



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: [siting.council@po.state.ct.us](mailto:siting.council@po.state.ct.us)

[www.ct.gov/csc](http://www.ct.gov/csc)

April 21, 2005

Kenneth C. Baldwin  
Robinson & Cole LLP  
280 Trumbull Street  
Hartford, CT 06103-3597

RE: **EM-VER-115-151-050404** -Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at Farndale Road, Waterbury and 178 New Haven Road, Prospect, Connecticut.

Dear Attorney Baldwin:

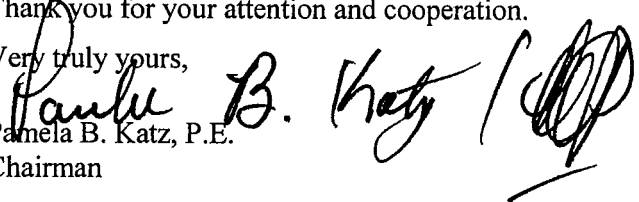
At a public meeting held on April 19, 2005, the Connecticut Siting Council (Council) acknowledged your notice to modify these existing telecommunications facilities, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the condition that the modifications to the tower at the Farndale Drive, Waterbury site are performed per drawing CT-0012-M1 of the structural analysis report sealed by Jason Seaverson, P.E. prior to the antenna swap.

The proposed modifications are to be implemented as specified here and in your notice dated April 4, 2005, and additional information received April 5, 2005, including the placement of all necessary equipment and shelters within the tower compounds. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to existing facility sites that would not increase tower heights, extend the boundaries of the tower sites, increase noise levels at the tower site boundaries by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundaries to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. These facilities have also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on these towers.

This decision is under the exclusive jurisdiction of the Council. Any additional change to these facilities will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

  
Pamela B. Katz, P.E.

Chairman

PBK/laf

- c: The Honorable Michael J. Jarjura, Mayor, City of Waterbury
- Gil Grabeline, Zoning Enforcement Officer, City of Waterbury
- The Honorable Robert J. Chatfield, Mayor, Town of Prospect
- William J. Donovan, Zoning Enforcement Officer, Town of Prospect
- Jonathan Roush, Site Marketing Manager, Northeast, SBA Network Services, Inc.
- Melanie Girton, Property Management Dept., Spectrasite Communications
- Christopher B. Fisher, Esq., Cuddy & Feder LLP
- Thomas F. Flynn III, Nextel Communications Inc.

280 Trumbull Street  
Hartford, CT 06103-3597  
Main (860) 275-8200  
Fax (860) 275-8299  
kbaldwin@rc.com  
Direct (860) 275-8345

April 4, 2005  
**RECEIVED**  
APR - 4 2005

*Via Hand Delivery*

S. Derek Phelps  
Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

CONNECTICUT  
SITING COUNCIL

Re: **Notice of Exempt Modification – Antenna Swap  
Farmdale Road, Waterbury, CT  
178 New Haven Road, Prospect, CT**

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains a wireless telecommunications facility at each of the sites referenced above. As described below, Cellco now intends to modify each facility.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to chief executive officer in each affected municipality.

**Farmdale Road Facility, Waterbury, CT**

Cellco’s existing Farmdale Road facility consists of twelve (12) cellular antennas on a tower owned by SpectraSite. Cellco now intends to modify its facility by removing all twelve (12) cellular antennas and installing nine (9) new cellular antennas and six (6) PCS antennas, for a total of fifteen (15) antennas, at the same level on the tower. Attached behind Tab 1 are specifications for the existing cellular antennas and the proposed cellular and PCS antennas for the facility; a new general power density table; and a structural analysis confirming that, following the reinforcement of the structure, the tower will be able to support the existing and proposed antennas and related equipment.



*Law Offices*

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HART1-1243745-1

S. Derek Phelps  
April 4, 2005  
Page 2

**New Haven Road Facility, Prospect, CT**

Cellco's existing New Haven Road facility consists of twelve (12) cellular antennas on a tower owned by SBA Communications. Cellco now intends to modify its facility by replacing six (6) cellular antennas with six (6) PCS antennas at the same level on the tower. Attached behind Tab 2 are specifications for the existing cellular antennas and the proposed PCS antennas for the facility and a new general power density table.

The planned modifications to each of these facilities fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in any increase in the overall height of the existing structure. Cellco's replacement antennas will be mounted at the same level on the tower.
2. The proposed modifications will not affect ground-mounted equipment and will not require the extension of the site boundaries.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more.
4. The proposed modifications will not result in radio frequency (RF) power density levels at the facility that exceed the Federal Communications Commission (FCC) adopted safety standard.

For the foregoing reasons, Cellco respectfully submits that the proposed modifications to the above-referenced telecommunications facilities constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,



Kenneth C. Baldwin

Enclosures

cc: Michael J. Jarjura, City of Waterbury Mayor  
Robert J. Chatfield, Town of Prospect Mayor  
Sandy M. Carter



**DECIBEL<sup>®</sup>**  
Base Station Antennas

**DB844G65ZAXY**

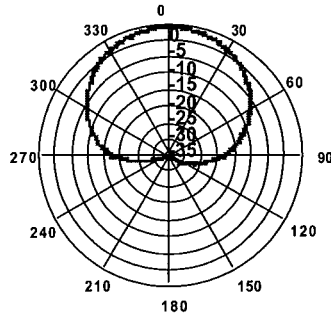
13.5 dBd, Directed Dipole, No Screen Antenna  
806-896, 870-960 MHz

806-896 MHz  
870-960 MHz

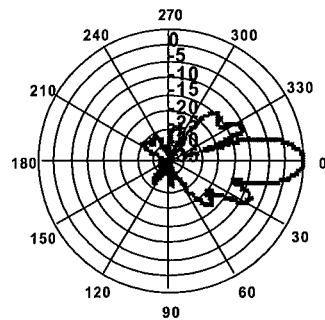
**GEN3VPOL™**  
ZoneMaster™

- Excellent azimuth roll-off, reducing sector to sector interference and reducing soft hand-offs
- Air dielectric feed system, no screws, rivets, welds or solder in RF element feed path
- Strong upper side lobe suppression
- Low profile appearance and low wind loading profile for easier zoning approvals

650



Horizontal 880 MHz (Tilt=0)



Vertical 880 MHz (Tilt=0)



**ELECTRICAL**

**MECHANICAL**

Frequency (MHz):	806-896	870-960
Polarization:	Vertical	Vertical
Gain (dBd/dBi):	13.5/15.6	13.8/15.9
Azimuth BW:	65°	65°
Elevation BW:	15°	15°
Beam Tilt:	0°	0°
USLS* (dB):	>15	>15
Null Fill* (dB):	20-25	20-25
Front-to-Back Ratio* (dB):	40	40
VSWR:	<1.33:1	<1.33:1
Impedance:	50 Ohms	50 Ohms
Max Input Power:	500 Watts	500 Watts
Lightning Protection:	DC Ground	DC Ground
Opt Electrical Tilt:	6°	6°

Weight:	12 lbs (5.4 kg)
Dimensions (LxWxD):	48 X 10 X 8.5 in (1219 X 254 X 216 mm)
Max. Wind Area:	0.97 ft <sup>2</sup> (0.09 m <sup>2</sup> )
Max. Wind Load (@ 100mph):	53 lbf (236 N)
Max. Wind Speed:	125 mph (201 km/h)
Radiator Material:	Aluminum
Reflector Material:	Aluminum
Radome Material:	ABS, UV Resistant
Mounting Hardware Material:	Galvanized Steel
Connector Type:	7-16 DIN-Female (Back)
Color:	Light Gray
Standard Mounting Hardware:	DB380 Pipe Mount Kit, included
Downtilt Mounting Hardware:	DB5083, optional
Opt. Mounting Hardware:	DB5084-AZ Azimuth Wall Mount



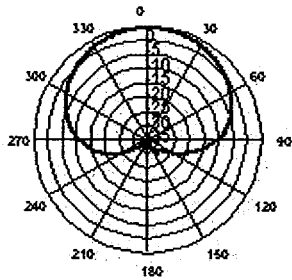
Andrew Corporation  
8635 Stemmons Freeway  
Dallas, Texas U.S.A 75247-3701  
Tel: 214.631.0310

Fax: 214.631.4706  
Toll Free Tel: 1.800.676.5342  
Fax: 1.800.229.4706  
www.andrew.com

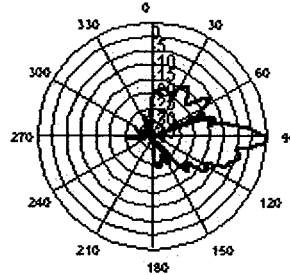
Warranty: Five years  
Date: 4/23/2004  
\* - Indicates Typical Values

[dbtech@andrew.com](mailto:dbtech@andrew.com)

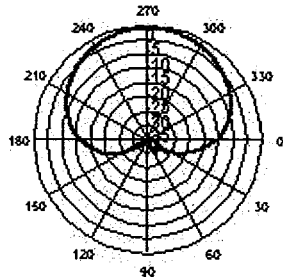
<b>DECIBEL'</b> Base Station Antennas	<b>948F85T2E-M</b> 16.1 dBi, Directed Dipole Antenna 1850-1990 MHz	<b>1850-1990 MHz</b>
		<b>MaxFill™</b> <b>dB Director®</b>
<ul style="list-style-type: none"> <li>• Exceptional azimuth roll-off reducing soft hand-offs and improving capacity</li> <li>• Excellent upper side lobe suppression</li> <li>• Deep null filling below the horizon assures improved signal intensity</li> <li>• Low profile appearance and low wind loading profile for easier zoning approvals</li> </ul>		<b>85°</b>



Azimuth 1850 MHz (Tilt=2)



Vertical 1850 MHz (Tilt=2)



Horizontal 1850 MHz (Tilt=2)



ELECTRICAL		MECHANICAL	
<b>Frequency (MHz):</b>	1850-1990	<b>Weight:</b>	8.5 lbs (3.9 kg)
<b>Polarization:</b>	Vertical	<b>Dimensions (LxWxD):</b>	48 X 3.5 X 7 in (1219 X 89 X 178 mm)
<b>Gain (dBd/dBi):</b>	14/16.1	<b>Max. Wind Area:</b>	1.18 ft <sup>2</sup> (0.11 m <sup>2</sup> )
<b>Azimuth BW:</b>	85°	<b>Max. Wind Load (@ 100mph):</b>	65 lbf (289 N)
<b>Elevation BW:</b>	8°	<b>Max. Wind Speed:</b>	125 mph (201 km/h)
<b>Beam Tilt:</b>	2°	<b>Radiator Material:</b>	Low Loss Circuit Board
<b>USLS* (dB):</b>	>18	<b>Reflector Material:</b>	Aluminum
<b>Null Fill* (dB):</b>	15	<b>Radome Material:</b>	ABS, UV Resistant
<b>Front-to-Back Ratio* (dB):</b>	40	<b>Mounting Hardware Material:</b>	Galvanized Steel
<b>VSWR:</b>	<1.33:1	<b>Connector Type:</b>	7-16 DIN - Female (Bottom)
<b>IM Suppression - Two 20 Watt Carriers:</b>	-150 dBc	<b>Color:</b>	Light Gray
<b>Impedance:</b>	50 Ohms	<b>Standard Mounting Hardware:</b>	DB390 Pipe Mount Kit, included
<b>Max Input Power:</b>	250 Watts	<b>Downtilt Mounting Hardware:</b>	DB5098, optional
<b>Lightning Protection:</b>	DC Ground	<b>Opt. Mounting Hardware:</b>	DB5094-AZ Azimuth Wall Mount
<b>Opt Electrical Tilt:</b>	0°, 4°, 6°		



**Andrew Corporation**  
8635 Stemmons Freeway  
Dallas, Texas U.S.A 75247-3701  
Tel: 214.631.0310

Fax: 214.631.4706  
Toll Free Tel: 1.800.676.5342  
Fax: 1.800.229.4706  
www.andrew.com

Date: 4/29/2004  
\* - Indicates Typical Values

dbtech@andrew.com



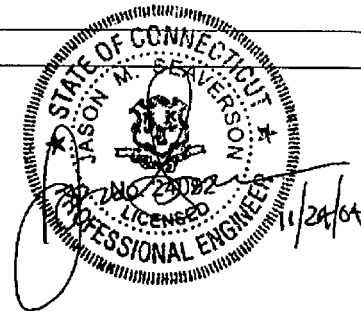
CT-0012  
11/24/2004

Structural Analysis Summary	
Tower Site	CT-0012 Waterbury
Application ID	104215-0
Address	Farmdale Drive Waterbury, CT 06708
Tower Height & Type	150.0 ft ITT Meyer Guyed Monopole
Building Code	ANSI/TIA/EIA-222-F (1996) 85 mph (New Haven County) w/ 0" radial ice 1996 BOCA National Building Code 85 mph w/ 0" radial ice 40 mph w/ 3/4" radial ice

Tower Information	
Tower Geometry	Tower Mapping completed by Smith Cullum, Acquisition Number CT-0012, dated 06/07/2001. Guy Design by AT&T, Drawing Number H847-596, dated 05/1994.
Foundation	Girard & Co. Engineers Drawing Number 38926, dated 07/10/1984. Anchor Design by AT&T, Drawing Number H847-596, dated 05/1994.

Results Summary*	
Tower Structure	<i>Inadequate; See Conclusions and Recommendations</i>
Guy Wires	<i>Inadequate; See Conclusions and Recommendations</i>
Splice Bolts	<i>Adequate</i>
Splice Plate	<i>Adequate</i>
Anchor Bolts	<i>Adequate</i>
Base Plate	<i>Adequate</i>
Base Foundation	<i>Adequate</i>
Anchors	<i>Adequate</i>

\* See following pages for detailed analysis results.



Analysis prepared by:  
Bryan Lanier, E.I.  
Project Engineer  
Contact (919) 466-5777  
with any questions.

Jason M. Scaverson, P.E.  
Senior Design Engineer

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Connecticut.

CT-0012  
11/24/2004

### 1.0 Introduction

A structural analysis was performed on the above noted tower for the addition of proposed antennas as listed. The analysis consisted of applying the forces caused by the existing and proposed loads, and determining the resulting stresses in the structure and its foundation.

ELEVATION (Ft. A.G.L.)	ANTENNA	CARRIER	COAX	I/O*	NOTES
161 156	(1) Decibel DB589T3Y (1) Generic Yagi on Platform w/ Handrails	Arch Paging	(1) 1-5/8" (1) 1/2"	I	Existing
152	(10) CSS DU04-8670 on Platform w/Handrails	Cingular	(10) 1-1/4"	I	Existing
145	(6) Allgon 7250.03 on Low Profile Platform	AT&T	(12) 1-5/8"	O	Proposed
147	(2) Gabriel DFPD2-52 on Pipe Mounts	Verizon	(2) 5/8"	O	Remove Existing
129	(4) Allgon 7120.16.05 (4) Allgon 7130.14.05 (4) EMS RV90-11-00DAL2 on Platform w/Handrails	Verizon	(12) 7/8"	O	Remove Existing
129	(9) Decibel DB844G65ZAXY (6) Decibel 948F85T2E-M on Platform w/Handrails	Verizon	(15) 1-5/8"	O	Proposed Replacement
120	(1) Gabriel DFPD2-52 on Pipe Mount	Verizon	(1) 5/8"	O	Remove Existing

\* I/O denotes coax installed inside or outside of monopole respectively.

### 2.0 Detailed Analysis Results

#### 2.1 Monopole Member Stress Levels

ELEVATION	STRESS RATIO*
110 to 150	1.16***
Splice Bolts	0.83
Splice Plates	0.99
71.5 to 110	0.94
33.6 to 71.5	0.18
0 to 33.6	0.15
Anchor Bolts	0.11
Base Plate	0.03

\* Maximum Stress Ratio: 1.00=Full Allowable.

\*\*Overstressed; Considered Acceptable.

\*\*\*Overstressed; Reinforcing Required.

CT-0012  
11/24/2004

2.2 Guy Wire Stress Levels

ELEVATION	CURRENT ANALYSIS*
115	1.20**

\*Maximum Stress Ratio: 1.00=Full Allowable (Based on safety factor of 2.0).

\*\*Overstressed; Reinforcing Required.

2.3 Foundation Stress Levels

BASE REACTIONS	MAXIMUM	RESULT*
Shear (kips)	5.8	Adequate
Moment (kip-feet)	207.7	Adequate
Compression (kips)	61.8	Adequate

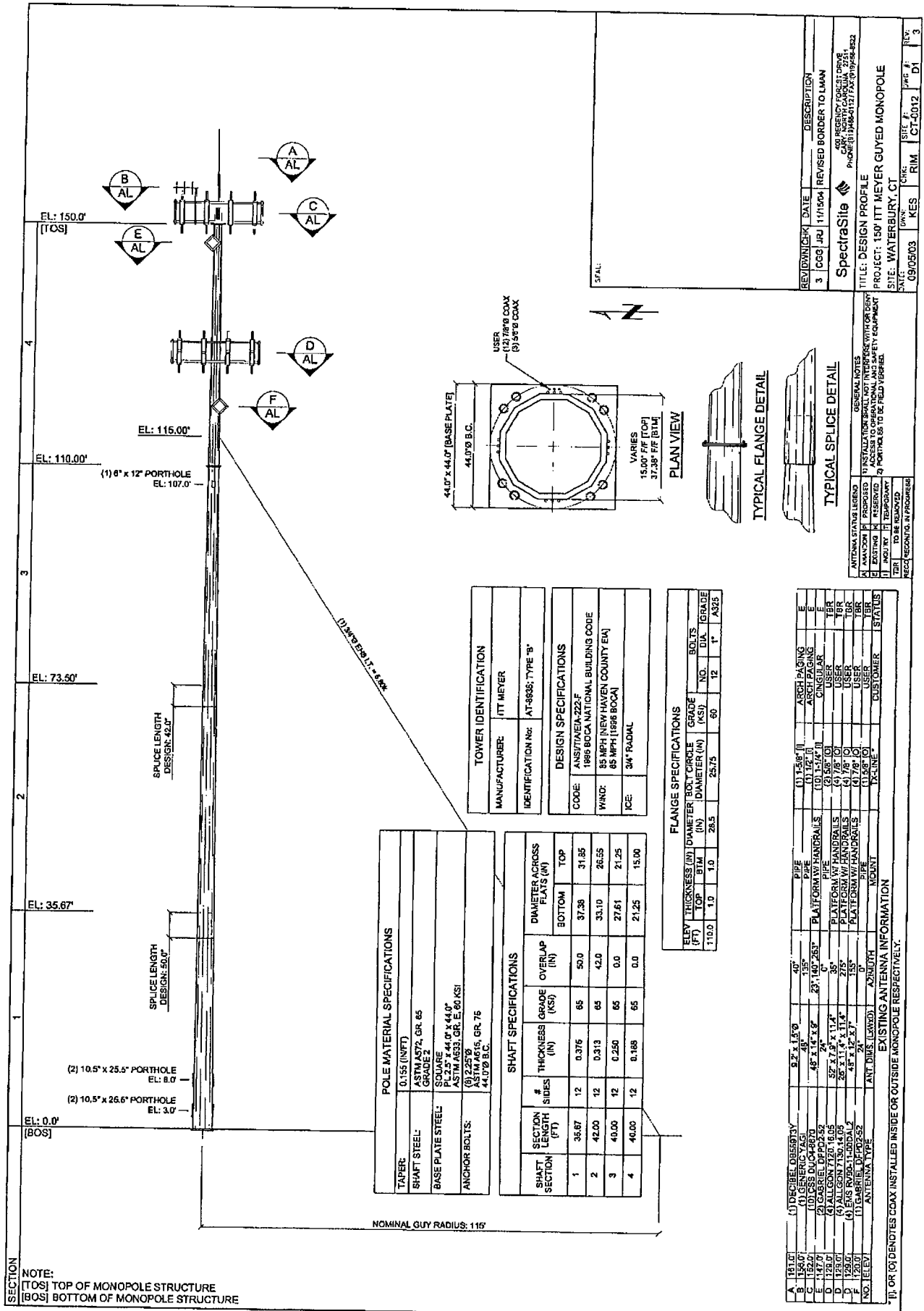
ANCHOR REACTIONS	MAXIMUM	RESULT*
Uplift (kips)	24.6	Adequate
Shear (kips)	24.7	Adequate

\*Based on Foundation Analysis.

3.0 Conclusions and Recommendations

1. The splice bolts, splice plates, anchor bolts, base plate, foundation and anchors are structurally adequate to accommodate the existing and proposed antenna and transmission line loading used in this analysis.
2. The monopole and guy wires are not structurally adequate to accommodate the existing and proposed antenna and transmission line loading used in this analysis.
3. The monopole and guy wires are structurally adequate to accommodate the existing and proposed antenna and transmission line loading used in this analysis with modification as detailed in drawing CT-0012-M1.
4. Any future changes in loading must be reviewed by the SpectraSite Engineering Department.





NOTE:  
 [TOS] TOP OF MONOPOLE STRUCTURE  
 [BOS] BOTTOM OF MONOPOLE STRUCTURE

NOMINAL GUY RADIUS: 116'

**POLE MATERIAL SPECIFICATIONS**

TAPER:	0.155 (NFT)
SHAFT STEEL:	A572 GR 50, GR 65
BASE PLATE STEEL:	SQUARE PL 2.5" x 44.0" x 44.0" ASTM A572, GR. E, 60 KSI
ANCHOR BOLTS:	(8) 2.25" ASTM A615, GR. 76 4.0" B.C.

**SHAFT SPECIFICATIONS**

SHAFT SECTION (FT)	# SIDES	THICKNESS (IN)	GRADE (KSI)	OVERLAP (IN)	DIAMETER ACROSS FLAYS (IN)	
					BOTTOM	TOP
1	36.87	12	0.376	65	50.0	31.85
2	42.00	12	0.313	65	42.0	26.55
3	40.00	12	0.250	65	0.0	21.25
4	40.00	12	0.188	65	0.0	15.00

**TOWER IDENTIFICATION**

MANUFACTURER:	ITT MEYER
IDENTIFICATION No.:	AT-5836; TYPE 'B'

**DESIGN SPECIFICATIONS**

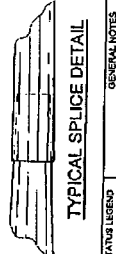
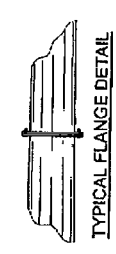
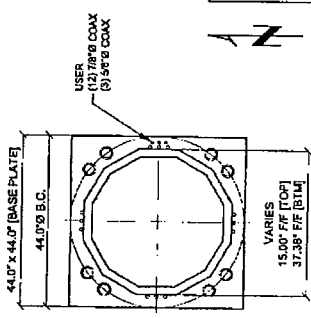
CODE:	ANSI/TIA/EIA-222-F 1886 BOCA NATIONAL BUILDING CODE
WIND:	85 MPH NEW HAVEN COUNTY EM
ICE:	3/4" RADIAL

**FLANGE SPECIFICATIONS**

ELEV. (FT)	THICKNESS (IN)	DIAMETER (IN)	BOLT CIRCLE (IN)	GRADE (KSI)	NO. BOLTS	DIA. (IN)
110.0	1.0	28.5	25.75	60	12	1"
150.0	1.0	28.5	25.75	60	12	1"

**EXISTING ANTENNA INFORMATION**

NO.	ELEV. (FT)	ANT. DIMS. (LxWxH) (FT)	ANT. TYPE	ANT. MOUNT	STATUS
1	151.6	9.2 x 12.0	PIPE	PIPE	ARCH PAGING
2	134.0	48"	48" x 14" x 8"	PLATFORM W/ HANDRAILS	CIRCULAR
3	142.0	23" x 14" x 8"	PIPE	PLATFORM W/ HANDRAILS	USER
4	123.0	57" x 27" x 11.4"	PLATFORM W/ HANDRAILS	PLATFORM W/ HANDRAILS	USER
5	123.0	26" x 11.4" x 11.4"	PLATFORM W/ HANDRAILS	PLATFORM W/ HANDRAILS	USER
6	123.0	48" x 12" x 8"	PIPE	PLATFORM W/ HANDRAILS	USER
7	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
8	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
9	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
10	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
11	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
12	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
13	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
14	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
15	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
16	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
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42	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
43	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
44	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
45	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
46	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
47	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
48	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
49	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER
50	123.0	24"	PIPE	PLATFORM W/ HANDRAILS	USER



**REVISIONS**

NO.	DATE	DESCRIPTION
3	11/18/04	REVISED BORDER TO LHMN

**SpectraSite**

TITLE: DESIGN PROFILE  
 PROJECT: 150' ITT MEYER GUYED MONOPOLE  
 SITE: WATERBURY, CT

DATE: 09/05/03  
 DRAWN BY: KES  
 CHECKED BY: RIM  
 DESIGNED BY: CT-0012  
 REVISIONS: 3



CUSTOMER : VERIZON  
 PROJECT : MONOPOLE GUY LUG COLLAR  
 SITE NAME: WATERBURY, CT  
 SITE NUMBER : CT-0012  
 DATE : 01/11/05  
 REV. NUMBER. :



**DRAWING INDEX**

MATERIAL LIST

SHEET(S) 1  
 CT-0012-E3 PULSE CHART (1 PAGE)

INSTALLATION DRAWINGS

<u>DRAWING NUMBER</u>	<u>DRAWING TITLE</u>	<u>REVISION</u>
SEP01	SPECTRASITE ENGINEERING PROCEDURE NO. 1	2
CT-0012-M1	MODIFICATION PROFILE	1
IGN	IBC GENERAL NOTES	3
CT-0012-E1	GUY LUG COLLAR INSTALLATION	0
CT-0012-E2	GUY WIRE	0

FABRICATION DRAWINGS

<u>DRAWING NUMBER</u>	<u>DRAWING TITLE</u>	<u>REVISION</u>
CT-0012-1	GUY LUG COLLAR WELDMENT	0

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the state of CONNECTICUT



**SpectraSite®**  
 100 REGENCY FOREST DRIVE  
 SUITE 400  
 CARY, NORTH CAROLINA 27511  
 PHONE: (919)468-0112 / FAX: (919)468-8522

**CUSTOMER :** VERIZON  
**PROJECT :** MONOPOLE GUY LUG COLLAR  
**SITE NAME :** WATERBURY, CT

**SITE NUMBER :** CT-0012  
**DATE :** 01/11/05  
**REV. NUMBER :**

**DRAWN BY :** JMB  
**CHECKED BY :**

**BILL OF MATERIALS**

QTY. RECD	QTY. SHIP	MARK NO.	DESCRIPTION	LENGTH	DRAWING NO.	WEIGHT (lbs)	COMMENTS
3	3	CT12-1	GUY LUG COLLAR WELDMENT	2'-0 3/8"	E1,1	396	
12	13	----	BOLT 3/4"Ø A325 ASSEMBLY (GALVD)	3 1/2"	----	----	
3	3	----	GUY STRAND 7/8" EHS	188'-0"	M1,E1	----	
3	3	----	TURNBUCKLE 1 1/2" X 18" J/E	----	M1,E1	----	
6	6	----	DEADEND GRIP 7/8"	----	M1,E1	----	
6	6	----	THIMBLE 1 1/8" HVY	----	M1,E1	----	
6	6	----	SHACKLE 1" SPA	----	M1,E1	----	
3	3	----	GUY STRAND 3/8" EHS	20'-0"	M1,E1	----	
6	6	----	WIRE ROPE CLIP, 3/8"	----	M1,E1	----	
3	3		SPECTRASITE BOOKSET(S)				

GUY TENSION CHART

STANDARD INITIAL TENSIONS ARE AT 60 F  
 TOWER BASE ELEVATION = 0.00  
 Dimensions are in FEET unless specified otherwise.

GUY DATA:	GUY HEIGHT	GUY DIAM (in.)	GUY WEIGHT (lb/ft)	GUY RADIUS	ANCHOR ELEV
	123.000	0.8750	1.581	115.000	0.000

TEMP. (F)	GUY TENSIONS (KIPS)	(KN)	TIME FOR 5 PULSES (SECONDS)
0	9.84	43.76	3.7
10	9.53	42.38	3.8
20	9.22	40.99	3.9
30	8.90	39.61	3.9
40	8.59	38.22	4.0
50	8.28	36.84	4.1
60	7.97	35.45	4.2
70	7.66	34.07	4.2
80	7.35	32.68	4.3
90	7.04	31.30	4.4
100	6.72	29.91	4.5

PULSES & TENSIONS AT + 10 % OF DESIGN  
 \*\* MAXIMUM ALLOWABLE \*\*

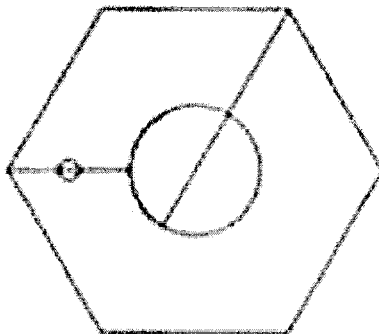
0	10.82	48.14	3.6
10	10.48	46.62	3.6
20	10.14	45.09	3.7
30	9.79	43.57	3.8
40	9.45	42.05	3.8
50	9.11	40.52	3.9
60	8.77	39.00	4.0
70	8.42	37.47	4.0
80	8.08	35.95	4.1
90	7.74	34.43	4.2
100	7.40	32.90	4.3

GUY TENSION CHART  
 VERIZON  
 150' ITT MEYER MONOPOLE  
 WATERBURY, CT

Tightening of A325 High Strength Bolts by AISC "Turn-of-the-Nut" Method

1. Install fasteners in holes with appropriate quantity of ASTM F436 hardened flat washers, as shown on erection drawings. Note that oversized holes may require hardened flat washers under both the bolt head and nut. Do not use split lock washers.
2. Starting at the more rigid, or central, portion of the connection, bring all the bolts to a "snug tight" fit, as defined on the General Notes drawing.
3. Based upon the bolt length and diameter, determine the amount of additional nut rotation required from the tables shown on the General Notes drawing.
4. Using a thin lined, waterproof marker, draw a matchmark line from any one point of the nut across the top of the nut toward the center and across the top of the threaded end of the bolt.
5. Count counterclockwise from the marked point on the nut the proper number of points to yield the required amount of turn, i.e. 2 points equals 1/3rd of a turn, and mark another line with a circle on the top of the nut from that point toward the center of the bolt (see sketch).
6. Starting at the more rigid, or central, portion of the connection, turn the nut until the line with the circle marked on the nut reaches the position that the first line currently occupies and lines up with the matchline on the bolt.
7. Close-out document pictures should be taken from a distance that identifies the location of the installation and shows the bolt markings. Photograph all sides of the installation, showing all fully tensioned bolts.

See sketch below:



Prepared and Authorized By:

*Douglas K. Pisco*  
\_\_\_\_\_  
Douglas K. Pisco, P.E.  
Senior Design Engineer



## GENERAL

1. ALL METHODS, MATERIALS AND WORKMANSHIP SHALL FOLLOW THE DICTATES OF GOOD CONSTRUCTION PRACTICE.
2. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER AND FOUNDATION CONSTRUCTION.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ANY INSTALLATION INTERFERENCES. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. DETAILS NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL FOLLOW SIMILAR DETAILS FOR THIS JOB.
4. ANY SUBSTITUTIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
5. ANY MANUFACTURED DESIGN ELEMENTS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS AND SHOULD BE SIMILAR TO THOSE SHOWN. THESE DESIGN ELEMENTS MUST BE STAMPED BY AN ENGINEER PROFESSIONALLY REGISTERED IN THE STATE OF THE PROJECT, AND SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
6. ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL CODES AND OSHA SAFETY REGULATIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS.
8. CONTRACTORS PROPOSED INSTALLATION SHALL NOT INTERFERE, NOR DENY ACCESS TO, ANY EXISTING OPERATIONAL AND SAFETY EQUIPMENT.
- 9.) FIELD CUT EDGES, EXCEPT DRILLED HOLES, SHALL BE GROUND SMOOTH.
- 10.) ALL FIELD CUT SURFACES SHALL BE REPAIRED WITH 95% ZINC RICH PAINT PER ASTM A780.

## APPLICABLE CODES AND STANDARDS

1. ANSITW610A - STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES, 222-F EDITION.
2. 2000 INTERNATIONAL BUILDING CODE.
3. ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, 318-89.
4. CRSI: CONCRETE REINFORCING STEEL INSTITUTE, MANUAL OF STANDARD PRACTICE, LATEST EDITION.
5. AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.
6. AWS: AMERICAN WELDING SOCIETY D1.1, STRUCTURAL WELDING CODE, LATEST EDITION.

## STRUCTURAL STEEL

1. ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS, LATEST EDITION.
2. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
3. ALL U-BOLTS SHALL BE ASTM A307 OR EQUIVALENT, WITH LOCKING DEVICE, UNLESS NOTED OTHERWISE.

## WELDING

1. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
2. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, U.N.O.
3. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
4. PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING 1/2" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH 95% ZINC RICH PAINT PER ASTM A780.

## PAINT

1. AS REQUIRED, CLEAN AND PAINT PROPOSED STEEL, ACCORDING TO FAA ADVISORY CIRCULAR AC 707460-1K.

## BOLT TIGHTENING PROCEDURE

1. TIGHTEN FLANGE BOLTS BY AISC - "TURN OF THE NUT" METHOD, USING THE CHART BELOW.

### BOLT LENGTHS UP TO AND INCLUDING FOUR DIA.

- |        |   |                             |
|--------|---|-----------------------------|
| 3/4"   | BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |
| 7/8"   | BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |
| 1"     | BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |
| 1-1/8" | BOLTS UP TO AND INCLUDING 4.5 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |
| 1-1/4" | BOLTS UP TO AND INCLUDING 5.0 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |
| 1-1/2" | BOLTS UP TO AND INCLUDING 6.0 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |

### BOLT LENGTHS OVER FOUR DIA. BUT NOT EXCEEDING 8 DIA.

- |        |                                |                             |
|--------|--------------------------------|-----------------------------|
| 3/4"   | BOLTS 4.25 TO 6.0 INCH LENGTH  | +1/2 TURN BEYOND SNUG TIGHT |
| 7/8"   | BOLTS 3.75 TO 7.0 INCH LENGTH  | +1/2 TURN BEYOND SNUG TIGHT |
| 1"     | BOLTS 4.25 TO 8.0 INCH LENGTH  | +1/2 TURN BEYOND SNUG TIGHT |
| 1-1/8" | BOLTS 4.75 TO 9.0 INCH LENGTH  | +1/2 TURN BEYOND SNUG TIGHT |
| 1-1/4" | BOLTS 5.25 TO 10.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 1-1/2" | BOLTS 6.25 TO 12.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |

2. SPLICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8(g)(1) OF THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS, LOCATED IN THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS PARAPHRASED AS FOLLOWS:

\*FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8(g)(1) THROUGH 8(g)(4).

8(g)(1) TURN-OF-THE-NUT TIGHTENING.

BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8 (c). UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.

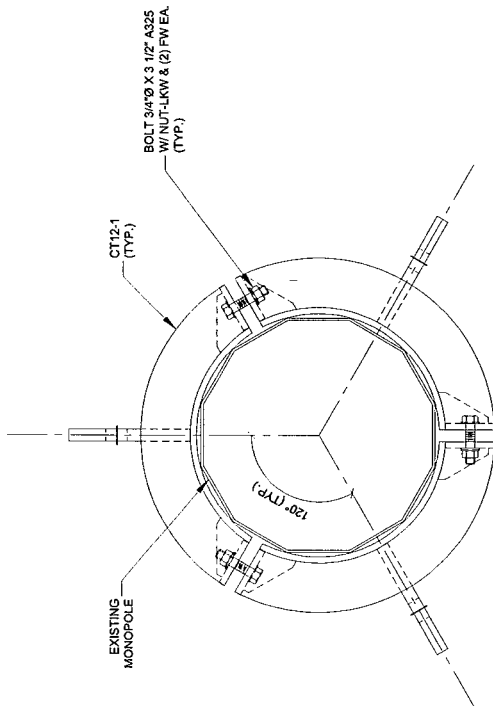
3. ALL OTHER BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8 (c) OF THE SPECIFICATION.

## SPECIAL INSPECTION

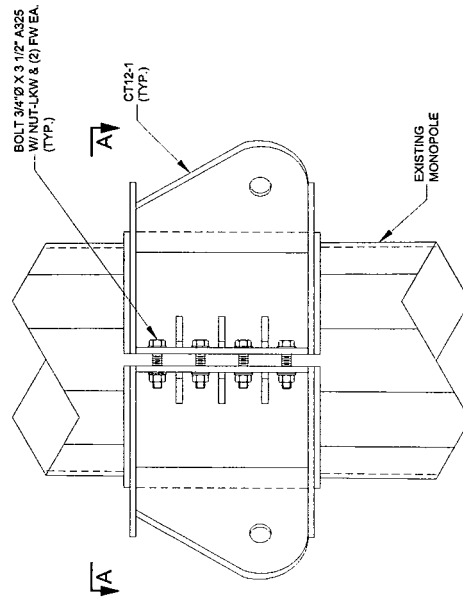
1. A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH IBC 2000, SECTION 1704 AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
  - a) STRUCTURAL WELDING
  - b) HIGH STRENGTH BOLTS
2. THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER IN ACCORDANCE WITH IBC 2000, SECTION 1704. UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM SUCH WORK WITHOUT THE SPECIAL INSPECTIONS.

REV	DWN	CHK	DATE	DESCRIPTION
3	JMB	JMS	11/04/04	REVISED NOTES
<b>SpectraSite</b> 480 REGENCY FOREST DRIVE PHOENIX, AZ 85028-0127 FAX: (602) 998-8822				
TITLE: IBC GENERAL NOTES				
PROJECT: VARIOUS				
DATE:	03/16/04	JMB	DKN	VARIOUS
REV:			IGN	3

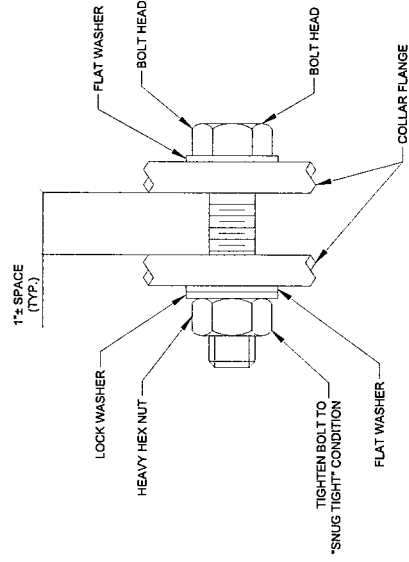




SECTION "A-A"  
[GUY WIRES NOT SHOWN FOR CLARITY]



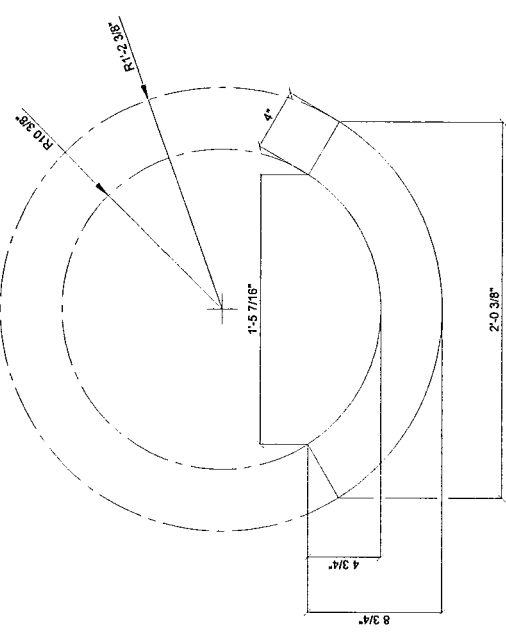
ELEVATION VIEW  
[GUY WIRES NOT SHOWN FOR CLARITY]



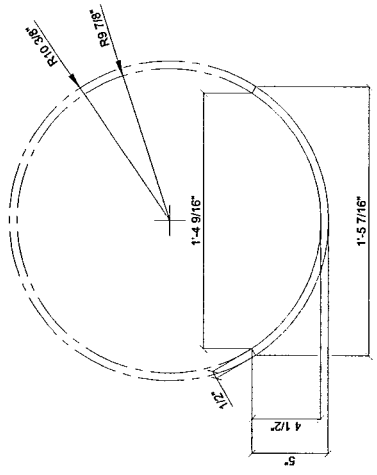
TYPICAL CONNECTION DETAIL

<b>SpectraSite</b>		300 AGENCY FOREST DRIVE PHONE: (919) 684-0117 FAX: (919) 684-8522	
TITLE: GUY LUG COLLAR INSTALLATION			
PROJECT: 150 FT MEYER GUYED MONOPOLE			
SITE: WATERBURY, CT			
DATE: 01/11/05	DWN: JMB	CHR: CT-0012	REV: E1 0

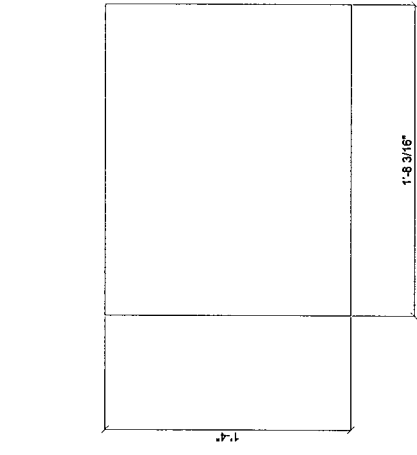
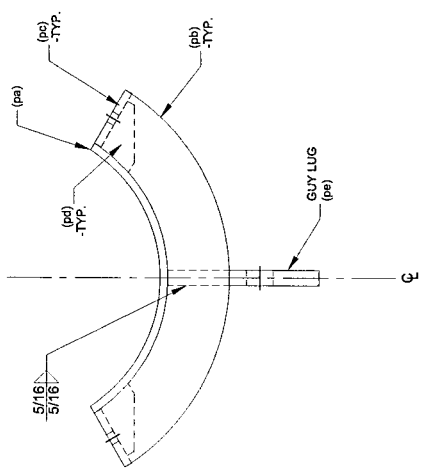




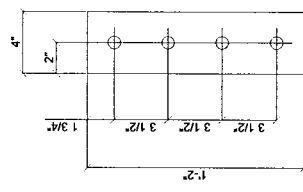
(pb)



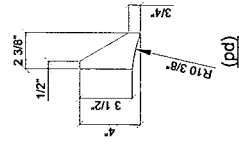
(pa)  
(ROLLED VIEW)



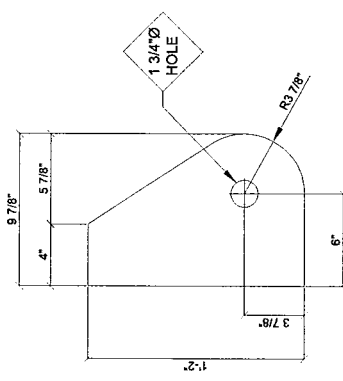
(pe)



(pc)



(pd)



(pe)  
(GUY LUG)

CT12-1  
(GUY LUG COLLAR WELDMENT)

MK	QTY	DESCRIPTION	LENGTH	REMARKS	REV	WT
(pa)	ONE	PL 1" X 9 7/8"	1'-2"	SHAPE		30.8 #
(pb)	6	PL 1/2" X 2 3/8"	0'-4"	SHAPE		4.8 #
(pc)	2	PL 1/2" X 4"	1'-2"	SHAPE		15.9 #
(pd)	2	PL 1/2" X 8 3/4"	2'-0 3/8"	SHAPE		28.2 #
(pe)	ONE	PL 1/2" X 1'-4"	1'-8 3/16"			45.8 #
CT12-1	ONE	GUY LUG COLLAR WELDMENT	2'-0 3/8"			125.5 #
					TOTAL WEIGHT:	132 #
					HOLES:	15 1/16" Ø U.N.O.
					MATERIAL:	A36
					FINISH:	GALVANIZE

**SpectraSite**  
 400 REGENCY FOREST DRIVE  
 WATERBURY, CT 06708-2012 FAX: 860-948-8322

TITLE: GUY LUG COLLAR WELDMENT  
 PROJECT: 150 TTT MEYER GUYED MONOPOLE  
 SITE: WATERBURY, CT

DATE: 07/11/05 DWN: JMB CHK: CT-0012  
 REV: 1 0

## Electrical Specifications

	7129.16 (A-800-85-15i)	7130.14 (A-800-95-11i)
Gain	13 dBd (15 dBi)	9 dBd (11 dBi)
Polarization	linear, vertical	linear, vertical
VSWR, 50Ω	<1.5:1 (806 MHz to 824 MHz)	<1.5:1 (806 MHz to 824 MHz)
VSWR, 50Ω	<1.4:1 (824 MHz to 896 MHz)	<1.4:1 (824 MHz to 896 MHz)
Horizontal 3dB beamwidth	85°	95°
Vertical 3dB beamwidth	15°	30°
Custom electrical downtilts	0°	0°
40 degree cone Front-to-back ratio	>30 dB	>28 dB
Suppression of first upper side lobe	>17 dB	>15 dB
Maximum CW input power	500W	500W
Two tone intermodulation 3rd order	<-103 dBm for 2x20W (146 dBc at 2x43 dBm)	<-103 dBm for 2x20W (146 dBc at 2x43 dBm)

## Mechanical Specifications

	7/16 DIN or Type N side mounted	
Connector		
Height	52" (1320 mm)	26.8" (680 mm)
Width	13" (330 mm)	11.4" (290 mm)
Depth	11.4" (290 mm)	11.4" (290 mm)
Weight	17.6 lbs (8 kg)	9.9 lbs (4.5 kg)
Survival wind speed	156 mph (70 m/s)	156 mph (70 m/s)
Maximum wind area	4.5 sq.ft (0.42 sq.m)	1.7 sq.ft (0.16 sq.m)
Maximum wind load @100mph	118 lbf (526 N)	44.6 lbf (199 N)

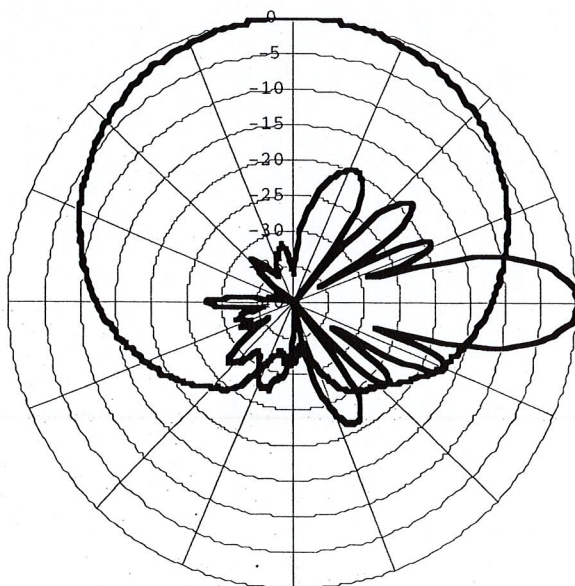
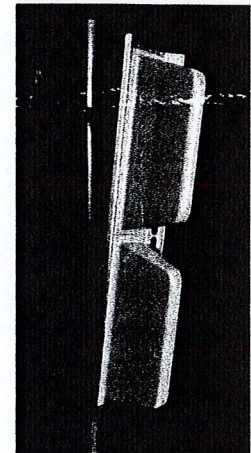
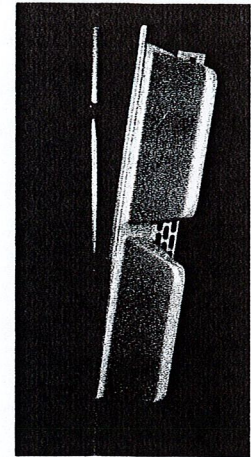
\*All metallic components DC grounded for Lightning Protection

### Mounting Hardware Options for Installation

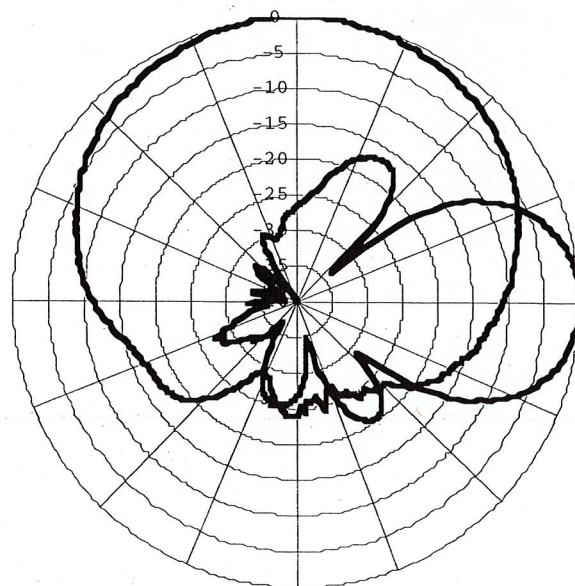
1) Pole mount	2165.10	2165.10
2) Combined pole mount/downtilt bracket	7254.10 (-1° to +24°)	7254.10 (-2° to +49°)

### Comments

Gain is typical within frequency band.  
 Front-to-back ratio is defined within 20° from the backwards direction in any plane.  
 Sidelobe suppression and null fill is relative to peak of main beam.  
 Radome color is NCS 2502-B (RAL 7035)(gray).



Typical Horizontal and Vertical 7129.16 Patterns



Typical Horizontal and Vertical 7130.14 Patterns

A poster displaying a comparison of antenna patterns has been included at the back of the catalog.



# QUICK REFERENCE GUIDE

## 95 Degree 800 MHz ALP

Gain	Part Number	Description	Page
23 dBi	7131.30.33.00	A-800-40-14i-15-D	23
23 dBi	7131.30.05.00	A-800-40-14i-15-N	23
23 dBi	7131.20.33.00	A-800-40-16i-0-D	23
23 dBi	7131.20.05.00	A-800-40-16i-0-N	23
23 dBi	7131.16.33.00	A-800-40-18i-0-D	23
23 dBi	7131.16.05.00	A-800-40-18i-0-N	23

## 95 Degree 800 MHz ALP

Gain	Part Number	Description	Page
27 dBi	7130.14.33.00	A-800-95-11i-0-D	27
27 dBi	7130.14.05.00	A-800-95-11i-0-N	27
28 dBi	7130.16.33.00	A-800-95-14i-0-D	28
28 dBi	7130.16.05.00	A-800-95-14i-0-N	28
28 dBi	7130.16.33.06	A-800-95-14i-6-D	28
28 dBi	7130.18.33.00	A-800-95-16i-0-D	28
28 dBi	7130.18.05.00	A-800-95-16i-0-N	28

## 60 Degree 800 MHz ALP

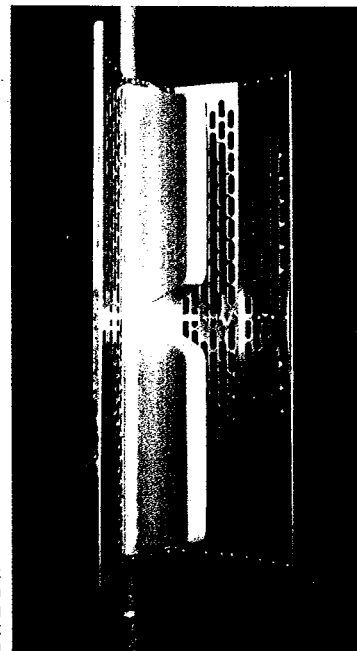
Gain	Part Number	Description	Page
24 dBi	7125.14.33.00	A-800-60-13i-0-D	24
24 dBi	7125.14.05.00	A-800-60-13i-0-N	24
24 dBi	7125.16.33.00	A-800-60-16i-0-D	24
24 dBi	7125.16.05.00	A-800-60-16i-0-N	24
24 dBi	7125.16.33.06	A-800-60-16i-6-D	24
25 dBi	7125.18.33.00	A-800-60-18i-0-D	25
25 dBi	7125.18.05.00	A-800-60-18i-0-N	25

## 60 Degree 800 MHz ALP

Gain	Part Number	Description	Page
29 dBi	7120.20.05.00	A-800-110-11i-0-N	29
29 dBi	7120.16.33.00	A-800-110-13i-0-D	29
29 dBi	7120.16.05.00	A-800-110-13i-0-N	29

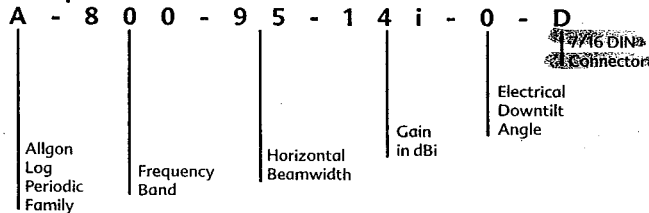
## 85 Degree 800 MHz ALP

Gain	Part Number	Description	Page
25 dBi	7129.12.33.00	A-800-85-9i-0-D	25
26 dBi	7129.14.33.00	A-800-85-11i-0-D	26
26 dBi	7129.14.05.00	A-800-85-11i-0-N	26
26 dBi	7129.32.33.00	A-800-85-12i-10-D	26
26 dBi	7129.32.05.00	A-800-85-12i-10-N	26
26 dBi	7129.20.33.00	A-800-85-13i-0-D	26
26 dBi	7129.20.05.00	A-800-85-13i-0-N	26
27 dBi	7129.16.33.00	A-800-85-15i-0-D	27
27 dBi	7129.16.05.00	A-800-85-15i-0-N	27



800 MHz Allgon Log Periodic Antenna

### Description Detail:



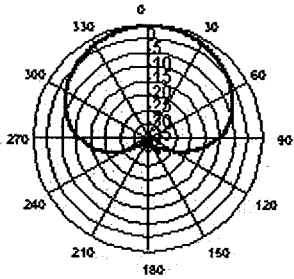
Antennas may be ordered using part number or description.



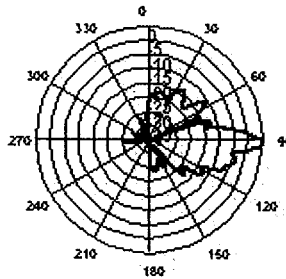
<b>DECIBEL'</b> <i>Base Station Antennas</i>	<b>948F85T2E-M</b> 16.1 dBi, Directed Dipole Antenna 1850-1990 MHz	<b>1850-1990 MHz</b>
		<b>MaxFill™</b> <b>dB Director®</b>

- Exceptional azimuth roll-off reducing soft hand-offs and improving capacity
- Excellent upper side lobe suppression
- Deep null filling below the horizon assures improved signal intensity
- Low profile appearance and low wind loading profile for easier zoning approvals

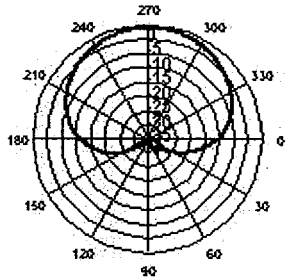
85°



Azimuth 1850 MHz (Tilt=2)



Vertical 1850 MHz (Tilt=2)



Horizontal 1850 MHz (Tilt=2)



ELECTRICAL		MECHANICAL	
<b>Frequency (MHz):</b>	1850-1990	<b>Weight:</b>	8.5 lbs (3.9 kg)
<b>Polarization:</b>	Vertical	<b>Dimensions (LxWxD):</b>	48 X 3.5 X 7 in (1219 X 89 X 178 mm)
<b>Gain (dBd/dBi):</b>	14/16.1	<b>Max. Wind Area:</b>	1.18 ft <sup>2</sup> (0.11 m <sup>2</sup> )
<b>Azimuth BW:</b>	85°	<b>Max. Wind Load (@ 100mph):</b>	65 lbf (289 N)
<b>Elevation BW:</b>	8°	<b>Max. Wind Speed:</b>	125 mph (201 km/h)
<b>Beam Tilt:</b>	2°	<b>Radiator Material:</b>	Low Loss Circuit Board
<b>USLS* (dB):</b>	>18	<b>Reflector Material:</b>	Aluminum
<b>Null Fill* (dB):</b>	15	<b>Radome Material:</b>	ABS, UV Resistant
<b>Front-to-Back Ratio* (dB):</b>	40	<b>Mounting Hardware Material:</b>	Galvanized Steel
<b>VSWR:</b>	<1.33:1	<b>Connector Type:</b>	7-16 DIN - Female (Bottom)
<b>IM Suppression - Two 20 Watt Carriers:</b>	-150 dBc	<b>Color:</b>	Light Gray
<b>Impedance:</b>	50 Ohms	<b>Standard Mounting Hardware:</b>	DB390 Pipe Mount Kit, included
<b>Max Input Power:</b>	250 Watts	<b>Downtilt Mounting Hardware:</b>	DB5098, optional
<b>Lightning Protection:</b>	DC Ground	<b>Opt. Mounting Hardware:</b>	DB5094-AZ Azimuth Wall Mount
<b>Opt Electrical Tilt:</b>	0°, 4°, 6°		



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Date: 4/29/2004  
 \* - Indicates Typical Values

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General Power Density

Site Name: Prospect  
 Tower Height: 132 FT

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm <sup>2</sup> )	Maximum Permissible Exposure* (mW/cm <sup>2</sup> )	Fraction of MPE (%)
Verizon	880	9	200	1800	132	0.0372	0.586	6.34%
Verizon	1900	3	200	600	132	0.0124	1	1.24%
<b>Total Percentage of Maximum Permissible Exposure</b>								<b>7.58%</b>

\*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz  
 mW/cm<sup>2</sup> = milliwatts per square centimeter  
 ERP = Effective Radiated Power





General Power Density

Site Name: Waterbury, CT  
 Tower Height: 128 FT

Operator	Operating Frequency (MHz)	Number of ERP Per Transmitter	Total ERP (watts)	Distance Range (feet)	Calculation Power Density (mW/cm <sup>2</sup> )	Maximum Permissible Exposure (mW/cm <sup>2</sup> )	Fraction of MPE (%)
Verizon	880	9	1800	128	0.0395	0.586	6.74%
Verizon	1900	3	600	128	0.0132	1	1.32%
<b>Total Percentage of Maximum Permissible Exposure</b>							<b>8.06%</b>

\*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1-1992

MHz = Megahertz  
 mW/cm<sup>2</sup> = milliwatts per square centimeter  
 ERP = Effective Radiated Power

