/4
B	L2 1/2x2 1/2x1/4	D	1 @ 2.5

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

MAX. CORNER REACTIONS AT BASE: TOWER DESIGN NOTES

- DCI(A)/L: 262 K
 SH-1. Tower is located in Fairfield County, Connecticut.
 2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
 3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
 UF-4. Deflections are based upon a 50 mph wind.
 SH-5. TOWER RATING: 97.7%



Section	T17	T16	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	L6x6x3/4	L6x6x3/4	L6x6x3/4	L6x6x3/4	L6x6x3/8	L5x5x1/2	L4x4x3/8										
Leg Grade																	
Diagonal Grade	2L2 1/2x2 1/2x1/4x3/8	2L2 1/2x2 1/2x1/4x3/8	2L2 1/2x2 1/2x1/4x3/8	2L2 1/2x2 1/2x1/4	A36	L3x3x1/4	L2 1/2x2x1/4										
Top Girts	2L2 1/2x2 1/2x1/4x3/8	2L2 1/2x2 1/2x1/4x3/8	2L2 1/2x2 1/2x1/4x3/8	2L2 1/2x2 1/2x1/4	A36	L3x3x1/4	L2 1/2x2x1/4										
Horizontals	N.A.	N.A.	L2 1/2x2x1/4	L2 1/2x2x1/4	L2 1/2x2x1/4	L2 1/2x2x1/4	L2 1/2x2x1/4	N.A.									
Sec. Horizontals	N.A.	N.A.	L2 1/2x2x1/4	L2 1/2x2x1/4	L2 1/2x2x1/4	L2 1/2x2x1/4	L2 1/2x2x1/4	N.A.									
Red. Diagonals	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	N.A.									
Red. Sub-Horiz	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	N.A.									
Red. Sub-Diags	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	L2 1/2x2x3/16	N.A.									
Inner Bracing	L3x3x3/16	L3x3x3/16	L3x3x3/16	L3x3x3/16	L3x3x3/16	L3x3x3/16	L3x3x3/16	L2 1/2x2 1/2x3/16									
Face Width (ft)	13.5833	12.6766	11.7699	11.0445	10.3191	9.59373	8.86636	8.14298	7.41761	7.05492	6.69223	6.32994	5.96685	5.60417	5.24148	4.87879	4.51610
# Panels @ (ft)	1 @ 12.4999	1 @ 12.5	1 @ 12.5	2 @ 5	2 @ 5	5 @ 10	5 @ 10	5 @ 5	5 @ 5	5 @ 5	5 @ 5	5 @ 5	5 @ 5	5 @ 5	5 @ 5	5 @ 5	5 @ 5
Weight (K)	25.4	40	35	26	23	19	19	19	18	18	18	18	18	18	18	18	18



Malouf Engineering Int'l, Inc.
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 FAX: (972) 783-2583

Job: 125 FT SST, STAMFORD CENTRAL SITE #CT2118

Project: CT02768S-15V4-R1

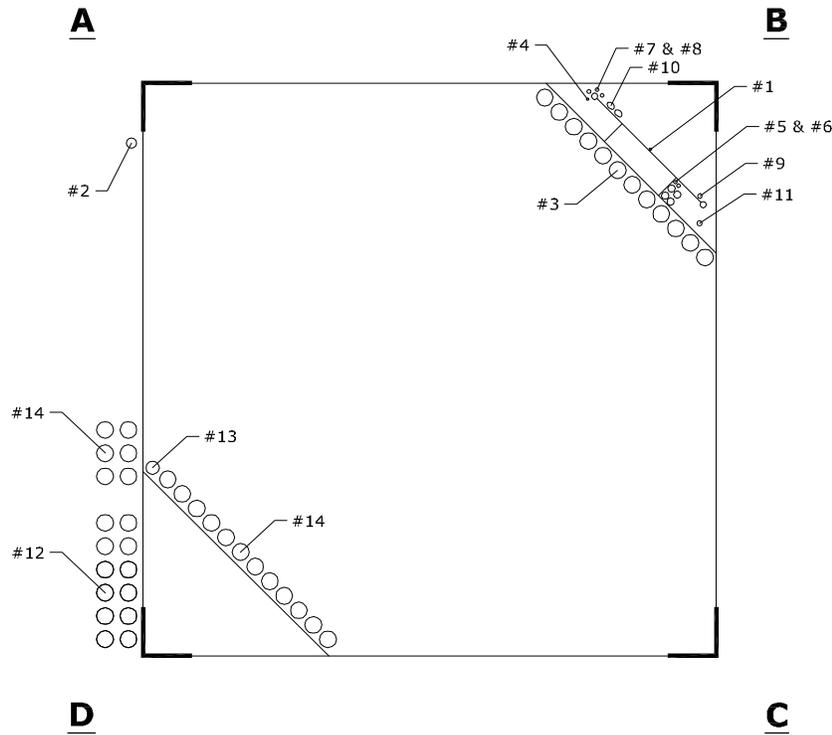
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No.	QTY.	DESCRIPTION	ELEV.	TENANT
1	1	Safety Climb & Climbing Ladder	125'	E
2	1	1 1/4" Rigid Conduit	125'	E
3	12	1 5/8	125'	AT&T / E
4	1	0.30	125'	AT&T / E
5	4	0.75" DC POWER TRUNK CABLES	125'	AT&T / E
6	2	0.625" FIBER TRUNK CABLE	125'	AT&T / E
7	2	3/8 (UNUSED)	115'	E
8	1	3/8	114.5'	E
9	1	1/2	122.5'	E
10	2	EW90	117'	E
11	1	1/2	25.5'	E
12	12	1 5/8	103'	T-MOBILE / E
13	1	HUBER-SUHNER 1.25" TC-OF CABLE	103'	T-MOBILE / E
14	18	1 5/8 (UNUSED)	96.5'	T-MOBILE / E

LEGEND:

- E = EXISTING #X
- P = PROPOSED #X
- F = FUTURE #X
- R = REMOVE #X
- TO RELOCATE



101 PLAN: SCHEMATIC Tx-LINE LAYOUT
SCALE: NOT TO SCALE

- NOTE:**
1. Tx LINE LAYOUT IS SCHEMATIC ONLY, BASED UPON MEI MAPPING DATED 4/6/2015 .
 2. NO NEW LINES ARE ADDED.
 3. ELEVATIONS SHOWN ARE ABOVE ROOF LINE.

OCT 15, 2015



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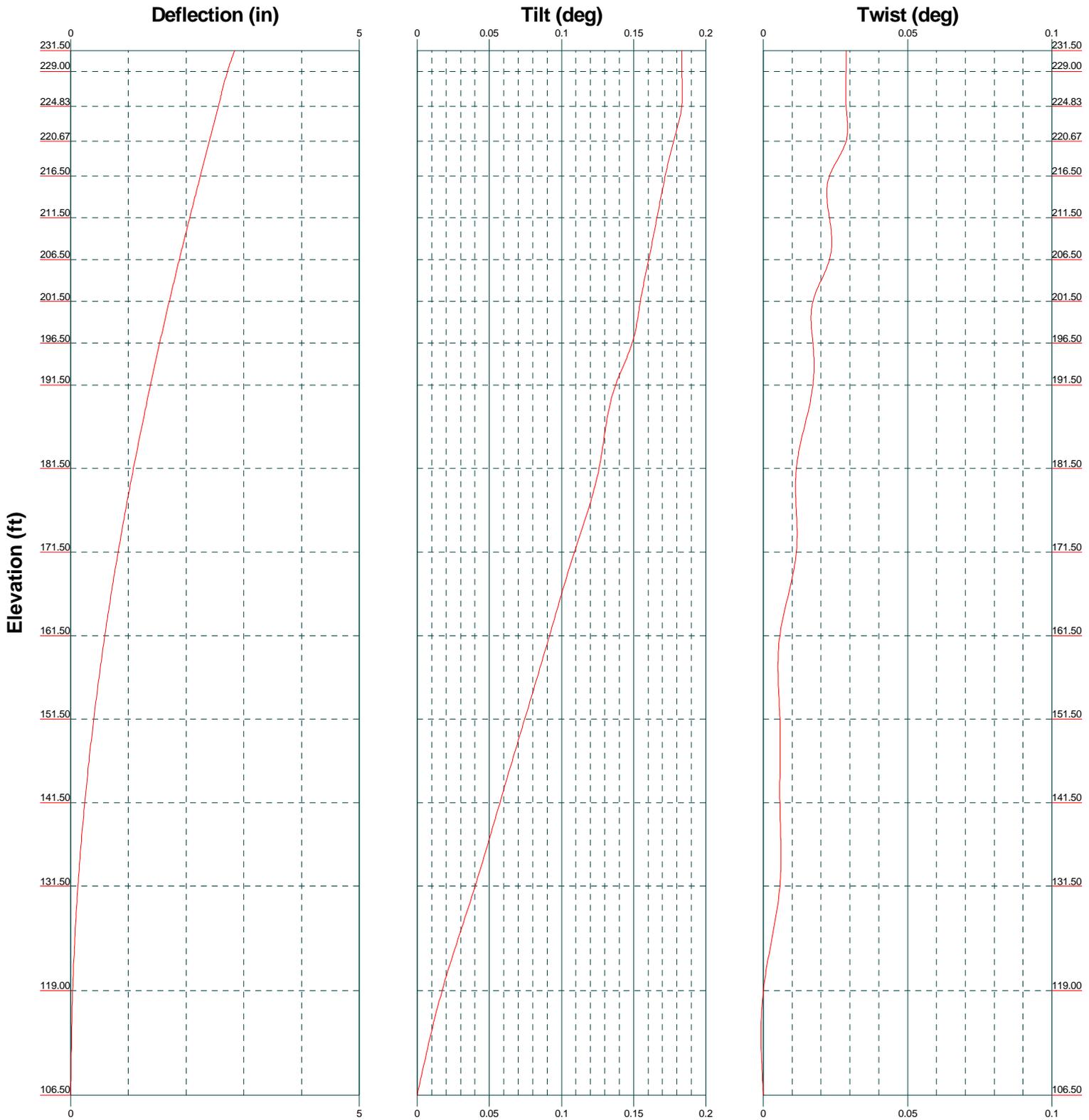
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STAMFORD CENTRAL SITE #CT2118

TOWER TxLINE LAYOUT

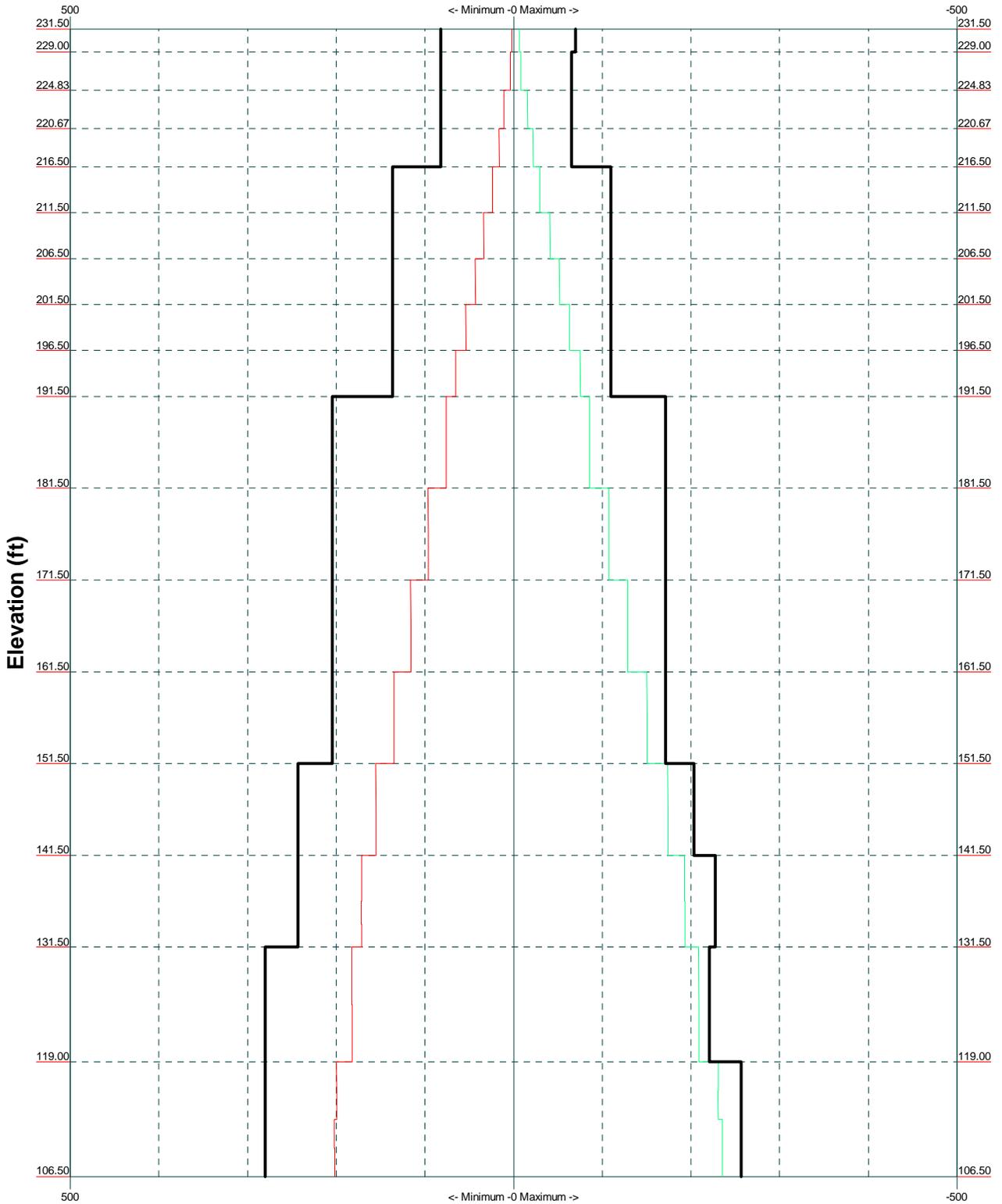
MEI PROJECT ID	SHEET NUMBER	REV.
CT02768S-15V4	L01	0



TIA/EIA-222-F - 85 mph/74 mph 0.5000 in Ice

Leg Capacity ———

Leg Compression (K)



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Job: 125 FT SST, STAMFORD CENTRAL SITE #CT2118		
Project: CT02768S-15V4-R1		
Client: SAI / AT&T	Drawn by: LNguyen	App'd:
Code: TIA/EIA-222-F	Date: 11/18/15	Scale: NTS
Path: D:\MEI\Projects\15 DATA\SS\CT02768S-15V4\CT02768S-15V4-R1.dwg		Dwg No: E-3

tnxTower Malouf Engineering Int'l, Inc. 17950 Preston Road, Suite #720 Dallas, TX 75252 Phone: (972) 783-2578 FAX: (972) 783-2583	Job 125 FT SST, STAMFORD CENTRAL SITE #CT2118	Page 1 of 7
	Project CT02768S-15V4-R1	Date 14:15:27 11/18/15
	Client SAI / AT&T	Designed by LNguyen

Tower Input Data

The main tower is a 4x free standing tower with an overall height of 231.50 ft above the ground line.

The base of the tower is set at an elevation of 106.50 ft above the ground line.

The face width of the tower is 5.60 ft at the top and 13.58 ft at the base.

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

Tower is located in Fairfield County, Connecticut.

Basic wind speed of 85 mph.

Nominal ice thickness of 0.5000 in.

Ice density of 56 pcf.

A wind speed of 74 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 50 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in tower member design is 1.333.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Placement <i>ft</i>	Total Number	Description	Placement <i>ft</i>	Total Number
Safety Line 3/8 (E)	231.50 - 106.50	1	EW90 (E)	223.50 - 106.50	2
Climbing Ladder (E)	231.50 - 106.50	1	3/8 (E (UNUSED))	221.50 - 106.50	2
W/G LADDER "A" (E)	212.50 - 106.50	1	3/8 (E)	221.00 - 106.50	1
W/G LADDER "B" (E)	206.50 - 106.50	1	1 5/8 (T-MOBILE / E)	209.50 - 106.50	12
W/G LADDER "C" (E)	200.50 - 106.50	1	Huber-Suhner 1.25" TC-OF Cable	209.50 - 106.50	1
1 1/4" Rigid Conduit (E)	231.50 - 106.50	1	(T-MOBILE / E)		
0.625" Fiber Trunk Cable (AT&T / E)	231.50 - 106.50	2	1 5/8	201.50 - 106.50	6
0.75" DC Power Trunk Cable (AT&T / E)	231.50 - 106.50	4	(T-MOBILE / E (UNUSED))		
1 5/8 (AT&T / E)	231.50 - 106.50	12	1 5/8	201.50 - 106.50	12
0.30 (AT&T / E)	231.50 - 106.50	1	(T-MOBILE / E (UNUSED))		
1/2 (E)	229.00 - 106.50	1	1/2	132.00 - 106.50	1
			(E)		

Feed Line/Linear Appurtenances - Entered As Area

Description	Placement <i>ft</i>	Total Number	Description	Placement <i>ft</i>	Total Number
MISCELLANEOUS (E)	231.50 - 106.50	2	WEIGHT (E)		
MISCELLANEOUS	231.50 - 106.50	1			

tnxTower Malouf Engineering Int'l, Inc. 17950 Preston Road, Suite #720 Dallas, TX 75252 Phone: (972) 783-2578 FAX: (972) 783-2583	Job	125 FT SST, STAMFORD CENTRAL SITE #CT2118	Page	2 of 7
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Discrete Tower Loads

Description	Placement	Weight	Description	Placement	Weight
	ft	K		ft	K
(2) TOP SMALL BEACONS (E)	245.17	0.06 0.09	UNUSED I-BEAM MOUNT (AT&T / E)	231.50	0.10 0.15
TOP LIGHTNING ROD (E)	244.50	0.05 0.07	1.5'x2-ELEMENT YAGI AND MOUNT (AT&T / E)	229.00	0.07 0.13
13' T BEAM MOUNT (E)	231.50	0.10 0.15	TOP SQUARE PLATFORM MOUNT (AT&T / E)	231.50	5.50 7.50
(3) HPA-45R-BUU-H6 w/ Pipe Mounts (AT&T / P)	235.00	0.08 0.17	PIPE DISH MOUNT (E)	223.50	0.15 0.23
(2) LGP21401 TMA'S (AT&T / E)	235.00	0.02 0.03	PIPE DISH MOUNT (E)	221.00	0.07 0.10
(2) HPA-45R-BUU-H6 w/ Pipe Mounts (AT&T / P)	235.00	0.08 0.17	4'Lx6'W REST PLATFORM (E)	216.50	0.75 1.25
HPA-45R-BUU-H6 w/ Pipe Mounts (AT&T / P)	235.00	0.08 0.17	4'Lx6'W REST PLATFORM (E)	216.50	0.75 1.25
(2) LGP21401 TMA'S (AT&T / E)	235.00	0.02 0.03	(2) AIR21 B2A B4P w/ pipe Mount (T-MOBILE / E)	209.50	0.13 0.18
RRUS-11 (AT&T / E)	235.00	0.05 0.07	(2) AIR21 B2A B4P w/ pipe Mount (T-MOBILE / E)	209.50	0.13 0.18
RRUS-11 (AT&T / E)	235.00	0.05 0.07	(2) AIR21 B2A B4P w/ pipe Mount (T-MOBILE / E)	209.50	0.13 0.18
RAYCAP DC6-48-60-18-8F DC SURGE BOX (AT&T / E)	233.00	0.03 0.06	(2) KRY 112 71/2 (T-MOBILE / E)	209.50	0.01 0.02
P65-15-XLH-RR w/ Pipe Mount (AT&T / E)	235.00	0.07 0.12	(2) KRY 112 71/2 (T-MOBILE / E)	209.50	0.01 0.02
OPA-65R-LCUU-H4 w/ Pipe Mounts (AT&T / E)	235.00	0.08 0.13	(2) KRY 112 71/2 (T-MOBILE / E)	209.50	0.01 0.02
OPA-65R-LCUU-H4 w/ Pipe Mounts (AT&T / E)	235.00	0.08 0.13	SECTOR FRAME MOUNT (T-MOBILE / E)	209.50	0.40 0.60
LGP21401 TMA'S (AT&T / E)	235.00	0.02 0.03	SECTOR FRAME MOUNT (T-MOBILE / E)	209.50	0.40 0.60
LGP21401 TMA'S (AT&T / E)	235.00	0.02 0.03	SECTOR FRAME MOUNT (T-MOBILE / E)	209.50	0.40 0.60
RRUS-11 (AT&T / E)	235.00	0.05 0.07	10"T x 9.5"W x 3.5"D TMA's (T-MOBILE / E)	203.00	0.02 0.03
RRUS-12 w/ A2 Backpack (AT&T / E)	235.00	0.08 0.11	10"T x 9.5"W x 3.5"D TMA's (T-MOBILE / E)	203.00	0.02 0.03
RRUS-12 w/ A2 Backpack (AT&T / E)	235.00	0.08 0.11	10"T x 9.5"W x 3.5"D TMA's (T-MOBILE / E)	203.00	0.02 0.03
RRUS-12 w/ A2 Backpack (AT&T / E)	235.00	0.08 0.11	LNx-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / N)	203.00	0.09 0.18
RAYCAP DC6-48-60-18-8F DC SURGE BOX (AT&T / E)	233.00	0.03 0.06	LNx-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / N)	203.00	0.09 0.18
RRUS-32 (AT&T / E)	235.00	0.08 0.10	LNx-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / N)	203.00	0.09 0.18
RRUS-32 (AT&T / E)	235.00	0.08 0.10	RRUS-11 B12 (T-MOBILE / N)	203.00	0.05 0.07
RRUS-32 (AT&T / E)	235.00	0.08 0.10	RRUS-11 B12 (T-MOBILE / N)	203.00	0.05 0.07
RRUS-32 (AT&T / E)	235.00	0.08 0.10	RRUS-11 B12 (T-MOBILE / N)	203.00	0.05 0.07

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Description	Placement	Weight	Description	Placement	Weight
	ft	K		ft	K
RRUS-11 B12	203.00	0.05	(T-MOBILE / E)		0.60
(T-MOBILE / N)		0.07	4x7-ELEMENT YAGI	132.00	0.03
SECTOR FRAME MOUNT	203.00	0.40	(AT&T / E)		0.04
(T-MOBILE / E)		0.60	2FT SIDEARM MOUNT	132.00	0.10
SECTOR FRAME MOUNT	203.00	0.40	(AT&T / E)		0.15
(T-MOBILE / E)		0.60			
SECTOR FRAME MOUNT	203.00	0.40			

Dishes

Description	Dish Type	Elevation	Outside Diameter	Weight
		ft	ft	K
10 FT HP DISH (E)	Paraboloid w/Shroud (HP)	223.50	10.00	0.40
1 FT HP DISH (WINDSTAR 43029) (E)	Paraboloid w/Shroud (HP)	221.00	1.00	0.03

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg D	Max. Vert	16	259.84	16.17	-16.86
	Max. H _x	16	259.84	16.17	-16.86
	Max. H _z	12	-226.67	-14.91	15.72
	Min. Vert	3	-229.56	-14.51	15.49
	Min. H _x	12	-226.67	-14.91	15.72
	Min. H _z	16	259.84	16.17	-16.86
Leg C	Max. Vert	14	251.00	-16.23	-15.99
	Max. H _x	18	-215.99	14.82	14.68
	Max. H _z	18	-215.99	14.82	14.68
	Min. Vert	18	-215.99	14.82	14.68
	Min. H _x	14	251.00	-16.23	-15.99
	Min. H _z	14	251.00	-16.23	-15.99
Leg B	Max. Vert	12	263.06	-17.05	16.31
	Max. H _x	16	-223.42	15.42	-14.87
	Max. H _z	12	263.06	-17.05	16.31
	Min. Vert	7	-225.05	15.09	-14.47
	Min. H _x	12	263.06	-17.05	16.31
	Min. H _z	16	-223.42	15.42	-14.87
Leg A	Max. Vert	18	252.45	15.95	16.30
	Max. H _x	18	252.45	15.95	16.30
	Max. H _z	18	252.45	15.95	16.30
	Min. Vert	14	-214.52	-14.53	-14.93
	Min. H _x	14	-214.52	-14.53	-14.93
	Min. H _z	14	-214.52	-14.53	-14.93

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Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	231.5 - 229	2.841	20	0.1823	0.0305
T2	229 - 224.833	2.716	20	0.1818	0.0269
T3	224.833 - 220.667	2.558	20	0.1806	0.0267
T4	220.667 - 216.5	2.401	20	0.1776	0.0260
T5	216.5 - 211.5	2.247	20	0.1730	0.0250
T6	211.5 - 206.5	2.062	20	0.1688	0.0230
T7	206.5 - 201.5	1.882	20	0.1629	0.0209
T8	201.5 - 196.5	1.708	20	0.1561	0.0188
T9	196.5 - 191.5	1.541	20	0.1476	0.0167
T10	191.5 - 181.5	1.383	20	0.1383	0.0148
T11	181.5 - 171.5	1.087	20	0.1250	0.0117
T12	171.5 - 161.5	0.822	20	0.1095	0.0093
T13	161.5 - 151.5	0.592	20	0.0922	0.0073
T14	151.5 - 141.5	0.400	20	0.0734	0.0057
T15	141.5 - 131.5	0.244	20	0.0565	0.0043
T16	131.5 - 119	0.125	20	0.0391	0.0032
T17	119 - 106.5	0.035	20	0.0199	0.0015

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
245.17	(2) TOP SMALL BEACONS	20	2.841	0.1823	0.0305	7200
244.50	TOP LIGHTNING ROD	20	2.841	0.1823	0.0305	7200
235.00	(3) HPA-45R-BUU-H6 w/ Pipe Mounts	20	2.841	0.1823	0.0305	7200
233.00	RAYCAP DC6-48-60-18-8F DC SURGE BOX	20	2.841	0.1823	0.0305	7200
231.50	13' T BEAM MOUNT	20	2.841	0.1823	0.0305	7200
229.00	1.5'x2-ELEMENT YAGI AND MOUNT	20	2.716	0.1818	0.0269	7200
223.50	10 FT HP DISH	20	2.508	0.1799 (3 dB)	0.0266 (3 dB)	108276
221.00	1 FT HP DISH (WINDSTAR 43029)	20	2.413	0.1779	0.0261	262875
216.50	4'Lx6'W REST PLATFORM	20	2.247	0.1730	0.0250	149529
209.50	(2) AIR21 B2A B4P w/ pipe Mount	20	1.990	0.1666	0.0221	51790
203.00	10'T x 9.5'W x 3.5'D TMA's	20	1.760	0.1582	0.0195	44501
132.00	4'x7-ELEMENT YAGI	20	0.130	0.0400	0.0033	27954

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail
T1	231.5 - 229	Leg	L4x4x3/8	4	-4.96	69.70	97.7	Pass
T2	229 - 224.833	Leg	L4x4x3/8	12	-8.16	65.17	12.5	Pass
T3	224.833 - 220.667	Leg	L4x4x3/8	21	-16.00	65.17	24.6	Pass
T4	220.667 - 216.5	Leg	L4x4x3/8	37	-22.05	65.17	33.8	Pass
T5	216.5 - 211.5	Leg	L5x5x1/2	51	-29.50	109.68	26.9	Pass
T6	211.5 - 206.5	Leg	L5x5x1/2	67	-41.15	109.68	37.5	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail
T7	206.5 - 201.5	Leg	L5x5x1/2	83	-51.77	109.68	47.2	Pass
T8	201.5 - 196.5	Leg	L5x5x1/2	95	-63.21	109.68	57.6	Pass
T9	196.5 - 191.5	Leg	L5x5x1/2	111	-75.23	109.68	68.6	Pass
T10	191.5 - 181.5	Leg	L6x6x5/8	123	-85.60	171.13	50.0	Pass
T11	181.5 - 171.5	Leg	L6x6x5/8	148	-107.52	171.31	62.8	Pass
T12	171.5 - 161.5	Leg	L6x6x5/8	168	-128.84	171.45	75.1	Pass
T13	161.5 - 151.5	Leg	L6x6x5/8	193	-150.64	171.58	87.8	Pass
T14	151.5 - 141.5	Leg	L6x6x3/4	213	-174.18	203.35	85.7	Pass
T15	141.5 - 131.5	Leg	L6x6x3/4	238	-193.20	227.69	84.9	Pass
T16	131.5 - 119	Leg	L6x6x7/8	306	-209.06	220.76	94.7	Pass
T17	119 - 106.5	Leg	L6x6x7/8	347	-235.17	256.70	91.6	Pass
T2	229 - 224.833	Diagonal	2L2 1/2x2x1/4x3/8	20	-3.83	47.46	8.1	Pass
T3	224.833 - 220.667	Diagonal	2L2 1/2x2x1/4x3/8	35	-4.44	47.46	9.4	Pass
T4	220.667 - 216.5	Diagonal	2L2 1/2x2x1/4x3/8	47	-5.70	42.32	13.5	Pass
T5	216.5 - 211.5	Diagonal	L2 1/2x2x1/4	63	-5.81	16.13	36.0	Pass
T6	211.5 - 206.5	Diagonal	L2 1/2x2x1/4	79	-6.10	15.52	39.3	Pass
T7	206.5 - 201.5	Diagonal	L2 1/2x2x1/4	91	-6.97	14.88	46.8	Pass
T8	201.5 - 196.5	Diagonal	L2 1/2x2x1/4	107	-7.46	14.20	52.6	Pass
T9	196.5 - 191.5	Diagonal	L2 1/2x2x1/4	119	-7.45	13.49	55.2	Pass
T10	191.5 - 181.5	Diagonal	L3x3x1/4	138	-12.40	18.16	68.3	Pass
T11	181.5 - 171.5	Diagonal	L3x3x1/4	158	-12.50	17.25	72.5	Pass
T12	171.5 - 161.5	Diagonal	L3x3x1/4	183	-12.82	16.34	78.5	Pass
T13	161.5 - 151.5	Diagonal	L3x3x1/4	203	-13.14	15.46	85.0	Pass
T14	151.5 - 141.5	Diagonal	L3x3x1/4	228	-12.29	14.61	84.1	Pass
T15	141.5 - 131.5	Diagonal	L3x3x1/4	260	-14.68	25.96	56.6	Pass
T16	131.5 - 119	Diagonal	2L2 1/2x2 1/2x1/4x3/8	340	-18.35	36.15	50.8	Pass
T17	119 - 106.5	Diagonal	2L2 1/2x2 1/2x1/4x3/8	407	-18.24	49.40	36.9	Pass
T15	141.5 - 131.5	Horizontal	L2 1/2x2x1/4	251	-2.90	6.80	42.6	Pass
T10	191.5 - 181.5	Secondary Horizontal	L2 1/2x2x1/4	143	-1.28	5.74	22.4	Pass
T11	181.5 - 171.5	Secondary Horizontal	L2 1/2x2x1/4	163	-1.61	4.88	33.1	Pass
T12	171.5 - 161.5	Secondary Horizontal	L2 1/2x2x3/16	189	-1.93	3.26	59.4	Pass
T13	161.5 - 151.5	Secondary Horizontal	L2 1/2x2 1/2x1/4	208	-2.26	5.51	41.0	Pass
T14	151.5 - 141.5	Secondary Horizontal	L2 1/2x2x1/4	233	-2.61	3.25	80.5	Pass
T1	231.5 - 229	Top Girt	C8x11.5	8	-0.59	45.47	19.8	Pass
T3	224.833 - 220.667	Top Girt	L2 1/2x2 1/2x1/4	25	-1.07	16.58	6.5	Pass
T5	216.5 - 211.5	Top Girt	C7x9.8	53	-1.11	44.01	2.5	Pass
T6	211.5 - 206.5	Top Girt	L2 1/2x2x1/4	69	-0.93	11.61	8.0	Pass
T8	201.5 - 196.5	Top Girt	L2 1/2x2 1/2x1/4	97	-0.78	13.26	5.9	Pass
T10	191.5 - 181.5	Top Girt	L2 1/2x2 1/2x1/4	127	3.61	28.16	12.8	Pass
T11	181.5 - 171.5	Top Girt	L2 1/2x2 1/2x1/4	150	-5.34	17.20	31.0	Pass
T12	171.5 - 161.5	Top Girt	L2 1/2x2 1/2x1/4	172	7.38	28.16	26.2	Pass
T13	161.5 - 151.5	Top Girt	L2 1/2x2 1/2x1/4	195	-6.37	14.22	44.8	Pass
T14	151.5 - 141.5	Top Girt	L2 1/2x2 1/2x1/4	215	-5.82	21.28	27.4	Pass
T15	141.5 - 131.5	Top Girt	L2 1/2x2 1/2x1/4	240	-6.10	11.58	52.6	Pass
T16	131.5 - 119	Top Girt	2L2 1/2x2 1/2x1/4x3/8	311	-9.12	40.29	22.6	Pass
T17	119 - 106.5	Top Girt	2L2 1/2x2 1/2x1/4x3/8	352	-8.54	36.94	23.1	Pass
T15	141.5 - 131.5	Redund Horz 1 Bracing	L2 1/2x2x3/16	256	-2.90	14.46	20.1	Pass
T16	131.5 - 119	Redund Horz 1	L2 1/2x2x3/16	327	-3.14	14.29	22.0	Pass

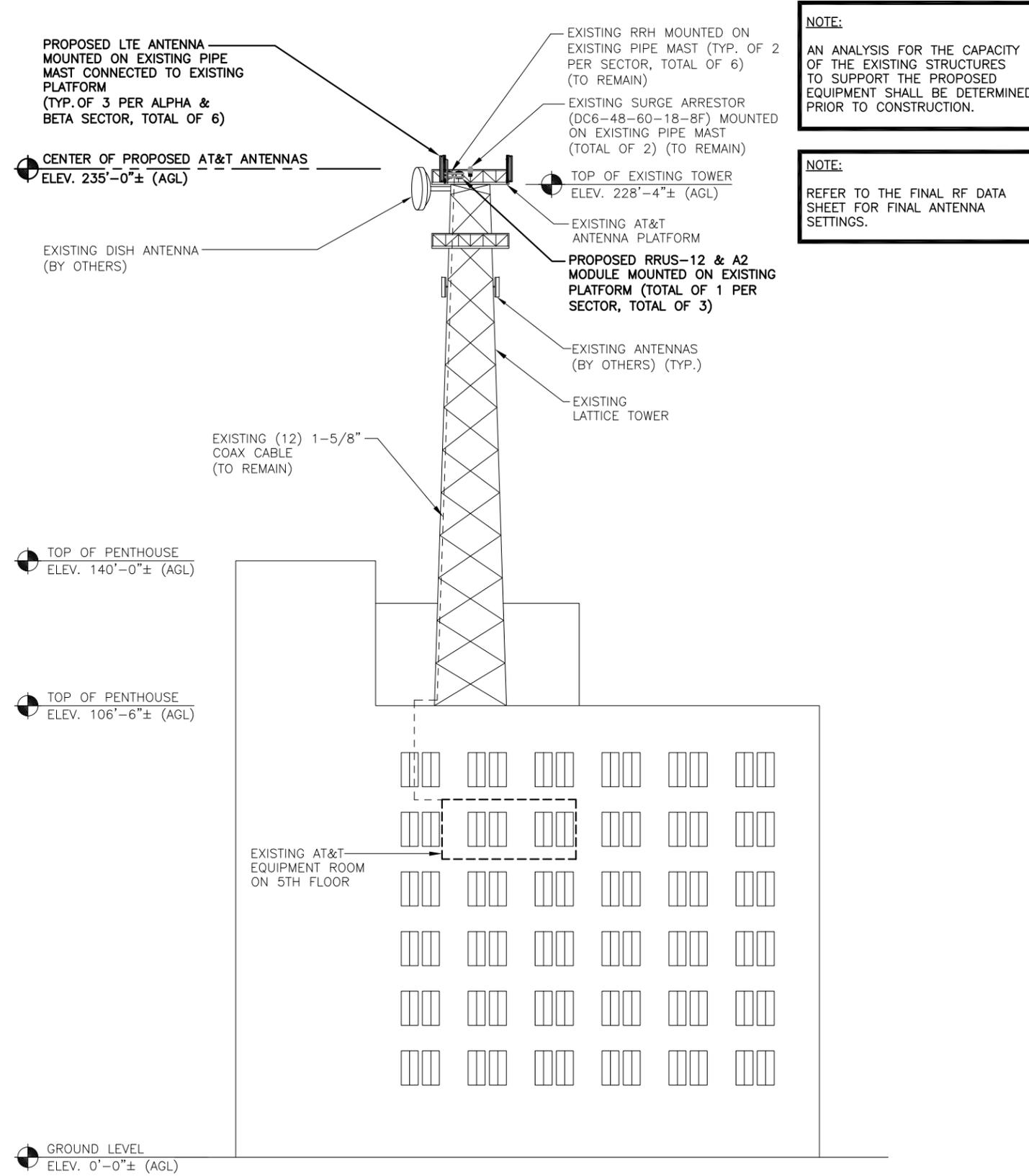
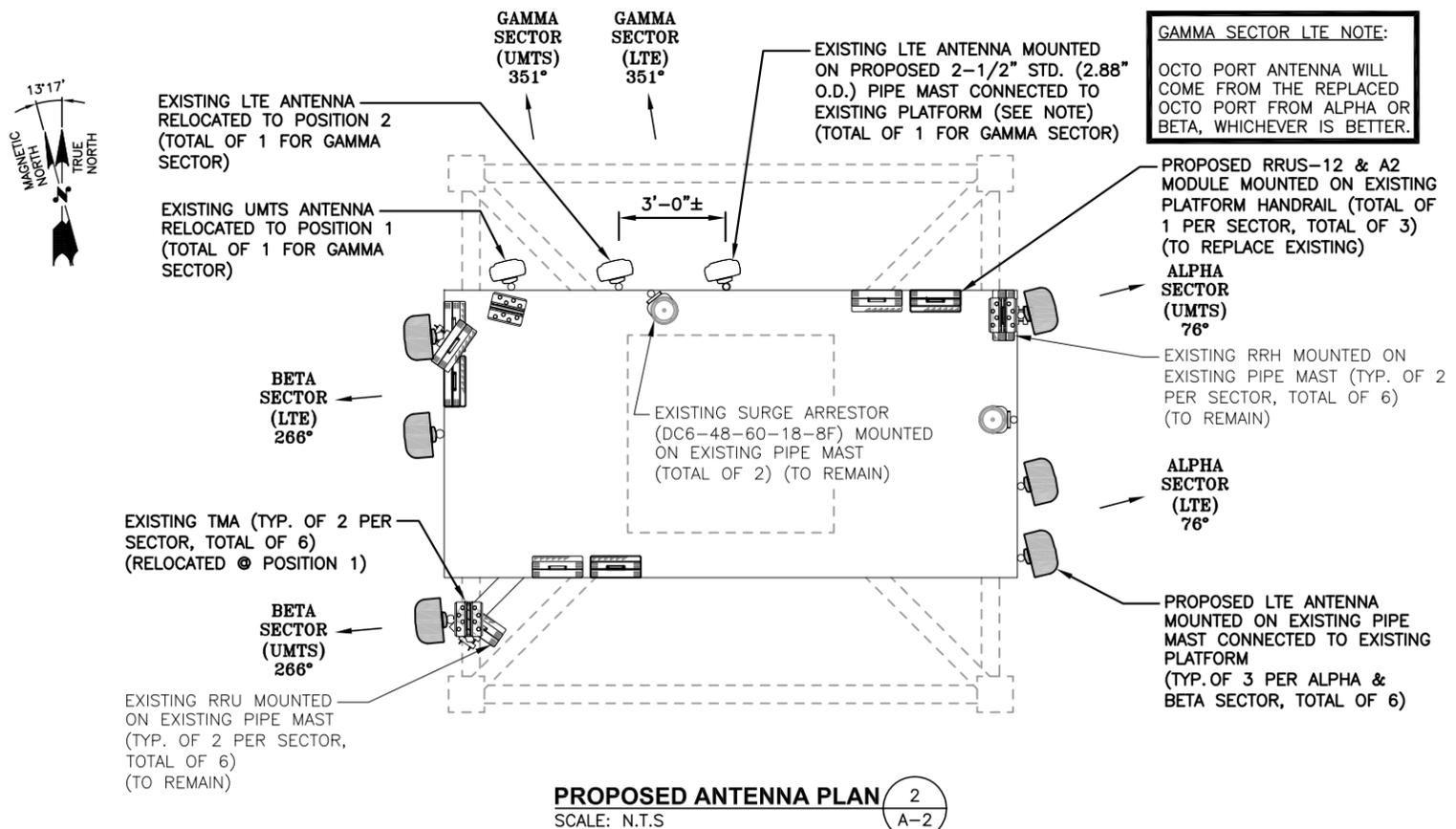
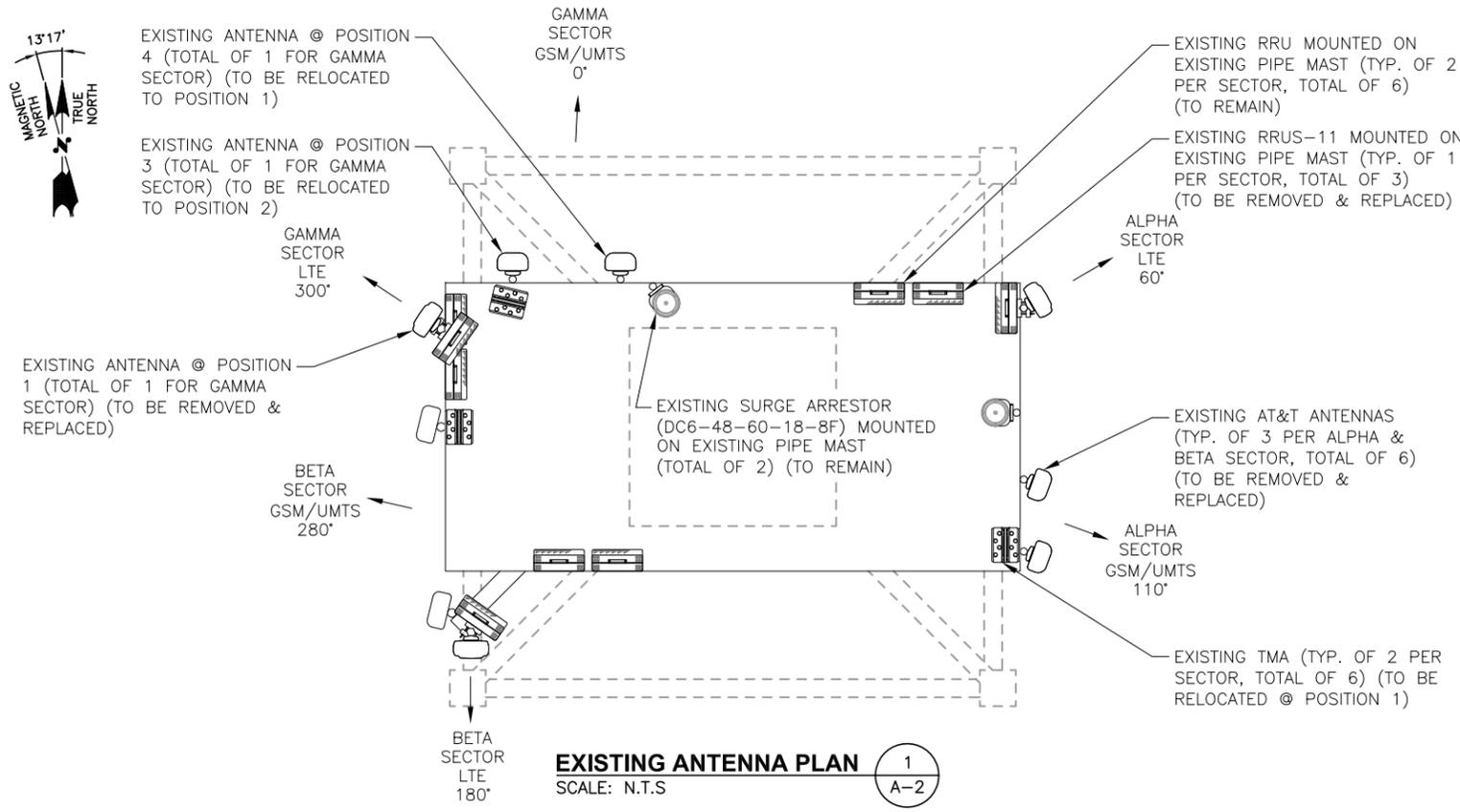
<p style="text-align: center;">tnxTower</p> <p>Malouf Engineering Int'l, Inc. 17950 Preston Road, Suite #720 Dallas, TX 75252 Phone: (972) 783-2578 FAX: (972) 783-2583</p>	<p>Job</p> <p style="text-align: center;">125 FT SST, STAMFORD CENTRAL SITE #CT2118</p>	<p>Page</p> <p style="text-align: center;">6 of 7</p>
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	<p>Client</p> <p style="text-align: center;">SAI / AT&T</p>	<p>Designed by</p> <p style="text-align: center;">LNguyen</p>

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail	
		Bracing							
T17	119 - 106.5	Redund Horz 1	L2 1/2x2x3/16	376	-3.53	13.76	25.7	Pass	
		Bracing							
T15	141.5 - 131.5	Redund Diag 1	L2 1/2x2x3/16	291	-1.96	12.65	15.5	Pass	
		Bracing							
T16	131.5 - 119	Redund Diag 1	L2 1/2x2x3/16	328	-3.64	5.32	68.4	Pass	
		Bracing							
T17	119 - 106.5	Redund Diag 1	L2 1/2x2x3/16	360	5.19	23.29	22.3	Pass	
		Bracing							
T15	141.5 - 131.5	Redund Hip 1	L2x2x1/4	303	-0.03	12.17	0.2	Pass	
		Bracing							
T16	131.5 - 119	Redund Hip 1	L2x2x1/4	344	-0.14	11.45	1.2	Pass	
		Bracing							
T17	119 - 106.5	Redund Hip 1	L2x2x1/4	402	-0.18	9.87	1.8	Pass	
		Bracing							
T17	119 - 106.5	Redund Hip Diagonal	L2x2x1/4	419	-0.11	2.18	5.2	Pass	
		Bracing							
T17	119 - 106.5	Redund Sub Horz	L2 1/2x2x3/16	365	-3.86	20.91	18.5	Pass	
		Bracing							
T17	119 - 106.5	Redund Sub	L2 1/2x2x3/16	394	-4.68	15.91	29.4	Pass	
		Diagonal Bracing							
T10	191.5 - 181.5	Inner Bracing	L2 1/2x2 1/2x3/16	133	-0.04	5.55	0.8	Pass	
T12	171.5 - 161.5	Inner Bracing	L2 1/2x2 1/2x3/16	178	-0.09	3.88	2.2	Pass	
T14	151.5 - 141.5	Inner Bracing	L2x2 1/2x3/16	223	-0.09	1.91	4.6	Pass	
T16	131.5 - 119	Inner Bracing	L3x3x3/16	316	-0.13	3.86	3.5	Pass	
T17	119 - 106.5	Inner Bracing	L3x3x3/16	357	-0.13	3.33	3.8	Pass	
							Summary		
							Leg (T1)	97.7	Pass
							Diagonal (T13)	85.0	Pass
							Horizontal (T15)	42.6	Pass
							Secondary Horizontal (T14)	80.5	Pass
							Top Girt (T15)	52.6	Pass
							Redund Horz 1 Bracing (T17)	25.7	Pass
							Redund Diag 1 Bracing (T16)	68.4	Pass
							Redund Hip 1 Bracing (T17)	1.8	Pass
							Redund Hip Diagonal Bracing (T17)	5.2	Pass
							Redund Sub Horz Bracing (T17)	18.5	Pass
							Redund Sub Diagonal Bracing (T17)	29.4	Pass
							Inner	4.6	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail
						Bracing (T14)		
						Bolt Checks	65.2	Pass
						RATING =	97.7	Pass

APPENDIX 2 – SOURCE / CHANGED CONDITION



NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

GAMMA SECTOR LTE NOTE:
OCTO PORT ANTENNA WILL COME FROM THE REPLACED OCTO PORT FROM ALPHA OR BETA, WHICHEVER IS BETTER.

Hudson Design Group LLC
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27 NORTHWESTERN DR.
SALEM, NH 03079

SITE NUMBER: CT2118
SITE NAME: STAMFORD - CENTRAL SBC CO.
555 MAIN STREET
STAMFORD, CT 06901
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	ISSUED FOR REVIEW	SG	AT	DPH
A	08/20/15	ISSUED FOR REVIEW			
NO. DATE		REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: SG		

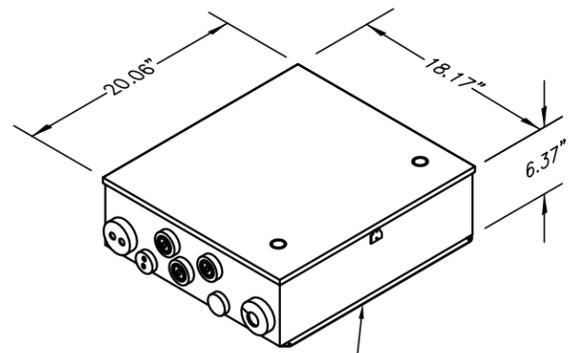
AT&T		
ANTENNA LAYOUT AND ELEVATION (RF MOD)		
JOB NUMBER	DRAWING NUMBER	REV
2118.00	A-2	A

NOTE:
SEE RFDS FOR RRH
FREQUENCY AND
MODEL NUMBER

PROPOSED RRH
REFER TO THE FINAL RFDS
AND CHART FOR QUANTITY,
MODEL AND DIMENSIONS

	L	W	D
RRUS - 12	20.4"	18.5"	7.5"

NOTE:
MOUNT PER MANUFACTURER'S
SPECIFICATIONS.



PROPOSED SURGE SUPPRESSOR
MODEL NUMBER: DC6-48-60-18
DIMENSIONS:
H20.06"xW18.17"xD6.37"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

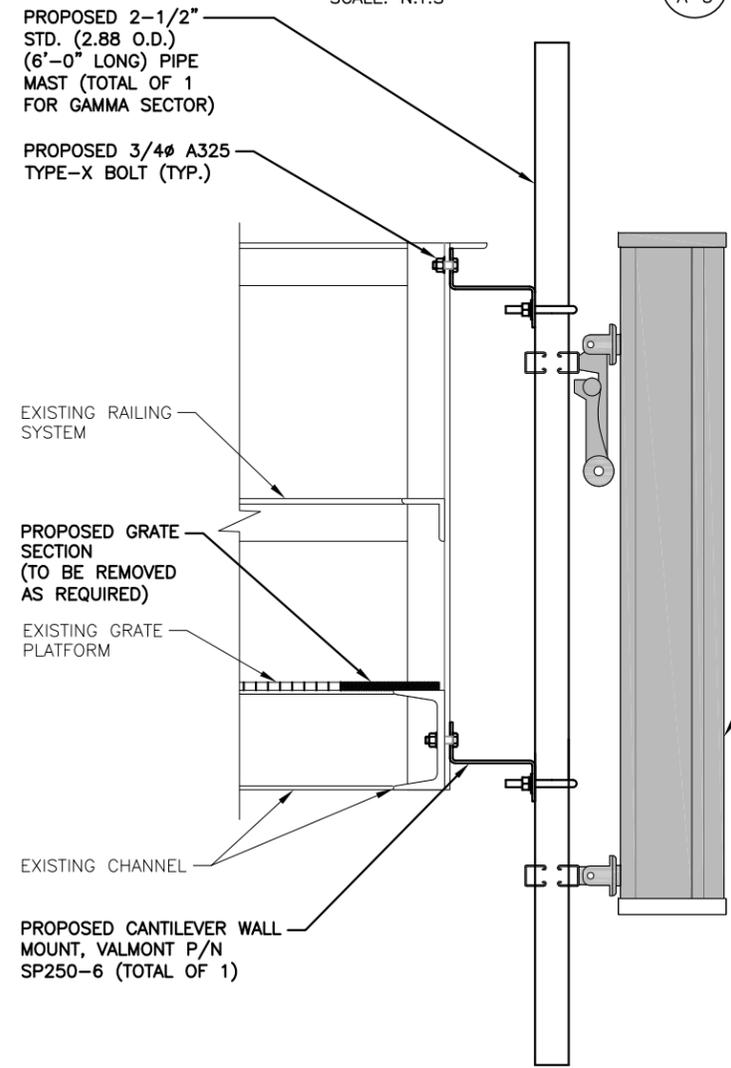
EXISTING ANTENNA SCHEDULE			
SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	KMW	AM-X-CD-14-65-00T-RET	48X11.8X5.9
	CCI	OPA-65R-LCUU-H4	48X14.4X7.3
	POWERWAVE	P65-15-XLH-RR	51X12X6
BETA:	KMW	AM-X-CD-14-65-00T-RET	48X11.8X5.9
	CCI	OPA-65R-LCUU-H4	48X14.4X7.3
	POWERWAVE	P65-15-XLH-RR	51X12X6
GAMMA:	KMW	AM-X-CD-14-65-00T-RET	48X11.8X5.9
	CCI	OPA-65R-LCUU-H4	48X14.4X7.3
	POWERWAVE	P65-15-XLH-RR	51X12X6

PROPOSED ANTENNA SCHEDULE			
SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	CCI	HPA-45R-BUU-H6	72X18.9X8.3
	CCI	HPA-45R-BUU-H6	72X18.9X8.3
	CCI	HPA-45R-BUU-H6	72X18.9X8.3
BETA:	CCI	HPA-45R-BUU-H6	72X18.9X8.3
	CCI	HPA-45R-BUU-H6	72X18.9X8.3
	CCI	HPA-45R-BUU-H6	72X18.9X8.3
GAMMA:	POWERWAVE	P65-15-XLH-RR	51X12X6
	CCI	OPA-65R-LCUU-H4	48X14.4X7.3
	CCI	OPA-65R-LCUU-H4	48X14.4X7.3

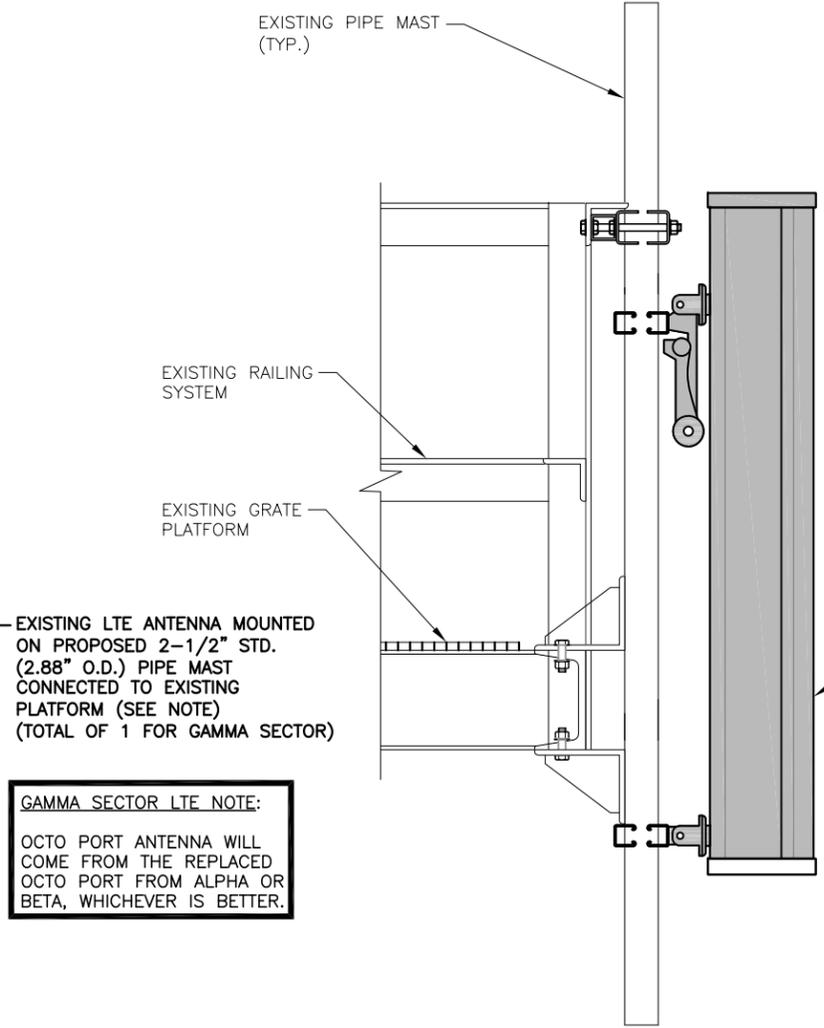
NOTE:
REFER TO THE FINAL RF DATA
SHEET FOR FINAL ANTENNA
SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY
OF THE EXISTING STRUCTURES
TO SUPPORT THE PROPOSED
EQUIPMENT SHALL BE DETERMINED
PRIOR TO CONSTRUCTION.

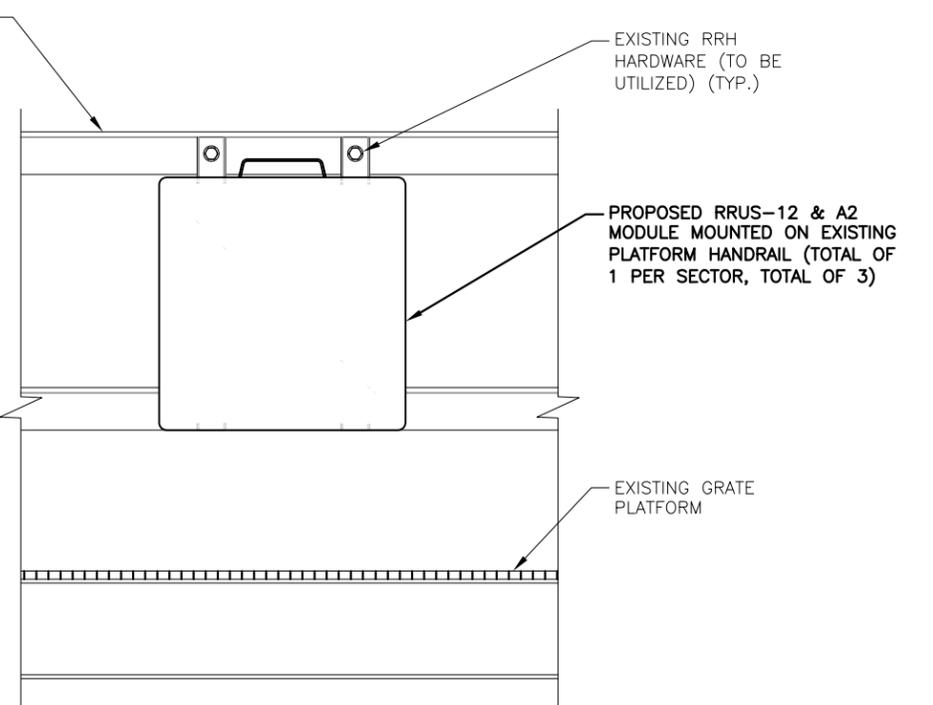
PROPOSED RRH DETAIL 4
SCALE: N.T.S. A-3



PROPOSED SURGE ARRESTOR DETAIL 5
SCALE: N.T.S. A-3



GAMMA SECTOR LTE NOTE:
OCTO PORT ANTENNA WILL
COME FROM THE REPLACED
OCTO PORT FROM ALPHA OR
BETA, WHICHEVER IS BETTER.



**PROPOSED LTE ANTENNA MOUNTED ON
NEW PIPE MAST CONNECTION DETAIL** 1
SCALE: N.T.S. A-3

**PROPOSED LTE ANTENNA MOUNTED ON
EXISTING PIPE MAST CONNECTION DETAIL** 2
SCALE: N.T.S. A-3

PROPOSED RRH MOUNTING DETAIL 3
SCALE: N.T.S. A-3

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NO.	DATE	REVISIONS	BY	CHK	APP'D
A	08/20/15	ISSUED FOR REVIEW	SG	AT	DPH

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: SG

AT&T		
DETAILS (RF MOD)		
JOB NUMBER	DRAWING NUMBER	REV
2118.00	A-3	A

Section 17A - FINAL SECTOR/CELL INFORMATION - SECTOR A (OR OMNI)

ANTENNA COMMON FIELDS	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	HPA-45R-BUU-H6		HPA-45R-BUU-H6				HPA-45R-BUU-H6							
ANTENNA VENDOR	CCI Products		CCI Products				CCI Products							
ANTENNA SIZE (H x W x D)	72.0X18.9X8.3		72.0X18.9X8.3				72.0X18.9X8.3							
ANTENNA WEIGHT	50		50				50							
AZIMUTH	76		76				76							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	235		235				235							
ANTENNA TIP HEIGHT														
MECHANICAL DOWNTILT	2		0				0							
FEEDER AMOUNT	2		Fiber + 2 Coax											
Antenna RET Motor (QTY/MODEL)		Built in		Built in				Built in						
SURGE ARRESTOR (QTY/MODEL)			3	DC/Fiber Squid (1) + Polyphaser/ 1000860 (2)			1	DC/Fiber Squid						
DIPLEXER (QTY/MODEL)	2	Powerwave / LGP 13519	2	Powerwave LGP 13519										
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)	1	Kathrein / 860-10006		LTE RRH				LTE RRH						
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	Pwav LGP21401 Single 1900 w/ 850BP (850)												
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser/ 1000860												
PDU FOR TMA (QTY/MODEL)	1	Powerwave LGP12104												
FILTER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)							1	RRUS-11						
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)							1	RRUS-12+RRUS-A2						
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)			1	RRUS-32										
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component1 (QTY/MODEL)														
Additional Component2 (QTY/MODEL)														
Additional Component3 (QTY/MODEL)														
Local Market Note1	Bronze Standard RF MOD - Replace existing antennas with HPA-45R-BUU-H6 on Alpha and Beta for all technologies - Gamma sector move existing OCTO port on POS 3 to 2. - Gamma replace existing LTE antennas on POS 1 with 1 OCTO 4' and install on POS 4. The OCTO port will come from the replaced OCTO port from Alpha or Beta whichever is better. - Adjust Azimuth to 76/266/351 on Alpha/Beta/Gamma respectively for all technologies - UMTS will be on Pos 1, GSM/WCS will be on Pos2 and LTE 700/1900 will be on Pos 4 - Replace existing LTE 1900 RRUS-11 with 1900 RRUS-12 and add A2. - Other equipments will remain													
Local Market Note2														
Local Market Note3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	CABLE NUMBER	CABLE ID (CSSNG)	
ANTENNA POSITION 1	PORT 1	60403.A.850.3G.1	60403.A.850.3G.1	CTV21181	CTV21181		UMTS 850	HPA-45R-BUU-H6_849MHz_00DT	15.3		0	None	Commscope 1-5/8 (850)	259		0							
	PORT 2	60403.A.850.3G.2	60403.A.850.3G.2	CTV2118A	CTV2118A		UMTS 850	HPA-45R-BUU-H6_849MHz_00DT	15.3		0	Bottom	Commscope 1-5/8 (850)	259		0							
	PORT 4	60403.A.1900.3G.2	60403.A.1900.3G.2	CTU21184	CTU21184		UMTS 1900	HPA-45R-BUU-H6_1930MHz_00DT	18		0	Bottom	Commscope 1-5/8 (1900)	259		0							
ANTENNA POSITION 2	PORT 1	60403.A.850.25G.1	60403.A.850.25G.1	321G21181	321G21181		GSM 850	HPA-45R-BUU-H6_849MHz_00DT	15.3		0	None	Commscope 1-5/8 (850)	259									
	PORT 3	60403.A.WCS.4G.111	60403.A.2300.4G.1	CTL02118_3A_1	CTL02118_3A_1		LTE WCS	HPA-45R-BUU-H6_2310MHz_00DT	18.3		0	top	FIBER	0									
ANTENNA POSITION 4	PORT 1	60403.A.700.4G.111	60403.A.700.4G.1	CTL02118_7A_1	CTL02118_7A_1		LTE 700	HPA-45R-BUU-H6_725MHz_00DT	15.3		0	top	FIBER	0		0							
	PORT 3	60403.A.1900.4G.111	60403.A.1900.4G.1	CTL02118_9A_1	CTL02118_9A_1		LTE 1900	HPA-45R-BUU-H6_1930MHz_00DT	18		0	top	FIBER	0		0							

Section 17C - FINAL SECTOR/CELL INFORMATION - SECTOR C

ANTENNA COMMON FIELDS		ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL		P65-15-XLH-RR		OPA-65R-LCUU-H4				OPA-65R-LCUU-H4							
ANTENNA VENDOR		Powerwave		CCI Products				CCI Products							
ANTENNA SIZE (H x W x D)		51X12X6		48X14.4X7.3				48X14.4X7.3							
ANTENNA WEIGHT		36		57				57							
AZIMUTH		351		351				351							
MAGNETIC DECLINATION															
RADIATION CENTER (feet)		235		235				235							
ANTENNA TIP HEIGHT															
MECHANICAL DOWNTILT		4		0				0							
FEEDER AMOUNT		2		Fiber + 2 Coax											
Antenna RET Motor (QTY/MODEL)		Built in		Built in				Built in							
SURGE ARRESTOR (QTY/MODEL)				3		DC/Fiber Squid (1) + Polyphaser/ 1000860 (2)		1		DC/Fiber Squid					
DIPLEXER (QTY/MODEL)		2		Powerwave / LGP 13519		2		Powerwave LGP 13519							
DUPLXER (QTY/MODEL)															
Antenna RET CONTROL UNIT (QTY/MODEL)		1		Kathrein / 860-10006		LTE RRH				LTE RRH					
DC BLOCK (QTY/MODEL)															
TMA/LNA (QTY/MODEL)		2		Pwav LGP21401 Single 1900 w/ 850BP (850)											
CURRENT INJECTORS FOR TMA (QTY/MODEL)		2		Polyphaser/ 1000860											
PDU FOR TMA (QTY/MODEL)		1		Powerwave LGP12104											
FILTER (QTY/MODEL)															
RRH - 700 band (QTY/MODEL)								1		RRUS-11					
RRH - 850 band (QTY/MODEL)															
RRH - 1900 band (QTY/MODEL)								1		RRUS-12+RRUS-A2					
RRH - AWS band (QTY/MODEL)															
RRH - WCS band (QTY/MODEL)				1		RRUS-32									
Additional RRH #1 - any band (QTY/MODEL)															
Additional RRH #2 - any band (QTY/MODEL)															
Additional Component1 (QTY/MODEL)															
Additional Component2 (QTY/MODEL)															
Additional Component3 (QTY/MODEL)															
Local Market Note1		Bronze Standard RF MOD - Replace existing antennas with HPA-45R-BUU-H6 on Alpha and Beta for all technologies - Gamma sector move existing OCTO port on POS 3 to 2. - Gamma replace existing LTE antennas on POS 1 with 1 OCTO 4' and install on POS 4. The OCTO port will come from the replaced OCTO port from Alpha or Beta whichever is better. - Adjust Azimuth to 76/266/351 on Alpha/Beta/Gamma respectively for all technologies - UMTS will be on Pos 1, GSM/WCS will be on Pos2 and LTE 700/1900 will be on Pos 4 - Replace existing LTE 1900 RRUS-11 with 1900 RRUS-12 and add A2. - Other equipments will remain													
Local Market Note2															
Local Market Note3															

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	CABLE NUMBER	CABLE ID (CSSNG)	
ANTENNA POSITION 1	PORT 1	60403.C.850.3G.1	60403.C.850.3G.1	CTV21183	CTV21183		UMTS 850	P65-15-XLH-RR_840MHz_07DT	14.7		7	None	Commscope 1-5/8 (850)	259		0							
	PORT 2	60403.C.850.3G.2	60403.C.850.3G.2	CTV2118C	CTV2118C		UMTS 850	P65-15-XLH-RR_840MHz_07DT	14.7		7	Bottom	Commscope 1-5/8 (850)	259		0							
	PORT 3	60403.C.1900.3G.2	60403.C.1900.3G.1	CTU21186	CTU21186		UMTS 1900	P65-15-XLH-RR_1930MHz_07DT	17		7	None	Commscope 1-5/8 (1900)	259		0							
ANTENNA POSITION 2	PORT 1	60403.C.850.25G.1	60403.C.850.25G.1	321G21183	321G21183		GSM 850	OPA-65R-LCUU-H4_849MHz_00DT	13.3		0	None	Commscope 1-5/8 (850)	259									
	PORT 3	60403.C.WCS.4G.222	60403.C.2300.4G.1	CTL06118_3C_1	CTL06118_3C_1		LTE WCS	OPA-65R-LCUU-H4_2310MHz_00DT	18.3		0	top	FIBER	0									
ANTENNA POSITION 4	PORT 1	60403.C.700.4G.222	60403.C.700.4G.1	CTL06118_7C_1	CTL06118_7C_1		LTE 700	OPA-65R-LCUU-H4_725MHz_00DT	12.7		0	top	FIBER	0		0							
	PORT 3	60403.C.1900.4G.222	60403.C.1900.4G.1	CTL06118_9C_1	CTL06118_9C_1		LTE 1900	OPA-65R-LCUU-H4_1930MHz_00DT	15.5		0	top	FIBER	0		0							

