TOWER ANALYSIS-200 FT. TYPE 340 GUYED TOWER

SITE: GUNNISON, COLORADO

GUNNISON COUNTY

10–05–11

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Tower Analysis- Gunnison, Colorado- 200' Guyed Tower-KVLE
Gunnison County

Authorization:

This structural analysis was authorized by Mr. Roy Miller of ETTower, Colorado Springs, CO. on 7-06-11. This analysis is to add a 4' dish at 90' and a 2' dish at 25' for Verizon Wireless.

Description of Tower:

The structure is a 200' UTC Type 340 guyed tower. The tower manufacturer is Utility Tower Co. of Oklahoma City, OK. The tower was sold to Mountain Valley Broadcasting and erected in 1980. The tower has guy wire insulators and a base insulator.

The tower is welded construction and has a face width of 18" center to center of leg members.

The design is triangular lattice type with single laced diagonal bracing, 10 bays per 20ft. section.

The tower has a tapered base.

There are three guy wire elevations and the tower has a single anchor system at 124' average radius at 120 degree intervals.

Materials of Fabrication:

Leg Members:

Elevation	Size	Material
0' – 200'	2" Std. Pipe	A53B

Diagonal Members:

Elevation	Size	Material
0' – 200'	1/2" Std. Pipe	A53B

Materials of Fabrication-continued:

Horizontal Members:

Elevation	Size	Material
0' – 200'	1/2" Std. Pipe	A53B

Existing Guy Wire System:

Elevation	Size & Type	Ultimate Strength
60' Torque stab.	3/8" EHS	15.4 k
120'	3/8" EHS	15.4 k
180'	3/8" EHS	15.4 k

Method of Analysis:

The tower was analyzed using "Risa Tower" computer program for lattice type guyed structures.

The tower was examined for Gunnison County, Colorado and conformance with ANSI/TIA/EIA-222-G, 90 MPH wind with no radial ice. The wind is applied to structure and tower appurtenances in accordance to EIA standards.

Existing and Proposed Loading:

Load	Qty	Elev.	Waveguide	Mount
2 Bay FM /Radomes	1	193' COR	1 5/8"	Leg
4' Dish	1	90'	1 5/8"	Std.
2' Dish	1	25'	1 5/8"	Std.

A light kit is included.

Results of Analysis:

Guy Wires:

Elevation	% Capacity
60'	39.5
120'	47.8
180'	59.2

Leg Members:

Elevation	% Capacity
0' – 200'	71.9

Diagonal Members:

Elevation	% Capacity
0' – 200'	55.1

Horizontal Members:

Not load carrying.

Summary:

All structural members are satisfactory.

Foundations:

There were no foundation drawings in the original file however we know the anchor shaft is a 3" beam with a capacity of 45 kips. The load is only 13.1 kips.

Assumptions made for this analysis include the following:

1. The fasteners will meet the strength of the relative members.
2. The tower guy wires have an initial tension of 10% of their breaking strength.
3. All leg steel is A53B pipe all bracing is A53B pipe.
4. The guy wires are standard EHS type.
5. The tower has no damage.
6. Tower site is relatively level.

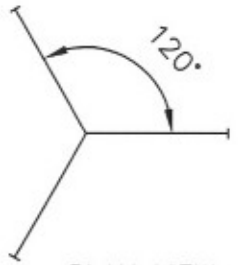
The general condition of the tower must be considered anytime additional loading is being considered. Rust, corrosion, damage, etc. could cause problems.

It is the responsibility of the tower owners and representatives to verify the tower loading.

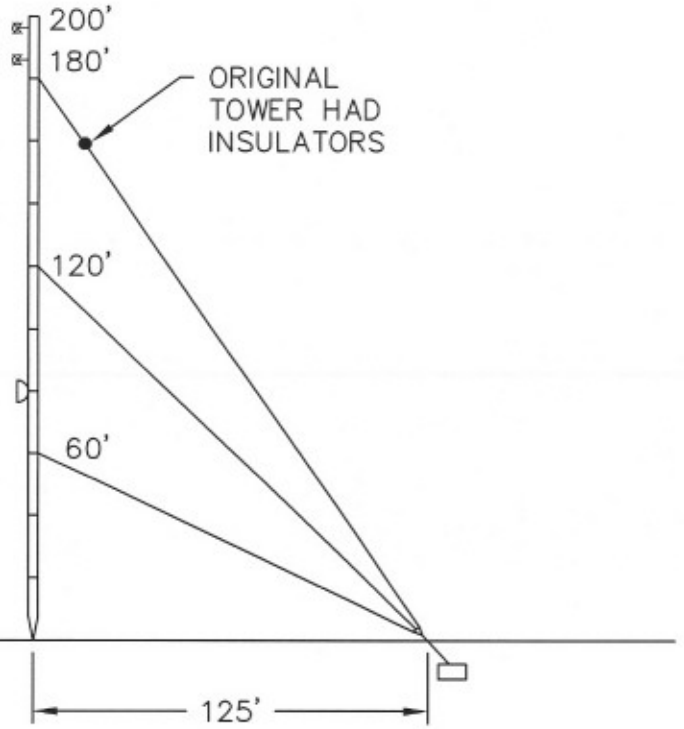
The tower information to perform this analysis was provided by Mr. Roy Miller of ETTower and Utility Tower Co. original file 80-108.

GUYWIRES						ANTENNAS			
ELEV.	QTY.	SIZE	CORD LENGTH	CUT LENGTH	INITIAL TENSION	TYPE ANTENNA	QTY.	ELEV.	LINE
60'	6	3/8" EHS			1.54	BEACON	1	200'	–
120'	3	3/8" EHS			1.54	2 BAY FM w/ RADOME	1	193' COR	1 5/8"
180'	3	3/8" EHS			1.54	* 4' DISH	1	90'	1 5/8"
						* 2' DISH	1	25'	1 5/8"

* PROPOSED ANTENNAS



PLAN VIEW



TOWER	GIRTS	DIAGS	LEGS
18" – SINGLE LACED – 10 BAY	1"ø x .133" STD PIPE	1/2"ø x .109" STD PIPE	2"ø x .154" STD PIPE

GENERAL NOTES:

1. TOWER IS LOCATED IN GUNNISON COUNTY, COLORADO.
2. TOWER IS ANALYZED FOR EXPOSURE C TO THE TIA/EIA-222-G STANDARD.
3. TOWER IS ANALYZED FOR A 99 MPH BASIC WIND IN ACCORDANCE WITH THE TIA/EIA-222-G STANDARD.
4. DEFLECTIONS ARE BASED ON A 60 MPH WIND.

ORIGINAL UTILITY TOWER
FILE NO. 80/108

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GUNNISON COUNTY

DRAWN BY	DATE	JOB#
TK	10-05-11	

NO	DATE	REVISION	BY

DRAWING NO. GCO1011UR