



ORIGINAL

CITY OF DANBURY
OFFICE OF THE CORPORATION COUNSEL

155 DEER HILL AVENUE
DANBURY, CONNECTICUT 06810
(203) 797-4518 (203)796-8043 FAX

January 6, 2010

RECEIVED
JAN 13 2010
CONNECTICUT
SITING COUNCIL

Sent via e-mail and regular U.S. Mail

Hon. Daniel F. Caruso, Chairman
and Members of the Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: TS-Clearwire-034-091120
Clearwire Corporation
Request for an order to approve tower sharing
at an existing telecommunications facility
located at 52 Stadley Rough Road, Danbury

Dear Chairman Caruso and Members of the Council:

Enclosed please find a report from Richard A. Comi regarding the above matter, which we understand is on the agenda for the Council's meeting on January 7, 2009. Mr. Comi's letter elaborates on the concerns addressed in my and Mayor Boughton's recent letters to the Council regarding this matter. The City respectfully requests that the Council take this correspondence into consideration before acting on the Clearwire submittal.

Respectfully yours,

Robin L. Edwards
Assistant Corporation Counsel

cc: Hon. Mark D. Boughton, Mayor
S. Derek Phelps, Executive Director
Laszlo L. Pinter, Deputy Corporation Counsel
Dennis I. Elpern, Planning Director
Daniel E. Casagrande, Esq.
Robert Marconi, Esq., AAG Connecticut Siting Council
Attorney Melanie Bachman, Connecticut Siting Council
Thomas J. Regan, Esq.
Christopher Fisher, Esq.

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THE CENTER FOR MUNICIPAL SOLUTIONS

518-439-3079 70 CAMBRIDGE ROAD GLENMONT, NEW YORK 12077 FAX: 518-478-0909

January 6, 2010

(sent via email)

Daniel F. Caruso, Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: TS-Clearwire-034-091120
Clearwire Corporation
Request for an order to approve tower sharing at an existing telecommunications facility located at 52 Stadley Rough Road, Danbury

Dear Chairman Caruso and members of the Siting Council:

At the request of the City of Danbury, I write to offer the following preliminary comments on two applications recently filed by Clearwire Corporation regarding the cellular tower facility located at 52 Stadley Rough Road in Danbury. The first application is dated November 20, 2009 and is entitled "Tower Sharing Application" (the "Application"). The second application is dated December 18, 2009 and is entitled "Notice of Exempt Modification" ("Notice"). The latter application apparently was filed at the request of the Siting Council. It is my understanding that the Council intends to consider the Application at its meeting on January 7, 2010. Nevertheless, I would like to take this opportunity to comment on both the Notice and the Application.

I. In my opinion, the following four aspects of the Application and Notice are inconsistent with the terms and conditions of the Council's Decision and Order, dated April 23, 2009, in Docket No. 366:

1. The Decision and Order states that all antennas on the facility shall be "flush mounted". (Decision and Order, Condition No. 1) The Application, page 2, paragraph one, states: "Clearwire plans to mount the antennas on 3 proposed pipe mounts". However, the FDH structural report of September 25, 2009, page four, proposed loading table, refers to "pipe mounts", (but on the same page, in the existing loading table, it refers to a "direct mount" for each of the other three carriers). Pipe mounting is of course not "flush mounting", and of course is not the least intrusive mounting. To add to the inconsistency between the documents, the Notice, on page 2 paragraph 3, states that the antennas "will be flush mounted".
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3. The Application materials contain an FDH structural report dated September 25, 2009. On page three of the report in the executive summary, FDH states "FDH Engineering, Inc. performed a structural analysis of the monopole located in Danbury, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, pursuant to the Structural Standard for Antenna Supporting Structures and Antennas, ANSI/TIA-222-G." On page four of the report it refers to Clearwire and three other carriers (T-Mobile, Sprint/Nextel and Metro PCS)

as existing loading and future loading. Another FDH report is contained in the Notice dated December 10, 2009 that indicates two future carriers would be located on the tower at elevations of 100 and 87 feet respectively. Accordingly, it would appear that the Application and Notice are inconsistent and that Clearwire, in the Notice, is seeking approval for six separate carrier slots, not the four separate carrier slots approved in the Decision and Order. (The December 10, 2009 FDH report shows six antennas at 137' for T-Mobile, six antennas for Sprint/Nextel at 127', six antennas for Metro PCS at 117', five antennas [three antennas and two dishes] for Clearwire at 107', a future carrier [fifth carrier] with six antennas at 100' and an additional carrier [sixth carrier] at 87'. The original design, however, was for only four carriers.)

4. The "lease exhibit" attached to both the Notice and the Application (sheet 2 of 3, dated November 18, 2009) shows the Clearwire antennas and dishes as platform mounted. There also appear to be internal inconsistencies in the designs of the antennas and their mounts. (Compare FDH December 10, 2009 report, Drawing E-1 with Sheet 2 of 3 (dated November 18, 2009).

II. There are several other items in the Application and Notice material that are inaccurate, incomplete and not verifiable as follows:

1. As to the two FDH structural reports (September 26, 2009 report attached to both the Application and Notice, and a December 10, 2009 report also attached to the Notice):
 - a. Both reports say they were performed pursuant to ANSI/TIA-222-G. To the best of my knowledge and belief this section of the ANSI code is not in effect in Connecticut. The code section in effect in Connecticut is §222-F, and the analysis should be undertaken pursuant to that section. (In fact, the engineer for Optasite testified in the January 26, 2009 hearing on the Optasite application that the appropriate standard is §222-F.) This calls into question the validity of the structural reports as the tower may not be strong enough to hold the extra antennas.
 - b. The December 10, 2009 report in the Conclusions on page 3 states: "Furthermore, provided the foundation was designed and constructed to support the original design reactions." The two "future loading" carriers were not included in the original design, thus there is no verification that foundation design is adequate. Based on the additional proposed loading on the tower, is the "break point" analysis done in the original application still accurate; i.e. with more load and movement of the tower will the tower, if it falls, break and fall on the church property? There is no break point analysis in either FDH report.
 - c. Also on page 5 in Table 4, of both FDH reports, the Original Design column has different numbers. How can this be? There is only one original design. Is there an explanation for the difference? What numbers are correct? Without an explanation how will the Council know what design they are approving?
 - d. On page 7 of the December 10, 2009 FDH report, the proposed carriers are shown on the tower as not being flush mounted.
 - e. There were no calculations in either FDH structural report provided to verify any of the assertions in either of the FDH reports.
2. The Notice, on page 2, paragraph 3, states that "The new antennas, Remote Radio Heads and Dragonwave dishes will have the same centerline – 140 feet." This is erroneous information as T-Mobile, not Clearwire, is proposed for that elevation.
3. The Application, Item G. Public Safety Concerns/Benefits, page 4, states that Clearwire performed an analysis of the radio frequency fields emanating from the transmitting antennas on the tower" and that the analysis was "dated October 14, 2009". The only document in the material dated October 14, 2009 is a one page unsigned document which appears to be an email from Julius De La Cruz to HPC. That report is inaccurate or incomplete in several ways. Assuming that the Council elects to treat the applications before it as a Tower Sharing Application, I respectfully submit that this report should not be used to demonstrate that the public safety concerns have been met. My comments on this analysis are as follows:

- a. Section 2, Item 4, in the De La Cruz memo, states that the “dish is Andrew VHLP2.5-11 with 24” diameter”. This contradicts the structural reports that refer to model Dragonwave A-ANT-23-G-2-C. Therefore it appears that emissions used in the De La Cruz memo are from the wrong model dishes.
- b. The De La Cruz memo states: “This study incorporates the most conservative consideration for determining the practical combined worst case power density levels that would be theoretically encountered from locations surrounding the transmitting location”. The document does not state where these locations are. I do not know what the emission levels would be at the property line or at the windows of the nearby home, as the power from the antennas is greater at the windows of the home on the adjacent property, than at the base of the tower. The emission report should show calculations at the property line and at the 2nd story windows of the home. Without this, it is impossible to determine from this document if the cumulative emissions from the site meet the FCC emission requirements.
- c. There are no assumptions stated for the other carriers’ channels or EiRP and therefore, it is impossible to determine if the cumulative emissions from the site meet the FCC emission requirements.
- d. It is my understanding that the Maximum Permissible Exposure (MPE) standard is dependant on the frequency of each individual carrier, not just 1 milliwatt per square centimeter for all frequencies as Mr. De La Cruz uses in the report. This makes the stated combined Power Density erroneous and this too makes it impossible to determine if the cumulative emissions from the site meet the FCC emission requirements. (FCC Bulletin OET 65).
- e. The public exposure standard is 1/5 of the occupational limit and should have been used as the standard and was not. (FCC Bulletin OET 65)
- f. There are no calculations provided for the RF Emissions stated in the memo.
- g. It is unclear who “HPC”, the recipient of the De La Cruz memo, is. The Council may want to have information provided on HPC, require that the report be signed, as well as have Mr. De La Cruz provide his credentials for preparing his report.

CONCLUSION

It is my judgment that:

- 1) The requirements for shared use have not been met,
- 2) The Application and Notice are inconsistent in several respects with the final Decision & Order, and
- 3) The Application and Notice are replete with internal inconsistencies.

The Council should address these deficiencies before making a decision on the Application and Notice. I respectfully request the opportunity to submit pre-filed testimony should the Council decide to hold a full hearing on these submittals.

Sincerely,

R. A. Comi (electronic signature)

Richard A. Comi
CMS



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DEC 31 2009

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CITY OF DANBURY

OFFICE OF THE MAYOR
155 DEER HILL AVENUE
DANBURY, CONNECTICUT 06810

MARK D. BOUGHTON
MAYOR

(203) 797-4511
FAX (203) 796-1666

m.boughton@ci.danbury.ct.us

Sent via email (Carriann.Mulcahy@ct.gov)

December 29, 2009

Hon. Daniel F. Caruso, Chairman
and Members of the Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: TS-Clearwire-034-091120
Clearwire Corporation
Request for an order to approve tower sharing
at an existing telecommunications facility
located at 52 Stadley Rough Road, Danbury

Dear Chairman Caruso and Members of the Council:

I write in response to correspondence to me dated December 21, 2009 from S. Derek Phelps, Executive Director, requesting the City's comments regarding the above mentioned proposal. I wish to direct the Council's attention to an area in which this proposal is contradictory to the terms of the Decision and Order of the Connecticut Siting Council, in Docket No. 366. As you will recall, the City of Danbury appeared in Docket No. 366 as a party. The decision rendered in Docket No. 366 has been appealed the City of Danbury and Jose and Christina Carvalheiro, and is currently pending in the judicial district of New Britain as docket # HHB-CV09-4021287-S. A pretrial has been scheduled in this matter on January 8, 2010 at 9:30 a.m. The parties are currently undergoing settlement discussions.

The Tower Sharing Application indicates on page 2, Section B. Proposed Project, that three antennas on pipe mounts, along with dishes are proposed. It indicates on page 3, Section F. Environmental Feasibility, that "there will be little increase in the visibility of the Tower...". The Lease Exhibit, attached to the Tower Sharing Application, entitled "South Elevation", depicts an extended panel antenna (1 per sector, 3 total). The Decision and Order in Docket No. 366, indicates in condition number 1, among other items, that, "All antennas attached to the monopole shall be flush-mounted." The antennas proposed to be added by Clearwire do not appear to be

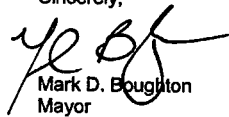


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flush-mounted and therefore, are in direct contradiction to the condition imposed by the Council in its Decision and Order. Additionally, the amended D&M Plan considered by the Council on December 18, 2009, contains drawing No. L-2, Landscape Details, Sheet L-2, Revision D, last revised November 30, 2009 that indicates, "All future carrier shelters deployed at site are required to have pitched roofs and siding with cedar appearance." The proposed outdoor cabinet is not depicted as being constructed with a pitched roof and of cedar type material. Thus, the outdoor cabinet fails to comply with the newly proposed D&M Plan. Although this D&M Plan will ultimately be ruled upon by the Council at the conclusion of the pending litigation, the City respectfully requests that the Council take this information into consideration, should it rule on the pending request prior to the finalization of the litigation. Additionally, the City may have other comments on this proposal as we are considering whether to request Mr. Richard Comi, the City's retained expert in Docket No. 366, to review the Applicant's request for tower sharing.

I respectfully request that the Council deny the Applicant's request for tower sharing, as it does not comply with the conditions of the Council's Decision and Order in Docket No. 366 and also fails to comply with the newly proposed D&M Plan. Thank you for your consideration and attention to this very important matter.

Sincerely,



Mark D. Boughton
Mayor

cc: S. Derek Phelps, Executive Director (sent via email)
Dennis I. Elpern, Planning Director (sent via email)
Laszlo L. Pinter, Deputy Corporation Counsel
Daniel E. Casagrande, Esq. (sent via email)
Robert Marconi, Esq., AAG Connecticut Siting Council (sent via email)
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The Council should address these deficiencies before making a decision on the Application and Notice. I respectfully request the opportunity to submit pre-filed testimony should the Council decide to hold a full hearing on these submittals.

Sincerely,

R. A. Comi (electronic signature)

Richard A. Comi
CMS

Perrone, Michael

From: Perrone, Michael
Sent: Thursday, December 10, 2009 10:16 AM
To: 'Regan, Thomas J.'
Subject: TS-CLEARWIRE-034-091120 -- Clearwire - 52 Stadley Rough Road, Danbury

Attorney Regan:

Clearwire proposes a pipe mount for the antennas and dishes. However, in the Council's Decision and Order for this tower in Docket No. 366, it requires that all antennas be flush-mounted. I cut and pasted the following from the D&O.

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Optasite Towers LLC, hereinafter referred to as the Certificate Holder, for a telecommunications facility at 52 Stadley Rough Road, Danbury, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Omnipoint Communications, Inc. and other entities, both public and private, but such tower shall not exceed a height of 140 feet above ground level. All antennas attached to the monopole shall be flush-mounted.

Would flush-mounting Clearwire's antennas, dishes, and remote radio heads be feasible? If you could check on that and let me know, I'd appreciate it.

Thanks.

Mike Perrone
Siting Analyst
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051
Phone: 860-827-2943
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Email: michael.perrone@ct.gov



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

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www.ct.gov/csc

December 21, 2009

The Honorable Mark D. Boughton
Mayor
City of Danbury
City Hall
155 Deer Hill Avenue
Danbury, CT 06810

RE: **TS-CLEARWIRE-034-091120** - Clearwire Corporation request for an order to approve tower sharing at an existing telecommunications facility located at 52 Stadley Rough Road, Danbury, Connecticut.

Dear Mayor Boughton:

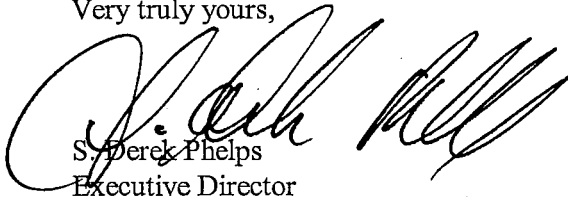
The Connecticut Siting Council (Council) received this request for tower sharing, pursuant to Connecticut General Statutes § 16-50aa.

The Council will consider this item at the next meeting scheduled for January 7, 2010, at 2:00 p.m. in Hearing Room One, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the council by January 6, 2010.

Thank you for your cooperation and consideration.

Very truly yours,



S. Derek Phelps
Executive Director

SDP/jbw

Enclosure: Notice of Tower Sharing

c: Dennis Elpern, City Planner, City of Danbury

THOMAS J. REGAN
Direct Dial: (860) 509-6522
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185 Asylum
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Via Hand Delivery

ORIGINAL

November 20, 2009

RECEIVED
NOV 20 2009
CONNECTICUT
SITING COUNCIL

Daniel F. Caruso, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Clearwire Corporation – Tower Sharing Applications

Dear Mr. Caruso:

On behalf of Clearwire Corporation, enclosed for filing you will find an original and twenty (20) copies a “*Tower Sharing Application*”, for each of the following :

1. Danbury @ 52 Stadley Rough Road
2. Shelton @ 308 River Road (Rt. 110)

Please note, a signed and sealed Structural Analysis Report regarding the tower located at 308 River Road in Shelton will be submitted to the Connecticut Siting Council in a later filing.

I have also enclosed a copy of this transmittal letter which I would like to have date-stamped and returned to the courier delivering this package.

Also enclosed are two (2) checks in the amount of \$500.00 each to cover the filing fee. If you have any questions, please feel free to contact me.

Very truly yours,

BROWN RUDNICK LLP

By: 
Thomas J. Regan

TJR/bh
Enclosures

40266761 v1 - REGANTJ - 025064/0017



Daniel F. Caruso, Chairman
November 20, 2009
RE: Clearwire Corporation – Tower Sharing Applications
Page 2

cc/encls: via 1st Class Mail:

City of Danbury
City Hall
Mayor Mark D. Boughton
155 Deer Hill Avenue
Danbury, CT 06810

City of Shelton
Mayor Mark A. Laretti
City Hall
54 Hill Street
Shelton, CT 06484

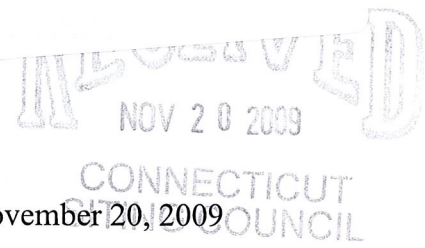
CONNECTICUT

In re:

Request of Clearwire Corporation for the
Approval of the Shared Use of a Tower to be
Located at 52 Stadley Rough Road, Danbury,
Connecticut.

:
:
:
:

November 20, 2009



TOWER SHARING APPLICATION

ORIGINAL

Clearwire Corporation (“Clearwire”) proposes herein to share a telecommunications tower (the “Tower”) to be located at 52 Stadley Rough Road in Danbury, Connecticut (the “Facility”). Optasite Towers LLC was issued a Certificate of Environmental Compatibility and Public Need from the Connecticut Siting Council (the “Council”) for the Tower on April 23, 2009 in Docket No. 366. Pursuant to Connecticut General Statutes §16-50aa (the “Statute”), Clearwire requests a finding from the Council that the shared use of this Facility is technically, legally, environmentally, and economically feasible, will meet public safety concerns, will avoid the unnecessary proliferation of towers and is in the public interest. Clearwire further requests an order approving the shared use of this Facility.

The purpose of this request is to utilize a telecommunications tower that has been Certified by the Council to develop Clearwire’s 4G wireless broadband network to provide high-speed wireless data and to develop VoIP service within the State of Connecticut and in this area of Danbury. Therefore, this application avoids the construction of an additional tower in Danbury.

A. The Facility

The Facility is located at a latitude of 41° 25’ 59.17” N and longitude of 73° 25’ 54.9” W. The Tower is a 140-foot monopole. Pursuant to the Structural Report, multiple carriers plan to locate on the Tower. A site plan is attached.

B. Proposed Project

Clearwire will install three (3) WiMAX antennas (Model No. LLPX310R), two (2) Dragonwave dishes (Model No. A-ANT-32G-2-C) and three (3) Samsung Remote Radio Heads (Model No. FDD-R6-RHH BTS). Clearwire plans to mount the antennas on 3 proposed pipe mounts with a centerline of 107 feet. Six cables, 5/16" in diameter, will run to the new WiMAX antennas (two per panel). Additionally, 2 coax cables, 1/2" in diameter, will run to the new dishes (one per dish).

Clearwire plans to lease a 10-foot by 10-foot (approximately) area within the previously proposed fenced compound. Clearwire proposes to locate its equipment cabinet on a proposed 6-foot by 7-foot (approximately) concrete slab within its leased area. A proposed ice bridge will connect the equipment to the Tower. The proposed power and telephone conduits will be routed from the pull box, previously proposed, to Clearwire's proposed equipment cabinets. No upgrades to the access road or parking area will be necessary.

C. Technical Feasibility

Consistent with the requirements of the Statute, it is technically feasible for Clearwire to collocate at this Facility. To analyze whether the Tower can support Clearwire's proposed modifications, Clearwire commissioned FDH Engineering, Inc. to perform a structural analysis of the Tower with Clearwire's proposed antennas. The structural analysis is attached. According to the Structural Analysis Report, dated September 25, 2009, "... the foundation should have the necessary capacity to support both the proposed and existing loading" (Page 3, Structural Analysis Report).

D. Legal Feasibility

The Council has the authority, pursuant to the Statute, to issue an order approving the shared use of this Tower. By issuing an order approving Clearwire's use of the Tower, Clearwire

will be able to proceed with obtaining a building permit for its proposed installation on the Tower. Therefore, consistent with the Statute, Clearwire's proposal is legally feasible.

E. Economic Feasibility

Clearwire is a wireless telecommunications provider licensed by the Federal Communications Commission to provide service in areas of Connecticut, including but not limited to Fairfield County. Clearwire has entered into a lease with SBA for the purpose of locating its antennas and associated equipment at the Facility so that it may provide wireless telecommunications service to this area of Danbury. A redacted copy of the Letter of Authorization is attached. Therefore, the shared use of this Facility is economically feasible.

F. Environmental Feasibility

Pursuant to the Statute, the proposal will be environmentally feasible for the following reasons:

- The overall impact on the City of Danbury will be decreased with the sharing of a single tower versus the proliferation of towers.
- The proposal will not increase the height of the Tower.
- There will be little increase in the visibility of the Tower with the addition of Clearwire's antennas, Remote Radio Heads and dishes.
- There will be no impact on any wetlands or water resources as a result of Clearwire's modifications.
- There will be no increased impact on air quality because no air pollutants will be generated during the normal operation of the Facility.

- There will only be a brief, slight increase in noise pollution while the antennas are attached and the equipment buildings are installed.
- During construction, the proposed project will generate a small amount of traffic as workers arrive and depart and materials are delivered. Upon completion, traffic will be limited to an average of one monthly maintenance/inspection visit.

G. Public Safety Concerns / Benefits

There will be no adverse impact to the health and safety of the surrounding community or the workers at the Facility due to the addition of Clearwire's antennas to the Tower. Clearwire performed an analysis of the radio frequency fields emanating from the transmitting antennas on the Tower to ensure compliance with the National Council on Radiation Protection and Measurements' ("NCRP") standard for maximum permissible exposure (MPE) adopted by the Federal Communications Commission ("FCC"). The analysis, dated October 14, 2009, indicates that Clearwire's antennas will emit .000090% of the NCRP's standard for maximum permissible exposure. A cumulative power density analysis indicates that together, all of the antennas on the Tower will cumulatively emit 2.48% of the NCRP's standard for maximum permissible exposure. The power density analysis is attached. Therefore, the analysis demonstrates that the maximum level of radio-frequency energy emitted from the Tower will be well below the FCC's mandated radio frequency exposure limits.

Moreover, Clearwire expects to enhance safety in the Danbury area by improving wireless communications for local residents and travelers. Clearwire is currently developing its 4G wireless broadband network to provide high-speed wireless data and its VoIP service within the State of Connecticut. Clearwire's 4G service leverages the WiMAX technology to enable enhanced wireless data communications. In order to provide reliable coverage to residents and


travelers in this area of Danbury and fulfill their coverage goals to comply with their FCC license, this site is a necessary part of Clearwire's network development.

Specifically, this proposal is designed to provide reliable wireless coverage along Stadley Rough Road, along approximately 1 mile of Great Plain Road and along approximately 0.8 miles of Corn Tassle Road. Clearwire's proposal will also provide a reliable signal level in and around the surrounding commercial and residential areas within close proximity to the site.

Conclusion

For the reasons stated above, the attachment of Clearwire's antennas, Remote Radio Heads and dishes to the Tower would meet all the requirements set forth in the Statute. This proposal is technically, legally, environmentally and economically feasible and meets all public safety concerns. Therefore, Clearwire respectfully requests that the Council approve this request for the shared use of the Tower located at 52 Stadley Rough Road in Danbury, Connecticut.

Clearwire Corporation

By: 

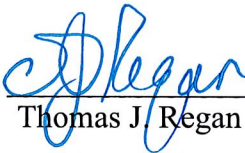
Thomas J. Regan
Brown Rudnick LLP
185 Asylum Street, CityPlace I
Hartford, CT 06103-3402
Email - tregan@brownrudnick.com
Phone - 860.509.6522
Fax - 860.509.6622

Certificate of Service

This is to certify that on this 20th day of November, 2009, the foregoing Tower Sharing

Proposal was sent, via first class mail, to the following:

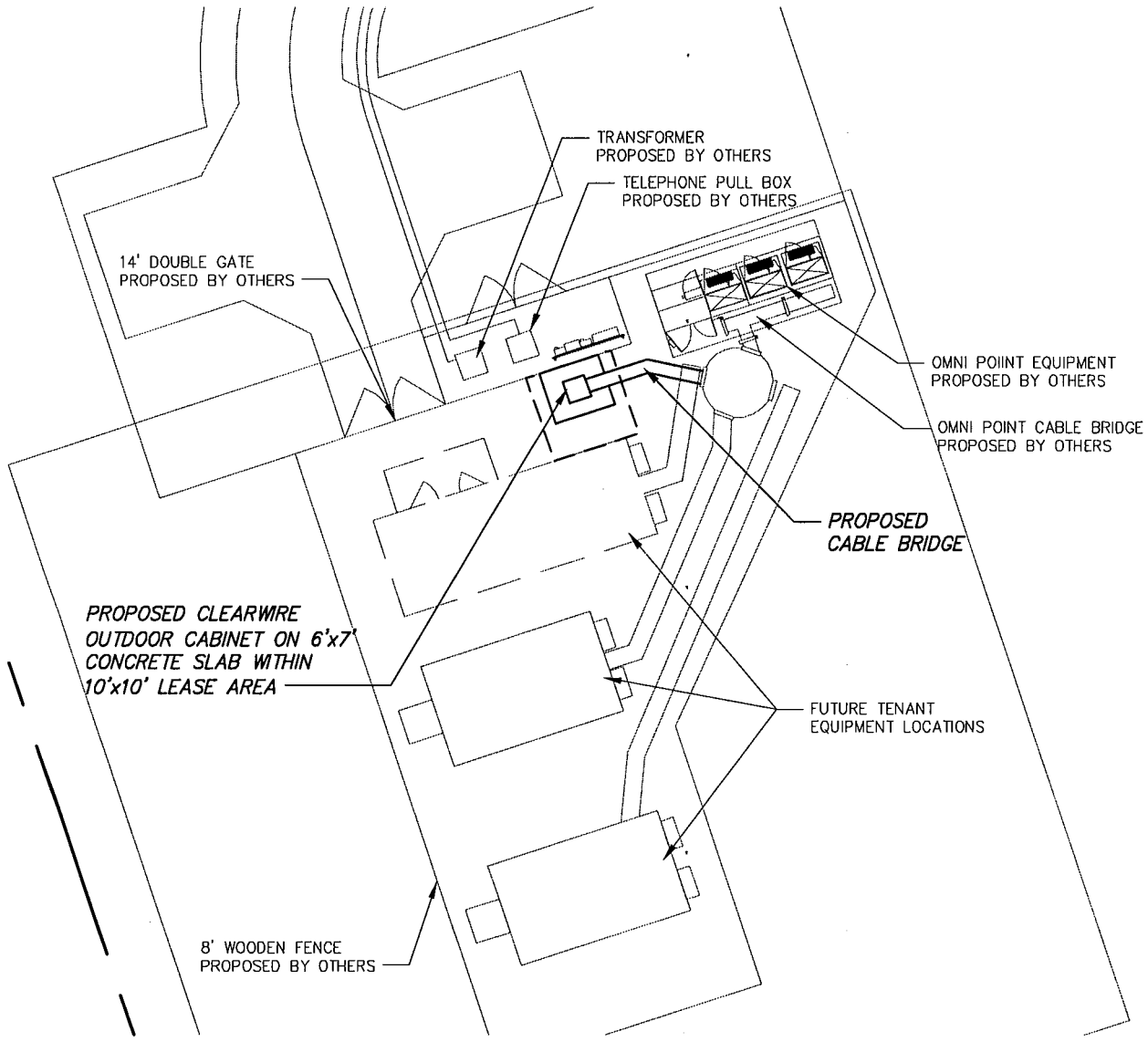
City of Danbury
City Hall
Mayor Mark D. Boughton
155 Deer Hill Avenue
Danbury, CT 06810

By: 
Thomas J. Regan

40266594 v1 - 025064/0017

File: W:\CLEARWIRE\CT\20592\SITES\1053 - CT-BDR0011\LE\CT-BDR0011_LE.DWG Saved: 11/18/2009 12:26:44 PM Plotted: 11/18/2009 12:27:42 PM User: WYD, Heather

APPROX. TRUE
APPROX. MAG. N



14' DOUBLE GATE
PROPOSED BY OTHERS

TRANSFORMER
PROPOSED BY OTHERS

TELEPHONE PULL BOX
PROPOSED BY OTHERS

OMNI POINT EQUIPMENT
PROPOSED BY OTHERS

OMNI POINT CABLE BRIDGE
PROPOSED BY OTHERS

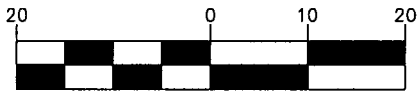
PROPOSED
CABLE BRIDGE

PROPOSED CLEARWIRE
OUTDOOR CABINET ON 6'x7'
CONCRETE SLAB WITHIN
10'x10' LEASE AREA

FUTURE TENANT
EQUIPMENT LOCATIONS

8' WOODEN FENCE
PROPOSED BY OTHERS

SITE PLAN
GRAPHIC SCALE



IN FEET

LEASE EXHIBIT

SCALE: 1" = 20'
NOVEMBER 18, 2009

1 OF 3

REVISION NUMBER 2



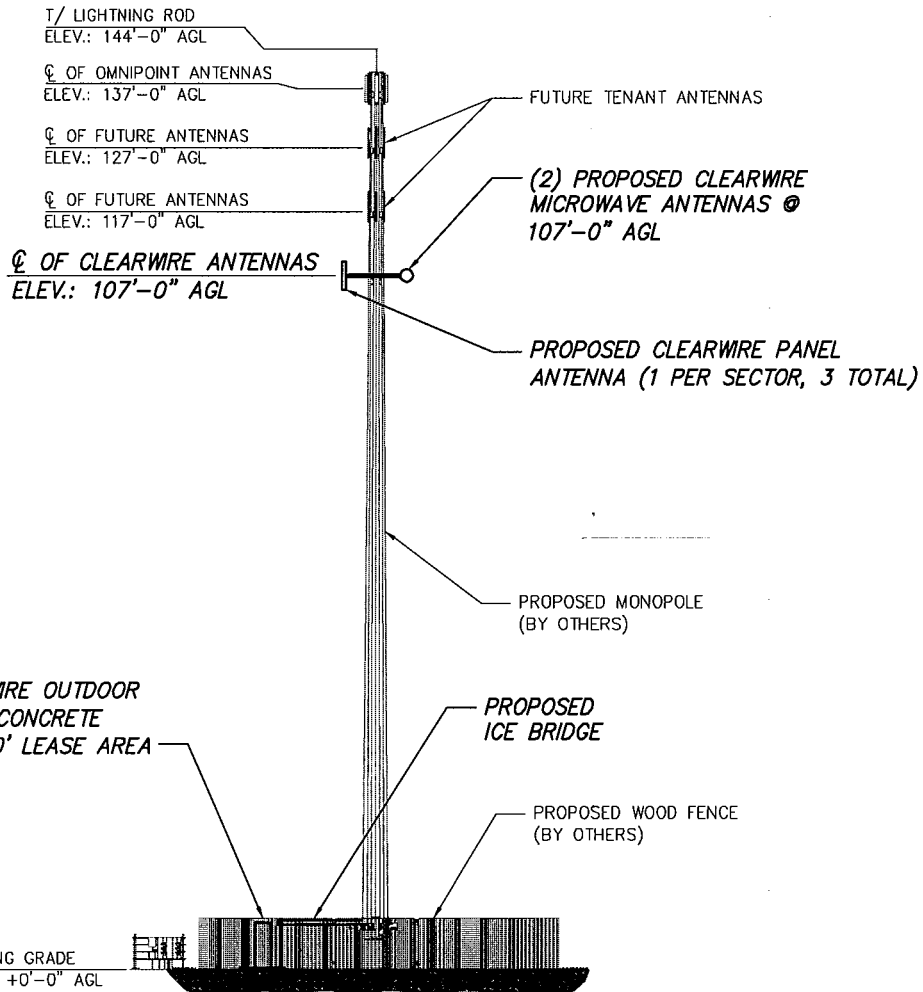
III Winners Circle, PO Box 5269 · Albany, NY 12205-0269
Main: (518) 463-4500 · www.chacompanies.com

clearw're
TECHNOLOGIES, INC.

5808 LAKE WASHINGTON
BLVD. NE STE. 300
KIRKLAND, WA 98033
OFFICE: (425) 216-7600
FAX: (425) 216-7900

CT-BDR0011
52 STADLEY ROUGH ROAD
DANBURY, CT 06811

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SOUTH ELEVATION

NO SCALE

LEASE EXHIBIT

NO SCALE
NOVEMBER 18, 2009

2 OF 3

REVISION NUMBER 2

Drawing Copyright © 2008



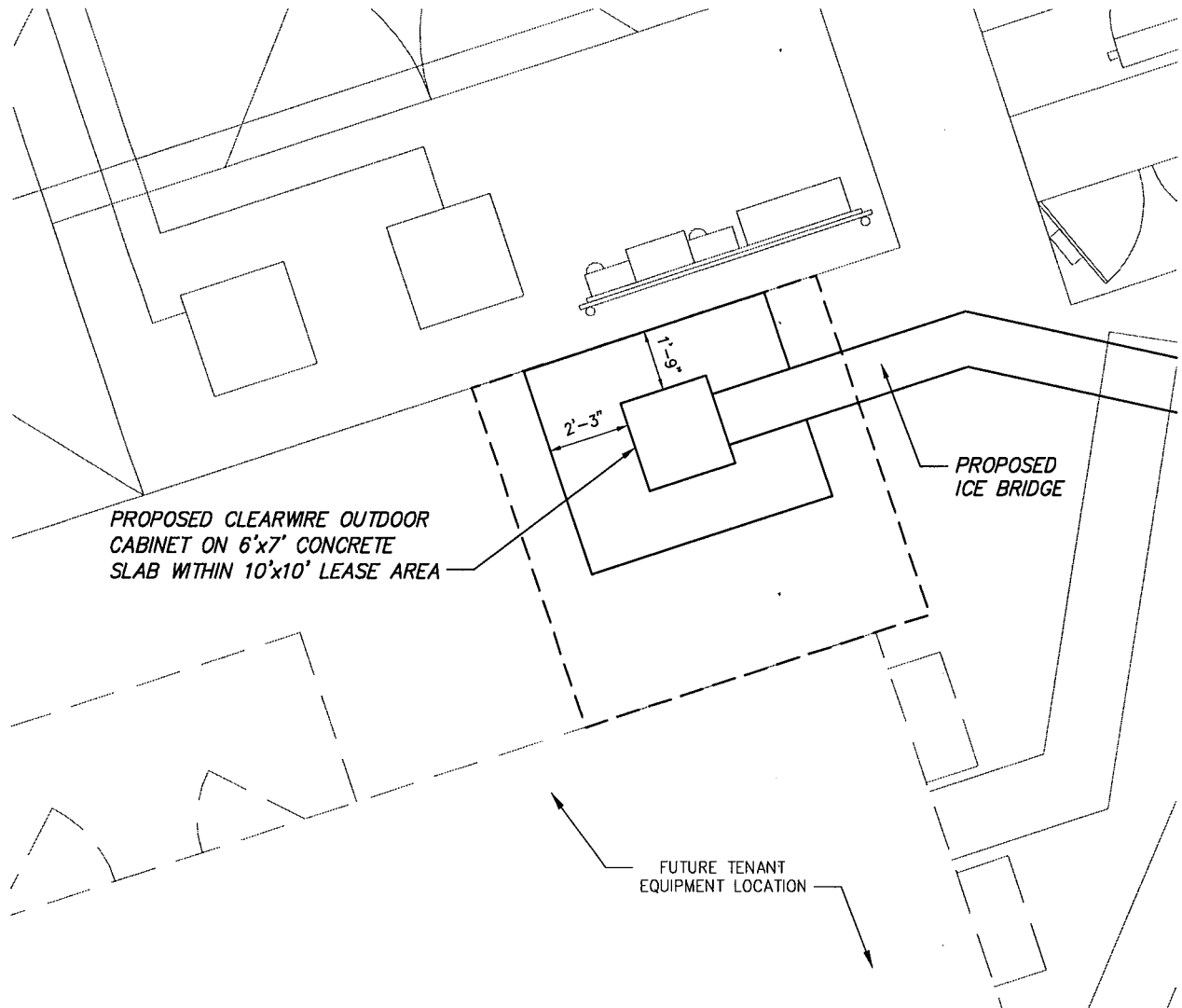
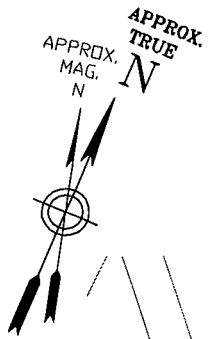
111 Winners Circle, PO Box 6269 · Albany, NY 12205-0269
Main: (616) 463-4600 · www.chacompanies.com

clearw're
TECHNOLOGIES, INC.

5808 LAKE WASHINGTON
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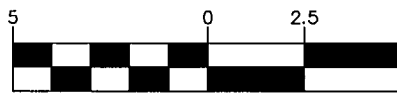
CT-BDR0011
52 STADLEY ROUGH ROAD
DANBURY, CT 06811

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EQUIPMENT LAYOUT

GRAPHIC SCALE



IN FEET

LEASE EXHIBIT

SCALE: 1" = 5'
NOVEMBER 18, 2009

3 OF 3

REVISION NUMBER 2

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clearw're
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FAX: (425) 216-7900

CT-BDR0011
52 STADLEY ROUGH ROAD
DANBURY, CT 06811



**Structural Analysis for
SBA Network Services, Inc.**

140' Monopole

**Site Name: Danbury 1
Site ID: CT13549-S**

FDH Project Number 09-06165E S2

Prepared By:

Blake A. Bartok, EI
Project Engineer

Reviewed By:

Christopher M. Murphy, PE
Vice President
CT PE License No. 25842

FDH Engineering, Inc.

2730 Rowland Rd.
Raleigh, NC 27615
(919)-755-1012
info@fdh-inc.com



September 25, 2009

Prepared pursuant to ANSI TIA-222-G Structural Standard for Antenna Supporting Structures and Antennas

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	3
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BASE LEVEL DRAWING.....	8

EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Danbury, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, pursuant to the *Structural Standard for Antenna Supporting Structures and Antennas, ANSI/TIA-222-G*. Information pertaining to the existing/proposed antenna loading, current tower geometry, and the member sizes was obtained from the Rohn Products LLC (Eng. File No. 060-6274) original design drawings dated June 1, 2009, and SBA Network Services, Inc.

The *basic design wind speed* per *ANSI/TIA-222-G* standards is 110 mph without ice and 50 mph with 3/4" radial ice. Ice is considered to increase in thickness with height. Furthermore, the tower is analyzed as a Class II structure in Exposure Category B.

Conclusions

With the existing and proposed antennas from Clearwire in place 107 ft, the tower meets the requirements of the *ANSI/TIA-222-G* standards provided the **Recommendations** listed below are satisfied. Furthermore, provided the foundation was designed and constructed to support the original design reactions (See Rohn Eng. File No. 060-6274), the foundation should have the necessary capacity to support both the proposed and existing loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH Engineering, Inc. is accurate (i.e., the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower will be properly erected and maintained per the original design drawings.

Recommendations

To ensure the requirements of the *ANSI/TIA-222-G* standards are met with the existing and proposed loading in place, we have the following recommendations:

1. The proposed coax should be installed inside the pole's shaft.
2. The proposed BTSs should be installed directly behind the proposed panel antennas.

APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coaxlines are shown in **Table 1**. If the actual layout determined in the field deviates from this layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.

Table 1 – Appurtenance Loading

Existing Loading:

Antenna No.	Centerline Elevation (ft)	Coax and Lines (in) ¹	Carrier	Mount	Description
1-6	137 ²	(12) 1-5/8	T-Mobile	Direct Mount	(6) RFS APX16PV-16VL-E
7-12	127 ³	(12) 1-5/8	Sprint/Nextel	Direct Mount	(6) Decibel DB848H90E-XY
13-18	117 ⁴	(12) 1-5/8	Metro PCS	Direct Mount	(3) Kathrein 80010504 (3) Kathrein 742-351

¹ Coax is installed inside the pole's shaft, unless otherwise noted.

² Currently T-Mobile has no loading installed at 137 ft. According to information provided by SBA, T-Mobile may install up to (6) RFS APX16PV-16VL-E antennas and (12) 1-5/8" coax. Analysis performed with leased loading in place.

³ Currently Sprint/Nextel has no loading installed at 127 ft. According to information provided by SBA, Sprint/Nextel may install up to (6) Decibel DB848H90E-XY antennas and (12) 1-5/8" coax. Analysis performed with leased loading in place.

⁴ Currently MetroPCS has no loading installed at 117 ft. According to information provided by SBA, MetroPCS may install up to (3) Kathrein 80010504 antennas, (3) Kathrein 742-351 antennas, and (12) 1-5/8" coax. Analysis performed with leased loading in place.

Proposed Loading:

Antenna No.	Centerline Elevation (ft)	Coax and Lines (in)	Carrier	Mount	Description
1-5	107	(6) 5/16 (2) 1/2	Clearwire	(3) 4" Dia. x 8'-6" Pipe Mounts	(3) Argus LLPX310R (3) Samsung FDD-R6-RRH BTSs (2) Dragonwave A-ANT-23G-2-C Dishes

RESULTS

Based on information obtained from the original design drawings, the yield strength of steel for individual members was as follows:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Shaft Sections	65 ksi
Base Plate	50 ksi
Anchor Bolts	105 ksi

Table 3 displays the ratio (as a percentage) of force in the member to their capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its capacity. **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH Engineering, Inc. should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Pole Profile** and **Base Level Drawing** for detailed modeling information.

Table 3 – Summary of Working Percentage of Structural Components

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
L1	140 - 111.92	Pole	TP23.763x18x0.1875	25.8	Pass
L2	111.92 - 87.92	Pole	TP28.153x22.7723x0.1875	60.5	Pass
L3	87.92 - 43.42	Pole	TP36.75x27.0805x0.25	72.7	Pass
L4	43.42 - 0	Pole	TP45x35.3267x0.3125	70.0	Pass
		Anchor Bolts	(16) 1.5" Dia., 49.75" Dia. BC	73.0	Pass
		Base Plate	1.5" thick x 53.75" Dia.	69.8	Pass

Table 4 – Maximum Base Reactions

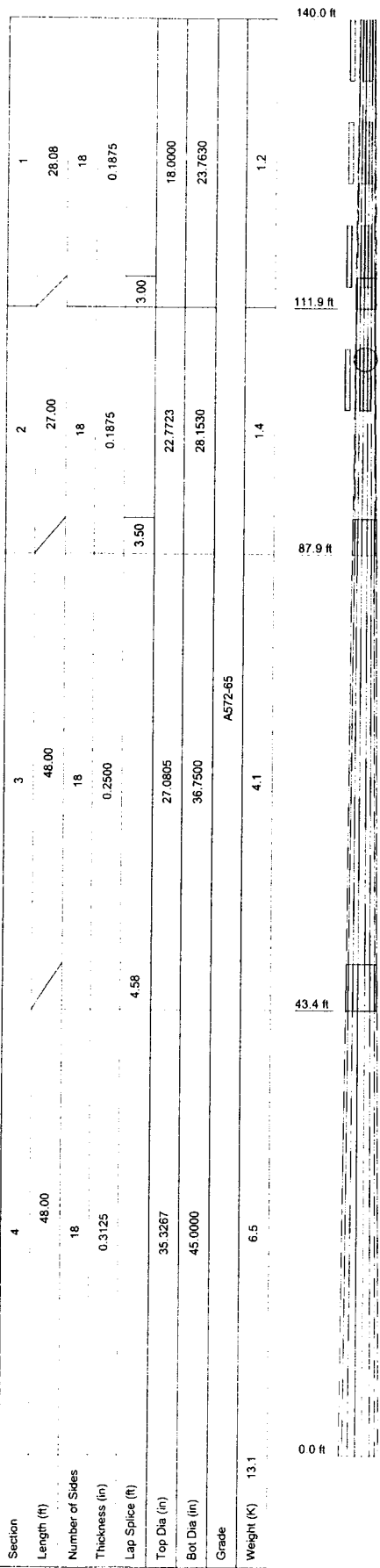
Load Type	Current Analysis (ANSI/TIA-222-G)	Original Design (ANSI/TIA-222-G)
Axial	23 k	58 k
Shear	18 k	23 k
Moment	1,646 k-ft	2,301 k-ft

GENERAL COMMENTS

This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.



DESIGNED APPURTENANCE LOADING

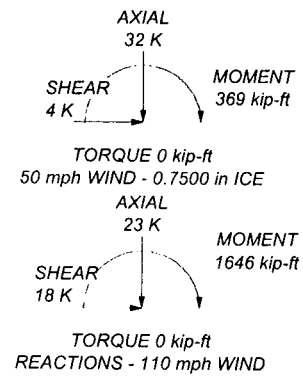
TYPE	ELEVATION	TYPE	ELEVATION
(2) RFS - APX16PV-16VL-E w/ mount pipe (T-Mobile)	137	Kathrein - 742 351 w/ mount pipe (Metro PCS)	117
(2) RFS - APX16PV-16VL-E w/ mount pipe (T-Mobile)	137	Kathrein - 742 351 w/ mount pipe (Metro PCS)	117
(2) RFS - APX16PV-16VL-E w/ mount pipe (T-Mobile)	137	Argus - LLPX310R (Clearwire)	107
(2) DB848H90E-XY w/Mount Pipe (Sprint/Nextel)	127	Argus - LLPX310R (Clearwire)	107
(2) DB848H90E-XY w/Mount Pipe (Sprint/Nextel)	127	Argus - LLPX310R (Clearwire)	107
(2) DB848H90E-XY w/Mount Pipe (Sprint/Nextel)	127	Samsung - FDD-R6-RRH BTS (Clearwire)	107
(2) DB848H90E-XY w/Mount Pipe (Sprint/Nextel)	127	Samsung - FDD-R6-RRH BTS (Clearwire)	107
Kathrein - 800-10504 w/ mount pipe (Metro PCS)	117	Samsung - FDD-R6-RRH BTS (Clearwire)	107
Kathrein - 800-10504 w/ mount pipe (Metro PCS)	117	Pipe Mount - 4" x 8'-6" (Clearwire)	107
Kathrein - 800-10504 w/ mount pipe (Metro PCS)	117	Pipe Mount - 4" x 8'-6" (Clearwire)	107
Kathrein - 800-10504 w/ mount pipe (Metro PCS)	117	Pipe Mount - 4" x 8'-6" (Clearwire)	107
Kathrein - 742 351 w/ mount pipe (Metro PCS)	117	Dragonwave - A-ANT-23G-2-C (Clearwire)	107
		Dragonwave - A-ANT-23G-2-C (Clearwire)	107

MATERIAL STRENGTH

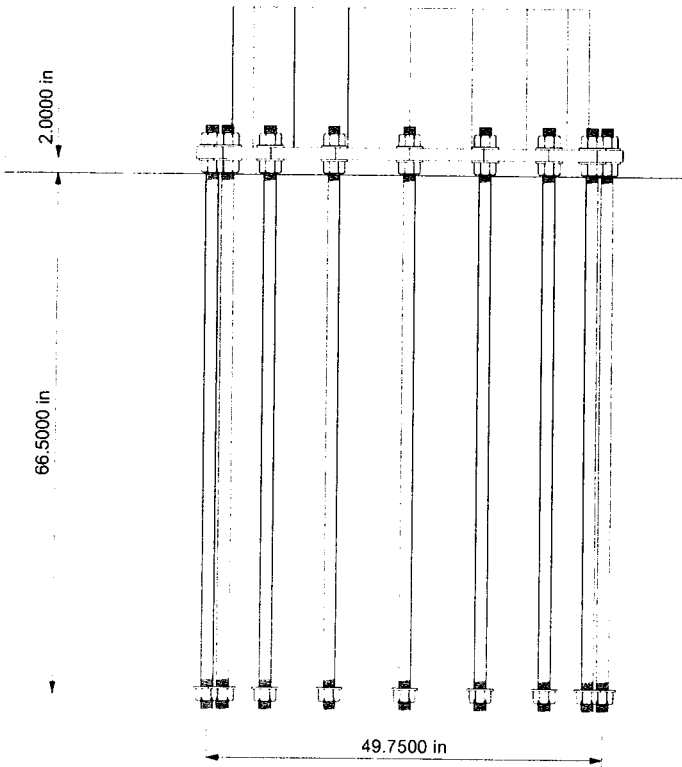
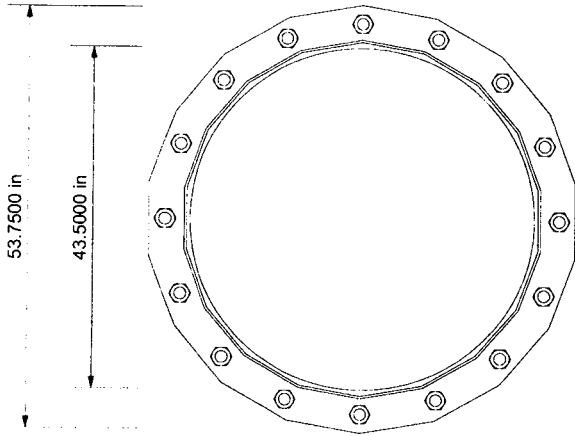
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 110 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.



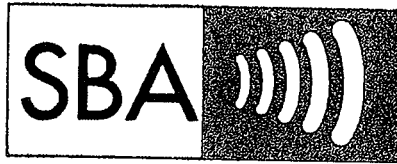
FDH Engineering, Inc. 2730 Rowland Road Raleigh, North Carolina Phone: (919) 755-1012 FAX: (919) 755-1031	Job: Danbury 1, CT CT13549-S
	Project: 09-06165E S2
	Client: SBA Network Services, Inc. Drawn by Scott Hilgoe App'd:
	Code: TIA-222-G Date 09/25/09 Scale NTS
	Path: _____ Dwg No E-1



FOUNDATION NOTES

1. Plate thickness is 1.5000 in.
2. Plate grade is A572-50.
3. Anchor bolt grade is F1554-105.
4. f_c is 4 ksi.

FDH Engineering, Inc. 2730 Rowland Road Raleigh, North Carolina Phone: (919) 755-1012 FAX: (919) 755-1031	Job: Danbury 1, CT CT13549-S	Drawn by Scott Hilgoe	App'd.	
	Project: 09-06165E S2	Client: SBA Network Services, Inc.	Date: 09/25/09	
	Code: TIA-222-G	Scale: NTS		
	Path:			
				Dwg No. F-1



LETTER OF AUTHORIZATION

Date: November 11, 2009

SBA Site ID: CT13549-S-04/Danbury 1

Property Located at: 52 Stadley Rough Road, Danbury, CT 06811

THE CITY/COUNTY OF: DANBURY / FAIRFIELD

APPLICATION FOR ZONING/USE/BUILDING PERMIT

To Whom It May Concern:

This letter authorizes Clearwire and it's authorized agents to file for all necessary zoning, planning and building permits (local, state and federal) for the purposes of installing, operating and maintaining a telecommunications facility at the site/property referenced above on behalf of Candlewood Baptist Church.

All approval conditions that may be granted to Clearwire in connection with this facility relating to this specific application are the sole responsibility of Clearwire.

Thank you,

SBA Towers II LLC

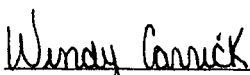
By: 


Name: Jason Silberstein

Its: Sr. VP, Property Management

Date: 11 / 11 / 2009

Sworn and subscribed this 11th day of November, 2009


NOTARY PUBLIC

NOTARY PUBLIC - STATE OF FLORIDA
 Wendy Carrick
Commission # DD495151
Expires: NOV. 30, 2009
Bonded Thru Atlantic Bonding Co., Inc.



To: HPC
From: Julius De La Cruz – Radio Frequency Engineer
Cc: Cameron Syme
Subject: Power Density Report for CT-BDR0011
Date: October 14, 2009

1. Introduction:

This report is the result of Electromagnetic Field Intensities (EMF – Power Densities) study for the Clearwire broadband antenna installation on a Self Support Tower at 52 Stadley Rough Road, Danbury, CT 06811. This study incorporates the most conservative consideration for determining the practical combined worst case power density levels that would be theoretically encountered from locations surrounding the transmitting location:

2: Discussion:

The following assumptions were used in the calculations:

- 1) The emissions from Clearwire transmitters are in the (2496 – 2960) Frequency Band
- 2) The emissions from the Clearwire Microwave dishes are in the 11 GHz Frequency Band
- 3) The model number for Clearwire Antenna is Argus LLPX310R
- 4) The model number for the Microwave dish is Andrew VHLP2.5-11 with 24” Diameter.
- 5) The Clearwire Panel antenna centerline is 107 feet.
- 6) The Clearwire Microwave dish centerline is 107 feet.
- 7) The Maximum Transmit power from any Clearwire panel antenna is 251 Watts Effective Isotropic Radiated Power (EiRP) assuming 2 channels per sector.
- 8) The Maximum Transmit power from any Clearwire Microwave Dish is 346 Watts Effective Isotropic Radiated Power (EiRP) assuming 1 channel per dish.
- 9) All antennas are simultaneously transmitting and receiving 24 hours per day.
- 10) The average ground level of the studied area does not change significantly with respect to the transmitting location.

Equations given in “FCC OET Bulletin 65, Edition 97-01” were used with the above information to perform the calculations.

3: Conclusion:

Based on the above worst case assumptions, the power density calculation from the Clearwire antenna installation on a Self Support Tower at 52 Stadley Rough Road, Danbury, CT 06811 is 0.0000009 mW/cm². This value represents 0.000090% of the Maximum Permissible Exposure (MPE) standard of 1 milliwatt per square centimeter (mW/cm²) set forth in the FCC/ANSI/IEEE C95-1-1991. Furthermore, the proposed antenna location for Clearwire will not interfere with existing public safety communications, AM or FM radio broadcasts, TV, Police Communications, HAM Radio communications or any other signals in the area.

The combined Power Density from all other carriers is 2.48 %. The combined Power Density for this site is 2.48009% of the M.P.E. standard.