

CONNECTICUT SITING COUNCIL

PETITION OF NEW CINGULAR WIRELESS)
PCS, LLC ("AT&T") TO THE CONNECTICUT)
SITING COUNCIL FOR A DECLARATORY) PETITION NO. _____
RULING THAT NO CERTIFICATE OF)
ENVIRONMENTAL COMPATIBILITY AND)
PUBLIC NEED IS REQUIRED TO MODIFY)
AN EXISTING WIRELESS)
TELECOMMUNICATIONS FACILITY)
LOCATED AT 345 BUSHY HILL ROAD,)
SIMSBURY, CONNECTICUT)

PETITION FOR DECLARATORY RULING TO MODIFY AN EXISTING WIRELESS FACILITY 345 BUSHY HILL ROAD, SIMSBURY, CONNECTICUT

I. Introduction

New Cingular Wireless PCS, LLC ("AT&T"), the "Petitioner", hereby petitions the Connecticut Siting Council ("Council") pursuant to Sections 16-50j-38 and 16-50j-39 of the Regulations of Connecticut State Agencies ("R.C.S.A.") for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need ("Certificate") is required pursuant to Section 16-50k of the Connecticut General Statutes ("C.G.S.") to modify an existing wireless facility owned by the Simsbury Fire District located at 345 Bushy Hill Road in Simsbury, Connecticut (the "Site"). Included in Attachment 1 is a March 14, 2019 letter from the Simsbury Fire District authorizing AT&T to file this Petition.

II. The Premises and Existing Wireless Facility

The approximately 1.74-acre Site is located on Bushy Hill Road (aka Rt. 167) and is improved with a one-story fire station operated by the Simsbury Volunteer Fire Department and associated parking area. The Site is located behind the fire house, within a residential district with a mix of forested areas and homes to the north and predominantly residential areas to the south, east and west. Aerial photos are provided on Sheet Number T-1 of the enclosed drawings, prepared by Maser Consulting Connecticut, dated April 9, 2019 and last revised June 21, 2019 (the "Site Drawings"), and the enclosed Viewshed Analysis Report in Attachment 5.

The existing wireless facility consists of an approximately 107-foot tall monopole structure and associated facilities for T-Mobile and Verizon, as well as local emergency response services provided by two 13-foot tall whip antennas at the top of the monopole.

Associated equipment is located at grade within a fenced equipment compound located at the edge of the existing parking area north of the base of the tower.

The existing monopole was reportedly constructed in 2004 as an 80-foot municipal tower. At that time, T-Mobile and Metro PCS had existing facilities on the monopole and the Simsbury Volunteer Fire Department had two 6-foot whip antennas at the top of the existing tower. On December 12, 2013, Verizon received Council approval to extend the 80-foot monopole tower by 26 feet to a height of 106 feet and install twelve (12) antennas at a centerline height of approximately 100-feet AGL (See Petition No. 1077 included in Attachment 3).

On June 16, 2014, AT&T received Council approval for shared use of the existing tower to install twelve (12) panel antennas at a centerline height of 90-feet AGL and an equipment compound on the property. (See TS-AT&T-128-140506, included in Attachment 3). This approval was later modified on October 6, 2014 to permit the relocation of AT&T's proposed equipment shelter and allow an underground conduit to supply natural to the proposed back-up power generator. (See TS-AT&T-128-140506, included in Attachment 4). Subsequent to said Tower Share Decision, AT&T did not install the approved equipment. Thus, AT&T does not currently operate a facility on the tower.

More recently, the Council has approved modifications for Verizon Wireless for upgrades to their facilities on the monopole (See EM-VER-128-180124 included in Attachment 3).

III. AT&T's Proposed Modification

AT&T is licensed by the Federal Communications Commission ("FCC") to provide wireless services in this area of the State of Connecticut. AT&T's is proposing to collocate on the existing 107-foot tower by extending it ten (10) feet and installing nine (9) antennas on a V-boom mount on the monopole extension at a centerline height of approximately 113-feet AGL. The two existing 13-foot tall whip antennas would be relocated to the top of the monopole extension, with the top of the whip antennas located at approximately 130-feet AGL.

AT&T will also mount fifteen (15) remote radio units ("RRUs") on the proposed V-boom mount. Associated unmanned equipment is proposed within an approximately 758-square foot fenced equipment compound to be located in a landscaped area behind the tower, adjacent to the parking lot along the northern property line. The equipment will include a Generac Industrial Diesel Generator as a back-up power source for AT&T's facility. Specifications of the generator are provided in Attachment 6.

AT&T's proposed modification to the existing facility is detailed in the Site Drawings included as Attachment 2. Also, annexed hereto as Attachment 4 are passing structural analysis for the proposed monopole extension and the V-boom mounts, prepared by Maser Consulting Connecticut, dated May 30, 2019. The structural analysis

demonstrates that the proposed modifications to the monopole will be designed to support AT&T's installation.

IV. The Proposal Will Not Have a Substantial Adverse Environmental Effect

A comparison of the existing and proposed conditions reveals no substantial or significant environmental impacts associated with AT&T's proposed modification to the existing facility. The monopole extension will be consistent with the existing tower design, color, and material. Photosimulations depicting the existing and proposed facility at 24 surrounding locations are included in Attachment 5. These photosimulations demonstrate that visibility of the proposed monopole extension is limited to the immediately surrounding residential area and to the Southwest along Nila Way and is not substantial. In fact, of the 24 locations studied in the visibility study, the proposed monopole extension will only be visible year-round at 2 locations where it is currently not visible. While visibility from the surrounding residential areas will be minimally increased, it is respectfully submitted that this change will not adversely impact these properties.

Also enclosed in Attachment 7 is confirmation that the proposed extension of the existing monopole tower will not require registration with the FAA.

A. Minimal Physical Impact

AT&T's proposed modification will result in limited disturbance to the site within the proposed 758-square foot equipment area and the associated underground conduit connecting the equipment to AT&T's facility on the monopole. Existing access to the site will continue to be utilized. The facility is unmanned and requires no water or wastewater connections and generates no waste.

B. Compliance with MPE Limits

The operation of AT&T's antennas on the proposed extension along with the operation of Verizon's, T-Mobile's, and the Town's antennas will not increase the total radio frequency electromagnetic power density at the site to a level at or above applicable standards. A power density report is included in Attachment 8. The total radio frequency power density will be 31.99% of the allowable FCC established general public limit at ground level and well within standards adopted by the Connecticut Department of Energy & Environmental Protection as set forth in C.G.S. Section 22a-162.

V. AT&T's Need for the Proposed Modification to Provide Reliable Service

Included in Attachment 9 are AT&T radio frequency coverage maps which depict existing coverage from AT&T's facilities in the surrounding area and projected coverage from the proposed wireless facility. As shown in these maps, AT&T needs the proposed modification to provide reliable service within its network in this area of Simsbury. Moreover, AT&T determined that to meet its coverage objectives, it needed to mount its

antennas at a height above the 90' centerline heights approved in 2014. Since Verizon's facility is located at the top of the monopole at a centerline height of approximately 101', AT&T is proposing this extension to meet its objectives.

As such, while the Council does not have to find a public need for the facility as part of a ruling on this Petition, it is respectfully submitted that the enclosed information fully demonstrates the need for the proposed modification to provide reliable wireless services to the public.

VI. Notice of Petition Filing

Pursuant to R.C.S.A. Section 16-50j-40(a), notice of AT&T's intent to file this Petition was sent to each person appearing of record as an owner of property that abuts the site, as well as the appropriate municipal officials and government agencies as listed in Section 16-50e of the C.G.S. Certification of such notice, a copy of the notice and the list of property owners is included in Attachment 10 along with the map from the Town's GIS website used to identify abutting property owners. Attachment 10 also includes a certification of service to municipal officials and government agencies to whom notice was sent.

VII. Conclusion

As set forth herein, AT&T's proposed modifications to the existing wireless facility are wholly consistent with legislative findings outlined in C.G.S. Sections 16-50g and 16-50aa that seek to avoid the unnecessary proliferation of towers in the State. It is respectfully submitted that AT&T's facility does not present any significant adverse environmental effects as listed in Section 16-50p of the General Statutes. Therefore, and for the foregoing reasons, AT&T petitions the Connecticut Siting Council for a determination that the proposed wireless telecommunications facility does not require a Certificate of Environmental Compatibility and Public Need and that the Council issue an order approving same.

Respectfully Submitted,



Kristen Motel, Esq.
On behalf of the Petitioner, AT&T
Cuddy & Feder, LLP
445 Hamilton Avenue, 14th Floor
White Plains, New York 10601
(914) 761-1300

1



3/14/19

Simsbury Fire District
345 Bushy Hill Rd.
Simsbury, CT 06070

RE: **Letter of Authorization**
345 Bushy Hill Rd.
Simsbury, CT 06070
AT&T Site Name: Simsbury Deerfield Lane
AT&T Site No.: CT2413S / FA#12906926

Simsbury Fire District ("Property Owner") does hereby appoint **New Cingular Wireless PCS, LLC (AT&T)** ("Carrier") and its authorized contractors/agents including but not limited to **Smartlink, LLC** to act as "Applicant/Agent" for the purpose of preparing and filing any application or document necessary to ensure Carrier's ability to use the Property as a telecommunications facility. The Property Owner understands and agrees that this application may be denied, modified, or approved with conditions and that such conditions or modifications must be complied with prior to the issuance of building permits. It is understood by both Property Owner and Carrier that the authorization given herein does not constitute a commitment by the Property Owner to Carrier or otherwise convey right to the Property to Carrier, and that such conveyance shall only be accomplished by the execution of a further agreement by both parties.

By: _____

Printed Name: _____

Title: _____

Date: _____

2

PROJECT NOTES

- SITE INFORMATION OBTAINED FROM THE FOLLOWING:
 - LIMITED FIELD OBSERVATION BY MASER CONSULTING ON 10/05/18.
 - TOWN OF SIMSBURY, CONNECTICUT GIS MAP, URL: [HTTP://SIMSBURY.MAPXPRESS.NET/AGS_MAP](http://SIMSBURY.MAPXPRESS.NET/AGS_MAP).
 - PLAN ENTITLED "SIMSBURY" COMPLETED BY EBI CONSULTING OF BURLINGTON, MA, LAST REVISED 11/04/14.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANIES OR OTHER PUBLIC/GOVERNING AUTHORITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
- THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE AS A RESULT OF CONSTRUCTION OF THIS FACILITY AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND CONSTRUCTION DRAWINGS.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS MUST BE VERIFIED. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY POTENTIALLY DANGEROUS EXPOSURE LEVELS.
- THE PROPOSED FACILITY WILL CAUSE AN INSIGNIFICANT OR "DE-MINIMUS" INCREASE IN STORM WATER RUNOFF, THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
- NO NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY AS TO CAUSE A NUISANCE.
- THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (NO HANDICAP ACCESS IS REQUIRED).
- THE FACILITY DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
- CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTHS WITH RF ENGINEERING PRIOR TO INSTALLATION.
- THE TOWER, MOUNTS AND ANTENNAS SHALL BE DESIGNED TO MEET EIA/TIA-222-H AS PER IBC REQUIREMENTS.
- ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
- CONTRACTOR MUST FIELD LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION.
- CONSTRUCTION SHALL NOT COMMENCE UNTIL COMPLETION OF A PASSING STRUCTURAL ANALYSIS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. THE STRUCTURAL ANALYSIS IS TO BE PERFORMED BY OTHERS.
- CONTRACTOR SHALL CONTACT STATE SPECIFIC ONE CALL SYSTEM THREE WORKING DAYS PRIOR TO ANY EARTH MOVING ACTIVITIES.

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SITE NAME: SIMSBURY-BUSHY HILL RD.

FA NUMBER: 12906926

SITE NUMBER: CT2413S

1C - MRCTB032789

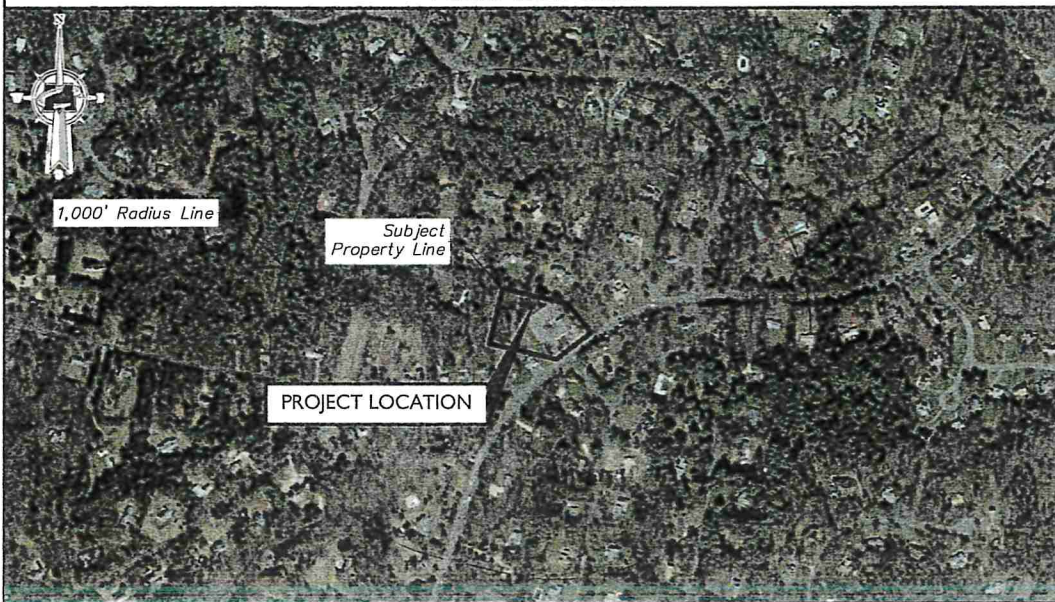
345 BUSHY HILL ROAD
SIMSBURY, CT 06070
HARTFORD COUNTY

ZONING DRAWINGS

NOTES:

- THERE ARE 68 HOMES WITHIN A 1,000' RADIUS OF THE SUBJECT PROPERTY.
- THERE ARE NO SCHOOLS OR CHILD DAY CARE CENTERS WITHIN A 1,000' RADIUS OF THE SUBJECT PROPERTY.
- THE CLOSEST SCHOOL IS APPROXIMATELY 5,300'± TO THE SUBJECT PROPERTY.
- THE CLOSEST CHILD DAY CARE CENTER IS APPROXIMATELY 11,500'± TO THE SUBJECT PROPERTY.

VICINITY MAP



CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.

- | | |
|---|--|
| 1. 2018 CONNECTICUT STATE BUILDING CODE, INCORPORATING THE 2015 IBC | 8. INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81 IEEE C2 LATEST EDITION |
| 2. 2017 NATIONAL ELECTRICAL CODE - NFPA 70 | 9. TELCORDIA GR-1275 |
| 3. 2017 NFPA 101 | 10. ANSI T1.311 |
| 4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION 360-10 | 11. PROPOSED USE: UNMANNED TELECOM FACILITY |
| 5. AMERICAN CONCRETE INSTITUTE | 12. HANDICAP REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED. |
| 6. TIA-222-G | 13. CONSTRUCTION TYPE: IIB |
| 7. TIA 607 FOR GROUNDING | 14. USE GROUP: U |

PROJECT INFORMATION

SITE INFORMATION

LATITUDE: 41.841378° N
LONGITUDE: 72.850436° W
JURISDICTION: HARTFORD COUNTY

APPLICANT/LESSEE

COMPANY: NEW CINGULAR WIRELESS PCS, LLC
ADDRESS: 550 COCHITUATE ROAD
CITY, STATE, ZIP: FRAMINGHAM, MA 01701

STRUCTURE OWNER

COMPANY: SIMSBURY FIRE DISTRICT
ADDRESS: 871 HOPEMEADOW STREET
CITY, STATE, ZIP: SIMSBURY, CT 06070

CLIENT REPRESENTATIVE

COMPANY: SMARTLINK, LLC
ADDRESS: 85 RANGWAY ROAD, BUILDING 3, STE. 102
CITY, STATE, ZIP: NORTH BILLERICA, MA 01862
CONTACT: TODD OLIVER
E-MAIL: TODD.OLIVER@SMARTLINKLLC.COM

SITE ACQUISITION

COMPANY: SMARTLINK, LLC
ADDRESS: 85 RANGWAY ROAD, BUILDING 3, STE. 102
CITY, STATE, ZIP: NORTH BILLERICA, MA 01862
CONTACT: SHARON KEEFE
E-MAIL: SHARON.KEEFE@SMARTLINKLLC.COM

CONSTRUCTION MANAGER

COMPANY: SMARTLINK, LLC
ADDRESS: 85 RANGWAY ROAD, BUILDING 3, STE. 102
CITY, STATE, ZIP: NORTH BILLERICA, MA 01862
CONTACT: ROBERT PICARD
E-MAIL: ROBERT.PICARD@SMARTLINKLLC.COM

ENGINEER

COMPANY: MASER CONSULTING P.A.
ADDRESS: 331 NEWMAN SPRINGS ROAD, SUITE 203
CITY, STATE, ZIP: RED BANK, NJ 07701
CONTACT: ROBERT ANDREWS
PHONE: (856) 797-0412
E-MAIL: RANDREWS@MASERCONSULTING.COM

PROJECT DESCRIPTION/ SCOPE OF WORK

- INSTALL (15) NEW RRU'S, (5) PER SECTOR
- INSTALL (9) NEW PANEL ANTENNAS, (3) PER SECTOR
- INSTALL (3) NEW ANTENNA SECTOR FRAMES
- INSTALL (3) NEW DC-6 SURGE SUPPR. DOMES, (1) PER SECTOR
- INSTALL (2) NEW 18-PAIR FIBER TRUNKS
- INSTALL (6) NEW 6/C DC CABLES
- INSTALL (1) 10' MONOPOLE EXTENSION
- INSTALL (6) 12" STAND-OFF MOUNTS, (2) PER SECTOR
- MODIFY EXISTING MONOPOLE

PROPOSED PROJECT SCOPE BASED ON RFDS ID# 2592584, VERSION 7.00, LAST UPDATED 05/08/2019.

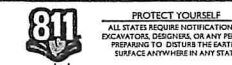
SHEET INDEX

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A-2	DETAILS
A-3	DETAILS
A-4	DETAILS



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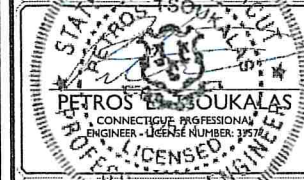
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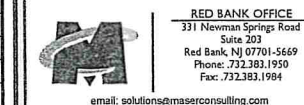
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1	06/05/19	REVISED PER COMMENTS	AJC	RA
0	04/09/19	DESIGNED FOR REVIEW	AJC	RA
REV		EXCAVATION	CHECKED BY	



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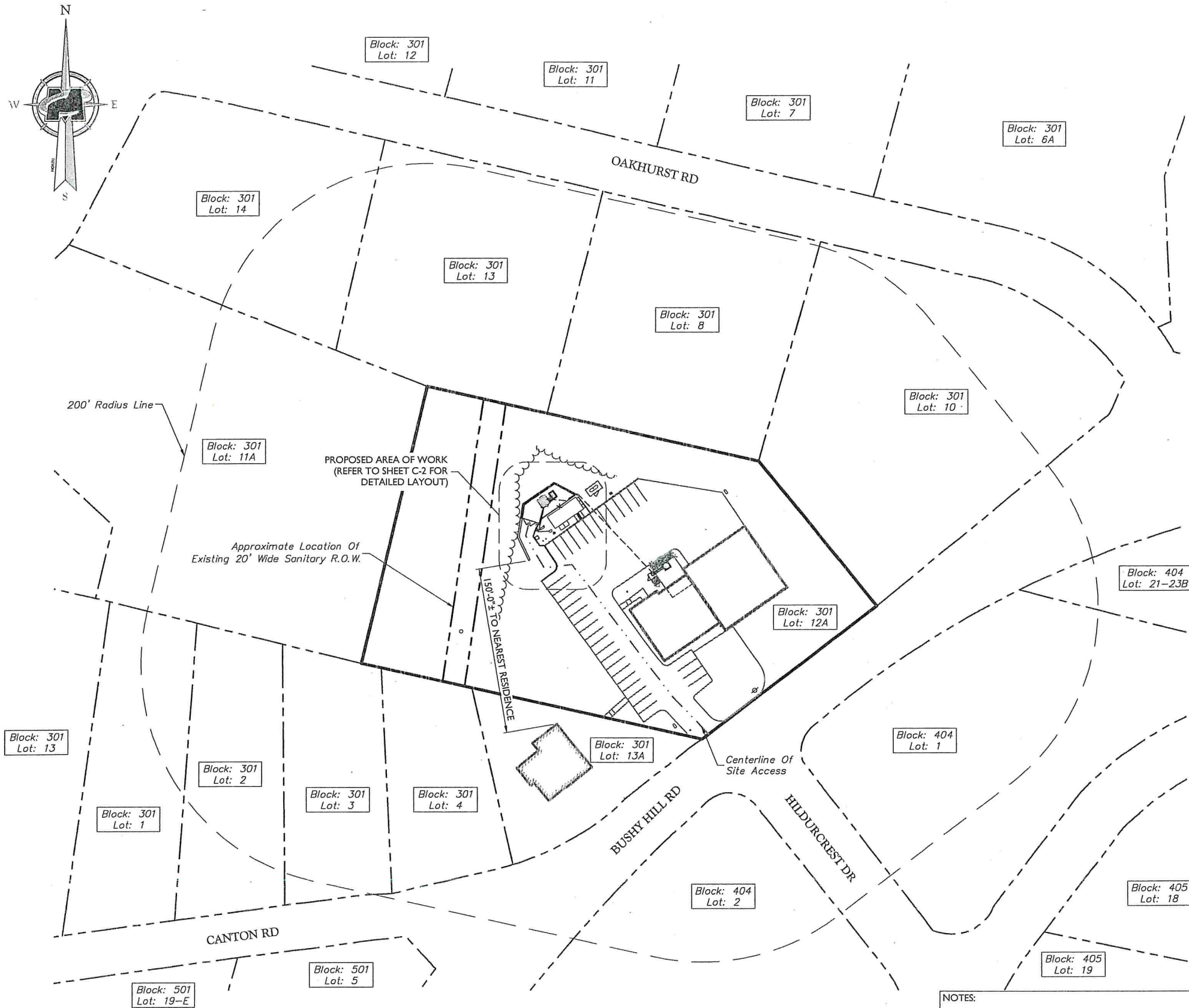
SITE NAME:
SIMSBURY -
BUSHY HILL RD.
FA# 12906926
SITE# CT2413S

345 BUSHY HILL ROAD
SIMSBURY, CT 06070
HARTFORD COUNTY



SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1



LINE LEGEND

- 200' Radius Line
- Adjacent Property Line
- Subject Property Line
- Centerline Of Site Access

NOTES:

1. THERE ARE 68 HOMES WITHIN A 1,000' RADIUS OF THE SUBJECT PROPERTY.

200' RADIUS / ABUTTERS MAP

SCALE: 1" = 50' FOR 22"x34"
(SCALE: 1" = 100' FOR 11"x17")

SURVEY, BEING A PORTION OF
TAX PARCEL: 2841
31 TOBEY ROAD LTD.
31 TOBEY ROAD
TOWN OF BLOOMFIELD
COUNTY OF HARTFORD
STATE OF CONNECTICUT

NOTES:

1. THERE ARE 68 HOMES WITHIN A 1,000' RADIUS OF THE SUBJECT PROPERTY.
2. THERE ARE NO SCHOOLS OR CHILD DAY CARE CENTERS WITHIN A 1,000' RADIUS OF THE SUBJECT PROPERTY.
3. THE CLOSEST SCHOOL IS APPROXIMATELY 5,300'± TO THE SUBJECT PROPERTY.
3. THE CLOSEST CHILD DAY CARE CENTER IS APPROXIMATELY 11,500'± TO THE SUBJECT PROPERTY.

200' RADIUS / ABUTTERS LIST

SCALE: 1" = 50' FOR 22"x34"
(SCALE: 1" = 100' FOR 11"x17")

E16 301 013A
SIMSBURY FIRE DISTRICT
869 HOPMEADOW STREET
SIMSBURY CT 06070

C16 301 002
TASHJI GEORGETTE AND IRENE
6 CANTON ROAD
WEST SIMSBURY CT 06092

C16 301 010
STEELE CHRISTOPHER L AND LINDSAY J
5 OAKHURST ROAD
SIMSBURY CT 06070

C16 404 002
LOVELAND RICHARD E AND KIM E
1 HILDURCREST DRIVE
SIMSBURY CT 06070

C16 301 001
LINDQUIST CHRISTOPHER J
8 CANTON ROAD
WEST SIMSBURY CT 06092

C16 301 003
MACDONALD GEFF
4 CANTON ROAD
WEST SIMSBURY CT 06 06092

C16 301 013
ST JEAN CARL AND KARIANN
11 OAKHURST ROAD
SIMSBURY CT 06070

C16 301 008
MILLER ELIZABETH AND KODZ JOSEPH
9 OAKHURST ROAD
SIMSBURY CT 06070

C16 301 011A
FILIPPOPOULOS KONSTANTINOS
17 OAKHURST ROAD
SIMSBURY CT 06070

C16 301 012A
SIMSBURY FIRE DISTRICT
869 HOPMEADOW STREET
SIMSBURY CT 06070

C16 301 014
BOYKO LORI AND STEPHEN JR
15 OAKHURST ROAD
SIMSBURY CT 06070

C16 404 001
BUTLER STEVEN J AND ELIZABETH A
2 HILDURCREST DRIVE
SIMSBURY CT 06070

C16 404 21-23B
DEELEY SHAWN R AND MARGARET M
348 BUSHY HILL ROAD
SIMSBURY CT 06070

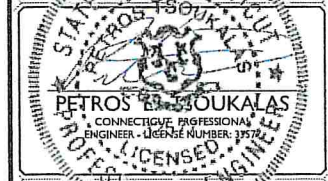
C16 301 004
KEATING ANDREW M
2 CANTON ROAD
WEST SIMSBURY CT 06092



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SCALE:		JOB NUMBER:	
AS SHOWN		18946092A	



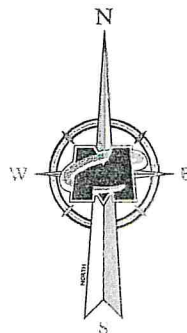
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SITE NAME:
SIMSBURY -
BUSHY HILL RD.
FA# 12906926
SITE# CT2413S
345 BUSHY HILL ROAD
SIMSBURY, CT 06070
HARTFORD COUNTY



SHEET TITLE:
200' RADIUS / ABUTTERS MAP AND
200' RADIUS / ABUTTERS LIST

SHEET NUMBER:
Z-1



PROPOSED AT&T 20kW AC GENERATOR ON
A PROPOSED 4'-0"x6'-0" CONCRETE PAD

PROPOSED 6'-8"x6'-8" AT&T W.I.C. ON A
PROPOSED 8'-0"x8'-0" CONCRETE PAD

PROPOSED GPS ANTENNA

Existing AT&T Lease Area
(758 Sq. Ft.)

PROPOSED CHAIN LINK FENCE

PROPOSED RETAINING WALL

Existing Utilities Backboard

Existing Transformer

Existing Bollard
(Typ. of 2)

Existing Verizon
Equipment Shelter

Existing Light Post
(Typ.)

Existing Telco Pull Box

Existing Underground Cable Port

Existing Access
Gate (Typ.)

Existing Chain Link Fence
(Typ.)

Existing Building
(Typ.)

Existing Monopole
(SEE SHEET C-2 FOR ELEVATION VIEW)

Existing Propane Tank

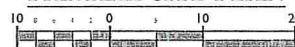
Existing Curb (Typ.)

Existing Tree Line

60'-0"± TO NEAREST PROPERTY LINE

Existing Cable Bridge

PARTIAL SITE PLAN



SCALE : 1" = 10' FOR 22"x34"
(SCALE : 1" = 20' FOR 11"x17")



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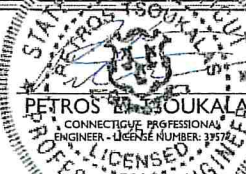
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SCALE: AS SHOWN JOB NUMBER: 18946092A

2	06/21/19	REVISED PER ASBUTTERS LIST	JCM	RA	
1	06/05/19	REVISED PER COMMENTS	AJC	RA	
0	04/09/19	USED FOR REVIEW	AJC	RA	
REV		DESCRIPTION	CHECKED BY		



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BUSHY HILL RD.
FA# 12906926
SITE# CT2413S

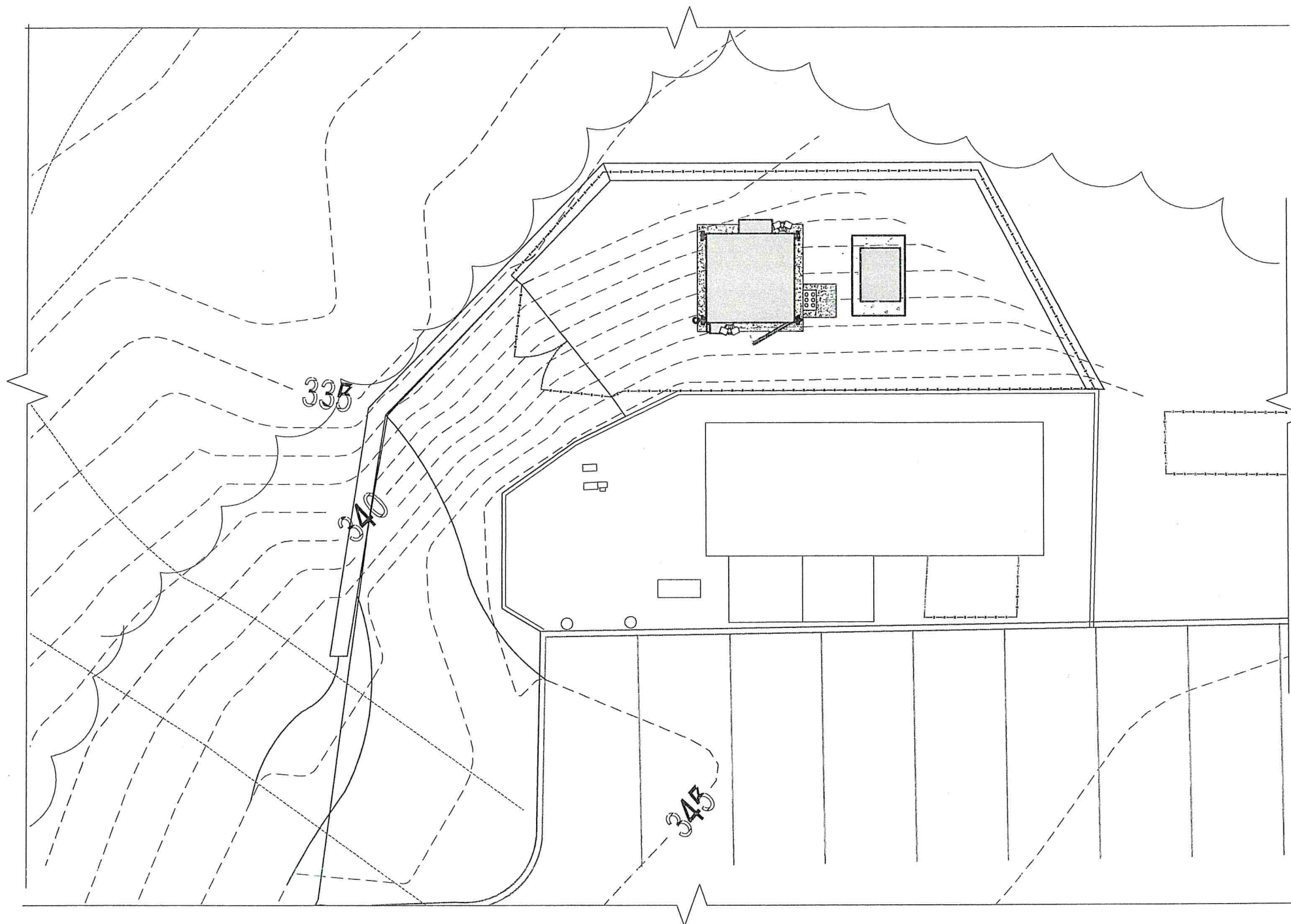
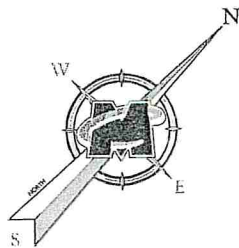
345 BUSHY HILL ROAD
SIMSBURY, CT 06070
HARTFORD COUNTY



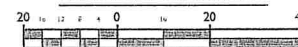
RED BANK OFFICE
331 Newnam Springs Road
Suite 203
Red Bank, NJ 07701-5669
Phone: 732.383.1950
Fax: 732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE:
PARTIAL SITE PLAN

SHEET NUMBER:
Z-2



GRADING PLAN



LINE LEGEND

- Contour Major - Existing
- . - . - . Contour Minor - Existing
_____ CONTOUR - PROPOSED

NOTES:

- PLAN ENTITLED "SIMSBURY FIRE STATION PREPARED BY EBI, DATED: 04/11/14 WERE PROVIDED BY SMARTLINK. MASER CONSULTING CONNECTICUT HAS NOT VERIFIED PROPOSED GRATING.



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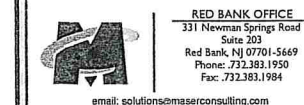
SCALE:		JOB NUMBER:	
AS SHOWN		18946092A	



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SITE NAME:
SIMSBURY -
BUSHY HILL RD.
FA# 12906926
SITE# CT2413S

345 BUSHY HILL ROAD
SIMSBURY, CT 06070
HARTFORD COUNTY



SHEET TITLE:
GRADING PLAN
SHEET NUMBER:
Z-3

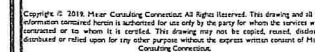


Item	Control (n=10)	MCI (n=10)	AD (n=10)	Mild AD (n=10)
1	35	25	15	20
2	30	20	10	15
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4	30	20	10	15
5	35	25	15	20
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8	30	20	10	15
9	35	25	15	20
10	25	15	5	10

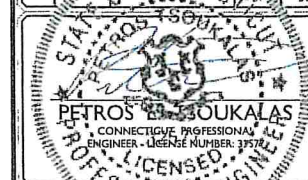
SCALE : 1" = 20' FOR 22"X34"
(SCALE : 1" = 40' FOR 11"X17")

- - - - - Contour Major - Existing
 - - - - - Contour Minor - Existing
 _____ CONTOUR - PROPOSED

- PLAN ENTITLED "SIMSBURY FIRE STATION PREPARED BY EBI, DATED: 04/11/14 WERE PROVIDED BY SMARTLINK. MASER CONSULTING CONNECTICUT HAS NOT VERIFIED PROPOSED GRATING.



SCALE:		JOB NUMBER:	
AS SHOWN		18946092A	
2	06/21/19	REVISED PER ABUTTERS LIST	JCM RA
1	06/05/19	REVISED PER COMMENTS	AJC RA
0	04/09/19	2019 PCS FORM	AJC RA
REV	E	DESCRIPTION	DATE WHEN CHECKED



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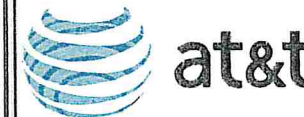
SITE NAME:
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BUSHY HILL RD.
FA# 12906926
SITE# CT2413S
345 BUSHY HILL ROAD
SIMSBURY, CT 06070
HARTFORD COUNTY



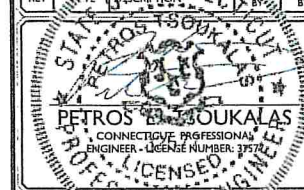
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GRADING PLAN

SHEET NUMBER : Z-4

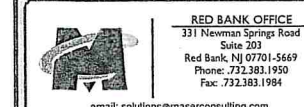


SCALE:	JOB NUMBER:
AS SHOWN	18946092A
2	06/21/19
1	06/05/19
0	04/09/19
REV	

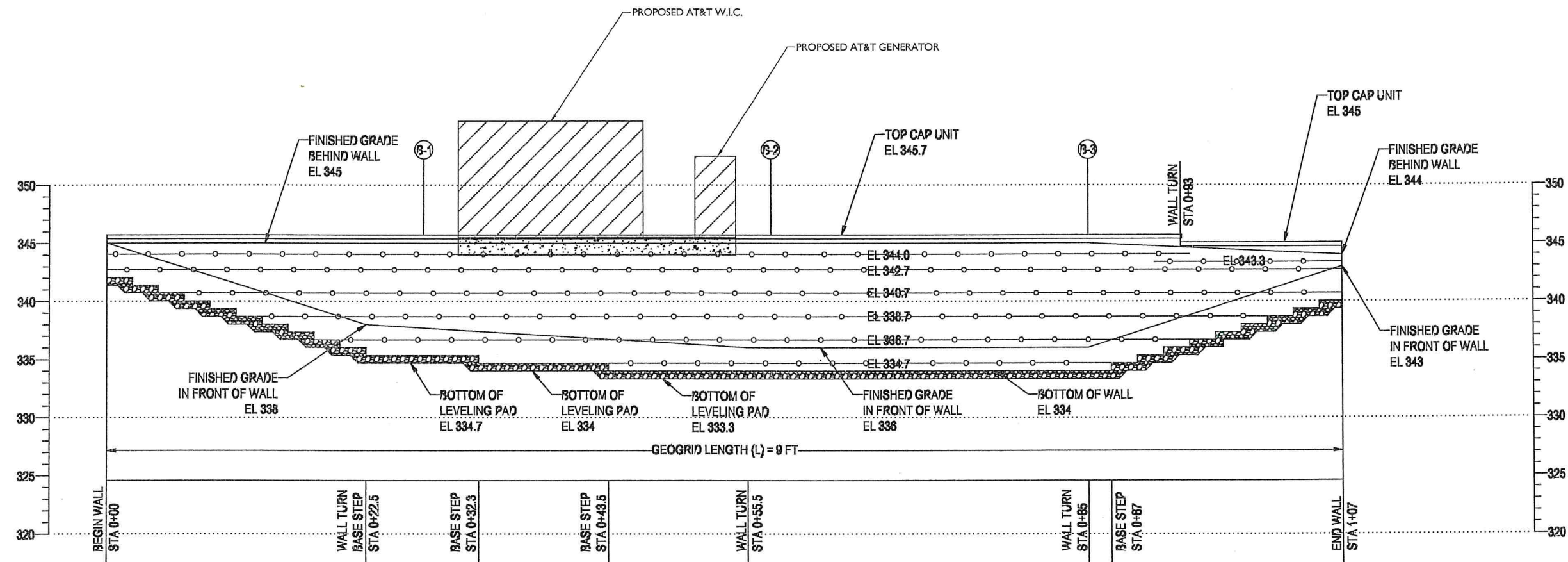


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SITE# CT2413S
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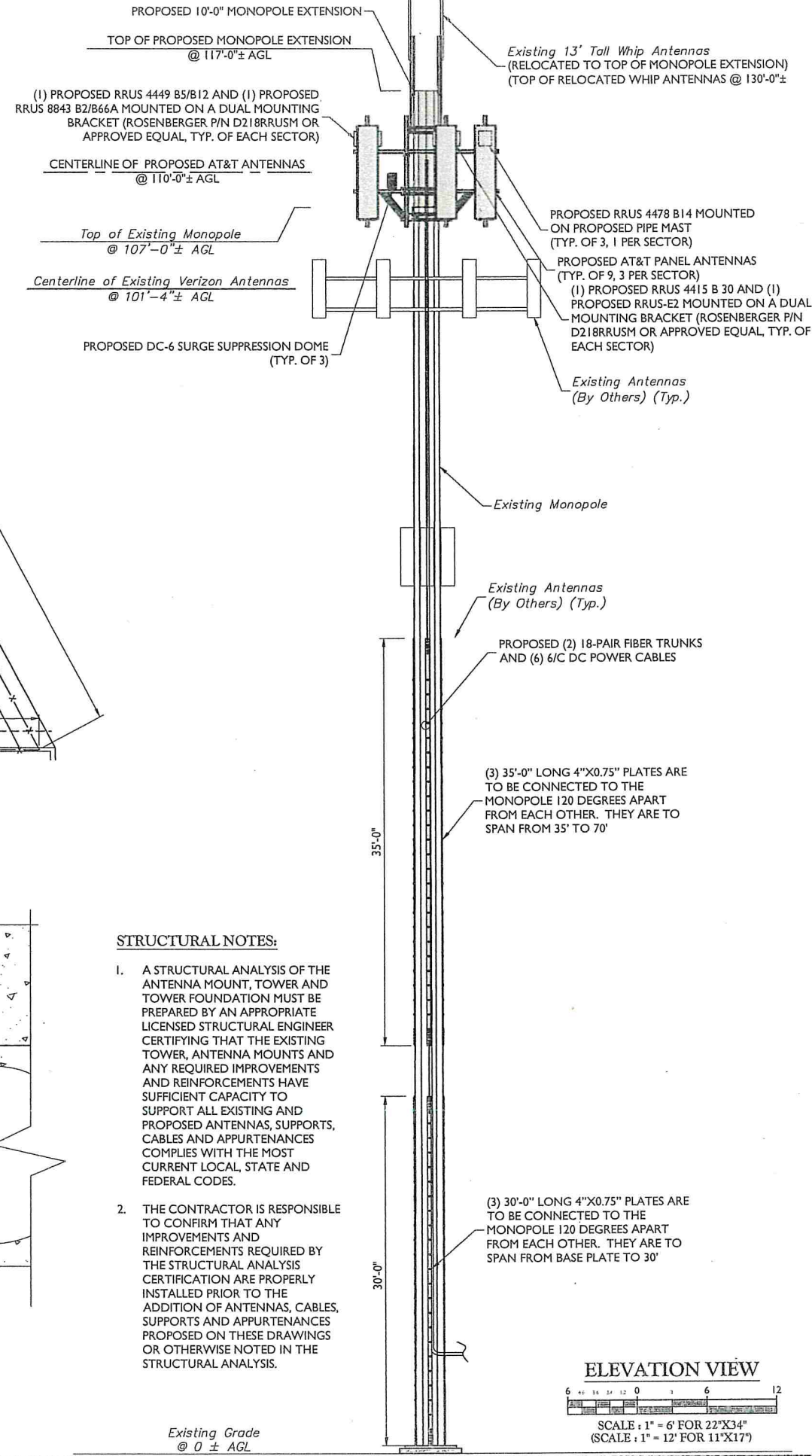
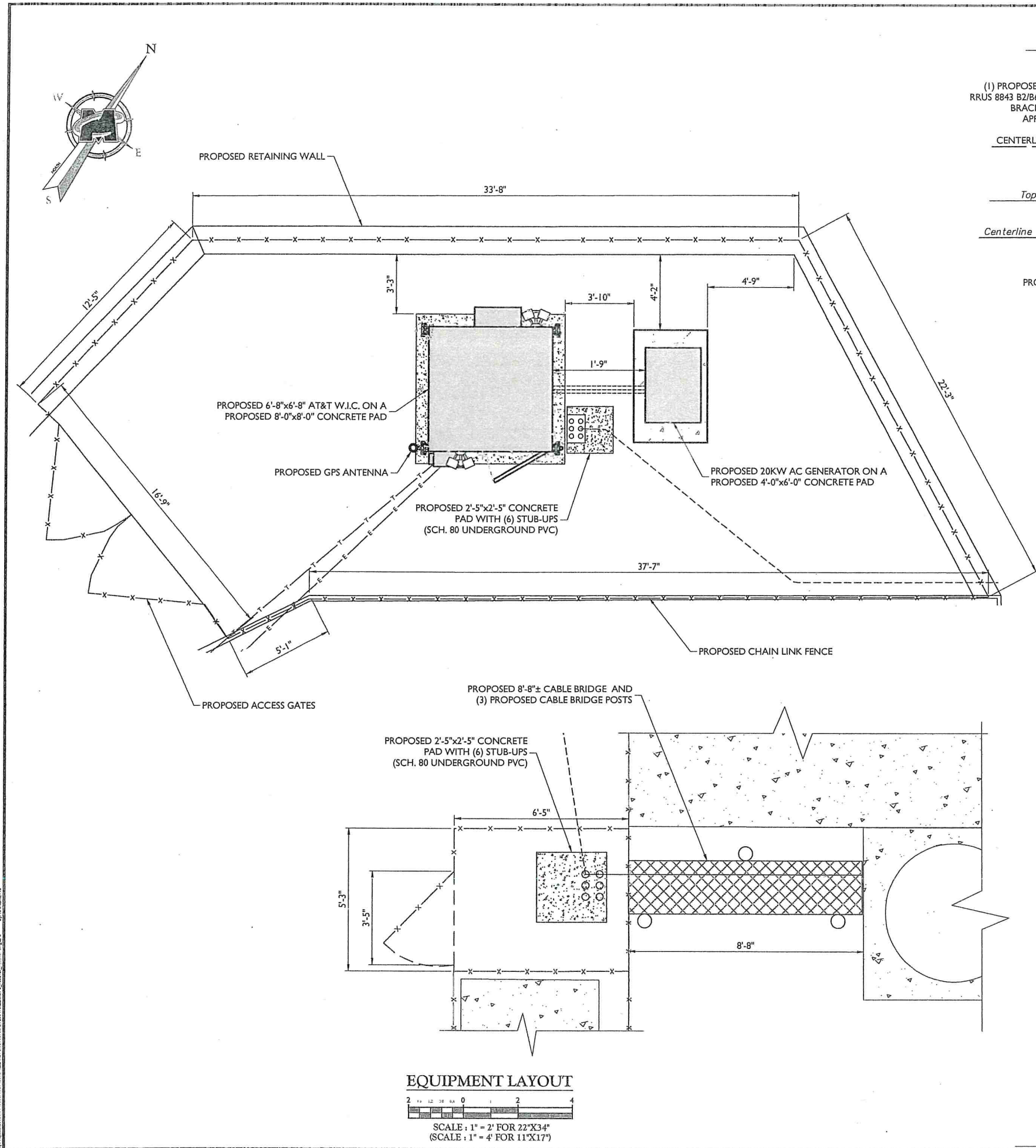
SHEET TITLE:
GRADING PLAN
SHEET NUMBER:
Z-5



NOTES:

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GRADING PLAN
SCALE: 1" = 20' FOR 22"x34"
(SCALE: 1" = 40' FOR 11"x17")



STRUCTURAL NOTES:

1. A STRUCTURAL ANALYSIS OF THE ANTENNA MOUNT, TOWER AND TOWER FOUNDATION MUST BE PREPARED BY AN APPROPRIATE LICENSED STRUCTURAL ENGINEER CERTIFYING THAT THE EXISTING TOWER, ANTENNA MOUNTS AND ANY REQUIRED IMPROVEMENTS AND REINFORCEMENTS HAVE SUFFICIENT CAPACITY TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, SUPPORTS, CABLES AND APPURTENANCES COMPLIES WITH THE MOST CURRENT LOCAL, STATE AND FEDERAL CODES.
2. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY IMPROVEMENTS AND REINFORCEMENTS REQUIRED BY THE STRUCTURAL ANALYSIS CERTIFICATION ARE PROPERLY INSTALLED PRIOR TO THE ADDITION OF ANTENNAS, CABLES, SUPPORTS AND APPURTENANCES PROPOSED ON THESE DRAWINGS OR OTHERWISE NOTED IN THE STRUCTURAL ANALYSIS.

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REV	DATE	DESCRIPTION	BY	CHECKED
2	06/21/19	REVISED PER ABUTTERS LIST	JCH	RA
1	06/05/19	REVISED PER COMMENTS	AJC	RA
0	04/09/19	ISSUED FOR REVIEW	AJC	RA

PETROS E. BOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 33578

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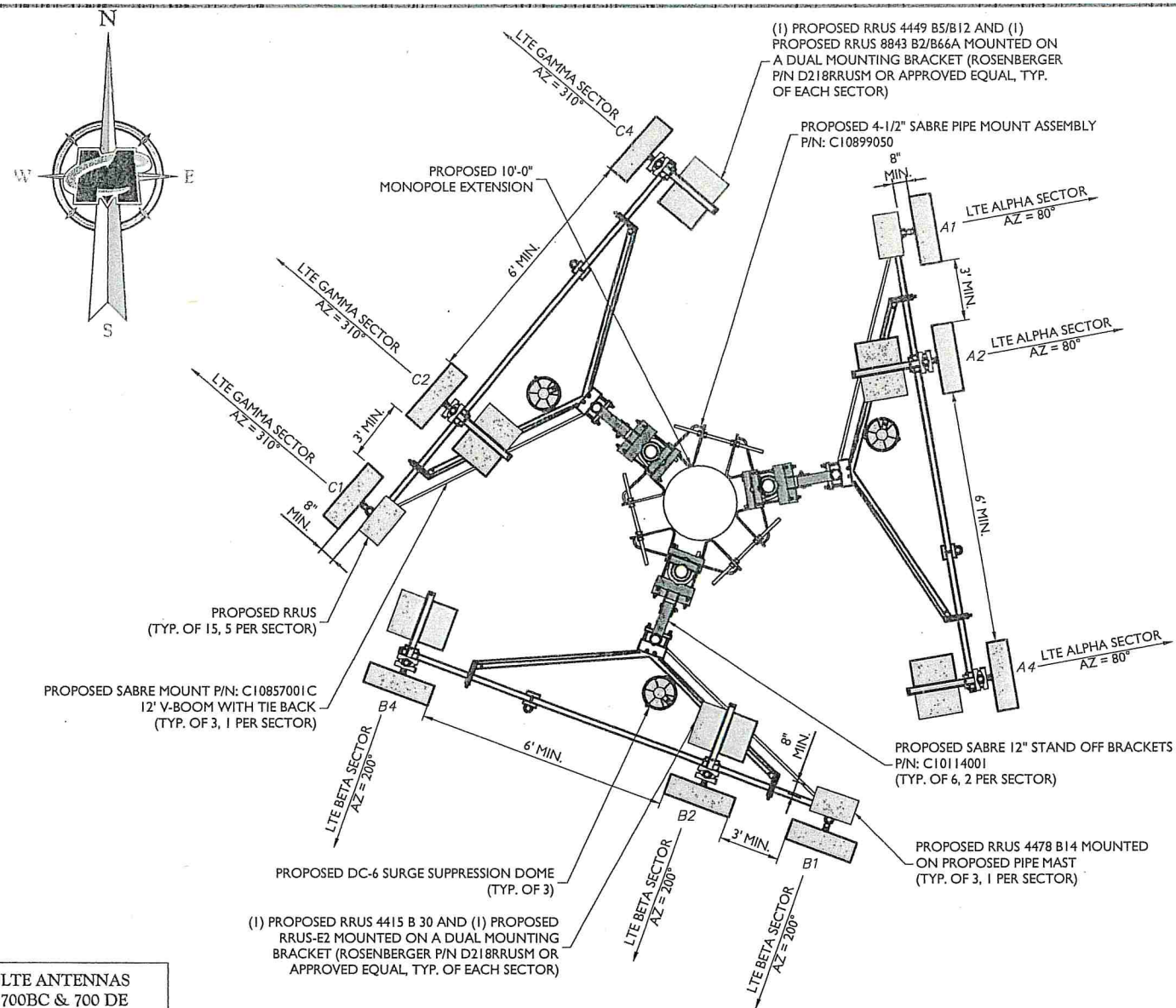
SITE NAME:
SIMSBURY -
BUSHY HILL RD.
FA# 12906926
SITE# CT2413S

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HARTFORD COUNTY

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Phone: 732.383.1950
Fax: 732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE:
EQUIPMENT LAYOUT AND ELEVATION VIEW

SHEET NUMBER:
Z-6



PROPOSED ANTENNA LAYOUT

NOT TO SCALE

SECTOR		PROPOSED ANTENNA	TECHNOLOGY	ANTENNA STATUS	HEIGHT (m)	WIDTH (m)	DEPTH (m)	WEIGHT (lbs)	ANTENNA AZIMUTH (DEG.)	ANT. CL. ELEV. (ft.)	REMOTE RADIO/TMA CONFIGURATION	TRANSMISSION CABLE		
												QUANTITY	TYPE	STATUS
Sector 1	1	KHW EPBQ-454LBH8-L1	LTE	PROPOSED	96.00	21.00	6.30	86.00	80	110'	(1) RRUS 4478 B14	1/2	FIBER/DC	PROPOSED
	2	CCI HPA65R-BUBA	LTE	PROPOSED	96.00	11.70	7.60	57.30	80	110'	(1) RRUS 4415 B30 (1) RRUS-E2	-	-	-
	3	KHW EPBQ-454LBH0-L1	LTE	PROPOSED	96.00	21.00	6.30	95.40	80	110'	(1) RRUS 4449 B5/B12 (1) RRUS 0843 B2/B4A4	-	-	-
	4		-	-					-		-	-	-	-
Sector 2	1	KHW EPBQ-454LBH8-L1	LTE	PROPOSED	96.00	21.00	6.30	86.00	200	110'	(1) RRUS 4478 B14	1/2	FIBER/DC	PROPOSED
	2	CCI HPA65R-BUBA	LTE	PROPOSED	96.00	11.70	7.60	57.30	200	110'	(1) RRUS 4415 B30 (1) RRUS-E2	-	-	-
	3	KHW EPBQ-454LBH0-L1	LTE	PROPOSED	96.00	21.00	6.30	95.40	200	110'	(1) RRUS 4449 B5/B12 (1) RRUS 0843 B2/B4A4	-	-	-
	4		-	-					-		-	-	-	-
Sector 3	1	KHW EPBQ-454LBH0-L1	LTE	PROPOSED	96.00	21.00	6.30	86.00	310	110'	(1) RRUS 4478 B14	2	DC	PROPOSED
	2	CCI HPA65R-BUBA	LTE	PROPOSED	96.00	11.70	7.60	57.30	310	110'	(1) RRUS 4415 B30 (1) RRUS-E2	-	-	-
	3	KHW EPBQ-454LBH8-L1	LTE	PROPOSED	96.00	21.00	6.30	95.40	310	110'	(1) RRUS 4449 B5/B12 (1) RRUS 0843 B2/B4A4	-	-	-
	4		-	-					-		-	-	-	-



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SURFACE ANYWHERE IN ANY STATE

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CAL#:		JOB NUMBER:	
AS SHOWN		I8946092A	
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
2	06/21/19	REVISED PER ABUTTERS LIST	JCH RA
1	06/05/19	REVISED PER COMMENTS	AJC RA
0	04/09/19	REVISION FOR REVIEW	AJC RA
REV	DESCRIPTION	BY	CHECK BY



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SITE# CT2413S
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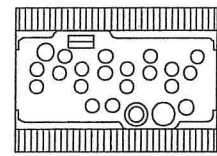
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Suite 203
Red Bank, NJ 07701-5669
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Fax: 732.383.1984

email: solutions@maserconsulting.com

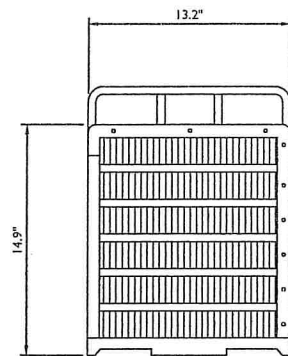
SHEET TITLE:

ANTENNA LAYOUTS AND
ANTENNA SCHEDULE

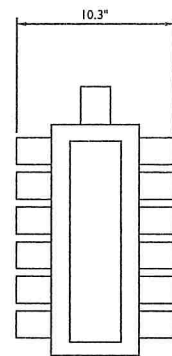
SHEET NUMBER : Z-7



PLAN VIEW



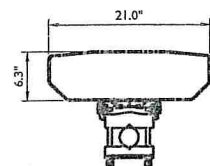
FRONT VIEW



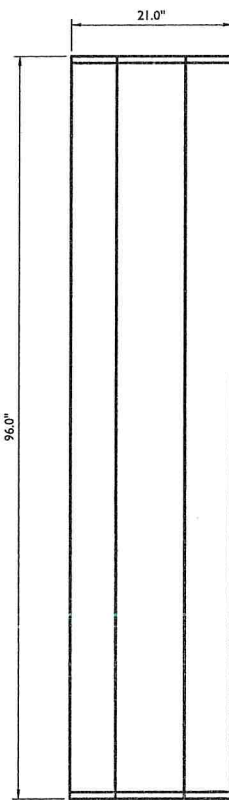
SIDE VIEW

WEIGHT = 72.0 LBS W/O MOUNTING HARDWARE
(INCLUDES SUNSHIELD AND DOUBLE FILTER CHASSIS)
WEIGHT: 72.0 LBS

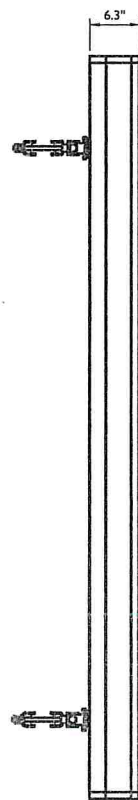
**ERICSSON DUAL BAND
RRU-8843 B2+B66A DETAIL**
NOT TO SCALE



PLAN VIEW



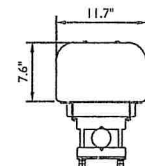
FRONT VIEW



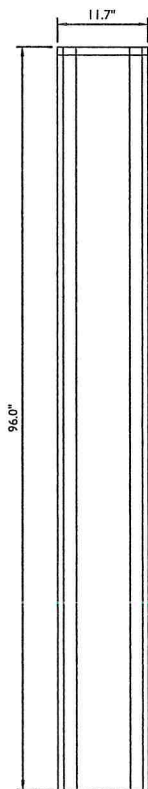
SIDE VIEW

WEIGHT WITHOUT MOUNTING BRACKET = 86 LBS
WEIGHT WITH MOUNTING BRACKET = 95.4 LBS

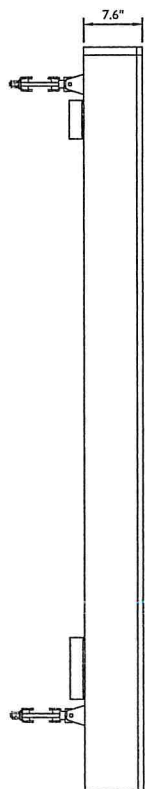
KMW EPBQ-654L8H8-L2
NOT TO SCALE



PLAN VIEW



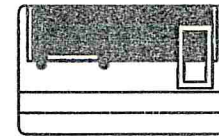
FRONT VIEW



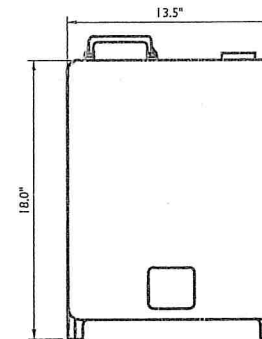
SIDE VIEW

WEIGHT WITHOUT MOUNTING BRACKET = 54 LBS
WEIGHT WITH MOUNTING BRACKET = 66.6 LBS

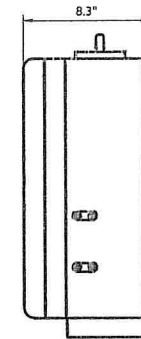
CCI HPA65R-BU8A ANTENNA
NOT TO SCALE



PLAN VIEW

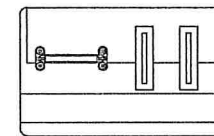


FRONT VIEW

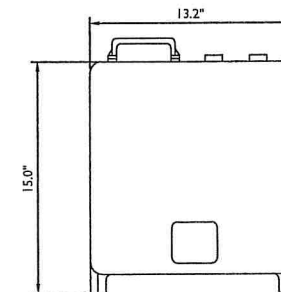


SIDE VIEW

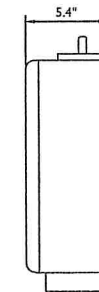
WEIGHT INCLUDES SUNSHIELD = 59.9 LBS
ERICSSON RRUS 4478 B14
NOT TO SCALE



PLAN VIEW

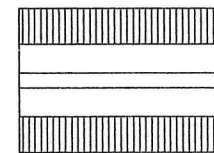


FRONT VIEW

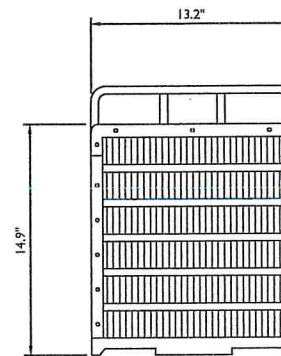


SIDE VIEW

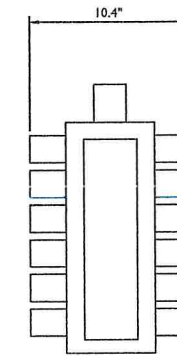
WEIGHT INCLUDES SUNSHIELD = 44 LBS
ERICSSON RRUS 4415 B30
NOT TO SCALE



PLAN VIEW



FRONT VIEW



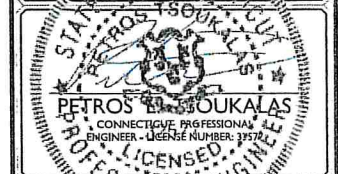
SIDE VIEW

WEIGHT = 73 LBS W/O MOUNTING HARDWARE
DIMENSIONS (H X W X D): 14.9"H X 13.2"W X 10.4"D
(INCLUDES SUNSHIELD) WEIGHT: 73.0 LBS

**ERICSSON DUAL BAND
RRUS-4449 B5+B12 DETAIL**
NOT TO SCALE



SCALE:	JOB NUMBER:
AS SHOWN	18946092A
1	2
3	4
5	6
7	8
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11	12
13	14
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17	18
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93	94
95	96
97	98
99	100



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FA# 12906926
SITE# CT2413S
345 BUSHY HILL ROAD
SIMSBURY, CT 06070
HARTFORD COUNTY





SCALE:	JOB NUMBER:
AS SHOWN	18946092A
2	06/21/19
1	06/05/19
0	04/09/19
REV	

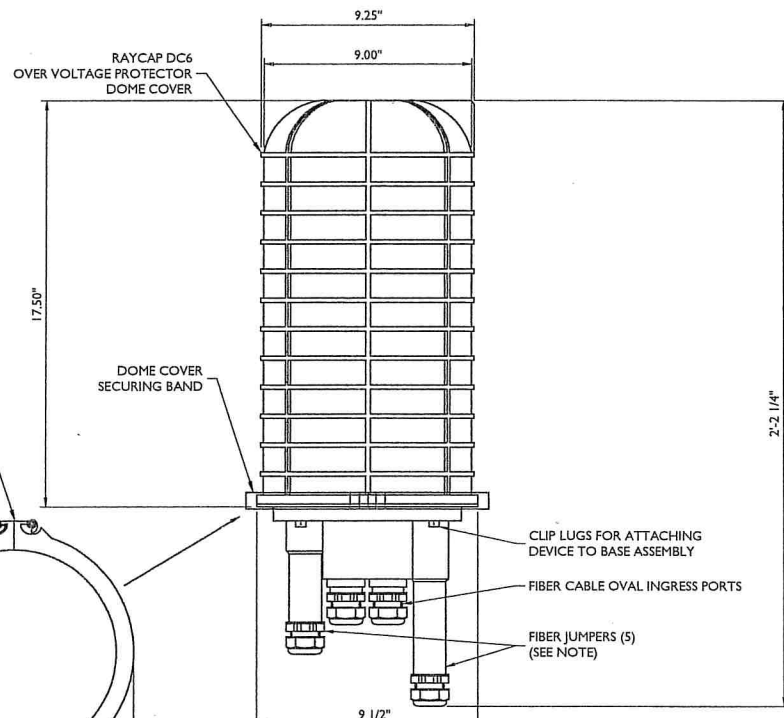
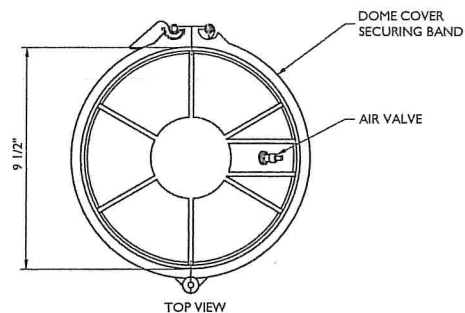


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FA# 12906926
SITE# CT24138
345 BUSHY HILL ROAD
SIMSBURY, CT 06070
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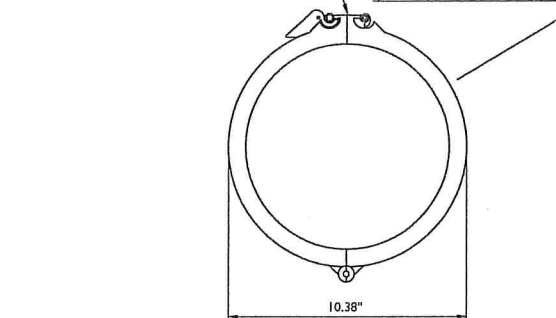
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331 Newman Springs Road
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Red Bank, NJ 07701-5669
Phone: 732.383.1950
Fax: 732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE:
DETAILS
SHEET NUMBER:
A-2

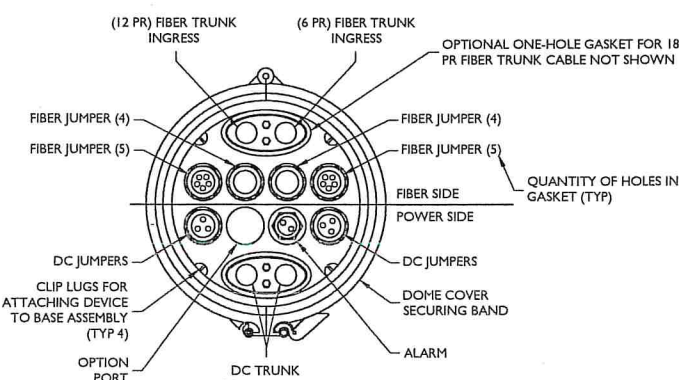


SIDE VIEW DC6-48-60-18-8F

WEIGHT = 32.8lbs (EACH)

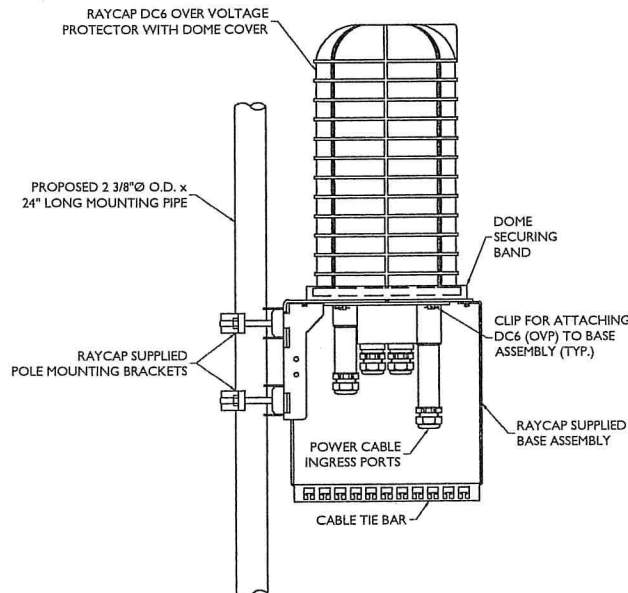


BOTTOM VIEW
DC6-48-60-0-8F



BOTTOM VIEW
DC6-48-60-18-8F

NOTE:
REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC-TO-1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP.

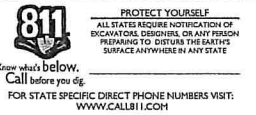


NOTES:

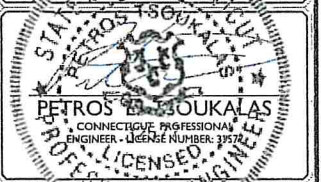
RAYCAP VIA AT&T SUPPLIES THE DC6 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

**DC6 SURGE SUPPRESSION DOME
ANTENNA PLATFORM MOUNT ASSEMBLY**
NOT TO SCALE

DC6 SURGE SUPPRESSION DOME DETAIL
NOT TO SCALE



SCALE:	JOB NUMBER:
AS SHOWN	18946092A
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3	06/21/19
4	06/21/19
5	06/21/19
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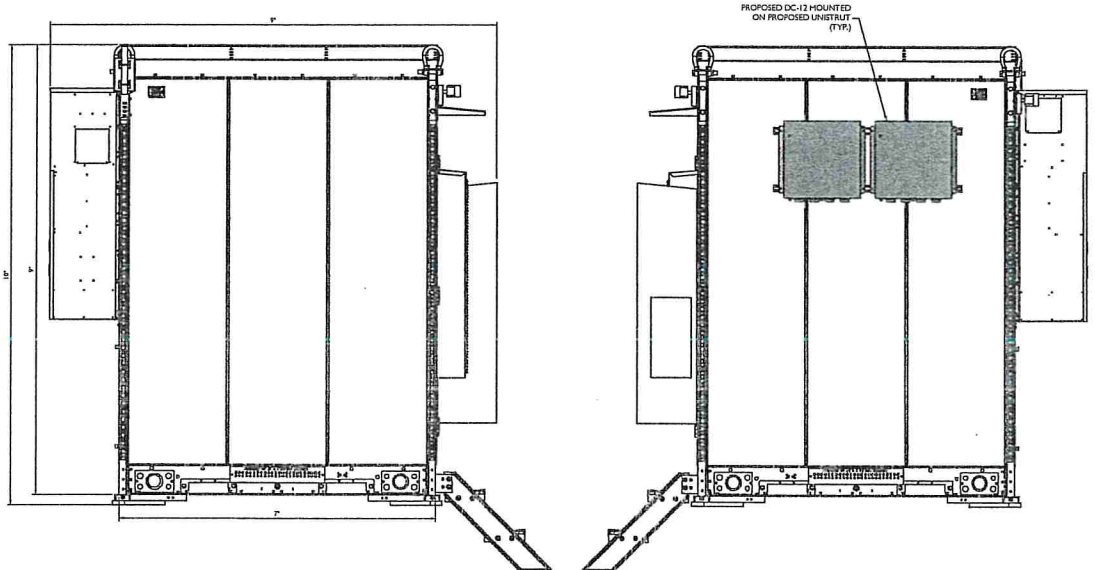
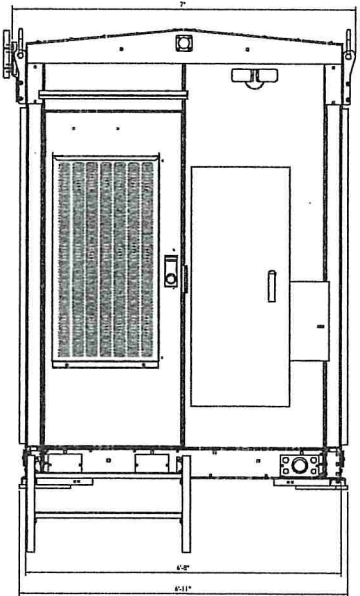
IT IS A VIOLATION OF THE PROFESSIONAL ENGINEER ACT, UNLESS THEY ARE ALL UNDER THE SUPERVISION AND DIRECTION OF THE RESPONSIBLE LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:
SIMSBURY -
BUSHY HILL RD.
FA# 12906926
SITE# CT2413S

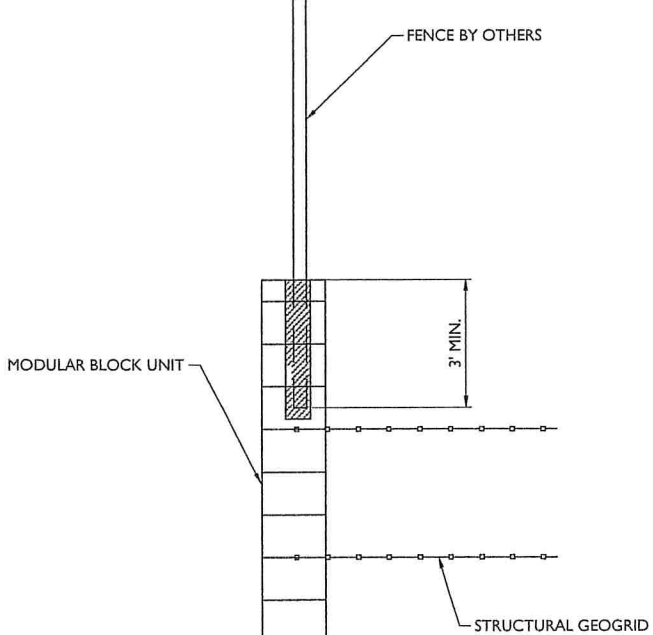
345 BUSHY HILL ROAD
SIMSBURY, CT 06070
HARTFORD COUNTY



- Color – Pebble-Gray, RAL7032.
- Finish – Standard finish is multistage dry powder polyester paint for maximum durability and performance against corrosion. Optional exterior finishes also available upon request.
- NetSure™ 7100 DC Power System in 23" rack with three (3) battery trays (Third Party Integrated).
- NCU system and generator control (Third Party Integrated).
- (2) 19" or 23" equipment welded frames installed. One with fiber patch panel and the other without. (Third Party Integrated.)



Vertiv | XTE 802 Series Walk-In-Cabinet (WIC) (631-205-434)



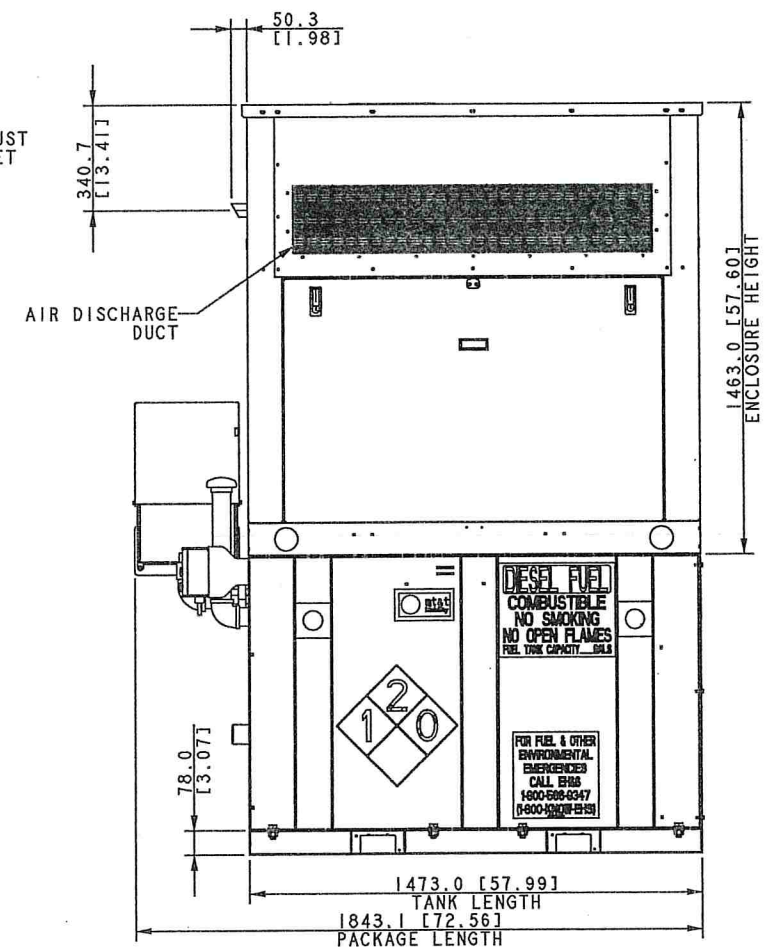
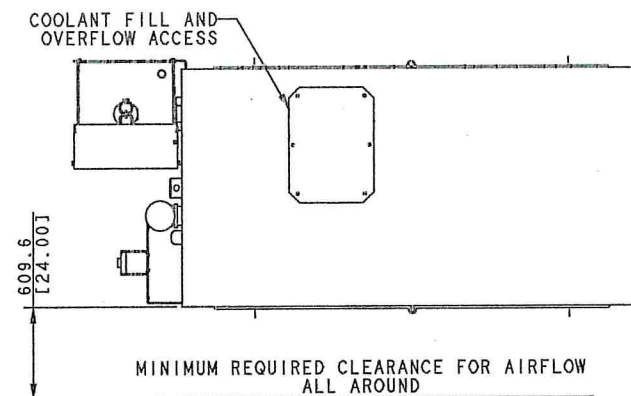
FENCE DETAIL
SCALE: NTS


NON-SHRINK GROUT
POST IN PLACE



FENCE POST EMBEDMENT DETAIL

1. ALL SIDES OF THE GENERATOR ARE SERVICE ACCESSIBLE.
RIGHT SIDE IS PRIMARY SERVICE SIDE.
2. 6 AMP BATTERY CHARGER.
3. 120VAC ENGINE BLOCK HEATER.
4. 120VAC 80W BATTERY HEATER.
5. GENERATOR MUST BE GROUNDED.
6. SOUND ATTENUATED ENCLOSURE STANDARD WITH GENERATOR.
7. MUST ALLOW FREE FLOW OF DISCHARGE AIR AND EXHAUST.
8. MUST ALLOW FREE FLOW OF INTAKE AIR.
9. BASE TANK REQUIRES ALL STUB-UPS TO BE IN THE REAR TANK STUB-UP AREA.
10. TANK EQUIPPED WITH FIRE SAFETY VALVE ON FUEL SUPPLY LINE.
11. IT IS THE RESPONSIBILITY OF THE INSTALLATION TECHNICIAN TO ENSURE
THAT THE GENERATOR INSTALLATION COMPLIES WITH ALL APPLICABLE
CODES, STANDARDS, AND REGULATIONS.
12. GENERATOR IS INSTALLED ON A UL-142 RATED DOUBLE WALL SUBBASE FUEL TANK.

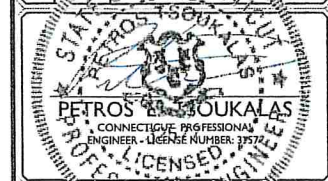


REV	DATE	ON COMPOSITE DRGS., SEE PART NO. FOR REVISION LEVEL	BY	DO NOT SCALE. REFERENCE THE MODEL FOR ALL UNSPECIFIED DIMENSIONS	
-	3-22-18	NEW DRAWING [CT185300]	JMR	VELOCITIES OTHERWISE SPECIFIED: ALL QUESTIONS TO MILLNETTERS GENERAL TOLERANCES: 1.X ± .005 2.X ± .010 3.X ± .015 ANGLES ± 0° 30' SURFACE FINISH ✓ MAX. THIRD ANGLE PROJECTION 	KOHLER KOHLER, WISCONSIN 53044 THIS DRAWING IN DESIGN AND DETAIL IS KOHLER CO. PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH KOHLER CO. WORK. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.
				TITLE DIMENSION PRINT, 20KW STATE TANK, ENCL	
			APPROVALS	SCALE 0.40 CAR NO. SHEET 1 of 1	
			DRAWN JMR 3-22-18		
			CHECKED JMR 3-22-18		
			APPROVED LRD 3-22-18	ADV-9064 D	

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SCALE:		JOB NUMBER:	
AS SHOWN		18946092A	
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2	04/21/19	REVISED PER ABUTTERS LIST	JCH RA
1	05/05/19	REVISED PER COMMENTS	AJC RA
0	04/09/15	FOR REVIEW	AJC RA
REV	DESCRIPTION		CHECKED BY



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE A LICENSEE UNDER THE JUNCTION OF THE RESPONSIBLE LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:
SIMSBURY
BUSHY HILL RD.
FA# 12906926
SITE# CT2413S
345 BUSHY HILL ROAD
SIMSBURY, CT 06070
HARTFORD COUNTY



SHEET TITLE:

CONSTRUCTION DETAILS

SHEET NUMBER : A-4

GENERATOR DETAIL
NOT TO SCALE

3

Petition No. 1077
Verizon
Simsbury, Connecticut
Staff Report
November 19, 2013

On October 11, 2013, the Connecticut Siting Council (Council) received a petition from Celco Partnership d/b/a Verizon Wireless (Verizon) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the extension of an existing telecommunications facility at 345 Bushy Hill Road in Simsbury, Connecticut. Council member Robert Hannon and Siting Analyst David Martin visited the site on November 12, 2013 to review the proposal. Attorney Kenneth Baldwin represented Verizon at the field review.

The existing telecommunications tower is 80 feet tall and is located behind the Simsbury Volunteer Fire Department (SVFD) station at 345 Bushy Hill Road. Currently, the SVFD has two six-foot whip antennas at the top of the existing tower; T-Mobile has three flush-mounted antennas at 77 feet; and MetroPCS has three flush-mounted antennas at 70 feet. Verizon proposes to extend the tower by 26 feet to a height of 106 feet in order to install 12 antennas (three LTE antennas, three cellular antennas, three PCS antennas, and three AWS antennas) on T-arms at a centerline height of 100 feet. SVFD would re-locate its antennas to the top of the extended tower. This relocation to a higher centerline is expected to improve the fire department's service in this section of Simsbury. AT&T has also submitted correspondence indicating that it would be interested in placing antennas at a centerline height of 90 feet should the tower be extended.

Verizon would install a 12-foot by 30-foot shelter just beyond the edge of the parking area in the rear of the fire station for its ground equipment. The shelter would include a natural gas-fueled backup generator—natural gas is available on the fire station property. The shelter at this location would require some filling to extend an embankment to accommodate it. A few trees would have to be taken down for this filling. AT&T would install an 11'6" by 20' shelter for its ground equipment. It would be located a short distance from Verizon's shelter along the back of the parking area.

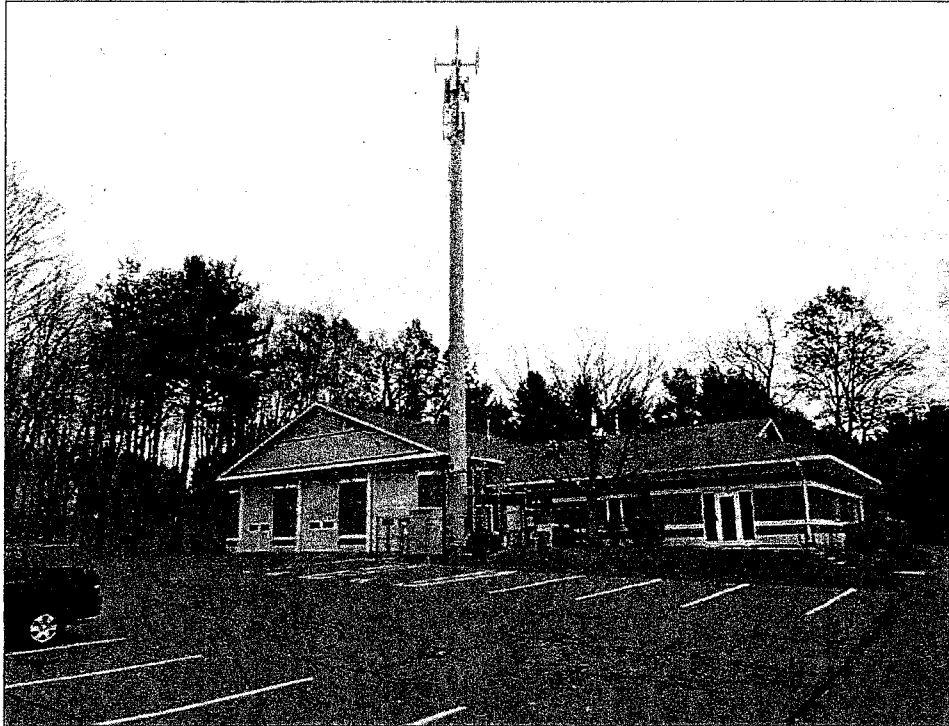
Although the fire house is on a main road in Simsbury (State Route 167) and is surrounded by single family homes, the visibility of the existing tower is actually minimal due to the presence of mature coniferous and deciduous trees that ring the SVFD property. The proposed 26-foot extension is estimated to increase the year-round visibility of the tower by approximately 10% to 25 acres. It should not dramatically alter the tower's presence in the surrounding vicinity.

For this petition, Verizon hired C Squared Systems to take field measurements of RF levels at this facility. C Squared added calculations for Verizon's proposed antennas to its measured readings and estimated the expected power density to be approximately 4.8% of the FCC limit for maximum permissible exposure for the general public.

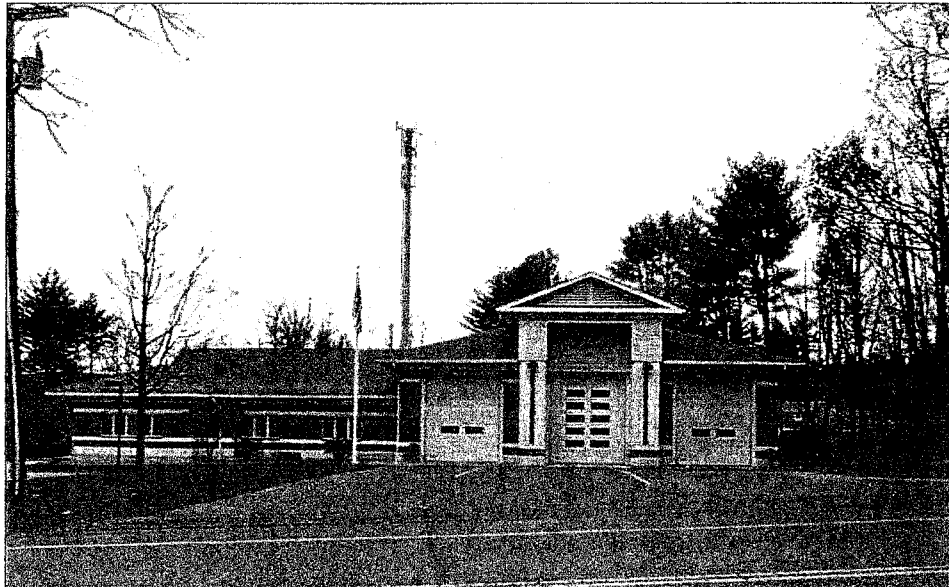
Verizon provided notice to the Town of Simsbury and abutting property owners on October 11, 2013. No comments or inquiries have been received. Mary Glassman, Simsbury First Selectwoman, has no objections to the Petition.

The proposed tower extension is not expected to have any substantial adverse environmental effects. Staff recommends approval.

View of existing tower from behind fire house



View of existing tower from across Bushy Hill Road

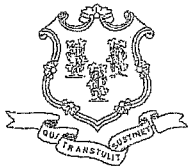


View of tower from north along Bushy Hill Road



View of tower from south along Bushy Hill Road





June 16, 2014

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

Steven J. Quinn
Smartlink
33 Boston Post Road West
Marlborough, MA 01752

RE: **TS-AT&T-128-140506** - AT&T request for an order to approve tower sharing at an existing telecommunications facility located at 345 Bushy Hill Road, Simsbury, Connecticut.

Dear Mr. Quinn:

At a public meeting held June 12, 2014, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures with the following conditions:

- Prior to antenna installation, the reinforcements detailed in Section 4 of the "Structural Analysis and Reinforcement Design Report" prepared by Centek Engineering dated April 10, 2014, and stamped by Carlo Centore shall be implemented;
- Within 45 days following completion of the antenna installation, AT&T shall provide documentation certified by a professional engineer that its installation complied with the requirements of the structural analysis;
- Any deviation from the proposed installation as specified in the original tower share request and supporting materials with the Council shall render this decision invalid;
- Any material changes to the proposed installation as specified in the original tower share request and supporting materials filed with the Council shall require an explicit request for modification to the Council pursuant to Connecticut General Statutes § 16-50aa, including all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65;
- Not less than 45 days after completion of the proposed installation, the Council shall be notified in writing that the installation has been completed;
- Any nonfunctioning antenna and associated antenna mounting equipment owned and operated by AT&T on this facility shall be removed within 60 days of the date the antenna ceased to function;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

This decision is under the exclusive jurisdiction of the Council and applies only to this request for tower sharing dated May 5, 2014. This facility has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower. Any deviation from the approved tower sharing request is enforceable under the provisions of Connecticut General Statutes § 16-50u.

The proposed shared use is to be implemented as specified in your letter dated May 5, 2014, including the placement of all necessary equipment and shelters within the tower compound.

Please be advised that the validity of this action shall expire one year from the date of this letter.



Thank you for your attention and cooperation.

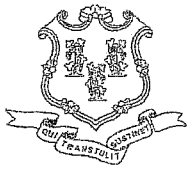
Very truly yours,

A handwritten signature in cursive script that reads "Robert Stein". To the right of the signature, the letters "MAB" are handwritten in a smaller, more upright script.

Robert Stein
Chairman

RS/CDM/cm

- c: The Honorable Mary A. Glassman, First Selectman, Town of Simsbury
Hiram Peck, Director of Community Planning and Development, Town of Simsbury
John Solury, Vice President, Simsbury Fire District



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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E-Mail: siting.council@ct.gov

www.ct.gov/csc

October 6, 2014

Steven Quinn
Smartlink
33 Boston Post Road West
Marlborough, MA 01752

RE: **TS-AT&T-128-140506** - AT&T request to modify a previously approved tower sharing request at an existing telecommunications facility located at 345 Bushy Hill Road, Simsbury, Connecticut.

Dear Mr. Quinn:

At a public meeting held on October 2, 2014, the Connecticut Siting Council (Council) approved a request to modify a previously approved tower share request for an existing telecommunications facility located at 345 Bushy Hill Road in Simsbury, Connecticut. This approval modifies the Council's decision made on June 12, 2014 to rule that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa. In its decision of October 2, 2014, the Council included the following conditions that were included with its original decision:

- Prior to antenna installation, the reinforcements detailed in Section 4 of the "Structural Analysis and Reinforcement Design Report" prepared by Centek Engineering dated April 10, 2014, and stamped by Carlo Centore shall be implemented; and
- Within 45 days following completion of the antenna installation, AT&T shall provide documentation certified by a professional engineer that its installation complied with the requirements of the structural analysis.
- Any deviation from the proposed installation as specified in the original tower share request and supporting materials with the Council shall render this decision invalid;
- Any material changes to the proposed installation as specified in the original tower share request and supporting materials filed with the Council shall require an explicit request for modification to the Council pursuant to Connecticut General Statutes § 16-50aa, including all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65;
- Not less than 45 days after completion of the proposed installation, the Council shall be notified in writing that the installation has been completed;
- Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by AT&T shall be removed within 60 days of the date the antenna ceased to function.
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

This decision is under the exclusive jurisdiction of the Council and applies only to this request to modify a tower sharing request dated August 29, 2014. This facility has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower. Any deviation from the approved tower sharing request is enforceable under the provisions of Connecticut General Statutes § 16-50u.



October 6, 2014

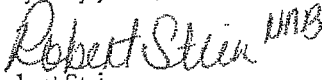
Page 2

The proposed shared use is to be implemented as specified in your letter dated August 29, 2014 including the placement of all necessary equipment and shelters within the tower compound.

Please be advised that the validity of this action shall expire one year from the date of this letter.

Thank you for your attention and cooperation.

Very truly yours,


Robert Stein
Chairman

RS/CDM/cm

c: The Honorable Mary A. Glassman, First Selectman, Town of Simsbury
Hiram Peck, Director of Community Planning and Development, Town of Simsbury
John Solury, Vice President, Simsbury Fire District



February 13, 2018

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **EM-VER-128-180124** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 345 Bushy Hill Road, Simsbury, Connecticut.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
2. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
3. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
4. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by Cellco Partnership d/b/a Verizon Wireless shall be removed within 60 days of the date the antenna ceased to function;
5. The validity of this action shall expire one year from the date of this letter; and
6. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated January 22, 2018. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case



CONNECTICUT SITING COUNCIL
Affirmative Action / Equal Opportunity Employer

modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,



Melanie A. Bachman
Executive Director

MAB/CMW/bm

- c: The Honorable Eric Wellman, First Selectman, Town of Simsbury
- Michael Glidden, Assistant Town Planner, Town of Simsbury
- Simsbury Fire District, Tower/Property Owner

4



MASER CONSULTING
— CONNECTICUT —

Monopole Modification Structural Analysis

FOR

CTL02413 – Simsbury Deerfield Lane

FA #: 12906926
345 Bushy Hill Road
Simsbury, CT 06070
Hartford County

New Site - MRCTB032789

Monopole Utilization: 97.9%*

Foundation Utilization: 82.3%

*Tower is considered adequate upon completion of modifications as listed in the 'Recommendations' section of this report

May 30, 2019

Prepared For

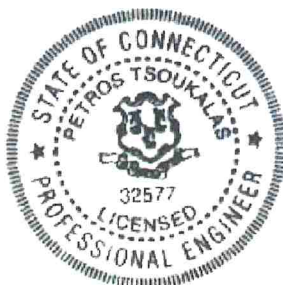
AT&T

550 Cochituate Road
Framingham, MA 01701

Prepared By

Maser Consulting Connecticut

331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
T: 732.383.1950



Petros E. Tsoukalas, P.E.
Geographic Discipline Leader
Connecticut License No. 32557





Objective:

The objective of this report is to determine the capacity of the monopole and foundation at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

Introduction:

Maser Consulting Connecticut has reviewed the following documents in completing this report:

Document Type	Remarks	Source
As- Built Information	Email correspondence from Todd Oliver, dated May 30, 2019	Smartlink, LLC
Radio Frequency Data Sheet (RFDS)	RFDS ID: 2592584, Version 6.00 Dated March 22, 2019	Smartlink, LLC
Structural Analysis	Centek Engineering Project #13298.000 Rev 1, Dated April 10, 2014	Smartlink, LLC

Codes, Standards and Loading:

Maser Consulting Connecticut utilized the following codes and standards:

- 2018 Connecticut State Building Code, Incorporating the 2015 IBC
- Structural Standards for Antenna Supporting Structures and Antennas ANSI/TIA-222-G
 - Nominal Wind Speed – 93 mph (Per Connecticut Building Code)
 - Exposure Category – B
 - Structure Class – II
 - Ice Thickness – 1.00"
 - Ice Wind Speed – 50 mph

Discrete and Linear Appurtenances:

Maser Consulting Connecticut understands the proposed AT&T loading to be as follows:

- (6) EPBQ-654L8H8-L2 Antennas (Proposed)
- (3) HPA65R-BU8A Antennas (Proposed)
- (3) RRUS 4415 B30 (Proposed)
- (3) RRUS B5/B12 4449 (Proposed)
- (3) RRUS B14 4478 (Proposed)
- (3) RRUS B2/B66A 8843 (Proposed)
- (3) DC6s (Proposed)
- (3) RRUS-E2 B29 (Future)

Note: The overall antenna loading is found in the appendix A of this report.

Analysis Approach:

A three-dimensional model was created using tnxTower (version 8.0.5.0), a commercially available analysis software package. This model was used to calculate member stressed for live, dead, wind and ice load cases.



Assumptions:

General Site Design Assumptions:

1. All engineering services are performed on the basis that the information provided to Maser Consulting Connecticut and used in this analysis is current and correct.
2. It is the responsibility of the client to ensure that the information provided to Maser Consulting Connecticut and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that the original design, material production, fabrication, and erection of the existing structure was performed in accordance with accepted industry design standards and in accordance with all applicable codes. Further, it is assumed that the existing structure and appurtenances have been properly maintained in accordance with all applicable codes and manufacturer's specifications and no structural defects and/or deterioration to the structural members has occurred.
3. The existing equipment loading has been applied at locations determined from the supplied documentation and field observations. Should the existing equipment configuration differ from what is utilized in this analysis, the results of this analysis are invalid.
4. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Maser Consulting Connecticut is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.

Site Specific Assumptions and Design Parameters:

1. Structural Steel Grades have been assumed as follows, unless otherwise noted in this analysis:
 - Pole Sections ASTM A572 (Gr. 35) & A500 (Gr. 42)
 - Flange Plates ASTM A36 (Gr. 36)
 - Flange Bolts ASTM A325
 - Base Plate A572 (Gr. 60)
 - Anchor Rods A615 (Gr. 75)
 - Reinforcement Bars A514 (Gr. 100)
2. The existing tower is constructed to plumb and is properly maintained with no structural deficiencies and deteriorations.
3. It is assumed that the telecommunication equipment supports, antenna supports, and existing structure have been designed by a registered licensed professional engineer for the existing loads acting on the structure, as required by all applicable codes.
4. It is assumed that information provided by the client regarding the structure itself, the antenna models, feed lines, and other relevant information is current and correct.
5. It is assumed all other existing appurtenances, antennas, cables, etc. belonging to others have been installed and supported per code and per specifications so as not to damage any existing structural support members, and that any contributing loads from adjacent equipment has been taken into consideration for their design.
6. It is assumed the modification has been installed as intended as outlined in the referenced SA report.

Calculations:

Selected calculations and analysis output can be found in Appendix A of this report.



Analysis Results and Conclusion:

Component	Utilization %	Pass/Fail
Monopole	97.9	Pass
Flange Plate	48.6	Pass
Flange Bolts	75.9	Pass
Base Plate	89.8	Pass
Anchor Rods	76.8	Pass
Foundation	82.3	Pass

Structure Rating – (Controlling Utilization of all Components)	97.9%
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Recommendation:

The monopole and foundation have **SUFFICIENT** capacity to carry the existing and proposed loading. In order for the results of this analysis to be considered valid the following modifications listed below and shown on Maser Consulting Construction Drawings Job #: 18946092A shall be completed.

- 1) Install flat plate reinforcement from 0-20ft and 42.5-62.5ft
- 2) Modify existing flange at 80ft
- 3) Install 10ft extension at elevation 106ft

Maser Consulting Connecticut reserves the right to amend this report if additional information regarding the members is provided. The conclusions reached by Maser Consulting Connecticut in this report are only valid for the appurtenances listed in this report. Any change to the installation will require a revision to this structural analysis.

We appreciate the opportunity to be of service on this project. If you should have any questions or require any additional information, please do not hesitate to call our office.

Sincerely,
Maser Consulting Connecticut

Petros E. Tsoukalas, P.E.
Geographic Discipline Leader

Nathaniel Ober
Assistant Project Manager



Disclaimer of Warranties:

The engineering services rendered by Maser Consulting Connecticut in connection with this structural analysis are limited to a computer analysis of the mounting frame structure and theoretical capacity of its main structural members. No allowance has been made for any damaged, bent, missing, loose, or rusted members or connections.

Maser Consulting Connecticut will accept no liability which may arise due to any deficiency in design, material, fabrication, erection, construction, or lack of maintenance. Maser Consulting Connecticut has not performed a site visit of the mounting frame to verify member sizes or equipment loading. Contractor should inspect the condition of the existing structure, mounting frames and connections and notify Maser Consulting Connecticut of any discrepancies or deficiencies before proceeding with installation.

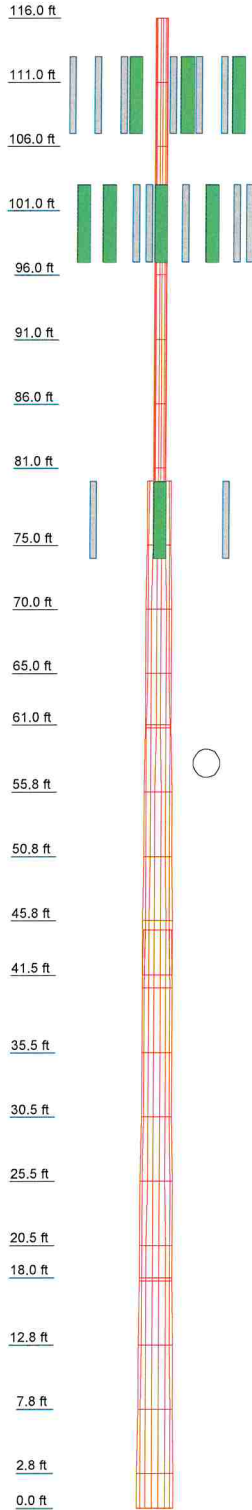
Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as part of our work. We recommend that material of suitable size and strength be purchased from a reputable manufacturer.

Maser Consulting Connecticut makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of the mounting frames. Maser Consulting Connecticut will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report.



APPENDIX A

Section	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Length (ft)	2.75	5.00	5.00	5.00	0.25	5.00	5.00	5.00	5.00	4.00	5.00	5.00	5.00	5.00	5.00	0.25	4.00	5.00	5.00	5.00	1.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Number of Sides	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	0	0	0	0	0	0	0	0
Thickness (in)	0.4375	0.4437	0.4500	0.4500	0.4500	0.4500	0.4500	0.4500	0.2500	0.2500	0.2500	0.4313	0.4313	0.4375	0.4500	0.4500	0.2500	0.1875	0.1875	0.1875	0.6250	0.6250	0.6250	0.6250	0.6250	0.6250	0.5000	0.5000
Socket Length (ft)	3.50																											
Top Dia (in)	33.0628	32.3225	31.5821	30.8437	30.4629	29.6942	28.9538	28.2135	27.4735	26.7335	26.0000	25.2600	24.5200	23.7800	23.0400	22.3000	21.5600	20.8200	20.0800	19.3400	18.6000	17.8600	17.1200	16.3800	15.6400	14.9000	14.1600	13.4200
Bot Dia (in)	33.4700	33.0628	32.3225	31.5821	30.8437	30.4629	29.6942	28.9538	28.2135	27.4735	26.7335	26.0000	25.2600	24.5200	23.7800	23.0400	22.3000	21.5600	20.8200	20.0800	19.3400	18.6000	17.8600	17.1200	16.3800	15.6400	14.9000	14.1600
Grade	A607-65														A500-42													
Weight (lb)	10589.4	11216.6	740.8	730.7	720.6	3320.5	402.5	392.5	382.5	372.5	326.7	7496.4	570.4	562.8	555.2	18197.1	239.6	232.1	224.6	81.0	405.1	405.1	405.1	405.1	405.1	405.1	327.4	327.4



DESIGNED APPURTENANCE LOADING

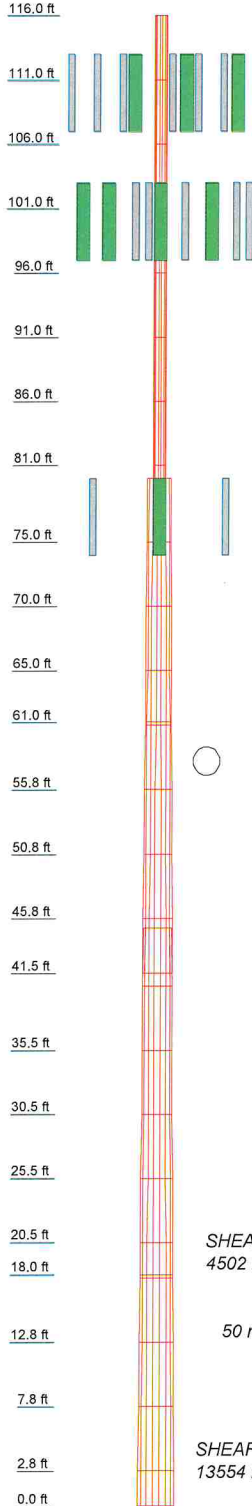
TYPE	ELEVATION	TYPE	ELEVATION
7x4.5" OD Mount Pipe (Other)	117	BXA-70063/6CF (Verizon)	100
7x4.5" OD Mount Pipe (Other)	117	BXA-171063-12CF (Verizon)	100
7x4.5" OD Mount Pipe (Other)	117	BXA-70063/6CF (Verizon)	100
6' Omni (Other)	117	BXA-171063-12CF (Verizon)	100
DB404 (Other)	117	BXA-70063/6CF (Verizon)	100
ANT220D3 (Other)	117	BXA-171063-12CF (Verizon)	100
DB201-A (Other)	117	BXA-70063/6CF (Verizon)	100
EPBQ-654L8H8-L2 (ATT)	110	BXA-171063-12CF (Verizon)	100
EPBQ-654L8H8-L2 (ATT)	110	BXA-70063/6CF (Verizon)	100
EPBQ-654L8H8-L2 (ATT)	110	BXA-171063-12CF (Verizon)	100
HPA65R-BU8A (ATT)	110	BXA-70063/6CF (Verizon)	100
HPA65R-BU8A (ATT)	110	BXA-171063-12CF (Verizon)	100
HPA65R-BU8A (ATT)	110	RRH2x40-07L (Verizon)	100
EPBQ-654L8H8-L2 (ATT)	110	RRH2x40-07L (Verizon)	100
EPBQ-654L8H8-L2 (ATT)	110	RRH2X60-AWS (Verizon)	100
EPBQ-654L8H8-L2 (ATT)	110	RRH2X60-AWS (Verizon)	100
RRU B14 4478 (ATT)	110	RRH2X60-AWS (Verizon)	100
RRU B14 4478 (ATT)	110	RRH2X60-AWS (Verizon)	100
RRU B14 4478 (ATT)	110	DB-T1-6Z-8AB-0Z (Verizon)	100
RRUS 4415 (ATT)	110	12' T-Arm (Verizon)	100
RRUS 4415 (ATT)	110	12' T-Arm (Verizon)	100
RRUS 4415 (ATT)	110	12' T-Arm (Verizon)	100
RRUS 4449 B5/12 (ATT)	110	TMA (T-Mobile)	77
RRUS 4449 B5/12 (ATT)	110	TMA (T-Mobile)	77
RRUS 4449 B5/12 (ATT)	110	APX16DWV-16DWVS-E-A20 (T-Mobile)	77
RRUS 8843 B2 B66A (ATT)	110	APX16DWV-16DWVS-E-A20 (T-Mobile)	77
RRUS 8843 B2 B66A (ATT)	110	APX16DWV-16DWVS-E-A20 (T-Mobile)	77
RRUS 8843 B2 B66A (ATT)	110	APX16DWV-16DWVS-E-A20 (T-Mobile)	77
DC6-48-06-18-8F (ATT)	110	APX16DWV-16DWVS-E-A20 (T-Mobile)	77
DC6-48-06-18-8F (ATT)	110	TMA (T-Mobile)	77
DC6-48-06-18-8F (ATT)	110	Valmont Uni-Tri Bracket (T-Mobile)	77
Sabre C10857001C (ATT)	110		
Sabre C10857001C (ATT)	110		
Sabre C10857001C (ATT)	110		
RRUS E2 B29 (ATT)	110		
RRUS E2 B29 (ATT)	110		
RRUS E2 B29 (ATT)	110		

MATERIAL STRENGTH

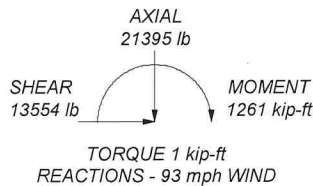
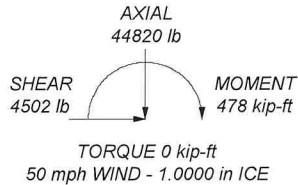
GRADE	Fy	Fu	GRADE	Fy	Fu
A500-42	42 ksi	58 ksi	A607-65	65 ksi	80 ksi

Maser Consulting 5141 Virginia Way, Suite 420 Brentwood, TN 37027 Phone: (615) 686-2575 FAX:			Job: CTL02413 Project: 18946092A Client: AT&T Code: TIA-222-G Path:			Drawn by: NOber Date: 05/30/19 App'd: Scale: NTS Dwg No. E-1		
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Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	5.00	0	0.5000	3.50	12.7500	12.7500	A500-42	327.4
2	5.00	0	0.5000		12.7500	12.7500	A500-42	327.4
3	5.00	0	0.6250		12.7500	12.7500	A500-42	405.1
4	5.00	0	0.6250		12.7500	12.7500	A500-42	405.1
5	5.00	0	0.6250		12.7500	12.7500	A500-42	405.1
6	5.00	0	0.6250		12.7500	12.7500	A500-42	405.1
7	5.00	0	0.6250		12.7500	12.7500	A500-42	405.1
8	5.00	0	0.6250		12.7500	12.7500	A500-42	405.1
9	5.00	0	0.6250		12.7500	12.7500	A500-42	405.1
10	5.00	0	0.6250		12.7500	12.7500	A500-42	405.1
11	5.00	0	0.6250	3.50	22.7403	23.4805	A500-42	232.1
12	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
13	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
14	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
15	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
16	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
17	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
18	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
19	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
20	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
21	5.00	0	0.6250	3.50	22.7403	23.4805	A500-42	232.1
22	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
23	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
24	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
25	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
26	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
27	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
28	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
29	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1
30	5.00	0	0.6250		22.7403	23.4805	A500-42	232.1



ALL REACTIONS
ARE FACTORED



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-42	42 ksi	58 ksi	A607-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-G Standard.
2. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. Weld together tower sections have flange connections.
8. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
9. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
10. Welds are fabricated with ER-70S-6 electrodes.

Maser Consulting
5141 Virginia Way, Suite 420
Brentwood, TN 37027
Phone: (615) 686-2575
FAX:

Job:	CTL02413		
Project:	18946092A		
Client:	AT&T	Drawn by:	NOber
Code:	TIA-222-G	Date:	05/30/19
Path:	\\BOS001\mnt\proj\18946092A\18946092A\Drawings\Tower\Maple\CTL02413.dwg		
		App'd:	Scale: NTS
			Dwg No. E-1

tnxTower Maser Consulting 5141 Virginia Way, Suite 420 Brentwood, TN 37027 Phone: (615) 686-2575 FAX:	Job	CTL02413	Page	1 of 24
	Project	18946092A	Date	17:13:12 05/30/19
	Client	AT&T	Designed by	NOber

Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).

Basic wind speed of 93 mph.

Structure Class II.

Exposure Category B.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

Weld together tower sections have flange connections..

Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..

Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..

Welds are fabricated with ER-70S-6 electrodes..

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
Use Code Safety Factors - Guys	Retention Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	√ Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	Pole Without Linear Attachments
		Pole With Shroud Or No Appurtenances
		Outside and Inside Corner Radii Are
		Known

<i>inxTower</i> Maser Consulting 5141 Virginia Way, Suite 420 Brentwood, TN 37027 Phone: (615) 686-2575 FAX:	Job	CTL02413	Page	2 of 24
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	Client	AT&T	Designed by	NOber

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	116.00-111.00	5.00	0.00	Round	12.7500	12.7500	0.5000		A500-42 (42 ksi)
L2	111.00-106.00	5.00	0.00	Round	12.7500	12.7500	0.5000		A500-42 (42 ksi)
L3	106.00-101.00	5.00	0.00	Round	12.7500	12.7500	0.6250		A500-42 (42 ksi)
L4	101.00-96.00	5.00	0.00	Round	12.7500	12.7500	0.6250		A500-42 (42 ksi)
L5	96.00-91.00	5.00	0.00	Round	12.7500	12.7500	0.6250		A500-42 (42 ksi)
L6	91.00-86.00	5.00	0.00	Round	12.7500	12.7500	0.6250		A500-42 (42 ksi)
L7	86.00-81.00	5.00	0.00	Round	12.7500	12.7500	0.6250		A500-42 (42 ksi)
L8	81.00-80.00	1.00	0.00	Round	12.7500	12.7500	0.6250		A500-42 (42 ksi)
L9	80.00-75.00	5.00	0.00	18	22.0000	22.7403	0.1875	0.7500	A607-65 (65 ksi)
L10	75.00-70.00	5.00	0.00	18	22.7403	23.4805	0.1875	0.7500	A607-65 (65 ksi)
L11	70.00-65.00	5.00	0.00	18	23.4805	24.2208	0.1875	0.7500	A607-65 (65 ksi)
L12	65.00-61.00	4.00	0.00	18	24.2208	24.8130	0.1875	0.7500	A607-65 (65 ksi)
L13	61.00-60.75	0.25	0.00	18	24.8130	24.8500	0.4625	1.8500	A607-65 (65 ksi)
L14	60.75-55.75	5.00	0.00	18	24.8500	25.5903	0.4500	1.8000	A607-65 (65 ksi)
L15	55.75-50.75	5.00	0.00	18	25.5903	26.3305	0.4375	1.7500	A607-65 (65 ksi)
L16	50.75-45.75	5.00	0.00	18	26.3305	27.0708	0.4313	1.7250	A607-65 (65 ksi)
L17	45.75-41.50	4.25	3.50	18	27.0708	27.7000	0.4313	1.7250	A607-65 (65 ksi)
L18	41.50-40.50	4.50	0.00	18	26.8068	27.4731	0.2500	1.0000	A607-65 (65 ksi)
L19	40.50-35.50	5.00	0.00	18	27.4731	28.2135	0.2500	1.0000	A607-65 (65 ksi)
L20	35.50-30.50	5.00	0.00	18	28.2135	28.9538	0.2500	1.0000	A607-65 (65 ksi)
L21	30.50-25.50	5.00	0.00	18	28.9538	29.6942	0.2500	1.0000	A607-65 (65 ksi)
L22	25.50-20.50	5.00	0.00	18	29.6942	30.4346	0.2500	1.0000	A607-65 (65 ksi)
L23	20.50-18.00	2.50	0.00	18	30.4346	30.8047	0.2500	1.0000	A607-65 (65 ksi)
L24	18.00-17.75	0.25	0.00	18	30.8047	30.8417	0.4625	1.8500	A607-65 (65 ksi)
L25	17.75-12.75	5.00	0.00	18	30.8417	31.5821	0.4562	1.8250	A607-65 (65 ksi)
L26	12.75-7.75	5.00	0.00	18	31.5821	32.3225	0.4500	1.8000	A607-65 (65 ksi)
L27	7.75-2.75	5.00	0.00	18	32.3225	33.0628	0.4437	1.7750	A607-65 (65 ksi)
L28	2.75-0.00	2.75		18	33.0628	33.4700	0.4375	1.7500	A607-65 (65 ksi)

tnxTower Maser Consulting 5141 Virginia Way, Suite 420 Brentwood, TN 37027 Phone: (615) 686-2575 FAX:	Job	CTL02413	Page	3 of 24
	Project	18946092A	Date	17:13:12 05/30/19
	Client	AT&T	Designed by	NOber

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	12.7500	19.2423	361.5439	4.3346	6.3750	56.7128	723.0879	9.6154	0.0000	0
	12.7500	19.2423	361.5439	4.3346	6.3750	56.7128	723.0879	9.6154	0.0000	0
L2	12.7500	19.2423	361.5439	4.3346	6.3750	56.7128	723.0879	9.6154	0.0000	0
	12.7500	19.2423	361.5439	4.3346	6.3750	56.7128	723.0879	9.6154	0.0000	0
L3	12.7500	23.8074	438.6696	4.2925	6.3750	68.8109	877.3392	11.8966	0.0000	0
	12.7500	23.8074	438.6696	4.2925	6.3750	68.8109	877.3392	11.8966	0.0000	0
L4	12.7500	23.8074	438.6696	4.2925	6.3750	68.8109	877.3392	11.8966	0.0000	0
	12.7500	23.8074	438.6696	4.2925	6.3750	68.8109	877.3392	11.8966	0.0000	0
L5	12.7500	23.8074	438.6696	4.2925	6.3750	68.8109	877.3392	11.8966	0.0000	0
	12.7500	23.8074	438.6696	4.2925	6.3750	68.8109	877.3392	11.8966	0.0000	0
L6	12.7500	23.8074	438.6696	4.2925	6.3750	68.8109	877.3392	11.8966	0.0000	0
	12.7500	23.8074	438.6696	4.2925	6.3750	68.8109	877.3392	11.8966	0.0000	0
L7	12.7500	23.8074	438.6696	4.2925	6.3750	68.8109	877.3392	11.8966	0.0000	0
	12.7500	23.8074	438.6696	4.2925	6.3750	68.8109	877.3392	11.8966	0.0000	0
L8	12.7500	23.8074	438.6696	4.2925	6.3750	68.8109	877.3392	11.8966	0.0000	0
	12.7500	23.8074	438.6696	4.2925	6.3750	68.8109	877.3392	11.8966	0.0000	0
L9	22.3105	12.9812	780.3007	7.7434	11.1760	69.8193	1561.6281	6.4918	3.5420	18.891
	23.0621	13.4217	862.4715	8.0062	11.5521	74.6596	1726.0778	6.7121	3.6723	19.586
L10	23.0621	13.4217	862.4715	8.0062	11.5521	74.6596	1726.0778	6.7121	3.6723	19.586
	23.8138	13.8623	950.2174	8.2690	11.9281	79.6621	1901.6852	6.9324	3.8026	20.28
L11	23.8138	13.8623	950.2174	8.2690	11.9281	79.6621	1901.6852	6.9324	3.8026	20.28
	24.5655	14.3028	1043.7217	8.5318	12.3042	84.8268	2088.8168	7.1528	3.9329	20.975
L12	24.5655	14.3028	1043.7217	8.5318	12.3042	84.8268	2088.8168	7.1528	3.9329	20.975
	25.1668	14.6552	1122.7941	8.7420	12.6050	89.0753	2247.0656	7.3290	4.0371	21.531
L13	25.1244	35.7459	2677.8057	8.6444	12.6050	212.4400	5359.1350	17.8763	3.5531	7.682
	25.1620	35.8002	2690.0352	8.6576	12.6238	213.0923	5383.6099	17.9035	3.5596	7.696
L14	25.1639	34.8505	2621.3582	8.6620	12.6238	207.6521	5246.1656	17.4286	3.5816	7.959
	25.9156	35.9078	2867.2541	8.9248	12.9999	220.5605	5738.2810	17.9573	3.7119	8.249
L15	25.9175	34.9278	2791.7683	8.9292	12.9999	214.7539	5587.2101	17.4672	3.7339	8.535
	26.6692	35.9557	3045.5834	9.1920	13.3759	227.6918	6095.1743	17.9813	3.8642	8.832
L16	26.6702	35.4506	3004.2495	9.1942	13.3759	224.6016	6012.4521	17.7287	3.8752	8.986
	27.4219	36.4639	3269.2874	9.4570	13.7520	237.7325	6542.8767	18.2354	4.0055	9.288
L17	27.4219	36.4639	3269.2874	9.4570	13.7520	237.7325	6542.8767	18.2354	4.0055	9.288
	28.0608	37.3251	3506.4623	9.6804	14.0716	249.1872	7017.5385	18.6661	4.1162	9.545
L18	27.7080	21.0728	1877.6407	9.4277	13.6179	137.8807	3757.7521	10.5384	4.2780	17.112
	27.8584	21.6016	2022.5480	9.6642	13.9564	144.9195	4047.7573	10.8028	4.3953	17.581
L19	27.8584	21.6016	2022.5480	9.6642	13.9564	144.9195	4047.7573	10.8028	4.3953	17.581
	28.6102	22.1890	2192.0906	9.9270	14.3325	152.9459	4387.0656	11.0966	4.5256	18.102
L20	28.6102	22.1890	2192.0906	9.9270	14.3325	152.9459	4387.0656	11.0966	4.5256	18.102
	29.3619	22.7765	2370.8524	10.1899	14.7086	161.1887	4744.8244	11.3904	4.6559	18.624
L21	29.3619	22.7765	2370.8524	10.1899	14.7086	161.1887	4744.8244	11.3904	4.6559	18.624
	30.1137	23.3640	2559.0780	10.4527	15.0847	169.6478	5121.5233	11.6842	4.7862	19.145
L22	30.1137	23.3640	2559.0780	10.4527	15.0847	169.6478	5121.5233	11.6842	4.7862	19.145
	30.8655	23.9514	2757.0113	10.7155	15.4608	178.3232	5517.6503	11.9780	4.9165	19.666
L23	30.8655	23.9514	2757.0113	10.7155	15.4608	178.3232	5517.6503	11.9780	4.9165	19.666
	31.2414	24.2452	2859.6943	10.8469	15.6488	182.7421	5723.1514	12.1249	4.9816	19.927
L24	31.2086	44.5416	5180.8196	10.7715	15.6488	331.0681	10368.4562	22.2750	4.6076	9.962
	31.2462	44.5960	5199.8048	10.7846	15.6676	331.8825	10406.4516	22.3022	4.6141	9.977
L25	31.2471	44.0024	5132.7037	10.7869	15.6676	327.5997	10272.1612	22.0054	4.6251	10.137
	31.9989	45.0745	5517.0996	11.0497	16.0437	343.8794	11041.4588	22.5415	4.7554	10.423
L26	31.9999	44.4660	5444.8015	11.0519	16.0437	339.3731	10896.7675	22.2372	4.7664	10.592
	32.7517	45.5234	5842.5618	11.3147	16.4198	355.8241	11692.8114	22.7660	4.8968	10.882
L27	32.7526	44.9000	5764.8051	11.3169	16.4198	351.0885	11537.1957	22.4542	4.9078	11.06
	33.5044	45.9427	6175.8523	11.5798	16.7959	367.6999	12359.8310	22.9757	5.0381	11.353
L28	33.5054	45.3043	6092.3692	11.5820	16.7959	362.7294	12192.7548	22.6565	5.0491	11.541
	33.9188	45.8698	6323.3433	11.7265	17.0028	371.9010	12655.0070	22.9392	5.1207	11.705

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
L1				1	1	1			
116.00-111.00									
L2				1	1	1			
111.00-106.00									
L3				1	1	1			
106.00-101.00									
L4				1	1	1			
101.00-96.00									
L5				1	1	1			
96.00-91.00									
L6				1	1	1			
91.00-86.00									
L7				1	1	1			
86.00-81.00									
L8				1	1	1			
81.00-80.00									
L9				1	1	1			
80.00-75.00									
L10				1	1	1			
75.00-70.00									
L11				1	1	1			
70.00-65.00									
L12				1	1	1			
65.00-61.00									
L13				1	1	0.912785			
61.00-60.75									
L14				1	1	0.922319			
60.75-55.75									
L15				1	1	0.933343			
55.75-50.75									
L16				1	1	0.932418			
50.75-45.75									
L17				1	1	0.930353			
45.75-41.50									
L18				1	1	1			
41.50-40.50									
L19				1	1	1			
40.50-35.50									
L20				1	1	1			
35.50-30.50									
L21				1	1	1			
30.50-25.50									
L22				1	1	1			
25.50-20.50									
L23				1	1	1			
20.50-18.00									
L24				1	1	0.94796			
18.00-17.75									
L25				1	1	0.950929			
17.75-12.75									
L26				1	1	0.954457			
12.75-7.75									
L27				1	1	0.958533			
7.75-2.75									
L28				1	1	0.967102			
2.75-0.00									

Feed Line/Linear Appurtenances - Entered As Round Or Flat

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Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A (1-5/8 FOAM) (Verizon)	C	No	Surface Ar (CaAa)	100.00 - 80.00	6	3	0.000 0.000	1.9800		0.82
1/2" 6C DC WIRE (ATT)	C	No	Surface Ar (CaAa)	110.00 - 80.00	8	4	0.000 0.000	0.5000		1.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight plf
LDF7-50A (1-5/8 FOAM) (T-Mobile)	C	No	No	Inside Pole	77.00 - 6.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82
LDF7-50A (1-5/8 FOAM) (Verizon)	C	No	No	Inside Pole	80.00 - 6.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82
18-Pair Fiber (ATT)	C	No	No	Inside Pole	80.00 - 6.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	3.00 3.00 3.00
1/2" 6C DC WIRE (ATT)	C	No	No	Inside Pole	80.00 - 6.00	8	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	1.00 1.00 1.00
18-Pair Fiber (ATT)	C	No	No	Inside Pole	90.00 - 80.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	3.00 3.00 3.00

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
L1	116.00-111.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	111.00-106.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.800	0.000	32.00
L3	106.00-101.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	1.000	0.000	40.00
L4	101.00-96.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	3.376	0.000	59.68
L5	96.00-91.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	3.970	0.000	64.60
L6	91.00-86.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	3.970	0.000	88.60

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<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face</i>	<i>A_R ft²</i>	<i>A_F ft²</i>	<i>C_AA_I In Face ft²</i>	<i>C_AA_I Out Face ft²</i>	<i>Weight lb</i>
L7	86.00-81.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	3.970	0.000	94.60
L8	81.00-80.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.794	0.000	18.92
L9	80.00-75.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	104.44
L10	75.00-70.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	119.20
L11	70.00-65.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	119.20
L12	65.00-61.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	95.36
L13	61.00-60.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	5.96
L14	60.75-55.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	119.20
L15	55.75-50.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	119.20
L16	50.75-45.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	119.20
L17	45.75-41.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	101.32
L18	41.50-40.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	23.84
L19	40.50-35.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	119.20
L20	35.50-30.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	119.20
L21	30.50-25.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	119.20
L22	25.50-20.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	119.20
L23	20.50-18.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	59.60
L24	18.00-17.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	5.96
L25	17.75-12.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	119.20
L26	12.75-7.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	119.20
L27	7.75-2.75	A	0.000	0.000	0.000	0.000	0.00

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Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight lb
L28	2.75-0.00	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	41.72
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight lb
L1	116.00-111.00	A	2.263	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L2	111.00-106.00	A	2.253	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	3.253	0.000	79.44
L3	106.00-101.00	A	2.242	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	4.053	0.000	98.88
L4	101.00-96.00	A	2.231	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	9.240	0.000	215.86
L5	96.00-91.00	A	2.220	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	10.511	0.000	244.03
L6	91.00-86.00	A	2.207	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	10.481	0.000	266.79
L7	86.00-81.00	A	2.195	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	10.449	0.000	271.49
L8	81.00-80.00	A	2.187	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	2.086	0.000	54.13
L9	80.00-75.00	A	2.178	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	104.44
L10	75.00-70.00	A	2.164	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	119.20
L11	70.00-65.00	A	2.148	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	119.20
L12	65.00-61.00	A	2.134	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	95.36
L13	61.00-60.75	A	2.126	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	5.96
L14	60.75-55.75	A	2.117	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	119.20
L15	55.75-50.75	A	2.098	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	119.20
L16	50.75-45.75	A	2.077	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00

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Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight lb
L17	45.75-41.50	C		0.000	0.000	0.000	0.000	119.20
		A	2.057	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	101.32
L18	41.50-40.50	A	2.044	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	23.84
L19	40.50-35.50	A	2.028	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	119.20
L20	35.50-30.50	A	2.000	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	119.20
L21	30.50-25.50	A	1.967	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	119.20
L22	25.50-20.50	A	1.929	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	119.20
L23	20.50-18.00	A	1.895	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	59.60
L24	18.00-17.75	A	1.881	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	5.96
L25	17.75-12.75	A	1.851	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	119.20
L26	12.75-7.75	A	1.779	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	119.20
L27	7.75-2.75	A	1.664	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	41.72
L28	2.75-0.00	A	1.455	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	116.00-111.00	0.0000	0.0000	0.0000	0.0000
L2	111.00-106.00	0.0000	1.4044	0.0000	1.5830
L3	106.00-101.00	0.0000	1.6716	0.0000	1.7972
L4	101.00-96.00	0.0000	4.1363	0.0000	2.9947
L5	96.00-91.00	0.0000	4.4968	0.0000	3.1742
L6	91.00-86.00	0.0000	4.4968	0.0000	3.1741
L7	86.00-81.00	0.0000	4.4968	0.0000	3.1739
L8	81.00-80.00	0.0000	4.4968	0.0000	3.1739
L9	80.00-75.00	0.0000	0.0000	0.0000	0.0000
L10	75.00-70.00	0.0000	0.0000	0.0000	0.0000
L11	70.00-65.00	0.0000	0.0000	0.0000	0.0000
L12	65.00-61.00	0.0000	0.0000	0.0000	0.0000
L13	61.00-60.75	0.0000	0.0000	0.0000	0.0000
L14	60.75-55.75	0.0000	0.0000	0.0000	0.0000

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Section	Elevation	CP _X	CP _Z	CP _X Ice	CP _Z Ice
	ft	in	in	in	in
L15	55.75-50.75	0.0000	0.0000	0.0000	0.0000
L16	50.75-45.75	0.0000	0.0000	0.0000	0.0000
L17	45.75-41.50	0.0000	0.0000	0.0000	0.0000
L18	41.50-40.50	0.0000	0.0000	0.0000	0.0000
L19	40.50-35.50	0.0000	0.0000	0.0000	0.0000
L20	35.50-30.50	0.0000	0.0000	0.0000	0.0000
L21	30.50-25.50	0.0000	0.0000	0.0000	0.0000
L22	25.50-20.50	0.0000	0.0000	0.0000	0.0000
L23	20.50-18.00	0.0000	0.0000	0.0000	0.0000
L24	18.00-17.75	0.0000	0.0000	0.0000	0.0000
L25	17.75-12.75	0.0000	0.0000	0.0000	0.0000
L26	12.75-7.75	0.0000	0.0000	0.0000	0.0000
L27	7.75-2.75	0.0000	0.0000	0.0000	0.0000
L28	2.75-0.00	0.0000	0.0000	0.0000	0.0000

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L2	7	1/2" 6C DC WIRE	106.00 - 110.00	1.0000	1.0000
L3	7	1/2" 6C DC WIRE	101.00 - 106.00	1.0000	1.0000
L4	3	LDF7-50A (1-5/8 FOAM)	96.00 - 100.00	1.0000	1.0000
L4	7	1/2" 6C DC WIRE	96.00 - 101.00	1.0000	1.0000
L5	3	LDF7-50A (1-5/8 FOAM)	91.00 - 96.00	1.0000	1.0000
L5	7	1/2" 6C DC WIRE	91.00 - 96.00	1.0000	1.0000
L6	3	LDF7-50A (1-5/8 FOAM)	86.00 - 91.00	1.0000	1.0000
L6	7	1/2" 6C DC WIRE	86.00 - 91.00	1.0000	1.0000
L7	3	LDF7-50A (1-5/8 FOAM)	81.00 - 86.00	1.0000	1.0000
L7	7	1/2" 6C DC WIRE	81.00 - 86.00	1.0000	1.0000
L8	3	LDF7-50A (1-5/8 FOAM)	80.00 - 81.00	1.0000	1.0000
L8	7	1/2" 6C DC WIRE	80.00 - 81.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
7"x4.5" OD Mount Pipe (Other)	A	None		0.0000	117.00	No Ice 1/2" Ice	2.55 3.21	75.60 97.75

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
7'x4.5" OD Mount Pipe (Other)	B	None		0.0000	117.00	1" Ice 3.64 No Ice 2.55 1/2" Ice 3.21	3.64 2.55 3.21	124.79 75.60 97.75
7'x4.5" OD Mount Pipe (Other)	C	None		0.0000	117.00	1" Ice 3.64 No Ice 2.55 1/2" Ice 3.21	3.64 2.55 3.21	124.79 75.60 97.75
6' Omni (Other)	A	From Face	4.00 0.00 6.00	0.0000	117.00	1" Ice 3.64 No Ice 1.20 1/2" Ice 1.80	3.64 1.20 1.80	124.79 20.00 29.39
DB404 (Other)	A	From Face	4.00 0.00 5.50	0.0000	117.00	1" Ice 2.17 No Ice 1.14 1/2" Ice 2.05	2.17 1.14 2.05	42.81 10.00 20.00
ANT220D3 (Other)	B	From Face	4.00 0.00 5.00	0.0000	117.00	1" Ice 2.96 No Ice 1.10 1/2" Ice 1.50	2.96 1.10 1.50	30.00 40.00 5.00
DB201-A (Other)	C	From Face	4.00 0.00 8.00	0.0000	117.00	1" Ice 1.90 No Ice 1.10 1/2" Ice 1.98	1.90 1.10 1.98	-30.00 30.00 30.00
Valmont Uni-Tri Bracket (T-Mobile)	A	None		0.0000	77.00	1" Ice 2.86 No Ice 1.75 1/2" Ice 1.94	2.86 1.75 1.94	30.00 290.00 310.00
APX16DWV-16DWVS-E-A 20 (T-Mobile)	A	From Face	5.00 0.00 0.00	0.0000	77.00	1" Ice 2.13 No Ice 7.07 1/2" Ice 7.52	2.13 2.15 2.49	330.00 40.00 70.00
APX16DWV-16DWVS-E-A 20 (T-Mobile)	B	From Face	5.00 0.00 0.00	0.0000	77.00	1" Ice 7.97 No Ice 7.07 1/2" Ice 7.52	7.97 2.15 2.49	100.00 40.00 70.00
APX16DWV-16DWVS-E-A 20 (T-Mobile)	C	From Face	5.00 0.00 0.00	0.0000	77.00	1" Ice 7.97 No Ice 7.07 1/2" Ice 7.52	7.97 2.15 2.49	100.00 40.00 70.00
TMA (T-Mobile)	A	From Face	4.00 5.00 0.00	0.0000	77.00	1" Ice 7.97 No Ice 1.00 1/2" Ice 1.13	2.83 0.41 0.50	100.00 20.00 27.62
TMA (T-Mobile)	B	From Face	4.00 5.00 0.00	0.0000	77.00	1" Ice 1.26 No Ice 1.00 1/2" Ice 1.13	0.59 0.41 0.50	37.11 20.00 27.62
TMA (T-Mobile)	C	From Face	4.00 5.00 0.00	0.0000	77.00	1" Ice 1.26 No Ice 1.00 1/2" Ice 1.13	0.59 0.41 0.50	37.11 20.00 27.62
BXA-70063/6CF (Verizon)	A	From Face	4.00 6.00 0.00	0.0000	100.00	1" Ice 1.26 No Ice 7.57 1/2" Ice 8.02	0.59 4.16 4.60	37.11 31.00 73.49
BXA-171063-12CF (Verizon)	A	From Face	4.00 4.00 0.00	0.0000	100.00	1" Ice 8.47 No Ice 4.80 1/2" Ice 5.25	5.04 3.63 4.06	121.83 12.80 40.29
BXA-70063/6CF (Verizon)	A	From Face	4.00 0.00 0.00	0.0000	100.00	1" Ice 5.71 No Ice 7.57 1/2" Ice 8.02	4.51 4.16 4.60	73.33 31.00 73.49
BXA-171063-12CF (Verizon)	A	From Face	4.00 -4.00 0.00	0.0000	100.00	1" Ice 8.47 No Ice 4.80 1/2" Ice 5.25	5.04 3.63 4.06	121.83 12.80 40.29
BXA-70063/6CF (Verizon)	B	From Face	4.00 6.00 0.00	0.0000	100.00	1" Ice 5.71 No Ice 7.57 1/2" Ice 8.02	4.51 4.16 4.60	73.33 31.00 73.49
BXA-171063-12CF (Verizon)	B	From Face	4.00 4.00	0.0000	100.00	1" Ice 8.47 No Ice 4.80 1/2" Ice 5.25	5.04 3.63 4.06	121.83 12.80 40.29

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
BXA-70063/6CF (Verizon)	B	From Face	0.00 4.00 0.00	0.0000	100.00	1" Ice 5.71 No Ice 7.57 1/2" Ice 8.02	4.51 4.16 4.60	73.33 31.00 73.49
BXA-171063-12CF (Verizon)	B	From Face	0.00 4.00 -4.00	0.0000	100.00	1" Ice 8.47 No Ice 4.80 1/2" Ice 5.25	5.04 3.63 4.06	121.83 12.80 40.29
BXA-70063/6CF (Verizon)	C	From Face	0.00 4.00 6.00	0.0000	100.00	1" Ice 5.71 No Ice 7.57 1/2" Ice 8.02	4.51 4.16 4.60	73.33 31.00 73.49
BXA-171063-12CF (Verizon)	C	From Face	0.00 4.00 4.00	0.0000	100.00	1" Ice 8.47 No Ice 4.80 1/2" Ice 5.25	5.04 3.63 4.06	121.83 12.80 40.29
BXA-70063/6CF (Verizon)	C	From Face	0.00 4.00 0.00	0.0000	100.00	1" Ice 5.71 No Ice 7.57 1/2" Ice 8.02	4.51 4.16 4.60	73.33 31.00 73.49
BXA-171063-12CF (Verizon)	C	From Face	0.00 4.00 -4.00	0.0000	100.00	1" Ice 8.47 No Ice 4.80 1/2" Ice 5.25	5.04 3.63 4.06	121.83 12.80 40.29
RRH2x40-07L (Verizon)	A	From Face	0.00 4.00 4.00	0.0000	100.00	1" Ice 5.71 No Ice 2.10 1/2" Ice 2.29	4.51 2.10 2.29	73.33 50.00 72.49
RRH2x40-07L (Verizon)	B	From Face	0.00 4.00 4.00	0.0000	100.00	1" Ice 2.48 No Ice 2.10 1/2" Ice 2.29	2.48 2.10 2.29	98.09 50.00 72.49
RRH2x40-07L (Verizon)	C	From Face	0.00 4.00 4.00	0.0000	100.00	1" Ice 2.48 No Ice 2.10 1/2" Ice 2.29	2.48 2.10 2.29	98.09 50.00 72.49
RRH2X60-AWS (Verizon)	A	From Face	0.00 4.00 -4.00	0.0000	100.00	1" Ice 2.48 No Ice 3.50 1/2" Ice 3.76	2.48 1.82 2.05	98.09 60.00 82.72
RRH2X60-AWS (Verizon)	B	From Face	0.00 4.00 -4.00	0.0000	100.00	1" Ice 4.03 No Ice 3.50 1/2" Ice 3.76	2.29 1.82 2.05	109.06 60.00 82.72
RRH2X60-AWS (Verizon)	C	From Face	0.00 4.00 -4.00	0.0000	100.00	1" Ice 4.03 No Ice 3.50 1/2" Ice 3.76	2.29 1.82 2.05	109.06 60.00 82.72
DB-T1-6Z-8AB-0Z (Verizon)	C	From Face	0.00 4.00 0.00	0.0000	100.00	1" Ice 4.03 No Ice 5.60 1/2" Ice 5.60	2.29 2.33 2.33	109.06 40.00 80.00
12' T-Arm (Verizon)	A	None	0.00	0.0000	100.00	1" Ice 5.60 No Ice 4.20 1/2" Ice 5.40	2.33 1.10 2.70	120.00 150.00 225.00
12' T-Arm (Verizon)	B	None	0.00	0.0000	100.00	1" Ice 6.60 No Ice 4.20 1/2" Ice 5.40	4.30 1.10 2.70	300.00 150.00 225.00
12' T-Arm (Verizon)	C	None	0.00	0.0000	100.00	1" Ice 6.60 No Ice 4.20 1/2" Ice 5.40	4.30 1.10 2.70	300.00 150.00 225.00
EPBQ-654L8H8-L2 (ATT)	A	From Face	4.00 -6.00 0.00	0.0000	110.00	1" Ice 6.60 No Ice 18.09 1/2" Ice 18.72	4.30 7.03 7.62	300.00 97.00 190.25
EPBQ-654L8H8-L2 (ATT)	B	From Face	4.00 -6.00 0.00	0.0000	110.00	1" Ice 19.36 No Ice 18.09 1/2" Ice 18.72	8.21 7.03 7.62	291.68 97.00 190.25
EPBQ-654L8H8-L2 (ATT)	C	From Face	4.00 -6.00 0.00	0.0000	110.00	1" Ice 19.36 No Ice 18.09 1/2" Ice 18.72	8.21 7.03 7.62	291.68 97.00 190.25

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
HPA65R-BU8A (ATT)	A	From Face	0.00 4.00 -2.00 0.00	0.0000	110.00	1" Ice 19.36 No Ice 11.23 1/2" Ice 11.85 1" Ice 12.47	8.21 9.94 11.37 12.64	291.68 86.50 174.29 271.84
HPA65R-BU8A (ATT)	B	From Face	4.00 -2.00 0.00	0.0000	110.00	No Ice 11.23 1/2" Ice 11.85 1" Ice 12.47	9.94 11.37 12.64	86.50 174.29 271.84
HPA65R-BU8A (ATT)	C	From Face	4.00 -2.00 0.00	0.0000	110.00	No Ice 11.23 1/2" Ice 11.85 1" Ice 12.47	9.94 11.37 12.64	86.50 174.29 271.84
EPBQ-654L8H8-L2 (ATT)	A	From Face	4.00 2.00 0.00	0.0000	110.00	No Ice 18.09 1/2" Ice 18.72 1" Ice 19.36	7.03 7.62 8.21	97.00 190.25 291.68
EPBQ-654L8H8-L2 (ATT)	B	From Face	4.00 2.00 0.00	0.0000	110.00	No Ice 18.09 1/2" Ice 18.72 1" Ice 19.36	7.03 7.62 8.21	97.00 190.25 291.68
EPBQ-654L8H8-L2 (ATT)	C	From Face	4.00 2.00 0.00	0.0000	110.00	No Ice 18.09 1/2" Ice 18.72 1" Ice 19.36	7.03 7.62 8.21	97.00 190.25 291.68
RRU B14 4478 (ATT)	A	From Face	3.00 -6.00 0.00	0.0000	110.00	No Ice 1.86 1/2" Ice 2.03 1" Ice 2.20	0.82 0.94 1.07	47.40 61.55 78.22
RRU B14 4478 (ATT)	B	From Face	3.00 -6.00 0.00	0.0000	110.00	No Ice 1.86 1/2" Ice 2.03 1" Ice 2.20	0.82 0.94 1.07	47.40 61.55 78.22
RRU B14 4478 (ATT)	C	From Face	3.00 -6.00 0.00	0.0000	110.00	No Ice 1.86 1/2" Ice 2.03 1" Ice 2.20	0.82 0.94 1.07	47.40 61.55 78.22
RRUS 4415 (ATT)	A	From Face	3.00 -2.00 0.00	0.0000	110.00	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97	0.68 0.79 0.91	44.00 56.43 71.23
RRUS 4415 (ATT)	B	From Face	3.00 -2.00 0.00	0.0000	110.00	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97	0.68 0.79 0.91	44.00 56.43 71.23
RRUS 4415 (ATT)	C	From Face	3.00 -2.00 0.00	0.0000	110.00	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97	0.68 0.79 0.91	44.00 56.43 71.23
RRUS 4449 B5/12 (ATT)	A	From Face	3.00 2.00 0.00	0.0000	110.00	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97	1.30 1.45 1.60	73.00 90.19 110.08
RRUS 4449 B5/12 (ATT)	B	From Face	3.00 2.00 0.00	0.0000	110.00	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97	1.30 1.45 1.60	73.00 90.19 110.08
RRUS 4449 B5/12 (ATT)	C	From Face	3.00 2.00 0.00	0.0000	110.00	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97	1.30 1.45 1.60	73.00 90.19 110.08
RRUS 8843 B2 B66A (ATT)	A	From Face	3.00 2.00 0.00	0.0000	110.00	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97	1.35 1.50 1.65	72.00 89.60 109.91
RRUS 8843 B2 B66A (ATT)	B	From Face	3.00 2.00 0.00	0.0000	110.00	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97	1.35 1.50 1.65	72.00 89.60 109.91
RRUS 8843 B2 B66A (ATT)	C	From Face	3.00 2.00 0.00	0.0000	110.00	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97	1.35 1.50 1.65	72.00 89.60 109.91
DC6-48-06-18-8F (ATT)	A	From Face	2.00 0.00	0.0000	110.00	No Ice 1.20 1/2" Ice 1.88	1.20 1.88	32.00 53.81

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
DC6-48-06-18-8F (ATT)	B	From Face	0.00 2.00 0.00 0.00	0.0000	110.00	1" Ice 2.09 No Ice 1.20 1/2" Ice 1.88 1" Ice 2.09	2.09 1.20 1.88 2.09	78.48 32.00 53.81 78.48
DC6-48-06-18-8F (ATT)	C	From Face	2.00 0.00 0.00	0.0000	110.00	No Ice 1.20 1/2" Ice 1.88 1" Ice 2.09	1.20 1.88 2.09	32.00 53.81 78.48
Sabre C10857001C (ATT)	A	None		0.0000	110.00	No Ice 9.12 1/2" Ice 15.94 1" Ice 22.76	5.23 8.82 12.41	462.00 700.00 938.00
Sabre C10857001C (ATT)	B	None		0.0000	110.00	No Ice 9.12 1/2" Ice 15.94 1" Ice 22.76	5.23 8.82 12.41	462.00 700.00 938.00
Sabre C10857001C (ATT)	C	None		0.0000	110.00	No Ice 9.12 1/2" Ice 15.94 1" Ice 22.76	5.23 8.82 12.41	462.00 700.00 938.00
RRUS E2 B29 (ATT)	A	From Face	3.00 0.00 0.00	0.0000	110.00	No Ice 3.15 1/2" Ice 3.36 1" Ice 3.59	1.29 1.44 1.60	60.00 83.22 109.64
RRUS E2 B29 (ATT)	B	From Face	3.00 0.00 0.00	0.0000	110.00	No Ice 3.15 1/2" Ice 3.36 1" Ice 3.59	1.29 1.44 1.60	60.00 83.22 109.64
RRUS E2 B29 (ATT)	C	From Face	3.00 0.00 0.00	0.0000	110.00	No Ice 3.15 1/2" Ice 3.36 1" Ice 3.59	1.29 1.44 1.60	60.00 83.22 109.64

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice

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Comb. No.	Description
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	116 - 111	Pole	Max Tension	15	3.02	-0.01	0.00
			Max. Compression	26	-1397.95	1.08	-0.05
			Max. Mx	8	-694.79	-4.23	0.00
			Max. My	2	-697.37	-0.07	4.19
			Max. Vy	8	631.90	-4.23	0.00
			Max. Vx	14	625.86	-0.07	-4.14
			Max. Torque	33			-0.22
L2	111 - 106	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-15519.92	1.12	-0.16
			Max. Mx	8	-4170.78	-29.19	-0.03
			Max. My	2	-4214.95	-0.07	28.99
			Max. Vy	8	6148.87	-29.19	-0.03
			Max. Vx	14	6117.03	-0.07	-28.98
			Max. Torque	33			-0.22
L3	106 - 101	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16318.22	1.17	-0.30
			Max. Mx	8	-4695.31	-60.40	-0.07
			Max. My	14	-4738.13	-0.07	-60.05
			Max. Vy	8	6336.00	-60.40	-0.07
			Max. Vx	14	6299.59	-0.07	-60.05
			Max. Torque	33			-0.22
L4	101 - 96	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-22998.71	1.23	-1.57
			Max. Mx	8	-6122.32	-104.19	-0.27

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L5	96 - 91	Pole	Max. My	14	-6202.21	-0.06	-103.81
			Max. Vy	8	9512.74	-104.19	-0.27
			Max. Vx	14	9364.81	-0.06	-103.81
			Max. Torque	20			0.37
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-23944.69	1.29	-1.83
			Max. Mx	8	-6697.11	-152.70	-0.33
			Max. My	14	-6810.50	-0.06	-151.02
			Max. Vy	8	9896.49	-152.70	-0.33
			Max. Vx	14	9509.22	-0.06	-151.02
L6	91 - 86	Pole	Max. Torque	20			0.45
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-24916.96	1.34	-2.09
			Max. Mx	8	-7335.42	-203.04	-0.38
			Max. My	14	-7475.83	-0.06	-198.89
			Max. Vy	8	10250.73	-203.04	-0.38
			Max. Vx	14	9627.60	-0.06	-198.89
			Max. Torque	20			0.53
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25893.78	1.39	-2.33
L7	86 - 81	Pole	Max. Mx	8	-8019.63	-255.05	-0.43
			Max. My	14	-8177.89	-0.06	-247.24
			Max. Vy	8	10565.55	-255.05	-0.43
			Max. Vx	14	9710.92	-0.06	-247.24
			Max. Torque	20			0.61
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26088.81	1.40	-2.37
			Max. Mx	8	-8161.42	-265.63	-0.43
			Max. My	14	-8321.91	-0.06	-256.96
			Max. Vy	8	10623.04	-265.63	-0.43
L8	81 - 80	Pole	Max. Vx	14	9722.73	-0.06	-256.96
			Max. Torque	20			0.63
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28005.88	1.43	-2.44
			Max. Mx	8	-9141.36	-320.20	-0.45
			Max. My	14	-9295.80	-0.06	-307.01
			Max. Vy	8	11331.28	-320.20	-0.45
			Max. Vx	14	10427.92	-0.06	-307.01
			Max. Torque	20			0.63
			Max Tension	1	0.00	0.00	0.00
L9	80 - 75	Pole	Max. Compression	26	-28764.95	1.46	-2.49
			Max. Mx	8	-9647.42	-377.22	-0.45
			Max. My	14	-9790.52	-0.06	-359.50
			Max. Vy	8	11495.62	-377.22	-0.45
			Max. Vx	14	10592.07	-0.06	-359.50
			Max. Torque	20			0.63
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-29540.22	1.49	-2.54
			Max. Mx	8	-10172.86	-435.02	-0.46
			Max. My	14	-10303.10	-0.06	-412.78
L10	75 - 70	Pole	Max. Vy	8	11648.65	-435.02	-0.46
			Max. Vx	14	10746.07	-0.06	-412.78
			Max. Torque	20			0.63
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30171.89	1.51	-2.57
			Max. Mx	8	-10606.27	-481.80	-0.46
			Max. My	14	-10725.30	-0.06	-455.94
			Max. Vy	8	11762.72	-481.80	-0.46
			Max. Vx	14	10861.74	-0.06	-455.94
			Max. Torque	20			0.62
L11	70 - 65	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30171.89	1.51	-2.57
			Max. Mx	8	-10606.27	-481.80	-0.46
			Max. My	14	-10725.30	-0.06	-455.94
			Max. Vy	8	11762.72	-481.80	-0.46
			Max. Vx	14	10861.74	-0.06	-455.94
			Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30171.89	1.51	-2.57
			Max. Mx	8	-10606.27	-481.80	-0.46
L12	65 - 61	Pole	Max. My	14	-10725.30	-0.06	-455.94
			Max. Vy	8	11762.72	-481.80	-0.46
			Max. Vx	14	10861.74	-0.06	-455.94
			Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30171.89	1.51	-2.57
			Max. Mx	8	-10606.27	-481.80	-0.46
			Max. My	14	-10725.30	-0.06	-455.94
			Max. Vy	8	11762.72	-481.80	-0.46
			Max. Vx	14	10861.74	-0.06	-455.94
L13	61 - 60.75	Pole	Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00

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L14	60.75 - 55.75	Pole	Max. Compression	26	-30230.06	1.52	-2.58
			Max. Mx	8	-10659.50	-484.74	-0.48
			Max. My	14	-10776.15	-0.05	-458.66
			Max. Vy	8	11785.17	-484.74	-0.48
			Max. Vx	14	10916.52	-0.05	-458.66
			Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31396.47	1.53	-2.61
			Max. Mx	8	-11501.12	-544.11	-0.47
			Max. My	14	-11612.69	-0.06	-513.51
L15	55.75 - 50.75	Pole	Max. Vy	8	11993.70	-544.11	-0.47
			Max. Vx	14	11091.31	-0.06	-513.51
			Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32578.18	1.55	-2.64
			Max. Mx	8	-12360.93	-604.58	-0.48
			Max. My	14	-12466.32	-0.06	-569.46
			Max. Vy	8	12210.66	-604.58	-0.48
			Max. Vx	14	11307.48	-0.06	-569.46
			Max. Torque	20			0.62
L16	50.75 - 45.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33774.70	1.57	-2.67
			Max. Mx	8	-13234.11	-666.12	-0.48
			Max. My	14	-13332.82	-0.06	-626.47
			Max. Vy	8	12418.13	-666.12	-0.48
			Max. Vx	14	11514.84	-0.06	-626.47
			Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33956.32	1.57	-2.68
			Max. Mx	8	-13368.41	-675.44	-0.48
L17	45.75 - 41.5	Pole	Max. My	14	-13465.88	-0.05	-635.11
			Max. Vy	8	12447.74	-675.44	-0.48
			Max. Vx	14	11546.59	-0.05	-635.11
			Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35564.54	1.59	-2.70
			Max. Mx	8	-14411.62	-731.91	-0.48
			Max. My	14	-14504.73	-0.06	-687.50
			Max. Vy	8	12653.20	-731.91	-0.48
			Max. Vx	14	11748.95	-0.06	-687.50
L18	41.5 - 40.5	Pole	Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36528.56	1.60	-2.73
			Max. Mx	8	-15103.56	-795.38	-0.49
			Max. My	14	-15182.97	-0.06	-746.45
			Max. Vy	8	12764.31	-795.38	-0.49
			Max. Vx	14	11865.22	-0.06	-746.45
			Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37508.12	1.62	-2.75
L19	40.5 - 35.5	Pole	Max. Mx	8	-15810.86	-859.37	-0.49
			Max. My	14	-15876.28	-0.06	-805.95
			Max. Vy	8	12861.33	-859.37	-0.49
			Max. Vx	14	11968.24	-0.06	-805.95
			Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38502.06	1.62	-2.76
			Max. Mx	8	-16532.82	-923.81	-0.49
			Max. My	14	-16584.07	-0.06	-865.94
			Max. Vy	8	12946.81	-923.81	-0.49
L20	35.5 - 30.5	Pole	Max. Vx	14	12060.57	-0.06	-865.94
			Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38502.06	1.62	-2.76
			Max. Mx	8	-16532.82	-923.81	-0.49
			Max. My	14	-16584.07	-0.06	-865.94
			Max. Vy	8	12946.81	-923.81	-0.49
			Max. Vx	14	12060.57	-0.06	-865.94
			Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
L21	30.5 - 25.5	Pole	Max. Compression	26	-38502.06	1.62	-2.76
			Max. Mx	8	-16532.82	-923.81	-0.49
			Max. My	14	-16584.07	-0.06	-865.94
			Max. Vy	8	12946.81	-923.81	-0.49
			Max. Vx	14	12060.57	-0.06	-865.94
			Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38502.06	1.62	-2.76
			Max. Mx	8	-16532.82	-923.81	-0.49
			Max. My	14	-16584.07	-0.06	-865.94

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L22	25.5 - 20.5	Pole	Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39509.02	1.62	-2.76
			Max. Mx	8	-17268.81	-988.67	-0.49
			Max. My	14	-17305.79	-0.06	-926.38
			Max. Vy	8	13026.64	-988.67	-0.49
			Max. Vx	14	12148.04	-0.06	-926.38
L23	20.5 - 18	Pole	Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40016.69	1.62	-2.76
			Max. Mx	8	-17639.06	-1021.24	-0.49
			Max. My	14	-17669.25	-0.06	-956.76
			Max. Vy	8	13068.10	-1021.24	-0.49
			Max. Vx	14	12192.89	-0.06	-956.76
L24	18 - 17.75	Pole	Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40085.95	1.62	-2.76
			Max. Mx	8	-17705.25	-1024.50	-0.49
			Max. My	14	-17733.38	-0.06	-959.80
			Max. Vy	8	13070.92	-1024.50	-0.49
			Max. Vx	14	12216.32	-0.06	-959.80
L25	17.75 - 12.75	Pole	Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41471.48	1.62	-2.75
			Max. Mx	8	-18769.37	-1090.15	-0.49
			Max. My	14	-18790.23	-0.06	-1021.09
			Max. Vy	8	13212.53	-1090.15	-0.49
			Max. Vx	14	12342.97	-0.06	-1021.09
L26	12.75 - 7.75	Pole	Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42861.71	1.62	-2.75
			Max. Mx	8	-19852.38	-1156.52	-0.49
			Max. My	14	-19865.22	-0.06	-1083.12
			Max. Vy	8	13354.98	-1156.52	-0.49
			Max. Vx	14	12490.41	-0.06	-1083.12
L27	7.75 - 2.75	Pole	Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44153.48	1.62	-2.75
			Max. Mx	8	-20856.43	-1223.58	-0.49
			Max. My	14	-20861.14	-0.06	-1145.88
			Max. Vy	8	13491.85	-1223.58	-0.49
			Max. Vx	14	12632.93	-0.06	-1145.88
L28	2.75 - 0	Pole	Max. Torque	20			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44820.06	1.62	-2.75
			Max. Mx	8	-21385.63	-1260.76	-0.49
			Max. My	14	-21386.12	-0.06	-1180.69
			Max. Vy	8	13569.09	-1260.76	-0.49
			Max. Vx	2	-12713.27	-0.06	1179.70
			Max. Torque	20			0.62

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	26	44820.06	-0.23	0.37

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Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Max. H _x	20	21394.90	13554.46	-0.01
	Max. H _z	2	21394.26	0.01	12699.59
	Max. M _x	2	1179.70	0.01	12699.59
	Max. M _z	8	1260.76	-13554.46	-0.01
	Max. Torsion	20	0.62	13554.46	-0.01
	Min. Vert	15	16045.35	0.01	-12698.34
	Min. H _x	8	21394.90	-13554.46	-0.01
	Min. H _z	14	21394.25	0.01	-12699.56
	Min. M _x	14	-1180.69	0.01	-12699.56
	Min. M _z	20	-1260.65	13554.46	-0.01
	Min. Torsion	8	-0.62	-13554.46	-0.01

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	17829.48	-0.01	-0.09	0.38	-0.04	-0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	21394.26	-0.01	-12699.59	-1179.70	-0.06	-0.18
0.9 Dead+1.6 Wind 0 deg - No Ice	16045.35	-0.01	-12698.36	-1158.37	-0.04	-0.18
1.2 Dead+1.6 Wind 30 deg - No Ice	21395.35	6296.90	-11010.14	-1022.78	-584.44	-0.00
0.9 Dead+1.6 Wind 30 deg - No Ice	16046.52	6296.96	-11010.24	-1004.40	-573.85	-0.01
1.2 Dead+1.6 Wind 60 deg - No Ice	21395.36	11430.69	-6659.33	-618.65	-1061.35	0.29
0.9 Dead+1.6 Wind 60 deg - No Ice	16046.52	11430.69	-6659.33	-607.63	-1042.23	0.29
1.2 Dead+1.6 Wind 90 deg - No Ice	21394.90	13554.46	0.01	0.49	-1260.76	0.62
0.9 Dead+1.6 Wind 90 deg - No Ice	16046.05	13554.16	0.01	0.35	-1238.07	0.61
1.2 Dead+1.6 Wind 120 deg - No Ice	21395.36	11430.68	6659.33	619.63	-1061.35	0.47
0.9 Dead+1.6 Wind 120 deg - No Ice	16046.52	11430.69	6659.34	608.35	-1042.23	0.46
1.2 Dead+1.6 Wind 150 deg - No Ice	21395.35	6296.90	11010.14	1023.77	-584.44	0.30
0.9 Dead+1.6 Wind 150 deg - No Ice	16046.52	6296.96	11010.24	1005.12	-573.85	0.30
1.2 Dead+1.6 Wind 180 deg - No Ice	21394.25	-0.01	12699.56	1180.69	-0.06	0.18
0.9 Dead+1.6 Wind 180 deg - No Ice	16045.35	-0.01	12698.34	1159.09	-0.04	0.18
1.2 Dead+1.6 Wind 210 deg - No Ice	21395.35	-6296.90	11010.14	1023.78	584.33	0.01
0.9 Dead+1.6 Wind 210 deg - No Ice	16046.52	-6296.96	11010.24	1005.12	573.77	0.01
1.2 Dead+1.6 Wind 240 deg - No Ice	21395.36	-11430.68	6659.33	619.64	1061.24	-0.29
0.9 Dead+1.6 Wind 240 deg - No Ice	16046.52	-11430.69	6659.34	608.35	1042.15	-0.28
1.2 Dead+1.6 Wind 270 deg - No Ice	21394.90	-13554.46	0.01	0.49	1260.65	-0.62
0.9 Dead+1.6 Wind 270 deg - No Ice	16046.05	-13554.16	0.01	0.35	1237.99	-0.61

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Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
No Ice						
1.2 Dead+1.6 Wind 300 deg - No Ice	21395.36	-11430.69	-6659.33	-618.65	1061.24	-0.47
0.9 Dead+1.6 Wind 300 deg - No Ice	16046.52	-11430.69	-6659.33	-607.64	1042.15	-0.46
1.2 Dead+1.6 Wind 330 deg - No Ice	21395.35	-6296.90	-11010.14	-1022.78	584.33	-0.30
0.9 Dead+1.6 Wind 330 deg - No Ice	16046.52	-6296.96	-11010.24	-1004.40	573.77	-0.30
1.2 Dead+1.0 Ice+1.0 Temp	44820.06	0.23	-0.37	2.75	1.62	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	44819.94	0.02	-4362.21	-458.65	1.66	-0.22
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	44819.98	2170.81	-3778.65	-396.94	-227.81	-0.13
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	44819.98	3835.39	-2225.18	-232.60	-403.79	0.02
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	44819.94	4501.79	-0.04	2.82	-474.78	0.18
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	44819.98	3835.39	2225.13	238.25	-403.79	0.24
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	44819.98	2170.81	3778.60	402.59	-227.81	0.25
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	44819.94	0.02	4362.14	464.30	1.66	0.22
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	44819.98	-2170.78	3778.59	402.59	231.12	0.13
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	44819.97	-3835.36	2225.13	238.25	407.11	-0.02
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	44819.93	-4501.75	-0.04	2.82	478.11	-0.18
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	44819.98	-3835.36	-2225.18	-232.60	407.11	-0.24
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	44819.98	-2170.78	-3778.64	-396.94	231.13	-0.25
Dead+Wind 0 deg - Service	17829.35	-0.00	-2954.86	-271.67	-0.04	-0.04
Dead+Wind 30 deg - Service	17829.43	1465.78	-2562.91	-235.60	-134.83	-0.00
Dead+Wind 60 deg - Service	17829.43	2658.70	-1548.92	-142.31	-244.69	0.07
Dead+Wind 90 deg - Service	17829.33	3148.70	-0.02	0.41	-290.32	0.15
Dead+Wind 120 deg - Service	17829.43	2658.70	1548.90	143.13	-244.69	0.11
Dead+Wind 150 deg - Service	17829.43	1465.78	2562.89	236.42	-134.83	0.07
Dead+Wind 180 deg - Service	17829.35	-0.00	2954.81	272.49	-0.04	0.04
Dead+Wind 210 deg - Service	17829.43	-1465.78	2562.89	236.42	134.74	0.00
Dead+Wind 240 deg - Service	17829.43	-2658.70	1548.90	143.13	244.60	-0.07
Dead+Wind 270 deg - Service	17829.33	-3148.71	-0.02	0.41	290.23	-0.15
Dead+Wind 300 deg - Service	17829.43	-2658.70	-1548.92	-142.31	244.60	-0.11
Dead+Wind 330 deg - Service	17829.43	-1465.79	-2562.90	-235.60	134.74	-0.07

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-17829.48	0.00	0.01	17829.48	0.09	0.001%
2	0.00	-21395.38	-12713.70	0.01	21394.26	12699.59	0.057%
3	0.00	-16046.53	-12713.70	0.01	16045.35	12698.36	0.075%
4	6297.03	-21395.38	-11010.38	-6296.90	21395.35	11010.14	0.001%
5	6297.03	-16046.53	-11010.38	-6296.96	16046.52	11010.24	0.001%
6	11430.84	-21395.38	-6659.41	-11430.69	21395.36	6659.33	0.001%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
7	11430.84	-16046.53	-6659.41	-11430.69	16046.52	6659.33	0.001%
8	13560.08	-21395.38	0.00	-13554.46	21394.90	-0.01	0.022%
9	13560.08	-16046.53	0.00	-13554.16	16046.05	-0.01	0.028%
10	11430.84	-21395.38	6659.41	-11430.68	21395.36	-6659.33	0.001%
11	11430.84	-16046.53	6659.41	-11430.69	16046.52	-6659.34	0.001%
12	6297.03	-21395.38	11010.38	-6296.90	21395.35	-11010.14	0.001%
13	6297.03	-16046.53	11010.38	-6296.96	16046.52	-11010.24	0.001%
14	0.00	-21395.38	12713.70	0.01	21394.25	-12699.56	0.057%
15	0.00	-16046.53	12713.70	0.01	16045.35	-12698.34	0.075%
16	-6297.03	-21395.38	11010.38	6296.90	21395.35	-11010.14	0.001%
17	-6297.03	-16046.53	11010.38	6296.96	16046.52	-11010.24	0.001%
18	-11430.84	-21395.38	6659.41	11430.68	21395.36	-6659.33	0.001%
19	-11430.84	-16046.53	6659.41	11430.69	16046.52	-6659.34	0.001%
20	-13560.08	-21395.38	0.00	13554.46	21394.90	-0.01	0.022%
21	-13560.08	-16046.53	0.00	13554.16	16046.05	-0.01	0.028%
22	-11430.84	-21395.38	-6659.41	11430.69	21395.36	6659.33	0.001%
23	-11430.84	-16046.53	-6659.41	11430.69	16046.52	6659.33	0.001%
24	-6297.03	-21395.38	-11010.38	6296.90	21395.35	11010.14	0.001%
25	-6297.03	-16046.53	-11010.38	6296.96	16046.52	11010.24	0.001%
26	0.00	-44820.06	0.00	-0.23	44820.06	0.37	0.001%
27	0.00	-44820.06	-4365.35	-0.02	44819.94	4362.21	0.007%
28	2171.87	-44820.06	-3780.51	-2170.81	44819.98	3778.65	0.005%
29	3837.28	-44820.06	-2226.26	-3835.39	44819.98	2225.18	0.005%
30	4505.04	-44820.06	0.00	-4501.79	44819.94	0.04	0.007%
31	3837.28	-44820.06	2226.26	-3835.39	44819.98	-2225.13	0.005%
32	2171.87	-44820.06	3780.51	-2170.81	44819.98	-3778.60	0.005%
33	0.00	-44820.06	4365.35	-0.02	44819.94	-4362.14	0.007%
34	-2171.87	-44820.06	3780.51	2170.78	44819.98	-3778.59	0.005%
35	-3837.28	-44820.06	2226.26	3835.36	44819.97	-2225.13	0.005%
36	-4505.04	-44820.06	0.00	4501.75	44819.93	0.04	0.007%
37	-3837.28	-44820.06	-2226.26	3835.36	44819.98	2225.18	0.005%
38	-2171.87	-44820.06	-3780.51	2170.78	44819.98	3778.64	0.005%
39	0.00	-17829.48	-2962.12	0.00	17829.35	2954.86	0.040%
40	1467.14	-17829.48	-2565.27	-1465.78	17829.43	2562.91	0.015%
41	2661.14	-17829.48	-1550.33	-2658.70	17829.43	1548.92	0.016%
42	3156.41	-17829.48	0.00	-3148.70	17829.33	0.02	0.043%
43	2661.14	-17829.48	1550.33	-2658.70	17829.43	-1548.90	0.016%
44	1467.14	-17829.48	2565.27	-1465.78	17829.43	-2562.89	0.015%
45	0.00	-17829.48	2962.12	0.00	17829.35	-2954.81	0.040%
46	-1467.14	-17829.48	2565.27	1465.78	17829.43	-2562.89	0.015%
47	-2661.14	-17829.48	1550.33	2658.70	17829.43	-1548.90	0.016%
48	-3156.41	-17829.48	0.00	3148.71	17829.33	0.02	0.043%
49	-2661.14	-17829.48	-1550.33	2658.70	17829.43	1548.92	0.016%
50	-1467.14	-17829.48	-2565.27	1465.79	17829.43	2562.90	0.015%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	10	0.00043232	0.00063612
3	Yes	9	0.00047323	0.00085127
4	Yes	18	0.00000001	0.00097375
5	Yes	18	0.00000001	0.00000000
6	Yes	19	0.00000001	0.00000000
7	Yes	18	0.00000001	0.00000000

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8	Yes	12	0.00016202	0.00067605
9	Yes	11	0.00017213	0.00084544
10	Yes	19	0.00000001	0.00000000
11	Yes	18	0.00000001	0.00000000
12	Yes	18	0.00000001	0.00096808
13	Yes	18	0.00000001	0.00000000
14	Yes	10	0.00043227	0.00063708
15	Yes	9	0.00047319	0.00085225
16	Yes	18	0.00000001	0.00097666
17	Yes	18	0.00000001	0.00000000
18	Yes	19	0.00000001	0.00000000
19	Yes	18	0.00000001	0.00000000
20	Yes	12	0.00016201	0.00067594
21	Yes	11	0.00017213	0.00084533
22	Yes	19	0.00000001	0.00000000
23	Yes	18	0.00000001	0.00000000
24	Yes	18	0.00000001	0.00098256
25	Yes	18	0.00000001	0.00000000
26	Yes	10	0.00000001	0.00009628
27	Yes	16	0.00028898	0.00069570
28	Yes	17	0.00019768	0.00090994
29	Yes	17	0.00019743	0.00094606
30	Yes	16	0.00028845	0.00071776
31	Yes	17	0.00019757	0.00099268
32	Yes	17	0.00019803	0.00093125
33	Yes	16	0.00028959	0.00071224
34	Yes	17	0.00019814	0.00097021
35	Yes	17	0.00019783	0.00099943
36	Yes	16	0.00028892	0.00072807
37	Yes	17	0.00019771	0.00095280
38	Yes	17	0.00019781	0.00094795
39	Yes	8	0.00096103	0.00032572
40	Yes	10	0.00036135	0.00074363
41	Yes	10	0.00036061	0.00081361
42	Yes	8	0.00095870	0.00046101
43	Yes	10	0.00036072	0.00089246
44	Yes	10	0.00036156	0.00072739
45	Yes	8	0.00096169	0.00032790
46	Yes	10	0.00036155	0.00075338
47	Yes	10	0.00036069	0.00087303
48	Yes	8	0.00095861	0.00046067
49	Yes	10	0.00036058	0.00079835
50	Yes	10	0.00036134	0.00077221

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	116 - 111	26.145	42	2.0591	0.0035
L2	111 - 106	23.990	42	2.0564	0.0036
L3	106 - 101	21.842	42	2.0432	0.0038
L4	101 - 96	19.718	42	2.0098	0.0039
L5	96 - 91	17.642	42	1.9493	0.0036
L6	91 - 86	15.648	42	1.8536	0.0032
L7	86 - 81	13.774	42	1.7210	0.0028
L8	81 - 80	12.058	42	1.5503	0.0022
L9	80 - 75	11.737	42	1.5115	0.0021
L10	75 - 70	10.215	42	1.3950	0.0018
L11	70 - 65	8.819	42	1.2692	0.0015

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L12	65 - 61	7.559	42	1.1360	0.0012
L13	61 - 60.75	6.654	42	1.0253	0.0010
L14	60.75 - 55.75	6.600	42	1.0223	0.0010
L15	55.75 - 50.75	5.561	42	0.9610	0.0009
L16	50.75 - 45.75	4.589	42	0.8967	0.0008
L17	45.75 - 41.5	3.684	42	0.8304	0.0008
L18	45 - 40.5	3.555	42	0.8204	0.0007
L19	40.5 - 35.5	2.801	42	0.7669	0.0007
L20	35.5 - 30.5	2.060	42	0.6483	0.0005
L21	30.5 - 25.5	1.443	42	0.5296	0.0004
L22	25.5 - 20.5	0.951	42	0.4113	0.0003
L23	20.5 - 18	0.582	42	0.2935	0.0002
L24	18 - 17.75	0.443	42	0.2349	0.0002
L25	17.75 - 12.75	0.431	42	0.2317	0.0002
L26	12.75 - 7.75	0.223	42	0.1667	0.0001
L27	7.75 - 2.75	0.082	42	0.1014	0.0001
L28	2.75 - 0	0.010	42	0.0361	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
117.00	7"x4.5" OD Mount Pipe	42	26.145	2.0591	0.0035	47215
110.00	EPBQ-654L8H8-L2	42	23.559	2.0550	0.0037	32906
100.00	BXA-70063/6CF	42	19.298	2.0001	0.0038	5552
77.00	Valmont Uni-Tri Bracket	42	10.808	1.4337	0.0019	2291

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	116 - 111	113.404	8	8.9521	0.0147
L2	111 - 106	104.073	8	8.9411	0.0153
L3	106 - 101	94.768	8	8.8840	0.0158
L4	101 - 96	85.568	8	8.7390	0.0163
L5	96 - 91	76.576	8	8.4762	0.0153
L6	91 - 86	67.934	8	8.0601	0.0137
L7	86 - 81	59.806	8	7.4837	0.0117
L8	81 - 80	52.362	8	6.7413	0.0094
L9	80 - 75	50.971	8	6.5725	0.0089
L10	75 - 70	44.363	8	6.0659	0.0075
L11	70 - 65	38.305	8	5.5186	0.0063
L12	65 - 61	32.834	8	4.9391	0.0052
L13	61 - 60.75	28.902	8	4.4574	0.0043
L14	60.75 - 55.75	28.669	8	4.4446	0.0043
L15	55.75 - 50.75	24.158	8	4.1779	0.0039
L16	50.75 - 45.75	19.932	8	3.8979	0.0035
L17	45.75 - 41.5	16.004	8	3.6097	0.0032
L18	45 - 40.5	15.441	8	3.5662	0.0031
L19	40.5 - 35.5	12.167	8	3.3333	0.0029

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L20	35.5 - 30.5	8.948	8	2.8175	0.0023
L21	30.5 - 25.5	6.268	8	2.3014	0.0018
L22	25.5 - 20.5	4.128	8	1.7867	0.0014
L23	20.5 - 18	2.526	8	1.2747	0.0009
L24	18 - 17.75	1.925	8	1.0201	0.0007
L25	17.75 - 12.75	1.872	8	1.0061	0.0007
L26	12.75 - 7.75	0.966	8	0.7235	0.0005
L27	7.75 - 2.75	0.357	8	0.4403	0.0003
L28	2.75 - 0	0.045	8	0.1566	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
117.00	7"x4.5" OD Mount Pipe	8	113.404	8.9521	0.0147	11579
110.00	EPBQ-654L8H8-L2	8	102.208	8.9348	0.0154	8020
100.00	BXA-70063/6CF	8	83.749	8.6970	0.0162	1334
77.00	Valmont Uni-Tri Bracket	8	46.940	6.2341	0.0079	539

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	% Capacity	Pass Fail
L1	116 - 111	Pole	TP12.75x12.75x0.5	Pole	1.9%	Pass
L2	111 - 106	Pole	TP12.75x12.75x0.5	Pole	12.9%	Pass
L3	106 - 101	Pole	TP12.75x12.75x0.625	Pole	21.4%	Pass
L4	101 - 96	Pole	TP12.75x12.75x0.625	Pole	36.7%	Pass
L5	96 - 91	Pole	TP12.75x12.75x0.625	Pole	53.5%	Pass
L6	91 - 86	Pole	TP12.75x12.75x0.625	Pole	71.0%	Pass
L7	86 - 81	Pole	TP12.75x12.75x0.625	Pole	89.0%	Pass
L8	81 - 80	Pole	TP12.75x12.75x0.625	Pole	92.7%	Pass
L9	80 - 75	Pole	TP22.74x22x0.1875	Pole	75.0%	Pass
L10	75 - 70	Pole	TP23.481x22.74x0.1875	Pole	83.6%	Pass
L11	70 - 65	Pole	TP24.221x23.481x0.1875	Pole	91.5%	Pass
L12	65 - 61	Pole	TP24.813x24.221x0.1875	Pole	97.3%	Pass
L13	61 - 60.75	Pole + Reinf.	TP24.85x24.813x0.4625	Reinf. 2 Bolt-Shaft Bearing	71.8%	Pass
L14	60.75 - 55.75	Pole + Reinf.	TP25.59x24.85x0.45	Reinf. 2 Tension Rupture	64.7%	Pass
L15	55.75 - 50.75	Pole + Reinf.	TP26.331x25.59x0.4375	Reinf. 2 Tension Rupture	69.0%	Pass
L16	50.75 - 45.75	Pole + Reinf.	TP27.071x26.331x0.4313	Reinf. 2 Tension Rupture	73.1%	Pass
L17	45.75 - 41.5	Pole + Reinf.	TP27.7x27.071x0.4313	Reinf. 2 Bolt-Shaft Bearing	88.1%	Pass
L18	41.5 - 40.5	Pole	TP27.473x26.807x0.25	Pole	85.5%	Pass
L19	40.5 - 35.5	Pole	TP28.213x27.473x0.25	Pole	88.7%	Pass
L20	35.5 - 30.5	Pole	TP28.954x28.213x0.25	Pole	91.6%	Pass
L21	30.5 - 25.5	Pole	TP29.694x28.954x0.25	Pole	94.3%	Pass
L22	25.5 - 20.5	Pole	TP30.435x29.694x0.25	Pole	96.8%	Pass
L23	20.5 - 18	Pole	TP30.805x30.435x0.25	Pole	97.9%	Pass
L24	18 - 17.75	Pole + Reinf.	TP30.842x30.805x0.4625	Reinf. 1 Tension Rupture	80.3%	Pass
L25	17.75 - 12.75	Pole + Reinf.	TP31.582x30.842x0.4563	Reinf. 1 Tension Rupture	82.3%	Pass
L26	12.75 - 7.75	Pole + Reinf.	TP32.322x31.582x0.45	Reinf. 1 Tension Rupture	84.2%	Pass
L27	7.75 - 2.75	Pole + Reinf.	TP33.063x32.322x0.4438	Reinf. 1 Tension Rupture	86.0%	Pass
L28	2.75 - 0	Pole + Reinf.	TP33.47x33.063x0.4375	Reinf. 1 Tension Rupture	86.9%	Pass

<i>tnxTower</i> Maser Consulting 5141 Virginia Way, Suite 420 Brentwood, TN 37027 Phone: (615) 686-2575 FAX:	Job	CTL02413	Page 24 of 24
	Project	18946092A	Date 17:13:12 05/30/19
	Client	AT&T	Designed by NOber

Section No.	Elevation ft	Component Type	Size	Critical Element	% Capacity	Pass Fail
					Summary	
					Pole	97.9% Pass
					Reinforcement	88.1% Pass
					Overall	97.9% Pass

Program Version 8.0.5.0 - 11/28/2018 File:R:\AllOffices\MtLaurel/Projects/2018/18946000A/18946092A/Structural/Tower Mods/Rev
5/TNX/CTL02413_Modified.eri

Monopole Flange Plate Connection

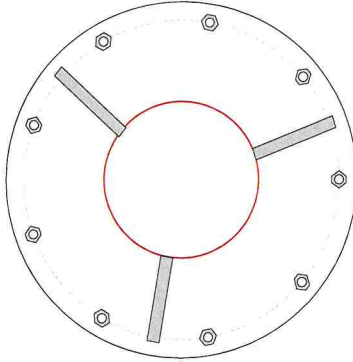
Elevation = 106 ft.



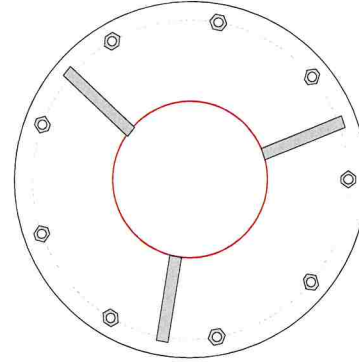
BU #	
Site Name	
Order #	
TIA-222 Revision	G

Applied Loads	
Moment (kip-ft)	28.99
Axial Force (kips)	4.21
Shear Force (kips)	6.15

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(9) 3/4" ϕ bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 26" BC

Top Plate Data

29" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

(3) 7"H x 7"W x 1"T, Notch: 0.5"
plate: Fy= 36 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.5" fillet
vert. weld: 0.5" fillet

Top Pole Data

12.75" x 0.5" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Plate Data

29" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

(3) 7"H x 7"W x 1"T, Notch: 0.5"
plate: Fy= 36 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.5" fillet
vert. weld: 0.5" fillet

Bottom Pole Data

12.75" x 0.5" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	5.48
Allowable (kips)	30.04
Stress Rating:	18.2% Pass

Top Plate Capacity

Max Stress (ksi):	6.16	(Flexural (b/Le>2))
Allowable Stress (ksi):	32.40	
Stress Rating:	19.0%	Pass
Tension Side Stress Rating:	14.4%	Pass

Top Stiffener Capacity

Horizontal Weld:	15.1%	Pass
Vertical Weld:	21.2%	Pass
Plate Flexure+Shear:	14.0%	Pass
Plate Tension+Shear:	9.3%	Pass
Plate Compression:	35.9%	Pass

Top Pole Capacity

Punching Shear:	17.3%	Pass
-----------------	-------	-------------

Bottom Plate Capacity

Max Stress (ksi):	6.16	(Flexural (b/Le>2))
Allowable Stress (ksi):	32.40	
Stress Rating:	19.0%	Pass
Tension Side Stress Rating:	14.4%	Pass

Bottom Stiffener Capacity

Horizontal Weld:	15.1%	Pass
Vertical Weld:	21.2%	Pass
Plate Flexure+Shear:	14.0%	Pass
Plate Tension+Shear:	9.3%	Pass
Plate Compression:	35.9%	Pass

Bottom Pole Capacity

Punching Shear:	17.3%	Pass
-----------------	-------	-------------

Monopole Flange Plate Connection

Elevation = 80 ft.

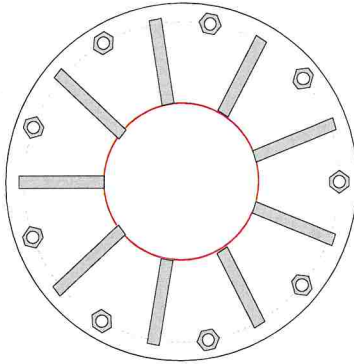


BU #	
Site Name	
Order #	

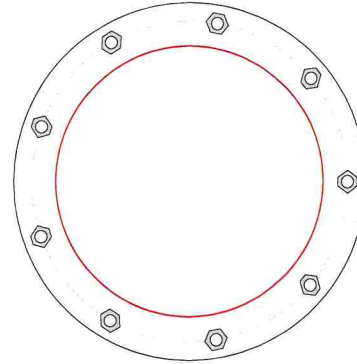
TIA-222 Revision	G
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Applied Loads	
Moment (kip-ft)	256.96
Axial Force (kips)	8.32
Shear Force (kips)	10.62

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(9) 1" ϕ bolts (A490 N; Fy=130 ksi, Fu=150 ksi) on 26" BC

Top Plate Data

29" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

(9) 14"H x 7"W x 1"T, Notch: 0.5"
plate: Fy= 36 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.5" fillet
vert. weld: 0.5" fillet

Top Pole Data

12.75" x 0.625" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Plate Data

29" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

22" x 0.625" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	51.76
Allowable (kips)	68.14
Stress Rating:	75.9% Pass

Top Plate Capacity

Max Stress (ksi):	14.96	(Roark's Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	46.2%	Pass
Tension Side Stress Rating:	N/A	

Top Stiffener Capacity

Horizontal Weld:	43.1%	Pass
Vertical Weld:	24.4%	Pass
Plate Flexure+Shear:	15.1%	Pass
Plate Tension+Shear:	30.9%	Pass
Plate Compression:	44.3%	Pass

Top Pole Capacity

Punching Shear:	11.7%	Pass
-----------------	-------	---

Bottom Plate Capacity

Max Stress (ksi):	15.73	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	48.6%	Pass
Tension Side Stress Rating:	19.9%	Pass

Bottom Stiffener Capacity

Horizontal Weld:	N/A
Vertical Weld:	N/A
Plate Flexure+Shear:	N/A
Plate Tension+Shear:	N/A
Plate Compression:	N/A

Bottom Pole Capacity

Punching Shear:	N/A
-----------------	-----

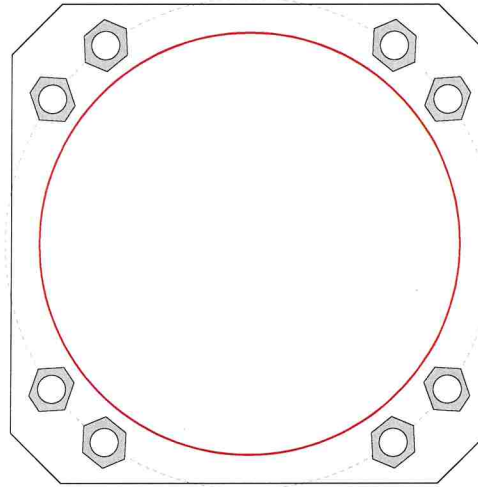
Monopole Base Plate Connection



Site Info	
BU #	
Site Name	
Order #	

Analysis Considerations	
TIA-222 Revision	G
Grout Considered:	No
l_{ar} (in)	2
Eta Factor, η	0.5

Applied Loads	
Moment (kip-ft)	1261.00
Axial Force (kips)	21.40
Shear Force (kips)	13.55



Connection Properties

Anchor Rod Data

(8) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 39" BC

Base Plate Data

38" OD x 2" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi)

Stiffener Data

N/A

Pole Data

33.47" x 0.25" 4-sided pole (A607-65; $F_y=65$ ksi, $F_u=80$ ksi)

Analysis Results

Anchor Rod Summary

(units of kips, kip-in)

$Pu_c = 196.41$	$\phi Pn_t = 260$	Stress Rating
$Vu = 1.69$	$\phi Vn = n/a$	76.8%
$Mu = n/a$	$\phi Mn = n/a$	Pass

Base Plate Summary

Max Stress (ksi):	48.51	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	89.8%	Pass

Pier and Pad Foundation

TIA-222 Revision:
Tower Type:

Top & Bot. Pad Rein. Different?: ☐
Block Foundation?: ☐

Superstructure Analysis Reactions		
Compression, P_{comp} :	21.40	kips
Base Shear, V_{u_comp} :	13.55	kips
Moment, M_u :	1261	ft-kips
Tower Height, H :	117	ft
BP Dist. Above Fdn, bp_{dist} :	3	in

Foundation Analysis Checks				
	Capacity	Demand	Rating	Check
Lateral (Sliding) (kips)	106.32	13.55	12.7%	Pass
Bearing Pressure (ksf)	4.50	2.85	63.4%	Pass
Overturing (kip*ft)	1643.75	1352.49	82.3%	Pass
Pier Flexure (Comp.) (kip*ft)	2977.47	1308.44	43.9%	Pass
Pier Compression (kip)	9372.94	33.77	0.4%	Pass
Pad Flexure (kip*ft)	3821.47	608.62	15.9%	Pass
Pad Shear - 1-way (kips)	527.95	124.42	23.6%	Pass
Pad Shear - 2-way (Comp) (ksi)	0.164	0.000	0.0%	Pass

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, $dpier$:	5	ft
Ext. Above Grade, E :	0.5	ft
Pier Rebar Size, Sc :	8	
Pier Rebar Quantity, mc :	36	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :	3	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Soil Rating: **82.3%**
Structural Rating: **43.9%**

Pad Properties		
Depth, D :	6	ft
Pad Width, W :	17	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Bottom), Sp :	8	
Pad Rebar Quantity (Bottom), mp :	36	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60000	psi
Concrete Compressive Strength, F'_c :	3000	psi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	100	pcf
Ultimate Gross Bearing, Q_{ult} :	6.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	30	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :		
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	N/A	ft

<--Toggle between Gross and Net

5

Viewshed Analysis Report

Proposed Upgrade to Existing Wireless Telecommunications Facility:

CT2413S Simsbury-Bushy Hill Road
345 Bushy Hill Road
Simsbury, CT 06070



- Proposed extension to 117 ft
- Comparison viewshed of existing 107 ft monopole and proposed 117 ft monopole
- Balloon test and viewshed verification completed 3/21/19

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 Smartlink, LLC and AT &T, Virtual Site Simulations, LLC (VSS) was contracted to provide a Viewshed Analysis Report for proposed modifications to existing telecommunications facility located at 345 Bushy Hill Road, Simsbury, CT 06070. Hereafter referred to as "the Site". The proposed modifications to tower facility would consist of adding approximately 10 ft to the existing 107 ft. above ground level ("AGL") Monopole type antenna structure. The proposed height of structure will be 117 AGL, with a max height of 130 Ft. AGL that includes two 13 Ft whip antennas relocated from top of existing structure. Associated unmanned equipment will be contained within an approximately 10 ft x 20 ft fenced gravel equipment compound located at the edge of the existing parking area due north of the base of the tower.

Site Description and Setting

The existing Monopole type telecommunications facility is located on a 1.74 Acre property designated by the tax assessor as parcel C16 301 012A, owned by the Simsbury Fire District. The Site is approximately 1.94 miles due north of Ct. Route 44 at intersection of Route 167, Bushy Hill Road. The site is located within a mostly rural/residential area and the subject property contains an existing single-story Fire Station. The proposed modifications to the facilities ground equipment space is within an existing rectangularly shaped landscaped area behind an existing structure, adjacent to parking area, along the Northern edge of the property.

Development surrounding this area is a mix of forested areas and residential houses to the north, with mainly residential areas to the south east and west. The Farmington River is approximately 2.08 miles to the east at its nearest point. The Walter Ethel School is approximately .64 miles to the northeast at its nearest point. The Children's Center, Inc., a daycare facility, is approximately 1.91 +/- Miles to northeast. The Farmington Canal Trail is 1.7 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 one-mile radius 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.

Computer Modeling – Viewshed Analysis

A combination of Image based, Lidar based and Digital Elevation Model (“DEM”) based data was used to perform this analysis. Two software packages were used to perform this analysis; Environmental Systems Research Institute Inc. (ERSI) ArcGIS Spatial Analyst and Virtual Site Simulations, LLC bespoke Interactive Viewshed Analysis tool (hereafter referred to as IVS). IVS has the ability to not only return a binary visible/not visible result, but to also calculate the percentage of tower height visible from each location. (See Attachment A for IVS results). Each software package was used to confirm the results of the other. Both software packages allow 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 117 ft. AGL). 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 Thursday, March 21st, 2019 and used as the visual reference for site observations from random locations throughout the study area. 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 Leica 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 the 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 documentation 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.

Seven photographs were used for simulations and an additional 17 photographs were added for documentation of balloon non-visible locations. These Simulations and documentation photos are plotted on the viewshed analysis map (Attachment A) attached and shown in the Photo Simulation Package (Attachment B).

Visibility Analysis Results

The results of the of viewshed analysis for the proposed modifications to tower are provided on the visibility analysis maps attached at the end of this report within Attachment A. The maps are provided in two ways, one showing proposed total visibility by height (IVS) as an overview and a second set of maps comparing existing visibility to proposed.

Predicted estimate of year-round views (Summer, leaf on condition) of the proposed modifications to tower facility are from approximately 1.7 acres total or approximately .09 % of the 1-mile radius study area. The majority of these views (1.62 Acres +/- 94.34%) are contained within a 1000 ft radius of the site. These specific views are around and along Bushy Hill Road and the entrance to Hildurcrest Drive. The remaining .8 Acres of predicted year-round views mainly occur in small pockets of visibility scattered along Bushy Hill Road and Canton 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 modifications to tower facility are from an additional 1.93 acres. Total predicted seasonal views 3.64 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 along Canton Road, to the north along Oakhurst Road and to the south east along Hildurcrest Drive. Views from these specific areas are predicted to be obscured by existing tree cover.

Comparison results for proposed modifications to tower height are as follows:

Predicted estimate of additional year-round views (Summer, leaf on condition) is approximately .35 Acres (an increase in visibility of .02 %).

Predicted estimate of additional seasonal views (Winter, leaf off condition) is approximately .5 Acres (an increase in visibility of .025 %).

Areas of predicted additional visibility, both seasonal and year-round, are mostly contained within 1000 ft of the site and are scattered around the edges of existing tower visibility.

Documentation

Sources used for Visibility Analysis located at:

**Proposed Wireless Telecommunications Facility
CT2413S Simsbury -Deerfield Lane
345 Bushy Hill Road
Simsbury, CT 06070**

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 - Comparison Viewshed With IVS Overview

Proposed Upgrade to Existing Wireless Telecommunications Facility:

CT2413S Simsbury-Bushy Hill Road
345 Bushy Hill Road
Simsbury, CT 06070



- Proposed extension to 117 ft
- Comparison viewshed of existing 107 ft monopole and proposed 117 ft monopole
- Balloon test and viewshed verification completed 3/21/19

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.

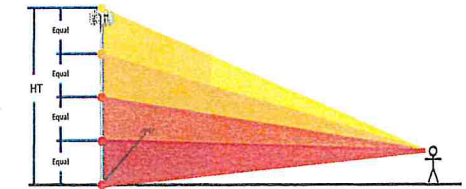


Proposed Facility:

CT2413S Simsbury-Bushy Hill Road
345 Bushy Hill Road
Simsbury, CT 06070

IVS Leaf-On Viewshed - Imagery

IVSview® Color Legend



- ☆ Facility Location
- 1 Mile Radius
- 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)

Tower Visibility

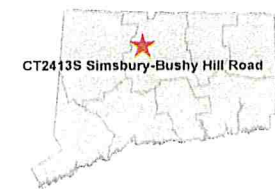
Color	Location	% Vis	Acres
Yellow	Top 25%	0.04%	0.7
Orange	Top 50%	0.01%	0.2
Red	Top 75%	0.01%	0.1
Dark Red	Top 100%	0.03%	0.6
	Base	0.00%	0.1
	TOTAL	0.09%	1.7 Acres

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)
 RADIUS (FT)= 1 Mile
 TRANSMITTER_HEIGHT (Ft-AGL)= 117.0
 RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
 PERCENT_VISIBLE (%)= 0.09

Notes:

- map compiled by VSS, LLC on : 3/21/19
- Tower location(lat/long NAD 83): 41.841378 -72.850436
- Data Sources noted on documentation page attached



CT2413S Simsbury-Bushy Hill Road

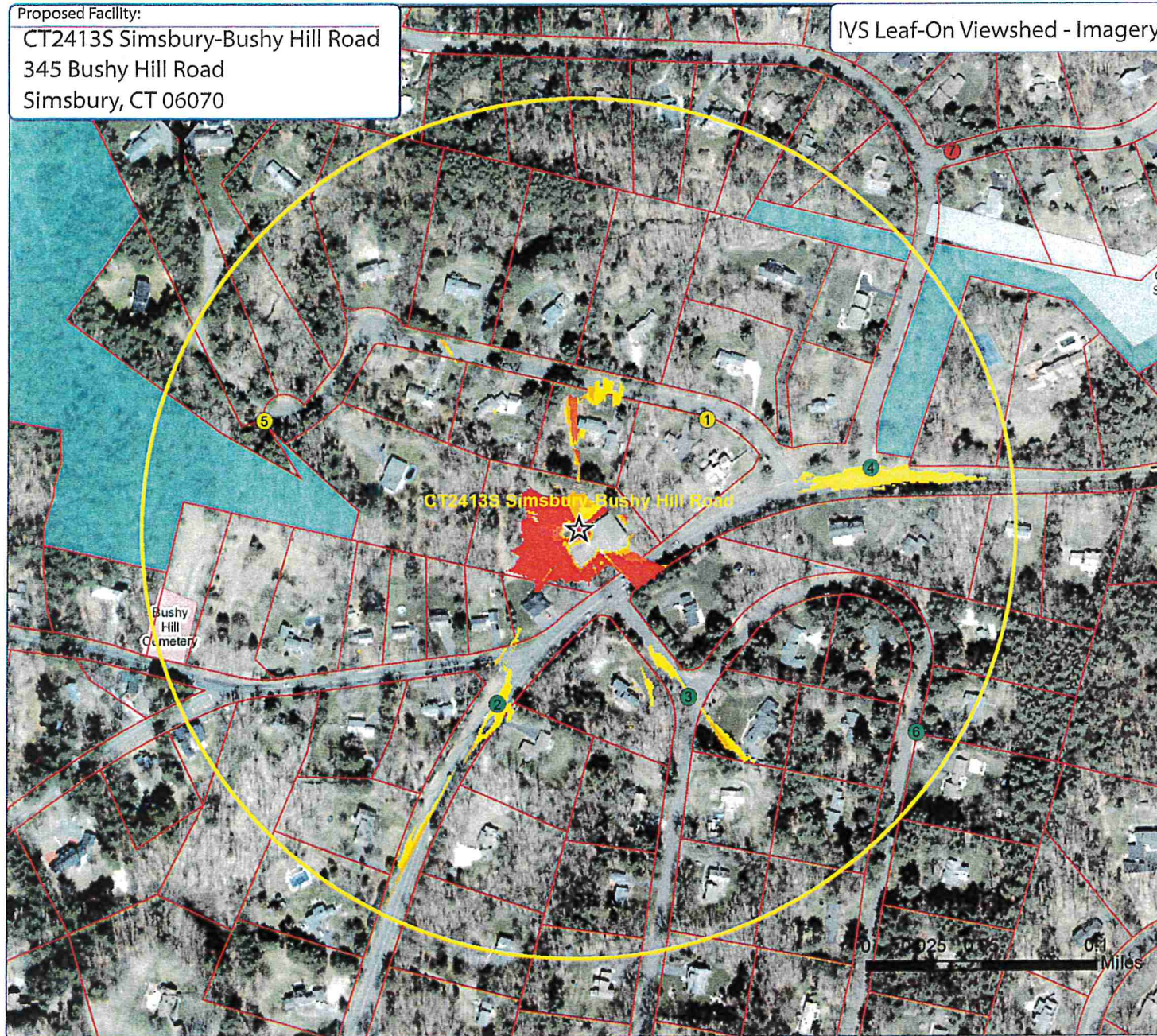
Viewshed analysis maps and representations contained herein depict where proposed facility may potentially be visible based on the best data available and site conditions at the time data was collected. This study does not claim to depict all locations from where the facility may be potentially visible.



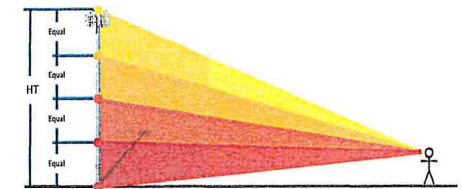
Proposed Facility:

CT2413S Simsbury-Bushy Hill Road
345 Bushy Hill Road
Simsbury, CT 06070

IVS Leaf-On Viewshed - Imagery



IVSview® Color Legend



- ☆ Facility Location
- 1000 Foot Radius
- ▬ 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)

Tower Visibility

Color	Location	% Vis	Acres
Yellow	Top 25%	0.04%	0.7
Orange	Top 50%	0.01%	0.2
Red	Top 75%	0.01%	0.1
Dark Red	Top 100%	0.03%	0.6
Base		0.00%	0.1
TOTAL		0.09%	1.7 Acres

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)
RADIUS (FT)= 1000 FT
TRANSMITTER_HEIGHT (Ft-AGL)= 117.0
RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
PERCENT_VISIBLE (%)= 0.09

Notes:

- map compiled by VSS, LLC on : 3/21/19
- Tower location(lat/long NAD 83): 41.841378 -72.850436
- 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.

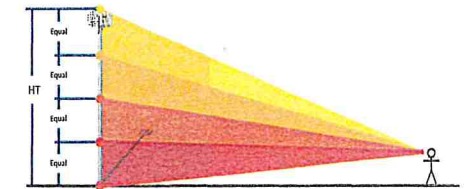


Proposed Facility:

CT2413S Simsbury-Bushy Hill Road
345 Bushy Hill Road
Simsbury, CT 06070

IVS Leaf-On Viewshed - Topo

IVSview® Color Legend



- ☆ Facility Location
- 1 Mile Radius
- 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)

Tower Visibility

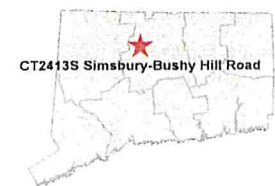
Color	Location	% Vis	Acres
Yellow	Top 25%	0.04%	0.7
Orange	Top 50%	0.01%	0.2
Red	Top 75%	0.01%	0.1
Dark Red	Top 100%	0.03%	0.6
Base		0.00%	0.1
TOTAL		0.09%	1.7 Acres

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)
RADIUS (FT)= 1 Mile
TRANSMITTER_HEIGHT (Ft-AGL)= 117.0
RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
PERCENT_VISIBLE (%)= 0.09

Notes:

- map compiled by VSS, LLC on : 3/21/19
- Tower location(lat/long NAD 83): 41.841378 -72.850436
- Data Sources noted on documentation page attached



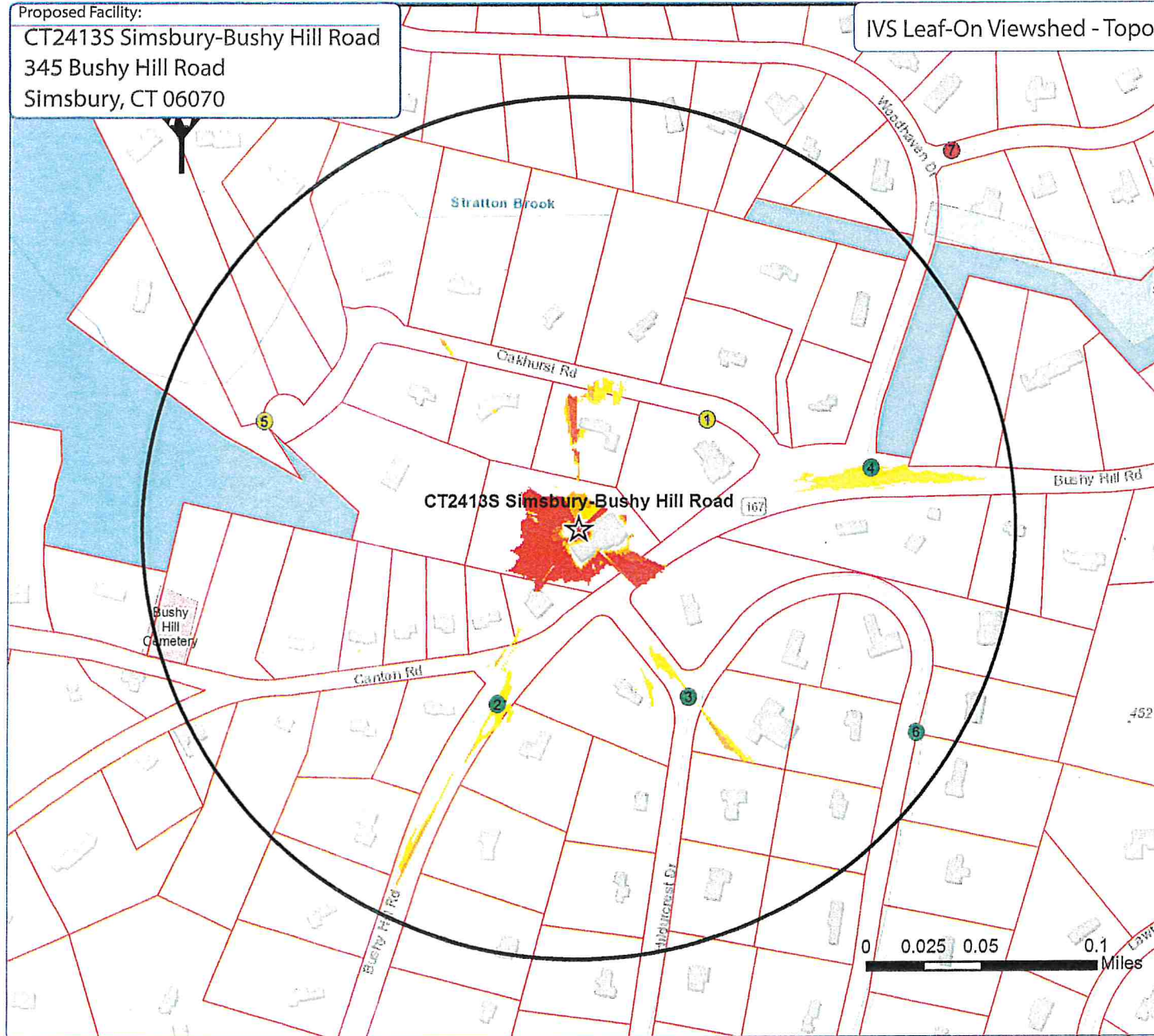
Viewshed analysis maps and representations contained herein depict where proposed facility may potentially be visible based on the best data available and site conditions at the time data was collected. This study does not claim to depict all locations from where the facility may be potentially visible.



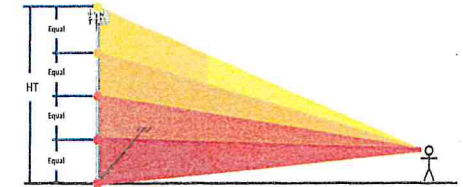
Proposed Facility:

CT2413S Simsbury-Bushy Hill Road
345 Bushy Hill Road
Simsbury, CT 06070

IVS Leaf-On Viewshed - Topo



IVSview® Color Legend



- ☆ Facility Location
- 1000 Foot Radius
- 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)

Tower Visibility

Color	Location	% Vis	Acres
Yellow	Top 25%	0.04%	0.7
Orange	Top 50%	0.01%	0.2
Red	Top 75%	0.01%	0.1
Dark Red	Top 100%	0.03%	0.6
Base		0.00%	0.1
TOTAL		0.09%	1.7 Acres

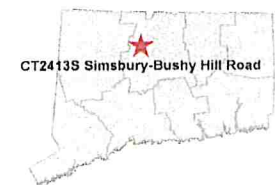
Statistics:

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)
RADIUS (FT)= 1000 FT
TRANSMITTER_HEIGHT (Ft-AGL)= 117.0
RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
PERCENT_VISIBLE (%)= 0.09

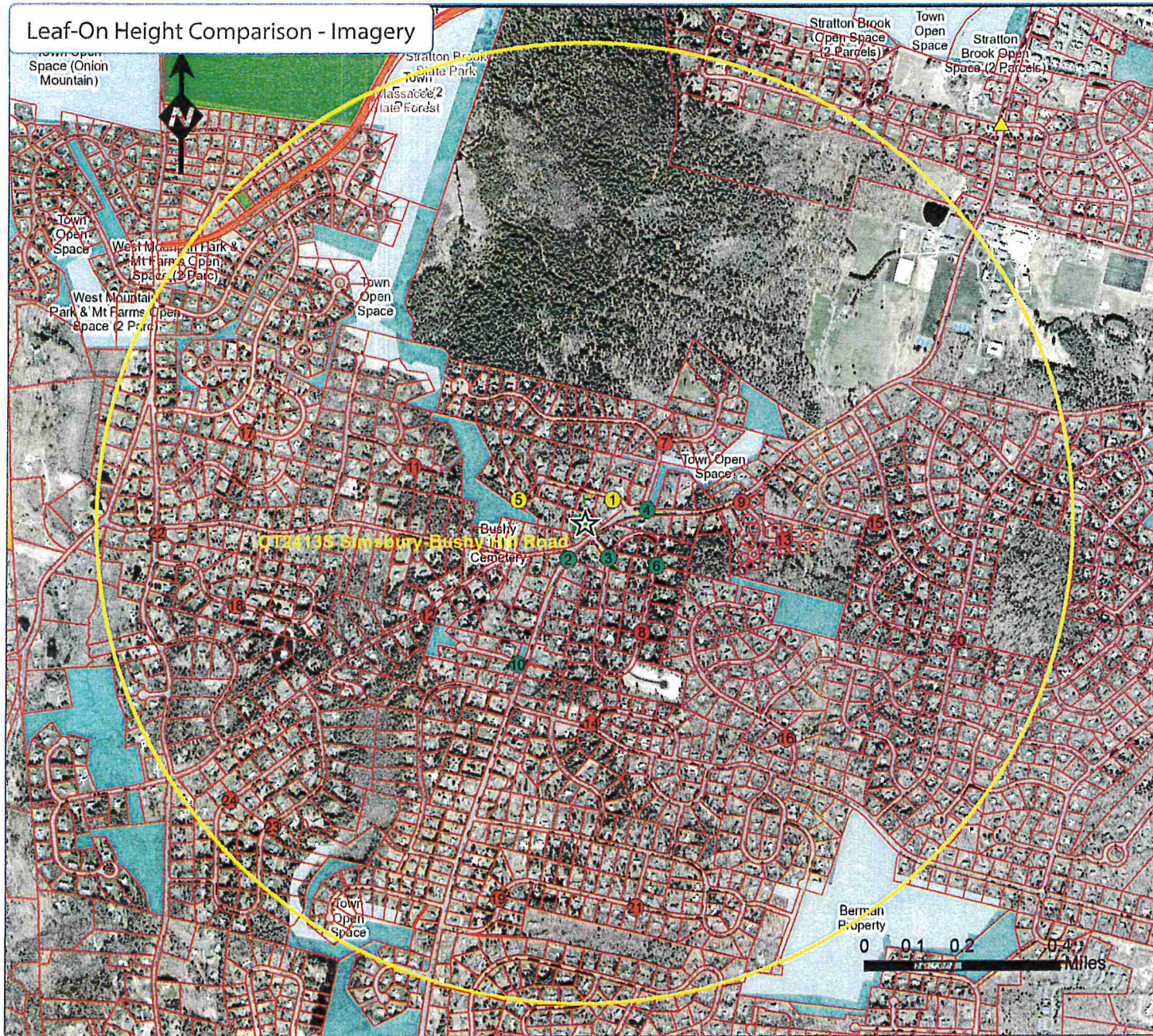
Notes:

- map compiled by VSS, LLC on : 3/21/19
- Tower location(lat/long NAD 83): 41.841378 -72.850436
- 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.



Leaf-On Height Comparison - Imagery



Proposed Wireless Telecommunications Facility:

CT2413S Simsbury-Bushy Hill Road
345 Bushy Hill Road
Simsbury, CT 06070

Legend:

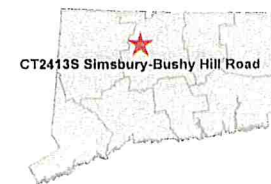
- ☆ Facility Location
- 1 Mile Radius
- ▬ Plat Lot Lines
- Photo location -Balloon visible- Year Round
- ⊗ Photo location -Balloon visible- Seasonal
- ⊗ Photo location -Balloon NOT visible
- ▲ School Facilities
- ▲ Daycare Facilities
- CT Open Space (Conservation Land)
- CT Open Space (Municipal Land)
- CT Open Space (State Land)
- Predicted Visibility-Existing(107 ft)
- Predicted Visibility-Proposed(117ft)

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)
RADIUS (FT)= 1 Mile
RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
PERCENT_VISIBLE (%) Existing (107ft)= 0.07% 1.36 Acres
PERCENT_VISIBLE (%) Proposed (117ft)= 0.09% 1.72 Acres

Notes:

- Percentage based on study area
- map compiled by VSS, LLC on: 3/21/19
- Tower location(lat/long NAD 83):41.841378 -72.850436
- 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.



Leaf-On Height Comparison - Imagery



Proposed Wireless Telecommunications Facility:

CT2413S Simsbury-Bushy Hill Road

345 Bushy Hill Road

Simsbury, CT 06070

Legend:

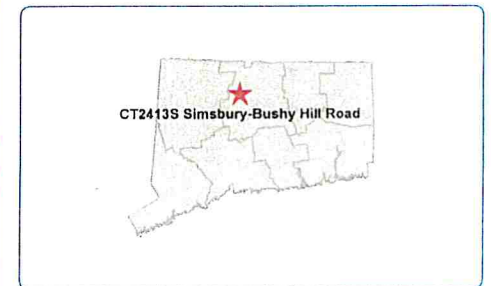
- ☆ Facility Location
- 1000 Foot Radius
- Plat Lot Lines
- ⊗ Photo location -Balloon visible- Year Round
- ⊗ Photo location -Balloon visible- Seasonal
- ⊗ Photo location -Balloon NOT visible
- ▲ School Facilities
- ▲ Daycare Facilities
- CT Open Space (Conservation Land)
- CT Open Space (Municipal Land)
- CT Open Space (State Land)
- Predicted Visibility-Existing(107ft)
- Predicted Visibility-Proposed(117ft)

Statistics:

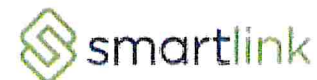
PROJ_DESC=Geographic (Lat/Long) / WGS84 / arc degrees
 PROJ_DATUM=WGS84 PROJ_UNITS=arc degrees
 PIXEL_WIDTH=0.0000013 arc degrees (+/- .6 ft)
 PIXEL_HEIGHT=0.0000014 arc degrees(+/- .6 ft)
 RADIUS (FT)= 1000 Feet
 RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
 PERCENT_VISIBLE (%) Existing (107ft)= 0.06% 1.29 Acres
 PERCENT_VISIBLE (%) Proposed(117ft)= 0.08% 1.62 Acres

Notes:

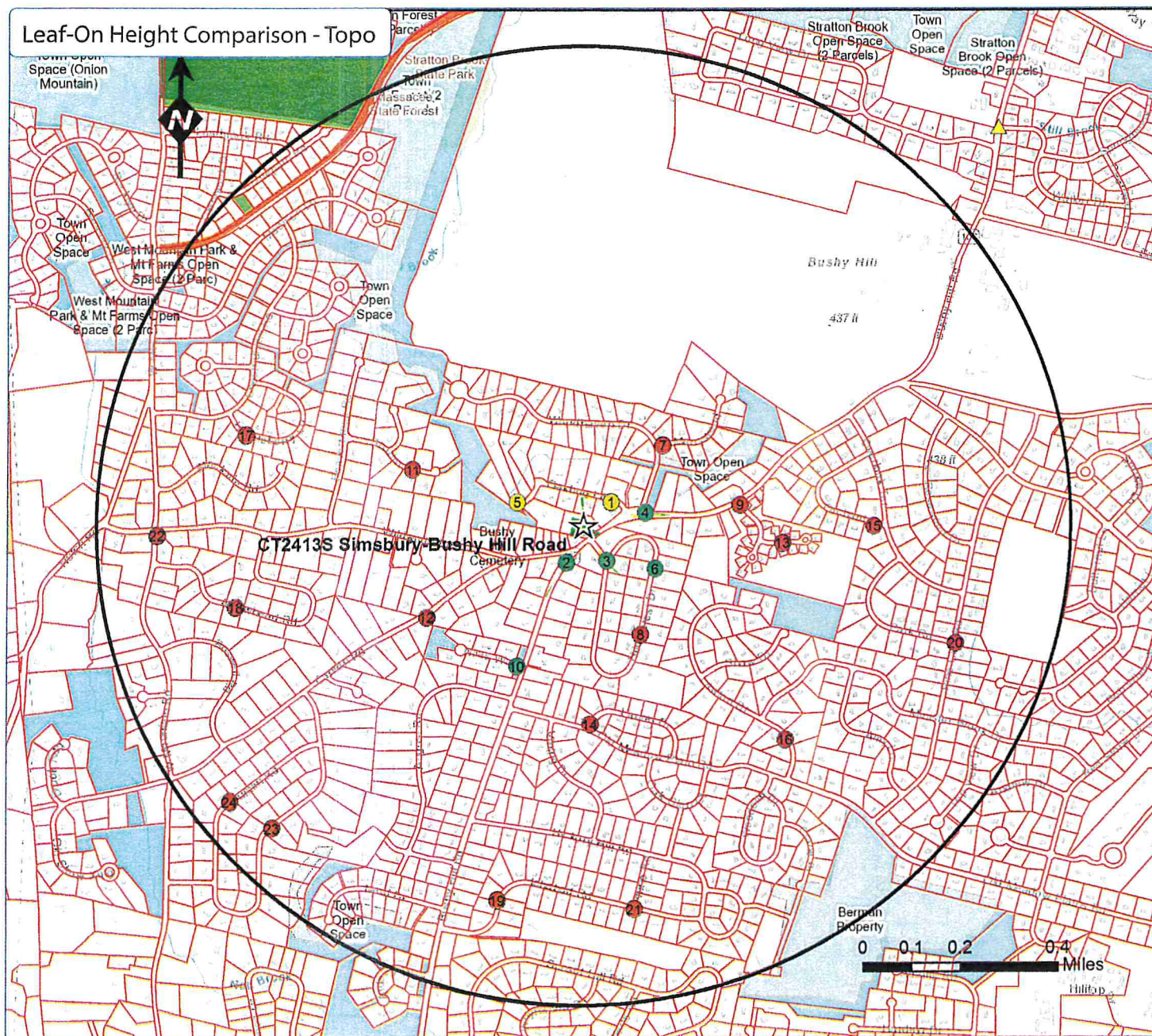
- Percentage based on study area
- map compiled by VSS, LLC on : 3/21/19
- Tower location(lat/long NAD 83): 41.841378 -72.850436
- Data Sources noted on documentation page attached



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.



Leaf-On Height Comparison - Topo



Proposed Wireless Telecommunications Facility:

CT2413S Simsbury-Bushy Hill Road

345 Bushy Hill Road

Simsbury, CT 06070

Legend:

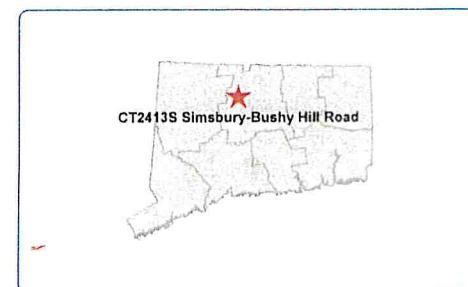
- ☆ Facility Location
- 1 Mile Radius
- Plat Lot Lines
- Photo location -Balloon visible- Year Round
- Photo location -Balloon visible- Seasonal
- Photo location -Balloon NOT visible
- School Facilities
- Daycare Facilities
- CT Open Space (Conservation Land)
- CT Open Space (Municipal Land)
- CT Open Space (State Land)
- Predicted Visibility-Existing(107 ft)
- Predicted Visibility-Proposed(117ft)

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)
 RADIUS (FT)= 1 Mile
 RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
 PERCENT_VISIBLE (%) Existing (107ft)=0.07% 1.36 Acres
 PERCENT_VISIBLE (%) Proposed (117ft)=0.09% 1.72 Acres

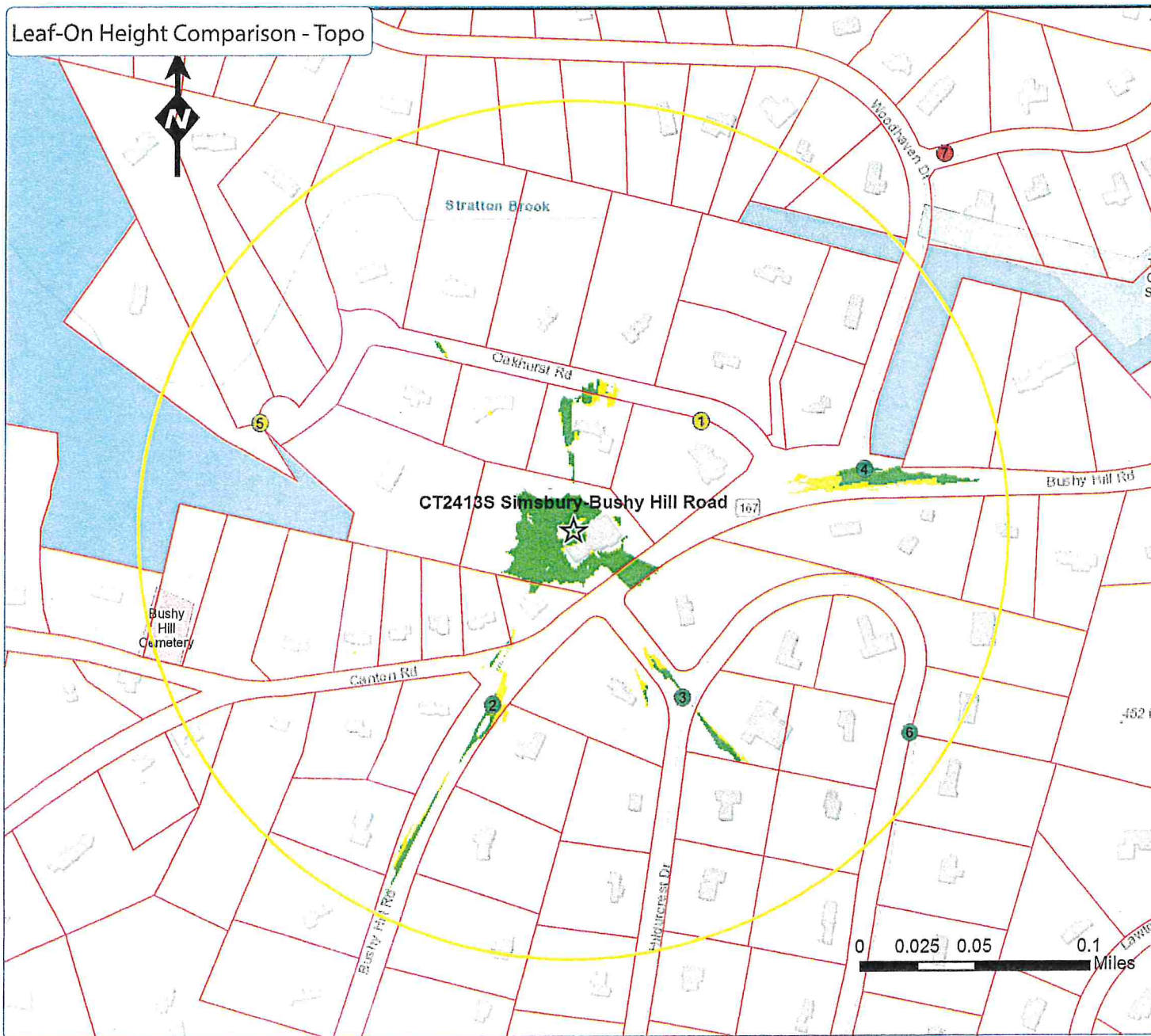
Notes:

- Percentage based on study area
- map compiled by VSS, LLC on : 3/21/19
- Tower location(lat/long NAD 83):41.841378 -72.850436
- 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:

CT2413S Simsbury-Bushy Hill Road

345 Bushy Hill Road

Simsbury, CT 06070

Legend:

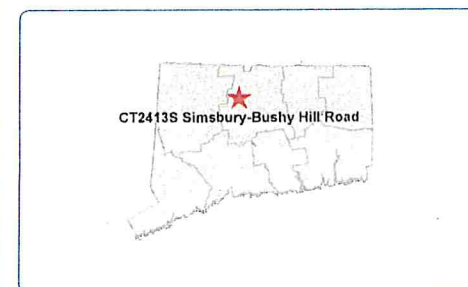
- ☆ Facility Location
- 1000 Foot Radius
- ▬ Plat Lot Lines
- ⊗ Photo location -Balloon visible- Year Round
- ⊗ Photo location -Balloon visible- Seasonal
- ⊗ Photo location -Balloon NOT visible
- ▲ School Facilities
- ▲ Daycare Facilities
- CT Open Space (Conservation Land)
- CT Open Space (Municipal Land)
- CT Open Space (State Land)
- Predicted Visibility-Existing(107ft)
- Predicted Visibility-Proposed(117ft)

Statistics:

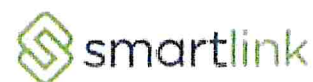
PROJ_DESC=Geographic (Lat/Long) / WGS84 / arc degrees
 PROJ_DATUM=WGS84 PROJ_UNITS=arc degrees
 PIXEL_WIDTH=0.0000013 arc degrees (+/- .6 ft)
 PIXEL_HEIGHT=0.0000014 arc degrees (+/- .6 ft)
 RADIUS (FT)= 1000 Feet
 RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
 PERCENT_VISIBLE (%) Existing (107ft)= 0.06% 1.29 Acres
 PERCENT_VISIBLE (%) Proposed (117ft)= 0.08% 1.62 Acres

Notes:

- Percentage based on study area
- map compiled by VSS, LLC on : 3/21/19
- Tower location(lat/long NAD 83): 41.841378 -72.850436
- 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.



Leaf-Off Height Comparison - Imagery



Proposed Wireless Telecommunications Facility:

CT2413S Simsbury-Bushy Hill Road

345 Bushy Hill Road

Simsbury, CT 06070

Legend:

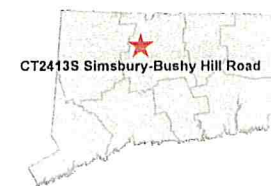
- ☆ Facility Location
- 1 Mile Radius
- Plat Lot Lines
- ⊗ Photo location -Balloon visible- Year Round
- ⊗ Photo location -Balloon visible- Seasonal
- ⊗ Photo location -Balloon NOT visible
- ▲ School Facilities
- ▲ Daycare Facilities
- CT Open Space (Conservation Land)
- CT Open Space (Municipal Land)
- CT Open Space (State Land)
- Predicted Visibility-Existing(107 ft)
- Predicted Visibility-Proposed(117ft)

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)
 RADIUS (FT)= 1 Mile
 RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
 PERCENT_VISIBLE (%) Existing (107ft)= 0.16% 3.14 Acres
 PERCENT_VISIBLE (%) Proposed(117ft)= 0.18 3.64 Acres

Notes:

- Percentage based on study area
- map compiled by VSS, LLC on : 3/21/19
- Tower location(lat/long NAD 83):41.841378 -72.850436
- 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.



Leaf-Off Height Comparison - Imagery



Proposed Wireless Telecommunications Facility:

CT2413S Simsbury-Bushy Hill Road
345 Bushy Hill Road
Simsbury, CT 06070

Legend:

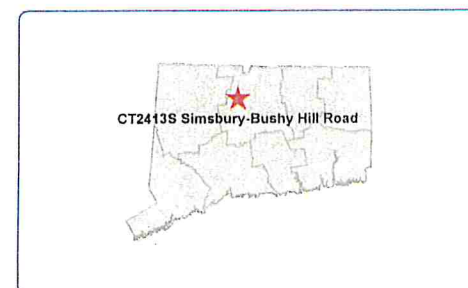
- ☆ Facility Location
- 1000 Foot Radius
- Plat Lot Lines
- Photo location -Balloon visible- Year Round
- Photo location -Balloon visible- Seasonal
- Photo location -Balloon NOT visible
- School Facilities
- Daycare Facilities
- CT Open Space (Conservation Land)
- CT Open Space (Municipal Land)
- CT Open Space (State Land)
- Predicted Visibility-Existing(107ft)
- Predicted Visibility-Proposed(117ft)

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)
RADIUS (FT)= 1000 FT
RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
PERCENT_VISIBLE (%) Existing (107ft)= 0.15% 2.93 Acres
PERCENT_VISIBLE (%) Proposed(117ft)= 0.17% 3.35 Acres

Notes:

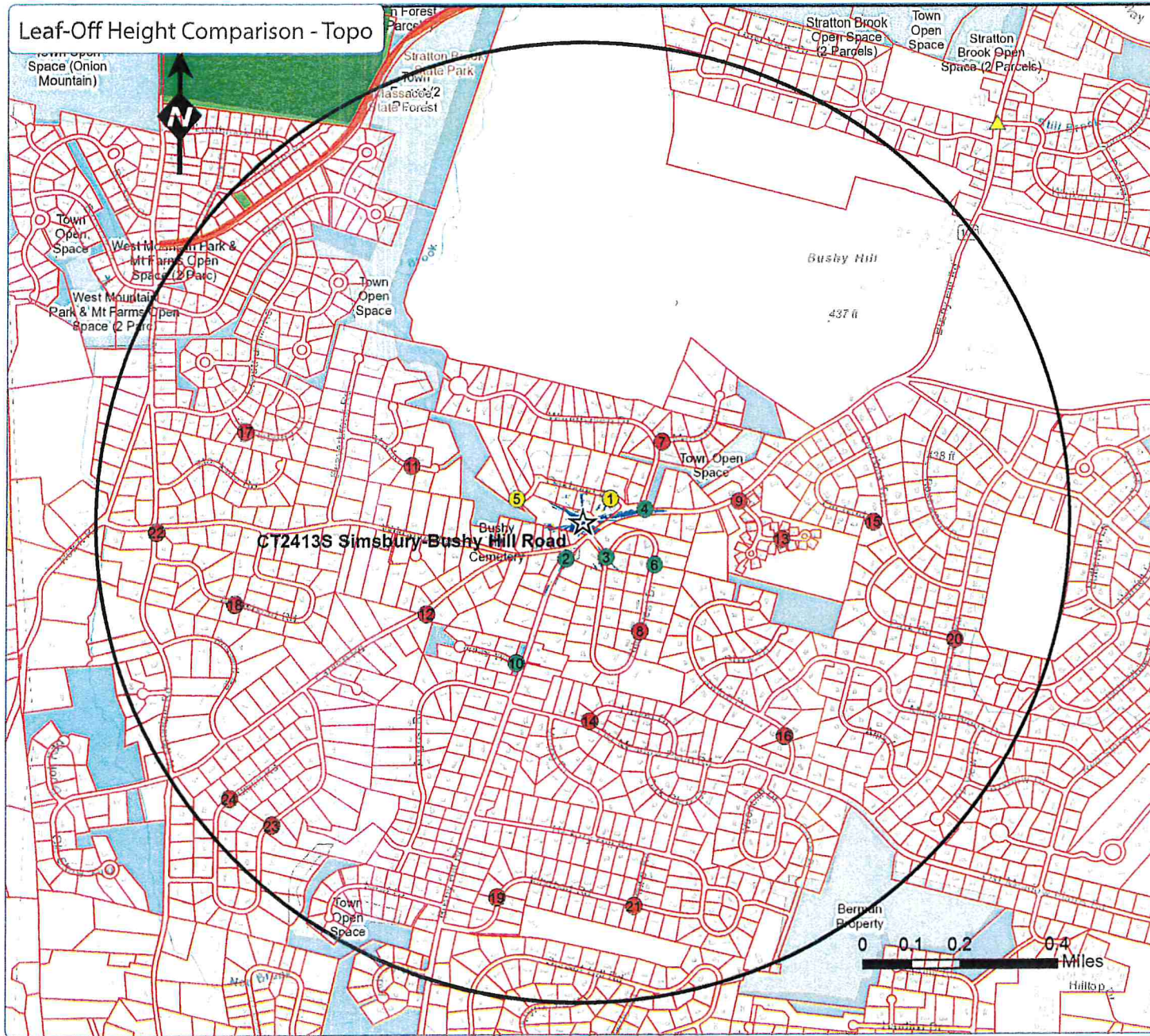
- Percentage based on study area
- map compiled by VSS, LLC on : 3/21/19
- Tower location(lat/long NAD 83):41.841378 -72.850436
- Data Sources noted on documentation page attached



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Leaf-Off Height Comparison - Topo



Proposed Wireless Telecommunications Facility:

CT2413S Simsbury-Bushy Hill Road
345 Bushy Hill Road
Simsbury, CT 06070

Legend:

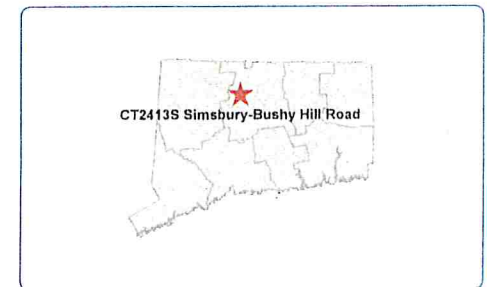
- ☆ Facility Location
- 1 Mile Radius
- ▬ Plat/Lot Lines
- Photo location - Balloon visible- Year Round
- Photo location - Balloon visible- Seasonal
- Photo location - Balloon NOT visible
- ▲ School Facilities
- ▲ Daycare Facilities
- CT Open Space (Conservation Land)
- CT Open Space (Municipal Land)
- CT Open Space (State Land)
- Predicted Visibility-Existing(107 ft)
- Predicted Visibility-Proposed(117ft)

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)
RADIUS (FT)= 1 Mile
RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
PERCENT_VISIBLE (%) Existing (107ft)= 0.16% 3.14 Acres
PERCENT_VISIBLE (%) Proposed (117ft)= 0.18 3.64 Acres

Notes:

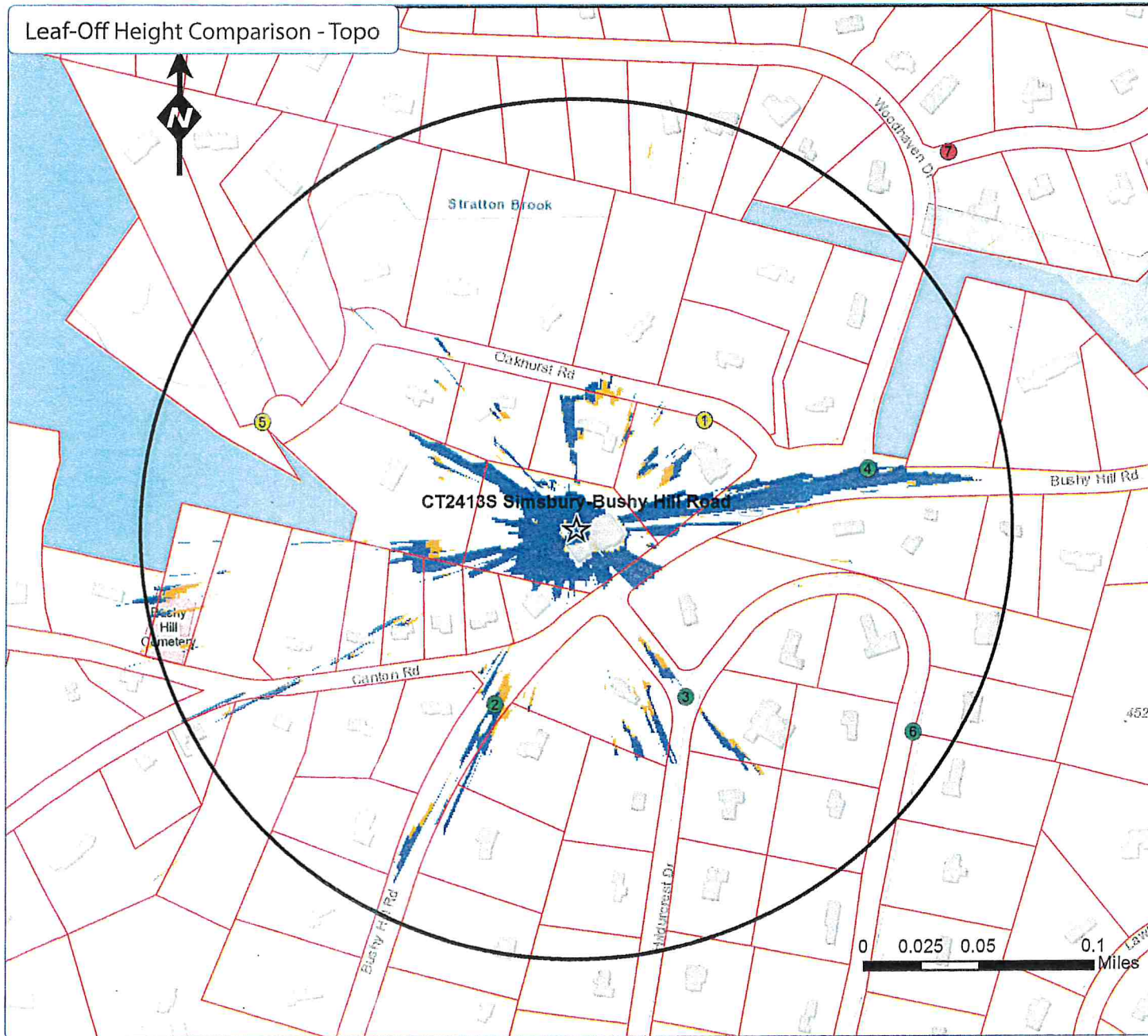
- Percentage based on study area
- map compiled by VSS, LLC on : 3/21/19
- Tower location(lat/long NAD 83):41.841378 -72.850436
- Data Sources noted on documentation page attached



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.



Leaf-Off Height Comparison - Topo



Proposed Wireless Telecommunications Facility:

CT2413S Simsbury-Bushy Hill Road
345 Bushy Hill Road
Simsbury, CT 06070

Legend:

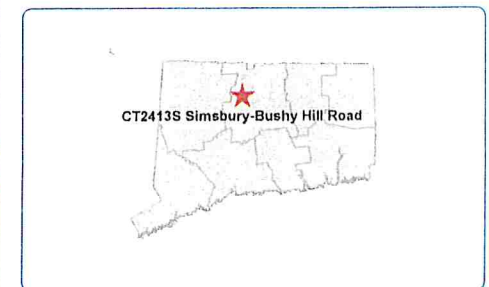
- ☆ Facility Location
- 1000 Foot Radius
- ▬ Plat/Lot Lines
- Photo location - Balloon visible- Year Round
- Photo location - Balloon visible- Seasonal
- Photo location - Balloon NOT visible
- ▲ School Facilities
- ▲ Daycare Facilities
- CT Open Space (Conservation Land)
- CT Open Space (Municipal Land)
- CT Open Space (State Land)
- Predicted Visibility-Existing(107ft)
- Predicted Visibility-Proposed(117ft)

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)
RADIUS (FT)= 1000 FT
RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
PERCENT_VISIBLE (%) Existing (107ft)= 0.15% 2.93 Acres
PERCENT_VISIBLE (%) Proposed(117ft)= 0.17% 3.35 Acres

Notes:

- Percentage based on study area
- map compiled by VSS, LLC on : 3/21/19
- Tower location(lat/long NAD 83):41.841378 -72.850436
- Data Sources noted on documentation page attached



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Attachment B - Photographic Simulation Package

Proposed Upgrade to Existing Wireless Telecommunications Facility:

CT2413S Simsbury-Bushy Hill Road
345 Bushy Hill Road
Simsbury, CT 06070



- Balloon Test Conducted 3/21/19
- Existing 107 ft AGL monopole
- Proposed extension to 117 ft and 13 ft whip antennas

Package prepared by:

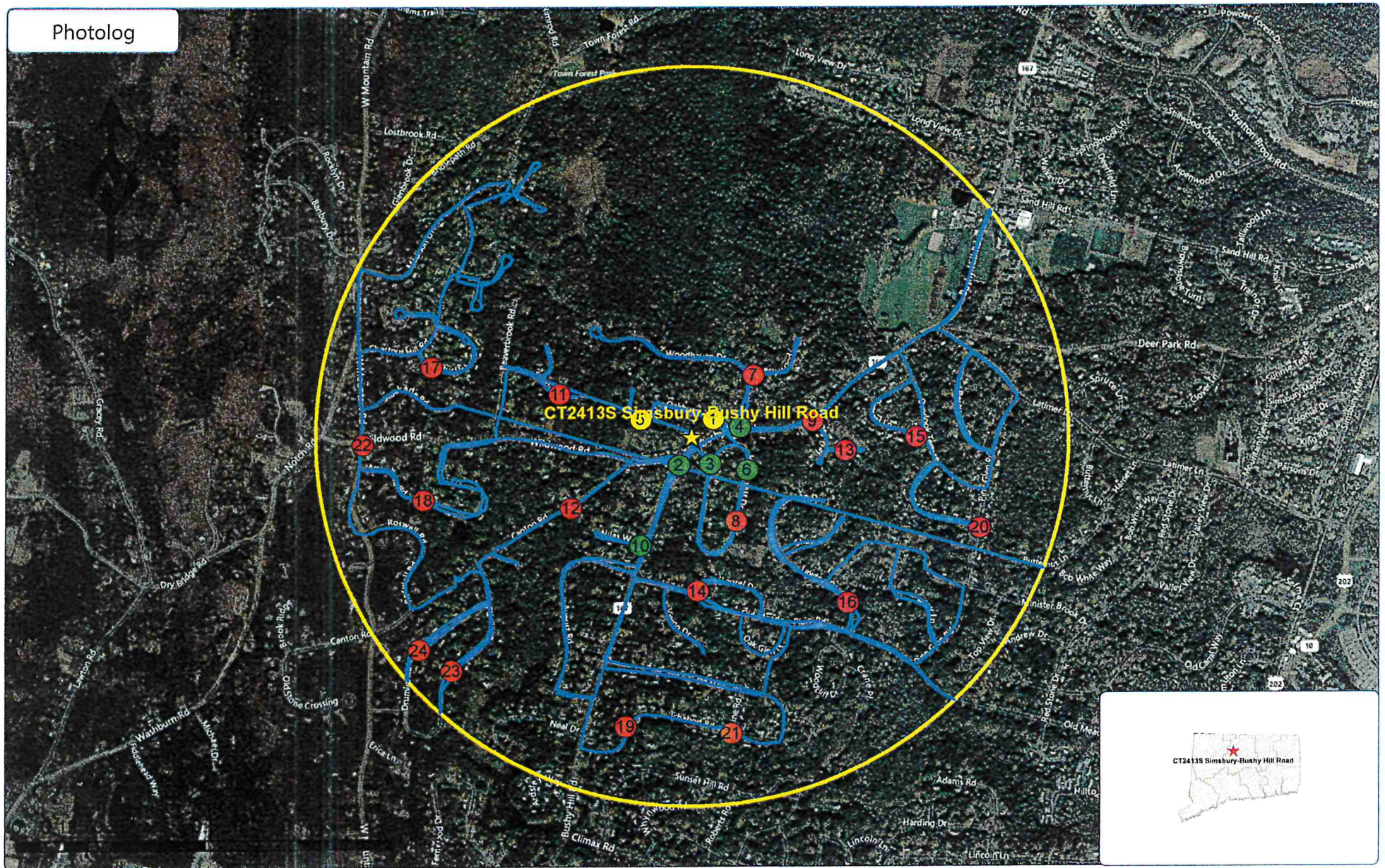
Virtual Site Simulations, LLC
28 Caswell Street
Suite 100
Narragansett, Rhode Island 02882

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



Photolog



Wireless Telecommunications Facility:

CT2413S Simsbury-Bushy Hill Road

345 Bushy Hill Road

Simsbury, CT 06070

Legend:

- ★ Facility Location
- 1 Mile Radius
- Reconnaissance Track Log
- ⊗ Photo location - Balloon visible - Year Round Visibility
- ⊗ Photo location - Balloon visible - Obscured Visibility
- ⊗ 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	5 Oakhurst Rd	41.84208	-72.84936	386.52 Feet	North-East	229	Obscured

Site: CT2413S Simsbury-Bushy Hill Road

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
1	5 Oakhurst Rd	41.84208	-72.84936	386.52 Feet	North-East	229	Obscured

Site: CT2413S Simsbury-Bushy Hill Road

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

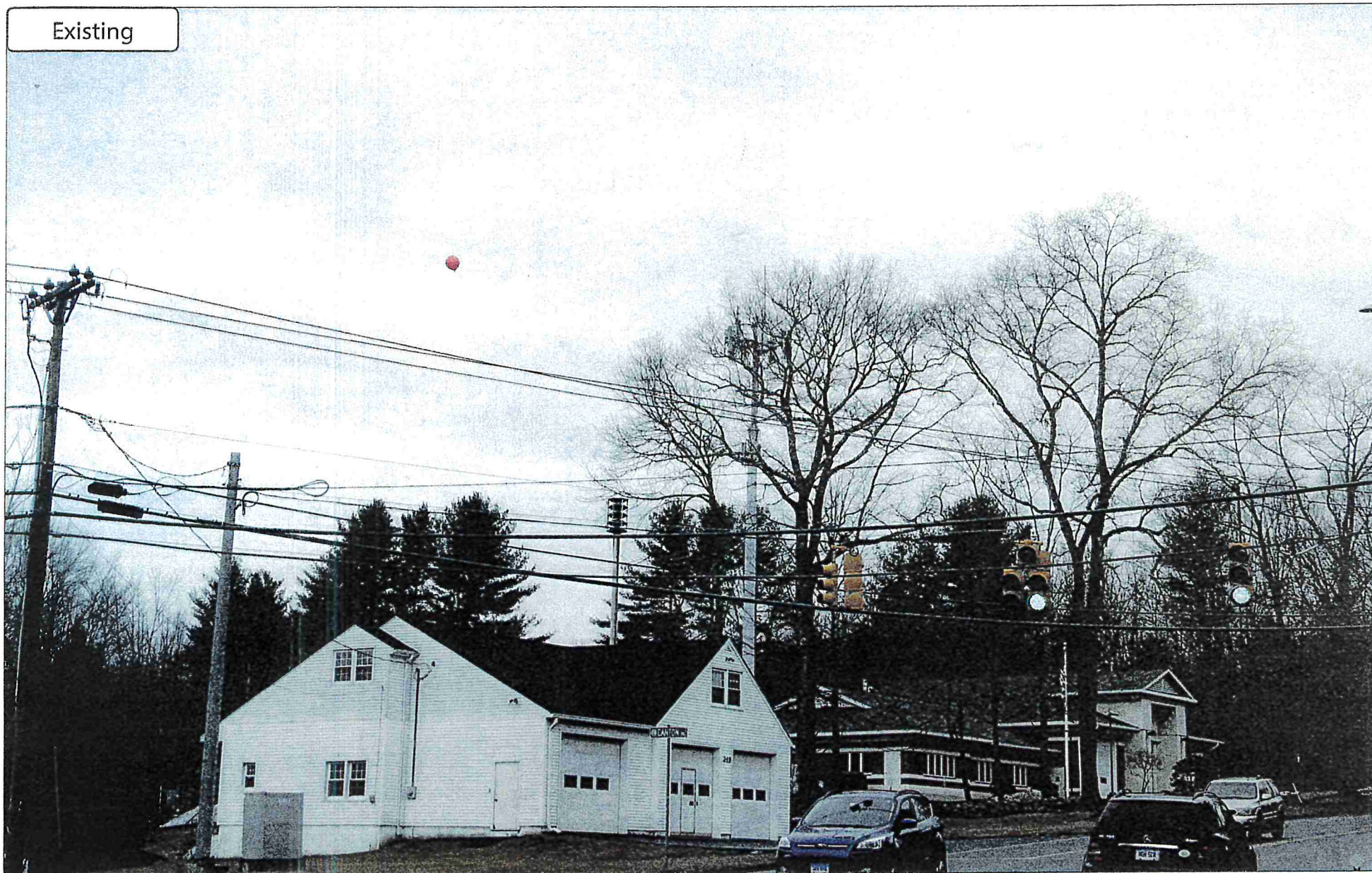


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
2	1 Canton Rd	41.84027	-72.85111	446.03 Feet	South-West	24	Year Round

Site: CT2413S Simsbury-Bushy Hill Road

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
2	1 Canton Rd	41.84027	-72.85111	446.03 Feet	South-West	24	Year Round

Site: CT2413S Simsbury-Bushy Hill Road

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
3	1 Hildurcrest Dr	41.84031	-72.84951	464.13 Feet	South-East	327	Year Round

Site: CT2413S Simsbury-Bushy Hill Road

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
3	1 Hildurcrest Dr	41.84031	-72.84951	464.13 Feet	South-East	327	Year Round

Site: CT2413S Simsbury-Bushy Hill Road

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
4	331 Bushy Hill Rd	41.84177	-72.84799	0.13 Miles	East	258	Year Round

Site: CT2413S Simsbury-Bushy Hill Road

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	331 Bushy Hill Rd	41.84177	-72.84799	0.13 Miles	East	258	Year Round

Site: CT2413S Simsbury-Bushy Hill Road

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
5	2 Canton Rd	41.84206	-72.85309	0.14 Miles	West	109	Obscured

Site: CT2413S Simsbury-Bushy Hill Road

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
5	2 Canton Rd	41.84206	-72.85309	0.14 Miles	West	109	Obscured

Site: CT2413S Simsbury-Bushy Hill Road

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	24 Hildurcrest Dr	41.84008	-72.84759	0.17 Miles	South-East	301	Year Round

Site: CT2413S Simsbury-Bushy Hill Road

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



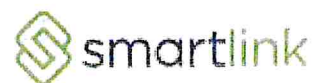
Simulation



Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
6	24 Hildurcrest Dr	41.84008	-72.84759	0.17 Miles	South-East	301	Year Round

Site: CT2413S Simsbury-Bushy Hill Road

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

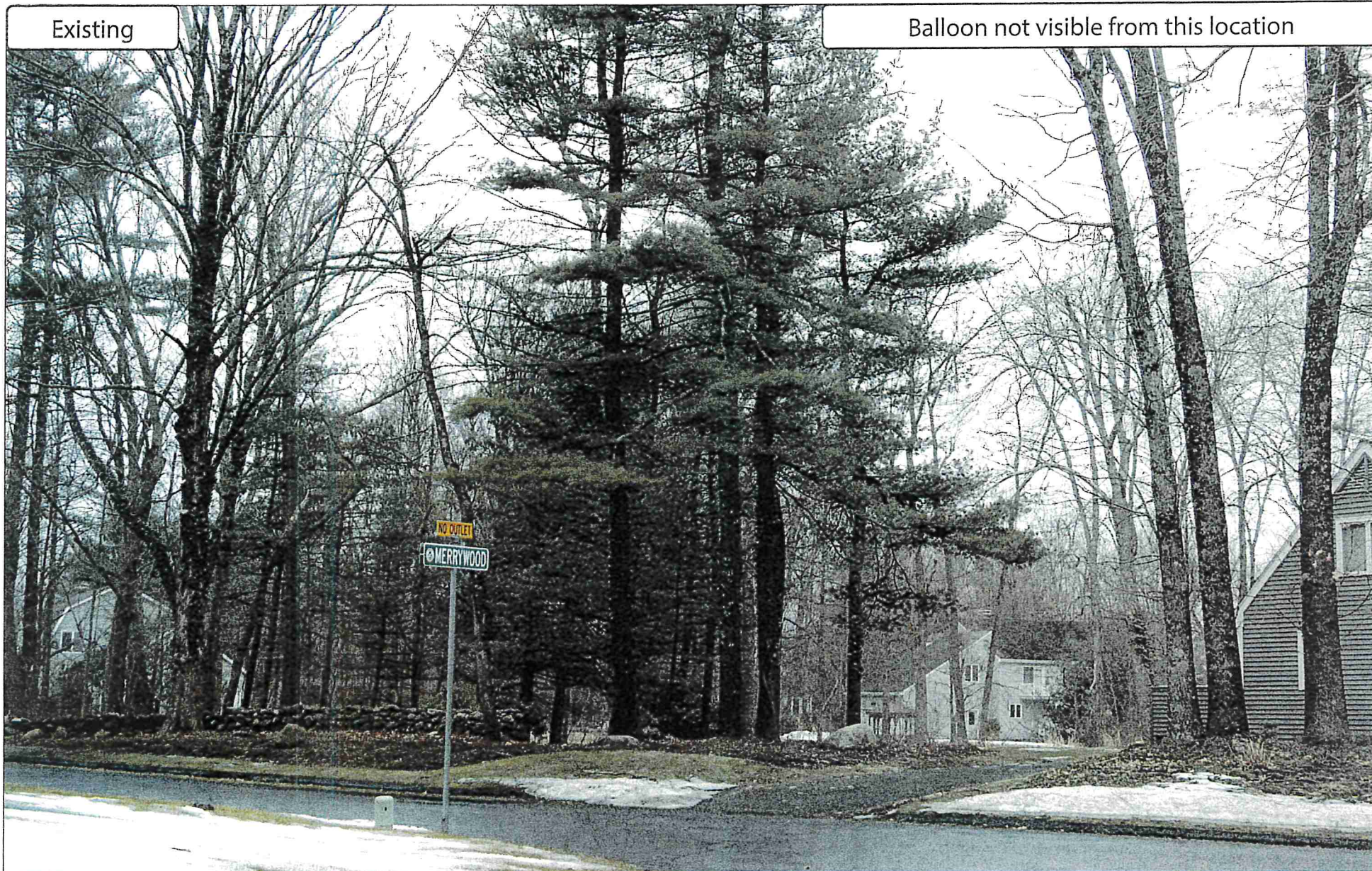


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
7	4 Merrywood	41.84379	-72.84732	0.23 Miles	North-East	224	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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

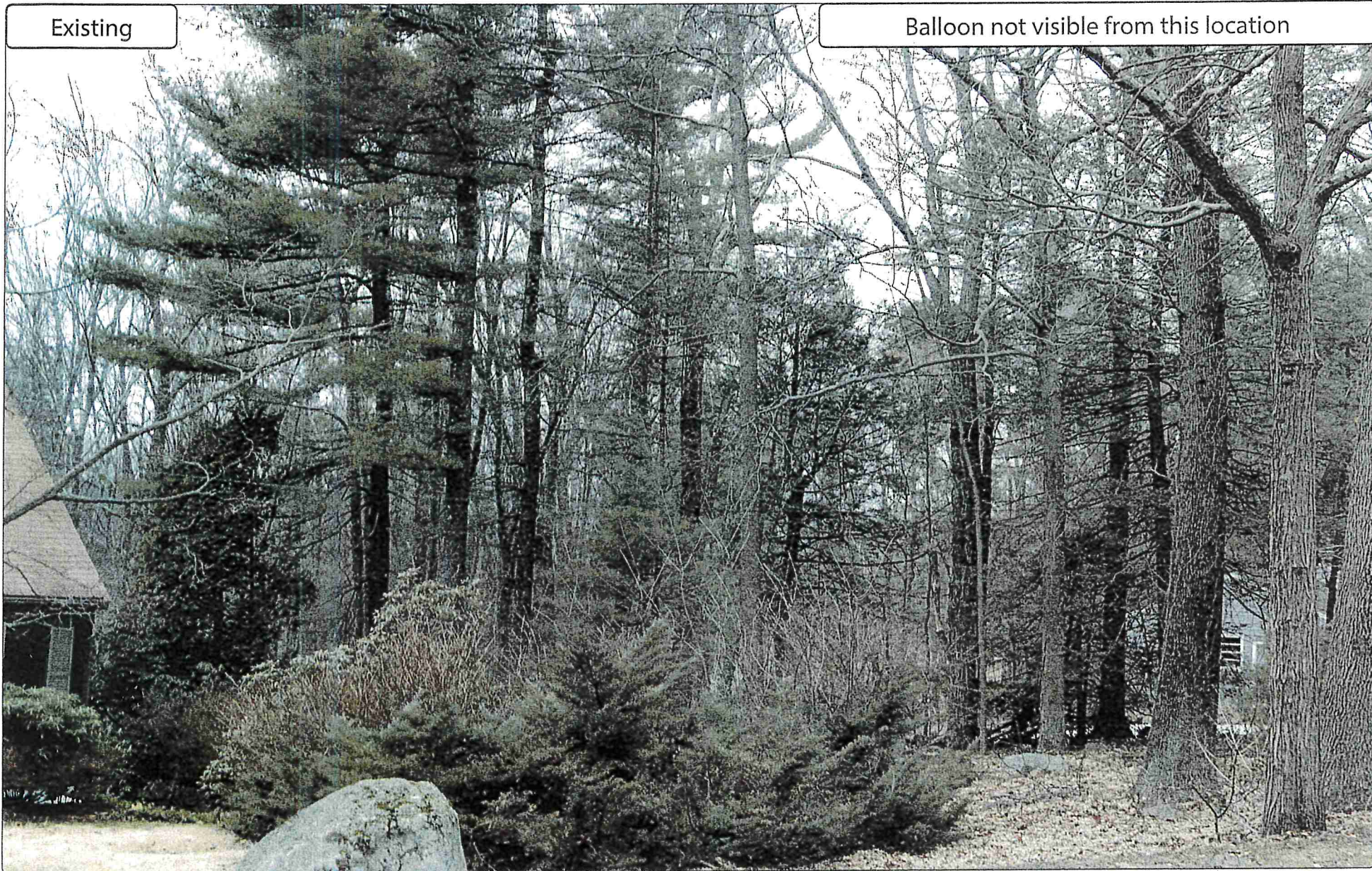


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
8	35 Hildurcrest Dr	41.83807	-72.84816	0.26 Miles	South-East	333	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location

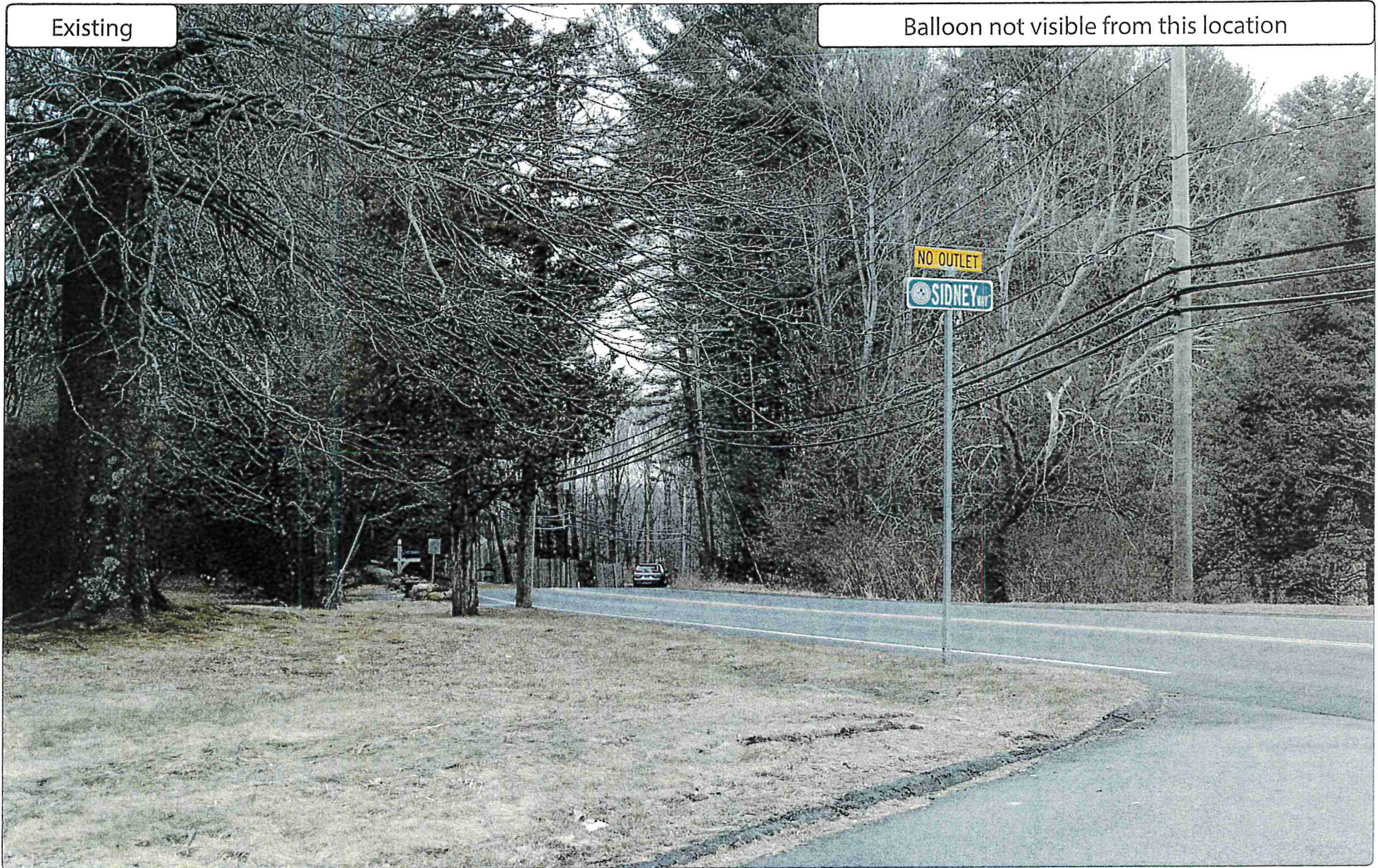


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
9	1 Sidney Way	41.84201	-72.84422	0.32 Miles	East	262	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing



Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
10	6 Nilas Way	41.8371	-72.85307	0.32 Miles	South-West	25	Year Round

Site: CT2413S Simsbury-Bushy Hill Road

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Simulation

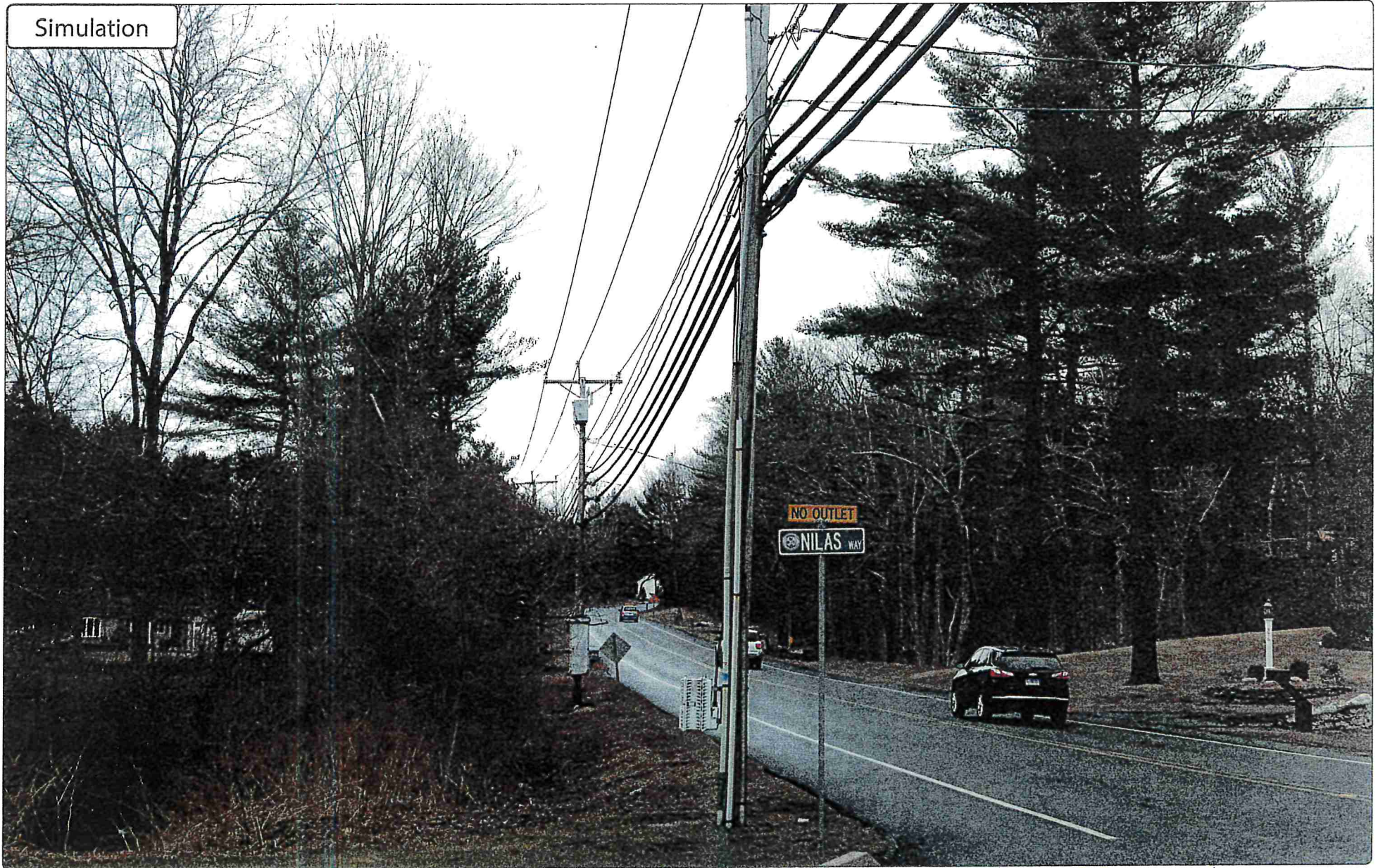


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
10	6 Nilas Way	41.8371	-72.85307	0.32 Miles	South-West	25	Year Round

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location



Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
11	10 Sharlin Dr	41.84305	-72.85727	0.37 Miles	West	108	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location



Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
12	35 Canton Rd	41.83858	-72.85665	0.37 Miles	South-West	59	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location

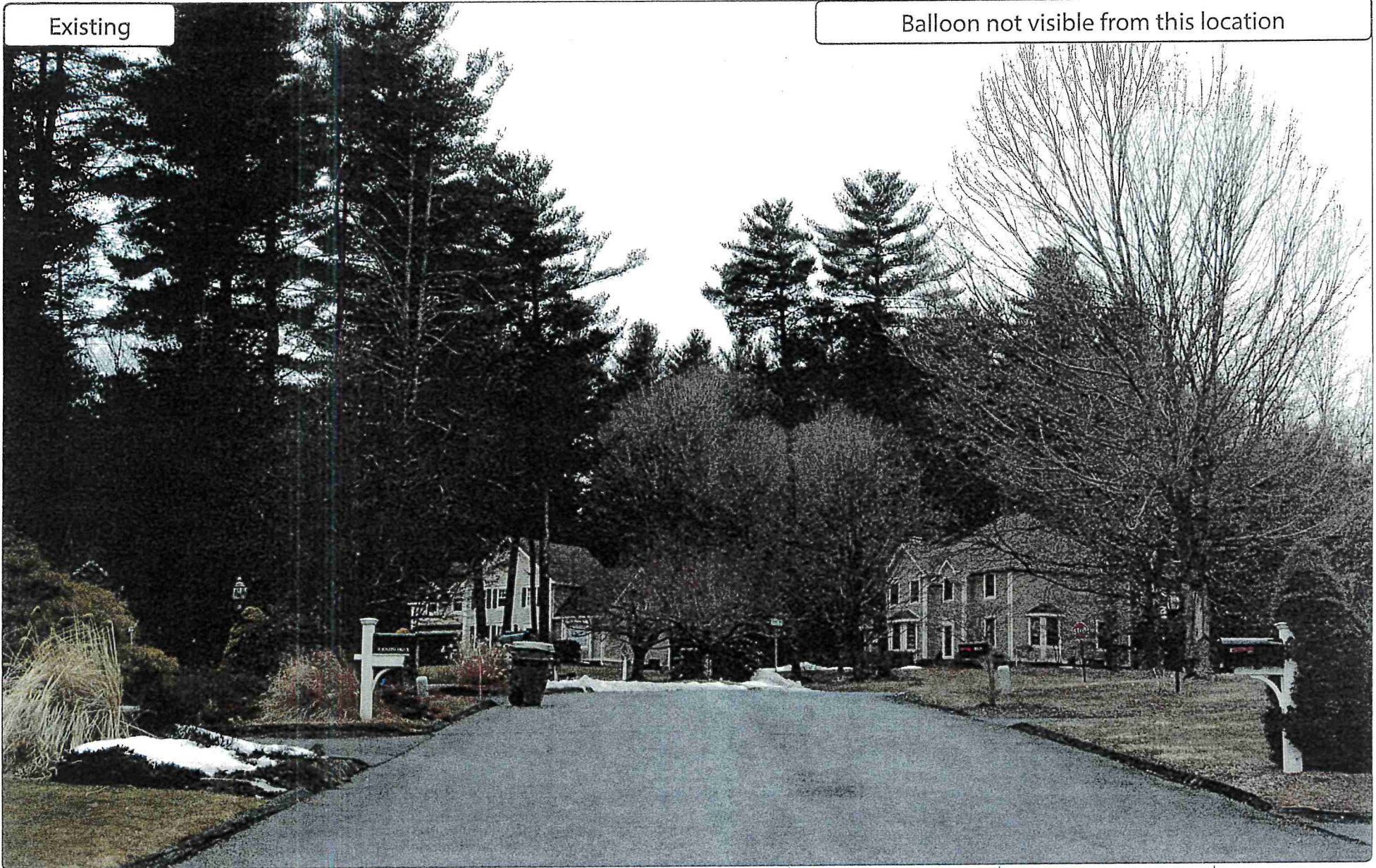


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
13	6 Joseph Dr	41.84086	-72.84254	0.41 Miles	East	275	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location

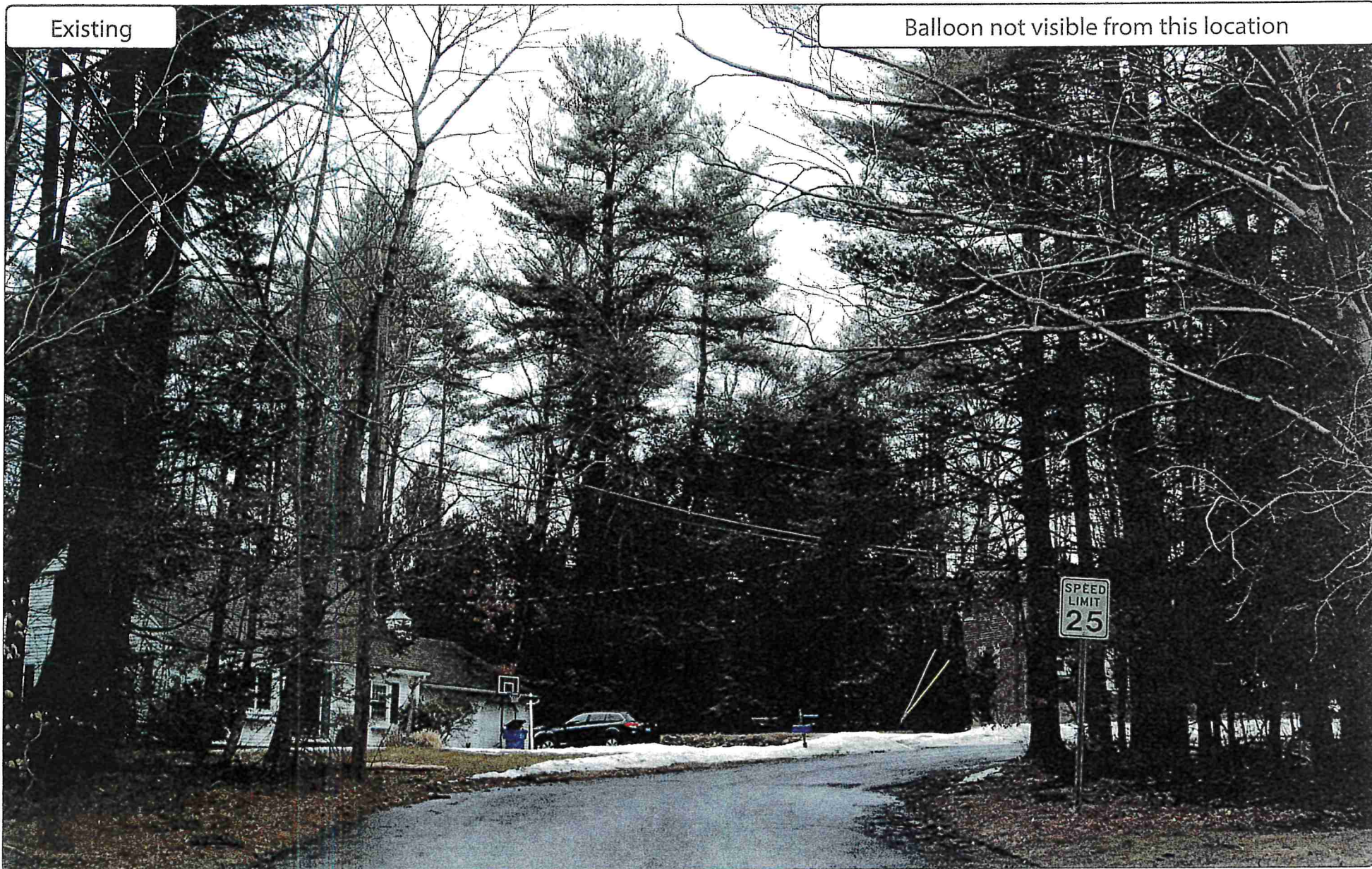


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
14	16 Old Meadow Plain Rd	41.83533	-72.85012	0.42 Miles	South	358	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location

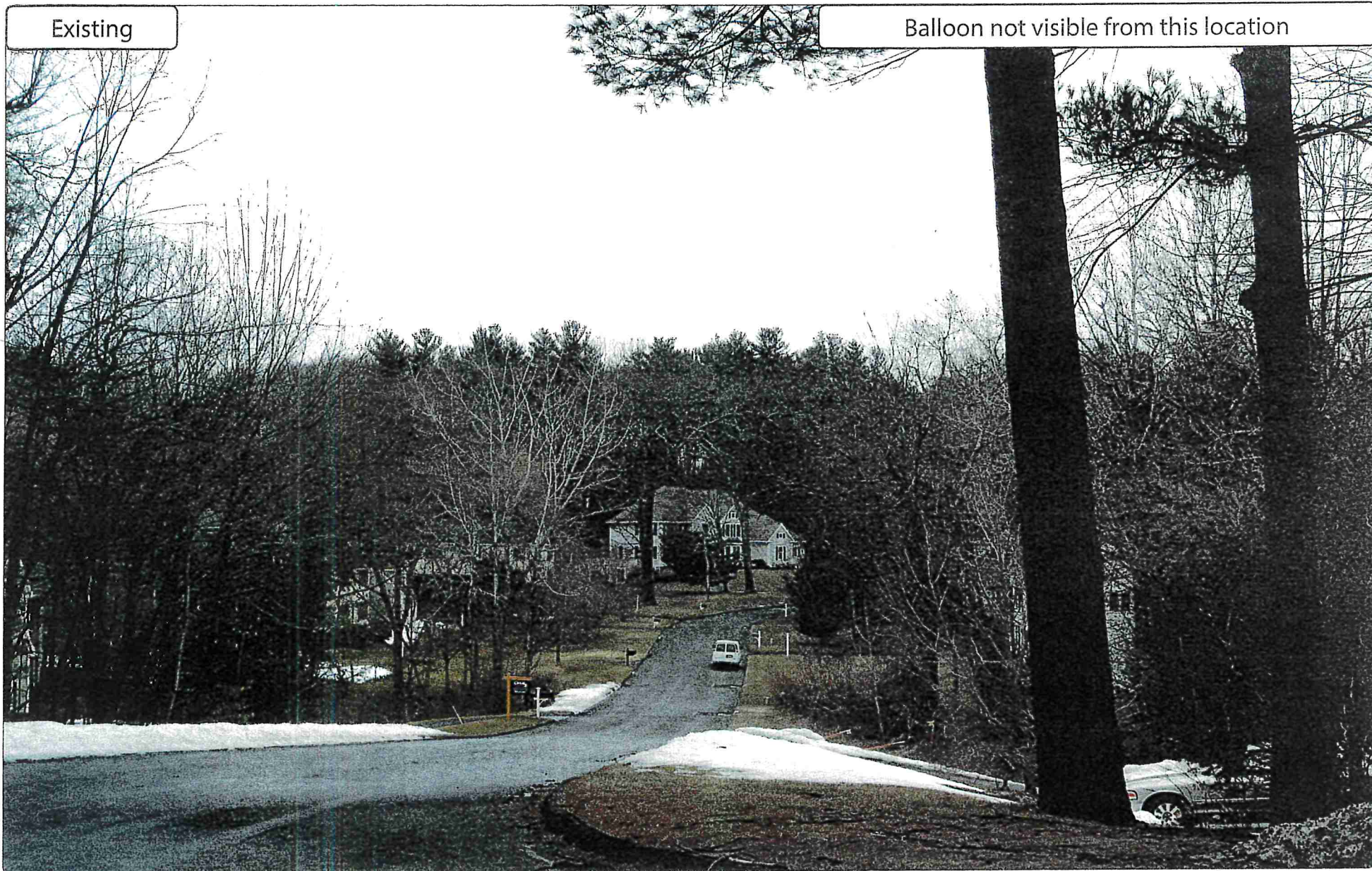


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
15	27 Overlook Terrace	41.84137	-72.83889	0.59 Miles	East	270	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location

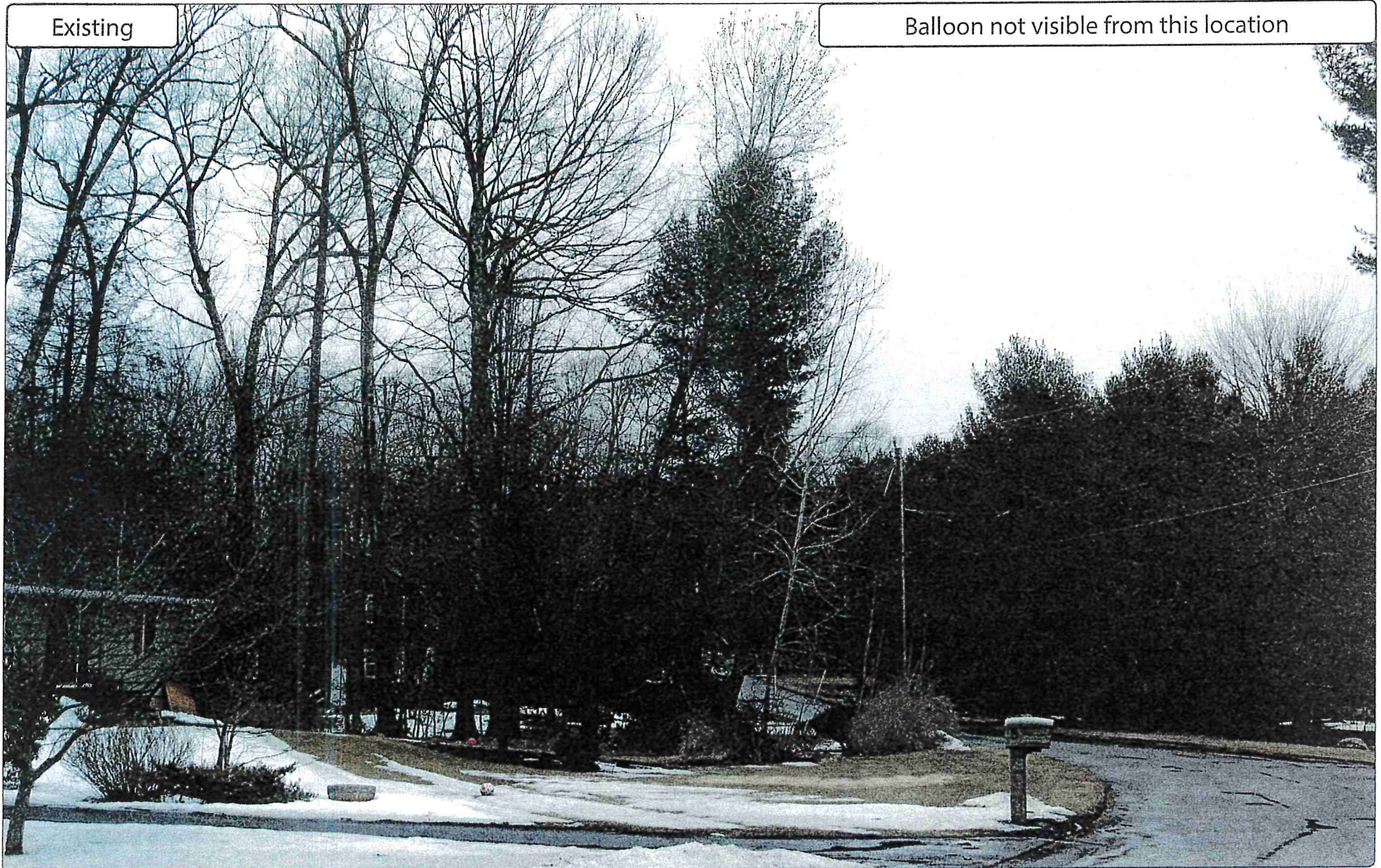


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
16	3 Lawton Dr	41.83488	-72.84238	0.61 Miles	South-East	317	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location



Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
17	3 Huckleberry Ln	41.84408	-72.86387	0.72 Miles	West	105	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location

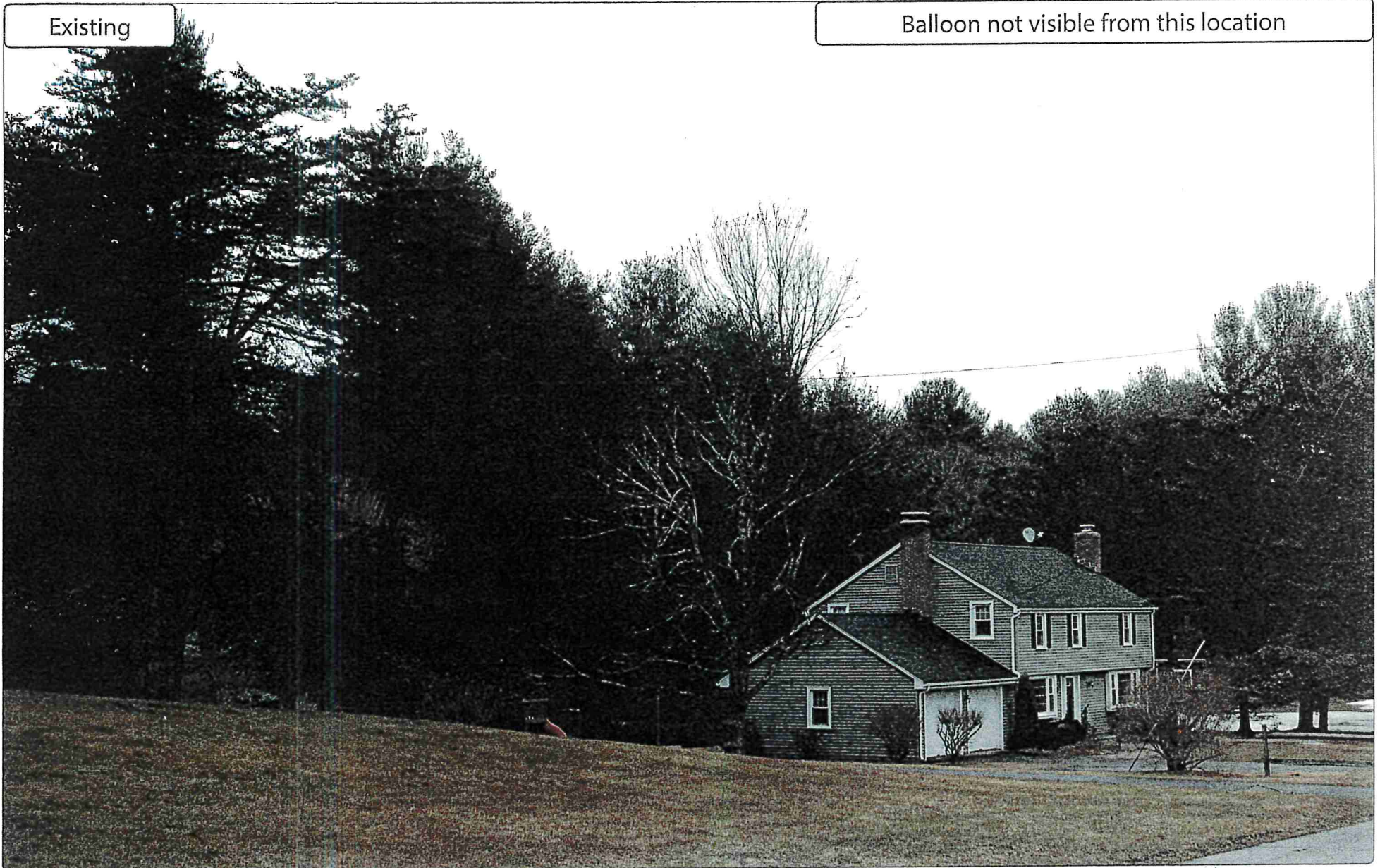


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
18	22 Arrowhead Dr	41.83889	-72.86426	0.73 Miles	West	76	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location

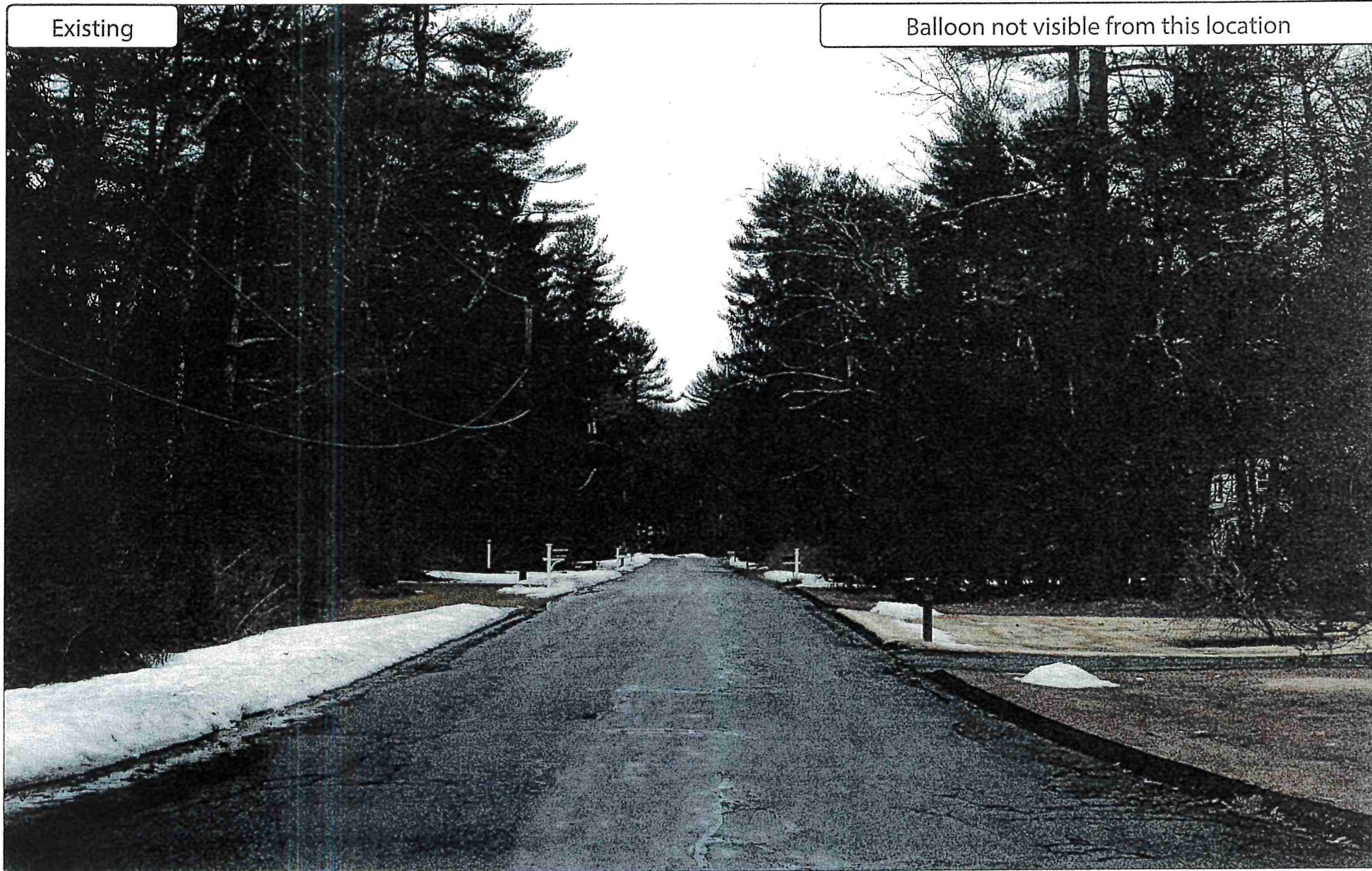


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
19	38 Pine Glen Rd	41.83781	-72.83561	0.8 Miles	East	288	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location

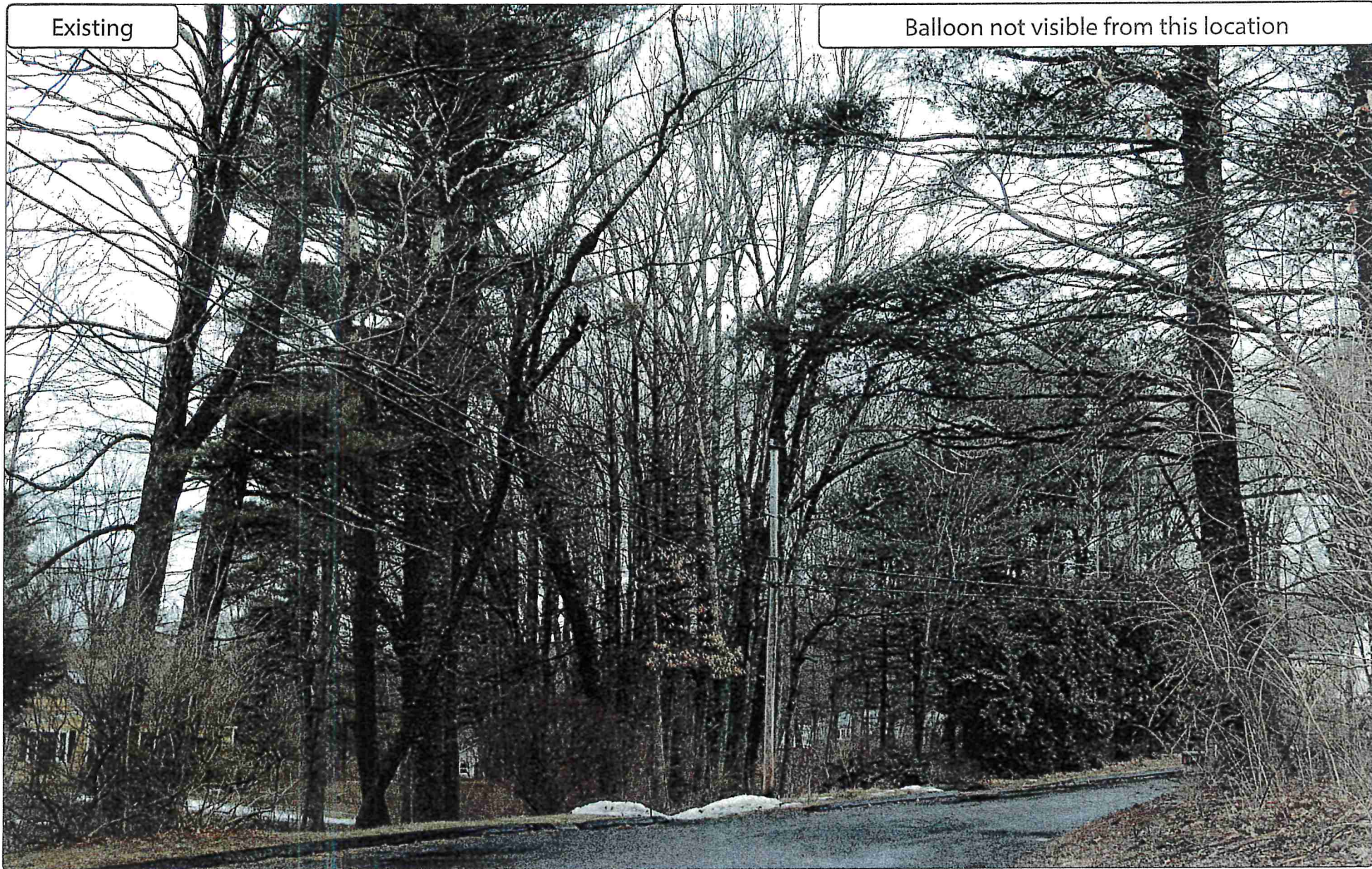


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
20	16 Ichabod Rd	41.83004	-72.85379	0.8 Miles	South	12	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location

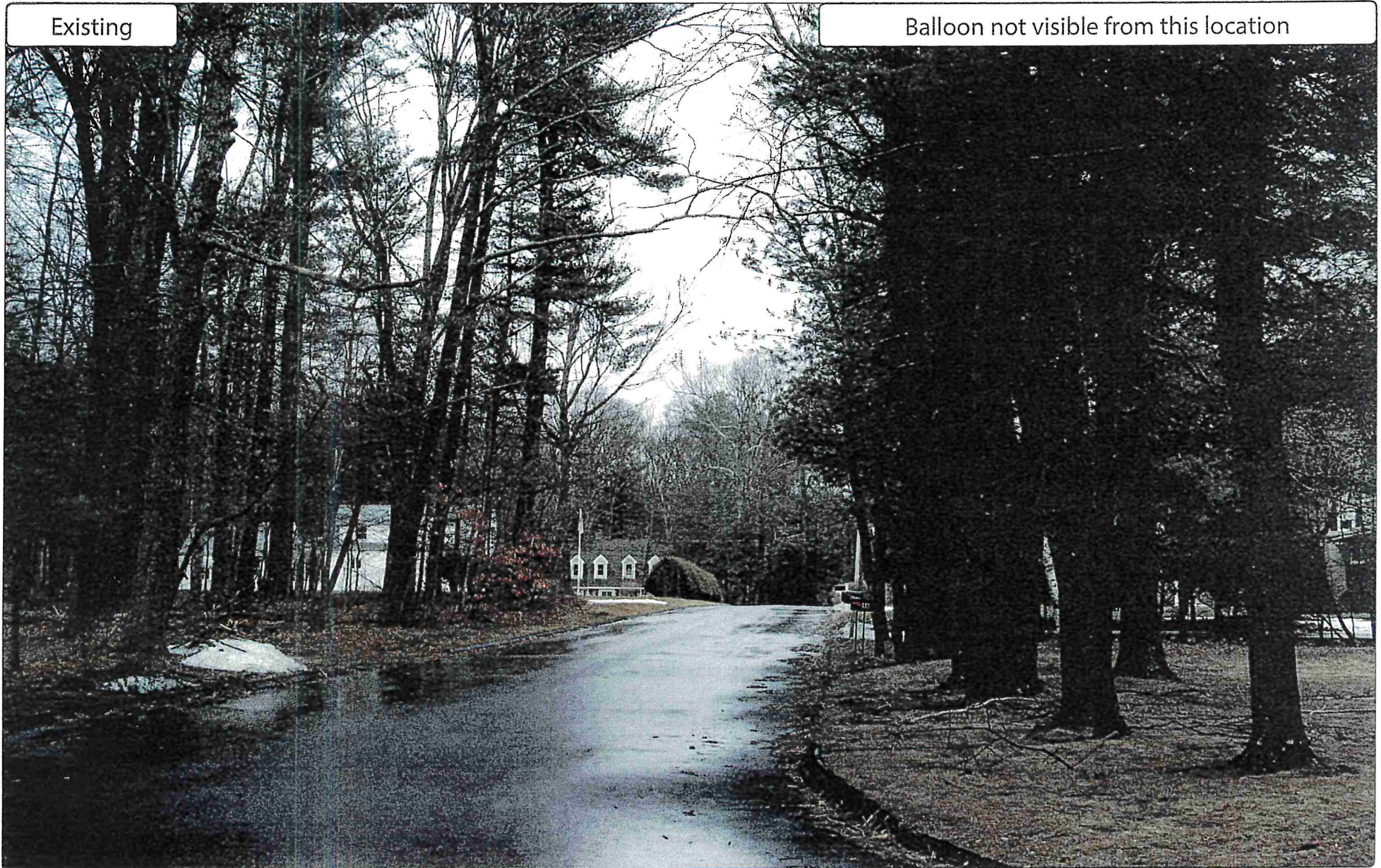


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
21	47 Ichabod Rd	41.82977	-72.84835	0.81 Miles	South	352	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location

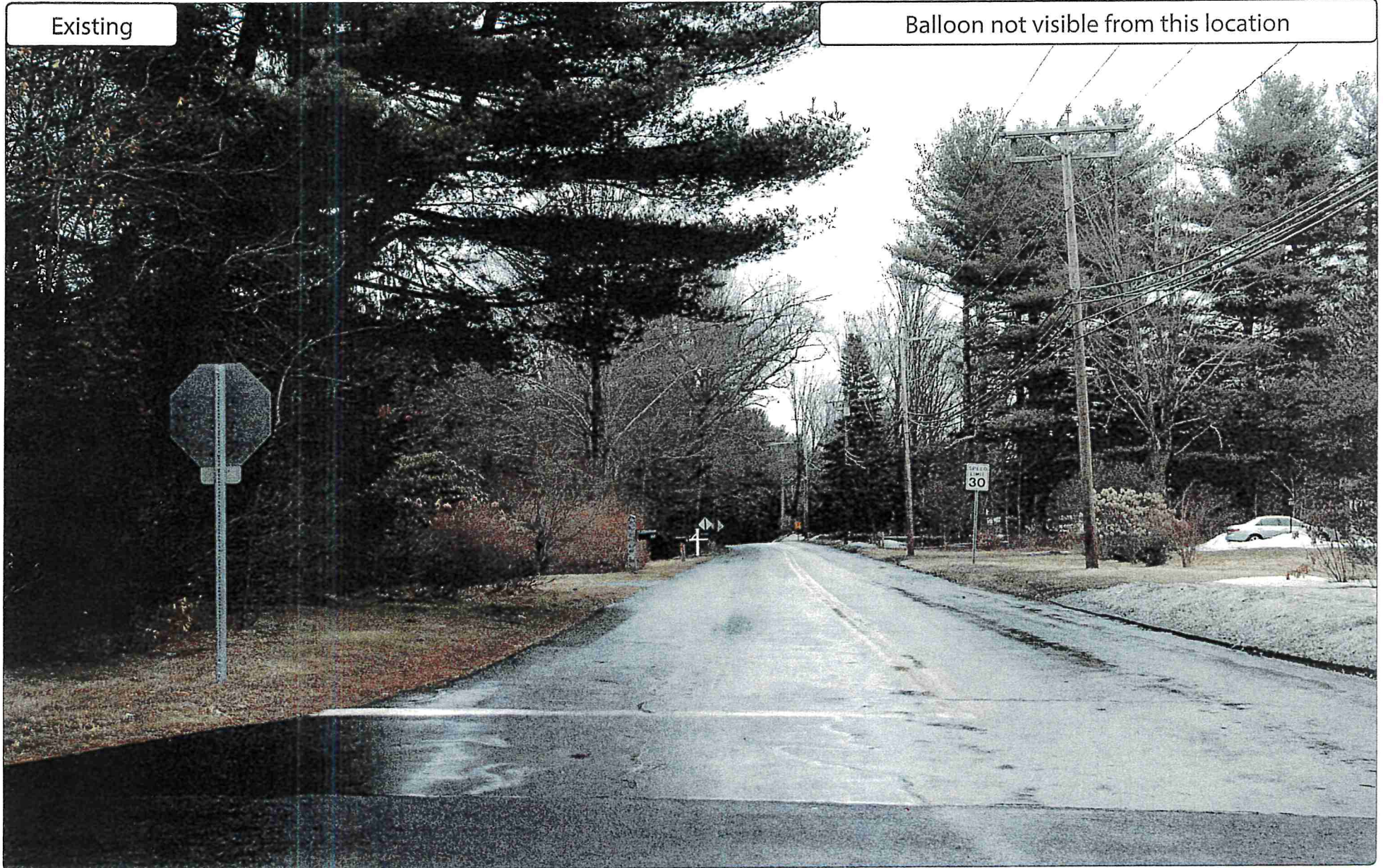


Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
22	258 W Mountain Rd	41.84105	-72.8674	0.87 Miles	West	89	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location



Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
23	20 Drumlin Rd	41.83223	-72.86276	0.9 Miles	South-West	45	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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Existing

Balloon not visible from this location



Photo #	Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
24	48 Drumlin Rd	41.83303	-72.86443	0.92 Miles	South-West	51	Not Visible

Site: CT2413S Simsbury-Bushy Hill Road

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6

SDC20 | 2.5L | 20 kW - AC INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL
POWER

Model G007098-0 (Steel)

Standby Power Rating
20 kW AC, 60 Hz




Image used for illustration purposes only




Codes and Standards


Generac products are designed to the following standards:

 UL2200, UL508, UL142, UL489

 NFPA 37, 70, 99, 110

 NEC700, 701, 702, 708

 ISO 3046, 7637, 8528, 9001

 NEMA ICS10, MG1, 250, ICS6, AB1

 **ANSI**
American National Standards Institute
ANSI C62.41

Powering Ahead

For over 50 years, Generac has provided innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial applications under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

SDC20 | 2.5L | 20 kW - AC

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL
POWER

Model G007098-0 (Steel)

STANDARD FEATURES

ENGINE SYSTEM

- Oil Drain Extension
- Air Cleaner with Service Indicator
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Exhaust Silencer with Drain
- Factory Filled Oil & Coolant

Fuel System

- Primary Fuel Filter

Cooling System

- 120V AC Coolant Heater
- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension

Electrical System

- Battery Charging Alternator
- AGM Spill Proof Battery
- Battery Cables
- Sealed/Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor
- Output Circuit Breaker

ALTERNATOR SYSTEM

- Class H Insulation Material
- Vented Rotor
- 2/3 Pitch
- Skewed Stator
- Amortisseur Winding
- Brushless Excitation
- Sealed Bearings
- Rotor Dynamically Spin Balanced
- Full Load Capacity Alternator
- Protective Thermal Shutdown

GENERATOR SET

- Single Side Service
- Internal Genset Vibration Isolators
- Separation of Circuits- High/Low Voltage
- Silencer Heat Shield
- High Heat Wrapped Exhaust Piping
- Silencer Enclosed Within Generator
- 5 Year Extended Warranty
- Extended Factory Testing
- 12 Gallon System Spill Containment
- 2.5 Gallon Fuel Fill Spill Containment

ENCLOSURE

- Serviceable Items Accessible Through Lift-Off Door
- High Performance Sound-Absorbing Material
- Gasketed Door
- Stamped Air-Intake Louvers
- Single Door Latch Lockable with Key & Padlock
- Rhino Coat™ - Textured Polyester Powder Coat
- 150 MPH Wind Rating
- 36" Snow Rating

FUEL TANK

- UL 142 Compliant
- Double Wall Construction
- Factory Pressure Tested (5 psi)
- Rupture Basin Alarm
- Fuel Level Gauge and Sender
- Check Valve in Supply Line
- Rhino Coat™ - Textured Polyester Powder Coat
- Stainless Steel Hardware
- Integrated Fork Pockets

CONTROL SYSTEM

- Digital H Control Panel - Dual 4x20 Display
- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable PLC
- RS-232/485 Communications
- All-Phase Sensing Voltage Regulator
- Full System Status
- 2-Wire Start Compatible
- Power Output (kW)
- Power Factor
- kW Hours, Total & Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents
- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage

- Frequency
- Date/Time Fault History (Event Log)
- Isochronous Governor Control
- Waterproof/Sealed Connectors
- Audible Alarms and Shutdowns
- Not in Auto (Flashing Light)
- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type)
- NFPA110 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus protocol
- Predictive Maintenance Algorithm
- Sealed Boards
- Password Parameter Adjustment Protection
- Single Point Ground Connections
- 15 Channel Data Logging
- 0.2 msec High Speed Data Logging
- Alarm Information Automatically Comes Up On the Display

Alarms

- Generator Run- Dry Contact
- Major Alarm- Dry Contact
- Minor Alarm- Dry Contact
- Low Fuel Alarm- Dry Contact
- Rupture Basin Alarm- Dry Contact
- Alarms & Warnings Time and Date Stamped
- Alarms & Warnings for Transient and Steady State Conditions
- Snap Shots of Key Operation Parameters During Alarms & Warnings
- Alarms and Warnings Spelled Out (No Alarm Codes)

MODEL OPTIONS

CONTROL SYSTEM

- 21 Light Annunciator- Shipped Loose Kit and Field Installed
- External E-Stop-Shipped Loose Kit and Field Installed

ENCLOSURE

- Aluminum Enclosure
- Extreme Cold Weather Kit - Shipped Loose Kit and Field Installed

TANKS

- External Fuel Vent- Shipped Loose Kit and Field Installed

SDC20 | 2.5L | 20 kW - AC

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL
POWER

Model G007098-0 (Steel)

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Mitsubishi
EPA Emissions Compliance	Interim Tier 4
Cylinder #	4
Type	In-Line
Displacement - L (Cu In)	2.5 (158)
Bore - mm (in)	88 (3.5)
Stroke - mm (in)	103 (4.1)
Compression Ratio	22:1
Intake Air Method	Naturally Aspirated

Engine Governing

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	± 0.25%

Lubrication System

Oil Pump Type	Trochoid Gear Pump
Oil Filter Type	Filtering Paper, Full Flow
Crankcase Capacity - L (qts)	6.5 (6.9)

Cooling System

Cooling System Type	Forced Circulation
Water Pump Type	Centrifugal Pump
Fan Type	Pusher
Fan Speed (rpm)	2100
Fan Diameter - mm (in)	431.8 (17)
Coolant Heater Wattage	1000
Coolant Heater Voltage	120

Fuel System

Fuel Type	Ultra Low Sulfur Diesel #2
Fuel Specifications	ASTM
Fuel Filtering (microns)	6
Fuel Inject Pump Make	Bosch
Injector Type	Engine Driven Gear
Engine Type	Diesel
Fuel Supply Line - mm (in.)	6.6 (0.26)

Engine Electrical System

System Voltage	12 VDC
Battery Charger Alternator	12V-50A
Battery Size	650 CCA
Battery Group	35
Battery Voltage	12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	Mecc Alte ECP 28-2L/4
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<5%
Telephone Interference Factor (TIF)	<45
Standard Excitation	Brushless

Bearings	Dual Sealed
Coupling	Belt, Pulley
Load Capacity - Standby	100%
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	±0.5%

RATING DEFINITIONS

Standby - Applicable for a varying emergency load for the duration of a utility power outage with no overload capability.

SDC20 | 2.5L | 20 kW - AC

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency



Model G007098-0 (Steel)

OPERATING DATA

POWER RATINGS

Single-Phase 120/240 VAC @1.0pf	20 kW	Amps: 83
Circuit Breaker Size	100A	

FUEL CONSUMPTION RATES*

Diesel - gph (lph)	
Percent Load	Standby
25%	0.74 (2.80)
50%	0.99 (3.75)
75%	1.41 (5.30)
100%	1.90 (7.19)

* Fuel supply installation must accommodate fuel consumption rates at 100% load.

COOLING

Coolant Flow per Minute	gpm (lpm)	Standby 11.9 (45)
Coolant System Capacity	gal (L)	3.5 (13.2)
Heat Rejection to Coolant	BTU/hr	238,200
Inlet Air	cfm (m³/min)	2365 (67)
Max. Operating Ambient Temperature (Before Derate)	°F (°C)	77° (25°)
Maximum Radiator Backpressure	in H ₂ O	0.50

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power cfm (m³/min)	88 (2.49)

ENGINE

		Standby
Rated Engine Speed	rpm	1800
Horsepower at Rated kW**	hp	33.5
Piston Speed	ft/min	1220.47
BMEP	psi	96.5

EXHAUST

		Standby
Exhaust Flow (Rated Output)	cfm (m³/min)	193 (328)
Max. Backpressure (Post Silencer)	inHg (kPa)	1.38 (4.67)
Exhaust Temp (Rated Output - Post Silencer)	°F (°C)	928 (497.7)

** Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes.

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

SDC20 | 2.5L | 20 kW - AC

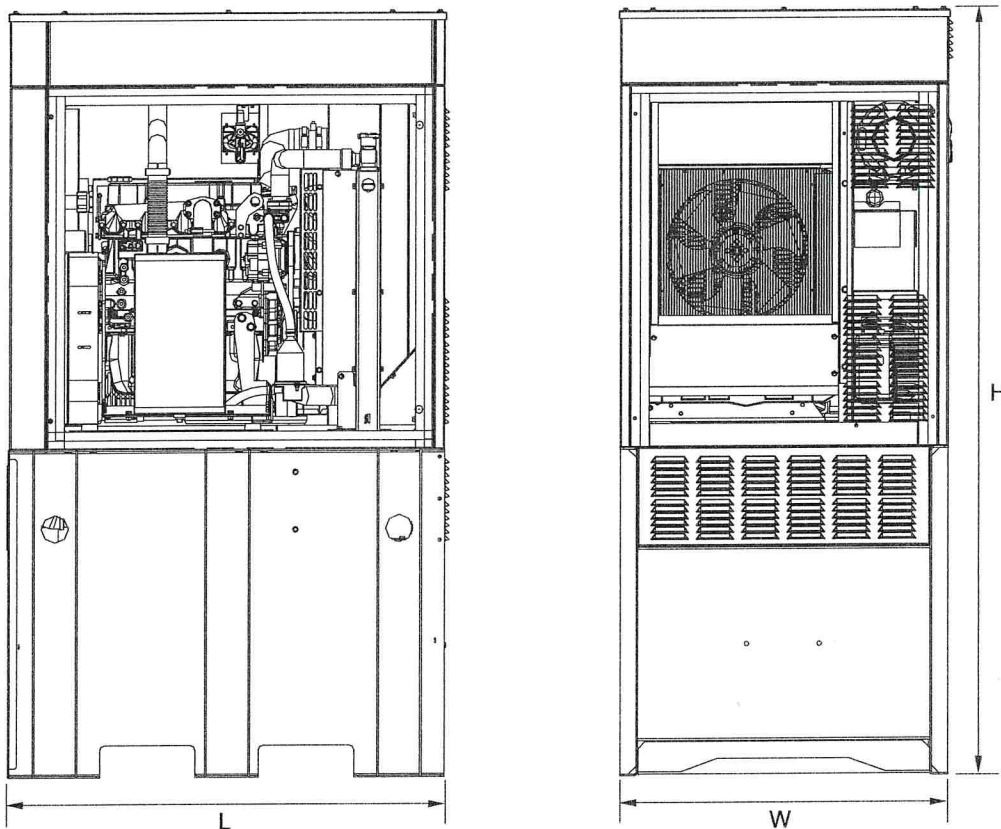
INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

DIMENSIONS AND WEIGHTS*

GENERAC | INDUSTRIAL
POWER

Model G007098-0 (Steel)



Level 2 Sound Attenuation Enclosure

Run Time Hours	48
Usable Capacity Gal (L)	92 (348.2)
L x W x H in (mm)	48 x 36 x 90 (1219.2 x 914.4 x 2286)
Weight lbs (kg)	2400 (1089)
Sound Level	71 dBA

* All measurements are approximate and for estimation purposes only.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

SDC20 | 2.5L | 20 kW - AC

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC® | **INDUSTRIAL**
POWER

Model G007098-0 (Steel)

7

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. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.

Your Specifications

NAD83 Coordinates

Latitude	41-50-29.0 north
Longitude	072-51-01.6 west

Measurements (Meters)

Overall Structure Height (AGL)	38.7
Support Structure Height (AGL)	35.7
Site Elevation (AMSL)	110.9

Structure Type

MTOWER - Monopole

Tower Construction Notifications

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

CLOSE WINDOW

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. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.

Your Specifications

NAD83 Coordinates

Latitude	41-50-29.0 north
Longitude	072-51-01.6 west

Measurements (Meters)

Overall Structure Height (AGL)	36.6
Support Structure Height (AGL)	32.6
Site Elevation (AMSL)	110.9

Structure Type

MTOWER - Monopole

Tower Construction Notifications

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

CLOSE WINDOW

8



C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
603-644-2800
support@csquaredsystems.com

Calculated Radio Frequency Exposure



CT2413

345 Bushy Hill Road, Simsbury, CT 06070

April 25, 2019

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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed installation of AT&T antenna arrays on an extension of the monopole tower located at 345 Bushy Hill Road in Simsbury, CT. The coordinates of the tower are 41° 50' 28.96" N, 72° 51' 01.57" W.

AT&T is proposing the following:

- 1) Install nine (9) multi-band antennas (three per sector) to support its commercial LTE network and the FirstNet National Public Safety Broadband Network ("NPSBN").

This report considers the planned antenna configuration for AT&T¹ to derive the resulting % Maximum Permissible Exposure of its proposed installation.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm²). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

¹ As referenced to AT&T's Radio Frequency Design Sheet updated 2/8/2019.

3. RF Exposure Calculation Methods

The power density calculation results were generated using the following formula as outlined in FCC bulletin OET 65, and Connecticut Siting Council recommendations:

$$\text{Power Density} = \left(\frac{1.6^2 \times 1.64 \times \text{ERP}}{4\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

ERP = Effective Radiated Power

R = Radial Distance = $\sqrt{H^2 + V^2}$

H = Horizontal Distance from antenna

V = Vertical Distance from radiation center of antenna

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

These calculations assume that the antennas are operating at 100 percent capacity and power, and that all antenna channels are transmitting simultaneously. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not consider actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final installations.

4. Calculation Results

Table 1 below outlines the power density information for the site. The proposed AT&T antennas are directional in nature; therefore, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower. Please refer to Attachment C for the vertical pattern of the proposed AT&T antennas. The calculated results for AT&T in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm ²)	Limit	% MPE
AT&T	90	880	2	500	0.0510	0.5867	0.87%
AT&T	90	1900	1	500	0.0255	1.0000	0.25%
AT&T	90	700	1	500	0.0255	0.4667	0.55%
AT&T	90	1900	1	500	0.0255	1.0000	0.25%
AT&T	90	2300	1	500	0.0255	1.0000	0.25%
Verizon	100	1970	1	5000	0.2035	1.0000	2.03%
Verizon	100	869	1	3050	0.1241	0.5793	2.14%
Verizon	100	2145	1	7400	0.3012	1.0000	3.01%
Verizon	100	746	1	2200	0.0895	0.4973	1.80%
T-Mobile	77	1945	8	157	0.0896	1.0000	0.90%
Simsbury Fire	123.5	453.1625					1.90%
Simsbury Police	123.5	453.75					1.90%
Farm. Valley Health	123.5	453.7875					1.90%
Town Wide	123.5	453.55					1.90%
AT&T	113	722	1	1730	0.0054	0.4813	1.13%
AT&T	113	739	1	3794	0.0119	0.4927	2.42%
AT&T	113	763	1	3794	0.0119	0.5087	2.34%
AT&T	113	885	1	4066	0.0128	0.5900	2.17%
AT&T	113	1900	1	5743	0.0180	1.0000	1.80%
AT&T	113	2100	1	8614	0.0271	1.0000	2.71%
AT&T	113	2300	1	6153	0.0193	1.0000	1.93%
						Total	31.99%

Table 1: Carrier Information^{2 3 4}

² The existing CSC filing for AT&T should be removed and replaced with the updated AT&T technologies and values provided in Table 1. The power density information for carriers other than AT&T was taken directly from the CSC database dated 12/12/2018. Please note that % MPE values listed are rounded to two decimal points and the total % MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not identically match the total value reflected in the table.

³ Antenna height listed for AT&T is in reference to the Maser Construction zoning drawings dated 4/19/2019 (Rev. 1).

⁴ Antenna height listed for Simsbury Fire, Police, Farm Valley Health and Town Wide antennas has been updated from 85' to 123.5' based on Maser Construction zoning drawings dated 4/19/2019 (Rev. 1). Assuming these antennas are to be relocated as shown and that all other parameters will remain the same, the corresponding calculated % MPE values at ground level will decrease by a factor of approximately 2.1. The % MPE values listed for these operators have been adjusted accordingly in the table based on this assumption.


5. Conclusion

The above analysis concludes that RF exposure at ground level from the proposed site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using conservative calculation methods, the highest expected percent of Maximum Permissible Exposure at ground level is **31.99% of the FCC General Population/Uncontrolled limit.**

As noted previously, the calculated % MPE levels are more conservative (higher) than the actual signal levels will be from the finished modifications.

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in FCC OET Bulletin 65 Edition 97-01, ANSI/IEEE Std. C95.1 and ANSI/IEEE Std. C95.3.



Report Prepared By: Sokol Andoni
RF Engineer
C Squared Systems, LLC

April 24, 2019
Date



Reviewed/Approved By: Keith Vellante
Director of RF Services
C Squared Systems, LLC

April 25, 2019
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2005, IEEE Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2002 (R2008), IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100 kHz-300 GHz IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure⁵

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure⁶

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 2: FCC Limits for Maximum Permissible Exposure (MPE)

⁵ Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure

⁶ General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure

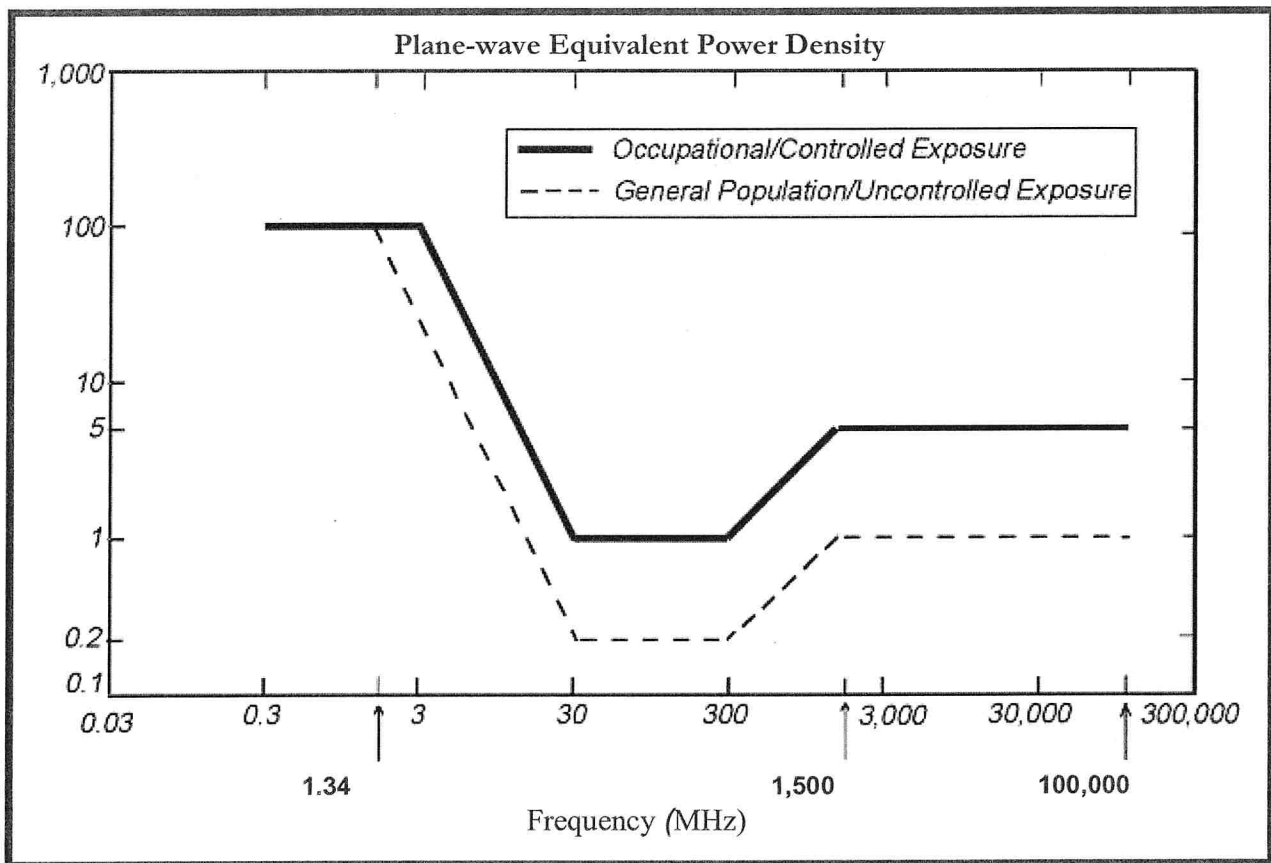
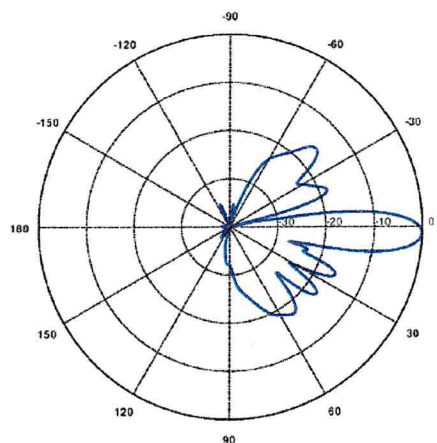


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Antenna Data Sheets and Electrical Patterns

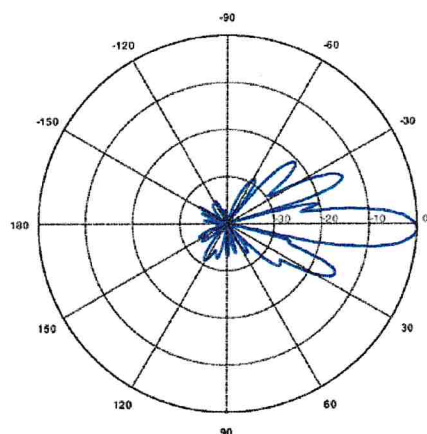
722 MHz

Manufacturer: CCI
 Model #: HPA65R-BU8A
 Frequency Band: 698-806 MHz
 Gain: 15.5 dBi
 Vertical Beamwidth: 9.7°
 Horizontal Beamwidth: 67°
 Polarization: ±45°
 Dimensions (L x W x D): 96.0" x 11.7" x 7.6"



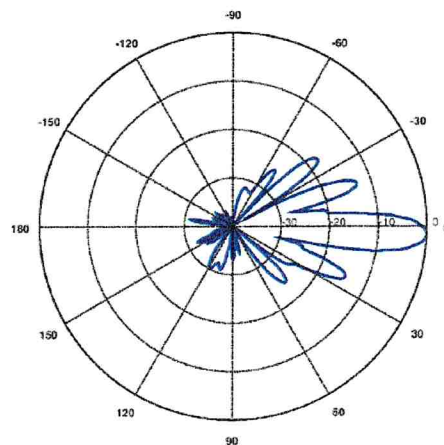
739/763 MHz

Manufacturer: KMW
 Model #: EPBQ-654L8H8-L2
 Frequency Band: 698-806 MHz
 Gain: 15.9 dBi
 Vertical Beamwidth: 9.3°
 Horizontal Beamwidth: 67°
 Polarization: ±45°
 Dimensions (L x W x D): 96.0" x 21.0" x 6.3"



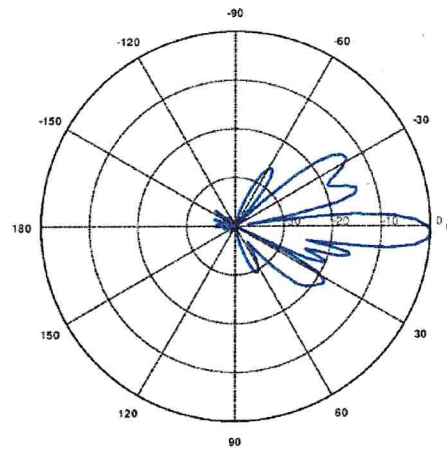
885 MHz

Manufacturer: KMW
 Model #: EPBQ-654L8H8-L2
 Frequency Band: 806-894 MHz
 Gain: 16.2 dBi
 Vertical Beamwidth: 8.7°
 Horizontal Beamwidth: 66°
 Polarization: ±45°
 Dimensions (L x W x D): 96.0" x 21.0" x 6.3"



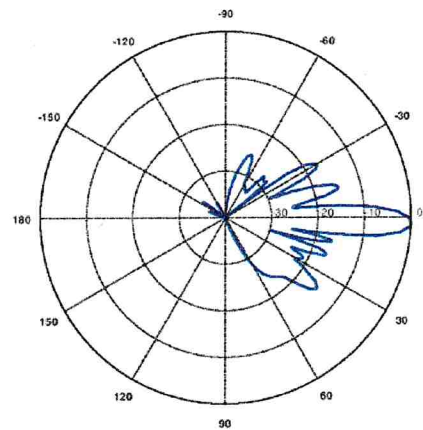
1900 MHz

Manufacturer: KMW
 Model #: EPBQ-654L8H8-L2
 Frequency Band: 1910-2180 MHz
 Gain: 17.7 dBi
 Vertical Beamwidth: 7.4°
 Horizontal Beamwidth: 60°
 Polarization: ±45°
 Dimensions (L x W x D): 96.0" x 21.0" x 6.3"



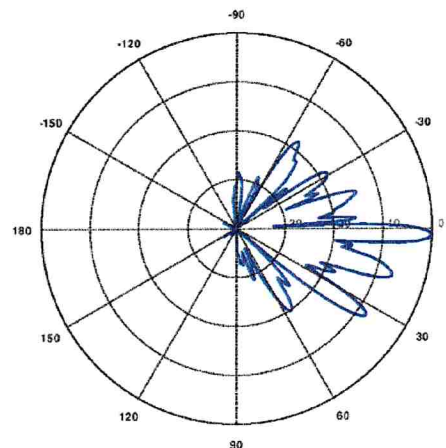
2100 MHz

Manufacturer: KMW
 Model #: EPBQ-654L8H8-L2
 Frequency Band: 1910-2180 MHz
 Gain: 17.7 dBi
 Vertical Beamwidth: 7.4°
 Horizontal Beamwidth: 60°
 Polarization: ±45°
 Dimensions (L x W x D): 96.0" x 21.0" x 6.3"

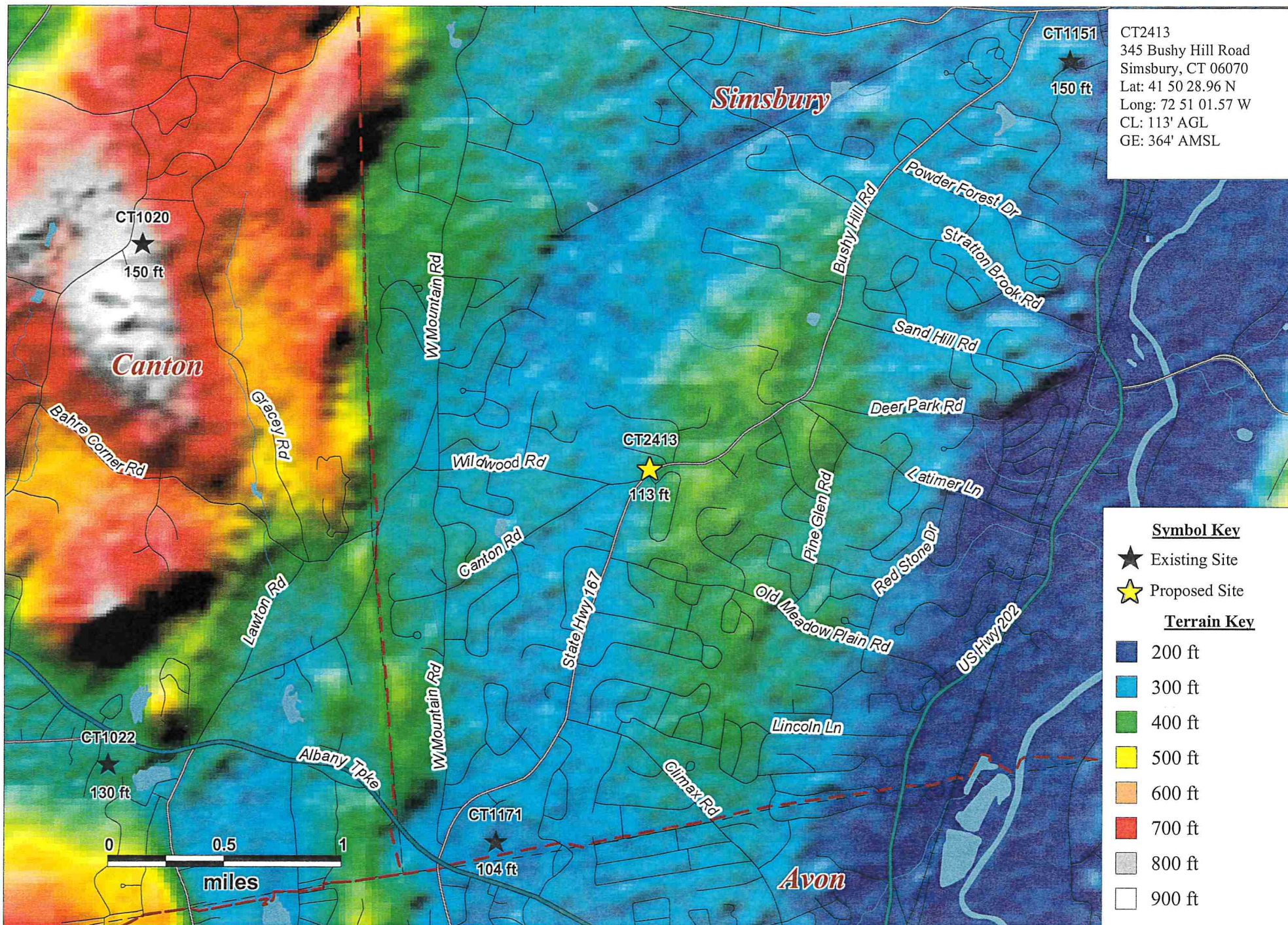


2300 MHz

Manufacturer: CCI
 Model #: HPA65R-BU8A
 Frequency Band: 2300-2400 MHz
 Gain: 18.0 dBi
 Vertical Beamwidth: 4.0°
 Horizontal Beamwidth: 60°
 Polarization: ±45°
 Dimensions (L x W x D): 96.0" x 11.7" x 7.6"



9



3D Terrain

Simsbury, CT

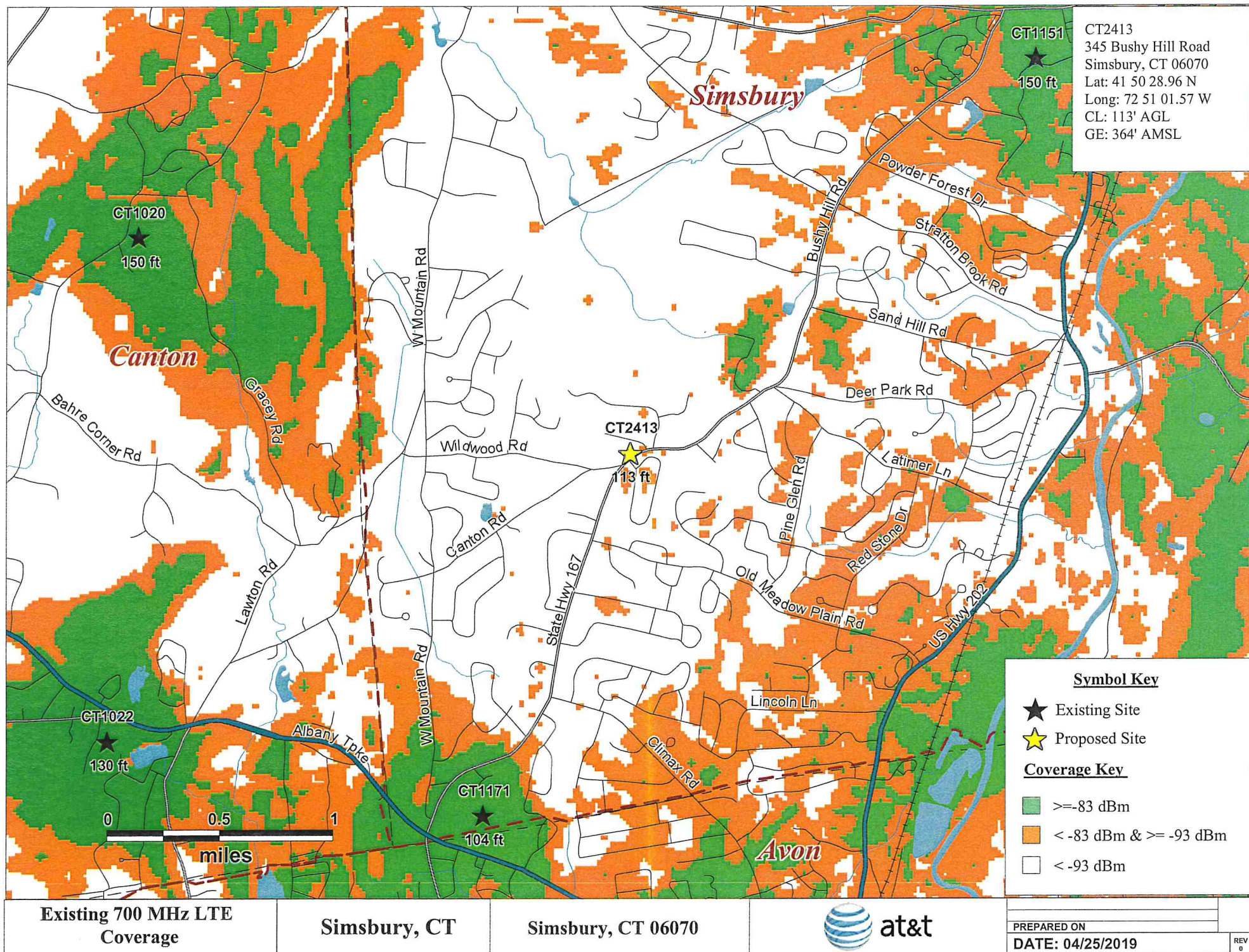
Simsbury, CT 06070

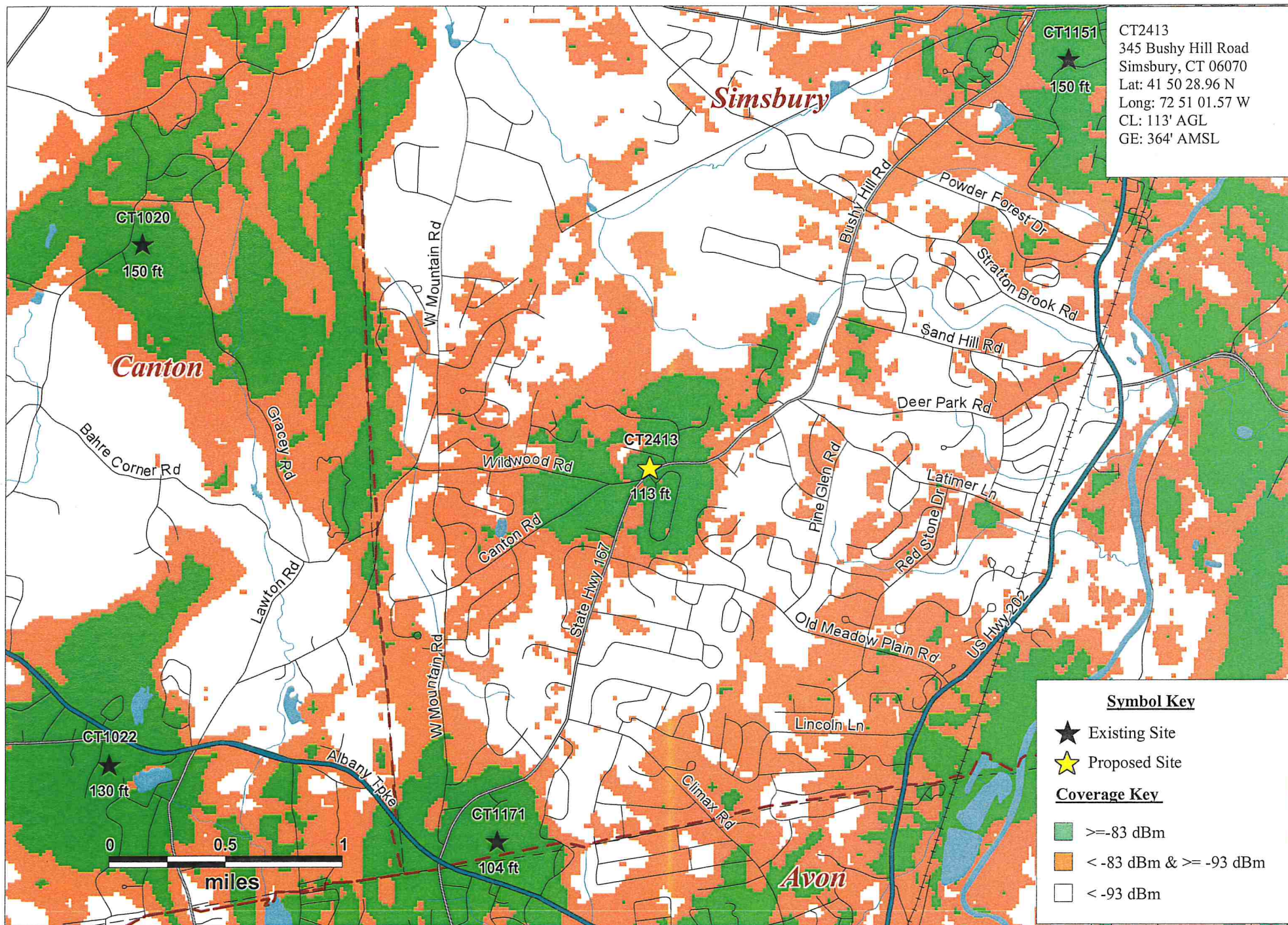


PREPARED ON

DATE: 04/25/2019

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Existing and Proposed
700 MHz LTE Coverage

Simsbury, CT

Simsbury, CT 06070



PREPARED ON

DATE: 04/25/2019

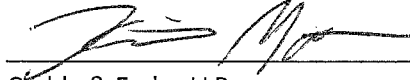
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CERTIFICATION OF SERVICE

I hereby certify that on the 21st day of June 2019, a copy of the foregoing notice of intended filing of a Petition with the Connecticut Siting Council for a declaratory ruling was sent by certified mail, return receipt requested, to the list below:

Dated: 6/21/19


Cuddy & Feder LLP
45 Hamilton Avenue, 14th Floor
White Plains, New York 10601
Attorneys for:
New Cingular Wireless PCS, LLC (AT&T)

State

THE HONORABLE WILLIAM TONG ATTORNEY GENERAL OFFICE OF THE ATTORNEY GENERAL 55 ELM STREET HARTFORD, CT 06106	DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT DAVID LEHMAN, COMMISSIONER 450 COLUMBUS BOULEVARD, SUITE 5 HARTFORD, CT 06103
DEPARTMENT OF PUBLIC HEALTH DR. RENEE D. COLEMAN, COMMISSIONER 410 CAPITOL AVENUE P.O. BOX 340308 HARTFORD, CT 06134	DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION PUBLIC UTILITIES REGULATORY AUTHORITY CHAIR KATIE DYKES TEN FRANKLIN SQUARE NEW BRITAIN, CT 06051
COUNCIL ON ENVIRONMENTAL QUALITY PETER B. HEARN, EXECUTIVE DIRECTOR 79 ELM STREET HARTFORD, CT 06106	DEPARTMENT OF TRANSPORTATION JOSEPH GIULIETTI, COMMISSIONER 2800 BERLIN TURNPIKE NEWINGTON, CT 06111
DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION KATIE DYKES, COMMISSIONER 79 ELM STREET HARTFORD, CT 06106	DEPARTMENT OF AGRICULTURE BRYAN P. HURLBURT, COMMISSIONER 450 COLUMBUS BOULEVARD, SUITE 701 HARTFORD, CT 06103
OFFICE OF POLICY AND MANAGEMENT MELISSA McCRAW, SECRETARY 450 CAPITOL AVENUE HARTFORD, CT 06106	STATE SENATOR – 8 th DISTRICT KEVIN WITKOS LEGISLATIVE OFFICE BUILDING 300 CAPITAL AVENUE ROOM 3400 HARTFORD, CT 06106

DEPARTMENT OF EMERGENCY SERVICES & PUBLIC PROTECTION JAMES C. ROVELLA, DEPUTY COMMISSIONER 1111 COUNTRY CLUB ROAD, MIDDLETOWN, CT 06457	CAPITOL REGION COUNCIL OF GOVERNMENTS 241 MAIN STREET HARTFORD, CT 06106-5310
DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT-OFFICES OF CULTURE AND TOURISM MARY DUNNE, STATE HISTORIC PRESERVATION OFFICER, HISTORIAN/ENVIRONMENTAL REVIEWER, 450 COLUMBUS BLVD., 5 TH FLOOR, HARTFORD, CT 06103	STATE HOUSE REPRESENTATIVE- DISTRICT 16 th JOHN HAMPTON LEGISLATIVE OFFICE BUILDING 300 CAPITAL AVENUE ROOM 4044 HARTFORD, CT 06106

Federal

FEDERAL COMMUNICATIONS COMMISSION 445 12 TH STREET SW WASHINGTON, DC 20554	FEDERAL AVIATION ADMINISTRATION 800 INDEPENDENCE AVENUE, SW WASHINGTON, DC 20591
U.S. SENATOR CHRISTOPHER MURPHY COLT GATEWAY 120 HUYSHOPE AVENUE SUITE 401 HARTFORD, CT 06106	U.S. SENATOR RICHARD BLUMENTHAL 90 STATE HOUSE SQUARE, 10TH FLOOR HARTFORD, CT 06103
U.S. CONGRESSWOMAN – 5 th DISTRICT JOHANA HAYES 108 BANK STREET WATERBURY, CT 06702	

Town of Simsbury

ERIC WELLMAN, FIRST SELECTMAN TOWN OF SIMSBURY TOWN HALL 933 HOPMEADOW STREET SIMSBURY, CT 06070	PLANNING AND LAND USE DEPARTMENT MICHAEL GLIDDEN, DIR. OF PLANNING AND COMMUNITY DEVELOPMENT TOWN OF SIMSBURY TOWN HALL 933 HOPMEADOW STREET SIMSBURY, CT 06070
CONSERVATION COMMISSION/INLAND WETLANDS & WATERCOURSES AGENCY MARGERY C B WINTERS, CHAIR TOWN OF SIMSBURY TOWN HALL 933 HOPMEADOW STREET SIMSBURY, CT 06070	DAVID ROGERS RYAN, CHAIRMAN ZONING COMMISSION TOWN OF SIMSBURY TOWN HALL 933 HOPEMEADOW STREET SIMSBURY, CT 06070

NOTICE

Notice is hereby given, pursuant to Section 16-50j-40(a) of the Regulations of Connecticut State Agencies of a Petition being filed with the Connecticut Siting Council ("Siting Council") on or after June 24, 2019 by New Cingular Wireless PCS, LLC ("AT&T"). AT&T seeks a declaratory ruling that modification of an existing wireless facility does not have significant adverse environmental effects that might otherwise require a certificate of environmental compatibility and public need ("Certificate").

The existing wireless facility is located on property owned by the Simsbury Fire Department, located at 345 Bushy Hill Road in the Town of Simsbury and identified on the Town of Simsbury Assessor's map as Map/Block/Lot C16/301/012A (the "Property"). The Property is an approximately 1.74-acre parcel improved with a one-story fire station. The existing wireless facility consists of an approximately 107-foot tall monopole structure with associated facilities for T-Mobile and Verizon Wireless, as well as local emergency response services. AT&T is proposing to extend the height of the tower by ten (10) feet, to a total height of 117-feet, and to add nine (9) antennas on a V-boom mount to the monopole extension at a centerline height of approximately 113-feet above ground level ("AGL"). The existing 13-foot tall whip antennas used for local emergency response services would be relocated to the top of the monopole extension, with the top of the whip antennas located at approximately 130 feet AGL. The modification is proposed to allow wireless services along 345 Bushy Hill Road and the surrounding residential areas in Simsbury.

The Petition will provide additional details of the proposal and explain why AT&T submits that this modification presents no significant adverse environmental effects. The location, height and other features of the proposal are subject to review and potential change under the provisions of Connecticut General Statutes Sections 16-50g et. seq.

Copies of the Petition will be available for review during normal business hours on or after June 24, 2019 at the following:

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Town Clerk of Simsbury
Ericka Butler
933 Hopmeadow Street
Simsbury, CT 06070

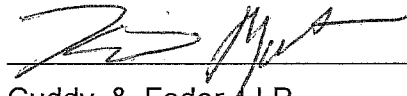
or the offices of the undersigned. All inquiries should be addressed to the Connecticut Siting Council or to the undersigned.

Kristen Motel, Esq.
Cuddy & Feder LLP
445 Hamilton Ave, 14th Floor
White Plains, New York 10601
(914) 761-1300
Attorneys for the Petitioner

CERTIFICATION OF SERVICE

I hereby certify that on the 21st day of June 2019, a copy of the following letter and notice of the intended filing of a Petition with the Connecticut Siting Council for a declaratory ruling was sent by certified mail, return receipt requested, to the attached list of abutting property owners:

Dated: 6/21/19



Cuddy & Feder LLP

45 Hamilton Avenue, 14th Floor

White Plains, New York 10601

Attorneys for:

New Cingular Wireless PCS, LLC (AT&T)

SIMSBURY FIRE DISTRICT 869 HOPMEADOW STREET SIMSBURY, CT 06070	MACDONALD GEFF 4 CANTON ROAD WEST SIMSBURY, CT 06092
TASHJI GEORGETTE AND IRENE 6 CANTON ROAD WEST SIMSBURY, CT 06092	ST JEAN CARL AND KARIANN 11 OAKHURST ROAD SIMSBURY, CT 06070
BUTLER STEVEN J AND ELIZABETH A 2 HILDURCREST DRIVE SIMSBURY, CT 06070	STEELE CHRISTOPHER L AND LINDSAY J 5 OAKHURST ROAD SIMSBURY, CT 06070
MILLER ELIZABETH AND KODZ JOSEPH 9 OAKHURST ROAD SIMSBURY, CT 06070	LOVELAND RICHARD E AND KIM E 1 HILDURCREST DRIVE SIMSBURY, CT 06070
FILIPPOPOULOS KONSTANTINOS TRUSTEE 17 OAKHURST ROAD SIMSBURY, CT 06070	KEATING ANDREW M 2 CANTON ROAD WEST SIMSBURY, CT 06092
SIMSBURY FIRE DISTRICT 869 HOPMEADOW STREET SIMSBURY, CT 06070	BOYKO LORI AND STEPHEN JR 15 OAKHURST ROAD SIMSBURY, CT 06070

DELLEY SHAWN R AND MARGARET M 348 BUSHYHILL ROAD SIMSBURY, CT 06070	LINDQUIST CHRISTOPHER 8 CANTON ROAD WEST SIMSBURY, CT 06092
ADAMS ROGER C JR AND NANCY S PO BOX 189 WEST SIMSBURY, CT 06092	NEUREITHER LAWRENCE J & RANDALL MARY E 18 OAKHURST ROAD SIMSBURY, CT 06070

June 21, 2019

VIA CERTIFIED MAIL/
RETURN RECEIPT REQUESTED

Re: New Cingular Wireless PCS, LLC ("AT&T")
Modifications to an Existing Wireless Facility
345 Bushy Hill Road, Simsbury, Connecticut

Dear Sir or Madam:

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC ("AT&T") with respect to the above referenced matter and our client's intent to file a petition for a declaratory ruling with the State of Connecticut Siting Council for approval of a modification to the existing wireless communications tower facility (the "Facility") owned by Simsbury Fire District on the above-captioned property.

State law requires that record owners of property abutting a parcel on which a facility is proposed be sent notice of an applicant's intent to file a petition with the Siting Council.

Included with this letter please find a Notice of this submission and details of the proposal. Of note, the location, height and other features of the Facility are subject to review and potential change by the Connecticut Siting Council under the provisions of Connecticut General Statutes §16-50g et seq.

If you have any questions concerning this petition, please contact the Connecticut Siting Council or the undersigned after June 24, 2019, the date that the petition is expected to be on file.

Very truly yours,

Kristen Motel
Enclosure

NOTICE

Notice is hereby given, pursuant to Section 16-50j-40(a) of the Regulations of Connecticut State Agencies of a Petition being filed with the Connecticut Siting Council ("Siting Council") on or after June 24, 2019 by New Cingular Wireless PCS, LLC ("AT&T"). AT&T seeks a declaratory ruling that modification of an existing wireless facility does not have significant adverse environmental effects that might otherwise require a certificate of environmental compatibility and public need ("Certificate").

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The Petition will provide additional details of the proposal and explain why AT&T submits that this modification presents no significant adverse environmental effects. The location, height and other features of the proposal are subject to review and potential change under the provisions of Connecticut General Statutes Sections 16-50g et. seq.

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Ericka Butler
933 Hopmeadow Street
Simsbury, CT 06070

or the offices of the undersigned. All inquiries should be addressed to the Connecticut Siting Council or to the undersigned.

Kristen Motel, Esq.
Cuddy & Feder LLP
445 Hamilton Ave, 14th Floor
White Plains, New York 10601
(914) 761-1300
Attorneys for the Petitioner

TOWN OF SIMSBURY, CONNECTICUT

345 BUSHY HILL ROAD

Parcel ID	Site Address	Owner Name	Mailing Address	Mailing City	Mailing State	Mailing Zip
E16 301 013A	349 BUSHY HILL ROAD	SIMSBURY FIRE DISTRICT	869 HOPMEADOW STREET	SIMSBURY	CT	06070-0000
C16 301 003	4 CANTON ROAD	MACDONALD GEFF	4 CANTON ROAD	WEST SIMSBURY	CT	06092-0000
C16 301 002	6 CANTON ROAD	TASHJI GEORGETTE AND IRENE	6 CANTON ROAD	WEST SIMSBURY	CT	06092-0000
C16 301 013	11 OAKHURST ROAD	ST JEAN CARL AND KARIANN	11 OAKHURST ROAD	SIMSBURY	CT	06070-0000
C16 404 001	2 HILDURCREST DRIVE	BUTLER STEVEN J AND ELIZABETH A	2 HILDURCREST DRIVE	SIMSBURY	CT	06070-0000
C16 301 010	5 OAKHURST ROAD	STEELE CHRISTOPHER L AND LINDSAY J	5 OAKHURST ROAD	SIMSBURY	CT	06070-0000
C16 301 008	9 OAKHURST ROAD	MILLER ELIZABETH AND KODZ JOSEPH	9 OAKHURST ROAD	SIMSBURY	CT	06070-0000
C16 404 002	1 HILDURCREST DRIVE	LOVELAND RICHARD E AND KIM E	1 HILDURCREST DRIVE	SIMSBURY	CT	06070-0000
C16 301 011A	17 OAKHURST ROAD	FILIPPOPOULOS KONSTANTINOS TRUSTEE	17 OAKHURST ROAD	SIMSBURY	CT	06070-0000
C16 301 004	2 CANTON ROAD	KEATING ANDREW M	2 CANTON ROAD	WEST SIMSBURY	CT	06092-0000
C16 301 012A	345 BUSHY HILL ROAD	SIMSBURY FIRE DISTRICT	869 HOPMEADOW STREET	SIMSBURY	CT	06070-0000
016 301 014	15 OAKHURST ROAD	BOYKO LORI AND STEPHEN JR	15 OAKHURST ROAD	SIMSBURY	CT	06070-0000
C16 404 21-23B	348 BUSHY HILL ROAD	DELLEY SHAWN R AND MARGARET M	348 BUSHYHILL ROAD	SIMSBURY	CT	06070-0000
C16 301 001	8 CANTON ROAD	LINDQUIST CHRISTOPHER	8 CANTON ROAD	WEST SIMSBURY	CT	06092-0000
C16 301-013	10 CANTON ROAD	ADAMS ROGER C JR AND NANCY S	PO BOX 189	WEST SIMSBURY	CT	06092-0000
C16 301 008	18 OAKHURST ROAD	NEUREITHER LAWRENCE J & RANDALL MARY E	18 OAKHURST ROAD	SIMSBURY	CT	06070-0000

MASER CONSULTING - CONNECTICUT
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SITE NAME:
 SIMSBURY -
 BUSHY HILL RD.
 FAF 12906926
 SITE# C124 US
 345 BUSHY HILL ROAD
 SIMSBURY, CT 06070
 HARTFORD COUNTY

RELIANCE GROUP
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 Boston, MA 02116-5009
 Tel: 617.252.1100
 Email: info@reliancegroup.com

200' RADIUS / ABUTTERS MAP AND 200' RADIUS / ABUTTERS LIST
 SCALE: 1" = 50' FOR 27X34"
 (SCALE: 1" = 100' FOR 11X17")

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