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March 12, 2019

***VIA FEDERAL EXPRESS AND
ELECTRONIC MAIL***

Melanie.bachman@ct.gov
Siting.council@ct.gov

Ms. Melanie A. Bachman, Esq., Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Petition of T-Mobile Northeast, LLC for a Declaratory Ruling that a Certificate of Environmental Compatibility and Public Need is not Required for the Modification of an Existing Rooftop Telecommunications Facility.

Dear Attorney Bachman:

This office represents T-Mobile Northeast, LLC ("T-Mobile"). On behalf of T-Mobile, I have enclosed an original and fifteen (15) copies of the above-mentioned Petition for Declaratory Ruling as well as the filing fee related thereto.

Please do not hesitate to contact me with any questions.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Jesse A. Langer".

Jesse A. Langer

Enclosures

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

**RE: PETITION OF T-MOBILE NORTHEAST, LLC FOR A
DECLARATORY RULING THAT A CERTIFICATE OF
ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED
IS NOT REQUIRED FOR THE MODIFICATION OF AN EXISTING
ROOFTOP TELECOMMUNICATIONS FACILITY**

PETITION FOR DECLARATORY RULING

MARCH 12, 2019

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Attachment F – Visual Assessment and Photo-Simulations

Attachment G – EME

Attachment H – FAA Compliance Report

**STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL**

PETITION OF T-MOBILE	:	MARCH 12, 2019
NORTHEAST, LLC FOR A	:	
DECLARATORY RULING THAT A	:	
CERTIFICATE OF ENVIRONMENTAL	:	
COMPATIBILITY AND PUBLIC NEED	:	
IS NOT REQUIRED FOR THE	:	
MODIFICATION OF AN EXISTING	:	
ROOFTOP TELECOMMUNICATIONS	:	
FACILITY	:	

PETITION FOR DECLARATORY RULING

In accordance with General Statutes § 4-176 (a), § 16-50k (a) and Regs., Conn. State Agencies § 16-50j-38 *et seq.*, T-Mobile Northeast, LLC (“T-Mobile”) respectfully seeks a declaratory ruling from the Connecticut Siting Council (“Council”) that a Certificate of Environmental Compatibility and Public Need is not required for the modification of an existing rooftop telecommunications facility (“Rooftop Facility”) presently located on the roof of the Connecticut Post Mall (“Mall”), located at 1201 Boston Post Road, Milford, Connecticut (“Property”).

I. AUTHORITY FOR REQUESTED RELIEF

General Statutes § 4-176 (a) provides that “[a]ny person may petition an agency . . . for a declaratory ruling as to the validity of any regulation, or the applicability to specified circumstances of a provision of the general statutes, a regulation, or a final decision on a matter within the jurisdiction of the agency.”¹ *Bingham v. Dept. of Public Works*, 286 Conn. 698, 706, 945 A.2d 927 (2008). The Council may approve a proposal concerning a telecommunications facility, or a modification to such a facility, by declaratory ruling if it determines that the

¹ General Statutes § 4-166 (9) defines “person” to mean “any individual, partnership, corporation, limited liability company, association, governmental subdivision, agency or public or private organization of any character, but does not include the agency conducting the proceeding.”

proposal does not have a substantial adverse environmental effect in the State. General Statutes § 16-50k (a).

II. CONTACT INFORMATION

T-Mobile is a limited liability company organized under the laws of the State of Delaware, and is duly registered with the State of Connecticut. All correspondence or communications may be addressed to T-Mobile's legal counsel as follows:

Jesse A. Langer
Updike, Kelly & Spellacy, P.C.
8 Frontage Road
East Haven, CT 06512
(203) 786-8317
jlanger@uks.com

III. BACKGROUND

A. The Property

The Property is an existing commercial shopping mall, which is located off exit 39B of I-95 south. The Mall is situated on an approximate seventy-five (75) acre parcel in between Route 1 and I-95.

The Property is located in the City of Milford ("City") within a Shopping Center Design (SCD) District. An SCD District allows by special use a plethora of commercial, mixed use and multi-family dwelling units. Milford Zoning Regs., Art. III, § 3.9. The City's Plan of Conservation and Development ("POCD") characterizes the area surrounding the Mall as a "clearly established . . . regional commercial area. [The Mall] and numerous national retailers make this area a destination within the region." Milford POCD, p. 95 (December 2012). The POCD further states that the "future land use policy for this area should be to strengthen its regional development focus and to promote a mix of goods, services and amenities to continue

its strong market draw.” *Id.* The POCD also states that the City has a host of major utility facilities, which it should continue to support, and indicates further that the City hosts some cell and wireless services. *Id. p. 114.*

The land uses immediately adjacent to the Property are incident to the existing heavy regional commercial corridor, with Route 1 serving as a primary artery for these commercial uses. There are residential areas beyond the immediate commercial corridor. Please see T-Mobile’s Site Plan, specifically Sheet C-1, which is appended hereto as Attachment A.

B. The Existing Rooftop Facility

The existing Rooftop Facility consists of six (6) panel antennas located on the lower roof of the Mall facing southeast and in the area above the Dave and Buster’s Restaurant, which is on the side of the Mall facing southeast in the approximate center of the Property. Three (3) of panel antennas are located on an existing pipe mast, along with three remote radio heads on the lower roof of the Mall (“Mast Installation”). These antennas extend to an approximate height of 18'-8" above the rooftop, approximately forty-five (45) feet above ground level (“AGL”). Three (3) more panel antennas are located on a frame slightly to the west on the lower roof (“Frame Installation”). These antennas extend twenty-five (25) feet above the rooftop, approximately forty-five (45) feet AGL. There is also one (1) flush mounted panel antenna to the side of the upper roof to the west of the Frame Installation and the Mast Installation. The flush mounted antenna is approximately forty-one (41) feet AGL. The associated equipment servicing these installations is situated in between the Frame Installation and the Mast Installation, with cabling routed to the flush mounted antenna. Please see Attachment A.

C. The Proposed Modification to the Existing Rooftop Facility

As a wireless carrier licensed by the Federal Communications Commission (“FCC”), T-Mobile seeks out wireless sites that will meet its coverage and capacity objectives so that T-Mobile may provide reliable coverage throughout its network. T-Mobile has identified a need to modify the existing rooftop installation to address such coverage and capacity objectives in the area of the City proximate to the Property.

The proposed modification to the Rooftop Facility would include a total of twelve (12) panel antennas and four (4) remote radio units split over four (4) sectors on the roof of the Mall. All of the rooftop mounted antennas and associated appurtenances would be installed at roof level of the Mall, with the highest point of the antennas at approximately 52'4" feet AGL. The existing twenty-five (25) foot pipe mast for the Mast Installation would be replaced with a new twelve standard thirty (30) foot pipe mast and base frame. Please see Attachment A, Sheet S-1. The antennas would be flush mounted to the new pipe mast. Please see the antenna specifications appended hereto as Attachment B.

Utilities would be routed through the existing building via conduits within existing utility chases. The existing equipment would accommodate the additional antennas and radio heads. The modification to the existing Rooftop Facility would also fall well within the loading limits of the Mall and, accordingly, the proposal would be structurally sound. Please see the Structural Analysis appended hereto as Attachment C.

IV. NOTICE TO ABUTTERS, OFFICIALS AND AGENCIES

In accordance with § 16-50j-40 of the Regulations of Connecticut State Agencies, on March 12, 2019, T-Mobile sent a notice of its intent to file this Petition, via certified mail, return receipt requested and regular mail, to each person appearing as a record owner of the properties

which abut the Property, each person appearing as the record owner of the properties on which the existing Rooftop Facility is located and the appropriate municipal officials and government agencies. A service list of abutters and a sample letter to the abutters are appended hereto as Attachment D. The service list of municipal officials and government agencies, as well as a copy of the letter sent to the host municipality, are appended hereto as Attachment E.

V. NO SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT

The proposed modification to the Rooftop Facility would not have a substantial adverse environmental effect.

A. Environmental Effects

The proposed modification to the existing Rooftop Facility would be located on the roof of the Mall, located in the City, in between Route 1 and I-95. As set forth in Part III.A, *supra*, the immediately surrounding area is a heavily developed regional commercial corridor and T-Mobile has submitted a proposal so as not to have a substantial adverse environmental effect.

B. Visual Effects

The proposed modifications to the existing Rooftop Facility would not have any adverse visual effects. The proposed antennas would be flush mounted to the new pipe mast. The pipe mast would be painted a non-contrasting color. T-Mobile has proposed a wireless site which is visually responsible and takes into account the aesthetic of the surrounding area. Please see the visual assessment and photo-simulations, which are appended hereto as Attachment F.

C. Compliance with the FCC

The proposed modification to the existing Rooftop Facility would comply with the limits for maximum permissible exposure (“MPE”) as promulgated by the FCC. Please see the Radio Frequency – Electromagnetic Energy Compliance Report appended hereto as Attachment G. As

the Report demonstrates, the proposed modification to the existing Rooftop Facility would be well below the MPE limits set by the FCC.

D. Compliance with the Federal Aviation Authority

The proposed modification to the Existing Rooftop Facility would not constitute a hazard to air navigation and otherwise require any additional measures or authorizations from the Federal Aviation Authority (“FAA”). Please see the FAA Compliance Report appended hereto as Attachment H.

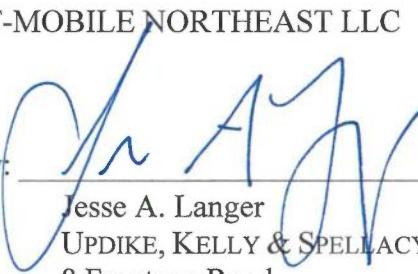
VI. CONCLUSION

This Petition and the appended attachments demonstrate that the proposed modification to the existing Rooftop Facility would not have a substantial adverse environmental effect. Therefore, a Certificate of Environmental Compatibility and Public Need is not required in accordance with the General Statutes § 16-50k.

Respectfully submitted by,

T-MOBILE NORTHEAST LLC

By:


Jesse A. Langer
UPDIKE, KELLY & SPELLACY, P.C.
8 Frontage Road
East Haven, CT 06512
(203) 786-8310
Email: jlanger@uks.com

ATTACHMENT A

SITE PLAN

...T...Mobile

WIRELESS COMMUNICATIONS FACILITY

MILFORD / I-95 /1

SITE ID: CT11002A

1201 BOSTON POST ROAD

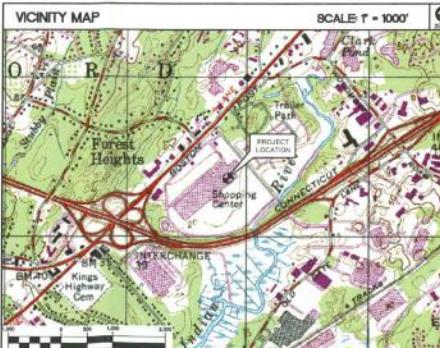
MILFORD, CT 06460

GENERAL NOTES

- ALL WORK SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2016 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/ETSI-222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2016 CONNECTICUT FIRE SAFETY CODE, AND THE CONNECTICUT STATE CONSTRUCTION CODE.
- CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL FURNISH A COORDINATED SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXECUTE AND FOLLOW THE CONTRACTOR'S SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
- CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AS SHOWN ON THE DRAWINGS OR INDICATED ON THE DRAWINGS OR IN THE WORK SPECIFICATIONS.
- CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR, AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND LOCAL AUTHORITIES AND THE LAWFUL CONSTRUCTION OVERSIGHT.
- CONTRACTOR SHALL SECURE A PERMIT FOR ALL PERIODIC AND INSPECTION REQUIREMENTS AND SHALL ALSO PAY FOR PERMIT FEES FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMIT SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
- CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR ALL WORK AND THE SUBMISSION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS NECESSARY. ALL NEW DRAWINGS SHALL BE MARKED AND REMOVED FROM THE CONTRACT AREA AS SOON AS POSSIBLE. CONTRACTOR SHALL FURNISH AN "AS-BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
- LOCATION OF EQUIPMENT, AND WORK APPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE AND WORK OF THE SUBCONTRACTORS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURE AND ITS RELATED PARTS DURING CONSTRUCTION. THIS INCLUDES THE LOCATION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
- DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK IS REQUIRED TO BE ADDED DUE TO ANY CONCERNES WITH LOCAL CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE ADDITIONAL WORK AS REQUIRED BY THE LOCAL GOVERNMENT CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
- ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.

SITE DIRECTIONS

FROM:	TO:
1. HEAD NORTH ON 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06020	2. TAKE THE 2ND RIGHT ONTO THOMAS HARTMAN RD.
	3. MERGE ONTO I-95 S TOWARD HARTFORD
	4. MERGE ONTO I-95 S TOWARD HARTFORD
	5. MERGE ONTO I-95 S TOWARD MY CITY/NY CITY
	6. MERGE ONTO BOSTON POST RD/US-1 N @ EXIT 398
	7. 1201 BOSTON POST ROAD IS ON THE RIGHT



T-MOBILE RF CONFIGURATION

4Sec-792MEE_3xAIR

PROJECT SUMMARY

- THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANAGED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:
 - RELOCATE (3) DUSTING PANEL ANTENNAS TO THE PROPOSED PIPE MAST ATTACHED TO THE EQUIPMENT SHELL DUNNAGE FRAME.
 - INSTALL (3) PROPOSED PANEL ANTENNA ON THE PROPOSED PIPE MAST ATTACHED TO THE EQUIPMENT SHELL DUNNAGE FRAME.
 - REPLACE (1) PANEL ANTENNA (DELTA SECTOR) WITH (1) PROPOSED HYBRID CABLES (2) TO PROPOSED PIPE MAST ATTACHED TO THE BUILDING FAÇADE (DELTA SECTOR).
 - INSTALL (2) 8X12 HYBRID CABLES (1) TO PROPOSED PIPE MAST FOR (ALPHA/BETA/GAMMA) AND ONE (1) TO DELTA.

PROJECT INFORMATION

SITE NAME:	MILFORD / I-95 /1
SITE ID:	CT11002A
SITE ADDRESS:	1201 BOSTON POST ROAD MILFORD, CT 06460
APPLICANT:	T-MOBILE CONNECT, LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06020
CONTACT PERSON:	DAVID (PROJECT MANAGER) (203) 592-8281
ENGINEER:	CENTEK ENGINEERING, INC. 62-64 BOSTON POST ROAD BLOOMFIELD, CT 06040
PROJECT COORDINATES:	LATITUDE: 41°14'11.80" N LONGITUDE: 73°02'29.7" W GROUND ELEVATION: 222' AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

SHL NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	2
N-1	DESIGN BASIS AND SITE NOTES	2
C-1	SITE LOCATION PLAN	2
C-2	ROOF PLATE ELEVATION AND ANTENNA MOUNTING CONF.	2
C-3	ANTENNA MOUNTING CONFIGURATION	2
S-1	ANTENNA MAST DETAILS	2
E-1	Typical Electrical Details	2

DATE: 08/01/18
SCALE: AS NOTED
JOB NO. 18127.08
TITLE SHEET
T-1
Sheet No. 1 of 1

DESKNASS

GOVERNING CODE 2012 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2016 CT STATE AMENDING CODE AND AMENDMENTS

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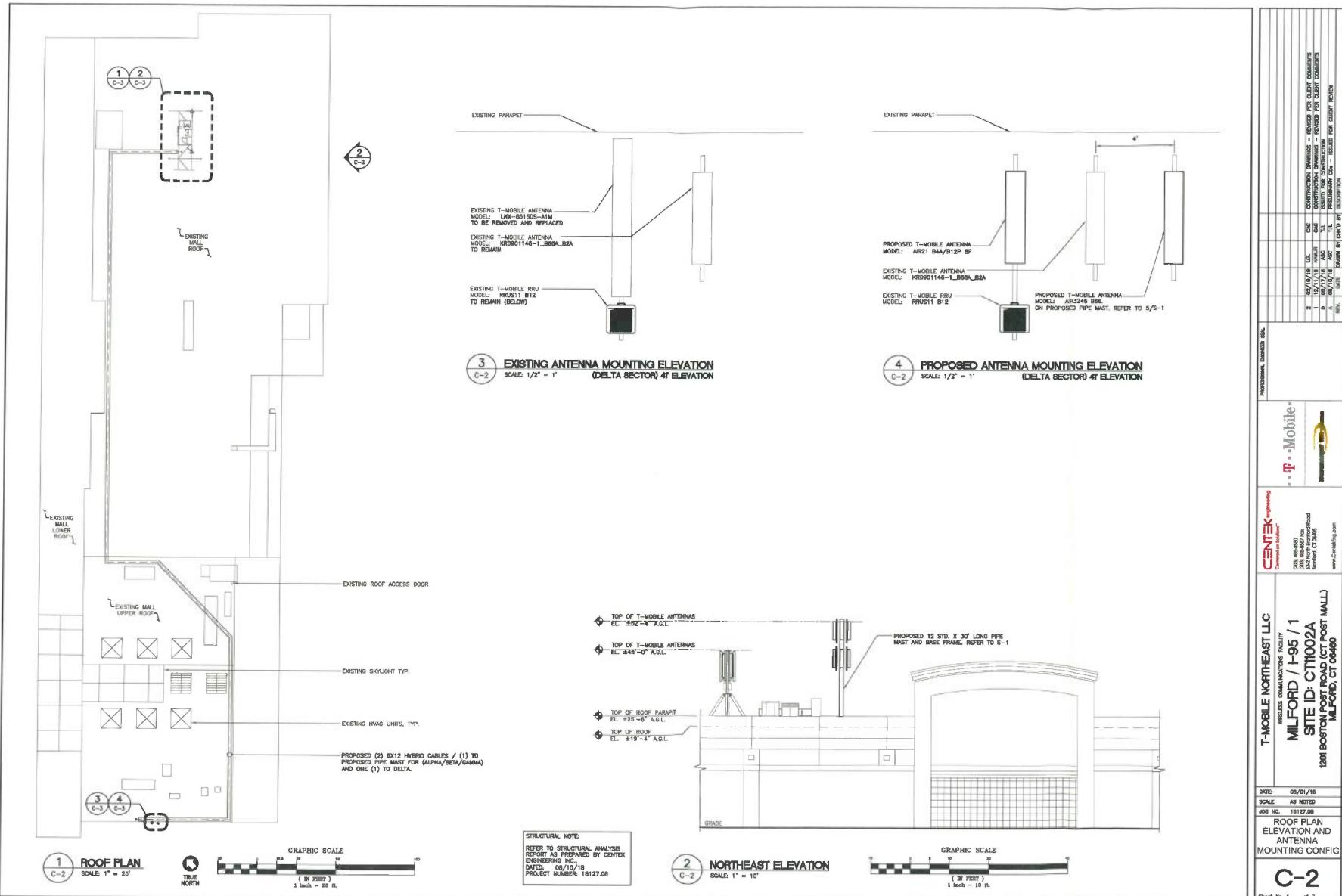
DRA's

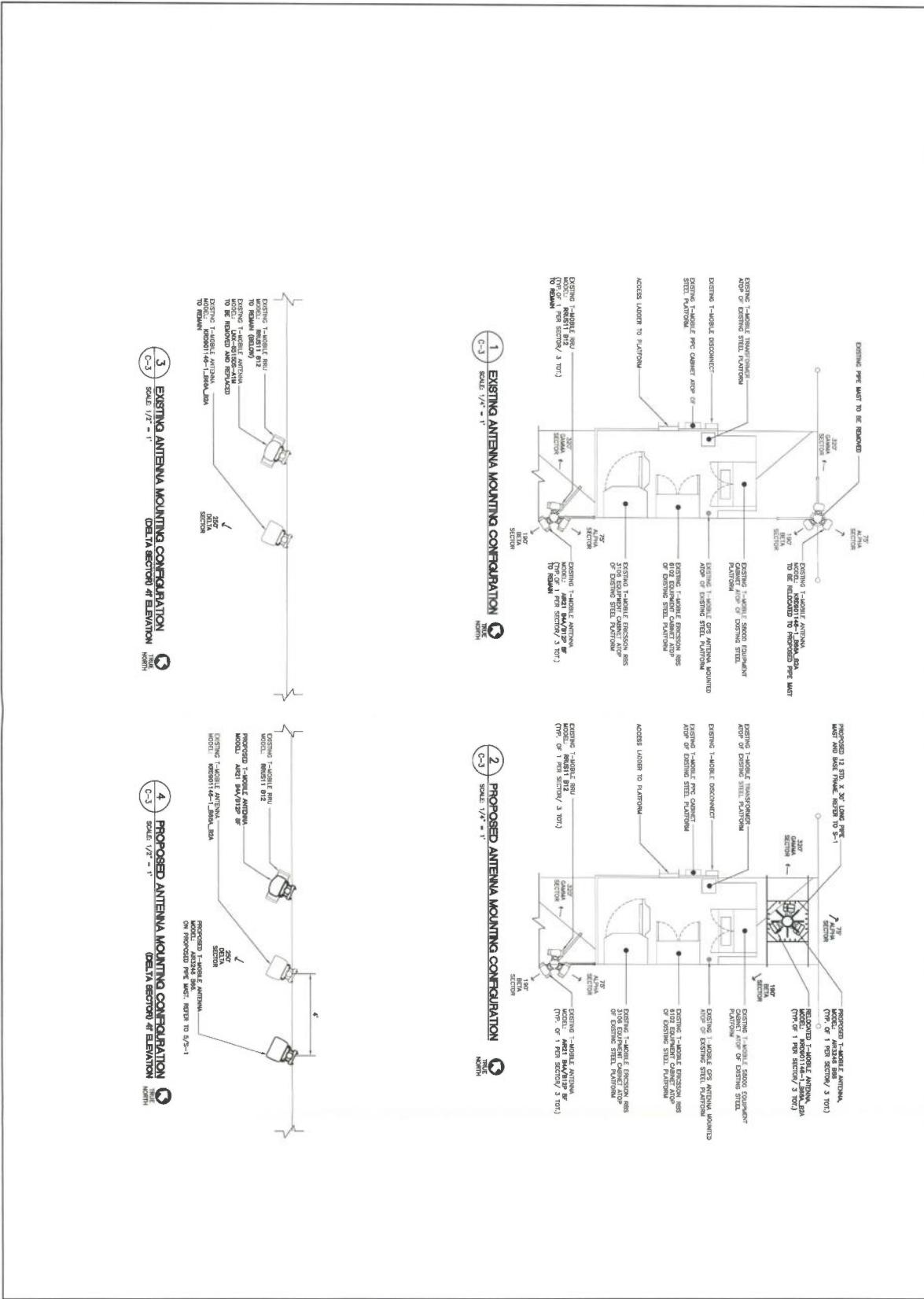
REGI

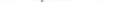
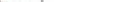
ORD

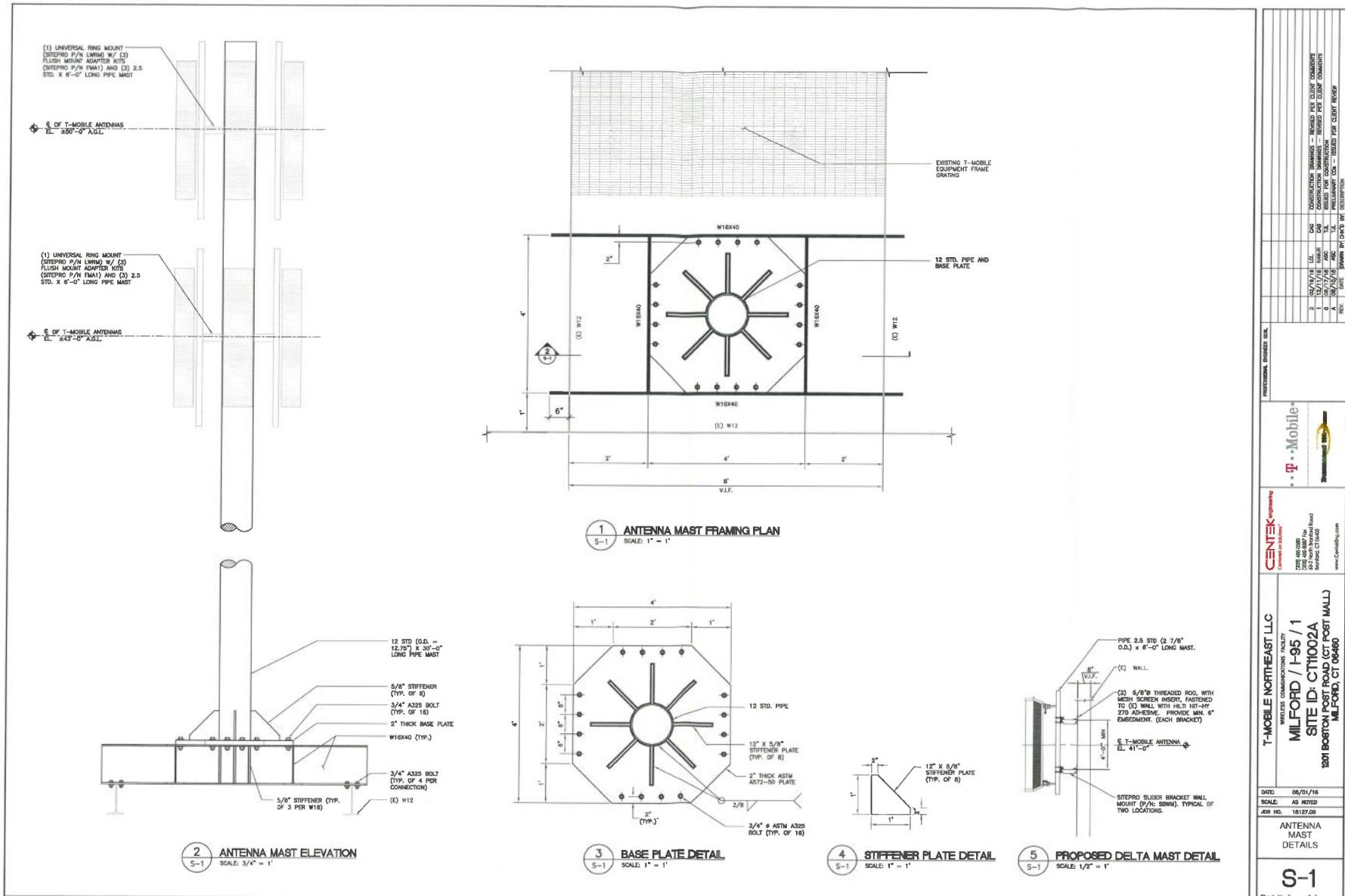
1. ALL COASTERS

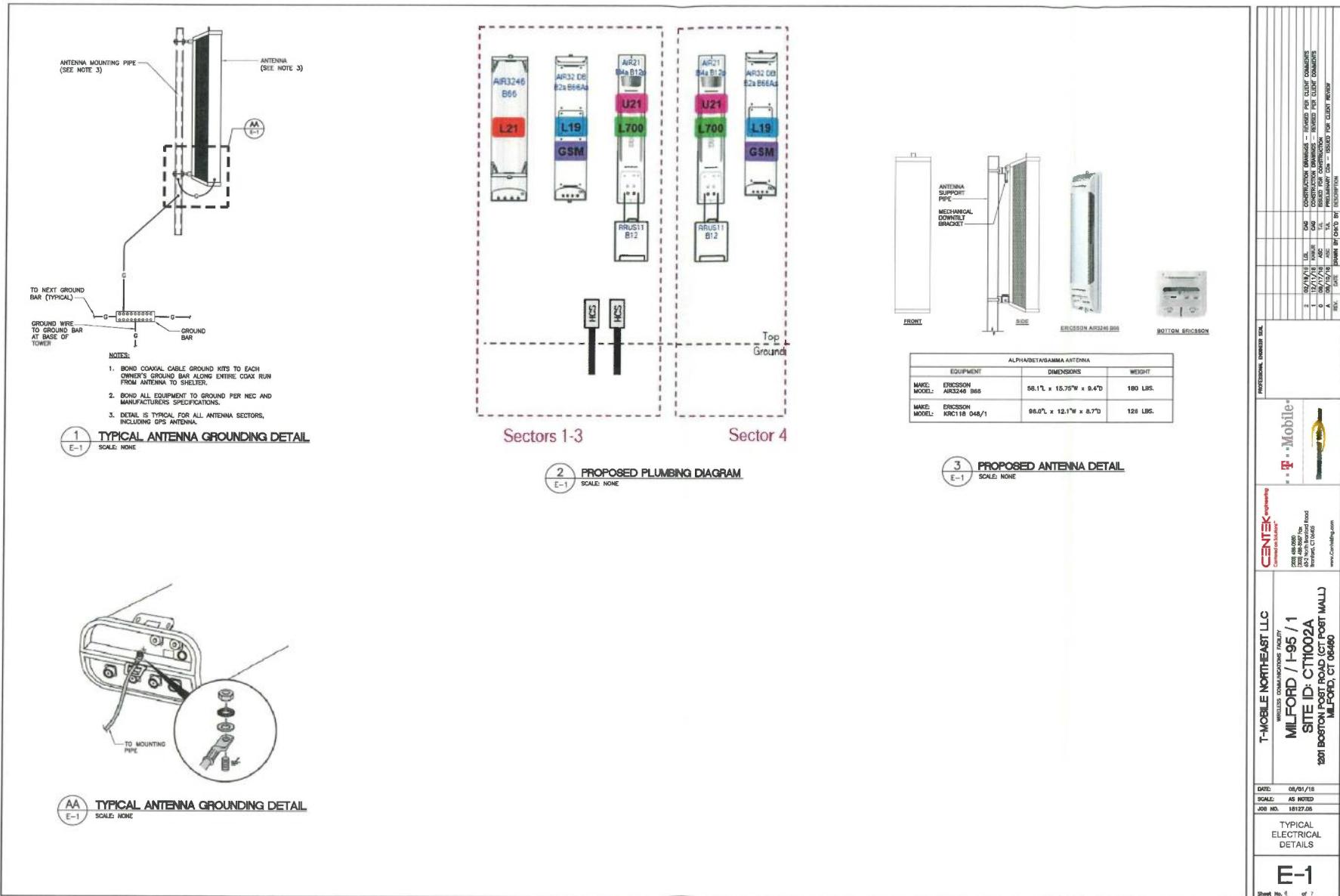
STRUCTURAL STEEL





T-MOBILE NORTHEAST LLC		CENTEK Engineering Complaints on 888-999-1111		PROFESSIONAL ENGINEER SEAL		
WIRELESS COMMUNICATIONS FACILITY		202-488-0000 202-488-0007 FAX 202-2 North Boundary Road Montgomery, CT 06463		 		
DATE:	06/17/18	NAME:		REV.:		
APR. NO.:	AS REFERRED	TITLE:		DRAWN BY:	CHKD BY:	
APR. NO.:	15/17/20	DESIGNER:		DESCRIPTION		
ANTENNA MOUNTING CONFIG.		2	02/19/18	URL	CAG	CONSTRUCTION DRAWINGS - REVIEWED PER CLIENT COMMENTS
MILFORD / I-95 / 1		1	12/11/18	MANUAL	CAG	CONSTRUCTION DRAWINGS - REVIEWED PER CLIENT COMMENTS
SITE ID: CT1002A		0	08/17/18	ABC	URL	ISSUED FOR CONSTRUCTION
1201 BOSTON POST ROAD (CT POST MALL)						ISSUED FOR CONSTRUCTION - ISSUED FOR CLIENT REVIEW
MILFORD, CT 06460						





ATTACHMENT B
ANTENNA SPECIFICATIONS



AIR 3246 update 12/18 - 17

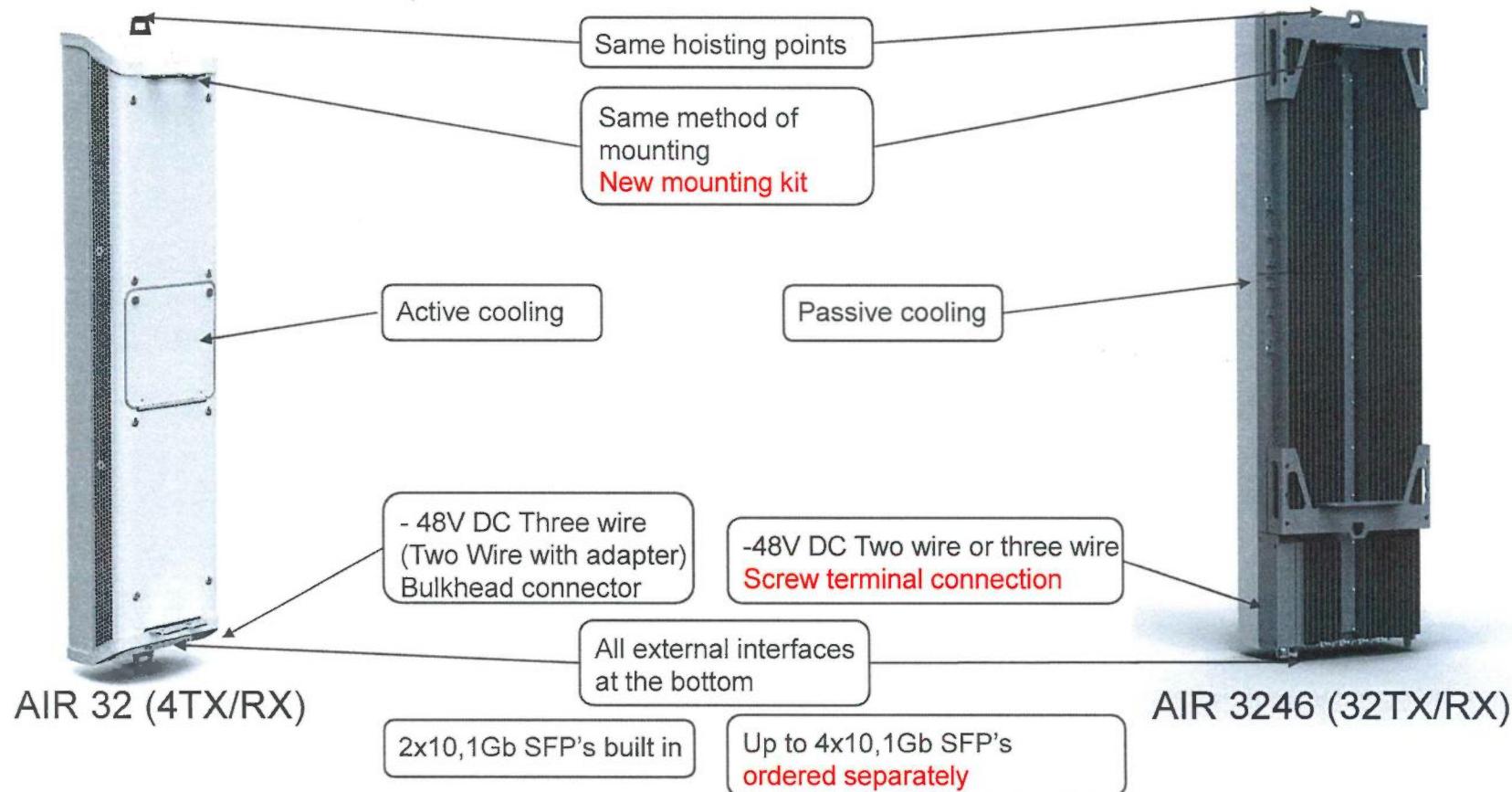
Kenth Höglund – AIR3246 product manager
Evangelos Paravalos – PjM RAN SW development Ottawa R&D

Agenda



- › AIR3246 site considerations
- › AIR3246 specifications
- › FD-MIMO dual band

Installation Comparison



POWER SYSTEM ON RAIL

POWER 6302 & BATTERY 6312/13

Power: AC input 172-275VAC, 50-60 Hz, 2.3 kW DC -48V output power

Battery: Capacity dimensioned for typical 10 and 50 minutes back-up time for 2kW user load

Lithium-Ion: Long battery lifetime

All:

O&M monitoring integrated

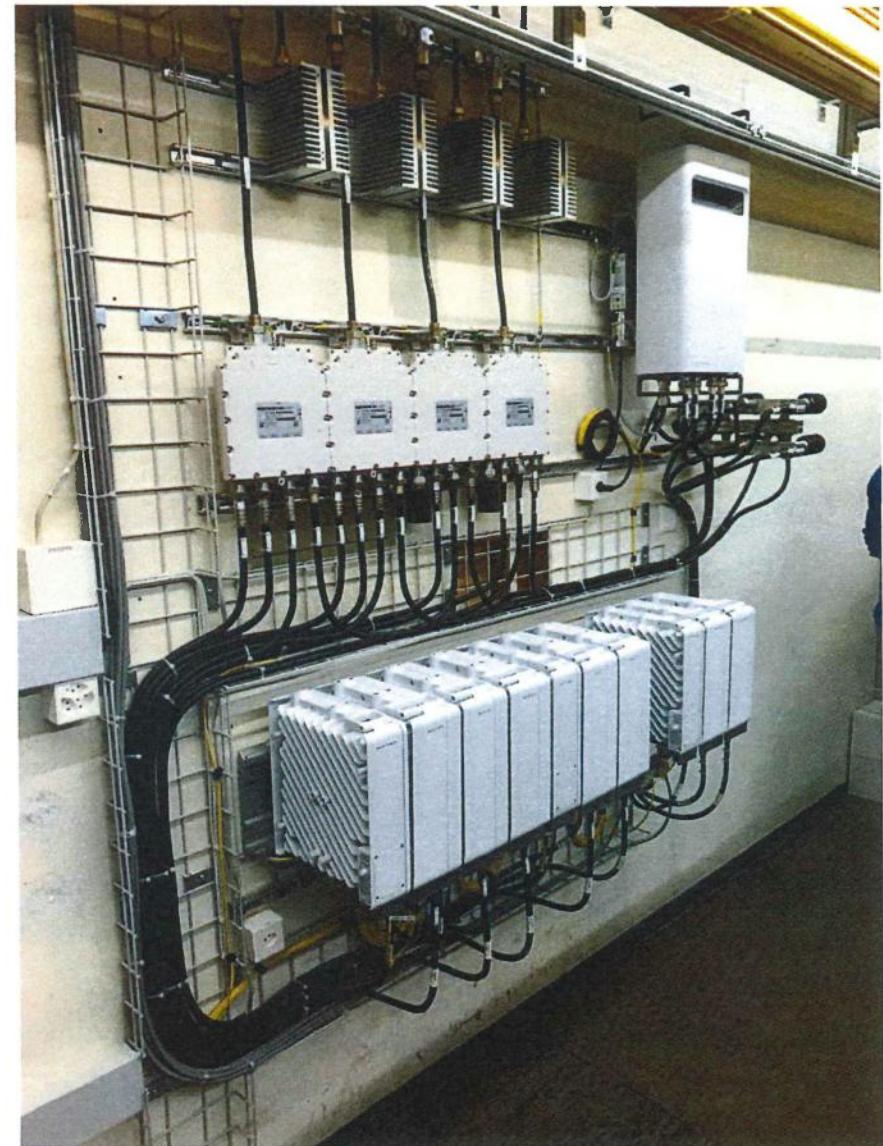
Ericsson Rail mounting

Convection cooled

IP 65



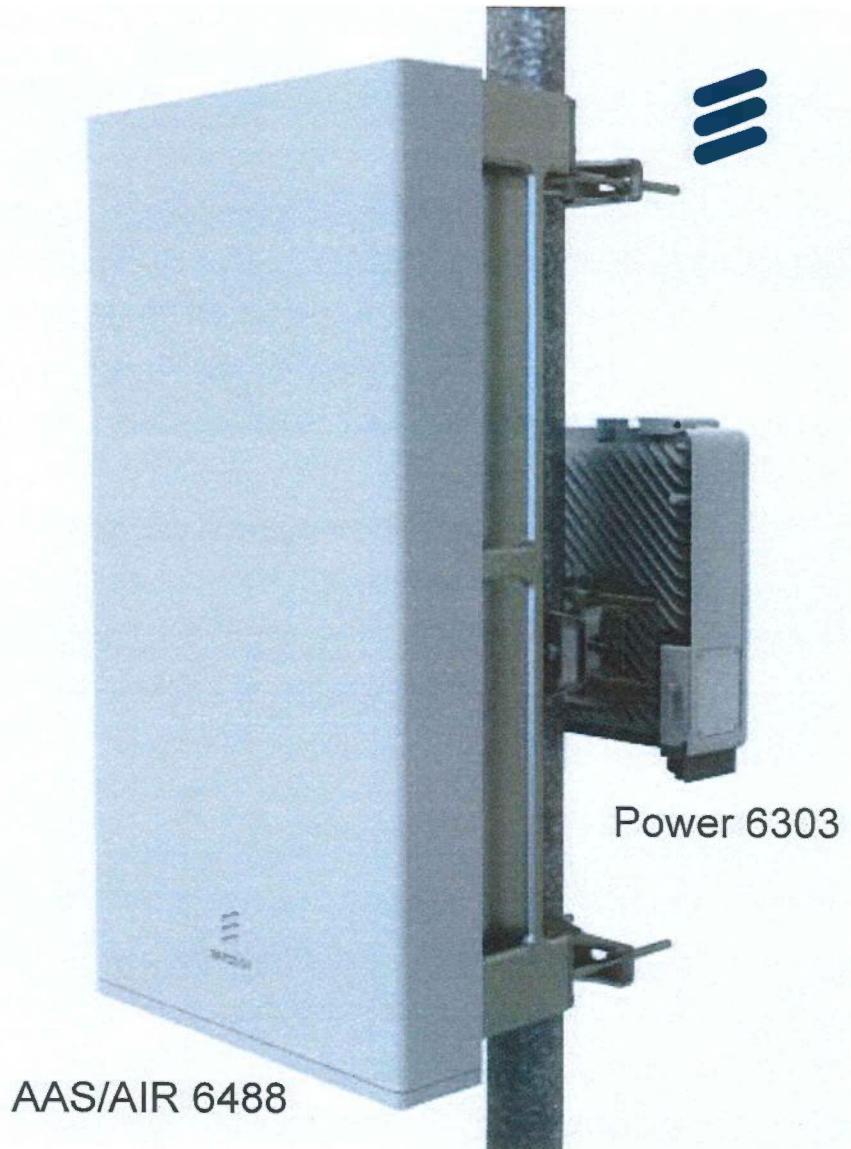
Battery
on Rail



POWER 6303

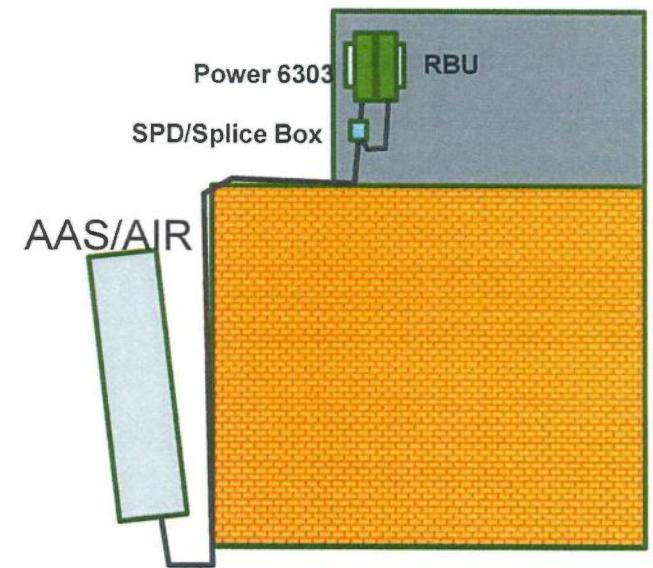
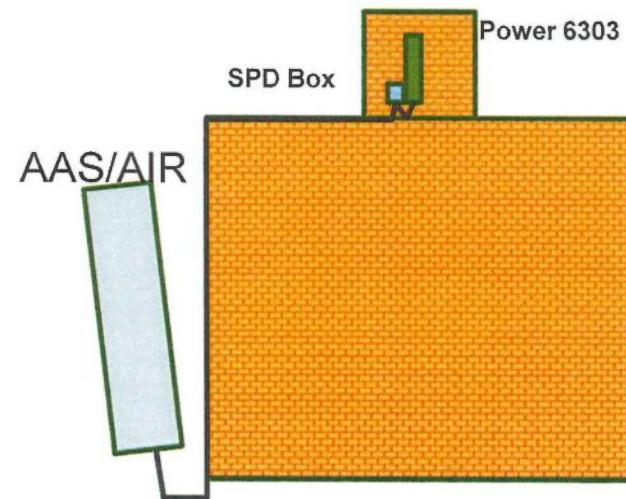
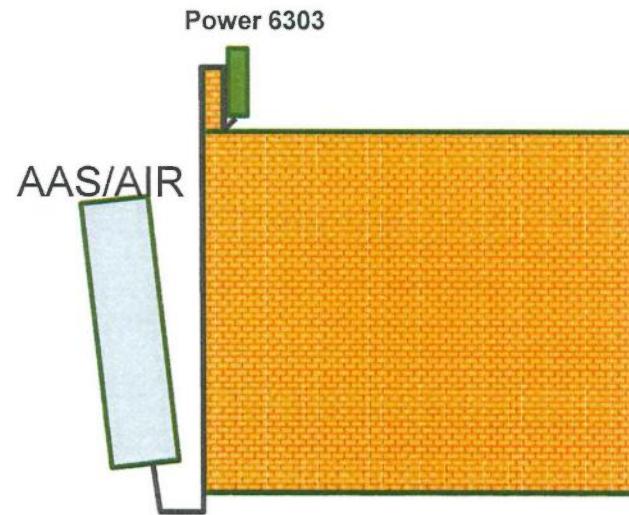
- 2KW FOR ERS RADIOS

- › Rationale
 - Enable AC/400 VDC feed to new Air radio units that do not have internal AC/DC conversion
- › Product overview:
 - 2 kW output power
- › One output with shielded 2x10mm² cable
- › Power input “connector”, hatch and screw terminal



POWER 6303

- INSTALLATION EXAMPLES WALL/ROOF

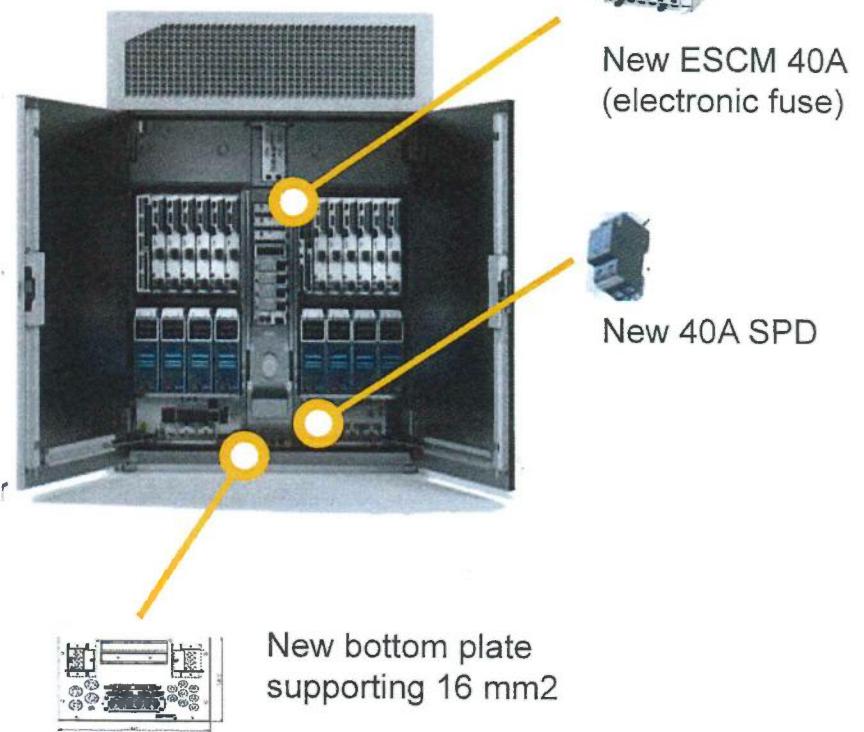


6K POWER EXPANSION FOR 5G RADIOS

- › Enable larger cables, new cable inlet components
- › New components for higher current, SPD and distribution unit
- › Allow a larger voltage drop over the distribution cable (reduce cost for installation material)



Example RBS 6102

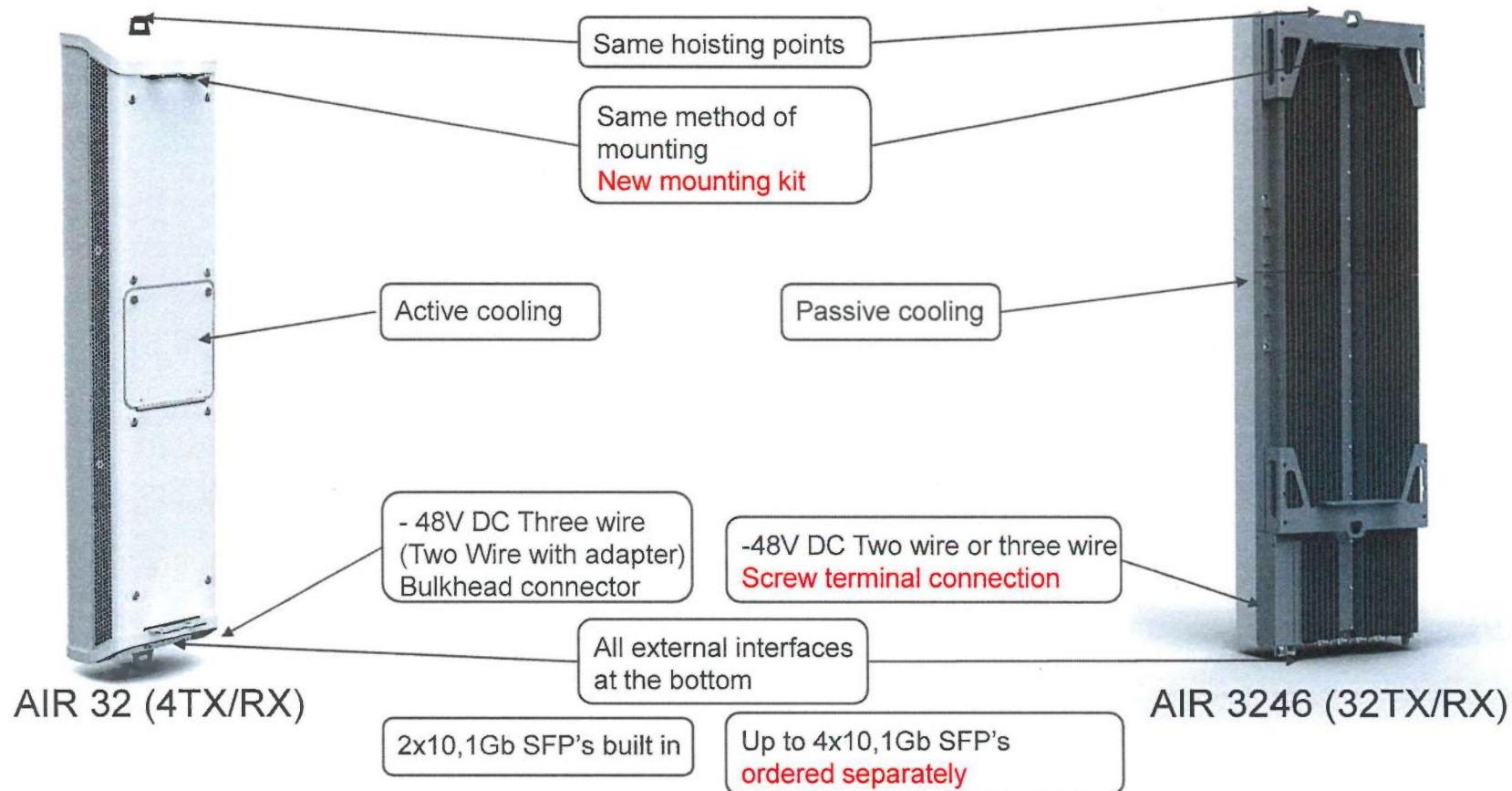


Agenda



- › AIR3246 site considerations
- › AIR3246 specifications
- › FD-MIMO dual band

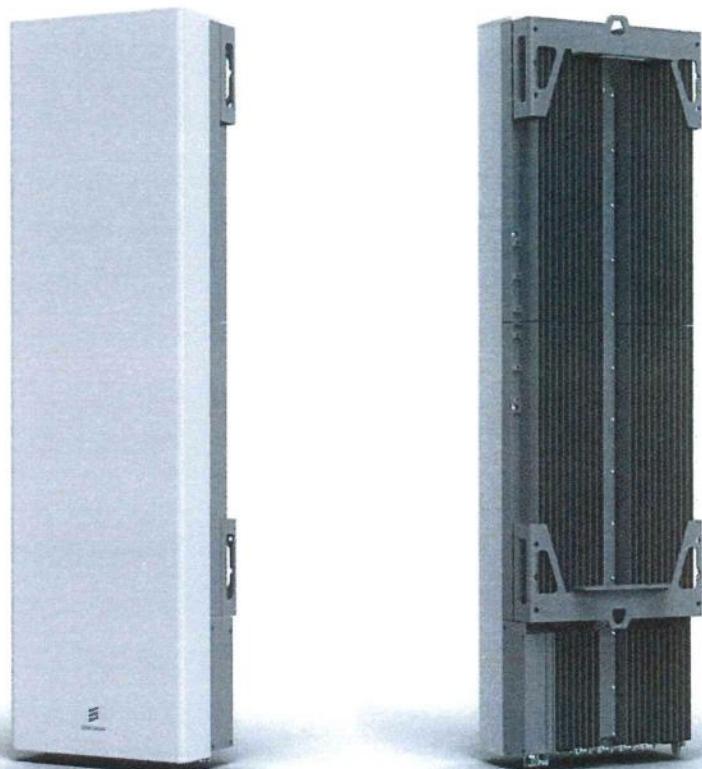
Installation Comparison



AIR 3246 BAND 66 (1/2)



- › Radio
 - 32 TX/RX
 - 90 MHz IBW
 - 60 MHz LTE CBW
 - Up to 3 carriers LTE
 - 160 W total RF conducted power
- › Baseband interface 4 x 10.1 Gbps CPRI
- › Mechanical properties
 - Size (H x W x D): 1475x400x238 mm
 - Weight : 81 Kg (estimated)
- › Power
 - -48v DC, 3 wire or 2 wire
 - Max Power consumption: < 1350 w (estimated)
 - 120/230 VAC via supervised external PSU

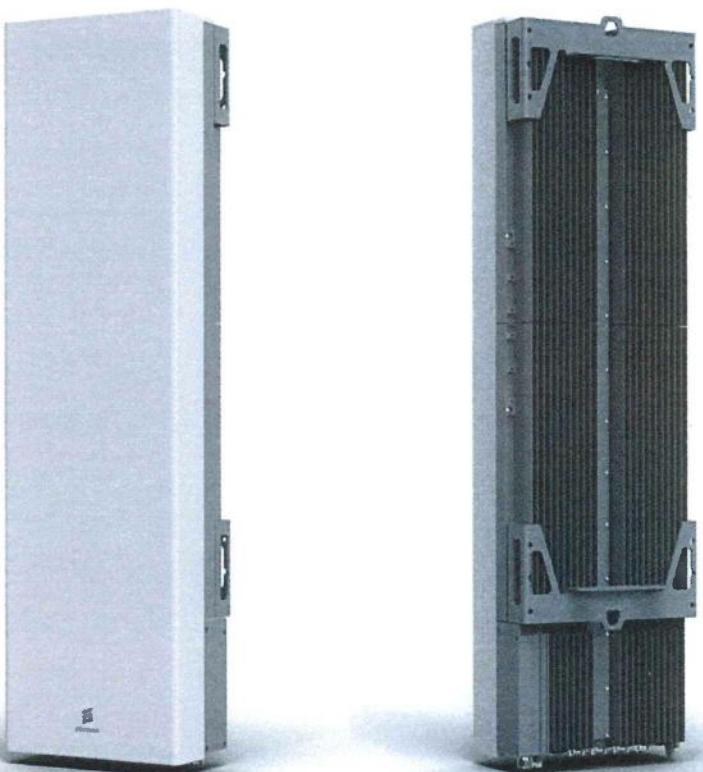


AIR 3246 BAND 66 (2/2)



› Antenna and beamforming properties

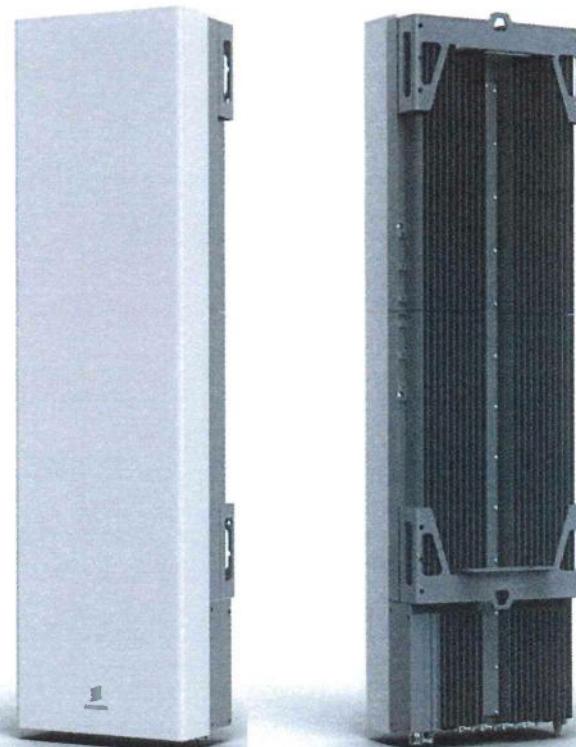
- 96 X-polarized elements split by..
- 4 rows and 4 columns of subarrays
- Subarrays 3x1 X-pol element.
- Beamforming capabilities. SW defined by baseband functionality.
For legacy terminals with capability of reporting 4 CSI or less, static cell specific beamforming selectable from a range of predefined patterns.
For terminals capable of reporting 8 or more, CSI precoder based user specific beamforming according to 3GPP up to Release 14.
- Broadcast beam, typical values
 - › Horiz. HPBW 65 degrees
 - › Vert. HPBW 6 degrees
 - › Gain 18 dBi
 - › Downtilt 2-12 degrees
- Traffic beams, typical values
 - › Horiz. HPBW 24 degrees
 - › Vert. HPBW 6 degrees
 - › Gain 23 dBi
 - › Horizontal pointing range +53 degrees
 - › Vertical pointing range: Up 5 deg, down 19 degrees



AIR 3246 BAND 25



- › 32 TX/RX
- › 160 W total RF output power
- › EIRP CRS Beam 70dBm
- › 65 MHz IBW
- › 60 MHz LTE CBW
- › 4 x 10.1 Gbps CPRI
- › Size (H x W x D):1475x400x238 mm
- › Weight : 81 Kg (estimated)
- › -48v DC, 3 wire or 2 wire
- › Max Power consumption: < 1440 w
- › 120/230 VAC via external PSU
- › Availability Q4-2018



Supported Beams (Preliminary)



- › TM4 and common channels:
 - MACRO (default = DUALPOLARIZED65 which is EB)
 - MACRO2 (default = SECTORIZED1 which is MB6)
 - MACRO_NARROW (default = NARROW which is narrow beam)
 - MACRO_WIDE (default = BROAD which is broad beam)
- › TM9 and CSI-RS (not configurable)
 - Always default to broad beam

Agenda

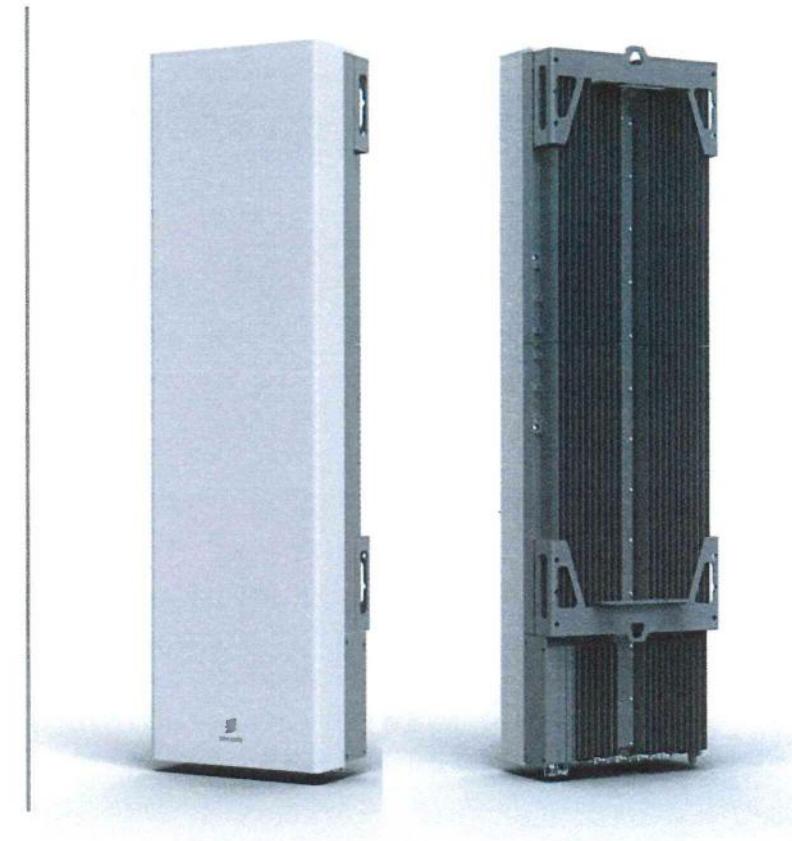


- › AIR3246 site considerations
- › AIR3246 specifications
- › FD-MIMO dual band

AIR 3246 DUAL BAND



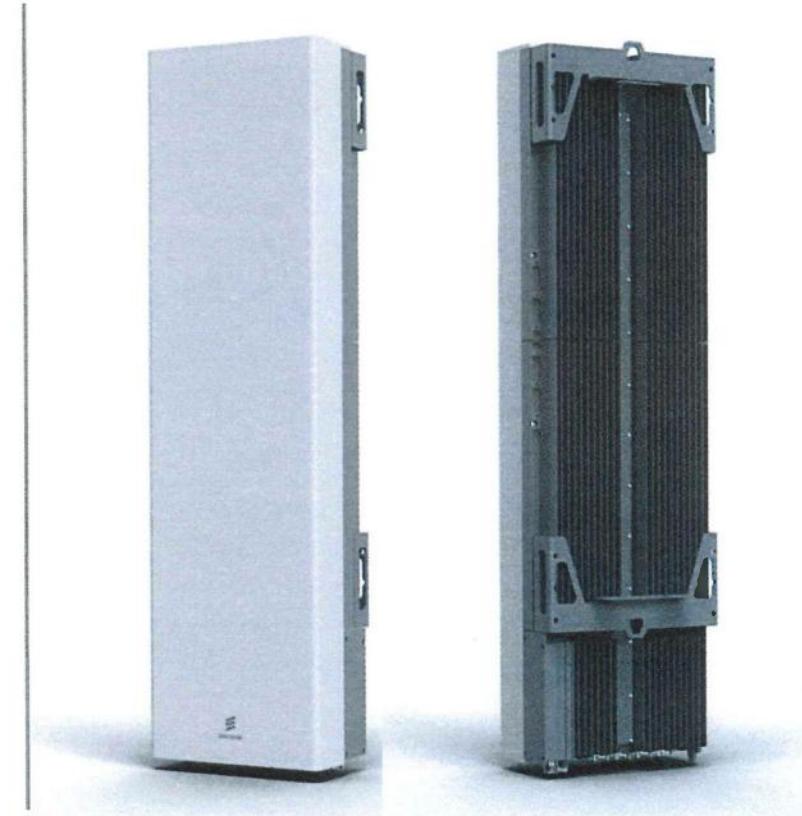
- › 32 TX/RX per band
- › Frequency bands: B66/B25
- › 320 W total RF output power
- › 90/65 MHz IBW
- › 60 MHz LTE CBW / Band
- › Interface: 4 x 25Gb CPRI
- › Size (H x W x D): 1475x400x300 mm (estimated)
- › Weight : TBD Kg
- › -48v DC, 3 wire or 2 wire
- › Optional 120/240 VAC
- › Target availability late Q4-2019



AIR 88XX DUAL BAND



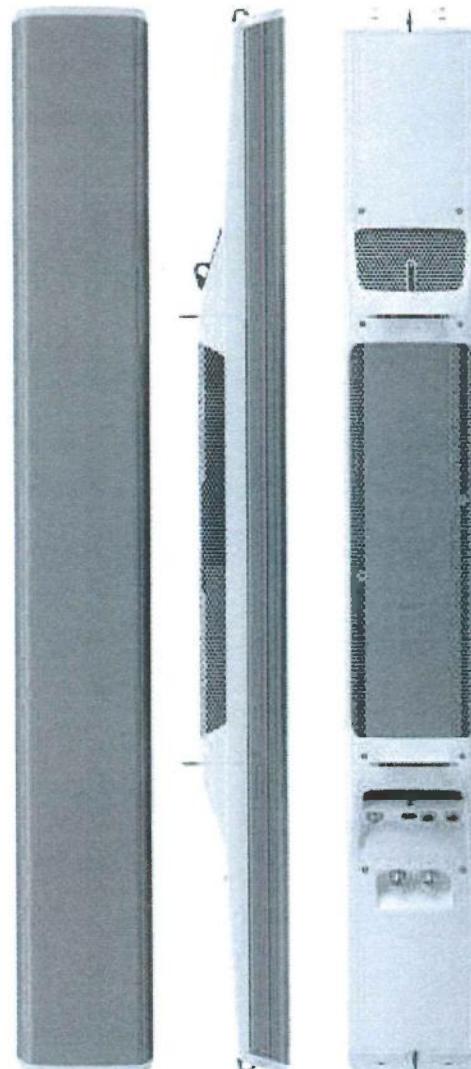
- › 8 TX/RX per band
- › Frequency bands: B66/B25
- › 320 W total RF output power
- › 90/65 MHz IBW
- › 60 MHz LTE CBW / Band
- › Interface: 4 x 10,1Gb CPRI
- › Size (H x W x D):1475x400x238 mm (estimated)
- › Weight : TBD Kg
- › -48v DC, 3 wire or 2 wire
- › 120/230 VAC via external PSU
- › Target availability Q3-2019







- › Frequency bands:
 - AWS (1700/2100 MHz) active 2TX/4RX dual X-pol vert. stacked
 - 698 MHz - 894 MHz passive single X-pol.
- › IBW (active part) = 20 MHz
- › Gain (active/passive): 18/16 dB (15.7 on A block)
- › Horiz. beamwidth (active/passive): 61°/68°
- › Vertical beamwidth (active/passive): 7°/9°
- › Integrated RET (AISG 2.0)
- › Interfaces
 - Two optical fiber ports (CPRI) for active antenna/radio
 - One power connector, -48 V DC
 - Two 7/16 female connectors for passive antenna, with RET support
- › Dimensions (H x W x D): 8.0' x 12.1" x 8.7"
- › Weight: ~126 lbs
- › Wind load: 1370 N @ 94 miles/hr



ATTACHMENT C
STRUCTURAL ANALYSIS



Centered on SolutionsSM

Structural Analysis Report

Antenna Pipe Mast

Proposed T-Mobile
Antenna Upgrade

T-Mobile Site Ref: CT11002A

1201 Boston Post Road
Milford, CT

CENTEK Project No. 18127.08

Date: August 9, 2018



Prepared for:

T-Mobile USA
35 Griffin Road
Bloomfield, CT 06002

CENTEK Engineering, Inc.
Structural Analysis – Structural Analysis
T-Mobile Site Ref. ~ CT11002A
Milford, CT
August 9, 2018

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CENTEK Engineering, Inc.
Structural Analysis – Structural Analysis
T-Mobile Site Ref. ~ CT11002A
Milford, CT
August 9, 2018

Introduction

The purpose of this report is to summarize the results of the non-linear, P-Δ structural analysis of the antenna upgrade proposed by T-Mobile on the existing roof mounted antenna masts located in Milford, Connecticut.

The host structure is a roof mounted steel equipment platform with two (2) existing antenna pipe masts along with façade mounted pipe masts at the Delta sector.

Antenna and Appurtenance Summary

The existing, proposed and future loads considered in this analysis consist of the following:

- **T-Mobile (Existing to Remain – Alpha, Beta & Gamma Sectors):**
Antennas: Three (3) AIR21 B4A/B12P (8-ft) panel antennas and three (3) Ericsson RRUS-11 B12 remote radio units mounted on one (1) existing pipe mast attached to the equipment platform steel dunnage frame with a RAD center elevation of +/- 41-ft AGL.
- **T-Mobile (Existing to Relocate – Alpha, Beta & Gamma Sectors):**
Antennas: Three (3) Ericsson KRD901146 (AIR32) panel antennas to be relocated to the proposed pipe mast attached to the equipment platform steel dunnage frame with a RAD center elevation of +/- 50-ft AGL.
- **T-Mobile (Proposed – Alpha, Beta & Gamma Sectors):**
Antennas: Three (3) Ericsson AIR3246 B66 panel antennas mounted on the proposed pipe mast attached to the equipment platform steel dunnage frame with a RAD center elevation of +/- 43-ft AGL.
- **T-Mobile (Existing to Remain – Delta Sector):**
Antennas: One (1) Ericsson KRD901146 (AIR32) panel antenna and one (1) Ericsson RRUS-11 B12 remote radio mounted on an existing pipe mast attached to the building façade with a RAD center elevation of +/- 41-ft AGL.
- **T-Mobile (Existing to Remove – Delta Sector):**
Antennas: One (1) Andrew LNX-6515DS panel antenna mounted on an existing pipe mast attached to the building façade with a RAD center elevation of +/- 41-ft AGL
- **T-Mobile (Proposed – Delta Sector):**
Antennas: One (1) AIR21 B4A/B12P (8-ft) panel antenna and one (1) Ericsson AIR3246 B66 mounted on one (1) existing and one (1) proposed pipe masts attached to the building façade with a RAD center elevation of +/- 41-ft AGL.

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Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents or reinforcement drawings.
- All members are “hot dipped” galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All coax cables to be installed as indicated in this report.

Analysis

The existing antenna support mounts were analyzed using a comprehensive computer program titled Risa3D. The program analyzes the antenna mounts, considering the worst case loading condition. The antenna support mounts were considered to be loaded by concentric forces along the pipe masts, and the model assumes that the members are subjected to bending, axial, and shear forces.

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Structure Loading

Loading was determined per the requirements of the 2012 International Building Code as modified by the 2016 CT State Building Code and ASCE 7-10 “Minimum Design Loads for Buildings and Other Structures”.

Wind Speed: Milford; $v = 125$ mph (Risk Cat 2) [Appendix N of the 2016 CSBC]

Results

Antenna mast stresses were calculated utilizing the structural analysis software Risa-3D.

- Calculated stresses were found to be within allowable limits.

Component	Stress Ratio (percentage of capacity)	Result
Proposed	39.7%	PASS

Conclusion

This analysis shows that the subject antenna mast is adequate to support the proposed modified antenna configuration.

The analysis is based, in part, on the information provided to this office by T-Mobile. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:


Timothy J. Lynn, PE
Structural Engineer



CENTEK Engineering, Inc.
Structural Analysis – Structural Analysis
T-Mobile Site Ref. ~ CT11002A
Milford, CT
August 9, 2018

Standard Conditions for Furnishing of
Professional Engineering Services on
Existing Structures

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the "as new" condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

Design Wind Load on Other Structures:

(Based on IBC 2012, CSBC 2016 and ASCE 7-10)

 Wind Speed = $V := 125$ mph (User Input) (CSBC Appendix-N)

 Risk Category = $BC := II$ (User Input) (IBC Table 1604.5)

 Exposure Category = $Exp := C$ (User Input)

 Height Above Grade = $Z := 50$ ft (User Input)

 Structure Height = $Height := 6$ ft (User Input)

 Horizontal Dimension of Structure = $Width := 1$ ft (User Input)
Terrain Exposure Constants:

Nominal Height of the Atmospheric Boundary Layer =

 $zg := \begin{cases} 1200 & \text{if } Exp = B = 900 \\ 900 & \text{if } Exp = C \\ 700 & \text{if } Exp = D \end{cases}$ (Table 26.9-1)

3-Sec Gust Speed Power Law Exponent =

 $\alpha := \begin{cases} 7 & \text{if } Exp = B = 9.5 \\ 9.5 & \text{if } Exp = C \\ 11.5 & \text{if } Exp = D \end{cases}$ (Table 26.9-1)

Integral Length Scale Factor =

 $I := \begin{cases} 320 & \text{if } Exp = B = 500 \\ 500 & \text{if } Exp = C \\ 650 & \text{if } Exp = D \end{cases}$ (Table 26.9-1)

Integral Length Scale Power Law Exponent =

 $E := \begin{cases} \frac{1}{3} & \text{if } Exp = B = 0.2 \\ \frac{1}{5} & \text{if } Exp = C \\ \frac{1}{8} & \text{if } Exp = D \end{cases}$ (Table 26.9-1)

Turbulence Intensity Factor =

 $c := \begin{cases} 0.3 & \text{if } Exp = B = 0.2 \\ 0.2 & \text{if } Exp = C \\ 0.15 & \text{if } Exp = D \end{cases}$ (Table 26.9-1)

Exposure Constant =

 $Z_{min} := \begin{cases} 30 & \text{if } Exp = B = 15 \\ 15 & \text{if } Exp = C \\ 7 & \text{if } Exp = D \end{cases}$ (Table 26.9-1)

Exposure Coefficient =

 $K_Z := \begin{cases} 2.01 \left(\frac{Z}{zg} \right)^{\left(\frac{2}{\alpha} \right)} & \text{if } 15 \leq Z \leq zg = 1.09 \\ 2.01 \left(\frac{15}{zg} \right)^{\left(\frac{2}{\alpha} \right)} & \text{if } Z < 15 \end{cases}$ (Table 29.3-1)



Centered on Solutions™
63-2 North Branford Road
Branford, CT 06405

www.centekeeng.com
P: (203) 488-0580
F: (203) 488-8587

Subject:

Wind Load on Equipment per ASCE 7-10

Location:

Milford, CT

Rev. 0: 8/9/18

Prepared by: T.J.L; Checked by: C.F.C.
Job No. 18127.08

Topographic Factor = $K_{zt} := 1$ (Eq. 26.8-2)

Wind Directionality Factor = $K_d := 0.85$ (Table 26.6-1)

Velocity Pressure = $q_z := 0.00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2 = 37.19$ (Eq. 29.3-1)

Force Coefficient = $(GC_r) := 1.9$ (Sec 29.5-1)

Wind Force = $F := q_z \cdot (GC_r) = 71$ psf



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Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model = Ericsson AIR21 B4A/B12P 8F
Antenna Shape = Flat (User Input)
Antenna Height = $L_{ant} := 96$ in (User Input)
Antenna Width = $W_{ant} := 12.1$ in (User Input)
Antenna Thickness = $T_{ant} := 8.7$ in (User Input)
Antenna Weight = $WT_{ant} := 148$ lbs (User Input)
Number of Antennas = $N_{ant} := 1$ (User Input)

Wind Load (Front)

SurfaceArea for One Antenna = $SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 8.1$ sf

Antenna Projected Surface Area = $A_{ant} := SA_{ant} \cdot N_{ant} = 8.1$ sf

Total Antenna Wind Force = $F_{ant} := F \cdot A_{ant} = 570$ lbs

Wind Load (Side)

SurfaceArea for One Antenna = $SA_{ant} := \frac{L_{ant} \cdot T_{ant}}{144} = 5.8$ sf

Antenna Projected Surface Area = $A_{ant} := SA_{ant} \cdot N_{ant} = 5.8$ sf

Total Antenna Wind Force = $F_{ant} := F \cdot A_{ant} = 410$ lbs

Gravity Load (without ice)

Weight of All Antennas = $WT_{ant} \cdot N_{ant} = 148$ lbs

Development of Wind & Ice Load on Antennas**Antenna Data:**

Antenna Model =	EricssonAIR32		
Antenna Shape =	Flat	(User Input)	
Antenna Height =	$L_{ant} := 56.6$	in	(User Input)
Antenna Width =	$W_{ant} := 12.9$	in	(User Input)
Antenna Thickness =	$T_{ant} := 8.7$	in	(User Input)
Antenna Weight =	$WT_{ant} := 132$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Wind Load (Front)

SurfaceArea for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 5.1$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 5.1$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 358$	lbs

Wind Load (Side)

SurfaceArea for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot T_{ant}}{144} = 3.4$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 3.4$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 242$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 132$	lbs
--------------------------	--------------------------------	-----

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	EricssonAIR3246 B66		
Antenna Shape =	Flat	(User Input)	
Antenna Height =	$L_{ant} := 58.1$	in	(User Input)
Antenna Width =	$W_{ant} := 15.7$	in	(User Input)
Antenna Thickness =	$T_{ant} := 9.4$	in	(User Input)
Antenna Weight =	$WT_{ant} := 180$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Wind Load (Front)

SurfaceArea for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 6.3$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 6.3$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 448$	lbs

Wind Load (Side)

SurfaceArea for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot T_{ant}}{144} = 3.8$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 3.8$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 268$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 180$	lbs
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Development of Wind & Ice Load on Antennas
Antenna Data:

Antenna Model =	Andrew LNX6515DS		
Antenna Shape =	Flat	(User Input)	
Antenna Height =	$L_{ant} := 96.4$	in	(User Input)
Antenna Width =	$W_{ant} := 11.9$	in	(User Input)
Antenna Thickness =	$T_{ant} := 7.1$	in	(User Input)
Antenna Weight =	$WT_{ant} := 50$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Wind Load (Front)

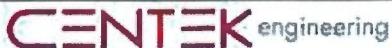
SurfaceArea for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 8$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 8$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 563$	lbs

Wind Load (Side)

SurfaceArea for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot T_{ant}}{144} = 4.8$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 4.8$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 336$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 50$	lbs
--------------------------	-------------------------------	-----



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Wind Load on Equipment per ASCE 7-10

Location:

Milford, CT

Rev. 0: 8/9/18

Prepared by: T.J.L; Checked by: C.F.C.
Job No. 18127.08

Development of Wind & Ice Load on RRHs

RRH Data:

RRH Model =	Ericsson RRUS-11		
RRH Shape =	Flat	(User Input)	
RRH Height =	$L_{RRH} := 17.8$	in	(User Input)
RRH Width =	$W_{RRH} := 17.3$	in	(User Input)
RRH Thickness =	$T_{RRH} := 7.2$	in	(User Input)
RRH Weight =	$WT_{RRH} := 50$	lbs	(User Input)
Number of RRHs =	$N_{RRH} := 1$		(User Input)

Wind Load (Front)

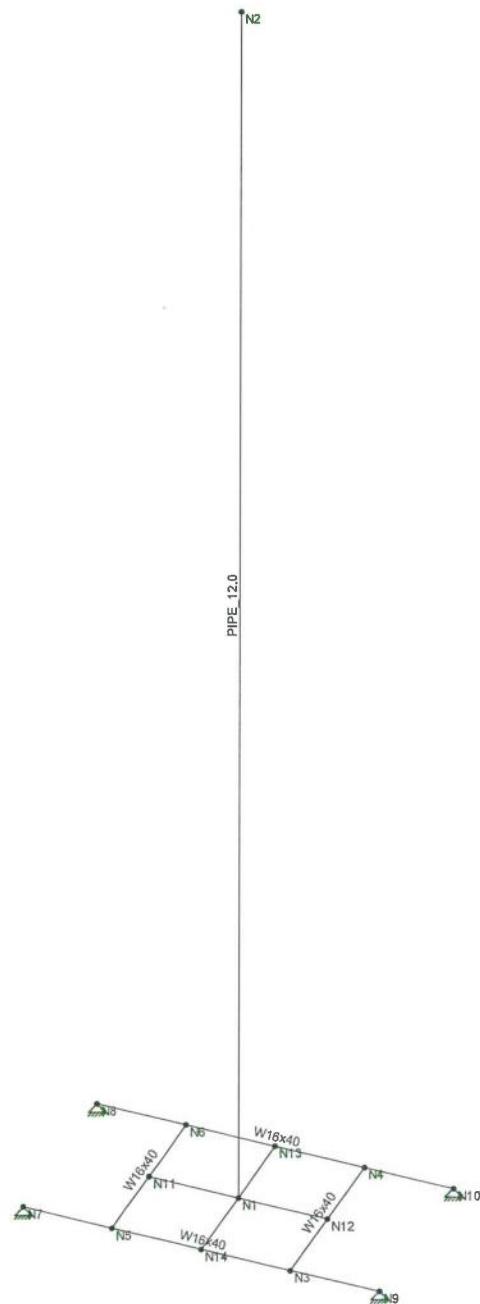
Surface Area for One RRH =	$SA_{RRH} := \frac{L_{RRH} \cdot W_{RRH}}{144} = 2.1$	sf
RRH Projected Surface Area =	$A_{RRH} := SA_{RRH} \cdot N_{RRH} = 2.1$	sf
Total RRH Wind Force =	$F_{RRH} := F \cdot A_{RRH} = 151$	lbs

Wind Load (Side)

Surface Area for One RRH =	$SA_{RRH} := \frac{L_{RRH} \cdot T_{RRH}}{144} = 0.9$	sf
RRH Projected Surface Area =	$A_{RRH} := SA_{RRH} \cdot N_{RRH} = 0.9$	sf
Total RRH Wind Force =	$F_{RRH} := F \cdot A_{RRH} = 63$	lbs

Gravity Load (without ice)

Weight of All RRHs =	$WT_{RRH} \cdot N_{RRH} = 50$	lbs
----------------------	-------------------------------	-----



Envelope Only Solution

Centek Engineering

TJL

18127.08

CT11002A - Antenna Mount (East)

Member Framing

Aug 9, 2018 at 5:03 PM

Antenna Mount.r3d

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI S100-10: ASD
Wood Code	AWC NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-11: ASD
Aluminum Code	AA ADM1-10: ASD - Building
	AISC 14th(360-10): ASD

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parmer Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1
Footing Overturning Safety Factor	1
Optimize for OTM/Sliding	No
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	150.001
Footing Concrete f'c (ksi)	4
Footing Concrete E'c (ksi)	3644
Lambda	1
Footing Steel f'y (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#3
Footing Top Bar Cover (in)	2
Footing Bottom Bar	#3
Footing Bottom Bar Cover (in)	3.5
Pedestal Bar	#3
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#3

Hot Rolled Steel Properties

Label	E [ksi]	G [ksi]	Nu	Therm (\1...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1 A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2 A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	58	1.2
3 A992	29000	11154	.3	.65	.49	50	1.1	58	1.2
4 A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5 A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6 A53 Grade B	29000	11154	.3	.65	.49	35	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Pipe Mast	PIPE 12.0	Beam	Pipe	A53 Grade B	Typical	13.7	262	262	523
2	bEAM	W16x40	Beam	Pipe	A992	Typical	11.8	28.9	518	.794

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Pipe Mast	30			Lbyy						Lateral
2	M2	bEAM	8			Lbyy						Lateral
3	M3	bEAM	8			Lbyy						Lateral
4	M4	bEAM	4			Lbyy						Lateral
5	M5	bEAM	4			Lbyy						Lateral

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...)	Section/Shape	Type	Design List	Material	Design Rul...
1	M1	N1	N2			Pipe Mast	Beam	Pipe	A53 Gra...	Typical
2	M2	N7	N9			bEAM	Beam	Pipe	A992	Typical
3	M3	N8	N10			bEAM	Beam	Pipe	A992	Typical
4	M4	N5	N6			bEAM	Beam	Pipe	A992	Typical
5	M5	N3	N4			bEAM	Beam	Pipe	A992	Typical
6	M10	N13	N1			RIGID	None	None	RIGID	Typical
7	M11	N1	N14			RIGID	None	None	RIGID	Typical
8	M8	N11	N12			RIGID	None	None	RIGID	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
1	N1	0	0	0	0	
2	N2	0	30	0	0	
3	N3	2	0	2	0	
4	N4	2	0	-2	0	
5	N5	-2	0	2	0	
6	N6	-2	0	-2	0	
7	N7	-4	0	2	0	
8	N8	-4	0	-2	0	
9	N9	4	0	2	0	
10	N10	4	0	-2	0	
11	N11	-2	0	0	0	
12	N12	2	0	0	0	
13	N13	0	0	-2	0	
14	N14	0	0	2	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N1						
2	N7	Reaction	Reaction	Reaction			
3	N8	Reaction	Reaction	Reaction			
4	N9	Reaction	Reaction	Reaction			



Company : Centek Engineering
Designer : TJL
Job Number : 18127.08
Model Name : CT11002A - Antenna Mount (East)

Aug 9, 2018
5:03 PM
Checked By: CAG

Joint Boundary Conditions (Continued)

Joint Label		X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
5	N10	Reaction	Reaction	Reaction			
6	N3						
7	N6						

Member Point Loads (BLC 2 : Weight of Equipment)

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	M1	Y	.396	28
2	M1	Y	.54	21
3	M1	Y	.4	21
4	M1	Y	.4	28

Member Point Loads (BLC 3 : Wind X-Direction)

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	M1	X	.842	28
2	M1	X	.984	21
3	M1	X	.15	21
4	M1	X	.15	28

Member Point Loads (BLC 4 : Wind Z-Direction)

Member Label		Direction	Magnitude[k, k-ft]	Location[ft, %]
1	M1	Z	.842	28
2	M1	Z	.984	21
3	M1	Z	.15	21
4	M1	Z	.15	28

Member Distributed Loads (BLC 3 : Wind X-Direction)

Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft, %]	End Location[ft, %]
1	M1	X	.051	.051	0 18

Member Distributed Loads (BLC 4 : Wind Z-Direction)

Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/...Start Location[ft, %]	End Location[ft, %]
1	M1	Z	.051	.051 0 18

Basic Load Cases

BLC Description		Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Self Weight	DL		-1						
2	Weight of Equipment	DL						4		
3	Wind X-Direction	WLX						4	1	
4	Wind Z-Direction	WLZ						4	1	

Load Combinations

Description		So...P... S... BLC Fac...BLC Fac...BLC Fac...BLC Fac...BLC Fac...BLC Fac...BLC Fac...BLC Fac...BLC Fac...									
1	IBC 16-8	Yes	Y	DL	1						
2	IBC 16-9	Yes	Y	DL	1	U	1	LLS	1		

Load Combinations (Continued)

	Description	So...P...	S...	BLC Fac...											
3	IBC 16-10 (a)	Yes	Y	DL	1	RLL	1								
4	IBC 16-10 (b)	Yes	Y	DL	1	SL	1	SLN	1						
5	IBC 16-10 (c)	Yes	Y	DL	1	RL	1								
6	IBC 16-11 (a)	Yes	Y	DL	1	LL	.75	LLS	.75	RLL	.75				
7	IBC 16-11 (b)	Yes	Y	DL	1	LL	.75	LLS	.75	SL	.75	SLN	.75		
8	IBC 16-11 (c)	Yes	Y	DL	1	LL	.75	LLS	.75	RL	.75				
9	IBC 16-12 (a) (a)	Yes	Y	DL	1	W...	.6								
10	IBC 16-12 (a) (b)	Yes	Y	DL	1	W...	.6								
11	IBC 16-12 (a) (c)	Yes	Y	DL	1	W...	-.6								
12	IBC 16-12 (a) (d)	Yes	Y	DL	1	W...	-.6								
13	IBC 16-13 (a) (a)	Yes	Y	DL	1	W...	.45	LL	.75	LLS	.75	RLL	.75		
14	IBC 16-13 (a) (b)	Yes	Y	DL	1	W...	.45	LL	.75	LLS	.75	RLL	.75		
15	IBC 16-13 (a) (c)	Yes	Y	DL	1	W...	-.45	LL	.75	LLS	.75	RLL	.75		
16	IBC 16-13 (a) (d)	Yes	Y	DL	1	W...	-.45	LL	.75	LLS	.75	RLL	.75		
17	IBC 16-13 (b) (a)	Yes	Y	DL	1	W...	.45	LL	.75	LLS	.75	SL	.75	SLN	.75
18	IBC 16-13 (b) (b)	Yes	Y	DL	1	W...	.45	LL	.75	LLS	.75	SL	.75	SLN	.75
19	IBC 16-13 (b) (c)	Yes	Y	DL	1	W...	-.45	LL	.75	LLS	.75	SL	.75	SLN	.75
20	IBC 16-13 (b) (d)	Yes	Y	DL	1	W...	-.45	LL	.75	LLS	.75	SL	.75	SLN	.75
21	IBC 16-13 (c) (a)	Yes	Y	DL	1	W...	.45	LL	.75	LLS	.75	RL	.75		
22	IBC 16-13 (c) (b)	Yes	Y	DL	1	W...	.45	LL	.75	LLS	.75	RL	.75		
23	IBC 16-13 (c) (c)	Yes	Y	DL	1	W...	-.45	LL	.75	LLS	.75	RL	.75		
24	IBC 16-13 (c) (d)	Yes	Y	DL	1	W...	-.45	LL	.75	LLS	.75	RL	.75		
25	IBC 16-15 (a)	Yes	Y	DL	.6	W...	.6								
26	IBC 16-15 (b)	Yes	Y	DL	.6	W...	.6								
27	IBC 16-15 (c)	Yes	Y	DL	.6	W...	-.6								
28	IBC 16-15 (d)	Yes	Y	DL	.6	W...	-.6								

Envelope Joint Reactions

Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N7	max	.457	11	5.587	10	.457	12	0	1	0	1	0
2		min	-.457	9	-3.918	28	-.457	10	0	1	0	1	0
3	N8	max	.457	11	5.587	12	.457	12	0	1	0	1	0
4		min	-.457	9	-3.918	26	-.457	10	0	1	0	1	0
5	N9	max	.457	11	5.587	10	.457	12	0	1	0	1	0
6		min	-.457	9	-3.918	28	-.457	10	0	1	0	1	0
7	N10	max	.457	11	5.587	12	.457	12	0	1	0	1	0
8		min	-.457	9	-3.918	26	-.457	10	0	1	0	1	0
9	Totals:	max	1.826	11	4.098	11	1.826	12					
10		min	-1.826	9	2.459	25	-1.826	10					

Envelope Joint Displacements

Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [deg]	LC	Y Rotation [deg]	LC	Z Rotation [deg]	LC
1	N1	max	0	9	-.002	26	.005	10	5.277e-04	10	0	12	1.318e-04
2		min	0	11	-.003	11	-.005	12	-5.277e-04	12	0	26	-1.318e-04
3	N2	max	2.668	9	-.003	26	2.818	10	1.052e-02	10	0	12	1.012e-02
4		min	-2.668	11	-.005	11	-2.818	12	-1.052e-02	12	0	26	-1.012e-02
5	N3	max	0	9	.008	28	.005	10	4.236e-04	26	5.772e-05	26	2.809e-04
6		min	0	11	-.011	10	-.005	12	-4.558e-04	12	-5.772e-05	12	-2.011e-04
7	N4	max	0	9	.008	26	.005	10	4.558e-04	10	5.772e-05	10	2.809e-04

Envelope Joint Displacements (Continued)

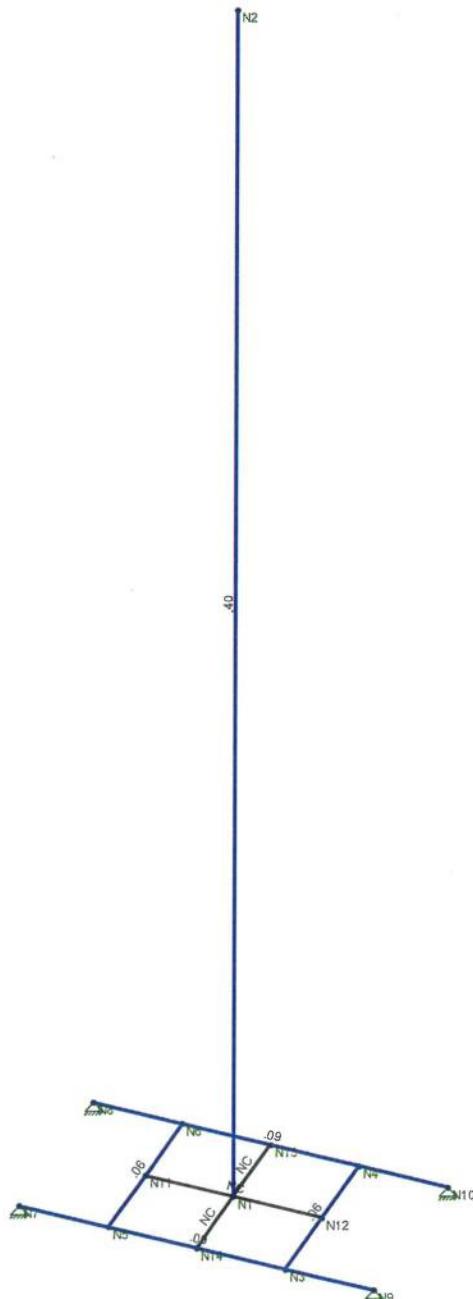
Joint	X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [... LC			LC	Y Rotation [... LC	LC	Z Rotation [... LC	
							-4.236e-04	28	-5.772e-05					
8	min	0	11	-.011	12	-.005	12	-4.236e-04	28	-5.772e-05	28	-2.011e-04	26	
9	N5	max	0	.008	28	.005	10	4.236e-04	26	5.772e-05	12	2.011e-04	28	
10		min	0	11	-.011	10	-.005	12	-4.558e-04	12	-5.772e-05	10	-2.809e-04	10
11	N6	max	0	.008	26	.005	10	4.558e-04	10	5.772e-05	12	2.011e-04	26	
12		min	0	11	-.011	12	-.005	12	-4.236e-04	28	-5.772e-05	10	-2.809e-04	12
13	N7	max	0	.9	0	28	0	10	4.236e-04	26	2.538e-04	12	2.953e-04	28
14		min	0	11	0	10	0	12	-4.558e-04	12	-2.538e-04	10	-4.141e-04	10
15	N8	max	0	.9	0	26	0	10	4.558e-04	10	2.538e-04	12	2.953e-04	26
16		min	0	11	0	12	0	12	-4.236e-04	28	-2.538e-04	10	-4.141e-04	12
17	N9	max	0	.9	0	28	0	10	4.236e-04	26	2.538e-04	10	4.141e-04	10
18		min	0	11	0	10	0	12	-4.558e-04	12	-2.538e-04	12	-2.953e-04	28
19	N10	max	0	.9	0	26	0	10	4.558e-04	10	2.538e-04	10	4.141e-04	12
20		min	0	11	0	12	0	12	-4.236e-04	28	-2.538e-04	12	-2.953e-04	26
21	N11	max	0	.002	25	.005	10	5.277e-04	10	0	28	1.318e-04	11	
22		min	0	11	-.006	11	-.005	12	-5.277e-04	12	0	26	-1.318e-04	9
23	N12	max	0	.002	27	.005	10	5.277e-04	10	0	10	1.318e-04	11	
24		min	0	11	-.006	9	-.005	12	-5.277e-04	12	0	12	-1.318e-04	9
25	N13	max	0	.011	26	.005	10	5.277e-04	10	0	9	1.318e-04	11	
26		min	0	11	-.015	12	-.005	12	-5.277e-04	12	0	11	-1.318e-04	9
27	N14	max	0	.011	28	.005	10	5.277e-04	10	0	11	1.318e-04	11	
28		min	0	11	-.015	10	-.005	12	-5.277e-04	12	0	9	-1.318e-04	9

Envelope AISC 14th(360-10): ASD Steel Code Checks

Member	Shape	Code Check	Loc...	LC	Shea...	Loc.....	L..Pnc/o...	Pnt/o...	Mnyy/...	Mnzz/.....	Eqn
1	M1	PIPE 12.0	.397	0	10	.021	0	10	202.972287.126	93.787	93.787 1 H1-1b
2	M2	W16x40	.095	2	10	.058	2	y	10258.605353.293	31.687	175.631 1..H1-1b
3	M3	W16x40	.095	2	12	.058	2	y	12258.605353.293	31.687	175.631 1..H1-1b
4	M4	W16x40	.057	2	10	.051	1.8...	y	10306.581353.293	31.687	182.136 1..H1-1b
5	M5	W16x40	.057	2	10	.051	1.8...	y	10306.581353.293	31.687	182.136 1..H1-1b



Code Check (Env)	
No Calc	
> 1.0	
.90-1.0	
.75-.90	
.50-.75	
0-.50	



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Centek Engineering
TJL
18127.08

CT11002A - Antenna Mount (East)
Unity Check

Aug 9, 2018 at 5:03 PM
Antenna Mount.r3d

ATTACHMENT D

SERVICE LIST of ABUTTERS and SAMPLE LETTER to ABUTTERS

CERTIFICATION OF SERVICE

I hereby certify that on the 12th day of March, 2019, T-Mobile Northeast, LLC, provided notice of its Petition For A Declaratory Ruling That A Certificate of Environmental Compatibility And Public Need Is Not Required for the modification of an existing rooftop telecommunications facility presently located at 1201 Boston Post Road, Milford, Connecticut, to the following:

Abutters

1354 Boston Post Road

Alliance Energy LLC
15 Northeast Industrial Road
Branford, CT 06405

1338 Boston Post Road

Robert J. Hunter
225 Woodruff Road
Milford, CT 06460

1330 Boston Post Road

Milford Four LLC
460 Coe Avenue
East Haven, CT 06512

1306 Boston Post Road

Milford Four LLC
460 Coe Avenue
East Haven, CT 06512

1292 Boston Post Road

Burger King Corporation
P.O. Box 020783
Miami, FL 33102-0783

1270 Boston Post Road

Iris Caplowe, Trustee
c/o Hillel J. Auerbach PC
P.O. Box 4014
New Haven, CT 06525

1260 Boston Post Road

Iris Caplowe, Trustee
c/o Hillel J. Auerbach PC
P.O. Box 4014
New Haven, CT 06525

1250 Boston Post Road

1250 Boston Post Road Milford LLC
c/o Phyllis Ellenbogen
411 Wishart Court
Henrico, VA 23229

1212 Boston Post Road

217 State Milford LLC
c/o Mattone, et al.
134-01 20th Avenue
College Point, NY 11356

60 Wilbar Avenue

Henry S. & Julie Williams
60 Wilbar Avenue
Milford, CT 06460

0 Banner Drive

State of Connecticut
Attn: Accounts Payable
P.O. Box 317546
Newington, CT 06131

1360 East Town Road

Rehold Milford LLC
c/o AFS Lease Accounting
P.O. Box 6500
Carlisle, PA 17013-6500

330 Old Gate Lane

Toys R US Property Company II LLC
Attn: Tax Department
1 Geoffrey Way
Wayne, NJ 06470

0 Old Gate Lane

Mblu: 79/811/12/A/
Connecticut Post Limited Partnership
c/o Marvin F. Poer & Company
3520 Piedmont Road N.E., Suite 410
Atlanta, GA 30305

0 Old Gate Lane

Mblu: 79/811/12/B/
Connecticut Post Limited Partnership
c/o Marvin F. Poer & Company
3520 Piedmont Road N.E., Suite 410
Atlanta, GA 30305

0 Old Gate Lane

City of Milford
70 West River Street
Milford, CT 06460

0 Leighton Road

Schick Manufacturing Inc.
1350 Timberlake Manor Parkway,
Suite 300
Chesterfield, MO 63017

42 Home Acres Avenue

Gary P. & Lynne J. Collucci
42 Home Acres Avenue
Milford, CT 06460

38 Home Acres Avenue

Daniel Brassell
38 Home Acres Avenue
Milford, CT 06460

32 Home Acres Avenue

Atsaline L. & Sonny T. Sunthorn
32 Home Acres Avenue
Milford, CT 06460

28 Home Acres Avenue

John K. & Vincenza S. Richards
28 Home Acres Avenue
Milford, CT 06460

1083 Boston Post Road

MIL LLC
124-19 Metropolitan Avenue
Kew Gardens, NY 11416

Property Owner

1201 Boston Post Road

Connecticut Post Limited Partnership
c/o Marvin F. Poer & Company
3520 Piedmont Road N.E., Suite 410
Atlanta, GA 30305

Respectfully submitted by,



Jesse A. Langer

March 12, 2019

VIA CERTIFIED MAIL
AND REGULAR MAIL

Alliance Energy LLC
15 Northeast Industrial Road
Branford, CT 06405

RE: Proposed modification of existing rooftop telecommunications facility at 1201 Boston Post Road, Milford, Connecticut

To Whom It May Concern:

I write on behalf of T-Mobile Northeast, LLC ("T-Mobile"). T-Mobile intends to file with the Connecticut Siting Council ("Council") a petition for declaratory ruling ("Petition") that a Certificate of Environmental Compatibility and Public Need is not required. The Petition addresses a proposed modification of an existing rooftop telecommunications facility ("Rooftop Facility") presently located on the roof of the Connecticut Post Mall ("Mall") located at 1201 Boston Post Road, Milford, Connecticut ("Property").

As a wireless carrier licensed by the Federal Communications Commission, T-Mobile seeks out wireless sites that will meet its coverage and capacity objectives so that T-Mobile may provide reliable coverage throughout its network. T-Mobile has identified a need to modify the existing Rooftop Facility to address such coverage and capacity objectives in the area proximate to the Property. The proposed modification to the Rooftop Facility would include a total of twelve (12) panel antennas and four (4) remote radio units split over four (4) sectors on the roof of the Mall.

This letter serves as notice to you as an abutting property owner pursuant to § 16-50j-40 of the Regulations of Connecticut State Agencies. T-Mobile will file the Petition on or about March 12, 2019, and will request that the Council place the Petition on some future agenda.

You may review the Petition at the office of the Council, which is located at 10 Franklin Square, New Britain, Connecticut, 06051, or at the City Hall for the City of Milford. If you have any questions or concerns regarding this matter, please contact the undersigned at (203) 786-8317, or the Council at (860) 827-2935.

Very truly yours,



Jesse A. Langer

ATTACHMENT E

SERVICE LIST of MUNICIPAL OFFICIALS and GOVERNMENT AGENCIES

CERTIFICATION OF SERVICE

I hereby certify that on the 12th day of March, 2019, T-Mobile Northeast, LLC, provided notice of its Petition For A Declaratory Ruling That A Certificate of Environmental Compatibility And Public Need Is Not Required for the modification of an existing rooftop telecommunications facility presently located at 1201 Boston Post Road, Milford, Connecticut, to the following:

City of Milford

City of Milford
Benjamin G. Blake, Mayor
City Hall
110 River Street
Milford, CT 06460

City of Milford
Planning and Zoning Board
David B. Sulkis, Executive Secretary
70 West River Street
Milford, CT 06460

City of Milford
Joanne M. Rohrig, City Clerk
70 West River Street
Milford, CT 06460

City of Milford
Zoning Board of Appeals
Stephen H. Harris, Executive Secretary
70 West River Street
Milford, CT 06460

City of Milford
Inland Wetland Agency
MaryRose Palumbo, Officer
70 West River Street
Milford, CT 06460

City of Milford
Conservation Commission
70 West River Street
Milford, CT 06460

State and Regional

The Honorable William Tong
Attorney General, State of Connecticut
Office of the Attorney General
55 Elm Street
Hartford, CT 06106

Connecticut Department of Emergency
Services and Public Protection
Division of Emergency Management
and Homeland Security
c/o James C. Rovella, Commissioner
1111 Country Club Road
Middletown, CT 06457

Connecticut Department of Public Health
c/o Raul Pino, MD, MPH, Commissioner
410 Capital Avenue
Hartford, CT 06106

Connecticut Public Utilities Regulatory
Authority
c/o John W. Betkoski III, Vice Chairman
Ten Franklin Square
New Britain, CT 06051

Connecticut Council on Environmental Quality
c/o Susan D. Merrow, Chair
79 Elm Street
Hartford, CT 06106

Connecticut Department of Economic and Community Development
c/o Catherine H. Smith, Commissioner
450 Columbus Boulevard, Suite 5
Hartford, CT 06103

Connecticut Department of Energy & Environmental Protection
c/o Katie Dykes, Commissioner
79 Elm Street
Hartford, CT 06106

Connecticut Department of Agriculture
c/o Steven K. Reviczky, Commissioner
450 Columbus Boulevard, Suite 701
Hartford, CT 06103

Connecticut Office of Policy and Management
c/o Melissa McCaw, Secretary
450 Capitol Avenue
Hartford, CT 06106

Connecticut Department of Transportation
c/o Joseph Giulietti, Commissioner
2800 Berlin Turnpike
Newington, CT 06131

Connecticut Department of Economic and Community Development
Office of Tourism
c/o Randy Fiveash, Director
450 Columbus Boulevard, Suite 5
Hartford, CT 06103

South Central Regional Council of Governments
c/o James Cosgrove, Chairman
127 Washington Avenue, 4th Fl. West
North Haven, CT 06473

Connecticut Department of Economic and Community Development
State Historic Preservation Office
c/o Elizabeth Shapiro, Interim Director of Culture
450 Columbus Boulevard, Suite 5
Hartford, CT 06103

Kathleen Kennedy
Connecticut State Representative; 119th District
Legislative Office Building, Room 4200
300 Capitol Avenue
Hartford, CT 06106

James Maroney
Connecticut State Senate; 14th District
Legislative Office Building, Room 3300
Hartford, CT 06106

Federal

U.S. Department of Transportation
Federal Aviation Administration
c/o Dan Elwell, Acting Administrator
800 Independence Avenue, SW
Washington, DC 20591

U.S. Representative Rosa DeLauro
Connecticut 3rd District
59 Elm Street
New Haven, CT 06510

U.S. Senator Christopher Murphy
Colt Gateway, Suite 401
120 Huyslope Avenue
Hartford, CT 06106

U.S. Senator Richard Blumenthal
90 State House Square, 10th Floor
Hartford, CT 06103

Federal Communications Commission
c/o Ajit Pai, Chairman
445 12th Street SW
Washington, DC 20554

Respectfully submitted by,

A handwritten signature in blue ink, appearing to read "Jesse A. Langer".

Jesse A. Langer

March 12, 2019

VIA CERTIFIED MAIL

City of Milford
Benjamin G. Blake, Mayor
City Hall
110 River Street
Milford, CT 06460

RE: Proposed modification of existing rooftop telecommunications facility at 1201 Boston Post Road, Milford, Connecticut

The Honorable Benjamin G. Blake:

I write on behalf of T-Mobile Northeast, LLC (“T-Mobile”). T-Mobile intends to file with the Connecticut Siting Council (“Council”) a petition for declaratory ruling (“Petition”) that a Certificate of Environmental Compatibility and Public Need is not required. The Petition addresses a proposed modification of an existing rooftop telecommunications facility (“Rooftop Facility”) presently located on the roof of the Connecticut Post Mall (“Mall”) located at 1201 Boston Post Road, Milford, Connecticut (“Property”).

As a wireless carrier licensed by the Federal Communications Commission, T-Mobile seeks out wireless sites that will meet its coverage and capacity objectives so that T-Mobile may provide reliable coverage throughout its network. T-Mobile has identified a need to modify the existing Rooftop Facility to address such coverage and capacity objectives in the area proximate to the Property. The proposed modification to the Rooftop Facility would include a total of twelve (12) panel antennas and four (4) remote radio units split over four (4) sectors on the roof of the Mall.

This letter serves as notice to you as an “appropriate municipal official and government agenc[y]” as that term is defined under § 16-50j-40 of the Regulations of Connecticut State Agencies. T-Mobile will file the Petition on or about March 15, 2019, and will request that the Council place the Petition on some future agenda.

Attached please find a copy of the Petition. If you have any questions or concerns regarding this matter, please contact the undersigned at (203) 786-8317, or the Council at (860) 827-2935.

Very truly yours,



Jesse A. Langer

Enclosures

ATTACHMENT F

VISUAL ASSESSMENT and PHOTO- SIMULATIONS

Photographic Simulation Package

Milford/1-95/1 - CT11002A
1201 Boston Post Road (CT Post Mall)
Milford, CT 06460



Centek Project No. 18127.08

Prepared For
Transcend Wireless
T-mobile

Prepared By
Centek Engineering, Inc.
63 North Branford Road
Branford, CT 06405
T: 203.488.0580
F: 203.488.8587
www.centekeeng.com

Date 01.10.2019

CENTEK engineering
Centered on SolutionsSM

Transcend Wireless

T-Mobile

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CENTEK Engineering, Inc.
Photographic Simulation Package
T-Mobile – New Site Development – CT11002A
Milford, CT
January 3, 2019

At the request of Transcend Wireless, acting on behalf of T-Mobile Northeast, LLC (“T-Mobile”), CENTEK Engineering, Inc. (“CENTEK”) completed this visual assessment and prepared computer-generated photographic simulations depicting the proposed installation of a wireless telecommunications facility (“Facility”) located at 1201 Boston Post Road, Milford, Connecticut, which will be referred throughout this summary as “the host property.”

The host property is an existing commercial shopping mall commonly known as the Connecticut Post Mall (“Mall”), which is located in Milford, off exit 39B of I-95 south. The Mall is situated on an approximate seventy-five (75) acre parcel, and in between Route 1 and I-95. The proposed Facility would be located on the rooftop of the Mall. See *Figure 1 – Photolog Key Legend*. The host property is currently developed with multiple commercial structures. The immediately surrounding land use is commercial, with residential uses extended beyond the commercial corridor, with Route 1 serving as a primary artery for commercial uses.

The proposed Facility would include twelve (12) panel antennas and four (4) remote radio units split over Four (4) sectors on the roof above Dave & Buster's located on the host property, which is on the side of the Mall facing southeast in the approximate center of the host property. All of the rooftop mounted antennas and associated appurtenances would be installed at roof level of the host property, with the top of the antennas at approximately fifty-two (52) feet Above Grade Level (“AGL”). The remote radio units would be just above the roof parapet elevation of approximately twenty-five (25) feet AGL. Utilities would be routed through the existing building via conduits within existing utility chases. The proposed Facility component locations are illustrated within construction drawings as prepared by CENTEK dated December 11th, 2018.

On December 10th, 2018, CENTEK personnel conducted a field visit to obtain photo-documentation of the existing conditions. At each photo location, the geographic coordinates were logged using global positioning system (“GPS”) technology. Photographs were taken with a Cannon Rebel EOS T5 digital camera body and Canon 75 to 300 millimeter (“mm”) zoom lens using a focal length of 75 mm for consistency.

Computer models were developed for the building and proposed telecommunications facility components within AutoCad and Revit. Photographic simulations were then created to depict to scale representations of the proposed installation. Using field data, site plan information and image editing software, the proposed Facility was scaled to the correct location and height, relative to the existing structure and surrounding area. A photo key map and copies of the existing conditions and photo-simulations are attached.

Six (6) photo-locations were simulated and represent potential views of the proposed installation(s) from various vantage points surrounding the Mall. The table below provides a description of each location, view orientation, and approximate distance between where the photo was taken and the proposed Facility.

CENTEK Engineering, Inc.
Photographic Simulation Package
T-Mobile – New Site Development – CT11002A
Milford, CT
January 3, 2019

View	Location	Orientation	Distance to Site A.Platform/B.Delta
1	Host Property	South	A.±800/B.900-ft
2	Host Property	West	A.±200/B.950-ft
3	Host Property	Southeast	A.±1150/B.750-ft
4	Host Property	North	A.±700/B.900-ft
5	Host Property	East	A.±1500/B.1050-ft
6	Host Property	Northeast	A.±510/B.1087-ft

(1) Refer to photo log key plan for additional information.

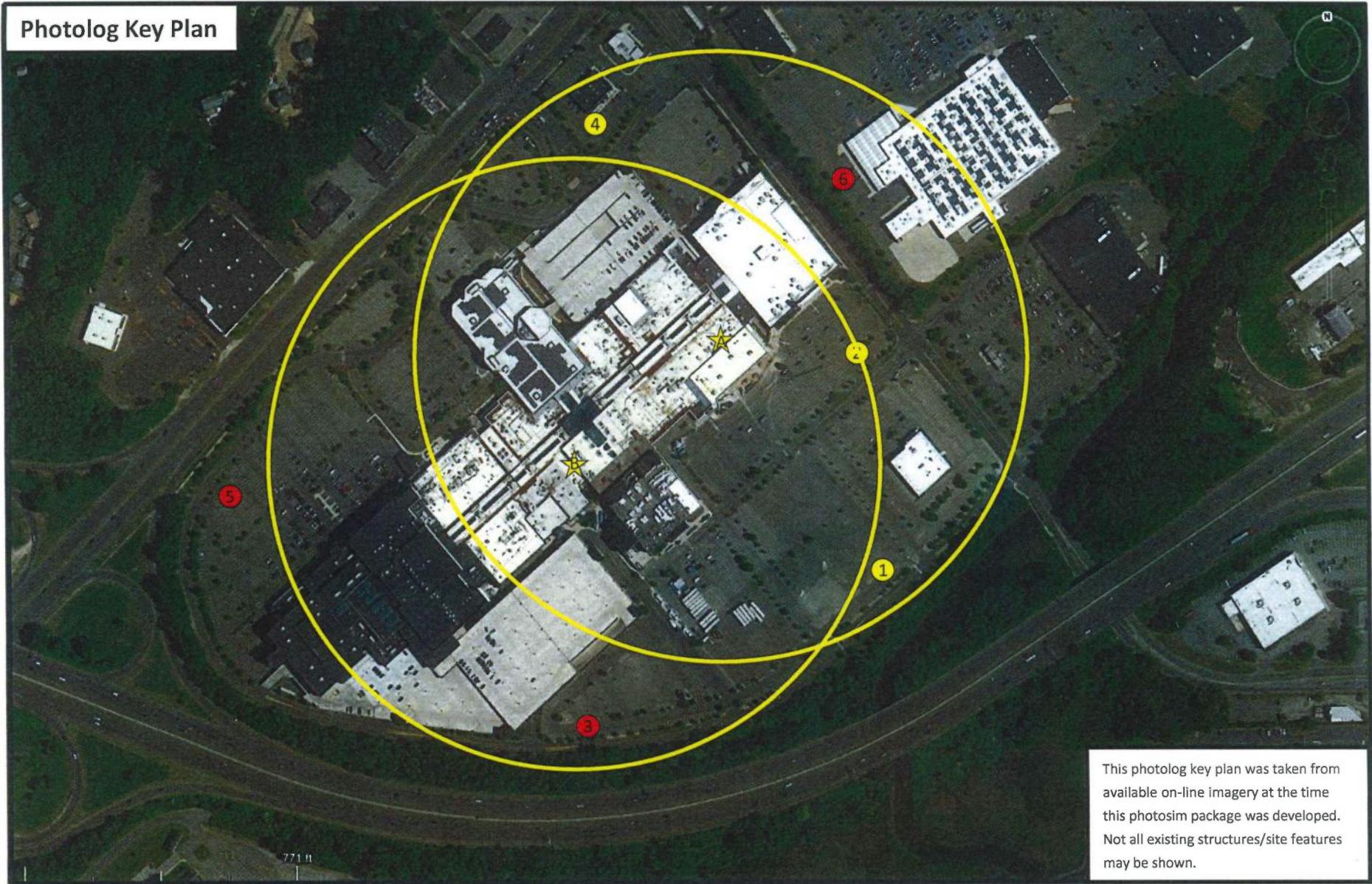
In conclusion, the affected views of the proposed Facility would be limited to locations on the host property within 1/8 of a mile of the proposed Facility as well as the immediate commercial properties to the north of the Mall.

Based on the results of this assessment, it is our opinion that the proposed installation of the Facility would not have an adverse visual impact on existing views of the Mall or the character of the surrounding community.

Assumptions

This photographic simulation package provides a representation of the Facility under similar conditions as those encountered during our field visit. This package is static in nature and does not necessarily fairly characterize the prevailing views from all locations within a given area. View of the Facility can change throughout the seasons and the time of day, and are dependent on weather and other atmospheric conditions (e.g., haze, fog, clouds, etc.); the location, angle and intensity of the sun; and the specific view location.

Photolog Key Plan



T-Mobile Site -
Milford/I-95/1-CT11002A
Centek Project # 18127.08
1201 Boston Post Road
Milford, CT 06460

CENTEK engineering
Centered on Solutions™

T-Mobile

Transcend Wireless

Photolog Legend

- ★ Proposed Antennas Locations
- Photo Location - (Year round visibility)
- Photo Location - (Not Visibility)
- 1000' Radius

Existing



Centek Project # 18127.08

Existing Photo # : 1
GPS Coordinates (Photo): 41.23470 -73.03253
Distance to Antennas: 800/900 Feet
Orientation: Looking South
Visibility: Year Round

CENTEK engineering

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Simulation



Centek Project # 18127.08

Simulation Photo # : 1
GPS Coordinates (Photo): 41.23470 -73.03253
Distance to Antennas: 800/900 Feet
Orientation: Looking South
Visibility: Year Round

Existing



Centek Project # 18127.08

Existing Photo # : 2
GPS Coordinates (Photo): 41.23646 -73.03274
Distance to Antennas: 200/950 Feet
Orientation: Looking West
Visibility: Year Round

CENTEK engineering

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Simulation



Centek Project # 18127.08

Simulation Photo # : 2
GPS Coordinates (photo): 41.23646 -73.03274
Distance to Antennas: 200/950 Feet
Orientation: Looking West
Visibility: Year Round

Existing



Centek Project # 18127.08

Existing Photo # : 3
GPS Coordinates (Photo): 41.23372 -73.035105
Distance to antennas: 1150/750 Feet
Orientation: Looking Southeast
Visibility: Not Visible

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Simulation



Centek Project # 18127.08

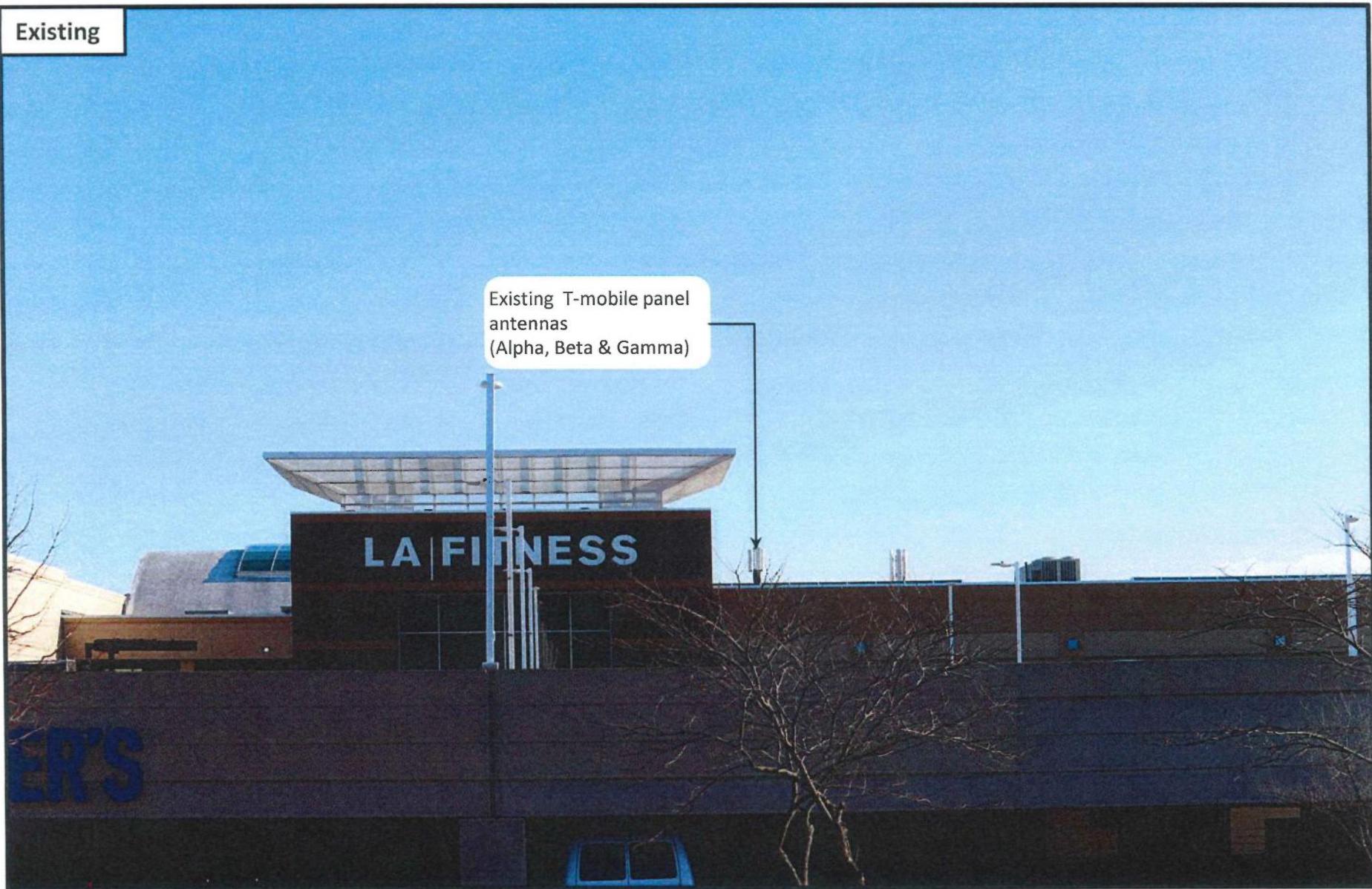
Simulation Photo # : 3
GPS Coordinates (Photo): 41.23372 -73.035105
Distance to Antennas: 1150/750 Feet
Orientation: Looking Southeast
Visibility: Year Round

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Existing



Centek Project # 18127.08

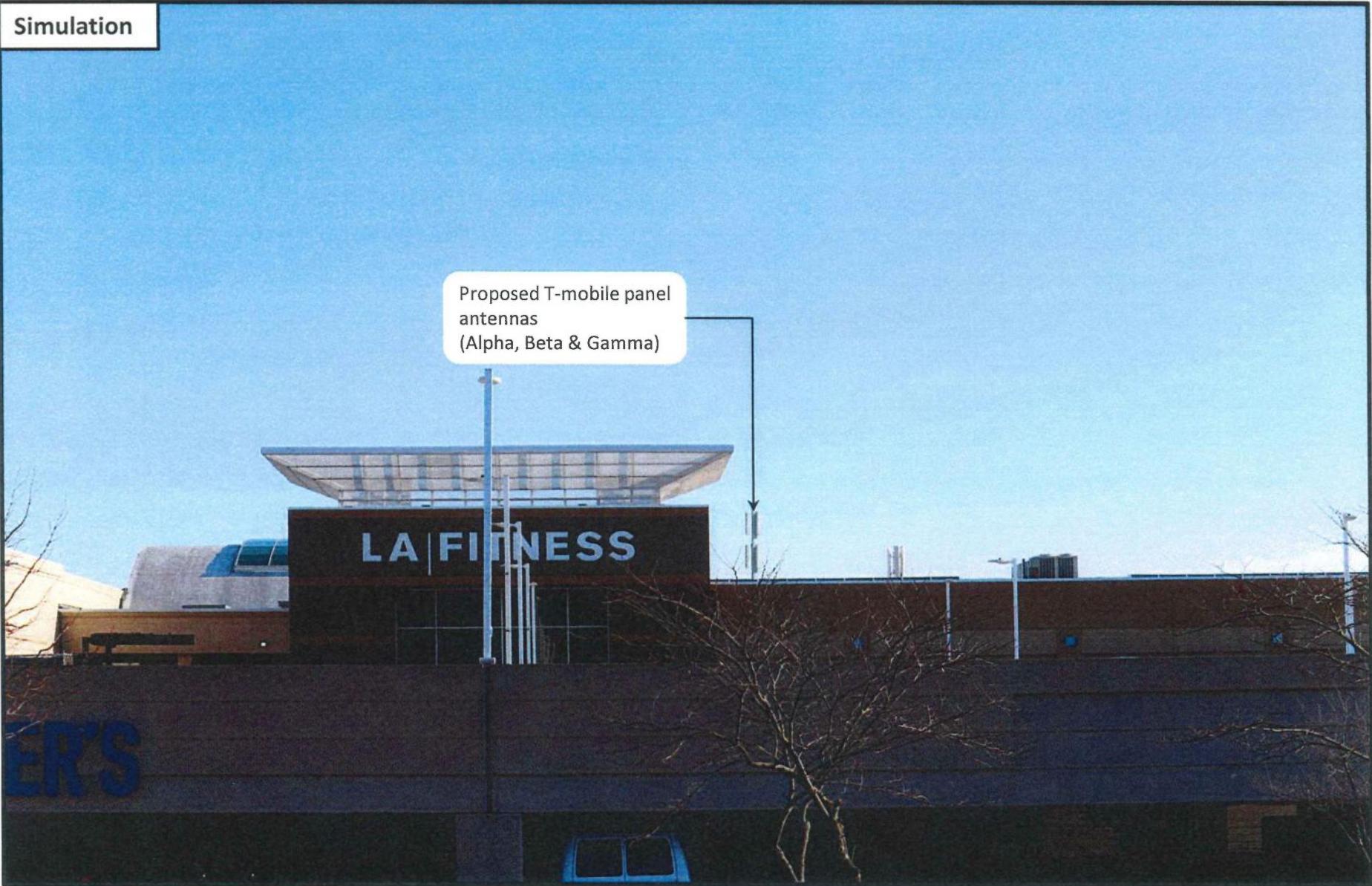
Existing Photo # : 4
GPS Coordinates (Photo): 41.23809 -73.03544
Distance to Antennas: 700/900 Feet
Orientation: Looking North
Visibility: Year Round

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Simulation



Centek Project # 18127.08

Simulation Photo # : 4
GPS Coordinates (Library): 41.23809 -73.03544
Distance to Library: 700/900 Feet
Orientation: Looking North
Visibility: Year Round

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Existing



Centek Project # 18127.08

Existing Photo # : 5
GPS Coordinates (Library): 41.23544 -73.03920
Distance to Library: 1500/1050 Feet
Orientation: Looking East
Visibility: Not Visible

CENTEK engineering

Centered on Solutions™

63-2 North Branford Road, Branford, CT 06405 203.488.0580 Fax 203.488.8587 www.CentekEng.com

Simulation



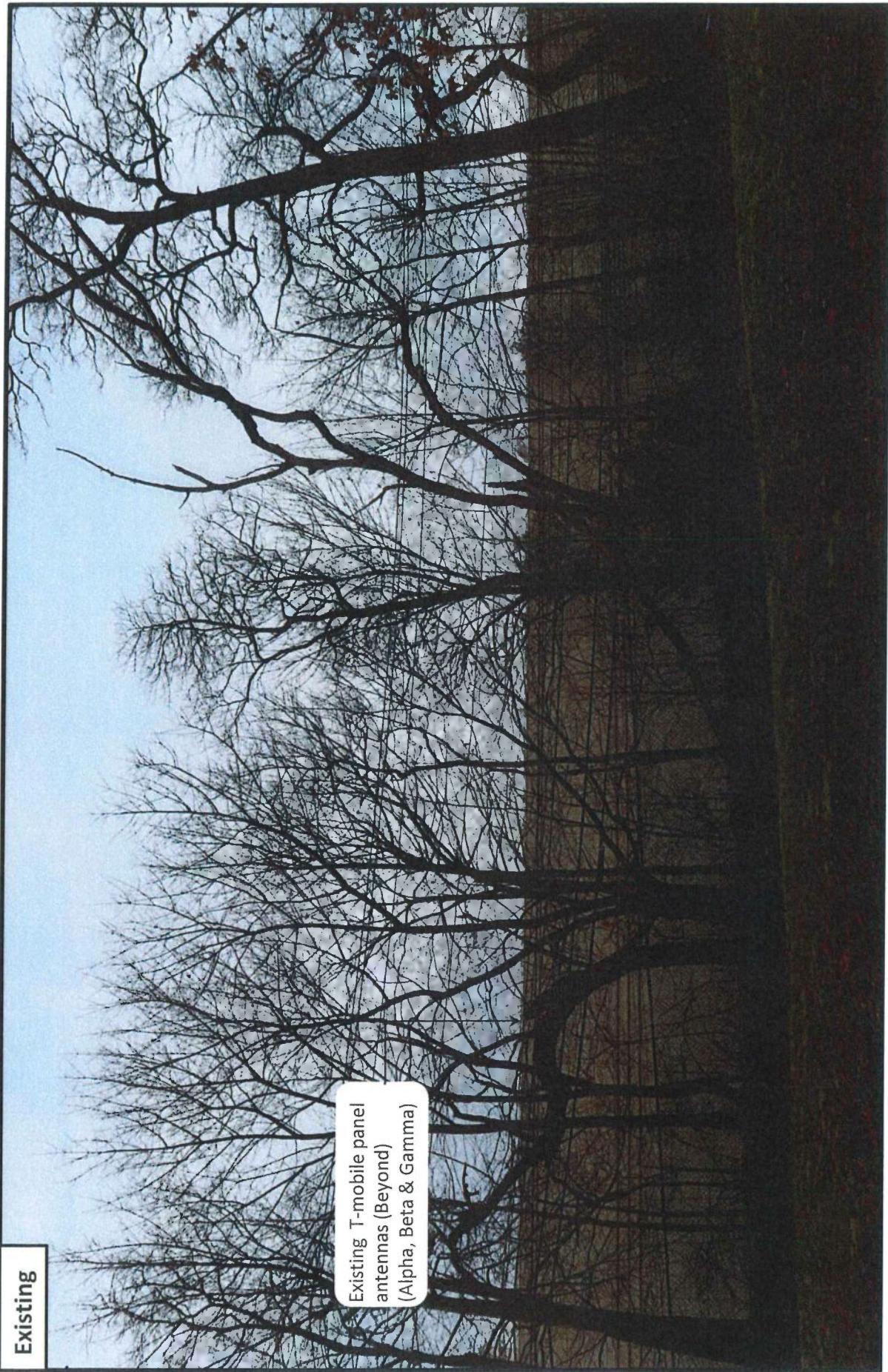
Centek Project # 18127.08

Simulation Photo # : 5
GPS Coordinates (Library): 41.23544 -73.03920
Distance to Library: 1500/1050 Feet
Orientation: Looking East
Visibility: Not Visible

CENTEK engineering

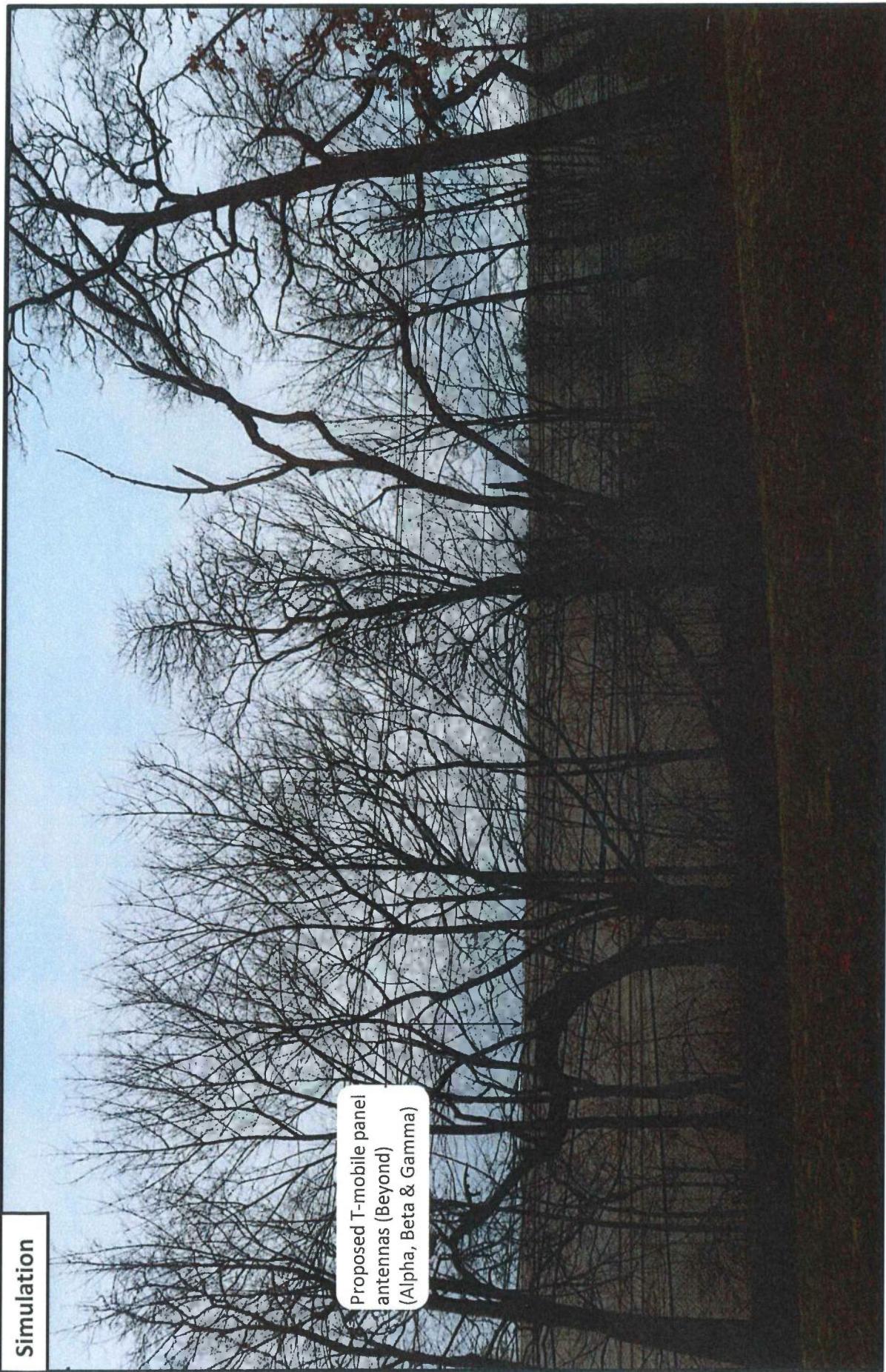
Centered on Solutions™

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Centek Project # 18127.08

Existing Photo # : 6
GPS Coordinates (Library): 41.23766 -73.03285
Distance to Library: 510/1087 Feet
Orientation: Looking Northeast
Visibility: Not Visible



Centek Project # 18127.08

Simulation Photo # : 6
GPS Coordinates (Library): 41.23766 -73.03285
Distance to Library: 510/1087 Feet
Orientation: Looking Northeast
Visibility: Not Visible

ATTACHMENT G

EME

Radio Frequency – Electromagnetic Energy (RF-EME) Compliance Report (L700 CMP4)

T-Mobile Proposed Facility

Site ID: CT11002A

Milford / I-95/I

1201 Boston Post Road, Milford, Connecticut 06460

December 24, 2018

EBI Project Number:
6218007259



Status:	The proposed site will be compliant with the installation of the mitigation measures described in Attachment I.
Remarks: See signage plan for mitigation measures to be installed upon upgrade/installation of the site to comply with FCC and T-Mobile standards.	

Prepared by:

 **EBI Consulting**
environmental | engineering | due diligence

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1.0 Executive Summary

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by T-Mobile to conduct radio frequency electromagnetic (RF-EME) modeling for T-Mobile Site CT11002A located at 1201 Boston Post Road in Milford, Connecticut to determine RF-EME exposure levels from proposed T-Mobile wireless communications equipment at this site. As described in detail in Appendix B of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields. This report contains a detailed summary of the RF EME analysis for the site.

This document addresses the compliance of T-Mobile's proposed transmitting facilities independently at the site.

The Maximum Emissions Value is 34.2000% of the FCC's general public limit (6.8400% of the FCC's occupational limit) at the main roof level. The proposed site is in compliance with Federal regulations regarding (radio frequency) RF Emissions.

At the nearest walking/working surfaces to the T-Mobile antennas on the rooftop, the maximum power density generated by the T-Mobile antennas is approximately 34.20 percent of the FCC's general public limit (6.84 percent of the FCC's occupational limit).

Based on worst-case predictive modeling, there are no modeled exposures on any accessible main roof level-walking/working surface related to T-Mobile's equipment in the area that exceed the FCC's occupational and/or general public exposure limits at this site.

Signage is recommended at the site as presented in Attachment I. Posting of the signage brings the site into compliance with FCC rules and regulations.

2.0 MPE Calculations

Calculations were completed for the proposed T-Mobile Wireless antenna rooftop facility located at 1201 Boston Post Road in Milford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed a distance above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of in areas in the immediate vicinity of the antennas.

In accordance with T-Mobile's RF Exposure policy, EBI performed theoretical modeling using RoofView® software to estimate the worst-case power density at the site rooftop-level resulting from operation of the antennas.

For this report, EBI utilized antenna and power data provided by T-Mobile and compared the resultant worst-case MPE levels to the FCC's occupational/controlled exposure limits outlined in OET Bulletin 65. EBI has performed theoretical worst case modeling using RoofView® to estimate the maximum potential power density from each proposed antenna based on worst-case assumptions for the number of antennas and power. All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmission paths per carrier prescribed configuration.

The assumptions used in the modeling are based upon information provided by T-Mobile in the supplied drawings and known configuration values information gathered from other sources to approximate each additional carrier's contribution.

There are no collocated carriers on the rooftop.

The data for all T-Mobile antennas used in this analysis is shown in Section 3.0. Actual antenna gains for each antenna were used per manufacturer's specifications. All calculations were done with respect to uncontrolled and general public threshold limits.

3.0 T-Mobile Antenna Inventory

Sector	Antenna Number	Antenna Make	Antenna Model	Height (ft) Above Nearest Walking Surface	Azimuth (°)	Technology	Frequency Band	Power Per Channel (W)	Number of Channels	ERP (W)
A	1	Ericsson	AIR21 B4A/B12P 6'	20.7	75	UMTS	AWS - 2100 MHz	40	1	1538
A	1	Ericsson	AIR21 B4A/B12P 6'	20.7	75	LTE	700 MHz	20	2	865
A	2	Ericsson	AIR32 B66A/B2A	28.3	75	LTE	PCS - 1900 MHz	40	2	2742
A	2	Ericsson	AIR32 B66A/B2A	28.3	75	GSM	PCS - 1900 MHz	15	1	514
A	3	Ericsson	AIR3246 B66	21.2	75	LTE	AWS - 2100 MHz	40	4	6153
B	1	Ericsson	AIR21 B4A/B12P 6'	20.7	190	UMTS	AWS - 2100 MHz	40	1	1538
B	1	Ericsson	AIR21 B4A/B12P 6'	20.7	190	LTE	700 MHz	20	2	865
B	2	Ericsson	AIR32 B66A/B2A	28.3	190	LTE	PCS - 1900 MHz	40	2	2742
B	2	Ericsson	AIR32 B66A/B2A	28.3	190	GSM	PCS - 1900 MHz	15	1	514
B	3	Ericsson	AIR3246 B66	21.2	190	LTE	AWS - 2100 MHz	40	4	6153
C	1	Ericsson	AIR21 B4A/B12P 6'	20.7	320	UMTS	AWS - 2100 MHz	40	1	1538
C	1	Ericsson	AIR21 B4A/B12P 6'	20.7	320	LTE	700 MHz	20	2	865
C	2	Ericsson	AIR32 B66A/B2A	28.3	320	LTE	PCS - 1900 MHz	40	2	2742
C	2	Ericsson	AIR32 B66A/B2A	28.3	320	GSM	PCS - 1900 MHz	15	1	514
C	3	Ericsson	AIR3246 B66	28.2	320	LTE	AWS - 2100 MHz	40	4	6153
D	1	Ericsson	AIR21 B4A/B12P 6'	18.7	250	UMTS	AWS - 2100 MHz	40	1	1538
D	1	Ericsson	AIR21 B4A/B12P 6'	18.7	250	LTE	700 MHz	20	2	865
D	2	Ericsson	AIR32 B66A/B2A	19.3	250	LTE	PCS - 1900 MHz	40	2	2742
D	2	Ericsson	AIR32 B66A/B2A	19.3	250	GSM	PCS - 1900 MHz	15	1	514
D	3	Ericsson	AIR3246 B66	19.2	250	LTE	AWS - 2100 MHz	40	4	6153

• This table contains an inventory of only T-Mobile Antennas and Power Values. Note that EBI uses an assumed set of antenna specifications and powers for unknown and other carrier antennas for modeling purposes as detailed in Section 2.0.

4.0 Summary and Conclusions

All calculations performed for this analysis yielded results that were within the allowable limits for exposure to RF Emissions. Based on predictive modeling, there are no modeled exposures on any accessible main roof level-walking/working surface related to T-Mobile's equipment in the area that exceed the FCC's occupational and/or general public exposure limits at this site. Installation of mitigation measures will bring the proposed site into compliance.

There are no collocated carriers on the rooftop.

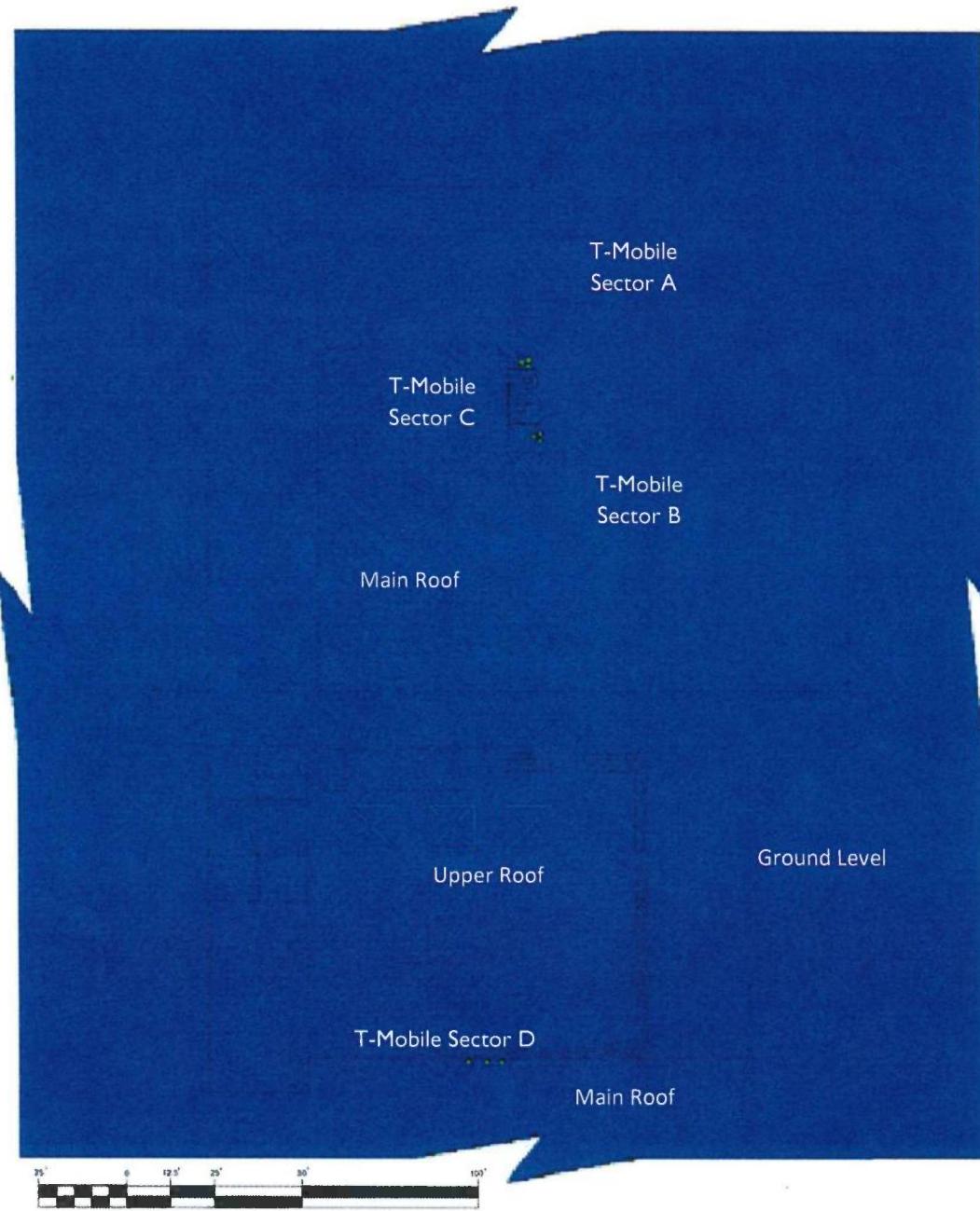
The anticipated maximum contribution from each sector of the proposed T-Mobile facility is 34.2% of the allowable FCC established general public limit (6.84% of the FCC occupational limit). This was determined through calculations along a radial from each sector taking full power values into account as well as actual vertical plane antenna gain values per the manufacturers supplied specifications for gain. Based on worst-case predictive modeling, there are no areas at ground level related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site. At ground level, the maximum power density generated by the antennas is approximately 10.10% of the FCC's general public limit (2.02% of the FCC's occupational limit).

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards. For this facility, the composite values calculated were within the allowable 100% threshold standard per the federal government.

EBI's modeling indicates that there are no areas on the walking/working surfaces at the rooftop level in front of the T-Mobile antennas that may exceed the FCC standards for general population and/or occupational exposure. To reduce the risk of exposure and/or injury, EBI recommends that access to the rooftop or areas associated with the active antenna installation be restricted and secured where possible. In order to alert any workers potentially accessing the site, a blue Notice sign and a yellow Guidelines sign are recommended for installation at the access to the rooftop as depicted on the Signage Plan – Attachment I.

Attachment I: MPE Analysis and Recommended Signage

Post at Roof Access Points



T-Mobile Antennas

% FCC Public Exposure Limit	
	500 < Exposure Level
	100 < Exposure Level \leq 500
	Exposure Level \leq 100

Sign	Sign Count	Description	Posting Instructions
	1	<p>Blue Notice Sign Used to notify individuals they are entering an area where the power density emitted from transmitting antennas may exceed the FCC's MPE limit for the general public or occupational exposures.</p>	Securely post at all access points to the site in a manner conspicuous to all individuals entering thereon.
	1	<p>Guidelines Informational sign used to notify workers that there are active antennas installed and provide guidelines for working in RF environments.</p>	Securely post at all access points to the site in a manner conspicuous to all individuals entering thereon.
	N/A	<p>Yellow Caution Sign Used to notify individuals that they are entering a hot spot where either the general public or occupational FCC's MPE limit is or could be exceeded.</p>	Signage not required.
	N/A	<p>Red Warning Sign Used to notify individuals that they are entering a hot zone where either the general public or occupational FCC's MPE limit has been exceeded.</p>	Signage not required.
<p>Notes:</p> <p>The proposed site will be compliant with the installation of the mitigation measures.</p> <p>The actual number of access points may vary based on documentation provided and/or if a survey was conducted. Recommended signage locations are based on T-Mobile's guidance for the worst-case scenario in each sector. The actual signage installation is dependent on accessibility of the facility and antennas. Locations deemed inaccessible due to OSHA safety standards (proximity to unprotected roof edge or slope, etc.) will be compliant upon installation of recommended signage at the closest accessible point.</p>			

Attachment 2: RoofView® Export File

StartMapDefinition																List Of Areas			
Roof Max	Roof Max	Map Max	Map Max	Y Offset	X Offset	Number of envelope										\$K\$11:\$HL\$K\$11:\$HL\$220			
210	210	210	210	0	0	1 \$K\$11:\$HL\$K\$11:\$HL\$220													
StartSettingsData																			
Standard	Method	Uptime	Scale Fact	Low Thr	Low Color	Mid Thr	Mid Color	Hi Thr	Hi Color	Over Color	Ap Ht	Mult	Ap Ht Method						
4	2	3	1	100	1	500	2	5000	3	3	1.5	1							
StartAntennaData It is advisable to provide an ID (ant 1) for all antennas																			
ID	Name	(MHz)	Trans Power	Trans Count	Coax Len	Coax Type	Other Loss	Input Power	Calc Power	Mfg	Model	(ft)	(ft)	(ft)	(ft)	dθd	BWdth	Uptime	ON
TMO A1	UMTS	2100	40	1	0	0	0		40	Ericsson	AIR21 B4A/B12P 6'	114	207	20.66667	6	15.85	65;31	ON*	
TMO A1	LTE	700	20	2	0	0	0		40	Ericsson	AIR21 B4A/B12P 6'	114	207	20.66667	6	13.35	68;31	ON*	
TMO A2	LTE	1900	40	2	0	0	0		80	Ericsson	AIR32 B66A/B2A	117	186	28.31667	4.7	15.35	63;31	ON*	
TMO A2	GSM	1900	15	1	0	0	0		15	Ericsson	AIR32 B66A/B2A	117	186	28.31667	4.7	15.35	63;31	ON*	
TMO A3	LTE	2100	40	4	0	0	0		160	Ericsson	AIR3246 B66	117	186	21.24667	4.84	15.85	65;31	ON*	
TMO B1	UMTS	2100	40	1	0	0	0		40	Ericsson	AIR21 B4A/B12P 6'	114	205	20.66667	6	15.85	65;146	ON*	
TMO B1	LTE	700	20	2	0	0	0		40	Ericsson	AIR21 B4A/B12P 6'	114	205	20.66667	6	13.35	68;146	ON*	
TMO B2	LTE	1900	40	2	0	0	0		80	Ericsson	AIR32 B66A/B2A	117	184	28.31667	4.7	15.35	63;146	ON*	
TMO B2	GSM	1900	15	1	0	0	0		15	Ericsson	AIR32 B66A/B2A	117	184	28.31667	4.7	15.35	63;146	ON*	
TMO B3	LTE	2100	40	4	0	0	0		160	Ericsson	AIR3246 B66	117	184	21.24667	4.84	15.85	65;146	ON*	
TMO C1	UMTS	2100	40	1	0	0	0		40	Ericsson	AIR21 B4A/B12P 6'	111	206	20.66667	6	15.85	65;276	ON*	
TMO C1	LTE	700	20	2	0	0	0		40	Ericsson	AIR21 B4A/B12P 6'	111	206	20.66667	6	13.35	68;276	ON*	
TMO C2	LTE	1900	40	2	0	0	0		80	Ericsson	AIR32 B66A/B2A	115	185	28.31667	4.7	15.35	63;276	ON*	
TMO C2	GSM	1900	15	1	0	0	0		15	Ericsson	AIR32 B66A/B2A	115	185	28.31667	4.7	15.35	63;276	ON*	
TMO C3	LTE	2100	40	4	0	0	0		160	Ericsson	AIR3246 B66	115	185	21.24667	4.84	15.85	65;276	ON*	
TMO D1	UMTS	2100	40	1	0	0	0		40	Ericsson	AIR21 B4A/B12P 6'	105	6	18.66667	6	15.85	65;206	ON*	
TMO D1	LTE	700	20	2	0	0	0		40	Ericsson	AIR21 B4A/B12P 6'	105	6	18.66667	6	13.35	68;206	ON*	
TMO D2	LTE	1900	40	2	0	0	0		80	Ericsson	AIR32 B66A/B2A	96	6	19.31667	4.7	15.35	63;206	ON*	
TMO D2	GSM	1900	15	1	0	0	0		15	Ericsson	AIR32 B66A/B2A	96	6	19.31667	4.7	15.35	63;206	ON*	
TMO D3	LTE	2100	40	4	0	0	0		160	Ericsson	AIR3246 B66	101	6	19.24667	4.84	15.85	65;206	ON*	
StartSymbolData																			
Sym	Map Mark	Roof X	Roof Y	Map Label Description (notes for this table only)															
Sym		5	35	AC Unit Sample symbols															
Sym		14	5	Roof Access															
Sym		45	5	AC Unit															
Sym		45	20	Ladder															

It should be noted that Roofview® considers the modeled area to be relative to true north. The provided drawings presented the site layout at an orientation other than true north. As such, the azimuths used in the Roofview® modeling were adjusted to account for this modified orientation.

Appendix A: Certifications

Preparer Certification

I, Thanh Estevam, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation.
- I have been trained on RF-EME modeling using RoofView® modeling software.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.

A handwritten signature in black ink, appearing to read "Thanh Estevam".

Appendix B: Federal Communications Commission (FCC) Requirements

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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 700 and 800 MHz Bands is 467 $\mu\text{W}/\text{cm}^2$ and 567 $\mu\text{W}/\text{cm}^2$ respectively, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu\text{W}/\text{cm}^2$. 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.

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

Additional details can be found in FCC OET 65.

ATTACHMENT H
FAA COMPLIANCE REPORT

February 28, 2019

Ms. Jenn Dupont
T-Mobile USA
c/o Transcend Wireless LLC
35 Griffin Road
Bloomfield, CT 06002

Subject: Federal Aviation Administration (FAA) Compliance Results
Propose T-Mobile USA Project
Site No. CT11002A / Milford / I-95 / I
1201 Boston Post Road
Milford, CT 06460
EBI Project No. 6119000677

Dear Ms. Dupont

Enclosed please find the results of the Federal Aviation Administration (FAA) Compliance studies for the above-referenced site. The studies were completed based on information provided by Transcend Wireless LLC on behalf of T-Mobile USA, and gathered from the Land Survey and Site Plans, attached as Appendix A.

EBI utilized both commercially available and publicly accessible software that runs algorithms in accordance with FAA glide-slope calculations, referenced in Federal Aviation Regulation (FAR) Part 77 and FCC Rulepart 47 CFR 17, to determine the need for filing with the FAA and if registration with the FCC are required. For this site, our analysis demonstrated that notice to the FAA and an Antenna Structure Registration with the FCC are not required. Thus, the site may proceed from an FAA Compliance perspective.

If the proposed project location or proposed height of the structure changes, please notify EBI Consulting, and we will be happy to conduct FAA Compliance studies based on the changes.

Land Survey and Site Plans – Appendix A

Latitude (NAD 83): 41° 14' 11.111" N
Longitude (NAD 83): 73° 02' 03.544" W
Site Ground Elevation (AMSL): 21.74 feet
Proposed Structure Height (AGL): 76.91 feet

Airspace© Studies – Appendix B

PASS. This site passed all Airspace studies, and notice to the FAA is not required.

FCC TowAir – Appendix C

PASS. This site does not require FCC registration based on the 6.10-meter (20-foot) rule.

Thank you for the opportunity to be of service to Transcend Wireless LLC on behalf of T-Mobile USA, and please don't hesitate to contact us with any questions or if we can assist with any of your future regulatory needs.

Respectfully Submitted,



Mr. Jermaine Deer
Author/FAA Specialist
TEL: 954-234-7429



Mr. Ian Swanson
Project Manager
TEL: (339) 933-0448

Appendix A: Land Survey and Site Plans
Appendix B: Airspace© Studies
Appendix C: FCC TowAir Results



Centered on Solutions™

FAA 2-C CERTIFICATION

Applicant: T-Mobile Northeast LLC
35 Griffin Rd S
Bloomfield, CT 06002

Site Name: CT11002A

Address: 1201 Boston Post Road
Milford, CT 06460

Horizontal Datum Source:

Ground Survey GPS Survey NAD 83 NAD 27

Vertical Datum Source:

Ground Survey GPS Survey NAVD 88 NGVD 29

Structure Type:

<input checked="" type="checkbox"/> Existing	<input type="checkbox"/> Monopole Tower	<input type="checkbox"/> Transmission Tower	<input type="checkbox"/> Utility Pole
<input type="checkbox"/> Proposed	<input type="checkbox"/> SST Lattice Tower	<input type="checkbox"/> Smokestack	<input checked="" type="checkbox"/> Roof Top
	<input type="checkbox"/> Guyed Lattice Tower	<input type="checkbox"/> Water Tank	<input type="checkbox"/> Other (describe)

Latitude: N 41° 14' 11.111" NAD83 N 41.2364196° NAD83

Longitude: W 73° 02' 03.544" NAD83 W 73.0343176° NAD83

Ground Elevation: 21.74 feet AMSL

Top of Existing Roof (Alpha, Beta, Gamma): 19.99 ± feet AGL 41.73 ± feet AMSL

Top of Existing Antenna (Delta): 39.27 ± feet AGL 61.01 ± feet AMSL

Top of Existing Roof (Delta): 39.61 ± feet AGL 61.35 ± feet AMSL

Top of Existing Antenna (Alpha, Beta, Gamma): 46.44 ± feet AGL 68.18 ± feet AMSL

Top of Proposed Antenna (Alpha, Beta, Gamma): 52.33 ± feet AGL 74.07 ± feet AMSL

Top of Existing Architectural Parapet: 76.91 ± feet AGL 98.65 ± feet AMSL

Certification: I certify that the Latitude and Longitude noted hereon are accurate to within ± 50 feet horizontally and that the site elevation is accurate to within ± 20 feet vertically. The top of proposed antenna height is 52.33 ± feet AGL (74.07 ± AMSL). The overall height is the top of architectural parapet at 76.91 ± feet AGL (98.65 ± AMSL). The horizontal datum (coordinates) are in terms of the North American Datum of 1983 (NAD 83) and are expressed in degrees minutes and seconds to the nearest thousandth of a second. The vertical datum (heights) is in terms of the National Geodetic Vertical Datum of 1988 and expressed to the nearest hundredth of a foot.

Company:

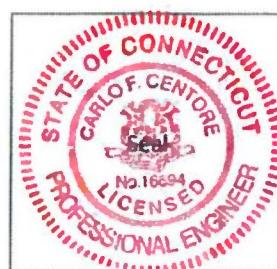
Centek Engineering, Inc.

Signature:

PE Name & License No.:

Carlo F. Centore, PE (Lic. No. CT16694)

Date Issued: 2/4/2019



TOWAIR Determination Results

*** NOTICE ***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results

Structure does not require registration. The structure meets the 6.10-meter (20-foot) Rule criteria.

Your Specifications

NAD83 Coordinates

Latitude	41-14-11.1 north
Longitude	073-02-03.5 west

Measurements (Meters)

Overall Structure Height (AGL)	23.4
Support Structure Height (AGL)	23.4
Site Elevation (AMSL)	6.6

Structure Type

B - Building

Tower Construction Notifications

Notify Tribes and Historic Preservation Officers of your plans to build a tower.

[CLOSE WINDOW](#)