



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

January 6, 2014

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 1363 Boston Post Road, Old Saybrook (owner, AT&T)**

**CT-CING-106-131114  
AMENDED Notice of Exempt Modification**

Dear Ms. Bachman:

On November 14, 2013 New Cingular Wireless PCS, LLC ("AT&T") submitted a Notice of Exempt Modification for the referenced telecommunications facility. Very shortly thereafter, AT&T revised its design for the modification, and the Siting Council kindly agreed to delay its decision pending submission of the revised plan and structural analysis, without payment of a second filing fee. (See attached email exchange.) This Amended Notice of Exempt Modification is intended to replace the original filing in its entirety.

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, 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, a copy of this letter and attachments is being sent to the chief elected official of the municipality in which the affected cell site is located.

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 characteristics of the facility 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 be unaffected.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound other than some enlarged equipment pads as may be noted in the attachments.
3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.
4. Radio frequency power density may increase due to use of one or more GSM channel for UMTS transmissions. Moreover, LTE will utilize additional radio frequencies newly-licensed by the FCC for cellular mobile communications. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

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: Carl P. Fortuna, 1<sup>st</sup> Selectman, Town of Old Saybrook

Attachments

**NEW CINGULAR WIRELESS PCS, LLC  
Equipment Modification**

1363 Boston Post Road, Old Saybrook, CT  
Site Number 1284  
Prior Decisions: Docket 411

**Tower Owner/Manager:** AT&T

**Equipment configuration:** Monopole

**Current and/or approved:** Three T-arm mounts @ 97 ft  
Nine KMW AM-X-CD-16-65-00T-RET antennas @ 97 ft c.l.  
Six CCI TMA's @ 97 ft  
Twelve lines 1 5/8 inch coax  
Equipment shelter

**Proposed modifications:** Remove all T-arms, antennas, and TMA's from 97 ft level.  
Remove six lines 1 5/8 inch coax.  
Install one Commscope MTC3607 antenna platform @ 97 ft level.  
Re-install three KMW AM-X-CD-16-65-00T-RET antennas @ 97 ft c.l.  
Install nine CCI HPA-65R-BUU-H6 antennas @ 97 ft c.l.  
Install three TMA's @ 97 ft.  
Install 18 remote radio heads and six associated A2 modules @ 95 ft.  
Install one collar mount @ 95 ft level.  
Install three Raycap DC6-48-60-18-8F surge arrestors @ 95 ft.  
Install one fiber cable and six DC control cables.

**Power Density:**

Calculations for AT&T's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 12.6 % of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for AT&T's planned operations would be approximately 16.3 % of the standard.

**Existing**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Other Users *							0.00
AT&T GSM *	97	880 - 894	3	296	0.0339	0.5867	5.78
AT&T GSM *	97	1900 Band	1	427	0.0163	1.0000	1.63
AT&T UMTS *	97	880 - 894	1	500	0.0191	0.5867	3.26
AT&T UMTS *	97	1900 Band	1	500	0.0191	1.0000	1.91
<b>Total *</b>							<b>12.6%</b>

\* Per CSC records

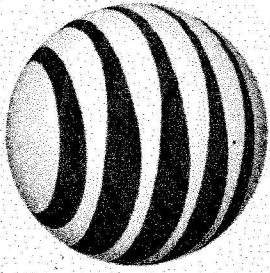
**Proposed**

<b>Company</b>	<b>Centerline Ht (feet)</b>	<b>Frequency (MHz)</b>	<b>Number of Channels</b>	<b>Power Per Channel (Watts)</b>	<b>Power Density (mW/cm<sup>2</sup>)</b>	<b>Standard Limits (mW/cm<sup>2</sup>)</b>	<b>Percent of Limit</b>
Other Users *							0.00
AT&T LTE	97	700 Band	1	500	0.0191	0.4667	4.09
AT&T LTE	97	1900 Band	1	500	0.0191	1.0000	1.91
AT&T LTE	97	2300 Band	1	500	0.0191	1.0000	1.91
AT&T UMTS	97	880 - 894	2	500	0.0382	0.5867	6.51
AT&T UMTS	97	1900 Band	1	500	0.0191	1.0000	1.91
<b>Total</b>							<b>16.3%</b>

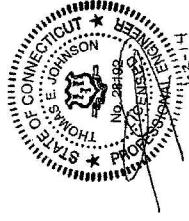
\* Per CSC records

**Structural information:**

The attached structural analysis (GPD Group, 12/11/13) demonstrates that the tower and foundation are adequate to accommodate the proposed equipment modifications.



at&t

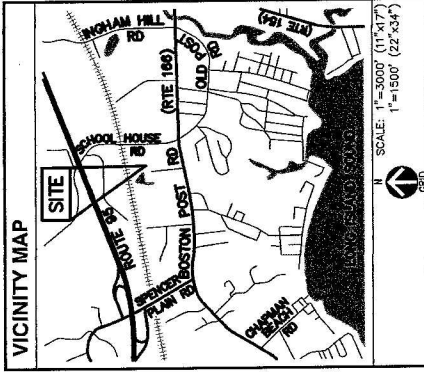


# OLD SAYBROOK SCHOOLHOUSE ROAD (CT-1284)

1363 BOSTON POST ROAD  
OLD SAYBROOK, CT 06475

SITE TYPE: MONOPOLE - LTE ALTERATION

PROJECT SUMMARY	
SITE NAME:	OLD SAYBROOK SCHOOLHOUSE ROAD
SITE ADDRESS:	1363 BOSTON POST ROAD OLD SAYBROOK, CT 06475
COUNTY:	MIDDLESEX
TAX ID:	027/023-0000
ZONING JURISDICTION:	TOWN OF OLD SAYBROOK
ZONING CLASSIFICATION:	(B-4) GATEWAY BUSINESS DISTRICT
CONSTRUCTION TYPE:	LTE ALTERATION
LATITUDE:	41° 17' 23.2" N ± (RECORD)
LONGITUDE:	72° 24' 21.4" W ± (RECORD)
PROPERTY OWNER:	N/F WILCOX FAMILY LLC 20 OLD SAYBROOK, CT 06475
APPLICANT:	NEW CHINGLAR WIRELESS PCS, LLC
DESIGNER/ENGINEER:	500 ENTERPRISE DRIVE ROCKY HILL, CT 06067
ARCHITECT/ENGINEER:	PROTERRA DESIGN GROUP, LLC NORTHAMPTON, MA 01060



SHEET INDEX		
SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	1
GN-1	GENERAL NOTES	1
A-1	COMPOUND & ELEVATION	1
A-2	EQUIPMENT ROOM PLAN	1
S-1	STRUCTURAL DETAILS	1
S-2	STRUCTURAL DETAILS	1
S-3	STRUCTURAL DETAILS	1
E-1	ELECTRICAL & GROUNDING DETAILS	1

SCALE NOTES	
1.	THIS SHEET SET WAS ORIGINALLY SETUP AS 11"x17". PRINTING TO A4 (210x297) WILL RESULT IN A DOUBLE SCALE SHEET SET WITH 1" MARGINS. RESULTING SCALES WILL BE THOSE NOTED IN TEXT. EXAMPLE: CONCREM WILL CHANGE TO 1/2" = 1'-0" DISTANCES WITH GRAPHICAL SCALES SHOWN HEREIN. GRAPHICAL SCALES WILL BE UNCHANGED BY ENLARGEMENT OR REDUCTION.

PROJECT DESCRIPTION	
1.	THIS PLAN SET DETAILS A MODIFICATION TO AN EXISTING MONOPOLE STRUCTURE FOR THE INSTALLATION OF A 1.5M TOWER. ALL DIMENSIONS SHALL BE AS SHOWN UNLESS OTHERWISE INDICATED. THE MONOPOLE SHALL BE REMOVED AND A RESTRICTED-ACCESS EQUIPMENT AND ANTENNA STRUCTURE SHALL BE INSTALLED AT THE LOCATION OF THE EXISTING MONOPOLE. THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE. THIS TABLE WILL CONTAIN NO LONGER APPLICABLE ITEMS.
2.	NO PORTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION.
3.	NO WASTE WATER WILL BE GENERATED AT THIS LOCATION.
4.	NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION.
5.	NO LIQUID WASTE WILL BE GENERATED AT THIS LOCATION.
6.	MAKE AN AVERAGE OF ONE TRIP PER MONTH AT ONE HOUR PER VISIT.

PLAN NOTES	
1.	EXISTING CONDITIONS BASED ON A FIELD VISIT BY PROTERRA DESIGN GROUP, LLC ON AUGUST 23, 2013.
2.	CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS. ENGINEER OF RECORD IS TO BE INFORMED OF ANY DISCREPANCIES PRIOR TO COMMENCING CONSTRUCTION ACTIVITY.
3.	ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION INFORMATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY: DIG SAFE SYSTEM (MA, WE, NH, RI, VT): 888-344-7233

**ProTerra**  
DESIGN GROUP, LLC  
500 Enterprise Drive  
Northampton, MA 01060  
Ph: (413) 320-4918  
Fax: (413) 320-4917

**SAI**  
27 Northwestern Drive  
Salem, NH 03079

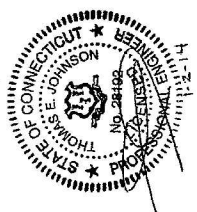
**at&t**  
New Cellular Wireless PCS, LLC  
500 Enterprise Drive  
Rocky Hill, CT 06067

**CT-1284**  
1363 BOSTON POST ROAD  
OLD SAYBROOK, CT 06475

REVISIONS	
2	COMMENTS

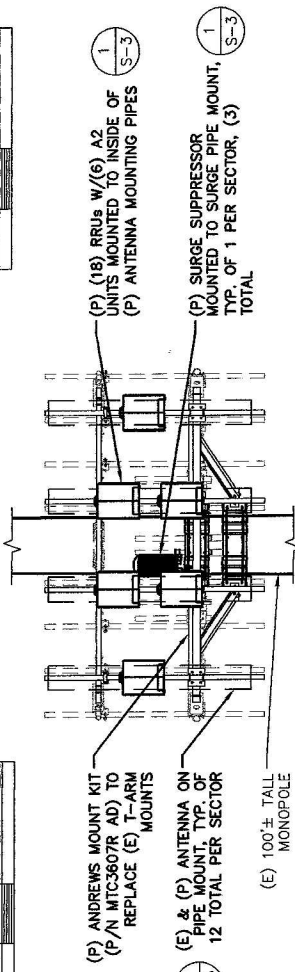
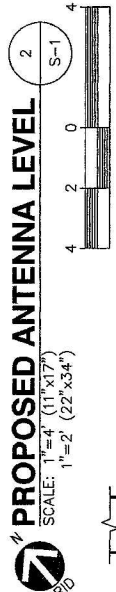
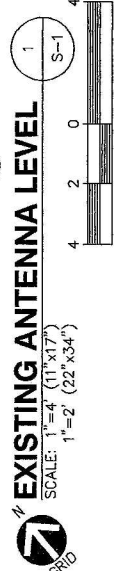
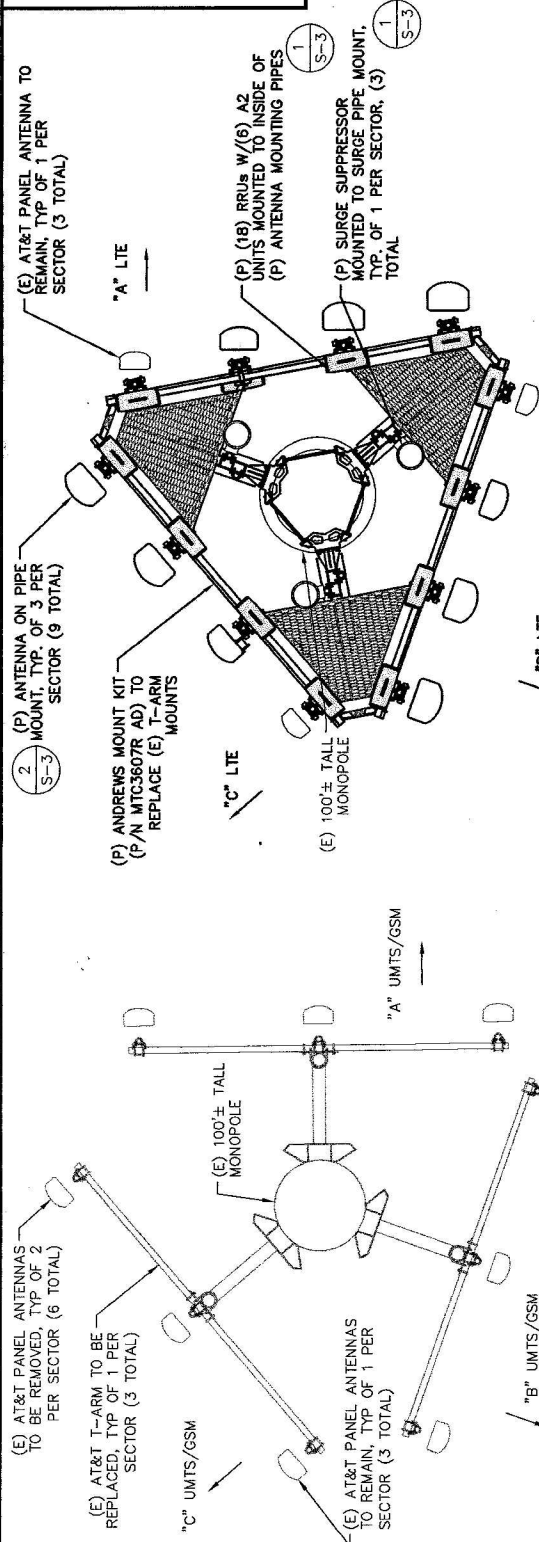
DESIGNED BY:	JMM/TEJ	JOB #:	11-023
DRAWN BY:	JEB	REV. #:	2
DATE:	1/2/14	<b>T-1</b>	
SCALE:	AS NOTED		





ALL WORK TO BE COMPLETED IN ACCORDANCE WITH LATEST AT&T RF DESIGN SHEET. PLEASE SEE RFDS FOR RRU FREQUENCY AND MODEL.

NOTE: ANTENNA RAD CENTER MUST BE AT SECTOR MOUNT ELEVATION. NO ECCENTRICITY ALLOWED.



**ProTerra**  
**DESIGN GROUP, LLC**  
 1 Short Street  
 Suite 3  
 Northampton, MA 01060  
 Ph: (413)320-4918  
 Fax: (413)320-4917

**SAI**  
 27 Northwestern Drive  
 Salem, NH 03079



SITE NUMBER  
**CT-1284**  
 1363 BOSTON POST ROAD  
 OLD SAYBROOK, CT 06475

REVISIONS	COMMENTS
2	

DESIGNED BY:	JMM/TEJ	JOB #:	11-023
DRAWN BY:	JEB	REV. #:	2
DATE:	1/2/14		
SCALE:	AS NOTED		

**S-1**





## SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing structure is capable of carrying the proposed loading configuration as specified by AT&T Mobility to SAI Communications . This report was commissioned by Mr. Edward Onessimo of SAI Communications .

**The proposed coax shall be installed internal to the monopole for the analysis results to be valid.**

### TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	54.2%	Pass
Anchor Rods	45.1%	Pass
Base Plate	52.2%	Pass
Foundation	45.3%	Pass

### ANALYSIS METHOD

tnxTower (Version 6.1.3.1), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being completed without the benefit of a detailed site visit.

### DOCUMENTS PROVIDED

Document	Remarks	Source
Equipment Modification Form	AT&T Internal Loading Document, dated 12/11/2013	Siterra
Construction Drawings	ProTerra Job #: 11-023, dated 10/15/2013	SAI
Tower Design	Sabre Job #: 49722, dated 9/22/2011	Siterra
Foundation Design	Sabre Job #: 49722, dated 9/22/2011	Siterra
Geotechnical Report	Dr. Clarence Welti, P.E., P.C., dated 6/1/2011	Siterra

## ASSUMPTIONS

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

1. The tower member sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. 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.
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations.
6. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
7. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
8. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
9. All prior structural modifications are assumed to be as per data supplied/available and to have been properly installed.
10. Loading interpreted from photos is accurate to  $\pm 5'$  AGL, antenna size accurate to  $\pm 3.3$  sf, and coax equal to the number of existing antennas without reserve.
11. All existing loading was obtained from site photos, the provided EMF and CDs and is assumed to be accurate.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD Group should be allowed to review any new information to determine its effect on the structural integrity of the tower.



99.0 ft



Section	1	2
Length (ft)	50.50	53.25
Number of Sides	18	18
Thickness (in)	0.2500	0.3125
Socket Length (ft)	4.75	32.5203
Top Dia (in)	22.1400	45.2000
Bot Dia (in)	34.1500	69.28.0
Grade	A572-65	
Weight (lb)	3603.6	10731.7

48.5 ft

0.0 ft

**DESIGNED APPURTENANCE LOADING**

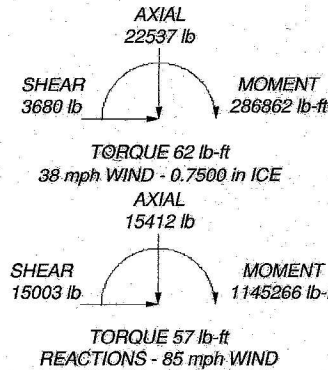
TYPE	ELEVATION	TYPE	ELEVATION
MTC3607 Platform w/Rails	97	(2) RRUS 12	97
AM-X-CD-16-65-00T-RET w/ Mount Pipe	97	RRUS E2	97
AM-X-CD-16-65-00T-RET w/ Mount Pipe	97	RRUS E2	97
AM-X-CD-16-65-00T-RET w/ Mount Pipe	97	RRUS 32	97
AM-X-CD-16-65-00T-RET w/ Mount Pipe	97	RRUS 32	97
(3) HPA-65R-BUU-H6 w/ Mount Pipe	97	RRUS 32	97
(3) HPA-65R-BUU-H6 w/ Mount Pipe	97	(2) KRC 161 286-1 (A2 Module)	97
(3) HPA-65R-BUU-H6 w/ Mount Pipe	97	(2) KRC 161 286-1 (A2 Module)	97
(3) HPA-65R-BUU-H6 w/ Mount Pipe	97	(2) KRC 161 286-1 (A2 Module)	97
DTMABP7819VG12A	97	Collar Mount	95
DTMABP7819VG12A	97	DC6-48-60-18-8F Surge Suppression Unit	95
DTMABP7819VG12A	97	DC6-48-60-18-8F Surge Suppression Unit	95
(2) RRUS 11	97	DC6-48-60-18-8F Surge Suppression Unit	95
(2) RRUS 11	97	DC6-48-60-18-8F Surge Suppression Unit	95
(2) RRUS 11	97	DC6-48-60-18-8F Surge Suppression Unit	95
(2) RRUS 12	97	DC6-48-60-18-8F Surge Suppression Unit	95
(2) RRUS 12	97	DC6-48-60-18-8F Surge Suppression Unit	95

**MATERIAL STRENGTH**

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

**TOWER DESIGN NOTES**

1. Tower is located in Middlesex 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 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 54.2%



<p><b>GPD GROUP</b> 520 S. Main St., Suite 2531 Akron, OH 44311 Phone: (614) 210-0751 FAX: (614) 210-0752</p>	<b>Job: CT1284 (105130) OLD SAYBROOK BOSTON.POST RD</b>		
	<b>Project: 2013723.13.105130.02</b>		
	Client: SAI	Drawn by: kdavis	App'd:
	Code: TIA/EIA-222-F	Date: 12/11/13	Scale: NTS
	Path:	Dwg No. E-1	

**From:** "Bachman, Melanie" <Melanie.Bachman@ct.gov>  
**To:** 'Steve Levine' <sllevine@snet.net>  
**Cc:** "Martin, David C." <David.C.Martin@ct.gov>; Carl Aquilina <Carl.Aquilina@SAI-Comm.com>; Carlo F. Centore <cfcentore@centekeng.com>; "Mulcahy, Carriann" <Carriann.Mulcahy@ct.gov>; "Fontaine, Lisa" <Lisa.Fontaine@ct.gov>  
**Sent:** Wednesday, November 20, 2013 1:33 PM  
**Subject:** RE: CT-CING-106-131114

Good afternoon, Steve.

Thank you for the information. We will place the exempt modification request on hold pending receipt of the updated information and apply the fee already paid to the resubmission. Please indicate in the cover letter for the updated information the above-referenced control number and a brief statement describing the resubmission.

Thanks.

**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 intended only for the individual named. If you have received this e-mail in error, please notify the sender immediately by e-mail. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake. Please do not forward to anyone else. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake. Please do not forward to anyone else.

**From:** Steve Levine [mailto:sllevine@snet.net]  
**Sent:** Wednesday, November 20, 2013 1:26 PM  
**To:** Bachman, Melanie  
**Cc:** Martin, David C.; Carl Aquilina; Carlo F. Centore  
**Subject:** CT-CING-106-131114

Dear Ms. Bachman,

AT&T is revising its proposed LTE upgrade design for 1363 Boston Post Road, Old Saybrook. We submitted an exempt mod Notice and fee for the upgrade on 11/14 using the original design. Dave Martin informs me that the EM has not yet gone out to Council members on a weekend summary.

We respectfully request that the Notice be placed on hold pending receipt of an updated equipment inventory, drawings, and structural analysis. We also respectfully request

that the \$625 fee already paid to the Council for the original submission be applied to the re-submission.

Thank you for your consideration in this matter.

Sincerely,

Steve Levine, for AT&T Mobility  
860-232-7835



**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

January 6, 2014

Honorable Carl P. Fortuna  
1<sup>st</sup> Selectman, Town of Old Saybrook  
Town Hall 302 Main Street  
Old Saybrook, CT 06475

**Amended Notice of Exempt Modification: Existing Telecommunications Facility**  
**- 1363 Boston Post Road, Old Saybrook**

Dear Mr. Fortuna:

On November 14, 2013 you were mailed a copy of an AT&T Notice of Exempt Modification to the Connecticut Siting Council for the referenced telecommunications facility. Shortly thereafter, AT&T revised its design for the modification, and the Siting Council agreed to delay its decision pending submission of the revised plan and structural analysis. This Amended Notice of Exempt Modification is intended to replace the original filing in its entirety.

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



SAI Communications  
27 Northwestern Drive  
Salem, NH 03079  
(603) 560-7049



Kevin Clements  
502 S. Main St., Suite 2531  
Akron, Ohio 44311  
(330) 572-2100  
kclements@gpdgroup.com

**GPD# 2013723.13.105130.01**  
October 29, 2013

### STRUCTURAL ANALYSIS REPORT

**AT&T DESIGNATION:** Site USID: 105130  
Site FA: 10133875  
Client #: CT1284  
Site Name: OLD SAYBROOK BOSTON POST RD  
AT&T Project: MOD: LTE Add 9/16/2013

**ANALYSIS CRITERIA:** Codes: TIA/EIA-222-F, ASCE 7-05 & 2005 CTBC  
85-mph (fastest-mile) with 0" ice  
38-mph (fastest-mile) with 0.75" ice

**SITE DATA:** 1363 Boston Post Road, Old Saybrook, CT 06475, Middlesex County  
Latitude 41° 17' 23.201" N, Longitude 72° 24' 21.398" W  
Market: New England  
99' Sabre Monopole

Mr. Edward Onessimo ,

GPD is pleased to submit this Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

#### Analysis Results

Tower Stress Level with Proposed Equipment:	46.7%	Pass
Foundation Ratio with Proposed Equipment:	42.1%	Pass

We at GPD appreciate the opportunity of providing our continuing professional services to you and SAI Communications . If you have any questions or need further assistance on this or any other projects please do not hesitate to call.

Respectfully submitted,



John N. Kabak, P.E.  
Connecticut #: 28336



## SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing structure is capable of carrying the proposed loading configuration as specified by AT&T Mobility to SAI Communications . This report was commissioned by Mr. Edward Onessimo of SAI Communications .

**The proposed coax shall be installed internal to the monopole for the analysis results to be valid.**

### TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	46.7%	Pass
Anchor Rods	38.7%	Pass
Base Plate	44.9%	Pass
Foundation	42.1%	Pass

## ANALYSIS METHOD

tnxTower (Version 6.1.3.1), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being completed without the benefit of a detailed site visit.

### DOCUMENTS PROVIDED

Document	Remarks	Source
Equipment Modification Form	AT&T Internal Loading Document, dated 10/9/2013	Siterra
Construction Drawings	ProTerra Job #: 11-023, dated 10/15/2013	SAI
Tower Design	Sabre Job #: 49722, dated 9/22/2011	Siterra
Foundation Design	Sabre Job #: 49722, dated 9/22/2011	Siterra
Geotechnical Report	Dr. Clarence Welti, P.E., P.C., dated 6/1/2011	Siterra

## ASSUMPTIONS

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

1. The tower member sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. 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.
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations.
6. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
7. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
8. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
9. All prior structural modifications are assumed to be as per data supplied/available and to have been properly installed.
10. Loading interpreted from photos is accurate to  $\pm 5'$  AGL, antenna size accurate to  $\pm 3.3$  sf, and coax equal to the number of existing antennas without reserve.
11. All existing loading was obtained from site photos, the provided EMF and CDs and is assumed to be accurate.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD Group should be allowed to review any new information to determine its effect on the structural integrity of the tower.

## DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the specified code recommended amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD GROUP makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

## **APPENDIX A**

### Tower Analysis Summary Form



## **APPENDIX B**

tnxTower Output File

<b>tnxTower</b>  <b>GPD Group</b> 520 South Main St. Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job</b> CT1284 (105130) OLD SAYBROOK BOSTON POST RD	<b>Page</b> 1 of 4
	<b>Project</b> 2013723.13.105130.01	<b>Date</b> 10:27:54 10/29/13
	<b>Client</b> SAI	<b>Designed by</b> mhoushell

## Tower Input Data

There is a pole section.

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

The following design criteria apply:

Tower is located in Middlesex County, Connecticut.

Basic wind speed of 85 mph.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 38 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 pole 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 Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C <sub>AA</sub>		Weight plf
						No Ice	ft <sup>2</sup> /ft	
5/8" Step Bolts	C	No	CaAa (Out Of Face)	99.00 - 8.00	1	No Ice	0.04	1.00
						1/2" Ice	0.14	1.56
						1" Ice	0.24	2.73
						2" Ice	0.44	6.91
						4" Ice	0.84	22.58
Safety Line (3/8")	C	No	CaAa (Out Of Face)	99.00 - 8.00	1	No Ice	0.04	0.22
						1/2" Ice	0.14	0.75
						1" Ice	0.24	1.28
						2" Ice	0.44	2.34
						4" Ice	0.84	4.46
LDF7-50A (1-5/8 FOAM)	A	No	Inside Pole	97.00 - 8.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
15.4mm DC Power	A	No	Inside Pole	95.00 - 8.00	6	No Ice	0.00	0.50
						1/2" Ice	0.00	0.50
						1" Ice	0.00	0.50
						2" Ice	0.00	0.50
						4" Ice	0.00	0.50
10mm Fiber Cable	A	No	Inside Pole	95.00 - 8.00	1	No Ice	0.00	0.10
						1/2" Ice	0.00	0.10
						1" Ice	0.00	0.10
						2" Ice	0.00	0.10
						4" Ice	0.00	0.10

<b>tnxTower</b>  <b>GPD Group</b> 520 South Main St. Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job</b> CT1284 (105130) OLD SAYBROOK BOSTON POST RD	<b>Page</b> 2 of 4
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	<b>Client</b> SAI	<b>Designed by</b> mhoushell

## Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz Lateral	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb	
ULP12-496	A	None			0.0000	97.00	No Ice	14.66	14.66	1250.00
							1/2" Ice	18.87	18.87	1481.33
							1" Ice	23.08	23.08	1712.66
							2" Ice	31.50	31.50	2175.32
							4" Ice	48.34	48.34	3100.64
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	97.00	No Ice	8.55	6.65	89.03
							1/2" Ice	9.18	7.68	157.32
							1" Ice	9.79	8.56	234.42
							2" Ice	11.06	10.38	413.07
							4" Ice	13.71	14.23	912.41
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	97.00	No Ice	8.55	6.65	89.03
							1/2" Ice	9.18	7.68	157.32
							1" Ice	9.79	8.56	234.42
							2" Ice	11.06	10.38	413.07
							4" Ice	13.71	14.23	912.41
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	97.00	No Ice	8.55	6.65	89.03
							1/2" Ice	9.18	7.68	157.32
							1" Ice	9.79	8.56	234.42
							2" Ice	11.06	10.38	413.07
							4" Ice	13.71	14.23	912.41
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	97.00	No Ice	10.60	8.11	76.55
							1/2" Ice	11.27	9.30	158.03
							1" Ice	11.91	10.21	247.79
							2" Ice	13.21	12.17	455.80
							4" Ice	15.93	16.35	1019.77
HPA-65R-BUU-H6 w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	97.00	No Ice	10.60	8.11	76.55
							1/2" Ice	11.27	9.30	158.03
							1" Ice	11.91	10.21	247.79
							2" Ice	13.21	12.17	455.80
							4" Ice	15.93	16.35	1019.77
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	97.00	No Ice	10.60	8.11	76.55
							1/2" Ice	11.27	9.30	158.03
							1" Ice	11.91	10.21	247.79
							2" Ice	13.21	12.17	455.80
							4" Ice	15.93	16.35	1019.77
(2) KRC 118 055/1 w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	97.00	No Ice	11.46	8.62	137.38
							1/2" Ice	12.17	9.90	223.76
							1" Ice	12.86	10.95	318.90
							2" Ice	14.24	12.92	539.23
							4" Ice	17.12	17.32	1135.84
(2) KRC 118 055/1 w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	97.00	No Ice	11.46	8.62	137.38
							1/2" Ice	12.17	9.90	223.76
							1" Ice	12.86	10.95	318.90
							2" Ice	14.24	12.92	539.23
							4" Ice	17.12	17.32	1135.84
(2) KRC 118 055/1 w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	97.00	No Ice	11.46	8.62	137.38
							1/2" Ice	12.17	9.90	223.76
							1" Ice	12.86	10.95	318.90
							2" Ice	14.24	12.92	539.23
							4" Ice	17.12	17.32	1135.84
DTMABP7819VG12A	A	From Leg	4.00	0.00	0.0000	97.00	No Ice	1.17	0.44	19.00
							1/2" Ice	1.32	0.56	26.12
							1" Ice	1.48	0.69	35.11
							2" Ice	1.83	0.97	59.49



<b>tnxTower</b>  <b>GPD Group</b> 520 South Main St. Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job</b>	CT1284 (105130) OLD SAYBROOK BOSTON POST RD	<b>Page</b>	3 of 4
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	<b>Client</b>	SAI	<b>Designed by</b>	mhoudeshell

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight
			Horz	Lateral					
DTMABP7819VG12A	B	From Leg	4.00	0.0000	97.00	4" Ice	2.62	1.63	139.29
			0.00	0.0000		No Ice	1.17	0.44	19.00
			0.00	0.0000		1/2" Ice	1.32	0.56	26.12
			0.00	0.0000		1" Ice	1.48	0.69	35.11
			0.00	0.0000		2" Ice	1.83	0.97	59.49
DTMABP7819VG12A	C	From Leg	4.00	0.0000	97.00	4" Ice	2.62	1.63	139.29
			0.00	0.0000		No Ice	1.17	0.44	19.00
			0.00	0.0000		1/2" Ice	1.32	0.56	26.12
			0.00	0.0000		1" Ice	1.48	0.69	35.11
			0.00	0.0000		2" Ice	1.83	0.97	59.49
Collar Mount	C	None	0.0000	0.0000	95.00	4" Ice	2.62	1.63	139.29
			0.0000	0.0000		No Ice	1.40	1.40	20.00
			0.0000	0.0000		1/2" Ice	2.40	2.40	35.00
			0.0000	0.0000		1" Ice	3.40	3.40	50.00
			0.0000	0.0000		2" Ice	5.40	5.40	80.00
(4) RRUS 11	A	From Leg	1.00	0.0000	95.00	4" Ice	9.40	9.40	140.00
			0.00	0.0000		No Ice	3.25	1.37	50.70
			0.00	0.0000		1/2" Ice	3.49	1.55	71.50
			0.00	0.0000		1" Ice	3.74	1.74	95.33
			0.00	0.0000		2" Ice	4.27	2.14	152.89
(4) RRUS 11	B	From Leg	1.00	0.0000	95.00	4" Ice	5.43	3.04	312.97
			0.00	0.0000		No Ice	3.25	1.37	50.70
			0.00	0.0000		1/2" Ice	3.49	1.55	71.50
			0.00	0.0000		1" Ice	3.74	1.74	95.33
			0.00	0.0000		2" Ice	4.27	2.14	152.89
(4) RRUS 11	C	From Leg	1.00	0.0000	95.00	4" Ice	5.43	3.04	312.97
			0.00	0.0000		No Ice	3.25	1.37	50.70
			0.00	0.0000		1/2" Ice	3.49	1.55	71.50
			0.00	0.0000		1" Ice	3.74	1.74	95.33
			0.00	0.0000		2" Ice	4.27	2.14	152.89
DC6-48-60-18-8F Surge Suppression Unit	A	From Leg	1.00	0.0000	95.00	4" Ice	5.43	3.04	312.97
			0.00	0.0000		No Ice	1.47	1.47	18.90
			0.00	0.0000		1/2" Ice	1.67	1.67	36.62
			0.00	0.0000		1" Ice	1.88	1.88	56.82
			0.00	0.0000		2" Ice	2.33	2.33	105.34
DC6-48-60-18-8F Surge Suppression Unit	B	From Leg	1.00	0.0000	95.00	4" Ice	3.38	3.38	239.02
			0.00	0.0000		No Ice	1.47	1.47	18.90
			0.00	0.0000		1/2" Ice	1.67	1.67	36.62
			0.00	0.0000		1" Ice	1.88	1.88	56.82
			0.00	0.0000		2" Ice	2.33	2.33	105.34
DC6-48-60-18-8F Surge Suppression Unit	C	From Leg	1.00	0.0000	95.00	4" Ice	3.38	3.38	239.02
			0.00	0.0000		No Ice	1.47	1.47	18.90
			0.00	0.0000		1/2" Ice	1.67	1.67	36.62
			0.00	0.0000		1" Ice	1.88	1.88	56.82
			0.00	0.0000		2" Ice	2.33	2.33	105.34
DC6-48-60-18-8F Surge Suppression Unit	C	From Leg	1.00	0.0000	95.00	4" Ice	3.38	3.38	239.02
			0.00	0.0000		No Ice	1.47	1.47	18.90
			0.00	0.0000		1/2" Ice	1.67	1.67	36.62
			0.00	0.0000		1" Ice	1.88	1.88	56.82
			0.00	0.0000		2" Ice	2.33	2.33	105.34
DC6-48-60-18-8F Surge Suppression Unit	C	From Leg	1.00	0.0000	95.00	4" Ice	3.38	3.38	239.02
			0.00	0.0000		No Ice	1.47	1.47	18.90
			0.00	0.0000		1/2" Ice	1.67	1.67	36.62
			0.00	0.0000		1" Ice	1.88	1.88	56.82
			0.00	0.0000		2" Ice	2.33	2.33	105.34
DC6-48-60-18-8F Surge Suppression Unit	C	From Leg	1.00	0.0000	95.00	4" Ice	3.38	3.38	239.02
			0.00	0.0000		No Ice	1.47	1.47	18.90
			0.00	0.0000		1/2" Ice	1.67	1.67	36.62
			0.00	0.0000		1" Ice	1.88	1.88	56.82
			0.00	0.0000		2" Ice	2.33	2.33	105.34
DC6-48-60-18-8F Surge Suppression Unit	C	From Leg	1.00	0.0000	95.00	4" Ice	3.38	3.38	239.02
			0.00	0.0000		No Ice	1.47	1.47	18.90
			0.00	0.0000		1/2" Ice	1.67	1.67	36.62
			0.00	0.0000		1" Ice	1.88	1.88	56.82
			0.00	0.0000		2" Ice	2.33	2.33	105.34
DC6-48-60-18-8F Surge Suppression Unit	C	From Leg	1.00	0.0000	95.00	4" Ice	3.38	3.38	239.02
			0.00	0.0000		No Ice	1.47	1.47	18.90
			0.00	0.0000		1/2" Ice	1.67	1.67	36.62
			0.00	0.0000		1" Ice	1.88	1.88	56.82
			0.00	0.0000		2" Ice	2.33	2.33	105.34
DC6-48-60-18-8F Surge Suppression Unit	C	From Leg	1.00	0.0000	95.00	4" Ice	3.38	3.38	239.02
			0.00	0.0000		No Ice	1.47	1.47	18.90
			0.00	0.0000		1/2" Ice	1.67	1.67	36.62
			0.00	0.0000		1" Ice	1.88	1.88	56.82
			0.00	0.0000		2" Ice	2.33	2.33	105.34
DC6-48-60-18-8F Surge Suppression Unit	C	From Leg	1.00	0.0000	95.00	4" Ice	3.38	3.38	239.02
			0.00	0.0000		No Ice	1.47	1.47	18.90
			0.00	0.0000		1/2" Ice	1.67	1.67	36.62
			0.00	0.0000		1" Ice	1.88	1.88	56.82
			0.00	0.0000		2" Ice	2.33	2.33	105.34
DC6-48-60-18-8F Surge Suppression Unit	C	From Leg	1.00	0.0000	95.00	4" Ice	3.38	3.38	239.02
			0.00	0.0000		No Ice	1.47	1.47	18.90
			0.00	0.0000		1/2" Ice	1.67	1.67	36.62
			0.00	0.0000		1" Ice	1.88	1.88	56.82
			0.00	0.0000		2" Ice	2.33	2.33	105.34

### Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
97.00	ULP12-496	35	8.460	0.7425	0.0001	42237
95.00	Collar Mount	35	8.152	0.7301	0.0001	42237

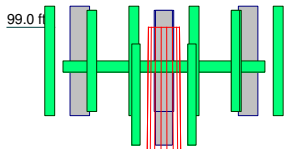
<b>tnxTower</b>  <b>GPD Group</b> 520 South Main St. Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	<b>Job</b> CT1284 (105130) OLD SAYBROOK BOSTON POST RD	<b>Page</b> 4 of 4
	<b>Project</b> 2013723.13.105130.01	<b>Date</b> 10:27:54 10/29/13
	<b>Client</b> SAI	<b>Designed by</b> mhoudehell

**Section Capacity Table**

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P <sub>allow</sub> lb	% Capacity	Pass Fail
L1	99 - 48.5	Pole	TP34.15x22.14x0.25	1	-7079.42	1351835.23	40.8	Pass
L2	48.5 - 0	Pole	TP45.2x32.5203x0.3125	2	-15293.80	2314607.77	46.7	Pass
Summary							ELC:	Existing + Proposed + Future
Pole (L2)							46.7	Pass
Rating =							46.7	Pass

## APPENDIX C

### Tower Elevation Drawings



### DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
ULP12-496	97	DTMABP7819VG12A	97
AM-X-CD-16-65-00T-RET w/ Mount Pipe	97	DTMABP7819VG12A	97
AM-X-CD-16-65-00T-RET w/ Mount Pipe	97	DTMABP7819VG12A	97
AM-X-CD-16-65-00T-RET w/ Mount Pipe	97	Collar Mount	95
AM-X-CD-16-65-00T-RET w/ Mount Pipe	97	(4) RRUS 11	95
AM-X-CD-16-65-00T-RET w/ Mount Pipe	97	(4) RRUS 11	95
AM-X-CD-16-65-00T-RET w/ Mount Pipe	97	(4) RRUS 11	95
HPA-65R-BUU-H6 w/ Mount Pipe	97	DC6-48-60-18-8F Surge Suppression Unit	95
HPA-65R-BUU-H6 w/ Mount Pipe	97	DC6-48-60-18-8F Surge Suppression Unit	95
HPA-65R-BUU-H6 w/ Mount Pipe	97	DC6-48-60-18-8F Surge Suppression Unit	95
(2) KRC 118 055/1 w/ Mount Pipe	97	DC6-48-60-18-8F Surge Suppression Unit	95
(2) KRC 118 055/1 w/ Mount Pipe	97	DC6-48-60-18-8F Surge Suppression Unit	95
(2) KRC 118 055/1 w/ Mount Pipe	97	DC6-48-60-18-8F Surge Suppression Unit	95

### MATERIAL STRENGTH

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

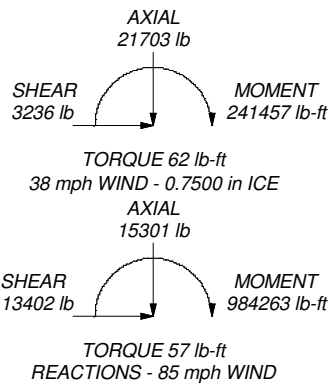
### TOWER DESIGN NOTES


1. Tower is located in Middlesex 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 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 46.7%

Section	1	2
Length (ft)	50.50	53.25
Number of Sides	18	18
Thickness (in)	0.2500	0.3125
Socket Length (ft)	4.75	
Top Dia (in)	22.1400	32.5203
Bot Dia (in)	34.1500	45.2000
Grade	A572-65	
Weight (lb)	3803.6	6928.0
		10731.7

48.5 ft

0.0 ft



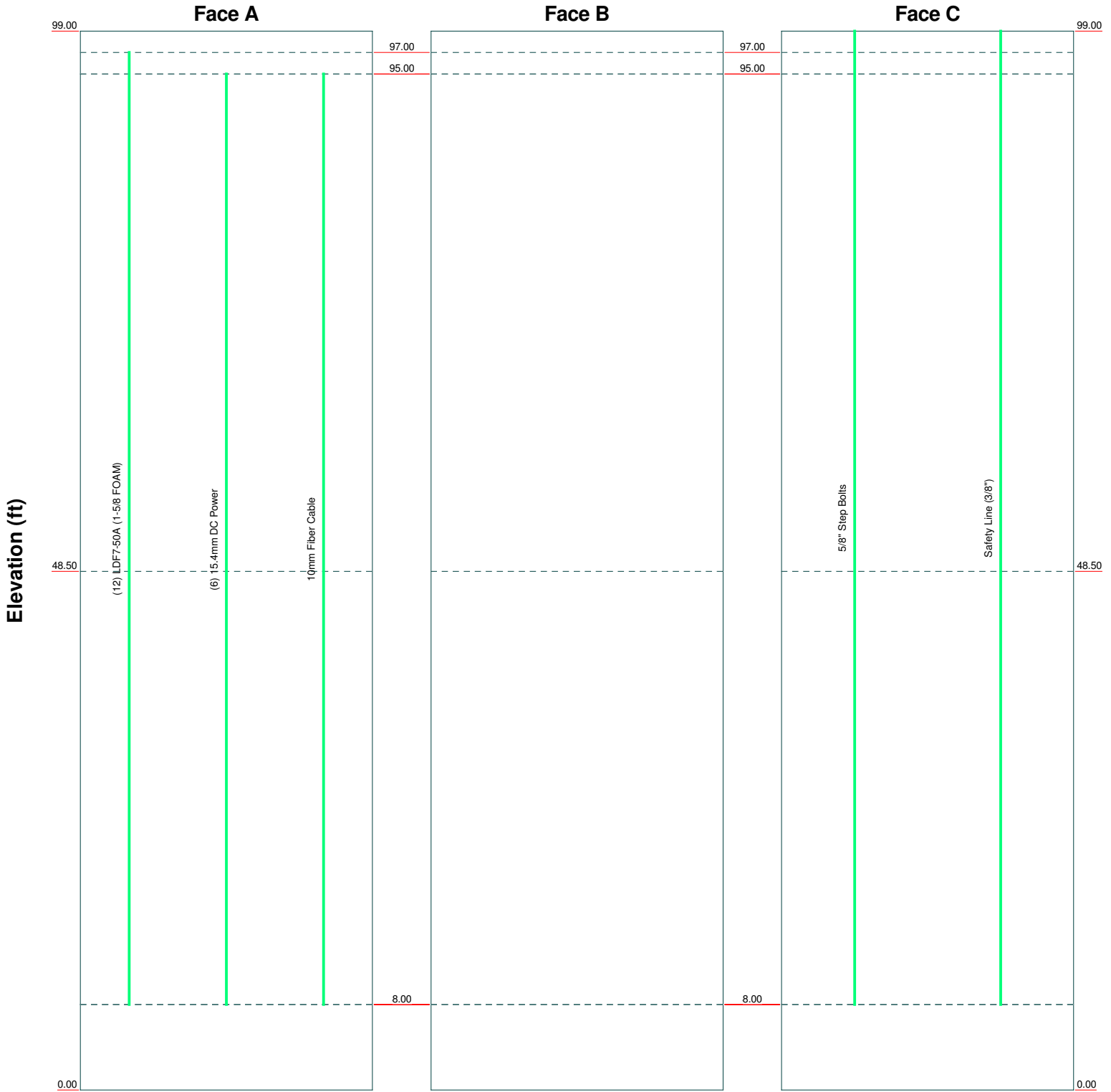

**GPD Group**  
 520 South Main St. Suite 2531  
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 Phone: (330) 572-2100  
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Job: **CT1284 (105130) OLD SAYBROOK BOSTON POST RD**  
 Project: **2013723.13.105130.01**  
 Client: SAI | Drawn by: mhoudeshell | App'd:  
 Code: TIA/EIA-222-F | Date: 10/29/13 | Scale: NTS  
 Path: | Dwg No. E-1  
N:\2011\AT\andT\105130\01 2013723.13.105130.01\_SAI\_SAI\m\105130.dwg

# Feed Line Distribution Chart

## 0' - 99'

— Round   
 — Flat   
 — App In Face   
 — App Out Face   
 — Truss Leg

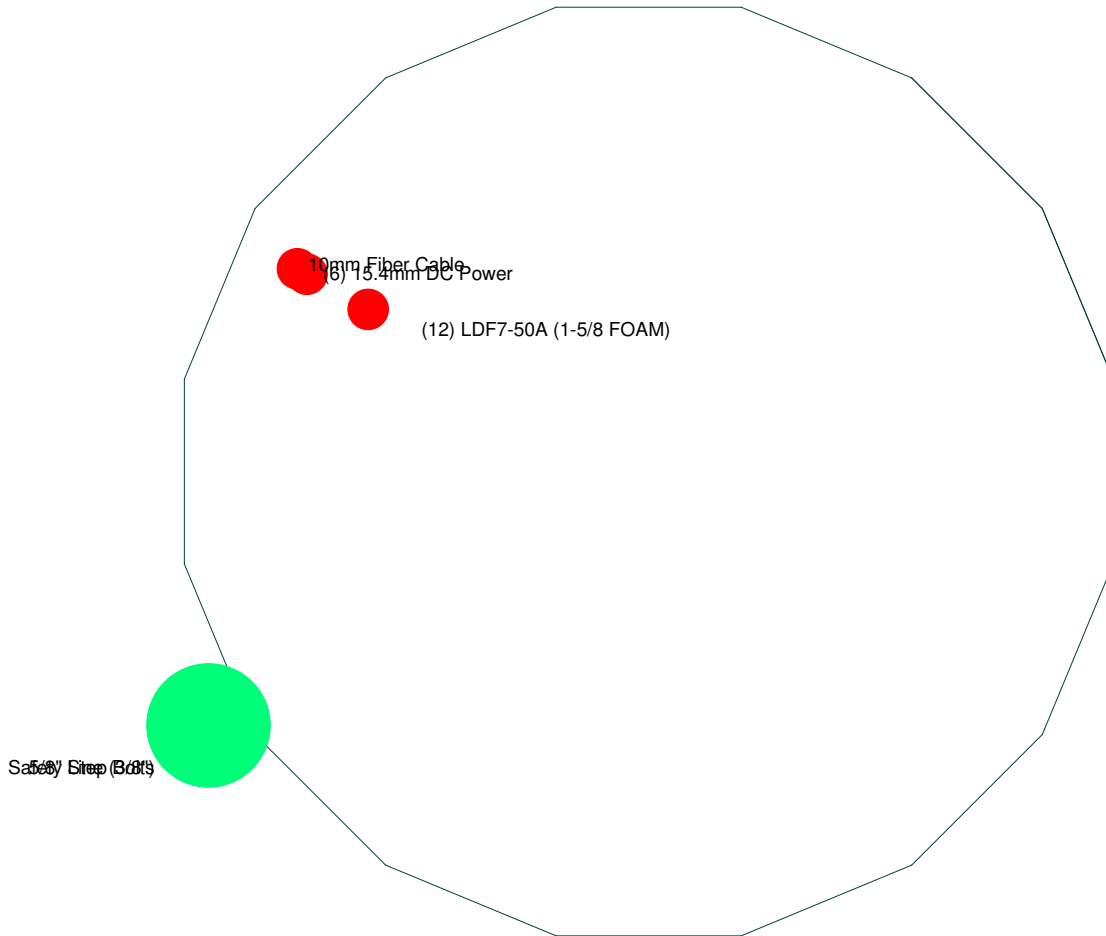



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Job: <b>CT1284 (105130) OLD SAYBROOK BOSTON POST RD</b>		
Project: <b>2013723.13.105130.01</b>		
Client: SAI	Drawn by: mhoudeshell	App'd:
Code: TIA/EIA-222-F	Date: 10/29/13	Scale: NTS
Path: N:\2011\ATandT\105130\01 2013723.13.105130.01_SAI_SAI\105130.dwg	Dwg No. E-7	

# Feed Line Plan

— Round   
 — Flat   
 — App In Face   
 — App Out Face



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Project: <b>2013723.13.105130.01</b>		
Client: SAI	Drawn by: mhoudeshell	App'd:
Code: TIA/EIA-222-F	Date: 10/29/13	Scale: NTS
Path:	Dwg No. E-7	
N:\2011\ATandT\105130\01 2013723.13.105130.01_SAI_SAI\m\105130.dwg		

## **APPENDIX D**

### Base Plate & Anchor Rod Calculations



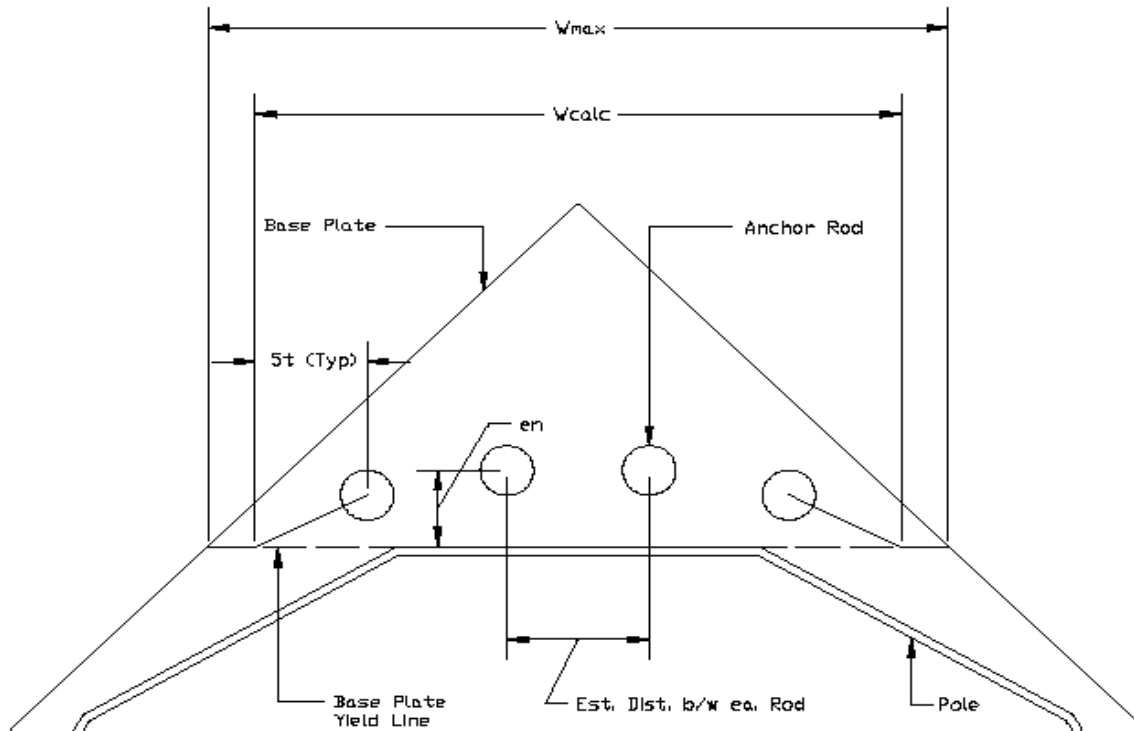
**Anchor Rod and Base Plate Stresses**  
**CT1284 (105130) OLD SAYBROOK BOSTON POST RD**  
**2013723.13.105130.01**

Overturing Moment =	984.26	k*ft
Axial Force =	15.30	k
Shear Force =	13.40	k

Acceptable Stress Ratio =	105.0%
---------------------------	--------

Anchor Rods		
Pole Diameter =	45.2	in
Number of Rods =	12	
Type =	Upset Rod	
Rod Yield Strength (Fy) =	75	ksi
ASIF =	1.333	
Rod Circle =	51.25	in
Rod Diameter =	2.25	in
Net Tensile Area =	3.25	in <sup>2</sup>
Max Tension on Rod =	75.47	kips
Max Compression on Rod =	78.02	kips
Allow. Rod Force =	195.00	kips
<b>Anchor Rod Capacity =</b>	<b>38.7%</b>	<b>OK</b>

Base Plate		
Plate Strength (Fy) =	50	ksi
Plate Thickness =	2.5	in
Plate Width =	49.75	in
Est. Dist. b/w ea. Rod =	6	in
W <sub>calc</sub> =	36.917	in
W <sub>max</sub> =	25.157	in
w =	25.16	in
S =	26.21	in <sup>3</sup>
fb =	22.46	ksi
Fb =	50	ksi
<b>Base Plate Capacity =</b>	<b>44.9%</b>	<b>OK</b>





## **APPENDIX E**

### Foundation Analysis



**Mat Foundation Analysis**  
**CT1284 (105130) OLD SAYBROOK BOSTON POST RD**  
**2013723.13.105130.01**

General Info	
Code	TIA/EIA-222-F (ASD)
Bearing On	Soil
Foundation Type	Mono Pad
Pier Type	Square
Reinforcing Known	Yes
Max Capacity	1.05

Tower Reactions	
Moment, M	984.263 k-ft
Axial, P	15.301 k
Shear, V	13.402 k

Pad & Pier Geometry		
Pier Width, $\phi$	6	ft
Pad Length, L	20.5	ft
Pad Width, W	20.5	ft
Pad Thickness, t	1.5	ft
Depth, D	6	ft
Height Above Grade, HG	0.5	ft

Pad & Pier Reinforcing		
Rebar Fy	60	ksi
Concrete Fc'	4.5	ksi
Clear Cover	3	in
Reinforced Top & Bottom?	Yes	
Pad Reinforcing Size	# 8	
Pad Quantity Per Layer	26	
Pier Rebar Size	# 8	
Pier Quantity of Rebar	26	

Soil Properties	
Soil Type	Granular
Soil Unit Weight	125 pcf
Angle of Friction, $\phi$	34 °
Bearing Type	Gross
Ultimate Bearing	8 ksf
Water Table Depth	5 ft
Frost Depth	3.5 ft

Bearing Summary			Load Case
Qxmax	1.34	ksf	1D+1W
Qymax	1.34	ksf	1D+1W
Qmax @ 45°	1.68	ksf	1D+1W
Q <sub>(all) Gross</sub>	4.00	ksf	
<b>Controlling Capacity</b>	<b>42.1%</b>	<b>Pass</b>	

Overturning Summary (Required FS=1.5)			Load Case
FS(ot)x	4.15	≥1.5	1D+1W
FS(ot)y	4.15	≥1.5	1D+1W
<b>Controlling Capacity</b>	<b>36.2%</b>	<b>Pass</b>	

