

1. 6:00 P.M. Call To Order  
Hardin County Engineer's Office  
708 16th St.  
Eldora, IA 50627
2. Roll Call
3. Approval Of Agenda
4. Approval Of Minutes From Last Meeting

Documents:

[11-8-18 BOARD OF ADJUSTMENT MEETING MINUTES.PDF](#)

5. 6:01 P.M. Open Public Hearing
6. Public Hearing To Review And Act On The Request Of E.on Climate And Renewables For A Special Permit  
Review and Act on the Request of E.on Climate and Renewables for a Special Permit to Construct a 197' Temporary Meteorological Tower. Located: S1/2, N1/2, SE1/4, Section 18, Sherman Township

[MAP OF LOCATION](#)

Documents:

[E.ON MET TOWER APPLICATION.PDF](#)

7. Close Public Hearing
8. Decision On Application
9. Other Business
10. Adjournment



# HARDIN COUNTY

## Zoning Department

JESSICA SHERIDAN | ZONING ADMINISTRATOR  
1215 EDGINGTON AVE  
ELDORA, IA 50627  
641.849.7372  
JSHERIDAN@HARDINCOUNTYIA.GOV

### Hardin County Board of Adjustment Thursday, November 8, 2018 6:00 PM, Hardin County Engineer's Office

#### *Meeting Minutes*

**6:00 PM – Meeting called to order.**

**Roll call:** Ben Speck, Roger Sutton, Les Raisch, and James Sweeney were all present. Deb Crosser was absent.

Barry Anderson (Austin Powder Company), Daniel Sterk (Austin Powder Company), Chuck Palmcook (Austin Powder Company), Chad Skinner (FTC Tower Company), Jane Knutson (Iowa Falls Airport), and Kevin Knutson were also present.

**Agenda approval:** Les made a motion to approve the agenda, Ben seconded, motion passed.

**Minutes approval:** Les made a motion to approve the minutes from last meeting, James seconded, motion passed.

**6:05 PM – Roger opened the public hearing for the Austin Powder Company conditional use permit application.**

**Public hearing:** Barry Anderson and Chuck Palmcook gave a presentation about the company. Some people who may be employed at the site are a salesman, a clerk, a location manager, blasters, and laborers/truck drivers. They expect to start with 5 or 6 (local) employees and, depending on how the site does, employee up to 15 to 18 (local) employees. James Sweeney inquired as to whether the containment for fertilizer is sufficiently sized to hold a load fill if a valve were to fail. Barry answered that the material is not water soluble, and that while the containment will hold some material it is not full secondary containment. Another concern from James was the drainage tile (and potentially the fiber optic cable) which runs along the road west of the property. He was concerned about the weight of loads the company would be carrying. Austin Powder answered that they shouldn't be using the west road for access to the site. They will really only be using CO Hwy S27 for transport and access. Another concern was an evacuation plan, which the company says they always have in place in case of emergency. It was suggested that the company contact the Radcliffe and Buckeye fire chiefs to educate them on the site, etc.

**6:39 PM – Roger closed the public hearing for the Austin Powder Company conditional use permit application.**

**Decision on application:** Les made a motion to approve Austin Powder's conditional use permit application and allow them to build a "magazine site", contingent upon approval of rezoning from Agricultural to Manufacturing, Ben seconded, motion passed.

**6:40 PM – Roger opened the public hearing for the FTC Tower Company application for a conditional use permit (Buckeye).**

**Public hearing:** Chad Skinner addressed some questions from last meeting. As soon as the tower reaches maximum height, the tower will be lit. Jane Knutson asked why the new application said the tower will be 199' instead of 195'. Chad says the actual tower is only 195', but that they add a 4' lightning rod.



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**6:43 PM – Roger closed the public hearing for the FTC Tower Company application for a conditional use permit (Buckeye).**

**Decision on application:** James made a motion to approve the FTC Tower Company conditional use permit application for the Buckeye tower site, Les seconded, motion passed.

**6:44 PM – Roger opened the public hearing for the FTC Tower Company application for a conditional use permit (Hubbard).**

**Public hearing:** No discussion.

**6:44 PM - Roger closed the public hearing for the FTC Tower Company application for a conditional use permit (Hubbard).**

**Decision on application:** Ben made a motion to approve the FTC Tower Company conditional use permit application for the Hubbard tower site, Les seconded, motion passed.

**Other business:** None

**Adjournment:** Les made a motion to adjourn, James seconded, motion passed.

**Meeting adjourned at approximately 6:46 PM.**

HARDIN COUNTY ZONING  
Application for Special Permit

Fee: \$75.00

Application is hereby made by:	<u>Josh Odom -- Wind Development Manager (Agent)</u>
	<u>ECRNA; 353 N Clark St, 30th Fl; Chicago, IL 60654</u>
Describe operation or installation	<u>Install temporary 60-meter tall meteorological tower.</u>
On the following described parcel:	<u>The South Half of the North Half of the Southeast Quarter, Section 18, Township 87N, Range 22W. PIN: 872218400002.</u>

Lot or tract area	<u>39.21 Acres</u>	Average width of lot	_____
Height of structure	<u>197</u>	feet; number of stories	<u>N/A</u>
Dimensions from right-of-way or lot lines:			
Front	<u>E: 2,300+</u>	feet; Rear	<u>W: 220+</u> feet; Side
			<u>N: 220+</u> feet; Side
			<u>S: 400+</u> feet

The undersigned applicant certifies under oath and under the penalties of perjury that the foregoing information is true and correct.

William Hinderaker and Jan Hinderaker  
Owner

Josh Odom  
Agent

Print Form

<i>Office Use Only</i>	
Permit is granted to proceed in accordance with information shown on this application and receipt of \$ _____ fee is acknowledged.	
Date approved:	_____
_____ Hardin County Zoning Administrator	

\*Show a sketch of tract or lot on Form No. 2, with dimensions, proposed buildings, yards, etc.\*  
All fees are non-refundable.

March 25, 2019

Mrs. Jessica Sheridan  
Zoning Administrator  
1215 Edgington Ave, Suite 5  
Eldora, IA 50627

Re: Letter of Authorization

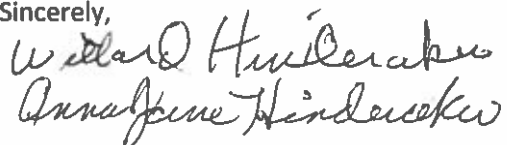
Property Address:	~24001-24999 Co Rd S21 (approximately 1665' N of 250 <sup>th</sup> St)
Legal Description:	S/2 N/2 SE/4 of 18-87N-22W
Assessor Parcel Numbers:	872218400002

Dear Mrs. Sheridan,

I, Willard and Anna Hinderaker, are the owners of the above described real property.

I authorize Josh Odom of E.ON Climate & Renewables North America, LLC to act as an agent on our behalf for the purpose of filing a Special Permit Application to erect a temporary meteorological tower on said property, subject to the approval of your office.

Sincerely,



Willard & Anna Hinderaker  
606 Isabella  
Radcliffe, IA 50230





### Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V\_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

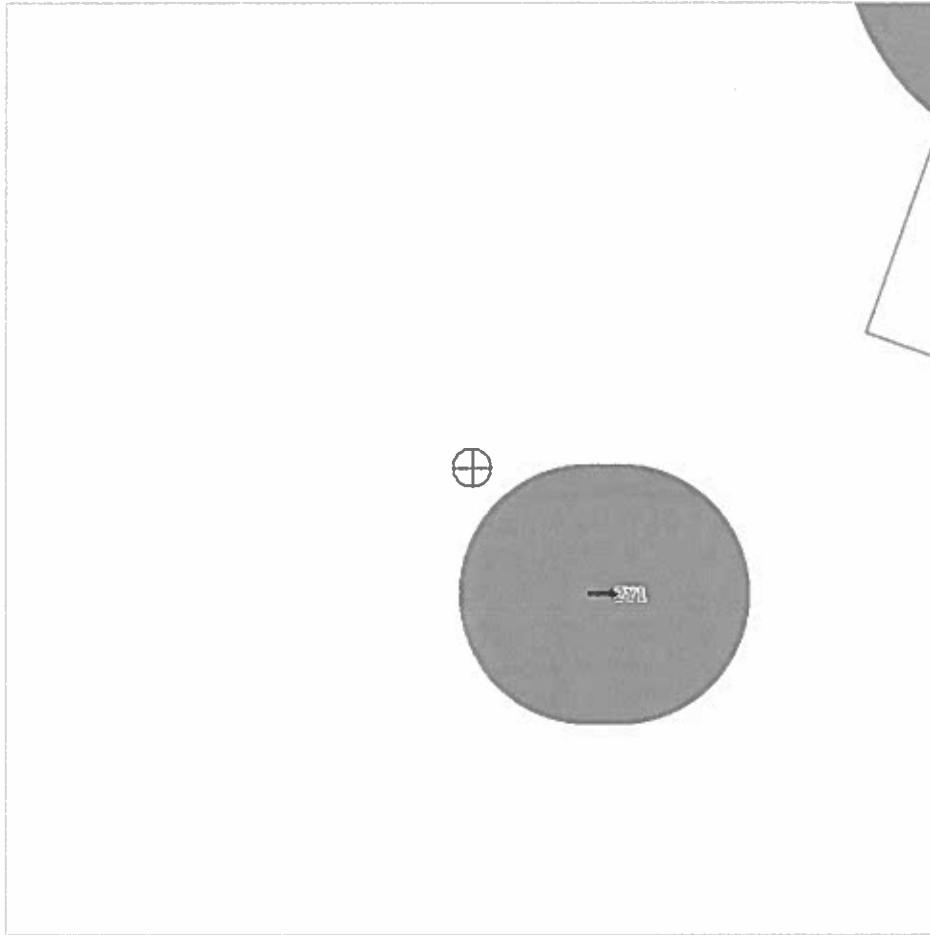
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

Latitude:	<input type="text" value="42"/> Deg <input type="text" value="20"/> M <input type="text" value="39.31"/> S <input type="button" value="N"/> <input type="button" value="v"/>
Longitude:	<input type="text" value="93"/> Deg <input type="text" value="27"/> M <input type="text" value="11.42"/> S <input type="button" value="W"/> <input type="button" value="v"/>
Horizontal Datum:	<input type="button" value="NAD83"/> <input type="button" value="v"/>
Site Elevation (SE):	<input type="text" value="1191"/> (nearest foot)
Structure Height :	<input type="text" value="197"/> (nearest foot)
Traverseway:	<input type="button" value="No Traverseway"/> <input type="button" value="v"/> (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway
Is structure on airport:	<input checked="" type="radio"/> No <input type="radio"/> Yes

### Results

You do not exceed Notice Criteria.



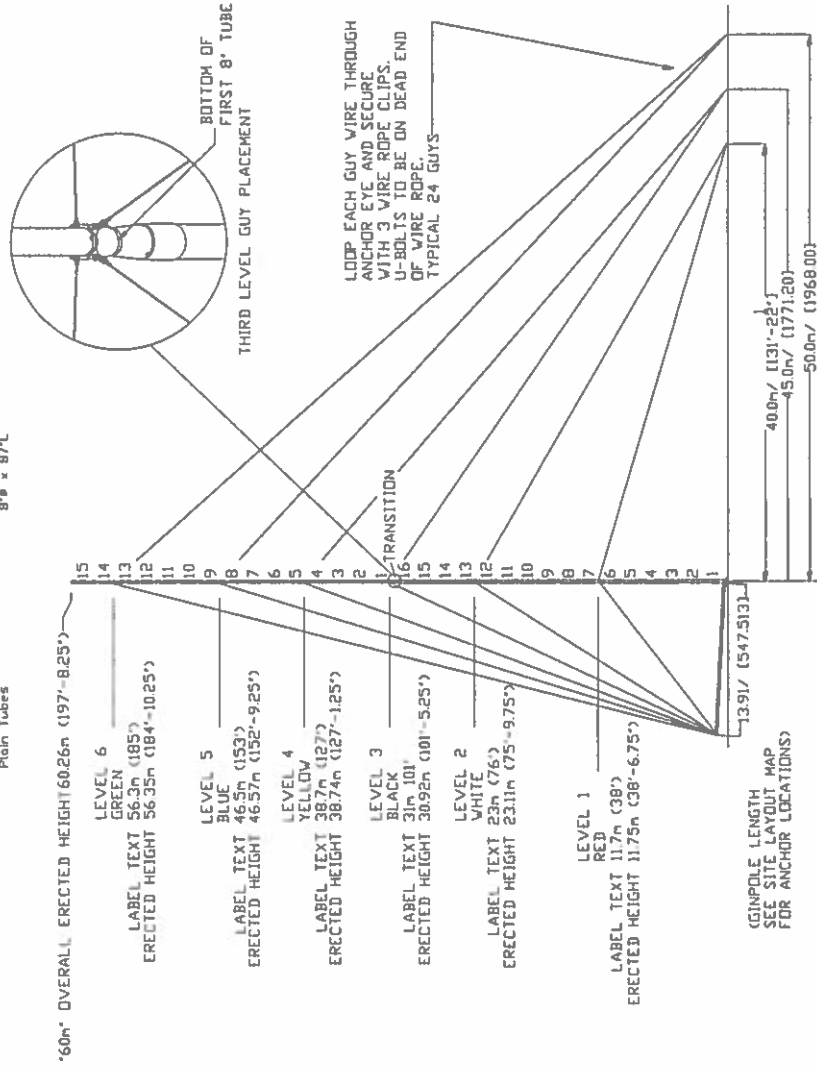


60m XHD with  
Standard Footprint

## Tower Layout

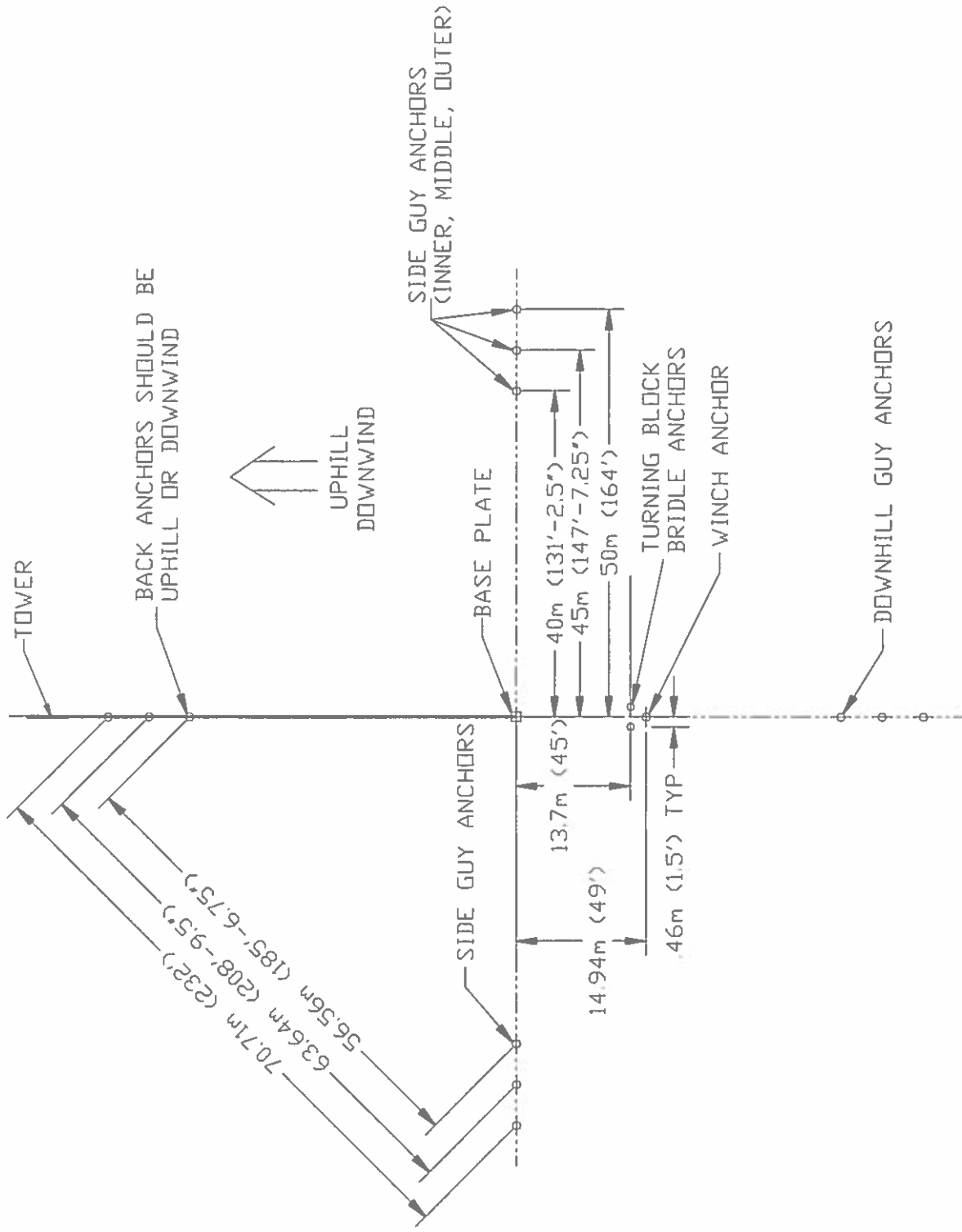
### TUBE SPECS (in order of assembly)

Tower:  
 Base Tube (with pivot pin hole) 10' 9" x 87'L (1 tube)  
 Plain Tubes (short) 10' 9" x 87'L (4 tubes)  
 Plain Tubes (short) 10' 9" x 73'L (1 tube)  
 Plain Tubes 8'9" x 87'L (15 tubes)  
 Gin Pole:  
 Base Tube (with pivot pin hole) 8'9" x 87'L  
 Plain Tubes 8'9" x 87'L



60m XHD with  
Standard Footprint

**Site Layout**



60m XHD with Standard Footprint

Stamped Drawing

Materials						
	Outer Diameter	Wall Thickness	Description	Yield Strength	Breaking Strength	Corrosion Protection
1	10 inch	0.089 inch	MT 1020	45.0 ksi	N/A	Hot Dipped Galvanized
2	25.1 mm	2.31 mm		310 MPa		
1	8 inch	0.089 inch	MT 1020	45.0 ksi	N/A	ASTM A53
	203 mm	2.31 mm		310 MPa		
3	10-8 inch laser	0.102 inch	MT 1016	48.0 ksi	N/A	
	254-203 mm	2.6 mm		310 MPa		
4	0.25 inch	N/A	7x19 Galv	N/A	7000 lb	Galvanized
	6.35 mm		Alumal		31.1 kN	

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	Initial release	1 July 2007	A Booth
B	Revised drawing to match NEMA Release 6.0	29 Apr 2010	A Booth

	Reactions and member forces									
	No ice		6.4mm (1/4") ice		12.7mm (1/2") ice		19 mm (3/4") ice		25 mm(1") ice	
	Imperial	SI	Imperial	SI	Imperial	SI	Imperial	SI	Imperial	SI
10 m (33 feet) wind velocity (Fastest mile)	111 mph	49.6 m/s	83 mph	37.1 m/s	88 mph	39.5 m/s	81 mph	36.3 m/s	33 mph	14.8 m/s
Top of tower wind velocity (Fastest mile)	143 mph	64.1 m/s	107 mph	47.8 m/s	85 mph	38.1 m/s	86 mph	39.4 m/s	43 mph	19.1 m/s
Radial ice thickness	0 in	0 mm	0.25 in	6.35 mm	0.50 in	12.7 mm	0.75 in	19.1 mm	1.00 in	25.4 mm
Inner guy anchor force (angle from horizontal)	4.2 kLb	18.7 kN	2.4 kLb	10.7 kN	2.2 kLb	9.7 kN	2.1 kLb	8.3 kN	2.1 kLb	8.2 kN
Middle guy anchor force (angle from horizontal)	3.5 kLb	15.7 kN	2.4 kLb	10.8 kN	2.2 kLb	9.7 kN	2.2 kLb	10.0 kN	2.2 kLb	8.9 kN
Outer guy anchor force (angle from horizontal)	8.1 kLb	36.2 kN	4.2 kLb	18.7 kN	3.8 kLb	16.7 kN	3.0 kLb	13.4 kN	2.8 kLb	11.8 kN
Tower base force (Note K) (horizontal - during erection)	8.2 kLb	36.5 kN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tower base force (vertical)	12.2 kLb	54.5 kN	16.8 kLb	73.9 kN	18.8 kLb	82.6 kN	18.8 kLb	88.8 kN	22.1 kLb	98.2 kN
Erection anchor force (Note K) (angle from horizontal)	7.2 kLb	32.0 kN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Maximum guy tension	2.8 kLb	12.8 kN	2.4 kLb	10.7 kN	2.2 kLb	9.8 kN	1.7 kLb	7.5 kN	1.8 kLb	8.0 kN
Maximum tower tube stress (compression)	15.1 ksi	104 MPa	11.8 ksi	79 MPa	11.0 ksi	78 MPa	8.8 ksi	62 MPa	8.3 ksi	58 MPa
Maximum tower tube stress (tension)	13.8 ksi	96.8 MPa	8.2 ksi	57 MPa	4.1 ksi	29 MPa	2.8 ksi	18 MPa	1.1 ksi	7 MPa
Maximum tower tube moment	75 in-kLb	8.4 kN-m	37 in-kLb	4.2 kN-m	28 in-kLb	3.2 kN-m	19 in-kLb	2.2 kN-m	0.9 in-kLb	1.1 kN-m
Maximum tower tube axial load	12.2 kLb	54.4 kN	16.8 kLb	73.9 kN	18.8 kLb	82.6 kN	18.8 kLb	88.8 kN	22.1 kLb	98.1 kN
Maximum top deflection	32 inches	812 mm	28 inches	687 mm	23 inches	582 mm	12 inches	312 mm	6 inches	153 mm
Initial guy tension	0.18 kLb	0.8 kN	0.18 kLb	0.8 kN	0.18 kLb	0.8 kN	0.18 kLb	0.8 kN	0.18 kLb	0.8 kN

**Notes**

A) Wind forces and allowable member loads are calculated using ANSI/TIA/EIA-222-F, (1996), "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures".

B) Wind speeds are fastest mile wind velocity per EIA-222-F. EIA-222-F wind loading coefficients:  $C_w=1.89$ ,  $C_d=1.0$ ,  $\alpha=2/7$ .

C) Fastest mile (fm) wind speed can be converted to an approximate three second (3sec) wind speed using the equation:  
 $V(3sec) = 1.22 V(fm)$  for  $V(fm) \leq 100$  mph

D) Guy joint efficiency = 0.9 and the guy safety factor is greater than or equal to 2.0.

E) An ANSYS large deflection FEA model using beam (Pipe18) and tension (Link10) elements with distributed wind load was used to calculate member forces and reactions.

F) Tower allowable stress design per American Institute of Steel Construction (AISC), "Allowable Stress Design", 9th Ed. 1989, Chapter I, equations H1-1, H1-2

G) This tower design meets the structural requirements of EIA-222-F, sections 1.2, 3.6.8 for the given loading condition. This analysis does not apply to EIA-222-F sections 7.11, 12.13.

H) Foundation design must be considered separately and is not a part of this analysis. Foundation details must be approved for the specific application and site by a qualified professional.

I) A locally qualified professional must determine the applicability of this analysis for the expected site conditions. Due to the lack of involvement in the siting or construction phase of this product at a specific location, liability is strictly limited to issues arising from negligence or willful misconduct by NRG or the professional engineer completing this analysis. No warranty, expressed or implied, is made concerning the suitability of this product for a given application or location.

J) Given dimensions are nominal. Actual dimensions may vary.

K) Erection forces are at zero wind speed and do not include any lower appendances.

**Units notation**

mm - Millimeters  
 m - Meters  
 m/s - Meters per second  
 kN - 1,000 Newtons  
 MPa - 1,000,000 Pascals  
 kLb - 1,000 US pounds  
 ksi - 1,000 US pounds per inch<sup>2</sup>  
 mph - Miles per hour  
 Ø - Diameter

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS MILLIS X 8 .030 ± 1/16 .015 ± .008 ± .1		THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF NRG SYSTEMS INC. AND SHALL BE KEPT CONFIDENTIAL. NO PORTION OF THE SAME SHALL BE REPRODUCED OR USED WITHOUT THE EXPRESS WRITTEN PERMISSION OF NRG SYSTEMS INC.		<b>NRG SYSTEMS INC</b> 110 RIGGS RD, HINESBURG, VT, 05481 60(50)mHD_60m with Large Footprint 254, 203 mm (10.0, 8.0 inch) diameter tube	
DO NOT SCALE DRAWING		APPROVALS	DATE		
DESIGN: JRM	CHECK: APB	DATE: 06/27/07	DATE: 07/04/07	REV: B	DATE: N/A
PART: NTS		REV: B		PAGE: 1 of 1	