COHEN and WOLF P.C.
ATTORNEYS AT LAW

JULIE D. KOHLER

PLEASE REPLY TO: Bridgeport
WRITER'S DIRECT DIAL: (203) 337-4157
E-Mail Address: jkohler@cohenandwolf.com

November 4, 2014

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Notice of Exempt Modification
Radio Communications Corp./ MetroPCS co-location
Site ID CTNH520A
21 Birchwood Drive Ansonia

Dear Attorney Bachman:

This office represents MetroPCS Massachusetts, LLC ("MetroPCS") and has been retained to file exempt modification filings with the Connecticut Siting Council on its behalf.

In this case, Radio Communications Corporation owns the existing lattice telecommunications tower and related facility at 21 Birchwood Drive, Ansonia, Connecticut (Latitude: 41.329078, Longitude:-73.056294). MetroPCS intends to add three new antennas and related equipment at this existing telecommunications facility in Ansonia ("Ansonia Facility"). Please accept this letter as notification, pursuant to R.C.S.A. § 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the Mayor David S. Cassetti, and the property owner, Robert Knapp.

The existing Ansonia Facility consists of an approximately 59 foot guyed lattice tower.[1] MetroPCS plans to add three antennas on standoff arm mounts at a centerline of 56 feet. (See the plans revised to October 31, 2014 attached hereto as Exhibit A). MetroPCS will also install an equipment cabinet and three RRUs (remote radio units) on proposed unistruts mounted to the existing ice bridge post as well as install coax cable and reuse existing coax cables. With modifications, the existing Ansonia Facility is structurally capable of supporting MetroPCS' proposed equipment additions, as indicated in the Tower Reinforcement Letter

[1] The Ansonia Facility is not listed on the Council's online database as being approved via a Docket or Petition but is the subject of a notice of intent captioned EM-METROPCS-002-140826.

dated October 20, 2014 and stamped October 29, 2014, attached hereto as Exhibit B. The Tower Reinforcement Letter provides that the Ansonia Facility is structurally capable of supporting MetroPCS' installation if the tower is modified in accordance with the proposed reinforcement plan dated October 14, 2014. That reinforcement plan is provided in Exhibit B. An initial Structural Analysis Report dated September 15, 2014 and stamped October 29, 2014 is also provided in Exhibit B.

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

1. The proposed modification will not increase the height of the tower. MetroPCS' additional antennas will be installed at a centerline of 56 feet, merely replacing existing antennas located at the same 56 foot elevation. The enclosed tower drawing confirms that the proposed modification will not increase the height of the tower.

2. The proposed modifications will not require an extension of the site boundaries or lease area, as depicted on Sheets 2 of Exhibit A. MetroPCS' equipment will be located entirely within the existing compound area.

3. The proposed modification to the Ansonia Facility will not increase the noise levels at the existing facility by six decibels or more.

4. The operation of the additional antennas will not increase the total radio frequency (RF) power density, measured at the base of the tower, to a level at or above the applicable standard. According to a Radio Frequency Emissions Analysis Report prepared by EBI dated October 28, 2014, MetroPCS' operations would add 56.66% of the FCC Standard. Therefore, the calculated "worst case" power density for the planned combined operation at the site including all of the proposed antennas would be 91.98% of the FCC Standard as calculated for a mixed frequency site as evidenced by the engineering exhibit attached hereto as Exhibit C.

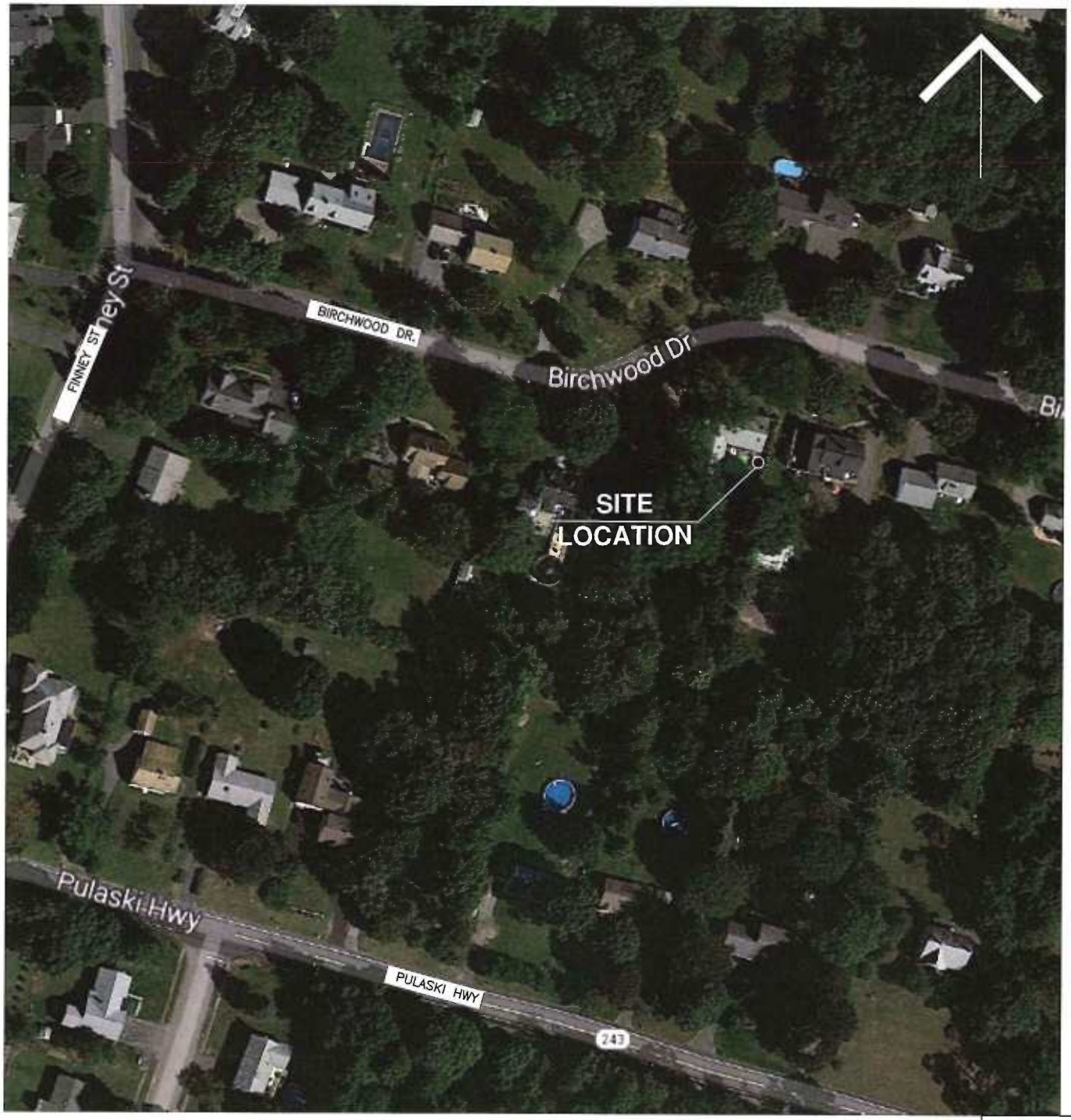
For the foregoing reasons, MetroPCS respectfully submits that the proposed antennas and equipment at the Ansonia Facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Upon acknowledgement by the Council of this proposed exempt modification, MetroPCS shall commence construction approximately sixty days from the date of the Council's notice of acknowledgement.

Sincerely,

Julie D. Kohler, Esq.

cc: Town of Ansonia, Mayor David S. Cassetti
Radio Communications Corp.
Robert Knapp
Sheldon Freincle, NSS

EXHIBIT A



KEY PLAN

N.T.S.

MetroKeep-AAV

CONFIGURATION

5A

SUBMITTALS	
LE REV A	05.19.14
LE REV 0	10.31.14

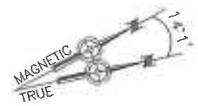
ATLANTIS GROUP
1340 Centre Street
Suite 212
Newton, MA 02459
Office: 617-965-0789
Fax: 617-213-5056

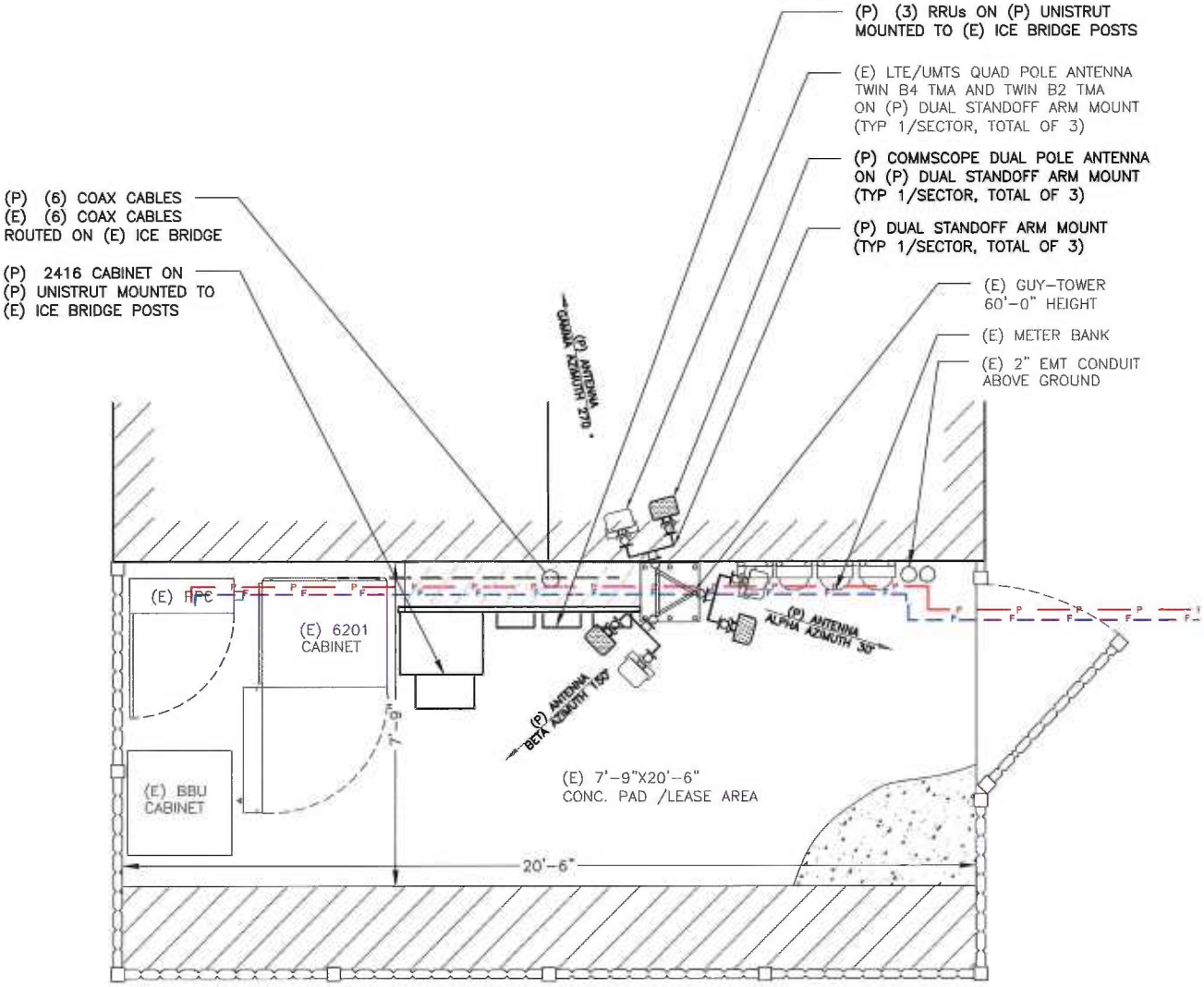
LEASE EXHIBIT

SITE NUMBER:
CTNH520A
SITE NAME:
KNAPP ANSONIA LATTICE TOWER
SITE ADDRESS:
21 BIRCHWOOD DR
ANSONIA, CT 06401

NORTHEAST SITE SOLUTIONS
54 MAIN STREET, UNIT 3
STURBRIDGE, MA 01566
(508) 434-5237
FOR
metroPCS.
metroPCS WIRELESS, INC.
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

DRAWN BY: MB | CHECKED BY: SM





1
LE-3

ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY LESSEE/LICENSEE'S STRUCTURAL & RF ENGINEERS. LOCATIONS OF POWER & TELEPHONE FACILITIES ARE SUBJECT TO APPROVAL BY UTILITY COMPANIES.

SITE PLAN

SCALE: N.T.S.

1
LE-2

MetroKeep-AAV

CONFIGURATION

5A

SUBMITTALS	
LE REV A	05.19.14
LE REV 0	10.31.14

ATLANTIS GROUP
1340 Centre Street
Suite 212
Newton, MA 02459
Office: 617-965-0789
Fax: 617-213-5056

LEASE EXHIBIT

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CTNH520A
SITE NAME:
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SITE ADDRESS:
21 BIRCHWOOD DR
ANSONIA, CT 06401

NORTHEAST SITE SOLUTIONS
54 MAIN STREET, UNIT 3
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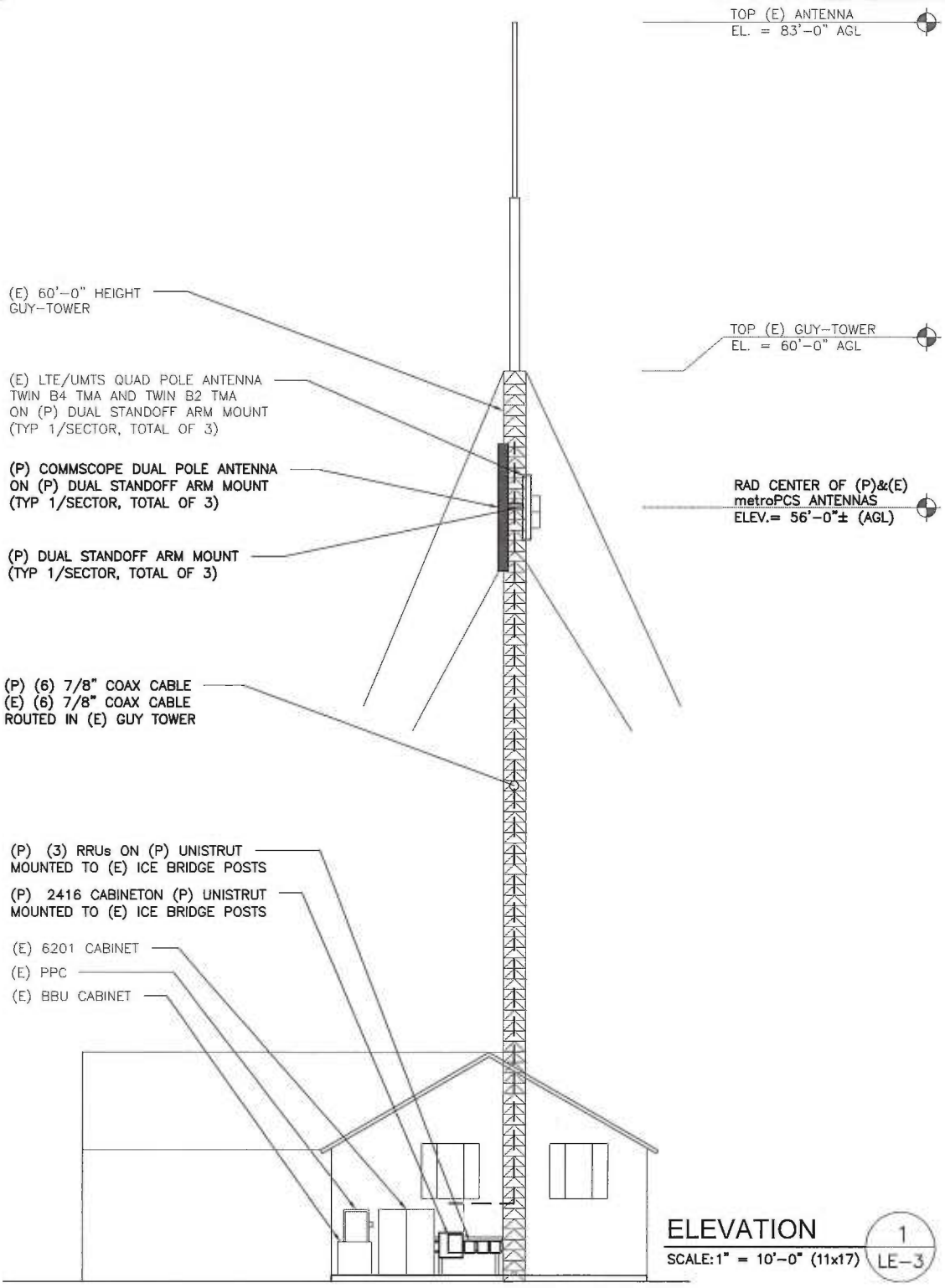
(508) 434-5237
FOR
metroPCS.
metroPCS WIRELESS, INC.
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

DRAWN BY: MB | CHECKED BY:SM



ELEVATION 1 / LE-3

SCALE: 1" = 10'-0" (11x17)

MetroKeep-AAV

CONFIGURATION

5A

SUBMITTALS	
LE REV A	05.19.14
LE REV 0	10.31.14

ATLANTIS GROUP
1340 Centre Street
Suite 212
Newton, MA 02459
Office: 617-965-0789
Fax: 617-213-5056

LEASE EXHIBIT

SITE NUMBER:
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SITE NAME:
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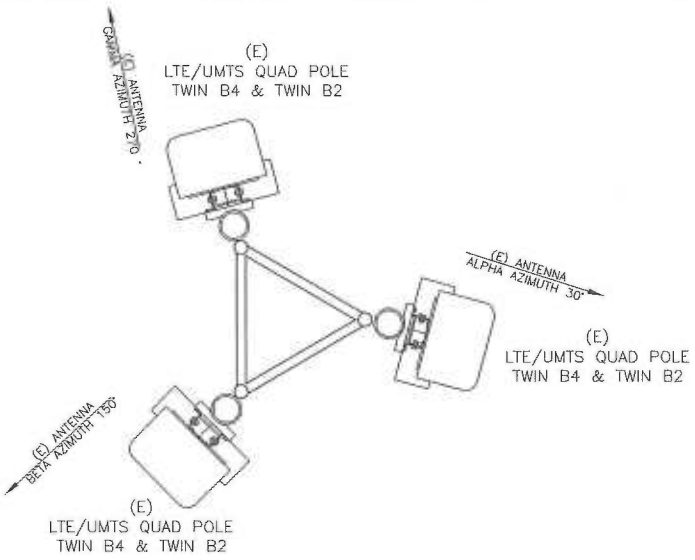
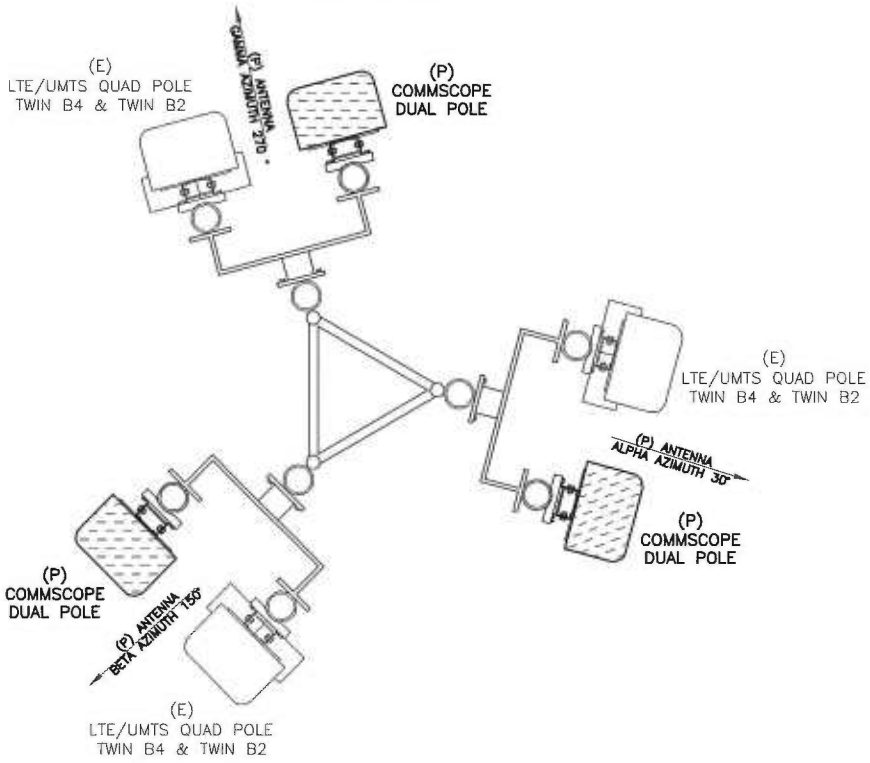


EXISTING



PROPOSED

ANTENNA PLAN

N.T.S.

1
LE-4

MetroKeep-AAV
CONFIGURATION
5A

SUBMITTALS	
LE REV A	05.19.14
LE REV 0	10.31.14

ATLANTIS GROUP
1340 Centre Street
Suite 212
Newton, MA 02459
Office: 617-965-0789
Fax: 617-213-5056

LEASE EXHIBIT

SITE NUMBER:
CTNH520A
SITE NAME:
KNAPP ANSONIA LATTICE TOWER
SITE ADDRESS:
21 BIRCHWOOD DR
ANSONIA, CT 06401

NORTHEAST SITE SOLUTIONS
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(508) 434-5237
FOR
metroPCS.
metroPCS WIRELESS, INC.
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

DRAWN BY: MB | CHECKED BY: SM

EXHIBIT B

KM Consulting Engineers, Inc.
Wireless Engineering and Project Management

October 20, 2014

Sheldon Freincle
Northeast Site Solutions
54 Main Street
Suite 3
Sturbridge, MA 01566

RE: Ansonia
Tower Reinforcement Letter
21 Birchwood Drive
Ansonia, CT 06401
KM Proposal No. 140604.03

Dear Mr. Freincle,

Further to your request, KM Consulting Engineers, Inc. (KMCE) has reviewed the structural capability of the Ansonia guyed tower to support the proposed MetroPCS installation with the proposed reinforcement by KMCE dated 10/14/14.

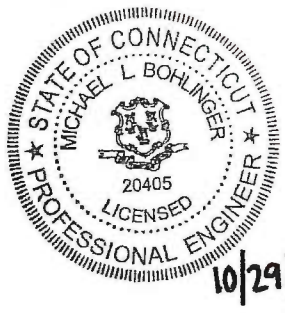
The proposed MetroPCS loading includes (3) Andrew APX16DWV_16DWVS panel antennas, (3) Commscope LNX-6515DS-VTM panel antennas, (3) TwinBS TMAs, (3) TwinB4 TMAs, and (18) 7/8" coax lines.

With the proposed modifications installed on the tower, KMCE finds the tower superstructure to be acceptable to support the proposed MetroPCS installation as per the TIA/EIA-222-F standards. The tower superstructure is rated at 97%, the guy wires are rated at 86.1%, the base foundation is rated at 15.9%, and the guy anchors are rated at 75.8%.

Should you have any questions or comments, please do not hesitate to contact our office.

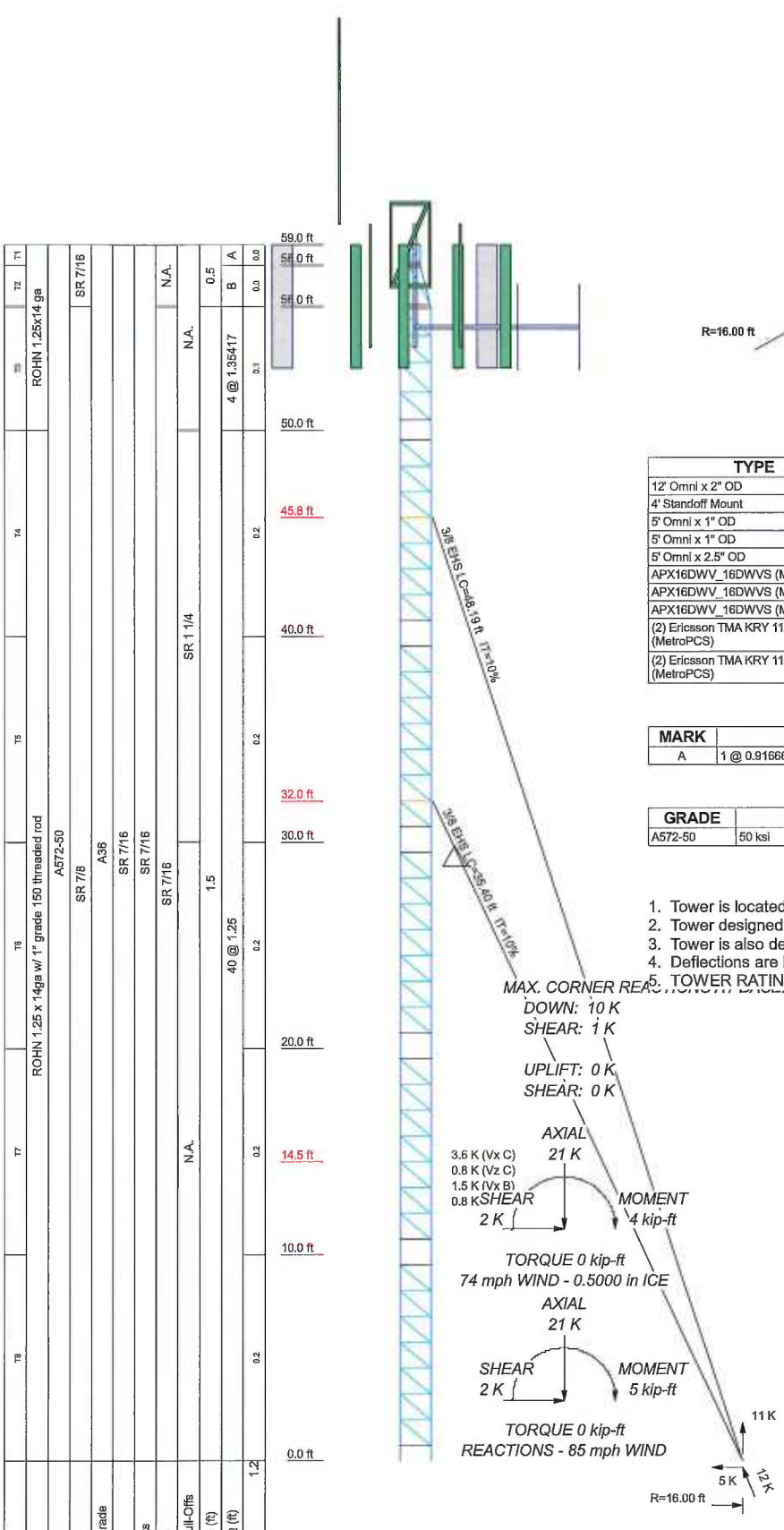
Sincerely,
KM CONSULTING ENGINEERS, INC.

Michael L. Bohlinger, PE
Principal
CT License No. 20405



10/29/14

9 Forest Lane, Ewing, New Jersey 08628 Tel. (609)538-0400 Fax. (609)538-8853
Email: info@kmengr.com VISIT OUR WEB PAGE @ www.kmengr.com



Section	T8	T7	T6	T5	T4	T3	T2	T1
Legs	ROHN 1.25 x 14ga w/ 1" grade 150 threaded rod					ROHN 1.25x14 ga		
Leg Grade	A572-50							
Diagonals	SR 7/8						SR 7/16	
Diagonal Grade	A36							
Top Girts	SR 7/16							
Bottom Girts	SR 7/16							
Horizontals	SR 7/16	N.A.					N.A.	
Top Guy Pull-Offs	N.A.			SR 1 1/4		N.A.		
Face Width (ft)	1.5					0.5		
# Panels @ (ft)	40 @ 1.25					4 @ 1.35417	B	A
Weight (K)	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0
	1.2							

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
12' Omni x 2" OD	60	(2) Ericsson TMA KRY 112 89/5 (MetroPCS)	56
4' Standoff Mount	59	LNX-6515DS-VTM (MetroPCS)	56
5' Omni x 1" OD	59 - 55	LNX-6515DS-VTM (MetroPCS)	56
5' Omni x 1" OD	59 - 55	LNX-6515DS-VTM (MetroPCS)	56
5' Omni x 2.5" OD	59 - 55	Yagi	55
APX16DWV_16DWVS (MetroPCS)	56	2' Standoff Mount	55
APX16DWV_16DWVS (MetroPCS)	56	2' Standoff Mount	55
APX16DWV_16DWVS (MetroPCS)	56	2' Standoff Mount	55
(2) Ericsson TMA KRY 112 89/5 (MetroPCS)	56		
(2) Ericsson TMA KRY 112 89/5 (MetroPCS)	56		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	1 @ 0.916667	B	1 @ 1.83333

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 97%

KM Consulting Engineers, Inc.
9 Forest Lane
Ewing, NJ 08628
Phone: (609) 538-0400
FAX:
Consulting Engineers

Job:	Ansonia LC1
Project:	59' Guyed Tower
Client: Northeast Site Solutions	Drawn by: Domenic Aversa / App'd:
Code: TIA/EIA-222-F	Date: 10/24/14 / Scale: NTS
Path: K:\Northeast Site Solutions\Ansonia\Engineering\Ansonia LC4 new load reinf.eri	Dwg No. E-1

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T1	59 - 58	Leg	ROHN 1.25x14 ga	1	-2.15	11.95	18.0	Pass
		Diagonal	7/16	10	-1.46	3.03	48.0	Pass
		Top Girt	7/16	6	-0.35	3.86	9.1	Pass
		Bottom Girt	7/16	9	-0.44	3.86	11.3	Pass
T2	58 - 56	Leg	ROHN 1.25x14 ga	15	-1.97	10.85	18.1	Pass
		Diagonal	7/16	23	-1.35	1.88	71.5	Pass
		Top Girt	7/16	18	-0.50	3.78	13.2	Pass
		Bottom Girt	7/16	21	-0.23	2.82	8.3	Pass
T3	56 - 50	Leg	ROHN 1.25x14 ga	27	-7.73	11.50	67.1	Pass
		Diagonal	7/8	34	-2.21	11.38	19.4	Pass
		Horizontal	7/16	37	-1.29	2.75	46.8	Pass
		Top Girt	7/16	30	-0.38	2.75	13.9	Pass
		Bottom Girt	7/16	31	-0.79	2.75	28.7	Pass
T4	50 - 40	Leg	ROHN 1.25 x 14ga w/ 1" grade 150 threaded rod	57	-18.82	37.78	49.8	Pass
		Diagonal	7/8	100	-2.94	11.42	25.7	Pass
		Horizontal	7/16	97	-1.69	2.75	61.5	Pass
		Top Girt	7/16	58	-1.16	2.75	42.3	Pass
		Bottom Girt	7/16	63	-0.67	2.75	24.5	Pass
		Guy A@45.75	3/8	297	5.78	7.70	75.0	Pass
		Guy B@45.75	3/8	296	6.63	7.70	86.1	Pass
		Guy C@45.75	3/8	295	6.60	7.70	85.8	Pass
		Top Guy Pull-Off@45.75	1 1/4	85	1.75	49.08	3.6	Pass
T5	40 - 30	Leg	ROHN 1.25 x 14ga w/ 1" grade 150 threaded rod	105	-28.66	37.78	75.9	Pass
		Diagonal	7/8	113	-2.11	11.42	18.5	Pass
		Horizontal	7/16	127	-1.27	2.75	46.1	Pass
		Top Girt	7/16	106	-0.81	2.75	29.6	Pass
		Bottom Girt	7/16	111	-0.51	2.75	18.4	Pass
		Guy A@32	3/8	300	4.13	7.70	53.7	Pass
		Guy B@32	3/8	299	5.45	7.70	70.7	Pass
		Guy C@32	3/8	298	5.41	7.70	70.3	Pass
		Top Guy Pull-Off@32	1 1/4	115	1.63	49.08	3.3	Pass
T6	30 - 20	Leg	ROHN 1.25 x 14ga w/ 1" grade 150 threaded rod	153	-32.80	37.78	86.8	Pass
		Diagonal	7/8	197	-2.09	11.42	18.3	Pass
		Horizontal	7/16	163	-0.92	2.75	33.3	Pass
		Top Girt	7/16	155	0.89	4.33	20.5	Pass
		Bottom Girt	7/16	157	-0.60	2.75	22.0	Pass
T7	20 - 10	Leg	ROHN 1.25 x 14ga w/ 1" grade 150 threaded rod	201	-36.66	37.78	97.0	Pass
		Diagonal	7/8	210	-4.45	11.42	39.0	Pass
		Horizontal	7/16	212	-2.17	2.75	79.0	Pass
		Top Girt	7/16	202	-0.80	2.75	29.2	Pass
		Bottom Girt	7/16	205	-1.41	2.75	51.4	Pass
T8	10 - 0	Leg	ROHN 1.25 x 14ga w/ 1" grade 150 threaded rod	249	-25.82	37.78	68.3	Pass
		Diagonal	7/8	294	-4.40	11.42	38.6	Pass
		Horizontal	7/16	290	-1.96	2.75	71.4	Pass
		Top Girt	7/16	251	-1.42	2.75	51.6	Pass
		Bottom Girt	7/16	254	-1.06	2.75	38.6	Pass
							Summary	
						Leg (T7)	97.0	Pass
						Diagonal (T2)	71.5	Pass
						Horizontal	79.0	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
						(T7) Top Girt	51.6	Pass
						(T8) Bottom Girt	51.4	Pass
						(T7) Guy A (T4)	75.0	Pass
						Guy B (T4)	86.1	Pass
						Guy C (T4)	85.8	Pass
						Top Guy Pull-Off (T4)	3.6	Pass
						Bolt Checks	74.6	Pass
						RATING =	**97.0**	**Pass**

TOWER REINFORCEMENT DRAWINGS & SPECIFICATIONS

SITE LOCATION: 21 BIRCHWOOD DRIVE, ANSONIA, CT 06401

SCOPE:
THE PURPOSE OF THESE REINFORCING DETAILS AND SPECIFICATIONS IS TO REINFORCE THE TOWER MEMBERS. THE LEGS REQUIRE BRACING VIA THREADED ROD FROM GRADE UP TO 50' AGL. THE DIAGONALS REQUIRE BRACING ON ALL 3 FACES VIA ADDITIONAL SOLID ROUNDS FROM GRADE UP TO 56' AGL.

REINFORCING INCLUDES: STRAPPING A 1"ø GRADE 150 THREADED ROD TO THE EXISTING TOWER LEGS FROM GRADE UP TO 50' AGL. THE THREADED ROD WILL BE SECURED USING ¼"ø U–BOLTS AND A ¼" THICK BENT PLATE BRACKET. THE BRACKETS WILL BE SPACED APPROXIMATELY 2' CENTER TO CENTER. STANDARD THREADED ROD CONNECTIONS MAY BE USED TO CONNECT MULTIPLE THREADED ROD SECTIONS TOGETHER. TWO BRACKETS WILL BE USED AT THE START AND END OF THE REINFORCEMENT. BOLTING 7/16"ø SOLID ROUND TO THE EXISTING TOWER DIAGONALS ON ALL 3 FACES FROM GRADE UP TO 56' AGL. THE SOLID ROUNDS WILL BE SECURED USING WIRE ROPE CLAMPS. THE WIRE ROPE CLAMPS WILL BE USED AT THE START, CENTER, AND END OF THE REINFORCEMENT.

THIS REINFORCEMENT IS REQUIRED AFTER ANALYZING THE TOWER. REFER TO STRUCTURAL ANALYSIS DATED SEPTEMBER 15, 2014.

OWNER:

KM Consulting Engineers, Inc.
Wireless Engineering & Project Management
32 West Upper Ferry Road Ewing, NJ 08628
Phone: (609) 538-0400 Fax: (609) 538-8858

CLIENT: NSS NORTHEAST SITE SOLUTIONS
54 MAIN STREET
SUITE 3
STURBRIDGE, MA 01566

REVISIONS:

NO.	DATE

MICHAEL L. BOHLINGER, PE
CONNECTICUT PROFESSIONAL ENGINEER
LICENSE # 20405

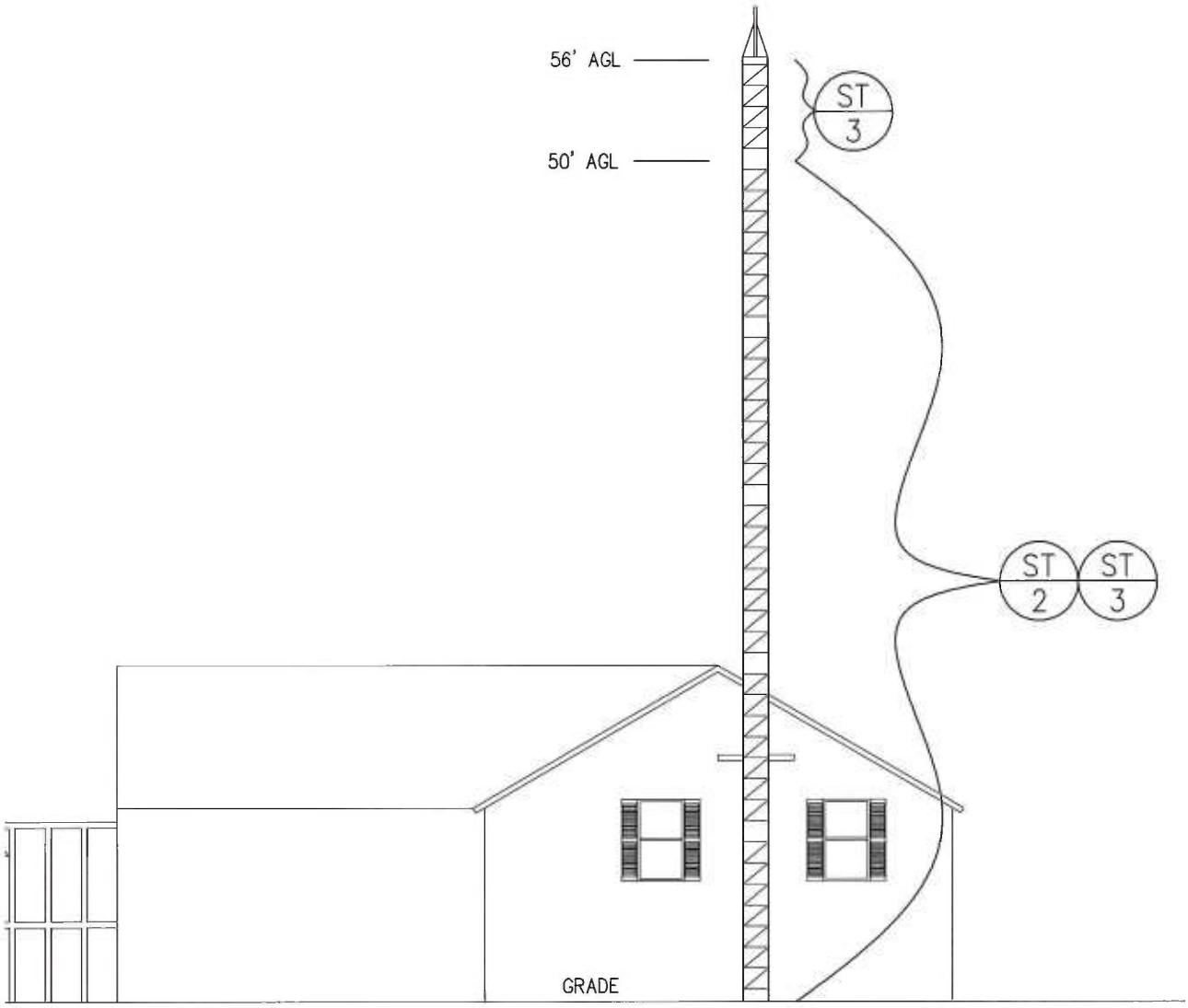
APPROVALS & DATE:
OWNER: _____ DATE: _____
S.A.C.: _____ DATE: _____
R / F.: _____ DATE: _____
CONST.: _____ DATE: _____

PROJECT NAME: ANSONIA

PROJECT ADDRESS:
21 BIRCHWOOD DRIVE
ANSONIA, CT 06401

DRAWING NO.: **T-1**

PROJECT #:	SITE ID #:	DRAWING TITLE:	P.C.:	CHKD:	DRN:	DATE:
140604.03		TITLE SHEET		MLB	RFT	10/14/14

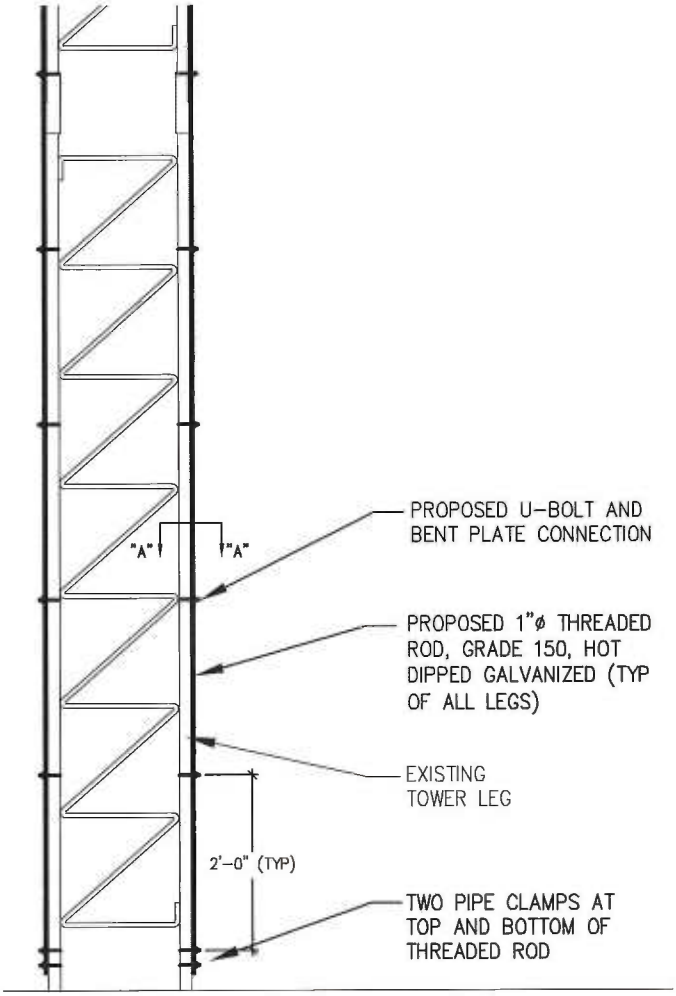


1 / ST-1 TOWER ELEVATION

SCALE: NTS

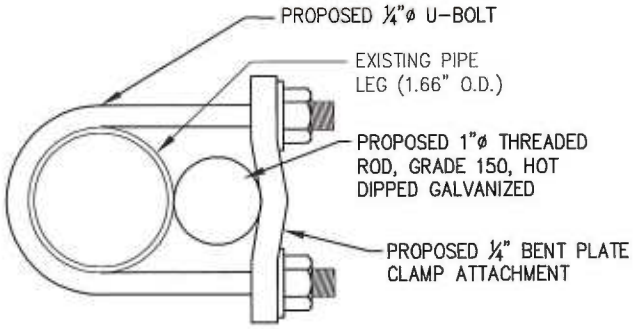
OWNER:	KM Consulting Engineers, Inc. *Wireless Engineering & Project Management* 32 West Upper Ferry Road Ewing, NJ 08628 Phone: (609) 538-0400 Fax: (609) 538-8858	CLIENT: NSS NORTHEAST SITE SOLUTIONS 54 MAIN STREET SUITE 3 STURBRIDGE, MA 01566	REVISIONS: NO. DATE
MICHAEL L. BOHLINGER, PE CONNECTICUT PROFESSIONAL ENGINEER LICENSE # 20405	APPROVALS & DATE: OWNER: _____ DATE: _____ S.A.C.: _____ DATE: _____ R / F.: _____ DATE: _____ CONST.: _____ DATE: _____	PROJECT NAME: ANSONIA PROJECT ADDRESS: 21 BIRCHWOOD DRIVE ANSONIA, CT 06401	DRAWING NO.: **ST-1**

PROJECT #:	SITE ID #:	DRAWING TITLE:	P.C.:	CHKD:	DRN:	DATE:
140604.03		TOWER ELEVATION		MLB	RFT	10/14/14



1 / ST-2 LEG REINFORCEMENT: 0-50' AGL

SCALE: 1/2" = 1'-0"



2 / ST-2 SECTION "A"

SCALE: NTS

NOTE:
CONTRACTOR MUST BE AWARE THAT OVER-TIGHTENING OF U-BOLTS AT LEG CONNECTIONS COULD DAMAGE EXISTING PIPE LEG. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING LEGS CAUSED BY OVER-TOGHTENING CONNECTIONS.

NOTES:
1. ALL MEMBERS, BOLTS HOLES, AND DIMENSIONS MUST BE FIELD VERIFIED PRIOR TO FABRICATION / PROCUREMENT OF REINFORCEMENT MATERIALS. ANY CHANGES TO THESE DRAWINGS AND SPECIFICATIONS OR CHANGES FOUND IN THE FIELD OF EXISTING TOWER MEMBERS MUST BE COMMUNICATED TO KM CONSULTING ENGINEERS INC. PRIOR TO INSTALLING REINFORCEMENT.

2. STEEL: ALL STEEL BENT PLATE MEMBERS TO BE A-36, HOT-DIP GALVANIZED TO ASTM A-123. ALL THREADED ROD MEMBERS TO BE 1"ø THREADED ROD, GRADE 150, HOT DIPPED GALVANIZED OR EQUIVALENT.

3. IF STEEL IS FIELD CUT, ENDS OF STEEL MUST BE SPRAYED WITH COLD GALVANIZE ZRC.

SAFETY NOTICE!
INSTALLATION OF THESE TOWER MODIFICATIONS WILL REQUIRE TOWER CLIMBING AT HEIGHTS WHERE FALLING COULD HARM OR PROVE FATAL TO WORKERS. THESE DRAWINGS INDICATE ONLY THE REINFORCEMENT AND NOT THE MEANS, METHODS, AND REQUIRED CONTRACTOR SAFETY. THESE REINFORCEMENT MEMBERS SHOULD BE INSTALLED BY A QUALIFIED, PROFESSIONAL TOWER CLIMBING COMPANY. KM CONSULTING ENGINEERS INC. TAKES NO RESPONSIBILITY FOR THE CONTRACTORS SAFETY POLICIES, PRACTICES, AND METHODS.

CERTIFICATION OF INSTALLATION:
DURING OR UPON COMPLETION OF THESE MODIFICATIONS TO THE TOWER, A CERTIFICATION LETTER FROM A LICENSED PROFESSIONAL ENGINEER MUST BE SUBMITTED TO THE TOWER OWNER.

NOTES:
ANY INTERFERENCE OF EXISTING TOWER LEG STRUCTURE OR APPURTENANCES TO PROPOSED REINFORCEMENT, CONTRACTOR TO COORDINATE SHIFTING OF REINFORCEMENT ATTACHMENT WITH ENGINEER PRIOR TO INSTALL.

OWNER:

KM Consulting Engineers, Inc.
Wireless Engineering & Project Management
32 West Upper Ferry Road Ewing, NJ 08628
Phone: (609) 538-0400 Fax: (609) 538-8858

CLIENT: NSS NORTHEAST SITE SOLUTIONS
54 MAIN STREET
SUITE 3
STURBRIDGE, MA 01566

REVISIONS:

NO.	DATE

APPROVALS & DATE:

OWNER: _____ DATE: _____

S.A.C.: _____ DATE: _____

R / F.: _____ DATE: _____

CONST.: _____ DATE: _____

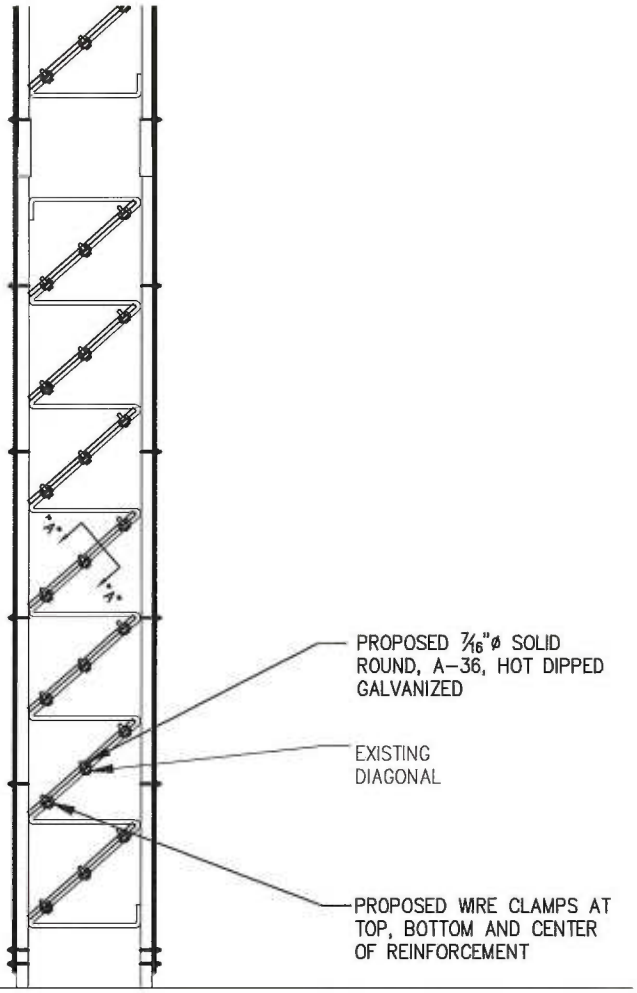
PROJECT NAME: ANSONIA

PROJECT ADDRESS: 21 BIRCHWOOD DRIVE
ANSONIA, CT 06401

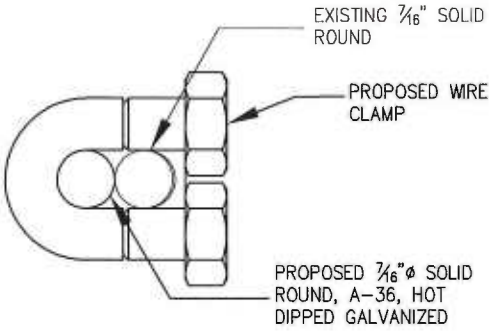
DRAWING NO.: **ST-2**

MICHAEL L. BOHLINGER, PE
CONNECTICUT PROFESSIONAL ENGINEER
LICENSE # 20405

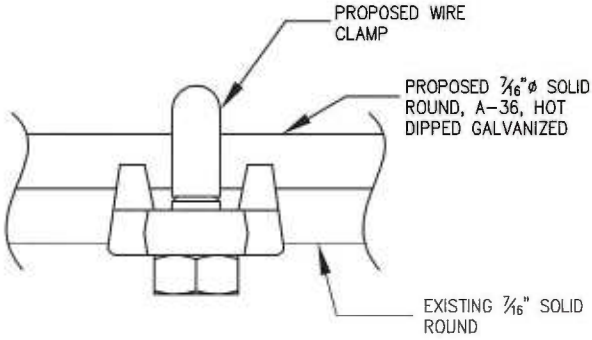
PROJECT #:	SITE ID #:	DRAWING TITLE:	P.C.:	CHKD:	DRN:	DATE:
140604.03		LEG REINFORCEMENT		MLB	RFT	10/14/14



1 / ST-3 DIAGONAL REINFORCEMENT: 0-56' AGL
SCALE: NTS



2 / ST-3 SECTION "A"
SCALE: NTS



3 / ST-3 CLAMP DETAIL
SCALE: NTS

NOTES:
1. ALL MEMBERS, BOLTS HOLES, AND DIMENSIONS MUST BE FIELD VERIFIED PRIOR TO FABRICATION / PROCUREMENT OF REINFORCEMENT MATERIALS. ANY CHANGES TO THESE DRAWINGS AND SPECIFICATIONS OR CHANGES FOUND IN THE FIELD OF EXISTING TOWER MEMBERS MUST BE COMMUNICATED TO KM CONSULTING ENGINEERS INC. PRIOR TO INSTALLING REINFORCEMENT.

2. STEEL: ALL SOLID ROUND TO BE A-36, HOT DIPPED GALVANIZED TO ASTM A-123 OR EQUIVALENT.

3. IF STEEL IS FIELD CUT, ENDS OF STEEL MUST BE SPRAYED WITH COLD GALVANIZE ZRC.

SAFETY NOTICE!
INSTALLATION OF THESE TOWER MODIFICATIONS WILL REQUIRE TOWER CLIMBING AT HEIGHTS WHERE FALLING COULD HARM OR PROVE FATAL TO WORKERS. THESE DRAWINGS INDICATE ONLY THE REINFORCEMENT AND NOT THE MEANS, METHODS, AND REQUIRED CONTRACTOR SAFETY. THESE REINFORCEMENT MEMBERS SHOULD BE INSTALLED BY A QUALIFIED, PROFESSIONAL TOWER CLIMBING COMPANY. KM CONSULTING ENGINEERS INC. TAKES NO RESPONSIBILITY FOR THE CONTRACTORS SAFETY POLICIES, PRACTICES, AND METHODS.

CERTIFICATION OF INSTALLATION:
DURING OR UPON COMPLETION OF THESE MODIFICATIONS TO THE TOWER, A CERTIFICATION LETTER FROM A LICENSED PROFESSIONAL ENGINEER MUST BE SUBMITTED TO THE TOWER OWNER.

NOTES:
ANY INTERFERENCE OF EXISTING TOWER LEG STRUCTURE OR APPURTENANCES TO PROPOSED REINFORCEMENT, CONTRACTOR TO COORDINATE SHIFTING OF REINFORCEMENT ATTACHMENT WITH ENGINEER PRIOR TO INSTALL.

OWNER:

KM Consulting Engineers, Inc.
Wireless Engineering & Project Management
32 West Upper Ferry Road Ewing, NJ 08628
Phone: (609) 538-0400 Fax: (609) 538-8858

CLIENT: NSS NORTHEAST SITE SOLUTIONS
54 MAIN STREET
SUITE 3
STURBRIDGE, MA 01566

REVISIONS:

NO.	DATE

APPROVALS & DATE:
OWNER: _____ DATE: _____
S.A.C.: _____ DATE: _____
R / F.: _____ DATE: _____
CONST.: _____ DATE: _____

PROJECT NAME: ANSONIA

PROJECT ADDRESS:
21 BIRCHWOOD DRIVE
ANSONIA, CT 06401

DRAWING NO.: **ST-3**

MICHAEL L. BOHLINGER, PE
CONNECTICUT PROFESSIONAL ENGINEER
LICENSE # 20405

PROJECT #:	SITE ID #:	DRAWING TITLE:	P.C.:	CHKD:	DRN:	DATE:
140604.03		DIAGONAL REINFORCEMENT		MLB	RFT	10/14/14

SECTION 1704
SPECIAL INSPECTIONS

1704.1 General. Where application is made for construction as described in this section, the owner or the *registered design professional in responsible charge* acting as the owner's agent shall employ one or more *approved agencies* to perform inspections during construction on the types of work listed under Section 1704. These inspections are in addition to the inspections identified in Section 110.

The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the *bUilding official*, for the inspection of the particular type of construction or operation requiring *special inspection*. The *registered design professional in responsible charge* and engineers of record involved in the design of the project are permitted to act as the *approved agency* and their personnel are permitted to act as the special inspector for the work designed by them, provided those personnel meet the qualification requirements of this section to the satisfaction of the *bUilding official*. The special inspector shall provide written documentation to the building official demonstrating his or her competence and relevant experience or training. Experience or training shall be considered relevant when the documented experience or training is related in complexity to the same type of *special inspection* activities for projects of similar complexity and material qualities. These qualifications are in addition to qualifications specified in other sections of this code.

Exceptions:

1. *Special inspections* are not required for work of a minor nature or as warranted by conditions in the jurisdiction as *approved* by the *building official*.
2. *Special inspections* are not required for building components unless the design involves the practice of professional engineering or architecture as defined by applicable state statutes and regulations governing the professional registration and certification of engineers or architects.
3. Unless otherwise required by the *bUilding official*, *special inspections* are not required for Group U occupancies that are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1.

1704.1.1 Statement of special inspections. The applicant shall submit a statement of *special inspections* prepared by the *registered design professional in responsible charge* in accordance with Section 107.1 as a condition for issuance. This statement shall be in accordance with Section 1705.

Exceptions:

1. A statement of *special inspections* is not required for structures designed and constructed in accordance with the conventional construction provisions of Section 2308.
2. The statement of *special inspections* is permitted to be prepared by a qualified person *approved* by the *bUilding official* for construction not designed by a *registered design professional*.

1704.1.2 Report requirement. Special inspectors shall keep records of inspections. The special inspector shall furnish inspection reports to the *building official*, and to the *registered design professional in responsible charge*. Reports shall indicate that work inspected was or was not completed in conformance to *approved construction documents*. Discrepancies shall be brought to the immediate attention of the contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the *building official* and to the *registered design professional in responsible charge* prior to the completion of that phase of the work. A final report documenting required *special inspections* and correction of any discrepancies noted in the inspections shall be submitted at a point in time agreed upon prior to the start of work by the applicant and the *bUilding official*.

1704.2 Inspection of fabricators. Where fabrication of structural load-bearing members and assemblies is being performed

1704.2.1 Fabrication and implementation procedures. The special inspector shall verify that the fabricator maintains detailed fabrication and quality control procedures that provide a basis for inspection control of the workmanship and the fabricator's ability to conform to *approved construction documents* and referenced standards. The special inspector shall review the procedures for completeness and adequacy relative to the code requirements for the fabricator's scope of work.

Exception: *Special inspections* as required by Section 1704.2 shall not be required where the fabricator is *approved* in accordance with Section 1704.2.2.

1704.2.2 Fabricator approval. *Special inspections* required by Section 1704 are not required where the work is done on the premises of a fabricator registered and *approved* to perform such work without *special inspection*. Approval shall be based upon review of the fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an *approved special inspection* agency. At completion of fabrication, the *approved* fabricator shall submit a *certificate of compliance* to the *building official* stating that the work was performed in accordance with the *approved construction documents*.

1704.3 Steel construction. The *special inspections* for steel elements of buildings and structures shall be as required by Section 1704.3 and Table 1704.3.

Exceptions:

1. *Special inspection* of the steel fabrication process shall not be required where the fabricator does not perform any welding, thermal cutting or heating operation of any kind as part of the fabrication process. In such cases, the fabricator shall be required to submit a detailed procedure for material control that demonstrates the fabricator's ability to maintain suitable records and procedures such that, at any time during the fabrication process, the material specification, grade and mill test reports for the main stress carrying elements are capable of being determined.
2. The special inspector need not be continuously present during welding of the following items, provided the materials, welding procedures and qualifications of welders are verified prior to the start of the work; periodic inspections are made of the work in progress and a visual inspection of all welds is made prior to completion or prior to shipment of shop welding.
   - 2.1. Single-pass fillet welds not exceeding $^5/_{16}$ inch (7.9 mm) in size.
   - 2.2. Floor and roof deck welding.
   - 2.3. Welded studs when used for structural diaphragm.
   - 2.4. Welded sheet steel for cold-formed steel members.
   - 2.5. Welding of stairs and railing systems.

1704.3.1 Welding. Welding inspection and welding inspector qualification shall be in accordance with this section.

1704.3.1.1 Structural steel. Welding inspection and welding inspector qualification for structural steel shall be in accordance with AWS D1.1.

1704.3.1.2 Cold-formed steel. Welding inspection and welding inspector qualification for cold-formed steel floor and roof decks shall be in accordance with AWS D1.3.

1704.3.1.3 Reinforcing steel. Welding inspection and welding inspector qualification for reinforcing steel shall be in accordance with AWS D1.4 and ACI 318.

1704.3.2 Details. The special inspector shall perform an inspection of the steel frame to verify compliance with the details shown on the *approved construction documents*, such as bracing, stiffening, member locations and proper application of joint details at each connection.

1704.3.3 High-strength bolts. Installation of high-strength bolts shall be inspected in accordance with AISC 360.

1704.3.3.1 General. While the work is in progress, the special inspector shall determine that the requirements for bolts, nuts, washers and paint; bolted parts and installation and tightening in such standards are met. For bolts requiring pretensioning, the special inspector shall observe the preinstallation testing and calibration procedures when such procedures are required by the installation method or by project plans or specifications; determine that all plies of connected materials have been drawn together and properly snugged and monitor the installation of bolts to verify that the selected procedure for installation is properly used to tighten bolts. For joints required to be tightened only to the snug-tight con-

OWNER:	KM Consulting Engineers, Inc. *Wireless Engineering & Project Management* 32 West Upper Ferry Road Ewing, NJ 08628 Phone: (609) 538-0400 Fax: (609) 538-8858	CLIENT: NSS NORTHEAST SITE SOLUTIONS 54 MAIN STREET SUITE 3 STURBRIDGE, MA 01566	REVISIONS: NO. DATE
MICHAEL L. BOHLINGER, PE CONNECTICUT PROFESSIONAL ENGINEER LICENSE # 20405	APPROVALS & DATE: OWNER: _____ DATE: _____ S.A.C.: _____ DATE: _____ R / F.: _____ DATE: _____ CONST.: _____ DATE: _____	PROJECT NAME: ANSONIA PROJECT ADDRESS: 21 BIRCHWOOD DRIVE ANSONIA, CT 06401	DRAWING NO.: **ST-4**
PROJECT #: 140604.01	SITE ID #:	DRAWING TITLE: SPECIAL INSPECTION NOTES	P.C.:
CHKD: MLB	DRN: DJA	DATE: 8/5/14	

TABLE 1704.3
REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD*	IBC REFERENCE
1. Material verification of high-strength bolts, nuts and washers:				
a. Identification markings to conform to ASTM standards specified in the approved construction documents.		X	AISC 360, Section A3.3 and applicable ASTM material standards	
b. Manufacturer's certificate of compliance required.		X		
2. Inspection of high-strength bolting:				
a. Snug-tight joints.		X	AISC 360, Section M2.5	1704.3.3
b. Pretensioned and slip-critical joints using turn-of-nut with matchmarking, twist-off bolt or direct tension indicator methods of installation.		X		
c. Pretensioned and slip-critical joints using turn-of-nut without matchmarking or calibrated wrench methods of installation.	X			
3. Material verification of structural steel and cold-formed steel deck:				
a. For structural steel, identification markings to conform to AISC 360.		X	AISC 360, Section M5.5	
b. For other steel, identification markings to conform to ASTM standards specified in the approved construction documents.		X	Applicable ASTM material standards	
c. Manufacturer's certified test reports.		X		
4. Material verification of weld filler materials:				
a. Identification markings to conform to AWS specification in the approved construction documents.		X	AISC 360, Section A3.5 and applicable AWS A5 documents	
b. Manufacturer's certificate of compliance required.		X		
5. Inspection of welding:				
a. Structural steel and cold-formed steel deck:				
1) Complete and partial joint penetration groove welds.	X		AWS D1.1	1704.3.1
2) Multipass fillet welds.	X			
3) Single-pass fillet welds > 5/16"	X			
4) Plug and slot welds.	X			
5) Single-pass fillet welds ≤ 5/16"		X		
6) Floor and roof deck welds.		X	AWS D1.3	
b. Reinforcing steel:				
1) Verification of weldability of reinforcing steel other than ASTM A 706.		X	AWS D1.4 ACI 318: Section 3.5.2	
2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement.	X			
3) Shear reinforcement.	X			
4) Other reinforcing steel.		X		
6. Inspection of steel frame joint details for compliance:				
a. Details such as bracing and stiffening.		X		1704.3.2
b. Member locations.		X		
c. Application of joint details at each connection.		X		

For SI: 1 inch = 25.4 mm.

OWNER:

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CLIENT: NSS NORTHEAST SITE SOLUTIONS
54 MAIN STREET
SUITE 3
STURBRIDGE, MA 01566

REVISIONS:

NO.	DATE

APPROVALS & DATE:

OWNER: _____ DATE: _____

S.A.C.: _____ DATE: _____

R / F.: _____ DATE: _____

CONST.: _____ DATE: _____

PROJECT NAME:
ANSONIA

PROJECT ADDRESS:
21 BIRCHWOOD DRIVE
ANSONIA, CT 06401

DRAWING NO.:
ST-5

MICHAEL L. BOHLINGER, PE
CONNECTICUT PROFESSIONAL ENGINEER
LICENSE # 20405

PROJECT #:	SITE ID #:	DRAWING TITLE:	P.C.:	CHKD:	DRN:	DATE:
140604.01		SPECIAL INSPECTION NOTES		MLB	DJA	8/5/14

STRUCTURAL ANALYSIS REPORT

For

metroPCS

Northeast Site Solutions
54 Main Street, Suite 3
Sturbridge, MA 01566

Ansonia
KM No. 140604.02

59' Guyed Tower
21 Birchwood Dr.
Ansonia, CT 06401

Prepared By:

KM CONSULTING ENGINEERS, INC.
9 Forest Ln, Ewing, NJ 08628
Ph: (609) 538-0400 www.kmengr.com

September 15, 2014

Prepared to EIA/TIA-222-F June 1996
Structural Standards for Steel Antenna Towers
and Antenna Supporting Structures

Northeast Site Solutions
Ansonia

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

Structure

Tower Manager: RCI

Location: 21 Birchwood Dr.
Ansonia, CT 06401

Manufacturer: Rohn
Model 45G

Equipment

Existing tower inventory plus the proposed installation are detailed in Section 2.0 "Tower Inventory."

Synopsis

Load Case No. 1: The existing tower superstructure with the current inventory and proposed MetroPCS installation.

The tower superstructure and guy wires are found to not have sufficient capacity and therefore do not meet the current standards. The base foundation and guy anchors are found to have sufficient capacity. The tower superstructure is rated at 153.3%, the guy wires are rated at 101.2%, the guy anchors are rated at 75.8%, and the base foundation is also acceptable.

2.0 TOWER INVENTORY

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
12' Omni x 2" OD	60	(2) Ericsson TMA KRY 112 89/5 (MetroPCS)	56
4' Standoff Mount	59	LNX-6515DS-VTM (MetroPCS)	56
5' Omni x 1" OD	59 - 55	LNX-6515DS-VTM (MetroPCS)	56
5' Omni x 1" OD	59 - 55	LNX-6515DS-VTM (MetroPCS)	56
5' Omni x 2.5" OD	59 - 55	Yagi	55
APX16DWV_16DWVS (MetroPCS)	56	2' Standoff Mount	55
APX16DWV_16DWVS (MetroPCS)	56	2' Standoff Mount	55
APX16DWV_16DWVS (MetroPCS)	56	2' Standoff Mount	55
(2) Ericsson TMA KRY 112 89/5 (MetroPCS)	56		
(2) Ericsson TMA KRY 112 89/5 (MetroPCS)	56		

Proposed Metro PCS Loading:
*(3) Andrew APX16DWV_16DWVS panel antennas @ 56' AGL
*(3) Commscope LNX-6515DS-VTM panel antennas @ 56' AGL
*(3) TwinB2 TMAs @ 56' AGL
*(3) TwinB4 TMAs @ 56' AGL
*(6) Proposed 7/8" coax lines up to 56' AGL
*(12) Existing 7/8" coax lines up to 56' AGL

3.0 COMMENTARY

Our scope of work is to determine if the existing structure is capable of withstanding the additional stresses/forces imposed by the installation of the proposed MetroPCS equipment noted in the tower inventory.

The tower member layout/sizes and foundation information were obtained from previous structural analysis by KM Consulting Engineers Inc. (KMCE) dated July 11, 2014 and verified with original Rohn 45G assembly drawings. Guy location was updated based on Atlantis Group mapping report. Guy anchor reinforcement details were obtained from KMCE drawings dated 7/20/09. Antenna inventory was obtained from a recent mapping of the tower. Proposed reinforcement by KMCE dated 8/5/14 was included in the model.

The following report will provide analytical calculations and commentary regarding the capacity of the proposed tower and subsequent recommendations.

4.0 ANALYSIS PROCEDURE

KM Consulting Engineers, Inc. carried out their structural analysis by correlating field inspection and tower member data into proprietary software designed specifically for communication tower analysis.

These programs run in conjunction with the guidelines set down in the EIA/TIA-222-F June 1996 Standard "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures".

The existing tower is analyzed by placing wind forces on the structure in 30° positional increments around the tower (ie. wind pressure directly onto the tower corners, faces and parallel to the faces). This enables the user to "create" a three-dimensional representation, yielding results for worst case scenarios. In effect, the production of these results allows the user to study the structural integrity of the tower when influenced by wind forces from any direction.

The proceeding report includes analysis for the tower with the addition of antennas in the scenarios stated. For clarity, the analysis shall include worst case loadings and a typical elevation view with maximum foundation loads tabulated.

Codes and Standards

ACI - American Concrete Institute - *Building Code Requirements for Structural Concrete (ACI 318-05)*, 2005

AISC - American Institute of Steel Construction - *Manual of Steel Construction, Allowable Stress Design*, 14th edition, 2010

TIA - Telecommunications Industry Association - *EIA/TIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures*, 1996

IBC 2003- International Building Code

5.0 TOWER ANALYSIS RESULTS

The tower was analyzed for the inventory detailed in Section 2.0 "Tower Inventory".

Structural wind speed is in accordance with TIA/EIA-222-F listing applicable to New Haven, CT: 85 MPH (fastest mile), no ice and 74 MPH (fastest mile), 1/2" radial ice.

All allowable capacities have been calculated to comply with the permitted EIA allowable increases (for wind). All bolts loaded in shear assume the threads **are included** in the shear plane.

Load Case No. 1: Proposed inventory of (3) Andrew APX16DWV_16DWVS panel antennas, (3) Commscope LNX-6515DS-VTM panel antennas , (3) TwinB2 TMAs, (3) TwinB4 TMAs, (12) existing 7/8" coax lines, and (6) proposed 7/8" coax lines.

The tower superstructure and guy wires are found to not have sufficient capacity and therefore do not meet the current standards. The base foundation and guy anchors are found to have sufficient capacity. The tower superstructure is rated at 153.3%, the guy wires are rated at 101.2%, the guy anchors are rated at 75.8%, and the base foundation is also acceptable.

Guy Wires			
Level (ft)	Factor of Safety		
	Actual	Allowable	Overstress
45.75	1.976	2	1.2%
32	2.746	2	-

Foundations				
Radius (ft)	Force	Capacity	Actual Force	% Capacity
Base	Compression	144	23	15.9%
16	Uplift	28	12	42.9%
16	Sliding	6.6	5	75.8%

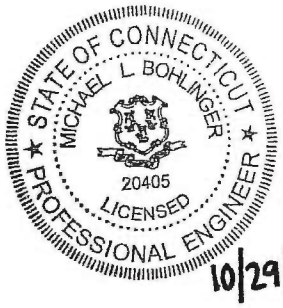
6.0 RECOMMENDATIONS

Further to our calculations, we conclude that the existing tower superstructure does not have adequate capacity and therefore does not meet the current EIA/TIA-222-F design standards. The existing tower superstructure requires reinforcement to support the proposed MetroPCS installation.

Please do not hesitate to contact our office with any questions or concerns regarding this report.

Sincerely,
KM CONSULTING ENGINEERS, INC

Domenic Aversa, EIT
Project Manager



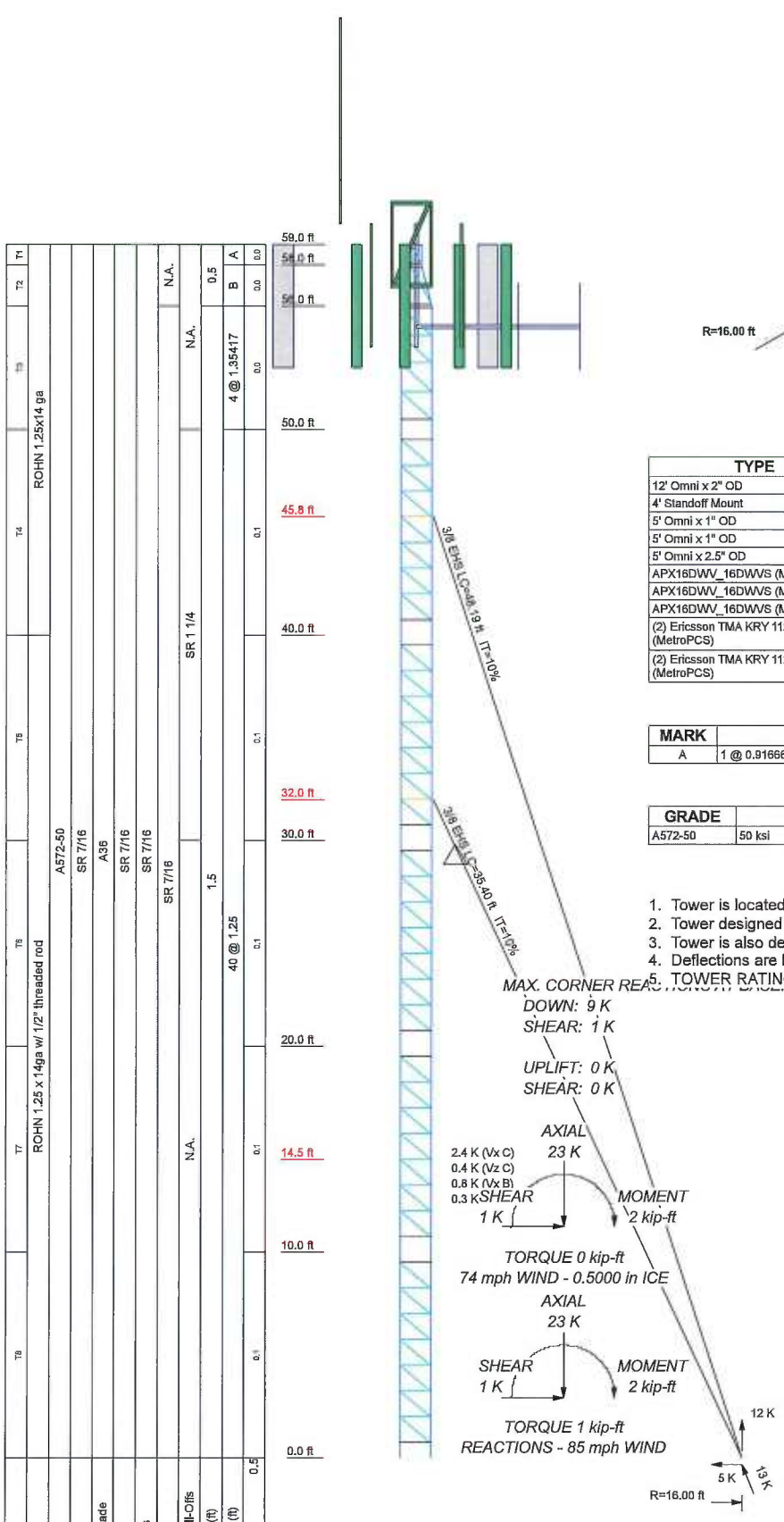
10/29/14

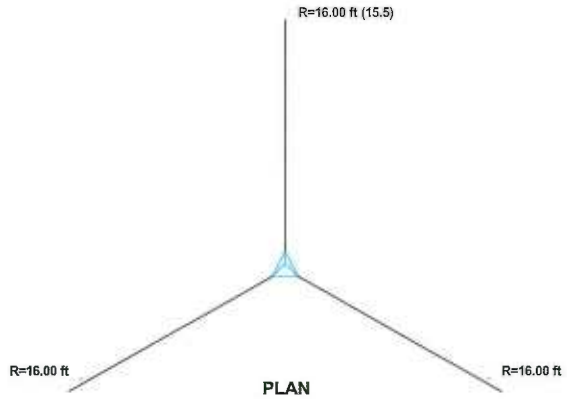
Reviewed and Approved by:

Michael L. Bohlinger, PE
Principal
CT License # 20405

7.0 APPENDIX

LOAD CASE 1





Section	T8	T7	T6	T5	T4	T3	T2	T1
Legs	ROHN 1.25 x 14ga w/ 1/2" threaded rod				ROHN 1.25x14 ga			
Leg Grade		A572-50						
Diagonals		SR 7/16						
Diagonal Grade		A36						
Top Girts		SR 7/16						
Bottom Girts		SR 7/16						
Horizontals		SR 7/16						N.A.
Top Guy Pull-Offs		N.A.			SR 1 1/4		N.A.	
Face Width (ft)			1.5				0.5	
# Panels @ (ft)			40 @ 1.25			4 @ 1.35417	B	A
Weight (K)	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
12' Omni x 2" OD	60	(2) Ericsson TMA KRY 112 89/5 (MetroPCS)	56
4' Standoff Mount	59	LNX-6515DS-VTM (MetroPCS)	56
5' Omni x 1" OD	59 - 55	LNX-6515DS-VTM (MetroPCS)	56
5' Omni x 1" OD	59 - 55	LNX-6515DS-VTM (MetroPCS)	56
5' Omni x 2.5" OD	59 - 55	Yagi	55
APX16DWV_16DWVS (MetroPCS)	56	2' Standoff Mount	55
APX16DWV_16DWVS (MetroPCS)	56	2' Standoff Mount	55
APX16DWV_16DWVS (MetroPCS)	56	2' Standoff Mount	55
(2) Ericsson TMA KRY 112 89/5 (MetroPCS)	56		
(2) Ericsson TMA KRY 112 89/5 (MetroPCS)	56		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	1 @ 0.916667	B	1 @ 1.83333

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

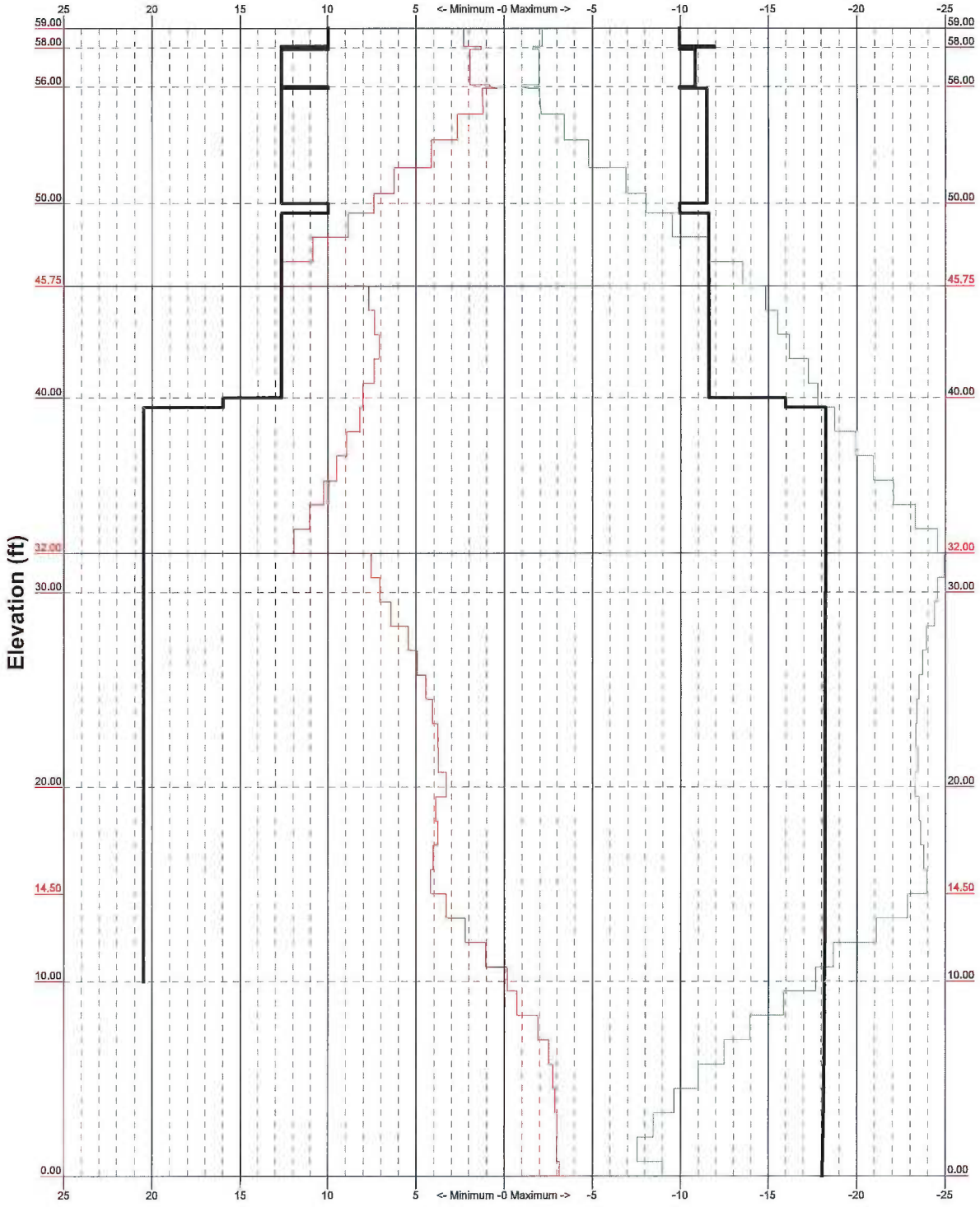
1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 153.3%

KM Consulting Engineers, Inc.
9 Forest Lane
Ewing, NJ 08628
Phone: (609) 538-0400
FAX:
Consulting Engineers

Job:	Ansonia LC1
Project:	59' Guyed Tower
Client:	Northeast Site Solutions
Drawn by:	Domenic Aversa
App'd:	
Code:	TIA/EIA-222-F
Date:	09/15/14
Scale:	NTS
Path:	K:\Northeast Site Solutions\Ansonia\Engineering\Ansonia LC2.eri
Dwg No.	E-1

TIA/EIA-222-F - 85 mph/74 mph 0.5000 in Ice

Leg Capacity ——— Leg Compression (K)

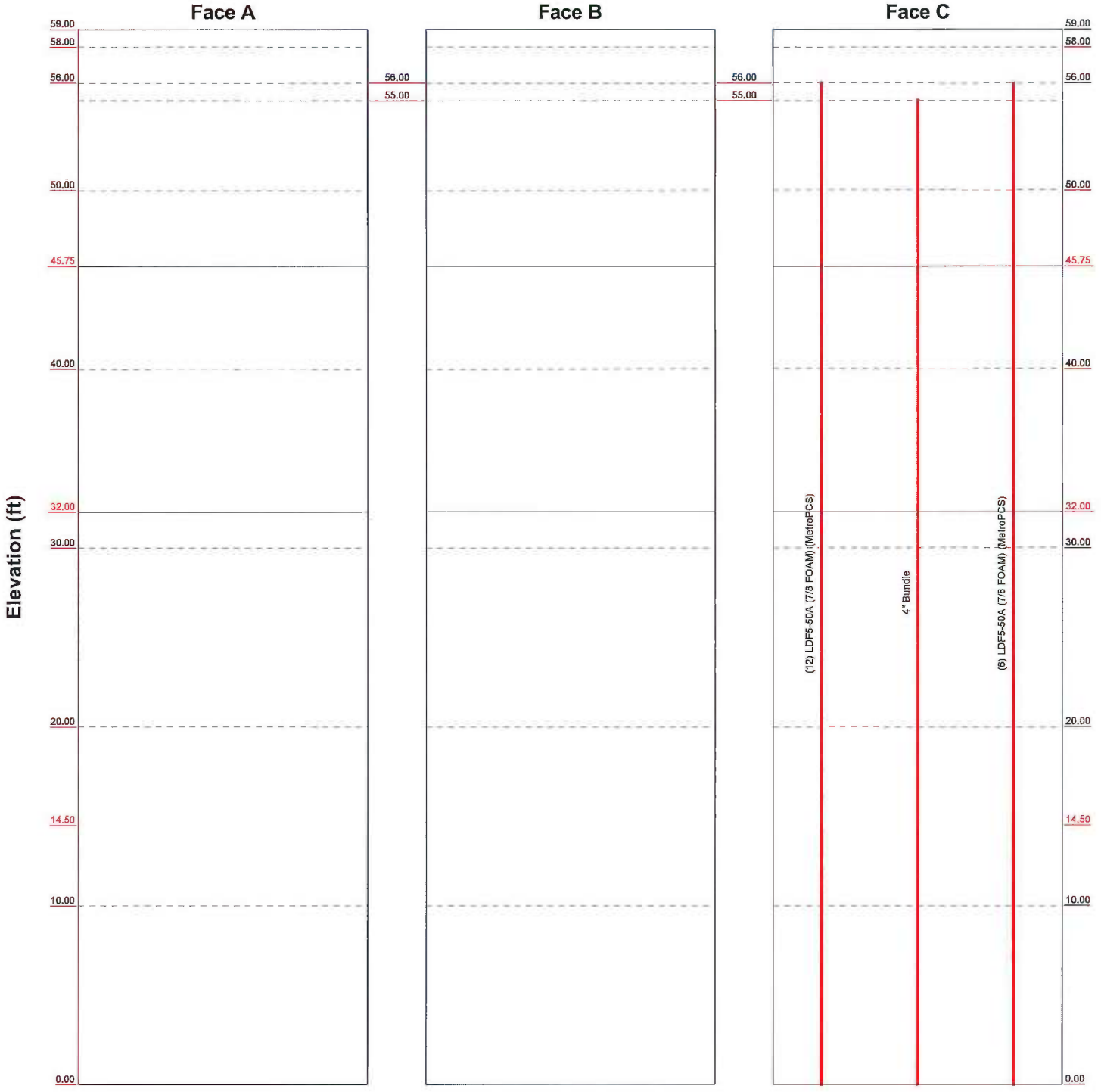


KM Consulting Engineers, Inc.
9 Forest Lane
Ewing, NJ 08628
Phone: (609) 538-0400
FAX:
Consulting Engineers

Job: Ansonia LC1			
Project: 59' Guyed Tower			
Client: Northeast Site Solutions	Drawn by: Domenic Aversa	App'd:	
Code: TIA/EIA-222-F	Date: 09/15/14	Scale: NTS	
Path: K:\Northeast Site Solutions\Ansonia\Engineering\Ansonia LC2.eri		Dwg No. E-3	

Feed Line Distribution Chart
0' - 59'

Round | Flat | App In Face | App Out Face | Truss Leg



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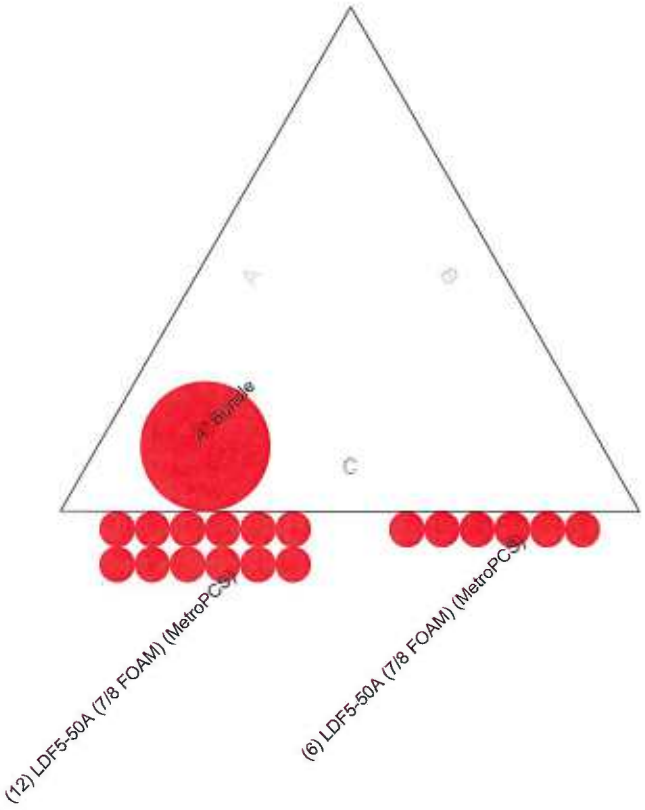
Path: K:\Northeast Site Solutions\Ansonia\Engineering\Ansonia LC2.eri		Dwg No. E-7	

Feed Line Plan

Round Flat App In Face App Out Face



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Consulting Engineers
9 Forest Lane
Ewing, NJ 08628
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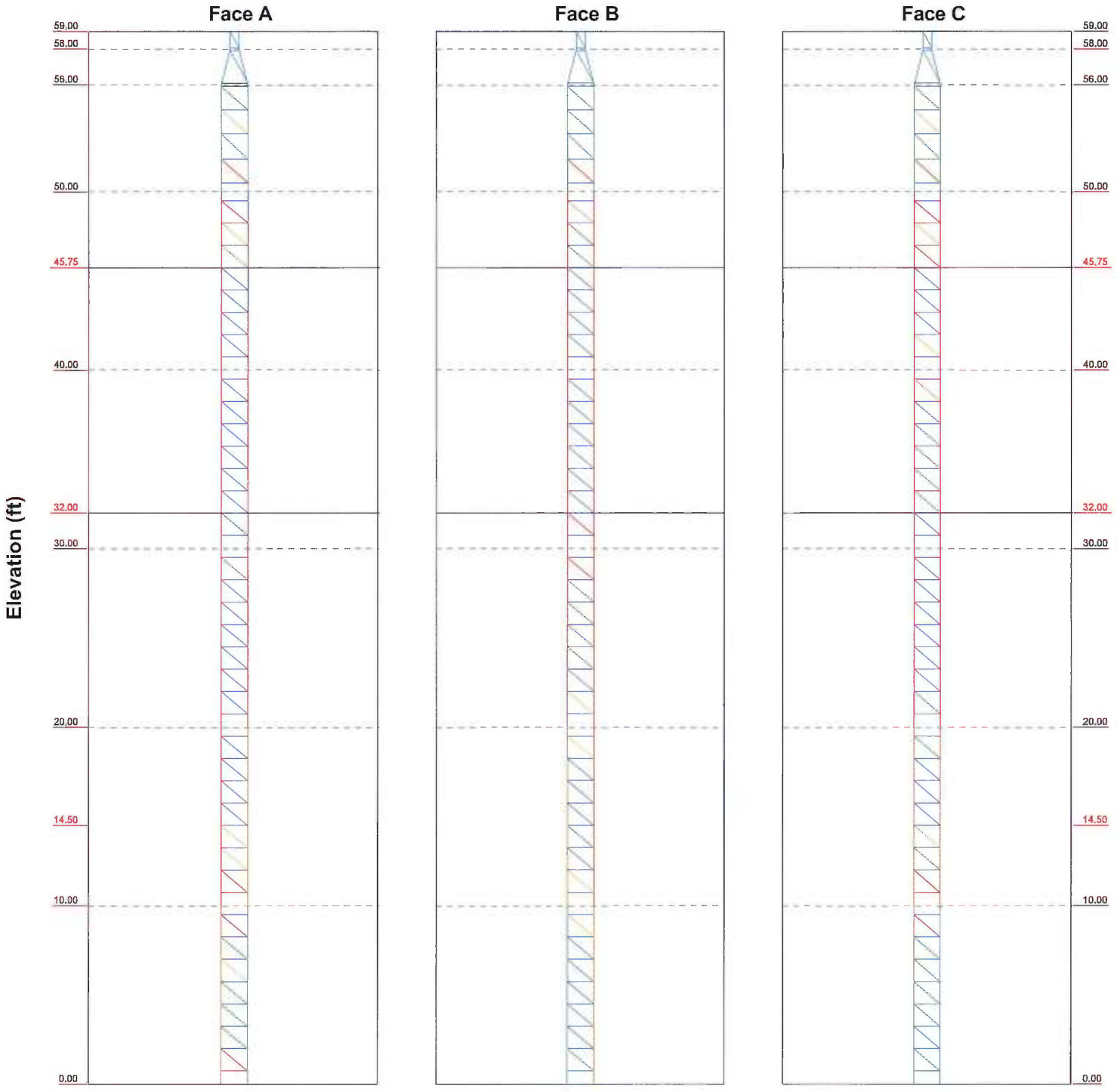
Path: K:\Northeast Site Solutions\Ansonia\Engineering\Ansonia LC2.eri		Dwg No. E-7	

Stress Distribution Chart
0' - 59'

> 100% | 90%-100% | 75%-90% | 50%-75% | < 50% Overstress



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Ewing, NJ 08628
Phone: (609) 538-0400
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Job: Ansonia LC1			
Project: 59' Guyed Tower			
Client: Northeast Site Solutions	Drawn by: Domenic Aversa	App'd:	
Code: TIA/EIA-222-F	Date: 09/15/14	Scale: NTS	
Path: K:\Northeast Site Solutions\Ansonia\Engineering\Ansonia LC2.eri		Dwg No. E-8	

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T1	59 - 58	Leg	ROHN 1.25x14 ga	1	-2.17	11.95	18.2 23.0 (b)	Pass
		Diagonal	7/16	10	-1.53	3.03	50.4	Pass
		Top Girt	7/16	6	-0.37	3.86	9.6	Pass
		Bottom Girt	7/16	9	-0.44	3.86	11.5	Pass
T2	58 - 56	Leg	ROHN 1.25x14 ga	15	-1.99	10.85	18.4	Pass
		Diagonal	7/16	23	-1.33	1.88	70.8	Pass
		Top Girt	7/16	18	-0.50	3.78	13.2	Pass
		Bottom Girt	7/16	21	-0.25	2.82	8.7	Pass
T3	56 - 50	Leg	ROHN 1.25x14 ga	27	-8.06	11.50	70.1	Pass
		Diagonal	7/16	34	-2.53	1.86	135.9	Fail ✗
		Horizontal	7/16	37	-1.39	2.75	50.6	Pass
		Top Girt	7/16	30	-0.38	2.75	14.0	Pass
		Bottom Girt	7/16	31	-1.05	2.75	38.2	Pass
T4	50 - 40	Leg	ROHN 1.25x14 ga	57	-17.81	11.62	153.3	Fail ✗
		Diagonal	7/16	100	-2.68	1.99	135.0	Fail ✗
		Horizontal	7/16	97	-1.67	2.75	60.7	Pass
		Top Girt	7/16	60	-1.19	2.75	43.5	Pass
		Bottom Girt	7/16	61	-0.52	2.75	18.8	Pass
		Guy A@45.75	3/8	297	6.55	7.70	85.1	Pass
		Guy B@45.75	3/8	296	7.79	7.70	101.2	Fail ✗
		Guy C@45.75	3/8	295	7.73	7.70	100.4	Fail ✗
		Top Guy Pull-Off@45.75	1 1/4	87	1.77	49.08	3.6	Pass
T5	40 - 30	Leg	ROHN 1.25 x 14ga w/ 1/2" threaded rod	105	-24.93	18.26	136.5	Fail ✗
		Diagonal	7/16	113	-2.24	2.10	106.6	Fail ✗
		Horizontal	7/16	121	-1.03	2.82	36.7	Pass
		Top Girt	7/16	108	-0.84	2.82	29.7	Pass
		Bottom Girt	7/16	111	-0.69	2.82	24.6	Pass
		Guy A@32	3/8	300	3.43	7.70	44.5	Pass
		Guy B@32	3/8	299	5.61	7.70	72.8	Pass
		Guy C@32	3/8	298	5.59	7.70	72.6	Pass
		Top Guy Pull-Off@32	1 1/4	117	1.48	49.08	3.0	Pass
T6	30 - 20	Leg	ROHN 1.25 x 14ga w/ 1/2" threaded rod	153	-24.56	18.22	134.8	Fail ✗
		Diagonal	7/16	197	-2.23	2.10	106.5	Fail ✗
		Horizontal	7/16	194	-0.87	2.82	30.9	Pass
		Top Girt	7/16	155	-0.84	2.82	29.7	Pass
		Bottom Girt	7/16	158	0.73	4.33	16.8	Pass
T7	20 - 10	Leg	ROHN 1.25 x 14ga w/ 1/2" threaded rod	201	-23.95	18.20	131.6	Fail ✗
		Diagonal	7/16	210	-2.92	2.10	139.3	Fail ✗
		Horizontal	7/16	213	1.89	4.33	43.7	Pass
		Top Girt	7/16	203	-0.48	2.82	17.1	Pass
		Bottom Girt	7/16	206	-1.15	2.82	40.9	Pass
T8	10 - 0	Leg	ROHN 1.25 x 14ga w/ 1/2" threaded rod	249	-17.69	18.18	97.3	Pass
		Diagonal	7/16	294	-2.83	2.10	134.9	Fail ✗
		Horizontal	7/16	290	-1.04	2.82	36.9	Pass
		Top Girt	7/16	252	1.60	4.33	36.9	Pass
		Bottom Girt	7/16	254	-0.70	2.82	24.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
						Summary		
						Leg (T4)	153.3	Fail ✗
						Diagonal (T7)	139.3	Fail ✗
						Horizontal (T4)	60.7	Pass
						Top Girt (T4)	43.5	Pass
						Bottom Girt (T7)	40.9	Pass
						Guy A (T4)	85.1	Pass
						Guy B (T4)	101.2	Fail ✗
						Guy C (T4)	100.4	Fail ✗
						Top Guy Pull-Off (T4)	3.6	Pass
						Bolt Checks	111.7	Fail ✗
						RATING =	**153.3**	**Fail ✗**

EXHIBIT C

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RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

MetroPCS Existing Facility

Site ID: CTNH520A

Knapp Ansonia Lattice Tower
21 Birchwood Drive
Ansonia, CT 06401

October 28, 2014

EBI Project Number: 62143691

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	91.98 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
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October 28, 2014

MetroPCS
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Emissions Analysis for Site: **CTNH520A – Knapp Ansonia Lattice Tower**

EBI Consulting was directed to analyze the proposed MetroPCS facility located at **21 Birchwood Drive, Ansonia, CT**, for the purpose of determining whether the emissions from the Proposed MetroPCS Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 700 MHz Band is 467 $\mu W/cm^2$, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed MetroPCS Wireless antenna facility located at **21 Birchwood Drive, Ansonia, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since MetroPCS is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel

2) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

7) The antennas used in this modeling are the **RFS APX16DWV-16DWVS-E-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **RFS APX16DWV-16DWVS-E-A20** has a maximum gain of **16.3 dBd** at its main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antenna mounting height centerlines of the proposed antennas are **56 feet and 46 feet** above ground level (AGL).

9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculations were done with respect to uncontrolled / general public threshold limits.

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MetroPCS Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	56	Height (AGL):	56	Height (AGL):	56
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	6	Channel Count	6	# PCS Channels:	6
Total TX Power:	240	Total TX Power:	240	# AWS Channels:	240
ERP (W):	3,833.82	ERP (W):	3,833.82	ERP (W):	3,833.82
Antenna A1 MPE%	14.72	Antenna B1 MPE%	14.72	Antenna C1 MPE%	14.72
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	46	Height (AGL):	46	Height (AGL):	46
Frequency Bands	700 Mhz	Frequency Bands	700 Mhz	Frequency Bands	700 Mhz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	445.37	ERP (W):	445.37	ERP (W):	445.37
Antenna A2 MPE%	4.16	Antenna B2 MPE%	4.16	Antenna C2 MPE%	4.16

Site Composite MPE%	
Carrier	**MPE%**
MetroPCS	**56.66**
Radio Comm Corp	4.15 %
Paging Assoc. Inc	14.50 %
Paging	7.08 %
Paging	9.59 %
Site Total MPE %:	**91.98 %**

MetroPCS Sector 1 Total:	18.89 %
MetroPCS Sector 2 Total:	18.89 %
MetroPCS Sector 3 Total:	18.89 %
Site Total:	91.98 %

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Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public exposure to RF Emissions.

The anticipated maximum composite contributions from the MetroPCS facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

MetroPCS Sector	Power Density Value (%)
Sector 1:	18.89 %
Sector 2:	18.89 %
Sector 3 :	18.89 %
MetroPCS Total:	56.66 %
Site Total:	91.98 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **91.98%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803`