



**TECHNICAL REPORT
TO THE
TOWN OF WINDSOR**

TARPON TOWERS II, LLC

**PROPOSED MONOPOLE
TELECOMMUNICATIONS
FACILITY**

**800 PROSPECT HILL ROAD
WINDSOR, CONNECTICUT**

*Tarpon Towers II, LLC
1001 3rd Avenue West, Suite 420
Bradenton, Florida 34205*

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Introduction

Tarpon Tower II, LLC, a limited liability company organized under the laws of the State of Delaware ("Tarpon"), hereby submits this Technical Report to the Town of Windsor ("Town") pursuant to General Statutes § 16-50l. Tarpon proposes to install a wireless telecommunications facility ("Facility") on an approximate 5.76 acre parcel commonly known as 800 Prospect Hill Road and owned by The Ferraina Company, LLC ("Property" or "Site"). The Facility would consist of a 135 foot monopole structure (with a lightning rod attached to the top), with an antenna array mounted to the monopole at a centerline of approximately 130 feet above grade level ("AGL"), and related equipment located nearby on a concrete equipment pad.

The antenna array would belong to T-Mobile Northeast LLC, a subsidiary of T-Mobile USA Inc. *d.b.a.* T-Mobile ("T-Mobile"). T-Mobile would provide the antennas and the equipment related to the operation of its antenna array. The Facility would also provide suitable space for three future carriers, and municipal emergency services equipment, if necessary, which would promote Connecticut's policy of collocation pursuant to General Statutes § 16-50aa. The Facility, if approved, would provide necessary wireless communications service in the area of the Town, as described in Section One, *infra*.

The purpose of this Technical Report is to provide the Town with information concerning the Facility. Section One addresses the need for the proposed Facility. Section Two details the site selection process, including an analysis of other sites considered and rejected by Tarpon. Section Three describes the design for the Facility and the environmental effects, if any, associated with the proposed Facility.

Please direct any correspondence and/or communications regarding this Technical Report to the attorneys for Tarpon as follows:

Updike, Kelly & Spellacy, P.C.
8 Frontage Road
East Haven, CT 06512
(203) 786-8317
Attention: Jesse A. Langer, Esq.

SECTION 1

Site Justification

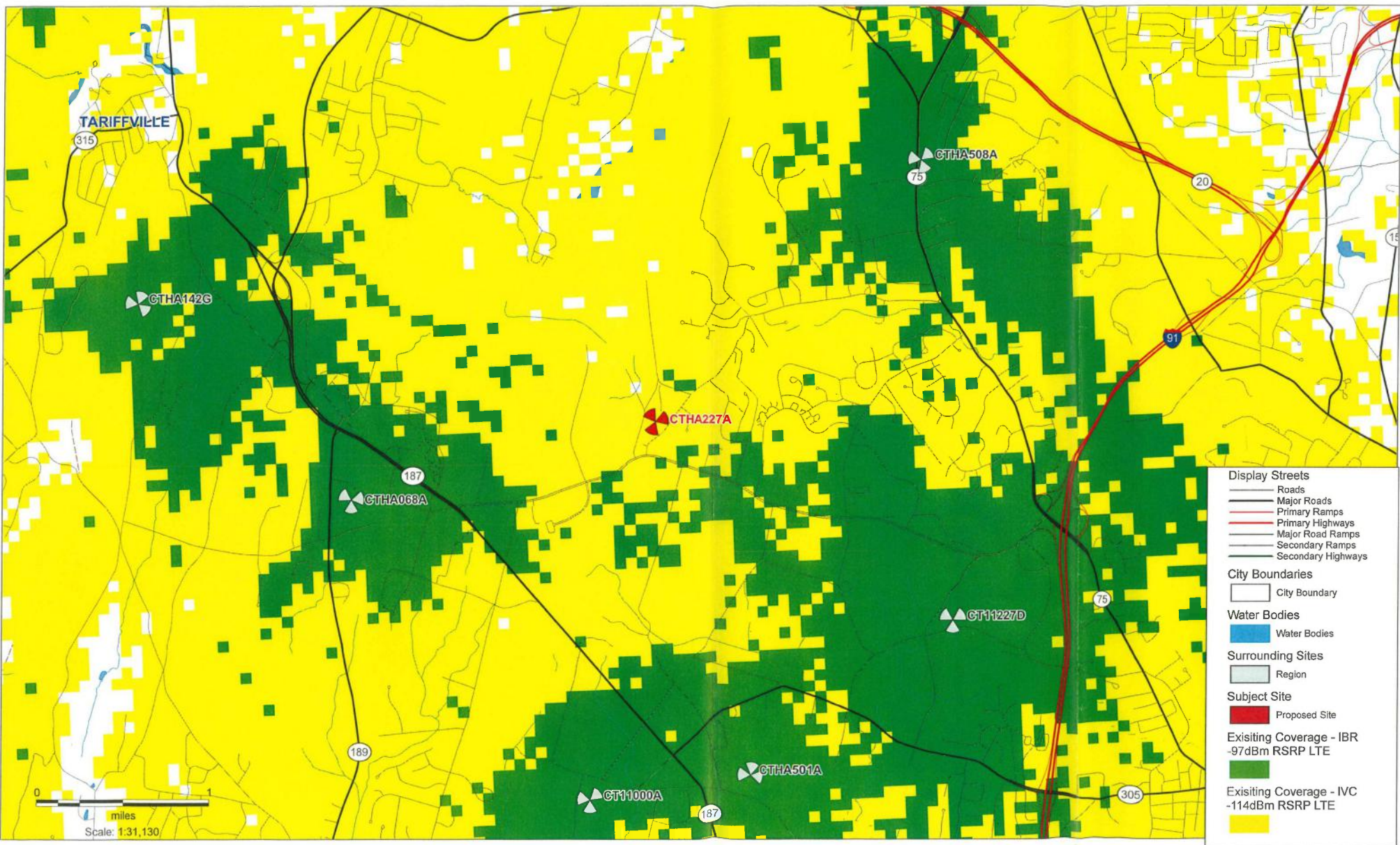
The proposed Facility is necessary to enhance wireless service availability to existing and future T-Mobile wireless device users. Enhanced coverage provided by the Facility would allow T-Mobile subscribers to use voice and data services reliably as well as to connect to Emergency 911 services. The proposed Facility would provide reliable wireless communications services to local roads and areas along the Day Hill Road Corridor, between Route 187 and Interstate 91, in the Town. This area is largely underserved and would include much needed service such as In-Building Residential (IBR) coverage improvements in the area of Day Hill Road, Hucklebury Lane and Iron Ore Road. The proposed Facility would also provide capacity relief to existing sectors on T-Mobile facilities CTHA068A and CT11227D. These existing T-Mobile sites presently cover the aforementioned area below T-Mobile's minimum signal level for reliable IBR coverage. The proposed Facility would increase user experience, including data rates and call quality, as well as provide additional capacity in this area. T-Mobile needs the Facility, in conjunction with other existing telecommunications facilities in the Town, to provide reliable services to the public.

This Technical Report includes propagation plots that depict (1) coverage from existing and approved surrounding sites and (2) predicted coverage from the proposed Facility with an antenna array mounted at 130 feet AGL along with the coverage provided by existing and approved sites. See propagation plots appended here to as Attachment 1.

The propagation plots demonstrate the need for a site in the area of the proposed Facility and the effectiveness of the proposed Facility in meeting the need for wireless service in this area of the Town.

ATTACHMENT
Propagation Plots

CTHA227A - Existing Coverage



Display Streets

- Roads
- Major Roads
- Primary Ramps
- Primary Highways
- Major Road Ramps
- Secondary Ramps
- Secondary Highways

City Boundaries

- City Boundary

Water Bodies

- Water Bodies

Surrounding Sites

- Region

Subject Site

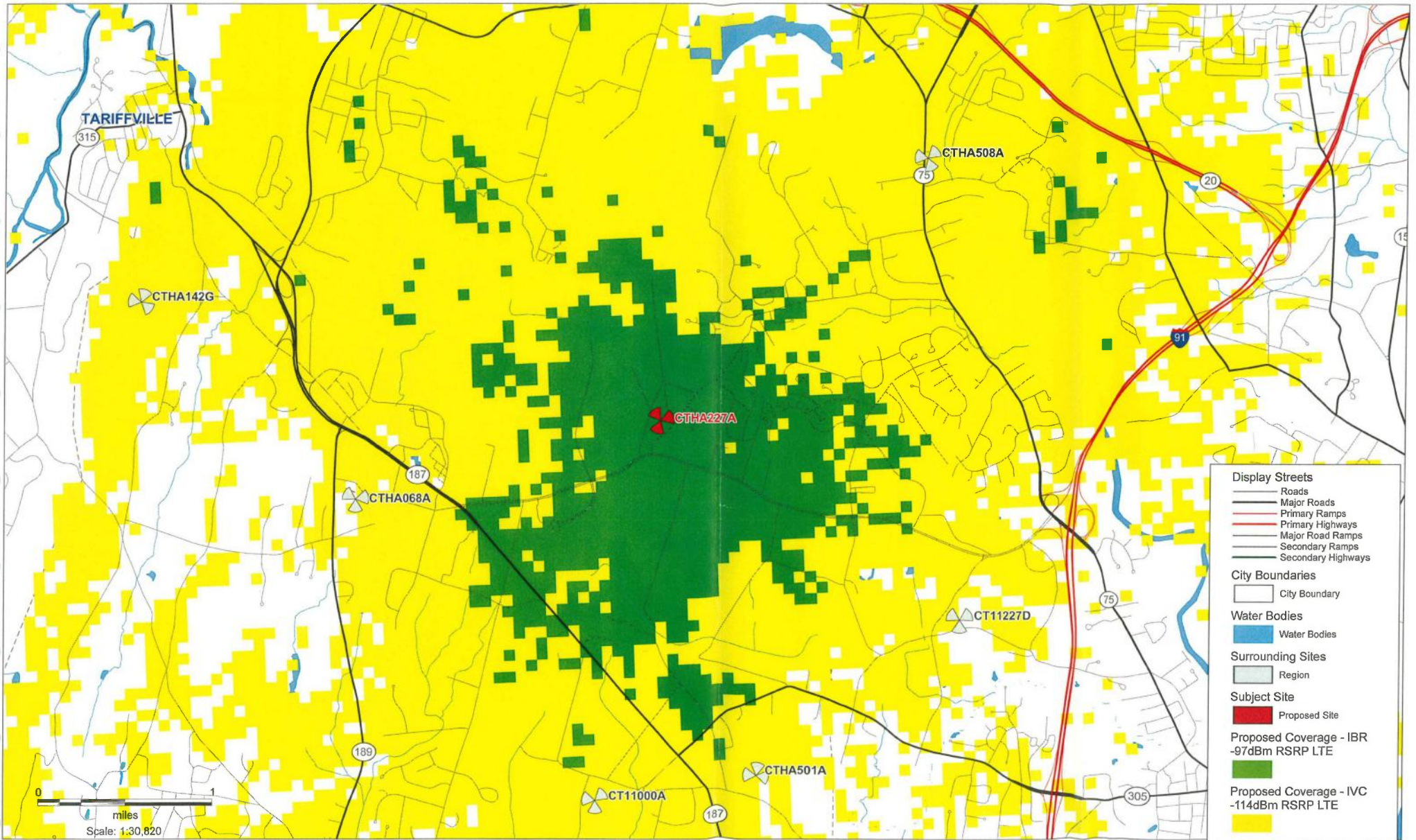
- Proposed Site

Existing Coverage - IBR -97dBm RSRP LTE

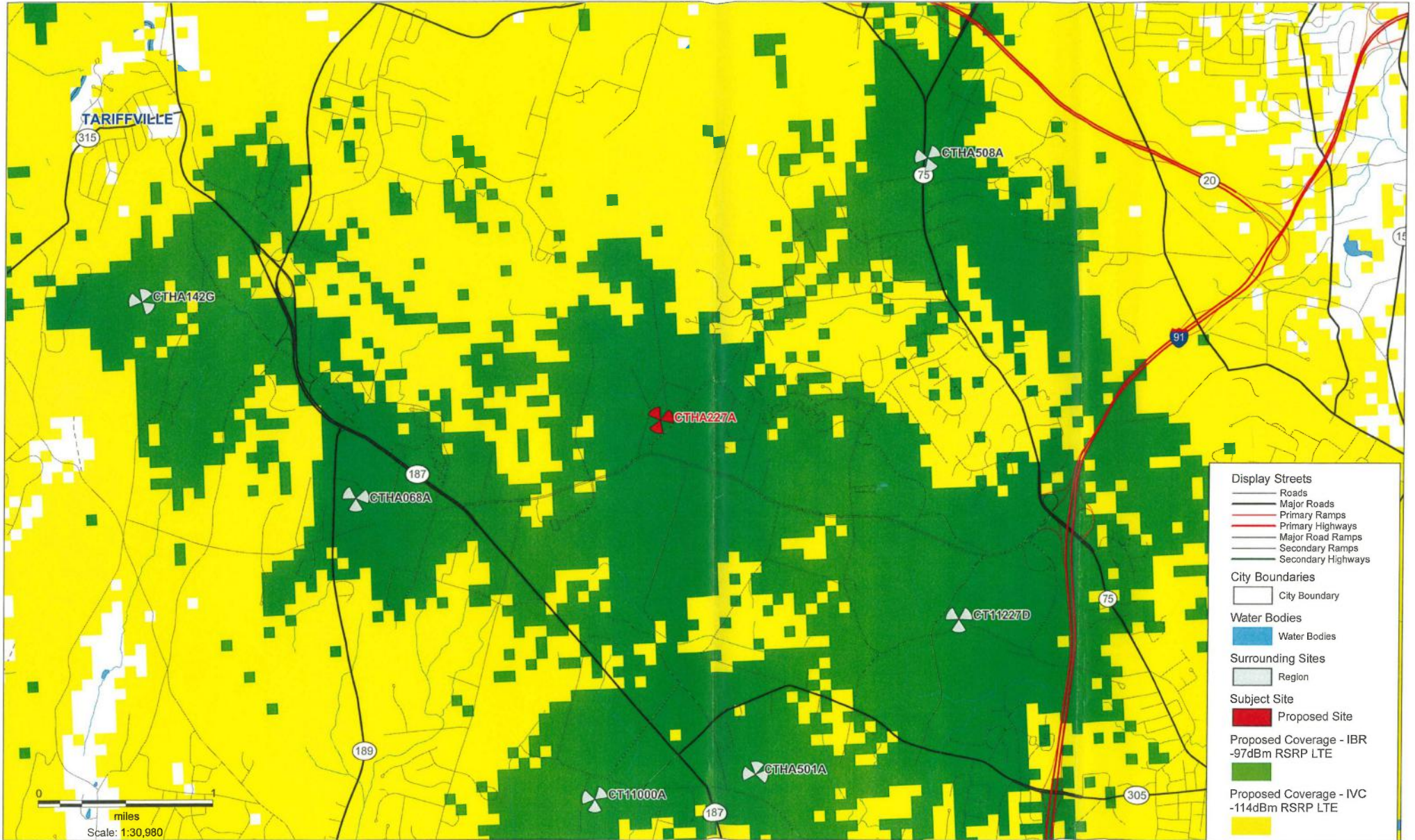
- Existing Coverage - IVC -114dBm RSRP LTE



CTHA227A - Proposed Standalone Coverage



CTHA227A - Proposed Coverage



SECTION 2

Site Search Process and Selection

General Statutes § 16-50I(e) requires Tarpon to provide the Town with a technical report considering, among other things, “the site selection process.” When filing its application for a certificate of environmental compatibility and public need with the Connecticut Siting Council, Tarpon must include a statement that describes “the narrowing process by which other possible sites were considered and eliminated.” Regs., Conn. State Agencies § 16-50j-74(j)(10). In accordance with these requirements, this Section of the Technical Report details the description of the general site search process, the identification of the target search area and the alternative locations considered for development of the proposed Facility.

Generally, carriers licensed by the Federal Communications Commission (“FCC”) investigate prospective sites in an area based upon the needs of its wireless network and infrastructure. A carrier, such as T-Mobile, chooses a target area central to the area in which it has identified coverage and/or capacity needs after extensive research of that particular area. The area targeted is the geographical location where the installation of a site would likely address the identified coverage or capacity need based on general radio frequency engineering and system design standards. The goal is to locate sites that will remedy coverage or capacity issues, cause the least environmental impact and avoid the unnecessary proliferation of towers.

As a general matter, site acquisition personnel study the area in and near the search area to determine whether any suitable structures exist. If a structure of appropriate height and structural capabilities cannot be found, then site acquisition personnel focus on industrial and commercial areas, or other areas that comport to local zoning ordinances that have appropriate environmental and land use characteristics. The list of potential locations is limited by the willingness of property owners to make their properties available for a telecommunications facility. Radio frequency (“RF”) engineers study potentially suitable and available locations to determine whether those locations will meet the technical requirements for a telecommunications facility. The list of possible alternative sites may be further narrowed by potential environmental effects and benefits. The weight given to relevant factors varies for each search, depending on the nature of the area and the availability of potential sites.

There are no existing towers, transmission line structures or other suitable structures in the area of the Town that was the subject of this site search. The nearest towers and suitable structures are already in use by T-Mobile. Moreover, any other existing towers are too far from the target area to provide sufficient coverage specifically to the target area. *See* the Map of Facilities within a Four Mile Radius appended here to as Attachment 2.

Based upon a comprehensive review of the surrounding area, Tarpon did not find a site that would be more suitable than the Property. The reasons Tarpon did not select any of the other locations are outlined below:

1. 825 Prospect Hill Road (Map ID 8306). This parcel is approximately 11 acres and hosts a residential dwelling. The property owner was not interested in a potential lease.

2. 740 Prospect Hill Road (Map ID 8298). This parcel is 7 acres and hosts a farm. The property owner was not interested in a potential lease.

3. 630 Prospect Hill Road (Map ID 8464). This is a 30 acre parcel, which hosts a residential dwelling. The property owner was not interested in a potential lease.

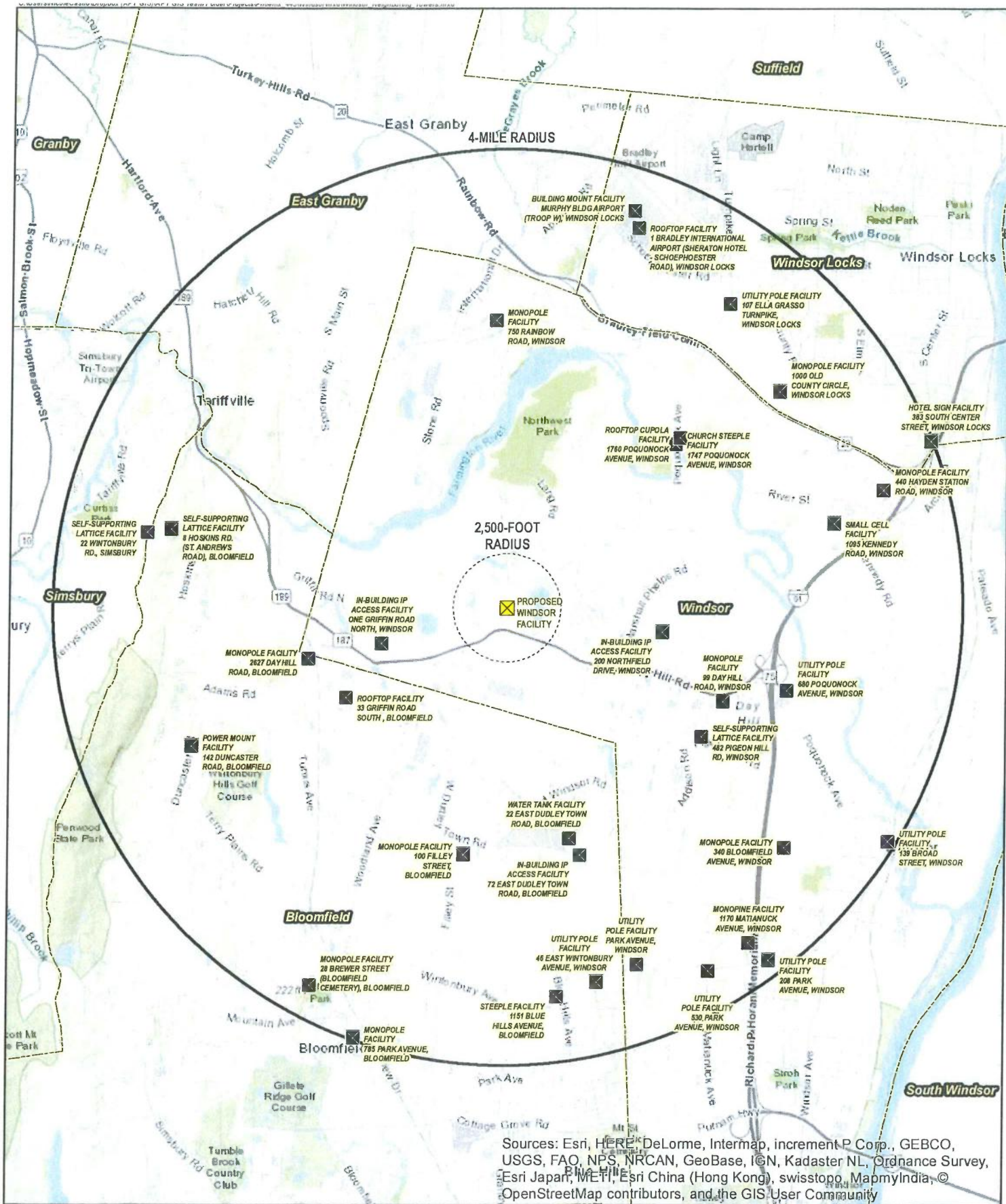
4. 903 Day Hill Road (Map ID 8496). This is a 49 acre parcel. This property would overlap with another existing site located at 482 Pigeon Hill Rd, Windsor, Connecticut, which is approximately 1.53 miles to the southeast.

5. 2000 Day Hill Road (Map ID 8207). This is approximately 360 acre parcel with a mix of previously improved areas, forest and ponds. The property owner was not interested in a potential lease.

Tarpon has determined that the Property is superior to the other parcels in the area. The Property is developed and located in an Industrial Zone. There are no wetlands or other environmental concerns.

ATTACHMENT

Map of Facilities within A Four Mile Radius



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Legend

- Proposed Facility
- Existing Towers Within 4 Miles of Proposed
- Municipal Boundary
- 2,500-Foot Radius
- 4-Mile Radius

Existing Adjacent Towers

Proposed Wireless Telecommunications Facility
 Windsor
 CT1209
 780 Prospect Hill Road
 Windsor, Connecticut

Base Map Source: ESRI World Topographic Map
 Data Sources: CSC Tower Database, Updated December 2018;
 Map Scale: 1 Inch = 6,002 feet
 Map Date: December 2018



SECTION 3

PROPOSED FACILITY AND SITE

**800 Prospect Hill Road
Windsor, Connecticut**

Land of
The Ferraina Company, LLC

Map 17, Block 135, Lot 1
5.76 Acres

GENERAL FACILITY DESCRIPTION

The proposed Facility would consist of a 2,500 (50 x 50) square foot compound ("Site"). The Facility would be located in the northern portion of the Property, an approximately 5.76 acre parcel, consisting of one lot and located at 800 Prospect Hill Road in the Town. The Property is developed and currently hosts three industrial buildings with associated parking and loading areas. The Facility would include a 135 foot AGL monopole structure (with a lightning rod on top) with T-Mobile's panel antenna array mounted at approximately 130 feet AGL.

Related equipment cabinets would be placed nearby within the leased area. The equipment would be surrounded by an eight foot chain link fence. Access to the proposed tower would be across an existing bituminous drive. Utility connections would extend from Prospect Hill Road. Please see the site plans appended hereto as Attachment 3.

ATTACHMENT

Site Plan



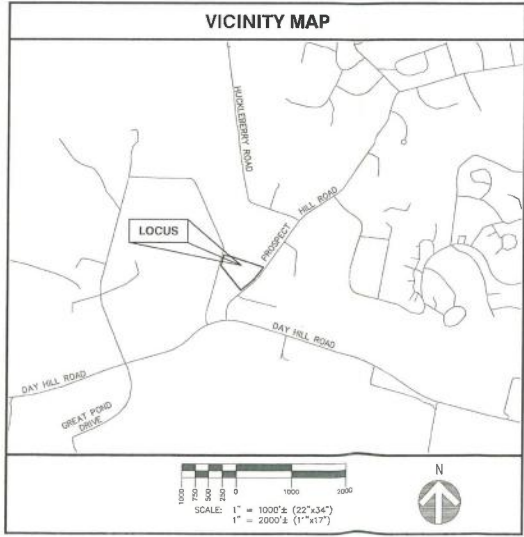
TARPON TOWERS II, LLC
SITE NAME: WINDSOR
SITE NUMBER: CT 1209
ADDRESS: 800 PROSPECT HILL ROAD
WINDSOR, CT 06095

CO-APPLICANT INFORMATION

T-Mobile SITE NUMBER: CTHAZ27
 T-MOBILE NORTHEAST, LLC
 35 SOUTH CROFTEN ROAD
 BLOOMFIELD, CT 06002

PROJECT INFORMATION

SITE TYPE: RAW LAND
 SCOPE OF WORK: PROPOSED 135' TALL MONOPOLE WITH 48'x48' FENCED COMPOUND AND 50'x50' LEASE AREA.
 SITE NAME: WINDSOR
 SITE NUMBER: CT 1209
 SITE ADDRESS: 800 PROSPECT HILL ROAD WINDSOR, CT 06095
 ASSESSOR'S TAX ID#: VAP 1/, BLOCK 1J5, L01 1
 ZONING DISTRICT: INDUSTRIAL (I)
 LATITUDE: 41° 52' 58.5" ± N (RECORD 1A)
 LONGITUDE: 72° 42' 29.2" ± W (RECORD 1A)
 (P) GRADE: 174.5 ±
 DATUM: NAD83/NAVD88
 PROPERTY OWNER: V/F THE FERRAINA COMPANY, LLC 510 PROSPECT HILL ROAD WINDSOR, CT 06095
 TOWER OWNER: TARPON TOWERS II, LLC 1001 3RD AVENUE WEST SUITE 420 BRADENTON, FL 34205
 SITE ENGINEER: PROTERRA DESIGN GROUP, LLC 4 BAY ROAD 310G A, SUITE 200 HADLEY, MA 01035 (413) 320-4918
 SURVEYOR: ALFORD ASSOCIATES, INC. 200 PIGEON HILL ROAD WINDSOR, CT 06095 (860) 688-7288



DRAWING INDEX

SHEET	DESCRIPTION	REVISION
T-1	TITLE SHEET	3
C-1	IMPROVEMENT LOCATION SURVEY	D
P-1	ABUTTERS PLAN	3
A-1	COMPILED PLOT PLAN	3
A-2	COMPOUND PLAN & ELEVATION	3
D-1	DETAILS	3
CA-1	CO-APPLICANT DETAILS	3

GENERAL NOTES

- CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER & TARPON TOWERS II, LLC REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
- PLANS FOR PERMITTING PURPOSES ONLY. NOT FOR CONSTRUCTION.
- ALL WORK TO BE PERFORMED IN ACCORDANCE WITH TARPON TOWERS II, LLC CONSTRUCTION GUIDELINES.
- ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL DIG-SAFE (888) 344-7233 72-HOURS PRIOR TO ANY EXCAVATION.
- THIS SHEET SET WAS ORIGINALLY PRINTED TO ANSI D (22"x34") WITH 1" MARGINS. PRINTING TO ANSI B (11"x17") WILL RESULT IN A HALF-SCALE (1:2) SHEET SET WITH 1/2" MARGINS. CONFIRM ALL SCALED DISTANCES WITH GRAPHICAL SCALES SHOWN HEREIN.

PERMITTING REVISED

ProTerra
 DESIGN GROUP, LLC

4 Bay Road
 Box A, Suite 200
 Hadley, MA 01035
 Ph: (413) 320-4918

CONSULTANTS:

NO.	DATE	REVISIONS
1	01/14/18	ISSUED FOR PERMITTING
2	01/17/18	PERMITTING REVISED
3	01/18/18	PERMITTING REVISED

SITE NAME: WINDSOR
SITE NUMBER: CT 1209
ADDRESS: 800 PROSPECT HILL ROAD WINDSOR, CT 06095

TARPON TOWERS II, LLC
 1001 3RD AVENUE WEST
 SUITE 420
 BRADENTON, FL 34205

TARPON TOWERS



DATE: 12/21/18
DRAWN: BM
CHECK: JMM/TEV
SCALE: SEE PLAN
JOB NO.: 18-027
SHEET TITLE:

TITLE SHEET

T-1

SURVEY NOTES -

- THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 36-20, 36-20a, 36-20b, 36-20c OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES. "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ENFORCED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. IT IS A LIMITED PROSPECTIVITY SURVEY BASED ON A GEOREFERENCED RECURRING CONFORMING TO HORIZONTAL ACCURACY CLASS A-2 AND IS INTENDED TO BE USED AS AN IMPROVEMENT LOCATION SURVEY.
- EXISTING TOPOGRAPHY, ADJACENT TO THE PROPOSED TOWER, HAS BEEN FIELD VERIFIED ON JULY 11, 2019 AND CONFORMS TO VERTICAL CLASS 7-2. UNDERGROUND UTILITIES, WITHIN THE AREA, HAVE BEEN TACED FOR REFERENCE PLAN #2.
- THE PURPOSE OF THIS SURVEY IS TO SUPPORT THE DESIGN AND CONSTRUCTION OF A TELECOMMUNICATION FACILITY. USE OF THIS SURVEY BY ANYONE OTHER THAN TARPON TOWERS II, LLC AND USE OF THIS SURVEY FOR ANY PURPOSE NOT RELATED TO THE DESIGN OF THE PROPOSED FACILITY IS STRICTLY PROHIBITED.
- PRIMARY GEODETIC SURVEY CONTROL WAS ESTABLISHED FROM AN ON THE GROUND SURVEY USING THE GLOBAL POSITIONING SYSTEM (GPS) ON JULY 11, 2019. THE HORIZONTAL CONTROL SYSTEM IS THE NAD 83 BASED ON THE GRS 90 INTERFERE ELLIPSOID. THE GRID COORDINATES ARE BASED ON THE CONNECTICUT STATE PLANE COORDINATE SYSTEM. ELEVATIONS SHOWN ARE BASED ON NAVD 83. VERTICAL AND HORIZONTAL INFORMATION SHOWN MEETS THE STANDARD CRITERIA FOR AN FAA 1A CERTIFICATION (20% HORIZONTAL AND 3% VERTICAL).
- IN THE EVENT THAT BENCHMARKS, ESTABLISHED FOR THIS PROJECT AND PUBLISHED ON THIS SURVEY, ARE DESTROYED, NOT RECOVERABLE, OR A DISCREPANCY IS FOUND, THE USER SHOULD VERIFY THIS DATA IN WRITING PRIOR TO COMMENCING OR CONTINUING ANY WORK.
- A COMMITMENT FOR TITLE INSURANCE PREPARED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, COMMITMENT DATED, EFFECTIVE DATE OF COMMITMENT: MAY 16, 2018 WAS USED TO PREPARE THIS SURVEY.
- AREA OF PARCEL: 780, 800, 810, 820 & 840 PROSPECT HILL ROAD - 250,779 SQ. FT. - 5.76 ACRES
- OWNER OF THE SUBJECT PARCEL IS THE FERRARIA COMPANY LLC, DEED REFERENCE VOL. 1912, PAGE 1. PARCEL IS SHOWN ON WINDSOR TAX ASSESSOR'S MAP 17, BLOCK 133, LOT 1, FILE CODE NO. 8303. PARCEL IS ZONED "I" INDUSTRIAL AS SHOWN ON THE CURRENT ZONING MAP FOR THE TOWN OF WINDSOR.
- NOTING IN THIS SURVEY IS INTENDED TO EXPRESS AN OPINION REGARDING OWNERSHIP OF TITLE.
- THE SUBJECT PROPERTY IS WITHIN "ZONE X", AN AREA OF MINIMAL FLOOD HAZARD, AS SHOWN ON A PLAN ENTITLED "NATIONAL FLOOD INSURANCE LAYER (NFIS) OBSOLETE, EFFECTIVE DATE: 6/30/2006, TOWN OF WINDSOR, CONNECTICUT. "ZONE X" IS OUTSIDE OF THE 1% ANNUAL CHANCE FLOOD (100 YEAR FLOOD) AND THE 0.2% ANNUAL CHANCE FLOOD AREA.

REFERENCE PLANS -

- "ALTA/ACSM LAND TITLE SURVEY PREPARED FOR THE FERRARIA COMPANY LLC, THE 800, 810, 820 AND 840 PROSPECT HILL ROAD, WINDSOR, CONNECTICUT. ALFORD ASSOCIATES, INC. CIVIL ENGINEERS, 300 PUSAN HILL ROAD, WINDSOR, CT 06095 (860) 686-7288. WILSON M. ALFORD, JR. P.E. & L.E. LICENSE #0544 SCALED 1/8"=40 FT. DATE: JUNE 26, 2008"
- "SITE PLAN PREPARED FOR D.M.A.C. LIMITED PARTNERSHIP, THE 800, 820 & 840 PROSPECT HILL ROAD, WINDSOR, CONN. SCALE: 1/8"=40 FT. DATE: MAY 7, 1990. REVISION DATES TO 6/17/91. ALFORD ASSOCIATES, INC., CIVIL ENGINEERS, WINDSOR, CONNECTICUT"

FAA 1-A CERTIFICATION

I HEREBY CERTIFY THAT THE LATITUDE, LONGITUDE, AND ELEVATION PRESENTED HEREON MEET THE REQUIREMENTS OF THE FAA WITH THE FOLLOWING ACCURACIES:
 THREE (3) FEET VERTICALLY
 TWENTY (20) FEET HORIZONTALLY

Wilson M. Alford, Jr. DATE: **Jul 10, 2019**
 WILSON M. ALFORD, JR. DATE: _____
 CONNECTICUT LICENSED LAND SURVEYOR NO. 8344

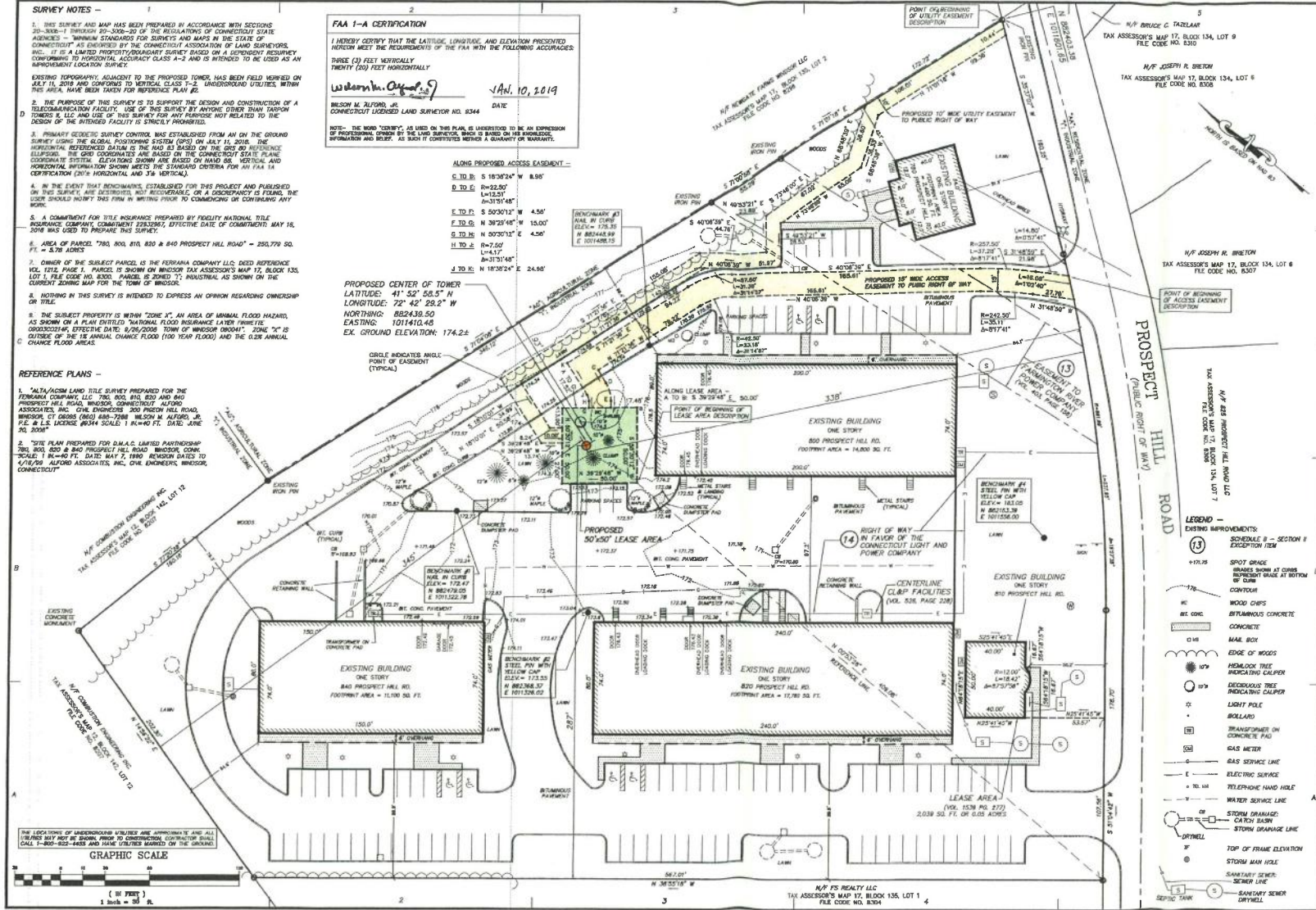
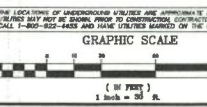
NOTE: THE WORD "CERTIFY" AS USED ON THIS PLAN IS UNDERSTOOD TO BE AN EXPRESSION OF PROFESSIONAL OPINION BY THE LAND SURVEYOR WHO IS BASED ON THE AVAILABLE INFORMATION AND BELIEFS, AS SUCH IT CONSTITUTES NEITHER A GUARANTEE OR WARRANTY.

ALONG PROPOSED ACCESS EASEMENT -

G. TO B.	S 18°30'24" W	8.90'
D. TO E.	N 02°52'00" W	14.23'
	N 31°51'41" E	14.23'
E. TO D.	S 50°50'12" E	4.56'
F. TO D.	N 38°20'48" W	15.00'
G. TO H.	N 00°30'12" E	4.26'
H. TO I.	N=7.50'	
	N=4.14'	
	N=31°14'45"	
J. TO K.	N 18°30'24" W	24.50'

PROPOSED CENTER OF TOWER
 LATITUDE: 41° 52' 58.5" N
 LONGITUDE: 72° 42' 29.2" W
 NORTHING: 882439.50
 EASTING: 1011410.48
 EX. GROUND ELEVATION: 174.2±

CIRCLE INDICATES ANGLE POINT OF EASEMENT (TYPICAL)



- LEGEND -**
- EXISTING IMPROVEMENTS - SCHEDULE B - SECTION 8 EXEMPTION ITEM
- 13 SPOT GRADE (BRASSES SHOWN AT CORNER WITH THEIR GRADE AT BOTTOM OF CURVE)
 - 14 WOOD CHIPS
 - 15 BITUMINOUS CONCRETE
 - 16 CONCRETE
 - 17 MALE BOX
 - 18 EDGE OF WOODS
 - 19 HIDELOCK TREE (INDICATING CALLIPE)
 - 20 DECIDUOUS TREE (INDICATING CALLIPE)
 - 21 LIGHT POLE
 - 22 BOLLARD
 - 23 TRANSFORMER ON CONCRETE PAD
 - 24 GAS METER
 - 25 GAS SERVICE LINE
 - 26 ELECTRIC SERVICE
 - 27 TELEPHONE HAND HOLE
 - 28 WATER SERVICE LINE
 - 29 STORM DRAINAGE: CATCH BASIN
 - 30 STORM DRAINAGE LINE
 - 31 OPEN WELL
 - 32 TOP OF FRAME ELEVATION
 - 33 STORM MAN HOLE
 - 34 SANITARY SEWER
 - 35 SANITARY SEWER OPENWELL

ProTerra DESIGN GROUP, LLC

4 Bay Road
 Bay A, Suite 200
 Hadley, MA 01035
 PH: (413)335-4018

Alford ASSOCIATES, INC.

CIVIL ENGINEERS
 300 PUSAN HILL ROAD
 WINDSOR, CT 06095
 860-686-7288
 WILSON M. ALFORD, JR. P.E. & L.E. LICENSE NO. 8344

CONSULTANTS:

INCL. DATE	REVISIONS

TITLE: WINDSOR
 SITE NUMBER: CT 2209
 ADDRESS: 800 PROSPECT HILL ROAD
 WINDSOR, CT 06095

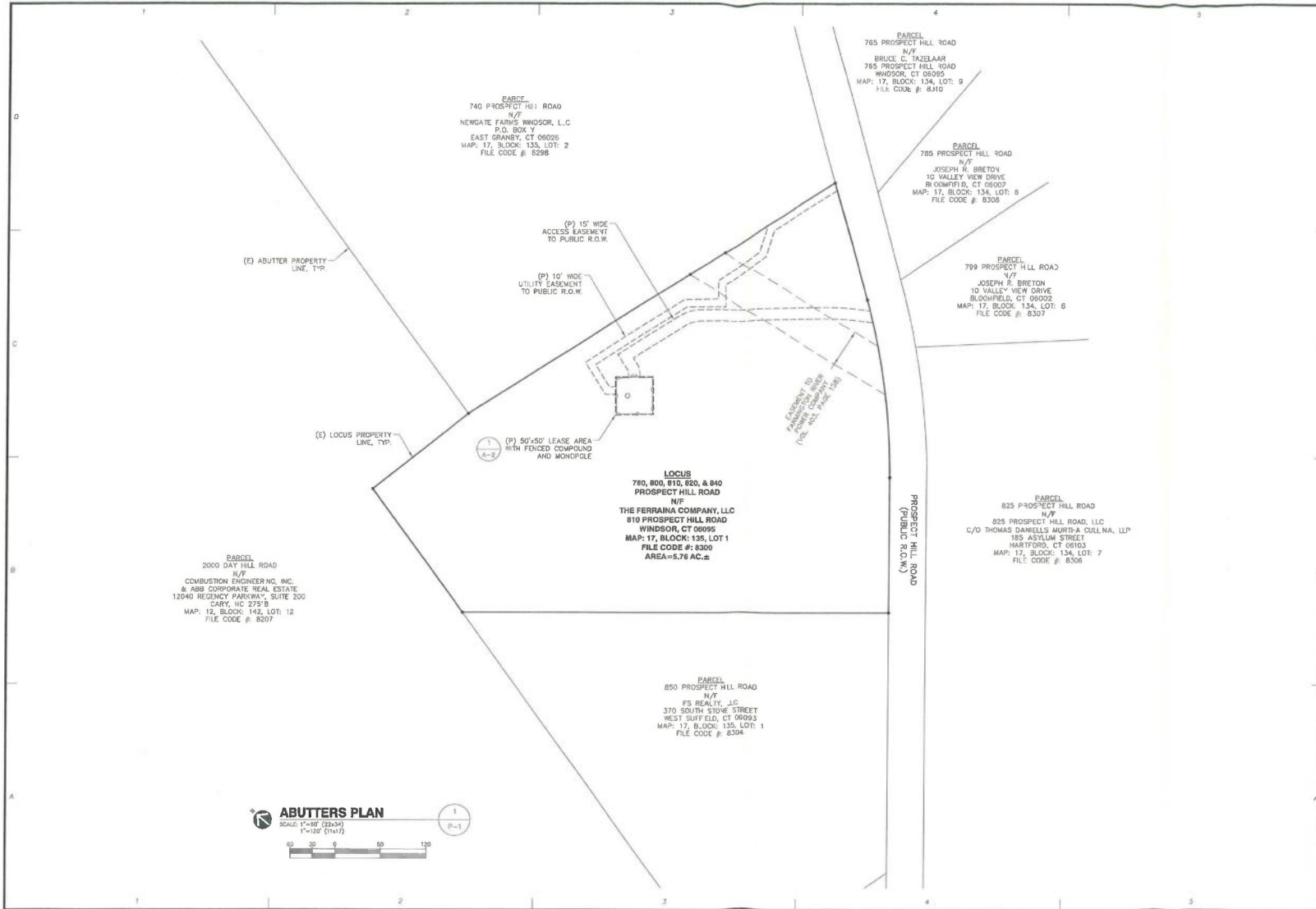
TOWER OWNER: TARPON TOWERS II, LLC
 2007 820 AVENUE 7 WEST
 SITES 450
 TOWERS II, LLC BRIDGEWATER, NJ 08936

Professional Seal: WILSON M. ALFORD, JR., P.E. & L.E. LICENSE NO. 8344

NOT VALID WITHOUT A LIVE SIGNATURE AND EXPIRES 6/30/2020

DATE: 08/31/18
 DRAWN: MSH
 CHECK: WMA
 SCALE: 1" = 40 FT.
 JOB NO.: 18-049

SHEET TITLE: IMPROVEMENT LOCATION SURVEY
C-1



ProTerra
DESIGN GROUP, LLC

4 Bay Road
Bldg A, Suite 200
Horsene, MA 01935
Ph:(413)320-4918

CONSULTANTS:

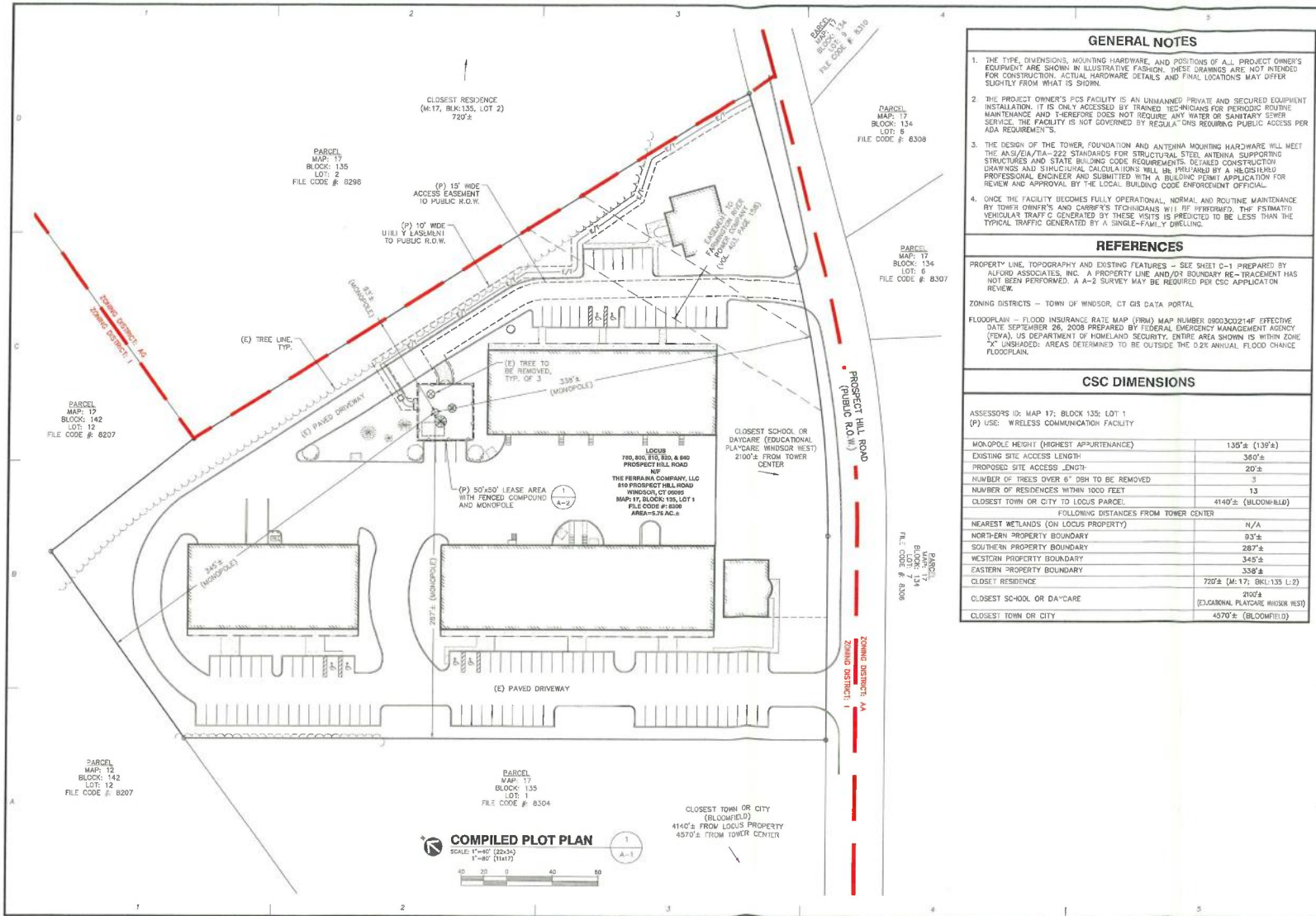
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2	10/16/19	PERMITTING REVISION
3	10/16/19	PERMITTING REVISION

SITE NAME: WINDSOR
SITE NUMBER: CT 1209
ADDRESS: 800 PROSPECT HILL ROAD
WINDSOR, CT 06095

TARPOON TOWERS
TOWER GROUP, LLC
8100 WINDSOR II, LLC
1001 3RD AVENUE WEST
SUITE 400
BRADENTON, FL 34205



DATE: 12/21/18
DRAWN: BLM
CHECK: JAH/TEJ
SCALE: SEE PLAN
JOB NO.: 18-027
SHEET TITLE:
ABUTTERS PLAN
P-1



CONSULTANTS:

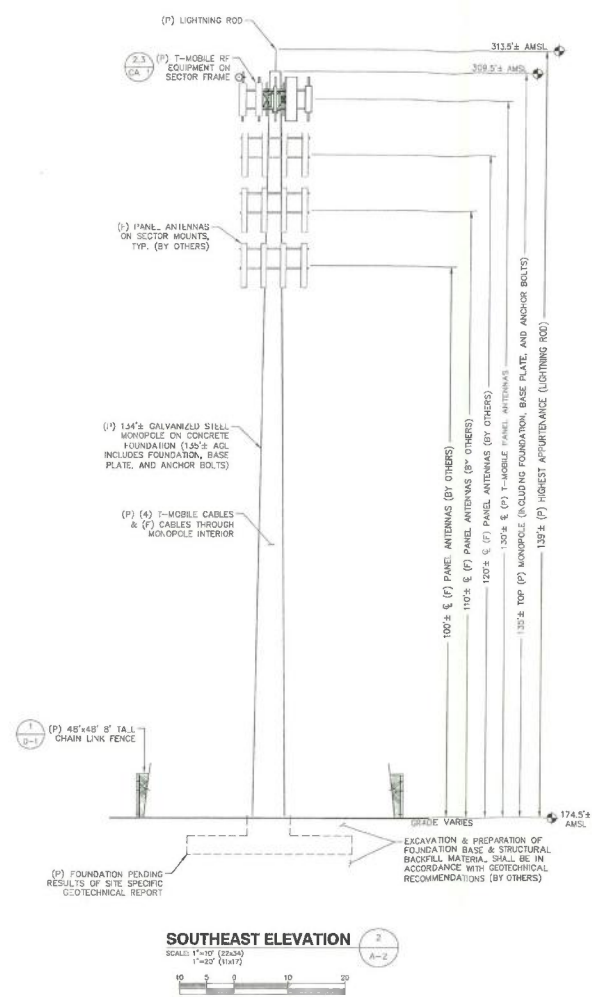
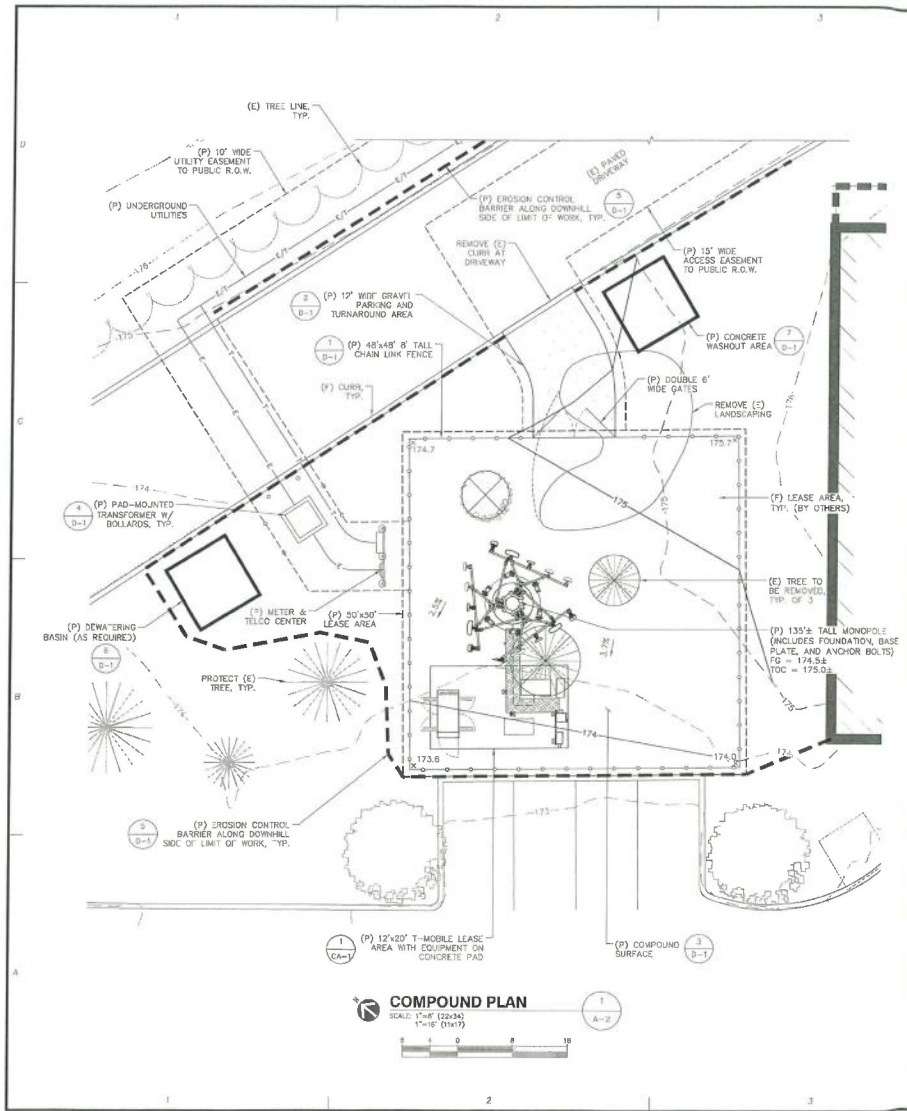
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1	12/21/18 ISSUED FOR PERMITTING
2	12/21/18 PERMITTING REVISIONS
3	12/21/18 PERMITTING REVISIONS

SITE NAME: WINDSOR
SITE NUMBER: CT 1809
ADDRESS: 800 PROSPECT HILL ROAD
WINDSOR, CT 06095

TOWER OWNER:
TARTAN TOWERS II, LLC
100 3RD AVENUE WEST
SUITE 420
BRADENTON, FL 34405



DATE: 12/21/18
DRAWN: BLM
CHECK: JMM/TEJ
SCALE: SEE PLAN
JOB NO.: 18-027
SHEET TITLE:



CONSULTANTS:

NO.	DATE	REVISIONS
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3	02/17/18	PERMITTING REVISED

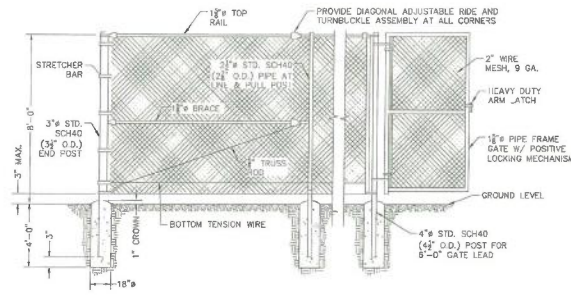
SITE NAME: WINDSOR
SITE NUMBER: CT 1209
ADDRESS: 800 PROSPECT HILL ROAD
WINDSOR, CT 06095

OWNER: TARTAN TOWERS, LLC
100 800 AVENUE WEST
SUITE 428
BRADENTON, FL 34205

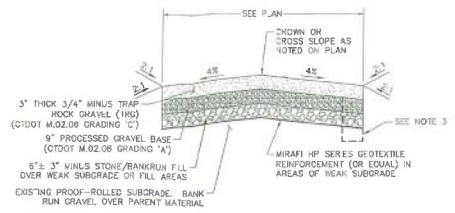


DATE: 12/21/18
DRAWN: BLM
CHECK: JHM/TEJ
SCALE: SEE PLAN
JOB NO.: 18-027

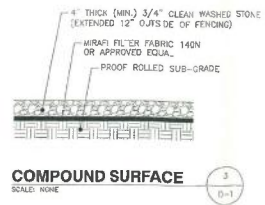
SHEET TITLE:
COMPOUND PLAN & ELEVATION
A-2



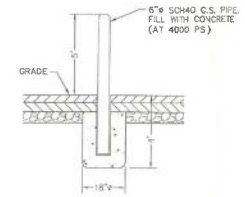
CHAIN LINK FENCE
SCALE: NONE



DRIVEWAY SECTION
SCALE: NONE

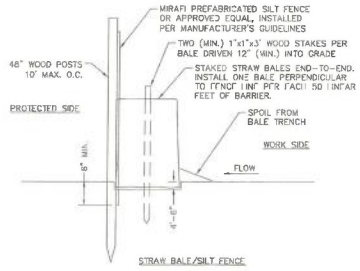
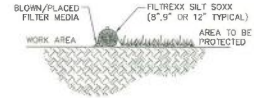


COMPOUND SURFACE
SCALE: NONE

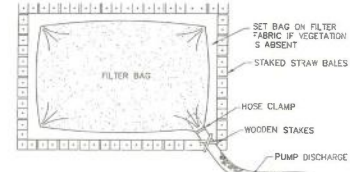


BOLLARD
SCALE: NONE

- NOTES:
1. USE SILT SOXX WHERE CONDITIONS DO NOT ALLOW STAKES TO BE DRIVEN.
 2. STRAW BALES TO BE TIED HYDROGRADABLE TINE.
 3. SILT SOXX FILL TO MEET FILTERREX SPECIFICATIONS AND APPLICATION REQUIREMENTS.
 4. SILT SOXX COMPOST MATERIAL TO BE DISPENSED ON SITE, AS DETERMINED BY ENGINEER.

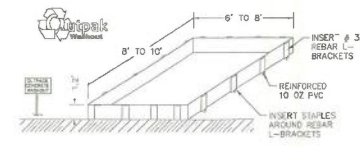


EROSION CONTROL BARRIER
SCALE: NONE



- NOTES:
1. ENSURE DISCHARGE AREA IS COVERED BY STABLE VEGETATION.
 2. USE DIFFUSER NOZZLE OR LOW DISCHARGE RATE TO PREVENT SCOURING.
 3. TO BE PLACED AT AN UPLAND LOCATION THAT WILL ALLOW WATER TO DRAIN TO THE GROUND.
 4. SIZE OF STRAW BALE ENCLOSURE TO BE 10x10' ADJUSTED TO WATER VOLUME.
 5. ADDITIONAL STRAW BALES MAY BE USED TO INCREASE RETENTION & FILTERING.

DEWATERING BASIN
SCALE: NONE



- NOTES:
1. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON THIS PROJECT.
 2. SIGNS SHALL BE PLACED AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT.
 3. THE CONCRETE WASHOUT AREA WILL BE REPLACED AS NECESSARY TO MAINTAIN CAPACITY FOR WASTE CONCRETE AND OTHER LIQUID WASTE.
 4. WASHOUT RESIDUE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
 5. DO NOT MIX EXCESS AMOUNTS OF FRESH CONCRETE OR CEMENT ON-SITE, OR STREAMS.
 6. AVOID DUMPING EXCESS CONCRETE IN NON-DESIGNATED DUMPING AREAS.
 7. LOCATE WASHOUT AREA AT LEAST 50' (15 METERS) FROM STORM DRAINS, OPEN DITCHES, OR WATERBODIES.
 8. WASHOUT RESIDUE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
 9. WASHOUT WASHINGS INTO THE OUTPACK WASHOUT AS SHOWN WHERE THE CONCRETE CAN SET, BE BROKEN UP, AND THEN DISPOSED OF PROPERLY.

CONCRETE WASHOUT AREA
SCALE: NONE

ProTerra
DESIGN GROUP, LLC
4 Bay Road
Bldg A2, S-14, 200
Troy, MI 48063
Ph: (413) 325-4418

CONSULTANT'S:

NO.	DATE	REVISIONS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

SITE NAME: WINDSOR
SITE NUMBER: CT 1209
ADDRESS: 800 PROSPECT HILL ROAD
WINDSOR, CT 06095
OWNER: TARTON TOWERS, LLC
1001 3RD AVENUE WEST
SUITE 400
BRADENTON, FL 34205



DATE: 12/21/18
DRAWN: BLM
CHECK: JMM/TEJ
SCALE: SEE PLAN
JOB NO.: 18-027
SHEET TITLE:

DETAILS
D-1

CO-APPLICANT INFORMATION



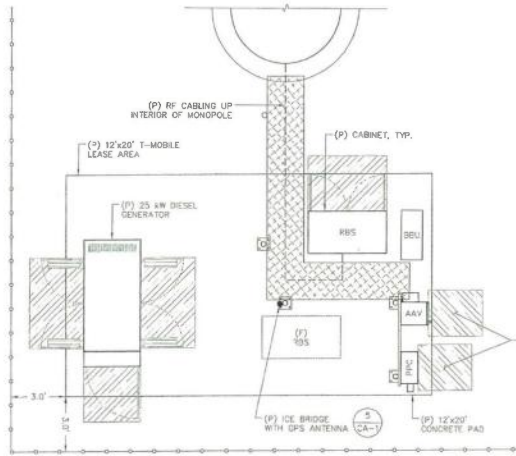
SITE NUMBER: CTHA227
 T-MOBILE, NORTHEAST, LLC
 35 SOUTH GREEN ROAD
 BLOOMFIELD, CT 06002

ProTerra
 DESIGN GROUP, LLC

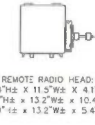
4 Bay Road
 200
 Hadley, MA 01035
 Ph: (413) 320-4916

CONSULTANTS:

NO.	DATE	REVISIONS
0	10/17/18	ISSUED FOR REVIEW
1	10/18/18	FOR PERMITS REVIEW
2	10/18/18	FOR PERMITS REVIEW
3	10/18/18	FOR PERMITS REVIEW



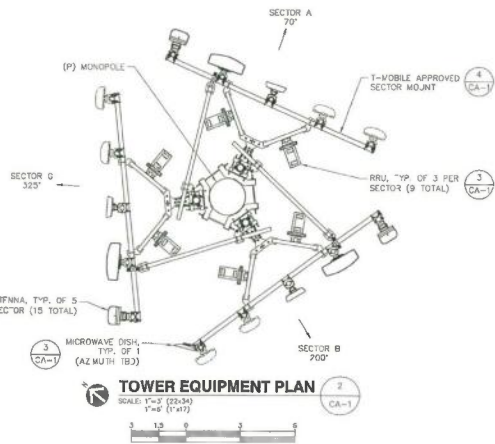
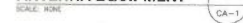
EQUIPMENT SIZE AND NUMBER SHALL BE CONFIRMED WITH FINAL RF DESIGN.



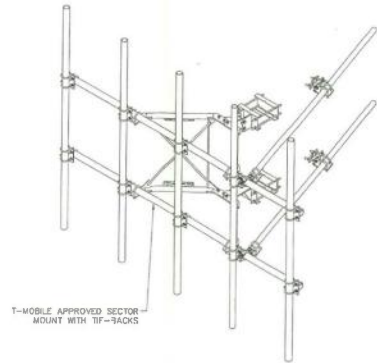
GROUND EQUIPMENT LAYOUT PLAN



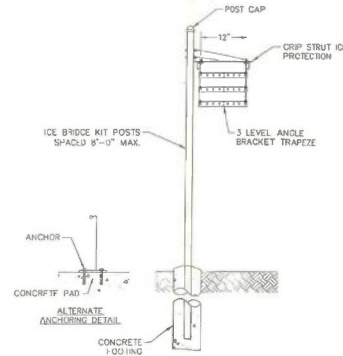
ANTENNA EQUIPMENT



TOWER EQUIPMENT PLAN



PLATFORM ISOMETRIC



ICE BRIDGE



SITE NAME: WINDSOR
 SITE NUMBER: CT 1209
 ADDRESS: 600 PROSPERITY HILL ROAD
 WINDSOR, CT 06095

TARPON TOWERS II, LLC
 1001 AVENUE WEST
 BRADENTON, FL 34105

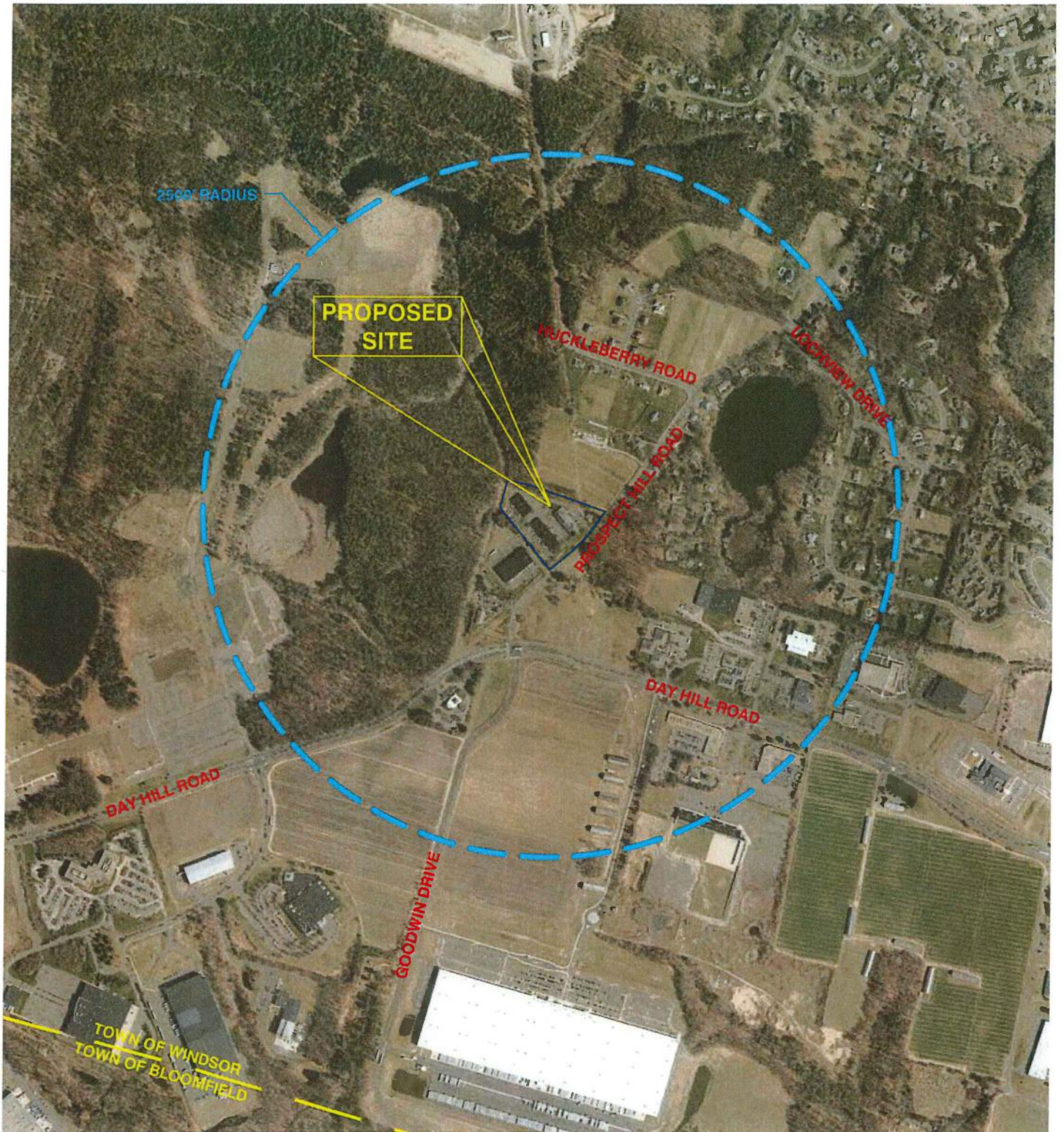
TITLE:



DATE: 12/21/18
 DRAWN: SLM
 CHECK: JMM/TEU
 SCALE: SEE PLAN
 JOB NO.: 18-027

CO-APPLICANT DETAILS

CA-1



AERIAL PHOTO

SCALE: 1"=1000'

ProTerra
DESIGN GROUP, LLC

4 Bay Road, Bldg. A Suite 200
Hadley, MA 01035
Ph: (413) 320-4918

LOCATION PLANS

SITE NAME: WINDSOR
SITE NUMBER: CT 1209
ADDRESS: 800 PROSPECT HILL ROAD
WINDSOR, CT 06095



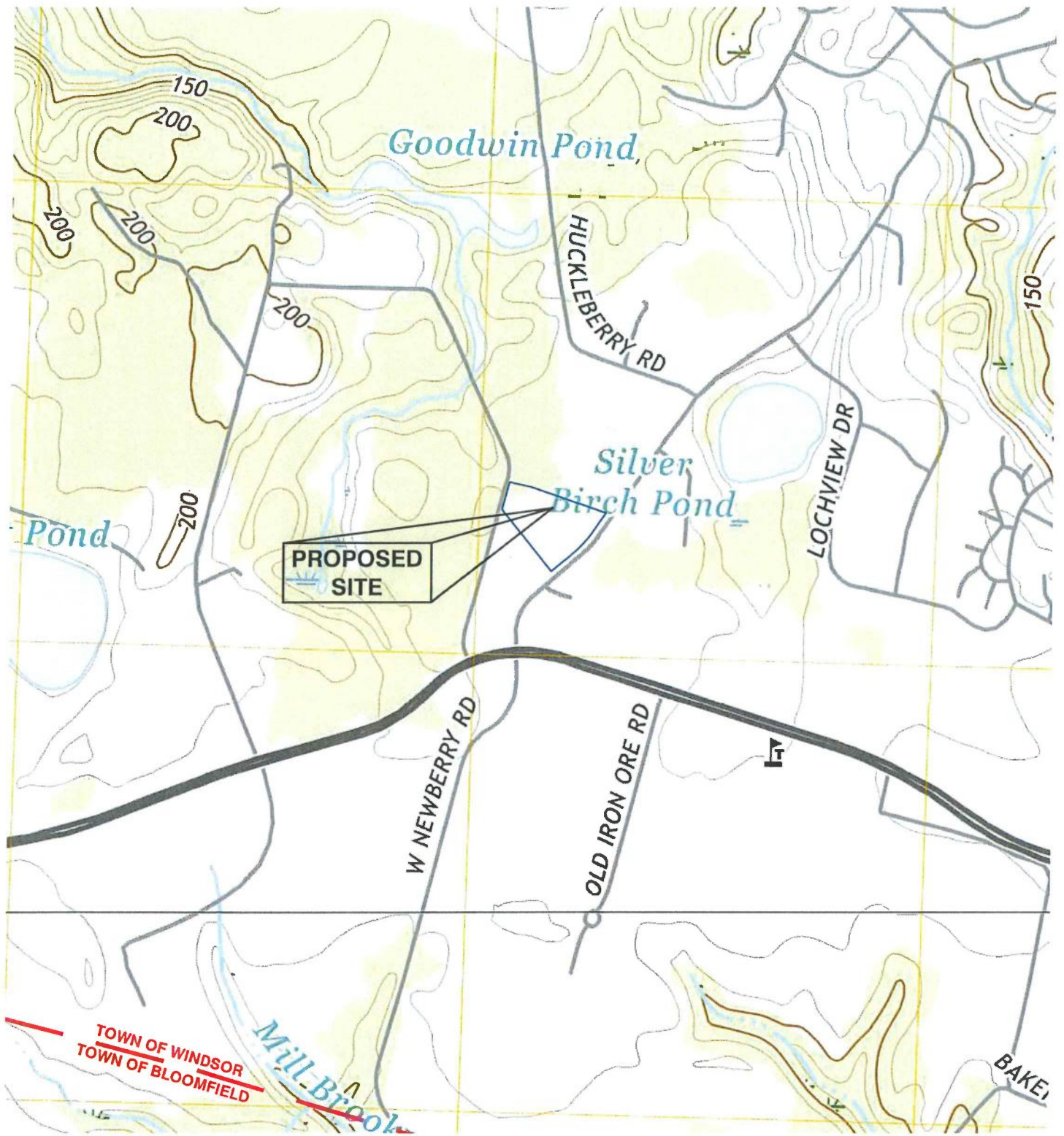
TARPON TOWERS II, LLC
1001 3RD AVENUE WEST
SUITE 420
BRADENTON, FL 34205

DATE: 02/12/19

REVISION: 2

JOB NO.: 18-027

SHEET: M-1



TOWN OF WINDSOR
TOWN OF BLOOMFIELD



USGS MAP

SCALE: 1"=1000'

ProTerra
DESIGN GROUP, LLC

4 Bay Road, Bldg. A Ph: (413)320-4918
Suite 200
Hadley, MA 01035

LOCATION PLANS

SITE NAME: WINDSOR
SITE NUMBER: CT 1209
ADDRESS: 800 PROSPECT HILL ROAD
WINDSOR, CT 06095



TARPON TOWERS II, LLC
1001 3RD AVENUE WEST
SUITE 420
BRADENTON, FL 34205

DATE:	02/12/19
REVISION:	2
JOB NO.:	18-027
SHEET:	M-2

SITE EVALUATION REPORT

I. LOCATION

- A. COORDINATES: 41°52'58.5" ± N
72°42'29.2" ± W
- B. GROUND ELEVATION: 174.2' ± AMSL
- C. USGS MAP: USGS 7.5 Minute Series Topographic Quadrangle Map, Windsor Locks (2018)
- D. SITE ADDRESS: 800 Prospect Hill Road
Windsor, CT 06095
- E. ZONING WITHIN ¼ MILE OF SITE: The area to the north of the proposed Site is zoned agricultural. The area to the east is zoned residential. The area to the south is zoned residential and industrial. The areas to the west are zoned industrial.

II. DESCRIPTION

- A. SITE SIZE: 2,500 square feet
T-MOBILE'S LEASED AREA: 200 square feet
- B. TOWER TYPE/HEIGHT: 135 foot Monopole Structure, with an antenna center line of 130 feet.
- C. SITE TOPOGRAPHY AND SURFACE: The Site is a developed active industrial center, with bituminous parking and access areas. The Site is relatively flat with the topography sloping slightly from north to south.
- D. SURROUNDING TERRAIN, VEGETATION, WETLANDS, OR WATER: The existing terrain consists largely of developed industrial structures surrounded by agricultural property. The nearest wetlands are +/-971 feet to the northwest of the proposed facility.
- E. LAND USE WITHIN ¼ MILE OF SITE: The land uses to the north and east include agricultural and residential. The land uses to the west include industrial. The land uses to the south are industrial.
- F. LOCATION OF SCHOOLS AND COMMERCIAL DAYCARES NEAR SITE: The closes school is located approximately 1.26 miles from the proposed Site. This school, called the Metropolitan Learning Center, is located at 1551 Blue

Hills Avenue in Bloomfield. The nearest commercial day care center is located approximately 1.0 mile to the southeast from the proposed Site. This day care center, called Educational Playcare, Inc., is located at 1045 Day Hill Road in the Town.

III. FACILITIES

- A. POWER COMPANY: Eversource
- B. POWER PROXIMITY TO SITE: The existing utility pole #1501 is located across Prospect Hill Road from the Site.
- C. TELEPHONE COMPANY: Frontier Communications
- D. PHONE SERVICE PROXIMITY: The existing utility pole #1501 is located across Prospect Hill Road from the Site.
- E. VEHICLE ACCESS TO SITE: Access to the proposed Facility would be across an existing bituminous parking lot and access.
- F. OBSTRUCTION: N/A
- G. CLEARING AND FILL REQUIRED: The total area of disturbance would be 8,230 square feet. The Facility would require 440 cubic yards of utility trench excavation and fill material and 29 cubic yards of crushed stone for the Facility compound. Tarpon would remove three trees located in close proximity to an existing building within the developed parcel.

III. LEGAL

- A. PURCHASE [] LEASE [X]
- B. OWNER: The Ferraina Company, LLC
- C. ADDRESS: 810 Prospect Hill Road, Windsor, CT, 06095
- D. DEED ON RECORD AT: Volume 471, Page 322

**FACILITIES AND EQUIPMENT SPECIFICATION
(TOWER & EQUIPMENT)**

I. TOWER SPECIFICATIONS

- A. MANUFACTURER: TBD
- B. TYPE: Monopole
- C. HEIGHT: 135'
- D. DIMENSIONS: TBD.

II. TOWER LOADING

A. T-MOBILE

- 1. MODEL: Ericsson AIR3246 B66A (M-MIMO) (x3)
RFS APX16DWV-16DWV-S-E-A20 (x3)
RFS APXVAARRR24_43-U-NA20 (x3)
VHLP1-23-4CR4B (x1)
- 2. DIMENSIONS: L 58.1"x W15.7" x D 9.4"
L96"x W 24" x D 8.7"
L54.8"x W 6.9" x D 4.3"
L 13.8"x W 15.7" x D 1"
- 3. ANTENNAS: An array consisting of 3 antennas per sector, 3 sectors, with 1 microwave dish.
- 4. HEIGHT: 130 feet AGL to the center line of the antennas
- 5. TRANSMISSION LINES: TBD

- B. FUTURE CARRIERS – 3 additional carriers and emergency services as needed.

III. ENGINEERING ANALYSIS AND CERTIFICATION:

All work shall be in accordance with the 2015 International Building Code as modified by the 2018 Connecticut State Building Code, including the TIA/EIA-222 revision G "structural standards for steel antenna towers and supporting structures," 2018 Connecticut State Fire Prevention Code, 2017 National Electrical Code and local codes. The foundation design will be based on soil conditions at the site.

ENVIRONMENTAL ASSESSMENT STATEMENT

I. PHYSICAL IMPACT

A. WATER FLOW AND QUALITY

The construction, operation and maintenance of the Facility would not result in a disturbance of or any impact to any wetlands and watercourses. The nearest wetland area or watercourse is a wetland area is +/- 971 feet to the northwest of the proposed Facility. That wetland resource is identified as Perkins Brook with bordering wetlands is not located on the Property. There is also an intervening paved service road located on an adjacent parcel. See the Wetlands Inspection Report prepared by Registered Soil Scientist, Matthew Gustafson, appended hereto as Attachment 4. Tarpon would implement Best Management Practices during construction to control storm water and erosion. Additionally, the Site is not located within a 100 year flood zone. See Attachment 3, supra.

B. AIR QUALITY

Under ordinary operating conditions, the equipment that would be used at this Facility would emit no air pollutants of any kind.

C. LAND

Minimal clearing and grading would be required for development of the proposed Site. See the Site Evaluation Report, *supra*. The Facility would require the removal of three trees located within close proximity of a building within the developed parcel. The remainder of the Property would remain unchanged by the construction and operation of the Site.

D. NOISE

The Facility equipment after construction would not emit any noise other than the installed heating, air conditioning and ventilation systems. In the event of a power outage, T-Mobile would install a backup generator. Some noise is anticipated during Facility construction, which is expected to take approximately ten weeks.

E. POWER DENSITY

The Facility would satisfy the FCC standards. The worst-case calculation of power density for operation of T-Mobile's antennas at the Facility would be approximately 4.67 percent of the applicable FCC standards. See the Radio Frequency Emissions Analysis Report appended hereto as Attachment 5.

F. VISIBILITY

Only 3 percent of the 8,042 acre study area (two mile radius) would have year-round views of portions of the Facility. Very few residential properties would have direct and unobstructed views of the Facility. Most of the views in the study area would be obstructed because of the heavy forest cover and landscaping within the surrounding neighborhoods. An additional 3 percent of the study area would have seasonal (leaf-off) views of the proposed Facility; however, most of these views would be from over one mile away and through existing tree mast. *See the Visibility Analysis, appended hereto as Attachment 6.*

General Statutes § 16-50l (f) (1) requires an applicant to include in its technical report “the location of all schools near the proposed facility, an analysis of the potential aesthetic impacts of the facility on said schools, as well as a discussion of efforts or measures to be taken to mitigate such aesthetic impacts”

There are no schools or commercial daycare facilities located within 250 feet of the proposed Site. The Facility would not be visible from either the Metropolitan Learning Center or the Educational Playcare, Inc. *See attached Visibility analysis.*

II. SCENIC, NATURAL, HISTORIC & RECREATIONAL VALUES

Tarpon has retained All Points Technology Corporation, P.C. (“All-Points”) to evaluate the Facility in accordance with the FCC’s regulations implementing the National Environmental Policy Act of 1969. All-Points consulted with the Connecticut State Historic Preservation Office (“SHPO”) and SHPO issued a determination of no adverse impact to any sites listed on or eligible for listing on the National Register of Historic Places. *See the SHPO Determination and Cultural Resources Screen appended hereto as Attachment 7.*

ATTACHMENTS

Wetlands Inspection Report

Radio Frequency Emissions Analysis Report

Visibility Analysis

SHPO Determination and Cultural Resources Screen



WETLAND INSPECTION

July 9, 2018

APT Project No.: CT445180

Prepared For: Phoenix Partnership
110 Washington Avenue
North Haven, CT 81506473
Attn: Keith Coppins

Site Name: CT1209 Windsor

Site Address: 780 Prospect Hill Road
Windsor, Connecticut

Date(s) of Investigation: 5/17/2018

Field Conditions: **Weather:** partly cloudy, high 60's
Soil Moisture: dry to moist

Wetland/Watercourse Delineation Methodology*:

- Connecticut Inland Wetlands and Watercourses
- Connecticut Tidal Wetlands
- Massachusetts Wetlands
- U.S. Army Corps of Engineers

Municipal Upland Review Area/Buffer Zone:

Wetlands: 150 feet
Watercourses: 150 feet

The wetlands inspection was performed by[†]:

Matthew Gustafson, Registered Soil Scientist

Enclosures: Wetland Inspection Field Form & Wetland Inspection Map

This report is provided as a brief summary of findings from APT's wetland investigation of the referenced Study Area that consists of proposed development activities and areas generally within 200 feet.[‡] If applicable, APT is available to provide a more comprehensive wetland impact analysis upon receipt of site plans depicting the proposed development activities and surveyed location of identified wetland and watercourse resources.

* Wetlands and watercourses were delineated in accordance with applicable local, state and federal statutes, regulations and guidance.

† All established wetlands boundary lines are subject to change until officially adopted by local, state, or federal regulatory agencies.

‡ APT has relied upon the accuracy of information provided by Phoenix Partnership and its contractors regarding proposed lease area and access road/utility easement locations for identifying wetlands and watercourses within the study area.

Attachments

- Wetland Inspection Field Form
- Wetland Inspection Map

Wetland Inspection Field Form

Wetlands Identified within Study Area:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Nearest Wetland Resource:	±971 feet to the northwest	
Identification Method:	Remote sensing <input checked="" type="checkbox"/> Type: CTDEEP Wetland Mapping	Field identified <input checked="" type="checkbox"/>

SITE CONDITIONS:

DEVELOPED

Paved <input checked="" type="checkbox"/>	Gravel <input type="checkbox"/>	Maintained Lawn <input checked="" type="checkbox"/>
Agriculture <input type="checkbox"/>	Cultivated <input type="checkbox"/>	Hayfield/Pasture <input type="checkbox"/>
Comments: Proposed wireless communications facility located in maintained lawn/landscaping area adjacent to commercial building.		

UNDEVELOPED UPLAND HABITAT

Forest <input type="checkbox"/>	Scrub/Shrub <input type="checkbox"/>	Field <input type="checkbox"/>
Other: None		
Comments: None		

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If no, describe field identified soils		

NEAREST WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: None		

CLASS:

Emergent <input checked="" type="checkbox"/>	Scrub-shrub <input checked="" type="checkbox"/>	Forested <input checked="" type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: Complex of edge forest transitioning to scrub/shrub and emergent vegetation classes that border on Perkins Brook.		

WATERCOURSE TYPE:

Perennial <input checked="" type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: Perkins Brook		
Comments: drains west to east		

Wetland Inspection Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: None	
Comments: None	

GENERAL COMMENTS:

No wetlands or watercourses are located on the subject property. The proposed wireless communications facility is to be located entirely within existing disturbed and developed area associated with the commercial buildings complex that occupies the subject property. The nearest wetland resource to the proposed project area is located approximately 971 feet to the northwest. This wetland/watercourse, identified as Perkins Brook and its bordering wetlands, is located on the west side of an existing paved service road, which crosses the brook.

Therefore, the proposed project would not affect wetlands or watercourses.



Legend

-  Approximate Proposed Tower Location
-  Subject Property
-  Proposed Lease Area
-  Approximate Parcel Boundary (CTDEEP)
-  Approximate Wetland Boundary
-  Watercourse (CTDEEP)

Map Notes:
 Base Map Source: 2016 CT Aerial Imagery (CTECO)
 Map Scale: 1 inch = 200 feet
 Map Date: June 2018



Wetland Inspection Map

Proposed Wireless
 Telecommunications Facility
 Windsor CT
 780 Prospect Hill Road
 Windsor, Connecticut



Transcom Engineering, Inc.

Wireless Network Design and Deployment

Radio Frequency Emissions Analysis Report

T-MOBILE Proposed Facility

Site ID: CTHA227A

Windsor
800 Prospect Hill Road
Windsor, CT 06095

August 20, 2019

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	4.67 %

Transcom Engineering, Inc.

Wireless Network Design and Deployment

August 20, 2019

T-MOBILE

Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 6009

Emissions Analysis for Site: **CTHA227A – Windsor**

Transcom Engineering, Inc (“Transcom”) was directed to analyze the proposed T-MOBILE facility to be located at **800 Prospect Hill Road, Windsor, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation located on this property will be within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 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 population 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 population 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.

Population 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 limits for the 600 MHz & 700 MHz bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (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.

Transcom Engineering, Inc.

Wireless Network Design and Deployment

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

Additional details can be found in FCC OET 65.

Transcom Engineering, Inc.

Wireless Network Design and Deployment

CALCULATIONS

Calculations were performed for the proposed T-MOBILE antenna facility to be located at **800 Prospect Hill Road, Windsor, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-MOBILE is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE	2100 MHz (AWS)	4	40
LTE	1900 MHz (PCS)	4	40
LTE / 5G NR	600 MHz	2	40
LTE	700 MHz	2	20
UMTS	2100 MHz (AWS)	1	40
Microwave	11 GHz	1	1

Table 1: Proposed Channel Data Table

Transcom Engineering, Inc.

Wireless Network Design and Deployment

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands. This is based on feedback from T-Mobile with regard to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Ericsson AIR3246 B66A (M-MIMO)	130
A	2	RFS APX16DWV-16DWV-S-E-A20	130
A	3	RFS APXVAARR24 43-U-NA20	130
B	1	Ericsson AIR3246 B66A (M-MIMO)	130
B	2	RFS APX16DWV-16DWV-S-E-A20	130
B	3	RFS APXVAARR24 43-U-NA20	130
B	4	1-foot Microwave Dish	130
C	1	Ericsson AIR3246 B66A (M-MIMO)	130
C	2	RFS APX16DWV-16DWV-S-E-A20	130
C	3	RFS APXVAARR24 43-U-NA20	130

Table 2: Antenna Data

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

Transcom Engineering, Inc.

Wireless Network Design and Deployment

RESULTS

Per the calculations completed for the proposed T-MOBILE configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Ericsson AIR3246 B66A (M-MIMO)	2100 MHz (AWS)	15.85	4	160	6,153.47	1.44
Antenna A2	RFS APX16DWV-16DWV-S-E-A20	1900 MHz (PCS)	15.9	4	160	6,224.72	1.46
Antenna A3	RFS APXVAARR24 43-U-NA20	600 MHz / 700 MHz / 2100 MHz (AWS)	12.95 / 13.35 / 16.35	5	160	4,169.10	1.75
Sector A Composite MPE%							4.65
Antenna B1	Ericsson AIR3246 B66A (M-MIMO)	2100 MHz (AWS)	15.85	4	160	6,153.47	1.44
Antenna B2	RFS APX16DWV-16DWV-S-E-A20	1900 MHz (PCS)	15.9	4	160	6,224.72	1.46
Antenna B3	RFS APXVAARR24 43-U-NA20	600 MHz / 700 MHz / 2100 MHz (AWS)	12.95 / 13.35 / 16.35	5	160	4,169.10	1.75
Antenna B4	1-foot MW dish	11 GHz	28.75	1	1	749.89	0.02
Sector B Composite MPE%							4.67
Antenna C1	Ericsson AIR3246 B66A (M-MIMO)	2100 MHz (AWS)	15.85	4	160	6,153.47	1.44
Antenna C2	RFS APX16DWV-16DWV-S-E-A20	1900 MHz (PCS)	15.9	4	160	6,224.72	1.46
Antenna C3	RFS APXVAARR24 43-U-NA20	600 MHz / 700 MHz / 2100 MHz (AWS)	12.95 / 13.35 / 16.35	5	160	4,169.10	1.75
Sector C Composite MPE%							4.65

Table 3: T-MOBILE Emissions Levels

Transcom Engineering, Inc.

Wireless Network Design and Deployment

The Following table (table 4) shows all carriers proposed at this site and their MPE% for this facility along with the newly calculated maximum T-MOBILE MPE contributions per this report. For this proposed facility, T-Mobile is currently the only proposed carrier. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, the sector with the largest calculated MPE% is Sector B. Table 5 below shows a summary for each T-MOBILE Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	MPE%
T-MOBILE – Max Per Sector Value (Sector B)	4.67 %
No Additional Carriers	NA
Site Total MPE %:	4.67 %

Table 4: All Proposed Carrier MPE Contributions

T-MOBILE Sector A Total:	4.65 %
T-MOBILE Sector B Total:	4.67 %
T-MOBILE Sector C Total:	4.65 %
Site Total:	4.67 %

Table 5: Site MPE Summary

Transcom Engineering, Inc.

Wireless Network Design and Deployment

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-MOBILE sector(s). For this site, the sector with the largest calculated MPE% is Sector B.

T-MOBILE _ Frequency Band / Technology Max Power Values (Sector B)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2100 MHz (AWS) LTE	4	1,538.37	130	14.39	2100 MHz (AWS)	1000	1.44%
T-Mobile 1900 MHz (PCS) LTE	4	1,556.18	130	14.55	1900 MHz (PCS)	1000	1.46%
T-Mobile 600 MHz LTE / 5G NR	2	788.97	130	3.69	600 MHz	400	0.92%
T-Mobile 700 MHz LTE	2	432.54	130	2.02	700 MHz	467	0.43%
T-Mobile 2100 MHz (AWS) UMTS	1	1,726.08	130	4.04	2100 MHz (AWS)	1000	0.40%
T-Mobile 11 GHz Microwave	1	749.89	130	0.18	11 GHz	1000	0.02%
						Total:	4.67%

Table 6: T-MOBILE Maximum Proposed Sector MPE Power Values

Transcom Engineering, Inc.

Wireless Network Design and Deployment

Summary

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

The anticipated maximum composite contributions from the proposed T-MOBILE facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-MOBILE Sector	Power Density Value (%)
Sector A:	4.65 %
Sector B:	4.67 %
Sector C:	4.65 %
T-MOBILE Maximum Total (per sector):	4.67 %
Site Total:	4.67 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site as described in this report will be **4.67 %** of the allowable FCC established general population limit sampled at the ground level.

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



Scott Heffernan
RF Engineering Director
Transcom Engineering, Inc
PO Box 1048
Sterling, MA 01564

Viewshed Analysis Report

Proposed Wireless Telecommunications Facility:

CT1209 Windsor
780 Prospect Hill Rd
Windsor, CT 06095



- 139 ft AGL structure, consisting of proposed new 135 ft monopole tower with 4 ft lightning rod
- Viewshed map completed 3/1/19
- Balloon test and viewshed verification completed 3/3/19

Viewshed analysis maps and representations contained herein depict where proposed facility may potentially be visible based on the best data available and site conditions at the time data was collected. This study does not claim to depict all locations from where the facility may be potentially visible.



Introduction

At the request of Tarpon Towers II, LLC, Virtual Site Simulations, LLC (VSS) was contracted to provide a Viewshed Analysis Report for a proposed telecommunications Facility located at 810 Prospect Hill Road, Windsor, CT 06095. Hereafter referred to as "the Site". The proposed tower facility would consist of an approximate 135 Ft. above ground level ("AGL") Monopole type antenna structure with a max height of 139 Ft. AGL that includes a 4 Ft lightning rod. Space is available for co-location of 3 future carriers. Associated unmanned equipment will be contained within an approximately 50 ft x 50 ft fenced gravel equipment compound surrounding the base of the proposed tower.

Site Description and Setting

The proposed Monopole type telecommunications facility is located on the 5.71 +/- Acre property designated by the tax assessor as parcel Code 8300 Map 17 Block 135 Lot 1 and owned by THE FERRAINA COMPANY LLC. The Site is approximately 2.4 miles due west of Interstate 91 at Exit 38, Poquonock Avenue. The site is located within a mostly rural area and the subject property contains 3 existing single story Industrial/Commercial buildings. The Proposed facility location is within an existing triangular shaped landscaped area behind an existing structure, along the Northern edge of the property. Existing tree-line on northern edge of property adjacent to proposed compound is to remain.

Development surrounding this area is a mix of farmland and residential houses to the north and northeast with commercial/industrial buildings and farmland to the south and south east. The Farmington River is approximately 1.04 miles to the northwest at its nearest point. The METROPOLITAN LEARNING CENTER is approximately 1.26 miles to the southwest. Educational Playcare Inc., a daycare facility, is approximately 1.0 +/- Miles to southeast. The Metacomet Trail is 3.3 miles to the east at its closest point. There are no CT Blue Blazed Trails within the study area. There are no schools or licensed daycare facilities within 250 ft of the proposed facility.

Methodology

A two-mile diameter surrounding the site is defined as the study area for this Viewshed Analysis. The Viewshed Analysis was conducted within the predefined study area using two different methods: computer modeling and on-site observation. Each method was used to verify the results of the other, providing the best possible prediction of locations that will have views of proposed telecommunications facility.

Note: Balloon Test was conducted during leaf-off conditions therefore leaf-off viewshed results were verified.

Computer Modeling – Viewshed Analysis

A combination of Image based, Lidar based and Digital Elevation Model (“DEM”) based data was used to perform this analysis. The primary software used was Environmental Systems Research Institute Inc. (ERSI) ArcGIS Spatial Analysis. This software allows the user to perform spatial analysis on imported maps and datasets. The maps and datasets used are documented in the “documentation” page at the end of this report. The maps and datasets are imported as layers within the software mapping program. Once imported, spatial analysis tools are used to evaluate each position within those layers from which the proposed facility may be visible. These tools allow for the input of: viewing reference height (assumed to be 5 Ft AGL) and tower height (in this case 139 ft AGL structure, consisting of proposed new 135 ft monopole tower with 4 ft lightning rod). The tools also take into account any layers that have been imported that may affect viewing location (i.e. topography, tree canopy, ground cover, buildings, roads etc.). Lidar data was used to create a Digital Surface Model (DSM) of the existing topography. Existing tree canopy height and Building heights were not averaged or assumed but calculated from lidar data within the DSM. Image analysis was used to classify the existing tree cover for both leaf on and leaf off conditions. The Image analysis results were then used to create two different DSM’s. Visibility analysis tools were then applied, and visibility models were created. The results of this computer model were then graphically layered on topographic and aerial maps.

These maps can be found in Attachment A.

On-site Observation & Documentation

A balloon test was conducted on Sunday, March 3rd, 2019 and used as the visual reference for site observations from random locations throughout the study area. Note: The balloon test was conducted at 135 Ft AGL. The balloon test consisted of flying a 3 Ft. diameter helium filled balloon to the top elevation of the proposed tower. Balloon diameter was measured using a custom set of calipers. A red balloon was used to provide the best contrast between it and surrounding sky or vegetation. The balloon was tethered to the location of the proposed tower, and its elevation was set by measuring the length of the tether. The elevation was verified using the Lieca DISTO D2 Laser distometer.

Balloon test accuracy is very wind dependent. The balloon test was therefore scheduled on a day with wind conditions below the accepted threshold of 10mph. A preliminary viewshed analysis was done using the method outlined above to determine what areas were predicted to have views of the proposed site and to verify the computer model. Drive-by visual reconnaissance of the Study Area was then conducted using the preliminary viewshed analysis as a guide. Locations where the Balloon was visible and not visible were photo documented and a GPS track of reconnaissance areas was made. Reconnaissance areas were limited to public areas/roads, no private property was used in the on-site observations of this test.

Photo documentation of this test was accomplished using a Nikon P900 16Mp digital camera set to use a 50mm focal length^{1 2}. The Nikon P900 was chosen because it has built-in XMP metadata files that embed the GPS location, light conditions and bearing to target within the image source data file. These photos document the necessary location and bearing data to ensure the accuracy of simulation location. This documentation was then incorporated into a computer model prediction. The on-site observations were used to adjust model assumptions made in 3d model as necessary.

¹ "The lens that most closely approximates the view of the unaided human eye is known as the normal focal length lens. For the 35 mm camera format, which gives an 24 x 35mm image, the normal focal length is about 50mm" Warren Bruce Photography, West Publishing Company, Egan, MN c 1993 (page 70)

² 50 mm focal length is based on 35mm film photography. Since Digital photographic sensors are not the same size as 35mm film ALL digital photography focal lengths must be corrected

Photographic Documentation

A number of photographs were chosen from the on-site documentations photos and used to prepare photorealistic simulations of the proposed telecommunications facility. GPS coordinates and bearing information recorded within the XMP metadata file of the documentation photos was used to generate virtual camera positions within a 3d model. The balloon in the documentation photos was used as a spatial reference to verify the proportions and height of the proposed tower. Site plan information, field observations and 3D models were then used in these simulations to portray relative scale and location of the proposed structure. The photo simulations were then created using a combination of the 3d model and photo rendering software. These simulations and the existing site photographs provided for reference are attached.

Eight photographs were used for simulations and documentation. These Simulations and documentation photos are plotted on the viewshed analysis map attached and shown in the Photo Simulation Package (Attachment B)

Visibility Analysis Results

The results of the of viewshed analysis for the proposed tower are provided on the visibility analysis maps attached at the end of this report within Attachment A.

Predicted estimate of year-round views (Summer, leaf on condition) of the proposed tower facility are from approximately 121.0 acres or approximately 6.02 % of the 2-mile diameter study area. The majority of these views (85.26 Acres +/- 70.46%) are contained within the farmland/industrial/commercial area to south of the proposed site around and along Day Hill Road at Goodwin Drive. The next largest area of predicted year-round visibility is contained with a 20.26 Acre area direct to the north of proposed site. The land use in this area is farmland to the south with approximately 16 single family homes built within existing farmland along Huckleberry Road and Morello Circle to the north. The majority of the remaining 15.48 Acres of predicted year-round views mainly occur in small pockets of visibility within the commercial /farmland area to southwest of the site along Day Hill Road. These views are predicted to be of the upmost portion of the proposed tower.

Predicted seasonal views (Winter, leaf off condition) of the proposed facility are from an additional 8.00 acres (an additional .39 %). Total predicted seasonal views 129.02 Acres. These additional seasonal views mostly occur along the edges of the year-round visibility areas with some small areas (+/-300 sq. ft) of additional seasonal visibility scattered within the residential area to west. Views from these specific areas are predicted to be distant and obscured by existing tree cover.

Areas of predicted visibility, both seasonal and year-round, are mostly contained within Commercial/Industrial/Farmland areas within .35 miles surrounding the proposed Site. The most significant residential views are predicted to occur from the southern side of the six single family homes on the south side of Huckleberry Road and the first two homes at the intersection of Huckleberry road and Morello Circle. These homes are approximately .19 miles (+/- 1000 ft) from the proposed tower location and their parcels appear to have been cut from neighboring farmland and as such, contain few mature trees. Due to the existing tree-line on the proposed site that is to remain, the proposed compound and lower portion of the tower are predicted to be obscured from views in this direction. It is predicted that the upper portion of the tower will be visible from these locations. It should be noted that no significant year -round views are predicted in the large residential area to west or to the north.

Documentation

Sources used for Visibility Analysis located at:

**Proposed Wireless Telecommunications Facility
CT1209 Windsor
810 Prospect Hill Road
Windsor, CT 06095**

Maps and datasets /consulting documents:

United States Geological Survey - USGS Topographical quadrangles (2011-2012)

National Resource Conservation Service -NAIP aerial photography (2010, 2012)

CRCOG Ortho-imagery – (2017)

UCONN- Center for Land Use Education and Research
- **LiDAR data (2016)**

DEEP- Connecticut Department of Energy and Environmental Protection
- **Open Space (2010)**
- **DEEP Property (2017)**
- **Historic Places (2008)**

United States Census (2010) – Landmark Polygon Features

Connecticut Forest & Park Association (CFPA) – Blue Blazed Trails (2016)

Connecticut.Gov eLicensing Website – Child Daycare & Group Daycare Homes Roster (2017)

Environmental Systems Research Institute Inc (ERSI) – CT state boundaries/counties (2010)

Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo

Limitations:

This report and the analysis herein does not claim to depict all locations, or the only locations from which the proposed facility will be visible; it is intended to provide a representation of those areas where proposed facility is likely to be visible.

Attachment A - Viewshed Mapping Package



Proposed Wireless Telecommunications Facility:

CT1209 Windsor
780 Prospect Hill Rd
Windsor, CT 06095

- Proposed new 139 ft AGL antenna structure
- Balloon test and viewshed verification completed 3/3/19

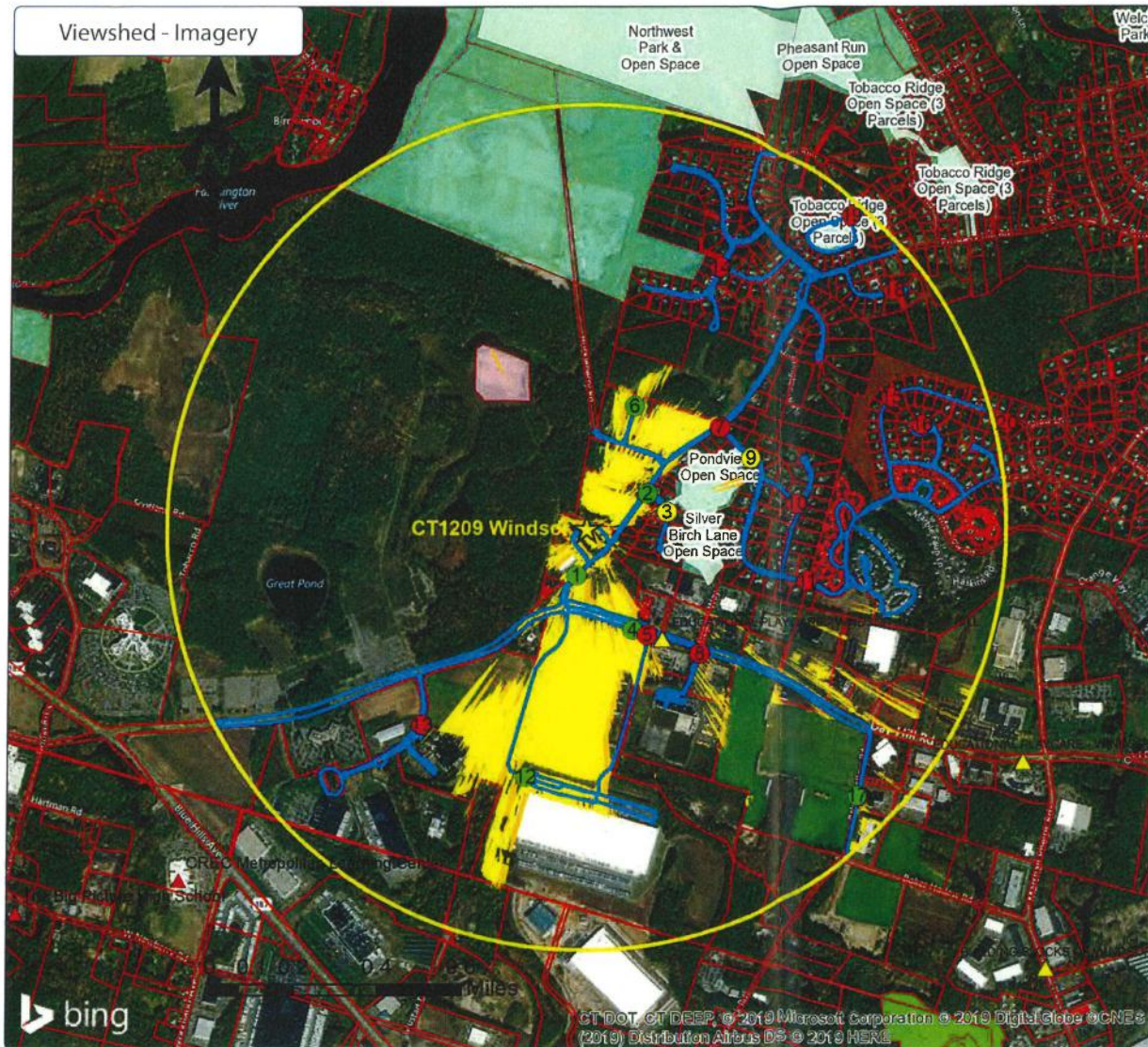
Package prepared by:

Virtual Site Simulations, LLC
28 Caswell Street
Suite 100
Narragansett, Rhode Island 02882

www.VirtualSiteSimulations.com
www.ThinkVSSFirst.com

Viewshed analysis maps and representations contained herein depict where proposed facility may potentially be visible based on the best data available and site conditions at the time data was collected. This study does not claim to depict all locations from where the facility may be potentially visible.





Proposed Wireless Telecommunications Facility:

CT1209 Windsor
780 Prospect Hill Rd
Windsor, CT 06095

Legend:

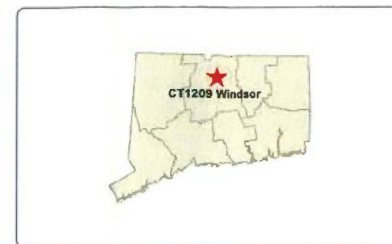
- ☆ Facility Location
- 2 Mile Diameter
- Track Log
- Plat Lot Lines
- Photo location -Balloon visible- Year Round
- ⊗ Photo location -Balloon visible- Seasonal
- Photo location -Balloon NOT visible
- ▲ School Facilities
- ▲ Daycare Facilities
- CT Open Space (Conservation Land)
- CT Open Space (Municipal Land)
- CT Open Space (State Land)
- Predicted Visibility-Year Round(Leaf On)
- Predicted Visibility-Seasonal(Leaf Off)

Statistics:

PROJ_DESC=Geographic (Lat/Long) / WGS84 / arc degrees
 PROJ_DATUM=WGS84 PROJ_UNITS=arc degrees
 PIXEL_WIDTH=0.0000013 arc degrees (+/- .6 ft)
 PIXEL_HEIGHT=0.0000014 arc degrees (+/- .6 ft)
 DIAMETER= 2 Mile
 TRANSMITTER_HEIGHT (Ft-AGL)= 139
 RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
 PERCENT_VISIBLE (%) Year Round (Leaf On)= 6.02
 PERCENT_VISIBLE (%) Seasonal (Leaf Off)= 6.41

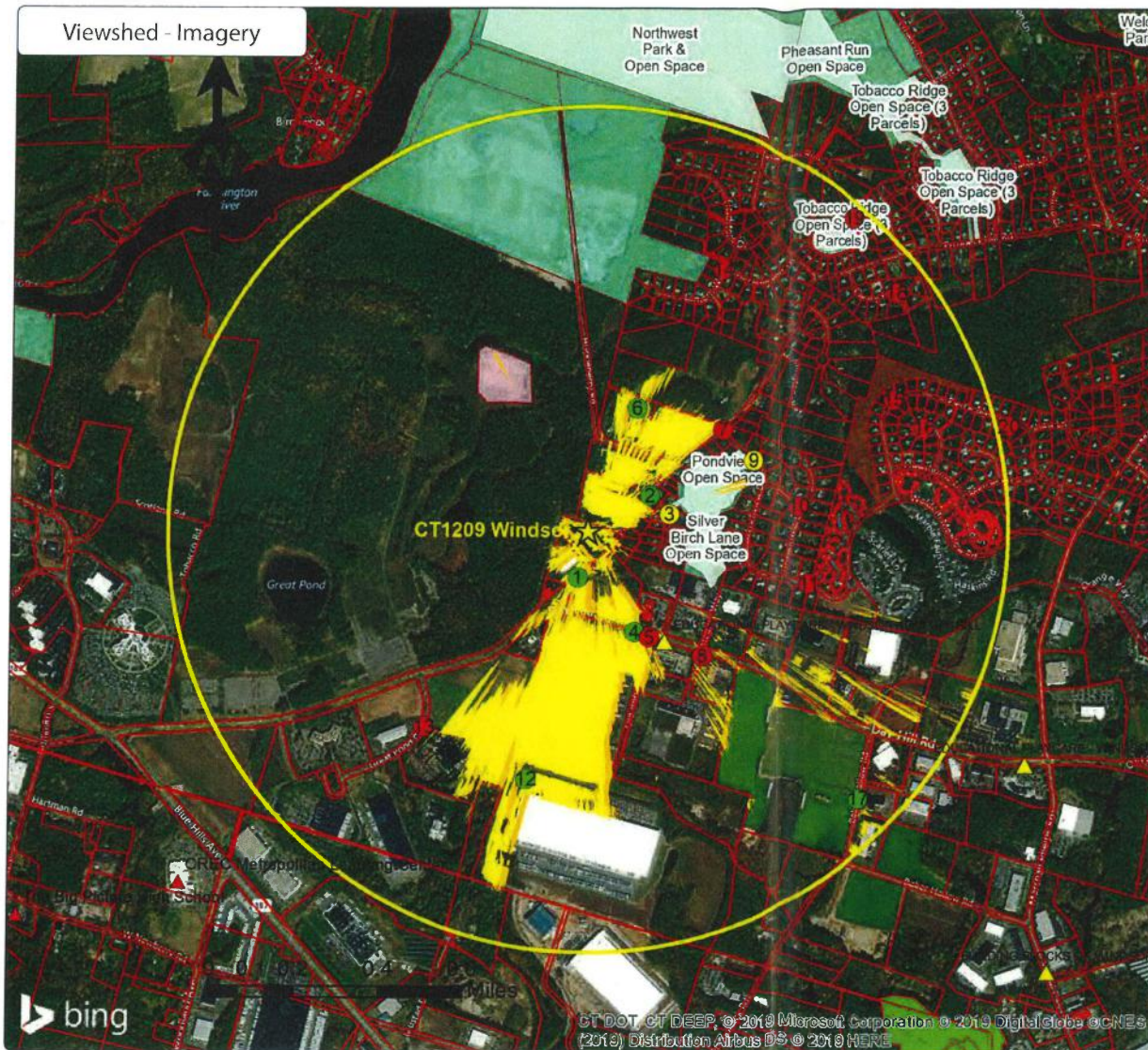
Notes:

- map compiled by VSS, LLC on: 3/20/19
- Tower location(lat/long NAD 83):41.882925 -72.708104
- Data Sources noted on documentation page attached



Viewshed analysis maps and representations contained herein depict where proposed facility may potentially be visible based on the best data available and site conditions at the time data was collected. This study does not claim to depict all locations from where the facility may be potentially visible.





Proposed Wireless Telecommunications Facility:

CT1209 Windsor
 780 Prospect Hill Rd
 Windsor, CT 06095

Legend:

- ☆ Facility Location
- 2 Mile Diameter
- Plat Lot Lines
- Photo location - Balloon visible- Year Round
- ⊗ Photo location - Balloon visible- Seasonal
- Photo location - Balloon NOT visible
- ▲ School Facilities
- ▲ Daycare Facilities
- CT Open Space (Conservation Land)
- CT Open Space (Municipal Land)
- CT Open Space (State Land)
- Predicted Visibility-Year Round(Leaf On)
- Predicted Visibility-Seasonal(Leaf Off)

Statistics:

PROJ_DESC=Geographic (Lat/Long) / WGS84 / arc degrees
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 PIXEL_WIDTH=0.0000013 arc degrees (+/- .6 ft)
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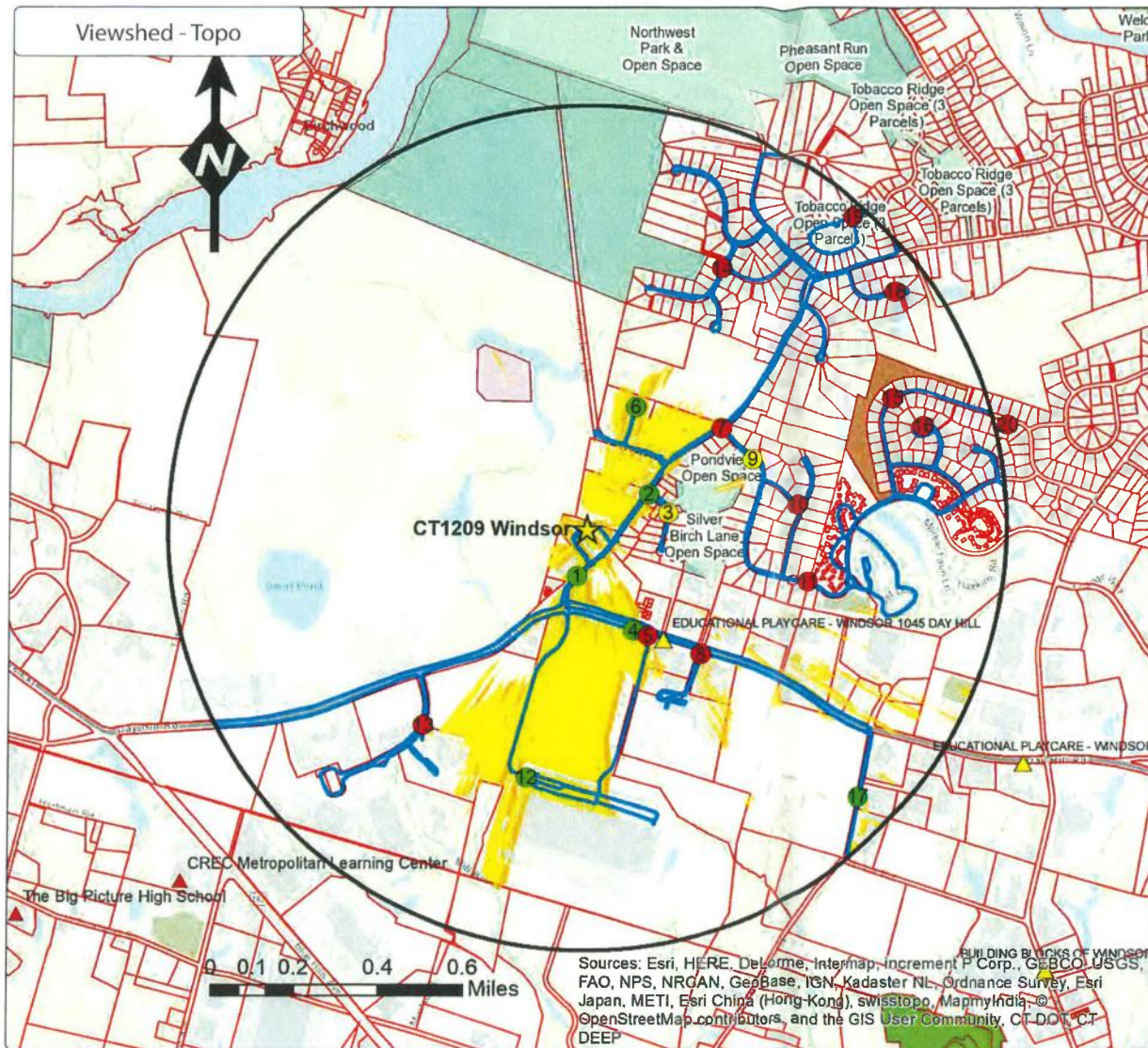
Notes:

- map compiled by VSS, LLC on: 3/20/19
- Tower location(lat/long NAD 83):41.882925 -72.708104
- Data Sources noted on documentation page attached



Viewshed analysis maps and representations contained herein depict where proposed facility may potentially be visible based on the best data available and site conditions at the time data was collected. This study does not claim to depict all locations from where the facility may be potentially visible.





Proposed Wireless Telecommunications Facility:

CT1209 Windsor
 780 Prospect Hill Rd
 Windsor, CT 06095

Legend:

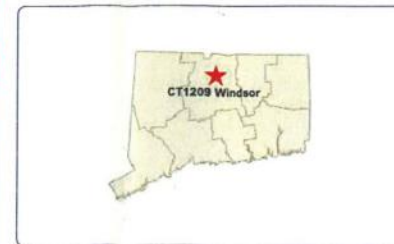
- ☆ Facility Location
- 2 Mile Diameter
- Track Log
- Plat Lot Lines
- Photo location -Balloon visible- Year Round
- ⊗ Photo location -Balloon visible- Seasonal
- Photo location -Balloon NOT visible
- ▲ School Facilities
- ▲ Daycare Facilities
- CT Open Space (Conservation Land)
- CT Open Space (Municipal Land)
- CT Open Space (State Land)
- Predicted Visibility-Year Round(Leaf On)
- Predicted Visibility-Seasonal(Leaf Off)

Statistics:

PROJ_DESC=Geographic (Lat/Long) / WGS84 / arc degrees
 PROJ_DATUM=WGS84 PROJ_UNITS=arc degrees
 PIXEL_WIDTH=0.0000013 arc degrees (+/- .6 ft)
 PIXEL_HEIGHT=0.0000014 arc degrees (+/- .6 ft)
 DIAMETER= 2 Mile
 TRANSMITTER_HEIGHT (Ft-AGL)= 139
 RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
 PERCENT_VISIBLE (%) Year Round (Leaf On)= 6.02
 PERCENT_VISIBLE (%) Seasonal (Leaf Off)= 6.41

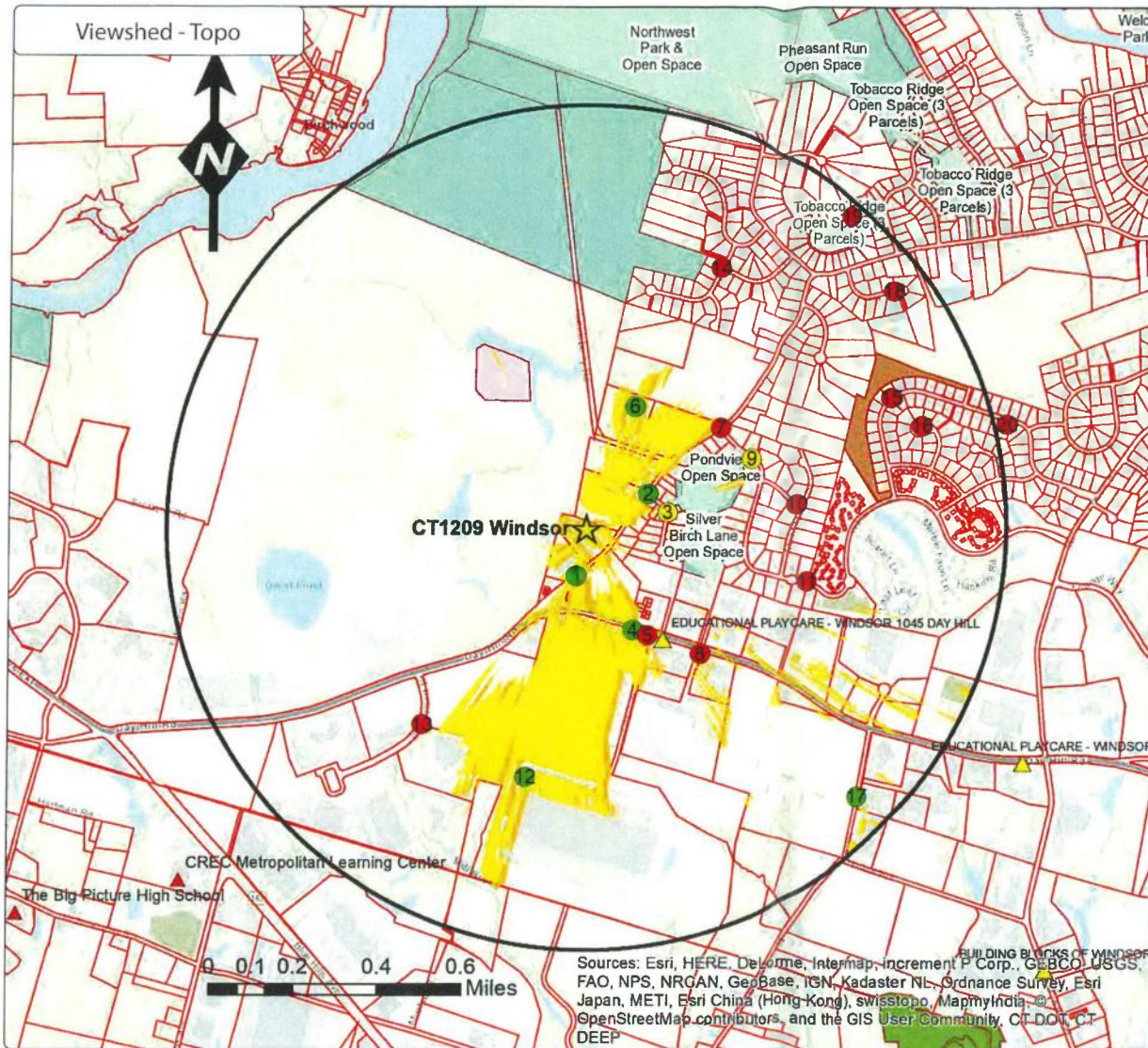
Notes:

- map compiled by VSS, LLC on: 3/20/19
- Tower location(lat/long NAD 83):41.882925 -72.708104
- Data Sources noted on documentation page attached



Viewshed analysis maps and representations contained herein depict where proposed facility may potentially be visible based on the best data available and site conditions at the time data was collected. This study does not claim to depict all locations from where the facility may be potentially visible.





Proposed Wireless Telecommunications Facility:

CT1209 Windsor
780 Prospect Hill Rd
Windsor, CT 06095

Legend:

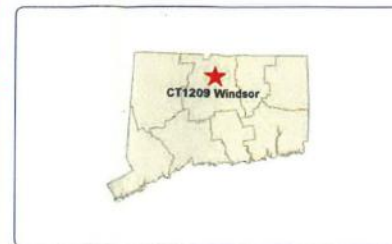
- ☆ Facility Location
- 2 Mile Diameter
- Plat Lot Lines
- Photo location - Balloon visible- Year Round
- ⊗ Photo location - Balloon visible- Seasonal
- Photo location - Balloon NOT visible
- ▲ School Facilities
- ▲ Daycare Facilities
- CT Open Space (Conservation Land)
- CT Open Space (Municipal Land)
- CT Open Space (State Land)
- Predicted Visibility-Year Round(Leaf On)
- Predicted Visibility-Seasonal(Leaf Off)

Statistics:

PROJ_DESC=Geographic (Lat/Long) / WGS84 / arc degrees
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 PERCENT_VISIBLE (%) Year Round (Leaf On)= 6.02
 PERCENT_VISIBLE (%) Seasonal (Leaf Off)= 6.41

Notes:

- map compiled by VSS, LLC on: 3/20/19
- Tower location(lat/long NAD 83):41.882925 -72.708104
- Data Sources noted on documentation page attached



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community, CT-DOH, CT-DEEP

Viewshed analysis maps and representations contained herein depict where proposed facility may potentially be visible based on the best data available and site conditions at the time data was collected. This study does not claim to depict all locations from where the facility may be potentially visible.



Attachment B - Photographic Simulation Package



Proposed Wireless Telecommunications Facility:

CT1209 Windsor
780 Prospect Hill Rd
Windsor, CT 06095

- Balloon Test Conducted 3/3/19

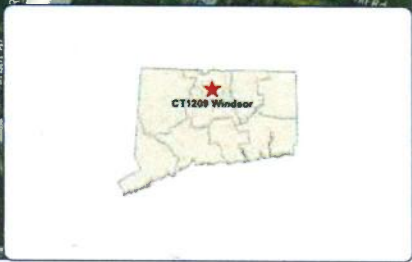
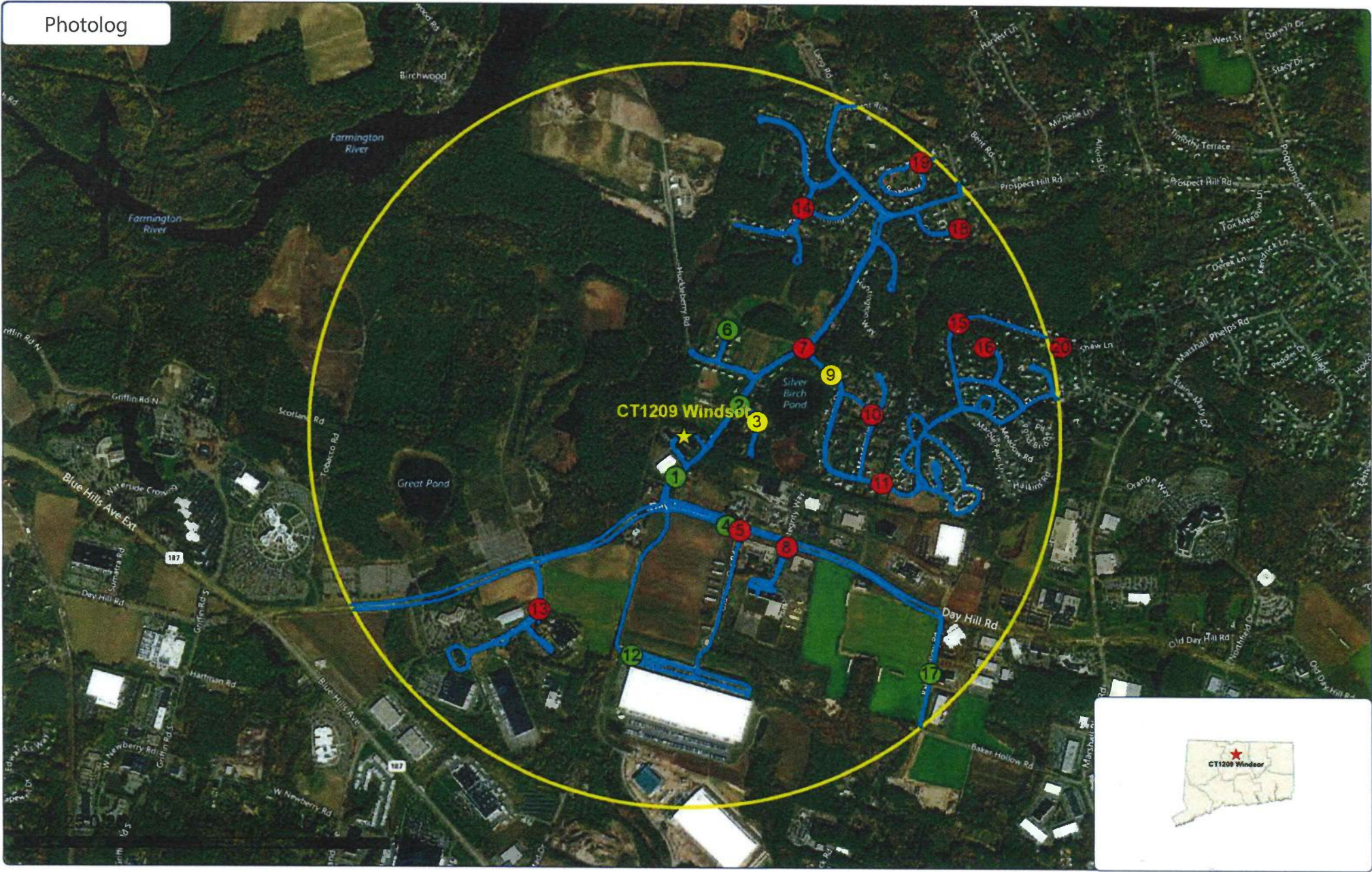
Package prepared by:

Virtual Site Simulations, LLC
28 Caswell Street
Suite 100
Narragansett, Rhode Island 02882

www.VirtualSiteSimulations.com
www.ThinkVSSFirst.com

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution





Wireless Telecommunications Facility:

CT1209 Windsor
 780 Prospect Hill Rd
 Windsor, CT 06095

Legend:

- ★ Facility Location 2 Mile Diameter
- Reconnaissance Track Log
- X Photo location -Balloon visible
- Year Round Visibility
- X Photo location -Balloon visible
- Obscured Visibility
- X Photo location -Balloon NOT visible

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Existing



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
1	850 Prospect Hill Rd	41.88131 -72.70857	0.11 Miles	South	12	Year Round

Site: CT1209 Windsor

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution





Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
1	850 Prospect Hill Rd	41.88131 -72.70857	0.11 Miles	South	12	Year Round

Site: CT1209 Windsor

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Existing



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
2	725 Prospect Hill Rd	41.88411 -72.70524	0.17 Miles	North-East	241	Year Round

Site: CT1209 Windsor

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Your Visual Data Partner



Simulation



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
2	725 Prospect Hill Rd	41.88411 -72.70524	0.17 Miles	North-East	241	Year Round

Site: CT1209 Windsor

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Existing



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
3	25 Silver Birch Ln	41.88348 -72.70435	0.2 Miles	East	259	Obscured

Site: CT1209 Windsor



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Simulation



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
3	25 Silver Birch Ln	41.88348 -72.70435	0.2 Miles	East	259	Obscured

Site: CT1209 Windsor



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Existing



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
4	1080 Day Hill Rd	41.87943 -72.70592	0.27 Miles	South-East	335	Year Round

Site: CT1209 Windsor

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Simulation



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
4	1080 Day Hill Rd	41.87943 -72.70592	0.27 Miles	South-East	335	Year Round

Site: CT1209 Windsor

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Existing

Balloon not visible from this location

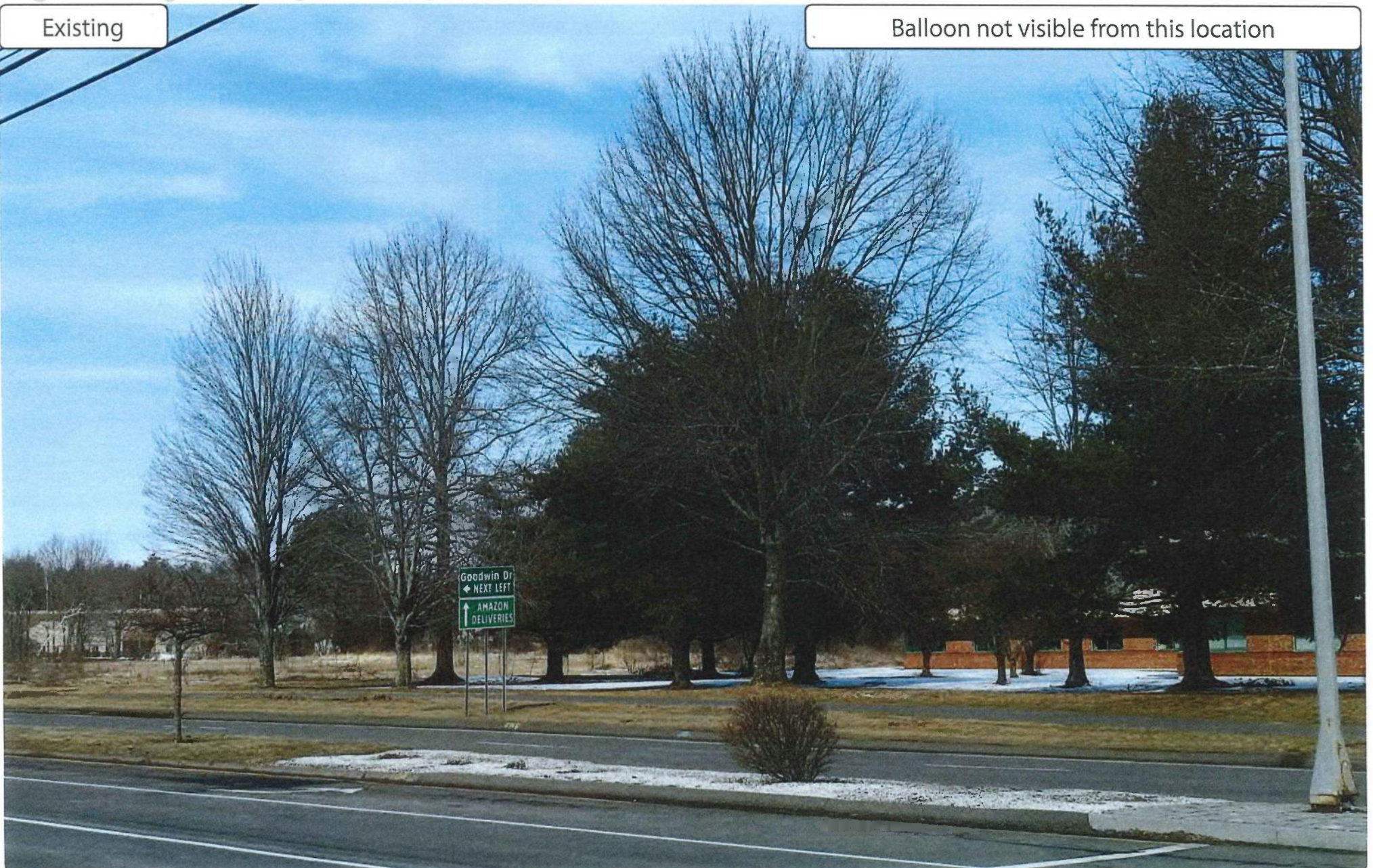


Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
5	Day Hill Rd and Old Iron Ore Rd	41.87925 -72.70524	0.29 Miles	South-East	330	Not Visible

Site: CT1209 Windsor

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Existing



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
6	98 Morello Cir	41.8871 -72.70585	0.31 Miles	North	202	Year Round

Site: CT1209 Windsor

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Simulation



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
6	98 Morello Cir	41.8871 -72.70585	0.31 Miles	North	202	Year Round

Site: CT1209 Windsor

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Existing

Balloon not visible from this location

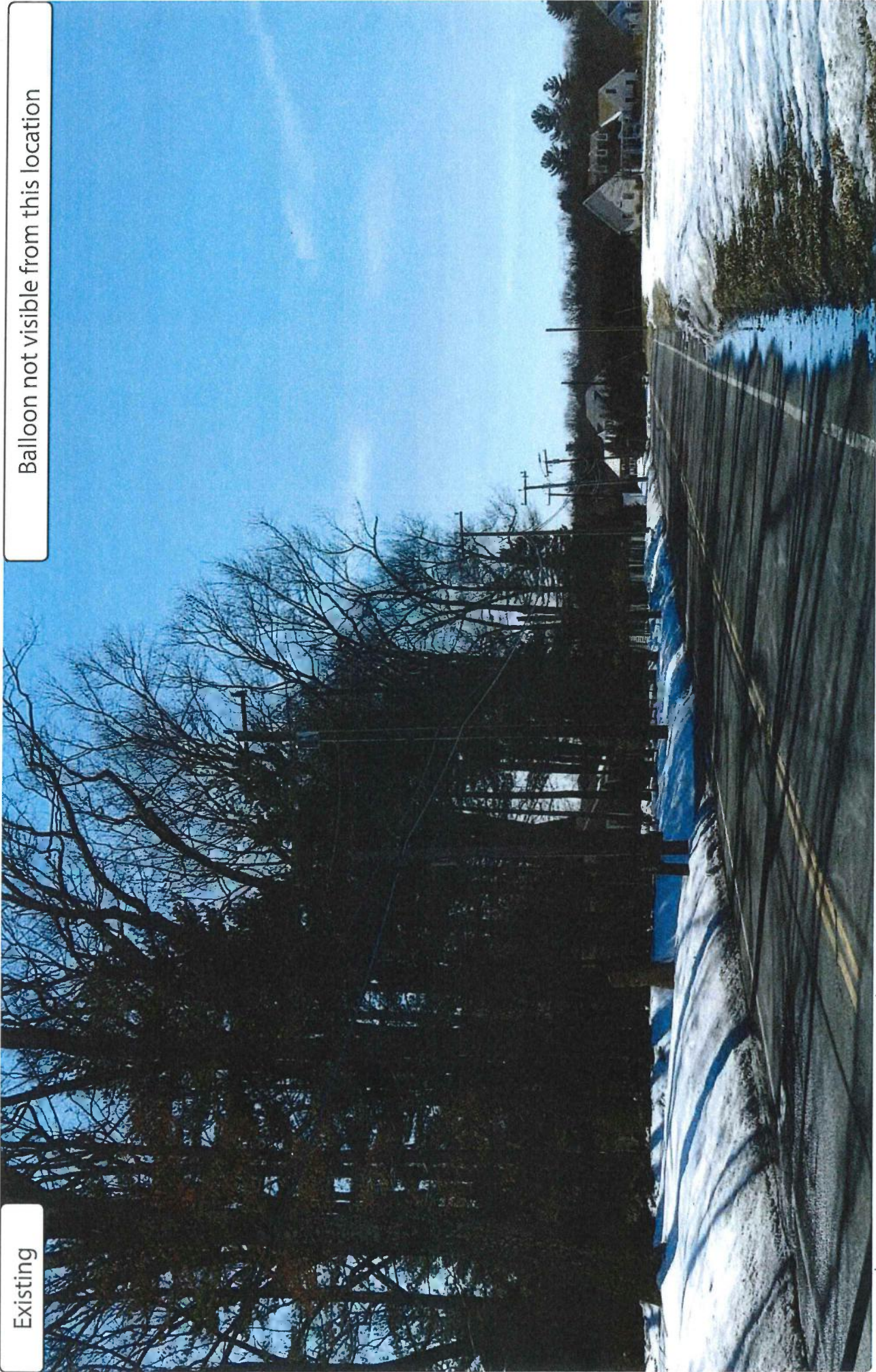


Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
7	2 Lochview Dr	41.88639 -72.70195	0.4 Miles	North-East	233	Not Visible

Site: CT1209 Windsor



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Existing

Balloon not visible from this location



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
8	Day Hill Rd and Opp Motor-	41.87861 -72.70282	0.4 Miles	South-East	318	Not Visible

Site: CT1209 Windsor

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Existing



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
9	1 Lochview Dr	41.88533 -72.70053	0.42 Miles	North-East	247	Obscured

Site: CT1209 Windsor



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Simulation



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
9	1 Lochview Dr	41.88533 -72.70053	0.42 Miles	North-East	247	Obscured

Site: CT1209 Windsor



Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution

Existing

Balloon not visible from this location

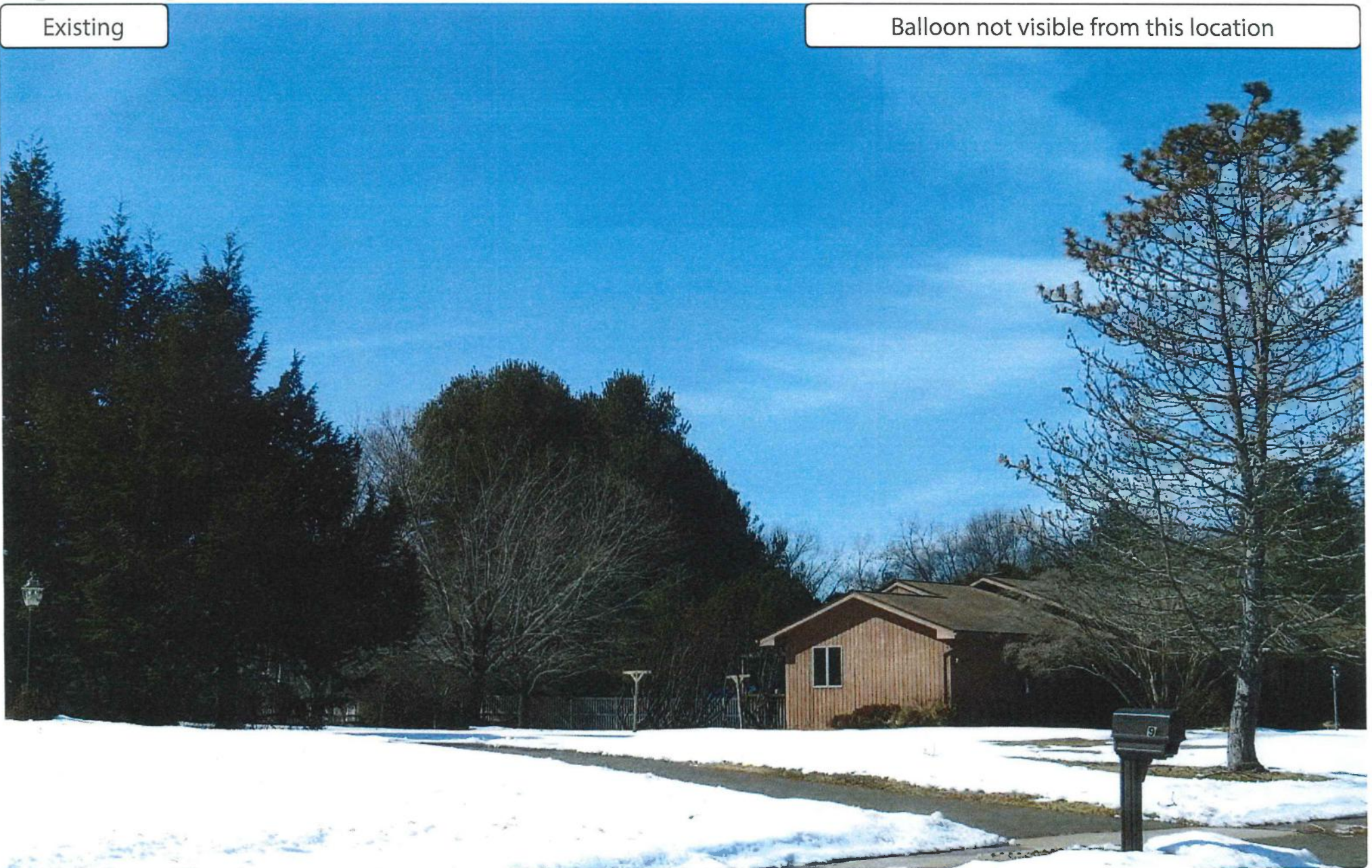


Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
10	9 Little Loch Way	41.88378 -72.6984	0.5 Miles	East	263	Not Visible

Site: CT1209 Windsor

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Existing

Balloon not visible from this location

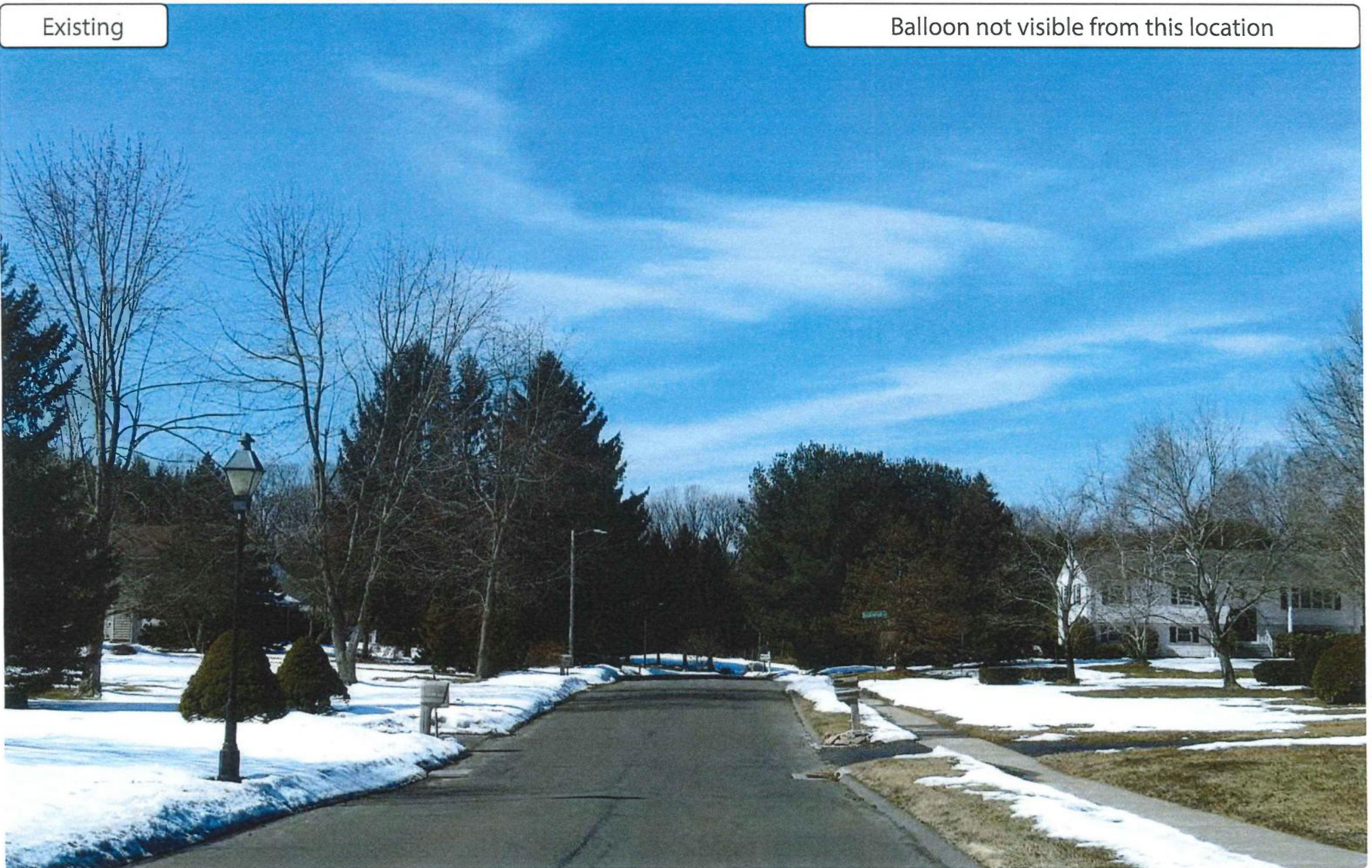


Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
11	136 Morning Glory Ct	41.88111 -72.69791	0.54 Miles	East	283	Not Visible

Site: CT1209 Windsor

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Existing

Balloon not visible from this location

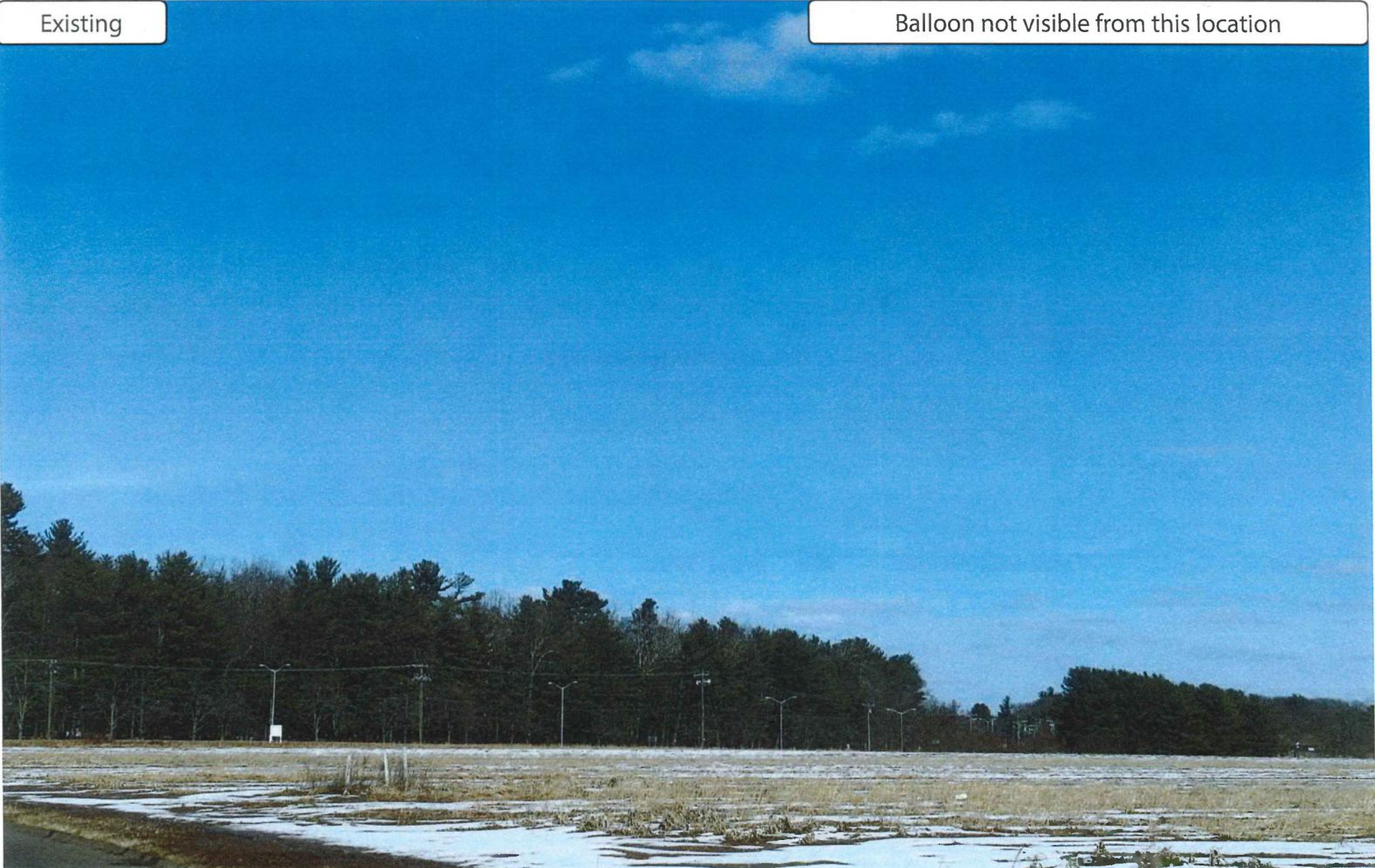


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
12	111 Great Pond Dr	41.87618	-72.71563	0.61 Miles	South-West	40	Not Visible

Site: CT1209 Windsor

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Existing



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
13	Goodwin Drive	41.8744 -72.71086	0.61 Miles	South	14	Year Round

Site: CT1209 Windsor

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Simulation



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
13	Goodwin Drive	41.8744 -72.71086	0.61 Miles	South	14	Year Round

Site: CT1209 Windsor

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Existing

Balloon not visible from this location



Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
14	410 Lantern Way	41.89185	-72.70198	0.69 Miles	North-East	207	Not Visible

Site: CT1209 Windsor

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Your Visual Data Partner



Existing

Balloon not visible from this location

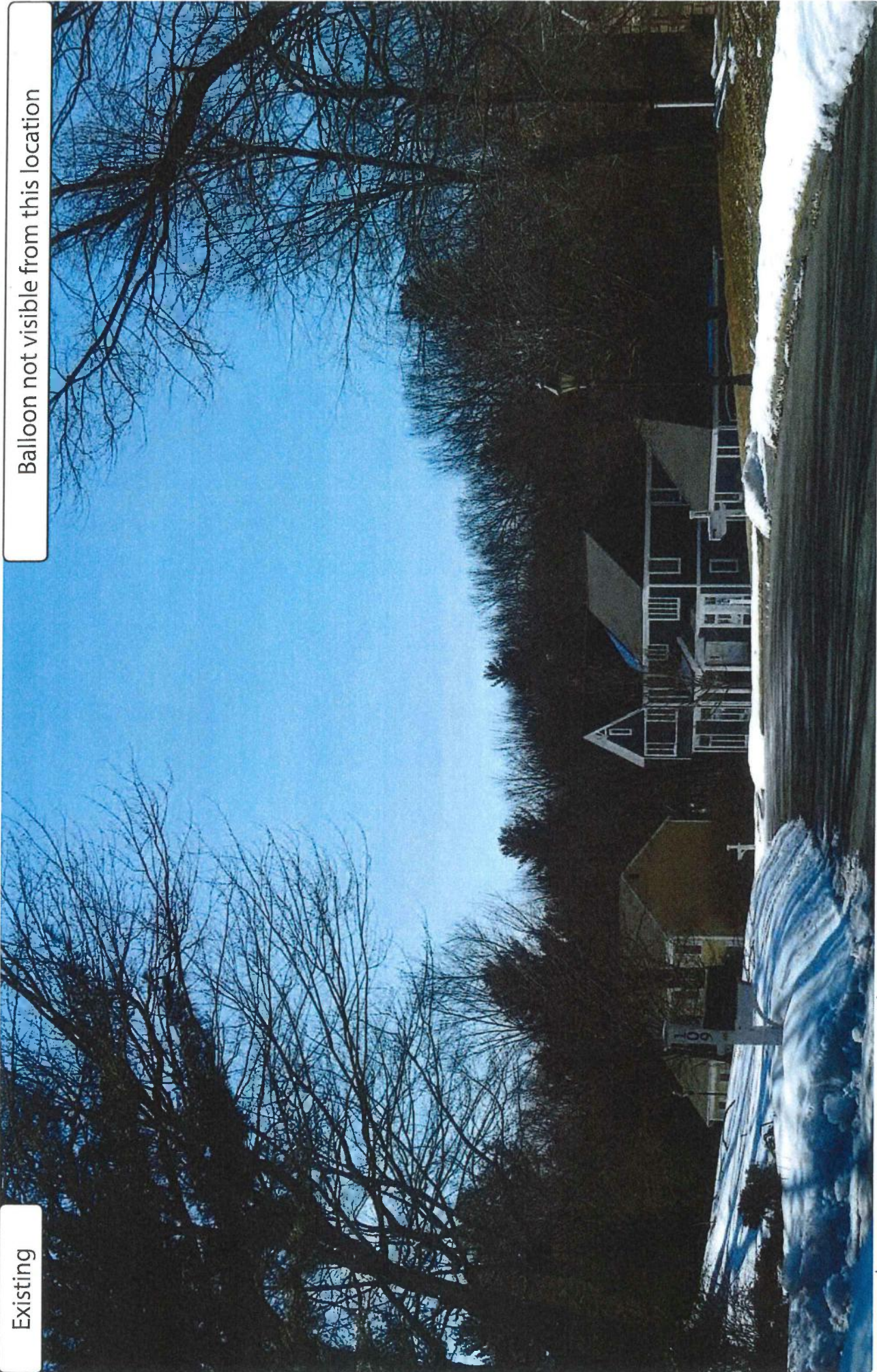


Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
15	104 Pierce Blvd	41.88741 -72.69398	0.79 Miles	North-East	247	Not Visible

Site: CT1209 Windsor



Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution

Existing

Balloon not visible from this location



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
16	626 Thoreau Cir	41.88646 -72.69263	0.83 Miles	East	253	Not Visible

Site: CT1209 Windsor

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Existing



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
17	50 Baker Hollow Rd	41.87374 -72.69546	0.91 Miles	South-East	314	Year Round

Site: CT1209 Windsor

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution





Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
17	50 Baker Hollow Rd	41.87374 -72.69546	0.91 Miles	South-East	314	Year Round

Site: CT1209 Windsor

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Existing

Balloon not visible from this location

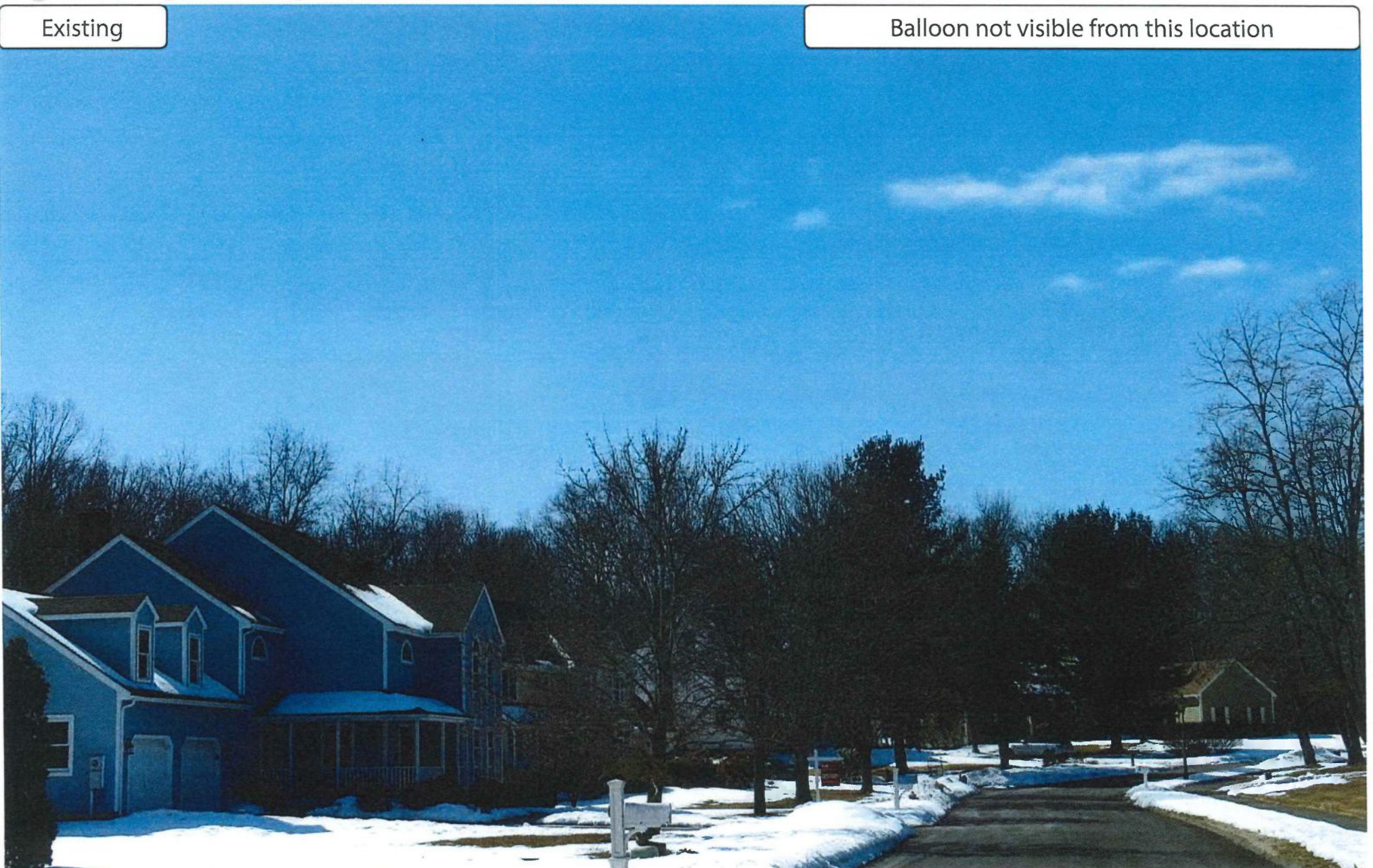


Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
18	8 Cleary Ln	41.89108 -72.69391	0.92 Miles	North-East	232	Not Visible

Site: CT1209 Windsor

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Existing

Balloon not visible from this location

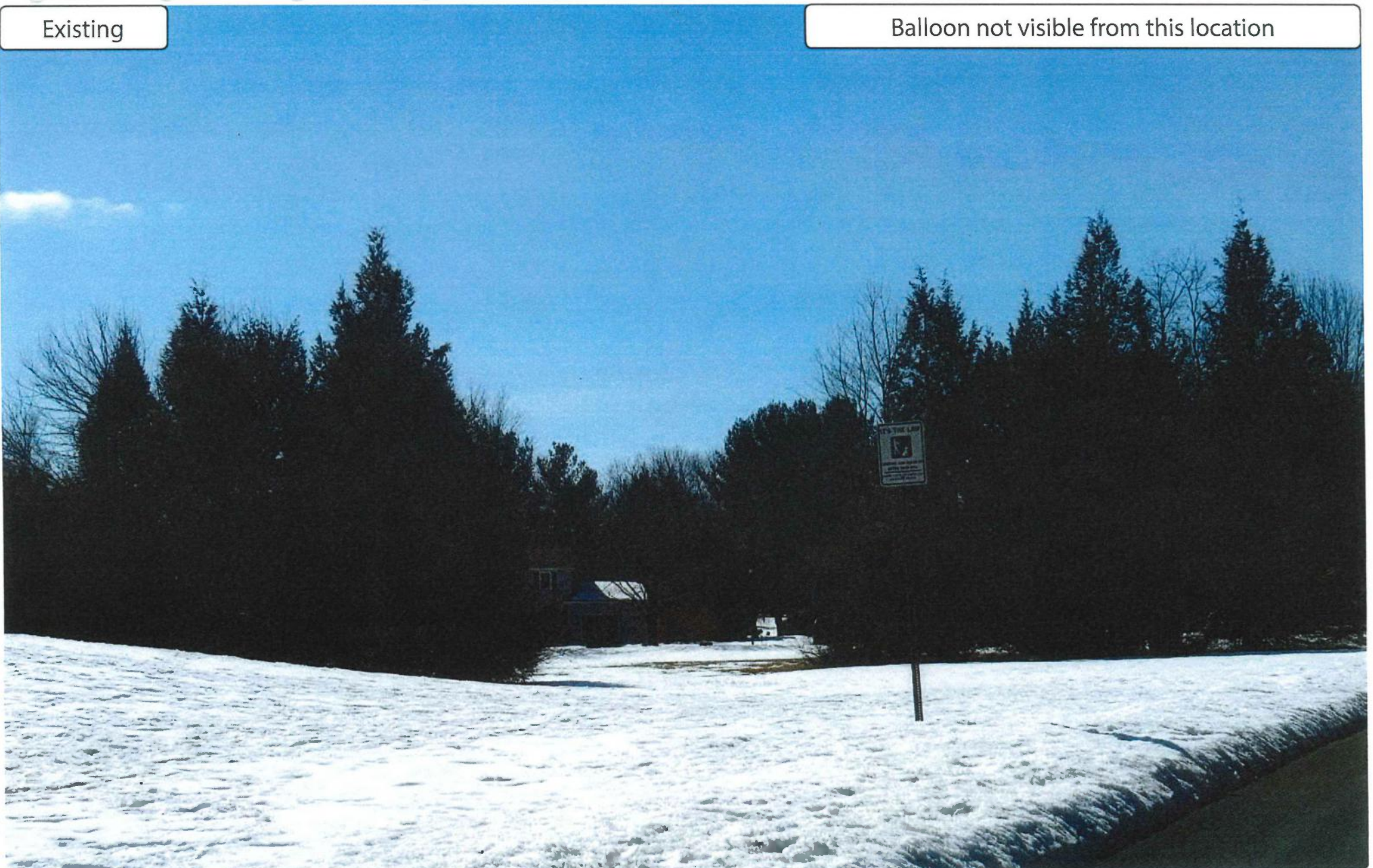


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
19	15 Broadleaf Cir	41.89363	-72.6959	0.97 Miles	North-East	220	Not Visible

Site: CT1209 Windsor

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Existing

Balloon not visible from this location

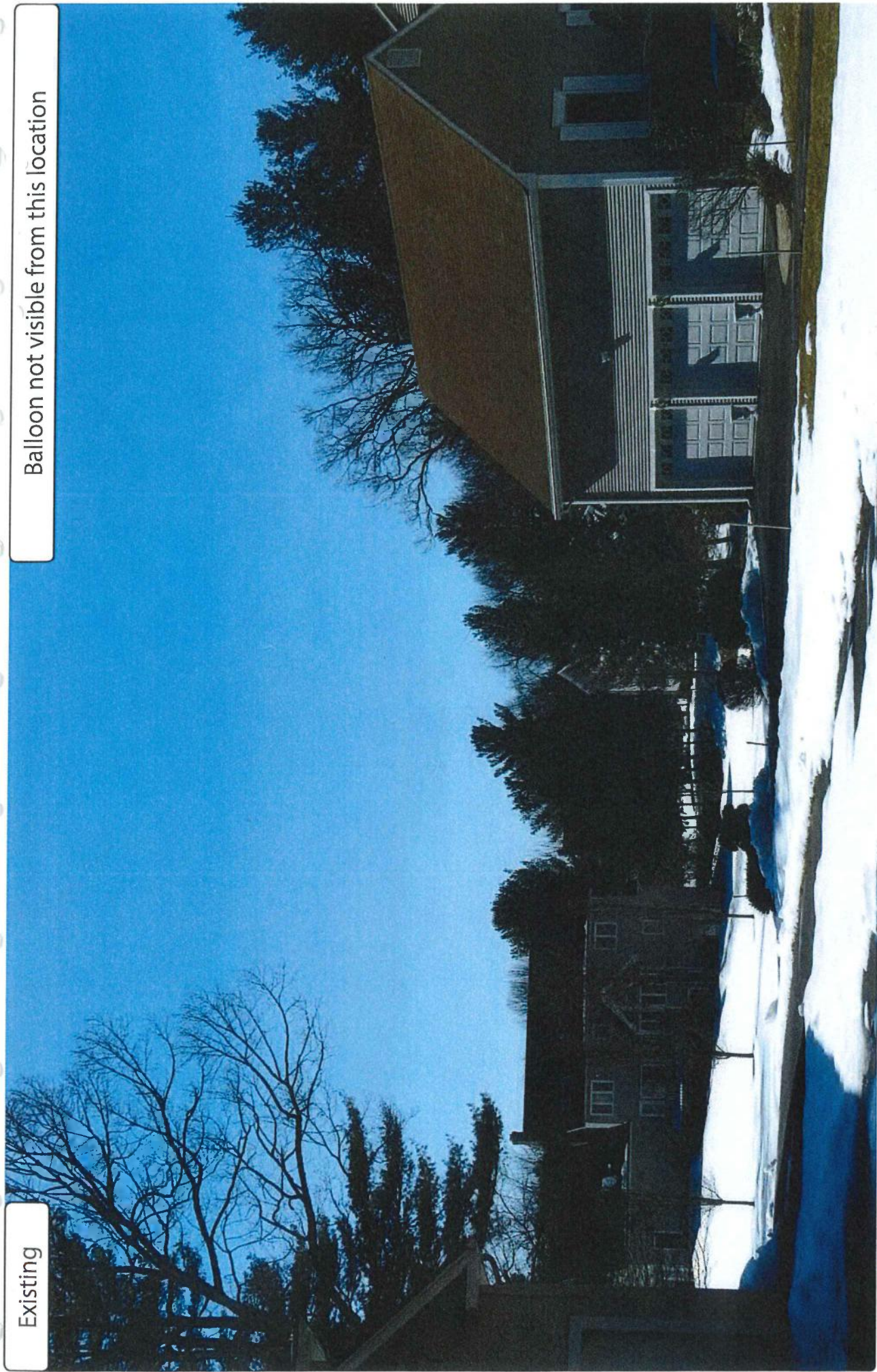


Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
20	53 Pierce Blvd	41.8865 -72.6887	1.03 Miles	East	256	Not Visible

Site: CT1209 Windsor



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Department of Economic and
Community Development

State Historic Preservation Office

February 6, 2019

Mr. Lucas Karmazinas
c/o All Points Technology Corp.
3 Saddlebrook Drive
Killingworth, CT 06419

Subject: Proposed Wireless Telecommunications Facility, Revised
810 Prospect Hill Road
Windsor, CT
Phoenix Partnership, LLC

Dear Mr. Karmazinas:

The State Historic Preservation Office is in receipt of the revised proposal for the above-referenced project, submitted for review and comment pursuant to the National Historic Preservation Act and in accordance with Federal Communications Commission regulations.

The property located at 810 Prospect Hill Road is located within a 0.5 mile radius of resources that are potentially eligible for listing in the National Register of Historic Places, including a collection of tobacco sheds located along Old Iron Ore Road, which were inventoried in the *Historic Barns of Connecticut* survey in 2011, available digitally.

The proposed undertaking includes installation of a 135 foot tall monopole with nine panel antennas and one dish antenna, located within a 50 foot by 50 foot chain-link equipment compound, located northwest portion of the subject parcel. A 15 foot-wide access easement would be through an existing parking lot to Prospect Hill Road. The antennas are proposed to be mounted at a maximum height of 130 feet above ground level (AGL). As the ground has been substantially disturbed in the past, it is unlikely for the site to contain intact archaeological deposits.

The SHPO concurs with All Points' determination that the proposed undertaking will have no adverse effect to sites listed on or eligible for listing on the National Register of Historic Places, with the following conditions:

State Historic Preservation Office

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Department of Economic and
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State Historic Preservation Office

1. The antennas, cables, and associated equipment will be designed, painted to match adjacent materials, and installed to be as non-visible as possible, and
2. if not in use for six consecutive months, antennas, cables, and all other equipment shall be removed by the telecommunications facility owner. This removal shall occur within 90 days of the end of such six-month period.

The State Historic Preservation Office appreciates the opportunity to review and comment upon this project. These comments are provided in accordance with the Connecticut Environmental Policy Act and Section 106 of the National Historic Preservation Act. For further information please contact Marena Wisniewski, Environmental Reviewer, at (860) 500-2357 or marena.wisniewski@ct.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "C. Labadia".

Catherine Labadia
Deputy State Historic Preservation Officer

State Historic Preservation Office

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