STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square
New Britain, Connecticut 06051
Phone: (860) 827-2935
Fax: (860) 827-2950

July 13, 2001

Sandy M. Carter
Verizon Wireless
20 Alexander Drive
P.O. Box 5029
Wallingford, CT 06492

RE: **TS-VER-002-010531** - Cellco Partnership d/b/a Verizon Wireless and AT&T Wireless PCS, LLC, d/b/a AT&T Wireless request for an order to approve tower sharing at an existing telecommunications facility located at 401 Wakelee Avenue, Ansonia, Connecticut.

Dear Ms. Carter:

At a public meeting held July 11, 2001, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility may require an explicit request to this agency pursuant to General Statutes § 16-50aa or notice pursuant to Regulations of Connecticut State Agencies Section 16-50j-73, as applicable. Such request or notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point 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.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction.

The proposed shared use is to be implemented as specified in your letters dated May 30, 2001, and June 28, 2001.

Thank you for your attention and cooperation.

Very truly yours,

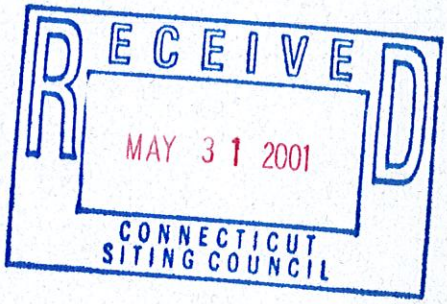
Mortimer A. Gelston
Chairman

MAG/RKE/laf

c: Honorable James T. DellaVolpe, Mayor, City of Ansonia
Peter Crabtree, Zoning Enforcement Officer, City of Ansonia
Christopher B. Fisher, Esq., Cuddy & Feder & Worby LLP
Maureen Woodstrom, SpectraSite Communications, Inc.
Ronald C. Clark, Nextel Communications
Peter W. van Wilgen, SNET Mobility LLC
Julie M. Donaldson, Esq., Hurwitz & Sagarin LLC

AT&T WIRELESS
12 Omega Drive
Stamford, CT. 06907

VERIZON WIRELESS
20 Alexander Drive
Wallingford, CT. 06492
203/294-8519



May 30, 2001

VIA OVERNIGHT DELIVERY

Mr. Mortimer A. Gelston, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: **Request by Cellco Partnership d/b/a Verizon Wireless and AT&T Wireless PCS, LLC, d/b/a AT&T Wireless for an Order to Approve the Shared Use of a Tower Facility located at 401 Wakelee Avenue, Ansonia, Connecticut.**

Dear Chairman Gelston:

Pursuant to Connecticut General Statutes (C.G.S.) Sec. 16-50aa, Cellco Partnership d/b/a Verizon Wireless and AT&T Wireless PCS, LLC, d/b/a AT&T Wireless (the "Applicants") hereby request an order from the Connecticut Siting Council ("Council") to approve the proposed shared use by Verizon Wireless and AT&T Wireless of an existing tower located at 401 Wakelee Avenue, Ansonia, Connecticut. The property is owned by the City of Ansonia. As shown on the attached drawings and as further described below, Verizon Wireless and AT&T Wireless propose to install antennas on the existing tower and to locate equipment at the base of the tower. The Applicants request that the Council find that the proposed shared use of the tower facility satisfies the criteria stated in C.G.S. Sec. 16-50aa and issue an order approving the proposed shared use.

Background

Verizon Wireless is licensed by the Federal Communications Commission to provide cellular telephone service in the New Haven County New England County Metropolitan Area (NECMA), which includes the area to be served by the proposed West Hartford installation. AT&T Wireless is licensed by the Federal Communications Commission to provide PCS service throughout Connecticut, including the greater New Haven area, which includes the area to be served by the proposed Ansonia installation.

The Wakelee Avenue facility consists of a an approximately 196' foot AGL lattice tower owned by SpectraSite Communications ("SpectraSite") and located within a leased parcel. Verizon Wireless and AT&T Wireless each have agreed with SpectraSite to the proposed shared use of this tower pursuant to mutually acceptable terms and conditions. SpectraSite has authorized Verizon Wireless and AT&T Wireless to apply for all necessary permits, approvals and authorizations which may be required for the proposed shared use of this facility.

Verizon Wireless proposes to install twelve (12) panel antennas, approximately five feet in height, on the tower with their center of radiation at approximately 178' above ground level ("AGL"). Of the twelve antennas, six will be used in Cellco's cellular system and six will be used in its Personal Communications System (PCS). Equipment associated with these antennas, as well as a diesel-fueled emergency stand-by generator, would be located in a new approximately 12-foot x 30-foot equipment shelter located at the base of the tower. In accordance with the Council's approval of Cingular Wireless's shared use of the site, the compound is being expanded, and the Verizon's equipment will be located within the expanded fenced compound.

AT&T Wireless proposes to install up to twelve (12) panel antennas, approximately 52 inches in height, on the tower with their center of radiation at approximately 158 feet AGL. Equipment associated with these antennas would be located on a concrete pad, approximately 8½ feet by 15 feet, located at the base of the tower.

Discussion

C.G.S. Sec. 16-50aa provides that, upon written request for approval of a proposed shared use, "if the Council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the Council shall issue an order approving such shared use" (C.G.S. Sec. 16-50aa(c)(1).)

A. Technical Feasibility. The existing tower is structurally sound and capable of supporting the proposed Verizon Wireless and AT&T Wireless antennas. The tower will not require any structural modification to support the proposed attachments. The proposed antenna installations present minimal potential for interference to or from existing radio transmissions from this location. In addition, the applicants are unaware of any occasion where their operations have caused interference with AM, FM or television reception. The proposed shared use of this tower therefore is technically feasible.

B. Legal Feasibility. Under C.G.S. Sec. 16-50aa, the Council has been authorized to issue an order approving the proposed shared use of an existing communications tower facility such as the facility at 401 Wakelee Avenue (C.G.S. Sec. 16-50aa(c)(1).) This authority complements the Council's prior existing authority under C.G.S. Sec. 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. C.G.S. Sec. 16-50x(a) directs the Council to "give consideration to other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under the authority vested in the Council

by C.G.S. Sec. 16-50aa, an order by the Council approving the shared use would permit the applicant to obtain a building permit for the proposed installations.

C. Environmental Feasibility. The proposed shared use would have a minimal environmental effect, for the following reasons:

1. The proposed installations would have an insignificant incremental visual impact, and would not cause any significant change or alteration in the physical or environmental characteristics of the existing site. The addition of the proposed antennas would not increase the height of the tower, and would not extend the boundaries of the tower site as previously approved.

2. The proposed installation would not increase the noise levels at the existing facility by six decibels or more. The only additional noise will occur during emergency use or periodic exercising of the generator.

3. Operation of AT&T Wireless' antennas and Verizon Wireless' antennas at this site would not exceed the total radio frequency electromagnetic radiation power density level adopted by the FCC and Connecticut Department of Health. The collective "worst case" exposure, as calculated for mixed frequency sites, would be approximately 12.32% of the standard. See Cumulative Emissions Compliance Report dated May 3, 2001, prepared by Alex Murillo, AT&T Radio Frequency Engineer, attached. Power density levels from shared use of the tower facility would thus be well below applicable FCC/ANSI standards.

4. The proposed installations would not require any water or sanitary facilities or generate discharges to water bodies. Operation of the emergency back-up generator will result in limited air emissions; pursuant to R.C.S.A. Section 22a-174-3, the generator will require the issuance of a permit from the Department of Environmental Protection Bureau of Air Management. After construction is complete, the proposed installation would not generate any traffic other than for periodic maintenance visits.

The proposed use of this facility would therefore have a minimal environmental effect, and is environmentally feasible.

D. Economic Feasibility. As previously mentioned, the tower owner and the Applicants have entered into mutual agreements to share use of the existing tower on terms agreeable to the parties, and the proposed tower sharing is thus economically feasible.

E. Public Safety Concerns. As stated above, the existing tower is structurally capable of supporting the proposed antennas. The Applicants are not aware of any other public safety concerns relative to the proposed tower sharing of the existing tower. In fact, the provision of new or improved wireless communications service in the Ansonia area through shared use of the tower is expected to enhance the safety and welfare of area residents and travelers. The public safety benefits of wireless service are further illustrated by the decision of local authorities elsewhere in Connecticut to provide wireless phones to residents to improve local public safety and emergency communications. The proposed shared use of this facility would likewise improve public safety in the Ansonia area.

Conclusion

For the reasons discussed above, the proposed shared use of the existing telecommunications tower facility at 401 Wakelee Avenue in Ansonia satisfies the criteria stated in C.G.S. Sec. 16-50aa, and advances the General Assembly's and the Council's goal of preventing the proliferation of towers in Connecticut. The Applicants therefore request that the Council issue an order approving the proposed shared use.

Pursuant to Connecticut General Statutes Sec, 16-50v and Section 16-50v-1(a) of the Regulations of Connecticut State Agencies, a check in the amount of $500.00 for the required filing fee is enclosed.

Thank you for your consideration of this matter.

Respectfully yours,

for Sandy M. Carter
Manager – Regulatory
Verizon Wireless

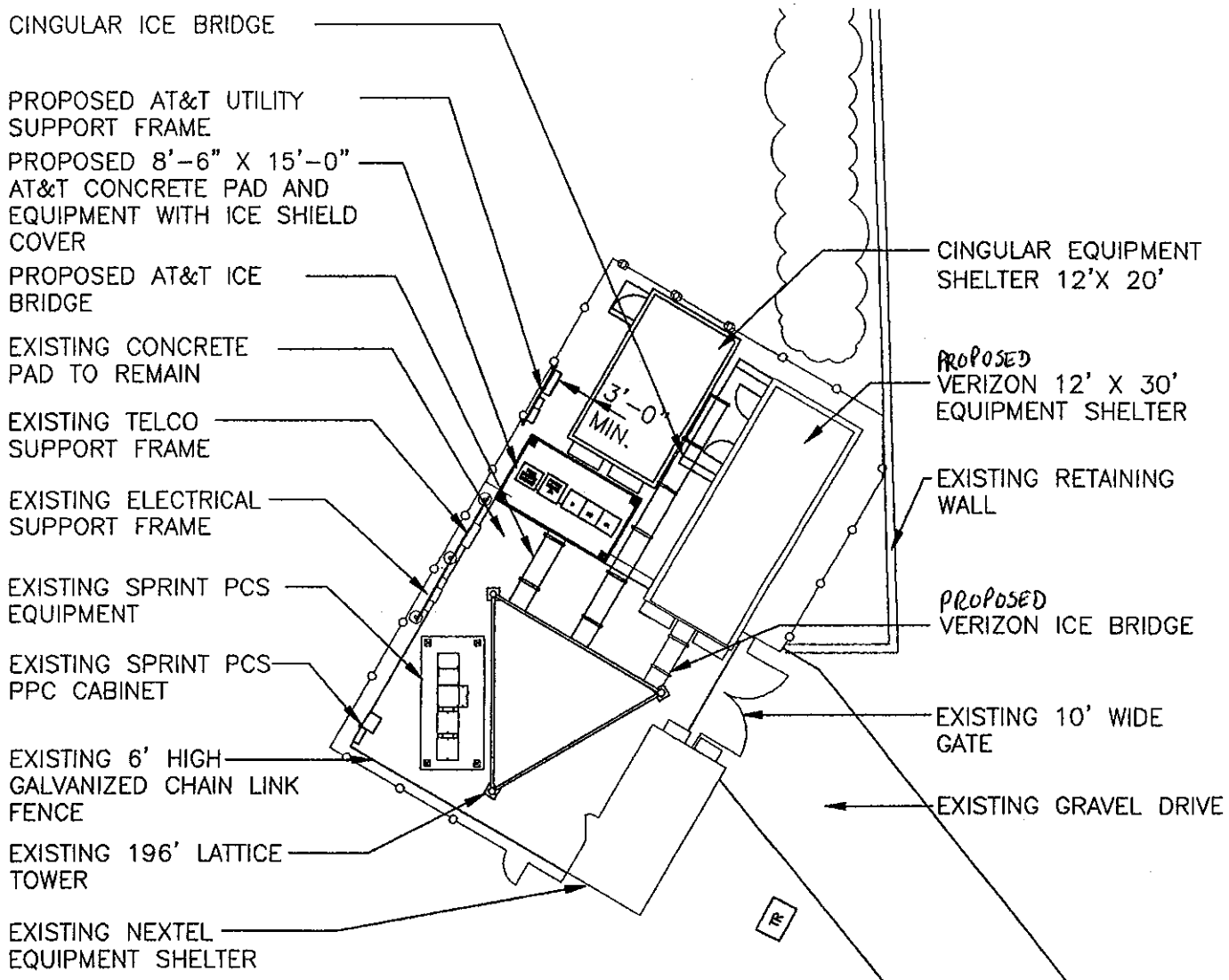
Christoper B. Fisher, Esq.
on behalf of AT&T Wireless

Attachments

cc: Mayor, City of Ansonia

LEASE EXHIBIT

THE LEASE PLAN IS DIAGRAMATIC IN NATURE AND IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND SIZE OF THE PROPOSED WIRELESS COMMUNICATION EQUIPMENT AND ANTENNA MOUNTS WITHIN THE EXISTING COMPOUND. ACTUAL LOCATION OF LEASE AREA WILL BE FINALIZED UPON COMPLETION OF DESIGN.



1 **SITE PLAN**
SCALE: 1" = 20'

"ISSUED FOR LEASE"

Natcomm, L.L.C.

AT&T

AT&T WIRELESS PCS LLC
12 ONEGA DRIVE
STAMFORD, CONNECTICUT 06907

DRAWING TITLE:
LEASE EXHIBIT

PROJECT INFORMATION:
ANSONIA
CT-285
401 WAKELEE AVENUE
ANSONIA, CT 06401

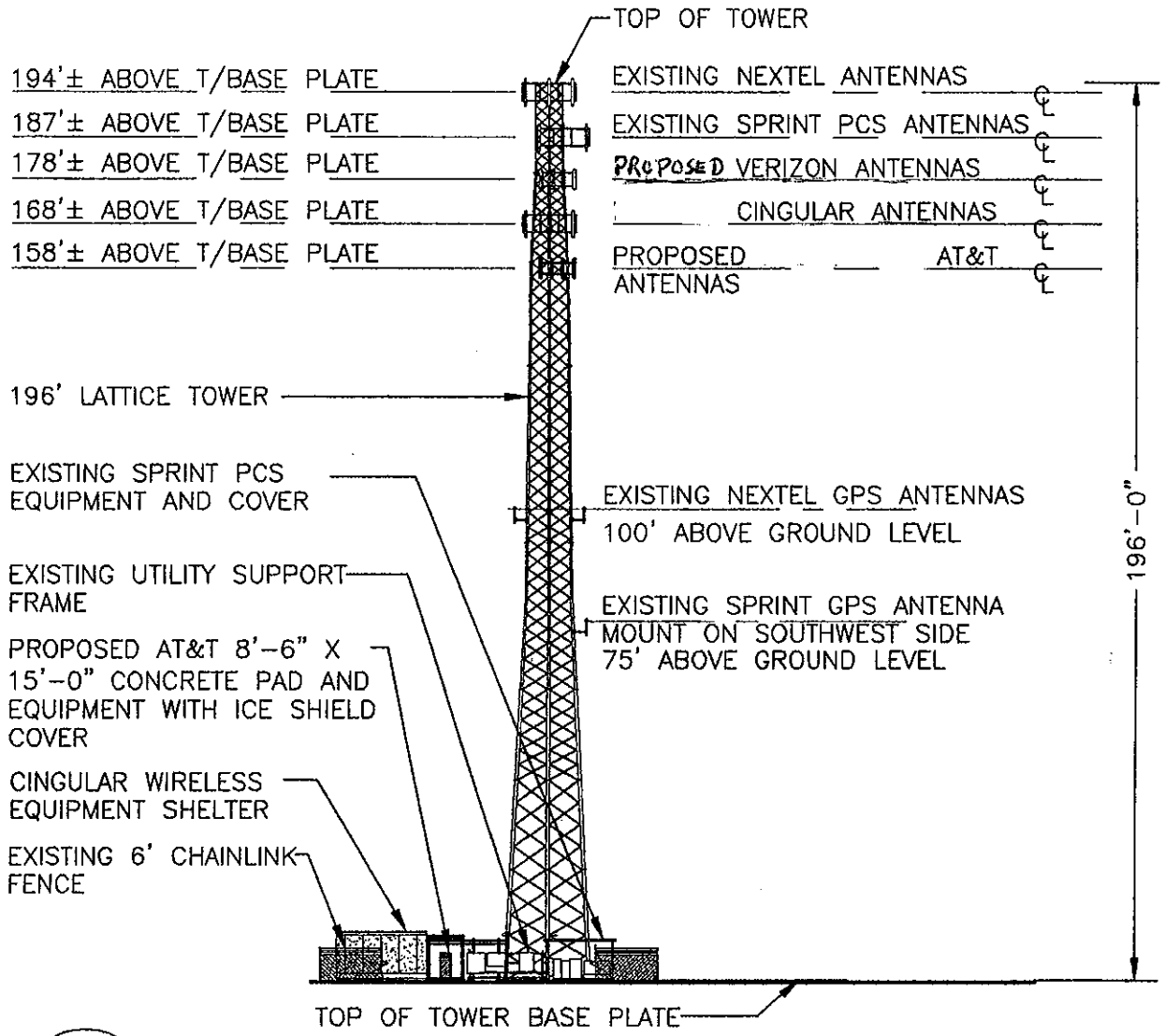
PROPERTY OWNER:
SPECTRASITE

DRAWING NO.
3CO-CT285-X01-0

REVISION NO. 0	DRAWN BY: P.A.M.
DATE ISSUED: 03/27/01	CHECKED BY: JJP
SCALE: NONE	APPROVED BY: CFC
	SHEET NO. 1 OF 2
A/E PROJECT NO: 336A	

LEASE EXHIBIT

THE LEASE PLAN IS DIAGRAMATIC IN NATURE AND IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND SIZE OF THE PROPOSED WIRELESS COMMUNICATION EQUIPMENT AND ANTENNA MOUNTS WITHIN THE EXISTING COMPOUND. ACTUAL LOCATION OF LEASE AREA WILL BE FINALIZED UPON COMPLETION OF DESIGN.



2 TOWER ELEVATION

SCALE: 1" = 40'

"ISSUED FOR LEASE"

Netcomm, L.L.C.

AT&T WIRELESS PCS LLC
12 OMEGA DRIVE
STAMFORD, CONNECTICUT 06907

DRAWING TITLE: LEASE EXHIBIT

PROJECT INFORMATION:
ANSONIA
CT-285
401 WAKELEE AVENUE
ANSONIA, CT 06401

PROPERTY OWNER:
SPECTRASITE

DRAWING NO.
3CO-CT285-X02-0

REVISION NO. 0	DRAWN BY: P.A.M.
DATE ISSUED: 03/27/01	CHECKED BY: J.J.P
SCALE: NONE	APPROVED BY: C.F.C
	SHEET NO. 2 OF 2
A/E PROJECT NO: 336A	

AT&T WIRELESS SERVICES

CT-285.1.1 Site Summary
MPE (Maximum Possible Exposure) Study
May 3, 2001

A. Owner of the structure on which the antenna is located and the location of the antenna:

Name of owner of the structure on which the antenna is located:	
Owner of Structure:	Spectrasite
Address of structure:	401 Wakelle Ave
	Ansonia, CT 06401

Latitude:	41° 21' 21"
Longitude:	73° 5' 29"

B. Owner of the antenna:

Name of the owner of the antenna:	AT&T Wireless Services
Address of antenna owner:	12 Omega Drive
	Stamford, CT 06907
Telephone number:	(203) 602-7029

C. Technical specifications:

FCC class (or type) of service:	PCS (IS-136)
Operating frequency of transmitter:	1965-1970MHz
Peak power output of transmitter:	8 Watts/per channel
Power into the antenna:	4 watts
Antenna manufacturer:	Allgon
Antenna model:	7184.14
Antenna type:	Panel
Gain of the antenna:	14.5 dBd
Antenna radiating pattern:	H-plane - 90° E-plane –6.5°
Polarization of radiation from antenna:	Linear, Vertical
Effective radiating power:	901.88 watts ERP at centerline (maximum)

D. Power density information:

The power density values presented in the attached studies were achieved according to FCC OET-65 using the following formula:

$$S = \frac{33.4xP}{R^2}$$ (Equation 9, FCC OET-65)

Where: S = Power density in $\mu W/cm^2$
P = Power (watts) ERP (effective radiated power)
R = Distance (meters)

Five measurements were taken for this structure. Besides the AT&T carrier information, the measurements for Cingular, Verizon, Sprint PCS, and Nextel were also included for the purposes of this study. Given the above equation, the worse case ground scenario is located at the base of the tower.

The results of this analysis indicate that the maximum level of RF energy in areas normally accessible to the public is below all applicable health and safety limits. Specifically, the maximum level of RF energy associated with simultaneous and continuous operation of all proposed transmitters will be less than 12.32% of the safety criteria adopted by the Federal Communication Commission as mandated by the Telecommunications Act of 1996. The Telecommunications Act of 1996 is the applicable Federal law with respect to consideration of the environmental effects of RF emissions in the siting of personal wireless facilities. The maximum level of RF energy will also be less than 12.32% of the exposure limits of ANSI, IEEE, NCRP, and the limits used by all states that regulate RF exposure.

Carrier	Power Density ($\mu W/cm^2$)	Maximum Allowable ($\mu W/cm^2$)	Percentage of Maximum
AT&T	**12.99**	1000	**1.30%**
Cingular	**24.20**	566.7	**4.27%**
Verizon	**21.56**	566.7	**3.80%**
Sprint PCS	**14.24**	1000	**1.42%**
Nextel	**8.59**	566.7	**1.52%**
Total	**81.58**		**12.32%**

The calculations of these values are shown on the attached spreadsheets.

AT&T WIRELESS SERVICES

Date: May 30, 2001

CT-285.1.1
Base of tower

ERP Calculator AT&T			ERP Calculator (Start here) Carrier 1		
Max Power to Ant port (dBm)	Ant Gain on determined lobe (dBd)	ERP (dbm)	Max Power to Ant port (dBm)	Ant Gain on determined lobe (dBd)	ERP (dbm)
45.051500	14.5	59.551500	0.000000	0	0.000000
(watts per channel)	Maximum Number of Channels	(watts)	(watts per channel)	Maximum Number of Channels	(watts)
4.000000	8	901.882538	0.000000	0	0.000000

ERP Calculator -Cingular/SNET			ERP Calculator (Start here) Carrier 2		
Max Power to Ant port (dBm)	Ant Gain on determined lobe (dBd)	ERP (dbm)	Max Power to Ant port (dBm)	Ant Gain on determined lobe (dBd)	ERP (dbm)
52.787536	10	62.787536	0.000000	0	0.000000
(watts per channel)	Maximum Number of Channels	(watts)	(watts per channel)	Maximum Number of Channels	(watts)
10.000000	19	1900.000000	0.000000	0	0.000000

ERP Calculator - Verizon			ERP Calculator (Start here) Carrier 3		
Max Power to Ant port (dBm)	Ant Gain on determined lobe (dBd)	ERP (dbm)	Max Power to Ant port (dBm)	Ant Gain on determined lobe (dBd)	ERP (dbm)
52.787536	10	62.787536	0.000000	0	0.000000
(watts per channel)	Maximum Number of Channels	(watts)	(watts per channel)	Maximum Number of Channels	(watts)
10.000000	19	1900.000000	0.000000	0	0.000000

ERP Calculator - Sprint PCS			ERP Calculator (Start here) Carrier 4		
Max Power to Ant port (dBm)	Ant Gain on determined lobe (dBd)	ERP (dbm)	Max Power to Ant port (dBm)	Ant Gain on determined lobe (dBd)	ERP (dbm)
50.413927	11	61.413927	0.000000	0	0.000000
(watts per channel)	Maximum Number of Channels	(watts)	(watts per channel)	Maximum Number of Channels	(watts)
10.000000	11	1384.817953	0.000000	0	0.000000
ERP Calculator - Nextel			ERP Calculator (Start here) Carrier 5		
Max Power to Ant port (dBm)	Ant Gain on determined lobe (dBd)	ERP (dbm)	Max Power to Ant port (dBm)	Ant Gain on determined lobe (dBd)	ERP (dbm)
49.542425	10	59.542425	0.000000	0	0.000000
(watts per channel)	Maximum Number of Channels	(watts)	(watts per channel)	Maximum Number of Channels	(watts)
10.000000	9	900.000000	0.000000	0	0.000000

Field density					
	AT&T	Cingular	Verizon	Sprint PCS	Nextel
BAND/FREQUENCY (MHz)	1900	850	850	1900	850
Signal Level (E.R.P. dbm)	59.551500	62.787536	62.787536	61.413927	59.542425
Antenna Centerline Height (ft)	158	168	178	187	194
Antenna Centerline Height (m)	48.158400	51.206400	54.254400	56.997600	59.131200
Signal Level (E.R.P. Watts)	901.882538	1900.000000	1900.000000	1384.817953	900.000000
Field Density (μW/cm2)	12.988301	24.202018	21.559076	14.237247	8.597172
Cumulative Density (μW/cm2)	12.988301	37.190319	58.749395	72.986642	81.583813
Maximum Density OET-65 (μW/cm2)	1000.000000	566.666667	566.666667	1000.000000	566.666667
% of Maximum Density	1.30%	4.27%	3.80%	1.42%	1.52%
Cummulative Percentage	1.30%	5.57%	9.37%	10.80%	12.32%

Percentage of Maximum ____

81.58 uW/cm2 Cumulative Density
12.32% **Cummulative % of maximum allowable level.**

APPENDIX B
Computer Input and Output Listings

```
TIME/DATE/FILES = 09:20:41 / 03-30-2001 / SP0896p1.dat - SP0896t1.sum
*****************************************************************************
*                                                                           *
*                                INPUT FILE                                 *
*                                                                           *
*****************************************************************************
TITLE
1996035   SP0896P1.DAT    ANSONIA WAKELEE  CT-0006 MARCH 28, 2001  EVS
C*-------------------------------------------------------------------
C! LOAD CASE        =EXISTING + NEXTEL MAX ALLOWABLE + PROPOSED (AT&T)
C! CLIENT           =SPECTRASITE
C! SITE ID          =CT-0006
C! SITE NAME/STATE =ANSONIA WAKELEE/ CT
C! COUNT / WIND     =NEW HAVEN /85 MPH+ 1/2 " ICE
C! ORIGINAL LOADING=ANSI/EIA 222-F-1996/80 MPH+1/2" ICE
C! TOWER DETAILS    =196 FT/SST/ROHN
C! PREPARED BY      =EVS
C*-------------------------------------------------------------------
OPTIONS
I,U
GENERAL DATA
T,196.0
ICE DATA
196.0,0.5
WIND DATA
1,85.0
C*****************************************************************************
MEMBER PROPERTIES
C*****************************************************************************
C* LEGS
 1, P, 50, 65, 29000,  8.750, 0.500
 2, P, 50, 65, 29000,  8.750, 0.375
 3, P, 50, 65, 29000,  6.625, 0.432
 4, P, 50, 65, 29000,  6.625, 0.340
 5, P, 50, 65, 29000,  5.563, 0.375
 6, P, 50, 65, 29000,  5.500, 0.375
 7, P, 50, 65, 29000,  4.500, 0.337
 8, P, 50, 65, 29000,  3.500, 0.300
 9, P, 50, 65, 29000,  2.875, 0.203
C* DIAGONALS
10,  A, 36, 58, 29000,  4.000, 4.000, 0.2500
11,  A, 36, 58, 29000,  3.500, 3.500, 0.2500
12,  A, 36, 58, 29000,  3.000, 3.000, 0.2500
13,  A, 36, 58, 29000,  2.500, 2.500, 0.2500
14,  A, 36, 58, 29000,  2.000, 2.000, 0.2500
15,  A, 36, 58, 29000,  2.000, 2.000, 0.1875
16,  A, 36, 58, 29000,  1.750, 1.750, 0.1875
C* HORIZONTALS
17,  A, 36, 58, 29000,  2.000, 2.000, 0.1250
C*******************************************
FACE WIDTH DATA
C*******************************************
  0.0,  23.0000
160.0,   6.7604
180.0,   6.6785
196.0,   6.6458
C*******************************************
PANEL CONFIGURATION
C*******************************************
C*ELV, BAY HT,ID [SUB,DIAPH,K-PANEL HIP (0-4,0-3,0-1)]
 80.0, 10.0000, C, 0, 0, 0
140.0,  6.6666, C, 0, 0, 0
160.0,  5.0000, C, 0, 0, 0
196.0,  4.0000, C, 0, 0, 0
C*******************************************
BOLT DATA
C*******************************************
C* SIZE, 1=A325
1, 1.000, 1
2, 0.875, 1
3, 0.750, 1
4, 0.625, 1
C*******************************************
C* MEMBER DATA
C*******************************************
C*    MEM, BLT, NBLT               0=TENSION
LEG DATA
 20.0, 1, 1, 8,.,.,.,., 0
 40.0, 2, 1, 8,.,.,.,., 0
 60.0, 2, 1, 8,.,.,.,., 0
 80.0, 3, 1, 6,.,.,.,., 0
100.0, 4, 1, 6,.,.,.,., 0
120.0, 5, 1, 4,.,.,.,., 0
140.0, 6, 1, 4,.,.,.,., 0
160.0, 7, 2, 4,.,.,.,., 0
180.0, 8, 3, 4,.,.,.,., 0
196.0, 9
DIAGONAL DATA
 20.0,10, 3, 1
 40.0,10, 3, 1
 60.0,11, 3, 1
 80.0,11, 3, 1
100.0,12, 3, 1
120.0,13, 4, 1
140.0,13, 4, 1
160.0,14, 4, 1
180.0,15, 4, 1
196.0,16, 4, 1
HORIZONTAL DATA
159.0, 0
160.0,17, 4, 1
195.0, 0
196.0,17, 4, 1
C*************************************************************
REINFORCEMENT DATA
C                          LEGS        DIAG.       HORIZ.
C*************************************************************
C* TO ACCOUNT FOR GUSSET PLATE MULTIPY BY 0.95
00.0,196.0,0.0,0.0,0.0,1.0,1.0,1.0,0.95,0.95,0.95,0.95,0.95,0.95
C*****************************
TRANSMISSION LINE DATA
C*****************************
C#1 'WAVEGUIDES ON FACE 1,2,3'
0, 196.0, 1,1, 2.250, 7.500, R
0, 196.0, 2,2, 2.250, 7.500, R
0, 196.0, 3,3, 2.250, 7.500, R
```

```
0, 196.0, 3,4, 2.250, 7.500, R
C* MISC. APPURT. + WEIGHT
0, 196.0, 5,5, 2.50, 10.0, R
C*****************************
C#***(START) /  TX-LINES ADDED BY ANTREAD PROGRAM ***** 03-30-2001 / 09:20
C* (9) DB844H90E-XY PANELS : ( 9) x 1-1/4" on Face [2]
   0.0, 196.0, 2,   6,   1.55,  0.664,R
   0.0, 196.0, 2,   7,   1.55,  0.664,R
   0.0, 196.0, 2,   8,   1.55,  0.664,R
   0.0, 196.0, 2,   9,   1.55,  0.664,R
   0.0, 196.0, 2,  10,   1.55,  0.664,R
   0.0, 196.0, 2,  11,   1.55,  0.664,R
   0.0, 196.0, 2,  12,   1.55,  0.664,R
   0.0, 196.0, 2,  13,   1.55,  0.664,R
   0.0, 196.0, 2,  14,   1.55,  0.664,R
C* (3) DB844H90E-XY PANELS : ( 3) x 1-1/4" on Face [2]
   0.0, 196.0, 2,  15,   1.55,  0.664,R
   0.0, 196.0, 2,  16,   1.55,  0.664,R
   0.0, 196.0, 2,  17,   1.55,  0.664,R
C* (6) DB980G90EM-S PANELS : ( 6) x 1-5/8" on Face [1]
   0.0, 187.5, 1,  18,   1.98,  1.080,R
   0.0, 187.5, 1,  19,   1.98,  1.080,R
   0.0, 187.5, 1,  20,   1.98,  1.080,R
   0.0, 187.5, 1,  21,   1.98,  1.080,R
   0.0, 187.5, 1,  22,   1.98,  1.080,R
   0.0, 187.5, 1,  23,   1.98,  1.080,R
C* (12) ALLGON 7129.16 PANELS : (12) x 1-5/8" on Face [3]
   0.0, 178.0, 3,  24,   1.98,  1.080,R
   0.0, 178.0, 3,  25,   1.98,  1.080,R
   0.0, 178.0, 3,  26,   1.98,  1.080,R
   0.0, 178.0, 3,  27,   1.98,  1.080,R
   0.0, 178.0, 3,  28,   1.98,  1.080,R
   0.0, 178.0, 3,  29,   1.98,  1.080,R
   0.0, 178.0, 3,  30,   1.98,  1.080,R
   0.0, 178.0, 3,  31,   1.98,  1.080,R
   0.0, 178.0, 3,  32,   1.98,  1.080,R
   0.0, 178.0, 3,  33,   1.98,  1.080,R
   0.0, 178.0, 3,  34,   1.98,  1.080,R
   0.0, 178.0, 3,  35,   1.98,  1.080,R
C* (12) DB846H80 PANELS : (12) x 1-1/4" on Face [3]
   0.0, 168.0, 3,  36,   1.55,  0.664,R
   0.0, 168.0, 3,  37,   1.55,  0.664,R
   0.0, 168.0, 3,  38,   1.55,  0.664,R
   0.0, 168.0, 3,  39,   1.55,  0.664,R
   0.0, 168.0, 3,  40,   1.55,  0.664,R
   0.0, 168.0, 3,  41,   1.55,  0.664,R
   0.0, 168.0, 3,  42,   1.55,  0.664,R
   0.0, 168.0, 3,  43,   1.55,  0.664,R
   0.0, 168.0, 3,  44,   1.55,  0.664,R
   0.0, 168.0, 3,  45,   1.55,  0.664,R
   0.0, 168.0, 3,  46,   1.55,  0.664,R
   0.0, 168.0, 3,  47,   1.55,  0.664,R
C* (12) ALLGON 7184 PANELS : (12) x 1-5/8" on Face [2]
   0.0, 158.0, 2,  48,   1.98,  1.080,R
   0.0, 158.0, 2,  49,   1.98,  1.080,R
   0.0, 158.0, 2,  50,   1.98,  1.080,R
   0.0, 158.0, 2,  51,   1.98,  1.080,R
   0.0, 158.0, 2,  52,   1.98,  1.080,R
   0.0, 158.0, 2,  53,   1.98,  1.080,R
   0.0, 158.0, 2,  54,   1.98,  1.080,R
   0.0, 158.0, 2,  55,   1.98,  1.080,R
   0.0, 158.0, 2,  56,   1.98,  1.080,R
   0.0, 158.0, 2,  57,   1.98,  1.080,R
   0.0, 158.0, 2,  58,   1.98,  1.080,R
   0.0, 158.0, 2,  59,   1.98,  1.080,R
C#***( END ) /  TX-LINES ADDED BY ANTREAD PROGRAM ***** 03-30-2001 / 09:20
POINT LOAD DATA
C*****************************
C* STANDARD SIDE LIGHTING FACE 2
C* ELV[WEIGHT, CaAa, Momnt, Torq] ICE ...
C#1 'STROBE+ BEACON' '' ''
196.0, 0.050,  5.0, 2.5, 3.80, 0.075, 6.0,  2.5, 3.8
C
C#1E '(9) DB844H90E-XY PANELS' ' NEXTEL' ''
196.0, 0.090, 23.8, 0.0, 0.0, 0.338, 27.2, 0.0 ,0.0
C#2 0.0,0.0, 9,5,2, 0.0,0.0,''
C#1P '(3) DB844H90E-XY PANELS' ' NEXTEL' ''
196.0, 0.030,  7.9, 0.0, 0.0, 0.113, 9.1, 0.0 ,0.0
C#2 0.0,0.0, 3,5,2, 0.0,0.0,''
C#1E '(3) GATE BOOM MOUNTS' '' ''
196.0, 1.600, 47.0, 0.0,0.0, 2.050,  67.0, 0.0, 0.0
C#1E '(6) DB980G90EM-S PANELS' 'SPRINT' ''
187.5, 0.045, 10.3, 0.0,0.0, 0.135,  12.2, 0.0, 0.0
C#2 0.0,0.0, 6,6,1, 0.0,0.0,''
C#1E '(3) GATE BOOM MOUNTS' '' ''
187.5, 1.600, 47.0, 0.0,0.0, 2.050,  67.0, 0.0, 0.0
C#1E '(12) ALLGON 7129.16 PANELS' 'CELLCO PARTNERS' ''
178.0, 0.204, 52.5, 0.0,0.0, 0.600,  57.7, 0.0, 0.0
C#2 0.0,0.0, 12,6,3, 0.0,0.0,''
C#1E '(3) GATE BOOM MOUNTS' '' ''
178.5, 1.600, 47.0, 0.0,0.0, 2.050,  67.0, 0.0, 0.0
C#1E '(12) DB846H80 PANELS' 'SNET' ''
168.0, 0.180, 49.3, 0.0,0.0, 0.640,  54.7, 0.0, 0.0
C#2 0.0,0.0, 12,5,3, 0.0,0.0,''
C#1E '(3) GATE BOOM MOUNTS' '' ''
168.0, 1.600, 47.0, 0.0,0.0, 2.050,  67.0, 0.0, 0.0
C#1P '(12) ALLGON 7184 PANELS' 'AT&T' ''
158.0, 0.120, 23.2, 0.0, 0.0, 0.450, 27.0, 0.0 ,0.0
C#2 0.0,0.0, 12,6,2, 0.0,0.0,''
C#1P '(3) GATE BOOM MOUNTS' '' ''
158.0, 1.600, 47.0, 0.0,0.0, 2.050,  67.0, 0.0, 0.0
C*****************************
LOAD FACTORS
C*****************************
B,1.00,1.00,0.00
I,1.00,0.75,1.00
C
C## LEG SPLICE ELEVATIONS SST
C SPLICE ELEVN START, END, INCREMENT (FT)
C## 20.0, 180.0, 20.0
C## END
C
C## FOUNDATION DESIGN LOADS SST (COMP, UPLIFT, SHEAR /LEG)
C## 343.0  301.1  36.3
C## END
```

```
*******************************************************************************
*                                                                             *
*                                OUTPUT FILE                                  *
*                                                                             *
*******************************************************************************
 TIME/DATE/FILES = 09:20:41 / 03-30-2001 / SP0896p1.dat - SP0896t1.sum
 -----------------------------------------------------------------------------
              TOWER ANALYSIS PROGRAM (TAP)
                 Summary Output Results
              (c) 2001, Morrison Hershfield
 -----------------------------------------------------------------------------
 LOAD CASE        =EXISTING + NEXTEL MAX ALLOWABLE + PROPOSED (AT&T)
 CLIENT           =SPECTRASITE
 SITE ID          =CT-0006
 SITE NAME/STATE =ANSONIA WAKELEE/ CT
 COUNT / WIND     =NEW HAVEN /85 MPH+ 1/2 " ICE
 ORIGINAL LOADING=ANSI/EIA 222-F-1996/80 MPH+1/2" ICE
 TOWER DETAILS    =196 FT/SST/ROHN
 PREPARED BY      =EVS
 -----------------------------------------------------------------------------

1996035   SP0896P1.DAT    ANSONIA WAKELEE  CT-0006 MARCH 28, 2001  EVS

Standards         :  TIA/EIA-222-F (96)
Wind Speed        :  85.0  MPH
Ice Thickness     :  0.50  inch
Tower Height      :  196.0 feet

Load Combinations:
------------------
0. No   wind.
1. Bare, wind on face.
2. Iced, wind on face.
3. Bare, wind on Corner.
4. Iced, wind on corner.
5. Bare, wind parallel to face.
6. Iced, wind parallel to face.

Load Factors for Forces:
------------------------
Bare Cases:  (1.00)Dead + (1.00)Wind + (0.00)Ice.
Iced Cases:  (1.00)Dead + (0.75)Wind + (1.00)Ice.
When dead loads resist wind:
Bare Cases:  (1.00)Dead + (1.00)Wind + (0.00)Ice.
Iced Cases:  (1.00)Dead + (0.75)Wind + (1.00)Ice.

Service Load Factors for Forces/Deflections
-------------------------------------------
Bare Cases:  (1.00)Dead + (1.00)Wind + (0.00)Ice.
Iced Cases:  (1.00)Dead + (0.75)Wind + (1.00)Ice.

Units are kip, ft .. Deflections in inches and degrees
```

MAXIMUM MEMBER RESPONSE

LEGS	ELEV1	ELEV2	LOAD	CAPAC	SR	LC
TENSION	80.0	86.7	198.4	267.9	0.74	4
COMPRESSION	60.0	70.0	-263.9	263.6	1.00	2
CONNECTION	10.0	20.0	293.6	368.0	0.80	4
DIAGONALS	**ELEV1**	**ELEV2**	**LOAD**	**CAPAC**	**SR**	**LC**
TENSION	160.0	164.0	6.6	17.0	0.39	6
COMPRESSION	100.0	106.7	-7.4	8.3	0.90	6
CONNECTION	100.0	106.7	7.5	8.6	0.87	6
HORIZONTALS	**ELEV1**	**ELEV2**	**LOAD**	**CAPAC**	**SR**	**LC**
TENSION	155.0	160.0	1.0	11.5	0.09	1
COMPRESSION	155.0	160.0	-1.2	2.6	0.46	4
CONNECTION	155.0	160.0	1.2	8.6	0.14	1

LEG SUMMARY

ELEVATION From	To	<-------Tension-----> Force (F)	Cap. (R)	F/R	<----Compression-----> Force (F)	Cap. (R)	F/R	<---Connection------> Force (F)	Cap. (R)	F/R
0.0	10.0	305.9(4)	517.1	0.59	-363.3(2)	442.4	0.82	305.9	368.0(T)	
10.0	20.0	293.6(4)	517.1	0.57	-347.5(2)	442.4	0.79	293.6	368.0(T)	0.80
20.0	30.0	280.9(4)	393.7	0.71	-331.3(2)	337.9	0.98	280.9	368.0(T)	
30.0	40.0	267.7(4)	393.7	0.68	-315.0(2)	337.9	0.93	267.7	368.0(T)	0.73
40.0	50.0	254.2(4)	393.7	0.65	-298.2(2)	337.9	0.88	254.2	368.0(T)	
50.0	60.0	240.3(4)	393.7	0.61	-281.3(2)	337.9	0.83	240.3	368.0(T)	0.65
60.0	70.0	225.9(4)	335.4	0.67	-263.9(2)	263.6	1.00	225.9	276.0(T)	
70.0	80.0	211.0(4)	335.4	0.63	-246.2(2)	263.6	0.93	211.0	276.0(T)	0.76
80.0	86.7	198.4(4)	267.9	0.74	-230.9(2)	235.5	0.98	198.4	276.0(T)	
86.7	93.3	187.9(4)	267.9	0.70	-218.6(2)	235.5	0.93	187.9	276.0(T)	
93.3	100.0	177.0(4)	267.9	0.66	-205.8(2)	235.5	0.87	177.0	276.0(T)	0.64
100.0	106.7	166.0(4)	243.9	0.68	-193.1(2)	205.8	0.94	166.0	184.0(T)	
106.7	113.3	154.4(4)	243.9	0.63	-179.7(2)	205.8	0.87	154.4	184.0(T)	
113.3	120.0	142.5(4)	243.9	0.58	-166.4(2)	205.8	0.81	142.5	184.0(T)	0.77
120.0	126.7	130.0(4)	240.9	0.54	-152.1(2)	202.7	0.75	130.0	184.0(T)	
126.7	133.3	117.2(4)	240.9	0.49	-137.9(2)	202.7	0.68	117.2	184.0(T)	
133.3	140.0	103.5(4)	240.9	0.43	-122.5(2)	202.7	0.60	103.5	184.0(T)	0.56
140.0	145.0	91.5(4)	175.9	0.52	-109.1(2)	150.8	0.72	91.5	140.9(T)	
145.0	150.0	80.3(4)	175.9	0.46	-96.6(2)	150.8	0.64	80.3	140.9(T)	
150.0	155.0	69.5(3)	175.9	0.40	-84.3(2)	150.8	0.56	69.5	140.9(T)	
155.0	160.0	58.5(3)	175.9	0.33	-70.8(2)	150.8	0.47	58.5	140.9(T)	0.42
160.0	164.0	48.3(3)	120.3	0.40	-58.4(2)	102.3	0.57	48.3	103.5(T)	
164.0	168.0	37.1(3)	120.3	0.31	-46.6(2)	102.3	0.46	37.1	103.5(T)	
168.0	172.0	28.6(3)	120.3	0.24	-35.8(2)	102.3	0.35	28.6	103.5(T)	
172.0	176.0	21.3(3)	120.3	0.18	-28.0(2)	102.3	0.27	21.3	103.5(T)	
176.0	180.0	14.2(3)	120.3	0.12	-19.7(2)	102.3	0.19	14.2	103.5(T)	0.14
180.0	184.0	9.7(3)	68.0	0.14	-14.0(2)	55.0	0.25			
184.0	188.0	5.3(3)	68.0	0.08	-8.8(2)	55.0	0.16			
188.0	192.0	2.7(3)	68.0	0.04	-4.8(2)	55.0	0.09			
192.0	196.0	0.4(3)	68.0	0.01	-2.2(2)	55.0	0.04			

DIAGONAL SUMMARY

ELEVATION From	To	<-------Tension------> Force (F)	Cap. (R)	F/R	<------Compression---> Force (F)	Cap. (R)	F/R	<----Connection----> Force (F)	Cap. (R)	F/R
0.0	10.0	9.9(6)	50.2	0.20	-9.9(6)	11.8	0.84	9.9	12.3(V)	0.81
10.0	20.0	9.7(6)	50.2	0.19	-9.7(6)	12.7	0.76	9.7	12.3(V)	0.79
20.0	30.0	9.5(6)	50.2	0.19	-9.5(6)	13.7	0.69	9.5	12.3(V)	0.77
30.0	40.0	9.3(6)	50.2	0.19	-9.4(6)	14.9	0.63	9.4	12.3(V)	0.76
40.0	50.0	9.2(6)	42.9	0.21	-9.2(6)	10.7	0.87	9.2	12.3(V)	0.75
50.0	60.0	9.0(6)	42.9	0.21	-9.0(6)	11.6	0.78	9.0	12.3(V)	0.73
60.0	70.0	8.8(6)	42.9	0.21	-8.9(6)	12.6	0.71	8.9	12.3(V)	0.72
70.0	80.0	8.7(6)	42.9	0.20	-8.7(6)	13.8	0.63	8.7	12.3(V)	0.71
80.0	86.7	7.8(6)	35.7	0.22	-7.9(6)	11.5	0.68	7.9	12.3(V)	0.64
86.7	93.3	7.7(6)	35.7	0.22	-7.7(6)	12.4	0.62	7.7	12.3(V)	0.62
93.3	100.0	7.5(6)	35.7	0.21	-7.6(6)	13.4	0.57	7.6	12.3(V)	0.62
100.0	106.7	7.5(6)	29.4	0.25	-7.4(6)	8.3	0.90	7.5	8.6(V)	0.87
106.7	113.3	7.3(6)	29.4	0.25	-7.4(6)	9.0	0.83	7.4	8.6(V)	0.87
113.3	120.0	7.3(6)	29.4	0.25	-7.3(6)	9.8	0.75	7.3	8.6(V)	0.85
120.0	126.7	7.2(6)	29.4	0.24	-7.3(6)	10.7	0.68	7.3	8.6(V)	0.85
126.7	133.3	7.2(6)	29.4	0.25	-7.2(6)	11.6	0.62	7.2	8.6(V)	0.84
133.3	140.0	7.1(6)	29.4	0.24	-7.2(6)	12.7	0.57	7.2	8.6(V)	0.84
140.0	145.0	6.6(6)	22.1	0.30	-6.5(6)	8.4	0.77	6.6	8.6(V)	0.77
145.0	150.0	6.4(6)	22.1	0.29	-6.5(6)	9.2	0.71	6.5	8.6(V)	0.76
150.0	155.0	6.5(6)	22.1	0.29	-6.4(6)	10.1	0.64	6.5	8.6(V)	0.75
155.0	160.0	5.9(6)	22.1	0.27	-6.0(6)	11.0	0.55	6.0	8.6(V)	0.70
160.0	164.0	6.6(6)	17.0	0.39	-6.7(6)	10.4	0.64	6.7	8.6(V)	0.78
164.0	168.0	6.2(6)	17.0	0.36	-6.1(6)	10.4	0.59	6.2	8.6(V)	0.72
168.0	172.0	4.6(5)	17.0	0.27	-4.6(6)	10.4	0.45	4.6	8.6(V)	0.54
172.0	176.0	4.4(5)	17.0	0.26	-4.4(5)	10.5	0.42	4.4	8.6(V)	0.51
176.0	180.0	3.6(6)	17.0	0.21	-3.6(6)	10.5	0.35	3.6	8.6(V)	0.42
180.0	184.0	2.7(6)	14.2	0.19	-2.7(6)	7.4	0.37	2.7	8.6(V)	0.32
184.0	188.0	2.4(6)	14.2	0.17	-2.4(6)	7.4	0.33	2.4	8.6(V)	0.28
188.0	192.0	1.5(5)	14.2	0.11	-1.5(5)	7.4	0.20	1.5	8.6(V)	0.18
192.0	196.0	1.3(5)	14.2	0.09	-1.3(5)	7.4	0.18	1.3	8.6(V)	0.15

HORIZONTAL SUMMARY

ELEVATION From	To	<-------Tension------> Force (F)	Cap. (R)	F/R	<----Compression-----> Force (F)	Cap. (R)	F/R	<----Connection----> Force (F)	Cap. (R)	F/R
155.0	160.0	1.0(1)	11.5	0.09	-1.2(4)	2.6	0.46	1.2	8.6(V)	0.14
192.0	196.0	0.6(2)	11.5	0.05	-0.6(3)	2.6	0.21	0.6	8.6(V)	0.07

FOUNDATIONS LOAD SUMMARY

Reaction	Service* Bare	Service* Iced	Factored Bare	Factored Iced	Design Service	Design Fact.
Load	339.8(1)	370.0(2)	339.8(1)	370.0(2)	370.0	370.0
Uplift	297.6(3)	312.3(4)	297.6(3)	312.3(4)	312.3	312.3
Shear	34.0(1)	35.8(2)	34.0(1)	35.8(2)	35.8	35.8

* See top of summary file for service load factors.

SERVICE DEFLECTIONS SUMMARY

NO ICE - 50 MPH WIND SPEED

Elev.	displacement	Rotation	Twist
10.0	0.03(5)	0.02(5)	0.00(5)
20.0	0.09(1)	0.03(1)	0.00(5)
30.0	0.17(5)	0.04(5)	0.00(5)
40.0	0.30(1)	0.06(1)	0.00(5)
50.0	0.44(5)	0.07(5)	0.00(5)
60.0	0.64(1)	0.09(1)	0.00(5)
70.0	0.86(1)	0.10(1)	0.00(5)
80.0	1.13(1)	0.13(1)	0.00(5)
86.7	1.34(1)	0.15(1)	0.00(5)
93.3	1.56(1)	0.16(1)	0.00(5)
100.0	1.81(1)	0.18(1)	0.00(5)
106.7	2.08(1)	0.19(1)	0.00(5)
113.3	2.37(1)	0.21(1)	0.00(5)
120.0	2.69(1)	0.22(1)	0.00(5)
126.7	3.03(1)	0.24(1)	0.00(3)
133.3	3.39(1)	0.26(1)	0.00(5)
140.0	3.77(1)	0.28(1)	0.00(3)
145.0	4.08(1)	0.29(1)	0.00(5)
150.0	4.40(1)	0.31(1)	0.00(3)
155.0	4.73(1)	0.31(1)	0.00(5)
160.0	5.08(1)	0.33(1)	0.00(3)
164.0	5.36(1)	0.34(1)	0.00(5)
168.0	5.67(1)	0.37(1)	0.00(3)
172.0	5.97(1)	0.35(1)	0.00(3)
176.0	6.28(1)	0.38(1)	0.00(3)
180.0	6.59(1)	0.37(1)	0.00(3)
184.0	6.90(1)	0.38(1)	0.00(3)
188.0	7.22(1)	0.38(1)	0.00(3)
192.0	7.54(1)	0.38(1)	0.00(3)
196.0	7.85(1)	0.38(1)	0.00(3)

SLENDERNESS VIOLATION SUMMARY*

ELEVATION From	To	Leg	Diagonal	Horizontal

* Printed values are kL/r for members exceeding the allowable limits

APPENDIX C
Miscellaneous Information

SpectraSite

SpectraSite Communications, Inc.
100 Regency Forest Drive, Suite 400
Cary, NC 27511
ATTN: Collocation Management
Collocation@spectrasite.com
Office: 919-851-0320
Fax: 919-859-6789

Date of Last Update: 3/25/01

Tower Antenna Inventory for Site # CT-0006 Site Name Ansonia Wakelee

Carrier	EXISTING						MAX ALLOWABLE						Microwave Other
	Antenna Info			Coax Info		Mount Type	Antenna Info			Coax Info		Mount Type	
	#	Type	Ht	#	Size/Distr		#	Type	Ht	#	Size/Distr		
Nextel	9	Decibel DB844H90E-XY	196'	9	1 ¼	Boom	12	Decibel DB 44H90E-XY	196'	12	1 ¼	Boom	
Sprint	6	Decibel DB980G90EMS	187.5'	6	1 5/8"	Boom							
Cellco Partners	12	Allgon 7129.16	178'	12	1 5/8"	Boom							
SNET	12	Decibel DB846H80	168'	12	1 ¼"	TBD by SCI							
AT&T (proposed)	12	Allgon 7184	158'	12	1 5/8"	TBD by SCI							

Mar-13-00 03:47P cassie templeton 678-947-0603 P.01

EPA:

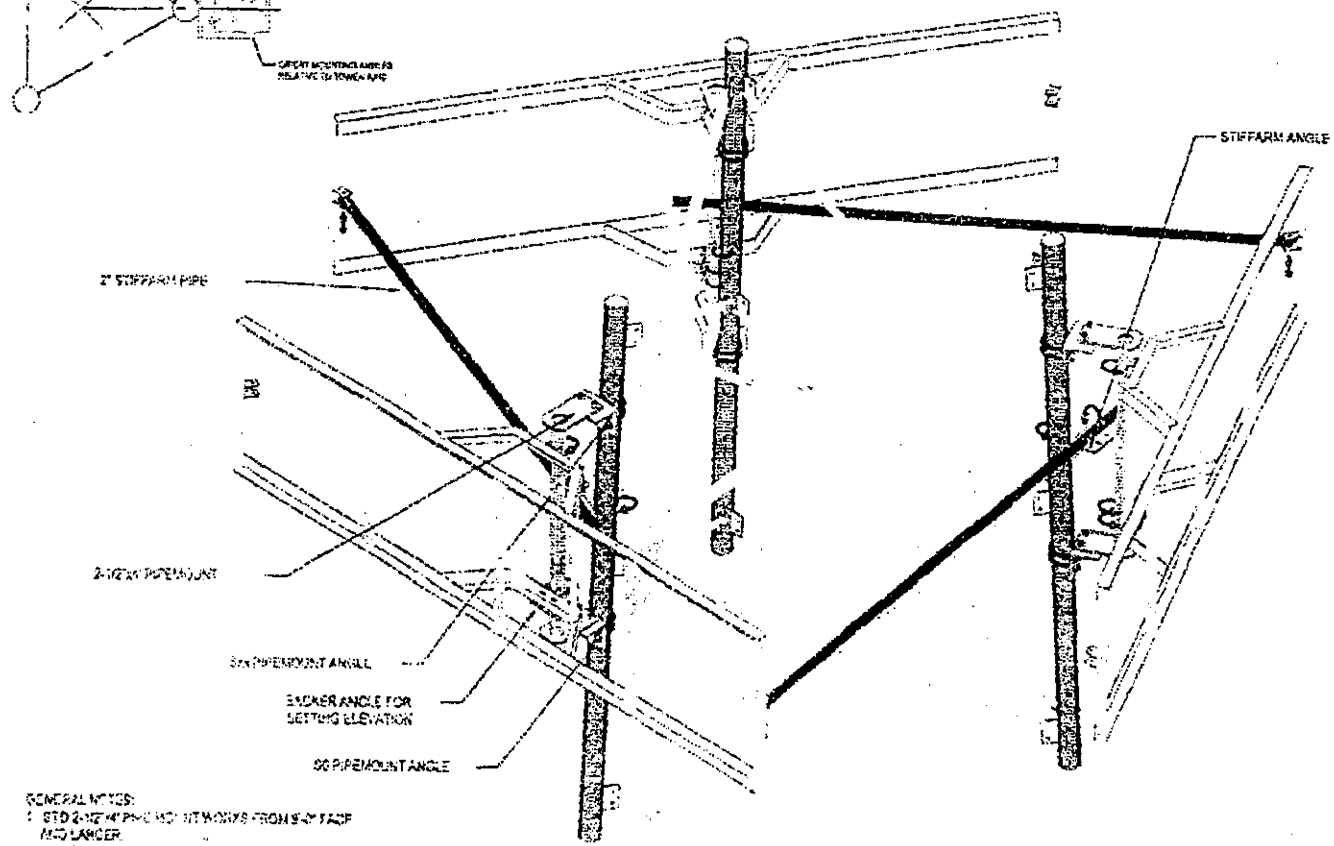
w/o = 47 ft²

w/i = 67 ft²

WT:

w/o = 1,600 lbs.

w/i = 2,050 lbs.



NUDD CORPORATION

Ricochet

Metricom, Inc.
2701 W. Plano Pkwy.
Plano, TX 75075

WAP DEVELOPMENT GUIDELINES

VOLUME II

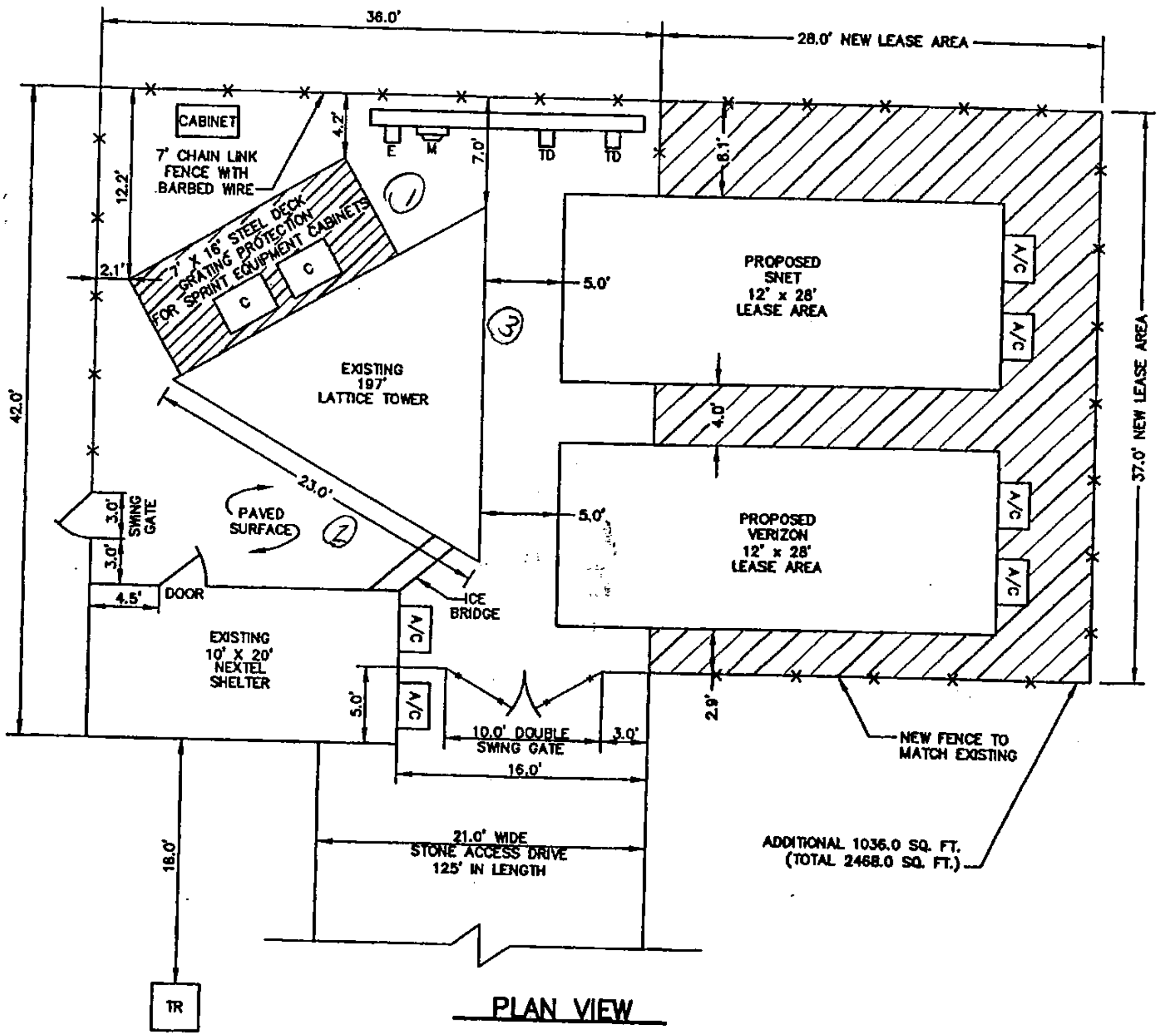
CONSTRUCTION SPECIFICATION STANDARD

RELEASE 1

12' BOOM CONFIGURATION SELF-SUPPORT TOWER

9L 1

4



PLAN VIEW

LEGEND:

E ELECTRIC SERVICE DISCONNECT
M METER
TD TELCO DEMARK
TR TRANSFORMER
C CABINET

GRAPHIC SCALE

10 0 5 10

(IN FEET)
1 Inch = 10 Feet

PROPOSED SNET COLLOCATION

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, shall be without liability to Kimley-Horn and Associates, Inc.

JOB No.	011815007
DATE	12/11/00
REV.	0
DRAWN	OA/OC
EJY	

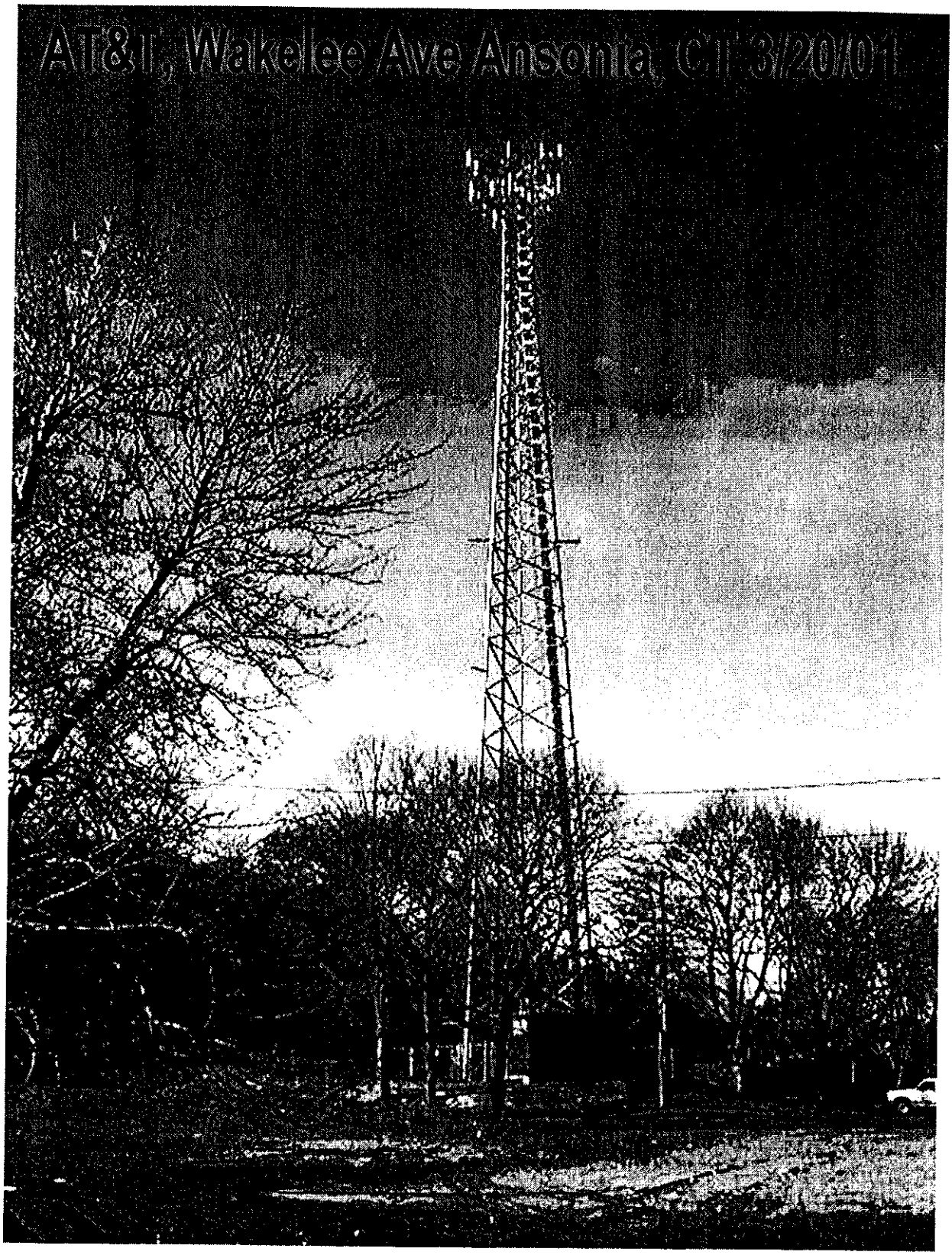
NO.	BY	REVISION	DATE
1	OA	[illegible]	[illegible]

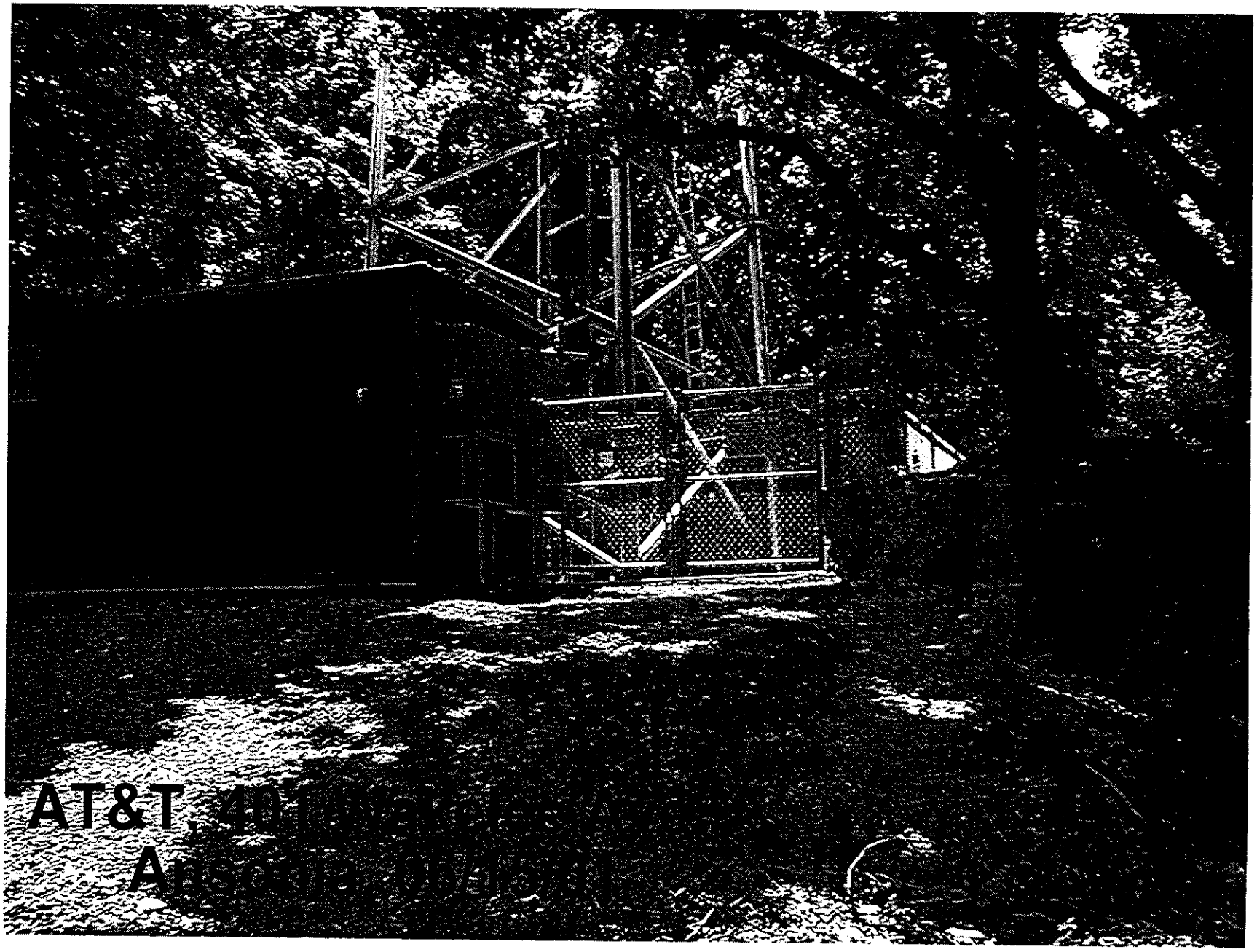
SPECTRASITE COMMUNICATIONS
8000 REGENCY PARKWAY, SUITE 570
CARY, NC 27511

ANSONIA-WAKELEE
CT-0006

SITE LAYOUT PLAN
SHEET 1 OF 2

APPENDIX D
Calculations


AT&T, Wakelee Ave Ansonia, CT 3/20/01


AT&T, 40 [illegible]
Atlanta, [illegible]

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square
New Britain, Connecticut 06051
Phone: (860) 827-2935
Fax: (860) 827-2950

June 5, 2001

Honorable James T. DellaVolpe
Mayor
City of Ansonia
City Hall
253 Main Street
Ansonia, CT 06401-1866

RE: **TS-VER-002-010531** - Cellco Partnership d/b/a Verizon Wireless and AT&T Wireless PCS, LLC, d/b/a AT&T Wireless request for an order to approve tower sharing at an existing telecommunications facility located at 401 Wakelee Avenue, Ansonia, Connecticut.

Dear Mr. DellaVolpe:

The Connecticut Siting Council (Council) received this request for tower sharing, pursuant to Connecticut General Statutes § 16-50aa.

The Council will consider this item at the next meeting scheduled for June 20, 2001, at 1:30 p.m. in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut.

Please call me or inform the Council if you have any questions or comments regarding this proposal.

Thank you for your cooperation and consideration.

Very truly yours,

Joel M. Rinebold
Executive Director

JMR/RKE/laf

Enclosure: Notice of Tower Sharing

c: Peter Crabtree, Zoning Enforcement Officer, City of Ansonia

I:\siting\em\bam-ver\ansonia\dellavolpe.doc

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square
New Britain, Connecticut 06051
Phone: (860) 827-2935
Fax: (860) 827-2950

June 26, 2001

Christopher B. Fisher, Esq.
Cuddy & Feder & Worby LLP
90 Maple Avenue
White Plains, NY 10601-5196

RE: **TS-VER-002-010531** – Request by Cellco Partnership d/b/a Verizon Wireless and AT&T Wireless for an Order to Approve the Shared Use of a Tower Facility located at 401 Wakelee Avenue, Ansonia, Connecticut.

Dear Attorney Fisher,

The Connecticut Siting Council (Council) requests that you provide a structural report stating that the tower located at 401 Wakelee Ave. in Ansonia, Connecticut is capable of supporting the two proposed platforms and antennae at the proposed heights. The original design of the tower called for the lowest platform on the tower to be located at the 80-foot level and not the 158-foot level as you have proposed. If it is determined that the tower is not structurally capable of supporting your proposed modification, please provide details for reinforcement of the tower.

Please forward an original and 20 copies to this office. In accordance with the State Solid Waste Management Plan, the Council is requesting that all filings be submitted on recyclable paper, primarily regular weight white office paper. Please avoid using heavy stock paper, colored paper, and metal or plastic binders and separators. Fewer copies of bulk material may be provided as appropriate.

Yours very truly,

Joel M. Rinebold
Executive Director

JMR/rcc

TS-VER-002-01053

Network Dept.

verizon wireless

Verizon Wireless
20 Alexander Drive
Wallingford, Connecticut 06492

June 28, 2001

Mr. Robert Erling, Analyst
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: Request by Cellco Partnership d/b/a Verizon Wireless and AT&T Wireless PCS, LLC, d/b/a AT&T Wireless for an Order to Approve the Shared Use of a Tower Facility located at 401 Wakelee Avenue, Ansonia, Connecticut.

Dear Mr. Erling:

Enclosed please find two (2) copies of the Structural Report for the Spectrasite tower located at 401 Wakelee Avenue in Ansonia, Connecticut. The Report was prepared by a structural engineer and stamped and sealed as shown. The Report includes both the antennas of Verizon Wireless and AT&T Wireless and concludes that the existing tower is capable, without structural reinforcing, of supporting the proposed and existing antennas.

I am submitting this Report in response to questions and concerns raised by Council Members in regard to the joint application filed by Verizon Wireless and AT&T Wireless to co-locate on this existing tower. It is my understanding that this application was tabled and that the Structural Report was requested by the Council.

If you have any questions or need additional information, please call me at my office at (203) 294-8519.

Thanks you for your time and attention to this matter.

Very truly yours,

Sandy M. Carter

Sandy M. Carter
Regulatory Manager
Verizon Wireless

Enclosure

MORRISON HERSHFIELD
3730 Chamblee Tucker Road, Atlanta, Georgia, 30341
Tel. (770) 939-2370 Fax. (678) 406-0020

REPORT

Site: CT-0006 Ansonia Wakelee, CT

Structural Analysis of 196 ft Rohn Self-Supporting Tower

MHC Project 1996035: SP0-896

Presented to:

Mr. Glenn Conway
Spectrasite Communications, Inc.
100 Regency Forest Drive, Suite 400
Cary, NC
27511

March 30, 2001

APPROVED
Name 4/3/01 Date
Name Date

STATE OF CONNECTICUT
CHOON HONG TAN
No. 22092
LICENSED PROFESSIONAL ENGINEER
3/30/01

Denis Hum, M.Eng., P.E.
Senior Structural Engineer

C.H. David Tan, M.Eng., P.E.
Senior Structural Engineer
Connecticut Registration No. 22092

Table of Contents

Revision	Date	Engr	Review	Comments
SP0-896	3/30/01	EVS	LJL	Analysis for AT&T Wireless.

1. Executive Summary

Morrison Hershfield, as requested by Mr. Glenn Conway of Spectrasite Communications, has carried out an analysis of the 196 ft Rohn self-support tower described in this report for the addition of AT&T's proposed antenna installation. This report includes, but is not limited to, details of the tower, assumptions used in this investigation, structural loading used, stress results, conclusions and recommendations.

Our analysis demonstrates that the existing tower and foundation **are in conformance** with the requirements of TIA/EIA-222-F *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures,* using the New Haven county minimum 85 mph wind speed with ½" radial ice and for the specified loading.

2. Tower Information

Tower Details

Site Name	CT-0006 Ansonia Wakelee, New Haven, CT
Location	401 Wakelee Ave, CT (Lat 41-21-22.4, Long 73-05-29.4)
Tower Description	196 ft self-support tower: Triangular with base F.W. of 23 ft and top F.W. of 6.6 ft
Original Fabricator / Date of Installation	Rohn/ 1999
Original Design Loading	EIA-TIA-222-F, 80 mph and 1/2" ice.
Current Standard and Loading	TIA/EIA-222-F, 85 mph wind speed and 1/2" ice.
Tower History	No known record of tower modifications since installation.

Sources of Information for Tower

Description	Source
Tower	Drawings by Rohn, Dwg No. C991159, dated July 12, 1999, provided by Spectrasite.
Antennas and Transmission Lines	Survey of existing conditions, collocation application sheet, provided by Spectrasite.
Foundation	No foundation data provided.

Material Grade Information

Legs	Pipes. 50 ksi yield strength.
Diagonals	Single-angles. 36 ksi yield strength. (Assumed)
Horizontals	Single-angles. 36 ksi yield strength.
Member Connections	ASTM A325 bolts.
Anchor Bolts	ASTM A354 Gr BC

3. Assumptions and Particular Considerations

All results and conclusions derived from this analysis report are as accurate as the information provided to Morrison Hershfield. An independent verification of the information supplied to us has not been made. It is assumed that the tower and foundation have been properly constructed as per the original design drawings and specifications. It is also assumed that the structure has been properly maintained, is in good condition and is capable of carrying the full design loading. Any subsequent modifications to the original tower, where applicable and based on data supplied to Morrison Hershfield, are also assumed to have been properly installed as per design and capable of carrying their full design load. Exceptions to the foregoing are stated explicitly in this report.

The following special assumptions were made in this analysis:

- Neither a geotechnical report nor foundation drawings were provided for this site. The original reactions were compared to the new design reactions to determine the adequacy of the foundation.
- All angle sections are assumed to be 36 ksi yield strength.

4. Scope of Analysis

Unless noted otherwise, this report is limited to a structural analysis of the tower based on established engineering principles for both structural behavior and member capacities. The analysis is performed using Morrison Hershfield's proprietary software for analysis of self-supporting towers. The software comprises pre- and post processing programs in conjunction with a main processing program, which together implement code provisions based on TIA/EIA and AISC requirements.

The analysis program uses a finite element representation of the self-supporting tower. The three-dimensional model consists of truss elements in a large displacement formulation. The ensuing non-linear equilibrium equations are solved in an iterative fashion yielding internal tower member forces, incorporating P-delta effects and including the effects of antenna and appurtenance loadings.

5. Antenna Loading Investigated

The following loading was considered for the structural analysis:

Antenna Loads

Elev (ft)	Antenna Description	Carrier	Location	TX-Lines / Face
	PROPOSED			
158.0	(12) ALLGON 7184 PANELS	AT&T		(12) 1-5/8" [2]
158.0	(3) GATE BOOM MOUNTS			
	FUTURE			
196.0	(3) DB844H90E-XY PANELS	NEXTEL		(3) 1-1/4" [2]
	EXISTING			
196.0	STROBE+ BEACON			
196.0	(9) DB844H90E-XY PANELS	NEXTEL		(9) 1-1/4" [2]
196.0	(3) GATE BOOM MOUNTS			
187.5	(6) DB980G90EM-S PANELS	SPRINT		(6) 1-5/8" [1]
187.5	(3) GATE BOOM MOUNTS			
178.0	(12) ALLGON 7129.16 PANELS	CELLCO PARTNERS		(12) 1-5/8" [3]
178.0	(3) GATE BOOM MOUNTS			
168.0	(12) DB846H80 PANELS	SNET		(12) 1-1/4" [3]
168.0	(3) GATE BOOM MOUNTS			

Notes: (a) Any discrepancies in loading from this listing should be brought to Morrison Hershfield's attention; results of this analysis cannot be used if the loading is different; (b) Face 5 denotes lines not on any face, and considered only as a linear appurtenance.

6. Analysis Results Summary

Summary results of our structural analysis are presented below. A listing of the full computer analysis is provided in Appendix B to this report. The results show that the existing tower **is in conformance** with the requirements of TIA/EIA-222-F *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures,* using the New Haven county minimum 85 mph wind speed with ½" radial ice and for the specified loading.

As-built details of the tower foundation were not available to MH. It is assumed that the foundations were designed for the loads indicated on the structural design drawings from Rohn. Foundation uplift loads from our analysis are 4% greater than the original design uplift forces, which can be considered acceptable considering also that the foundation has most likely been designed with some reserve uplift capacity. Compression loads are 8% greater than the original design reactions. This can be considered marginally acceptable,

however, as compression loading signifies a soil settlement problem that is not as adversely affected by the transitory wind loading. The foundations may therefore, by comparison, be considered to be **adequate** for the existing and proposed loading. We recommend, however, that foundation details for this site be obtained in order to determine the actual capacity of the foundation for uplift and compression.

Maximum Tower Response

Tower Member	Results
Legs	SRmax= 1.00 (60 ft - 70 ft) -> Compr.
Diagonals	SRmax= 0.90 (100 ft - 107 ft) -> Compr.
Horizontals	SRmax= 0.46 (155 ft - 160 ft) -> Compr.

SR= Stress ratio, should be less than 1.00. However, up to 5% overstress may be considered acceptable.

Foundation Loads Comparison

Load	Original Design	Current Analysis	Ratio to Original
Compression (kip)	343.0	370.0	1.08*
Uplift (kip)	301.1	312.3	1.04*
Shear (kip)	36.3	35.8	0.99

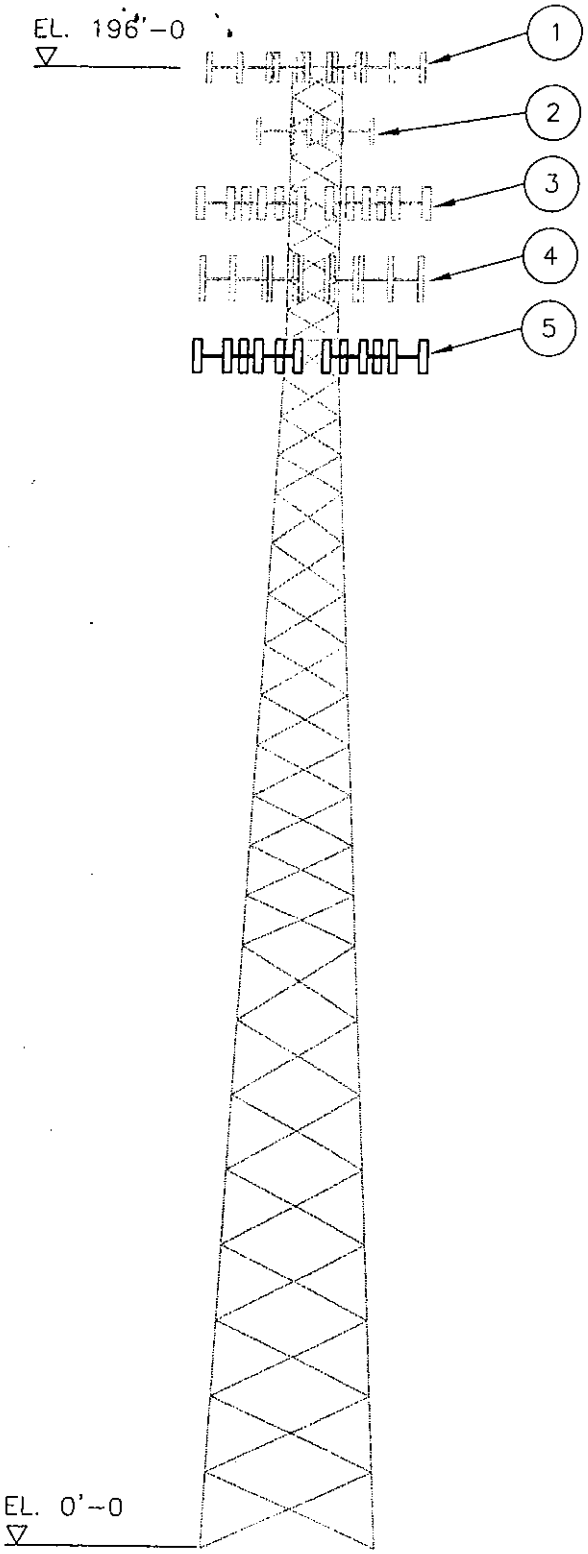
* Denotes ratio to original greater than 1.0.

7. Conclusions

Our analysis findings show that the existing tower **is capable,** without structural reinforcing, of supporting the loads as a result of the AT&T proposed antenna installation and existing antennas.

We trust that this report is satisfactory. If you have any questions, please feel free to contact our office.

APPENDIX A
Tower Elevation Drawing



ANTENNA SCHEDULE

TYPE	ELEV.	DESCRIPTION	TX LINES
1	196'	(12) DECIBEL DB844H90E-XY EXISTING (9) AND FUTURE (3)	(12) 1-1/4
2	187.5'	(6) DECIBEL DB980G90EMS EXISTING	(6) 1-5/8
3	178'	(12) ALLGON 7129.6 EXISTING	(12) 1-5/8
4	168'	(12) DECIBEL DB846H80 EXISTING	(12) 1-1/4
5	158'	(12) ALLGON 7184 PROPOSED	(12) 1-5/8

ANTENNA NOTES:

1. LOCATION AND TYPE OF ANTENNA AS SHOWN IN ANTENNA SCHEDULE.
2. FOR CLARITY, ANTENNA REPRESENTATIONS ARE CONCEPTUAL ONLY AND DO NOT NECESSARILY SHOW TRUE IMAGE OF ANTENNAS AND MOUNTS.

MORRISON HERSHFIELD
3730 Chamblee Tucker Rd.
Atlanta, GA. 30341
Tel: (770) 939 2370
Fax: (770) 934 9476

Project:
ANSONIA WAKELEE
CT-0006
401 WAKELEE AVE
NEW HAVEN, CT

SpectraSite

Drawing Title:
TOWER ELEVATION

Project No.
1996035/SP0-896

Scale: N.T.S.

Revision No.
0

Date: 03/29/01

Drawing No.
TP

Drawn By: GAF

APPENDIX B
Computer Input and Output Listings

```
TIME/DATE/FILES = 09:20:41 / 03-30-2001 / SP0896p1.dat - SP0896t1.sum
*****************************************************************************
*                                                                           *
*                              INPUT FILE                                   *
*                                                                           *
*****************************************************************************
TITLE
1996035   SP0896P1.DAT    ANSONIA WAKELEE  CT-0006 MARCH 28, 2001  EVS
C*-------------------------------------------------------------------
C! LOAD CASE        =EXISTING + NEXTEL MAX ALLOWABLE + PROPOSED (AT&T)
C! CLIENT           =SPECTRASITE
C! SITE ID          =CT-0006
C! SITE NAME/STATE  =ANSONIA WAKELEE/ CT
C! COUNT / WIND     =NEW HAVEN /85 MPH+ 1/2 " ICE
C! ORIGINAL LOADING=ANSI/EIA 222-F-1996/80 MPH+1/2" ICE
C! TOWER DETAILS    =196 FT/SST/ROHN
C! PREPARED BY      =EVS
C*-------------------------------------------------------------------
OPTIONS
I,U
GENERAL DATA
T,196.0
ICE DATA
196.0,0.5
WIND DATA
1,85.0
C*****************************************************************************
MEMBER PROPERTIES
C*****************************************************************************
C* LEGS
 1, P, 50, 65, 29000,  8.750, 0.500
 2, P, 50, 65, 29000,  8.750, 0.375
 3, P, 50, 65, 29000,  6.625, 0.432
 4, P, 50, 65, 29000,  6.625, 0.340
 5, P, 50, 65, 29000,  5.563, 0.375
 6, P, 50, 65, 29000,  5.500, 0.375
 7, P, 50, 65, 29000,  4.500, 0.337
 8, P, 50, 65, 29000,  3.500, 0.300
 9, P, 50, 65, 29000,  2.875, 0.203
C* DIAGONALS
10,  A, 36, 58, 29000,  4.000, 4.000, 0.2500
11,  A, 36, 58, 29000,  3.500, 3.500, 0.2500
12,  A, 36, 58, 29000,  3.000, 3.000, 0.2500
13,  A, 36, 58, 29000,  2.500, 2.500, 0.2500
14,  A, 36, 58, 29000,  2.000, 2.000, 0.2500
15,  A, 36, 58, 29000,  2.000, 2.000, 0.1875
16,  A, 36, 58, 29000,  1.750, 1.750, 0.1875
C* HORIZONTALS
17,  A, 36, 58, 29000,  2.000, 2.000, 0.1250
C*****************************************
FACE WIDTH DATA
C*****************************************
 0.0,  23.0000
160.0,   6.7604
180.0,   6.6785
196.0,   6.6458
C*****************************************
PANEL CONFIGURATION
C*****************************************
C*ELV, BAY HT,ID [SUB,DIAPH,K-PANEL HIP (0-4,0-3,0-1)]
 80.0, 10.0000, C, 0, 0, 0
140.0,  6.6666, C, 0, 0, 0
160.0,  5.0000, C, 0, 0, 0
196.0,  4.0000, C, 0, 0, 0
C*****************************************
BOLT DATA
C*****************************************
C* SIZE, 1=A325
1, 1.000, 1
2, 0.875, 1
3, 0.750, 1
4, 0.625, 1
C*****************************************
C* MEMBER DATA
C*****************************************
C*    MEM, BLT, NBLT                0=TENSION
LEG DATA
 20.0, 1, 1, 8,.,.,.,., 0
 40.0, 2, 1, 8,.,.,.,., 0
 60.0, 2, 1, 8,.,.,.,., 0
 80.0, 3, 1, 6,.,.,.,., 0
100.0, 4, 1, 6,.,.,.,., 0
120.0, 5, 1, 4,.,.,.,., 0
140.0, 6, 1, 4,.,.,.,., 0
160.0, 7, 2, 4,.,.,.,., 0
180.0, 8, 3, 4,.,.,.,., 0
196.0, 9
DIAGONAL DATA
 20.0,10, 3, 1
 40.0,10, 3, 1
 60.0,11, 3, 1
 80.0,11, 3, 1
100.0,12, 3, 1
120.0,13, 4, 1
140.0,13, 4, 1
160.0,14, 4, 1
180.0,15, 4, 1
196.0,16, 4, 1
HORIZONTAL DATA
159.0, 0
160.0,17, 4, 1
195.0, 0
196.0,17, 4, 1
C*****************************************************************
REINFORCEMENT DATA
C                              LEGS        DIAG.       HORIZ.
C*****************************************************************
C* TO ACCOUNT FOR GUSSET PLATE MULTIPY BY 0.95
00.0,196.0,0.0,0.0,0.0,1.0,1.0,1.0,0.95,0.95,0.95,0.95,0.95,0.95
C*******************************
TRANSMISSION LINE DATA
C*******************************
C#1 'WAVEGUIDES ON FACE 1,2,3'
0, 196.0, 1,1, 2.250, 7.500, R
0, 196.0, 2,2, 2.250, 7.500, R
0, 196.0, 3,3, 2.250, 7.500, R
```

```
0, 196.0, 3,4, 2.250, 7.500, R
C* MISC. APPURT. + WEIGHT
0, 196.0, 5,5, 2.50, 10.0, R
C*****************************
C#***(START) /  TX-LINES ADDED BY ANTREAD PROGRAM ***** 03-30-2001 / 09:20
C* (9) DB844H90E-XY PANELS : ( 9) x 1-1/4" on Face [2]
   0.0, 196.0, 2,   6,   1.55,  0.664,R
   0.0, 196.0, 2,   7,   1.55,  0.664,R
   0.0, 196.0, 2,   8,   1.55,  0.664,R
   0.0, 196.0, 2,   9,   1.55,  0.664,R
   0.0, 196.0, 2,  10,   1.55,  0.664,R
   0.0, 196.0, 2,  11,   1.55,  0.664,R
   0.0, 196.0, 2,  12,   1.55,  0.664,R
   0.0, 196.0, 2,  13,   1.55,  0.664,R
   0.0, 196.0, 2,  14,   1.55,  0.664,R
C* (3) DB844H90E-XY PANELS : ( 3) x 1-1/4" on Face [2]
   0.0, 196.0, 2,  15,   1.55,  0.664,R
   0.0, 196.0, 2,  16,   1.55,  0.664,R
   0.0, 196.0, 2,  17,   1.55,  0.664,R
C* (6) DB980G90EM-S PANELS : ( 6) x 1-5/8" on Face [1]
   0.0, 187.5, 1,  18,   1.98,  1.080,R
   0.0, 187.5, 1,  19,   1.98,  1.080,R
   0.0, 187.5, 1,  20,   1.98,  1.080,R
   0.0, 187.5, 1,  21,   1.98,  1.080,R
   0.0, 187.5, 1,  22,   1.98,  1.080,R
   0.0, 187.5, 1,  23,   1.98,  1.080,R
C* (12) ALLGON 7129.16 PANELS : (12) x 1-5/8" on Face [3]
   0.0, 178.0, 3,  24,   1.98,  1.080,R
   0.0, 178.0, 3,  25,   1.98,  1.080,R
   0.0, 178.0, 3,  26,   1.98,  1.080,R
   0.0, 178.0, 3,  27,   1.98,  1.080,R
   0.0, 178.0, 3,  28,   1.98,  1.080,R
   0.0, 178.0, 3,  29,   1.98,  1.080,R
   0.0, 178.0, 3,  30,   1.98,  1.080,R
   0.0, 178.0, 3,  31,   1.98,  1.080,R
   0.0, 178.0, 3,  32,   1.98,  1.080,R
   0.0, 178.0, 3,  33,   1.98,  1.080,R
   0.0, 178.0, 3,  34,   1.98,  1.080,R
   0.0, 178.0, 3,  35,   1.98,  1.080,R
C* (12) DB846H80 PANELS : (12) x 1-1/4" on Face [3]
   0.0, 168.0, 3,  36,   1.55,  0.664,R
   0.0, 168.0, 3,  37,   1.55,  0.664,R
   0.0, 168.0, 3,  38,   1.55,  0.664,R
   0.0, 168.0, 3,  39,   1.55,  0.664,R
   0.0, 168.0, 3,  40,   1.55,  0.664,R
   0.0, 168.0, 3,  41,   1.55,  0.664,R
   0.0, 168.0, 3,  42,   1.55,  0.664,R
   0.0, 168.0, 3,  43,   1.55,  0.664,R
   0.0, 168.0, 3,  44,   1.55,  0.664,R
   0.0, 168.0, 3,  45,   1.55,  0.664,R
   0.0, 168.0, 3,  46,   1.55,  0.664,R
   0.0, 168.0, 3,  47,   1.55,  0.664,R
C* (12) ALLGON 7184 PANELS : (12) x 1-5/8" on Face [2]
   0.0, 158.0, 2,  48,   1.98,  1.080,R
   0.0, 158.0, 2,  49,   1.98,  1.080,R
   0.0, 158.0, 2,  50,   1.98,  1.080,R
   0.0, 158.0, 2,  51,   1.98,  1.080,R
   0.0, 158.0, 2,  52,   1.98,  1.080,R
   0.0, 158.0, 2,  53,   1.98,  1.080,R
   0.0, 158.0, 2,  54,   1.98,  1.080,R
   0.0, 158.0, 2,  55,   1.98,  1.080,R
   0.0, 158.0, 2,  56,   1.98,  1.080,R
   0.0, 158.0, 2,  57,   1.98,  1.080,R
   0.0, 158.0, 2,  58,   1.98,  1.080,R
   0.0, 158.0, 2,  59,   1.98,  1.080,R
C#***( END ) /  TX-LINES ADDED BY ANTREAD PROGRAM ***** 03-30-2001 / 09:20
POINT LOAD DATA
C*****************************
C* STANDARD SIDE LIGHTING FACE 2
C* ELV[WEIGHT, CaAa, Momnt, Torq] ICE ...
C#1 'STROBE+ BEACON' '' ''
196.0, 0.050,  5.0, 2.5, 3.80, 0.075, 6.0,  2.5, 3.8
C
C#1E '(9) DB844H90E-XY PANELS' ' NEXTEL' ''
196.0, 0.090, 23.8, 0.0, 0.0, 0.338, 27.2, 0.0 ,0.0
C#2 0.0,0.0, 9,5,2, 0.0,0.0,''
C#1F '(3) DB844H90E-XY PANELS' ' NEXTEL' ''
196.0, 0.030,  7.9, 0.0, 0.0, 0.113, 9.1, 0.0 ,0.0
C#2 0.0,0.0, 3,5,2, 0.0,0.0,''
C#1E '(3) GATE BOOM MOUNTS' '' ''
196.0, 1.600, 47.0, 0.0,0.0, 2.050,  67.0, 0.0, 0.0
C#1E '(6) DB980G90EM-S PANELS' 'SPRINT' ''
187.5, 0.045, 10.3, 0.0,0.0, 0.135,  12.2, 0.0, 0.0
C#2 0.0,0.0, 6,6,1, 0.0,0.0,''
C#1E '(3) GATE BOOM MOUNTS' '' ''
187.5, 1.600, 47.0, 0.0,0.0, 2.050,  67.0, 0.0, 0.0
C#1E '(12) ALLGON 7129.16 PANELS' 'CELLCO PARTNERS' ''
178.0, 0.204, 52.5, 0.0,0.0, 0.600,  57.7, 0.0, 0.0
C#2 0.0,0.0, 12,6,3, 0.0,0.0,''
C#1E '(3) GATE BOOM MOUNTS' '' ''
178.5, 1.600, 47.0, 0.0,0.0, 2.050,  67.0, 0.0, 0.0
C#1E '(12) DB846H80 PANELS' 'SNET' ''
168.0, 0.180, 49.3, 0.0,0.0, 0.640,  54.7, 0.0, 0.0
C#2 0.0,0.0, 12,5,3, 0.0,0.0,''
C#1E '(3) GATE BOOM MOUNTS' '' ''
168.0, 1.600, 47.0, 0.0,0.0, 2.050,  67.0, 0.0, 0.0
C#1P '(12) ALLGON 7184 PANELS' 'AT&T' ''
158.0, 0.120, 23.2, 0.0, 0.0, 0.450, 27.0, 0.0 ,0.0
C#2 0.0,0.0, 12,6,2, 0.0,0.0,''
C#1P '(3) GATE BOOM MOUNTS' '' ''
158.0, 1.600, 47.0, 0.0,0.0, 2.050,  67.0, 0.0, 0.0
C*****************************
LOAD FACTORS
C*****************************
B,1.00,1.00,0.00
I,1.00,0.75,1.00
C
C## LEG SPLICE ELEVATIONS SST
C SPLICE ELEVN START, END, INCREMENT (FT)
C## 20.0, 180.0, 20.0
C## END
C
C## FOUNDATION DESIGN LOADS SST (COMP, UPLIFT, SHEAR /LEG)
C## 343.0  301.1  36.3
C## END
```

```
*******************************************************************************
*                                                                             *
*                                 OUTPUT FILE                                 *
*                                                                             *
*******************************************************************************
 TIME/DATE/FILES = 09:20:41 / 03-30-2001 / SP0896p1.dat - SP0896t1.sum
 -----------------------------------------------------------------------------
              TOWER ANALYSIS PROGRAM (TAP)
                 Summary Output Results
              (c) 2001, Morrison Hershfield
 -----------------------------------------------------------------------------
 LOAD CASE        =EXISTING + NEXTEL MAX ALLOWABLE + PROPOSED (AT&T)
 CLIENT           =SPECTRASITE
 SITE ID          =CT-0006
 SITE NAME/STATE  =ANSONIA WAKELEE/ CT
 COUNT / WIND     =NEW HAVEN /85 MPH+ 1/2 " ICE
 ORIGINAL LOADING=ANSI/EIA 222-F-1996/80 MPH+1/2" ICE
 TOWER DETAILS    =196 FT/SST/ROHN
 PREPARED BY      =EVS
 -----------------------------------------------------------------------------

1996035   SP0896P1.DAT    ANSONIA WAKELEE  CT-0006 MARCH 28, 2001  EVS

Standards          :  TIA/EIA-222-F (96)
Wind Speed         :  85.0  MPH
Ice Thickness      :  0.50  inch
Tower Height       :  196.0 feet

Load Combinations:
------------------
0. No  wind.
1. Bare, wind on face.
2. Iced, wind on face.
3. Bare, wind on Corner.
4. Iced, wind on corner.
5. Bare, wind parallel to face.
6. Iced, wind parallel to face.

Load Factors for Forces:
------------------------
Bare Cases:  (1.00)Dead + (1.00)Wind + (0.00)Ice.
Iced Cases:  (1.00)Dead + (0.75)Wind + (1.00)Ice.
When dead loads resist wind:
Bare Cases:  (1.00)Dead + (1.00)Wind + (0.00)Ice.
Iced Cases:  (1.00)Dead + (0.75)Wind + (1.00)Ice.

Service Load Factors for Forces/Deflections
-------------------------------------------
Bare Cases:  (1.00)Dead + (1.00)Wind + (0.00)Ice.
Iced Cases:  (1.00)Dead + (0.75)Wind + (1.00)Ice.

Units are kip, ft .. Deflections in inches and degrees
```

```
*****************************
MAXIMUM MEMBER RESPONSE
*****************************

LEGS                ELEV1   ELEV2     LOAD    CAPAC     SR LC

TENSION              80.0    86.7    198.4    267.9   0.74  4
COMPRESSION          60.0    70.0   -263.9    263.6   1.00  2
CONNECTION           10.0    20.0    293.6    368.0   0.80  4

DIAGONALS           ELEV1   ELEV2     LOAD    CAPAC     SR LC

TENSION             160.0   164.0      6.6     17.0   0.39  6
COMPRESSION         100.0   106.7     -7.4      8.3   0.90  6
CONNECTION          100.0   106.7      7.5      8.6   0.87  6

HORIZONTALS         ELEV1   ELEV2     LOAD    CAPAC     SR LC

TENSION             155.0   160.0      1.0     11.5   0.09  1
COMPRESSION         155.0   160.0     -1.2      2.6   0.46  4
CONNECTION          155.0   160.0      1.2      8.6   0.14  1
```

LEG SUMMARY

ELEVATION From	To	<-------Tension-----> Force (F)	Cap. (R)	F/R	<----Compression-----> Force (F)	Cap. (R)	F/R	<---Connection---- Force (F)	Cap. (R)	F/
0.0	10.0	305.9(4)	517.1	0.59	-363.3(2)	442.4	0.82	305.9	368.0(T)	
10.0	20.0	293.6(4)	517.1	0.57	-347.5(2)	442.4	0.79	293.6	368.0(T)	0
20.0	30.0	280.9(4)	393.7	0.71	-331.3(2)	337.9	0.98	280.9	368.0(T)	
30.0	40.0	267.7(4)	393.7	0.68	-315.0(2)	337.9	0.93	267.7	368.0(T)	0
40.0	50.0	254.2(4)	393.7	0.65	-298.2(2)	337.9	0.88	254.2	368.0(T)	
50.0	60.0	240.3(4)	393.7	0.61	-281.3(2)	337.9	0.83	240.3	368.0(T)	0
60.0	70.0	225.9(4)	335.4	0.67	-263.9(2)	263.6	1.00	225.9	276.0(T)	
70.0	80.0	211.0(4)	335.4	0.63	-246.2(2)	263.6	0.93	211.0	276.0(T)	0
80.0	86.7	198.4(4)	267.9	0.74	-230.9(2)	235.5	0.98	198.4	276.0(T)	
86.7	93.3	187.9(4)	267.9	0.70	-218.6(2)	235.5	0.93	187.9	276.0(T)	
93.3	100.0	177.0(4)	267.9	0.66	-205.8(2)	235.5	0.87	177.0	276.0(T)	0
100.0	106.7	166.0(4)	243.9	0.68	-193.1(2)	205.8	0.94	166.0	184.0(T)	
106.7	113.3	154.4(4)	243.9	0.63	-179.7(2)	205.8	0.87	154.4	184.0(T)	
113.3	120.0	142.5(4)	243.9	0.58	-166.4(2)	205.8	0.81	142.5	184.0(T)	0
120.0	126.7	130.0(4)	240.9	0.54	-152.1(2)	202.7	0.75	130.0	184.0(T)	
126.7	133.3	117.2(4)	240.9	0.49	-137.9(2)	202.7	0.68	117.2	184.0(T)	
133.3	140.0	103.5(4)	240.9	0.43	-122.5(2)	202.7	0.60	103.5	184.0(T)	0
140.0	145.0	91.5(4)	175.9	0.52	-109.1(2)	150.8	0.72	91.5	140.9(T)	
145.0	150.0	80.3(4)	175.9	0.46	-96.6(2)	150.8	0.64	80.3	140.9(T)	
150.0	155.0	69.5(3)	175.9	0.40	-84.3(2)	150.8	0.56	69.5	140.9(T)	
155.0	160.0	58.5(3)	175.9	0.33	-70.8(2)	150.8	0.47	58.5	140.9(T)	0
160.0	164.0	48.3(3)	120.3	0.40	-58.4(2)	102.3	0.57	48.3	103.5(T)	
164.0	168.0	37.1(3)	120.3	0.31	-46.6(2)	102.3	0.46	37.1	103.5(T)	
168.0	172.0	28.6(3)	120.3	0.24	-35.8(2)	102.3	0.35	28.6	103.5(T)	
172.0	176.0	21.3(3)	120.3	0.18	-28.0(2)	102.3	0.27	21.3	103.5(T)	
176.0	180.0	14.2(3)	120.3	0.12	-19.7(2)	102.3	0.19	14.2	103.5(T)	C
180.0	184.0	9.7(3)	68.0	0.14	-14.0(2)	55.0	0.25			
184.0	188.0	5.3(3)	68.0	0.08	-8.8(2)	55.0	0.16			
188.0	192.0	2.7(3)	68.0	0.04	-4.8(2)	55.0	0.09			
192.0	196.0	0.4(3)	68.0	0.01	-2.2(2)	55.0	0.04			

DIAGONAL SUMMARY

ELEVATION From	To	<-------Tension-------> Force (F)	Cap. (R)	F/R	<------Compression---> Force (F)	Cap. (R)	F/R	<----Connection----> Force (F)	Cap. (R)	F/R
0.0	10.0	9.9(6)	50.2	0.20	-9.9(6)	11.8	0.84	9.9	12.3(V)	0.81
10.0	20.0	9.7(6)	50.2	0.19	-9.7(6)	12.7	0.76	9.7	12.3(V)	0.79
20.0	30.0	9.5(6)	50.2	0.19	-9.5(6)	13.7	0.69	9.5	12.3(V)	0.77
30.0	40.0	9.3(6)	50.2	0.19	-9.4(6)	14.9	0.63	9.4	12.3(V)	0.76
40.0	50.0	9.2(6)	42.9	0.21	-9.2(6)	10.7	0.87	9.2	12.3(V)	0.75
50.0	60.0	9.0(6)	42.9	0.21	-9.0(6)	11.6	0.78	9.0	12.3(V)	0.73
60.0	70.0	8.8(6)	42.9	0.21	-8.9(6)	12.6	0.71	8.9	12.3(V)	0.72
70.0	80.0	8.7(6)	42.9	0.20	-8.7(6)	13.8	0.63	8.7	12.3(V)	0.71
80.0	86.7	7.8(6)	35.7	0.22	-7.9(6)	11.5	0.68	7.9	12.3(V)	0.64
86.7	93.3	7.7(6)	35.7	0.22	-7.7(6)	12.4	0.62	7.7	12.3(V)	0.62
93.3	100.0	7.5(6)	35.7	0.21	-7.6(6)	13.4	0.57	7.6	12.3(V)	0.62
100.0	106.7	7.5(6)	29.4	0.25	-7.4(6)	8.3	0.90	7.5	8.6(V)	0.87
106.7	113.3	7.3(6)	29.4	0.25	-7.4(6)	9.0	0.83	7.4	8.6(V)	0.87
113.3	120.0	7.3(6)	29.4	0.25	-7.3(6)	9.8	0.75	7.3	8.6(V)	0.85
120.0	126.7	7.2(6)	29.4	0.24	-7.3(6)	10.7	0.68	7.3	8.6(V)	0.85
126.7	133.3	7.2(6)	29.4	0.25	-7.2(6)	11.6	0.62	7.2	8.6(V)	0.84
133.3	140.0	7.1(6)	29.4	0.24	-7.2(6)	12.7	0.57	7.2	8.6(V)	0.84
140.0	145.0	6.6(6)	22.1	0.30	-6.5(6)	8.4	0.77	6.6	8.6(V)	0.77
145.0	150.0	6.4(6)	22.1	0.29	-6.5(6)	9.2	0.71	6.5	8.6(V)	0.76
150.0	155.0	6.5(6)	22.1	0.29	-6.4(6)	10.1	0.64	6.5	8.6(V)	0.75
155.0	160.0	5.9(6)	22.1	0.27	-6.0(6)	11.0	0.55	6.0	8.6(V)	0.70
160.0	164.0	6.6(6)	17.0	0.39	-6.7(6)	10.4	0.64	6.7	8.6(V)	0.78
164.0	168.0	6.2(6)	17.0	0.36	-6.1(6)	10.4	0.59	6.2	8.6(V)	0.72
168.0	172.0	4.6(5)	17.0	0.27	-4.6(6)	10.4	0.45	4.6	8.6(V)	0.54
172.0	176.0	4.4(5)	17.0	0.26	-4.4(5)	10.5	0.42	4.4	8.6(V)	0.51
176.0	180.0	3.6(6)	17.0	0.21	-3.6(6)	10.5	0.35	3.6	8.6(V)	0.42
180.0	184.0	2.7(6)	14.2	0.19	-2.7(6)	7.4	0.37	2.7	8.6(V)	0.32
184.0	188.0	2.4(6)	14.2	0.17	-2.4(6)	7.4	0.33	2.4	8.6(V)	0.28
188.0	192.0	1.5(5)	14.2	0.11	-1.5(5)	7.4	0.20	1.5	8.6(V)	0.18
192.0	196.0	1.3(5)	14.2	0.09	-1.3(5)	7.4	0.18	1.3	8.6(V)	0.15

HORIZONTAL SUMMARY

ELEVATION From	To	<-------Tension-------> Force (F)	Cap. (R)	F/R	<----Compression-----> Force (F)	Cap. (R)	F/R	<----Connection----> Force (F)	Cap. (R)	F/R
155.0	160.0	1.0(1)	11.5	0.09	-1.2(4)	2.6	0.46	1.2	8.6(V)	0.14
192.0	196.0	0.6(2)	11.5	0.05	-0.6(3)	2.6	0.21	0.6	8.6(V)	0.07

FOUNDATIONS LOAD SUMMARY

Reaction	Service* Bare	Service* Iced	Factored Bare	Factored Iced	Design Service	Design Fact.
Load	339.8(1)	370.0(2)	339.8(1)	370.0(2)	370.0	370.0
Uplift	297.6(3)	312.3(4)	297.6(3)	312.3(4)	312.3	312.3
Shear	34.0(1)	35.8(2)	34.0(1)	35.8(2)	35.8	35.8

* See top of summary file for service load factors.

SERVICE DEFLECTIONS SUMMARY

NO ICE - 50 MPH WIND SPEED

Elev.	displacement	Rotation	Twist
10.0	0.03(5)	0.02(5)	0.00(5)
20.0	0.09(1)	0.03(1)	0.00(5)
30.0	0.17(5)	0.04(5)	0.00(5)
40.0	0.30(1)	0.06(1)	0.00(5)
50.0	0.44(5)	0.07(5)	0.00(5)
60.0	0.64(1)	0.09(1)	0.00(5)
70.0	0.86(1)	0.10(1)	0.00(5)
80.0	1.13(1)	0.13(1)	0.00(5)
86.7	1.34(1)	0.15(1)	0.00(5)
93.3	1.56(1)	0.16(1)	0.00(5)
100.0	1.81(1)	0.18(1)	0.00(5)
106.7	2.08(1)	0.19(1)	0.00(5)
113.3	2.37(1)	0.21(1)	0.00(5)
120.0	2.69(1)	0.22(1)	0.00(5)
126.7	3.03(1)	0.24(1)	0.00(3)
133.3	3.39(1)	0.26(1)	0.00(5)
140.0	3.77(1)	0.28(1)	0.00(3)
145.0	4.08(1)	0.29(1)	0.00(5)
150.0	4.40(1)	0.31(1)	0.00(3)
155.0	4.73(1)	0.31(1)	0.00(5)
160.0	5.08(1)	0.33(1)	0.00(3)
164.0	5.36(1)	0.34(1)	0.00(5)
168.0	5.67(1)	0.37(1)	0.00(3)
172.0	5.97(1)	0.35(1)	0.00(3)
176.0	6.28(1)	0.38(1)	0.00(3)
180.0	6.59(1)	0.37(1)	0.00(3)
184.0	6.90(1)	0.38(1)	0.00(3)
188.0	7.22(1)	0.38(1)	0.00(3)
192.0	7.54(1)	0.38(1)	0.00(3)
196.0	7.85(1)	0.38(1)	0.00(3)

SLENDERNESS VIOLATION SUMMARY*

ELEVATION From	To	Leg	Diagonal	Horizontal

* Printed values are kL/r for members exceeding the allowable limits

APPENDIX C
Miscellaneous Information

SpectraSite

SpectraSite Communications, Inc.
100 Regency Forest Drive, Suite 400
Cary, NC 27511
ATTN: Collocation Management
Collocation@spectrasite.com
Office: 919-851-0320
Fax: 919-859-6789

Date of Last Update: 3/25/01

Tower Antenna Inventory for Site # CT-0006 Site Name Ansonia Wakelee

Carrier	EXISTING						MAX ALLOWABLE						Microwave Other
	Antenna Info			Coax Info		Mount Type	Antenna Info			Coax Info		Mount Type	
	#	Type	Ht	#	Size/Distr		#	Type	Ht	#	Size/Distr		
Nextel	9	Decibel DB844H90E-XY	196'	9	1 ¼	Boom	12	Decibel DB 44H90E-XY	196'	12	1 ¼	Boom	
Sprint	6	Decibel DB980G90EMS	187.5'	6	1 5/8"	Boom							
Cellco Partners	12	Allgon 7129.16	178'	12	1 5/8"	Boom							
SNET	12	Decibel DB846H80	168'	12	1 ¼"	TBD by SCI							
AT&T (proposed)	12	Allgon 7184	158'	12	1 5/8"	TBD by SCI							

EPA:

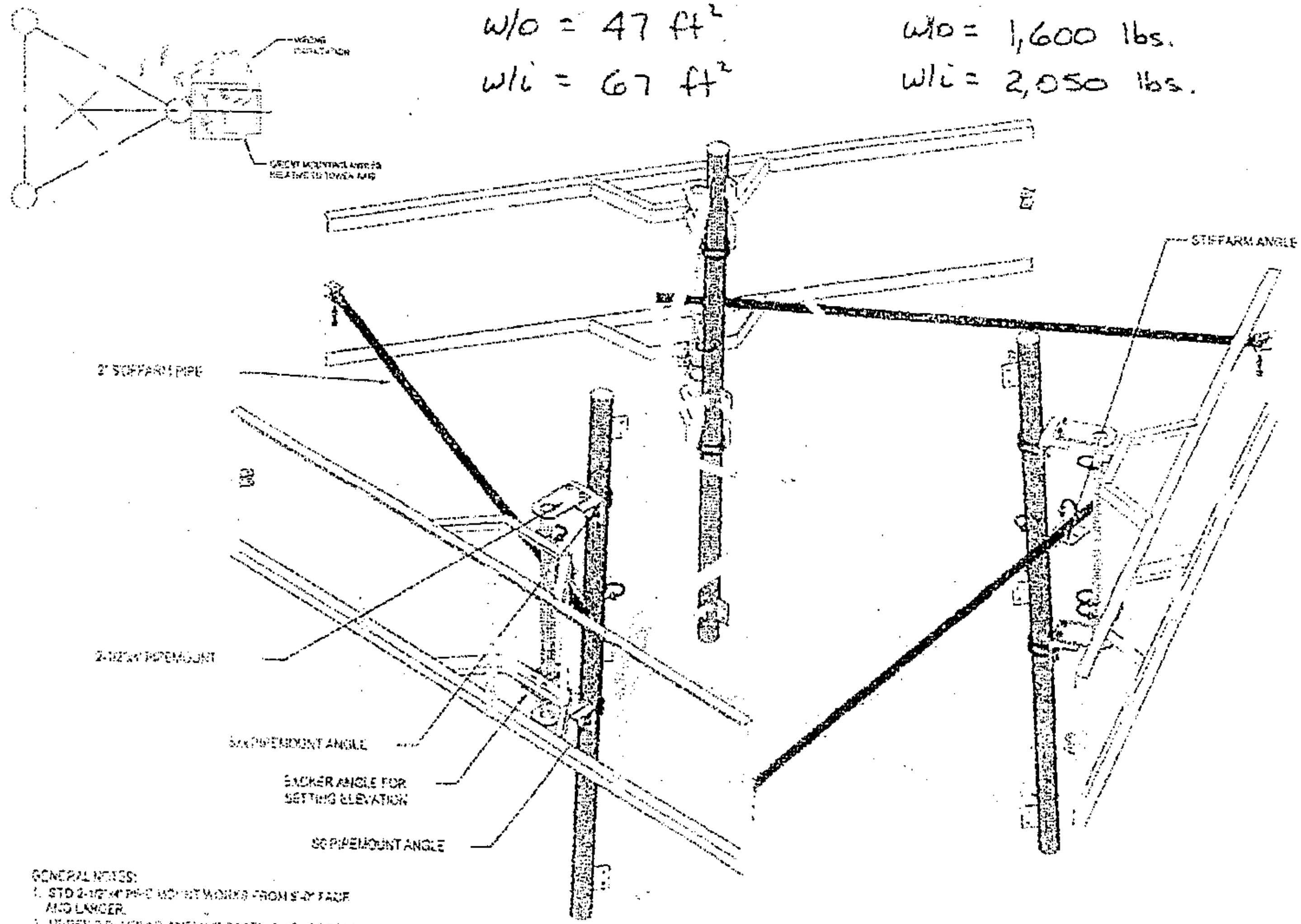
w/o = 47 ft^2

w/i = 67 ft^2

WT:

w/o = 1,600 lbs.

w/i = 2,050 lbs.



GENERAL NOTES:
1. STD 2-1/2"x4' PIPE MOUNT WORKS FROM 5'-2" FACE AND LARGER.
2. UPPER PIPEMOUNT ANGLE IS BASED ON FACE TAPER ... TO ... PIPEMOUNT.
3. WHEN TOWER FACE AT BOOM LOCATION EXCEEDS 16' STIFFARM PIPES WILL BE REPLACED WITH (2) 5/16" CABLE ASSEMBLIES ...

NUDD CORPORATION

ricochet

Metricom, Inc.
2701 W. Plano Pkwy
Plano, TX 75075

WAP DEVELOPMENT GUIDELINES

VOLUME II

CONSTRUCTION SPECIFICATION STANDARD

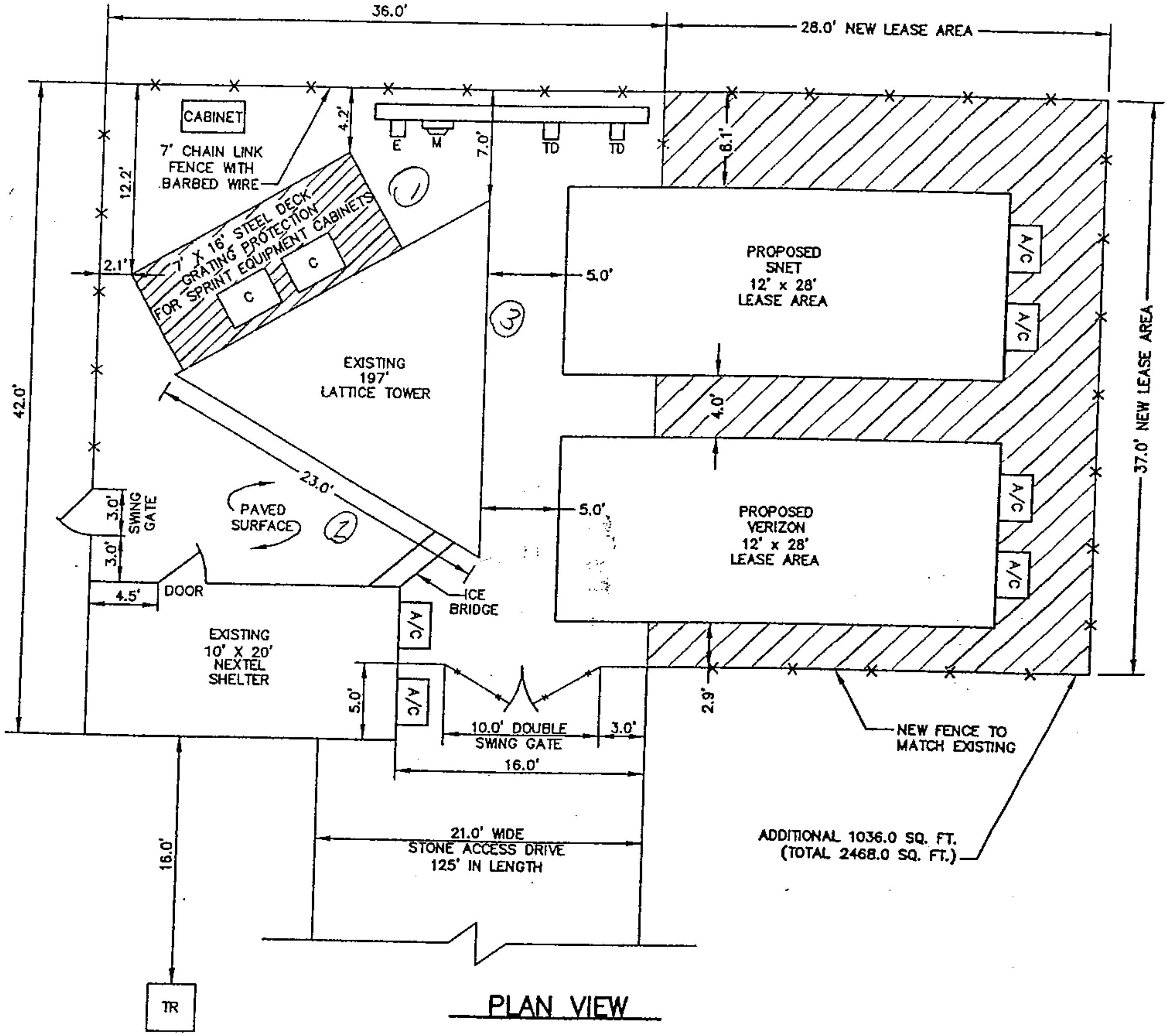
RELEASE 1

12' BOOM CONFIGURATION SELF-SUPPORT TOWER

CURRENT ISSUE DATE
FEB. 25, 2000

9L

4



PLAN VIEW

LEGEND:

- E ELECTRIC SERVICE DISCONNECT
- M METER
- TD TELCO DEMARK
- TR TRANSFORMER
- C CABINET

GRAPHIC SCALE

10 0 5 10

(IN FEET)

1 Inch = 10 Feet

PROPOSED SNET COLLOCATION

JOB No.	011815007
DATE:	12/11/00
REV.	0
DRAWN	QA/QC
EJY	

NO.	BY	REVISION	DATE
1	CNL	[illegible]	[illegible]

SPECTRASITE COMMUNICATIONS
8000 REGENCY PARKWAY, SUITE 670
CARY, NC 27511

ANSONIA–WAKELEE
CT–0006

SITE LAYOUT PLAN
SHEET 1 OF 2

APPENDIX D
Calculations

TS-VER-002-010531

CUDDY & FEDER & WORBY LLP

90 MAPLE AVENUE
WHITE PLAINS, NEW YORK 10601-5196

(914) 761-1300
TELECOPIER (914) 761-5372/6405
www.cfwlaw.com

New York City Office
500 FIFTH AVENUE
NEW YORK, NEW YORK 10110
(212) 944-2841
TELECOPIER (212) 944-2843

Connecticut Offices
733 SUMMER STREET
STAMFORD, CONNECTICUT 06901
(203) 348-4780

ONE MARSHALL STREET
NORWALK, CONNECTICUT 06854
(203) 853-8001
TELECOPIER (203) 831-8250

NEIL J. ALEXANDER (also CT)
THOMAS R. BEIRNE (also D.C.)
THOMAS M. BLOOMER
JOSEPH P. CARLUCCI
KENNETH J. DUBROFF
ROBERT FEDER
CHRISTOPHER B. FISHER (also CT)
ANTHONY B. GIOFFRE III (also CT)
SUSAN E.H. GORDON
KAREN G. GRANIK
JOSHUA J. GRAUER
WAYNE E. HELLER (also CT)
KENNETH F. JURIST
MICHAEL L. KATZ (also NJ)
JOSHUA E. KIMERLING (also CT)
DANIEL F. LEARY (also CT)
BARRY E. LONG

CUDDY & FEDER
1971-1995

WILLIAM S. NULL
DAWN M. PORTNEY
ELISABETH N. RADOW
NEIL T. RIMSKY
RUTH E. ROTH
MIGUEL A. TORRELLAS (also NJ)
CHAUNCEY L. WALKER (also CA)
ROBERT L. WOLFE
DAVID E. WORBY

Of Counsel
MICHAEL R. EDELMAN
ANDREW A. GLICKSON (also CT)
ROBERT L. OSAR (also TX)
MARYANN M. PALERMO
ROBERT C. SCHNEIDER
LOUIS R. TAFFERA

July 2, 2001

VIA FEDERAL EXPRESS
Mr. Joel Rinebold
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: Request by Verizon Wireless and AT&T Wireless for an Order to Approve Shared Use of a Tower Facility located at 401 Wakelee Avenue, Ansonia, Connecticut

Dear Mr. Rinebold:

Enclosed please find a structural analysis for the above referenced site with AT&T at the 158 foot level of the tower. Please do not hesitate to contact me should you or the Council require any additional information.

Very truly yours,

Christopher B. Fisher

Christopher B. Fisher

Enclosure

C&F&W:

MORRISON HERSHFIELD

3730 Chamblee Tucker Road, Atlanta, Georgia, 30341
Tel. (770) 939-2370 Fax. (678) 406-0020

REPORT

Site: CT-0006 Ansonia Wakelee, CT

Structural Analysis of 196 ft Rohn Self-Supporting Tower

MHC Project 1996035: SP0-896

Presented to:

Mr. Glenn Conway
Spectrasite Communications, Inc.
100 Regency Forest Drive, Suite 400
Cary, NC
27511

March 30, 2001

Denis Hum, M.Eng., P.E.
Senior Structural Engineer

C.H. David Tan, M.Eng., P.E.
Senior Structural Engineer
Connecticut Registration No. 22092

Table of Contents

Revision	Date	Engr	Review	Comments
SP0-896	3/30/01	EVS	LJL	Analysis for AT&T Wireless.

1. Executive Summary

Morrison Hershfield, as requested by Mr. Glenn Conway of Spectrasite Communications, has carried out an analysis of the 196 ft Rohn self-support tower described in this report for the addition of AT&T's proposed antenna installation. This report includes, but is not limited to, details of the tower, assumptions used in this investigation, structural loading used, stress results, conclusions and recommendations.

Our analysis demonstrates that the existing tower and foundation **are in conformance** with the requirements of TIA/EIA-222-F *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures,* using the New Haven county minimum 85 mph wind speed with ½" radial ice and for the specified loading.

2. Tower Information

Tower Details

Site Name	CT-0006 Ansonia Wakelee, New Haven, CT
Location	401 Wakelee Ave, CT (Lat 41-21-22.4, Long 73-05-29.4)
Tower Description	196 ft self-support tower: Triangular with base F.W. of 23 ft and top F.W. of 6.6 ft
Original Fabricator / Date of Installation	Rohn/ 1999
Original Design Loading	EIA-TIA-222-F, 80 mph and 1/2" ice.
Current Standard and Loading	TIA/EIA-222-F, 85 mph wind speed and 1/2" ice.
Tower History	No known record of tower modifications since installation.

Sources of Information for Tower

Description	Source
Tower	Drawings by Rohn, Dwg No. C991159, dated July 12, 1999, provided by Spectrasite.
Antennas and Transmission Lines	Survey of existing conditions, collocation application sheet, provided by Spectrasite.
Foundation	No foundation data provided.

Material Grade Information

Legs	Pipes. 50 ksi yield strength.
Diagonals	Single-angles. 36 ksi yield strength. (Assumed)
Horizontals	Single-angles. 36 ksi yield strength.
Member Connections	ASTM A325 bolts.
Anchor Bolts	ASTM A354 Gr BC

3. Assumptions and Particular Considerations

All results and conclusions derived from this analysis report are as accurate as the information provided to Morrison Hershfield. An independent verification of the information supplied to us has not been made. It is assumed that the tower and foundation have been properly constructed as per the original design drawings and specifications. It is also assumed that the structure has been properly maintained, is in good condition and is capable of carrying the full design loading. Any subsequent modifications to the original tower, where applicable and based on data supplied to Morrison Hershfield, are also assumed to have been properly installed as per design and capable of carrying their full design load. Exceptions to the foregoing are stated explicitly in this report.

The following special assumptions were made in this analysis:

- Neither a geotechnical report nor foundation drawings were provided for this site. The original reactions were compared to the new design reactions to determine the adequacy of the foundation.
- All angle sections are assumed to be 36 ksi yield strength.

4. Scope of Analysis

Unless noted otherwise, this report is limited to a structural analysis of the tower based on established engineering principles for both structural behavior and member capacities. The analysis is performed using Morrison Hershfield's proprietary software for analysis of self-supporting towers. The software comprises pre- and post processing programs in conjunction with a main processing program, which together implement code provisions based on TIA/EIA and AISC requirements.

The analysis program uses a finite element representation of the self-supporting tower. The three-dimensional model consists of truss elements in a large displacement formulation. The ensuing non-linear equilibrium equations are solved in an iterative fashion yielding internal tower member forces, incorporating P-delta effects and including the effects of antenna and appurtenance loadings.

5. Antenna Loading Investigated

The following loading was considered for the structural analysis:

Antenna Loads

Elev (ft)	Antenna Description	Carrier	Location	TX-Lines / Face
	PROPOSED			
158.0	(12) ALLGON 7184 PANELS	AT&T		(12) 1-5/8" [2]
158.0	(3) GATE BOOM MOUNTS			
	FUTURE			
196.0	(3) DB844H90E-XY PANELS	NEXTEL		(3) 1-1/4" [2]
	EXISTING			
196.0	STROBE+ BEACON			
196.0	(9) DB844H90E-XY PANELS	NEXTEL		(9) 1-1/4" [2]
196.0	(3) GATE BOOM MOUNTS			
187.5	(6) DB980G90EM-S PANELS	SPRINT		(6) 1-5/8" [1]
187.5	(3) GATE BOOM MOUNTS			
178.0	(12) ALLGON 7129.16 PANELS	CELLCO PARTNERS		(12) 1-5/8" [3]
178.0	(3) GATE BOOM MOUNTS			
168.0	(12) DB846H80 PANELS	SNET		(12) 1-1/4" [3]
168.0	(3) GATE BOOM MOUNTS			

Notes: (a) Any discrepancies in loading from this listing should be brought to Morrison Hershfield's attention; results of this analysis cannot be used if the loading is different; (b) Face 5 denotes lines not on any face, and considered only as a linear appurtenance.

6. Analysis Results Summary

Summary results of our structural analysis are presented below. A listing of the full computer analysis is provided in Appendix B to this report. The results show that the existing tower **is in conformance** with the requirements of TIA/EIA-222-F *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures,* using the New Haven county minimum 85 mph wind speed with ½" radial ice and for the specified loading.

As-built details of the tower foundation were not available to MH. It is assumed that the foundations were designed for the loads indicated on the structural design drawings from Rohn. Foundation uplift loads from our analysis are 4% greater than the original design uplift forces, which can be considered acceptable considering also that the foundation has most likely been designed with some reserve uplift capacity. Compression loads are 8% greater than the original design reactions. This can be considered marginally acceptable,

however, as compression loading signifies a soil settlement problem that is not as adversely affected by the transitory wind loading. The foundations may therefore, by comparison, be considered to be **adequate** for the existing and proposed loading. We recommend, however, that foundation details for this site be obtained in order to determine the actual capacity of the foundation for uplift and compression.

Maximum Tower Response

Tower Member	Results
Legs	SRmax= 1.00 (60 ft - 70 ft) -> Compr.
Diagonals	SRmax= 0.90 (100 ft - 107 ft) -> Compr.
Horizontals	SRmax= 0.46 (155 ft - 160 ft) -> Compr.

SR= Stress ratio, should be less than 1.00. However, up to 5% overstress may be considered acceptable.

Foundation Loads Comparison

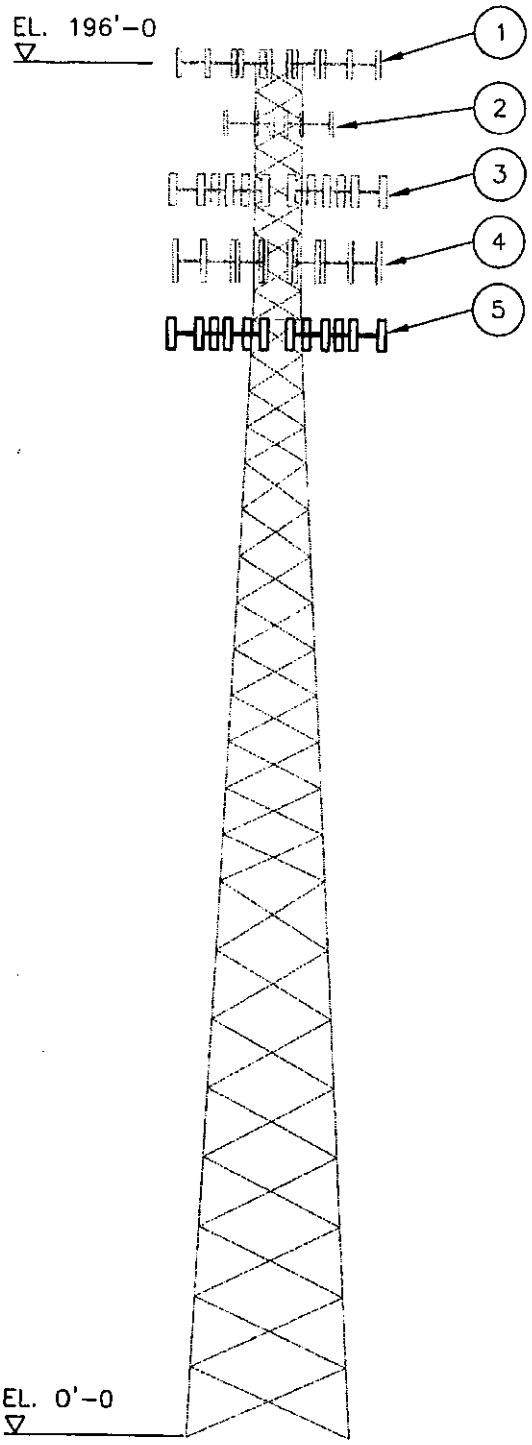
Load	Original Design	Current Analysis	Ratio to Original
Compression (kip)	343.0	370.0	1.08*
Uplift (kip)	301.1	312.3	1.04*
Shear (kip)	36.3	35.8	0.99

* Denotes ratio to original greater than 1.0.

7. Conclusions

Our analysis findings show that the existing tower **is capable,** without structural reinforcing, of supporting the loads as a result of the AT&T proposed antenna installation and existing antennas.

We trust that this report is satisfactory. If you have any questions, please feel free to contact our office.



ANTENNA SCHEDULE

TYPE	ELEV.	DESCRIPTION	TX LINES
1	196'	(12) DECIBEL DB844H90E-XY EXISTING (9) AND FUTURE (3)	(12) 1-1/4
2	187.5'	(6) DECIBEL DB980G90EMS EXISTING	(6) 1-5/8
3	178'	(12) ALLGON 7129.6 EXISTING	(12) 1-5/8
4	168'	(12) DECIBEL DB846H80 EXISTING	(12) 1-1/4
5	158'	(12) ALLGON 7184 PROPOSED	(12) 1-5/8

ANTENNA NOTES:

1. LOCATION AND TYPE OF ANTENNA AS SHOWN IN ANTENNA SCHEDULE.
2. FOR CLARITY, ANTENNA REPRESENTATIONS ARE CONCEPTUAL ONLY AND DO NOT NECESSARILY SHOW TRUE IMAGE OF ANTENNAS AND MOUNTS.

MORRISON HERSHFIELD
3730 Chamblee Tucker Rd.
Atlanta, GA. 30341
Tel: (770) 939 2370
Fax: (770) 934 9476

Project:
ANSONIA WAKELEE
CT-0006
401 WAKELEE AVE
NEW HAVEN, CT

SpectraSite

Drawing Title:
TOWER ELEVATION

Project No. 1996035/SP0-896	
Scale: N.T.S.	Revision No. 0
Date: 03/29/01	Drawing No. TP
Drawn By: GAF	

APPENDIX A
Tower Elevation Drawing