

November 21, 2016

Via Hand Delivery

Joseph P. Ganim, Mayor
City of Bridgeport
Margaret E. Morton Government Center
999 Broad Street
Bridgeport, CT 06604

Re: **Submission of Technical Information Concerning a Proposal to Construct a Wireless Telecommunications Facility at 541 Broadbridge Road, Bridgeport, Connecticut**

Dear Mayor Ganim:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”), in its proposal to construct a new wireless telecommunications facility on an approximately 1.26-acre parcel at 541 Broadbridge Road in Bridgeport, Connecticut (the “Property”). For the purposes of this filing, the proposed telecommunications facility is known as Cellco’s “Bridgeport NE Facility”. This Technical Report is submitted pursuant to Connecticut General Statutes (“Conn. Gen. Stat.”) § 16-50~~l~~(g), which establishes local input requirements for the siting of a wireless telecommunications facility under the jurisdiction of the Connecticut Siting Council (the “Council”). This statutory provision requires the submission of technical information to officials in the municipality where a proposed facility will be located and any municipality within 2,500 feet of the proposed facility location.

Correspondence and/or communications regarding the information contained in this report should be addressed to:

Robinson + Cole

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Anthony Befera
Cellco Partnership d/b/a Verizon Wireless
99 East River Drive
East Hartford, CT 06108

A copy of all such correspondence or communications should also be sent to Cellco's attorneys:

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

Cellco intends to submit an application to the Council for a Certificate of Environmental Compatibility and Public Need ("Certificate") for the construction, maintenance and operation of a wireless telecommunications facility at the Property. The Bridgeport NE Facility would interact with Cellco's existing cell sites in Bridgeport, Trumbull and Stratford.

The Bridgeport NE Facility would provide improved coverage and significant capacity relief to Cellco's network in Bridgeport, particularly along portions of Huntington Turnpike and Broadbridge Road, the surrounding commercial and residential areas and portions of Route 8 to the north of the Property. Coverage plots showing service from Cellco's existing cell sites in the area, alone and together with the proposed Bridgeport NE Facility are included in Attachment 1. These plots show areas of coverage from Cellco's existing cell sites in the area (purple shading), existing gaps in reliable wireless service, and the coverage footprint from the proposed Bridgeport NE Facility (lighter purple shading) in each of Cellco's licensed frequencies. The significant areas of overlapping service shown on these plots also helps illustrate the capacity benefits of the Bridgeport NE Facility which will off-load voice and data traffic from Cellco's North Bridgeport 2 cell site (Alpha and Beta sectors) and Trumbull II cell site (Beta and Gamma sectors) cell sites, which are currently operating beyond their respective capacity limits.

Cell Site Information

The proposed Bridgeport NE Facility would be located in the easterly portion of an approximately 1.26-acre parcel at 541 Broadbridge Road in Bridgeport. The Property is owned by Beardsley Plaza Limited Partnership and is located in Bridgeport's Office Retail ("OR") zone district. The Property is currently occupied by a retail shopping center and related parking and loading areas.

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The proposed wireless facility will consist of a 100-foot “flagpole” type tower located within a 10’ x 22’ fenced compound near the northeast corner of the retail building. Cellco will install up to six (6) panel-type antennas, at the top of the tower, (three (3) antennas at a height of 82 feet above ground level (“AGL”) and three (3) antennas at a height of 92 feet AGL). Cellco will also install nine (9) remote radio heads (“RRHs”) inside the tower. The antennas and RRHs will be surrounded by RF transparent sheathing. Equipment cabinets and a natural gas-fueled back-up generator would be located on the ground near the base of the flagpole tower. Access to the Bridgeport NE Facility would extend from Broadbridge Road over an existing paved driveway and parking area on the Property. Project plans for the Bridgeport NE Facility are included in Attachment 2.

Connecticut Siting Council Jurisdiction

Municipal jurisdiction over the siting of the proposed telecommunications facility described in this report is pre-empted by provisions of the Public Utilities Environmental Standards Act (“PUESA”), Conn. Gen. Stat. § 16-50g *et seq.* The PUESA gives exclusive jurisdiction over the location, type and modification of telecommunications towers, to the Council (Conn. Gen. Stat. § 16-50x(a); 16-50i(a)(6)). Accordingly, the telecommunications facility described in this report is exempt from the City’s land use regulations.

Upon receipt of an application, the Council will assign a docket number and, following a completeness review, set a hearing date. At that time, the City may choose to become an intervenor or party in the proceeding. Other procedures followed by the Council include serving the applicant and other participants with interrogatories, holding a pre-hearing conference, and conducting a public hearing. The public hearing would be held at a location in the City. Following the public hearing, the Council will issue findings of fact, an opinion and a decision and order. Prior to construction, the Council will also require the Applicant to submit a development and management plan (“D&M Plan”) which is, in essence, a final site development plan showing the details of the facility incorporating any conditions imposed by the Council. These procedures are also outside the scope of the City’s jurisdiction and are governed by the Connecticut General Statutes, the Regulations of Connecticut State Agencies, and the Council’s Rules of Practice. If the Council approves the cell site described in this report, Cellco will submit to the Building Official an application for approval of a local building permit. Under Section 16-50x of the General Statutes, which provides for the exclusive jurisdiction of the Council, the building official must honor the Council’s decision.

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Municipal Consultation Process

Pursuant to Section 16-50*l* of the General Statutes, City officials are entitled to receive technical information regarding the proposed telecommunications facility at least ninety (90) days prior to the filing of an application with the Council. This Technical Report is provided to the City in accordance with these provisions and includes information on the need for improved reliable wireless service in the area; the location of existing wireless facilities in and around Bridgeport; details of the proposed facility; the location of alternative sites considered and rejected; the location of schools and commercial day care facilities in the area and the aesthetic impacts of the facility on those schools and day care facilities, if any; a description of the site selection process; and a discussion of potential environmental effects associated with the proposed facility.

Not later than sixty (60) days after the initial consultation meeting, the municipality may, in cooperation with Cellco, hold a public information hearing on the facility proposal. If such a hearing is held, the applicant must notify all abutting landowners and publish notice of the hearing in a newspaper of general circulation in the municipality, at least fifteen (15) days prior to the hearing.

Not later than thirty (30) days after the initial consultation meeting, the municipality may present the prospective applicant with alternative sites, including municipal parcels, for its consideration. If not previously considered, these alternatives will be evaluated and discussed in its application to the Council.

Pursuant to Section 16-50*l*(e) of the General Statutes, Cellco must provide a summary of the City's comments and recommendations, if any, to the Council within fifteen (15) days of the filing of an application.

Need for the Proposed Wireless Facility

The proposed Bridgeport NE Facility described in this Technical Report is needed so that Cellco can provide enhanced wireless voice and data services in Bridgeport, and in portions of Trumbull and Shelton, Connecticut. More particularly, the Bridgeport NE Facility will provide additional wireless "coverage" along portions of Route 8, Route 108 and Merritt Parkway, and the area immediately around the Property in all of its licensed frequency ranges. The Bridgeport NE Facility will also provide significant capacity relief to Cellco's existing North Bridgeport 2 cell site (Alpha and Beta sectors) and Trumbull II cell site (Beta and Gamma sectors) which are currently operating beyond their respective capacity limits.

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Environmental Effects

In our experience, the primary impact of a wireless facility such as the proposed Bridgeport NE Facility is visual. The visual impact of the proposed facility will vary from place to place around the site location, depending upon factors such as vegetation, topography, distance from the tower, and the location of buildings in the sight-line of the cell site.

To more fully assess the visual impact of the Bridgeport NE Facility, Cellco's consultant, All-Points Technology Corporation ("APT") has prepared a Visual Analysis. This analysis indicates that a majority of the year-round visibility of the proposed 100-foot flagpole tower would be limited to the area in the immediate vicinity of the proposed tower location, generally within less than 0.25 miles of the Property. These year-round views encompass an area of approximately 60 acres. When the leaves are off the trees, views of the proposed tower through the trees (a/k/a seasonal views) may occur over a larger area (approximately 489 acres) around the tower site. (See Attachment 3).

Pursuant to the provisions of Conn. Gen. Stat. § 16-50p(a)(3)(G), new telecommunications facilities must be located at least 250 feet from schools (defined in C.G.S. §10-154a) and commercial day care facilities (defined in C.G.S. §19a-77(a)(1)) unless the location selected is acceptable to the City's chief elected official or the Council finds that the facility will not have a substantial adverse effect on the aesthetics or scenic quality of the neighborhood where the school or commercial day care use is located. The proposed Bridgeport NE Facility is not located within 250 feet of any building containing a school or commercial day care facility.

Based on field surveys, Cellco has determined that the construction of the Bridgeport NE Facility will have no direct impact on inland wetlands or watercourses, within or near the tower compound. Cellco anticipates that all other physical environmental effects associated with the proposed facility would be minimal.

Radio Frequency Emissions

The Federal Communications Commission ("FCC") has adopted a standard (the "Standard") for exposure of radio frequency ("RF") emissions from telecommunications base stations like the Bridgeport NE Facility. To ensure compliance with the Standard, Cellco has performed a worst-case RF emissions calculation for the proposed facility according to the methodology described in FCC Office of Science and Technology Bulletin No. 65 ("OST Bulletin 65"). This calculation is a conservative, worst-case approximation of RF emissions at

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the closest accessible point to the antenna (i.e., the base of the tower), and with all antennas transmitting simultaneously on all channels at full power. The worst-case calculated RF emissions level for Cellco's antennas at the 82-foot and 92-foot levels within the proposed tower would be 38.06% of the FCC Standard. (See Attachment 4.) Actual RF emissions levels from this facility will be far less than this "worst-case" approximation.

Scenic Natural Historic or Recreational Impacts

To further assess the environmental impacts of the proposed facility, Cellco is working with its consultant team to prepare a National Environmental Policy Act ("NEPA") Environmental Screening Checklist (the "NEPA Checklist") and other related environmental reviews to determine if the facility will have any significant adverse environmental effects. The NEPA Checklist will include information from the Environmental and Geographic Information Center of the Connecticut Department of Energy and Environmental Protection ("DEEP"), the U.S. Fish and Wildlife Service ("USFWS") and the State Historic Preservation Officer ("SHPO"). Copies of the DEEP, USFWS and the SHPO determinations will also be submitted as a part of the Council Application.

Site Search Process

Cellco conducted a search for suitable cell site locations in portions of Bridgeport and identified the Property as a site that would satisfy its wireless service objectives in the area. In addition to the proposed location, Cellco identified and investigated nine (9) alternative facility locations in the area. With the exception of the Property, each of the alternative sites considered were rejected by Cellco's RF engineers due to the location of the property either being too far outside the site search ring or too low to allow Cellco to satisfy its wireless service objectives in the area. A complete list of other potential cell sites investigated is included in Attachment 5.

Tower Sharing

As stated above, Cellco intends to build a tower that is capable of supporting its antennas and those of additional wireless telecommunications providers, if a need exists. The provision to share the tower is consistent with the intent of the General Assembly when it adopted Conn. Gen. Stat. § 16-50aa and with Council policy. The availability of space on the proposed tower may reduce, if not eliminate, the need for additional towers in Bridgeport for the foreseeable future.

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Conclusion

This Technical Report is submitted in accordance with Conn. Gen. Stat. § 16-50~~l~~ which requires Cellco to supply the City with information regarding its proposed Bridgeport NE Facility. This report includes information regarding the site selection process, public need, and the potential environmental impacts of the facility. Cellco submits that its proposed Bridgeport NE Facility would not have any significant adverse environmental effects. Moreover, Cellco submits that the public need for high quality wireless service, and a competitive framework for providing such service has been determined by the FCC to be in the public interest and that such public need far outweighs any perceived environmental effects of the proposed facility.

Please contact me if you have any additional questions regarding the proposed facility.

Sincerely,



Kenneth C. Baldwin

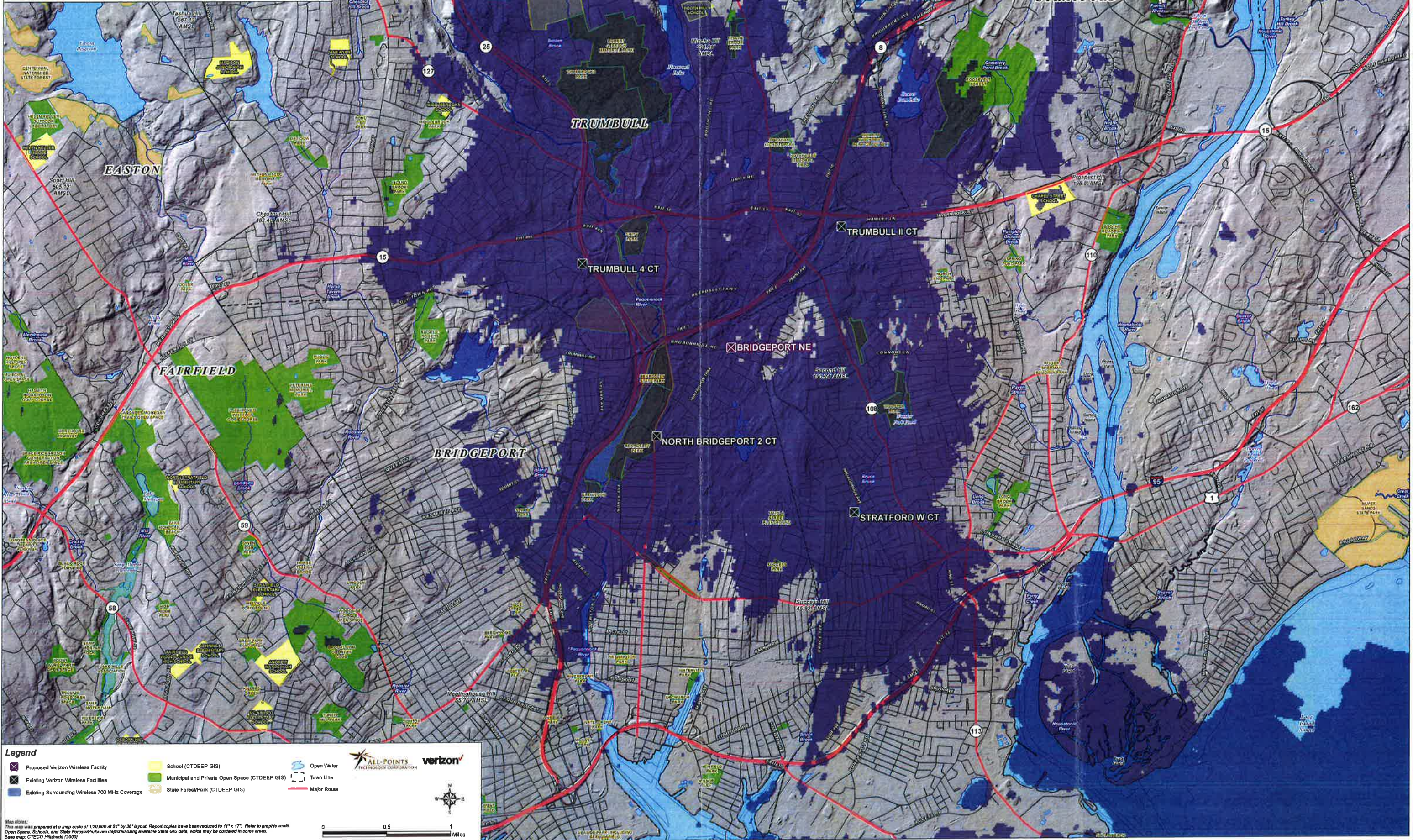
KCB/kmd
Enclosures
Copy to:

Timothy M. Herbst, Trumbull First Selectman (*via Federal Express*)
John A. Harkins, Stratford Mayor (*via Federal Express*)
Melville T. Riley, Jr., Acting Chair, Bridgeport Planning and Zoning Commission and
Inland Wetlands Commission (*via Federal Express*)
Fred Garrity, Jr., Chairman, Trumbull Planning and Zoning Commission (*via Federal
Express*)
Richard H. Girouard, Chairman, Trumbull Inland Wetlands Commission (*via Federal
Express*)
David Fuller, Chairman, Stratford Zoning Commission (*via Federal Express*)
Thomas Fahy, Chairman, Stratford Inland Wetlands Commission (*via Federal Express*)
Anthony Befera (*via Hand Delivery*)
Elizabeth Jamieson (*via Hand Delivery*)

ATTACHMENT 1

**Existing Verizon Wireless 700 MHz Coverage
Bridgeport, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss



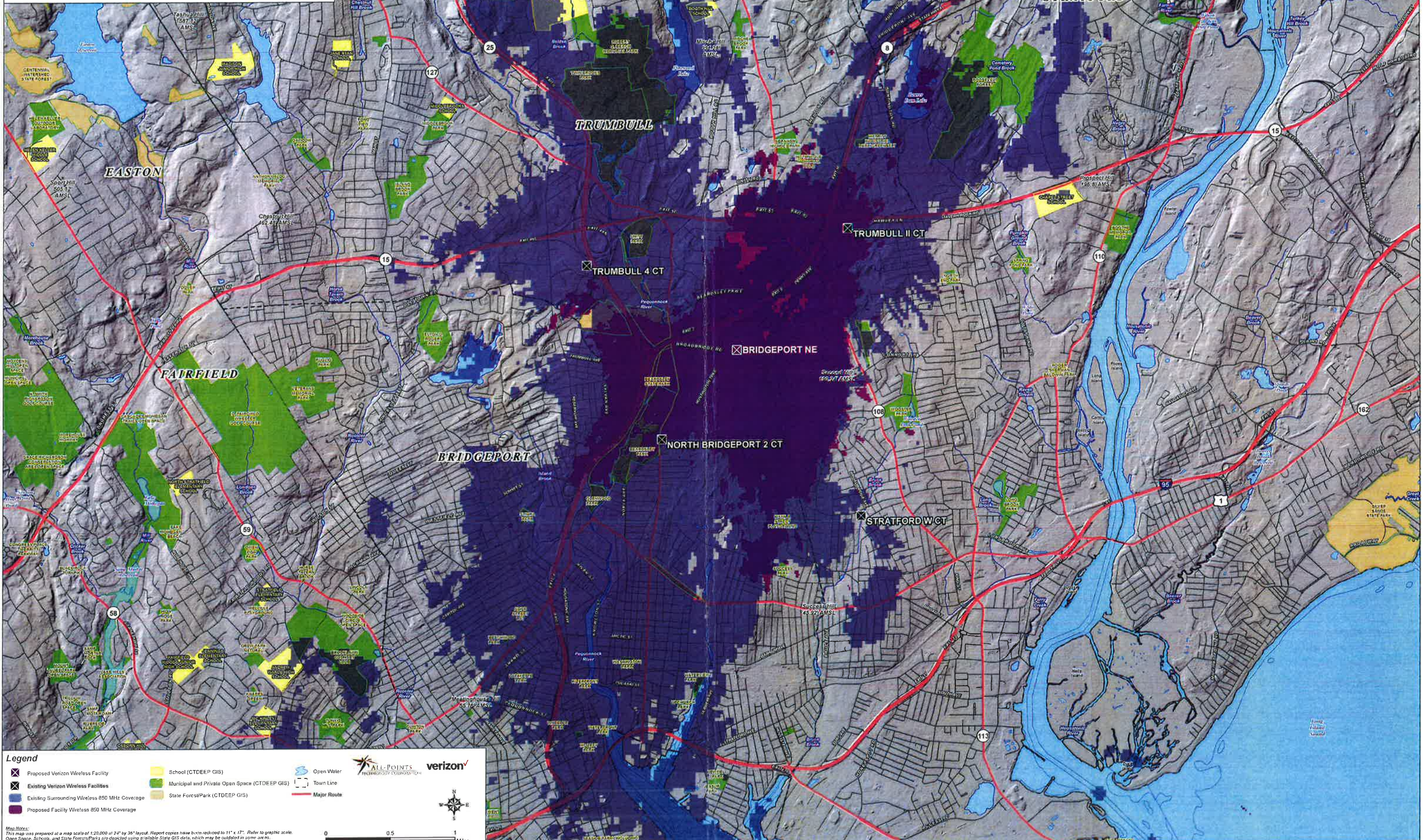
Legend

Map Notes:
This map was prepared at a map scale of 1:20,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale.
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTECD Hillside (2009)



**Proposed Verizon Wireless 850 MHz Coverage
Bridgeport, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**

Coverage plot assumes 55% site loading on the Cellco system
Coverage is depicted at a signal threshold of -85 dBm



Legend

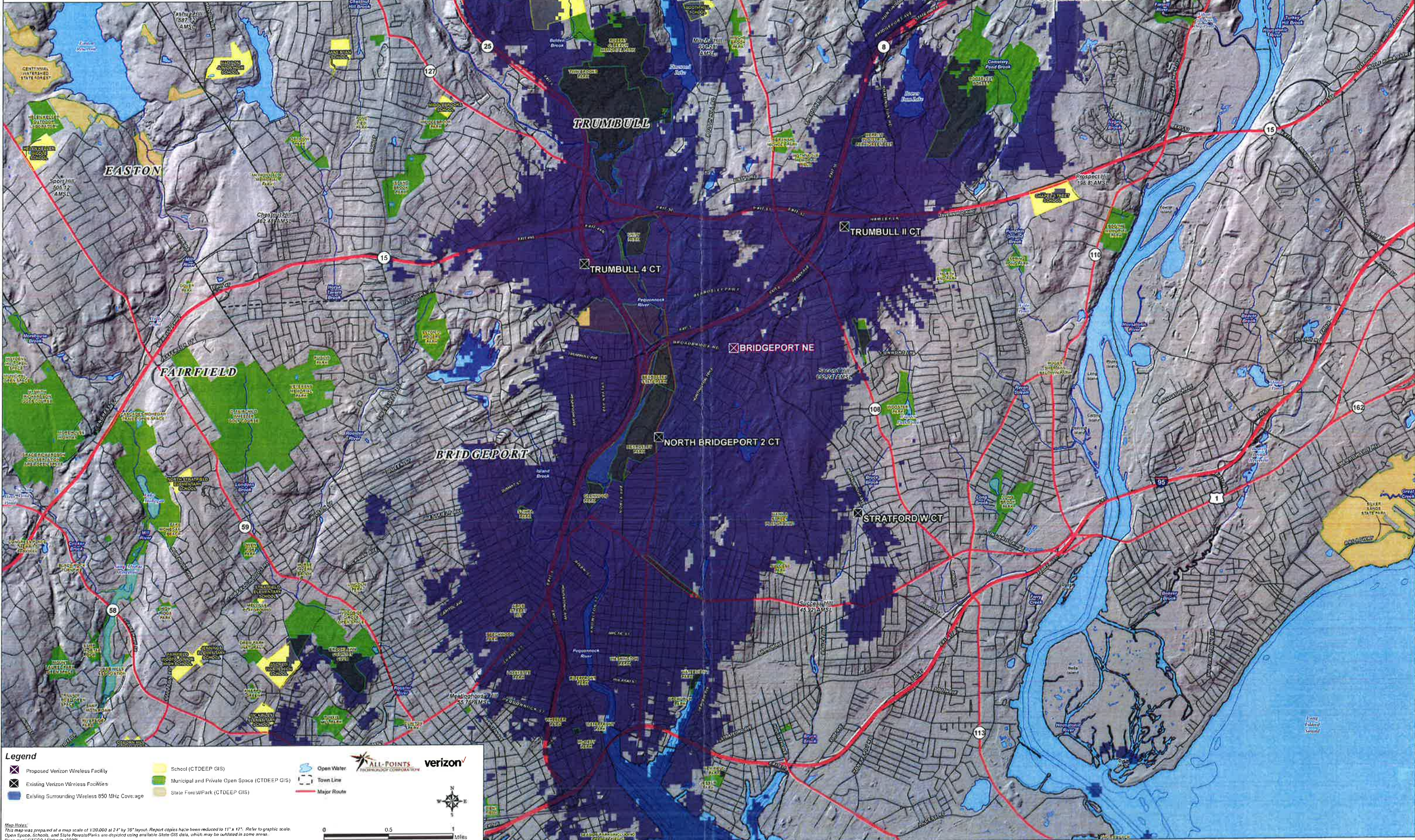
- Proposed Verizon Wireless Facility
- Existing Verizon Wireless Facilities
- Existing Surrounding Wireless 850 MHz Coverage
- Proposed Facility Wireless 850 MHz Coverage
- School (CTDEEP GIS)
- Municipal and Private Open Space (CTDEEP GIS)
- State Forest/Park (CTDEEP GIS)
- Open Water
- Town Line
- Major Route

Map Notes:
This map was prepared at a map scale of 1:20,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale.
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTECO Hillshade (2000)

0 0.5 1 Miles

**Existing Verizon Wireless 850 MHz Coverage
Bridgeport, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**

Coverage plot assumes 55% site loading on the Cellco system
Coverage is depicted at a signal threshold of -85 dBm



Legend

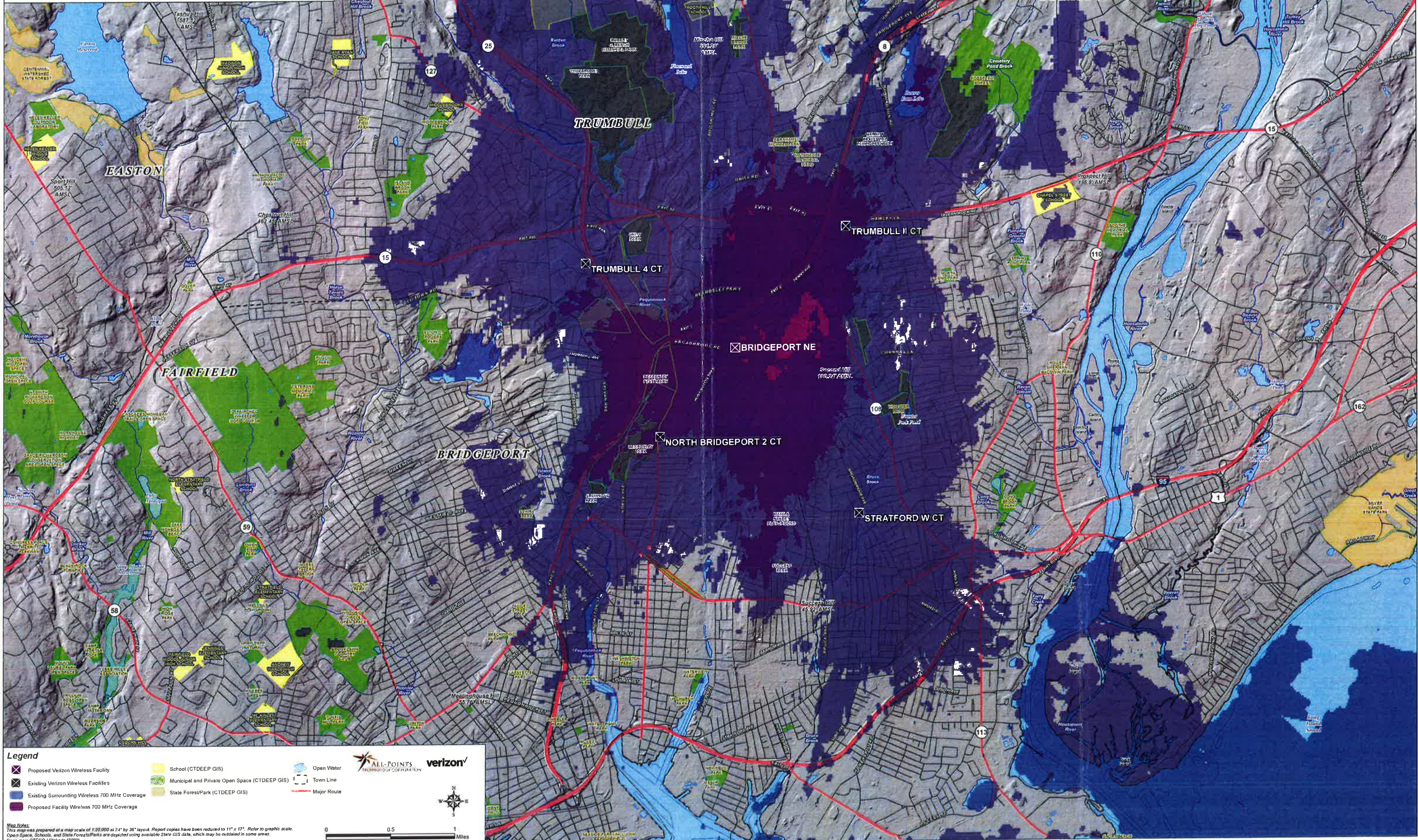
- Proposed Verizon Wireless Facility
- Existing Verizon Wireless Facility
- Existing Surrounding Wireless 850 MHz Coverage
- School (CTDEEP GIS)
- Municipal and Private Open Space (CTDEEP GIS)
- State Forest/Park (CTDEEP GIS)
- Open Water
- Town Line
- Major Route

Map Notes:
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Base map: CTECO Hillshade (2000)

0 0.5 1 Miles

**Proposed Verizon Wireless 700 MHz Coverage
Bridgeport, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss

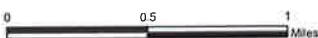


Legend

- Proposed Verizon Wireless Facility
- Existing Verizon Wireless Facilities
- Existing Surrounding Wireless 700 MHz Coverage
- Proposed Facility Wireless 700 MHz Coverage
- School (CTDEEP GIS)
- Municipal and Private Open Space (CTDEEP GIS)
- State Forest/Park (CTDEEP GIS)
- Open Water
- Town Line
- Major Route

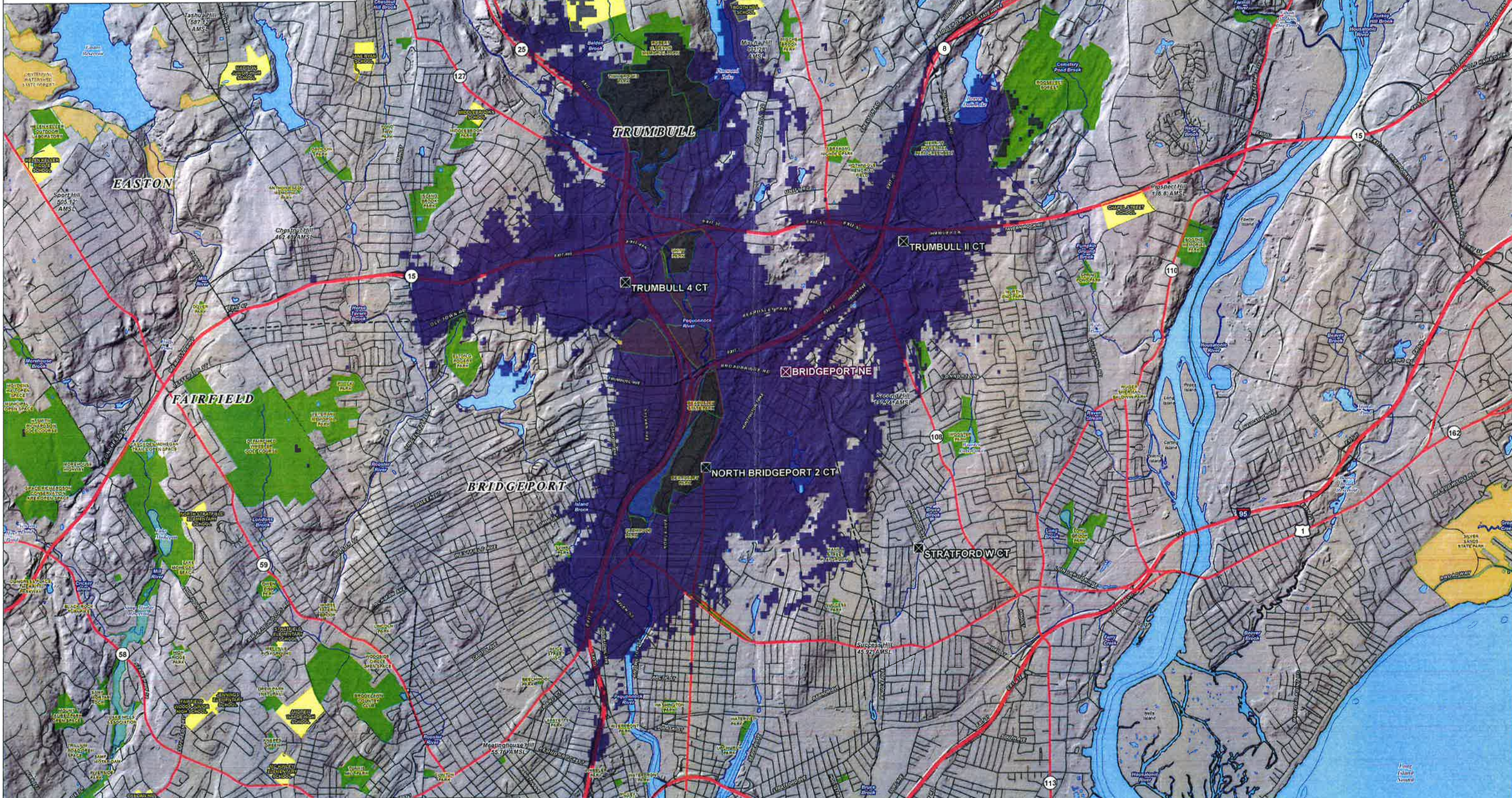
ALL-POINTS TECHNOLOGIES CORPORATION verizon

Map Notes:
This map was prepared at a map scale of 1:20,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale.
Open Space, Schools, and State Forest/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTECO Hillshade (2009)



**Existing Verizon Wireless 1900 MHz Coverage
Bridgeport, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss



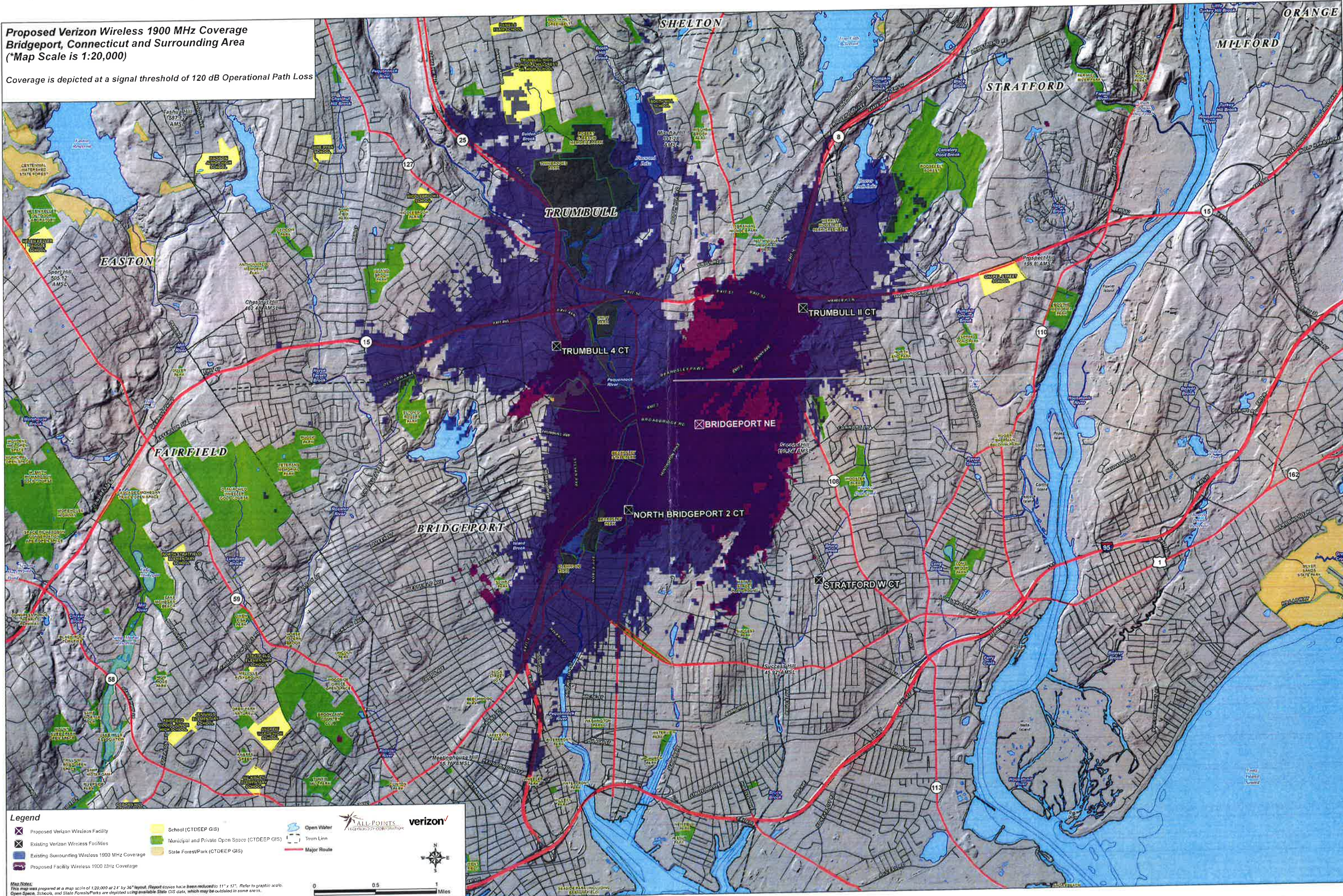
Legend

- Proposed Verizon Wireless Facility
- Existing Verizon Wireless Facility
- School (CTDEEP GIS)
- Municipal and Private Open Space (CTDEEP GIS)
- State Forest/Park (CTDEEP GIS)
- Open Water
- Town Line
- Major Route

Map Notes:
This map was prepared at a map scale of 1:20,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale.
Open Space, Schools, and State Forest/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTDECO Hillshade (2000)

**Proposed Verizon Wireless 1900 MHz Coverage
Bridgeport, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss



Legend

-  Proposed Verizon Wireless Facility
-  Existing Verizon Wireless Facilities
-  Existing Surrounding Wireless 1900 MHz Coverage
-  Proposed Facility Wireless 1900 MHz Coverage
-  School (CTDEEP GIS)
-  Municipal and Private Open Space (CTDEEP GIS)
-  State Forest/Park (CTDEEP GIS)
-  Open Water
-  Town Lines
-  Major Route

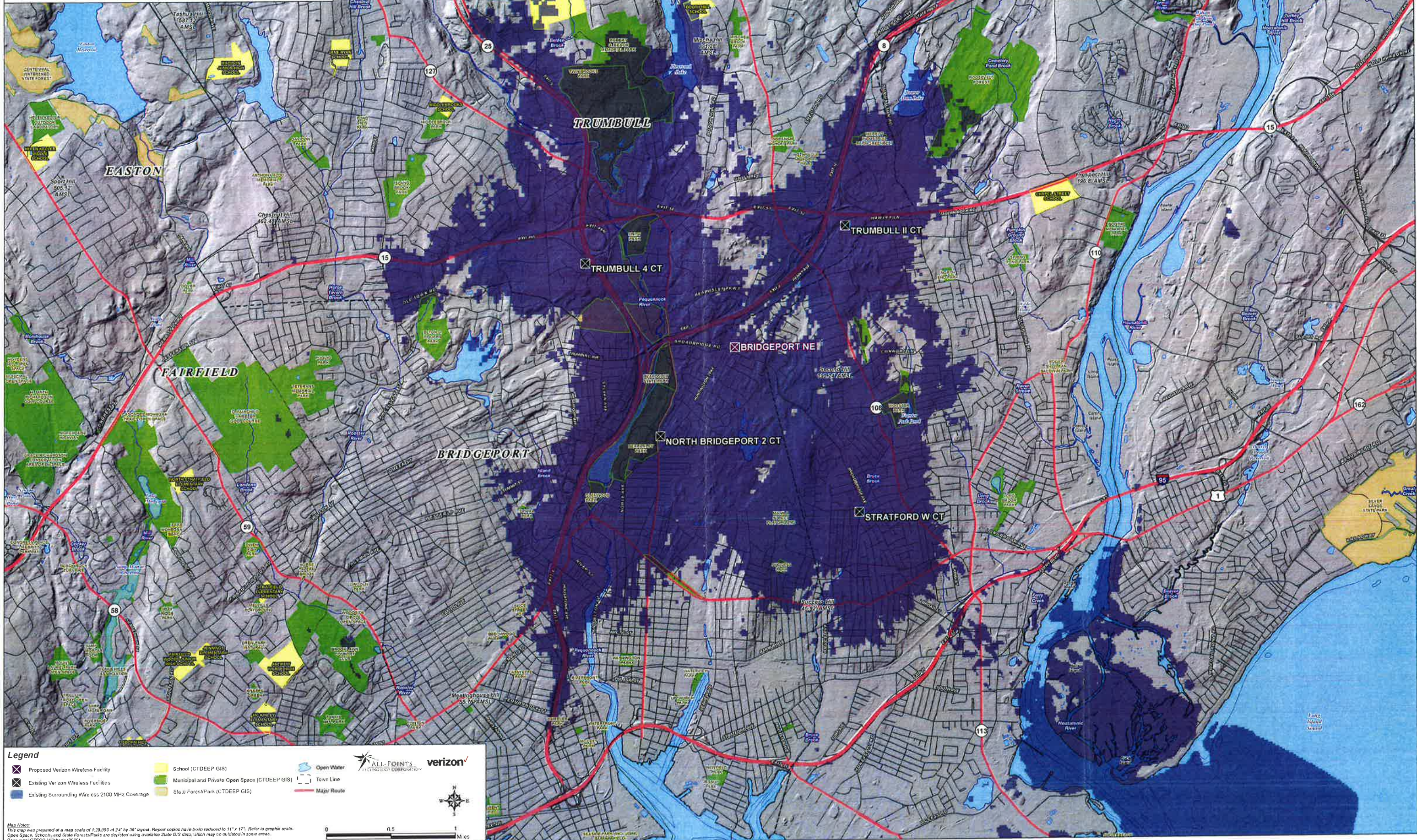


Map Notes:
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Open Space, Schools, and State Forest/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTECO Hillshade (2009)



**Existing Verizon Wireless 2100 MHz Coverage
Bridgeport, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss



Legend

- Proposed Verizon Wireless Facility
- Existing Verizon Wireless Facilities
- Existing Surrounding Wireless 2100 MHz Coverage
- School (CTDEEP GIS)
- Municipal and Private Open Space (CTDEEP GIS)
- State Forest/Park (CTDEEP GIS)
- Open Water
- Town Line
- Major Route

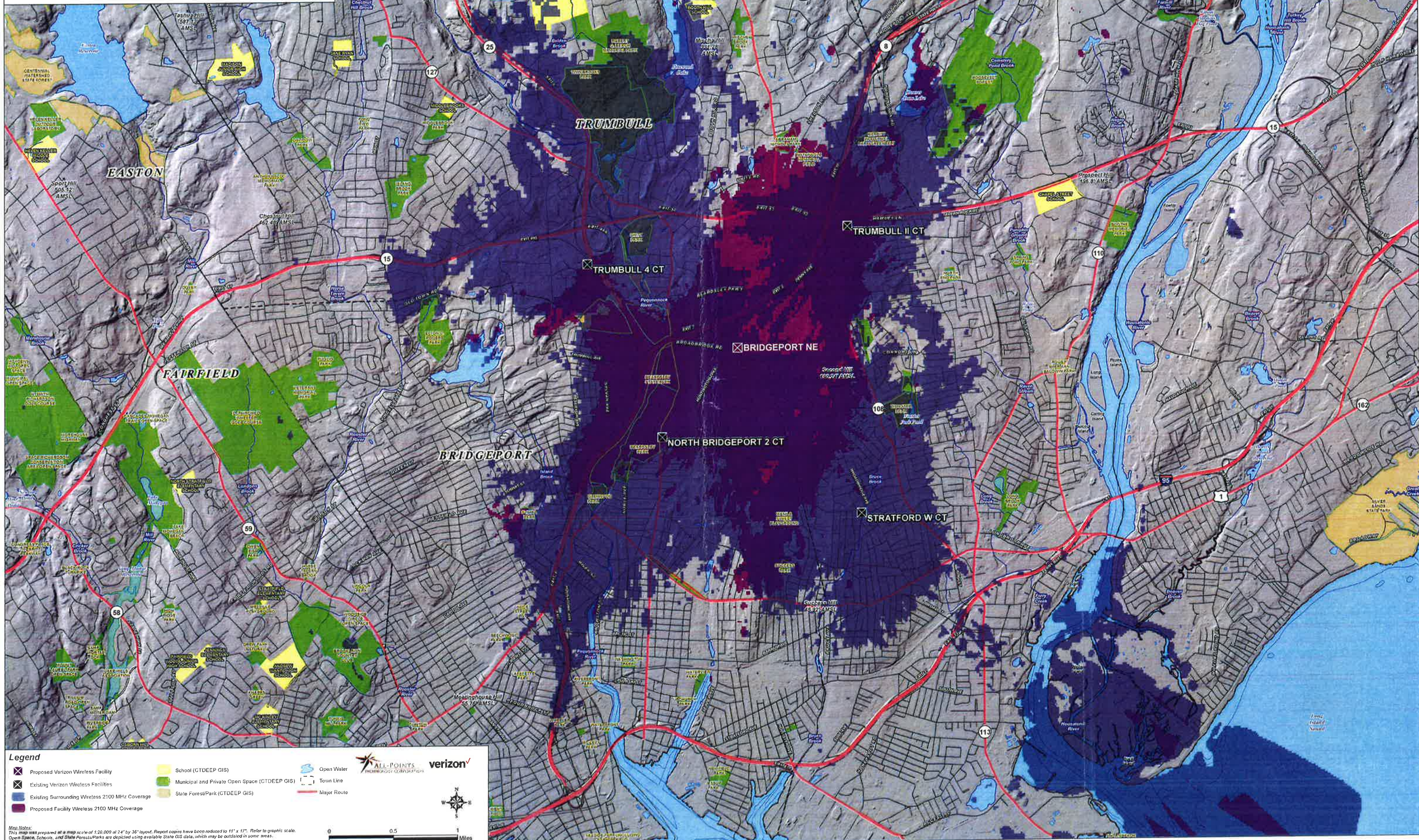
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 Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
 Base map: CTECO Hillshade (2000)

0 0.5 1 Miles



**Proposed Verizon Wireless 2100 MHz Coverage
Bridgeport, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss



Legend

Map Notes:
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Base map: CTDEEP (2000)



ATTACHMENT 2

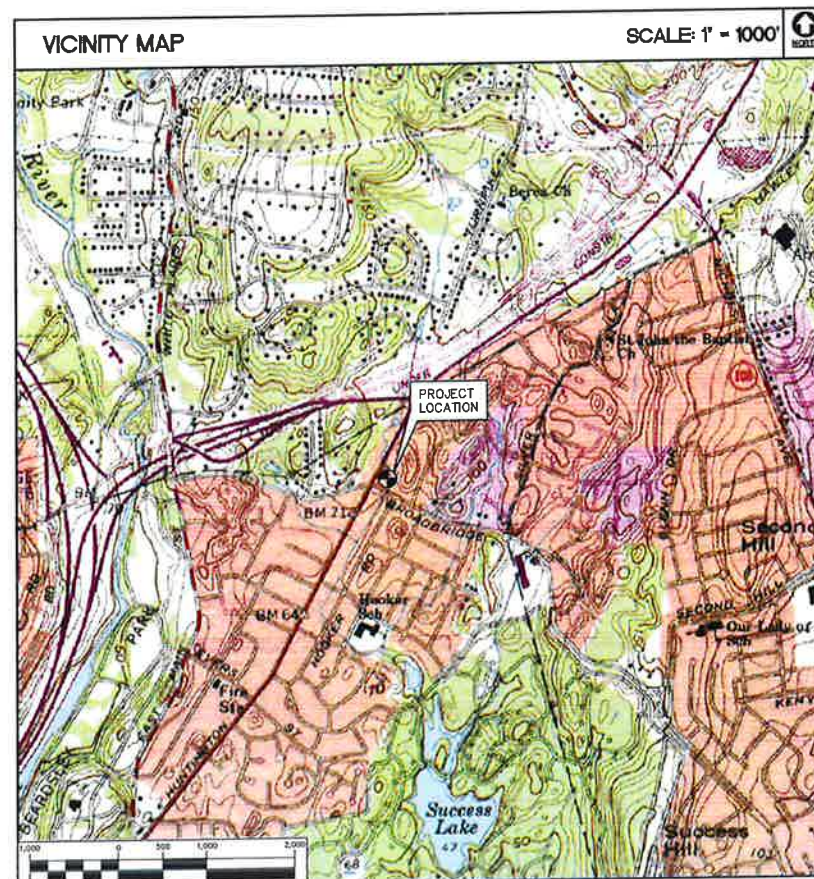
verizon

WIRELESS COMMUNICATIONS FACILITY BRIDGEPORT NE 541 BROADBRIDGE ROAD BRIDGEPORT, CT 06610

SITE DIRECTIONS	
FROM: 99 EAST RIVER DRIVE EAST HARTFORD, CONNECTICUT	TO: 541 BROADBRIDGE ROAD BRIDGEPORT, CONNECTICUT
1. HEAD SOUTHEAST ON E RIVER DR TOWARD PITKIN ST	0.9 MI.
2. CONTINUE ONTO E RIVER DR EXTENSION	0.3 MI.
3. TURN RIGHT ONTO THE US-5 S/CT-15 S RAMP TO NEW HAVEN-I-91 S	0.2 MI.
4. MERGE ONTO CT-15 S/US-5 S	0.8 MI.
5. TAKE EXIT 86 TO MERGE ONTO I-91 S TOWARD NEW HAVEN/NYC	17.1 MI.
6. TAKE EXIT 17 FOR CT-15 S/WILBUR CROSS PKWY	30.2 MI.
7. TAKE EXIT 52 FOR STATE ROUTE 108 S/STATE ROUTE 8 S TOWARD BRIDGEPORT	0.6 MI.
8. KEEP RIGHT, FOLLOW SIGNS FOR CT-108/STRATFORD	0.2 MI.
9. TURN LEFT ONTO CT-108 W/NICHOLS AVE	0.2 MI.
10. TURN RIGHT ONTO PENNY AVE	0.6 MI.
11. CONTINUE ONTO HUNTINGTON TURNPIKE	0.3 MI.
12. TURN LEFT ONTO BROADBRIDGE RD	249 FT.

GENERAL NOTES
1. PROPOSED ANTENNA LOCATIONS AND HEIGHTS PROVIDED BY CELCO PARTNERSHIP.

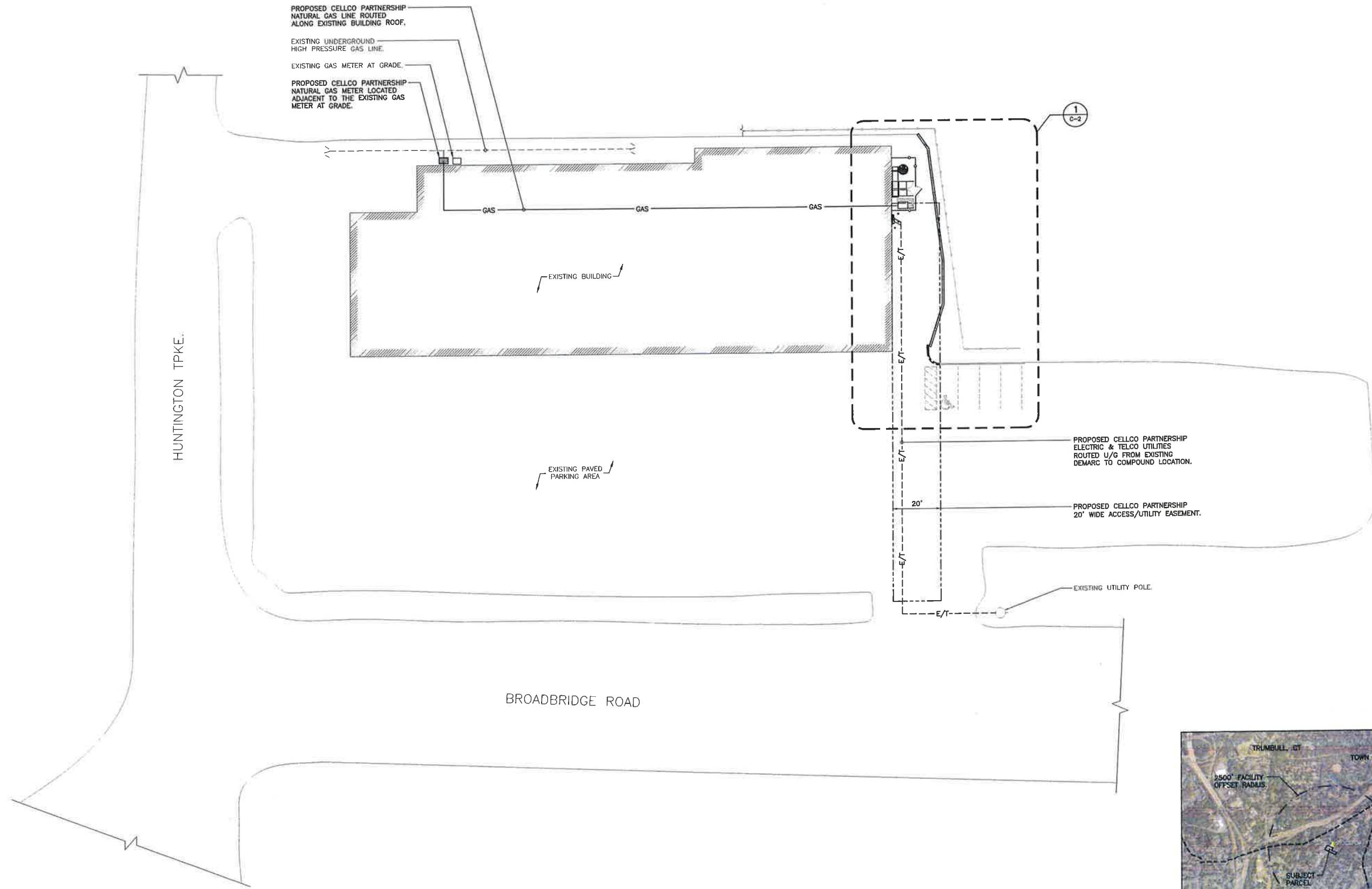
SITE INFORMATION
THE SCOPE OF WORK SHALL INCLUDE:
1. THE CONSTRUCTION OF A 10'x22' FENCED WIRELESS COMMUNICATIONS COMPOUND.
2. A TOTAL OF UP TO SIX (6) DIRECTIONAL PANEL ANTENNAS ARE PROPOSED TO BE MOUNTED AT CENTERLINE ELEVATIONS OF 82'-0"± AGL AND 92'-0"± AGL WITHIN A 100'-0"± PROPOSED FLAGPOLE TOWER.
3. POWER AND TELCO UTILITIES SHALL BE ROUTED UNDERGROUND FROM EXISTING RESPECTIVE DEMARCS TO THE PROPOSED UTILITY BACKBOARD LOCATED ADJACENT TO THE PROPOSED FENCED COMPOUND. FINAL DEMARC LOCATION AND UTILITY ROUTING TO PROPOSED BACKBOARD WILL BE VERIFIED/DETERMINED BY LOCAL UTILITY COMPANIES. UTILITIES WILL BE ROUTED UNDERGROUND FROM UTILITY BACKBOARD TO THE PROPOSED EQUIPMENT CABINETS LOCATED WITHIN FENCED COMPOUND AREA.
4. FINAL DESIGN FOR TOWER AND ANTENNA MOUNTS SHALL BE INCLUDED IN THE D&M PLANS.
5. THE PROPOSED WIRELESS FACILITY INSTALLATION WILL BE DESIGNED IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2009 CONNECTICUT SUPPLEMENT.
6. THERE WILL NOT BE ANY LIGHTING UNLESS REQUIRED BY THE FCC OR THE FAA.
7. THERE WILL NOT BE ANY SIGNS OR ADVERTISING ON THE ANTENNAS OR EQUIPMENT.



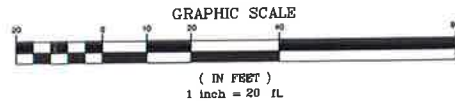
PROJECT SUMMARY	
SITE NAME:	BRIDGEPORT NE
SITE ADDRESS:	541 BROADBRIDGE ROAD BRIDGEPORT, CT 06610
PROPERTY OWNER:	BEARDSLEY PLAZA LIMITED PARTNERSHIP PO BOX 1700 BRIDGEPORT, CT 06601
LESSEE/TENANT:	CELCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
VERIZON SITE ACQUISITION CONTACT:	ALEKSEY TYURIN CELCO PARTNERSHIP (860) 660-8213
LEGAL/REGULATORY COUNSEL:	KENNETH C. BALDWIN, ESQ. ROBINSON & COLE (860) 257-8345
TOWER COORDINATES:	LATITUDE 41°-13'-19.494" LONGITUDE 73°-10'-02.504" GROUND ELEVATION: 80.9'± A.M.S.L. COORDINATES AND GROUND ELEVATION REFERENCED FROM FAA 1-A SURVEY CERTIFICATION AS PREPARED BY MARTINEZ COUCH AND ASSOCIATES LLC, DATED AUGUST 23, 2016.

SHEET INDEX		
SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
C-1	SITE LOCATION PLAN	0
C-2	COMPOUND PLAN, ELEVATION AND ANTENNA MOUNTING CONFIGURATION	0

PROFESSIONAL ENGINEER SEAL		ISSUED FOR CT SITING COUNCIL - CLIENT REVIEW	
verizon		DATE	DESCRIPTION
CENTEK engineering Central Solutions		REV.	
(203) 884-0580 (203) 884-8557 Fax 8-52 North Main Road Bridgeport, CT 06605 www.CentekEng.com		DATE	DESCRIPTION
Celco Partnership d/b/a Verizon Wireless WIRELESS COMMUNICATIONS FACILITY BRIDGEPORT NE 541 BROADBRIDGE ROAD BRIDGEPORT, CT 06610		DATE	DESCRIPTION
DATE: 08/10/16 SCALE: AS NOTED JOB NO. 14253.000		DATE	DESCRIPTION
TITLE SHEET		DATE	DESCRIPTION
T-1		DATE	DESCRIPTION
Sheet No. 1 of 3		DATE	DESCRIPTION



1
C-1 **SITE LOCATION PLAN**
SCALE: 1"=20'



REV.	DATE	ASCD	HW	DESCRIPTION
0	08/23/16			ISSUED FOR CT SITING COUNCIL - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL



CENITEK engineering
Center on Solstice

(203) 498-0390
2200 498-0397 Fax
Bridford, CT 06405
www.CenitekEng.com

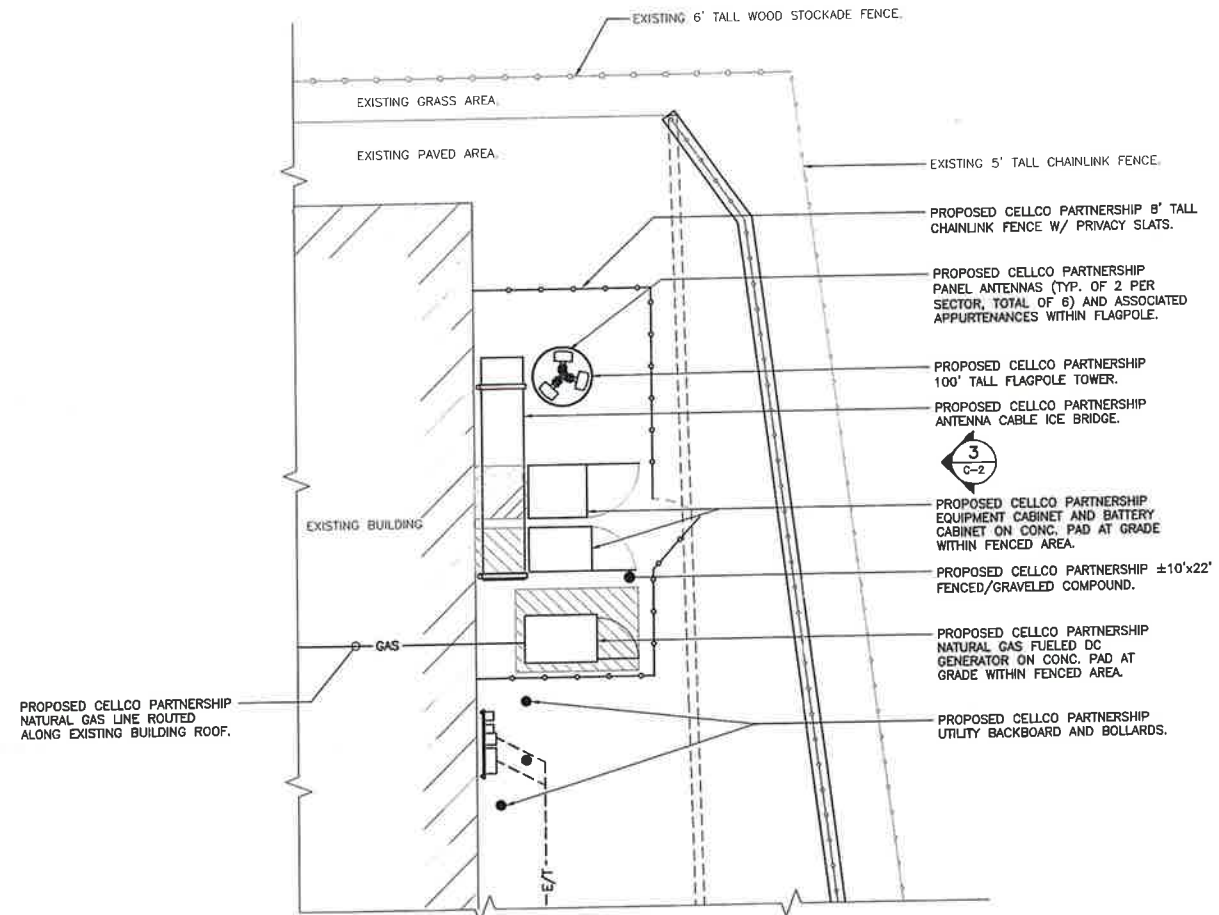
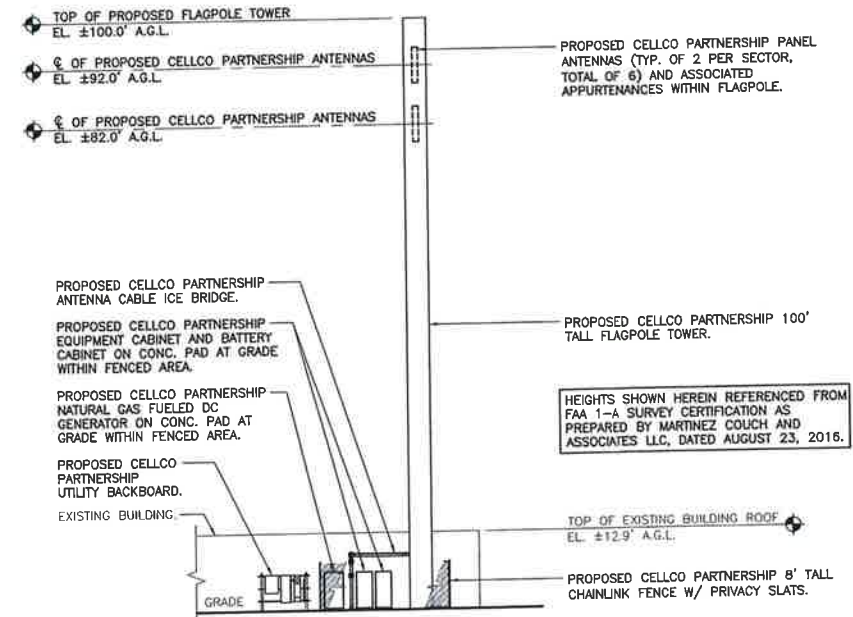
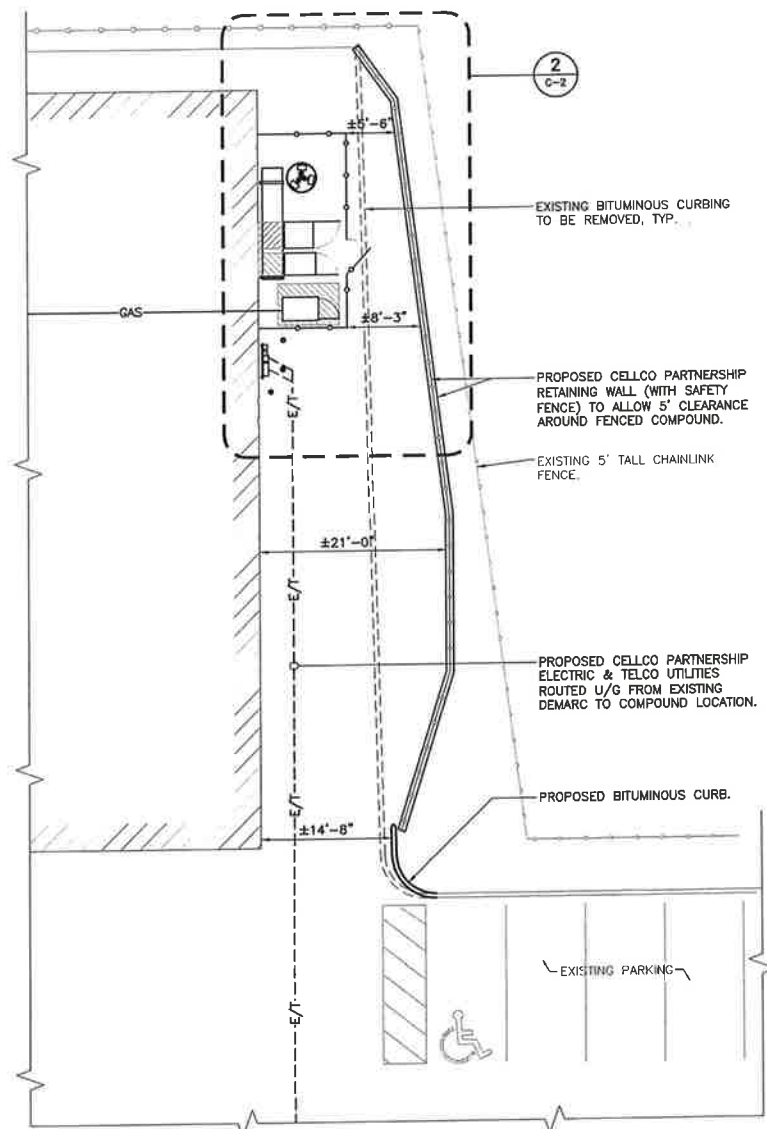
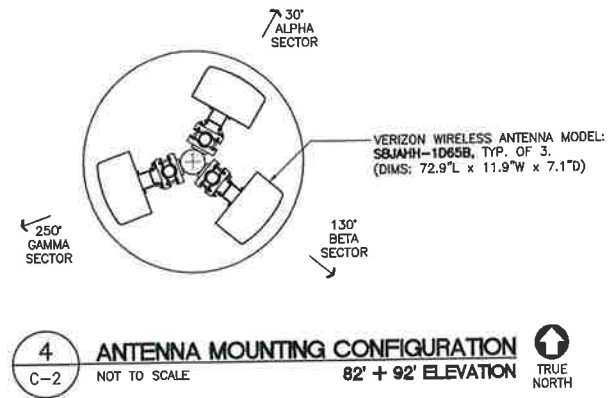
Cellco Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY

BRIDGEPORT NE
541 BROADBRIDGE ROAD
BRIDGEPORT, CT 06610

DATE: 08/10/16
SCALE: AS NOTED
JOB NO. 14253.000

SITE LOCATION PLAN

C-1



REV.	DATE	DESCRPTION	DRAWN BY	CHECKED BY	ISSUED FOR
0	08/23/16	ASC	MMR		CLIENT REVIEW

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Cellco Partnership d/b/a Verizon Wireless
 WIRELESS COMMUNICATIONS FACILITY
BRIDGEPORT NE
 541 BROADBRIDGE ROAD
 BRIDGEPORT, CT 06610

DATE: 08/10/16
 SCALE: AS NOTED
 JOB NO. 14253.000
**COMPOUND PLAN,
 ELEVATION AND
 ANTENNA
 MOUNTING CONFIG.**

ATTACHMENT 3

VISIBILITY ANALYSIS

**BRIDGEPORT NE
541 BROADBRIDGE ROAD
BRIDGEPORT, CONNECTICUT 06610**



Prepared for:

**Verizon Wireless
99 East River Drive
East Hartford CT 06108**

Prepared by:

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OCTOBER 2016

Project Introduction

Cellco Partnership d/b/a Verizon Wireless is pursuing a Certificate of Environmental Compatibility and Public Need from the Connecticut Siting Council ("Council") for the development of a new wireless communications facility ("Facility") at 541 Broadbridge Road in Bridgeport, Connecticut ("Site"). At the request of Verizon Wireless, All-Points Technology Corporation, P.C. ("APT") prepared this Visibility Analysis to evaluate the potential visibility of the proposed Facility within a two-mile radius of the proposed site location ("Study Area"). The Study Area also includes parts of the neighboring municipalities of Trumbull and Stratford which are located in the north and southeastern portions of the Study Area, respectively.

Site Description and Setting

The Site is occupied by an existing shopping plaza with a large paved parking area. The area proposed for the Facility is located in the northeast corner of the Site at an approximate ground elevation of ± 81 feet Above Mean Sea Level ("AMSL"). The proposed Facility would include a 100-foot tall monopole located within a 10-foot by 22-foot equipment compound. The equipment compound would be surrounded by an 8-foot-tall chain-link fence with privacy slats. Antenna arrays, associated appurtenances and cabling would be concealed within the monopole, which has been designed to resemble a flagpole.

Land use within the immediate vicinity is primarily a mix of medium density commercial and residential development, with the Connecticut Routes 8, 25 and 15 transportation corridors to the north and Broadbridge Road to the south. The topography within the Study Area is characterized generally by gently rolling hills and valleys with ground elevations ranging from approximately sea level to 526 feet AMSL. The tree cover within the Study Area (consisting of mixed deciduous hardwoods with interspersed conifers) occupies approximately 5,913 acres of the 8,042-acre study area ($\pm 74\%$).

Methodology

APT used the combination of a predictive computer model and in-field analysis to evaluate the visibility associated with the proposed Facility on both a quantitative and qualitative basis. The predictive model provides a measurable assessment of potential visibility throughout the entire Study Area including private properties and other areas inaccessible for direct observations. The in-field analyses included a balloon float and reconnaissance of the Study Area to record existing conditions, verify results of the model, inventory visible and nonvisible locations, and provide photographic documentation from publicly accessible areas. A description of the procedures used in the analysis is provided below.

Preliminary Computer Modeling

Two computer modeling tools were used to calculate those areas from which at least the top of the tower is estimated to be visible: IDRISI image analysis program (developed by Clark Labs, Clark University) and ArcGIS®, developed by Environmental Systems Research Institute, Inc. Project- and Study Area-specific data were incorporated into the computer model, including the tower's location, height, and ground elevation, as well as the surrounding topography and existing vegetation which are two primary features that can block direct lines of sight. Information used in the model included LiDAR¹-based digital elevation and land use data. The LiDAR-based Digital Elevation Model ("DEM") represents topographic information for the state of Connecticut that was derived through the spatial interpolation of airborne LiDAR-based data collected by the National Oceanic and Atmospheric Administration in the years 2015 and 2016 and has a horizontal resolution of 1.5 to 2 feet. In addition to the topographic information, this LiDAR data set contains all other recorded dimensional observations (or "returns") of land features including vegetation, buildings, and other infrastructure. The results of the LiDAR DEM analysis were compared with National Agricultural Imagery Program (USDA) aerial photography (1-foot resolution, flown in 2014) using IDRISI image processing tools, to confirm its general accuracy. The IDRISI tools develop light reflective classes defined by statistical analysis of individual pixels, which are then grouped based on common reflective values such that distinctions can be made automatically between deciduous and coniferous tree species, as well as grassland, impervious surface areas, water and other distinct land use features.

Once the data layers were entered, image processing tools were applied and overlaid onto USGS topographic base maps and aerial photographs to achieve an estimate of locations where the Facility might be visible. Additional data was reviewed and incorporated into the visibility analysis, including protected private and public open space, parks, recreational facilities, hiking trails, schools, and historic districts. The Hooker School, located at 138 Roger Williams Road in Bridgeport, CT, is approximately 0.37 mile to the south while the nearest daycare center, The Laurel School for Young Children located at 162 Beardsley Parkway, is approximately 0.42 miles to the northwest. The nearest recreational park, Beardsley Park located on East Main Street (CT Route 127), is approximately 0.5 mile to the west. One State Scenic Road, the Merritt Parkway (CT Route 15), is located approximately one mile to the north within the Study Area. The Housatonic Trail runs in a north/south direction approximately 0.5 mile to the east of the Site. No historic resources are located within the Study Area.

¹ LiDAR is an acronym for Light Detection and Ranging. It is a technology that utilized lasers to determine the distance to an object or surface. LiDAR is similar to radar, but incorporates laser pulses rather than sound waves. It measures the time delay between transmission and reflection of the laser pulse.

Field Reconnaissance

To supplement and fine tune the results of the computer modeling efforts, APT completed in-field verification activities consisting of a balloon float, vehicular and pedestrian reconnaissance, and photo-documentation.

Balloon Float and Field Reconnaissance

Balloon floats were conducted on September 1, 2016 and again on September 21, 2016. Each balloon float consisted of raising an approximately four-foot diameter, helium-filled red balloon, tethered to a string height of 100 feet above ground level ("AGL") at the proposed Facility location, such that the bottom of the balloon represented the top height of the monopole. At the time of the balloon floats, weather conditions on both dates consisted of cloudy to partly cloudy skies with calm winds. On both occasions the balloon was secured at the proposed Facility location and a Study Area reconnaissance was performed by driving along the local and State roads and other publicly accessible locations to document and inventory where the balloon could be seen above/through the trees and canopy. Visual observations from the reconnaissance were also used to evaluate the results of the preliminary visibility mapping and identify any discrepancies in the initial modeling.

Photographic Documentation

APT drove the public roads within the Study Area during the balloon float and photo-documented representative areas where the balloon was and was not visible. At each photo location, the geographic coordinates of the camera's position were logged using global positioning system ("GPS") technology. Photographs were taken with a Canon EOS 6D digital camera body and Canon EF 24 to 105 millimeter ("mm") zoom lens. APT used a standard focal length of 50mm to provide a consistent field of view and maintain proportional scale of the subjects in the photograph (the balloon) and corresponding simulation (the tower) relative to the surroundings.

Final Visibility Mapping

Information obtained during the field reconnaissance was incorporated into the mapping data layers, including observations of the balloon float, the photo locations, areas that experienced recent land use changes and those places where the initial model was found to over-predict visibility. Once the additional field data was integrated into the model, APT re-calculated the visibility of the proposed Facility from within the Study Area to assist in producing the final viewshed map.

Photographic Simulations

Photographic simulations were generated to portray scaled renderings from 10 representative locations where the proposed Facility would be visible year-round. Using field data, site plan information and 3-dimension (3D) modeling software, spatially referenced models of the site area and tower were generated and merged. The geographic coordinates obtained in the field for the photograph locations were incorporated into the model to produce virtual camera positions within the spatial 3D model. Photo simulations were then created using a combination of renderings generated in the 3D model and photo-rendering software programs². For presentation purposes in this report, the photographs were produced in an approximate 7-inch by 10.5-inch format.

Photo-documentation of existing conditions and photo-simulations of the proposed Facility are presented in the attachment at the end of this report. Where visible in the existing conditions photos, the balloon provides visual reference points for the approximate height and location of the tower relative to the scene. The photo-simulations are intended to provide the reader with a general understanding of the different views that might be achieved of the Facility.

It is important to consider that the publicly-accessible locations selected are typically representative of a "worst case" scenario. They were chosen to present unobstructed view lines (wherever possible), are static in nature and do not necessarily fairly characterize the prevailing views from all locations within a given area. From several locations, moving a few feet in any direction will result in a far different perspective of the tower than what is presented in the photographs. A view (or non-view) of the tower may be limited to the immediate area or to a particular time of year at the specific photo location.

The simulations provide a representation of the Facility under similar settings as those encountered during the balloon float and reconnaissance. Views of the tower can change substantially throughout the season and are dependent on environmental conditions, including (but not necessarily limited to) weather, light conditions, seasons, time of day, and the viewer location.

Photograph Locations

The table below summarizes characteristics of the photographs and simulations presented in the attachment to this report including a description of each location, view orientation, the distance from where the photo was taken relative to the proposed Facility and the general characteristic of that view. The photo locations are depicted on the photolog and viewshed maps provided as attachments to this report.

² As a final step, the accuracy and scale of select simulations are tested against photographs of similar existing facilities with recorded camera position, focal length, photo location, and tower location.

Photo No.	Photo Location	View Orientation	Distance to Facility	View Characteristic
1	Broadbridge Road	East	±0.47 Mile	Not visible
2	Broadbridge Road	Northeast	±0.18 Mile	Year Round
3	Duane Place	Southeast	±0.13 Mile	Year Round
4	Broadbridge Road	Northeast	±0.11 Mile	Year Round
5	Huntington Turnpike	East	±384 Feet	Year-round
6	Huntington Turnpike	Northeast	±0.23 Mile	Not Visible
7	Hooker Road	Northeast	±307 Feet	Year Round
8	Hooker Road	Northeast	±0.16 Mile	Year Round
9	Hooker Road	Northeast	±0.37 Mile	Year Round
10	Hooker Road	Northeast	±0.50 Mile	Year Round
11	Hooker Road	Northeast	±0.51 Mile	Not Visible
12	Roger Williams Road	Northeast	±0.38 Mile	Not Visible
13	Lynne Place at Alameda Place	North	±0.17 Mile	Not Visible
14	Greystone Road	Northwest	±0.20 Mile	Not Visible
15	Alameda Place	Northwest	±485 Feet	Not Visible
16	Holland Road	Northwest	±211 Feet	Year Round
17	Holland Road	Southwest	±359 Feet	Year Round
18	Iwanicki Circle	Southwest	±0.17 Mile	Not Visible
19	Huntington Turnpike, Trumbull	Southwest	±0.36 Mile	Not Visible
20	Lawlor Terrace, Stratford	Southwest	±0.74 Mile	Not Visible
21	Gannon Drive, Stratford	Southwest	±0.59 Mile	Not Visible
22	Second Hill Lane, Stratford	Northwest	±0.72 Mile	Not Visible
23	Ridgefield Drive, Stratford	Northwest	±0.52 Mile	Not Visible
24	Oak Ridge Drive, Trumbull	Southeast	±0.58 Mile	Not Visible
25	Unity Park, Trumbull	Southeast	±1.09 Miles	Not Visible
26	Quarry Road, Trumbull	Southeast	±1.05 Miles	Not Visible
27	White Plains Road, Trumbull	Southeast	±0.54 Mile	Not Visible
28	Sylvan Avenue, Trumbull	East	±1.04 Miles	Not Visible
29	Seltsam Road	Northeast	±1.08 Mile	Not visible
30	Huntington Plaza	Northeast	±0.73 Mile	Not Visible
31	East Main Street at Beardsley Park	Northeast	±0.92 Mile	Not Visible
32	East Main Street	Northeast	±1.04 Miles	Not Visible
33	East Main Street, Stratford	Northwest	±1.87 Miles	Not Visible

Photo locations in Bridgeport unless otherwise noted.

Photos were taken during "leaf-on" conditions. Some photos noted as "Not Visible" may offer limited, seasonal views through intervening trees during "leaf-off" conditions.

Photo-documentation of existing conditions during the balloon floats and simulations of the proposed Facility are presented in the attachment at the end of this report.

Visibility Analysis Results

Results of this analysis are graphically displayed on the visibility analysis maps provided in the attachment to the end of this report. The maps also include the locations of photographs and corresponding simulations.

Areas from where the Facility would be visible comprise of ± 60 acres of year-round visibility and ± 489 acres of seasonal visibility. Cumulatively, this equals less than 7% of the Study Area.

As seen on the visibility maps, the majority of year-round views of the Facility would occur from areas within the immediate vicinity of the Site –(approximately 0.25 mile or less). These views could extend about 0.5 mile to the southwest along Hooker Road but would quickly drop out of view the farther removed from the Site regardless of direction. Due to the relatively dense development, topography and vegetative cover throughout the Study Area, seasonal views would generally be limited to locations within ± 0.75 mile of the proposed Facility. Substantial utility infrastructure exists throughout the majority of areas from which the proposed Facility would be visible.

Based on the results of this analysis, views of the entire Facility, including the equipment compound, would primarily be limited to commercial locations in the immediate area. Most views from residential locations appear to be limited to the upper portions of the monopole, which has been designed to have a slim profile with no external or horizontal appurtenances.

Proximity to Schools And Commercial Child Day Care Centers

No views of the proposed Facility would occur at schools or commercial child day care centers. The nearest school, Hooker School, located at 138 Roger Williams Road in Bridgeport is approximately 0.37 mile to the south. The nearest daycare center, The Laurel School for Young Children located at 162 Beardsley Parkway, is approximately 0.42 miles to the northwest.

LIMITATIONS

The viewshed maps presented in the attachment to this report depict areas where the proposed Facility may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground through intervening topography, vegetation, buildings and other infrastructure. This analysis may not necessarily account for all visible locations, as it is based on the combination of computer modeling, incorporating 2000 LiDAR data and 2012 aerial photographs, and in-field observations from publicly-accessible locations. No access to private properties was provided to APT personnel. This analysis does not claim to depict the only areas, or all locations, where visibility may occur; it is intended to provide a representation of those areas where the Facility is likely to be seen.

The simulations provide a representation of the Facility under similar settings as those encountered during the balloon float and reconnaissance. Views of the Facility can change throughout the seasons and the time of day, and are dependent on weather and other atmospheric conditions (e.g., haze, fog, clouds); the location, angle and intensity of the sun; and the specific viewer location. Weather conditions on the day of the balloon float included partly cloudy skies. The photo-simulations presented in this report provide an accurate portrayal of the Facility during comparable conditions.

ATTACHMENTS

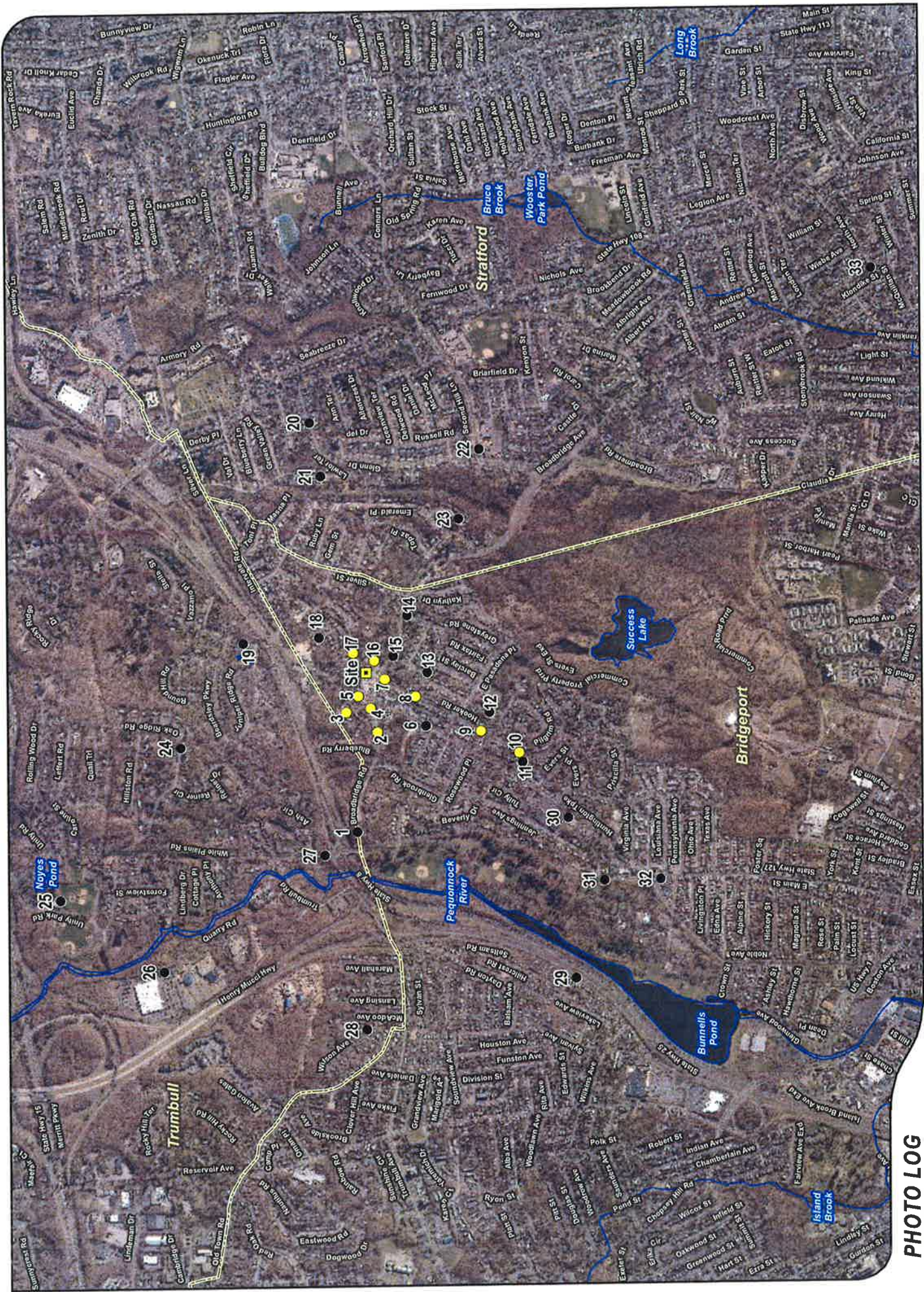


PHOTO LOG

- Legend**
- Site
 - Year-Round Visibility
 - Not Visible





EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
1	BROADBRIDGE ROAD	EAST	+/- 0.47 MILE	NOT VISIBLE





EXISTING

PHOTO

2

LOCATION

BROADBRIDGE ROAD

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.18 MILE

VISIBILITY

YEAR ROUND





PROPOSED

PHOTO

2

LOCATION

BROADBRIDGE ROAD

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.18 MILE

VISIBILITY

YEAR ROUND





EXISTING

PHOTO

3

LOCATION

DUANE PLACE

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 0.13 MILE

VISIBILITY

YEAR ROUND





PROPOSED

PHOTO

3

LOCATION

DUANE PLACE

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 0.13 MILE

VISIBILITY

YEAR ROUND



ALL-POINTS
TECHNOLOGY CORPORATION





EXISTING

PHOTO

4

LOCATION

BROADBRIDGE ROAD

ORIENTATION

NORTHEAST

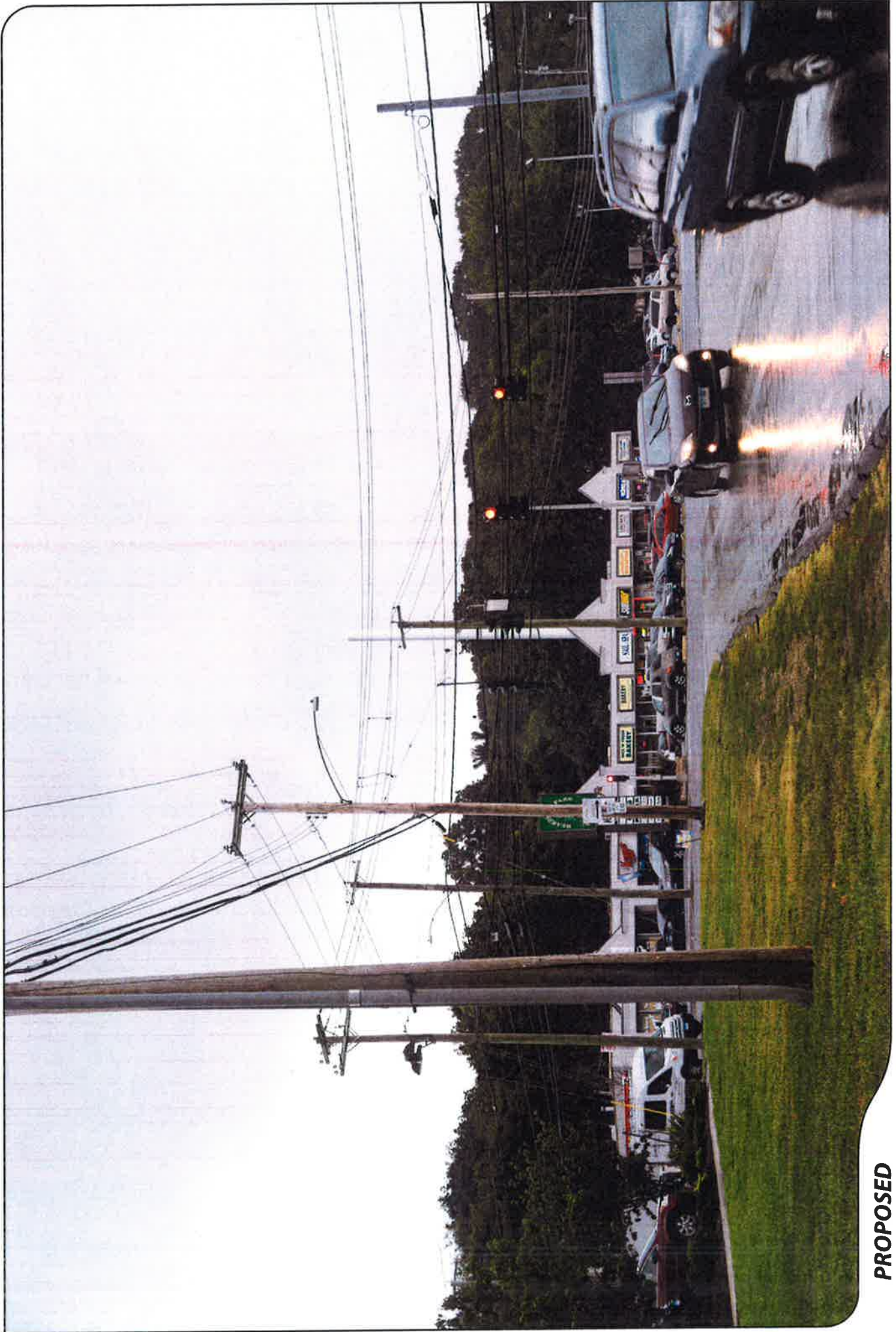
DISTANCE TO SITE

+/- 0.11 MILE

VISIBILITY

YEAR ROUND





PROPOSED

PHOTO

4

LOCATION

BROADBRIDGE ROAD

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.11 MILE

VISIBILITY

YEAR ROUND





EXISTING

PHOTO

5

LOCATION

HUNTINGTON TURNPIKE

ORIENTATION

EAST

DISTANCE TO SITE

+/- 384 FEET

VISIBILITY

YEAR ROUND





PROPOSED

PHOTO

5

LOCATION

HUNTINGTON TURNPIKE

ORIENTATION

EAST

DISTANCE TO SITE

+/- 384 FEET

VISIBILITY

YEAR ROUND



ALL-POINTS
ENGINEERING & CONSTRUCTION

verizon



EXISTING

PHOTO

6

LOCATION

HUNTINGTON TURNPIKE

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.23 MILE

VISIBILITY

NOT VISIBLE



EXISTING

PHOTO

7

LOCATION

HOOKER ROAD

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 307 FEET

VISIBILITY

YEAR ROUND



ALL-POINTS
PLANNING & ENGINEERING





PROPOSED

PHOTO 7	LOCATION HOOKER ROAD	ORIENTATION NORTHEAST	DISTANCE TO SITE +/- 307 FEET	VISIBILITY YEAR ROUND
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EXISTING

PHOTO

8

LOCATION

HOOKER ROAD

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.16 MILE

VISIBILITY

YEAR ROUND





PROPOSED

PHOTO

8

LOCATION

HOOKER ROAD

ORIENTATION

NORTHEAST

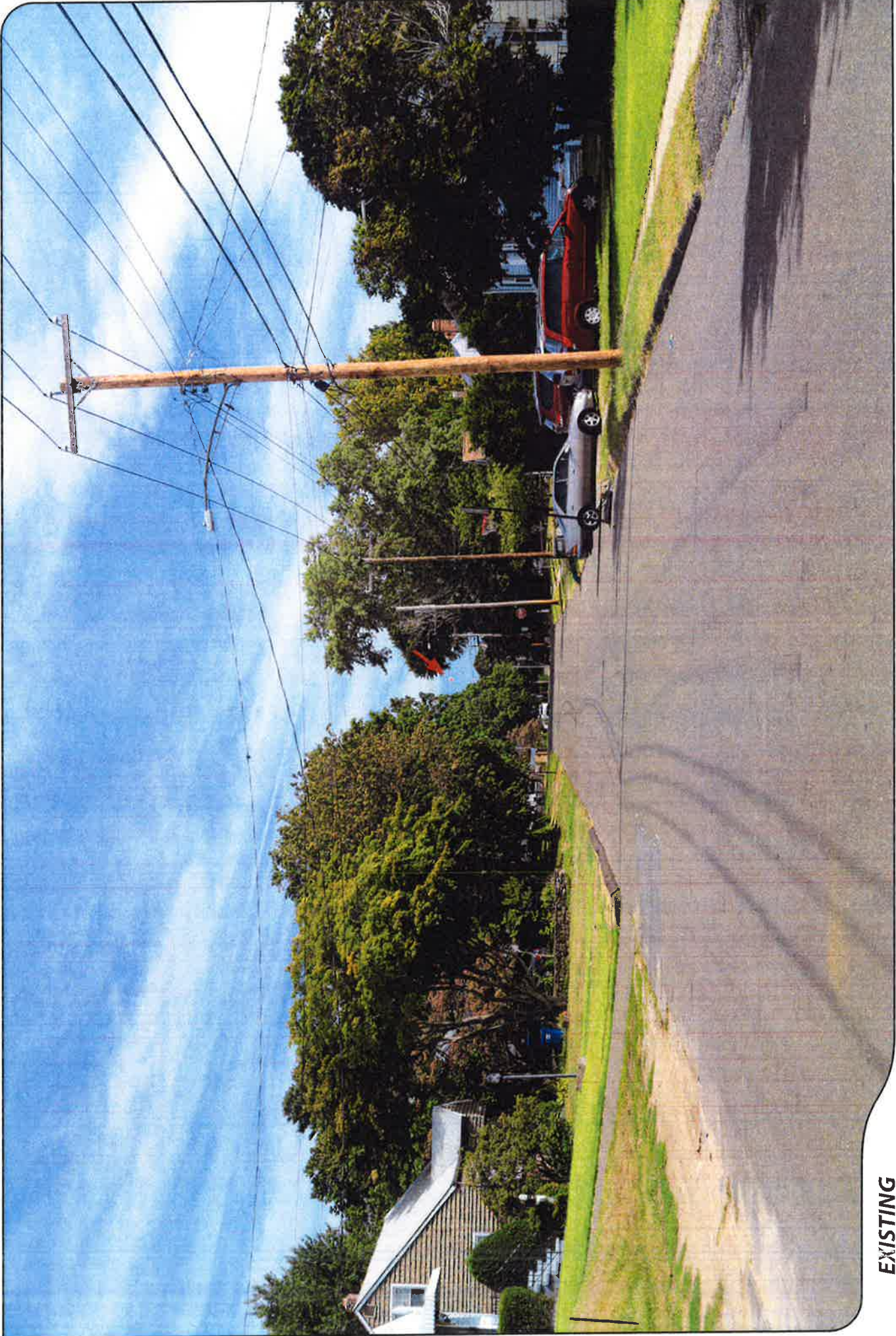
DISTANCE TO SITE

+/- 0.16 MILE

VISIBILITY

YEAR ROUND





EXISTING

PHOTO

9

LOCATION

HOOKER ROAD

ORIENTATION

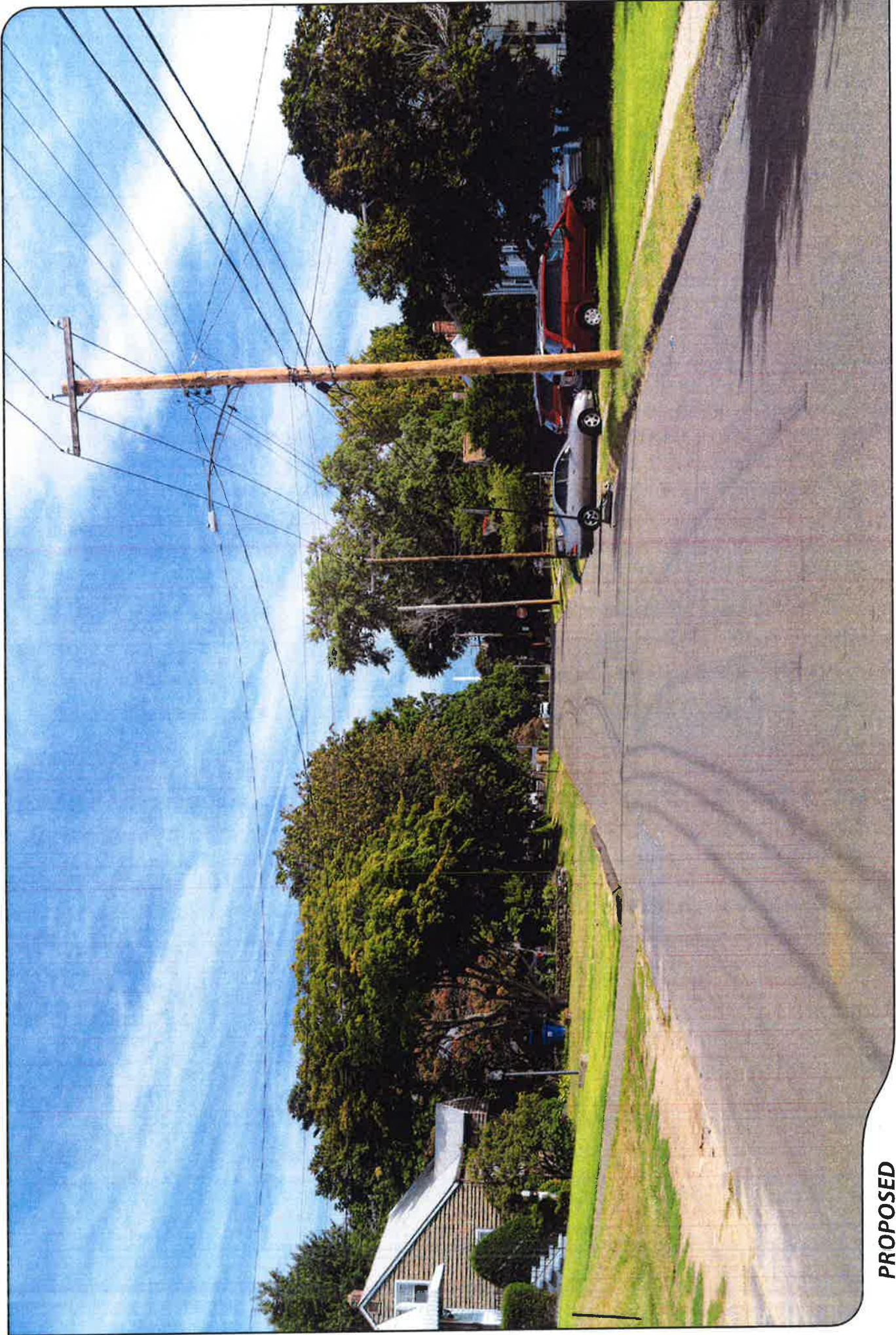
NORTHEAST

DISTANCE TO SITE

+/- 0.37 MILE

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO

9

LOCATION

HOOKER ROAD

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.37 MILE

VISIBILITY

YEAR ROUND



EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
10	HOOKER ROAD	NORTHEAST	+/- 0.50 MILE	YEAR ROUND





PROPOSED

PHOTO

10

LOCATION

HOOKER ROAD

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.50 MILE

VISIBILITY

YEAR ROUND





EXISTING

PHOTO

11

LOCATION

HOOKER ROAD

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.51 MILE

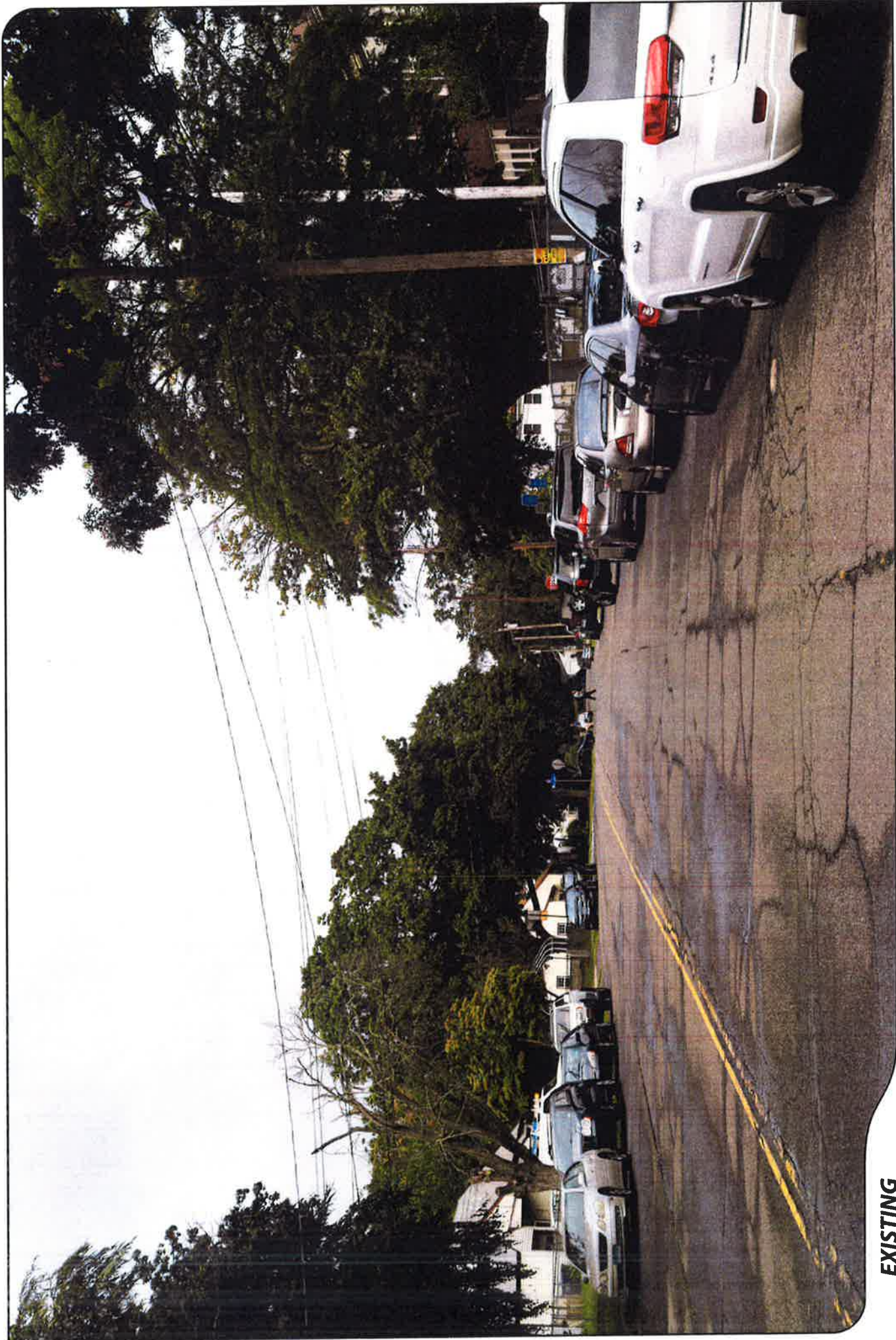
VISIBILITY

NOT VISIBLE



ALL-POINTS
PROPERTY SERVICES





EXISTING

PHOTO

12

LOCATION

ROGER WILLIAMS ROAD

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.38 MILE

VISIBILITY

NOT VISIBLE





EXISTING

PHOTO

13

LOCATION

LYNNE PLACE AT ALAMEDA PLACE

ORIENTATION

NORTH

DISTANCE TO SITE

+/- 0.17 MILE

VISIBILITY

NOT VISIBLE



ALL-POINTS
COMMERCIAL REAL ESTATE

verizon



EXISTING

PHOTO

14

LOCATION

GREYSTONE ROAD

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 0.20 MILE

VISIBILITY

NOT VISIBLE





EXISTING

PHOTO

15

LOCATION

ALAMEDA PLACE

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 485 FEET

VISIBILITY

NOT VISIBLE





EXISTING

PHOTO

16

LOCATION

HOLLAND ROAD

ORIENTATION

NORTHWEST

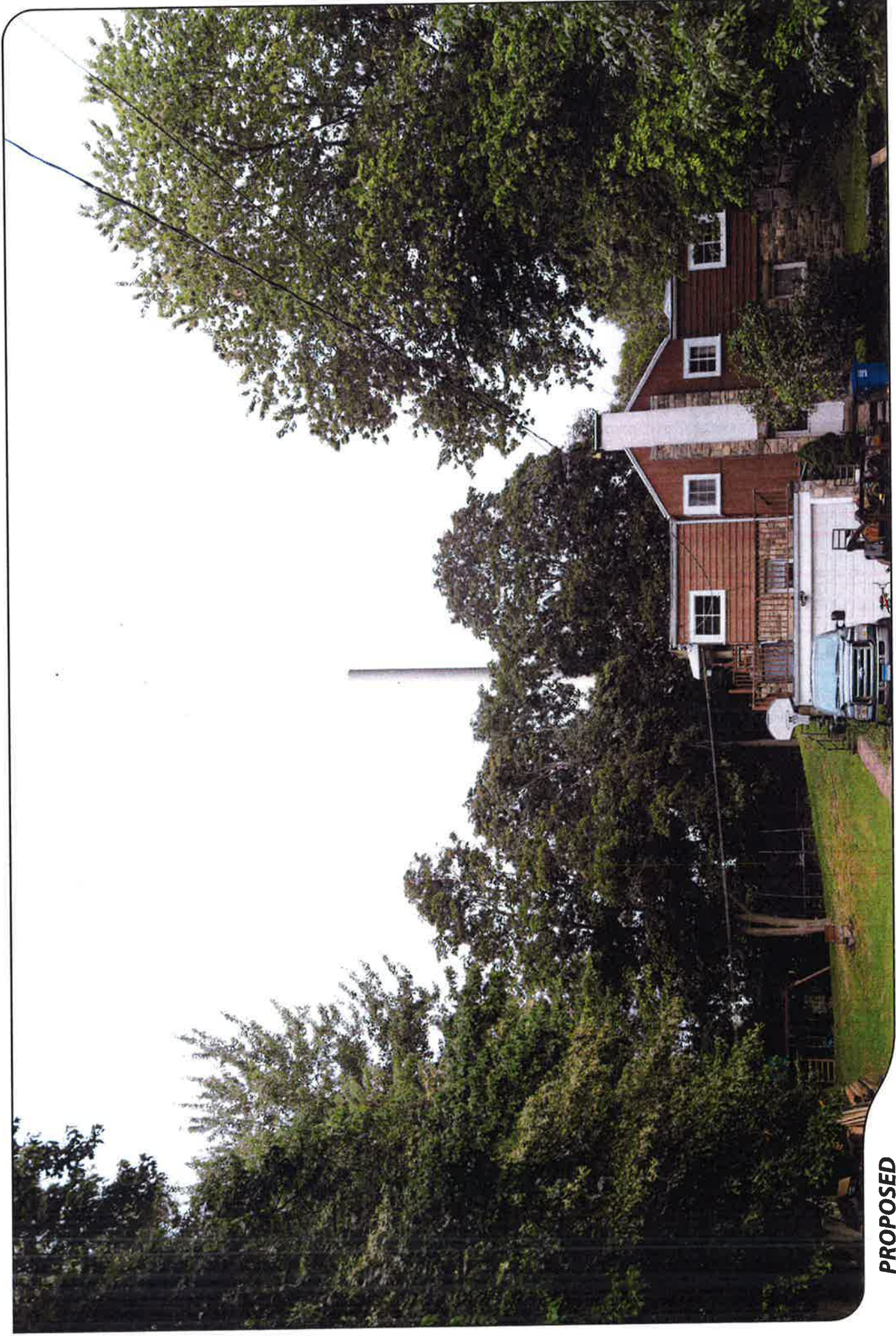
DISTANCE TO SITE

+/- 211 FEET

VISIBILITY

YEAR ROUND





PROPOSED

PHOTO

16

LOCATION

HOLLAND ROAD

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 211 FEET

VISIBILITY

YEAR ROUND





EXISTING

PHOTO

17

LOCATION

HOLLAND ROAD

ORIENTATION

SOUTHWEST

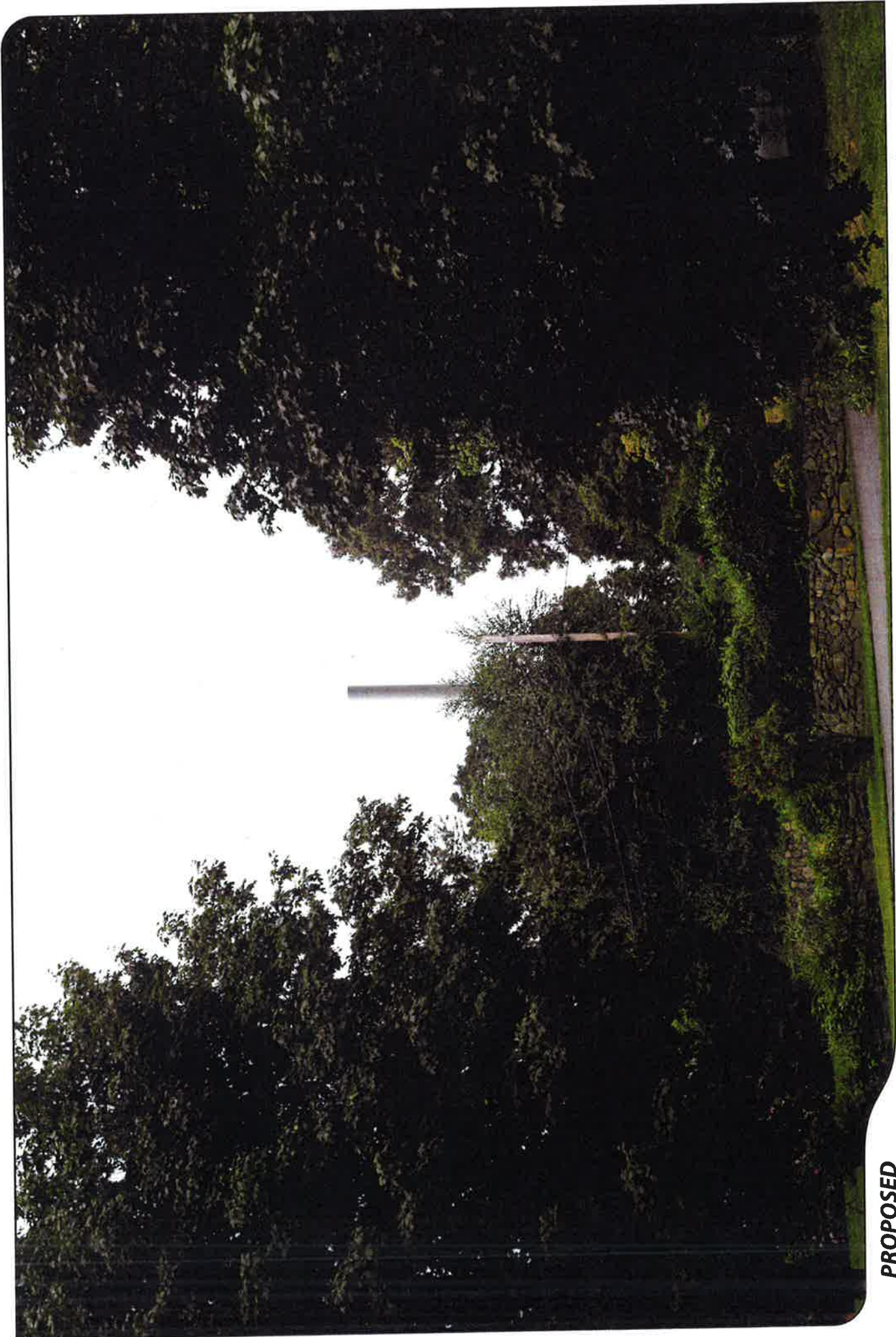
DISTANCE TO SITE

+/- 359 FEET

VISIBILITY

YEAR ROUND





PROPOSED

PHOTO

17

LOCATION

HOLLAND ROAD

ORIENTATION

SOUTHWEST

DISTANCE TO SITE

+/- 359 FEET

VISIBILITY

YEAR ROUND





EXISTING

PHOTO

18

LOCATION

IWANICKI CIRCLE

ORIENTATION

SOUTHWEST

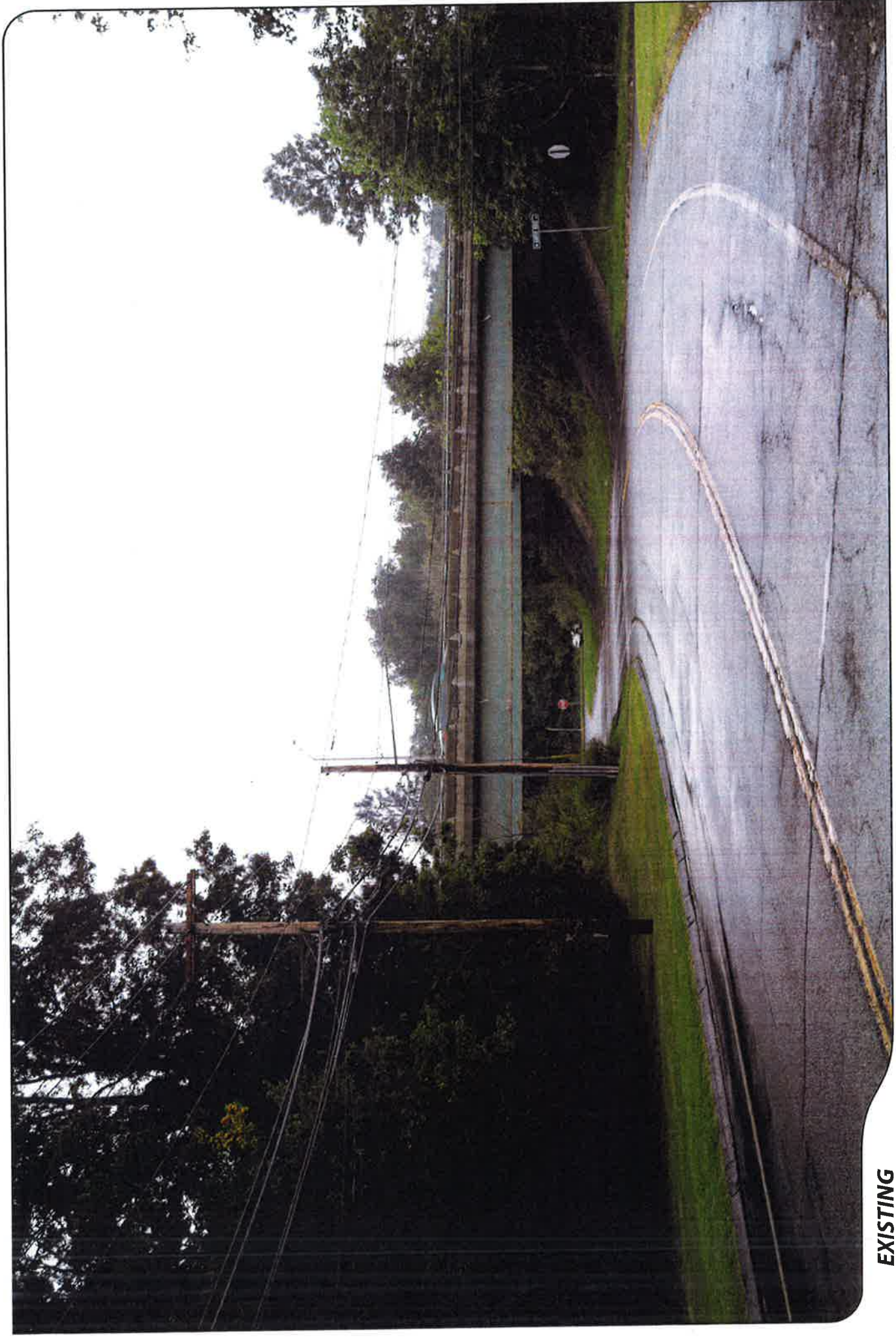
DISTANCE TO SITE

+/- 0.17 MILE

VISIBILITY

NOT VISIBLE





EXISTING

PHOTO

19

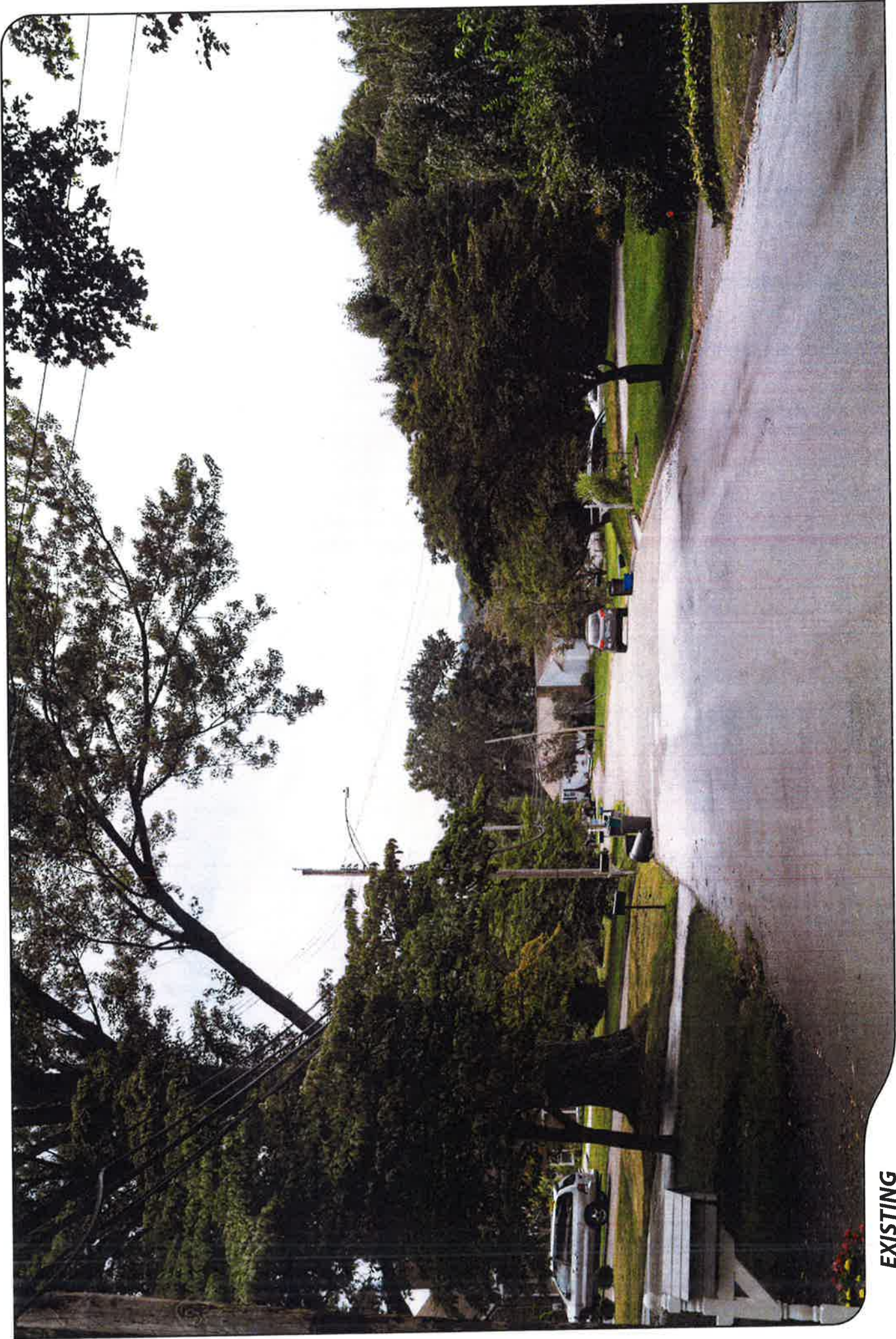
LOCATION
HUNTINGTON TURNPIKE (TRUMBULL)

ORIENTATION
SOUTHWEST

DISTANCE TO SITE
+/- 0.36 MILE

VISIBILITY
NOT VISIBLE





EXISTING

PHOTO

20

LOCATION

LAWLOR TERRACE (STRATFORD)

ORIENTATION

SOUTHWEST

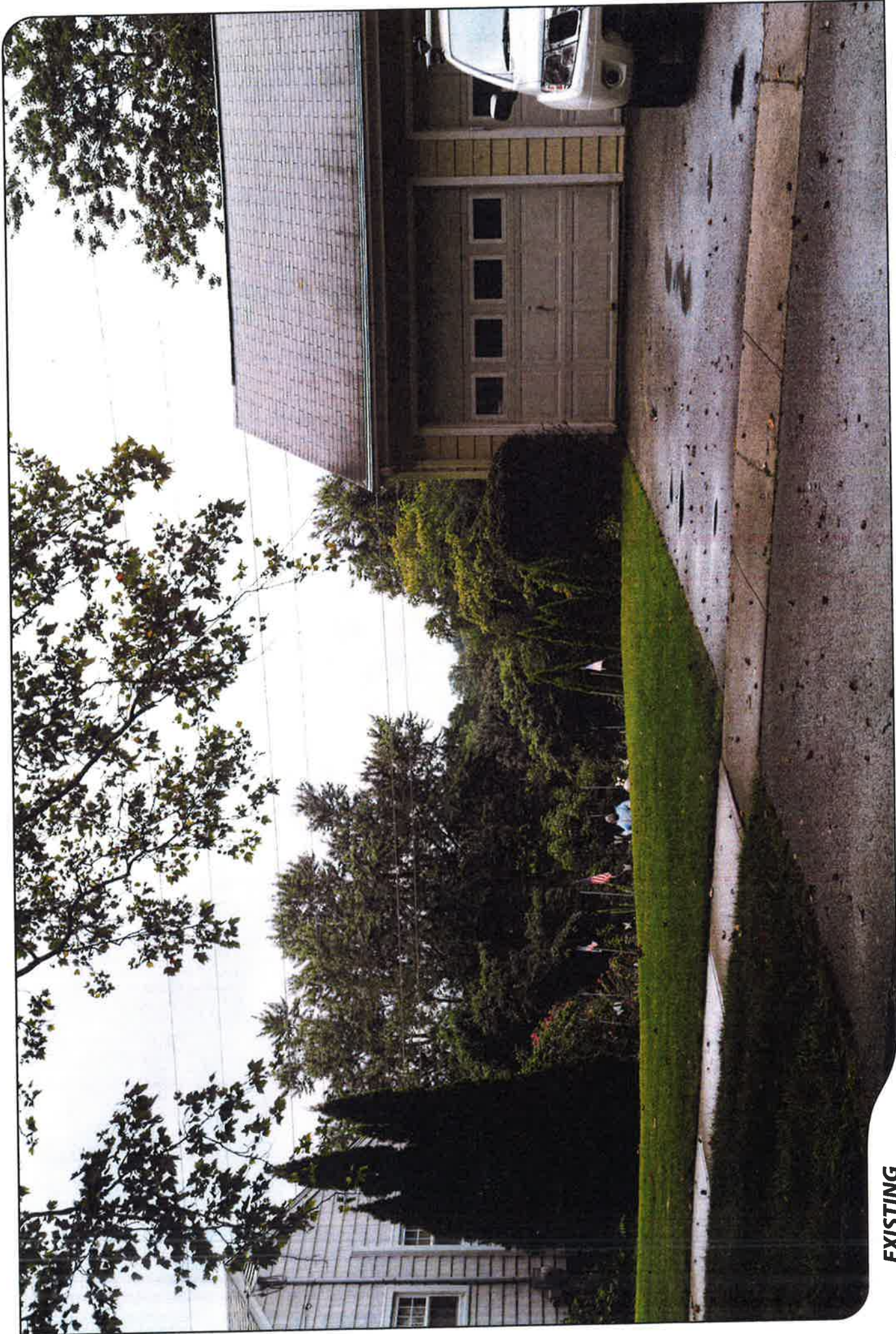
DISTANCE TO SITE

+/- 0.74 MILE

VISIBILITY

NOT VISIBLE





EXISTING

PHOTO

21

LOCATION

GANNON DRIVE (STRATFORD)

ORIENTATION

SOUTHWEST

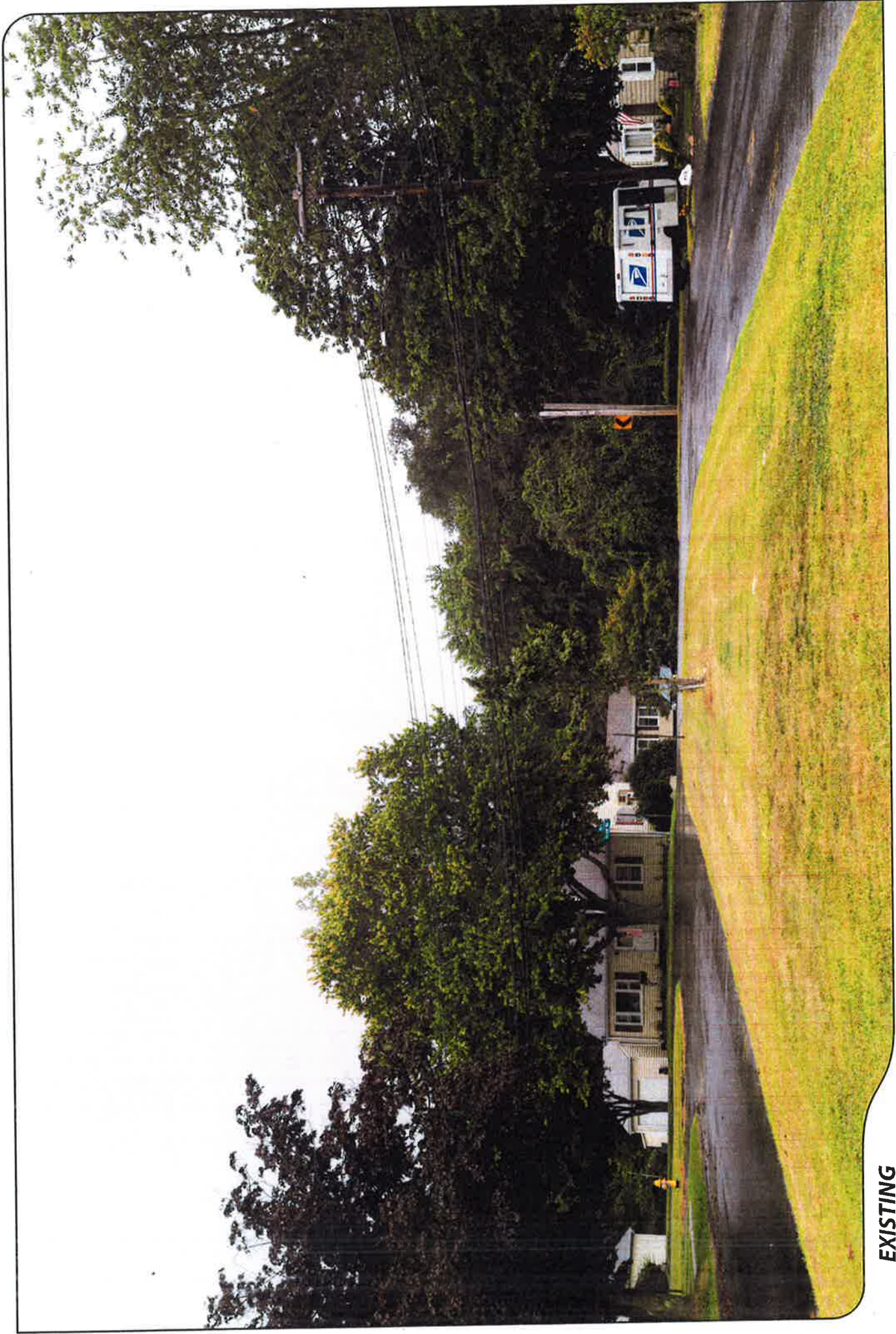
DISTANCE TO SITE

+/- 0.59 MILE

VISIBILITY

NOT VISIBLE





EXISTING

PHOTO

22

LOCATION

SECOND HILL LANE (STRATFORD)

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 0.72 MILE

VISIBILITY

NOT VISIBLE



ALL-POINTS
ENGINEERING, P.C.

verizon



EXISTING

PHOTO

23

LOCATION

RIDGEFIELD DRIVE (STRATFORD)

ORIENTATION

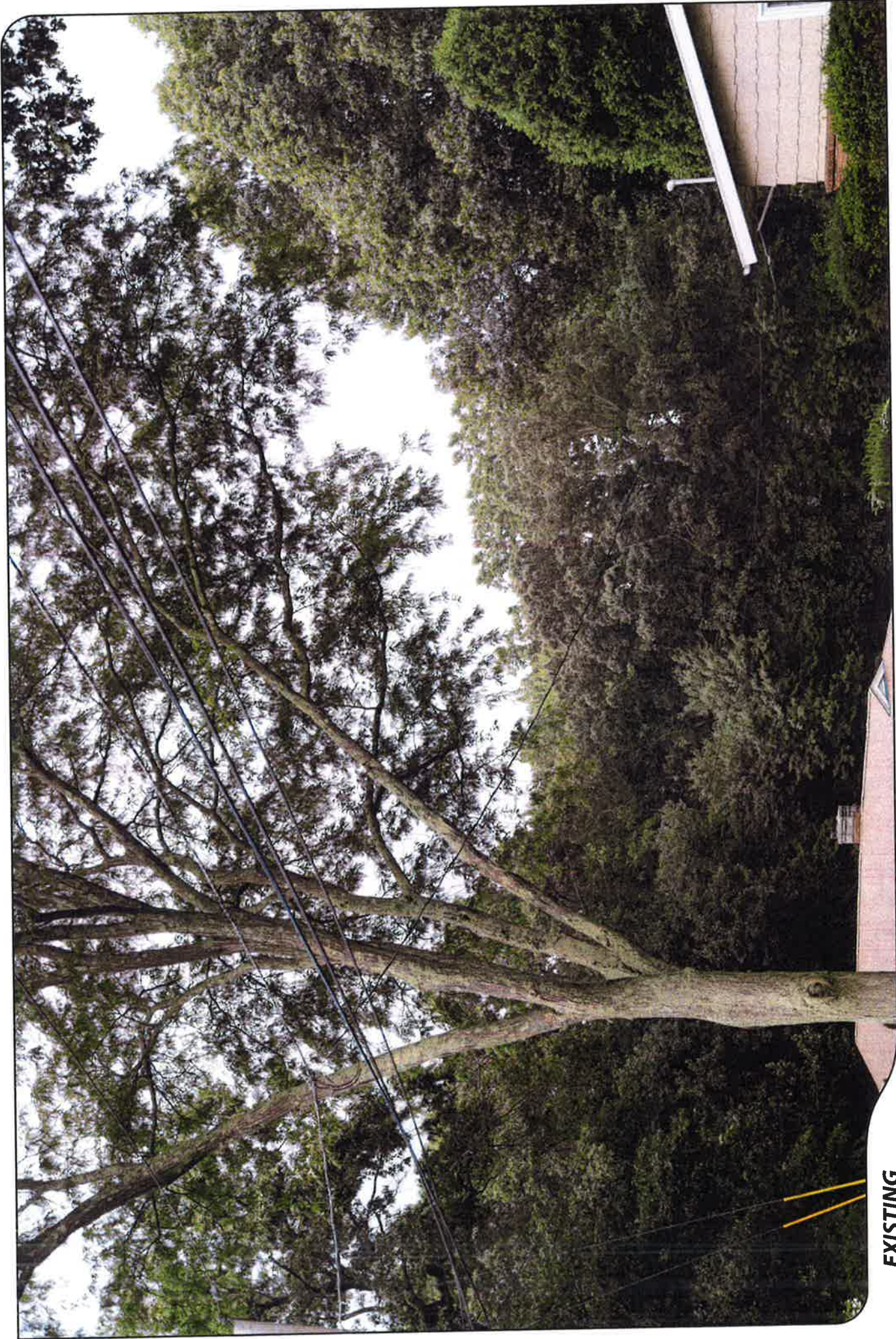
NORTHWEST

DISTANCE TO SITE

+/- 0.52 MILE

VISIBILITY

NOT VISIBLE



EXISTING

PHOTO

24

LOCATION

OAK RIDGE DRIVE (TRUMBULL)

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 0.58 MILE

VISIBILITY

NOT VISIBLE





EXISTING

PHOTO

25

LOCATION

UNITY PARK (TRUMBULL)

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 1.09 MILES

VISIBILITY

NOT VISIBLE





EXISTING

PHOTO

26

LOCATION

QUARRY ROAD (TRUMBULL)

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 1.05 MILES

VISIBILITY

NOT VISIBLE





EXISTING

PHOTO

27

LOCATION

WHITE PLAINS ROAD (TRUMBULL)

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

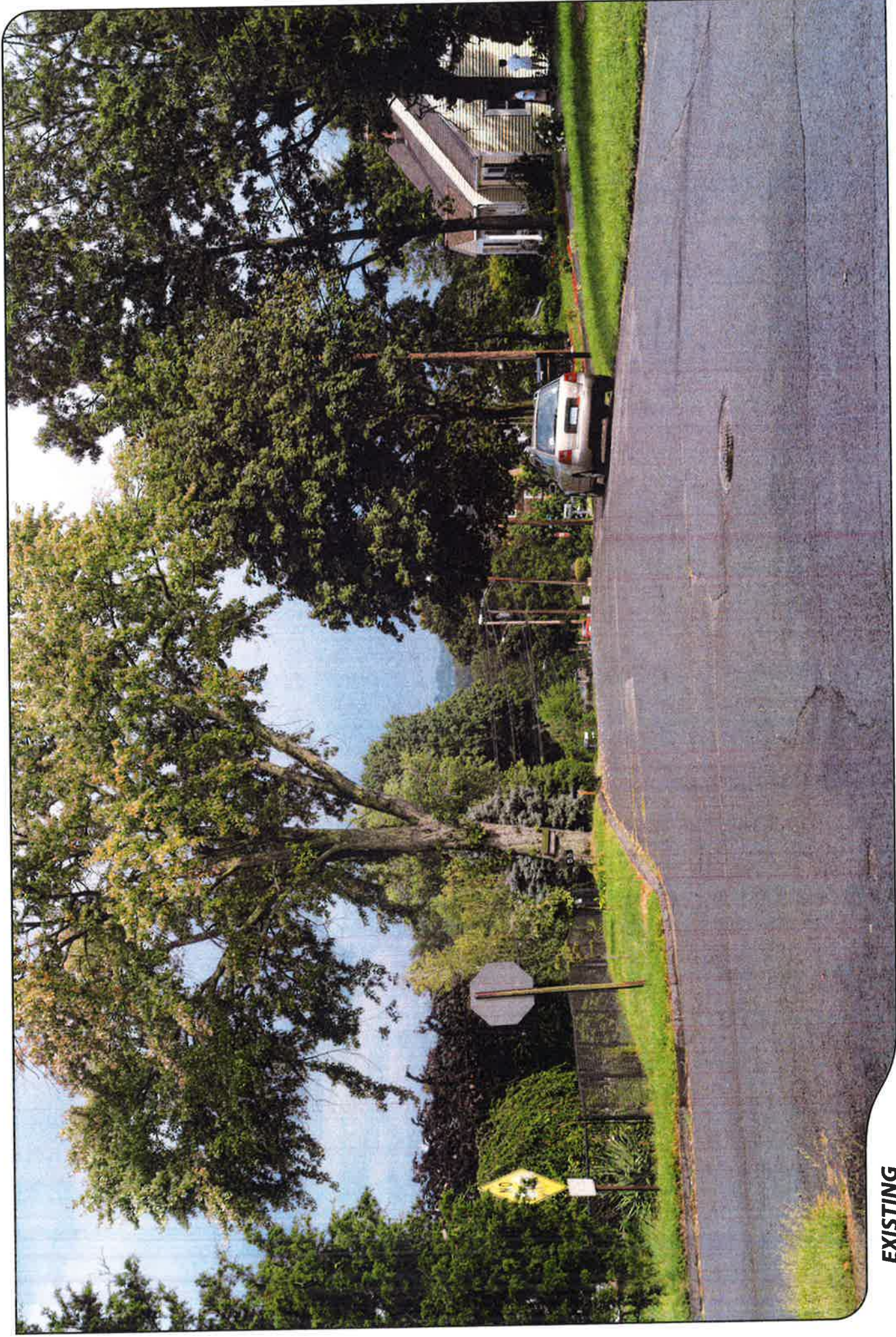
+/- 0.54 MILE

VISIBILITY

NOT VISIBLE



verizon



EXISTING

PHOTO

28

LOCATION

SYLVAN AVENUE (TRUMBULL)

ORIENTATION

EAST

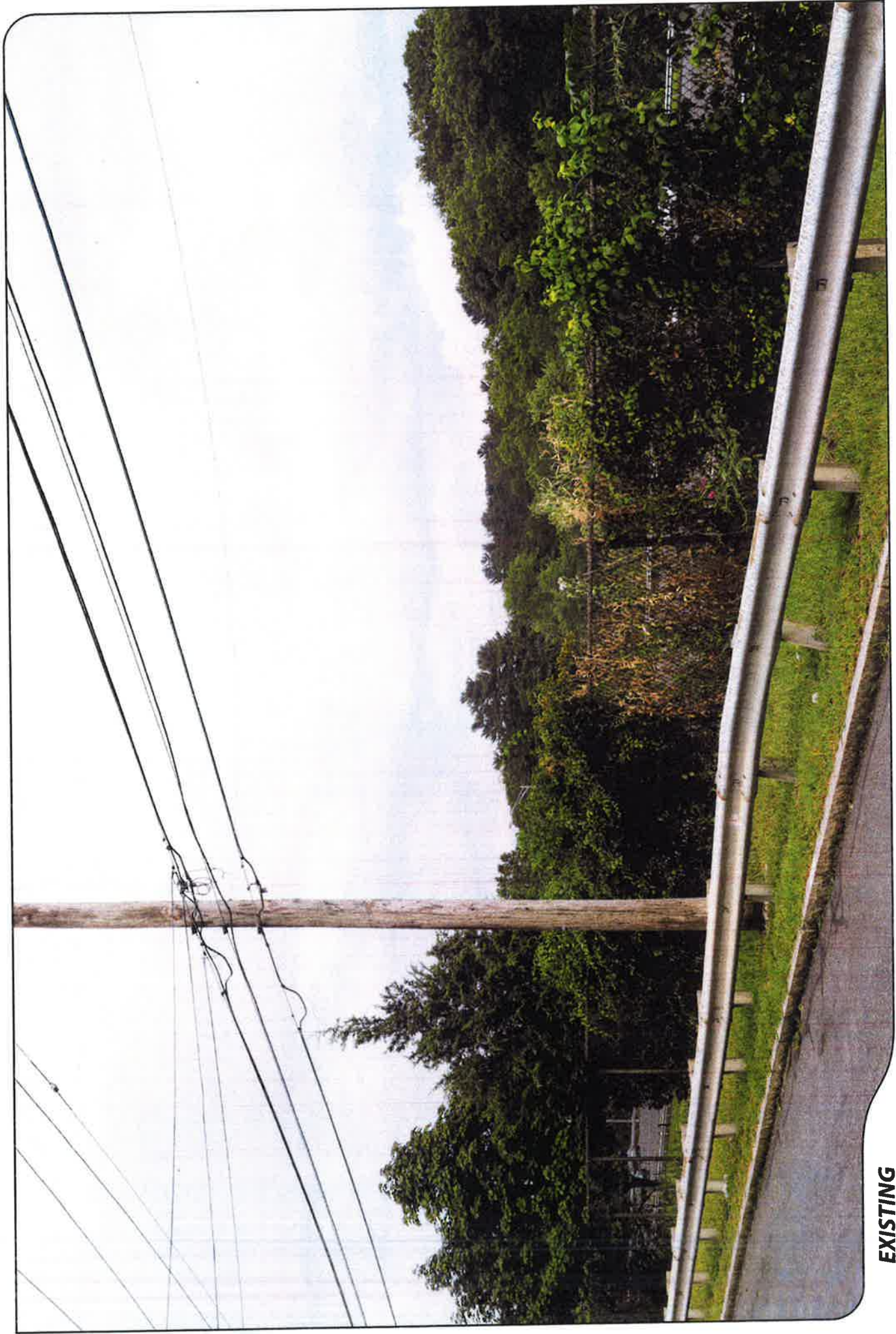
DISTANCE TO SITE

+/- 1.04 MILES

VISIBILITY

NOT VISIBLE





EXISTING

PHOTO

29

LOCATION

SELTSAM ROAD

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 1.08 MILES

VISIBILITY

NOT VISIBLE



ALL-POINTS
ENVIRONMENTAL PROFESSIONAL SERVICES

verizon



EXISTING

PHOTO

30

LOCATION
HUNTINGTON PLAZA

ORIENTATION
NORTHEAST

DISTANCE TO SITE
+/- 0.73 MILE

VISIBILITY
NOT VISIBLE





EXISTING

PHOTO

31

LOCATION

EAST MAIN STREET AT BEARDSLEY PARK

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.92 MILE

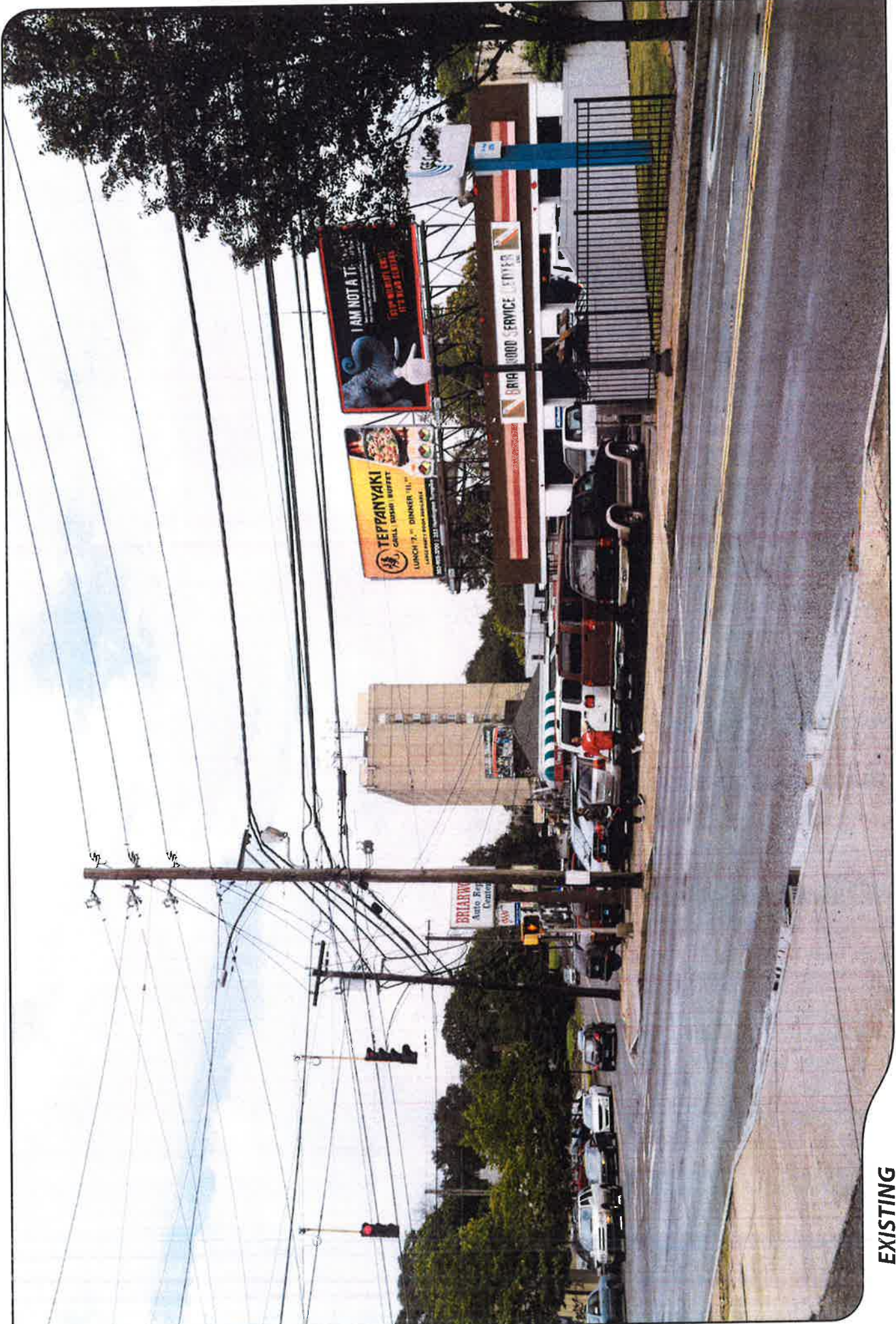
VISIBILITY

NOT VISIBLE



ALL-POINTS
RESIDENTIAL

verizon



EXISTING

PHOTO

32

LOCATION

EAST MAIN STREET

ORIENTATION

NORTHEAST

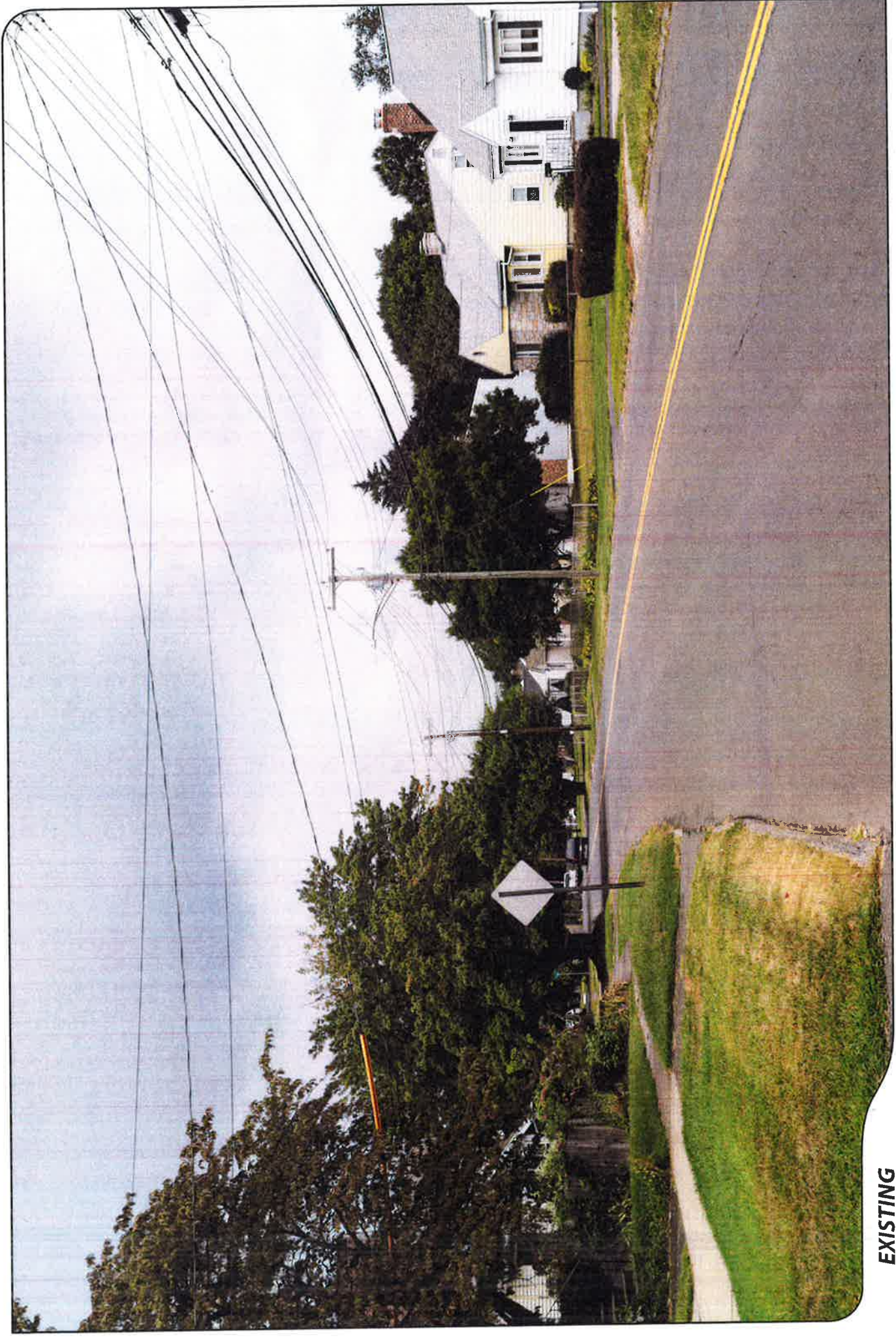
DISTANCE TO SITE

+/- 1.04 MILES

VISIBILITY

NOT VISIBLE





EXISTING

PHOTO

33

LOCATION

BROADBRIDGE AVENUE (STRATFORD)

ORIENTATION

NORTHWEST

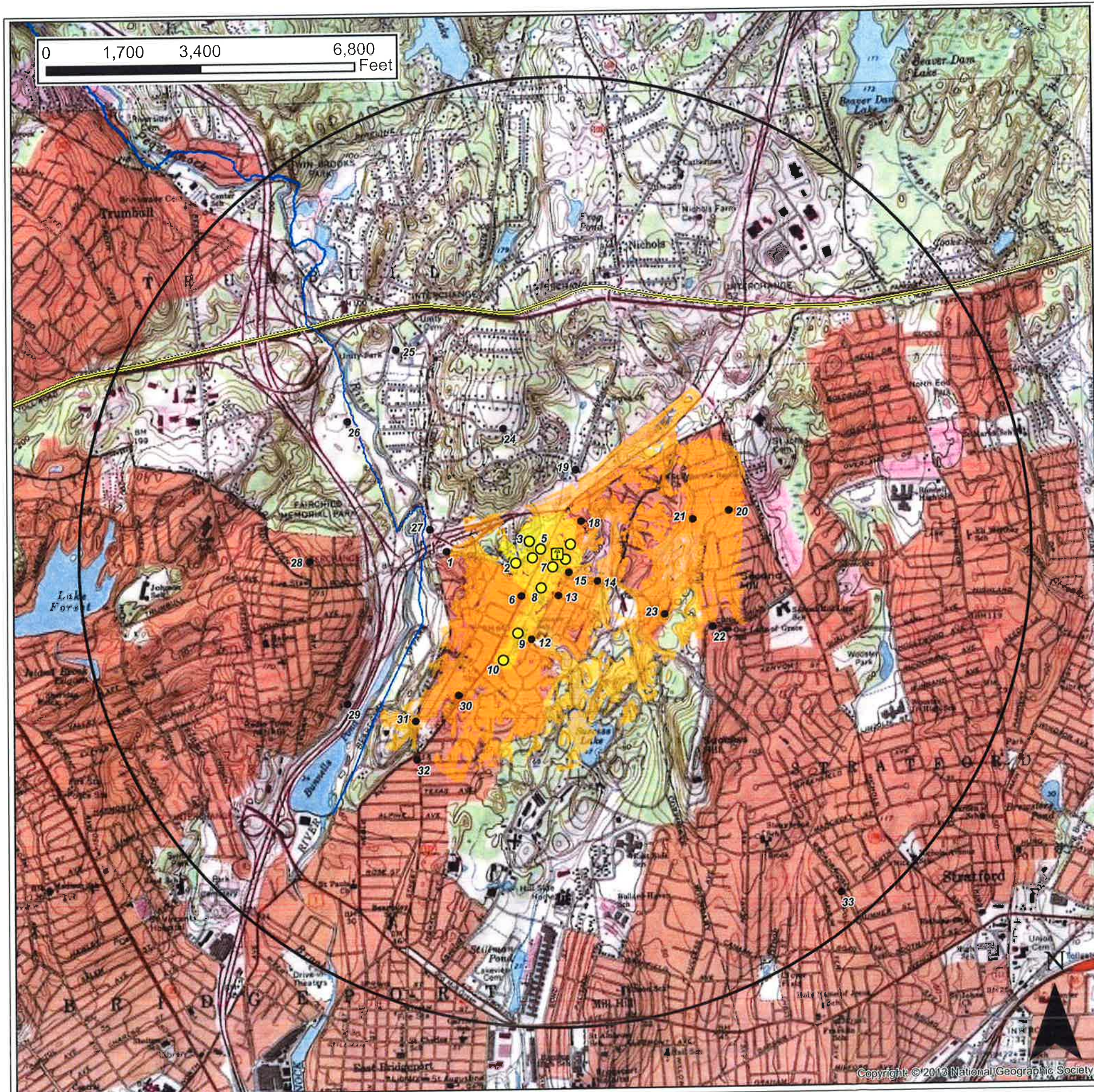
DISTANCE TO SITE

+/- 1.87 MILES

VISIBILITY

NOT VISIBLE





Viewshed Map – Topo Base

Proposed Wireless Telecommunications Facility
541 Broadbridge Road, Bridgeport, CT

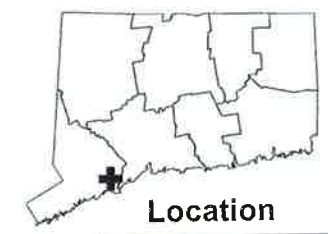
Proposed facility height is 100 feet AGL.
Forest canopy height is derived from lidar data.
Study area encompasses a two-mile radius and includes 8,042 acres of land.
Map compiled 10/4/2016

Map information field verified by APT on 9/1/2016 and 9/21/2016.

Only those resources located within the extent of the map are depicted. For a complete list of data sources consulted for this analysis, please refer to the Documentation Page.

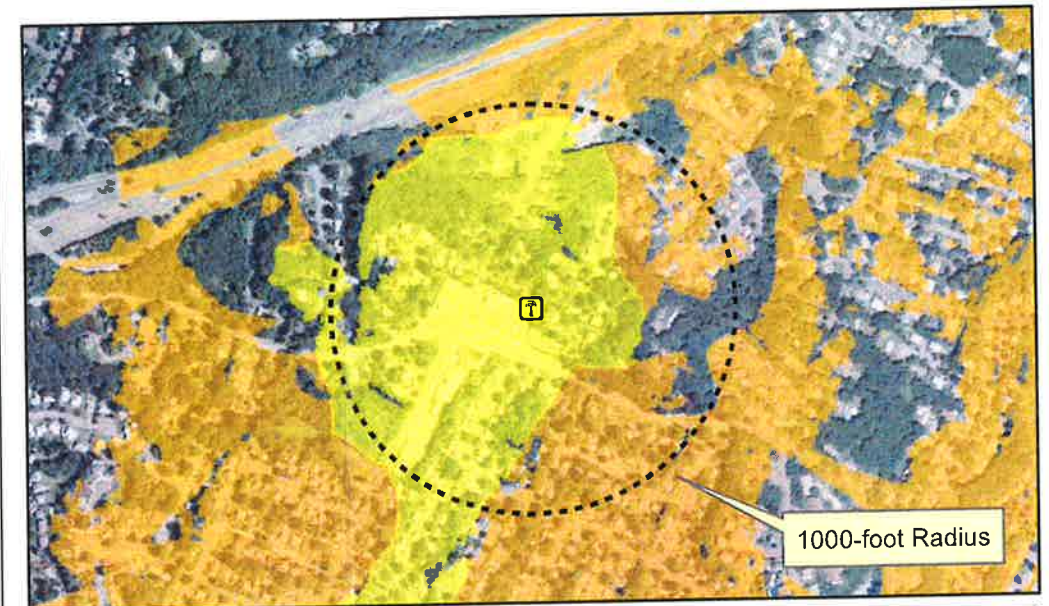
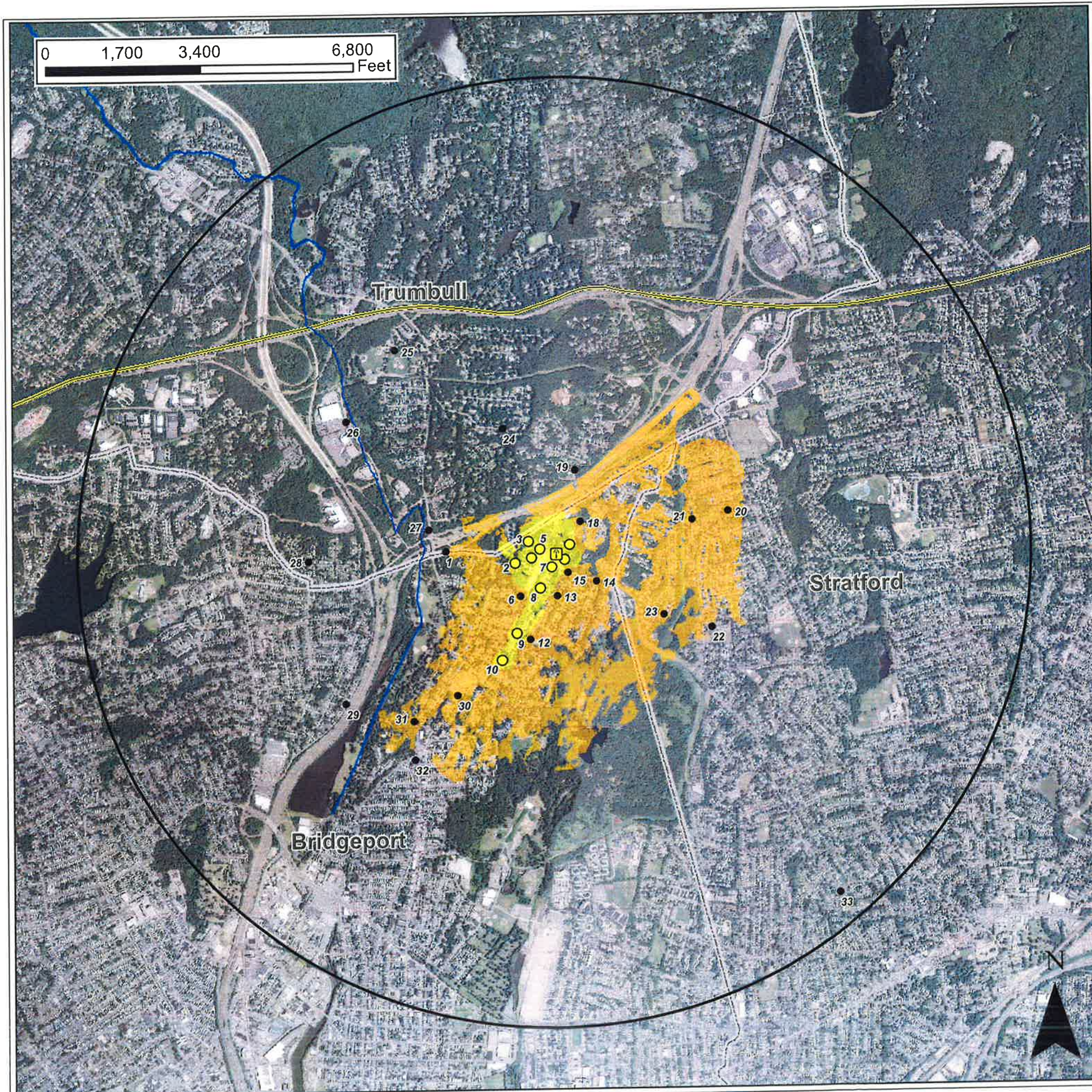
Legend

- Proposed Tower
- Photo Locations**
- Not Visible
- Visible
- Trails
- Predicted Seasonal Visibility (489 Acres)
- Predicted Year-Round Visibility (60 Acres)
- Towns
- 2-Mile Study Area
- Scenic Roads



Location





Viewshed Map – Aerial Base

Proposed Wireless Telecommunications Facility
541 Broadbridge Road, Bridgeport, CT

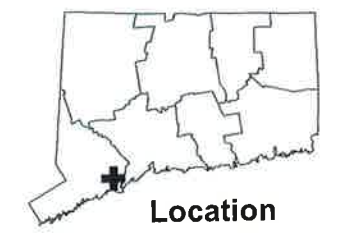
Proposed facility height is 100 feet AGL.
Forest canopy height is derived from lidar data.
Study area encompasses a two-mile radius and includes 8,042 acres of land.
Map compiled 10/4/2016

Map information field verified by APT on 9/1/2016 and 9/21/2016.

Only those resources located within the extent of the map are depicted. For a complete list of data sources consulted for this analysis, please refer to the Documentation Page.

Legend

- Proposed Tower
- Photo Locations**
- Not Visible
- Visible
- Trails
- Predicted Seasonal Visibility (489 Acres)
- Predicted Year-Round Visibility (60 Acres)
- Towns
- 2-Mile Study Area
- Scenic Roads



DOCUMENTATION

SOURCES CONSULTED FOR VIEWSHED MAPS 541 Broadbridge Road Bridgeport, Connecticut

Physical Geography / Background Data

Topography, Coniferous and Deciduous Forest (Heritage Consultants 2016)

*LiDAR data –NOAA 2015/2016

*USGS topographic quadrangle maps – Bridgeport (1984)

National Resource Conservation Service

*NAIP aerial photography (2014)

Department of Transportation Data

^State Scenic Highways (updated monthly)

Heritage Consultants

^Municipal Scenic Roads

Cultural Resources

Heritage Consultants

^National Register

^State Register 1966-2016

^ Local Survey Data Hri

Dedicated Open Space & Recreation Areas

Connecticut Department of Energy and Environmental Protection (DEEP)

*DEEP Property (May 1997)

*Federal Open Space (1997)

*Municipal and Private Open Space (1997)

Connecticut Forest Parks Association

^Connecticut Walk Books West –

The Guide to the Blue-Blazed Hiking Trails of Western Connecticut, 19th Edition, 2006.

Other

^ConnDOT Scenic Strips (based on Department of Transportation data)

*Available to the public in GIS-compatible format (some require fees).

^ Data not available to general public in GIS format. Reviewed independently and, where applicable, GIS data later prepared specifically for this Study Area.

NOTE Not all the sources listed above appear on the Viewshed Maps. Only those features within the scale of the graphic are shown.

LIMITATIONS

The visibility analysis map(s) presented in this report depict areas where the proposed Facility may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground and intervening topography, tree canopy heights and structures. This analysis may not necessarily account for all visible locations, as it is based on the combination of computer modeling, incorporating 2014 aerial photographs, and in-field observations from publicly-accessible locations. No access to private properties beyond the host Property was provided to APT personnel. This analysis does not claim to depict the only areas, or all locations, where visibility may occur; it is intended to provide a representation of those areas where the Facility is likely to be seen.

The photo-simulations in this report provide a representation of the Facility under similar settings as those encountered during the balloon float and reconnaissance. Views of the tower can change substantially throughout the season and are dependent on environmental conditions, including (but not necessarily limited to) weather, light conditions, seasons, time of day, and the viewer location.

ATTACHMENT 4

General Power Density

Site Name: BRIDGEPORT NE, CT
 Cumulative Power Density

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm ²)	Maximum Permissible Exposure* (mW/cm ²)	Fraction of MPE (%)
VZW PCS	1970	1	1469	1469	82	0.0786	1.0	7.86%
VZW Cellular	869	9	208	1872	82	0.1001	0.5793333333	17.28%
VZW AWS	2145	1	1501	1501	92	0.0638	1.0	6.38%
VZW 700	746	1	766	766	92	0.0325	0.4973333333	6.54%
Total Percentage of Maximum Permissible Exposure								38.06%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz
 mW/cm² = milliwatts per square centimeter
 ERP = Effective Radiated Power

Absolute worst case maximum values used.

ATTACHMENT 5

Cellco Partnership d/b/a Verizon Wireless
541 Broadbridge Road
Bridgeport, Connecticut

Bridgeport NE Facility

Site Search Summary

Section 16-50j-74(j) of the Regulations of Connecticut State Agencies requires the submission of a statement that describes “the narrowing process by which other possible sites were considered and eliminated.” In accordance with this requirement, descriptions of the general site search process, the identification of the applicable search area and the alternative locations considered for development of the proposed Bridgeport NE telecommunications facility are provided below.

Site Search Process

To initiate its site selection process in an area where wireless service problems have been identified, Cellco first establishes a “site search ring” or “site search area”. In any search ring or search area, Cellco seeks to avoid the unnecessary proliferation of towers and to reduce the potential adverse environmental effects of the cell site, while at the same time maximizing the quality and reliability of service provided. These objectives are achieved by initially locating existing towers and other sufficiently tall structures within and near a site search area. If any are found, they are evaluated to determine whether they are capable of supporting Cellco’s telecommunications antennas and related equipment at a location and elevation that satisfies its technical requirements.

The list of available locations may be further reduced if, after preliminary negotiations, the property owners withdraw a site from further consideration. From among the remaining locations, the proposed sites are selected by eliminating those that have greater potential for adverse environmental effects and fewer benefits to the public (i.e., those requiring taller towers; those with substantial adverse environmental impacts, or located in densely populated areas; and those with limited ability to share space with other public or private telecommunications service providers). It should be noted that in any given site search, the weight afforded to factors considered in the selection process will vary depending upon the availability and nature of sites within the search area.

Need for the Bridgeport NE Facility

Cellco currently maintains four (4) wireless telecommunications facilities within approximately two (2) miles of the proposed Bridgeport NE Facility. These facilities are identified as Cellco’s North Bridgeport 2; Trumbull 4; Trumbull II and Stratford West cell sites. Cellco’s North Bridgeport 2 facility consists of antennas on a building at 120 Huntington Turnpike in Bridgeport. Cellco’s Trumbull 4 facility consists of antennas on an existing electric transmission line support structure on property at 900 Old Town Road (a/k/a Rocky Hill Road) in Trumbull. Cellco’s Trumbull II facility consists of antennas on the roof of the Trumbull Marriott building at 180 Hawley Lane in Trumbull. Cellco’s Stratford West facility consists of antennas at the 77-foot level on the existing 100-foot tower at 24 Stonybrook Road in Stratford.

These existing facilities currently provide wireless service in the area around the proposed Bridgeport NE Facility location. Cellco's existing North Bridgeport 2 facility (Alpha and Beta sector antennas) and Trumbull II (Beta and Gamma sector antennas) are currently operating at or near their capacity limits, resulting in a significant reduction in reliable wireless service in the area. In addition, Cellco is experiencing significant gaps in wireless service in the residential area to the north and east and portions of Route 8 and Route 15 in northern Bridgeport and Trumbull. There are no other existing towers or other sufficiently tall structures available in the Bridgeport NE search area that would satisfy Cellco service objectives. Construction of a new tower, therefore, is required to resolve Cellco's existing wireless service problems.

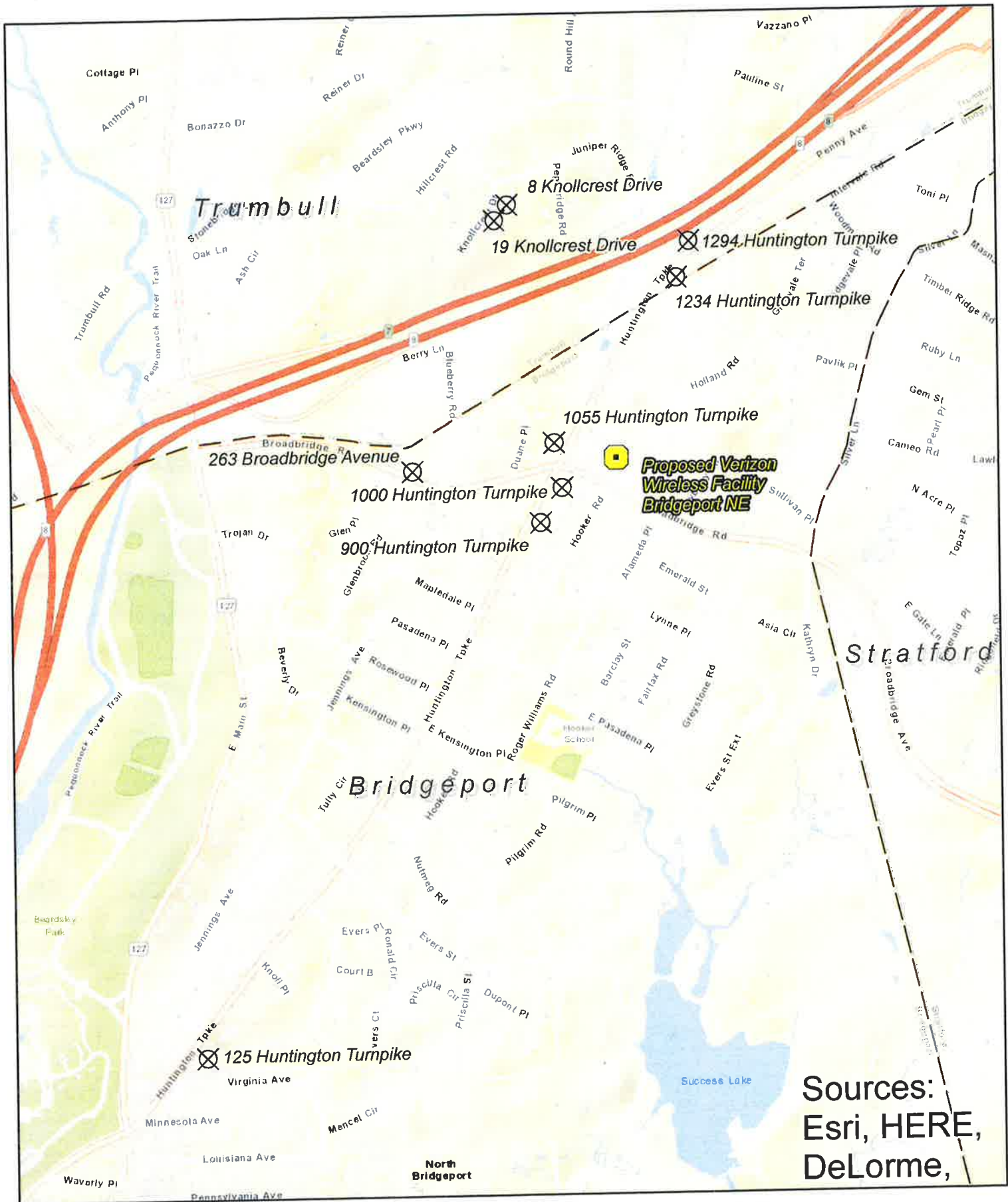
Identification of the Bridgeport NE Search Area

The purpose of the proposed Bridgeport NE Facility is to provide service to existing coverage gaps in the area primarily to the north and east along portions of Routes 8, 15 and 108, and to residential areas and capacity relief to Cellco's existing Trumbull II and North Bridgeport 2 cell sites. (See attached Search Area Maps).

Sites Investigated

Cellco investigated a total of ten (10) sites in Bridgeport, Trumbull and Stratford. A listing of the sites investigated is provided below.

1. **541 Broadbridge Road, Bridgeport, CT** – Proposed Bridgeport NE facility.
2. **125 Huntington Turnpike, Trumbull, CT** – Mutual Housing Association of Western CT – No landlord interest.
3. **1055 Huntington Turnpike, Bridgeport, CT** – Broadbridge Hill Development – No landlord interest.
4. **1294 Huntington Turnpike, Bridgeport, CT** – MTM Family LP – No landlord interest.
5. **1234 Huntington Turnpike, Bridgeport, CT** – MTM Family LP – No landlord interest.
6. **8 Knollcrest Drive, Trumbull, CT** – David and Maureen Smith – No landlord interest.
7. **19 Knollcrest Drive, Trumbull, CT** – had a quick site visit – determined that location wouldn't work due to a site topography.
8. **900 Huntington Turnpike, Bridgeport, CT** – No landlord interest.
9. **1000 Huntington Turnpike, Bridgeport, CT** – No landlord interest.
10. **263 Broadbridge Ave, Trumbull, CT** – Site rejected due to significant wetland areas on site.



Sources:
 Esri, HERE,
 DeLorme,

Legend

- Proposed Verizon Wireless Facility
- ⊗ Search Locations
- Municipal Boundary

Site Search Summary Map

Proposed Wireless
 Telecommunications Facility
 Bridgeport NE
 541 Broadbridge Road
 Bridgeport, Connecticut

