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STATE OF MINNESOTA
BOARD OF ARCHITECTURE, ENGINEERING,
LAND SURVEYING, LANDSCAPE ARCHITECTURE, GEOSCIENCE
AND INTERIOR DESIGN

In the matter of Jason M. Seaverson
PROFESSIONAL ENGINEER
License Number 43547

STIPULATION AND ORDER

Board File No. 2011-0077

TO: Jason M. Seaverson
30 Mackenzie Court
Fuquay Varina, North Carolina 27526

The Minnesota Board of Architecture, Engineering, Land Surveying, Landscape Architecture, Geoscience and Interior Design ("Board") is authorized pursuant to Minnesota Statutes section 214.10 (2010) and Minnesota Statutes section 326.111 (2010) to review complaints against architects, professional engineers, land surveyors, landscape architects, geoscientists, and certified interior designers, and to take disciplinary action whenever appropriate.

The Board received information concerning Jason M. Seaverson ("Respondent"). The Board's Complaint Committee ("Committee") reviewed the information. The parties have agreed that the matter may now be resolved by this Stipulation and Order.

STIPULATION

IT IS HEREBY AGREED by and between Respondent and the Committee as follows:

1. Jurisdiction. The Respondent was first issued a Professional Engineer license by the Board on July 15, 2004. Respondent is subject to the jurisdiction of the

Board with respect to the matters referred to in this Stipulation.

2. Facts. This Stipulation is based upon the following facts:

a. Respondent was first licensed as a professional engineer in the State of Minnesota on July 15, 2004.

b. On June 30, 2010, Respondent's Minnesota professional engineer license in the State of Minnesota expired.

c. On September 19, 2011, Respondent reinstated his Minnesota professional engineer license. Respondent's Minnesota professional engineer license is current with an expiration date of June 30, 2012.

d. Respondent held himself out as a professional engineer and practiced professional engineering during the time when his Minnesota professional engineer license had expired, by preparing, signing, and certifying the Structural Analysis Report for a '300 foot FWT Self Supported Tower' located in Wanamingo, Minnesota. See Exhibit A. A true and correct copy of the Structural Analysis Report prepared, signed and certified by the Respondent, for a '300 foot FWT Self Supported Tower' located in Wanamingo, Minnesota, is attached as Exhibit A.

3. Violations. Respondent admits that the facts specified above constitute violations of Minnesota Statutes section 326.02, subdivisions 1 and 3 (2010) and Minnesota Statutes section 326.03, subdivision 1 (2010) and are sufficient grounds for the action specified below. Specifically, Respondent held himself out as a Professional Engineer and practiced professional engineering, in the State of Minnesota, during the

time when Respondent's Minnesota Professional Engineer license had expired.

4. Enforcement Action. Respondent and the Committee agree that the Board should issue an Order in accordance with the following terms:

a. Reprimand. Respondent is reprimanded for the foregoing conduct.

b. Civil Penalty. Respondent shall pay to the Board a civil penalty of One Thousand Five Hundred Dollars ($1,500.00). Respondent shall submit a civil penalty of One Thousand Five Hundred Dollars ($1,500.00) by cashier's check or money order to the Board within sixty (60) days of the Board's approval of this Stipulation and Order.

5. Additional Discipline for Violations of Order. If Respondent violates this Stipulation and Order, the Board may impose additional discipline pursuant to the following procedure:

a. The Committee shall schedule a hearing before the Board. At least thirty days prior to the hearing, the Committee shall mail Respondent a notice of the violation alleged by the Committee and of the time and place of the hearing. Within fourteen days after the notice is mailed, Respondent shall submit a response to the allegations. If Respondent does not submit a timely response to the Board, the allegations may be deemed admitted.

b. At the hearing before the Board, the Complaint Committee and Respondent may submit affidavits made on personal knowledge and argument based on the record in support of their positions. The Complaint Committee may submit affidavits responding to any affidavits submitted by Respondent. The evidentiary

record before the Board shall be limited to such affidavits and this Stipulation and Order. Respondent waives a hearing before an administrative law judge and waives discovery, cross-examination of adverse witnesses, and other procedures governing administrative hearings or civil trials.

c. At the hearing, the Board will determine whether to impose additional disciplinary action, including additional conditions or limitations on Respondent's practice or suspension or revocation of Respondent's license.

6. Waiver of Respondent's Rights. For the purpose of this Stipulation, Respondent waives all procedures and proceedings before the Board to which Respondent may be entitled under the Minnesota and United States constitutions, statutes, or the rules of the Board, including the right to dispute the allegations against Respondent, to dispute the appropriateness of discipline in a contested case proceeding pursuant to Minnesota Statutes Chapter 14 (2010), and to dispute the civil penalty imposed by this Agreement. Respondent agrees that upon the application of the Committee without notice to or an appearance by Respondent, the Board may issue an Order containing the enforcement action specified in paragraph 4 herein. Respondent waives the right to any judicial review of the Order by appeal, writ of certiorari, or otherwise.

7. Collection. In accordance with Minnesota Statutes section 16D.17 (2010), in the event this order becomes final and Respondent does not comply with the condition in paragraph 4(b) above, Respondent agrees that the Board may file and enforce the unpaid portion of the civil penalty as a judgment without further notice or additional

proceedings.

8. Board Rejection of Stipulation and Order. In the event the Board in its discretion does not approve this Stipulation and Order or a lesser remedy than specified herein, this Stipulation and Order shall be null and void and shall not be used for any purpose by either party hereto. If this Stipulation is not approved and a contested case proceeding is initiated pursuant to Minnesota Statutes Chapter 14 (2010), Respondent agrees not to object to the Board's initiation of the proceedings and hearing the case on the basis that the Board has become disqualified due to its review and consideration of this Stipulation and the record.

9. Unrelated Violations. This settlement shall not in any way or manner limit or affect the authority of the Board to proceed against Respondent by initiating a contested case hearing or by other appropriate means on the basis of any act, conduct, or admission of Respondent justifying disciplinary action which occurred before or after the date of this Stipulation and Order and which is not directly related to the specific facts and circumstances set forth herein.

10. Record. The Stipulation, related investigative reports and other documents shall constitute the entire record of the proceedings herein upon which the Order is based. The investigative reports, other documents, or summaries thereof may be filed with the Board with this Stipulation.

11. Data Classification. Under the Minnesota Government Data Practices Act, this Stipulation and Order is classified as public data upon its issuance by the Board, Minnesota Statutes section 13.41, subdivision 5 (2010). All documents in the record shall

maintain the data classification to which they are entitled under the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13 (2010). They shall not, to the extent they are not already public documents, become public merely because they are referenced herein. A summary of this Order will appear in the Board's newsletter. A summary will also be sent to the national discipline data bank pertaining to the practice of engineering.

12. Entire Agreement. Respondent has read, understood, and agreed to this Stipulation and is freely and voluntarily signing it. The Stipulation contains the entire agreement between the parties hereto relating to the allegations referenced herein. Respondent is not relying on any other agreement or representations of any kind, verbal or otherwise.

13. Counsel. Respondent is aware that he may choose to be represented by legal counsel in this matter. Respondent knowingly waived legal representation.

14. Service. If approved by the Board, a copy of this Stipulation and Order shall be served personally or by first class mail on Respondent. The Order shall be effective and deemed issued when it is signed by the Chair of the Board.

RESPONDENT

Jason M. Seaverson, PE

Dated: 12/20, 2011

COMPLAINT COMMITTEE

By: _____

Lisa Hanni, LS
Committee Chair

Dated: 1/25/2012, 2011

ORDER

Upon consideration of the foregoing Stipulation and based upon all the files, records and proceedings herein, all terms of the Stipulation are approved and hereby issued as an Order of this Board on this the 3rd day of February ~~2011~~ 2012.

MINNESOTA BOARD OF
ARCHITECTURE, ENGINEERING,
LAND SURVEYING, LANDSCAPE
ARCHITECTURE, GEOSCIENCE AND
INTERIOR DESIGN

By: William D. Arockiasamy
William D. Arockiasamy, PE
Board Chair

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	300 ft FWT Self Supported Tower
ATC Site Name	:	Wanamingo, MN
ATC Site Number	:	50990
Proposed Carrier	:	AT&T Mobility
Carrier Site Name	:	Wanamingo
Carrier Site Number	:	FA # 10114796 / MPLSMN
County	:	Goodhue
Engineering Number	:	46124721
Date	:	November 24, 2010
Usage	:	64% Legs, 54% Diagonals, 6% Horizontals

Submitted by:
Michael B. Davenport, E.I.
Design Engineer

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

American Tower Engineering Services
400 Regency Forest Drive
Cary, NC 27511
Phone: 919-468-0112

Print Name: JASON M. SEAVERSON

Signature:

Date: 11/30/10 License # 43547

EXHIBIT A

Introduction

The purpose of this report is to summarize results of the structural analysis performed on the 300 ft. FWT Self Supported Tower located at 13002 440th St. West, Wanamingo, MN 55983, Goodhue County (ATC Site No. 50990). The tower was originally designed and manufactured by FWT (Design No. S99-1136-B.R2, dated May 15, 2001).

Analysis

The tower was analyzed using Semaan Engineering Solutions, Inc., Software. The analysis assumes that the tower is in good, undamaged, and non-corroded condition.

Basic Wind Speed:	80 mph (Fastest Mile)
Radial Ice:	69 mph (Fastest Mile) w/ ½" ice
Code:	TIA/EIA-222-F / 2006 IBC Criteria per Section 1609.1.1, Exception (4) and Section 3108.4 / 2007 Minnesota State Building Code

Antenna Loads

The following antenna loads were used in the tower analysis.

Proposed Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
288.0	6	Powerwave TT08-19DB111-001	Sector Frame	(12) 1 5/8" (1) 3/8"	AT&T Mobility
	12	RFS 10177RS-TO			
	12	Powerwave CM1007-DBPXBC-003			
	1	Kathrein 860 10006			

Double stack proposed coax in place of the existing lines.

Results

The maximum structure usage is: 64%

Leg Forces	Original Design Reactions	Current Analysis Reactions	% Of Design
Uplift (Kips)	426.8	239.6	56
Axial (Kips)	524.1	301.5	58
Shear (Kips)	49.2	29.9	61

The structure base reactions resulting from this analysis are acceptable when compared to the reactions shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Conclusion

Based on the analysis results, the structure meets the requirements per TIA/EIA-222-F, 2006 IBC and 2007 MSBC standards. The tower and foundation can support the existing and proposed antennas with the TX line distribution as described in this report.

If you have any questions or require additional information, please call 919-466-5147.

Standard Conditions

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

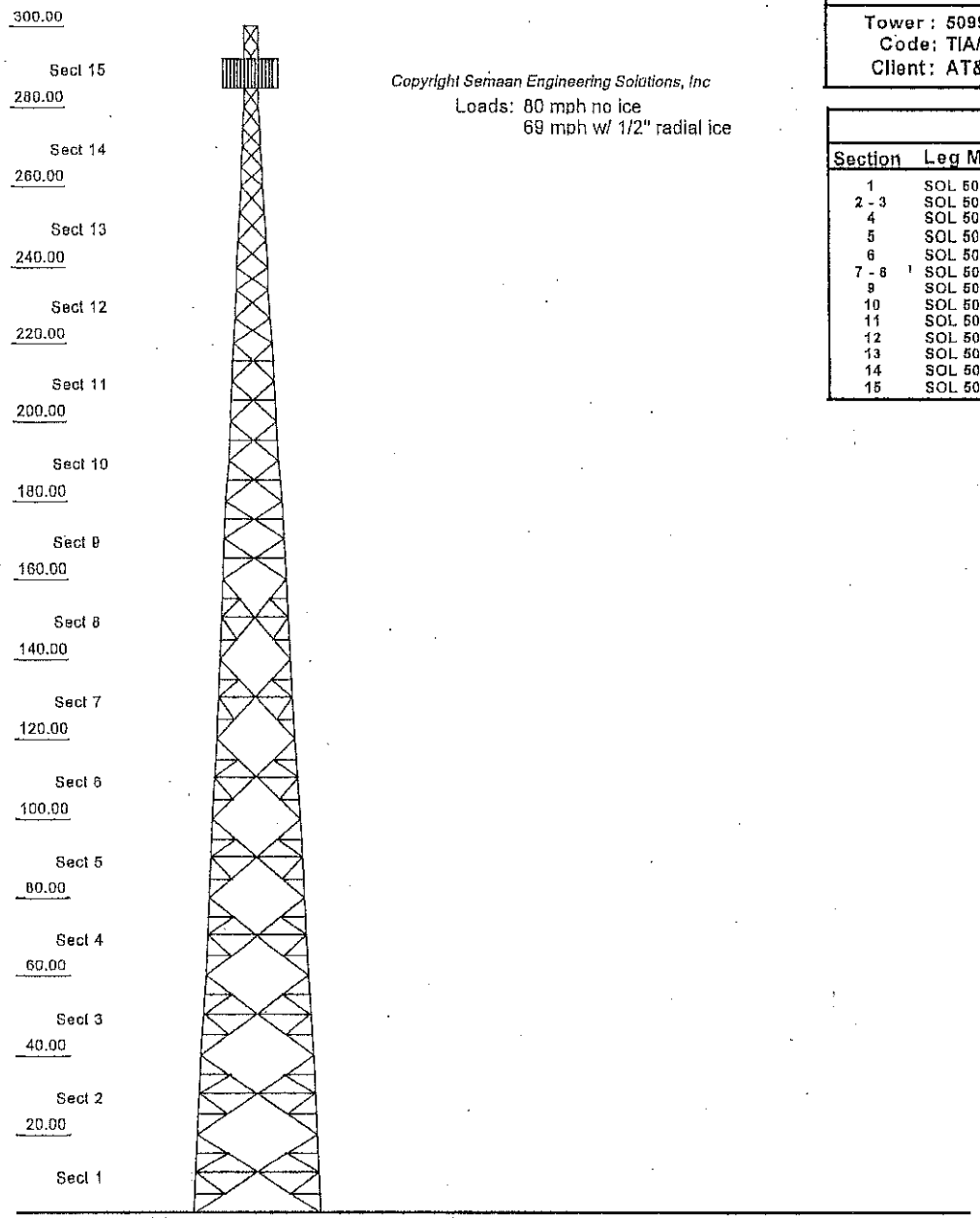
-- Information supplied by the client regarding the structure itself, the antenna and feed line loading on the structure and its components, or other relevant information.

-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to ATC Engineering Services and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated; and we, therefore, assume that their capacity has not significantly changed from the "as new" condition.

All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/EIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Engineering Services is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



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Loads: 80 mph no ice
69 mph w/ 1/2" radial ice

Uplift 239.56 k Moment 7,766.62 ft-k
Vert 301.49 k Total Down 63.71 k
Horiz 29.94 k Total Shear 49.95 k

Job Information

Tower : 50990
Code: TIA/EIA-222 Rev F
Client : AT&T Mobility

Location : Wanlmingo, MN
Shape : Triangle

Base Width : 32.00 ft
Top Width : 4.00 ft

Sections Properties

Section	Leg Members		Diagonal Members	Horizontal Members
1	SOL 50ksi	4 3/4" SOLID	DAE 36ksi 3X3X0.1875	
2 - 3	SOL 50ksi	4 1/2" SOLID	DAE 36ksi 3X3X0.1875	
4	SOL 50ksi	4 1/4" SOLID	DAE 36ksi 3X3X0.1875	
5	SOL 50ksi	4 1/4" SOLID	DAE 36ksi 2.5X2.5X0.1875	
6	SOL 50ksi	4" SOLID	DAE 36ksi 2.5X2.5X0.1875	
7 - 8	SOL 50ksi	3 3/4" SOLID	DAE 36ksi 2.5X2.5X0.1875	
9	SOL 50ksi	3 1/2" SOLID	DAE 36ksi 2.5X2.5X0.1875	
10	SOL 50ksi	3 1/4" SOLID	DAE 36ksi 2X2X0.1875	
11	SOL 50ksi	3" SOLID	SAE 36ksi 3X3X0.1875	
12	SOL 50ksi	3" SOLID	SAE 36ksi 2X2X0.1875	
13	SOL 50ksi	2 3/4" SOLID	SAE 36ksi 1.75X1.75X0.1875	
14	SOL 50ksi	2 1/4" SOLID	SAE 36ksi 1.75X1.75X0.1875	
15	SOL 50ksi	2" SOLID	SAE 36ksi 1.75X1.75X0.1875	SAE 36ksi 2X2X0.1875

Discrete Appurtenance

Elev (ft)	Type	Qty	Description
288.00	Panel	1	Kathrein 860 10006
288.00	Panel	12	Powerwave GM1007-DBPXBC-003
288.00	Panel	12	RFS 10177RS-TO
288.00	Panel	6	Powerwave TT06-19DB111-001
288.00	Mounting Frame	3	Flat Light Sector Frame

Linear Appurtenance

Elev (ft) From	To	Qty	Description
0.000	300.00	1	Climbing Ladder, Int
0.000	288.00	1	Wave Guide
0.000	288.00	1	3/8" Coax
0.000	288.00	12	1 5/8" Coax

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Site Number: 50990
Location: Wanimingo, MN

11/24/2010 11:15:59 AM

Code: TIA/EIA-222 Rev F

Gh : 1.09

Section Forces

LoadCase Normal No Ice — 80.00 mph Wind Normal To Face with No Ice

Allow Stress Inc: 1.333
Dead LF: 1.000
Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face
15	290.0	30.49	7.91	21.88	0.00	0.37	2.12	1.00	1.00	0.64	21.93	0.00	0.00	1,261.8	0.0	1,542.65	0.00	1,542.65	1
14	270.0	29.87	8.04	38.05	0.00	0.46	1.96	1.00	1.00	0.68	33.85	0.00	0.00	1,630.0	0.0	2,151.10	0.00	2,151.10	1
13	250.0	29.22	8.26	39.72	0.00	0.34	2.19	1.00	1.00	0.63	33.28	0.00	0.00	2,040.3	0.0	2,314.99	0.00	2,314.99	1
12	230.0	28.53	10.96	40.55	0.00	0.29	2.33	1.00	1.00	0.61	35.76	0.00	0.00	2,394.0	0.0	2,590.03	0.00	2,590.03	1
11	210.0	27.80	18.28	40.55	0.00	0.27	2.39	1.00	1.00	0.61	42.87	0.00	0.00	2,724.6	0.0	3,093.46	0.00	3,093.46	1
10	190.0	27.02	15.08	41.38	0.00	0.22	2.54	1.00	1.00	0.59	39.67	0.00	0.00	3,303.8	0.0	2,960.30	0.00	2,960.30	1
9	170.0	26.17	21.02	42.22	0.00	0.21	2.56	1.00	1.00	0.59	46.04	0.00	0.00	4,028.7	0.0	3,355.98	0.00	3,355.98	1
8	150.0	25.25	22.38	43.05	0.00	0.19	2.62	1.00	1.00	0.59	47.74	0.00	0.00	4,192.7	0.0	3,437.22	0.00	3,437.22	1
7	130.0	24.24	24.74	43.05	0.00	0.18	2.67	1.00	1.00	0.59	49.98	0.00	0.00	4,323.1	0.0	3,518.27	0.00	3,518.27	1
6	110.0	23.11	26.43	43.89	0.00	0.17	2.71	1.00	1.00	0.58	52.08	0.00	0.00	4,735.8	0.0	3,545.73	0.00	3,545.73	1
5	90.00	21.82	28.81	44.72	0.00	0.16	2.74	1.00	1.00	0.58	54.88	0.00	0.00	5,368.3	0.0	3,563.77	0.00	3,563.77	1
4	70.00	20.31	33.92	44.72	0.00	0.16	2.74	1.00	1.00	0.58	59.98	0.00	0.00	5,814.7	0.0	3,637.21	0.00	3,637.21	1
3	50.00	18.45	35.92	45.56	0.00	0.15	2.77	1.00	1.00	0.58	62.42	0.00	0.00	6,309.0	0.0	3,467.55	0.00	3,467.55	1
2	30.00	16.38	39.52	45.56	0.00	0.15	2.78	1.00	1.00	0.58	65.99	0.00	0.00	6,526.2	0.0	3,273.68	0.00	3,273.68	1
1	10.00	16.38	40.64	46.39	0.00	0.14	2.81	1.00	1.00	0.58	67.55	0.00	0.00	7,266.2	0.0	3,379.53	0.00	3,379.53	1
														61,919.1	0.0			45,831.46	

LoadCase 60 deg No Ice — 80.00 mph Wind at 60 deg From Face with No Ice

Allow Stress Inc: 1.333
Dead LF: 1.000
Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face
15	290.0	30.49	7.91	21.88	0.00	0.37	2.12	0.80	1.00	0.64	20.35	0.00	0.00	1,261.8	0.0	1,431.35	0.00	1,431.35	1
14	270.0	29.87	8.04	38.05	0.00	0.46	1.96	0.80	1.00	0.68	32.24	0.00	0.00	1,630.0	0.0	2,048.91	0.00	2,048.91	1
13	250.0	29.22	8.26	39.72	0.00	0.34	2.19	0.80	1.00	0.63	31.63	0.00	0.00	2,040.3	0.0	2,200.03	0.00	2,200.03	1
12	230.0	28.53	10.96	40.55	0.00	0.29	2.33	0.80	1.00	0.61	33.57	0.00	0.00	2,394.0	0.0	2,431.33	0.00	2,431.33	1
11	210.0	27.80	18.28	40.55	0.00	0.27	2.39	0.80	1.00	0.61	39.21	0.00	0.00	2,724.6	0.0	2,829.69	0.00	2,829.69	1
10	190.0	27.02	15.08	41.38	0.00	0.22	2.54	0.80	1.00	0.59	36.65	0.00	0.00	3,303.8	0.0	2,735.20	0.00	2,735.20	1
9	170.0	26.17	21.02	42.22	0.00	0.21	2.56	0.80	1.00	0.59	41.84	0.00	0.00	4,028.7	0.0	3,049.53	0.00	3,049.53	1
8	150.0	25.25	22.38	43.05	0.00	0.19	2.62	0.80	1.00	0.59	43.26	0.00	0.00	4,192.7	0.0	3,114.89	0.00	3,114.89	1
7	130.0	24.24	24.74	43.05	0.00	0.18	2.67	0.80	1.00	0.59	45.03	0.00	0.00	4,323.1	0.0	3,169.95	0.00	3,169.95	1
6	110.0	23.11	26.43	43.89	0.00	0.17	2.71	0.80	1.00	0.58	46.79	0.00	0.00	4,735.8	0.0	3,185.77	0.00	3,185.77	1
5	90.00	21.82	28.81	44.72	0.00	0.16	2.74	0.80	1.00	0.58	49.12	0.00	0.00	5,368.3	0.0	3,189.66	0.00	3,189.66	1
4	70.00	20.31	33.92	44.72	0.00	0.16	2.74	0.80	1.00	0.58	53.19	0.00	0.00	5,814.7	0.0	3,225.79	0.00	3,225.79	1
3	50.00	18.45	35.92	45.56	0.00	0.15	2.77	0.80	1.00	0.58	55.24	0.00	0.00	6,309.0	0.0	3,068.44	0.00	3,068.44	1
2	30.00	16.38	39.52	45.56	0.00	0.15	2.78	0.80	1.00	0.58	58.08	0.00	0.00	6,526.2	0.0	2,881.56	0.00	2,881.56	1
1	10.00	16.38	40.64	46.39	0.00	0.14	2.81	0.80	1.00	0.58	59.42	0.00	0.00	7,266.2	0.0	2,972.88	0.00	2,972.88	1
														61,919.1	0.0			41,534.97	

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Site Number: 50990
Location: Wanimingo, MN

Code: TIA/EIA-222 Rev F

11/24/2010 11:15:59 AM

Gh : 1.09

Section Forces

LoadCase 90 deg No Ice — 80.00 mph Wind at 90 deg From Face with No Ice

Allow Stress Inc: 1.333
Dead LF: 1.000
Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face
15	290.0	30.49	7.91	21.88	0.00	0.37	2.12	0.85	1.00	0.64	20.74	0.00	0.00	1,261.8	0.0	1,459.17	0.00	1,459.17	1
14	270.0	29.87	8.04	38.05	0.00	0.46	1.96	0.85	1.00	0.68	32.64	0.00	0.00	1,630.0	0.0	2,074.46	0.00	2,074.46	1
13	250.0	29.22	8.26	39.72	0.00	0.34	2.19	0.85	1.00	0.63	32.04	0.00	0.00	2,040.3	0.0	2,228.77	0.00	2,228.77	1
12	230.0	28.53	10.96	40.55	0.00	0.29	2.33	0.85	1.00	0.61	34.12	0.00	0.00	2,394.0	0.0	2,471.01	0.00	2,471.01	1
11	210.0	27.80	18.28	40.55	0.00	0.27	2.39	0.85	1.00	0.61	40.13	0.00	0.00	2,724.6	0.0	2,895.63	0.00	2,895.63	1
10	190.0	27.02	15.08	41.38	0.00	0.22	2.54	0.85	1.00	0.59	37.40	0.00	0.00	3,303.8	0.0	2,791.47	0.00	2,791.47	1
9	170.0	26.17	21.02	42.22	0.00	0.21	2.56	0.85	1.00	0.59	42.89	0.00	0.00	4,028.7	0.0	3,126.14	0.00	3,126.14	1
8	150.0	25.25	22.38	43.05	0.00	0.19	2.62	0.85	1.00	0.59	44.38	0.00	0.00	4,192.7	0.0	3,195.47	0.00	3,195.47	1
7	130.0	24.24	24.74	43.05	0.00	0.18	2.67	0.85	1.00	0.59	46.27	0.00	0.00	4,323.1	0.0	3,257.03	0.00	3,257.03	1
6	110.0	23.11	26.43	43.89	0.00	0.17	2.71	0.85	1.00	0.58	48.11	0.00	0.00	4,735.8	0.0	3,275.76	0.00	3,275.76	1
5	90.00	21.82	28.81	44.72	0.00	0.16	2.74	0.85	1.00	0.58	50.56	0.00	0.00	5,368.3	0.0	3,283.19	0.00	3,283.19	1
4	70.00	20.31	33.92	44.72	0.00	0.16	2.74	0.85	1.00	0.58	54.89	0.00	0.00	5,814.7	0.0	3,328.65	0.00	3,328.65	1
3	50.00	18.45	35.92	45.56	0.00	0.15	2.77	0.85	1.00	0.58	57.03	0.00	0.00	6,309.0	0.0	3,168.21	0.00	3,168.21	1
2	30.00	16.38	39.52	45.56	0.00	0.15	2.78	0.85	1.00	0.58	60.06	0.00	0.00	6,526.2	0.0	2,979.59	0.00	2,979.59	1
1	10.00	16.38	40.64	46.39	0.00	0.14	2.81	0.85	1.00	0.58	61.46	0.00	0.00	7,266.2	0.0	3,074.54	0.00	3,074.54	1
														61,919.1	0.0			42,609.10	

LoadCase Normal Ice — 69.28 mph Wind Normal To Face with Ice

Allow Stress Inc: 1.333
Dead LF: 1.000
Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face
15	290.0	22.86	7.91	36.82	14.94	0.56	1.84	1.00	1.00	0.73	34.77	0.00	0.00	1,823.4	561.6	1,586.55	0.00	1,586.55	1
14	270.0	22.40	8.04	61.11	23.06	0.69	1.78	1.00	1.00	0.81	57.77	0.00	0.00	2,456.0	826.0	2,499.65	0.00	2,499.65	1
13	250.0	21.91	8.26	62.89	23.18	0.51	1.89	1.00	1.00	0.70	52.40	0.00	0.00	2,891.1	850.8	2,359.91	0.00	2,359.91	1
12	230.0	21.40	10.96	64.49	23.94	0.42	2.03	1.00	1.00	0.66	53.50	0.00	0.00	3,336.1	942.1	2,524.27	0.00	2,524.27	1
11	210.0	20.85	18.28	63.85	23.30	0.37	2.12	1.00	1.00	0.64	59.21	0.00	0.00	3,880.1	1,155.5	2,845.58	0.00	2,845.58	1
10	190.0	20.26	15.08	65.19	23.81	0.31	2.27	1.00	1.00	0.62	55.41	0.00	0.00	4,574.3	1,270.5	2,775.70	0.00	2,775.70	1
9	170.0	19.63	21.02	66.57	24.35	0.29	2.32	1.00	1.00	0.61	61.86	0.00	0.00	5,543.7	1,515.0	3,060.82	0.00	3,060.82	1
8	150.0	18.94	22.38	65.77	22.71	0.26	2.41	1.00	1.00	0.60	62.13	0.00	0.00	5,689.3	1,496.6	3,084.21	0.00	3,084.21	1
7	130.0	18.18	24.74	65.99	22.94	0.24	2.47	1.00	1.00	0.60	64.27	0.00	0.00	5,899.9	1,576.7	3,141.40	0.00	3,141.40	1
6	110.0	17.33	26.43	67.06	23.17	0.22	2.52	1.00	1.00	0.60	66.36	0.00	0.00	6,384.1	1,648.3	3,155.21	0.00	3,155.21	1
5	90.00	16.37	28.81	68.14	23.42	0.21	2.56	1.00	1.00	0.59	69.19	0.00	0.00	7,174.5	1,806.2	3,153.84	0.00	3,153.84	1
4	70.00	15.23	33.92	68.40	23.68	0.20	2.58	1.00	1.00	0.59	74.37	0.00	0.00	7,838.6	2,024.0	3,179.83	0.00	3,179.83	1
3	50.00	13.84	35.92	69.50	23.94	0.20	2.61	1.00	1.00	0.59	76.89	0.00	0.00	8,423.3	2,114.4	3,022.51	0.00	3,022.51	1
2	30.00	12.29	39.52	69.77	24.21	0.19	2.64	1.00	1.00	0.59	80.55	0.00	0.00	8,766.9	2,240.7	2,836.95	0.00	2,836.95	1
1	10.00	12.29	40.64	70.88	24.49	0.18	2.66	1.00	1.00	0.59	82.21	0.00	0.00	9,673.0	2,406.8	2,927.87	0.00	2,927.87	1
														84,354.3	22,435.2			42,154.29	

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Site Number: 50990
Location: Wanimingo, MN

Code: TIA/EIA-222 Rev F

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Gh : 1.09

Section Forces

LoadCase 60 deg Ice — 69.28 mph Wind at 60 deg From Face with Ice

Allow Stress Inc: 1.333
Dead LF: 1.000
Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face
15	290.0	22.86	7.91	36.82	14.94	0.56	1.84	0.80	1.00	0.73	33.18	0.00	0.00	1,823.4	561.6	1,514.34	0.00	1,514.34	1
14	270.0	22.40	8.04	61.11	23.06	0.69	1.78	0.80	1.00	0.81	56.16	0.00	0.00	2,456.0	826.0	2,430.08	0.00	2,430.08	1
13	250.0	21.91	8.26	62.89	23.18	0.51	1.89	0.80	1.00	0.70	50.74	0.00	0.00	2,891.1	850.8	2,285.48	0.00	2,285.48	1
12	230.0	21.40	10.96	64.49	23.94	0.42	2.03	0.80	1.00	0.66	51.30	0.00	0.00	3,336.1	942.1	2,420.87	0.00	2,420.87	1
11	210.0	20.85	18.28	63.85	23.30	0.37	2.12	0.80	1.00	0.64	55.55	0.00	0.00	3,880.1	1,155.5	2,669.90	0.00	2,669.90	1
10	190.0	20.26	15.08	65.19	23.81	0.31	2.27	0.80	1.00	0.62	52.39	0.00	0.00	4,574.3	1,270.5	2,624.61	0.00	2,624.61	1
9	170.0	19.63	21.02	66.57	24.35	0.29	2.32	0.80	1.00	0.61	57.66	0.00	0.00	5,543.7	1,515.0	2,852.78	0.00	2,852.78	1
8	150.0	18.94	22.38	65.77	22.71	0.26	2.41	0.80	1.00	0.60	57.65	0.00	0.00	5,689.3	1,496.6	2,861.97	0.00	2,861.97	1
7	130.0	18.18	24.74	65.99	22.94	0.24	2.47	0.80	1.00	0.60	59.33	0.00	0.00	5,899.9	1,576.7	2,899.56	0.00	2,899.56	1
6	110.0	17.33	26.43	67.06	23.17	0.22	2.52	0.80	1.00	0.60	61.07	0.00	0.00	6,384.1	1,648.3	2,903.81	0.00	2,903.81	1
5	90.00	16.37	28.81	68.14	23.42	0.21	2.56	0.80	1.00	0.59	63.43	0.00	0.00	7,174.5	1,806.2	2,891.24	0.00	2,891.24	1
4	70.00	15.23	33.92	68.40	23.68	0.20	2.58	0.80	1.00	0.59	67.59	0.00	0.00	7,838.6	2,024.0	2,889.75	0.00	2,889.75	1
3	50.00	13.84	35.92	69.50	23.94	0.20	2.61	0.80	1.00	0.59	69.70	0.00	0.00	8,423.3	2,114.4	2,740.08	0.00	2,740.08	1
2	30.00	12.29	39.52	69.77	24.21	0.19	2.64	0.80	1.00	0.59	72.65	0.00	0.00	8,766.9	2,240.7	2,558.58	0.00	2,558.58	1
1	10.00	12.29	40.64	70.88	24.49	0.18	2.66	0.80	1.00	0.59	74.09	0.00	0.00	9,673.0	2,406.8	2,638.39	0.00	2,638.39	1
														84,354.3	22,435.2			39,181.43	

LoadCase 90 deg Ice — 69.28 mph Wind at 90 deg From Face with Ice

Allow Stress Inc: 1.333
Dead LF: 1.000
Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face
15	290.0	22.86	7.91	36.82	14.94	0.56	1.84	0.85	1.00	0.73	33.58	0.00	0.00	1,823.4	561.6	1,532.40	0.00	1,532.40	1
14	270.0	22.40	8.04	61.11	23.06	0.69	1.78	0.85	1.00	0.81	56.56	0.00	0.00	2,456.0	826.0	2,447.47	0.00	2,447.47	1
13	250.0	21.91	8.26	62.89	23.18	0.51	1.89	0.85	1.00	0.70	51.16	0.00	0.00	2,891.1	850.8	2,304.08	0.00	2,304.08	1
12	230.0	21.40	10.96	64.49	23.94	0.42	2.03	0.85	1.00	0.66	51.85	0.00	0.00	3,336.1	942.1	2,446.72	0.00	2,446.72	1
11	210.0	20.85	18.28	63.85	23.30	0.37	2.12	0.85	1.00	0.64	56.46	0.00	0.00	3,880.1	1,155.5	2,713.82	0.00	2,713.82	1
10	190.0	20.26	15.08	65.19	23.81	0.31	2.27	0.85	1.00	0.62	53.15	0.00	0.00	4,574.3	1,270.5	2,662.39	0.00	2,662.39	1
9	170.0	19.63	21.02	66.57	24.35	0.29	2.32	0.85	1.00	0.61	58.71	0.00	0.00	5,543.7	1,515.0	2,904.79	0.00	2,904.79	1
8	150.0	18.94	22.38	65.77	22.71	0.26	2.41	0.85	1.00	0.60	58.77	0.00	0.00	5,689.3	1,496.6	2,917.53	0.00	2,917.53	1
7	130.0	18.18	24.74	65.99	22.94	0.24	2.47	0.85	1.00	0.60	60.56	0.00	0.00	5,899.9	1,576.7	2,960.02	0.00	2,960.02	1
6	110.0	17.33	26.43	67.06	23.17	0.22	2.52	0.85	1.00	0.60	62.39	0.00	0.00	6,384.1	1,648.3	2,966.66	0.00	2,966.66	1
5	90.00	16.37	28.81	68.14	23.42	0.21	2.56	0.85	1.00	0.59	64.87	0.00	0.00	7,174.5	1,806.2	2,956.89	0.00	2,956.89	1
4	70.00	15.23	33.92	68.40	23.68	0.20	2.58	0.85	1.00	0.59	69.28	0.00	0.00	7,838.6	2,024.0	2,962.27	0.00	2,962.27	1
3	50.00	13.84	35.92	69.50	23.94	0.20	2.61	0.85	1.00	0.59	71.50	0.00	0.00	8,423.3	2,114.4	2,810.69	0.00	2,810.69	1
2	30.00	12.29	39.52	69.77	24.21	0.19	2.64	0.85	1.00	0.59	74.62	0.00	0.00	8,766.9	2,240.7	2,628.17	0.00	2,628.17	1
1	10.00	12.29	40.64	70.88	24.49	0.18	2.66	0.85	1.00	0.59	76.12	0.00	0.00	9,673.0	2,406.8	2,710.76	0.00	2,710.76	1
														84,354.3	22,435.2			39,924.65	

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Site Number: 50990
Location: Wanimingo, MN

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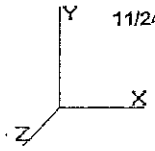

Tower Loading

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Distance From Face (ft)	X Angle (deg)	Vert Ecc (ft)
288.0	Kathrein 860 10006	1	3.00	0.320	1.00	11.60	0.530	1.00	0.000	0.00	0.000
288.0	Powerwave CM1007-	12	6.50	0.430	0.50	9.90	0.570	0.50	0.000	0.00	0.000
288.0	RFS 10177RS-TO	12	31.40	8.960	0.74	89.23	9.790	0.74	0.000	0.00	0.000
288.0	Powerwave TT08-19DB111-	6	22.00	0.920	0.50	29.60	1.140	0.50	0.000	0.00	0.000
288.0	Flat Light Sector Frame	3	400.00	17.900	0.75	510.00	22.200	0.75	0.000	0.00	0.000
	Totals	34	1789.80			2908.76			Number of Appurtenances : 5		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Wind	Spread On Faces	Bundling Arrangement
0.00	300.0	Climbing Ladder,	1	3.00	6.90	100.00	1	Separate
0.00	288.0	1 5/8" Coax	12	1.98	0.82	50.00	1	Separate
0.00	288.0	3/8" Coax	1	0.44	0.08	100.00	1	Separate
0.00	288.0	Wave Guide	1	3.00	6.00	100.00	1	Separate

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Site Number: 50990
Location: Wanimingo, MN

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Force/Stress Summary

Section: 1 SSTBASE Bot Elev (ft): 0.00 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 4 3/4" SOLID	-291.35	Normal No Ice	20.03	25	25	25	50.6	32.3	573.04	0	0	0.00	0.00	50	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 3X3X0.1875	-9.29	90 deg No Ice	36.89	25	50	12	150.8	8.8	19.08	4	2	34.13	43.50	48	Member Y

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 4 3/4" SOLID	232.94	60 deg No Ice	50	708.77	0	0	0.00	0.00	32	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 3X3X0.1875	8.91	90 deg No Ice	36	55.74	4	2	34.13	43.50	26	Bolt Shear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	223.95	60 deg No Ice	0.00	0		
Top Compression	281.53	Normal No Ice	0.00	0		
Bot Tension	241.80	60 deg No Ice	608.74	40	6	2 1/4 A36
Bot Compression	301.47	Normal No Ice	0.00	0		

Section: 2 SST Bot Elev (ft): 20.00 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 4 1/2" SOLID	-270.81	Normal No Ice	20.03	25	25	25	53.4	31.7	504.82	0	0	0.00	0.00	53	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 3X3X0.1875	-9.35	90 deg No Ice	35.23	25	50	12	145.3	9.4	20.55	4	2	34.13	43.50	45	Member Y

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 4 1/2" SOLID	216.75	60 deg No Ice	50	636.10	0	0	0.00	0.00	34	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 3X3X0.1875	9.26	90 deg No Ice	36	55.74	4	2	34.13	43.50	27	Bolt Shear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	207.31	60 deg No Ice	0.00	0		
Top Compression	260.60	Normal No Ice	0.00	0		
Bot Tension	223.95	60 deg No Ice	621.94	36	6	1 1/2 A325
Bot Compression	281.53	Normal No Ice	0.00	0		

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Site Number: 50990
Location: Wanimingo, MN

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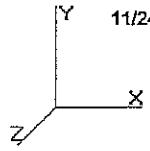

Force/Stress Summary

Section: 3 SST Bot Elev (ft): 40.00 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 4 1/2" SOLID	-248.73	Normal No Ice	20.03	25	25	25	53.4	31.7	504.82	0	0	0.00	0.00	49	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 3X3X0.1875	-9.13	90 deg No Ice	33.60	25	50	12	139.9	10.2	22.16	4	2	34.13	43.50	41	Member Y

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 4 1/2" SOLID	201.03	60 deg No Ice	50	636.10	0	0	0.00	0.00	31	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 3X3X0.1875	8.81	90 deg No Ice	36	55.74	4	2	34.13	43.50	25	Bolt Shear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	191.51	60 deg No Ice	0.00	0		
Top Compression	238.44	Normal No Ice	0.00	0		
Bot Tension	207.31	60 deg No Ice	621.94	33	6	1 1/2 A325
Bot Compression	260.60	Normal No Ice	0.00	0		

Section: 4 SST Bot Elev (ft): 60.00 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 4 1/4" SOLID	-226.52	Normal No Ice	20.03	25	25	25	56.6	31.1	440.58	0	0	0.00	0.00	51	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 3X3X0.1875	-8.66	90 deg No Ice	32.02	25	50	12	134.7	11.0	23.93	4	2	34.13	43.50	36	Member Y

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 4 1/4" SOLID	184.95	60 deg No Ice	50	567.38	0	0	0.00	0.00	32	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 3X3X0.1875	8.47	90 deg No Ice	36	55.74	4	2	34.13	43.50	24	Bolt Shear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	175.55	60 deg No Ice	0.00	0		
Top Compression	216.49	Normal No Ice	0.00	0		
Bot Tension	191.51	60 deg No Ice	522.67	37	6	1 3/8 A325
Bot Compression	238.44	Normal No Ice	0.00	0		

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Force/Stress Summary

Section: 5 SST — Bot Elev (ft): 80.00 — Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 4 1/4" SOLID	-204.87	Normal No Ice	20.03	25	25	25	56.6	31.1	440.58	0	0	0.00	0.00	46	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 2.5X2.5X0.1875	-8.22	90 deg No Ice	30.48	25	50	12	146.7	9.2	16.65	4	2	34.13	43.50	49	Member Y

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 4 1/4" SOLID	168.94	60 deg No Ice	50	567.38	0	0	0.00	0.00	29	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 2.5X2.5X0.1875	7.99	90 deg No Ice	36	44.72	4	2	34.13	43.50	23	Bolt Shear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	159.54	60 deg No Ice	0.00	0		
Top Compression	194.77	Normal No Ice	0.00	0		
Bot Tension	175.55	60 deg No Ice	522.67	34	6	1 3/8 A325
Bot Compression	216.49	Normal No Ice	0.00	0		

Section: 6 SST — Bot Elev (ft): 100.0 — Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 4" SOLID	-183.10	Normal No Ice	20.03	25	25	25	60.1	30.3	380.30	0	0	0.00	0.00	48	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 2.5X2.5X0.1875	-7.79	90 deg No Ice	29.00	25	50	12	141.0	10.0	18.03	4	2	34.13	43.50	43	Member Y

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 4" SOLID	152.56	60 deg No Ice	50	502.59	0	0	0.00	0.00	30	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 2.5X2.5X0.1875	7.56	90 deg No Ice	36	44.72	4	2	34.13	43.50	22	Bolt Shear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	143.44	60 deg No Ice	0.00	0		
Top Compression	173.48	Normal No Ice	0.00	0		
Bot Tension	159.54	60 deg No Ice	431.96	37	6	1 1/4 A325
Bot Compression	194.77	Normal No Ice	0.00	0		

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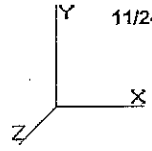

Force/Stress Summary

Section: 7 SST Bot Elev (ft): 120.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 3 3/4" SOLID	-162.33	Normal No Ice	20.03	25	25	25	64.1	29.3	324.02	0	0	0.00	0.00	50	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 2.5X2.5X0.1875	-7.33	90 deg No Ice	27.59	25	50	12	135.5	10.8	19.52	4	2	34.13	43.50	37	Member Y

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 3 3/4" SOLID	136.47	60 deg No Ice	50	441.76	0	0	0.00	0.00	30	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 2.5X2.5X0.1875	7.17	90 deg No Ice	36	44.72	4	2	34.13	43.50	21	Bolt Shear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	127.24	60 deg No Ice	0.00	0		
Top Compression	152.47	Normal No Ice	0.00	0		
Bot Tension	143.44	60 deg No Ice	349.89	41	6	1 1/8 A325
Bot Compression	173.48	Normal No Ice	0.00	0		

Section: 8 SST Bot Elev (ft): 140.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 3 3/4" SOLID	-141.05	Normal No Ice	20.03	25	25	25	64.1	29.3	324.02	0	0	0.00	0.00	43	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 2.5X2.5X0.1875	-7.00	90 deg No Ice	26.25	25	50	12	130.3	11.7	21.10	4	2	34.13	43.50	33	Member Y

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 3 3/4" SOLID	119.80	60 deg No Ice	50	441.76	0	0	0.00	0.00	27	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 2.5X2.5X0.1875	6.68	90 deg No Ice	36	44.72	4	2	34.13	43.50	19	Bolt Shear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	111.01	60 deg No Ice	0.00	0		
Top Compression	131.98	Normal No Ice	0.00	0		
Bot Tension	127.24	60 deg No Ice	349.89	36	6	1 1/8 A325
Bot Compression	152.47	Normal No Ice	0.00	0		

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Force/Stress Summary

Section: 9 SSTX-2 Bot Elev (ft): 160.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 3 1/2" SOLID	-126.44	Normal No Ice	10.02	50	50	50	68.7	28.2	271.67	0	0	0.00	0.00	46	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 2.5X2.5X0.1875	-4.44	90 deg No Ice	18.44	50	75	25	137.0	10.6	19.09	4	2	34.13	43.50	23	Member X

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 3 1/2" SOLID	108.58	60 deg No Ice	50	384.80	0	0	0.00	0.00	28	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 2.5X2.5X0.1875	4.46	90 deg No Ice	36	44.72	4	2	34.13	43.50	13	Bolt Shear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	96.78	60 deg No Ice	0.00	0		
Top Compression	112.40	Normal No Ice	0.00	0		
Bot Tension	111.01	60 deg No Ice	276.45	40	6	1 A325
Bot Compression	131.98	Normal No Ice	0.00	0		

Section: 10 SSTX-2 Bot Elev (ft): 180.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 3 1/4" SOLID	-107.65	Normal No Ice	10.02	50	50	50	74.0	26.9	223.32	0	0	0.00	0.00	48	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 2X2X0.1875	-3.96	90 deg No Ice	16.80	50	75	25	153.1	8.5	12.14	4	2	34.13	43.50	32	Member X

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 3 1/4" SOLID	93.69	60 deg No Ice	50	331.81	0	0	0.00	0.00	28	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG DAE - 2X2X0.1875	3.93	90 deg No Ice	36	33.99	4	2	34.13	43.50	11	Member

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	81.99	60 deg No Ice	0.00	0		
Top Compression	94.10	Normal No Ice	0.00	0		
Bot Tension	96.78	60 deg No Ice	276.45	35	6	1 A325
Bot Compression	112.40	Normal No Ice	0.00	0		

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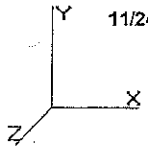

Force/Stress Summary

Section: 11 SSTX-2 Bot Elev (ft): 200.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 3" SOLID	-89.43	Normal No Ice	10.02	50	50	50	80.1	25.3	178.93	0	0	0.00	0.00	49	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 3X3X0.1875	-3.61	90 deg No Ice	15.24	50	75	50	145.5	9.4	10.25	2	1	17.06	21.75	35	Member Z

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 3" SOLID	78.73	60 deg No Ice	50	282.73	0	0	0.00	0.00	27	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 3X3X0.1875	3.59	90 deg Ice	36	27.87	2	1	17.06	21.75	21	Bolt Shear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	66.96	60 deg No Ice	0.00	0		
Top Compression	76.11	Normal No Ice	0.00	0		
Bot Tension	81.99	60 deg No Ice	211.66	39	6	7/8 A325
Bot Compression	94.10	Normal No Ice	0.00	0		

Section: 12 SSTX-3 Bot Elev (ft): 220.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 3" SOLID	-73.14	Normal No Ice	6.68	100	100	100	106.8	17.4	123.28	0	0	0.00	0.00	59	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 2X2X0.1875	-2.64	90 deg No Ice	11.74	50	75	50	164.9	7.3	5.24	2	1	17.06	21.75	50	Member Z

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 3" SOLID	65.02	60 deg No Ice	50	282.73	0	0	0.00	0.00	22	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 2X2X0.1875	2.63	90 deg No Ice	36	17.00	2	1	17.06	21.75	15	Member

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	52.36	60 deg No Ice	0.00	0		
Top Compression	58.86	Normal No Ice	0.00	0		
Bot Tension	66.96	60 deg No Ice	211.66	32	6	7/8 A325
Bot Compression	76.11	Normal No Ice	0.00	0		

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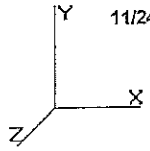

Force/Stress Summary

Section: 13 SSTX-3 Bot Elev (ft): 240.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 2 3/4" SOLID	-55.81	Normal No Ice	6.68	100	100	100	116.6	14.7	87.04	0	0	0.00	0.00	64	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 1.75X1.75X0.18	-2.49	90 deg Ice	10.16	50	75	50	164.0	7.4	4.59	2	1	10.99	17.40	54	Member Z

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 2 3/4" SOLID	50.01	60 deg No Ice	50	237.56	0	0	0.00	0.00	21	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 1.75X1.75X0.18	2.42	90 deg Ice	36	14.95	2	1	10.99	17.40	22	Bolt Shear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	36.22	60 deg No Ice	0.00	0		
Top Compression	40.68	Normal No Ice	0.00	0		
Bot Tension	52.36	60 deg No Ice	155.50	34	6	3/4 A325
Bot Compression	58.86	Normal No Ice	0.00	0		

Section: 14 SSTX-4 Bot Elev (ft): 260.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 2 1/4" SOLID	-38.25	Normal No Ice	5.01	100	100	100	106.8	17.4	69.34	0	0	0.00	0.00	55	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 1.75X1.75X0.18	-2.04	90 deg No Ice	7.621	50	75	50	130.2	11.7	7.29	2	1	10.99	17.40	28	Member Z

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 2 1/4" SOLID	34.31	60 deg No Ice	50	159.03	0	0	0.00	0.00	21	Member
HORIZ	0.00		0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 1.75X1.75X0.18	2.21	90 deg No Ice	36	14.95	2	1	10.99	17.40	20	Bolt Shear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	16.05	60 deg No Ice	0.00	0		
Top Compression	18.72	Normal No Ice	0.00	0		
Bot Tension	36.22	60 deg No Ice	107.99	34	6	5/8 A325
Bot Compression	40.68	Normal No Ice	0.00	0		

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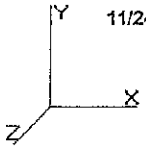

Force/Stress Summary

Section: 15 SSTX-4 Bot Elev (ft): 280.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 2" SOLID	-14.55	Normal No Ice	5.00	100	100	100	120.0	13.8	43.43	0	0	0.00	0.00	33	Member X
HORIZ SAE - 2X2X0.1875	-0.53	60 deg No Ice	4.000	100	100	100	121.8	13.4	9.55	1	1	8.53	10.87	6	Bolt Shear
DIAG SAE - 1.75X1.75X0.18	-3.05	90 deg No Ice	6.403	50	75	50	114.0	14.8	9.21	2	1	10.99	17.40	33	Member Z

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 2" SOLID	12.31	60 deg No Ice	50	125.65	0	0	0.00	0.00	9	Member
HORIZ SAE - 2X2X0.1875	0.51	Normal No Ice	36	17.00	1	1	8.53	10.87	5	Bolt Shear
DIAG SAE - 1.75X1.75X0.18	3.01	90 deg No Ice	36	14.95	2	1	10.99	17.40	27	Bolt Shear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0		
Top Compression	0.15	60 deg Ice	0.00	0		
Bot Tension	16.05	60 deg No Ice	71.99	22	4	5/8 A325
Bot Compression	18.72	Normal No Ice	0.00	0		

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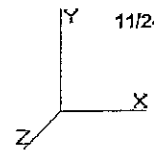

Support Forces Summary

(-) = Uplift (+) = Down

Load Case	Node	FX (kip)	FY (kip)	FZ (kip)
90 deg Ice	1b	-18.82	-190.09	-8.81
	1a	-20.98	248.27	9.92
	1	-3.67	29.09	-1.11
60 deg Ice	1b	-20.48	-220.68	-11.82
	1a	-13.35	153.97	4.05
	1	-3.17	153.97	-13.59
Normal Ice	1b	-8.85	-102.43	-8.94
	1a	8.85	-102.43	-8.94
	1	0.00	292.12	-27.81
90 deg No Ice	1b	-20.29	-208.83	-9.40
	1a	-22.27	251.30	10.37
	1	-4.16	21.24	-0.97
60 deg No Ice	1b	-21.87	-239.56	-12.63
	1a	-14.09	151.63	4.00
	1	-3.58	151.63	-14.20
Normal No Ice	1b	-9.69	-118.89	-10.01
	1a	9.69	-118.89	-10.01
	1	0.00	301.49	-29.94

Max Uplift:	239.56 (kip)	Moment:	7,766.62 (ft-kip)	Normal No Ice
Max Down:	301.49 (kip)	Total Down:	63.71 (kip)	
Max Shear:	29.94 (kip)	Total Shear:	49.95 (kip)	

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Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
80.00 mph Wind at 90 deg From Face with No Ice		1.7018	0.0664	0.7840
		0.0000	0.0000	0.0000

AFFIDAVIT OF SERVICE BY MAIL

RE: In the matter of Jason M. Seaverson,
PROFESSIONAL ENGINEER
License Number 43547

STATE OF MINNESOTA)
) ss.
COUNTY OF RAMSEY)

Lynette DuFresne, being first duly sworn, deposes and says:

That at the City of St. Paul, County of Ramsey and State of Minnesota, on this the 6th day of FEBRUARY, 2012, she served the attached **Stipulation and Order**, by depositing in the United States mail at said city and state, a true and correct copy thereof, properly enveloped, with first class and certified postage prepaid, and addressed to:

Mr. Jason M. Seaverson
30 Mackenzie Court
Fuquay Varina, North Carolina 27526

CERTIFIED MAIL
Return Receipt Requested
7010 0780 0001 5886 3262

Lynette DuFresne

Subscribed and sworn to before me on
this the 6th day of February, 2012.

(Notary Public)

BEVERLY A. CAREY
NOTARY PUBLIC
MINNESOTA
My Commission Expires Jan. 31 2015